

## PLC Connection Guide

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# AIBUS

Supported Series: UDIAN Automation AI-501, AI-518, AI-519, AI-701, AI-702M, AI-704M, AI-706M, AI-719.

Website: <http://www.yudian.us>

## HMI Setting:

| Parameters   | Recommended | Options     | Notes |
|--------------|-------------|-------------|-------|
| PLC type     | AIBUS       |             |       |
| PLC I/F      | RS485 2W    | RS232       |       |
| Baud rate    | 9600        | 9600, 19200 |       |
| Data bits    | 8           |             |       |
| Parity       | None        |             |       |
| Stop bits    | 2           |             |       |
| HMI sta. no. | 0           |             |       |
| PLC sta. no. | 1           | 0-100       |       |

|                     |     |
|---------------------|-----|
| On-line simulation  | YES |
| Extend address mode | NO  |

## Device Address:

### AI-518

| Bit/Word | Device type |     | Format | Range        | Memo            |
|----------|-------------|-----|--------|--------------|-----------------|
| W        | 0           | 00H | DD     |              | SV/STEP         |
| W        | 1           | 01H | DD     | -1999 ~ 9999 | HAL             |
| W        | 2           | 02H | DD     | -1999 ~ 9999 | LoAL            |
| W        | 3           | 03H | DD     | 0 ~ 9999     | dHAL            |
| W        | 4           | 04H | DD     | 0 ~ 9999     | dLAL            |
| W        | 5           | 05H | DD     | 0 ~ 2000     | dF              |
| W        | 6           | 06H | DD     | 0 ~ 4        | Ctrl            |
| W        | 7           | 07H | DD     | 0 ~ 9999     | M5              |
| W        | 8           | 08H | DD     | 1 ~ 9999     | P               |
| W        | 9           | 09H | DD     | 0 ~ 2000     | t               |
| W        | 10          | 0AH | DD     | 0 ~ 125      | Ctl             |
| W        | 11          | 0BH | DD     | 0 ~ 37       | Sn (read only)  |
| W        | 12          | 0CH | DD     | 0 ~ 3        | dIP (read only) |


|   |    |     |    |                      |  |
|---|----|-----|----|----------------------|--|
| W | 13 | 0DH | DD | -1999 ~ 9999         | dIL  |
| W | 14 | 0EH | DD | -1999 ~ 9999         | dIH  |
| W | 15 | 0FH | DD | 0 ~ 9999             | ALP  |
| W | 16 | 10H | DD | -1999 ~ 4000<br>0.1□ | Sc   |
| W | 17 | 11H | DD | 0 ~ 48               | Op1  |
| W | 18 | 12H | DD | -110 ~ 110%          | oPL  |
| W | 19 | 13H | DD | 0 ~ 110%             | oPH  |
| W | 20 | 14H | DD | 0 ~ 127              | CF (read only)   |
| W | 21 | 15H | DD | 0 ~ 19.2K            | Baud rate ( bAud )<br>/808Pstatus word:<br>run: 0 suspend: 4 stop: 12<br>(read only) |
| W | 22 | 16H | DD | 0 ~ 100              | ADDR   |
| W | 23 | 17H | DD | 0 ~ 20               | dL   |
| W | 24 | 18H | DD | 0 ~ 127              | Run  |
| W | 25 | 19H | DD | 0 ~ 9999             | Loc  |

## AI-701

| Bit/Word | Device type |     | Format | Range                | Memo               |
|----------|-------------|-----|--------|----------------------|--------------------|
| W        | 1           | 01H | DD     | -9990 ~ 30000        | HIAL               |
| W        | 2           | 02H | DD     | -9990 ~ 30000        | LoAL               |
| W        | 3           | 03H | DD     | -9990 ~ 30000        | HdAL               |
| W        | 4           | 04H | DD     | -9990 ~ 30000        | LdAL               |
| W        | 5           | 05H | DD     | 0 ~ 2000             | AHYS               |
| W        | 11          | 0BH | DD     | 0 ~ 37               | InP (read only)    |
| W        | 12          | 0CH | DD     | 0 ~ 3                | dPt                |
| W        | 13          | 0DH | DD     | -9999 ~ 30000        | SCL                |
| W        | 14          | 0EH | DD     | -9999 ~ 30000        | SCH                |
| W        | 15          | 0FH | DD     | 0 ~ 4444             | AOP                |
| W        | 16          | 10H | DD     | -1999 ~ 4000<br>0.1□ | Scb                |
| W        | 17          | 11H | DD     | 0 ~ 48               | Opt                |
| W        | 21          | 15H | DD     | 0 ~ 19.2K            | Baud rate ( bAud ) |

|   |    |     |    |         |  |
|---|----|-----|----|---------|--|
|   |    |     |    |         | /808P status word<br>run: 0 suspend: 4 stop: 12<br>(read only) |
| W | 22 | 16H | DD | 0 ~ 80  | ADDR   |
| W | 23 | 17H | DD | 0 ~ 40  | FILt   |
| W | 25 | 19H | DD | 0 ~ 255 | Loc  |

## Wiring Diagram:

|   |   |  |               |
|---|---|--|---------------|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female   | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | RS485 2W Port |
| 1 RX-   | 6 Data-                                 |  | 4 COMM A      |
| 2 RX+   | 9 Data+                                 |  | 3 COMM B      |
| 5 GND   | 5 GND                                   |  |               |
|  |   |  |               |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Dec/30/2008 |             |

# Allen-Bradley CompactLogix – Free Tag Names

Website: <http://www.ab.com>

## HMI Setting:

| Parameters   | Recommended                                 | Options            | Notes |
|--------------|---|--------------------|-------|
| PLC type     | Allen-Bradley CompactLogix – Free Tag Names |                    |       |
| PLC I/F      | RS232                                       |                    |       |
| Baud rate    | 19200                                       | 9600, 19200, 38400 |       |
| Data bits    | 8   | 8                  |       |
| Parity       | None  | Even, Odd, None    |       |
| Stop bits    | 1   | 1                  |       |
| HMI sta. no. | 0   |                    |       |
| PLC sta. no. | 1   | 1-31               |       |

## PLC Setting:


|                    |  |
|--------------------|--|
| Communication mode | DF1 Full Duplex protocol 19200, None, 8, 1 (default)<br>Error Check: BCC, Station Address: 1 |
|--------------------|--|

## Device Address:

| PLC Data Type Name | Bit/Word               | EasyBuilder Data Format | Memo                      |
|--------------------|------------------------|-------------------------|---------------------------|
| BOOL               | Boolean                | Bit object              |                           |
| BitArray           |                        |                         |                           |
| SINT               |                        |                         |                           |
| INT                | Integer                | 16-bit signed, ASCII    | -32768 ~ 32767            |
| DINT               | Double Integer         | 32-bit signed           | $-2^{31} \sim (2^{31}-1)$ |
| REAL               | Single Precision Float | 32-bit Float            | IEEE 754                  |



## Wiring Diagram:

|  |                                    |                                      |                           |
|--|------------------------------------|--------------------------------------|---------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | AB CPU CH0 RS232 9P D-Sub |
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TD                      |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RD                      |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                     |
|  |                                    |                                      |                           |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | June/2/2011 | Driver released. |

# Allen-Bradley CompactLogix/FlexLogix

Supported Series: Allen-Bradley ControlLogix, CompactLogix, FlexLogix CH0 DF1.

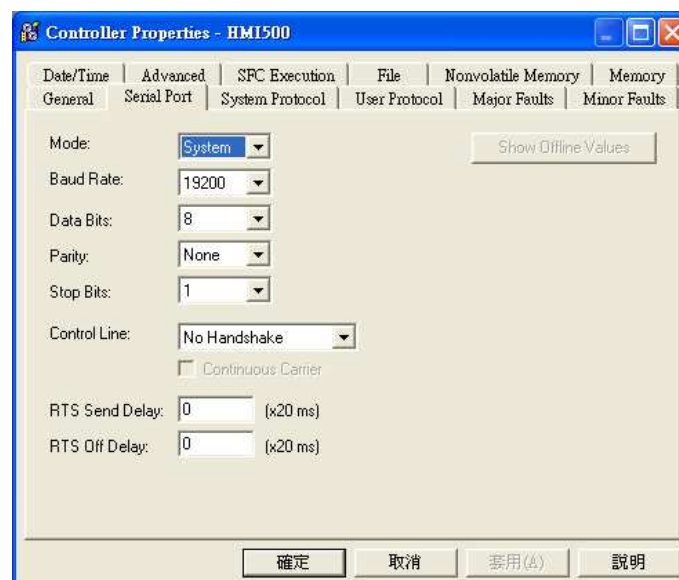
Website: <http://www.ab.com>

## HMI Setting:

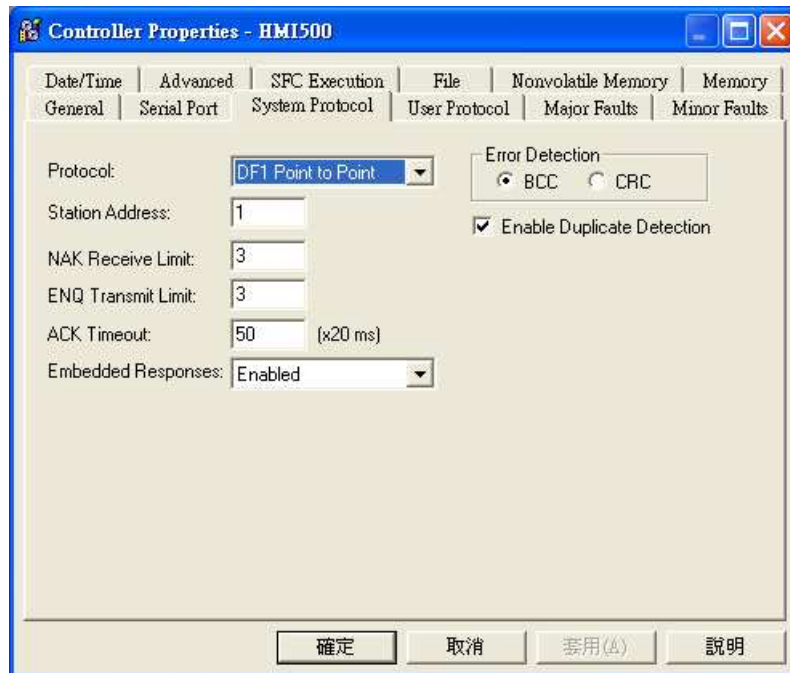
| Parameters   | Recommended                          | Options            | Notes |
|--------------|--------------------------------------|--------------------|-------|
| PLC type     | Allen-Bradley CompactLogix/FlexLogix |                    |       |
| PLC I/F      | RS232                                |                    |       |
| Baud rate    | 19200                                | 9600, 19200, 38400 |       |
| Data bits    | 8                                    | 8                  |       |
| Parity       | None                                 | Even, Odd, None    |       |
| Stop bits    | 1                                    | 1                  |       |
| HMI sta. no. | 0                                    |                    |       |
| PLC sta. no. | 1                                    | 1-31               |       |

## PLC Setting:

|                    |  |
|--------------------|--|
| Communication mode | DF1 Full Duplex protocol 19200, None, 8, 1 (default)<br>Error Check: BCC, Station Address: 1 |
|--------------------|--|



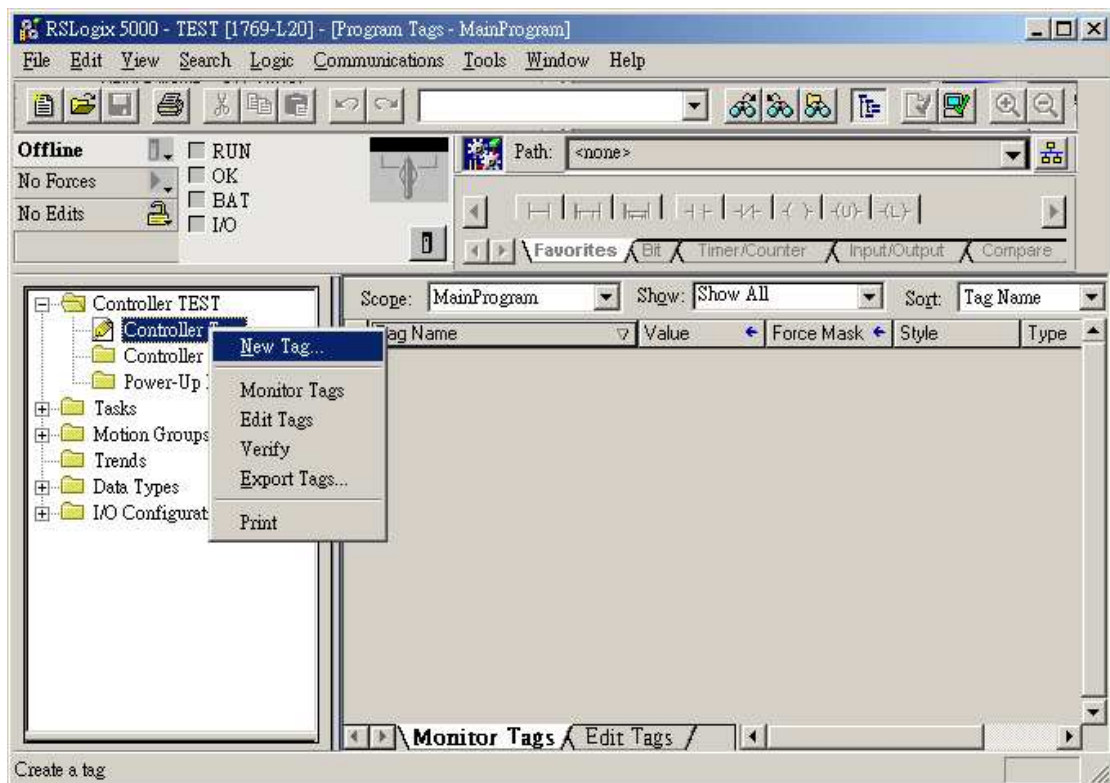
ControlLogix, CompactLogix CPU CH0 setting:

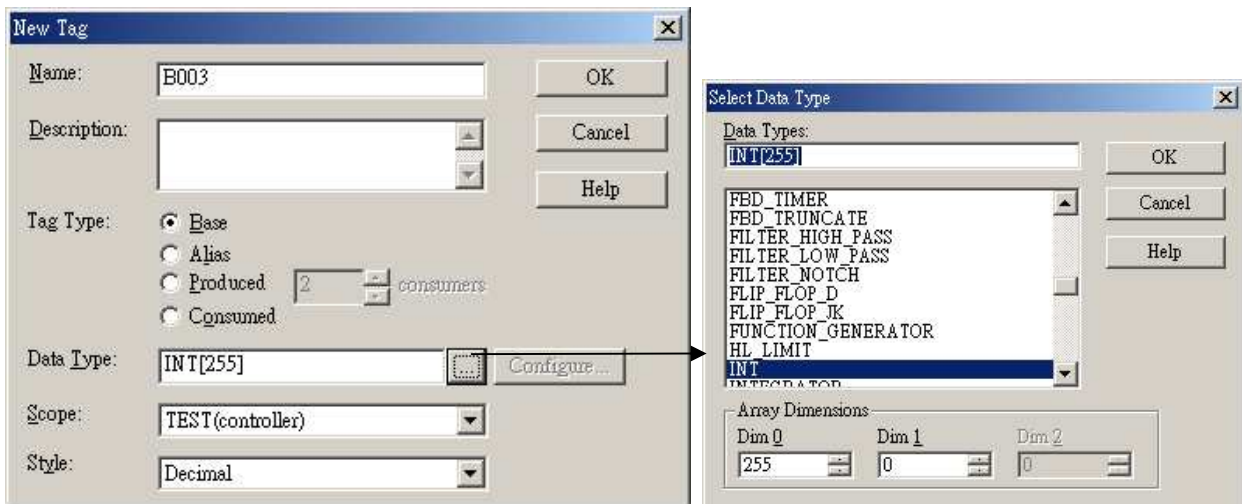


Create a Tag:

The name format must be 4 chars. For example: B003, T004, C005, N007, and F008.

Two or three chars are not available. For example: B03 or B3.






## Device Address:

| Bit/Word | Device type | Format    | Range        | Memo  |
|----------|-------------|-----------|--------------|---|
| B        | B_BOOL      | FFFDDDDdd | 0 ~ 25525515 | Bit data file                                   |
| B        | N_BOOL      | FFFDDDDdd | 0 ~ 25525515 | Integer data file bit level<br>(N7, 10 ~ 255)   |
| DW       | Tx.ACC      | FFFDDD    | 0 ~ 255255   | Timer Accumulator Value<br>(T4, T10 ~ 255)      |
| DW       | Tx.PRE      | FFFDDD    | 0 ~ 255255   | Timer Preset Value<br>(T4, T10 ~ 255)           |
| DW       | Nx_INT      | FFFDDD    | 0 ~ 255255   | Integer data file<br>(N7, 10 ~ 255)             |
| W        | Bx_INT      | FFFDDD    | 0 ~ 255255   | Bit data file word level                        |
| DW       | Cx.ACC      | FFFDDD    | 0 ~ 255255   | Counter Accumulator<br>Value (C5, C10 ~ 255)    |
| DW       | Cx.PRE      | FFFDDD    | 0 ~ 255255   | Counter Preset Value<br>(C5, C10 ~ 255)         |
| W        | F8_REAL     | DDD       | 0 ~ 255      | Floating point data file<br>(F8)                |
| W        | Fx_REAL     | FFFDDD    | 0 ~ 255255   | Floating point data file<br>(F008, F010 ~ F255) |

## Wiring Diagram:

|  |                                    |                                      |                           |
|--|------------------------------------|--------------------------------------|---------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | AB CPU CH0 RS232 9P D-Sub |
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TD                      |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RD                      |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                     |
|  |                                    |                                      |                           |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.50   | Dec/30/2008 |             |

# Allen-Bradley DF1

Supported Series: Allen-Bradley MicroLogix 1000, 1100, 1200, 1400, 1500, SLC 5/03, 5/04, 5/05.

Website: <http://www.ab.com>

Note: Allen-Bradley DF1 driver uses CRC checksum.

## HMI Setting:

| Parameters   | Recommended       | Options            | Notes |
|--------------|-------------------|--------------------|-------|
| PLC type     | Allen-Bradley DF1 |                    |       |
| PLC I/F      | RS232             |                    |       |
| Baud rate    | 9600              | 9600, 19200, 38400 |       |
| Data bits    | 8                 | 8                  |       |
| Parity       | None              | Even, Odd, None    |       |
| Stop bits    | 1                 | 1                  |       |
| HMI sta. no. | 0                 |                    |       |
| PLC sta. no. | 1                 | 1-31               |       |

## PLC Setting:

|                    |  |
|--------------------|--|
| Communication mode | DF1 Full Duplex protocol 19200, None, 8, 1 (default)<br>Error Check: CRC |
|--------------------|--|

## Device Address:

| Bit/Word | Device type | Format   | Range        | Memo                                       |
|----------|-------------|----------|--------------|--|
| B        | I1          | DDDdd    | 0 ~ 25515    | Input (I)                                  |
| B        | O0          | DDDdd    | 0 ~ 25515    | Output (O)                                 |
| B        | B3          | DDDdd    | 0 ~ 25515    | Bit data file (B3)                         |
| B        | B10 ~ 13    | DDDdd    | 0 ~ 25515    | Bit data file (B10 ~ 13)                   |
| B        | S_Bit       | DDDdd    | 0 ~ 25515    | Status (S) bit level                       |
| B        | Bfn         | FFFDDDdd | 0 ~ 25525515 | Bit data file (B3, 10 ~ 254)               |
| B        | NfnBit      | FFFDDDdd | 0 ~ 25525515 | Integer data file bit level (N7, 10 ~ 254) |
| W        | T4SV        | DDD      | 0 ~ 255      | Timer Preset Value (T4)                    |
| W        | T4PV        | DDD      | 0 ~ 255      | Timer Accumulator Value (T4)               |
| W        | C5SV        | DDD      | 0 ~ 255      | Counter Preset Value (C5)                  |
| W        | C5PV        | DDD      | 0 ~ 255      | Counter Accumulator Value (C5)             |

| Bit/Word | Device type | Format | Range      | Memo                             |
|----------|-------------|--------|------------|----------------------------------|
| W        | TfnSV       | FFFDDD | 0 ~ 255255 | Timer Preset Value               |
| W        | TfnPV       | FFFDDD | 0 ~ 255255 | Timer Accumulator Value          |
| W        | CfnSV       | FFFDDD | 0 ~ 255255 | Counter Preset Value             |
| W        | CfnPV       | FFFDDD | 0 ~ 255255 | Counter Accumulator Value        |
| W        | N7          | DDD    | 0 ~ 255    | Integer data file (N7)           |
| W        | N10 ~ 15    | DDD    | 0 ~ 255    | Integer data file (N10 ~ 15)     |
| W        | Nfn         | FFFDDD | 0 ~ 255255 | Integer data file (N7, 10 ~ 254) |
| W        | S           | DDD    | 0 ~ 255    | Status (S)                       |
| W        | F8          | DDD    | 0 ~ 255    | Floating point data file (F8)    |
| W        | Ffn         | FFFDDD | 0 ~ 255255 |                                  |
| W        | Lfn         | FFFDDD | 0 ~ 255255 |                                  |

## Wiring Diagram:

9P D-Sub to 8P Mini-DIN: MicroLogix 1000, 1100, 1200, 1400, 1500

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | MicroLogix RS232 8P Mini-DIN |
|------------------------------------|------------------------------------|--------------------------------------|------------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 7 TXD                        |
| 3 TX                               | 4 TX                               | 7 TX                                 | 4 RXD                        |
| 5 GND                              | 5 GND                              | 5 GND                                | 2 GND                        |

9P D-Sub to 9P D-Sub: SLC5/03, 04, 05 CH0

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | AB CPU CH0 RS232 9P D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|---------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TD                      |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RD                      |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                     |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V2.20   | Jan/05/2010 |             |



## Allen-Bradley DF1 (BCC)

Supported Series: Allen-Bradley MicroLogix 1000, 1100, 1200, 1500, SLC 5/03, 5/04, 5/05.

Website: <http://www.ab.com>

Note: Allen-Bradley DF1 (BCC) and Allen-Bradley DF1 are the same; the only difference is the use of BCC checksum.

### HMI Setting:

| Parameters   | Recommended             | Options            | Notes |
|--------------|-------------------------|--------------------|-------|
| PLC type     | Allen-Bradley DF1 (BCC) |                    |       |
| PLC I/F      | RS232                   |                    |       |
| Baud rate    | 19200                   | 9600, 19200, 38400 |       |
| Data bits    | 8                       | 8                  |       |
| Parity       | None                    | Even, Odd, None    |       |
| Stop bits    | 1                       | 1                  |       |
| HMI sta. no. | 0                       |                    |       |
| PLC sta. no. | 1                       | 1-31               |       |

### PLC Setting:

|                    |  |
|--------------------|--|
| Communication mode | DF1 Full Duplex protocol 19200, None, 8, 1 (default)<br>Error Check: CRC |
|--------------------|--|

### Device Address:

| Bit/Word | Device type | Format    | Range        | Memo                                       |
|----------|-------------|-----------|--------------|--|
| B        | I1          | DDDdd     | 0 ~ 25515    | Input (I)                                  |
| B        | O0          | DDDdd     | 0 ~ 25515    | Output (O)                                 |
| B        | B3          | DDDdd     | 0 ~ 25515    | Bit data file (B3)                         |
| B        | B10 ~ 13    | DDDdd     | 0 ~ 25515    | Bit data file (B10 ~ 13)                   |
| B        | S_Bit       | DDDdd     | 0 ~ 25515    | Status (S) bit level                       |
| B        | Bfn         | FFFDDDDdd | 0 ~ 25525515 | Bit data file (B3, 10 ~ 254)               |
| B        | NfnBit      | FFFDDDDdd | 0 ~ 25525515 | Integer data file bit level (N7, 10 ~ 254) |
| W        | T4SV        | DDD       | 0 ~ 255      | Timer Preset Value (T4)                    |
| W        | T4PV        | DDD       | 0 ~ 255      | Timer Accumulator Value (T4)               |
| W        | C5SV        | DDD       | 0 ~ 255      | Counter Preset Value (C5)                  |

| Bit/Word | Device type | Format | Range      | Memo                             |
|----------|-------------|--------|------------|----------------------------------|
| W        | C5PV        | DDD    | 0 ~ 255    | Counter Accumulator Value (C5)   |
| W        | TfnSV       | FFFDDD | 0 ~ 255255 | Timer Preset Value               |
| W        | TfnPV       | FFFDDD | 0 ~ 255255 | Timer Accumulator Value          |
| W        | CfnSV       | FFFDDD | 0 ~ 255255 | Counter Preset Value             |
| W        | CfnPV       | FFFDDD | 0 ~ 255255 | Counter Accumulator Value        |
| W        | N7          | DDD    | 0 ~ 255    | Integer data file (N7)           |
| W        | N10~15      | DDD    | 0 ~ 255    | Integer data file (N10 ~ 15)     |
| W        | Nfn         | FFFDDD | 0 ~ 255255 | Integer data file (N7, 10 ~ 254) |
| W        | S           | DDD    | 0 ~ 255    | Status (S)                       |
| W        | F8          | DDD    | 0 ~ 255    | Floating point data file (F8)    |
| W        | Ffn         | FFFDDD | 0 ~ 255255 |                                  |
| W        | Lfn         | FFFDDD | 0 ~ 255255 |                                  |

## Wiring Diagram:

9P D-Sub to 8P Mini-DIN: MicroLogix 1000, 1100, 1200, 1500

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | MicroLogix RS232 8P Mini-DIN |
|------------------------------------|------------------------------------|--------------------------------------|------------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 7 TXD                        |
| 3 TX                               | 4 TX                               | 7 TX                                 | 4 RXD                        |
| 5 GND                              | 5 GND                              | 5 GND                                | 2 GND                        |

9P D-Sub to 9P D-Sub: SLC5/03, 04, 05 CH0

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | AB CPU CH0 RS232 9P D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|---------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TD                      |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RD                      |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                     |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V2.30   | Apr/26/2010 |             |

# Allen-Bradley DH485

Supported Series: Allen-Bradley MicroLogix 1000, 1100, 1200, 1500, SLC 5/03, 5/04, 5/05.

Website: <http://www.ab.com>

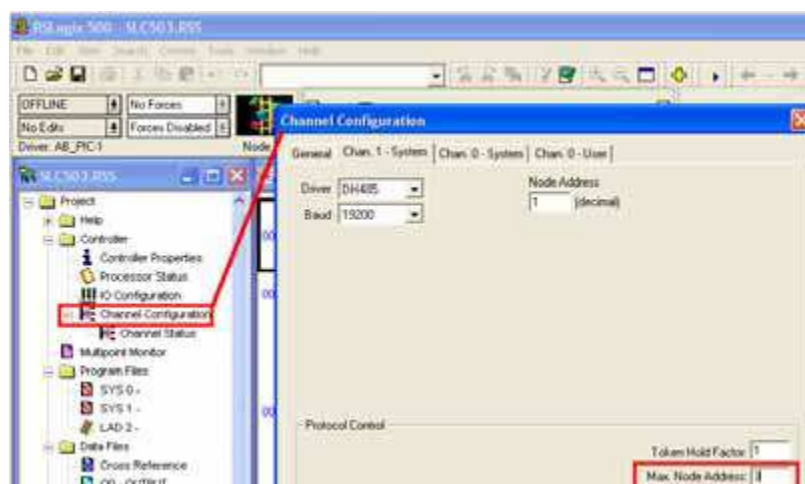
## HMI Setting:

| Parameters   | Recommended         | Options     | Notes |
|--------------|---------------------|-------------|-------|
| PLC type     | Allen-Bradley DH485 |             |       |
| PLC I/F      | RS485 2W            | RS232       |       |
| Baud rate    | 19200               | 9600, 19200 |       |
| Data bits    | 8                   |             |       |
| Parity       | Even                |             |       |
| Stop bits    | 1                   |             |       |
| HMI sta. no. | 0                   | 2           |       |
| PLC sta. no. | 1                   | 1-31        |       |

|                     |     |  |
|---------------------|-----|--|
| Online simulation   | YES |  |
| Extend address mode | NO  |  |

## PLC Setting:

|                    |   |
|--------------------|---|
| Communication mode | DH485 protocol 19200 (default)<br>Set the Max. Node Address to the number of PLCs in use. |
|--------------------|---|




## Device Address:

| Bit/Word | Device type | Format    | Range        | Memo   |
|----------|-------------|-----------|--------------|--|
| B        | I1          | DDDdd     | 0 ~ 25515    | Input (I)                                    |
| B        | O0          | DDDdd     | 0 ~ 25515    | Output (O)                                   |
| B        | B3          | DDDdd     | 0 ~ 25515    | Bit data file (B3)                           |
| B        | B10 ~ 13    | DDDdd     | 0 ~ 25515    | Bit data file (B10 ~ 13)                     |
| B        | Bfn         | FFFDDDDdd | 0 ~ 25525515 | Bit data file (B3, 10 ~ 254)                 |
| B        | NfnBit      | FFFDDDDdd | 0 ~ 25525515 | Integer data file bit level<br>(N7,10 ~ 254) |
| B        | S_Bit       | DDDdd     | 0 ~ 25515    | Status file                                  |
| W        | T4SV        | DDD       | 0 ~ 255      | Timer Preset Value (T4)                      |
| W        | T4PV        | DDD       | 0 ~ 255      | Timer Accumulator Value (T4)                 |
| W        | C5SV        | DDD       | 0 ~ 255      | Counter Preset Value (C5)                    |
| W        | C5PV        | DDD       | 0 ~ 255      | Counter Accumulator Value<br>(C5)            |
| W        | TfnSV       | FFFDDD    | 0 ~ 255255   | Timer Preset Value                           |
| W        | TfnPV       | FFFDDD    | 0 ~ 255255   | Timer Accumulator Value                      |
| W        | CfnSV       | FFFDDD    | 0 ~ 255255   | Counter Preset Value                         |
| W        | CfnPV       | FFFDDD    | 0 ~ 255255   | Counter Accumulator Value                    |
| W        | F8          | DDD       | 0 ~ 255      | Floating point data file (F8)                |
| W        | N7          | DDD       | 0 ~ 255      | Integer data file (N7)                       |
| W        | N10 ~ 15    | DDD       | 0 ~ 255      | Integer data file (N10 ~ 15)                 |
| W        | Nfn         | FFFDDD    | 0 ~ 255255   | Integer data file<br>(N7,10 ~ 254)           |
| W        | S           | DDD       | 0 ~ 255      | Status file                                  |


## Wiring Diagram:

RS-485: SLC500 Fixed type, SLC5/01, 02, 03 CH1.


HMI does not support 1747-AIC peripheral port.

|  |   |  |  |
|--|---|--|--|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female  | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | AB SLC500 DH485<br>RJ8 clip style port |
| 1 RX-  | 6 Data-                                 |  | 2 SDB                                  |
| 2 RX+  | 9 Data+                                 |  | 1 SDA                                  |
| 5 GND  | 5 GND                                   |  | 7 GND                                  |
|  |   |  |  |

9P D-Sub to 8P Mini-DIN: MicroLogix 1000, 1100, 1200, and 1500 must use DH485 protocol.

|  |                                    |                                      |                              |
|--|------------------------------------|--------------------------------------|------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | MicroLogix RS232 8P Mini-DIN |
| 2 RX   | 6 RX                               | 8 RX                                 | 7 TXD                        |
| 3 TX   | 4 TX                               | 7 TX                                 | 4 RXD                        |
| 5 GND  | 5 GND                              | 5 GND                                | 2 GND                        |
|  |                                    |                                      |                              |

9P D-Sub to 9P D-Sub: SLC5/03, 04, 05 CH0 must use DH485 protocol.

|  |                                    |                                      |                           |
|--|------------------------------------|--------------------------------------|---------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | AB CPU CH0 RS232 9P D-Sub |
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TD                      |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RD                      |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                     |
|  |                                    |                                      |                           |

Note: AB DH485 supports HMI X series only.

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Apr/17/2009 |             |

# Allen-Bradley EtherNet/IP (CompactLogix)

Supported Series: Allen-Bradley ControlLogix, CompactLogix, FlexLogix Ethernet.

Website: <http://www.ab.com>

## HMI Setting:

| Parameters   | Recommended                                 | Options | Notes |
|--------------|---|---------|-------|
| PLC type     | Allen-Bradley EtherNet/IP<br>(CompactLogix) |         |       |
| PLC I/F      | Ethernet                                    |         |       |
| Port no.     | 44818                                       |         |       |
| PLC sta. no. | 1   |         |       |

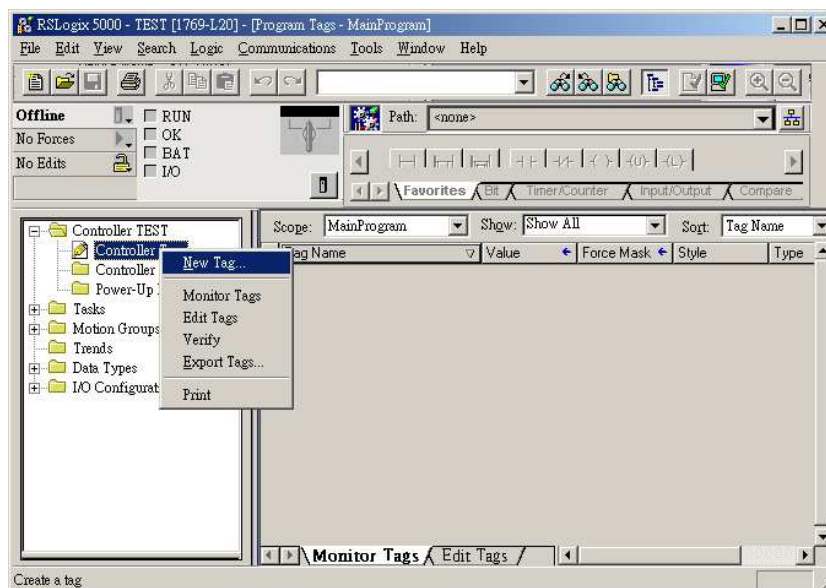
## PLC Setting:

RSLogix 5000 setting

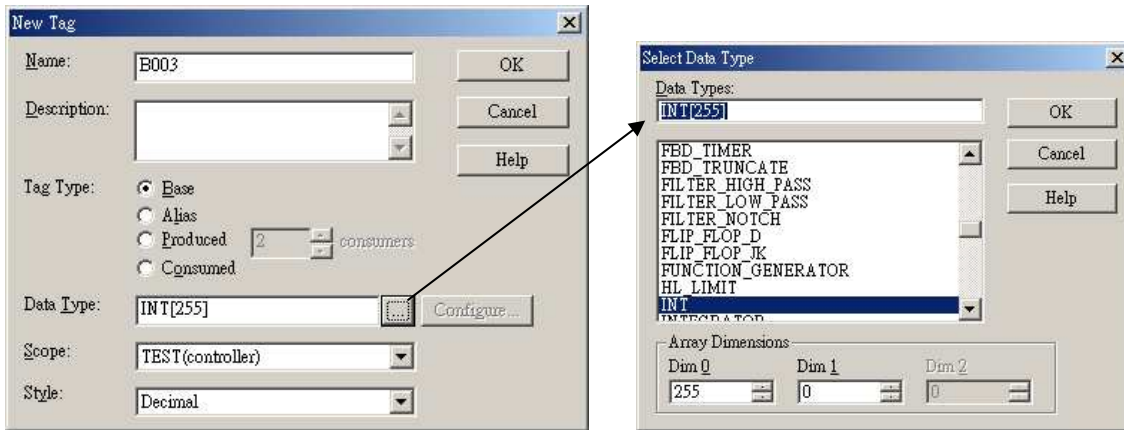
Create a Tag:

The name format must be 4 chars. For example: B003, T004, C005, N007, and F008.

Two or three chars are not available. For example: B03 or B3.








## Device Address:

| Bit/Word | Device type | Format  | Range        | Memo   |
|----------|-------------|---------|--------------|--|
| B        | Bx_BOOL     | FFFDDDD | 0 ~ 25525515 | Bit data file                                |
| B        | Nx_BOOL     | FFFDDDD | 0 ~ 25525515 | Integer data file bit level<br>(N7, 10 ~ 99) |
| W        | Bx_INT      | FFFDDD  | 0 ~ 255255   | Bit data file word level                     |
| W        | Nx_INT      | FFFDDD  | 0 ~ 255255   | Integer data file<br>(N7, 10 ~ 99)           |
| DW (F)   | F8_REAL     | DDD     | 0 ~ 255      | Floating point data file (F8)                |
| DW (F)   | Fx_REAL     | FFFDDD  | 0 ~ 255255   | Floating point data file (F8)                |
| DW       | Cx.ACC      | FFFDDD  | 0 ~ 255255   | Counter Accumulator Value<br>(C5, C10 ~ 255) |
| DW       | Cx.PRE      | FFFDDD  | 0 ~ 255255   | Counter Preset Value<br>(C5, C10 ~ 255)      |
| DW       | Tx.ACC      | FFFDDD  | 0 ~ 255255   | Timer Accumulator Value<br>(T4, T10 ~ 255)   |
| DW       | Tx.PRE      | FFFDDD  | 0 ~ 255255   | Timer Preset Value<br>(T4, T10 ~ 255)        |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.30   | Dec/30/2008 |             |

# Allen-Bradley EtherNet/IP (CompactLogix) – Free Tag Names

Supported Series: Allen-Bradley CompactLogix, FlexLogix Ethernet

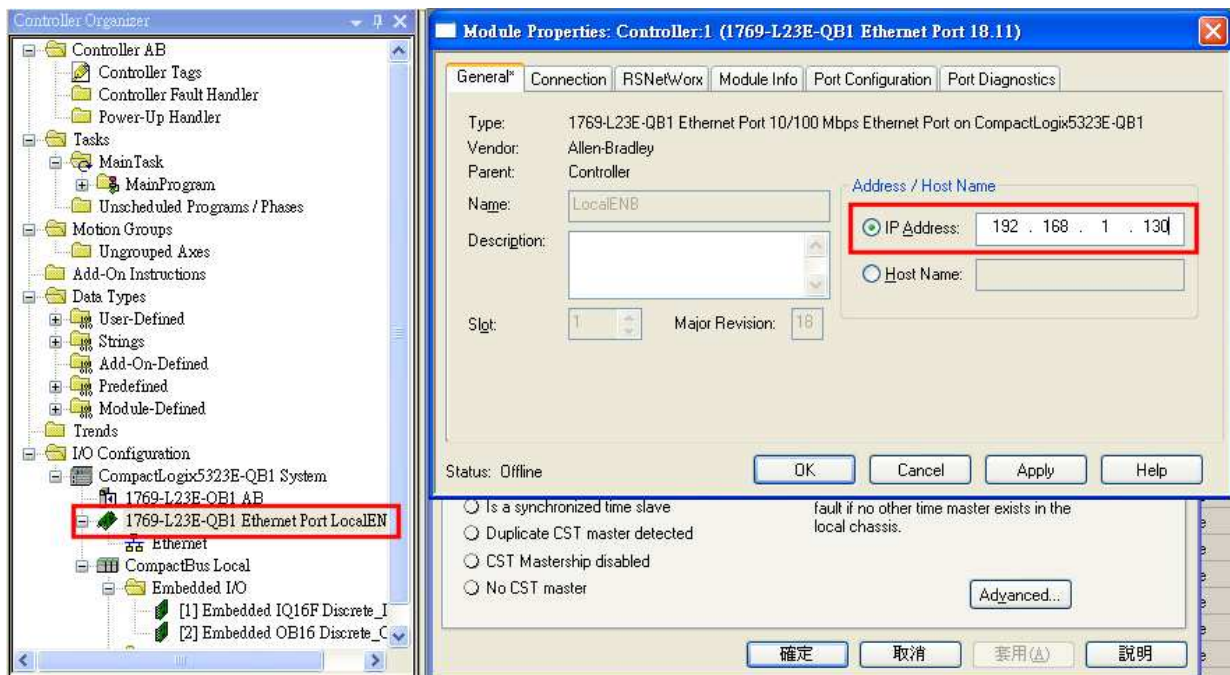
Website: <http://www.ab.com>

## HMI Setting:

| Parameters   | Recommended  | Options | Notes |
|--------------|--|---------|-------|
| PLC type     | Allen-Bradley EtherNet/IP<br>(CompactLogix) – Free Tag Names |         |       |
| PLC I/F      | Ethernet   |         |       |
| Port no.     | 44818  |         |       |
| PLC sta. no. | 1  |         |       |

## PLC Setting:

1. Set PLC IP address.

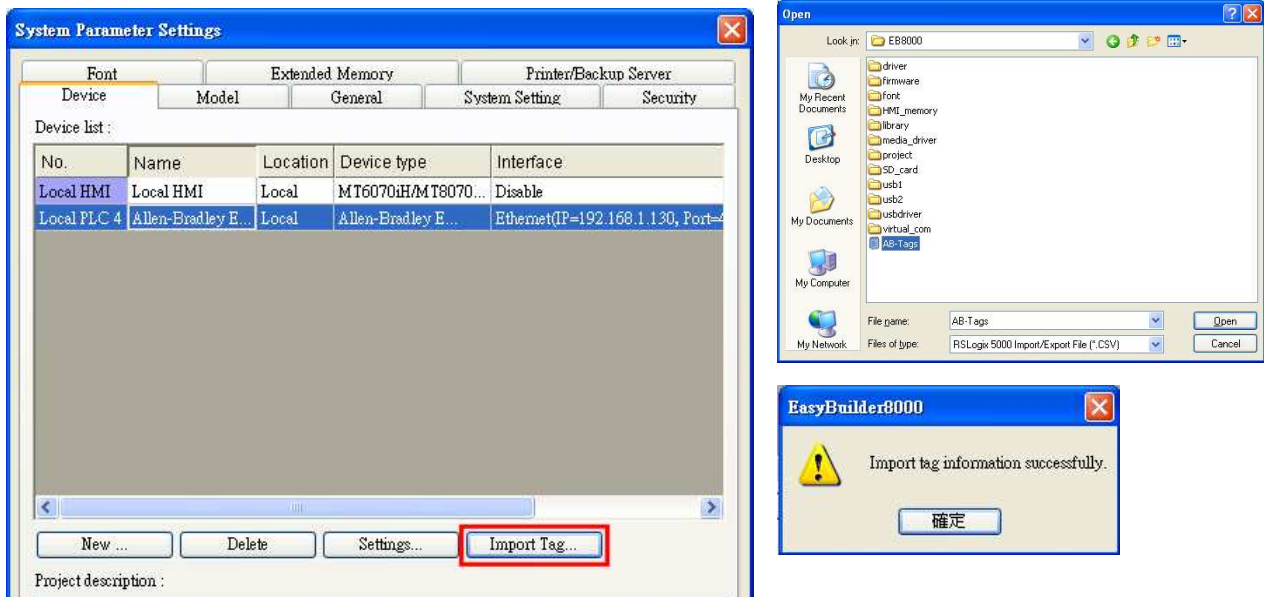


## 2. Create Tags.

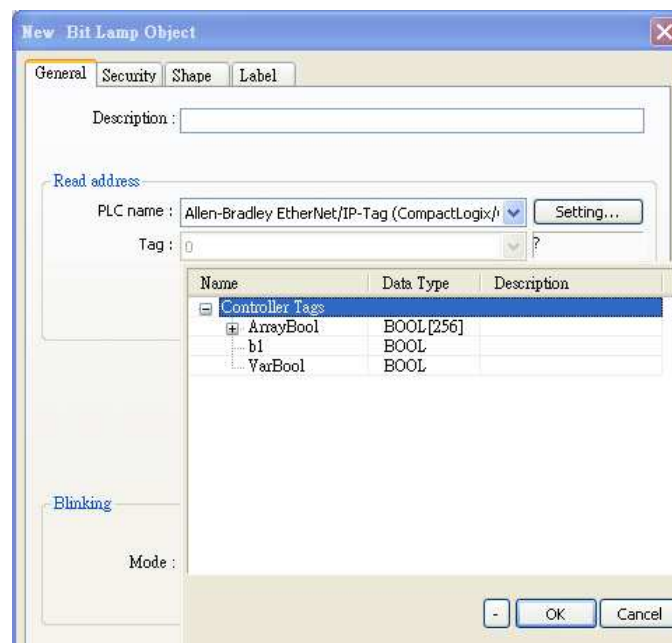
| Name        | Value | Force Mask | Style   | Data Type         |
|-------------|-------|------------|---------|-------------------|
| + ABC       | 56    |            | Decimal | DINT              |
| + Array2D   | {...} | {...}      | Decimal | DINT[25,5]        |
| + ArrayBool | {...} | {...}      | Decimal | BOOL[256]         |
| + ArrayDINT | {...} | {...}      | Decimal | DINT[130]         |
| + ArrayReal | {...} | {...}      | Float   | REAL[125]         |
| b1          | 0     |            | Decimal | BOOL              |
| + INT       | {...} | {...}      | Decimal | INT[360]          |
| + Local1:C  | {...} | {...}      |         | AB:Embedded_IQ... |
| + Local1:I  | {...} | {...}      |         | AB:Embedded_IQ... |
| + Local2:C  | {...} | {...}      |         | AB:Embedded_O...  |
| + Local2:I  | {...} | {...}      |         | AB:Embedded_O...  |
| + Local2:O  | {...} | {...}      |         | AB:Embedded_O...  |
| VarBool     | 0     |            | Decimal | BOOL              |
| + VarDint   | 21862 |            | Decimal | DINT              |
| + VarInt    | 0     |            | Decimal | INT               |
| VarReal     | 0.0   |            | Float   | REAL              |
| + VarSint   | -128  |            | Decimal | SINT              |

## 3. Export Tag data to CSV file.

4. In EB8000, add Allen-Bradley EtherNet/IP (CompactLogix)- Free Tag Names driver. Input PLC IP address. On System Parameter Settings dialog click [Import Tag...] button.



5. On object dialog, select PLC, click Tag and select a Controller Tag.




## Device Address:

| PLC data type name | Bit/Word               | EB8000 data format   | Memo                      |
|--------------------|------------------------|----------------------|---------------------------|
| BOOL               | Boolean                | Bit object           |                           |
| BitArray           |                        |                      |                           |
| SINT               |                        |                      |                           |
| INT                | Integer                | 16-bit signed, ASCII | -32768 ~ 32767            |
| DINT               | Double Integer         | 32-bit signed        | $-2^{31} \sim (2^{31}-1)$ |
| REAL               | Single Precision Float | 32-bit Float         | IEEE 754                  |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Aug/25/2010 |             |

# Allen-Bradley EtherNet/IP (ControlLogix) – Free Tag Names

Supported Series: Allen-Bradley ControlLogix, CompactLogix, FlexLogix Ethernet.

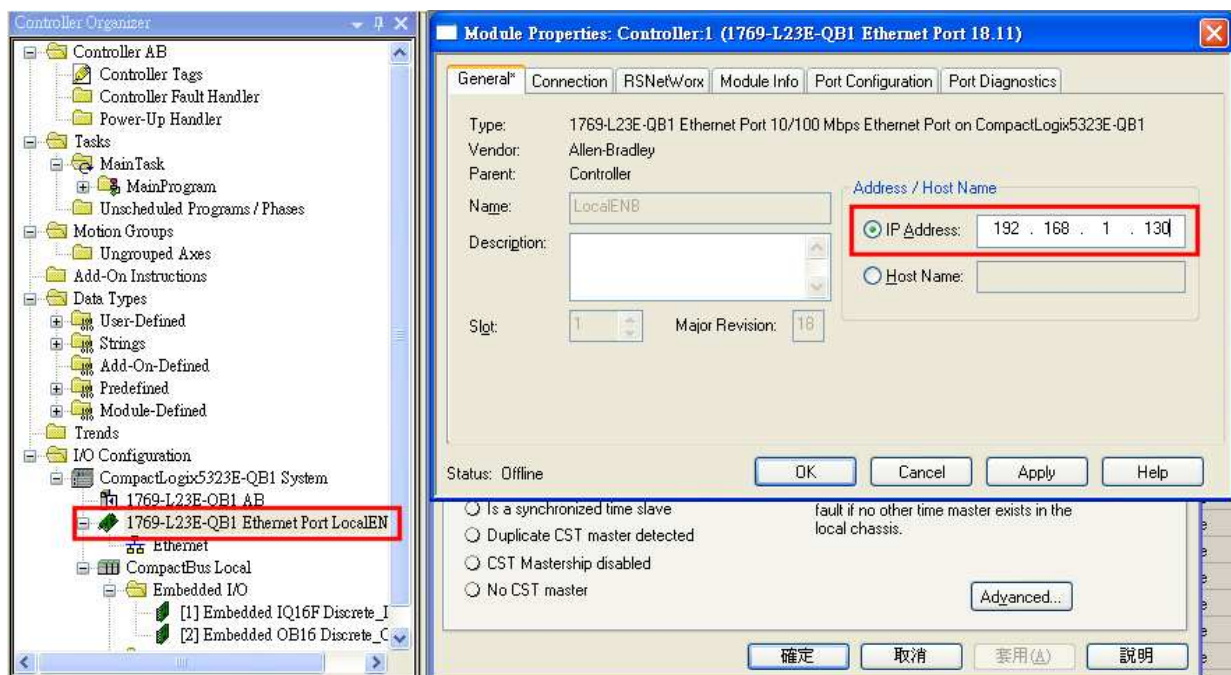
Website: <http://www.ab.com>

## HMI Setting:

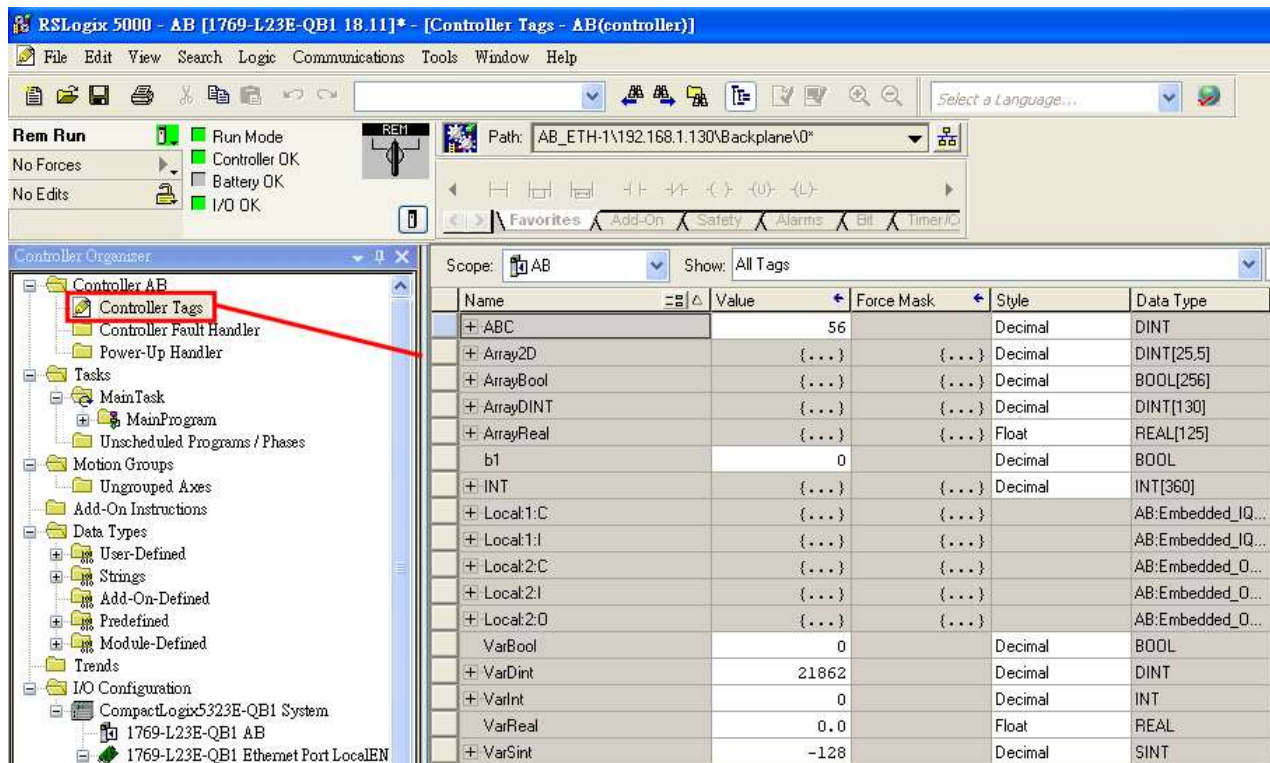
| Parameters   | Recommended  | Options | Notes |
|--------------|--|---------|-------|
| PLC type     | Allen-Bradley EtherNet/IP<br>(ControlLogix) – Free Tag Names |         |       |
| PLC I/F      | Ethernet   |         |       |
| Port no.     | 44818  |         |       |
| PLC sta. no. | The same as CPU Slot No.                                     |         |       |

## PLC Setting:

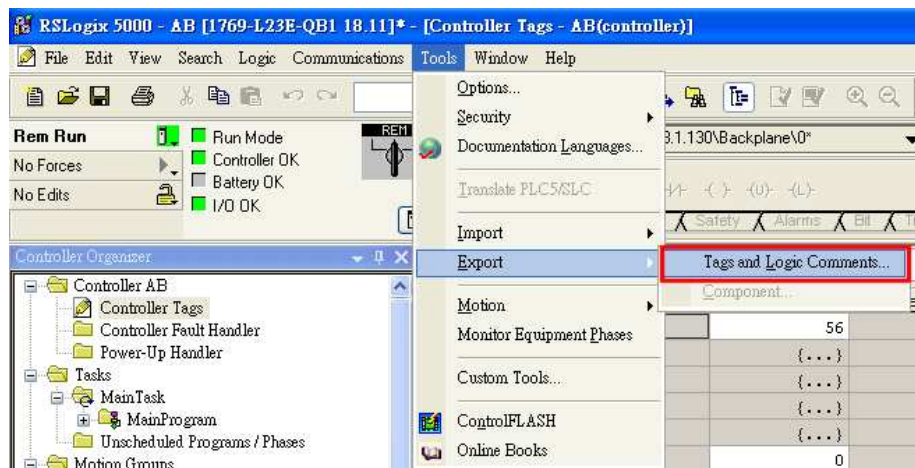
1. Set PLC IP address.



## 2. Create Tags.

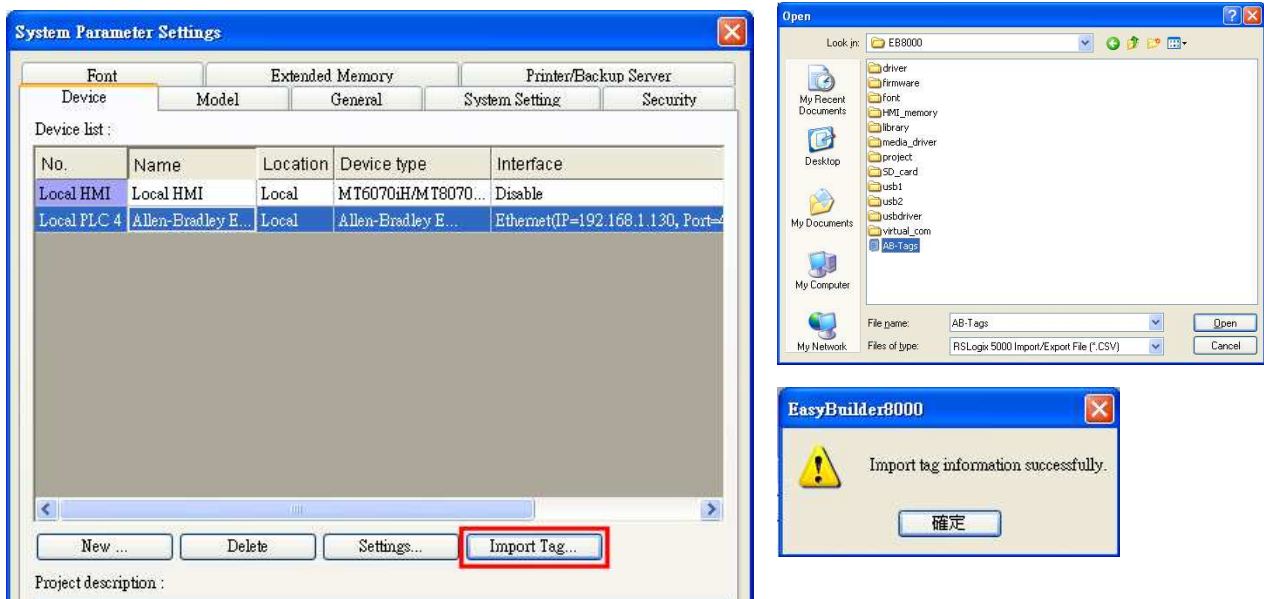


## 3. Export Tag data to CSV file.

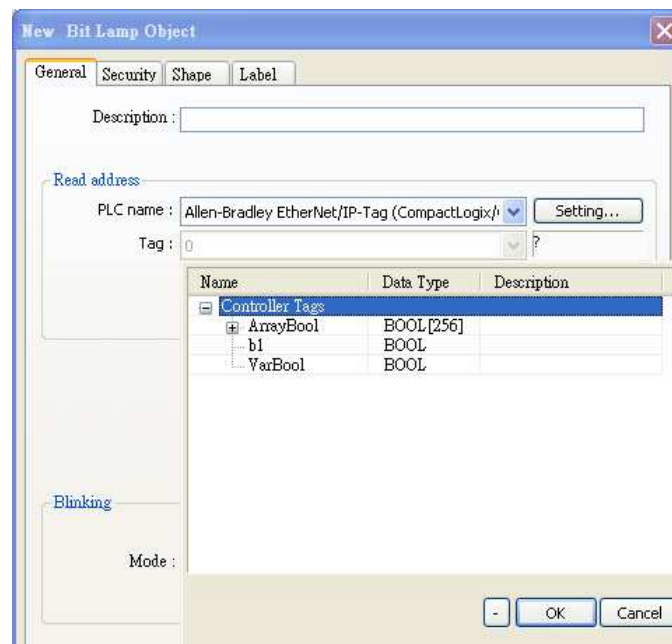


4. In EB8000, add Allen-Bradley EtherNet/IP (ControlLogix) – Free Tag Names driver. Input PLC IP address. On System Parameter Settings dialog click [Import Tag...] button.





5. On object dialog, select PLC, click Tag and select a Controller Tag.




### Device Address:

| PLC data type name | Bit/Word               | EB8000 data format   | Memo                      |
|--------------------|------------------------|----------------------|---------------------------|
| BOOL               | Boolean                | Bit object           |                           |
| BitArray           |                        |                      |                           |
| SINT               |                        |                      |                           |
| INT                | Integer                | 16-bit signed, ASCII | -32768 ~ 32767            |
| DINT               | Double Integer         | 32-bit signed        | $-2^{31} \sim (2^{31}-1)$ |
| REAL               | Single Precision Float | 32-bit Float         | IEEE 754                  |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Oct/05/2010 |             |

## Allen-Bradley EtherNet/IP (DF1)

Supported Series: Allen-Bradley MicroLogix 1100, 1400, SLC5/05 Ethernet port.  
MicroLogix1000, 1200, 1500, SLC 5/03, 5/04 with 1761-NET-ENI

Website: <http://www.ab.com>

### HMI Setting:

| Parameters   | Recommended                     | Options | Notes |
|--------------|---------------------------------|---------|-------|
| PLC type     | Allen-Bradley EtherNet/IP (DF1) |         |       |
| PLC I/F      | Ethernet                        |         |       |
| Port no.     | 44818                           |         |       |
| HMI sta. no. | 0                               |         |       |
| PLC sta. no. | 1                               |         |       |

### PLC Setting:

|                    |   |
|--------------------|---|
| Communication mode | Port Setting: 10/100 Mbps Full Duplex/Half Duplex |
|--------------------|---|

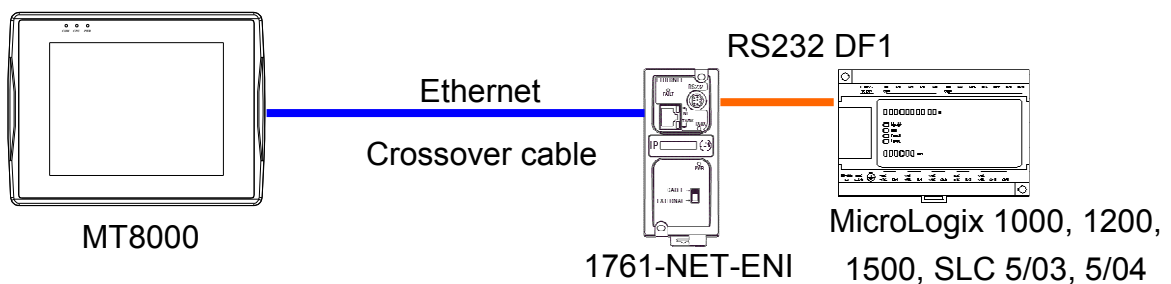
### Device Address:

| Bit/Word | Device type | Format   | Range        | Memo                                       |
|----------|-------------|----------|--------------|--|
| B        | I1          | DDDdd    | 0 ~ 25515    | Input (I)                                  |
| B        | O0          | DDDdd    | 0 ~ 25515    | Output (O)                                 |
| B        | B3          | DDDdd    | 0 ~ 25515    | Bit data file (B3)                         |
| B        | S_Bit       | DDDDDDdd | 0 ~ 25525515 | Status file                                |
| B        | Bfn         | FFFDDDdd | 0 ~ 25525515 | Bit data file (B3, 10 ~ 254)               |
| B        | NfnBit      | FFFDDDdd | 0 ~ 25525515 | Integer data file bit level (N7, 10 ~ 254) |
| W        | T4SV        | DDD      | 0 ~ 255      | Timer Preset Value (T4)                    |
| W        | T4PV        | DDD      | 0 ~ 255      | Timer Accumulator Value (T4)               |
| W        | C5SV        | DDD      | 0 ~ 255      | Counter Preset Value (C5)                  |
| W        | C5PV        | DDD      | 0 ~ 255      | Counter Accumulator Value (C5)             |
| W        | TfnSV       | FFFDDD   | 0 ~ 255255   |  |
| W        | TfnPV       | FFFDDD   | 0 ~ 255255   |  |

|        |       |        |            |   |
|--------|-------|--------|------------|---|
| W      | CfnSV | FFFDDD | 0 ~ 255255 |   |
| W      | CfnPV | FFFDDD | 0 ~ 255255 |   |
| W      | S     | DDD    | 0 ~ 255    |   |
| W      | N7    | DDD    | 0 ~ 255    | Integer data file (N7)                  |
| W      | Nfn   | FFFDDD | 0 ~ 255255 | Integer data file (N7, 10 ~ 254)        |
| DW (F) | F8    | DDD    | 0 ~ 255    | Floating point data file (F8)           |
| DW (F) | Ffn   | FFFDDD | 0 ~ 255255 | Floating point data file (F8, 10 ~ 254) |
| DW     | Lfn   | FFFDDD | 0 ~ 255255 | Driver version 2.00 or later supported  |

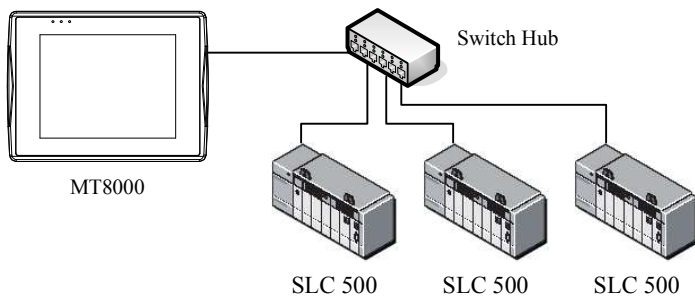
## Wiring Diagram:

Direct connect (crossover cable):




| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |

Through a hub:



| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description       |
|---------|-------------|-------------------|
| V2.00   | Dec/21/2009 | Add Lfn register. |

# Allen-Bradley PLC5

Website: <http://www.ab.com>

## HMI Setting:

| Parameters   | Recommended        | Options         | Notes |
|--------------|--------------------|-----------------|-------|
| PLC type     | Allen-Bradley PLC5 |                 |       |
| PLC I/F      | RS232              |                 |       |
| Baud rate    | 19200              | 9600, 19200     |       |
| Data bits    | 8                  | 8               |       |
| Parity       | Even               | Even, Odd, None |       |
| Stop bits    | 1                  | 1               |       |
| HMI sta. no. | 0                  |                 |       |
| PLC sta. no. | 1                  | 1-31            |       |

## PLC Setting:

|                    |  |
|--------------------|--|
| Communication mode | DF1 Full Duplex protocol 19200, None, 8, 1 (default) |
|--------------------|--|

Allen-Bradley PLC-5 Family PLCs use DF1 Full Duplex protocol.

For PLC-5/10, PLC-5/15 and PLC-5/25, MT8000 should be connected to the DF1 port on the 1785-KE module.

For PLC-5/11, PLC-5/20, PLC-5/30 and PLC-5/40, MT8000 should be connected to the Channel 0 Port on the PLC.

## Device Address:


| Bit/Word | Device type | Format    | Range        | Memo                     |
|----------|-------------|-----------|--------------|--------------------------|
| B        | I1          | DDDdd     | 0 ~ 25515    | Input (I)                |
| B        | O0          | DDDdd     | 0 ~ 25515    | Output (O)               |
| B        | B3          | DDDdd     | 0 ~ 99915    | Bit data file (B3)       |
| B        | B10 ~ 13    | DDDdd     | 0 ~ 99915    | Bit data file (B10 ~ 13) |
| B        | S_Bit       | DDDDDDdd  | 0 ~ 25599915 |                          |
| B        | Bfn         | FFFDDDDdd | 0 ~ 25599915 |                          |
| B        | NfnBit      | FFFDDDDdd | 0 ~ 25599915 |                          |
| W        | T4SV        | DDD       | 0 ~ 999      | Timer Preset Value (T4)  |

| Bit/Word | Device type | Format | Range      | Memo                                       |
|----------|-------------|--------|------------|--|
| W        | T4PV        | DDD    | 0 ~ 999    | Timer Accumulator Value (T4)               |
| W        | C5SV        | DDD    | 0 ~ 999    | Counter Preset Value (C5)                  |
| W        | C5PV        | DDD    | 0 ~ 999    | Counter Accumulator Value (C5)             |
| W        | TfnSV       | FFFDDD | 0 ~ 255999 |  |
| W        | TfnPV       | FFFDDD | 0 ~ 255999 |  |
| W        | CfnSV       | FFFDDD | 0 ~ 255999 |  |
| W        | CfnPV       | FFFDDD | 0 ~ 255999 |  |
| W        | N7          | DDD    | 0 ~ 999    | Integer data file (N7)                     |
| W        | N10 ~ 15    | DDD    | 0 ~ 999    | Integer data file (N10 ~ 15)               |
| W        | Nfn         | FFFDDD | 0 ~ 255999 | Integer data file (V2.5.0 or newer)        |
| W        | S           | DDD    | 0 ~ 255    |  |
| W        | F8          | DDD    | 0 ~ 999    | Floating point data file (F8)              |
| W        | Ffn         | FFFDDD | 0 ~ 255999 | Floating point data file (V2.5.0 or newer) |

## Wiring Diagram:

### 9P D-Sub to 25P D-Sub: PLC5 CPU CH0

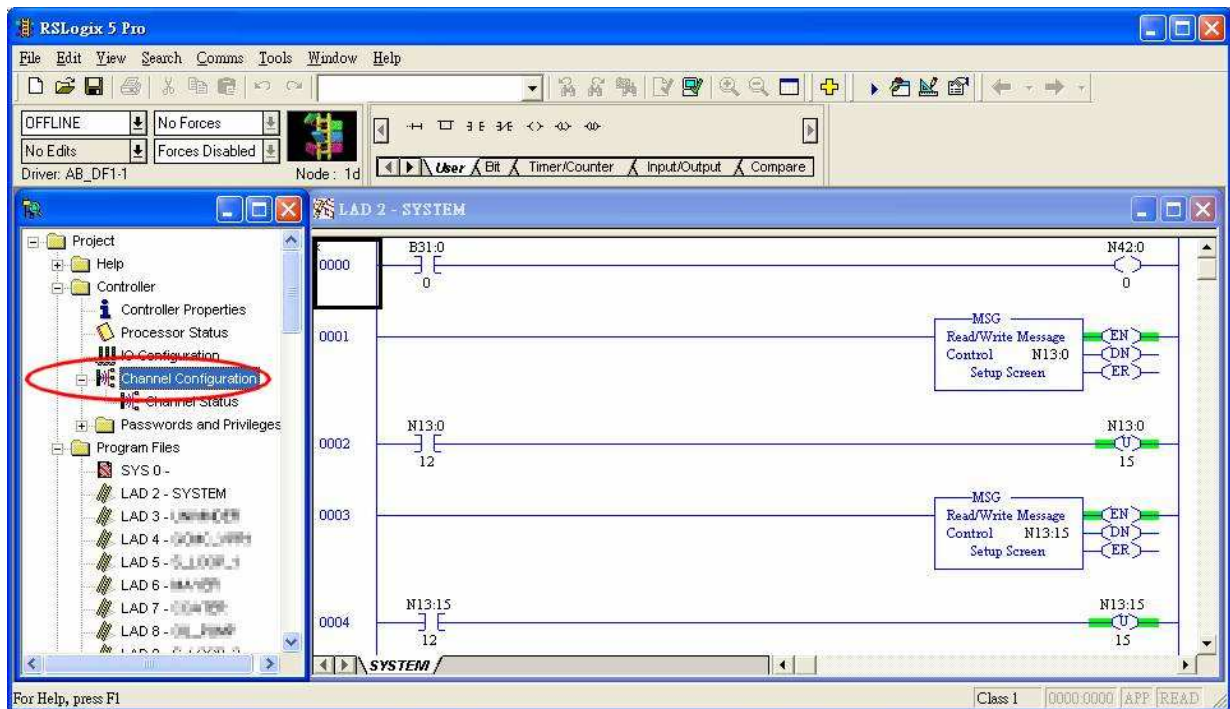
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | AB CPU CH0 RS232 25P<br>D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|-------------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TD                          |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RD                          |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                         |



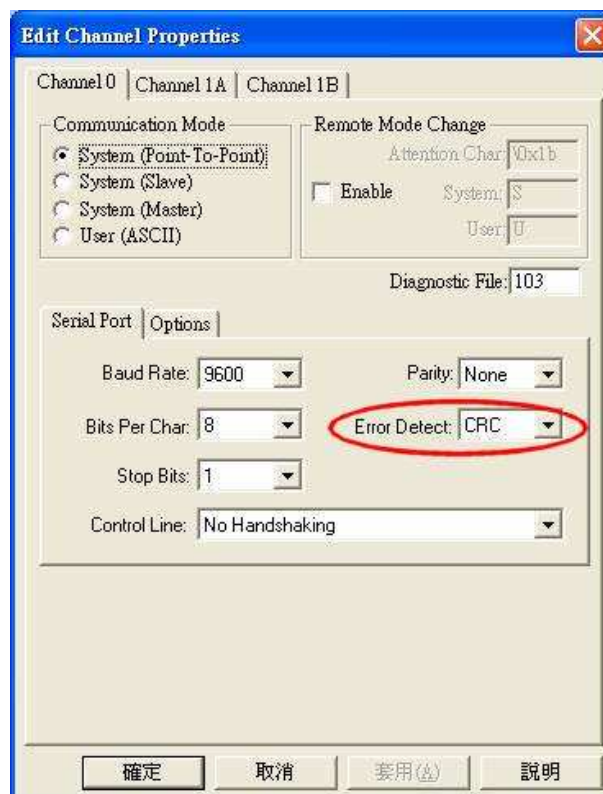
Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Note:

The default error checking of AB PLC5 is BCC, whereas our driver is CRC.



Access [Channel Configuration] from RSLogix5, under Channel 0 tab, please select “CRC” for [Error Detect].





**Driver Version:**

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Apr/17/2009 |             |

## altus ALNET-I

Supported Series: Altus SeriesMode PO3042, PO3142, PO3242, PO3342, PL103 ,PL104, PL105, QK800, QK801, QK2000.

### HMI Setting:

| Parameters   | Recommended   | Options | Notes |
|--------------|---------------|---------|-------|
| PLC type     | altus ALNET-I |         |       |
| PLC I/F      | RS232         |         |       |
| Baud rate    | 9600          |         |       |
| Data bits    | 8             |         |       |
| Parity       | Even          |         |       |
| Stop bits    | 1             |         |       |
| PLC sta. no. | 0             |         |       |

### Device Address:

| Bit/Word | Device Type | Format | Range      | Memo             |
|----------|-------------|--------|------------|------------------|
| B        | M_Bit       | DDDDh  | 0 ~ 1023f  | Memories         |
| B        | A           | DDDh   | 0 ~ 511f   | Auxiliary Relays |
| B        | E           | DDDh   | 0 ~ 511f   | Input Relays     |
| B        | D_Bit       | DDDDdd | 0 ~ 102331 | Decimals         |
| B        | F_Bit       | DDDDdd | 0 ~ 102331 | Reals            |
| B        | I_Bit       | DDDDdd | 0 ~ 102331 | Integers         |
| B        | S           | DDDh   | 0 ~ 511f   | Output Relays    |
| W        | M           | DDDD   | 0 ~ 4096   | Memories         |
| DW       | D           | DDDD   | 0 ~ 4096   | Decimals         |
| DW       | F           | DDDD   | 0 ~ 1023   | Reals            |
| DW       | I           | DDDD   | 0 ~ 1023   | Integers         |
| W        | TM          | HHHH   | 0 ~ ffff*  | Memory Tables    |
| DW       | TD          | HHHH   | 0 ~ ffff*  | Decimal Tables   |
| DW       | TF          | HHHH   | 0 ~ ffff*  | Real Tables      |
| DW       | TI          | HHHH   | 0 ~ ffff*  | Integer Tables   |

Note: The formats of TM, TD, TF and TI in PLC software are represented as TXA[B]. "X" can be M, D, F, or I.


The address range of B is 0~FF, and A is 0~FF. The device type is AABB, and the range depends on the PLC settings.

For example: Model PO3242, range of "A" is "0" and range of "B" is 0 ~ 7.

## Wiring Diagram:


9P D-Sub to 8P RJ45: PLC PO3042, PO3142, PO3242, PO3342

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | PLC RS232 8P RJ45 |
|------------------------------------|------------------------------------|--------------------------------------|-------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TX              |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RX              |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND             |



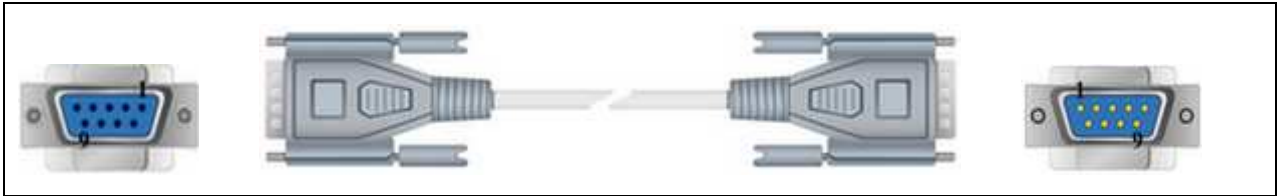
9P D-Sub to 9P D-Sub: PLC PL103, PL104, PL105

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | PLC RS232 9P D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|--------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 7 TX               |
| 3 TX                               | 4 TX                               | 7 TX                                 | 1 RX               |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND              |



9P D-Sub to 9P D-Sub: PLC QK800, QK801, QK2000.

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | PLC RS232 9P D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|--------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TX               |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RX               |
| 5 GND                              | 5 GND                              | 5 GND                                | 7 GND              |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Jul/24/2009 |             |

# Baumuller

Website: <http://www.baumuller.com/>

## HMI Setting:

| Parameters   | Recommended | Options         | Notes |
|--------------|-------------|-----------------|-------|
| PLC type     | Baumuller   |                 |       |
| PLC I/F      | RS485 4W    |                 |       |
| Baud rate    | 19200       | 9600, 19200     |       |
| Data bits    | 8           | 7 or 8          |       |
| Parity       | Even        | Even, Odd, None |       |
| Stop bits    | 1           | 1 or 2          |       |
| HMI sta. no. | 0           |                 |       |
| PLC sta. no. | 0           | Defaults        |       |

## PLC Setting:

|                    |                                    |
|--------------------|------------------------------------|
| Communication mode | RK 512 Protocol, 19200, 8, 1, Even |
|--------------------|------------------------------------|


## Device Address:

| Bit/Word | Device type           | Format | Range    | Memo |
|----------|-----------------------|--------|----------|------|
| B        | DB0_bit ~<br>DB29_bit | DDDh   | 0 ~ 255f |      |
| W        | DB0 ~ DB29            | DDD    | 0 ~ 255  |      |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|   |  |  |  |
|---|--|--|--|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | Baumuller servo RS422 9P<br>D-Sub Female |
| 1 RX-                                   |  |  | 1 TXD-                                   |
| 2 RX+                                   |  |  | 9 TXD+                                   |
| 3 TX-                                   |  |  | 5 RXD-                                   |
| 4 TX+                                   |  |  | 6 RXD+                                   |
| 5 GND                                   |  |  | 8 GND                                    |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Apr/17/2009 |             |

# Change

Supported Series: Compressor controller

Website: <http://www.sh-changjia.com/>

## HMI Setting:

| Parameters   | Recommended | Options | Notes |
|--------------|-------------|---------|-------|
| PLC type     | Change      |         |       |
| PLC I/F      | RS485 2W    |         |       |
| Baud rate    | 9600        |         |       |
| Data bits    | 8           |         |       |
| Parity       | None        |         |       |
| Stop bits    | 1           |         |       |
| PLC sta. no. | 1           | 1~6     |       |


## Device Address:

| Bit/Word | Device type | Format | Range           | Memo       |
|----------|-------------|--------|-----------------|------------|
| B        | CTL         | DDD    | 0 ~ 5, 128, 150 | Write only |
| DW       | SET         | DDD    | 0 ~ 57, 128     |            |
| DW       | STATUS      | DD     | 1 ~ 20          | Read only  |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|   |   |  |                 |
|---|---|--|-----------------|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Change RS485 2W |
| 1 RX-                                   | 6 Data-                                 |  | 15 D-           |
| 2 RX+                                   | 9 Data+                                 |  | 16 D+           |
| 5 GND                                   | 5 GND                                   |  |                 |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Jan/19/2011 | Driver released. |



## Cimon CM1-CP4A/ECO1A

Supported Series: Cimon CM1 series, CP4A module

Website: <http://www.kdtsys.com>

### HMI Setting:

| Parameters   | Recommended          | Options | Notes |
|--------------|----------------------|---------|-------|
| PLC type     | Cimon CM1-CP4A/ECO1A |         |       |
| PLC I/F      | RS232                |         |       |
| Baud rate    | 38400                |         |       |
| Data bits    | 8                    |         |       |
| Parity       | None                 |         |       |
| Stop bits    | 1                    |         |       |
| PLC sta. no. | 1                    |         |       |


### Device Address:

| Bit/Word | Device type | Format | Range    | Memo           |
|----------|-------------|--------|----------|----------------|
| B        | X           | DDh    | 0 ~ 23f  | 0-1F Read Only |
| B        | Y           | DDh    | 0 ~ 23f  |                |
| B        | M           | DDDh   | 0 ~ 511f |                |
| B        | K           | DDDh   | 0 ~ 127f |                |
| B        | L           | DDDh   | 0 ~ 127f |                |
| B        | F           | DDDh   | 0 ~ 127f | Read Only      |
| B        | T           | DDDh   | 0 ~ 102f |                |
| B        | C           | DDDh   | 0 ~ 102f |                |
| W        | D           | DDDD   | 0 ~ 4999 |                |
| W        | S           | DD     | 0 ~ 99   | Max. Range: 99 |
| W        | TS          | DDDD   | 0 ~ 1023 |                |
| W        | TC          | DDDD   | 0 ~ 1023 |                |
| W        | CS          | DDDD   | 0 ~ 1023 |                |
| W        | CC          | DDDD   | 0 ~ 1023 |                |

## Wiring Diagram:

9P D-Sub to 6P RJ11:

|                                    |                                    |                                      |                                  |
|------------------------------------|------------------------------------|--------------------------------------|----------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | CM1-CP4A RS232 6P RJ11<br>Female |
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TXD                            |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RXD                            |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                            |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Nov/30/2009 |             |

# Cimon CM1-SC02A

Supported Series: Cimon CM series, SC02A module

Website: <http://www.kdtsys.com>

## HMI Setting:

| Parameters   | Recommended     | Options | Notes |
|--------------|-----------------|---------|-------|
| PLC type     | Cimon CM1-SC02A |         |       |
| PLC I/F      | RS232           |         |       |
| Baud rate    | 38400           |         |       |
| Data bits    | 8               |         |       |
| Parity       | None            |         |       |
| Stop bits    | 1               |         |       |
| PLC sta. no. | 1               |         |       |


## Device Address:

| Bit/Word | Device type | Format | Range    | Memo           |
|----------|-------------|--------|----------|----------------|
| B        | X           | DDh    | 0 ~ 23f  | 0-1F Read Only |
| B        | Y           | DDh    | 0 ~ 23f  | 0-F Read Only  |
| B        | M           | DDDh   | 0 ~ 511f |                |
| B        | K           | DDDh   | 0 ~ 127f |                |
| B        | L           | DDDh   | 0 ~ 127f |                |
| B        | F           | DDDh   | 0 ~ 127f | Read Only      |
| B        | T           | DDDh   | 0 ~ 102f |                |
| B        | C           | DDDh   | 0 ~ 102f |                |
| W        | D           | DDDD   | 0 ~ 4999 |                |
| W        | S           | DD     | 0 ~ 99   | Max. Range: 99 |
| W        | TS          | DDDD   | 0 ~ 1023 |                |
| W        | TC          | DDDD   | 0 ~ 1023 |                |
| W        | CS          | DDDD   | 0 ~ 1023 |                |
| W        | CC          | DDDD   | 0 ~ 1023 |                |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|                                    |                                    |                                      |                          |
|------------------------------------|------------------------------------|--------------------------------------|--------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | CM1-SC02A RS232 9P D-Sub |
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TD                     |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RD                     |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                    |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Nov/30/2009 |             |

## Copley Controls

Supported Series: Digital Servo Driver & Controllers, Xenus, Xenus Micro, Accelnet, Accelnet Micro, Stepnet series.

Website: <http://www.copleycontrols.com/motion/>

### HMI Setting:

| Parameters   | Recommended     | Options         | Notes |
|--------------|-----------------|-----------------|-------|
| PLC type     | Copley Controls |                 |       |
| PLC I/F      | RS232           |                 |       |
| Baud rate    | 9600            | 9600~115200     |       |
| Data bits    | 8               | 8               |       |
| Parity       | None            | Even, Odd, None |       |
| Stop bits    | 1               | 1               |       |
| HMI sta. no. | 0               |                 |       |
| PLC sta. no. | 0               | 0-127           |       |

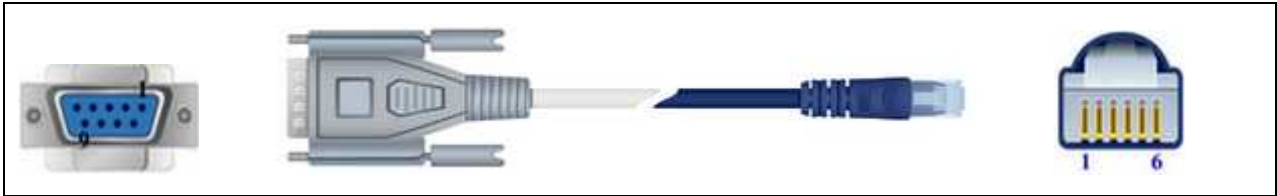
### Device Address:

| Bit/Word | Device type  | Format | Range    | Memo                         |
|----------|--------------|--------|----------|------------------------------|
| W        | Flash INT 16 | HHH    | 0 ~ 999  | For Register is INT16 or U16 |
| W        | RAM INT 16   | HHH    | 0 ~ 999  | For Register is INT16 or U16 |
| W        | Flash INT 32 | HHH    | 0 ~ 999  | For Register is INT32 or U32 |
| W        | RAM INT 32   | HHH    | 0 ~ 999  | For Register is INT32 or U32 |
| W        | Register     | DDDD   | 0 ~ 2457 |                              |
| W        | T_command    | H      | 0        |                              |
| W        | Reset        | H      | 0        |                              |

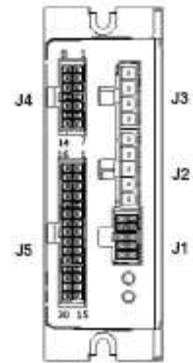
### Wiring Diagram:

9P D-Sub to 6P RJ11: Xenus, Xenus Micro, Accelnet, Stepnet

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Xenus Micro Panel (Stepnet)<br>RS232 6P RJ11 Female |
|------------------------------------|------------------------------------|--------------------------------------|---|
| 2 RX                               | 6 RX                               | 8 RX                                 | 5 TXD   |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RXD   |
| 5 GND                              | 5 GND                              | 5 GND                                | 3, 4 GND  |


**Accelnet Micro:**

|                                    |                                    |                                      |  |
|------------------------------------|------------------------------------|--------------------------------------|--|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Accelnet Micro Panel RS232 J5<br>Cable Connector |
| 2 RX                               | 6 RX                               | 8 RX                                 | 29 TXD   |
| 3 TX                               | 4 TX                               | 7 TX                                 | 14 RXD   |
| 5 GND                              | 5 GND                              | 5 GND                                | 15 GND   |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Dec/30/2008 |             |

# CROUZET M3 (FBD)

## HMI Setting:

| Parameters   | Recommended      | Options | Notes |
|--------------|------------------|---------|-------|
| PLC type     | CROUZET M3 (FBD) |         |       |
| PLC I/F      | RS232            |         |       |
| Baud rate    | 115200           |         |       |
| Data bits    | 7                |         |       |
| Parity       | Even             |         |       |
| Stop bits    | 1                |         |       |
| PLC sta. no. | 1                |         |       |


## Device Address:

| Bit/Word | Device type | Format | Range     | Memo                           |
|----------|-------------|--------|-----------|--------------------------------|
| B        | SLI_Bit     | DDh    | 10 ~ 24f  | Serial link input              |
| B        | SLO_Bit     | DDh    | 250 ~ 48f | Serial link output (read only) |
| W        | IA          | DD     | 1 ~ 99    | Analogy input (default: 1 ~ 4) |
| W        | SL_IN       | DD     | 1 ~ 24    | Serial link input              |
| W        | SL_OUT      | DD     | 25 ~ 48   | Serial link output (read only) |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|                                    |  |  |  |
|------------------------------------|--|--|--|
| HMI COM1<br>RS232 9P<br>D-Sub Male |  |  | CROUZET M3 RS232 9P<br>D-Sub Female (Extension<br>Cable) |
| 2 RX                               |  |  | 2 TD   |
| 3 TX                               |  |  | 3 RD   |
| 5 GND                              |  |  | 5 GND  |
| 7 RTS                              |  |  | 4 DTR  |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.



(3m serial link cable)

Note: Please use 3m serial link cable (Accessories from Millenium 3) and extension cable (as shown) to communicate with HMI series.

MT6050/8050i  
RS232  
9P D-SUB Male  
COM1

CROUZET CD12  
RS-232  
9P D-SUB Female  
(Extension cable)

|   |     |   |     |
|---|-----|---|-----|
| 6 | TX  | 3 | RD  |
| 9 | RX  | 2 | TD  |
| 5 | GND | 5 | GND |
| 4 | TX+ | 4 | DTR |



HMI



User's cable



88970102



Millenium 3

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Oct/26/2010 |             |



## CROUZET M3 (LAD)

### HMI Setting:

| Parameters   | Recommended      | Options | Notes |
|--------------|------------------|---------|-------|
| PLC type     | CROUZET M3 (LAD) |         |       |
| PLC I/F      | RS232            |         |       |
| Baud rate    | 115200           |         |       |
| Data bits    | 7                |         |       |
| Parity       | Even             |         |       |
| Stop bits    | 1                |         |       |
| PLC sta. no. | 1                |         |       |

### Device Address:

| Bit/Word | Device type | Format | Range     | Memo                           |
|----------|-------------|--------|-----------|--------------------------------|
| B        | I           | DD     | 1 ~ 99    | Input (default: 1 ~ 4)         |
| B        | O           | DD     | 1 ~ 99    | Output (default: 1 ~ 4)        |
| B        | M           | DD     | 1 ~ 28    | Relay                          |
| B        | SLI_Bit     | DDh    | 10 ~ 24f  | Serial link input              |
| B        | SLO_Bit     | DDh    | 250 ~ 48f | Serial link output (read only) |
| W        | T           | DD     | 1 ~ 12    | Timer                          |
| W        | C           | DD     | 1 ~ 16    | Counter                        |
| W        | IA          | DD     | 1 ~ 99    | Analogy input (default: 1 ~ 4) |
| W        | SL_IN       | DD     | 1 ~ 24    | Serial link input              |
| W        | SL_OUT      | DD     | 25 ~ 48   | Serial link output (read only) |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|                                    |  |  |  |
|------------------------------------|--|--|--|
| HMI COM1<br>RS232 9P<br>D-Sub Male |  |  | CROUZET M3 RS232 9P<br>D-Sub Female (Extension<br>Cable) |
| 2 RX                               |  |  | 2 TD   |
| 3 TX                               |  |  | 3 RD   |
| 5 GND                              |  |  | 5 GND  |
| 7 RTS                              |  |  | 4 DTR  |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.



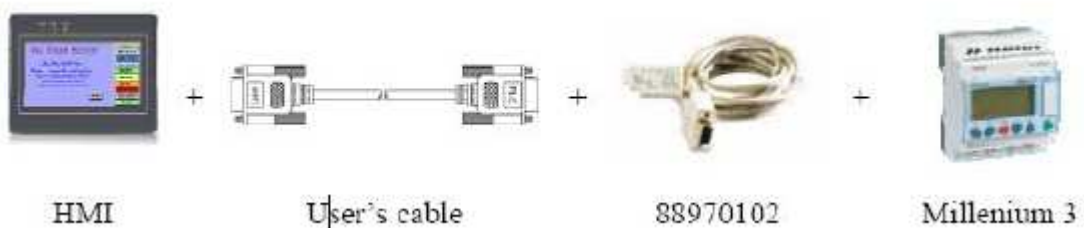
(3m serial link cable)

Note: Please use 3m serial link cable (Accessories from Millenium 3) and extension cable (as shown) to communicate with HMI series.

MT6050/8050i  
RS232  
9P D-SUB Male  
COM1

CROUZET CD12  
RS-232  
9P D-SUB Female  
(Extension cable)

|       |   |     |
|-------|---|-----|
| 6 TX  | 3 | RD  |
| 9 RX  | 2 | TD  |
| 5 GND | 5 | GND |
| 4 TX+ | 4 | DTR |



**Driver Version:**

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Oct/26/2010 |             |

# Danfoss ECL Apex20

Website: <http://www.danfoss.com/>

## HMI Setting:

| Parameters   | Recommended        | Options | Notes |
|--------------|--------------------|---------|-------|
| PLC type     | Danfoss ECL Apex20 |         |       |
| PLC I/F      | RS232              |         |       |
| Baud rate    | 9600               |         |       |
| Data bits    | 8                  |         |       |
| Parity       | None               |         |       |
| Stop bits    | 1                  |         |       |
| PLC sta. no. | 1                  |         |       |


## Device Address:

| Bit/Word | Device type | Format | Range       | Memo                        |
|----------|-------------|--------|-------------|-----------------------------|
| B        | Flag        | DDDD   | 0 ~ 8191    |                             |
| B        | Output      | DDDD   | 0 ~ 1023    |                             |
| B        | Input       | DDDD   | 0 ~ 1023    |                             |
| B        | Reg_Bit     | DDDDdd | 0 ~ 1638331 | dd: Bit no. (00 ~ 31)       |
| W        | Register    | DDDDD  | 0 ~ 16383   |                             |
| W        | Counter     | DDDD   | 0 ~ 1599    |                             |
| W        | Timer       | DDDD   | 0 ~ 1599    |                             |
| W        | Reg_Float   | DDDDD  | 0 ~ 16383   | Support 32-bit float format |

EasyBuilder device address range may differ from PLC extended mode, please refer to EasyBuilder address range as above.

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|  |                                    |                                      |   |         |
|--|------------------------------------|--------------------------------------|---|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | ECL Apex20 Controller RS232<br>9P D-Sub |         |
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TXD                                   |         |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RXD                                   |         |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                                   |         |
|  |                                    |                                      | 7 RTS                                   | circuit |
|  |                                    |                                      | 8 CTS                                   |         |
|  |                                    |                                      |   |         |

|   |   |  |  |
|---|---|--|--|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | ECL Apex20 Controller Port#1 /<br>Port#0 |
| 1 RX-                                   | 6 Data-                                 |  | 11 / 29                                  |
| 2 RX+                                   | 9 Data+                                 |  | 12 / 28                                  |
| 5 GND                                   | 5 GND                                   |  |  |
|   |   |  |  |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.30   | Jan/10/2011 |             |

# Danfoss ECL Apex20 (Ethernet)

Website: <http://www.danfoss.com/>

## HMI Setting:

| Parameters   | Recommended                   | Options | Notes |
|--------------|-------------------------------|---------|-------|
| PLC type     | Danfoss ECL Apex20 (Ethernet) |         |       |
| PLC I/F      | Ethernet                      |         |       |
| Port no.     | 5050                          |         |       |
| PLC sta. no. | 0                             |         |       |

## Device Address:




| Bit/Word | Device type | Format | Range       | Memo                        |
|----------|-------------|--------|-------------|-----------------------------|
| B        | Flag        | DDDD   | 0 ~ 8191    |                             |
| B        | Output      | DDDD   | 0 ~ 1023    |                             |
| B        | Input       | DDDD   | 0 ~ 1023    |                             |
| B        | Reg_Bit     | DDDDdd | 0 ~ 1638331 | dd: Bit no. (00 ~ 31)       |
| W        | Register    | DDDD   | 0 ~ 16383   |                             |
| W        | Counter     | DDDD   | 0 ~ 1599    |                             |
| W        | Timer       | DDDD   | 0 ~ 1599    |                             |
| W        | Reg_Float   | DDDD   | 0 ~ 16383   | Support 32-bit float format |

EasyBuilder device address range may differ from PLC extended mode, please refer to EasyBuilder address range as above.

## Wiring Diagram:




Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |

|   |  |   |
|---|--|---|
| 8 BD3-  | Brown  | 8 BD3-  |
|  |  |  |

Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Jan/10/2011 |             |

## Danfoss FC Series

Supported Series: FC051, FC100, FC200, FC300, VLT Micro Driver.

Website: <http://www.danfoss.com/>

### HMI Setting:

| Parameters   | Recommended       | Options | Notes |
|--------------|-------------------|---------|-------|
| PLC type     | Danfoss FC Series |         |       |
| PLC I/F      | RS485 2W          |         |       |
| Baud rate    | 9600              |         |       |
| Data bits    | 8                 |         |       |
| Parity       | Even              |         |       |
| Stop bits    | 1                 |         |       |
| PLC sta. no. | 1                 |         |       |

### Device Address:

| Bit/Word | Device type |    | Format | Range      | Memo                  |
|----------|-------------|----|--------|------------|-----------------------|
| W        | Parameter   | 09 | DDDD   | 0 ~ 9999   | Set Parameter         |
| DW       | Reference   | 10 | D      | 0 ~ 1      | Control Bus Reference |
| DW       | Para_Index  | 11 | DDDDDD | 0 ~ 999999 | Set Parameter(Index)  |

Para\_Index 310.1=31001, Para\_Index310.0=31000

### Wiring Diagram:

| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | FC RS485 |
|---|---|--|----------|
| 1 RX-                                   | 6 Data-                                 |  | 69 D-    |
| 2 RX+                                   | 9 Data+                                 |  | 68 D+    |
| 5 GND                                   | 5 GND                                   |  |          |
|   |   |  |          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

\*RW100 set PCD1 Control Word of station 1

\*RW101 read PCD1 Status Word of station 1

\*RW102 set PCD2 Control Word of station 2

\*RW103 read PCD2 Status Word of station 2

\*RW104 set PCD3 Control Word of station 3

\*RW105 read PCD3 Status Word of station 3

\*RW106 set PCD4 Control Word of station 4

\*RW107 read PCD4 Status Word of station 4

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Jan/14/2010 |             |

## Danfoss VLT2800 Series

Supported Series: VLT2800 series

Website: <http://www.danfoss.com/>

### HMI Setting:

| Parameters   | Recommended            | Options | Notes            |
|--------------|------------------------|---------|------------------|
| PLC type     | Danfoss VLT2800 Series |         |                  |
| PLC I/F      | RS485 2W               |         |                  |
| Baud rate    | 9600                   |         |                  |
| Data bits    | 8                      |         |                  |
| Parity       | Even                   |         |                  |
| Stop bits    | 1                      |         |                  |
| PLC sta. no. | 1                      | 0-126   | According to PLC |

### PLC Setting:

|                    |                            |
|--------------------|----------------------------|
| Communication mode | 9600, Even, 8, 1 (default) |
|--------------------|----------------------------|

### Device Address:

| Bit/Word | Device type | Format | Range    | Memo                  |
|----------|-------------|--------|----------|-----------------------|
| DW       | Parameter   | DDDD   | 0 ~ 2000 | Set Parameter         |
| W        | Reference   | D      | 0 ~ 1    | Control Bus Reference |

The control word register is set according to the station number.

If the station number is 1, the control word will be RW100 and RW101; if the station number is 2, the control word will be RW102 and RW103, and so on.

## Wiring Diagram:

|   |   |  |               |
|---|---|--|---------------|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | VLT2800 RS485 |
| 1 RX-                                   | 6 Data-                                 |  | 69 D-         |
| 2 RX+                                   | 9 Data+                                 |  | 68 D+         |
| 5 GND                                   | 5 GND                                   |  |               |
|   |   |  |               |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Dec/30/2008 |             |

# DELTA DVP

Supported Series: DELTA DVP series

Website: <http://www.deltadriver.com>

## HMI Setting:

| Parameters   | Recommended | Options         | Notes |
|--------------|-------------|-----------------|-------|
| PLC type     | DELTA DVP   |                 |       |
| PLC I/F      | RS232       | RS232, RS485    |       |
| Baud rate    | 9600        | 9600, 19200     |       |
| Data bits    | 7           | 7, 8            |       |
| Parity       | Even        | Even, Odd, None |       |
| Stop bits    | 1           | 1               |       |
| PLC sta. no. | 1           | 0-255           |       |


## Device Address:

| Bit/Word | Device type | Format | Range             | Memo                |
|----------|-------------|--------|-------------------|---------------------|
| B        | X           | OOOOO  | 0 ~ 23417 (octal) | Input               |
| B        | Y           | OOOOO  | 0 ~ 23417 (octal) | Output              |
| B        | M           | DDDDD  | 0 ~ 65536         | Auxiliary Relay     |
| B        | S           | DDDD   | 0 ~ 9999          | Step Relay          |
| B        | T           | DDDD   | 0 ~ 9999          | Timer               |
| B        | C           | DDDD   | 0 ~ 9999          | Counter             |
| B        | TV_Bit      | DDDDdd | 0 ~ 999915        | Timer               |
| W        | TV          | DDDD   | 0 ~ 9999          | Timer               |
| W        | CV          | DDD    | 0 ~ 127           | Counter             |
| W        | CV2         | DDD    | 200 ~ 254         | Double Word Counter |
| W        | D           | DDDD   | 0 ~ 9999          | Data Register       |

## Wiring Diagram:

9P D-Sub to 8P Mini-DIN:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | DELTA DVP CPU Port RS232<br>8P Mini-DIN |
|------------------------------------|------------------------------------|--------------------------------------|---|
| 2 RX                               | 6 RX                               | 8 RX                                 | 5 TXD                                   |
| 3 TX                               | 4 TX                               | 7 TX                                 | 4 RXD                                   |
| 5 GND                              | 5 GND                              | 5 GND                                | 3/8 GND                                 |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Dec/30/2008 |             |

# BECKHOFF Embedded PC (CX-ARM)

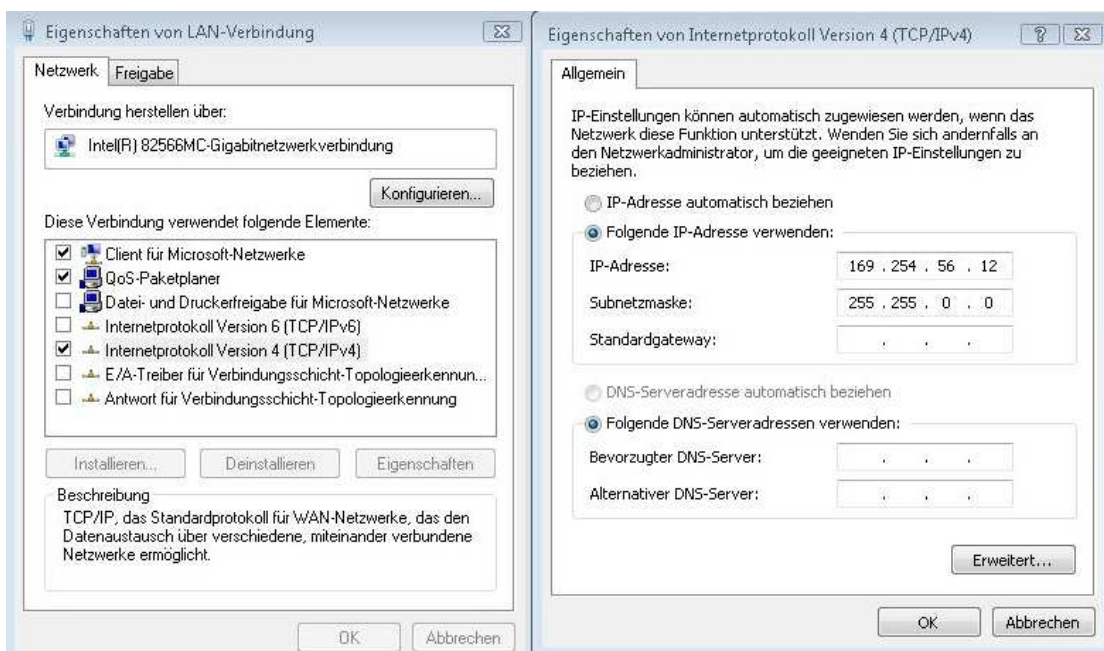
Supported Series: ARM-CX90x0 and CX80xx

## HMI Setting:

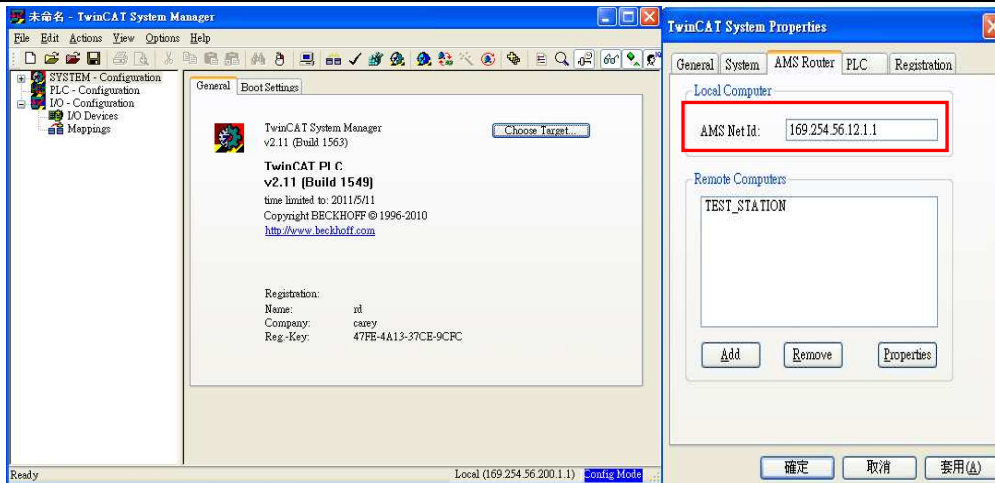
| Parameters   | Recommended                   | Options            | Notes |
|--------------|-------------------------------|--------------------|-------|
| PLC type     | BECKHOFF Embedded PC (CX-ARM) |                    |       |
| PLC I/F      | Ethernet                      |                    |       |
| Port no.     | 48898                         |                    |       |
| ADS port     | 801                           | 801, 811, 821, 831 |       |
| PLC sta. no. | 1                             |                    |       |

## PLC Setting:

### a. Confirm PC IP address

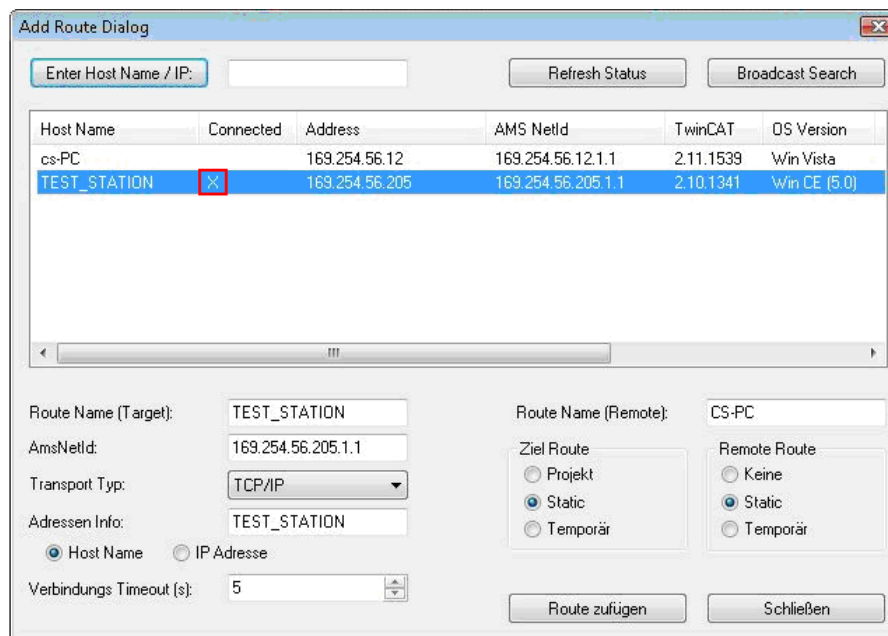


### b. Open Twincat, Set IP address 169.254.56.12.1

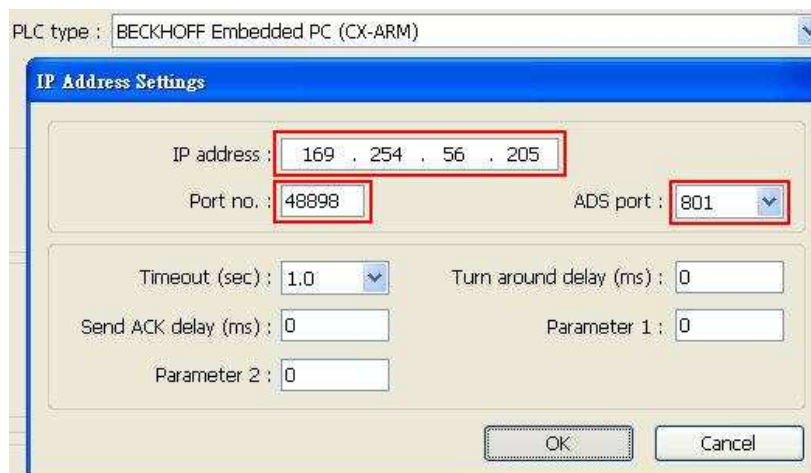


- c. Use Twincat to build a Route Table to make sure the system is connected, if PLC power turns OFF and then ON, please redo this step.

Note: when connected, if “X” is displayed, the connection succeeded.



- d. Open EB8000, set IP address, ADS port and Port no.



- e. Run on line simulation.

Note: If the project is downloaded to HMI, please set HMI IP 169.254.56.12 identically to Twincat IP address setting.


## Device address:

| Bit/Word | Device type | Format | Range      | Memo               |
|----------|-------------|--------|------------|--------------------|
| B        | IX          | DDDDDo | 0 ~ 655357 | o : Bit no.(0 ~ 7) |
| B        | QX          | DDDDDo | 0 ~ 655357 | o : Bit no.(0 ~ 7) |
| B        | MX          | DDDDDo | 0 ~ 655357 | o : Bit no.(0 ~ 7) |
| W        | IW          | DDDDD  | 0 ~ 65535  |                    |
| W        | QW          | DDDDD  | 0 ~ 65535  |                    |
| W        | MW          | DDDDD  | 0 ~ 65535  |                    |
| DW       | ID          | DDDDD  | 0 ~ 65535  |                    |
| DW       | QD          | DDDDD  | 0 ~ 65535  |                    |
| DW       | MD          | DDDDD  | 0 ~ 65535  |                    |

## Wiring Diagram:

Direct connect (crossover cable):


| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |



|  |             |        |
|--|-------------|--------|
| 5 BD4-   | White/Blue  | 5 BD4- |
| 6 RX-  | Green       | 6 RX-  |
| 7 BD3+   | White/Brown | 7 BD3+ |
| 8 BD3-   | Brown       | 8 BD3- |
|  |             |        |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description                         |
|---------|-------------|-------------------------------------|
| V1.00   | Apr/18/2011 | Driver released.                    |
| V1.10   | Aug/24/2011 | Extended address range up to 65535. |

# BECKHOFF Embedded PC (PC or CX-x86)

Supported Series: Intel-CX10x0 and CX50x0

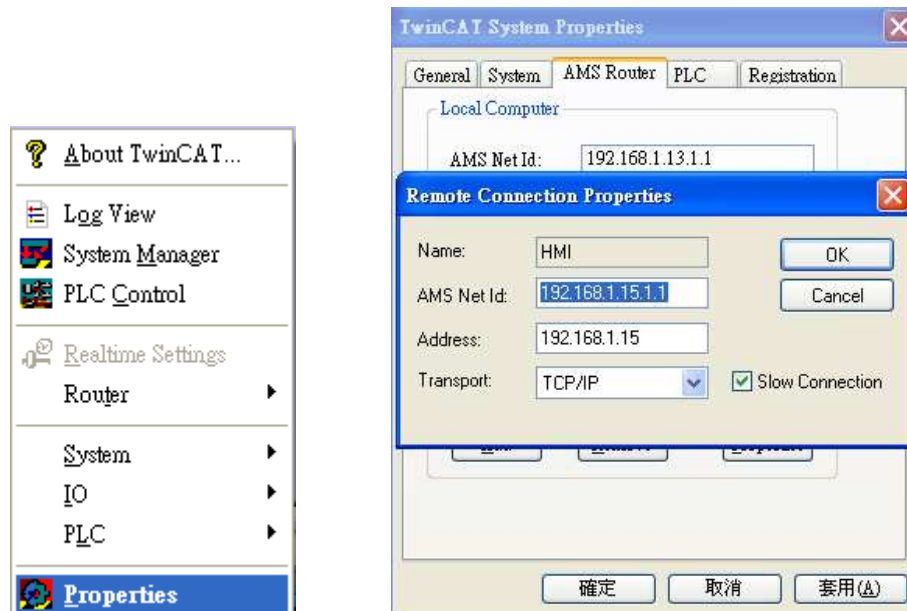
## HMI Setting:

| Parameters   | Recommended                         | Options            | Notes |
|--------------|-------------------------------------|--------------------|-------|
| PLC type     | BECKHOFF Embedded PC (PC or CX-s86) |                    |       |
| PLC I/F      | Ethernet                            |                    |       |
| Port no.     | 48898                               |                    |       |
| ADS port     | 801                                 | 801, 811, 821, 831 |       |
| PLC sta. no. | 1                                   |                    |       |

## PLC Setting:

### Step1.

Open TwinCat System Properties.



PLC Settings: Set HMI Name, AMS Net ID, and Address.

Ex:

HMI IP: 192.168.1.15

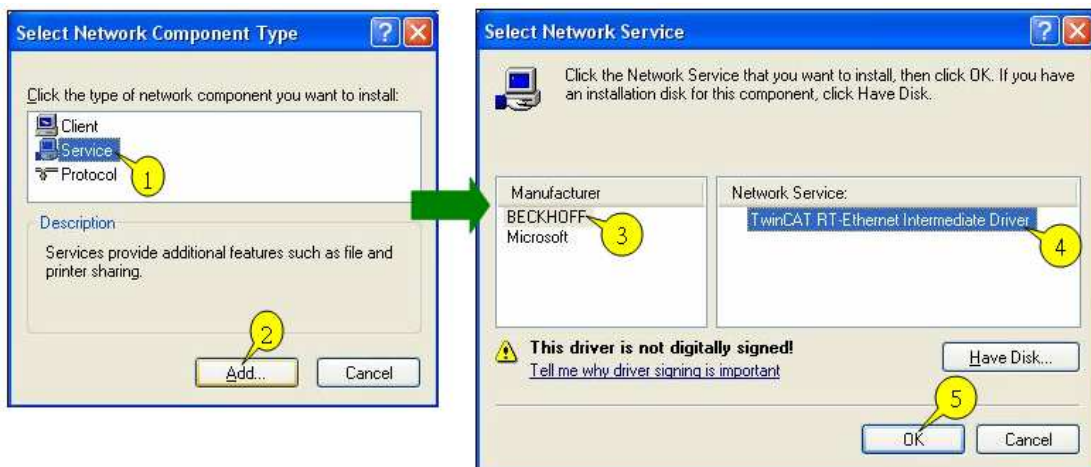
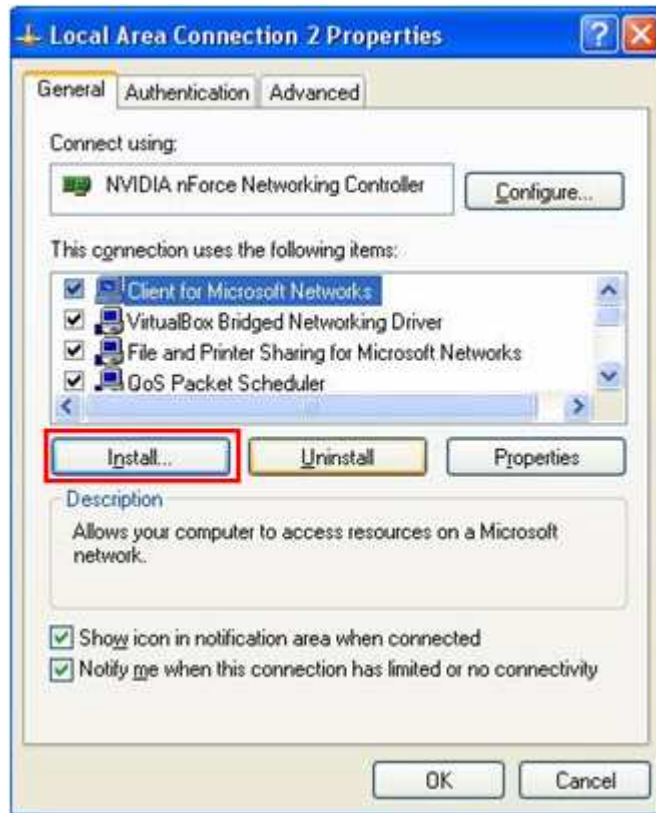
AMS Net ID: Must input 192.168.1.15.1

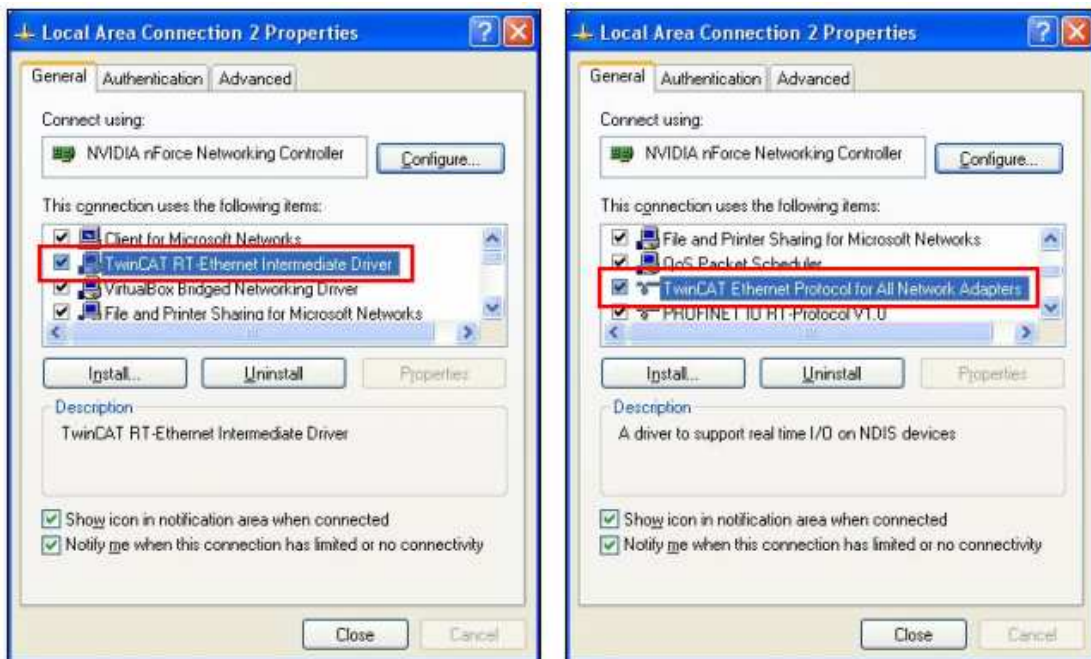
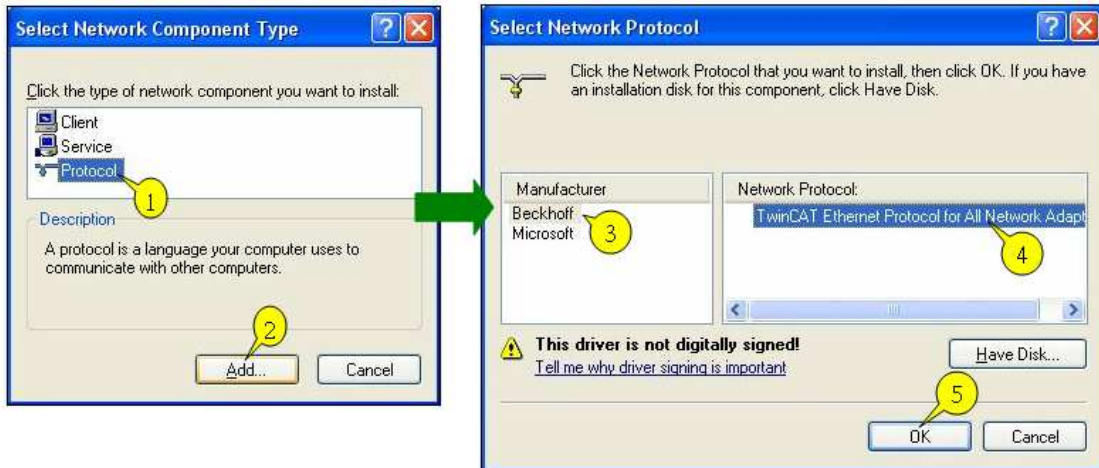
Address: 192.168.1.15

Name: Input "HMI" or any user-defined name.

## Step2.

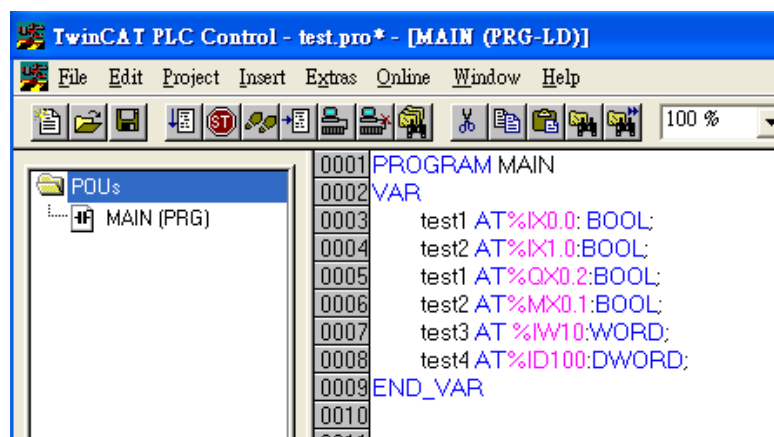
Simulate PLC on PC. 2 Twincat drivers must be installed as follows:





**Step3.**

The following commands can be utilized for Twincat PLC to output the parameters observed.



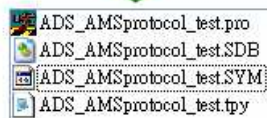
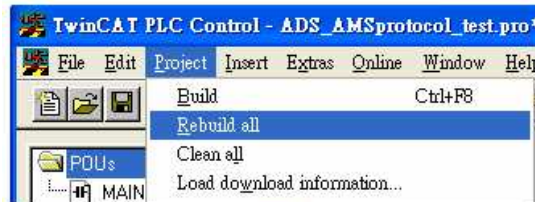
### PS. TwinCAT PLC

IX, QX, MX - Must output in BOOL type.

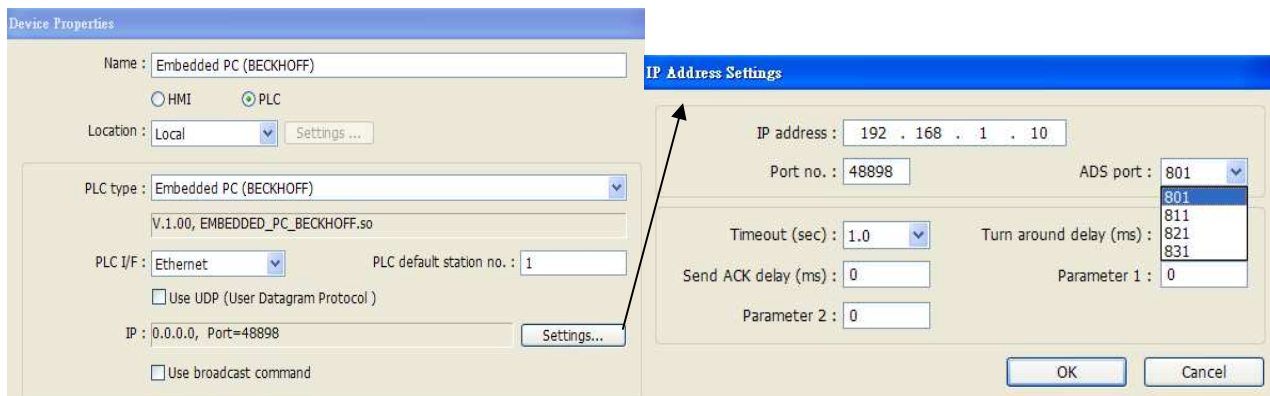
IW, QW, MW - Must output in UINT, WORD, and INT types.

ID, QD, MD - Must output in UDINT, DWORD, and DINT types.

Project -> Rebuild all

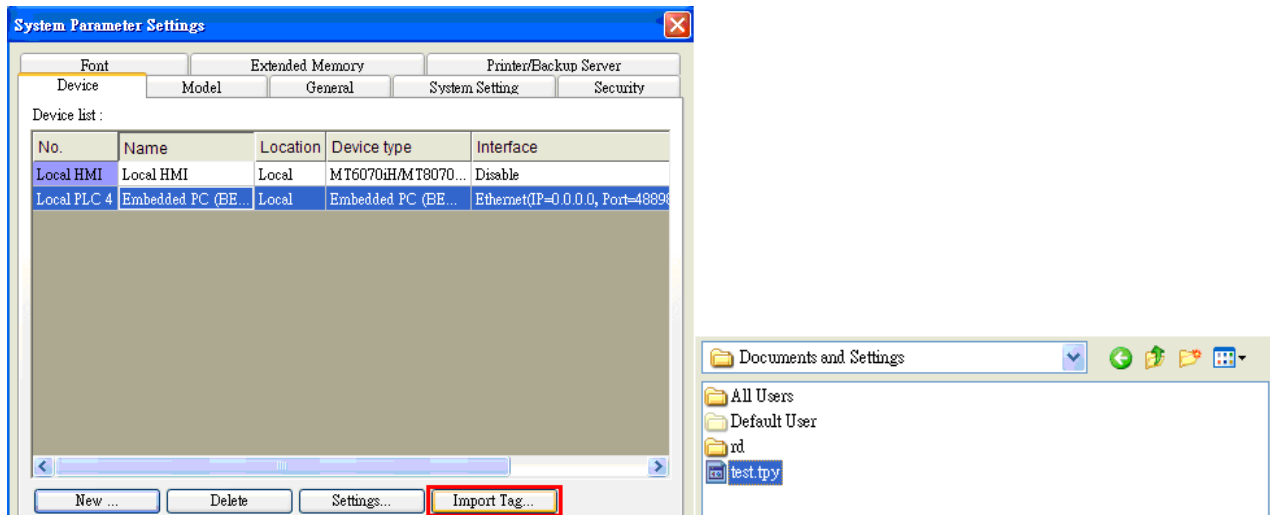


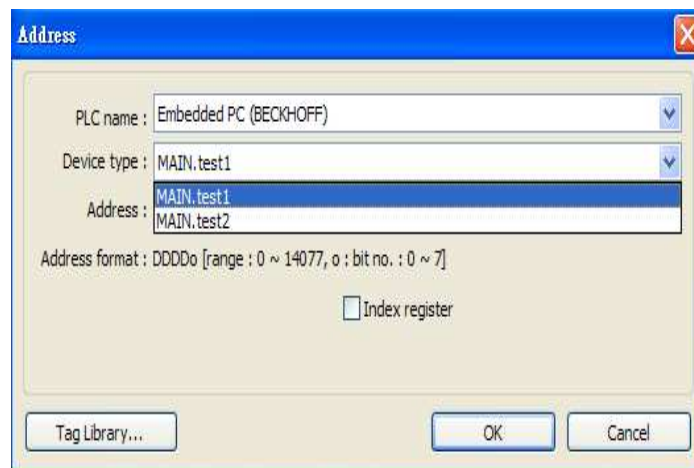
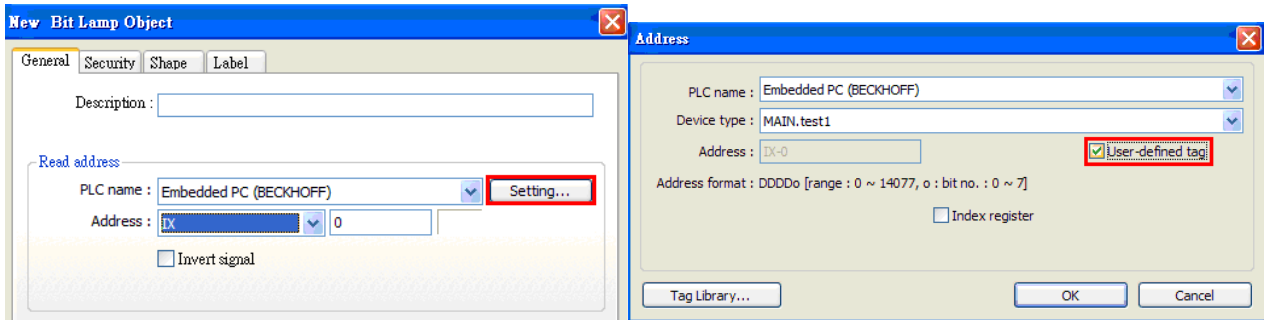
### Step4. Set PLC IP in EasyBuilder.



### Step5.

Click [Import Tag] button in EasyBuilder to open the TPY file compiled by TwinCAT PLC Control.





### Step6.

Download the project compiled in EasyBuilder to HMI.


### Device address:

| Bit/Word | Device type | Format | Range      | Memo               |
|----------|-------------|--------|------------|--------------------|
| B        | IX          | DDDDDo | 0 ~ 655357 | o : Bit no.(0 ~ 7) |
| B        | QX          | DDDDDo | 0 ~ 655357 | o : Bit no.(0 ~ 7) |
| B        | MX          | DDDDDo | 0 ~ 655357 | o : Bit no.(0 ~ 7) |
| W        | IW          | DDDDD  | 0 ~ 65535  |                    |
| W        | QW          | DDDDD  | 0 ~ 65535  |                    |
| W        | MW          | DDDDD  | 0 ~ 65535  |                    |
| DW       | ID          | DDDDD  | 0 ~ 65535  |                    |
| DW       | QD          | DDDDD  | 0 ~ 65535  |                    |
| DW       | MD          | DDDDD  | 0 ~ 65535  |                    |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description                         |
|---------|-------------|-------------------------------------|
| V1.00   | Dec/08/2010 | Driver released.                    |
| V1.10   | Aug/24/2011 | Extended address range up to 65535. |

## EMERSON PLC EC20

Supported Series: Emerson PLC EC20 Series. (Modbus RTU Protocol)

### HMI Setting:

| Parameters   | Recommended      | Options                | Notes |
|--------------|------------------|------------------------|-------|
| PLC type     | EMERSON PLC EC20 |                        |       |
| PLC I/F      | RS232            |                        |       |
| Baud rate    | 9600             | 9600, 19200,<br>115200 |       |
| Data bits    | 8                | 7 or 8                 |       |
| Parity       | Even             | Even, Odd,<br>None     |       |
| Stop bits    | 1                | 1 or 2                 |       |
| PLC sta. no. | 0                | 0-255                  |       |

### PLC Setting:

|                    |                     |
|--------------------|---------------------|
| Communication mode | Modbus RTU protocol |
|--------------------|---------------------|

### Device Address:

| Bit/Word | Device type | Format | Range                          | Memo                 |
|----------|-------------|--------|--------------------------------|----------------------|
| B        | Y           | OOO    | 0 ~ 377 ( octal )<br>256 point | 0000-0255            |
| B        | X           | OOO    | 0 ~ 377 ( octal )<br>256 point | 1200-01455 0000-0255 |
| B        | M           | DDDD   | 0 ~ 1999                       | 2000-3999            |
| B        | SM          | DDD    | 0~ 255                         | 4400-4655            |
| B        | S           | DDD    | 0 ~ 991                        | 6000-6991            |
| B        | T           | DDD    | 0 ~ 255                        | 8000-8255            |
| B        | C           | DDD    | 0 ~ 255                        | 9200-9455            |



|    |          |      |           |           |
|----|----------|------|-----------|-----------|
| W  | D        | DDDD | 0 ~ 7999  | 0000-7999 |
| W  | SD       | DDD  | 0 ~ 255   | 8000-8255 |
| W  | Z        | DD   | 0 ~ 15    | 8500-8515 |
| W  | T        | DDD  | 0 ~ 255   | 9000-9255 |
| W  | C        | DDD  | 0 ~ 199   | 9500-9699 |
| DW | C_Double | DDD  | 200 ~ 255 | 9700-9811 |
| DW | D_Double | DDDD | 0 ~ 7998  | 0000-7999 |

### Wiring Diagram:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Emerson EC20 COM1 |
|------------------------------------|------------------------------------|--------------------------------------|-------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | TXD               |
| 3 TX                               | 4 TX                               | 7 TX                                 | RXD               |
| 5 GND                              | 5 GND                              | 5 GND                                | GND               |
|                                    |                                    |                                      |                   |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Dec/30/2008 |             |

# F930GOT Server

Supported Series: F930GOT general-purpose communication Type 1.

## HMI Setting:

| Parameters   | Recommended    | Options         | Notes |
|--------------|----------------|-----------------|-------|
| PLC type     | F930GOT Server |                 |       |
| PLC I/F      | RS232          |                 |       |
| Baud rate    | 38400          | 9600, 115200    |       |
| Data bits    | 8              | 7 or 8          |       |
| Parity       | None           | Even, Odd, None |       |
| Stop bits    | 1              | 1 or 2          |       |
| PLC sta. no. | 1              |                 |       |

## Device Address:


| Bit/Word | Device type | Format | Range     | Memo |
|----------|-------------|--------|-----------|------|
| B        | RB          | DDDD   | 0 ~ 2047  |      |
| W        | RW          | DDDDD  | 0 ~ 65535 |      |

**Note:** In PLC name drop - down menu don't select F930GOT Server.  
Please select Local HMI, Device Type=RW.

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Micro Computer Board RS232 |
|------------------------------------|------------------------------------|--------------------------------------|----------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | TD                         |
| 3 TX                               | 4 TX                               | 7 TX                                 | RD                         |
| 5 GND                              | 5 GND                              | 5 GND                                | GND                        |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Protocol:

### Read Command:

PC → HMI

|    |     |              |      |    |
|----|-----|--------------|------|----|
| 02 | '0' | Read address | Size | CR |
|----|-----|--------------|------|----|

|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 02 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 32 | 0D |
|----|----|----|----|----|----|----|----|----|----|

Read RW0 1 word (2 bytes) STX = 0x02, '0' = Read command, CR = 0x0D

Read address (hexadecimal)

0 ~ FFFF = RW0 ~ 65535

Size (hexadecimal)

2 ~ FE = 2 ~ 254 bytes = 1 ~ 127 word.

Size must be even.

HMI → PC (response)

|    |       |       |       |    |
|----|-------|-------|-------|----|
| 02 | Data1 | Data2 | ..... | CR |
|----|-------|-------|-------|----|

|    |    |    |    |    |    |
|----|----|----|----|----|----|
| 02 | 30 | 30 | 31 | 30 | 0D |
|----|----|----|----|----|----|

RW0 = 0x0010 = 16

### Write Command:

PC → HMI

|    |     |              |      |       |       |       |    |
|----|-----|--------------|------|-------|-------|-------|----|
| 02 | '1' | Read address | Size | Data1 | Data2 | ..... | CR |
|----|-----|--------------|------|-------|-------|-------|----|

|    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|
| 02 | 31 | 30 | 30 | 30 | 30 | 30 | 32 | 12 | 34 | 0D |
|----|----|----|----|----|----|----|----|----|----|----|

Write RW0 = 0x1234

Read address (hexadecimal)

0 ~ FFFF = RW0 ~ 65535

Size (hexadecimal)

2 ~ FE = 2 ~ 254 bytes = 1 ~ 127 word.

Size must be even.

HMI → PC (response)

|    |
|----|
| 06 |
|----|

ACK = 0x06

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Aug/14/2009 | Driver released. |

## FATEK FB Series

Supported Series: FATEK FBs series, FB MC series, and FB MA series need FB-DTBR converter.

Website: <http://www.fatek.com/>

### HMI Setting:

| Parameters   | Recommended     | Options                  | Notes                        |
|--------------|-----------------|--------------------------|------------------------------|
| PLC type     | FATEK FB Series |                          |                              |
| PLC I/F      | RS232           | RS232/RS485<br>/Ethernet |                              |
| Baud rate    | 9600            |                          |                              |
| Data bits    | 7               |                          |                              |
| Parity       | Even            |                          |                              |
| Stop bits    | 1               |                          |                              |
| PLC sta. no. | 1               | 0-255                    | Must match PLC port setting. |
| TCP port no. | 500             |                          | Ethernet only.               |

### Device Address:


| Bit/Word | Device type | Format | Range      | Memo              |
|----------|-------------|--------|------------|-------------------|
| B        | X           | DDDD   | 0 ~ 9999   | Input             |
| B        | Y           | DDDD   | 0 ~ 9999   | Output            |
| B        | M           | DDDD   | 0 ~ 9999   | Internal Relay    |
| B        | S           | DDDD   | 0 ~ 9999   | Step Relay        |
| B        | T           | DDDD   | 0 ~ 9999   | Timer             |
| B        | C           | DDDD   | 0 ~ 9999   | Counter           |
| B        | PLC_MODE    | D      | 0          | PLC mode          |
| B        | R_Bit       | DDDDdd | 0 ~ 999915 |                   |
| B        | D_Bit       | DDDDdd | 0 ~ 999915 |                   |
| W        | RT          | DDDD   | 0 ~ 9999   | Timer Register    |
| W        | RC          | DDDD   | 0 ~ 9999   | Counter Register  |
| W        | R           | DDDD   | 0 ~ 9999   | Data Register     |
| W        | D           | DDDD   | 0 ~ 9999   | Data Register     |
| W        | DRT         | DDDD   | 0 ~ 9999   | Double Word Timer |

|   |     |      |           |                              |
|---|-----|------|-----------|------------------------------|
|   |     |      |           | Register                     |
| W | DRC | DDD  | 200 ~ 255 | Double Word Counter Register |
| W | WX  | DDDD | 0 ~ 9999  | Input Word                   |
| W | WY  | DDDD | 0 ~ 9999  | Output Word                  |
| W | WM  | DDDD | 0 ~ 9999  | Internal Relay Word          |
| W | WS  | DDDD | 0 ~ 9999  |                              |

## Wiring Diagram:


### 9P D-Sub to 4P Mini-DIN: FBs Port0

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | FBs RS232 4P Mini-DIN |
|------------------------------------|------------------------------------|--------------------------------------|-----------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TX                  |
| 3 TX                               | 4 TX                               | 7 TX                                 | 4 RX                  |
| 5 GND                              | 5 GND                              | 5 GND                                | 2 GND                 |




### 9P D-Sub to 9P D-Sub: FBs communication module


| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | FBs communication module<br>RS232 9P D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|--|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TX                                       |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RX                                       |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                                      |



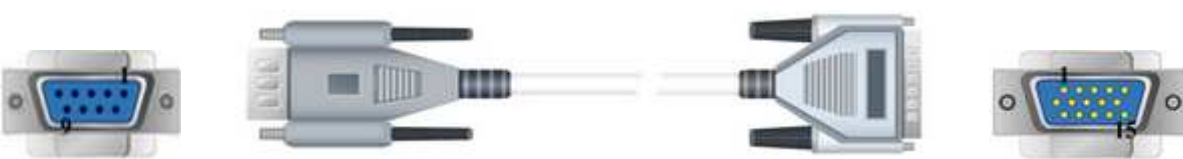
**FBs communication module 3P Terminal Block**

|  |   |  |   |
|--|---|--|---|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female  | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | FBs communication module 3P<br>Terminal Block |
| 1 RX-  | 6 Data-                                 |  | D-  |
| 2 RX+  | 9 Data+                                 |  | D+  |
| 5 GND  | 5 GND                                   |  |   |
|  |   |  |   |

**9P D-Sub to 15P D-Sub: CPU Port**

|  |                                    |                                      |                                |
|--|------------------------------------|--------------------------------------|--------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | FB CPU Port RS232 15P<br>D-Sub |
| 2 RX   | 6 RX                               | 8 RX                                 | 2 TX                           |
| 3 TX   | 4 TX                               | 7 TX                                 | 1 RX                           |
| 5 GND  | 5 GND                              | 5 GND                                | 6 GND                          |
|  |                                    |                                      | 3 RTS                          |
|  |                                    |                                      | 4 CTS                          |
|  |                                    |                                      | circuit                        |
|  |                                    |                                      |                                |

**9P D-Sub to 15P D-Sub: CPU Port RS485 2W**

|  |   |  |                                   |
|--|---|--|-----------------------------------|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female  | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | FB CPU Port RS485 2W 15P<br>D-Sub |
| 1 RX-  | 6 Data-                                 |  | 7 D-                              |
| 2 RX+  | 9 Data+                                 |  | 5 D+                              |
| 5 GND  | 5 GND                                   |  |                                   |
|  |   |  |                                   |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description                                  |
|---------|-------------|--|
| V1.60   | Feb/17/2011 | R_Bit, D_Bit and WS address types are added. |



# FLEXI SOFT (SICK)

## HMI Setting:

| Parameters   | Recommended       | Options                               | Notes |
|--------------|-------------------|---------------------------------------|-------|
| PLC type     | FLEXI SOFT (SICK) |                                       |       |
| PLC I/F      | RS232             |                                       |       |
| Baud rate    | 115200            | 9600,19200,3<br>8400,57600,1<br>15200 |       |
| Data bits    | 8                 |                                       |       |
| Parity       | None              |                                       |       |
| Stop bits    | 1                 |                                       |       |
| PLC sta. no. | 0                 |                                       |       |


## Device Address:

| Bit/Word | Device type  | Format | Range   | Memo         |
|----------|--------------|--------|---------|--------------|
| B        | I            | DDo    | 0 ~ 967 | Input        |
| B        | Q            | DDo    | 0 ~ 487 | Output       |
| B        | Logic result | DDo    | 0 ~ 327 | Logic Result |
| B        | RS-232       | DDo    | 0 ~ 327 | RS-232       |

## Wiring Diagram:

9P D-Sub to 4P Mini-DIN: FLEXI soft CPU0 Port0

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | FLEXI soft CPU0 Port0<br>4P Mini-DIN |
|------------------------------------|------------------------------------|--------------------------------------|--------------------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TX                                 |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RX                                 |
| 5 GND                              | 5 GND                              | 5 GND                                | 4 GND                                |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date       | Description      |
|---------|------------|------------------|
| V1.00   | Apr/6/2011 | Driver released. |

## Fuji NB Series

Website: <http://www.fujielectric.co.jp/fcs/eng/>

### HMI Setting:

| Parameters   | Recommended    | Options | Notes |
|--------------|----------------|---------|-------|
| PLC type     | Fuji NB Series |         |       |
| PLC I/F      | RS485 4W       |         |       |
| Baud rate    | 19200          |         |       |
| Data bits    | 8              |         |       |
| Parity       | Odd            |         |       |
| Stop bits    | 1              |         |       |
| PLC sta. no. | 0              |         |       |

### PLC Setting:

|                    |   |
|--------------------|---|
| Communication mode | NITP Protocol / PLC Password (default is 0) |
|--------------------|---|


### Device Address:

| Bit/Word | Device type | Format | Range    | Memo             |
|----------|-------------|--------|----------|------------------|
| B        | Y           | HHH    | 0 ~ 7ff  | Output Relay     |
| B        | X           | HHH    | 0 ~ 3ff  | Input Relay      |
| B        | M           | HHH    | 0 ~ fff  | Internal Relay   |
| B        | L           | HHH    | 0 ~ fff  | Latch Relay      |
| B        | C           | HH     | 0 - ff   | Counter          |
| B        | M_Spe       | HHHH   | 0 ~ 81ff | Special Relay    |
| B        | T           | HHH    | 0 ~ 1ff  | Timer            |
| W        | TV          | HHH    | 0 ~ 3ff  | Timer value      |
| W        | CV          | HHH    | 0 ~ 3ff  | Counter value    |
| W        | D           | HHHH   | 0 ~ 1fff | Data Register    |
| W        | D_Spe       | HHHH   | 0 ~ 81ff | Special Register |

## Wiring Diagram:

9P D-Sub to 8P RJ45:

|   |  |  |                              |
|---|--|--|------------------------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | Fuji NB Series RS422 8P RJ45 |
| 1 RX-                                   |  |  | 4 TX-                        |
| 2 RX+                                   |  |  | 3 TX+                        |
| 3 TX-                                   |  |  | 6 RX-                        |
| 4 TX+                                   |  |  | 5 RX+                        |
| 5 GND                                   |  |  |                              |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | May/05/2009 |             |

## GE FANUC 0i MD

Website: [http://www.fanucfa.com/welcome\\_worldwide/](http://www.fanucfa.com/welcome_worldwide/)

### HMI Setting:

| Parameters   | Recommended    | Options | Notes |
|--------------|----------------|---------|-------|
| PLC type     | GE FANUC 0i MD |         |       |
| PLC I/F      | RS232          |         |       |
| Baud rate    | 19200          |         |       |
| Data bits    | 8              |         |       |
| Parity       | Even           |         |       |
| Stop bits    | 1              |         |       |
| PLC sta. no. | 0              |         |       |

|                    |     |
|--------------------|-----|
| On-line simulation | YES |
|--------------------|-----|

### PLC Setting:

Reader/Puncher interface (2ch.) is used for touch panel interface.

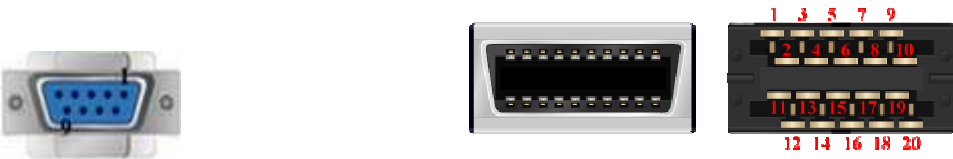
External touch panel interface, S/N: A02B-0320-J685, for Power Mate Series.

### Device Address:

| Bit/Word | Device type | Format | Range     | Memo                    |
|----------|-------------|--------|-----------|-------------------------|
| B        | X           | DDDDo  | 0 ~ 11277 |                         |
| B        | Y           | DDDDo  | 0 ~ 11277 |                         |
| B        | K           | DDDo   | 0 ~ 9997  |                         |
| B        | E           | DDDDo  | 0 ~ 99997 |                         |
| B        | D_Bit       | DDDDo  | 0 ~ 99997 |                         |
| B        | R_Bit       | DDDDo  | 0 ~ 94997 |                         |
| W        | T           | DDDD   | 0 ~ 9499  | Must be a multiple of 2 |
| W        | C           | DDDD   | 0 ~ 5199  | Must be a multiple of 4 |
| W        | D_Byte      | DDDD   | 0 ~ 9999  |                         |
| W        | R_Byte      | DDDD   | 0 ~ 9499  |                         |
| W        | D           | DDDD   | 0 ~ 9999  | Must be a multiple of 2 |
| W        | R           | DDDD   | 0 ~ 9499  | Must be a multiple of 2 |

## Wiring Diagram:

9P D-Sub to 20P JD36B or JD54: CPU Port GE FANUC 0i MD

|   |         |  |   |         |
|---|---------|--|---|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male  |         |  | GE FANUC 0i MD RS232 20P JD36B<br>or JD54 |         |
| 2 RX  |         |  | 11 TX                                     |         |
| 3 TX  |         |  | 1 RX                                      |         |
| 5 GND   |         |  | 8 GND                                     |         |
| 7 RTS   | circuit |  |   |         |
| 8 CTS   |         |  |   |         |
|   |         |  | 15 RTS                                    | circuit |
|   |         |  | 05 CTS                                    |         |
|   |         |  | 03 DR                                     | circuit |
|   |         |  | 07 CD                                     |         |
|   |         |  | 13 ER                                     |         |
|  |         |  |   |         |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | May/16/2011 | Driver released. |

## GE Fanuc CMM

Website: <http://www.ge.com>

### HMI Setting:

| Parameters   | Recommended  | Options                       | Notes                           |
|--------------|--------------|-------------------------------|---------------------------------|
| PLC type     | GE Fanuc CMM |                               |                                 |
| PLC I/F      | RS232        | RS232/RS485                   |                                 |
| Baud rate    | 19200        | 9600,19200,38400,57600,115200 |                                 |
| Data bits    | 8            | 7,8                           | Must set to 8 for this protocol |
| Parity       | Odd          | Even, Odd, None               |                                 |
| Stop bits    | 1            | 1, 2                          |                                 |
| PLC sta. no. | 0            | 0-255                         | Does not apply to this protocol |

### PLC Setting:


Refer to the related PLC manual.

### Device Address:


| Bit/Word | Device type | Format | Range     | Memo                   |
|----------|-------------|--------|-----------|------------------------|
| B        | I           | DDDDD  | 1 ~ 10000 | Input relay            |
| B        | Q           | DDDDD  | 1 ~ 10000 | Output relay           |
| B        | M           | DDDDD  | 1 ~ 10000 | Auxiliary relay        |
| B        | G           | DDDD   | 1 ~ 7680  |                        |
| B        | T           | DDD    | 1 ~ 256   |                        |
| B        | SA          | DDD    | 1 ~ 128   |                        |
| B        | SB          | DDD    | 1 ~ 128   |                        |
| B        | SC          | DDD    | 1 ~ 128   |                        |
| B        | S           | DDD    | 1 ~ 128   |                        |
| W        | AI          | DDDDD  | 1 ~ 10000 | Analog input register  |
| W        | AQ          | DDDDD  | 1 ~ 10000 | Analog output register |
| W        | R           | DDDDD  | 1 ~ 32640 | Data register          |

## Wiring Diagram:

### 9P D-Sub to 15P D-Sub: CPU Port 90-30/VersaMax


|   |  |  |                                      |         |
|---|--|--|--------------------------------------|---------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female   |  |  | 90-30/VersaMax RS485 2W<br>15P D-Sub |         |
| 1 RX-   |  |  | 12 SDA                               |         |
| 2 RX+   |  |  | 13 SDB                               |         |
| 5 GND   |  |  | 7 GND                                |         |
| 3 TX-   |  |  | 10 RDA                               |         |
| 4 TX+   |  |  | 11 RDB                               | circuit |
|   |  |  | 9 RT                                 |         |
|   |  |  | 6 RTSA                               | circuit |
|   |  |  | 15 CTSA                              |         |
|   |  |  | 8 RTSB                               | circuit |
|   |  |  | 14 CTSB                              |         |
|  |  |  |                                      |         |

### 9P D-Sub to 6P RJ11: CPU Port (90-30 series CPU351/352/363/364)

|  |  |  |                                     |
|--|--|--|-------------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   |  |  | 90-30/90-70 series RS232 6P<br>RJ11 |
| 2 RX   |  |  | 2 TX                                |
| 3 TX   |  |  | 5 RX                                |
| 5 GND  |  |  | 3 GND                               |
|  |  |  |                                     |



**9P D-Sub to 9P D-Sub: CPU Port (VersaMax series CPU001/002/005/E05)**

|  |                                    |                                      |                                   |
|--|------------------------------------|--------------------------------------|-----------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | VersaMax series RS232 9P<br>D-Sub |
| 2 RX   | 6 RX                               | 8 RX                                 | 2 TX                              |
| 3 TX   | 4 TX                               | 7 TX                                 | 3 RX                              |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                             |
|  |                                    |                                      |                                   |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Jul/09/2009 | Driver released. |

# GE FANUC RX3i

Website: <http://www.ge.com>

## HMI Setting:

| Parameters   | Recommended   | Options         | Notes |
|--------------|---------------|-----------------|-------|
| PLC type     | GE FANUC RX3i |                 |       |
| PLC I/F      | RS232         | RS232, RS485    |       |
| Baud rate    | 19200         | 1200~115200     |       |
| Data bits    | 8             |                 |       |
| Parity       | Odd           | None, Even, Odd |       |
| Stop bits    | 1             | 1 or 2          |       |
| PLC sta. no. | 1             | 1~99            |       |

## PLC Setting:

Refer to the related PLC manual.


## Device Address:

| Bit/Word | Device type | Format | Range     | Memo |
|----------|-------------|--------|-----------|------|
| B        | I           | DDDDD  | 1 ~ 32768 |      |
| B        | Q           | DDDDD  | 1 ~ 32768 |      |
| B        | M           | DDDDD  | 1 ~ 32768 |      |
| B        | G           | DDDDD  | 1 ~ 32768 |      |
| B        | T           | DDDDD  | 1 ~ 32768 |      |
| B        | SA          | DDDDD  | 1 ~ 32768 |      |
| B        | SB          | DDDDD  | 1 ~ 32768 |      |
| B        | SC          | DDDDD  | 1 ~ 32768 |      |
| B        | S           | DDDDD  | 1 ~ 32768 |      |
| W        | AI          | DDDDD  | 1 ~ 32768 |      |
| W        | AQ          | DDDDD  | 1 ~ 32768 |      |
| W        | R           | DDDDD  | 1 ~ 32768 |      |

## Wiring Diagram:


9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | GE Fanuc RX3i COM1 RS232<br>9P D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|--------------------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TXD                                |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RXD                                |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                                |



9P D-Sub to 15P D-Sub:

| HMI COM1<br>RS485 4W 9P<br>D-Sub Male |  |  | GE Fanuc RX3i COM2 RS422<br>15P D-Sub |
|---------------------------------------|--|--|---------------------------------------|
| 1 RX-                                 |  |  | 12 SDA                                |
| 2 RX+                                 |  |  | 13 SDB                                |
| 5 GND                                 |  |  | 7 GND                                 |
| 3 TX-                                 |  |  | 10 RDA                                |
| 4 TX+                                 |  |  | 11 RDB                                |
|                                       |  |  | 9 RT                                  |
|                                       |  |  | 6 RTSA                                |
|                                       |  |  | 15 CTSA                               |
|                                       |  |  | 8 RTSB                                |
|                                       |  |  | 14 CTSB                               |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.10   | Oct/01/2010 | Driver released. |

## GE Fanuc Series 90-30 (Ethernet)

Supported Series: GE 90-30 series, CPU model 374plus.

### HMI Setting:

| Parameters   | Recommended                      | Options | Notes |
|--------------|----------------------------------|---------|-------|
| PLC type     | GE Fanuc Series 90-30 (Ethernet) |         |       |
| PLC I/F      | Ethernet                         |         |       |
| Port no.     | 18245                            |         |       |
| PLC sta. no. | 1                                | 1~99    |       |

### Device Address:


| Bit/Word | Device type | Format | Range     | Memo  |
|----------|-------------|--------|-----------|---|
| B        | I_bit       | DDDDD  | 1 ~ 32768 |   |
| B        | Q_bit       | DDDDD  | 1 ~ 32768 |   |
| B        | M_bit       | DDDDD  | 1 ~ 32768 |   |
| B        | G_bit       | DDDDD  | 1 ~ 32768 |   |
| B        | T_bit       | DDDDD  | 1 ~ 32768 |   |
| B        | SA_bit      | DDDDD  | 1 ~ 32768 | Read Only   |
| B        | SB_bit      | DDDDD  | 1 ~ 32768 | Read Only   |
| B        | SC_bit      | DDDDD  | 1 ~ 32768 | Read Only   |
| B        | S_bit       | DDDDD  | 1 ~ 32768 | Read Only   |
| W        | I           | DDDDD  | 1 ~ 32753 | Address increment by 8 words, ex: I1, I9, I17, I25..... |
| W        | Q           | DDDDD  | 1 ~ 32753 | The rule is same as above, ex:Q1, Q9, Q17...            |
| W        | M           | DDDDD  | 1 ~ 32753 | The rule is same as above, ex:M1, M9, M17..             |
| W        | G           | DDDDD  | 1 ~ 32753 | The rule is same as above, ex:G1, G9, G17...            |
| W        | T           | DDDD   | 1 ~ 1024  | The rule is same as above, ex:T1, T9, T17....           |
| W        | SA          | DDDDD  | 1 ~ 32753 | Read only, the rule is same as above                    |
| W        | SB          | DDDDD  | 1 ~ 32753 | Read only, the rule is same as above                    |

|   |    |       |           |                                      |
|---|----|-------|-----------|--------------------------------------|
| W | SC | DDDDD | 1 ~ 32753 | Read only, the rule is same as above |
| W | S  | DDDDD | 1 ~ 32753 | Read only, the rule is same as above |
| W | R  | DDDDD | 1 ~ 32768 |                                      |
| W | AI | DDDDD | 1 ~ 32768 |                                      |
| W | AQ | DDDDD | 1 ~ 32768 |                                      |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.70   | Apr/09/2010 |             |

## GE Fanuc SNP-X

Supported Series: GE Fanuc 90 & VersaMax series PLC

Website: <http://www.ge.com>

### HMI Setting:

| Parameters   | Recommended    | Options                                 | Notes                           |
|--------------|----------------|---|---------------------------------|
| PLC type     | GE Fanuc SNP-X |   |                                 |
| PLC I/F      | RS485 4w       | RS232/RS485                             |                                 |
| Baud rate    | 19200          | 9600, 19200,<br>38400, 57600,<br>115200 |                                 |
| Data bits    | 8              | 7, 8                                    | Must set to 8 for this protocol |
| Parity       | Odd            | Even, Odd, None                         |                                 |
| Stop bits    | 1              | 1, 2                                    |                                 |
| PLC sta. no. | 0              | 0-255                                   | Does not apply to this protocol |

### PLC Setting:

Refer to the related PLC manual.

### Device Address:

| Bit/Word | Device type | Format | Range     | Memo                  |
|----------|-------------|--------|-----------|-----------------------|
| B        | I           | DDDDD  | 1 ~ 10000 | Input relay           |
| B        | Q           | DDDDD  | 1 ~ 10000 | Output relay          |
| B        | M           | DDDDD  | 1 ~ 10000 | Auxiliary relay       |
| B        | G           | DDDD   | 1 ~ 7680  |                       |
| B        | T           | DDD    | 1 ~ 256   |                       |
| B        | SA          | DDD    | 1 ~ 128   |                       |
| B        | SB          | DDD    | 1 ~ 128   |                       |
| B        | SC          | DDD    | 1 ~ 128   |                       |
| B        | S           | DDD    | 1 ~ 128   |                       |
| W        | AI          | DDDDD  | 1 ~ 10000 | Analog input register |

|   |    |       |           |                        |
|---|----|-------|-----------|------------------------|
| W | AQ | DDDDD | 1 ~ 10000 | Analog output register |
| W | R  | DDDDD | 1 ~ 32640 | Data register          |

## Wiring Diagram:

Note: 90 VersaMax series PLC of GE Fanuc includes series: 90-30, 90-70, VersaMax Micro, VersaMax Nano and VersaMax, etc.

CPU of 90-30 series can utilize RS485 serial com port of the module, and SNP serial communication protocol of GE to connect with EasyView MT8000HMI. In addition: CPU331/340/341/350/351/352/360/363/364 can connect through CMM311


communication module ;

CPU351/352/363/364 can connect through serial com port of CPU unit.

90-70 series CPU can connect through CMM711 communication module or serial com port of CPU unit.


For relevant software and hardware settings please refer to the technical manual offered by GE Fanuc.

### 9P D-Sub to 15P D-Sub: CPU Port (90-30/VersaMax)


|  |  |  |                                   |         |
|--|--|--|-----------------------------------|---------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | 90-30/VersaMax RS422 15P<br>D-Sub |         |
| 1 RX-  |  |  | 12 SDA                            |         |
| 2 RX+  |  |  | 13 SDB                            |         |
| 5 GND  |  |  | 7 GND                             |         |
| 3 TX-  |  |  | 10 RDA                            |         |
| 4 TX+  |  |  | 11 RDB                            | circuit |
|  |  |  | 9 RT                              |         |
|  |  |  | 6 RTSA                            | circuit |
|  |  |  | 15 CTSA                           |         |
|  |  |  | 8 RTSB                            | circuit |
|  |  |  | 14 CTSB                           |         |
|  |  |  |                                   |         |



**9P D-Sub to 6P RJ11: CPU Port (90-30 series CPU351/352/363/364)**

|  |  |  |                                     |
|--|--|--|-------------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   |  |  | 90-30/90-70 series RS232 6P<br>RJ11 |
| 2 RX   |  |  | 2 TX                                |
| 3 TX   |  |  | 5 RX                                |
| 5 GND  |  |  | 3 GND                               |
|  |  |  |                                     |

**9P D-Sub to 9P D-Sub: CPU Port (VersaMax series CPU001/002/005/E05)**

|  |                                    |                                      |                                   |
|--|------------------------------------|--------------------------------------|-----------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | VersaMax series RS232 9P<br>D-Sub |
| 2 RX   | 6 RX                               | 8 RX                                 | 2 TX                              |
| 3 TX   | 4 TX                               | 7 TX                                 | 3 RX                              |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                             |
|  |                                    |                                      |                                   |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Jan/09/2009 |             |

## HanYoung Series

Supported Series: Temperature Controller.

Website: <http://hynux.com/kor/>

### HMI Setting:

| Parameters   | Recommended     | Options         | Notes |
|--------------|-----------------|-----------------|-------|
| PLC type     | HanYoung Seires |                 |       |
| PLC I/F      | RS485 4W        |                 |       |
| Baud rate    | 9600            |                 |       |
| Data bits    | 8               | 7 or 8          |       |
| Parity       | None            | Even, Odd, None |       |
| Stop bits    | 1               | 1 or 2          |       |
| PLC sta. no. | 1               | 0-255           |       |

### Device Address:

| Bit/Word | Device type | Format | Range    | Memo |
|----------|-------------|--------|----------|------|
| B        | I           | DDDD   | 1 ~ 9999 |      |
| W        | D           | DDDD   | 1 ~ 9999 |      |

### Wiring Diagram:

|   |  |  |                 |
|---|--|--|-----------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | Han Young RS422 |
| 1 RX-                                   |  |  | 32 TX-          |
| 2 RX+                                   |  |  | 31 TX+          |
| 3 TX-                                   |  |  | 34 RX-          |
| 4 TX+                                   |  |  | 33 RX+          |
| 5 GND                                   |  |  |                 |
|   |  |  |                 |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.60   | Jun/14/2010 |             |

# Heng Yuan Sensor

Supported Series: EU series, EU5 series, EU10 series.

Website: <http://www.tjhysensor.cn/>

## HMI Setting:

| Parameters   | Recommended      | Options | Notes |
|--------------|------------------|---------|-------|
| PLC type     | Heng Yuan Sensor |         |       |
| PLC I/F      | RS485 2W         |         |       |
| Baud rate    | 9600             |         |       |
| Data bits    | 8                |         |       |
| Parity       | Even             |         |       |
| Stop bits    | 1                |         |       |
| PLC sta. no. | 2                | 1-31    |       |

|                     |     |  |
|---------------------|-----|--|
| Online simulator    | YES |  |
| Extend address mode | YES |  |

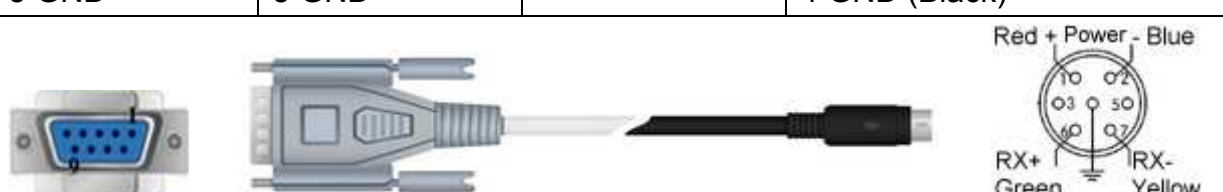
## Device Address:

| Bit/Word | Device type | Format | Range    | Memo |
|----------|-------------|--------|----------|------|
| W        | Parameter   | DDDD   | 0 ~ 2000 |      |

## Wiring Diagram:

9P D-Sub to 7P Mini-DIN: EU05 series

| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Heng Yuan Sensor RS485 |
|---|---|--|------------------------|
| 1 RX-                                   | 6 Data-                                 |  | 7 RX- (Yellow)         |
| 2 RX+                                   | 9 Data+                                 |  | 6 RX+ (Green)          |
| 5 GND                                   | 5 GND                                   |  | 4 GND (Black)          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Dec/30/2008 | Driver released. |

# HITACHI EH-SIO

## HMI Setting:

| Parameters   | Recommended    | Options            | Notes |
|--------------|----------------|--------------------|-------|
| PLC type     | HITACHI EH-SIO |                    |       |
| PLC I/F      | RS232          | RS232, RS485       |       |
| Baud rate    | 19200          | 9600, 19200, 38400 |       |
| Data bits    | 7              | 7                  |       |
| Parity       | Even           | Even               |       |
| Stop bits    | 1              | 1                  |       |
| PLC sta. no. | 0              |                    |       |

## PLC Setting:


|                    |                          |
|--------------------|--------------------------|
| Communication mode | 19200, E, 7, 1 (default) |
|--------------------|--------------------------|

## Device Address:

| Bit/Word | Device type | Format | Range    | Memo                        |
|----------|-------------|--------|----------|-----------------------------|
| B        | X           | HHHHh  | 0 ~ ffff | External input-bit (X)      |
| B        | Y           | HHHHh  | 0 ~ ffff | External output-bit (Y)     |
| B        | M           | HHHHh  | 0 ~ ffff | Data area-bit (M)           |
| B        | T           | HHHHh  | 0 ~ ffff | Timer (T)                   |
| B        | R           | HHHHh  | 0 ~ ffff | Internal output (R)         |
| B        | L           | HHHHh  | 0 ~ ffff | Link area-bit (L)           |
| W        | TC          | HH     | 0 ~ ff   | Timer/Counter current value |
| W        | WM          | HHHH   | 0 ~ 270f | Data area-word (M)          |
| W        | WX          | HHHH   | 0 ~ 270f | External input-word (X)     |
| W        | WY          | HHHH   | 0 ~ 270f | External output-word (Y)    |
| W        | WR          | HHHH   | 0 ~ 270f | Internal output-word (R)    |
| W        | WL          | HHHH   | 0 ~ 270f | Link area-word (L)          |

## Wiring Diagram:

9P D-Sub to 8P RJ45: EH-SIO port1/port 2 RS232

| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | HITACHI EH-SIO port1 / port2<br>RS232 8P RJ45 |         |
|--|------------------------------------|--------------------------------------|---|---------|
| 2 RX   | 6 RX                               | 8 RX                                 | 5 SD  |         |
| 3 TX   | 4 TX                               | 7 TX                                 | 6 RD  |         |
| 5 GND  | 5 GND                              | 5 GND                                | 1 SG  |         |
| 8 CTS  |                                    |                                      | 8 RS  |         |
|  |                                    |                                      | 4 PHL   | circuit |
|  |                                    |                                      | 7 DR  |         |
|  |                                    |                                      |   |         |

EH-SIO port2 RS485 4W

| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | Hitachi EH-SIO |  |
|---|--|--|----------------|--|
| 1 RX-                                   |  |  | 5 TX-          |  |
| 2 RX+                                   |  |  | 4 TX+          |  |
| 3 TX-                                   |  |  | 6 RX-          |  |
| 4 TX+                                   |  |  | 7 RX+          |  |
| 5 GND                                   |  |  | 1 SG           |  |
|   |  |  |                |  |

**EH-SIO port2 RS485 4W**

|   |  |  |                |         |
|---|--|--|----------------|---------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | Hitachi EH-SIO |         |
| 1 RX-                                   |  |  | 5 TX-          | circuit |
| 3 TX-                                   |  |  | 6 RX-          |         |
| 2 RX+                                   |  |  | 4 TX+          | circuit |
| 4 TX+                                   |  |  | 7 RX+          |         |
| 5 GND                                   |  |  | 1 SG           |         |
|   |  |  |                |         |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | May/25/2010 | Driver released. |



## HITACHI EHV Series (Ethernet)

Website: <http://www.hitachi-ies.co.jp/english/products/plc/index.htm>

### HMI Setting:

| Parameters | Recommended                   | Options   | Notes |
|------------|-------------------------------|-----------|-------|
| PLC type   | HITACHI EHV Series (Ethernet) |           |       |
| PLC I/F    | Ethernet                      |           |       |
| Port no.   | 3004                          | 3004~3007 |       |


### Device Address:

| Bit/Word | Device type | Format | Range     | Memo                        |
|----------|-------------|--------|-----------|-----------------------------|
| B        | X           | HHHHh  | 0 ~ ffff  | External input-bit (X)      |
| B        | Y           | HHHHh  | 0 ~ ffff  | External output-bit (Y)     |
| B        | M           | HHHHh  | 0 ~ ffff  | Data area-bit (M)           |
| B        | T           | DDDDD  | 0 ~ 65535 | Timer (T)                   |
| B        | R           | HHHHh  | 0 ~ ffff  | Internal output (R)         |
| B        | L           | HHHHh  | 0 ~ ffff  | Link area-bit (L)           |
| W        | TC          | DDDD   | 0 ~ 2559  | Timer/Counter current value |
| W        | WM          | HHHH   | 0 ~ 7fff  | Data area-word (M)          |
| W        | WX          | HHHH   | 0 ~ ffff  | External Input-word (X)     |
| W        | WY          | HHHH   | 0 ~ ffff  | External output-word (Y)    |
| W        | WR          | HHHH   | 0 ~ ffff  | Internal output-word (R)    |
| W        | WL          | HHHH   | 0 ~ 73ff  | Link area-word (L)          |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description     |
|---------|-------------|-----------------|
| V1.00   | Jan/12/2010 | Driver released |

## HITACHI H/EH/EHV Series

Supported Series: HITACHI H series, EH-150, Micro-EH, H20, H40, H64, H200, H250, H252, H300, H302, H700, H702, H1000, H1002, H2000, H4010.

Website: <http://www.hitachi-ies.co.jp/english/products/plc/index.htm>

### HMI Setting:

| Parameters   | Recommended             | Options            | Notes                            |
|--------------|-------------------------|--------------------|----------------------------------|
| PLC type     | HITACHI H/EH/EHV Series |                    |                                  |
| PLC I/F      | RS232                   | RS232, RS485       |                                  |
| Baud rate    | 19200                   | 9600, 19200, 38400 |                                  |
| Data bits    | 7                       | 7                  |                                  |
| Parity       | Even                    | Even               |                                  |
| Stop bits    | 1                       | 1                  |                                  |
| PLC sta. no. | 0                       | 0-255              | Does not apply to this protocol. |

|                     |     |                   |    |
|---------------------|-----|-------------------|----|
| Online simulator    | YES | Broadcast command | NO |
| Extend address mode | NO  |                   |    |

### PLC Setting:

|                    |                       |
|--------------------|-----------------------|
| Communication mode | 19200,E,7,1 (default) |
|--------------------|-----------------------|

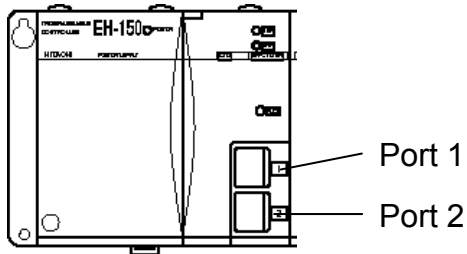
### Device Address:

| Bit/Word | Device type | Format | Range    | Memo                    |
|----------|-------------|--------|----------|-------------------------|
| B        | X           | HHHHh  | 0 ~ ffff | External input-bit (X)  |
| B        | Y           | HHHHh  | 0 ~ ffff | External output-bit (Y) |
| B        | M           | HHHHh  | 0 ~ ffff | Data area-bit (M)       |
| B        | T           | HHHHh  | 0 ~ ffff | Timer (T)               |
| B        | R           | HHHHh  | 0 ~ ffff | Internal output (R)     |
| B        | L           | HHHHh  | 0 ~ ffff | Link area-bit (L)       |

|   |    |      |          |                             |
|---|----|------|----------|-----------------------------|
| W | TC | HH   | 0 ~ ff   | Timer/Counter current value |
| W | WM | HHHH | 0 ~ 270f | Data area-word (M)          |
| W | WX | HHHH | 0 ~ 270f | External input-word (X)     |
| W | WY | HHHH | 0 ~ 270f | External output-word (Y)    |
| W | WR | HHHH | 0 ~ c3ff | Internal output-word (R)    |
| W | WL | HHHH | 0 ~ 270f | Link area-word (L)          |

## Wiring Diagram:

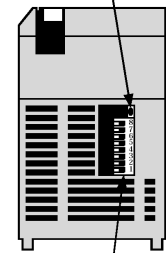
**WARNING:** If your communication cable is not wired exactly as shown in our cable assembly instructions, damage to the HMI or loss of communications can be caused.



| CPU TYPE        | Port 1        | Port 2 |
|-----------------|---------------|--------|
| EH-150/CPU 104A | RS-232        | RS-232 |
| EH-150/CPU 208A | RS-232        | RS-232 |
| EH-150/CPU 308A | RS-232/RS-485 | RS-232 |
| EH-150/CPU 316A | RS-232/RS-485 | RS-232 |
| EH-150/CPU 448A | RS-232/RS-485 | RS-232 |

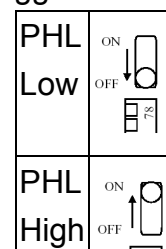
| Switch Number |     |                 |                          |                 |
|---------------|-----|-----------------|--------------------------|-----------------|
| 1             | OFF | Normal mode     |                          |                 |
| 2             | OFF | TRNS0 operation |                          |                 |
| 3, 4          | 3   | 4               | Port1 transmission speed |                 |
|               | ON  | ON              | 4,800 bps                | Doesn't support |
|               | OFF | ON              | 9,600 bps                |                 |
|               | ON  | OFF             | 19,200 bps               | Default         |
|               | OFF | OFF             | 38,400 bps               |                 |
| 5             | ON  | Dedicated port  |                          |                 |
| 6             | 6   | PHL             | Port2 transmission speed |                 |
|               | ON  | Low             | 9,600 bps                |                 |
|               | ON  | High            | 38,400 bps               |                 |
|               | OFF | Low             | 4,800 bps                | Doesn't support |
|               | OFF | High            | 19,200 bps               | Default         |
| 7             | OFF | (System mode)   |                          | Do not turn on. |
| 8             | OFF | (System mode)   |                          | Do not turn on. |

Port setting toggle-switch




Mode setting DIP-switch

Toggle-Switch



**9P D-Sub to 8P RJ45: EH-150 port1/port 2 RS232 / MICRO-EH port1 RS232**

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | HITACHI EH-150 port1 / port2<br>RS232 8P RJ45 |         |
|------------------------------------|------------------------------------|--------------------------------------|---|---------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 5 SD  |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | 6 RD  |         |
| 5 GND                              | 5 GND                              | 5 GND                                | 1 SG  |         |
| 8 CTS                              |                                    |                                      | 8 RS  |         |
|                                    |                                    |                                      | 4 PHL   | circuit |
|                                    |                                    |                                      | 7 DR  |         |
|                                    |                                    |                                      |   |         |

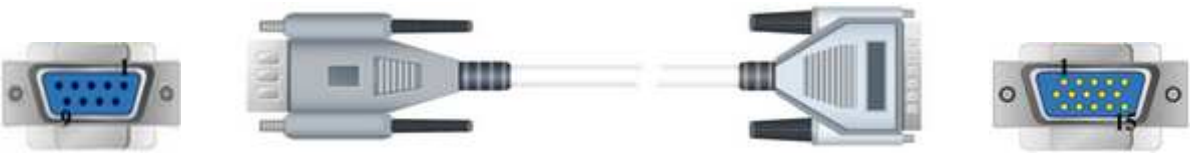
## EH-150 port1 RS485 4W

|  |  |  |                              |  |
|--|--|--|------------------------------|--|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | Hitachi EH-150 Port1 8P RJ45 |  |
| 1 RX-  |  |  | 5 TX-                        |  |
| 2 RX+  |  |  | 4 TX+                        |  |
| 3 TX-  |  |  | 6 RX-                        |  |
| 4 TX+  |  |  | 7 RX+                        |  |
| 5 GND  |  |  | 1 SG                         |  |
|  |  |  |                              |  |

## EH-150 port1 RS485 4W

|  |  |  |                              |         |
|--|--|--|------------------------------|---------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | Hitachi EH-150 Port1 8P RJ45 |         |
| 1 RX-  |  |  | 5 TX-                        | circuit |
| 3 TX-  |  |  | 6 RX-                        |         |
| 2 RX+  |  |  | 4 TX+                        | circuit |
| 4 TX+  |  |  | 7 RX+                        |         |
| 5 GND  |  |  | 1 SG                         |         |
|  |  |  |                              |         |

**9P D-Sub to 15P D-Sub: H Series CPU Port RS232**

|  |  |  |   |         |
|--|--|--|---|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   |  |  | Hitachi H series CPU RS232<br>15P D-Sub |         |
| 2 RX   |  |  | 2 TXD                                   |         |
| 3 TX   |  |  | 3 RXD                                   |         |
| 5 GND  |  |  | 9 SG                                    | Circuit |
|  |  |  | 10 SG                                   |         |
| 8 CTS  |  |  | 4 RTS                                   |         |
|  |  |  | 5 CTS                                   | Circuit |
|  |  |  | 7 DSR                                   |         |
|  |  |  | 8 PHL                                   |         |
|  |  |  | 14 PV12                                 |         |
|  |  |  |   |         |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description   |
|---------|-------------|---|
| V1.10   | Oct/22/2009 | Fixed HMI occupies the control right of CPU module. |
| V1.30   | Mar/22/2010 |   |

# HUST H4X

Supported Series: HUST CNC Controller H4 Series.

Website: <http://www.hust.com.tw/>

## HMI Setting:

| Parameters        | Recommended | Options                | Notes    |
|-------------------|-------------|------------------------|----------|
| PLC type          | HUST H4X    |                        |          |
| PLC I/F           | RS-232      |                        | CPU port |
| Baud rate         | 38400       | 9600,19200,38400,57600 |          |
| Data bits         | 7           |                        |          |
| Parity            | Even        |                        |          |
| Stop bits         | 2           |                        |          |
| Turn around delay | 5           |                        |          |
| PLC sta. no.      | 1           |                        |          |

## Device Address:

| Bit/Word | Device type | Format | Range         | Memo   |
|----------|-------------|--------|---------------|--|
| B        | I           | DDD    | 0 ~ 255       | Mapping to VM 10800 ~ 10807 (read only)                          |
| B        | O           | DDD    | 0 ~ 255       | Mapping to VM 10808 ~ 10815 (read only)                          |
| B        | C           | DDD    | 0 ~ 255       | Mapping to VM 10816 ~ 10823 (read only)                          |
| B        | S           | DDD    | 0 ~ 255       | Mapping to VM 10824 ~ 10831 (read only)                          |
| B        | A           | DDD    | 0 ~ 255       | Mapping to VM 10832 ~ 10863 (read only)                          |
| B        | VM_bit      | DDDDdd | 100 ~ 9999931 | Bit address (dd): 00 ~ 31  |
| DW       | VM          | DDDDD  | 1 ~ 99999     | Please refer to the controller specification for register range. |
| DW       | R           | DDD    | 0 ~ 255       | Mapping to VM 10000 ~ 10255 (read only)                          |



|    |    |     |         |  |
|----|----|-----|---------|--|
| DW | Cn | DDD | 0 ~ 255 | Mapping to VM 10256 ~ 10511<br>(read only) |
| DW | Tm | DDD | 0 ~ 255 | Mapping to VM 10512 ~ 10767<br>(read only) |

## Wiring Diagram:

|                                    |                                    |                                      |                           |
|------------------------------------|------------------------------------|--------------------------------------|---------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | HUST CNC Controller RS232 |
| 2 RX                               | 6 RX                               | 8 RX                                 | TXD                       |
| 3 TX                               | 4 TX                               | 7 TX                                 | RXD                       |
| 5 GND                              | 5 GND                              | 5 GND                                | GND                       |
|                                    |                                    |                                      |                           |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V2.01   | Sep/29/2009 |             |

# IAI X-SEL CONTROLLER

Website: <http://www.iai-robot.co.jp/>

## HMI Setting:

| Parameters   | Recommended          | Options         | Notes |
|--------------|----------------------|-----------------|-------|
| PLC type     | IAI X-SEL CONTROLLER |                 |       |
| PLC I/F      | RS232                |                 |       |
| Baud rate    | 9600                 | 9600~19200      |       |
| Data bits    | 7                    | 7 or 8          |       |
| Parity       | None                 | Even, Odd, None |       |
| Stop bits    | 1                    | 1 or 2          |       |
| PLC sta. no. | 0                    |                 |       |

## Device Address:

| Bit/Word | Device type    | Format | Range | Memo   |
|----------|----------------|--------|-------|--|
| W        | Servo_On_Off   | H      | 1 ~ 8 | Address 1~8 represent the corresponding axis.<br>Write 1 means ON and 0 means OFF.   |
| W        | Servo_Origin   | H      | 1 ~ 8 | Address 1~8 represent the corresponding axis.<br>Back to origin.   |
| W        | CurrentAxisPos | H      | 1 ~ 8 | For reading current position. The state of current axis is put in RW axis*100.<br>i.e., for the state of axis 2, 2*100=200, so it is in RW200. |
| W        | RunProgram     | H      | 0     | Data written indicates which program to run.   |
| W        | EndProgram     | H      | 0     | Data written indicates which program to stop.  |
| W        | PointMove      | H      | 0 ~ 8 | Address 1~8 represent the corresponding axis. The data written indicates which point to reach. Put parameters ACC, DEC, SPEED in               |

|   |               |   |       |  |
|---|---------------|---|-------|--|
|   |               |   |       | axis*100+1, axis*100+2 and axis*100+3 respectively.  |
| W | JoggingMove   | H | 0 ~ 8 | Jogging. Address 1~8 represent the corresponding axis. Put parameters ACC, DEC, SPEED and Position in axis*100+11, axis*100+12, axis*100+13 and axis*100+14 respectively.                            |
| W | AbsoluteMove  | H | 0 ~ 8 | Jog to the set absolute coordinate. Address 1~8 represent the corresponding axis. Put parameters ACC, DEC, SPEED and Position in axis*100+21, axis*100+22, axis*100+23 and axis*100+24 respectively. |
| W | PointChange   | H | 0 ~ 8 | To change the value of the point. Address 1~8 represent the corresponding axis. Put parameters ACC, DEC, SPEED and Position in axis*100+31, axis*100+32, axis*100+33 and axis*100+34 respectively.   |
| W | SoftWareReset | H | 0     | Reset soft ware.   |

Note: ddd: Decimal, hhh: Hexadecimal, ooo: Octal.

Each model of CPU is different; it is recommended to refer to PLC Manual Device List.

## Wiring Diagram:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Host RS232 |
|------------------------------------|------------------------------------|--------------------------------------|------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | TX         |
| 3 TX                               | 4 TX                               | 7 TX                                 | RX         |
| 5 GND                              | 5 GND                              | 5 GND                                | GND        |
|                                    |                                    |                                      |            |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Jun/01/2010 | Driver released. |

## IDEC Micro

Supported Series: IDEC Micro3, Micro3C, MicroSmart, OpenNet Controller series.

Website: <http://www.idec.com>

### HMI Setting:

| Parameters   | Recommended           | Options         | Notes                          |
|--------------|-----------------------|-----------------|--------------------------------|
| PLC type     | IDEC Micro            |                 |                                |
| PLC I/F      | RS232                 | RS232, RS485    |                                |
| Baud rate    | 9600                  | 9600, 19200     |                                |
| Data bits    | 7                     | 7, 8            |                                |
| Parity       | Even                  | Even, Odd, None |                                |
| Stop bits    | 1                     | 1               |                                |
| PLC sta. no. | 255 (for 1:1 connect) | 0-255           | 255 or same as the PLC setting |

|                     |     |                                       |
|---------------------|-----|---------------------------------------|
| Online simulator    | YES |                                       |
| Extend address mode | YES | Do not set the PLC Station No. to 255 |

### PLC Setting:

|                    |   |
|--------------------|---|
| Communication mode | 9600, E, 7, 1 (default), Use Computer Link Protocol |
|--------------------|---|


### Device Address:

| Bit/Word | Device type | Format | Range     | Memo               |
|----------|-------------|--------|-----------|--------------------|
| B        | X           | DDDDo  | 0 ~ 20477 | Input (I)          |
| B        | Y           | DDDDo  | 0 ~ 20477 | Output (Q)         |
| B        | M           | DDDDo  | 0 ~ 20477 | Internal Relay (M) |
| W        | RT          | DDDD   | 0 ~ 9999  | Timer (T)          |
| W        | RC          | DDDD   | 0 ~ 9999  | Counter (C)        |
| W        | D           | DDDD   | 0 ~ 9999  | Data Register (D)  |

## Wiring Diagram:


9P D-Sub to 8P Mini-DIN: Micro3C, MicroSmart, OpenNet Controller CPU Ladder Port

|                                    |                                    |                                      |   |
|------------------------------------|------------------------------------|--------------------------------------|---|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | CPU Port1 or Port2 RS232 8P<br>Mini-DIN |
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                                   |
| 3 TX                               | 4 TX                               | 7 TX                                 | 4 RXD                                   |
| 5 GND                              | 5 GND                              | 5 GND                                | 7 GND                                   |




9P D-Sub to 8P Mini-DIN: Micro3 CPU Port, MicroSmart with FC4A-PC2 RS485  
Communication Adapter

|   |   |  |                            |
|---|---|--|----------------------------|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | CPU Port RS485 8P Mini-DIN |
| 1 RX-                                   | 6 Data-                                 |  | 2 RXD-                     |
| 2 RX+                                   | 9 Data+                                 |  | 1 RXD+                     |
| 5 GND                                   | 5 GND                                   |  | 7 GND                      |



9P D-Sub to Terminals: Micro3C, OpenNet Controller Data Link Terminals,  
MicroSmart with FC4A-PC3 RS485 Communication Adapter

|   |   |  |                     |
|---|---|--|---------------------|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Data Link Terminals |
| 1 RX-                                   | 6 Data-                                 |  | A RXD-              |
| 2 RX+                                   | 9 Data+                                 |  | B RXD+              |
| 5 GND                                   | 5 GND                                   |  | SG GND              |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Jun/19/2009 |             |

# INOVANCE H2U/H1U

Website: <http://www.inovance.cn/>

## HMI Setting:

| Parameters   | Recommended      | Options         | Notes |
|--------------|------------------|-----------------|-------|
| PLC type     | INOVANCE H2U/H1U |                 |       |
| PLC I/F      | RS485 4W         |                 |       |
| Baud rate    | 9600             | 9600~19200      |       |
| Data bits    | 7                | 7 or 8          |       |
| Parity       | Even             | Even, Odd, None |       |
| Stop bits    | 1                | 1 or 2          |       |
| PLC sta. no. | 0                |                 |       |

## Device Address:

| Bit/Word | Device type | Format | Range       | Memo                    |
|----------|-------------|--------|-------------|-------------------------|
| B        | X           | OOO    | 0 ~ 377     | Input Bits              |
| B        | Y           | OOO    | 0 ~ 377     | Output Bits             |
| B        | M           | DDDD   | 0 ~ 7999    | Auxiliary Relay         |
| B        | T           | DDD    | 0 ~ 255     | Timer Relay             |
| B        | C           | DDD    | 0 ~ 255     | Counter Relay           |
| B        | SM          | DDDD   | 8000 ~ 9999 | Special Auxiliary Relay |
| B        | D_Bit       | DDDDdd | 0 ~ 799915  |                         |
| B        | S           | DDDD   | 0 ~ 4095    |                         |
| W        | TV          | DDD    | 0 ~ 255     | Timer Memory            |
| W        | CV          | DDD    | 0 ~ 199     | Counter Memory          |
| W        | D           | DDDD   | 0 ~ 7999    | Data Registers          |
| DW       | CV2         | DDD    | 200 ~ 255   | Counter Memory (32bit)  |
| W        | SD          | DDDD   | 8000 ~ 9999 | Special Data Register   |

Note: ddd: Decimal, hhh: Hexadecimal, ooo: Octal.


Each model of CPU is different, it is recommended to refer to PLC Manual Device List.



## Wiring Diagram:

9P D-Sub to 8P MiniDIN:

|   |  |  |                           |
|---|--|--|---------------------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | H2U/H1U RS422 8P Mini-DIN |
| 1 RX-                                   |  |  | 4 TX-                     |
| 2 RX+                                   |  |  | 7 TX+                     |
| 3 TX-                                   |  |  | 1 RX-                     |
| 4 TX+                                   |  |  | 2 RX+                     |
| 5 GND                                   |  |  | 3 GND                     |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | May/19/2010 | Driver released. |

# Intelligent Servo

Supported Series: Intelligent Servo supports IDM640, IDM240.

Website: <http://www.techsoftmotion.com>

## HMI Setting:

| Parameters   | Recommended       | Options         | Notes |
|--------------|-------------------|-----------------|-------|
| PLC type     | Intelligent Servo |                 |       |
| PLC I/F      | RS232             |                 |       |
| Baud rate    | 9600              | 9600~115200     |       |
| Data bits    | 8                 | 7 or 8          |       |
| Parity       | None              | Even, Odd, None |       |
| Stop bits    | 1                 | 1 or 2          |       |
| PLC sta. no. | 1                 |                 |       |

## Device Address:

| Bit/Word | Device type    | Format | Range     | Memo              |
|----------|----------------|--------|-----------|-------------------|
| W        | Register_32bit | HHHH   | 0 ~ 270f  | 32bit signed      |
| DW       | Register_H     | HHHH   | 0 ~ 270f  | 32bit Hex         |
| W        | UPD            | HHHHH  | 0 ~ 1869f | Send UDP command  |
| W        | STOP           | HHHHH  | 0 ~ 1869f | Send STOP command |

## Wiring Diagram:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Servo RS232 |
|------------------------------------|------------------------------------|--------------------------------------|-------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TD        |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RD        |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND       |
|                                    |                                    |                                      |             |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Nov/06/2009 | Driver released. |

## Justfi controller

Supported Series: Justfi weighing instruments, Industrial Batching Controller supports XK31CB4, XK31CB6.

Website: <http://www.justfi.com>

### HMI Setting:

| Parameters   | Recommended       | Options         | Notes |
|--------------|-------------------|-----------------|-------|
| PLC type     | Justfi controller |                 |       |
| PLC I/F      | RS232             |                 |       |
| Baud rate    | 9600              | 9600, 19200     |       |
| Data bits    | 7                 | 7 or 8          |       |
| Parity       | Even              | Even, Odd, None |       |
| Stop bits    | 1                 | 1 or 2          |       |
| PLC sta. no. | 1                 |                 |       |

### Device Address:

| Bit/Word | Device type           | Format | Range  | Memo                     |
|----------|-----------------------|--------|--------|--------------------------|
| W        | Func                  | DD     | 0 ~ 99 | Read / Write             |
| DW       | Func_DW               | DD     | 0 ~ 99 | Read / Write             |
| W        | RW                    | H      | 0      | Weight (read only)       |
| W        | RF                    | H      | 0      | Read result (read only)  |
| W        | RT                    | H      | 0      | Read total (read only)   |
| W        | RG                    | H      | 0      | Read prescription group  |
| W        | RC                    | H      | 0      | Circle                   |
| W        | RB                    | H      | 0      | Read status (read only)  |
| W        | MZ                    | H      | 0      | Zero (write only)        |
| W        | MT                    | H      | 0      | Tare (write only)        |
| W        | CT                    | H      | 0      | Clear tare (write only)  |
| W        | DT                    | H      | 0      | Clear total (write only) |
| W        | BB                    | H      | 0      | Start (write only)       |
| W        | HB                    | H      | 0      | Stop (write only)        |
| W        | BD                    | H      | 0      | Discharge (write only)   |
| W        | RP1t<br>.....<br>RP6F | H      | 0      | Read/Write recipe        |

## Wiring Diagram:

|                                    |                                    |                                      |           |
|------------------------------------|------------------------------------|--------------------------------------|-----------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | CB4 RS232 |
| 2 RX                               | 6 RX                               | 8 RX                                 | TD        |
| 3 TX                               | 4 TX                               | 7 TX                                 | RD        |
| 5 GND                              | 5 GND                              | 5 GND                                | GND       |
|                                    |                                    |                                      |           |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.40   | Nov/04/2009 |             |

## Kernel sistemi

Supported Series: Kernel sistemi DMX 30

Website: <http://www.kernel.modena.it/>

### HMI Setting:

| Parameters   | Recommended    | Options | Notes                           |
|--------------|----------------|---------|---------------------------------|
| PLC type     | Kernel sistemi |         |                                 |
| PLC I/F      | RS232          | RS485   |                                 |
| Baud rate    | 19200          | 9600    |                                 |
| Data bits    | 8              |         |                                 |
| Parity       | None           |         |                                 |
| Stop bits    | 1              |         |                                 |
| PLC sta. no. | 1              |         | Must match the PLC port setting |


### Device Address:

| Bit/Word | Device type | Format | Range    | Memo |
|----------|-------------|--------|----------|------|
| W        | D           | HHHH   | 0 ~ ffff |      |

### Wiring Diagram:

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | DMX30 RS232 9P D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|----------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TX                 |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RX                 |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Feb/06/2010 | Driver released. |

## KEYENCE KV-10/16/24/40/80/Visual KV Series

Supported Series: KEYENCE KV series, KV16~80

Website: <http://www.keyence.com/>

### HMI Setting:

| Parameters   | Recommended                                | Options | Notes                            |
|--------------|--|---------|----------------------------------|
| PLC type     | KEYENCE KV-10/16/24/40/80/Visual KV Series |         |                                  |
| PLC I/F      | RS232                                      | RS232   |                                  |
| Baud rate    | 9600                                       |         |                                  |
| Data bits    | 8  |         |                                  |
| Parity       | Even                                       |         |                                  |
| Stop bits    | 1  |         |                                  |
| PLC sta. no. | 0  |         | Must match the PLC port setting. |

### Device Address:

| Bit/Word | Device type | Format  | Range       | Memo            |
|----------|-------------|---------|-------------|-----------------|
| B        | RLY         | DDDdd0* | 0 ~ 655150* | dd:0 ~ 15       |
| B        | DM_Bit      | DDDDh   | 0 ~ 65535f  |                 |
| W        | DM          | DDDD    | 0 ~ 65535   |                 |
| W        | TM          | DDDD    | 0 ~ 8999    |                 |
| W        | T           | DDDD    | 0 ~ 9999    |                 |
| W        | T_Curr      | DDDD    | 0 ~ 9999    | Timer_Current   |
| W        | T_Preset    | DDDD    | 0 ~ 9999    |                 |
| W        | C           | DDDD    | 0 ~ 9999    |                 |
| W        | C_Curr      | DDDD    | 0 ~ 9999    | Counter_Current |
| W        | C_Preset    | DDDD    | 0 ~ 9999    |                 |

Note.\*

If Relay (bit) register is used, please place a zero at the end of the address.

For example, to read Relay (bit) 100, the address is written as "1000".




## Wiring Diagram:

### RS232 CPU Port:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | KEYENCE PLC<br>OP-26486 |
|------------------------------------|------------------------------------|--------------------------------------|-------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                   |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RXD                   |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                   |
|                                    |                                    |                                      |                         |

### 9P D-Sub to 6P RJ11:

| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | KEYENCE PLC RS232 6P<br>RJ11 |
|--|------------------------------------|--------------------------------------|------------------------------|
| 2 RX   | 6 RX                               | 8 RX                                 | 2 TXD                        |
| 3 TX   | 4 TX                               | 7 TX                                 | 4 RXD                        |
| 5 GND  | 5 GND                              | 5 GND                                | 3 GND                        |
|  |                                    |                                      |                              |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.40   | Apr/17/2009 |             |

## KEYENCE KV-5000 (Ethernet)

Website: <http://www.keyence.com/>

### HMI Setting:

| Parameters   | Recommended                | Options | Notes                            |
|--------------|----------------------------|---------|----------------------------------|
| PLC type     | KEYENCE KV-5000 (Ethernet) |         |                                  |
| PLC I/F      | Ethernet                   |         |                                  |
| Port no.     | 8501                       |         | Must match the PLC port setting. |
| PLC sta. no. | 0                          |         | Must match the PLC port setting. |

### Device Address:

| Bit/Word | Device type | Format | Range     | Memo          |
|----------|-------------|--------|-----------|---------------|
| B        | MR          | DDDdd  | 0 ~ 99915 |               |
| B        | LR          | DDDdd  | 0 ~ 99915 |               |
| B        | CR          | DDDdd  | 0 ~ 99915 |               |
| B        | RLY         | DDDdd  | 0 ~ 99915 |               |
| W        | DM          | DDDDD  | 0 ~ 65535 |               |
| W        | TM          | DDDD   | 0 ~ 9999  |               |
| W        | T           | DDDD   | 0 ~ 9999  |               |
| W        | T_Curr      | DDDD   | 0 ~ 9999  | Timer Current |
| W        | T_Preset    | DDDD   | 0 ~ 9999  | Timer Preset  |
| W        | C           | DDDD   | 0 ~ 9999  |               |
| W        | C_Curr      | DDDD   | 0 ~ 9999  |               |
| W        | C_Preset    | DDDD   | 0 ~ 9999  |               |
| W        | CM          | DDDDD  | 0 ~ 65535 |               |
| W        | EM          | DDDDD  | 0 ~ 65535 |               |
| W        | FM          | DDDDD  | 0 ~ 65535 |               |

#### Note:


If RLY (bit) register is used, please place a zero at the end of the address.

For example, to read RLY 100, the address is written as "1000".

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Dec/25/2009 | Driver released. |

## KEYENCE KV-700/1000/3000/5000 Series

Website: <http://www.keyence.com/>

### HMI Setting:

| Parameters   | Recommended                          | Options | Notes                            |
|--------------|--------------------------------------|---------|----------------------------------|
| PLC type     | KEYENCE KV-700/1000/3000/5000 Series |         |                                  |
| PLC I/F      | RS232                                | RS232   |                                  |
| Baud rate    | 115200                               |         |                                  |
| Data bits    | 8                                    |         |                                  |
| Parity       | Even                                 |         |                                  |
| Stop bits    | 1                                    |         |                                  |
| PLC sta. no. | 0                                    |         | Must match the PLC port setting. |

### Device Address:

| Bit/Word | Device type | Format | Range     | Memo            |
|----------|-------------|--------|-----------|-----------------|
| B        | MR          | DDDdd  | 0 ~ 99915 |                 |
| B        | LR          | DDDdd  | 0 ~ 99915 |                 |
| B        | CR          | DDDdd  | 0 ~ 99915 |                 |
| B        | RLY         | DDDdd  | 0 ~ 99915 |                 |
| W        | DM          | DDDDD  | 0 ~ 65535 |                 |
| W        | TM          | DDDD   | 0 ~ 9999  |                 |
| W        | T           | DDDD   | 0 ~ 9999  |                 |
| W        | T_Curr      | DDDD   | 0 ~ 9999  | Timer_Current   |
| W        | T_Preset    | DDDD   | 0 ~ 9999  |                 |
| W        | C           | DDDD   | 0 ~ 9999  |                 |
| W        | C_Curr      | DDDD   | 0 ~ 9999  | Counter_Current |
| W        | C_Preset    | DDDD   | 0 ~ 9999  |                 |
| W        | CM          | DDDDD  | 0 ~ 65535 |                 |
| W        | EM          | DDDDD  | 0 ~ 65535 |                 |
| W        | FM          | DDDDD  | 0 ~ 65535 |                 |

Note:

If Relay (bit) register is used, please place a zero at the end of the address.

For example, to read Relay (bit) 100, the address is written as "1000".

## Wiring Diagram:

|                                    |                                    |                                      |                        |
|------------------------------------|------------------------------------|--------------------------------------|------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | KENEYCE OP-26486 RS232 |
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                  |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RXD                  |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                  |
|                                    |                                    |                                      |                        |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V2.20   | Jul/28/2009 |             |

## Korenix 6550

Website: <http://www.korenix.com/>

### HMI Setting:

| Parameters   | Recommended  | Options | Notes           |
|--------------|--------------|---------|-----------------|
| PLC type     | Korenix 6550 |         | Modbus protocol |
| PLC I/F      | Ethernet     |         |                 |
| Port no.     | 502          |         |                 |
| PLC sta. no. |              | 0       |                 |

### Device Address:

| Bit/Word | Device type | Format  | Range         | Memo |
|----------|-------------|---------|---------------|------|
| B        | 1x          | DDDDD   | 1 ~ 65535     |      |
| B        | 0x          | DDDDD   | 1 ~ 65535     |      |
| B        | 3x_Bit      | DDDDDdd | 100 ~ 6553515 |      |
| B        | 4x_Bit      | DDDDDdd | 100 ~ 6553515 |      |
| B        | 6x_Bit      | DDDDDdd | 100 ~ 6553515 |      |
| W        | 3x          | DDDDD   | 1 ~ 65535     |      |
| W        | 4x          | DDDDD   | 1 ~ 65535     |      |
| W        | 5x          | DDDDD   | 1 ~ 65535     |      |
| W        | 6x          | DDDDD   | 1 ~ 65535     |      |

### Wiring Diagram:

Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.61   | Apr/17/2009 |             |

# Koyo CLICK

Supported Series: KOYO CLICK PLC series

Website: <http://www.automationdirect.com>

## HMI Setting:

| Parameters   | Recommended | Options                      | Notes                       |
|--------------|-------------|------------------------------|-----------------------------|
| PLC type     | Koyo CLICK  |                              |                             |
| PLC I/F      | RS232       |                              |                             |
| Baud rate    | 38400       | Communications Port1 (fixed) | Reference PLC Specification |
| Data bits    | 8           | Communications Port1 (fixed) | Reference PLC Specification |
| Parity       | Odd         | Communications Port1 (fixed) | Reference PLC Specification |
| Stop bits    | 1           | Communications Port1 (fixed) | Reference PLC Specification |
| PLC sta. no. | 1           | Communications Port1 (fixed) | Reference PLC Specification |

## Device Address:

| Bit/Word | Device type | Format | Range     | Memo                               |
|----------|-------------|--------|-----------|------------------------------------|
| B        | X           | Ddd    | 001 ~ 816 | Input Status (Read Only)           |
| B        | Y           | Ddd    | 001 ~ 816 | Output Status                      |
| B        | C           | DDDD   | 1 ~ 2000  | Control Bit                        |
| B        | T           | DDD    | 1 ~ 500   | Timer Status (Read Only)           |
| B        | CT          | DDD    | 1 ~ 250   | Counter Status (Read Only)         |
| B        | SC          | DDDD   | 1 ~ 1000  | System Control Bit (Read Only)     |
| W        | DS          | DDDD   | 1 ~ 4500  | Data Registers                     |
| W        | DD          | DDDD   | 1 ~ 1000  | Data Registers (Double Word)       |
| W        | DH          | DDD    | 1 ~ 500   | Data Registers                     |
| W        | DF          | DDD    | 1 ~ 500   | Data Registers (Double Word)       |
| W        | XD          | D      | 0 ~ 8     | Input Status Registers (Read Only) |
| W        | YD          | D      | 0 ~ 8     | Output Status Registers            |
| W        | TD          | DDD    | 1 ~ 500   | Timer Current Values (Read Only)   |



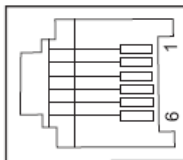
|   |     |      |          |   |
|---|-----|------|----------|---|
| W | CTD | DDD  | 1 ~ 250  | Counter Current Values<br>(Double Word/Read Only) |
| W | SD  | DDDD | 1 ~ 1000 | System Data Registers<br>(Read Only)              |
| W | TXT | DDDD | 1 ~ 1000 | Text Data Registers                               |

ddd: Decimal / hhh:Hexadecimal / ooo:Octal

## Wiring Diagram:

KOYO CLICK PLC Com Port:

6 pin RJ12 Phone  
Type Jack – both ports



| Port 1 Pin Descriptions |     |                            |
|-------------------------|-----|----------------------------|
| 1                       | 0V  | Power (-) connection (GND) |
| 2                       | 5V  | Power (+) connection       |
| 3                       | RXD | Receive data (RS-232)      |
| 4                       | TXD | Transmit data (RS-232)     |
| 5                       | NC  | No connection              |
| 6                       | 0V  | Power (-) connection (GND) |

| Port 2 Pin Descriptions |     |                            |
|-------------------------|-----|----------------------------|
| 1                       | 0V  | Power (-) connection (GND) |
| 2                       | 5V  | Power (+) connection       |
| 3                       | RXD | Receive data (RS-232)      |
| 4                       | TXD | Transmit data (RS-232)     |
| 5                       | RTS | Request to send            |
| 6                       | 0V  | Power (-) connection (GND) |

9P D-Sub to 6P RJ12 Jack:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | KOYO CLICK PLC RS232 6P<br>RJ12 Jack |
|------------------------------------|------------------------------------|--------------------------------------|--------------------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 4 TXD                                |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RXD                                |
| 5 GND                              | 5 GND                              | 5 GND                                | 1 GND                                |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.50   | Jun/22/2010 |             |

## KOYO DIRECT

Supported Series: KOYO DirectLogic series PLC DL05, DL06, DL105, DL205, DL305, and DL405 series.

Website: <http://www.automationdirect.com>

### HMI Setting:

| Parameters   | Recommended | Options            | Notes |
|--------------|-------------|--------------------|-------|
| PLC type     | KOYO DIRECT |                    |       |
| PLC I/F      | RS232       | RS232, RS485       |       |
| Baud rate    | 9600        | 9600, 19200, 38400 |       |
| Data bits    | 8           | 7, 8               |       |
| Parity       | Odd         | Even, Odd, None    |       |
| Stop bits    | 1           | 1                  |       |
| PLC sta. no. | 1           | 1-90               |       |

### PLC Setting:

|  |  |
|--|--|
|  | <ol style="list-style-type: none"> <li>1. The PLC must not have a password.</li> <li>2. PLC must be set for Full Duplex operation.</li> <li>3. PLC must be set for No Hardware Handshaking.</li> <li>4. The PLC must be set to use the 'K' Sequence Protocol.</li> <li>5. Set the mode switch to the TERM mode.</li> <li>6. When using the D4-440 CPU, the station number must be set to 1.</li> </ol> |
|--|--|

### Device Address:


| Bit/Word | Device type | Format | Range     | Memo                |
|----------|-------------|--------|-----------|---------------------|
| B        | X           | O000   | 0 ~ 4000  | Input Bits          |
| B        | Y           | O000   | 0 ~ 4000  | Output Bits         |
| B        | C           | O0000  | 0 ~ 10000 | Control Relays      |
| B        | T           | O000   | 0 ~ 1000  | Timer Status Bits   |
| B        | CT          | O000   | 0 ~ 1000  | Counter Status Bits |
| B        | S           | O000   | 0 ~ 2000  |                     |

|   |         |       |           |          |
|---|---------|-------|-----------|----------|
| B | SP      | O000  | 0 ~ 2000  |          |
| B | GX      | O0000 | 0 ~ 10000 |          |
| B | GY      | O0000 | 0 ~ 10000 |          |
| W | V       | O0000 | 0 ~ 77777 | V Memory |
| W | Timer   | O000  | 0 ~ 1000  |          |
| W | Counter | O000  | 0 ~ 1000  |          |


## Wiring Diagram:

9P D-Sub to 6P RJ12 Jack: CPU unit:

DL05/DL06/DL105/DL230/DL240/DL250/DL350/DL450 RS232 port

|  |                                    |                                      |                                      |  |
|--|------------------------------------|--------------------------------------|--------------------------------------|--|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | KOYO CLICK PLC RS232 6P<br>RJ12 Jack |  |
| 2 RX   | 6 RX                               | 8 RX                                 | 4 TX                                 |  |
| 3 TX   | 4 TX                               | 7 TX                                 | 3 RX                                 |  |
| 5 GND  | 5 GND                              | 5 GND                                | 1 GND                                |  |
|  |                                    |                                      |                                      |  |

9P D-Sub to 15P D-Sub: CPU unit: DL06/DL250 CPU Port2 RS232

|  |                                    |                                      |   |         |
|--|------------------------------------|--------------------------------------|---|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | KOYO DirectLogic PLC CPU<br>RS232 Port2 15P D-Sub |         |
| 2 RX   | 6 RX                               | 8 RX                                 | 2 TX  |         |
| 3 TX   | 4 TX                               | 7 TX                                 | 3 RX  |         |
| 5 GND  | 5 GND                              | 5 GND                                | 7 GND   |         |
|  |                                    |                                      | 4 RTC   | circuit |
|  |                                    |                                      | 5 CTS   |         |
|  |                                    |                                      |   |         |

**9P D-Sub to 15P D-Sub: CPU unit: DL06/DL250 CPU Port2 RS422**

| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | KOYO DirectLogic PLC CPU<br>RS422 Port2 15P D-Sub |         |
|---|--|--|---|---------|
| 1 RX-                                   |  |  | 10 TX-  |         |
| 2 RX+                                   |  |  | 9 TX+   |         |
| 3 TX-                                   |  |  | 6 RX-   |         |
| 4 TX+                                   |  |  | 13 RX+  |         |
| 5 GND                                   |  |  | 7 GND   |         |
|   |  |  | 11 RTS+   | Circuit |
|   |  |  | 14 CTS+   |         |
|   |  |  | 12 RTS-   | Circuit |
|   |  |  | 15 CTS-   |         |
|   |  |  |   |         |

Note: DL06/DL250 CPU Port2 include RS232 and RS422

**9P D-Sub to 15P D-Sub: CPU unit: DL430/DL440/DL450 CPU unit Port0 RS232**

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | KOYO DirectLogic PLC DL405<br>CPU RS232 Port0 15P D-Sub |         |
|------------------------------------|------------------------------------|--------------------------------------|---|---------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TX  |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RX  |         |
| 5 GND                              | 5 GND                              | 5 GND                                | 13 GND  |         |
|                                    |                                    |                                      | 1 YOP   | circuit |
|                                    |                                    |                                      | 7 CTS   |         |
|                                    |                                    |                                      | 2 YOM   |         |
|                                    |                                    |                                      | 4 ONLINE  | circuit |
|                                    |                                    |                                      | 14 GND  |         |
|                                    |                                    |                                      |   |         |


**9P D-Sub to 25P D-Sub: CPU unit: DL430/DL440/DL450 CPU unit Port1 & DL350 CPU unit Port2 RS232**

|                                    |                                    |                                      |   |         |
|------------------------------------|------------------------------------|--------------------------------------|---|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | KOYO DirectLogic PLC<br>DL305/405 CPU RS232 Port<br>25P D-Sub |         |
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TX  |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RX  |         |
| 5 GND                              | 5 GND                              | 5 GND                                | 7 GND   |         |
|                                    |                                    |                                      | 4 RTC   | Circuit |
|                                    |                                    |                                      | 5 CTS   |         |
|                                    |                                    |                                      |   |         |


**9P D-Sub to 25P D-Sub: CPU unit: DL430/DL440/DL450 CPU unit Port1 & DL350 CPU unit Port2 RS422**

|   |  |  |   |         |
|---|--|--|---|---------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | KOYO DirectLogic PLC<br>DL305/405 CPU RS422 Port<br>25P D-Sub |         |
| 1 RX-                                   |  |  | 16 TX-  |         |
| 2 RX+                                   |  |  | 14 TX+  |         |
| 3 TX-                                   |  |  | 10 RX-  |         |
| 4 TX+                                   |  |  | 9 RX+   |         |
| 5 GND                                   |  |  | 7 GND   |         |
|   |  |  | 19 RTS+   | circuit |
|   |  |  | 11 CTS+   |         |
|   |  |  | 18 RTS-   | circuit |
|   |  |  | 23 CTS-   |         |
|   |  |  |   |         |

**9P D-Sub to 25P D-Sub: CPU unit: DL450 CPU unit Port3 RS422**

|  |  |  |   |
|--|--|--|---|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | KOYO DirectLogic PLC DL405<br>CPU RS422 Port3 25P D-Sub |
| 1 RX-  |  |  | 13 TX-  |
| 2 RX+  |  |  | 12 TX+  |
| 3 TX-  |  |  | 25 RX-  |
| 4 TX+  |  |  | 24 RX+  |
| 5 GND  |  |  | 7 GND   |
|  |  |  |   |

**9P D-Sub to 25P D-Sub: Communication unit: DL205 series D2-DCM and DL405 series D4-DCM RS232**

|  |                                    |                                      |   |
|--|------------------------------------|--------------------------------------|---|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | KOYO DirectLogic PLC<br>DL205/405 DCM RS232 Port<br>25P D-Sub |
| 2 RX   | 6 RX                               | 8 RX                                 | 2 TX  |
| 3 TX   | 4 TX                               | 7 TX                                 | 3 RX  |
| 5 GND  | 5 GND                              | 5 GND                                | 7 GND   |
|  |                                    |                                      | 4 RTC   |
|  |                                    |                                      | 5 CTS   |
|  |                                    |                                      | circuit   |
|  |                                    |                                      |   |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.30   | Nov/08/2010 |             |

## Koyo Ethernet

Supported Series: KOYO DirectLogic series, model H0-ECOM100, H2-ECOM100.

Website: <http://www.automationdirect.com>

### HMI Setting:

| Parameters   | Recommended                | Options | Notes  |
|--------------|----------------------------|---------|--------|
| PLC type     | Koyo Ethernet              |         |        |
| PLC I/F      | Ethernet                   |         | UDP/IP |
| Port no.     | 28784                      |         |        |
| PLC sta. no. | No need to set station no. | 0       |        |

### Device Address:

| Bit/Word | Device type | Format | Range     | Memo                   |
|----------|-------------|--------|-----------|------------------------|
| B        | GX          | OOOO   | 0 ~ 3777  | Global I/O             |
| B        | X           | OOOO   | 0 ~ 1777  | Real Word Inputs       |
| B        | SP          | OOOO   | 0 ~ 1777  | Special Purpose Relays |
| B        | GY          | OOOO   | 0 ~ 3777  | More Global I/O        |
| B        | Y           | OOOO   | 0 ~ 1777  | Real Word Outputs      |
| B        | C           | OOOO   | 0 ~ 3777  | Control Relays         |
| B        | S           | OOOO   | 0 ~ 1777  | Stage Status Bits      |
| B        | T           | OOO    | 0 ~ 377   | Timer Status Bits      |
| B        | CT          | OOO    | 0 ~ 377   | Counter Status Bits    |
| W        | V           | OOOOO  | 0 ~ 41237 | V-memory               |
| W        | CCM_32      | HHH    | 1 ~ 200   | GX, X, SP              |
| W        | CCM_33      | HHH    | 1 ~ 340   | GY, Y, C, S, Y, CT, V  |
| W        | CCM_31      | HHHH   | 1 ~ 42a0  | V                      |


EasyBuilder device address ranges may be different from PLC extended mode, please refer to EasyBuilder address range as above.

ddd:Decimal, hhh:Hexadecimal, ooo:Octal

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Jul/03/2009 |             |



## Lenze

Supported Series: PLC Model No.: 9300/8200 series, and EPL10200

Pass-through 2102IB fieldbus module: RS485 (LECOM B)

Website: <http://www.lenze.de>

### HMI Setting:

| Parameters   | Recommended | Options         | Notes |
|--------------|-------------|-----------------|-------|
| PLC type     | Lenze       |                 |       |
| PLC I/F      | RS232       |                 |       |
| Baud rate    | 9600        | 9600, 19200     |       |
| Data bits    | 7           | 7,8             |       |
| Parity       | None        | Even, Odd, None |       |
| Stop bits    | 1           | 1, 2            |       |
| PLC sta. no. | 1           | 0-255           |       |

### PLC Setting:

|                    |                           |
|--------------------|---------------------------|
| Communication mode | Same as the MT500 setting |
|--------------------|---------------------------|

### Device Address:

| Bit/Word | Device type | Format   | Range        | Memo  |
|----------|-------------|----------|--------------|---|
| B        | CNB         | DDDDdd   | 0 ~ 999915   | Subcode not supported.<br>Can only read/write CNI<br>Word Type. |
| B        | CB          | DDDDddxx | 0 ~ 81920015 | Subcode supported.<br>Can only read/write CI<br>Word Type.      |
| W        | CI          | DDDDdd   | 0 ~ 819200   | Subcode supported.<br>Integer                                   |
| W        | CD          | DDDDdd   | 0 ~ 819200   | Subcode supported.<br>DWord                                     |
| W        | CF          | DDDDdd   | 0 ~ 819200   | Subcode supported.<br>DWord (float point)                       |
| W        | CNI         | DDDD     | 0 ~ 9999     | Subcode not supported.<br>Integer                               |
| W        | CND         | DDDD     | 0 ~ 9999     | Subcode not supported.<br>DWord                                 |
| W        | CNF         | DDDD     | 0 ~ 9999     | Subcode not supported.<br>DWord (float point)                   |

## Wiring Diagram:

|   |   |  |   |
|---|---|--|---|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Lenze 2102IB LECOM-B<br>RS485 plug-in terminal 4-pole |
| 1 RX-                                   | 6 Data-                                 |  | 72 T/R (A)  |
| 2 RX+                                   | 9 Data+                                 |  | 71 T/R (B)  |
| 5 GND                                   | 5 GND                                   |  |   |
|   |   |  |   |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Apr/17/2009 |             |
| V1.20   | Sep/6/2011  |             |

## LIYAN EX series

Supported Series: LIYAN PLC Ex/Ex1s/Ex1n/Ex2n series

Website: <http://www.liyanplc.com/>

### HMI Setting:

| Parameters   | Recommended     | Options         | Notes                            |
|--------------|-----------------|-----------------|----------------------------------|
| PLC type     | LIYAN EX series |                 |                                  |
| PLC I/F      | RS232           | RS232           |                                  |
| Baud rate    | 9600            | 9600~115200     |                                  |
| Data bits    | 7               | 7,8             |                                  |
| Parity       | Even            | Even, Odd, None |                                  |
| Stop bits    | 1               | 1,2             |                                  |
| PLC sta. no. | 0               | 0-255           | Must match the PLC port setting. |


### Device Address:

| Bit/Word | Device type | Format | Range       | Memo                           |
|----------|-------------|--------|-------------|--------------------------------|
| B        | X           | ooo    | 0 ~ 377     | Input Relay                    |
| B        | Y           | ooo    | 0 ~ 377     | Output Relay                   |
| B        | M           | ddd    | 0 ~ 9999    | Internal Bit Memory            |
| B        | T           | ddd    | 0 ~ 255     | Timer Bit Memory               |
| B        | C           | ddd    | 0 ~ 255     | Counter Bit Memory             |
| W        | TV          | ddd    | 0 ~ 255     | Timer Register                 |
| W        | CV          | ddd    | 0 ~ 199     | Counter Register               |
| W        | D           | ddd    | 0 ~ 9999    | Data Register                  |
| W        | CV2         | ddd    | 200 ~ 255   | Counter Register (Double Word) |
| W        | SD          | ddd    | 8000 ~ 9999 | Special Data Register          |

## Wiring Diagram:

9P D-Sub to 8P Mini-DIN: Ex, Ex1s, Ex1n, Ex2n series

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | LIYAN Ex series CPU Port<br>RS232 8P Mini-DIN |
|------------------------------------|------------------------------------|--------------------------------------|---|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TXD   |
| 3 TX                               | 4 TX                               | 7 TX                                 | 7 RXD   |
| 5 GND                              | 5 GND                              | 5 GND                                | 6 GND   |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Aug/12/2009 |             |

## LS GLOFA Cnet

Supported Series: LS GLOFA GM6/GM7 CPU port. G7L-CUEB / G6L-CUEB / G4L-CUEA / G3L-CUEA Cnet module

Website: <http://www.lgis.com/>

### HMI Setting:

| Parameters   | Recommended   | Options           | Notes |
|--------------|---------------|-------------------|-------|
| PLC type     | LS GLOFA Cnet |                   |       |
| PLC I/F      | RS232         | RS232/RS485 2W/4W |       |
| Baud rate    | 9600          | 9600~115200       |       |
| Data bits    | 8             | 7, 8              |       |
| Parity       | None          | Even, Odd, None   |       |
| Stop bits    | 1             | 1                 |       |
| PLC sta. no. | 0             | 0~31              |       |

### PLC Setting:

|                      |  |
|----------------------|--|
| Communication mode   | 9600,N,8,1 (default), Cnet protocol        |
| Communication module | Applicable mode: 1 dedicated communication |


### Device Address:

| Bit/Word | Device type | Format | Range     | Memo           |
|----------|-------------|--------|-----------|----------------|
| B        | MX          | DDDDD  | 0 ~ 32767 | Internal Relay |
| B        | IX          | ddDdd  | 0 ~ 63763 | Input          |
| B        | QX          | ddDdd  | 0 ~ 63763 | Output         |
| W        | MW          | DDDDD  | 0 ~ 32767 | Data Register  |
| DW       | MD          | DDDDD  | 0 ~ 16383 | Double Word    |

## Wiring Diagram:


9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | LS GLOFA GM CPU Port<br>RS232 9P D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|--|
| 2 RX                               | 6 RX                               | 8 RX                                 | 7 TXD                                  |
| 3 TX                               | 4 TX                               | 7 TX                                 | 4 RXD                                  |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                                  |



9P D-Sub to 9P D-Sub: Communication Module (G7L-CUEB / G6L-CUEB / G4L-CUEA / G3L-CUEA Cnet RS232)

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | LS GLOFA GM RS232 9P<br>D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|-------------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                         |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RXD                         |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                         |
|                                    |                                    |                                      | 1 CD                          |
|                                    |                                    |                                      | 7 RTS                         |
|                                    |                                    |                                      | 8 CTS                         |
|                                    |                                    |                                      | 4 DTR                         |
|                                    |                                    |                                      | 6 DSR                         |
|                                    |                                    |                                      | circuit                       |
|                                    |                                    |                                      | circuit                       |



Communication Module (G7L-CUEC / G6L-CUEC / G4L-CUEA / G3L-CUEA Cnet RS422)

| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | RS422 |
|---|--|--|-------|
| 1 RX-                                   |  |  | SDB   |
| 2 RX+                                   |  |  | SDA   |
| 3 TX-                                   |  |  | RDB   |

|       |  |  |     |
|-------|--|--|-----|
| 4 TX+ |  |  | RDA |
| 5 GND |  |  | GND |
|       |  |  |     |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.80   | Jun/08/2010 |             |

## LS GLOFA FEnet (Ethernet)

Website: <http://www.lgis.com/>

### HMI Setting:

| Parameters   | Recommended               | Options | Notes |
|--------------|---------------------------|---------|-------|
| PLC type     | LS GLOFA FEnet (Ethernet) |         |       |
| PLC I/F      | Ethernet                  |         |       |
| Port no.     | 2004                      |         |       |
| PLC sta. no. | 0                         | 0~31    |       |

### Device Address:


| Bit/Word | Device type | Format | Range      | Memo           |
|----------|-------------|--------|------------|----------------|
| B        | MX          | DDDDDD | 0 ~ 131056 | Internal Relay |
| B        | IX          | ddDdd  | 0 ~ 63763  | Input          |
| B        | QX          | ddDdd  | 0 ~ 63763  | Output         |
| W        | MW          | DDDD   | 0 ~ 8191   | Data Register  |
| DW       | MD          | DDDD   | 0 ~ 4095   | Double Word    |



## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Apr/02/2009 | Driver released. |

# LS GLOFA GM3467 (LOADER)

Supported Series: LS GLOFA series GM3, GM4, GM6, GM7 CPU port.

Website: <http://www.lgis.com/>

## HMI Setting:

| Parameters   | Recommended              | Options | Notes |
|--------------|--------------------------|---------|-------|
| PLC type     | LS GLOFA GM3467 (LOADER) |         |       |
| PLC I/F      | RS232                    |         |       |
| Baud rate    | 38400                    |         |       |
| Data bits    | 8                        |         |       |
| Parity       | None                     |         |       |
| Stop bits    | 1                        |         |       |
| PLC sta. no. | 1                        |         |       |


## Device Address:

| Bit/Word | Device type | Format | Range      | Memo                          |
|----------|-------------|--------|------------|-------------------------------|
| B        | MX          | DDDDDD | 0 ~ 524272 |                               |
| B        | IX          | ddDdd  | 0 ~ 63763  | 00.0.0 ~ 63.7.63<br>(dd.D.dd) |
| B        | QX          | ddDdd  | 0 ~ 63763  | 00.0.0 ~ 63.7.63<br>(dd.D.dd) |
| W        | IW          | HHH    | 0 ~ 273    |                               |
| W        | QW          | HHH    | 0 ~ 273    |                               |
| W        | MW          | DDDDD  | 0 ~ 32767  |                               |
| W        | MD          | DDDDD  | 0 ~ 16383  |                               |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|                                    |                                    |                                      |                                   |
|------------------------------------|------------------------------------|--------------------------------------|-----------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | LS GLOFA series RS232 9P<br>D-Sub |
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TD                              |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RD                              |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                             |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.30   | Mar/08/2010 |             |

## LS MASTER-K Cnet

Supported Series: LS MASTER-K series: K80S, K200S, K300S, and K1000S

Website: <http://www.lgis.com/>

### HMI Setting:

| Parameters   | Recommended      | Options            | Notes                            |
|--------------|------------------|--------------------|----------------------------------|
| PLC type     | LS MASTER-K Cnet |                    |                                  |
| PLC I/F      | RS232            | RS232/RS485        |                                  |
| Baud rate    | 38400            | 9600, 19200, 38400 |                                  |
| Data bits    | 8                | 8                  |                                  |
| Parity       | None             | Even, Odd, None    |                                  |
| Stop bits    | 1                | 1                  |                                  |
| PLC sta. no. | 0                | 0-31               | Must match the PLC port setting. |


|                  |     |
|------------------|-----|
| Online simulator | YES |
|------------------|-----|

### Device Address:

| Bit/Word | Device type | Format | Range     | Memo                  |
|----------|-------------|--------|-----------|-----------------------|
| B        | P           | DDDh   | 0 ~ 255f  | I/O Relay (P)         |
| B        | K           | DDDh   | 0 ~ 255f  | Keep Relay (K)        |
| B        | M           | DDDh   | 0 ~ 255f  | Auxiliary Relay (M)   |
| B        | L           | DDDh   | 0 ~ 255f  | Link Relay (L)        |
| B        | F           | DDDh   | 0 ~ 255f  | Special Relay (F)     |
| B        | D_bit       | DDDDh  | 0 ~ 9999f | D_bit                 |
| W        | TV          | DDD    | 0 ~ 255   | Timer Present Value   |
| W        | CV          | DDD    | 0 ~ 255   | Counter Present Value |
| W        | D           | DDDD   | 0 ~ 9999  | Data Register (D)     |
| W        | M_word      | DDD    | 0 ~ 255   | Word type for M       |
| W        | L_word      | DDD    | 0 ~ 255   | Word type for L       |
| W        | F_word      | DDD    | 0 ~ 255   | Word type for F       |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|  |                                    |                                      |                                     |
|--|------------------------------------|--------------------------------------|-------------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | CPU Port Cnet I/F RS232 9P<br>D-Sub |
| 2 RX   | 6 RX                               | 8 RX                                 | 7 TX                                |
| 3 TX   | 4 TX                               | 7 TX                                 | 4 RX                                |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                               |
|  |                                    |                                      |                                     |

If connected with Cnet module, please refer to Cnet module document.

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description                                    |
|---------|-------------|--|
| V1.00   | Apr/19/2010 | Driver released.                               |
| V1.10   | May/11/2011 | Added registers: D_bit, M_word, F_word, L_word |

## LS MASTER-K CPU Direct

Supported Series: LS MASTER-K series: K80S, K120S, K200S, K300S, K1000S, K7M.

Website: <http://www.lgis.com/>

### HMI Setting:

| Parameters   | Recommended            | Options            | Notes                            |
|--------------|------------------------|--------------------|----------------------------------|
| PLC type     | LG MASTER-K CPU Direct |                    |                                  |
| PLC I/F      | RS232                  | RS232/RS485        |                                  |
| Baud rate    | 38400                  | 9600, 19200, 38400 |                                  |
| Data bits    | 8                      | 8                  |                                  |
| Parity       | None                   | Even, Odd, None    |                                  |
| Stop bits    | 1                      | 1                  |                                  |
| PLC sta. no. | 0                      | 0-31               | Must match the PLC port setting. |

|                  |     |
|------------------|-----|
| Online simulator | YES |
|------------------|-----|


### Device Address:

| Bit/Word | Device type | Format | Range     | Memo                  |
|----------|-------------|--------|-----------|-----------------------|
| B        | P           | DDDh   | 0 ~ 255f  | I/O Relay (P)         |
| B        | K           | DDDh   | 0 ~ 255f  | Keep Relay (K)        |
| B        | M           | DDDh   | 0 ~ 255f  | Auxiliary Relay (M)   |
| B        | L           | DDDh   | 0 ~ 255f  | Link Relay (L)        |
| B        | F           | DDDh   | 0 ~ 255f  | Special Relay (F)     |
| B        | D_bit       | DDDDh  | 0 ~ 9999f | D_bit                 |
| W        | TV          | DDD    | 0 ~ 255   | Timer Present Value   |
| W        | CV          | DDD    | 0 ~ 255   | Counter Present Value |
| W        | D           | DDDD   | 0 ~ 9999  | Data Register (D)     |
| W        | M_word      | DDD    | 0 ~ 255   | Word type for M       |
| W        | L_word      | DDD    | 0 ~ 255   | Word type for L       |
| W        | F_word      | DDD    | 0 ~ 255   | Word type for F       |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | CPU Port RS232 9P D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|-------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TX                    |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RX                    |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                   |

The diagram illustrates the physical connection between four 9-pin D-sub ports. From left to right: a blue 9-pin D-sub male connector (HMI COM1), a grey 9-pin D-sub male connector (HMI COM2), a grey 9-pin D-sub female connector (HMI COM3), and another blue 9-pin D-sub male connector (CPU Port RS232 9P D-Sub). A grey cable connects the two grey connectors, and a blue cable connects the two blue connectors.

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description                                    |
|---------|-------------|--|
| V1.20   | May/11/2011 | Added registers: D_bit, M_word, F_word, L_word |

# LS MASTER-K MODBUS RTU

Supported Series: LS MASTER-K MODBUS RTU

Website: <http://www.lgis.com/>

## HMI Setting:

| Parameters   | Recommended            | Options | Notes                            |
|--------------|------------------------|---------|----------------------------------|
| PLC type     | LS MASTER-K MODBUS RTU |         |                                  |
| PLC I/F      | RS485 2W               |         |                                  |
| Baud rate    | 9600                   |         |                                  |
| Data bits    | 8                      | 8       |                                  |
| Parity       | Even                   | Even    |                                  |
| Stop bits    | 1                      | 1       |                                  |
| PLC sta. no. | 1                      |         | Must match the PLC port setting. |

## Device Address:

| Bit/Word | Device type | Format | Range     | Memo                |
|----------|-------------|--------|-----------|---------------------|
| B        | P           | DDDDh  | 0 ~ 9999f | I/O Relay (P)       |
| B        | M           | DDDDh  | 0 ~ 9999f | Auxiliary Relay (M) |
| B        | L           | DDDDh  | 0 ~ 9999f | Link Relay (L)      |
| B        | K           | DDDDh  | 0 ~ 9999f | Keep Relay (K)      |
| B        | F           | DDDDh  | 0 ~ 9999f | Special Relay (F)   |
| B        | D_bit       | DDDDh  | 0 ~ 9999f |                     |
| W        | T           | DDDD   | 0 ~ 9999  | Timer (T)           |
| W        | C           | DDDD   | 0 ~ 9999  | Counter (C)         |
| W        | S           | DDDD   | 0 ~ 9999  |                     |
| W        | D           | DDDD   | 0 ~ 9999  | Data Register (D)   |
| W        | T_double    | DDDD   | 0 ~ 9999  |                     |
| W        | C_double    | DDDD   | 0 ~ 9999  |                     |
| W        | S_double    | DDDD   | 0 ~ 9999  |                     |
| W        | D_double    | DDDD   | 0 ~ 9999  |                     |
| W        | F_word      | DDDD   | 0 ~ 9999  |                     |
| W        | L_word      | DDDD   | 0 ~ 9999  |                     |




|   |        |      |          |  |
|---|--------|------|----------|--|
| W | M_word | DDDD | 0 ~ 9999 |  |
|---|--------|------|----------|--|

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | CPU Port RS232 9P D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|-------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TX                    |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RX                    |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                   |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description                                    |
|---------|-------------|--|
| V1.10   | May/11/2011 | Added registers: D_bit, M_word, F_word, L_word |

# LS MASTER-K10S1

Supported Series: LS MASTER-K10S1

Website: <http://www.lgis.com/>

## HMI Setting:

| Parameters   | Recommended     | Options     | Notes                            |
|--------------|-----------------|-------------|----------------------------------|
| PLC type     | LS MASTER-K10S1 |             |                                  |
| PLC I/F      | RS232           | RS232/RS485 |                                  |
| Baud rate    | 9600            |             |                                  |
| Data bits    | 8               | 8           |                                  |
| Parity       | None            | None        |                                  |
| Stop bits    | 1               | 1           |                                  |
| PLC sta. no. | 0               |             | Must match the PLC port setting. |


## Device Address:

| Bit/Word | Device type | Format | Range    | Memo                  |
|----------|-------------|--------|----------|-----------------------|
| B        | P           | DDDh   | 0 ~ 255f | I/O Relay (P)         |
| B        | K           | DDDh   | 0 ~ 255f | Keep Relay (K)        |
| B        | M           | DDDh   | 0 ~ 255f | Auxiliary Relay (M)   |
| B        | L           | DDDh   | 0 ~ 255f | Link Relay (L)        |
| B        | F           | DDDh   | 0 ~ 255f | Special Relay (F)     |
| B        | T           | DDD    | 0 ~ 255  | Timer (T)             |
| B        | C           | DDD    | 0 ~ 255  | Counter (C)           |
| W        | TV          | DDD    | 0 ~ 255  | Timer Present Value   |
| W        | CV          | DDD    | 0 ~ 255  | Counter Present Value |
| W        | D           | DDDD   | 0 ~ 9999 | Data Register (D)     |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | CPU Port RS232 9P D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|-------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TX                    |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RX                    |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                   |

The diagram illustrates the physical connection between four 9-pin D-sub ports. From left to right: a blue 9-pin D-sub male connector (HMI COM1), a grey 9-pin D-sub male connector (HMI COM2), a grey 9-pin D-sub female connector (HMI COM3), and another blue 9-pin D-sub male connector (CPU Port RS232 9P D-Sub). A grey cable with a female connector on one end and a male connector on the other is shown connecting the HMI COM2 and HMI COM3 ports.

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Sep/08/2009 | Driver released. |

# LS XGB Cnet

Supported Series: LS XGB/XGT Series

Website: <http://www.lgis.com/>

## HMI Setting:

| Parameters   | Recommended | Options         | Notes                            |
|--------------|-------------|-----------------|----------------------------------|
| PLC type     | LS XGB Cnet |                 |                                  |
| PLC I/F      | RS232       | RS232/RS485     |                                  |
| Baud rate    | 115200      | 9600~115200     |                                  |
| Data bits    | 8           | 7, 8            |                                  |
| Parity       | None        | Even, Odd, None |                                  |
| Stop bits    | 1           | 1               |                                  |
| PLC sta. no. | 1           | 0-31            | Must match the PLC port setting. |

## Device Address:


| Bit/Word | Device type | Format | Range          | Memo   |
|----------|-------------|--------|----------------|--|
| B        | P_Bit       | DDDDh  | 0 ~ 2047f      | I/O device Bit                                 |
| B        | M_Bit       | DDDDh  | 0 ~ 2047f      | Internal device Bit                            |
| B        | L_Bit       | DDDDDh | 0 ~ 11263f     | Communication device Bit                       |
| B        | K_Bit       | DDDDh  | 0 ~ 2559f      | Preservation device Bit                        |
| B        | F_Bit       | DDDDh  | 0 ~ 2047f      | Special device Bit( write available from 1025) |
| B        | S_Bit       | DDDDD  | 0 ~ 12799      | Relay for step control Bit                     |
| B        | D_Bit       | DDDDDh | 0 ~ 32767f     | Data register_Bit expression (D0000.0)         |
| B        | U_Bit       | DH.DDh | 0.000 ~ 7f.31f | XGK-CPUe : hh(0~1f)                            |
| B        | T_Bit       | DDDD   | 0 ~ 2047       | Timer device Bit                               |
| B        | C_Bit       | DDDD   | 0 ~ 2047       | Counter device Bit                             |
| W        | P           | DDDD   | 0 ~ 2047       | I/O device_2,048 points                        |
| W        | M           | DDDD   | 0 ~ 2047       | Internal device_4,096 points                   |
| W        | L           | DDDDD  | 0 ~ 11263      | Communication device_20,480                    |

|   |   |       |              | points                                   |
|---|---|-------|--------------|--|
| W | K | DDDD  | 0 ~ 2559     | Preservation device_4,096 points         |
| W | F | DDDD  | 0 ~ 2047     | Special device_4,096 point               |
| W | S | DDDDD | 0 ~ 12799    | Relay for step control                   |
| W | D | DDDDD | 0 ~ 32767    | Data register_5120 words                 |
| W | U | DH.DD | 0.00 ~ 7f.31 | Analog data register_256 words           |
| W | N | DDDDD | 0 ~ 21503    | Communication data register_3,936 words  |
| W | Z | DDD   | 0 ~ 127      | Index register_128 words                 |
| W | T | DDDD  | 0 ~ 2047     | Timer current value register_256 words   |
| W | C | DDDD  | 0 ~ 2047     | Counter current value register_256 words |

## Wiring Diagram:

9P D-Sub to 6P Mini-DIN:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | XGB main unit RS232 6P<br>Mini-DIN |
|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 6 TXD                              |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RXD                              |
| 5 GND                              | 5 GND                              | 5 GND                                | 3 GND                              |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description                                       |
|---------|-------------|---|
| V1.50   | Mar/07/2011 | Added registers: P_Bit, M_Bit, L_Bit, K_Bit...etc |

## LS XGB FEnet (Ethernet)

Supported Series: LS XGB/XGT with XBL-EMTA

Website: <http://www.lqis.com/>

### HMI Setting:

| Parameters   | Recommended             | Options | Notes |
|--------------|-------------------------|---------|-------|
| PLC type     | LS XGB FEnet (Ethernet) |         |       |
| PLC I/F      | Ethernet                |         |       |
| Port no.     | 2004                    |         |       |
| PLC sta. no. | 0                       | 0~255   |       |

### PLC Setting:

|                    |               |
|--------------------|---------------|
| Communication mode | FEnet Potocol |
|--------------------|---------------|

### Device Address:


| Bit/Word | Device type | Format | Range          | Memo   |
|----------|-------------|--------|----------------|--|
| B        | P_Bit       | DDDDh  | 0 ~ 2047f      | I/O device Bit                                 |
| B        | M_Bit       | DDDDh  | 0 ~ 2047f      | Internal device Bit                            |
| B        | L_Bit       | DDDDDh | 0 ~ 11263f     | Communication device Bit                       |
| B        | K_Bit       | DDDDh  | 0 ~ 2559f      | Preservation device Bit                        |
| B        | F_Bit       | DDDDh  | 0 ~ 2047f      | Special device Bit( write available from 1025) |
| B        | S_Bit       | DDDh   | 0 ~ 127f       | Relay for step control Bit                     |
| B        | D_Bit       | DDDDDh | 0 ~ 32767f     | Data register_Bit expression (D0000.0)         |
| B        | U_Bit       | DH.DDh | 0.000 ~ 7f.31f | XGK-CPUE : hh(0~1f)                            |
| B        | T_Bit       | DDDD   | 0 ~ 2047       | Timer device Bit                               |
| B        | C_Bit       | DDDD   | 0 ~ 2047       | Counter device Bit                             |
| W        | P           | DDDD   | 0 ~ 2047       | I/O device_2,048 points                        |
| W        | M           | DDDD   | 0 ~ 2047       | Internal device_4,096 points                   |
| W        | L           | DDDDD  | 0 ~ 11263      | Communication device_20,480 points             |

|   |   |       |              |  |
|---|---|-------|--------------|--|
| W | K | DDDD  | 0 ~ 2559     | Preservation device_4,096 points         |
| W | F | DDDD  | 0 ~ 2047     | Special device_4,096 point               |
| W | S | DDDDD | 0 ~ 12799    | Relay for step control                   |
| W | D | DDDDD | 0 ~ 32767    | Data register_5120 words                 |
| W | U | DH.DD | 0.00 ~ 7f.31 | Analog data register_256 words           |
| W | N | DDDDD | 0 ~ 21503    | Communication data register_3,936 words  |
| W | Z | DDD   | 0 ~ 127      | Index register_128 words                 |
| W | T | DDDD  | 0 ~ 2047     | Timer current value register_256 words   |
| W | C | DDDD  | 0 ~ 2047     | Counter current value register_256 words |

## Wiring Diagram:




Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |

|   |  |   |
|---|--|---|
| 8 BD3-  | Brown  | 8 BD3-  |
|  |  |  |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description                                       |
|---------|-------------|---|
| V1.50   | Aug/16/2011 | Added registers: P_Bit, M_Bit, L_Bit, K_Bit...etc |



## LS XGK Cnet

Supported Series: LS XGT series communication module XGL-CH2A

Website: <http://www.lgis.com/>

### HMI Setting:

| Parameters   | Recommended | Options              | Notes |
|--------------|-------------|----------------------|-------|
| PLC type     | LS XGK Cnet |                      |       |
| PLC I/F      | RS232       | RS232/RS485<br>2W/4W |       |
| Baud rate    | 115200      | 9600~115200          |       |
| Data bits    | 8           | 7, 8                 |       |
| Parity       | None        | Even, Odd, None      |       |
| Stop bits    | 1           | 1                    |       |
| PLC sta. no. | 0           | 1                    |       |

### Device Address:


| Bit/Word | Device type | Format | Range          | Memo   |
|----------|-------------|--------|----------------|--|
| B        | P_Bit       | DDDDh  | 0 ~ 2047f      | I/O device Bit                                 |
| B        | M_Bit       | DDDDh  | 0 ~ 2047f      | Internal device Bit                            |
| B        | L_Bit       | DDDDDh | 0 ~ 11263f     | Communication device Bit                       |
| B        | K_Bit       | DDDDh  | 0 ~ 2559f      | Preservation device Bit                        |
| B        | F_Bit       | DDDDh  | 0 ~ 2047f      | Special device Bit( write available from 1025) |
| B        | S_Bit       | DDDDD  | 0 ~ 12799      | Relay for step control Bit                     |
| B        | D_Bit       | DDDDDh | 0 ~ 32767f     | Data register_Bit expression (D0000.0)         |
| B        | U_Bit       | DH.DDh | 0.000 ~ 3f.31f | XGK-CPUE : hh(0~1f)                            |
| B        | T_Bit       | DDDD   | 0 ~ 2047       | Timer device Bit                               |
| B        | C_Bit       | DDDD   | 0 ~ 2047       | Counter device Bit                             |
| W        | P           | DDDD   | 0 ~ 2047       | I/O device                                     |
| W        | M           | DDDD   | 0 ~ 2047       | Internal device                                |
| W        | L           | DDDDD  | 0 ~ 11263      | Communication device                           |
| W        | K           | DDDD   | 0 ~ 2559       | Preservation device                            |

| Bit/Word | Device type | Format | Range        | Memo                                       |
|----------|-------------|--------|--------------|--|
| W        | F           | DDDD   | 0 ~ 2047     | Special device( write available from 1025) |
| W        | S           | DDDDD  | 0 ~ 12799    | Relay for step control                     |
| W        | D           | DDDDD  | 0 ~ 32767    | Data register                              |
| W        | U           | DH.DD  | 0.00 ~ 3f.31 | Analog data register XGK-CPUE : hh(0~1f)   |
| W        | N           | DDDDD  | 0 ~ 21503    | Communication data register                |
| W        | Z           | DDD    | 0 ~ 127      | Index register_128 words                   |
| W        | T           | DDDD   | 0 ~ 2047     | Timer current value register               |
| W        | C           | DDDD   | 0 ~ 2047     | Counter current value register             |
| W        | R           | DDDDD  | 0 ~ 32767    |  |
| W        | ZR          | DDDDD  | 0 ~ 32767    |  |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | XGL-CH2A CH1 RS232 9P<br>D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|--------------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                          |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RXD                          |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                          |



9P D-Sub to Terminals:

| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | XGL-CH2A CH2 5P Terminals |
|---|--|--|---------------------------|
| 1 RX-                                   |  |  | TXD-                      |
| 2 RX+                                   |  |  | TXD+                      |
| 3 TX-                                   |  |  | RXD-                      |
| 4 TX+                                   |  |  | RXD+                      |
| 5 GND                                   |  |  | GND                       |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date         | Description                                       |
|---------|--------------|---|
| V1.30   | Feb /25/2011 | Added registers: P_Bit, M_Bit, L_Bit, K_Bit...etc |

## LS XGK FEnet (Ethernet)

Supported Series: LS XGT series XGL-EFMT Ethernet module.

Website: <http://www.lgis.com/>

### HMI Setting:

| Parameters   | Recommended             | Options | Notes |
|--------------|-------------------------|---------|-------|
| PLC type     | LS XGK FEnet (Ethernet) |         |       |
| PLC I/F      | Ethernet                |         |       |
| Port no.     | 2004                    |         |       |
| PLC sta. no. | 0                       |         |       |

### Device Address:


| Bit/Word | Device type | Format | Range          | Memo   |
|----------|-------------|--------|----------------|--|
| B        | P_Bit       | DDDDh  | 0 ~ 2047f      | I/O device Bit                                 |
| B        | M_Bit       | DDDDh  | 0 ~ 2047f      | Internal device Bit                            |
| B        | L_Bit       | DDDDDh | 0 ~ 11263f     | Communication device Bit                       |
| B        | K_Bit       | DDDDh  | 0 ~ 2559f      | Preservation device Bit                        |
| B        | F_Bit       | DDDDh  | 0 ~ 2047f      | Special device Bit( write available from 1025) |
| B        | S_Bit       | DDDDD  | 0 ~ 12799      | Relay for step control Bit                     |
| B        | D_Bit       | DDDDDh | 0 ~ 32767f     | Data register_Bit expression (D0000.0)         |
| B        | U_Bit       | DH.DDh | 0.000 ~ 3f.31f | XGK-CPUE : hh(0~1f)                            |
| B        | T_Bit       | DDDD   | 0 ~ 2047       | Timer device Bit                               |
| B        | C_Bit       | DDDD   | 0 ~ 2047       | Counter device Bit                             |
| W        | P           | DDDD   | 0 ~ 2047       | I/O device                                     |
| W        | M           | DDDD   | 0 ~ 2047       | Internal device                                |
| W        | L           | DDDDD  | 0 ~ 11263      | Communication device                           |
| W        | K           | DDDD   | 0 ~ 2559       | Preservation device                            |
| W        | F           | DDDD   | 0 ~ 2047       | Special device( write available from 1025)     |
| W        | S           | DDDDD  | 0 ~ 12799      | Relay for step control                         |
| W        | D           | DDDDD  | 0 ~ 32767      | Data register                                  |

| Bit/Word | Device type | Format | Range        | Memo  |
|----------|-------------|--------|--------------|---|
| W        | U           | DH.DD  | 0.00 ~ 3f.31 | Analog data register XGK-CPUE :<br>hh(0~1f) |
| W        | N           | DDDDD  | 0 ~ 21503    | Communication data register                 |
| W        | Z           | DDD    | 0 ~ 127      | Index register_128 words                    |
| W        | T           | DDDD   | 0 ~ 2047     | Timer current value register                |
| W        | C           | DDDD   | 0 ~ 2047     | Counter current value register              |
| W        | R           | DDDDD  | 0 ~ 32767    |   |
| W        | ZR          | DDDDD  | 0 ~ 32767    |   |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description                                       |
|---------|-------------|---|
| V1.30   | Mar/10/2011 | Added registers: P_Bit, M_Bit, L_Bit, K_Bit...etc |

## LS XGT/XGK CPU DIRECT

Supported Series: LS XGT/XGK CPU RS232 port.

Website: <http://www.lgjs.com/>

### HMI Setting:

| Parameters   | Recommended           | Options         | Notes |
|--------------|-----------------------|-----------------|-------|
| PLC type     | LS XGT/XGK CPU DIRECT |                 |       |
| PLC I/F      | RS232                 | RS232/RS485     |       |
| Baud rate    | 115200                | 9600~115200     |       |
| Data bits    | 8                     | 7, 8            |       |
| Parity       | None                  | Even, Odd, None |       |
| Stop bits    | 1                     | 1               |       |
| PLC sta. no. | 0                     |                 |       |

### Device Address:


| Bit/Word | Device type | Format | Range          | Memo   |
|----------|-------------|--------|----------------|--|
| B        | P_Bit       | DDDDh  | 0 ~ 2047f      | I/O device Bit                                 |
| B        | M_Bit       | DDDDh  | 0 ~ 2047f      | Internal device Bit                            |
| B        | L_Bit       | DDDDDh | 0 ~ 11263f     | Communication device Bit                       |
| B        | K_Bit       | DDDDh  | 0 ~ 2559f      | Preservation device Bit                        |
| B        | F_Bit       | DDDDh  | 0 ~ 2047f      | Special device Bit( write available from 1025) |
| B        | S_Bit       | DDDDD  | 0 ~ 12799      | Relay for step control Bit                     |
| B        | D_Bit       | DDDDDh | 0 ~ 32767f     | Data register_Bit expression (D0000.0)         |
| B        | U_Bit       | DH.DDh | 0.000 ~ 3f.31f | XGK-CPUE : hh(0~1f)                            |
| B        | T_Bit       | DDDD   | 0 ~ 2047       | Timer device Bit                               |
| B        | C_Bit       | DDDD   | 0 ~ 2047       | Counter device Bit                             |
| W        | P           | DDDD   | 0 ~ 2047       | I/O device                                     |
| W        | M           | DDDD   | 0 ~ 2047       | Internal device                                |
| W        | L           | DDDDD  | 0 ~ 11263      | Communication device                           |
| W        | K           | DDDD   | 0 ~ 2559       | Preservation device                            |

|   |    |       |              |  |
|---|----|-------|--------------|--|
| W | F  | DDDD  | 0 ~ 2047     | Special device( write available from 1025) |
| W | S  | DDDDD | 0 ~ 12799    | Relay for step control                     |
| W | D  | DDDDD | 0 ~ 32767    | Data register                              |
| W | U  | DH.DD | 0.00 ~ 3f.31 | Analog data register XGK-CPUE : hh(0~1f)   |
| W | N  | DDDDD | 0 ~ 21503    | Communication data register                |
| W | Z  | DDD   | 0 ~ 127      | Index register_128 words                   |
| W | T  | DDDD  | 0 ~ 2047     | Timer current value register               |
| W | C  | DDDD  | 0 ~ 2047     | Counter current value register             |
| W | R  | DDDDD | 0 ~ 32767    |  |
| W | ZR | DDDDD | 0 ~ 32767    |  |
| W | TS | DDDD  | 0 ~ 2047     | Setup value                                |
| W | CS | DDDD  | 0 ~ 2047     | Setup value                                |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|                                    |                                    |                                      |                                 |
|------------------------------------|------------------------------------|--------------------------------------|---------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | XGT main unit RS232 9P<br>D-Sub |
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                           |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RXD                           |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                           |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description                                       |
|---------|-------------|---|
| V1.40   | Mar/10/2011 | Added registers: P_Bit, M_Bit, L_Bit, K_Bit...etc |



## Master (Master-Slave Protocol)

To connect HMI with MT500, MT500 has to be set as [Slave].

For more information, please refer to User's Manual CH28.

### HMI Setting:

| Parameters   | Recommended                    | Options                                | Notes |
|--------------|--------------------------------|--|-------|
| PLC type     | Master (Master-Slave Protocol) |  |       |
| PLC I/F      | RS232                          |  |       |
| Baud rate    | 115200                         | 38400, 115200                          |       |
| Data bits    | 8                              |  |       |
| Parity       | Even                           |  |       |
| Stop bits    | 1                              |  |       |
| HMI sta. no. | 0                              |  |       |
| PLC sta. no. | 0                              |  |       |
| Parameter 1  | MT500 PLC ID                   | Use PLCAddressView.exe to find PLC ID. |       |



### PLC Setting:

|                    |                               |
|--------------------|-------------------------------|
| Communication mode | MT500 Multiple HMI set Slave. |
|--------------------|-------------------------------|

**System Parameter Setting**

PLC: **General** | Indicator | Security | Editor | Hardware | Misc

PLC type: MITSUBISHI FX0n/FX2

HMI model: MT510T/MT508T (640 x 480)

PLC I/F port: RS-485 4W      Baud rate: 9600

Data bits: 7 Bits      Parity: Even

Stop bits: 1 Bit

Parameter 1: 0      Turn around delay: 0

Parameter 3: 0      Parameter 4: 0

Parameter 5: 0      Parameter 6: 0

HMI station no.: 0      PLC station no.: 0

Multiple HMI: Slave      HMI-HMI link speed: 115200

Connect I/F: Serial

Local IP address: 0 . 0 . 0 . 0

Server IP address: 0 . 0 . 0 . 0

Subnetwork mask: 0 . 0 . 0 . 0

Default route IP address: 0 . 0 . 0 . 0

PLC time out constant (sec): 3.0      PLC block pack: 0

OK      Cancel

**PLC Address View**

MITSUBISHI FX0n/FX2

| PLC Address         | Type ID | Bit/Word   | Address Type | Addressing Format | Max   | Min  |
|---------------------|---------|------------|--------------|-------------------|-------|------|
| MITSUBISHI FX0n/FX2 |         |            |              |                   |       |      |
| PLC ID=10           |         |            |              |                   |       |      |
| 0                   |         | Bit(HMI)   | LB           | ddd               | 9999  | 0    |
| 1                   |         | Bit(PLC)   | X            | ooo               | 377   | 0    |
| 2                   |         | Bit(PLC)   | Y            | ooo               | 377   | 0    |
| 3                   |         | Bit(PLC)   | M            | ddd               | 9999  | 0    |
| 4                   |         | Bit(PLC)   | T            | ddd               | 255   | 0    |
| 5                   |         | Bit(PLC)   | C            | ddd               | 255   | 0    |
| 8                   |         | Word(HMI)  | LW           | ddd               | 9999  | 0    |
| 9                   |         | Word(PLC)  | TV           | ddd               | 255   | 0    |
| 10                  |         | Word(PLC)  | CV           | ddd               | 199   | 0    |
| 11                  |         | Word(PLC)  | D            | ddd               | 9999  | 0    |
| 12                  |         | Dword(PLC) | CV2          | ddd               | 255   | 200  |
| 13                  |         | Word(PLC)  | SD           | ddd               | 9999  | 0000 |
| 121                 |         | Word(HMI)  | RW           | ddd               | 32767 | 0    |
| 120                 |         | Bit(HMI)   | RBI          | dddh              | 2047  | 0    |
| 140                 |         | Bit(HMI)   | RB           | dddh              | 2047  | 0    |
| 141                 |         | Word(HMI)  | RW           | ddd               | 65535 | 0    |
| 160                 |         | Bit(HMI)   | Mx_RB        | dddh              | 4095  | 0    |
| 161                 |         | Bit(HMI)   | Mx_LB        | ddd               | 9999  | 0    |
| 100                 |         | Word(HMI)  | Mx_RW        | ddd               | 65535 | 0    |

Exit

## Device Address:

| Bit/Word | MT500 | MT8000 | Range                       | Memo |
|----------|-------|--------|-----------------------------|------|
| B        | Ms_RB | RW_Bit | ddd: 0 ~ 4095<br>(h): 0 ~ f |      |
| B        | Ms_LB | LB     | dddd:0 ~ 9999               |      |
| W        | Ms_RW | RW     | ddd:0 ~ 65535               |      |
| W        | Ms_LW | LW     | ddd:0 ~ 9999                |      |

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Dec/30/2008 | Driver released. |

## Memobus (Yaskawa MP Series Controllers)

Supported Series: YASKAWA MP2200, MP2300, MP2300S, MP9xx communication module.

Website: <http://www.yaskawa.com/>

### HMI Setting:

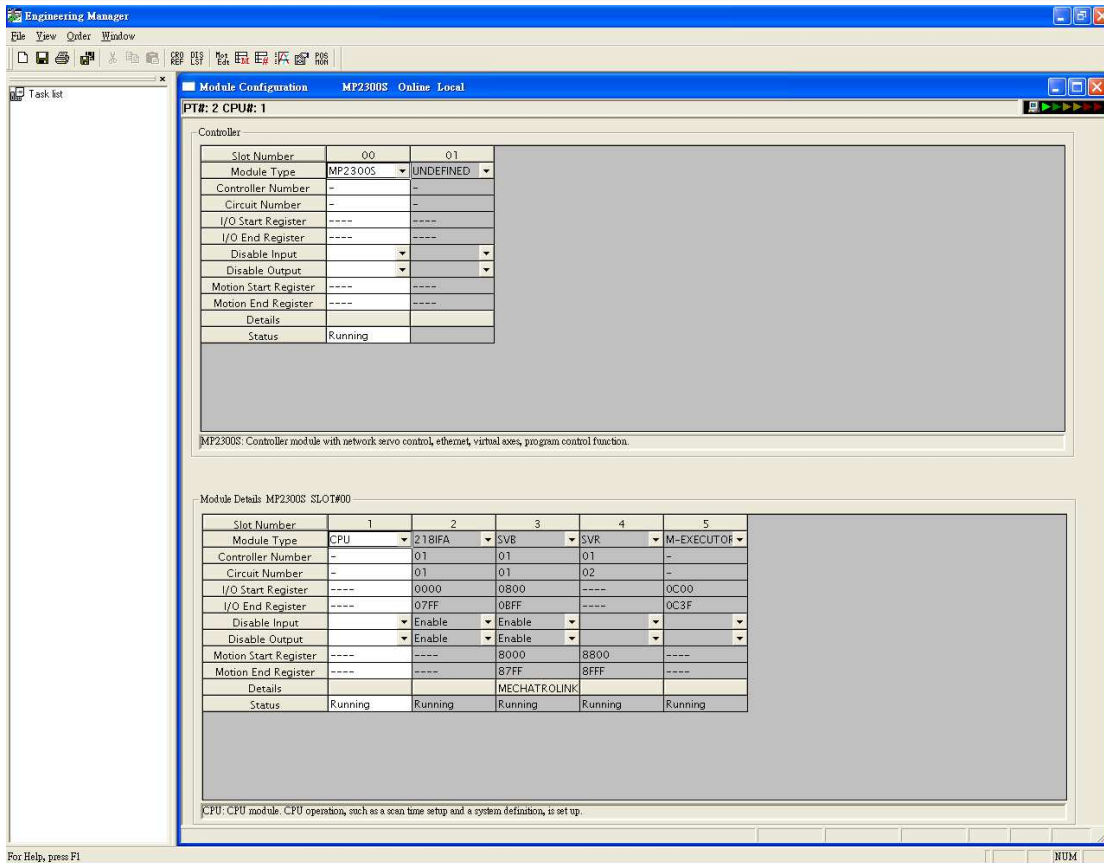
| Parameters   | Recommended                             | Options                     | Notes                            |
|--------------|---|-----------------------------|----------------------------------|
| PLC type     | Memobus (Yaskawa MP Series Controllers) |                             |                                  |
| PLC I/F      | RS485/Ethernet                          | RS232/RS485 2w/4w, Ethernet |                                  |
| Baud rate    | 19200                                   | 9600~57600                  |                                  |
| Data bits    | 8                                       |                             |                                  |
| Parity       | Even                                    |                             |                                  |
| Stop bits    | 1                                       |                             |                                  |
| Port no.     | 502                                     | default                     | Ethernet Module Only             |
| PLC sta. no. | 1                                       | 1-31                        | Must match the PLC port setting. |

### PLC Setting:

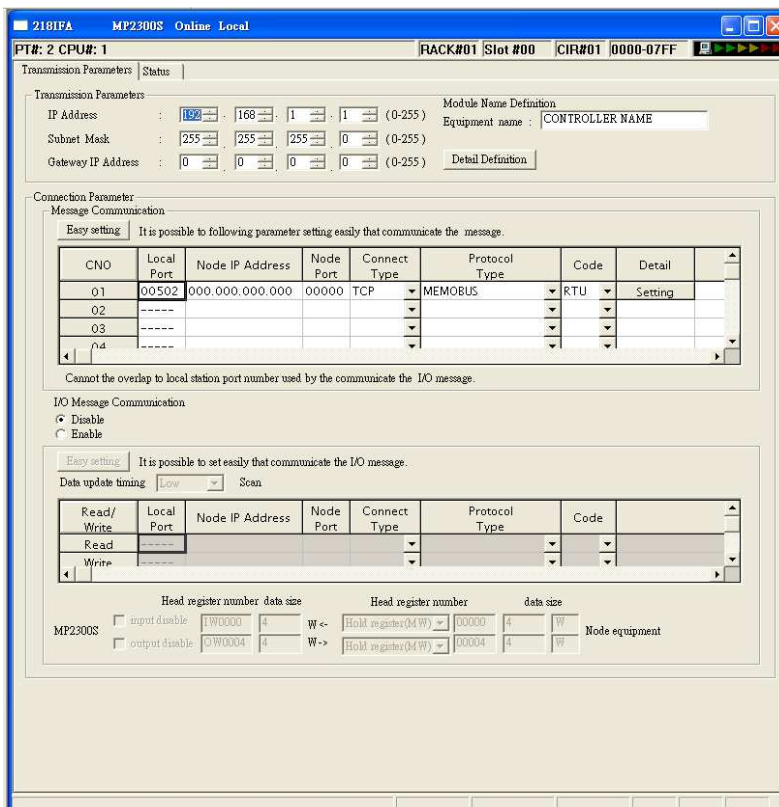
|                    |                     |
|--------------------|---------------------|
| Communication mode | MEMOBUS, Slave, RTU |
|--------------------|---------------------|

### PLC Ethernet Setting:

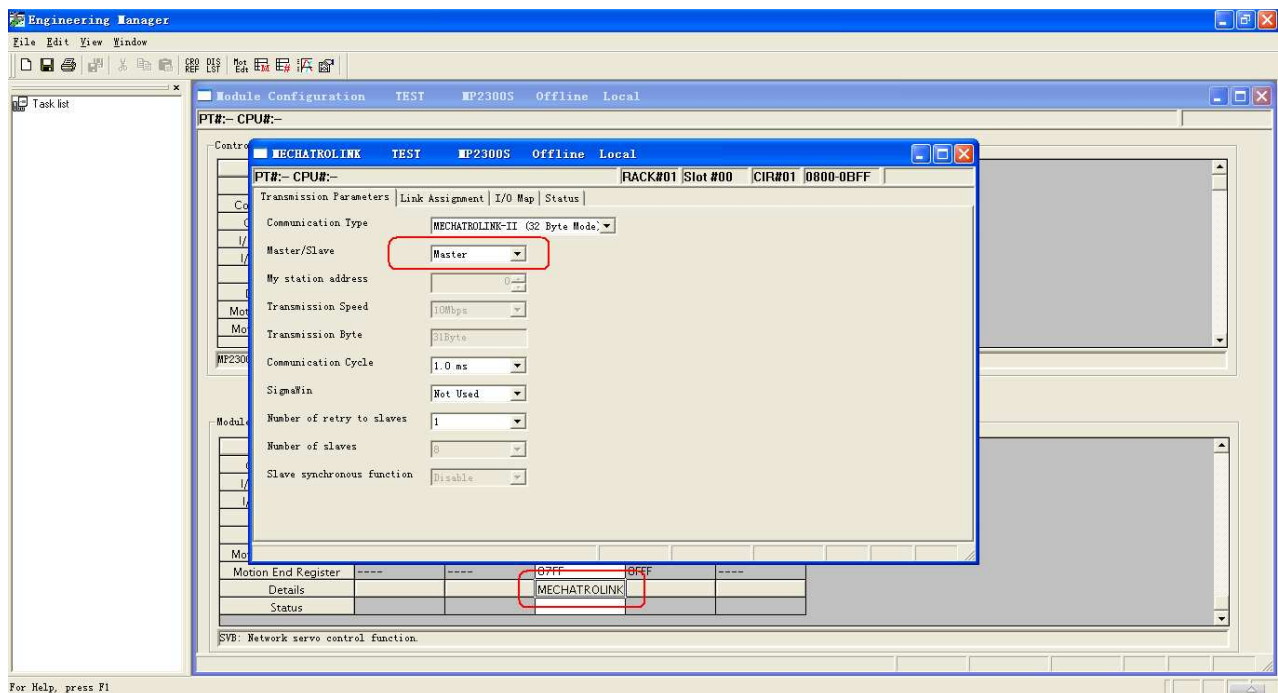
1. Use MPE720 program software, open Module Configuration, double click "218IFA".



- In Transmission Parameters input MP2300S IP address, Subnet Mask, Gateway IP. In Connection Parameter, CNO -1 input: Local Port=502, Node IP address=000.000.000.000, Node Port=00000, Connect Type=TCP, Protocol Type=MEMOBUS, Code=RTU.



### 3. Click MECHATROLINK to set up MP2300S PLC as Master.



### 4. Close all dialogs and save to MP2300S.

## Note:

1. Only CNO 01 can auto communicate with one HMI. Other CNO need a ladder program created for communication.
2. DIP SW2-2 of MP2300S must be set to OFF position during normal communication, otherwise, IP address will be erased after reset power, and it will be unable to communicate with HMI when set to ON position.


## Device Address:

| Bit/Word | Device type | Format | Range          | Memo             |
|----------|-------------|--------|----------------|------------------|
| B        | MB_1        | DDDDh  | 0 ~ 9999f      | MB 0 ~ 9999      |
| B        | MB_2        | DDDDDh | 10000 ~ 65534f | MB 10000 ~ 65535 |
| B        | IB          | HHHHH  | 0 ~ a7ff0      | Read only        |
| B        | IW_Bit      | HHHHdd | 0~ a7ff15      |                  |
| W        | IW          | HHHH   | 0 ~ a7ff       | Read only        |
| DW       | IL          | HHHH   | 0 ~ a7ff       | Read only        |
| DW (F)   | IF          | HHHH   | 0 ~ a7ff       | Read only        |
| W        | MW          | DDDDD  | 0 ~ 65534      | Holding register |
| DW       | ML          | DDDDD  | 0 ~ 65533      | Double word      |
| DW (F)   | MF          | DDDDD  | 0 ~ 65533      | Floating point   |

\*: When connect via Ethernet interface the max range of IW, IL and IF would be restricted.

## Wiring Diagram:

9P D-Sub to 9P D-Sub: 217IF-01, 218IF-01

|  |                                    |                                      |                         |
|--|------------------------------------|--------------------------------------|-------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | 217IF-01 RS232 9P D-Sub |
| 2 RX   | 6 RX                               | 8 RX                                 | 2 TX                    |
| 3 TX   | 4 TX                               | 7 TX                                 | 3 RX                    |
| 5 GND  | 5 GND                              | 5 GND                                | 7 GND                   |
|  |                                    |                                      |                         |

217IF-01:


|   |   |  |                                 |
|---|---|--|---------------------------------|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | 217IF-01 RS485 14P<br>Connector |
| 1 RX-                                   | 6 Data-                                 |  | 2, 4 D-                         |
| 2 RX+                                   | 9 Data+                                 |  | 1, 3 D+                         |
| 5 GND                                   | 5 GND                                   |  | 14 GND                          |
|   |   |  |                                 |

217IF-01:

|   |  |  |                                 |
|---|--|--|---------------------------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | 217IF-01 RS422 14P<br>Connector |
| 1 RX-                                   |  |  | 2 TX-                           |
| 2 RX+                                   |  |  | 1 TX+                           |
| 3 TX-                                   |  |  | 4 RX-                           |
| 4 TX+                                   |  |  | 3 RX+                           |
| 5 GND                                   |  |  | 14 GND                          |
|   |  |  |                                 |


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.70   | Dec/20/2010 |             |



## Memory Map

Memory Map protocol is similar to IBM 3764R communication protocol. EasyBuilder reserves 512 words of data memory to use with this protocol. EasyBuilder must update the values in these words. EasyBuilder uses these words to display data and control parts status on screen. When touch actions are taken, data is sent to the others once, and then update the memory in it. The HMI should always update the data memory.

### HMI Setting:

| Parameters | Recommended | Options                | Notes         |
|------------|-------------|------------------------|---------------|
| PLC type   | Memory Map  |                        |               |
| PLC I/F    | RS232       | RS232, RS485<br>4W, 2W | RS232 default |
| Baud rate  | 115200      | 9600~115200            |               |
| Data bits  | 8           |                        |               |
| Parity     | Even        | Even, Odd, None        |               |
| Stop bits  | 1           |                        |               |

### Device Address:

| Bit/Word | Device type | Format | Range     | Memo |
|----------|-------------|--------|-----------|------|
| B        | MB          | DDDDh  | 0 ~ 9999f |      |
| W        | MW          | DDDD   | 0 ~ 9999  |      |

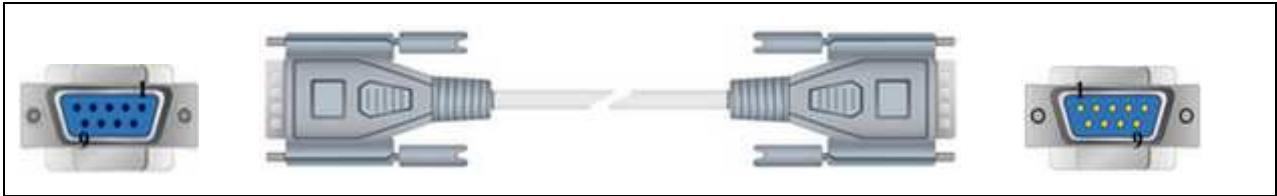
MB and MW share the same data storage.

MW 0 = MB 000000 ~ MB 0000f, MW 1 = MB 000100 ~ MB 0001f

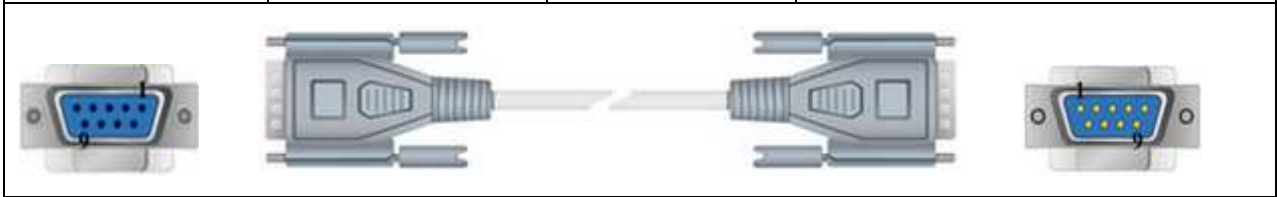
### Wiring Diagram:

9P D-Sub to 9P D-Sub:

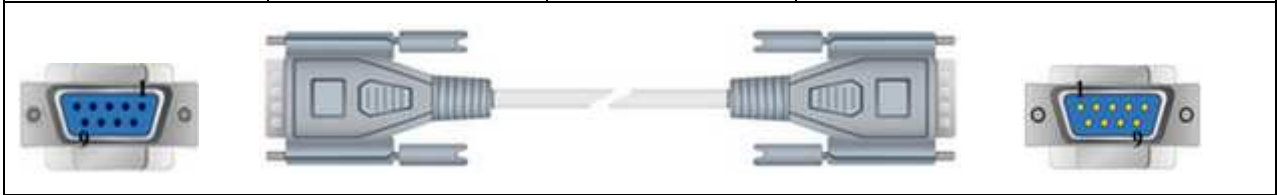
|                                    |  |  |                         |
|------------------------------------|--|--|-------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male |  |  | HMI COM1 RS232 9P D-Sub |
| 2 RX                               |  |  | 3 TX                    |
| 3 TX                               |  |  | 2 RX                    |
| 5 GND                              |  |  | 5 GND                   |



|   |  |  |                               |
|---|--|--|-------------------------------|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female |  |  | HMI COM1 RS485 2W 9P<br>D-Sub |
| 1 RX-                                   |  |  | 1 RX-                         |
| 2 RX+                                   |  |  | 2 RX+                         |
| 5 GND                                   |  |  | 5 GND                         |



|   |  |  |                               |
|---|--|--|-------------------------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | HMI COM1 RS485 4W 9P<br>D-Sub |
| 1 RX-                                   |  |  | 3 TX-                         |
| 2 RX+                                   |  |  | 4 TX+                         |
| 3 TX-                                   |  |  | 1 RX-                         |
| 4 TX+                                   |  |  | 2 RX+                         |
| 5 GND                                   |  |  | 5 GND                         |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Note:**

For Memory map information, please refer to User’s Manual “Chapter 31 Memory Map Communication”.

**Driver Version:**

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Mar/19/2009 | Driver released. |

# mitsubishi A1S

Supported Series: MITSUBISHI A1S

Website: <http://www.mitsubishi-automation.com/>

## HMI Setting:

| Parameters   | Recommended    | Options | Notes |
|--------------|----------------|---------|-------|
| PLC type     | MITSUBISHI A1S |         |       |
| PLC I/F      | RS232          |         |       |
| Baud rate    | 9600           |         |       |
| Data bits    | 8              |         |       |
| Parity       | Odd            |         |       |
| Stop bits    | 1              |         |       |
| PLC sta. no. | 0              |         |       |

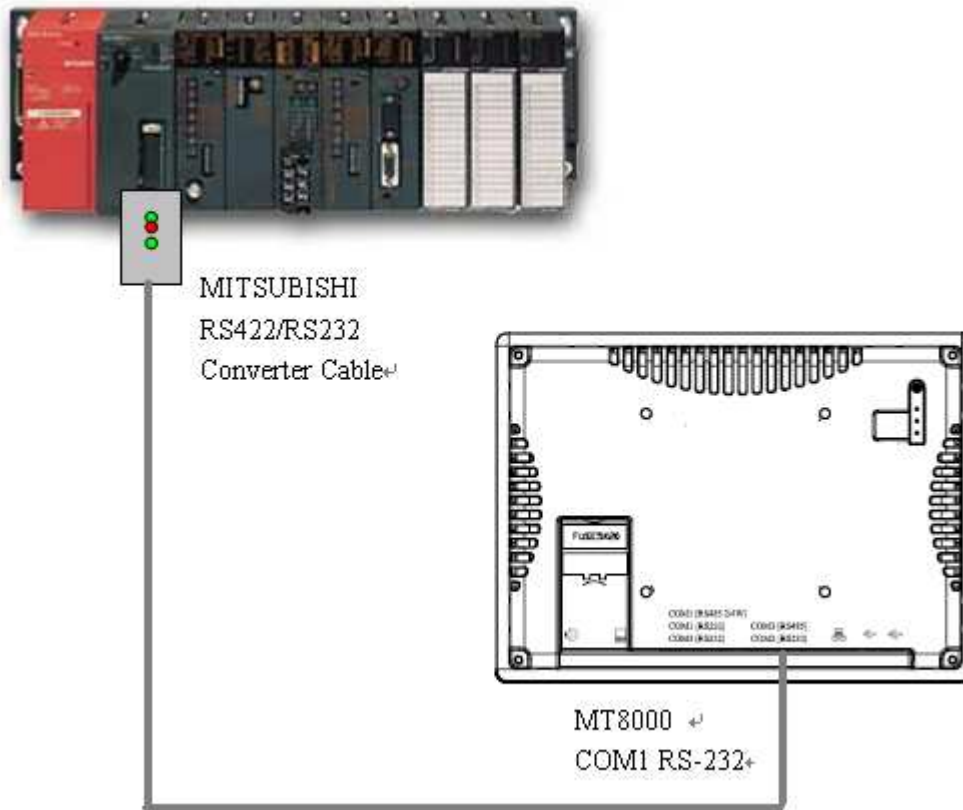
## Device Address:

| Bit/Word | Device type | Format | Range     | Memo            |
|----------|-------------|--------|-----------|-----------------|
| B        | X           | HHHH   | 0 ~ ffff  | Input Relay     |
| B        | Y           | HHHH   | 0 ~ ffff  | Output Relay    |
| B        | M           | DDDDD  | 0 ~ 65535 | Auxiliary Relay |
| B        | B           | HHHH   | 0 ~ ffff  |                 |
| B        | F           | DDDDD  | 0 ~ 65535 |                 |
| W        | TV          | DDDDD  | 0 ~ 65535 | Timer Memory    |
| W        | CV          | DDDDD  | 0 ~ 65535 | Counter Memory  |
| W        | D           | DDDDD  | 0 ~ 65535 | Data Register   |
| W        | W           | HHHH   | 0 ~ ffff  |                 |
| W        | R           | DDDDD  | 0 ~ 65535 |                 |

## Wiring Diagram:

Use the RS422 to RS232 PLC programming cable (shown as follows)

MITSUBISHI AnS CPU



| HMI COM1 RS232<br>9P D-Sub Male | PLC Programing<br>Cable | Mitsubishi RS422 25P D-Sub |
|---------------------------------|-------------------------|----------------------------|
| 3 TD                            | RD                      | 2 RX+                      |
| 2 RD                            | TD                      | 3 TX+                      |
| 5 GND                           | GND                     | 4 DSR+                     |
| 8 CTS                           | RTS                     | 7 GND                      |
| 7 RTS                           | CTS                     | 15 RX-                     |
|                                 |                         | 16 TX-                     |
|                                 |                         | 17 DSR-                    |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Sep/18/2009 | Driver released. |

# mitsubishi A2A

Supported Series: MITSUBISHI A2A, A2USH

Website: <http://www.mitsubishi-automation.com/>

## HMI Setting:

| Parameters   | Recommended    | Options | Notes |
|--------------|----------------|---------|-------|
| PLC type     | MITSUBISHI A2A |         |       |
| PLC I/F      | RS232          |         |       |
| Baud rate    | 9600           |         |       |
| Data bits    | 8              |         |       |
| Parity       | Odd            |         |       |
| Stop bits    | 1              |         |       |
| PLC sta. no. | 0              |         |       |

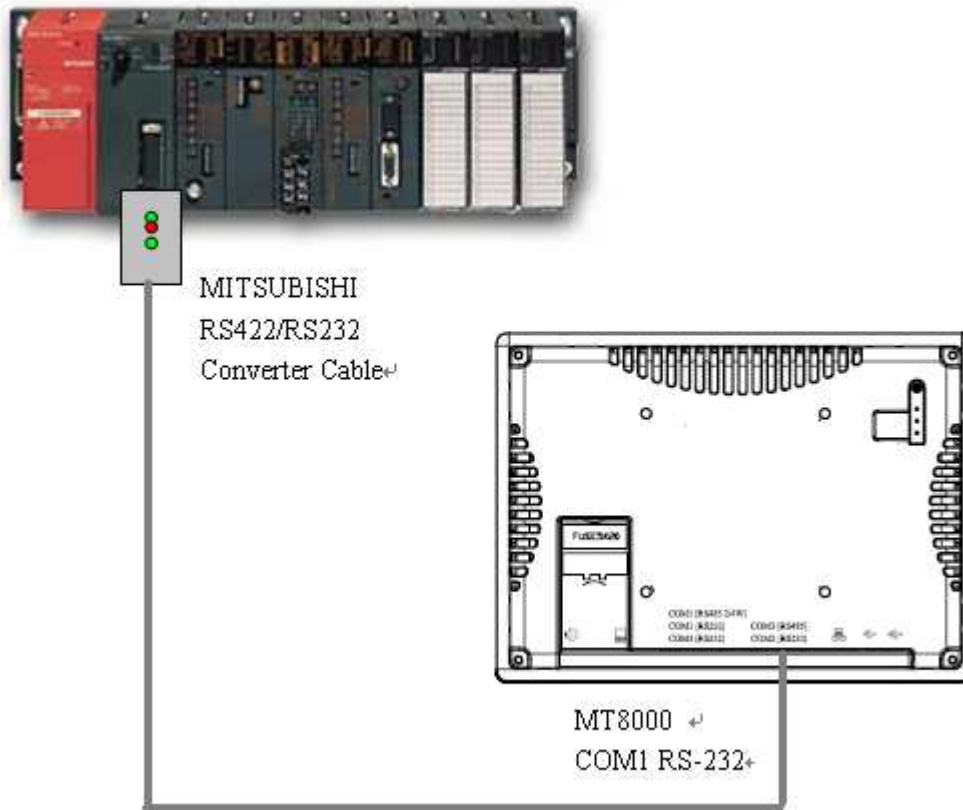
## Device Address:

| Bit/Word | Device type | Format | Range     | Memo            |
|----------|-------------|--------|-----------|-----------------|
| B        | X           | HHHH   | 0 ~ 270f  | Input Relay     |
| B        | Y           | HHHH   | 0 ~ 270f  | Output Relay    |
| B        | M           | DDDD   | 0 ~ 9999  | Auxiliary Relay |
| B        | B           | HHHH   | 0 ~ ffff  |                 |
| B        | F           | DDDDD  | 0 ~ 65535 |                 |
| W        | TV          | DDD    | 0 ~ 255   | Timer Memory    |
| W        | CV          | DDD    | 0 ~ 255   | Counter Memory  |
| W        | D           | DDDD   | 0 ~ 9999  | Data Register   |
| W        | W           | HHHH   | 0 ~ ffff  |                 |
| W        | R           | DDDDD  | 0 ~ 65535 |                 |

## Wiring Diagram:

Use the RS422 to RS232 PLC programming cable (shown as follows)

MITSUBISHI AnS CPU



| HMI COM1 RS232<br>9P D-Sub Male | PLC Programing<br>Cable | Mitsubishi RS422 25P D-Sub |
|---------------------------------|-------------------------|----------------------------|
| 3 TD                            | RD                      | 2 RX+                      |
| 2 RD                            | TD                      | 3 TX+                      |
| 5 GND                           | GND                     | 4 DSR+                     |
| 8 CTS                           | RTS                     | 7 GND                      |
| 7 RTS                           | CTS                     | 15 RX-                     |
|                                 |                         | 16 TX-                     |
|                                 |                         | 17 DSR-                    |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Aug/12/2009 | Driver released. |



# MITSUBISHI A2US

Supported Series: MITSUBISHI A2US

Website: <http://www.mitsubishi-automation.com/>

## HMI Setting:

| Parameters   | Recommended     | Options | Notes |
|--------------|-----------------|---------|-------|
| PLC type     | MITSUBISHI A2US |         |       |
| PLC I/F      | RS232           |         |       |
| Baud rate    | 9600            |         |       |
| Data bits    | 8               |         |       |
| Parity       | Odd             |         |       |
| Stop bits    | 1               |         |       |
| PLC sta. no. | 0               |         |       |

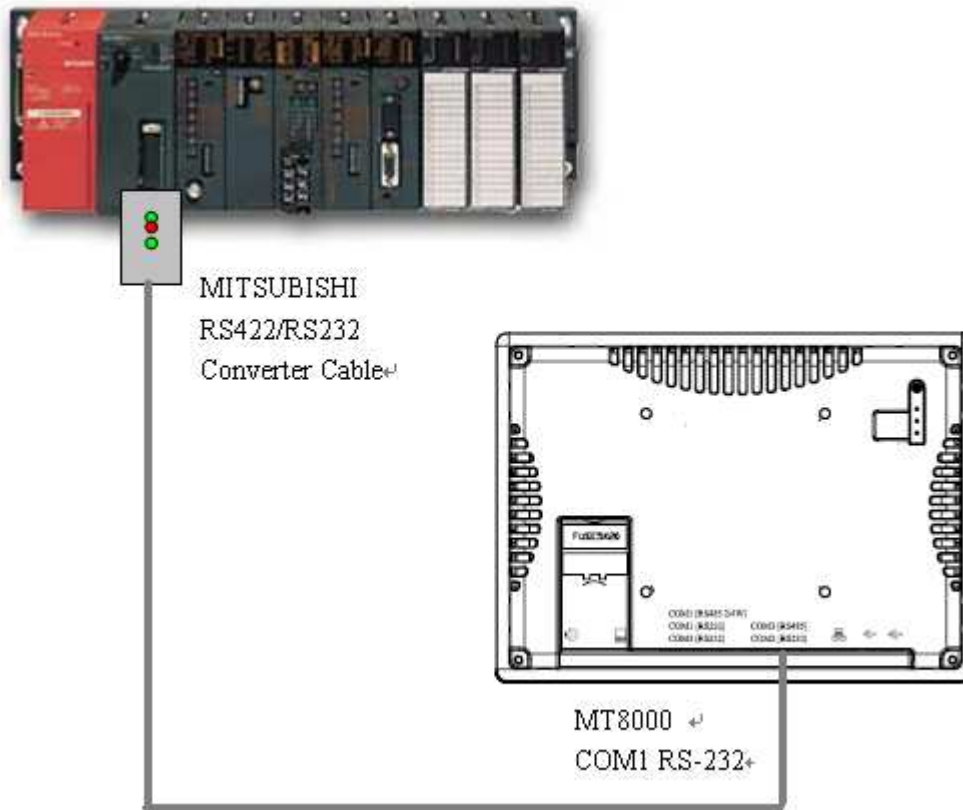
## Device Address:

| Bit/Word | Device type | Format | Range    | Memo            |
|----------|-------------|--------|----------|-----------------|
| B        | X           | HHHH   | 0 ~ 270f | Input Relay     |
| B        | Y           | HHHH   | 0 ~ 270f | Output Relay    |
| B        | M           | DDDD   | 0 ~ 9999 | Auxiliary Relay |
| W        | TV          | DDD    | 0 ~ 255  | Timer Memory    |
| W        | CV          | DDD    | 0 ~ 255  | Counter Memory  |
| W        | D           | DDDD   | 0 ~ 9999 | Data Register   |

## Wiring Diagram:

Use the RS422 to RS232 PLC programming cable (shown as follows)

MITSUBISHI AnS CPU



| HMI COM1 RS232<br>9P D-Sub Male | PLC Programing<br>Cable | Mitsubishi RS422 25P D-Sub |
|---------------------------------|-------------------------|----------------------------|
| 3 TD                            | RD                      | 2 RX+                      |
| 2 RD                            | TD                      | 3 TX+                      |
| 5 GND                           | GND                     | 4 DSR+                     |
| 8 CTS                           | RTS                     | 7 GND                      |
| 7 RTS                           | CTS                     | 15 RX-                     |
|                                 |                         | 16 TX-                     |
|                                 |                         | 17 DSR-                    |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Mar/20/2009 | Driver released. |

# MITSUBISHI A3N/A1SH

Supported Series: MITSUBISHI A3N/A3A/A1SH/A2SH

Website: <http://www.mitsubishi-automation.com/>

## HMI Setting:

| Parameters   | Recommended         | Options | Notes |
|--------------|---------------------|---------|-------|
| PLC type     | MITSUBISHI A3N/A1SH |         |       |
| PLC I/F      | RS232               |         |       |
| Baud rate    | 9600                |         |       |
| Data bits    | 8                   |         |       |
| Parity       | Odd                 |         |       |
| Stop bits    | 1                   |         |       |
| PLC sta. no. | 0                   |         |       |

Note: This driver is not available for On-line Simulation.

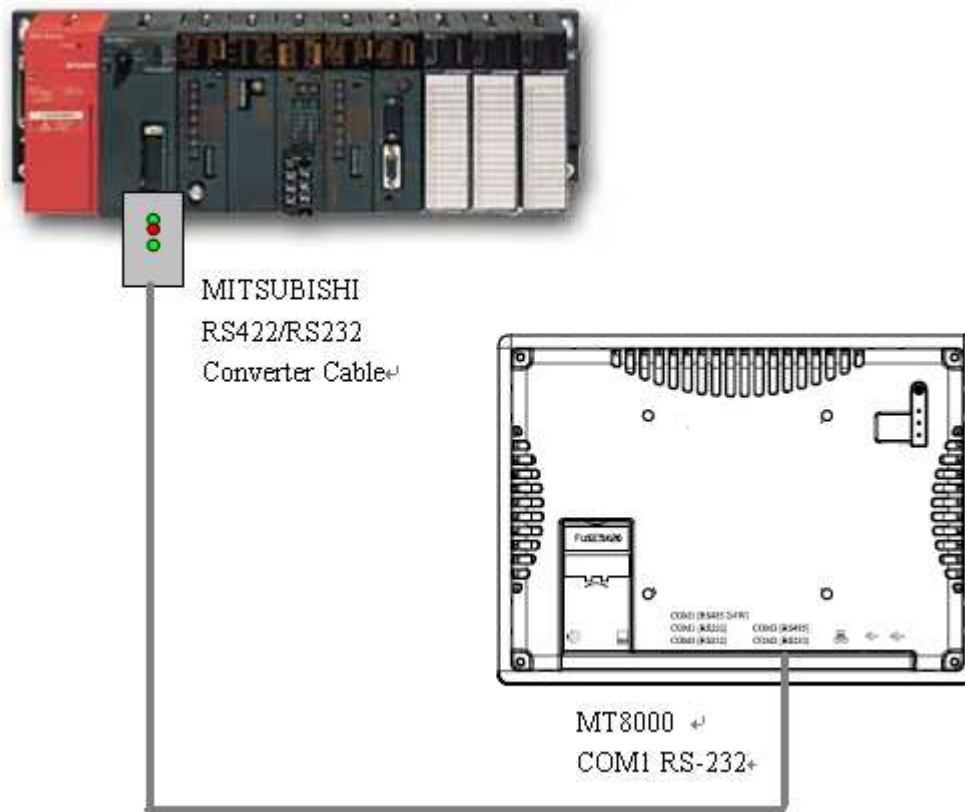
## Device Address:

| Bit/Word | Device type | Format | Range     | Memo            |
|----------|-------------|--------|-----------|-----------------|
| B        | X           | HHHH   | 0 ~ ffff  | Input Relay     |
| B        | Y           | HHHH   | 0 ~ ffff  | Output Relay    |
| B        | M           | DDDDD  | 0 ~ 65535 | Auxiliary Relay |
| B        | B           | HHHH   | 0 ~ ffff  |                 |
| B        | F           | DDDDD  | 0 ~ 65535 |                 |
| W        | TV          | DDDDD  | 0 ~ 65535 | Timer Memory    |
| W        | CV          | DDDDD  | 0 ~ 65535 | Counter Memory  |
| W        | D           | DDDDD  | 0 ~ 65535 | Data Register   |
| W        | W           | HHHH   | 0 ~ ffff  |                 |
| W        | R           | DDDDD  | 0 ~ 65535 |                 |

## Wiring Diagram:

Use the RS422 to RS232 PLC programming cable (shown as follows)

MITSUBISHI AnS CPU



| HMI COM1 RS232<br>9P D-Sub Male | PLC Programing<br>Cable | Mitsubishi RS422 25P D-Sub |
|---------------------------------|-------------------------|----------------------------|
| 3 TD                            | RD                      | 2 RX+                      |
| 2 RD                            | TD                      | 3 TX+                      |
| 5 GND                           | GND                     | 4 DSR+                     |
| 8 CTS                           | RTS                     | 7 GND                      |
| 7 RTS                           | CTS                     | 15 RX-                     |
|                                 |                         | 16 TX-                     |
|                                 |                         | 17 DSR-                    |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Oct/20/2009 | Driver released. |

# mitsubishi AJ71

Supported Series: Mitsubishi A series PLC with AJ71C24 communication module using the Computer Link protocol.

Website: <http://www.mitsubishi-automation.com>

## HMI Setting:

| Parameters   | Recommended     | Options  | Notes |
|--------------|-----------------|--|-------|
| PLC type     | MITSUBISHI AJ71 | MITSUBISHI AJ71 (AnA/AnU CPU),<br>MITSUBISHI AJ71 (Format 4) |       |
| PLC I/F      | RS485 4W        | RS485 4W, RS232  |       |
| Baud rate    | 19200           | 9600, 19200  |       |
| Data bits    | 8               | 8  |       |
| Parity       | Even            | Even, Odd, None  |       |
| Stop bits    | 1               | 1  |       |
| PLC sta. no. | 0               |  |       |

## PLC Setting:

|                     |   |
|---------------------|---|
| Communication mode  | Computer Link protocol 9600, Even, 8, 1 (default) |
| Mode setting switch | Format 1  |
| Parity check        | Enable  |
| Sum check           | Enable  |

## Device Address:

| Bit/Word | Device type | Format | Range     | Memo            |
|----------|-------------|--------|-----------|-----------------|
| B        | X           | HHHH   | 0 ~ ffff  | Input Bits      |
| B        | Y           | HHHH   | 0 ~ ffff  | Output Bits     |
| B        | M           | DDDDD  | 0 ~ 65535 | Internal Relays |
| B        | T           | DDDDD  | 0 ~ 65535 |                 |
| B        | C           | DDDDD  | 0 ~ 65535 |                 |
| B        | B           | HHHH   | 0 ~ ffff  |                 |

|   |    |       |           |                      |
|---|----|-------|-----------|----------------------|
| B | F  | DDDDD | 0 ~ 65535 |                      |
| W | TV | DDDDD | 0 ~ 65535 | Timer Preset Value   |
| W | CV | DDDDD | 0 ~ 65535 | Counter Preset Value |
| W | D  | DDDDD | 0 ~ 65535 | Data Registers       |
| W | W  | HHHH  | 0 ~ ffff  |                      |
| W | R  | DDDDD | 0 ~ 65535 |                      |

## Wiring Diagram:

|   |  |  |               |
|---|--|--|---------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | AJ71C24 RS422 |
| 1 RX-                                   |  |  | SDB           |
| 2 RX+                                   |  |  | SDA           |
| 3 TX-                                   |  |  | RDB           |
| 4 TX+                                   |  |  | RDA           |
| 5 GND                                   |  |  | GND           |
|   |  |  |               |

|                                    |                                    |                                      |                                 |
|------------------------------------|------------------------------------|--------------------------------------|---------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | A1SJ71UC24-R2 RS232 9P<br>D-Sub |
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                           |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RXD                           |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                           |
|                                    |                                    |                                      | 1 DCD                           |
|                                    |                                    |                                      | 4 DTR                           |
|                                    |                                    |                                      | 6 DSR                           |
|                                    |                                    |                                      | 7 RTS                           |
|                                    |                                    |                                      | 8 CTS                           |
|                                    |                                    |                                      | circuit                         |
|                                    |                                    |                                      | circuit                         |
|                                    |                                    |                                      |                                 |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.



**Driver Version:**

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.50   | Mar/11/2010 |             |

# MITSUBISHI FX0n/FX2

Supported Series: Mitsubishi FX0s/FX0n/FX1s/FX2 PLC

Website: <http://www.mitsubishi-automation.com>

## HMI Setting:


| Parameters   | Recommended         | Options                           | Notes                                       |
|--------------|---------------------|-----------------------------------|---|
| PLC type     | MITSUBISHI FX0n/FX2 |                                   |   |
| PLC I/F      | RS485 4W            | RS232/RS485                       |   |
| Baud rate    | 9600                | 9600/19200/38400/<br>57600/115200 |   |
| Data bits    | 7                   | 7,8                               |   |
| Parity       | Even                | Even, Odd, None                   |   |
| Stop bits    | 1                   | 1,2                               |   |
| PLC sta. no. | 0                   | 0-255                             | Must be set identically to the PLC setting. |

## Device Address:


| Bit/Word | Device type | Format | Range       | Memo                   |
|----------|-------------|--------|-------------|------------------------|
| B        | X           | OOO    | 0 ~ 377     | Input Relay            |
| B        | Y           | OOO    | 0 ~ 377     | Output Relay           |
| B        | M           | DDDD   | 0 ~ 9999    | Auxiliary Relay        |
| B        | T           | DDD    | 0 ~ 255     | Timer Relay            |
| B        | C           | DDD    | 0 ~ 255     | Counter Relay          |
| B        | SM          | DDDD   | 8000 ~ 9999 | Special Aux. Relays    |
| B        | D_Bit       | DDDDdd | 0 ~ 999915  | Data Register Bit (D)  |
| B        | S           | DDDD   | 0 ~ 4095    | States                 |
| W        | TV          | DDD    | 0 ~ 255     | Timer Memory           |
| W        | CV          | DDD    | 0 ~ 199     | Counter Memory         |
| W        | D           | DDDD   | 0 ~ 9999    | Data Register          |
| DW       | CV2         | DDD    | 200 ~ 255   | Counter Memory(D Word) |
| W        | SD          | DDDD   | 8000 ~ 9999 | Special Data Register  |

## Wiring Diagram:

### 9P D-Sub to 8P MiniDIN:

|  |  |  |  |
|--|--|--|--|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | Mitsubishi PLC CPU RS422<br>Port 8P Mini-DIN |
| 1 RX-  |  |  | 4 TX-  |
| 2 RX+  |  |  | 7 TX+  |
| 3 TX-  |  |  | 1 RX-  |
| 4 TX+  |  |  | 2 RX+  |
| 5 GND  |  |  | 3 GND  |
|  |  |  |  |

### 9P D-Sub to 25P D-Sub:

|  |  |         |  |
|--|--|---------|--|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |         | Mitsubishi PLC CPU RS422<br>Port 25P D-Sub |
| 1 RX-  |  |         | 16 TXD-                                    |
| 2 RX+  |  |         | 3 TXD+                                     |
| 3 TX-  |  |         | 15 RXD-                                    |
| 4 TX+  |  |         | 2 RXD+                                     |
| 5 GND  |  |         | 7 GND                                      |
|  |  | 4 DSR+  | circuit                                    |
|  |  | 8 GND   |  |
|  |  | 13 +5V  | circuit                                    |
|  |  | 17 DSR- |  |
|  |  |         |  |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date         | Description                   |
|---------|--------------|-------------------------------|
| V1.10   | Sep/ 01/2009 | Added registers: S, SM, D_bit |

## mitsubishi FX232/485BD

Supported Series: MITSUBISHI FX0n/FX2/FX2n COM for Communication Module BD  
 FX2N-485-BD, FX2N-232-BD, FX1N-485-BD and FX1N-232-BD.

Website: <http://www.mitsubishi-automation.com>

### HMI Setting:

| Parameters   | Recommended            | Options              | Notes                               |
|--------------|------------------------|----------------------|-------------------------------------|
| PLC type     | mitsubishi FX232/485BD |                      |                                     |
| PLC I/F      | RS232/RS485            | RS232/RS485<br>2w/4w | in accordance with the BD<br>module |
| Baud rate    | 19200                  | 9600/19200           |                                     |
| Data bits    | 7                      | 7,8                  |                                     |
| Parity       | Even                   | Even, Odd, None      |                                     |
| Stop bits    | 1                      | 1,2                  |                                     |
| PLC sta. no. | 1                      | 0-15                 |                                     |

Note: It is recommended to set turn around delay to 8. (For i series HMI)

|                  |     |                     |     |
|------------------|-----|---------------------|-----|
| Online simulator | YES | Extend address mode | YES |
|------------------|-----|---------------------|-----|

### PLC Setting:

|                    |  |
|--------------------|--|
| Communication mode | Must set PLC station when using BD Module. |
|--------------------|--|

Register D8120 setting: set b9 and b8 of BFM#0 to 0.

FX2N-485-BD, FX1N-485-BD

FX2N-232-BD, FX1N-232-BD

## Device Address:


| Bit/Word | Device type | Format | Range       | Memo                    |
|----------|-------------|--------|-------------|-------------------------|
| B        | X           | OOO    | 0 ~ 377     | Input Relay             |
| B        | Y           | OOO    | 0 ~ 377     | Output Relay            |
| B        | M           | DDDD   | 0 ~ 7999    | Auxiliary Relay         |
| B        | T           | DDD    | 0 ~ 511     | Timer Relay             |
| B        | C           | DDD    | 0 ~ 255     | Counter Relay           |
| B        | SM          | DDDD   | 8000 ~ 9999 | Special Auxiliary Relay |
| B        | D_Bit       | DDDDh  | 0 ~ 7999f   | Data Register Bit       |
| B        | S           | DDDD   | 0 ~ 4095    | State Relay             |
| W        | TV          | DDD    | 0 ~ 255     | Timer Memory            |
| W        | CV          | DDD    | 0 ~ 199     | Counter Memory          |
| W        | D           | DDDD   | 0 ~ 7999    | Data Register           |
| W        | CV2         | DDD    | 200 ~ 255   | Counter Memory(D Word)  |
| W        | SD          | DDDD   | 8000 ~ 9999 | Special Data Register   |

## Wiring Diagram:

9P D-Sub to 9P D-Sub: Communication Module RS232BD

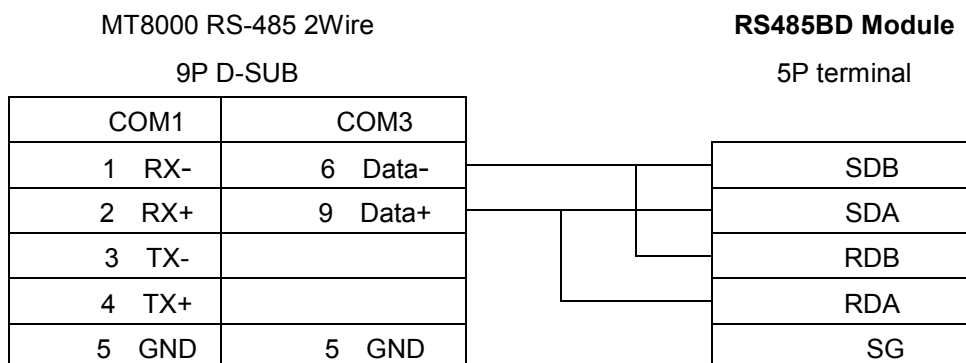
|                                    |                                    |                                      |                                |
|------------------------------------|------------------------------------|--------------------------------------|--------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | 232BD Module RS232 9P<br>D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|--------------------------------|

|       |       |       |       |
|-------|-------|-------|-------|
| 2 RX  | 6 RX  | 8 RX  | 3 TXD |
| 3 TX  | 4 TX  | 7 TX  | 2 RXD |
| 5 GND | 5 GND | 5 GND | 5 GND |


**9P D-Sub to 5P Terminals: Communication Module RS485BD**

|   |  |  |                           |
|---|--|--|---------------------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | 485BD Module 5P Terminals |
| 1 RX-                                   |  |  | SDB                       |
| 2 RX+                                   |  |  | SDA                       |
| 3 TX-                                   |  |  | RDB                       |
| 4 TX+                                   |  |  | RDA                       |
| 5 GND                                   |  |  | SG                        |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Communication Module RS485BD:**

**Driver Version:**

| Version | Date        | Description                   |
|---------|-------------|-------------------------------|
| V1.40   | Jul/26/2011 | Added registers: D_Bit and S. |

# MITSUBISHI FX2n

Supported Series: Mitsubishi FX1n/FX2n series PLC

Website <http://www.mitsubishi-automation.com>

## HMI Setting:

| Parameters   | Recommended     | Options                           | Notes |
|--------------|-----------------|-----------------------------------|-------|
| PLC type     | MITSUBISHI FX2n |                                   |       |
| PLC I/F      | RS485 4W        | RS232/RS485                       |       |
| Baud rate    | 19200           | 9600/19200/38400<br>/57600/115200 |       |
| Data bits    | 7               |                                   |       |
| Parity       | Even            |                                   |       |
| Stop bits    | 1               |                                   |       |
| PLC sta. no. | 0               |                                   |       |


|                  |     |                     |    |
|------------------|-----|---------------------|----|
| Online simulator | YES | Extend address mode | NO |
|------------------|-----|---------------------|----|

## Device Address:

| Bit/Word | Device type | Format | Range       | Memo                    |
|----------|-------------|--------|-------------|-------------------------|
| B        | X           | OOO    | 0 ~ 377     | Input Relay             |
| B        | Y           | OOO    | 0 ~ 377     | Output Relay            |
| B        | M           | DDDD   | 0 ~ 7999    | Auxiliary Relay         |
| B        | T           | DDD    | 0 ~ 255     | Timer Relay             |
| B        | C           | DDD    | 0 ~ 255     | Counter Relay           |
| B        | SM          | DDDD   | 8000 ~ 9999 | Special Auxiliary Relay |
| B        | D_Bit       | DDDDdd | 0 ~ 799915  | Data Register Bit (D)   |
| B        | S           | DDDD   | 0 ~ 4095    | State Relay (S)         |
| W        | TV          | DDD    | 0 ~ 255     | Timer Memory            |
| W        | CV          | DDD    | 0 ~ 199     | Counter Memory          |
| W        | D           | DDDD   | 0 ~ 7999    | Data Register           |
| DW       | CV2         | DDD    | 200 ~ 255   | Counter Memory(D Word)  |
| W        | SD          | DDDD   | 8000 ~ 9999 | Special Data Register   |

## Wiring Diagram:

9P D-Sub to 8P Mini-DIN:

|  |  |  |  |
|--|--|--|--|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | Mitsubishi FX series PLC CPU<br>Port RS422 8P Mini-DIN |
| 1 RX-  |  |  | 4 TX-  |
| 2 RX+  |  |  | 7 TX+  |
| 3 TX-  |  |  | 1 RX-  |
| 4 TX+  |  |  | 2 RX+  |
| 5 GND  |  |  | 3 GND  |
|  |  |  |  |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.60   | Sep/10/2009 |             |



# MITSUBISHI FX3u (Ethernet)

Supported Series: MITSUBISHI FX SERIES, Module: FX3U-ENET.

Website: <http://www.mitsubishi-automation.com>

## HMI Setting:

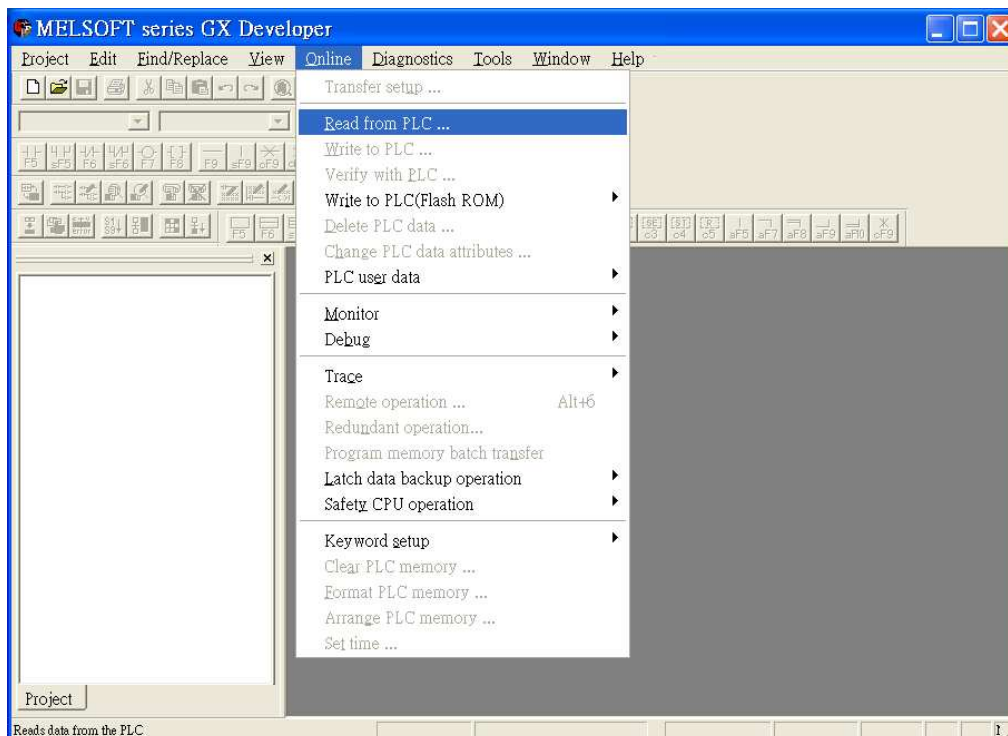
| Parameters   | Recommended                | Options | Notes                   |
|--------------|----------------------------|---------|-------------------------|
| PLC type     | MITSUBISHI FX3u (Ethernet) |         |                         |
| PLC I/F      | Ethernet                   |         |                         |
| Port no.     | 5001(default)              |         | Refer to Module Setting |
| PLC sta. no. | 0 (default)                |         | Refer to Module Setting |

## PLC Setting:

Fx3u-ENET module setting:

Before using Ethernet module, use GX Developer / FX Configurator-EN to set the Ethernet module, the FX3u-ENET module setting steps are shown below.

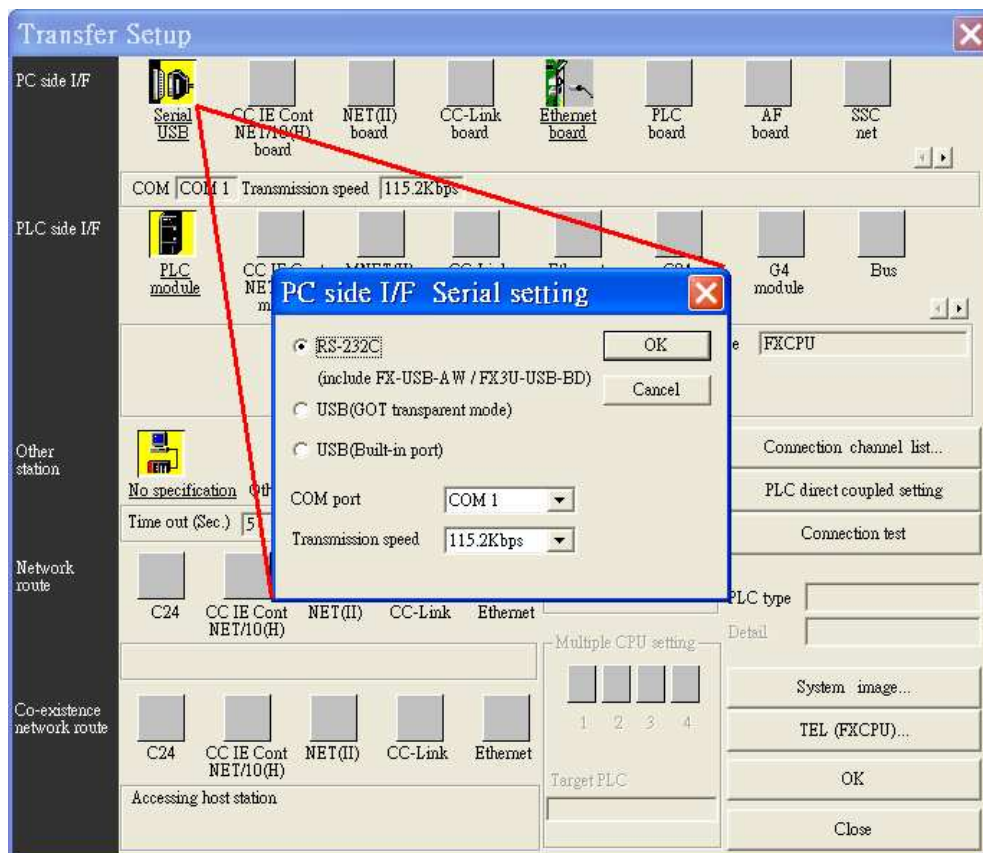
1. Open GX Developer, select “Read from PLC” in Online list.



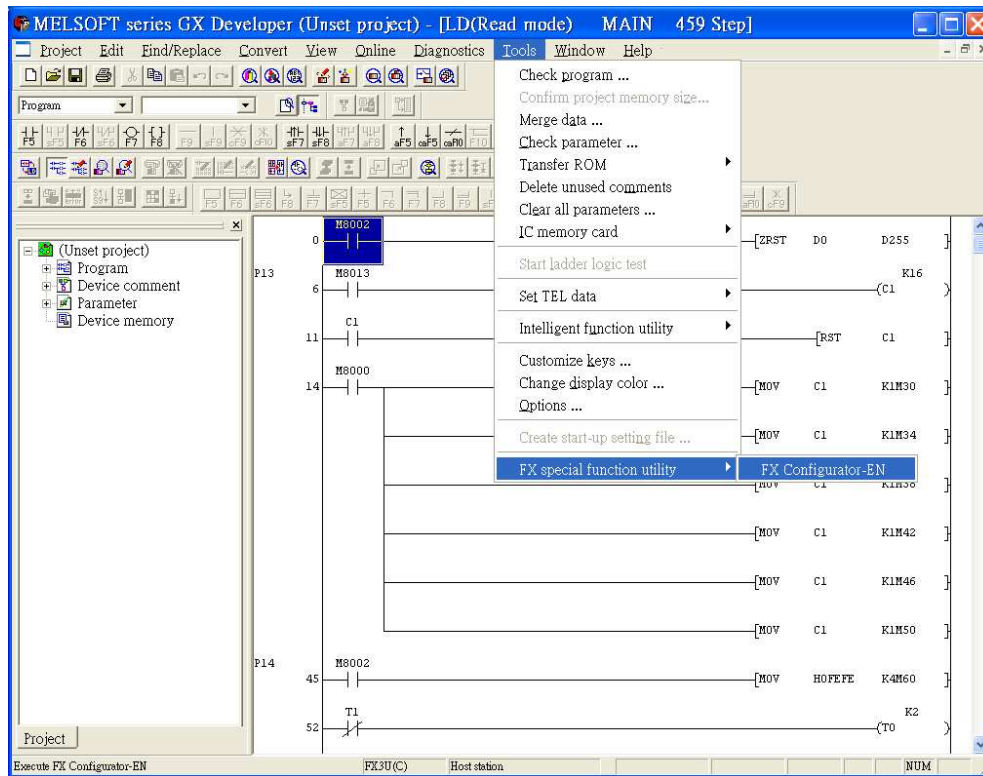
2. Select "FXCPU" in PLC series.



3. Connect PLC via serial port for setting IP address first.

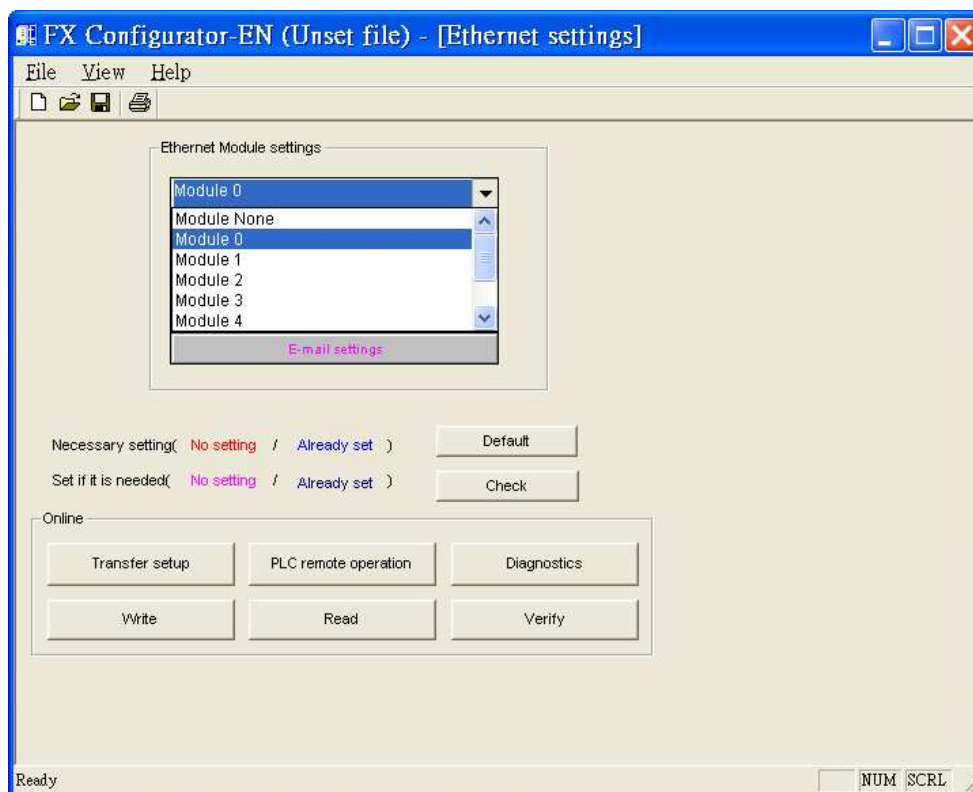


4. After finishing the PLC settings, select Tools/FX special function utility/FX Configurator-EN.

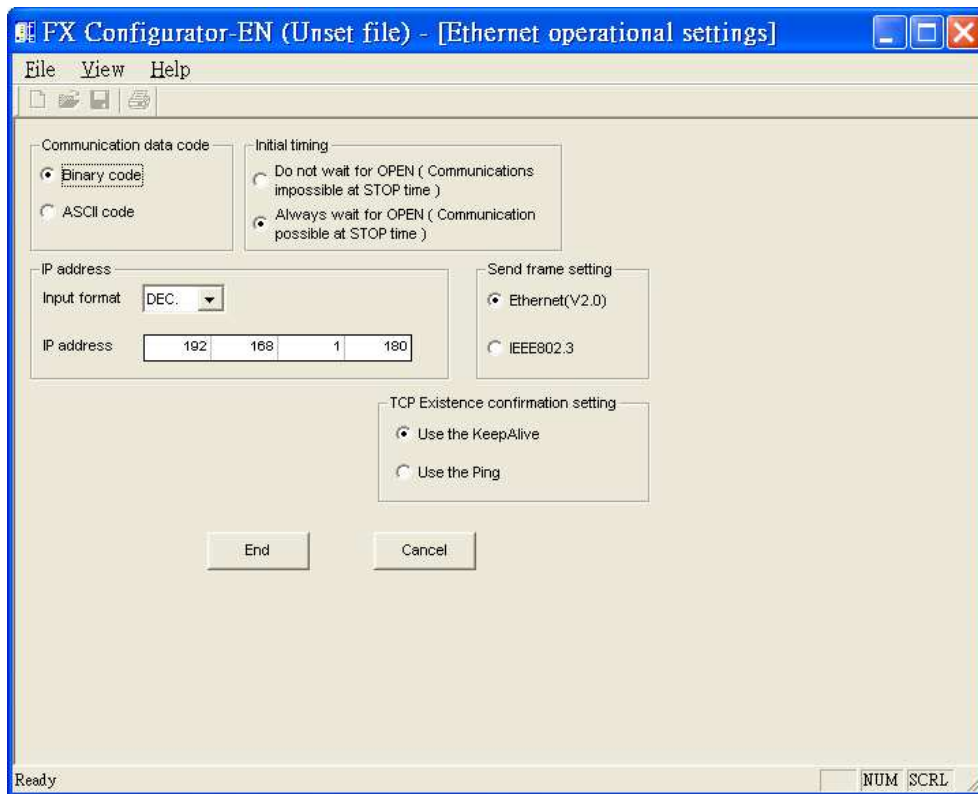


5. Select “Module 0” in Ethernet Module settings.

(If more than one module needed, please set modules step by step)



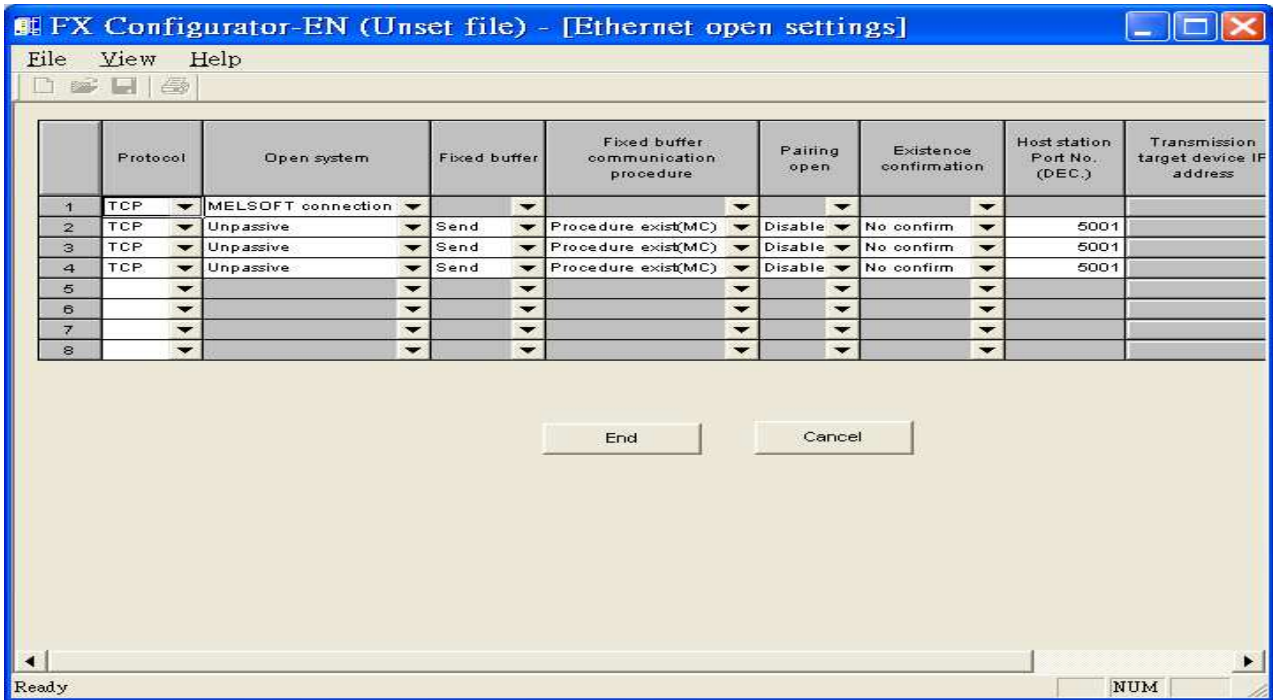
6. In Ethernet operational settings, select the related parameters and IP address and then press "End" to finish setting.



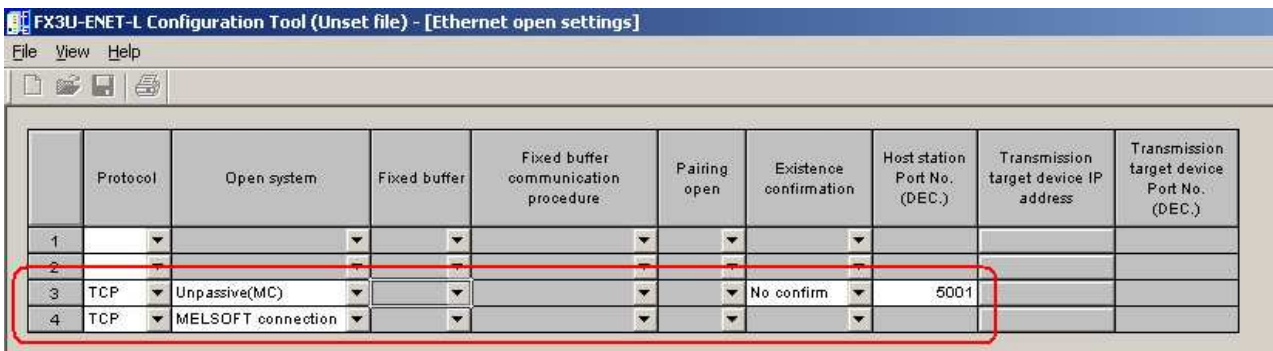
7. In Ethernet open settings, press "End" after setting the parameters below.

|   |     |                    |      |                     |         |            |      |  |
|---|-----|--------------------|------|---------------------|---------|------------|------|--|
| 1 | TCP | MELSOFT connection |      |                     |         |            |      |  |
| 2 | TCP | Unpassive          | Send | Procedure exist(MC) | Disable | No confirm | 5001 |  |
| 3 | TCP | Unpassive          | Send | Procedure exist(MC) | Disable | No confirm | 5001 |  |
| 4 | TCP | Unpassive          | Send | Procedure exist(MC) | Disable | No confirm | 5001 |  |

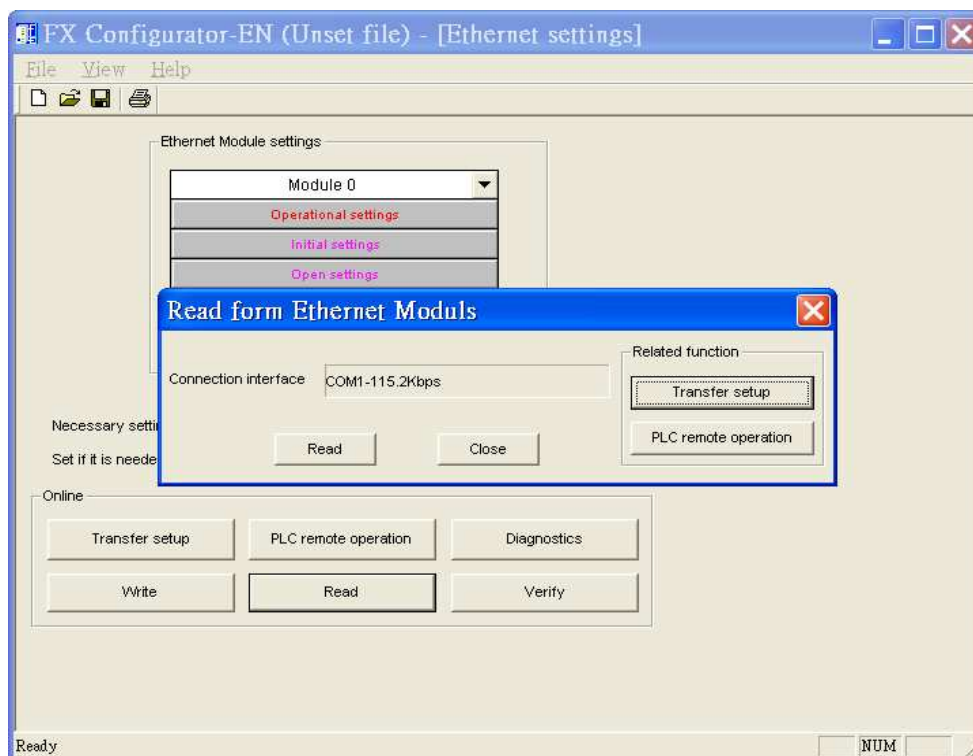
(The first Protocol means using GX Developer to communicate with module, the max. "Fixed buffer communication procedure" is 4 units.)



Or



8. After setting the parameters of PLC, restart for Ethernet communication.




## Device Address:

| Bit/Word | Device type | Format | Range       | Memo                     |
|----------|-------------|--------|-------------|--------------------------|
| B        | X           | OOO    | 0 ~ 571     | Input                    |
| B        | Y           | OOO    | 0 ~ 571     | Output Relay             |
| B        | M           | DDDD   | 0 ~ 7999    | Internal Relay           |
| B        | T           | DDD    | 0 ~ 511     | Timer Contacts           |
| B        | C           | DDD    | 0 ~ 255     | Counter Contacts         |
| B        | SM          | DDDD   | 8000 ~ 8511 | Special Int. Relays      |
| B        | D_Bit       | DDDDdd | 0 ~ 1799915 | Data Register Bit Access |
| B        | S           | DDDD   | 0 ~ 4095    | Step Relays              |
| W        | TV          | DDD    | 0 ~ 511     | Timer Value              |
| W        | CV          | DDD    | 0 ~ 199     | Counter Value            |
| W        | D           | DDDD   | 0 ~ 7999    | Data Registers           |
| W        | CV2         | DDD    | 200 ~255    | Counter Value            |
| W        | SD          | DDDD   | 8000 ~ 8511 | Special Data Registers   |
| W        | R           | DDDD   | 0 ~ 32767   | File Register            |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Feb/12/2009 | Driver released. |

## MITSUBISHI FX3u/FX3G

Supported Series: Mitsubishi FX3U/FX3UC/FX3G.

Website: <http://www.mitsubishi-automation.com>

### HMI Setting:

| Parameters   | Recommended          | Options              | Notes                           |
|--------------|----------------------|----------------------|---------------------------------|
| PLC type     | MITSUBISHI FX3u/FX3G |                      |                                 |
| PLC I/F      | RS485 4w             | RS232/RS485<br>2w/4w |                                 |
| Baud rate    | 38400                | 9600/19200           |                                 |
| Data bits    | 7                    |                      |                                 |
| Parity       | Even                 |                      |                                 |
| Stop bits    | 1                    |                      |                                 |
| PLC sta. no. | 0                    |                      | Does not apply to this protocol |

|                  |                              |                     |    |
|------------------|------------------------------|---------------------|----|
| Online simulator | YES<br>(9600 baud rate only) | Extend address mode | NO |
|------------------|------------------------------|---------------------|----|

### Device Address:

| Bit/Word | Device type | Format | Range       | Memo                   |
|----------|-------------|--------|-------------|------------------------|
| B        | X           | OOO    | 0 ~ 764     | Input Relay            |
| B        | Y           | OOO    | 0 ~ 764     | Output Relay           |
| B        | M           | DDDD   | 0 ~ 7999    | Auxiliary Relay        |
| B        | T           | DDD    | 0 ~ 511     | Timer Relay (T)        |
| B        | C           | DDD    | 0 ~ 255     | Counter Relay (C)      |
| B        | SM          | DDDD   | 8000 ~ 9999 | Special Relay (M)      |
| B        | D_Bit       | DDDDdd | 0 ~ 799915  | Data Register Bit (D)  |
| B        | S           | DDDD   | 0 ~ 4095    | State Relay (S)        |
| W        | TV          | DDD    | 0 ~ 511     | Timer Memory (T)       |
| W        | CV          | DDD    | 0 ~ 199     | Counter Memory (C)     |
| W        | D           | DDDD   | 0 ~ 7999    | Data Register (D)      |
| DW       | CV2         | DDD    | 200 ~ 255   | Counter Memory(D Word) |




| Bit/Word | Device type | Format | Range       | Memo                      |
|----------|-------------|--------|-------------|---------------------------|
| W        | SD          | DDDD   | 8000 ~ 9999 | Special Data Register (D) |
| W        | R           | DDDDD  | 0 ~ 32767   | Extended Register (R)     |
| W        | Z           | D      | 0 ~ 7       | Index register            |

## Wiring Diagram:

9P D-Sub to 8P Mini-DIN:

| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | Mitsubishi FX series PLC CPU<br>Port RS422 8P Mini-DIN |
|---|--|--|--|
| 1 RX-                                   |  |  | 4 TX-  |
| 2 RX+                                   |  |  | 7 TX+  |
| 3 TX-                                   |  |  | 1 RX-  |
| 4 TX+                                   |  |  | 2 RX+  |
| 5 GND                                   |  |  | 3 GND  |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.71   | Nov/15/2010 |             |

## MITSUBISHI MELSEC-Q (Ethernet)

Supported Series: MITSUBISHI Q series (Q03UDE, Q04UDEH, Q06UDEH, Q10UDEH, Q13UDEH, Q20UDEH, Q26UDEH), MELSEC-Q protocol application to CPU of Ethernet interface or Ethernet module.

Website: <http://www.mitsubishi-automation.com>

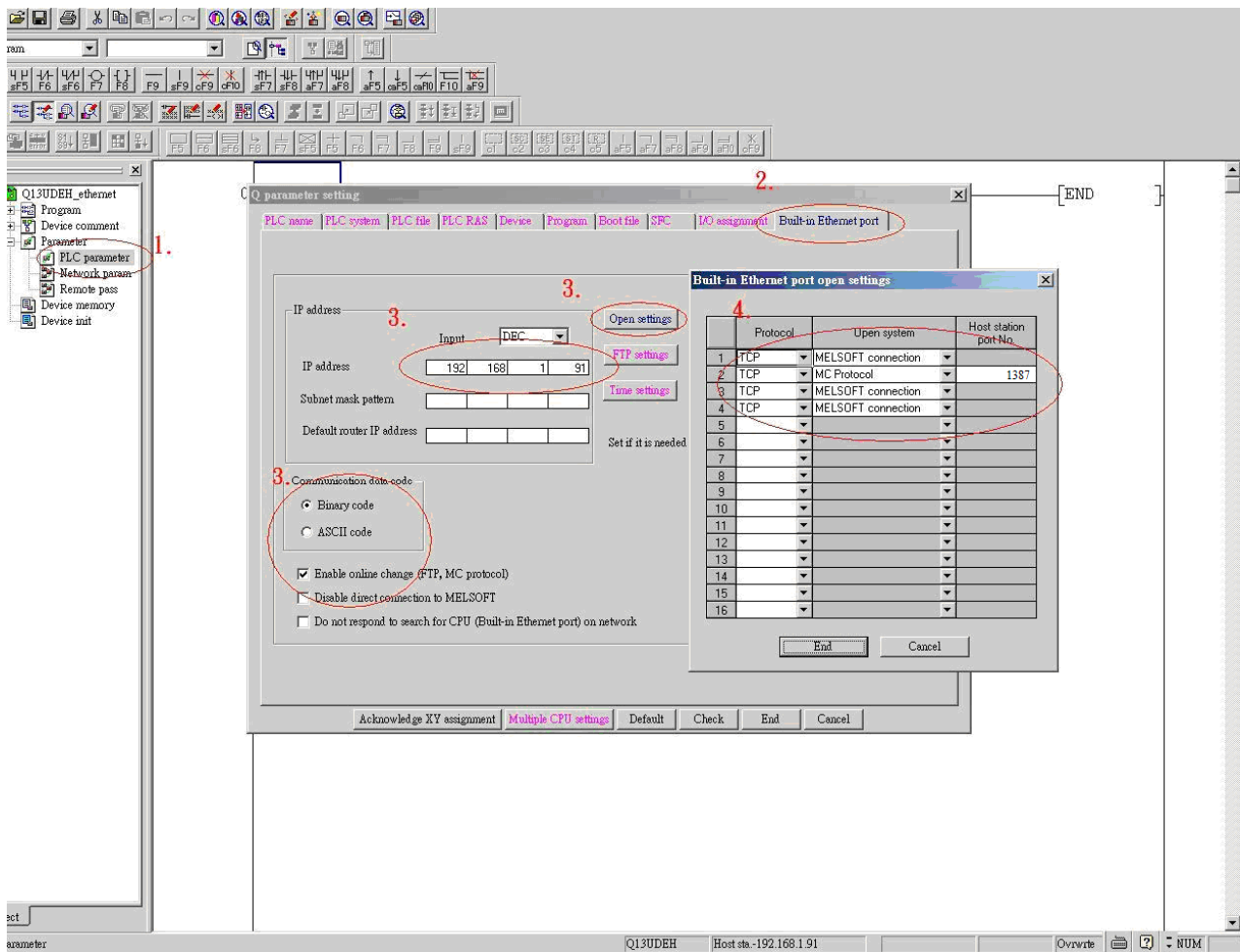
### HMI Setting:

| Parameters   | Recommended                                     | Options | Notes                           |
|--------------|---|---------|---------------------------------|
| PLC type     | MITSUBISHI MELSEC-Q (Ethernet)                  |         |                                 |
| PLC I/F      | Ethernet  |         |                                 |
| Port no.     | Set identically to the PLC setting              |         | Advised to set port no. to 4999 |
| Parameter 1  | Networking no. (Set identically to PLC setting) | 0~255   | Q13UDEH has to be set to 0      |
| PLC sta. no. | Set identically to the PLC setting              | 255     | Q13UDEH has to be set to 255    |

### PLC Setting:

MITSUBISHI Q series Ethernet module setting:

Note: If using QJ71E71 module, please refer to MITSUBISHI QJ71E71 connection guide.

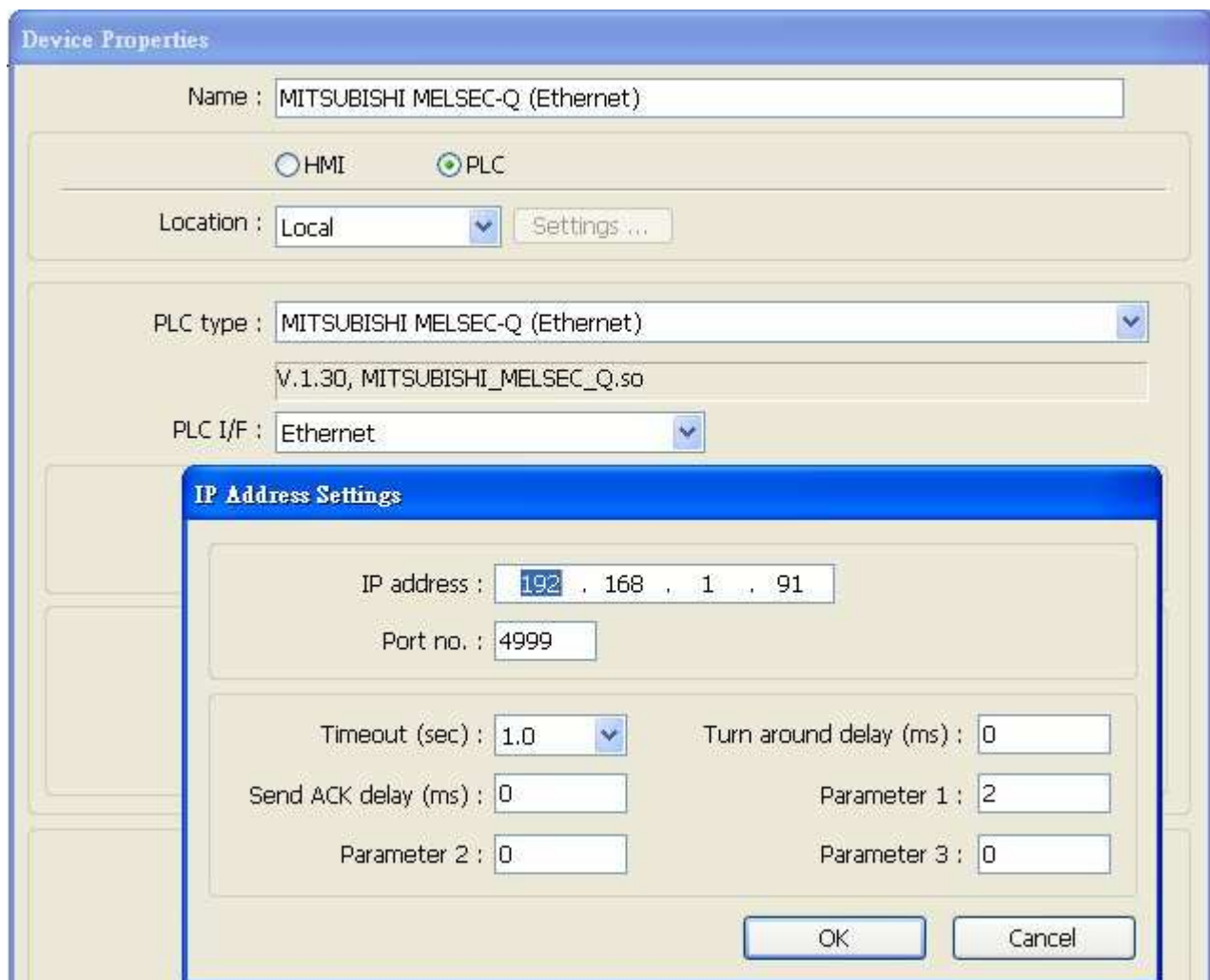


1. Click [PLC parameter].
2. [Built-in Ethernet port].
3. Click [Open settings] and then set the IP address and communication data code
4. Set the MC protocol-TCP Port No.1387 (Hex) and in EasyBuilder, TCP port is 4999 (Dec).

Note: In EasyBuilder, please fill in [Network No.] in Parameter 1 as PLC setting. For example below, the Network No. is 2.

| Module 1         |                              |
|------------------|------------------------------|
| Network type     | Ethernet                     |
| Starting I/O No. | 0000                         |
| Network No.      | 2                            |
| Total stations   |                              |
| Group No.        | 1                            |
| Station No.      | 1                            |
| Mode             | On line                      |
|                  | Operational settings         |
|                  | Initial settings             |
|                  | Open settings                |
|                  | Router relay parameter       |
|                  | Station No.<->IP information |
|                  | FTP Parameters               |
|                  | E-mail settings              |

Set to 2 for Parameter 1 in EasyBuilder.



## Device Address:


| Bit/Word | Device type | Format    | Range        | Memo                          |
|----------|-------------|-----------|--------------|-------------------------------|
| B        | SM          | DDDD      | 0 ~ 2047     | Special Relay                 |
| B        | X           | HHHH      | 0 ~ 1fff     | Input Relay                   |
| B        | Y           | HHHH      | 0 ~ 1fff     | Output Relay                  |
| B        | M           | DDDDD     | 0 ~ 61439    | Internal Relay                |
| B        | L           | DDDDD     | 0 ~ 32767    | Latch Relay                   |
| B        | F           | DDDDD     | 0 ~ 32767    | Annunciator                   |
| B        | V           | DDDDD     | 0 ~ 32767    | Edge Relay                    |
| B        | B           | HHHH      | 0 ~ efff     | Link Relay                    |
| B        | TS          | DDDDD     | 0 ~ 25471    | Timer Contact                 |
| B        | TC          | DDDDD     | 0 ~ 25471    | Timer Coil                    |
| B        | SS          | DDDDD     | 0 ~ 25471    | Retentive Timer Contact       |
| B        | SC          | DDDDD     | 0 ~ 25471    | Retentive Timer Coil          |
| B        | CS          | DDDDD     | 0 ~ 25471    | Counter Contact               |
| B        | CC          | DDDDD     | 0 ~ 25471    | Counter Coil                  |
| B        | SB          | HHHH      | 0 ~ 7fff     | Special Link Relay            |
| B        | S           | DDDD      | 0 ~ 8191     | Step relay                    |
| B        | DX          | HHHH      | 0 ~ 1fff     | Direct Input                  |
| B        | DY          | HHHH      | 0 ~ 1fff     | Direct Output                 |
| B        | D_bit       | DDDDDDDDh | 0 ~ 4184063f | Data Register bit             |
| B        | SD_bit      | DDDDh     | 0 ~ 2047f    | Special register Bit          |
| B        | ZR_bit      | HHHHHHHh  | 0 ~ 3fd7fff  | File Register Bit             |
| B        | R_bit       | DDDDDDh   | 0 ~ 32767f   | File Register Bit             |
| B        | SW_bit      | HHHh      | 0 ~ 7fff     | Special Link Register Bit     |
| B        | W_bit       | HHHHHHHh  | 0 ~ 3fd7fff  | Link Register Bit             |
| W        | SD          | DDDD      | 0 ~ 2047     | Special register              |
| W        | D           | DDDDDDDD  | 0 ~ 4184063  | Data Register                 |
| W        | W           | HHHHHH    | 0 ~ 3fd7ff   | Link Register                 |
| W        | TN          | DDDDD     | 0 ~ 25471    | Timer Current value           |
| W        | SN          | DDDDD     | 0 ~ 25471    | Retentive Timer Current value |
| W        | CN          | DDDDD     | 0 ~ 25471    | Counter Current value         |
| W        | SW          | HHH       | 0 ~ 7ff      | Special Link Register         |
| W        | Z           | DD        | 0 ~ 20       | Index Register                |
| W        | R           | DDDDD     | 0 ~ 32767    | File Register                 |
| W        | ZR          | HHHHHH    | 0 ~ 3fd7ff   | File Register                 |

Note: Each model of CPU is different, it is recommended to refer to MITSUBISHI MELSEC-Q Manual Device List.

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.30   | Jan/14/2011 |             |

# mitsubishi MR J3 A

Website: <http://www.mitsubishi-automation.com>

## HMI Setting:

| Parameters   | Recommended        | Options     | Notes |
|--------------|--------------------|-------------|-------|
| PLC type     | MITSUBISHI MR J3 A |             |       |
| PLC I/F      | RS485 4W           | RS232/RS485 |       |
| Baud rate    | 9600               | 9600~115200 |       |
| Parity       | Even               |             |       |
| Data bits    | 8                  |             |       |
| Stop bits    | 1                  |             |       |
| PLC sta. no. | 0                  | 0~31        |       |

## Device Address:

| Bit/Word | Device type | Format | Range  | Memo                               |
|----------|-------------|--------|--------|------------------------------------|
| W        | PA          | DD     | 1 ~ 19 | Basic Setting                      |
| W        | PB          | DD     | 1 ~ 45 | Gain / Filter Setting              |
| W        | PC          | DD     | 1 ~ 50 | Extension Setting                  |
| W        | PD          | DD     | 1 ~ 30 | Input / Output Setting             |
| W        | Status      | DD     | 0 ~ 17 | Amplifier Status                   |
| W        | Alarm       | D      | 0 ~ 6  | Alarm                              |
| W        | Alarm_T     | D      | 0 ~ 6  | Alarm Time (Hour)                  |
| W        | Mode        | D      | 1 ~ 4  | Write Only, Mode Setting*          |
| W        | Speed       | D      | 1 ~ 9  | Write Only, Set Current Speed<br>* |
| W        | Acc         | D      | 0 ~ 1  | Write Only, Set Acceleration*      |
| W        | Rotation    | D      | 0 ~ 1  | Write Only, Rotation Direction*    |
| W        | End         | D      | 0 ~ 1  | Write Only, End*                   |
| W        | M_dist      | D      | 0 ~ 1  | Write Only, Moving Distance*       |
| W        | Rot_P       | D      | 0 ~ 1  | Write Only, Rotation Position*     |
| W        | P_start     | D      | 0 ~ 1  | Write Only, Start Positioning*     |

Note: \* represents the write-only registers. The usage of this kind of registers is to run Jog Mode and Positioning Mode.

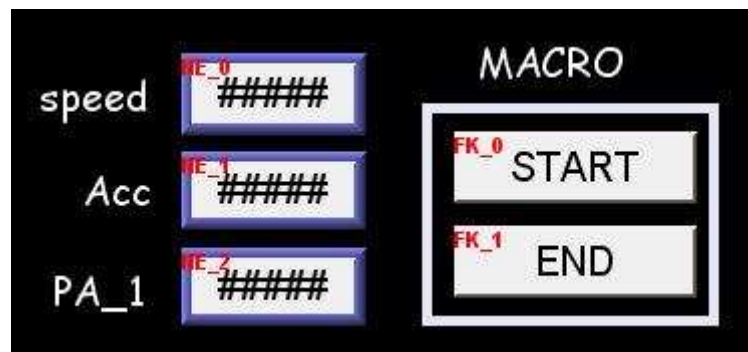
## How to use EasyBuilder8000/Easy BuilderPro to run Jog and Positioning Mode

### \*Jog Mode

To run Jog Mode, please follow the steps listed sequentially:

- (1) Set Jog Mode
- (2) Set rotation speed
- (3) Set acceleration
- (4) Set forward / reverse rotation direction
- (5) End

The following shows how to run the steps above using Macro in EasyBuilder8000/Easy BuilderPro.



On the editing window of EasyBuilder8000/Easy BuilderPro, the write address of "speed" is set to Local HMI LW0 (the address can be user-defined), and set "Acc" (Acceleration) to LW1.

To run Jog Mode, the communication with the device must be continuous which only allows an interval less than 0.5 seconds, otherwise the motor will be locked. Therefore, in this example, only one register PA\_1 is set to read device value.

Macro Demonstration:

a. Start Macro

```
macro_command main()
```

```
short speed
```

```
short acc
```

```
short mode
```

```
mode = 1 // This represents Jog Mode.
```

```
SetData(mode, "MITSUBISHI MR J3 A", Mode, 1, 1) // Set driver mode to Jog.
```

```
GetData(speed, "Local HMI", LW, 0, 1) // Save LW0 value to speed.
```

```
SetData(speed, "MITSUBISHI MR J3 A", Speed, 0, 1) // Set motor operating speed.
```



```

GetData(acc, "Local HMI", LW, 1, 1) //
SetData(acc, "MITSUBISHI MR J3 A", Acc, 0, 1) // Set motor acceleration.
    
```

```

short motion
motion = 0x0801 // Special code, see Note 1.
    
```

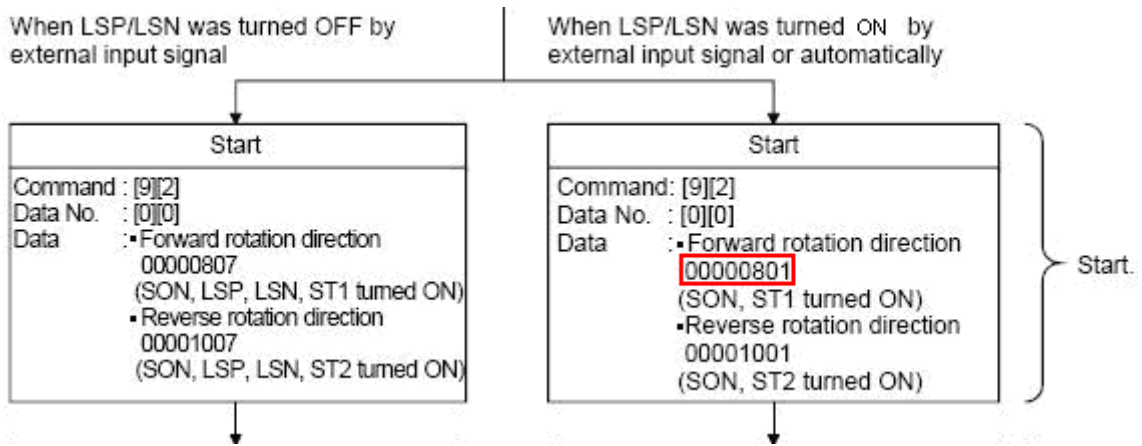
```

SetData(motion, "MITSUBISHI MR J3 A", Rotation, 0, 1) // Rotate.
    
```

```

end macro_command
    
```

Note 1. Original Factory Manual:



b. End Macro

```

macro_command main()
    
```

```

short stop
stop = 1 // See Note 2.
    
```

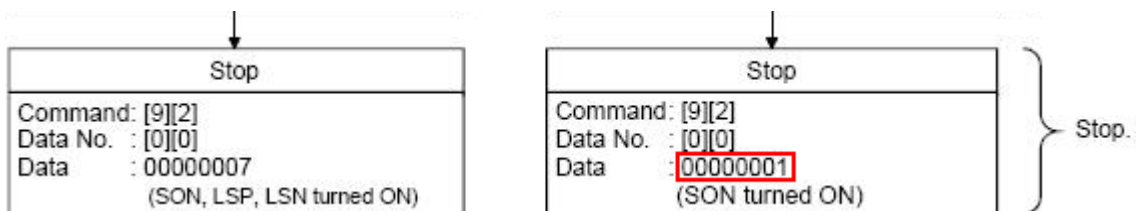
```

SetData(stop, "MITSUBISHI MR J3 A", End, 1, 1)
    
```

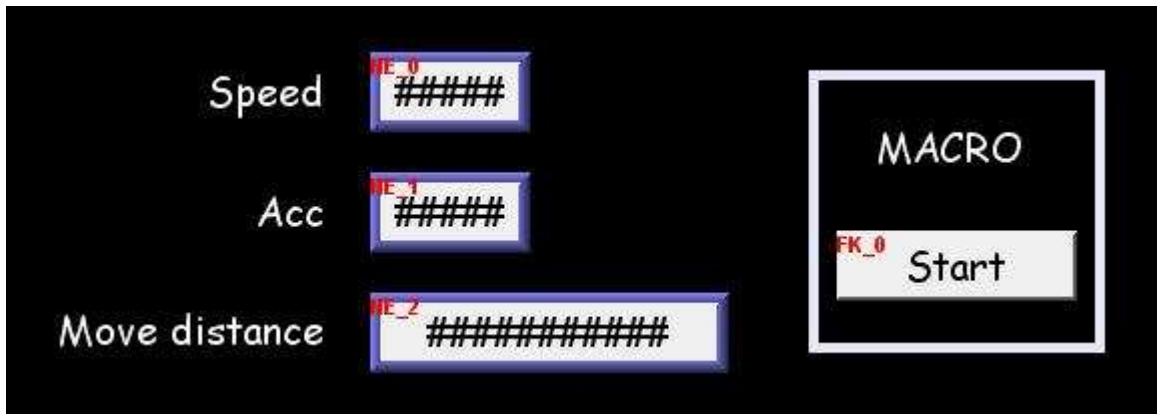
```

end macro_command
    
```

Note 2. Original Factory Manual:



## \*Positioning Mode



On the editing window of EasyBuilder8000/Easy BuilderPro, the write address of "Speed" is set to Local HMI LW2 (the address can be user-defined), and set "Acc" (Acceleration) to LW3, "Move distance" to LW4 (DW format).

Macro Demonstration:

```
macro_command main()
```

```
short mode
```

```
mode = 0x2 // Positioning Mode
```

```
SetData(mode, "MITSUBISHI MR J3 A", Mode, 1, 1)
```

```
short speed
```

```
GetData(speed, "Local HMI", LW, 2, 1)
```

```
SetData(speed, "MITSUBISHI MR J3 A", Speed, 0, 1)
```

```
short acc
```

```
GetData(acc, "Local HMI", LW, 3, 1)
```

```
SetData(acc, "MITSUBISHI MR J3 A", Acc, 0, 1)
```

```
short dist
```

```
GetData(dist, "Local HMI", LW, 4, 1)
```

```
SetData(dist, "MITSUBISHI MR J3 A", M_dist, 0, 1)
```

```
short rot_P
```

```
rot_P = 1 // Set to 0: Forward Rotation 1: Reverse Rotation
```

```
SetData(rot_P, "MITSUBISHI MR J3 A", Rot_P, 0, 1)
```

```
short rotat
```

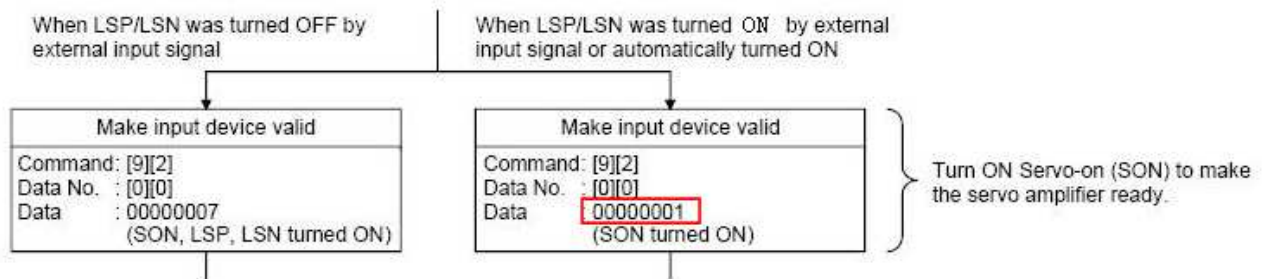
```
rotat = 1 // See Note 3.
```

```
SetData(rotat, "MITSUBISHI MR J3 A", Rotation, 0, 1)
```

```
SetData(rot_P, "MITSUBISHI MR J3 A", P_start, 0, 1) // Start Positioning.
```

```
end macro_command
```

### Note 3. Original Factory Manual



## Wiring Diagram:

9P D-Sub to RJ 45:

| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | CN3 RS422 RJ45 Female |
|---|--|--|-----------------------|
| 1 RX-                                   |  |  | 4 TX-                 |
| 2 RX+                                   |  |  | 5 TX+                 |
| 3 TX-                                   |  |  | 6 RX-                 |
| 4 TX+                                   |  |  | 3 RX+                 |
| 5 GND                                   |  |  | 7 GND                 |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Sep/01/2011 | Driver released. |

# MITSUBISHI MR-MQ100 (Ethernet)

Supported Series: MITSUBISHI MR-MQ100-Ethernet

Website: <http://www.mitsubishi-automation.com>

## HMI Setting:

| Parameters   | Recommended                        | Options | Notes                           |
|--------------|------------------------------------|---------|---------------------------------|
| PLC type     | MITSUBISHI MR-MQ100 (Ethernet)     |         |                                 |
| PLC I/F      | Ethernet                           |         |                                 |
| Port no.     | Set identically to the PLC setting |         | Advised to set port no. to 4999 |
| Parameter1   | 1                                  |         | Network No.                     |
| PLC sta. no. | 255                                |         |                                 |

## PLC Setting:

The screenshot shows the MELSOFT Series MT Developer2 software interface. The Project tree on the left shows the 'Basic Setting' folder selected. The 'Basic Setting' dialog box is open, with the 'Built-in Ethernet Port Setting' tab selected. The 'Open Setting' button is highlighted. The 'Built-in Ethernet Port Open Setting' dialog box is also open, showing a table of protocols and host station port numbers.

|    | Protocol | Open System        | Host Station Port No. |
|----|----------|--------------------|-----------------------|
| 1  | UDP      | MELSOFT Connection |                       |
| 2  | TCP      | MC Protocol        | 1387                  |
| 3  | TCP      | MC Protocol        | 2000                  |
| 4  | TCP      | MC Protocol        | 3000                  |
| 5  | TCP      | MELSOFT Connection |                       |
| 6  | TCP      | MELSOFT Connection |                       |
| 7  | TCP      | MELSOFT Connection |                       |
| 8  | TCP      | MELSOFT Connection |                       |
| 9  | TCP      | MELSOFT Connection |                       |
| 10 | TCP      | MELSOFT Connection |                       |
| 11 | TCP      | MELSOFT Connection |                       |
| 12 | TCP      | MELSOFT Connection |                       |
| 13 | TCP      | MELSOFT Connection |                       |
| 14 | TCP      | MELSOFT Connection |                       |
| 15 | TCP      | MELSOFT Connection |                       |
| 16 | TCP      | MELSOFT Connection |                       |

Host station port No.: Please input in HEX.

1. Click [Basic Setting].
2. [Built-in Ethernet Port Setting].
3. Click [Open Setting] and then set the IP address and communication data code.
4. Set the MC Protocol-TCP Port No. (Hex)

## Device Address:


| Bit/Word | Device type | Format  | Range        | Memo             |
|----------|-------------|---------|--------------|------------------|
| B        | SM          | DDDD    | 0 ~ 2255     | Special Relay    |
| B        | X           | HHHH    | 0 ~ 1fff     | Input            |
| B        | Y           | HHHH    | 0 ~ 1fff     | Output           |
| B        | M           | DDDDD   | 0 ~ 61439    | Internal Relay   |
| B        | F           | DDDDD   | 0 ~ 32767    | Annunciator      |
| B        | B           | HHHH    | 0 ~ efff     | Link Relay       |
| B        | D_Bit       | DDDDDDh | 0 ~ 4184063f |                  |
| W        | SD          | DDDD    | 0 ~ 2255     | Special Register |
| W        | D           | DDDDDD  | 0 ~ 4184063  | Data Register    |
| W        | W           | HHHHHH  | 0 ~ 3fd7ff   | Link Register    |
| W        | #           | DDDDD   | 0 ~ 12287    | Motion Register  |

Note: ddd: Decimal, hhh: Hexadecimal, ooo: Octal.

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description           |
|---------|-------------|-----------------------|
| V1.10   | Jun/08/2011 | Added register: D_Bit |

## MITSUBISHI Q00/Q00UJ/Q01/QJ71

Supported Series: Mitsubishi Q series PLC with QJ71C24 communication module, Q00, Q00J, Q00UJ, Q01, Q02H, Q06H, Q12H, Q25H, Q12PH, Q25PH CPU port.

Website: <http://www.mitsubishi-automation.com>

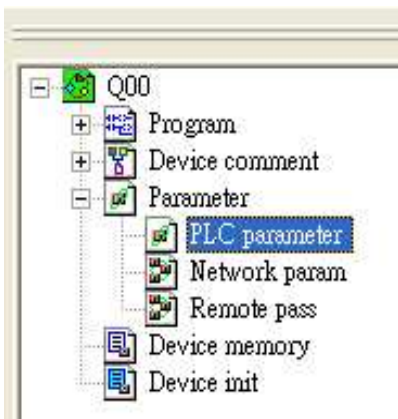
### HMI Setting:

| Parameters   | Recommended                   | Options         | Notes |
|--------------|-------------------------------|-----------------|-------|
| PLC type     | MITSUBISHI Q00/Q00UJ/Q01/QJ71 |                 |       |
| PLC I/F      | RS232                         | RS485 4W, RS232 |       |
| Baud rate    | 9600                          | 9600~115200     |       |
| Data bits    | 8                             |                 |       |
| Parity       | Odd                           |                 |       |
| Stop bits    | 1                             |                 |       |
| PLC sta. no. | 0                             |                 |       |

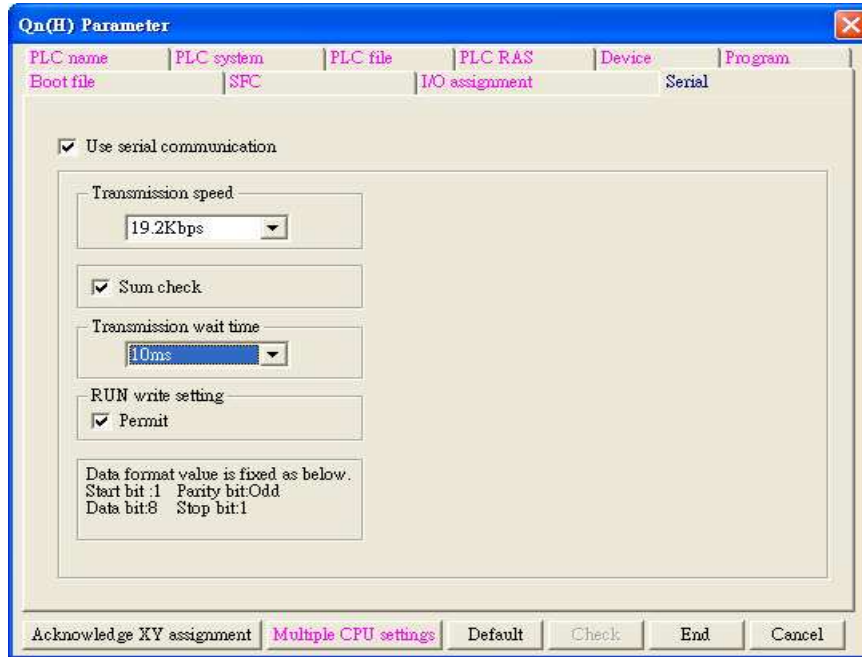
|                     |     |
|---------------------|-----|
| Online simulator    | YES |
| Extend address mode | NO  |

### PLC Setting:

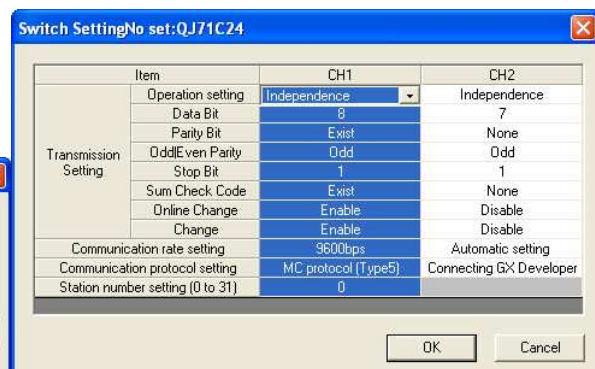
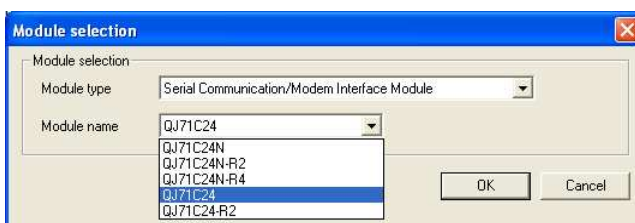
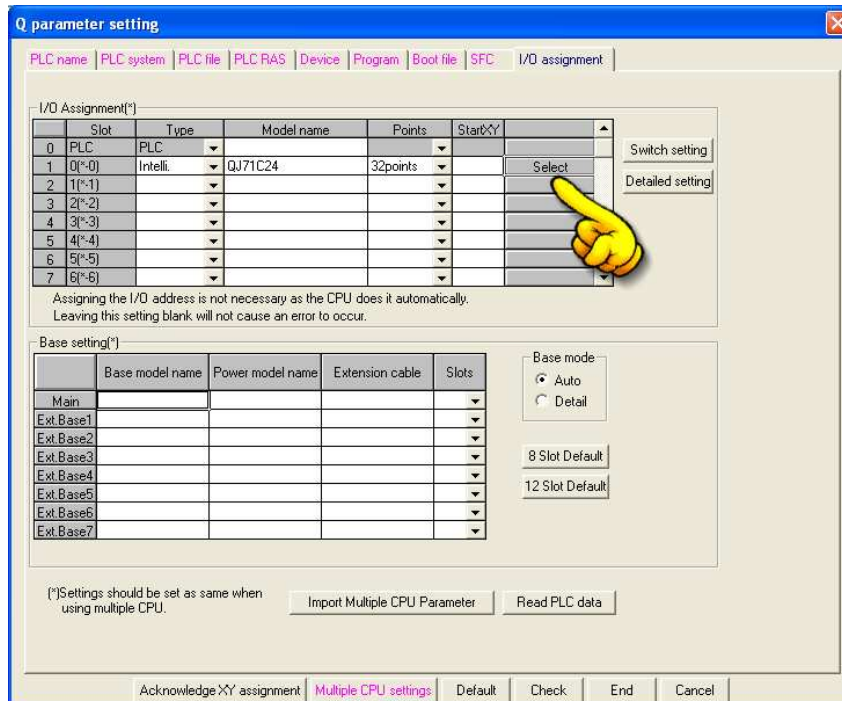
Q00, Q01 CPU port setting:



1. In GX Developer "PLC data list" click [PLC parameter].
2. In "PLC parameter" go to [Serial] page.
3. Select [Use serial communication].
4. Set [Transmission speed] to 9600~115200.
5. Select [Sum check].
6. Set [Transmission wait time] to 10ms.
7. Permit [RUN write setting].
8. Click [End] to close the dialog.
9. Write the PLC Parameter to PLC.
10. Reset PLC, the parameter will be activated.



QJ71 setting:






## Device Address:

| Bit/Word | Device type | Format | Range      | Memo                          |
|----------|-------------|--------|------------|-------------------------------|
| B        | X           | HHHH   | 0 ~ 1fff   | Input Relay                   |
| B        | Y           | HHHH   | 0 ~ 1fff   | Output Relay                  |
| B        | M           | DDDD   | 0 ~ 8191   | Internal Relay                |
| B        | L           | DDDD   | 0 ~ 8191   | Latch Relay                   |
| B        | F           | DDDD   | 0 ~ 2047   | Annunciator                   |
| B        | V           | DDDD   | 0 ~ 2047   | Edge Relay                    |
| B        | B           | HHHH   | 0 ~ 1fff   | Link Relay                    |
| B        | TC          | DDDD   | 0 ~ 2047   | Timer Coil                    |
| B        | SS          | DDDD   | 0 ~ 2047   | Retentive Timer Contact       |
| B        | SC          | DDDD   | 0 ~ 2047   | Retentive Timer Coil          |
| B        | CS          | DDDD   | 0 ~ 1023   | Counter Contact               |
| B        | CC          | DDDD   | 0 ~ 1023   | Counter Coil                  |
| B        | SB          | HHH    | 0 ~ 7ff    | Special Link Relay            |
| B        | S           | DDDD   | 0 ~ 8191   | Step Relay                    |
| B        | DX          | HHHH   | 0 ~ 1fff   | Direct Input                  |
| B        | DY          | HHHH   | 0 ~ 1fff   | Direct Output                 |
| B        | TS          | DDDD   | 0 ~ 2047   | Timer Contact                 |
| B        | SM          | DDDD   | 0 ~ 2047   |                               |
| B        | D_Bit       | DDDDh  | 0 ~ 12287f |                               |
| W        | W           | HHHH   | 0 ~ 2fff   | Link Register                 |
| W        | TN          | DDDD   | 0 ~ 2047   | Timer Current Value           |
| W        | SN          | DDDD   | 0 ~ 2047   | Retentive Timer Current Value |
| W        | CN          | DDDD   | 0 ~ 1023   | Counter Current Value         |
| W        | R           | DDDDD  | 0 ~ 32767  | File Register                 |
| W        | SW          | HHH    | 0 ~ 7ff    | Special Link Register         |
| W        | Z           | DD     | 0 ~ 15     | Index Register                |
| W        | ZR          | HHHH   | 0 ~ ffff   | File Register                 |
| W        | D           | DDDDD  | 0 ~ 12287  | Data Register                 |
| W        | SD          | DDDD   | 0 ~ 2047   |                               |


## Wiring Diagram:

|   |  |  |                    |
|---|--|--|--------------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | QJ71C24 CH.2 RS422 |
| 1 RX-                                   |  |  | SDB                |
| 2 RX+                                   |  |  | SDA                |
| 3 TX-                                   |  |  | RDB                |
| 4 TX+                                   |  |  | RDA                |
| 5 GND                                   |  |  | GND                |
|   |  |  |                    |


### 9P D-Sub to 9P D-Sub:

|  |                                    |                                      |                                |
|--|------------------------------------|--------------------------------------|--------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | QJ71C24 CH.1 RS232 9P<br>D-Sub |
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TXD                          |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RXD                          |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                          |
|  |                                    |                                      | 1 DCD                          |
|  |                                    |                                      | 4 DTR                          |
|  |                                    |                                      | 6 DSR                          |
|  |                                    |                                      | 7 RTS                          |
|  |                                    |                                      | 8 CTS                          |
|  |                                    |                                      | circuit                        |
|  |                                    |                                      | circuit                        |
|  |                                    |                                      |                                |

**9P D-Sub to 6P Mini-DIN: Q00, Q01 CPU port RS232**

|  |                                    |                                      |  |
|--|------------------------------------|--------------------------------------|--|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Q00, Q01 CPU Port RS232 6P<br>Mini-DIN |
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TXD                                  |
| 3 TX   | 4 TX                               | 7 TX                                 | 4 RXD                                  |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                                  |
|  |                                    |                                      |  |

**9P D-Sub to 6P Mini-DIN: Q00UJ CPU port RS232**

|  |                                    |                                      |  |       |         |       |
|--|------------------------------------|--------------------------------------|--|-------|---------|-------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Q00UJ CPU Port RS232 6P<br>Mini-DIN  |       |         |       |
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TXD  |       |         |       |
| 3 TX   | 4 TX                               | 7 TX                                 | 4 RXD  |       |         |       |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND  |       |         |       |
|  |                                    |                                      | <table border="1"> <tr> <td>1 RTS</td> <td rowspan="2">circuit</td> </tr> <tr> <td>6 CTS</td> </tr> </table> | 1 RTS | circuit | 6 CTS |
| 1 RTS  | circuit                            |                                      |  |       |         |       |
| 6 CTS  |                                    |                                      |  |       |         |       |
|  |                                    |                                      |  |       |         |       |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description                        |
|---------|-------------|------------------------------------|
| V1.80   | Jun/08/2011 | Added register: D_Bit              |
| V1.90   | Sep/23/2011 | Fixed bit communication incorrect. |

# mitsubishi Q00J

Supported Series: MITSUBISHI Q00J CPU

## HMI Setting:

| Parameters   | Recommended     | Options                           | Notes    |
|--------------|-----------------|-----------------------------------|----------|
| PLC type     | MITSUBISHI Q00J |                                   |          |
| PLC I/F      | RS232           |                                   | CPU port |
| Baud rate    | 115200          | 9600,19200,38400,<br>57600,115200 |          |
| Data bits    | 8               |                                   |          |
| Parity       | Odd             |                                   |          |
| Stop bits    | 1               |                                   |          |
| PLC sta. no. |                 |                                   |          |


## Device Address:

| Bit/Word | Device type | Format | Range      | Memo |
|----------|-------------|--------|------------|------|
| B        | SM          | DDDD   | 0 ~ 1023   |      |
| B        | X           | HHH    | 0 ~ 7ff    |      |
| B        | Y           | HHH    | 0 ~ 7ff    |      |
| B        | M           | DDDD   | 0 ~ 8191   |      |
| B        | L           | DDDD   | 0 ~ 2047   |      |
| B        | F           | DDDD   | 0 ~ 1023   |      |
| B        | V           | DDDD   | 0 ~ 1023   |      |
| B        | B           | HHH    | 0 ~ 7ff    |      |
| B        | SB          | HHH    | 0 ~ 3ff    |      |
| B        | D_Bit       | DDDDh  | 0 ~ 11135f |      |
| W        | SD          | DDDD   | 0 ~ 1023   |      |
| W        | D           | DDDDD  | 0 ~ 11135  |      |
| W        | W           | HHH    | 0 ~ 7ff    |      |
| W        | SW          | HHH    | 0 ~ 3ff    |      |
| W        | Z           | D      | 0 ~ 9      |      |
| W        | C           | DDD    | 0 ~ 511    |      |
| W        | T           | DDD    | 0 ~ 511    |      |

## Wiring Diagram:

9P D-Sub to 6P Mini-DIN: Q00 CPU port RS232

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Q00 CPU Port RS232 6P<br>Mini-DIN |
|------------------------------------|------------------------------------|--------------------------------------|-----------------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                             |
| 3 TX                               | 4 TX                               | 7 TX                                 | 4 RXD                             |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                             |

MT8-Mitsubishi-Q-3M cable can connect MT8000 with Mitsubishi Q series directly.

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description          |
|---------|-------------|----------------------|
| V1.20   | Jun/08/2011 | Added register D_bit |

## MITSUBISHI Q00U/Q01U/Q02U/QnUD/QnUDH

Supported Series: MITSUBISHI Q00U, Q01U, Q02U, Q03UD, Q04UDH, Q06UDH, Q10UDH, Q13UDH, Q20UDH, Q26UDH CPU.

### HMI Setting:

| Parameters   | Recommended                             | Options            | Notes  |
|--------------|---|--------------------|--|
| PLC type     | MITSUBISHI<br>Q00U/Q01U/Q02U/QnUD/QnUDH |                    |  |
| PLC I/F      | RS232                                   | RS485 4W,<br>RS232 | CPU port direct connect  |
| Baud rate    | 115200                                  | 115200 only        | 9600,19200,38400,57600,115200<br>For Q00UJ, only 9600 is available |
| Data bits    | 8                                       |                    |  |
| Parity       | Odd                                     |                    |  |
| Stop bits    | 1                                       |                    |  |
| PLC sta. no. | No                                      |                    |  |

### Device Address:

| Bit/Word | Device type | Format | Range      | Memo                  |
|----------|-------------|--------|------------|-----------------------|
| B        | SM          | DDDD   | 0 ~ 2047   |                       |
| B        | X           | HHHH   | 0 ~ 1fff   | Input Relay           |
| B        | Y           | HHHH   | 0 ~ 1fff   | Output Relay          |
| B        | M           | DDDD   | 0 ~ 8191   | Internal Relay        |
| B        | L           | DDDD   | 0 ~ 8191   | Latch Relay           |
| B        | F           | DDDD   | 0 ~ 2047   | Annunciator           |
| B        | V           | DDDD   | 0 ~ 2047   | Edge Relay            |
| B        | B           | HHHH   | 0 ~ 1fff   | Link Relay            |
| B        | SB          | HHH    | 0 ~ 7ff    | Special Link Relay    |
| B        | D_Bit       | DDDDh  | 0 ~ 12287f |                       |
| W        | SD          | DDDD   | 0 ~ 2047   |                       |
| W        | D           | DDDD   | 0 ~ 12287  | Data Register         |
| W        | W           | HHHH   | 0 ~ 1fff   | Link Register         |
| W        | SW          | HHH    | 0 ~ 7ff    | Special Link Register |
| W        | Z           | DD     | 0 ~ 19     | Index Register        |

| Bit/Word | Device type | Format | Range     | Memo                  |
|----------|-------------|--------|-----------|-----------------------|
| W        | R           | DDDDD  | 0 ~ 32767 |                       |
| W        | C           | DDDD   | 0 ~ 1023  | Counter Current Value |
| W        | T           | DDDD   | 0 ~ 2047  | Timer Current Value   |


### Note:

EasyBuilder doesn't support MITSUBISHI Q02U CPU to do on-line simulation on PC. When using Q02U driver, HMI needs 10 seconds to initiate PLC Q02U driver. Before the completion of initiation, it is recommended not to wire data to PLC, this could cause "PLC no response" ; Incorrect wiring or data could cause PLC to be locked. If PLC is locked, please restart PLC or reinstall PLC module.

### Wiring Diagram:

9P D-Sub to 6P Mini-DIN: Q02 CPU port RS232

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Q02 CPU Port RS232 6P<br>Mini-DIN |         |
|------------------------------------|------------------------------------|--------------------------------------|-----------------------------------|---------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                             |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | 4 RXD                             |         |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                             |         |
|                                    |                                    |                                      | 1 RTS                             | circuit |
|                                    |                                    |                                      | 6 CTS                             |         |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description          |
|---------|-------------|----------------------|
| V1.60   | Jun/08/2011 | Added register D_bit |

# MITSUBISHI Q00UJ/QnU/QnUD/QnUDH/QnUDEH (mini USB)

Supported Series: MITSUBISHI Q00UJ, Q00U, Q01U, Q02U, Q03UDE, Q03UD, Q04UDEH, Q04UDH, Q06UDEH, Q06UDH, Q10UDEH, Q10UDH, Q13UDEH, Q13UDH, Q20UDEH, Q20UDH, Q26UDEH, Q26UDH USB Port.

## HMI Setting:

| Parameters | Recommended   | Options | Notes                   |
|------------|---|---------|-------------------------|
| PLC type   | MITSUBISHI<br>Q00UJ/QnU/QnUD/QnUDH/QnUDEH<br>(mini USB) |         |                         |
| PLC I/F    | USB   |         | CPU port direct connect |

## Device Address:

| Bit/Word | Device type | Format | Range      | Memo                  |
|----------|-------------|--------|------------|-----------------------|
| B        | SM          | DDDD   | 0 ~ 2047   |                       |
| B        | X           | HHHH   | 0 ~ 1fff   | Input Relay           |
| B        | Y           | HHHH   | 0 ~ 1fff   | Output Relay          |
| B        | M           | DDDD   | 0 ~ 8191   | Internal Relay        |
| B        | L           | DDDD   | 0 ~ 8191   | Latch Relay           |
| B        | F           | DDDD   | 0 ~ 2047   | Annunciator           |
| B        | V           | DDDD   | 0 ~ 2047   | Edge Relay            |
| B        | B           | HHHH   | 0 ~ 1fff   | Link Relay            |
| B        | SB          | HHH    | 0 ~ 7ff    | Special Link Relay    |
| B        | D_Bit       | DDDDh  | 0 ~ 12287f |                       |
| W        | SD          | DDDD   | 0 ~ 2047   |                       |
| W        | D           | DDDDD  | 0 ~ 12287  | Data Register         |
| W        | W           | HHHH   | 0 ~ 1fff   | Link Register         |
| W        | SW          | HHH    | 0 ~ 7ff    | Special Link Register |
| W        | Z           | DD     | 0 ~ 19     | Index Register        |
| W        | R           | DDDDD  | 0 ~ 32767  |                       |
| W        | C           | DDDD   | 0 ~ 1023   | Counter Current Value |
| W        | T           | DDDD   | 0 ~ 2047   | Timer Current Value   |



**Note:**

EasyBuilder doesn't support MITSUBISHI Q02U CPU to do on-line simulation on PC. When using Q02U driver, HMI needs 10 seconds to initiate PLC Q02U driver. Before the completion of initiation, it is recommended not to wire data to PLC, this could cause "PLC no response" ; Incorrect wiring or data could cause PLC to be locked. If PLC is locked, please restart PLC or reinstall PLC module.

**Driver Version:**

| Version | Date        | Description          |
|---------|-------------|----------------------|
| V1.30   | Jun/08/2011 | Added register D_bit |

# MITSUBISHI Q02/02H

Supported Series; MITSUBISHI Q02/Q02H CPU port.

Website: <http://www.mitsubishi-automation.com>

## HMI Setting:

| Parameters   | Recommended        | Options         | Notes |
|--------------|--------------------|-----------------|-------|
| PLC type     | MITSUBISHI Q02/02H |                 |       |
| PLC I/F      | RS232              | RS485 4W, RS232 |       |
| Baud rate    | 115200             | 115200 only     |       |
| Data bits    | 8                  |                 |       |
| Parity       | Odd                |                 |       |
| Stop bits    | 1                  |                 |       |
| PLC sta. no. | 0                  |                 |       |

|                   |     |                     |    |
|-------------------|-----|---------------------|----|
| Online simulator  | YES | Extend address mode | NO |
| Broadcast command | NO  |                     |    |


## Device Address:

| Bit/Word | Device type | Format | Range    | Memo                    |
|----------|-------------|--------|----------|-------------------------|
| B        | X           | HHHH   | 0 ~ 1fff | Input Relay             |
| B        | Y           | HHHH   | 0 ~ 1fff | Output Relay            |
| B        | M           | DDDD   | 0 ~ 8191 | Internal Relay          |
| B        | L           | DDDD   | 0 ~ 8191 | Latch Relay             |
| B        | F           | DDDD   | 0 ~ 2047 | Annunciator             |
| B        | V           | DDDD   | 0 ~ 2047 | Edge Relay              |
| B        | B           | HHHH   | 0 ~ 1fff | Link Relay              |
| B        | TC          | DDDD   | 0 ~ 2047 | Timer Coil              |
| B        | SS          | DDDD   | 0 ~ 2047 | Retentive Timer Contact |
| B        | SC          | DDDD   | 0 ~ 2047 | Retentive Timer Coil    |
| B        | CS          | DDDD   | 0 ~ 1023 | Counter Contact         |
| B        | CC          | DDDD   | 0 ~ 1023 | Counter Coil            |
| B        | SB          | HHH    | 0 ~ 7ff  | Special Link Relay      |
| B        | S           | DDDD   | 0 ~ 8191 | Step Relay              |
| B        | DX          | HHHH   | 0 ~ 1fff | Direct Input            |

| Bit/Word | Device type | Format | Range      | Memo                          |
|----------|-------------|--------|------------|-------------------------------|
| B        | DY          | HHHH   | 0 ~ 1fff   | Direct Output                 |
| B        | TS          | DDDD   | 0 ~ 2047   | Timer Contact                 |
| B        | D_Bit       | DDDDDh | 0 ~ 12287f |                               |
| W        | W           | HHHH   | 0 ~ 1fff   | Link Register                 |
| W        | TN          | DDDD   | 0 ~ 2047   | Timer Current Value           |
| W        | SN          | DDDD   | 0 ~ 2047   | Retentive Timer Current Value |
| W        | CN          | DDDD   | 0 ~ 1023   | Counter Current Value         |
| W        | R           | DDDDD  | 0 ~ 32767  | File Register                 |
| W        | SW          | HHH    | 0 ~ 7ff    | Special Link Register         |
| W        | Z           | DD     | 0 ~ 15     | Index Register                |
| W        | ZR          | HHHH   | 0 ~ ffff   | File Register                 |
| W        | D           | DDDDD  | 0 ~ 12287  | Data Register                 |

## Wiring Diagram:

9P D-Sub to 6P Mini-DIN: Q02 CPU port RS232

| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Q02 CPU Port RS232 6P<br>Mini-DIN |         |
|--|------------------------------------|--------------------------------------|-----------------------------------|---------|
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TXD                             |         |
| 3 TX   | 4 TX                               | 7 TX                                 | 4 RXD                             |         |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                             |         |
|  |                                    |                                      | 1 RTS                             | circuit |
|  |                                    |                                      | 6 CTS                             |         |
|  |                                    |                                      |                                   |         |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description          |
|---------|-------------|----------------------|
| V1.60   | Jun/08/2011 | Added register D_bit |

# mitsubishi Q06H

Supported Series: Mitsubishi Q06H CPU port.

Website: <http://www.mitsubishi-automation.com>

## HMI Setting:

| Parameters   | Recommended     | Options         | Notes |
|--------------|-----------------|-----------------|-------|
| PLC type     | MITSUBISHI Q06H |                 |       |
| PLC I/F      | RS232           | RS485 4W, RS232 |       |
| Baud rate    | 115200          | 115200 only     |       |
| Data bits    | 8               |                 |       |
| Parity       | Odd             |                 |       |
| Stop bits    | 1               |                 |       |
| PLC sta. no. | 0               |                 |       |

|                   |     |                     |    |
|-------------------|-----|---------------------|----|
| Online simulator  | YES | Extend address mode | NO |
| Broadcast command | NO  |                     |    |

## Device Address:


| Bit/Word | Device type | Format | Range    | Memo                    |
|----------|-------------|--------|----------|-------------------------|
| B        | X           | HHHH   | 0 ~ 1fff | Input Relay             |
| B        | Y           | HHHH   | 0 ~ 1fff | Output Relay            |
| B        | M           | DDDD   | 0 ~ 8191 | Internal Relay          |
| B        | L           | DDDD   | 0 ~ 8191 | Latch Relay             |
| B        | F           | DDDD   | 0 ~ 2047 | Annunciator             |
| B        | V           | DDDD   | 0 ~ 2047 | Edge Relay              |
| B        | B           | HHHH   | 0 ~ 1fff | Link Relay              |
| B        | TC          | DDDD   | 0 ~ 2047 | Timer Coil              |
| B        | SS          | DDDD   | 0 ~ 2047 | Retentive Timer Contact |
| B        | SC          | DDDD   | 0 ~ 2047 | Retentive Timer Coil    |
| B        | CS          | DDDD   | 0 ~ 1023 | Counter Contact         |
| B        | CC          | DDDD   | 0 ~ 1023 | Counter Coil            |
| B        | SB          | HHH    | 0 ~ 7ff  | Special Link Relay      |
| B        | S           | DDDD   | 0 ~ 8191 | Step Relay              |

| Bit/Word | Device type | Format | Range      | Memo                          |
|----------|-------------|--------|------------|-------------------------------|
| B        | DX          | HHHH   | 0 ~ 1fff   | Direct Input                  |
| B        | DY          | HHHH   | 0 ~ 1fff   | Direct Output                 |
| B        | TS          | DDDD   | 0 ~ 2047   | Timer Contact                 |
| B        | D_Bit       | DDDDh  | 0 ~ 12287f |                               |
| W        | W           | HHHH   | 0 ~ 1fff   | Link Register                 |
| W        | TN          | DDDD   | 0 ~ 2047   | Timer Current Value           |
| W        | SN          | DDDD   | 0 ~ 2047   | Retentive Timer Current Value |
| W        | CN          | DDDD   | 0 ~ 1023   | Counter Current Value         |
| W        | R           | DDDDD  | 0 ~ 32767  | File Register                 |
| W        | SW          | HHH    | 0 ~ 7ff    | Special Link Register         |
| W        | Z           | DD     | 0 ~ 15     | Index Register                |
| W        | ZR          | HHHH   | 0 ~ ffff   | File Register                 |
| W        | D           | DDDDD  | 0 ~ 12287  | Data Register                 |

## Wiring Diagram:

9P D-Sub to 6P Mini-DIN: Q02 CPU port RS232

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Q02 CPU Port RS232 6P<br>Mini-DIN |         |
|------------------------------------|------------------------------------|--------------------------------------|-----------------------------------|---------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                             |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | 4 RXD                             |         |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                             |         |
|                                    |                                    |                                      | 1 RTS                             | circuit |
|                                    |                                    |                                      | 6 CTS                             |         |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description          |
|---------|-------------|----------------------|
| V1.60   | Jun/08/2011 | Added register D_bit |

## MITSUBISHI QJ71E71 (Ethernet)

Supported Series ; Mitsubishi Q type, MELSEC-Q series PLC (Q00J, Q00, Q01, Q02, Q02H, Q06H, Q12H, Q25H, Q12PH, Q25PH) QJ71E71-100 Ethernet module.

Website: <http://www.mitsubishi-automation.com>

### HMI Setting:

| Parameters   | Recommended                   | Options | Notes |
|--------------|-------------------------------|---------|-------|
| PLC type     | MITSUBISHI QJ71E71 (Ethernet) |         |       |
| PLC I/F      | Ethernet                      |         |       |
| Port no.     | 5002                          |         |       |
| PLC sta. no. | 2                             | 1~99    |       |

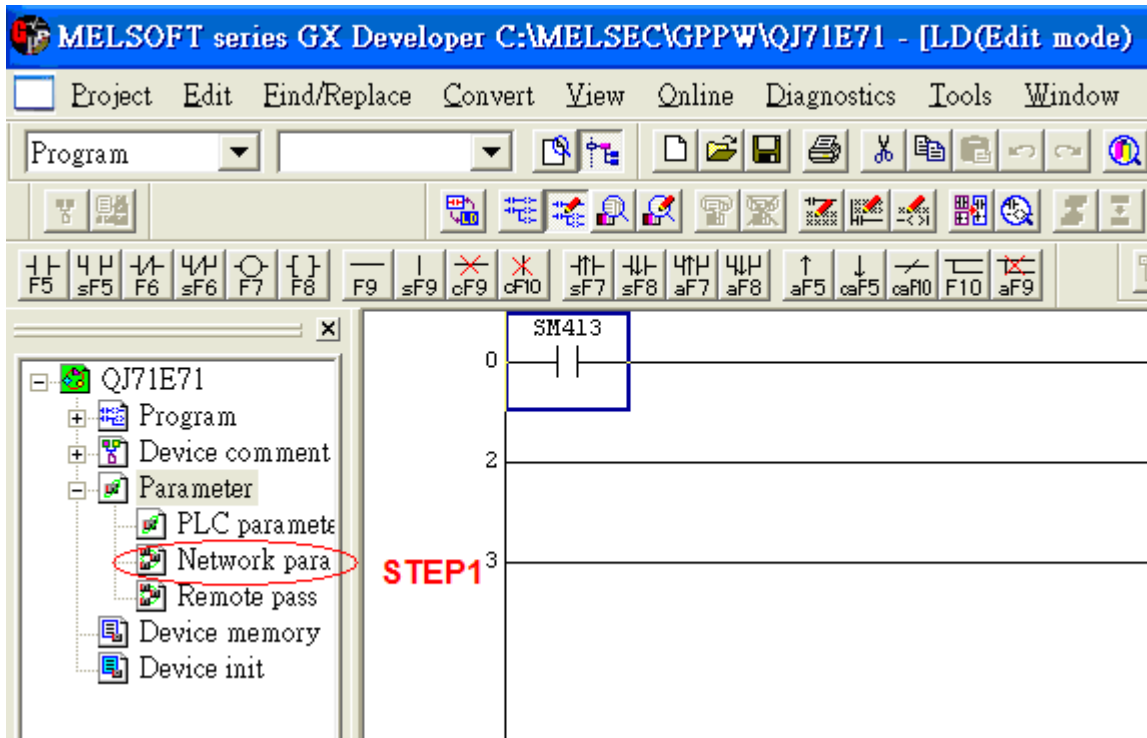
**Note:** MITSUBISHI QJ71E71 only supports PLC Network No. 1.

If PLC Network No. is not 1, please use “MITSUBISHI MELSEC-Q(Ethernet)” driver and fill in the Network No. in Parameter 1. Please refer to MITSUBISHI MELSEC-Q(Ethernet) for further information.

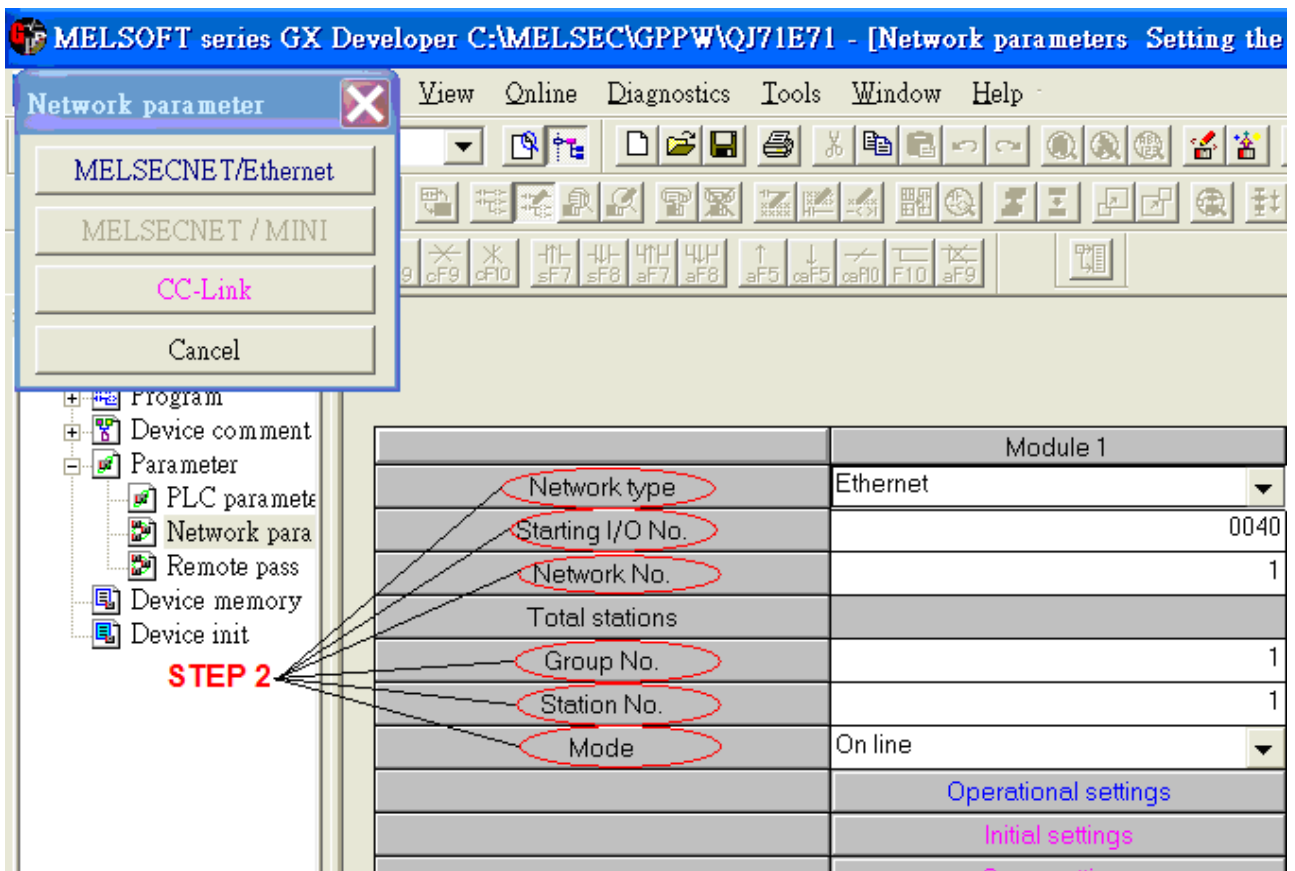
### PLC Setting:

QJ71E71-100 Ethernet module settings:

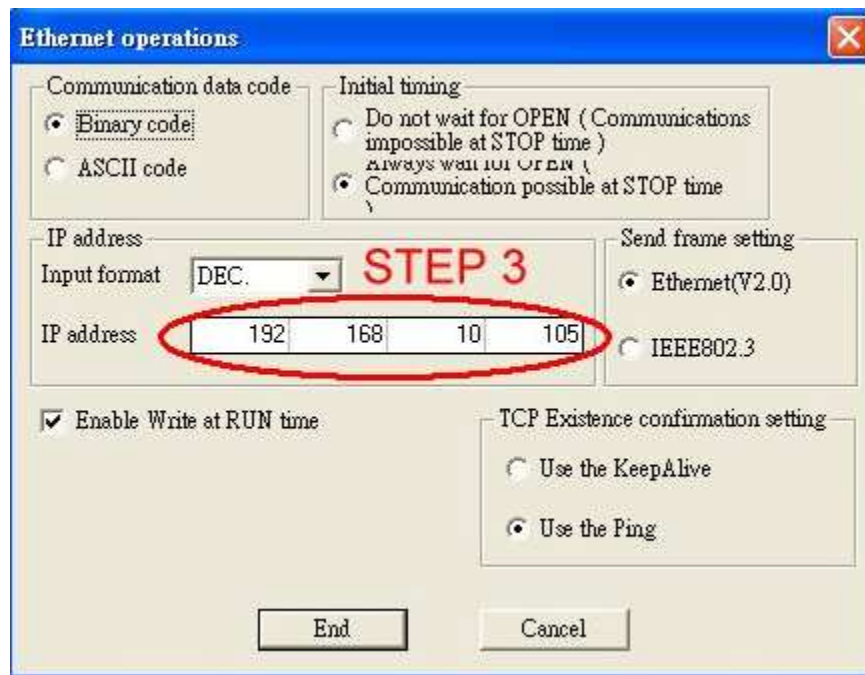
1. Use USB or RS232 of Q-CPU for setting PLC parameters.



2. Click [Operational settings] to set IP information.



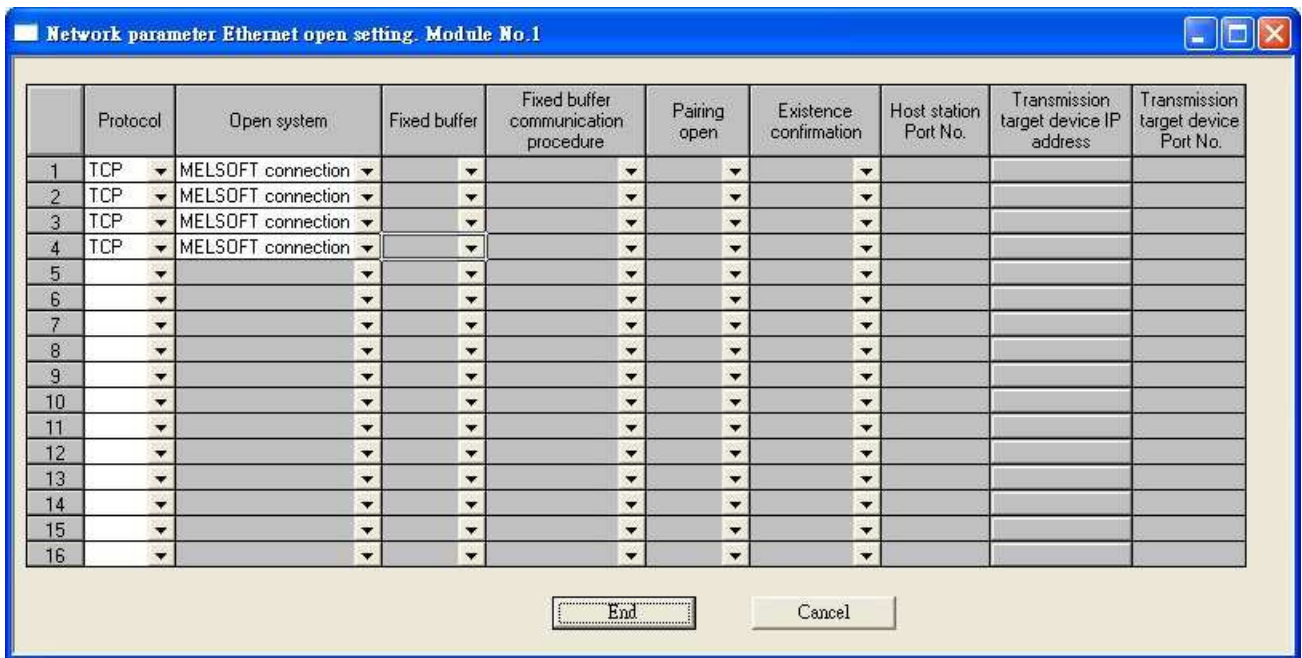
3. Select Ethernet (2.0) for communicating with HMI.



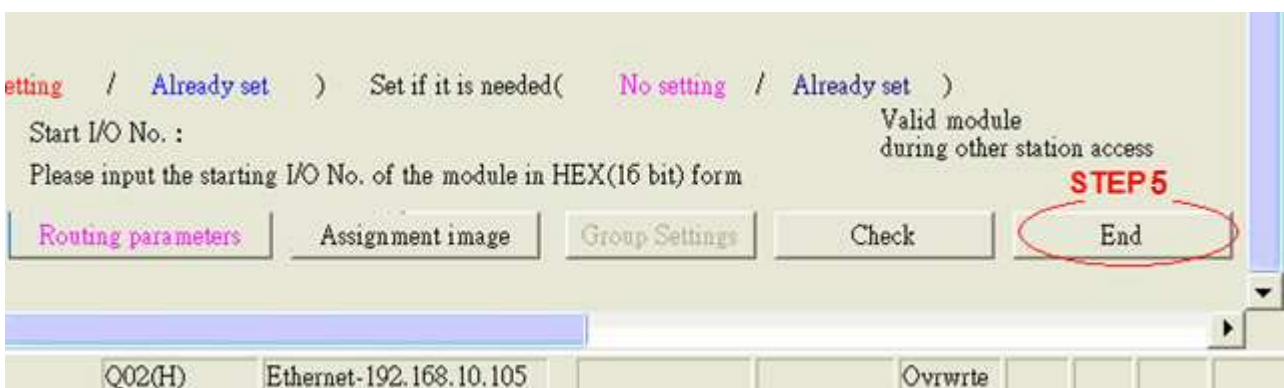
4. Click [Open settings] to set the system.

|                  | Module 1   | Module 2 |
|------------------|--|----------|
| Network type     | Ethernet   | None     |
| Starting I/O No. | 0040   |          |
| Network No.      | 1  |          |
| Total stations   |  |          |
| Group No.        | 1  |          |
| Station No.      | 1  |          |
| Mode             | On line  |          |
|                  | <a href="#">Operational settings</a>                 |          |
|                  | <a href="#">Initial settings</a>                     |          |
|                  | <b>STEP 4</b> <a href="#">Open settings</a>          |          |
|                  | <a href="#">Router relay parameter</a>               |          |
|                  | <a href="#">Station No. &lt;-&gt; IP information</a> |          |
|                  | <a href="#">FTP Parameters</a>                       |          |
|                  | <a href="#">E-mail settings</a>                      |          |
|                  | <a href="#">Interrupt settings</a>                   |          |

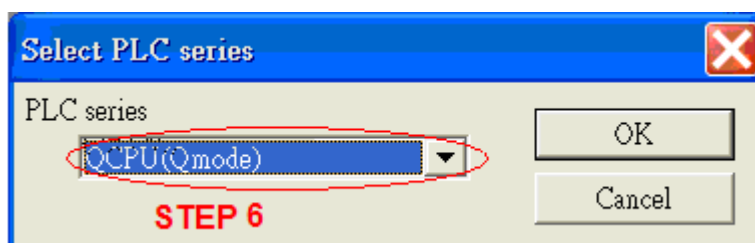




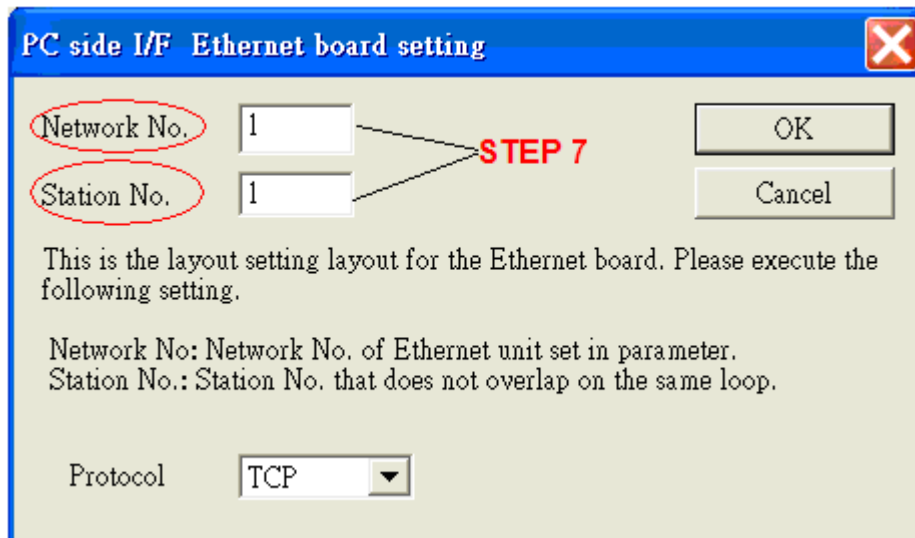
5. Press [END] to finish settings.



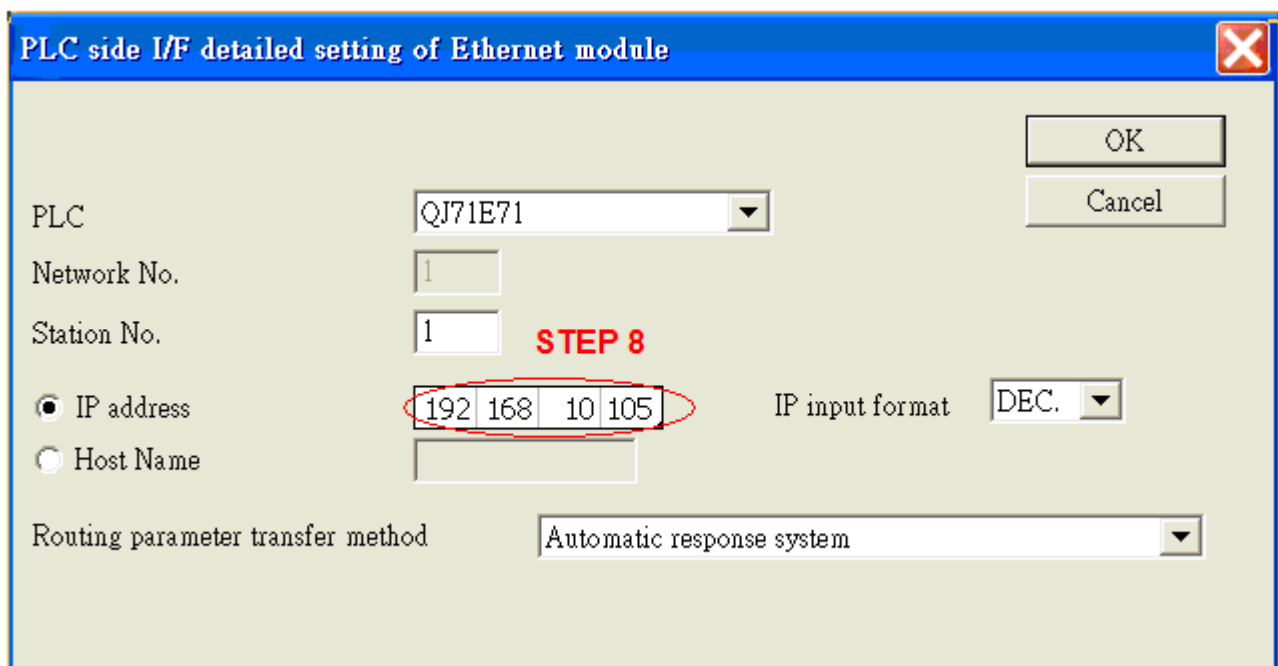
6. Restart PLC software and select [READ FROM PLC], select [QCPU(Qmode)] and press [OK].



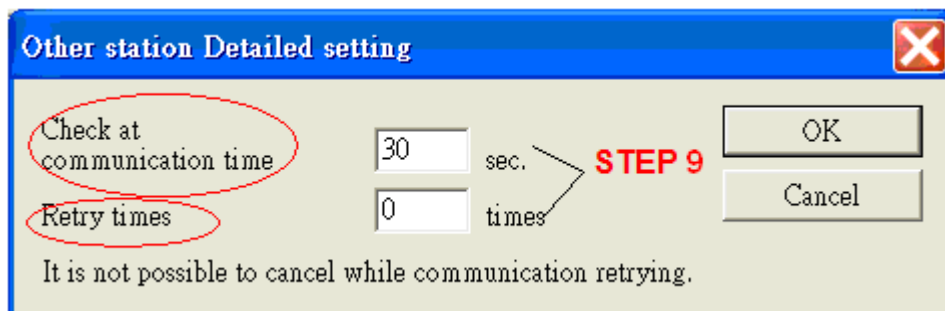
7. In [PC side I/F Ethernet board setting] set Network No. and Station No. (Station No.1 is PC Station No. not Ethernet module Station No., ranged from 2~64, the Network No. can not be the same as that of PC)



8. Select “Ethernet module” in PLC Side I/F to set QJ71E71 IP address.(IP address = Network Parameter IP address)



9. For “Other station”, click [Other station(Single network)] for setting [Check at communication time] and [Retry times].



10. After finishing the settings above, click [Connection test] for testing the communication and sending the PLC program.

### Device Address:


| Bit/Word | Device type | Format | Range      | Memo               |
|----------|-------------|--------|------------|--------------------|
| B        | SM          | DDDD   | 0 ~ 2047   |                    |
| B        | X           | HHHH   | 0 ~ 1fff   | Input Relay        |
| B        | Y           | HHHH   | 0 ~ 1fff   | Output Relay       |
| B        | M           | DDDD   | 0 ~ 8191   | Internal Relay     |
| B        | L           | DDDD   | 0 ~ 8191   | Latch Relay        |
| B        | F           | DDDD   | 0 ~ 2047   | Annunciator        |
| B        | V           | DDDD   | 0 ~ 2047   | Edge Relay         |
| B        | B           | HHHH   | 0 ~ 1fff   | Link Relay         |
| B        | TS          | DDDD   | 0 ~ 2047   |                    |
| B        | TC          | DDDD   | 0 ~ 2047   |                    |
| B        | SS          | DDDD   | 0 ~ 2047   |                    |
| B        | SC          | DDDD   | 0 ~ 2047   |                    |
| B        | CS          | DDDD   | 0 ~ 1023   |                    |
| B        | CC          | DDDD   | 0 ~ 1023   |                    |
| B        | SB          | HHH    | 0 ~ 7ff    | Special Link Relay |
| B        | S           | DDDD   | 0 ~ 8191   |                    |
| B        | DX          | HHHH   | 0 ~ 1fff   | Direct Input       |
| B        | DY          | HHHH   | 0 ~ 1fff   | Direct Output      |
| B        | D_Bit       | DDDDh  | 0 ~ 12287f |                    |
| W        | SD          | DDDD   | 0 ~ 2047   |                    |
| W        | D           | DDDDD  | 0 ~ 12287  | Data Register      |
| W        | W           | HHHH   | 0 ~ 1fff   | Link Register      |
| W        | TN          | DDDD   | 0 ~ 2047   |                    |
| W        | SN          | DDDD   | 0 ~ 2047   |                    |

| Bit/Word | Device type | Format | Range     | Memo                  |
|----------|-------------|--------|-----------|-----------------------|
| W        | CN          | DDDD   | 0 ~ 1023  |                       |
| W        | SW          | HHH    | 0 ~ 7ff   | Special Link Register |
| W        | Z           | DD     | 0 ~ 15    | Index Register        |
| W        | R           | DDDDD  | 0 ~ 32767 | File Register         |
| W        | ZR          | HHHHH  | 0 ~ fe7ff | File Register         |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description           |
|---------|-------------|-----------------------|
| V2.20   | Jun/08/2011 | Added register: D_bit |

# MODBUS ASCII

Supported Series: MODBUS ASCII CONTROLLER

Website: <http://www.modbus.org>

## HMI Setting:

| Parameters   | Recommended  | Options                           | Notes |
|--------------|--------------|-----------------------------------|-------|
| PLC type     | MODBUS ASCII |                                   |       |
| PLC I/F      | RS485        | RS232/RS485                       |       |
| Baud rate    | 9600         | 9600/19200/38400/<br>57600/115200 |       |
| Data bits    | 8            | 7,8                               |       |
| Parity       | Even         | Even, Odd, None                   |       |
| Stop bits    | 1            | 1,2                               |       |
| PLC sta. no. | 1            | 0-255                             |       |

|                     |     |                   |     |
|---------------------|-----|-------------------|-----|
| Online simulator    | YES | Broadcast command | YES |
| Extend address mode | YES |                   |     |

## PLC Setting:

|                    |                       |
|--------------------|-----------------------|
| Communication mode | Modbus ASCII protocol |
|--------------------|-----------------------|

## Device Address:

| Bit/Word | Device type | Format  | Range         | Memo                           |
|----------|-------------|---------|---------------|--------------------------------|
| B        | 1x          | DDDDD   | 1 ~ 65535     | Input bit (read only)          |
| B        | 0x          | DDDDD   | 1 ~ 65535     | Output bit                     |
| B        | 3x_Bit      | DDDDDdd | 100 ~ 6553515 | Input Register bit (read only) |
| B        | 4x_Bit      | DDDDDdd | 100 ~ 6553515 | Output Register bit            |
| W        | 3x          | DDDDD   | 1 ~ 65535     | Input Register (read only)     |
| W        | 4x          | DDDDD   | 1 ~ 65535     | Output Register                |
| W        | 6x          | DDDDD   | 1 ~ 65535     |                                |

Modbus RTU function code:


|    |                            |                               |
|----|----------------------------|-------------------------------|
| 0x | 0x01 Read coil             | 0x05 write single coil        |
| 1x | 0x02 Read discrete input   | N/A for write operation       |
| 3x | 0x04 Read input register   | N/A for write operation       |
| 4x | 0x03 Read holding register | 0x10 write multiple registers |

3xbit is equivalent to 3x  
4xbit is equivalent to 4x

## Wiring Diagram:


9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Modbus ASCII Controller<br>RS232 9P D-Sub |         |
|------------------------------------|------------------------------------|--------------------------------------|---|---------|
| 2 RX                               | 6 RX                               | 8 RX                                 | TXD                                       |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | RXD                                       |         |
| 5 GND                              | 5 GND                              | 5 GND                                | GND                                       |         |
|                                    |                                    |                                      | RTS                                       | circuit |
|                                    |                                    |                                      | CTS                                       |         |




9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | Modbus ASCII Controller<br>RS422 9P D-Sub |  |
|---|--|--|---|--|
| 1 RX-                                   |  |  | TX-                                       |  |
| 2 RX+                                   |  |  | TX+                                       |  |
| 3 TX-                                   |  |  | RX-                                       |  |
| 4 TX+                                   |  |  | RX+                                       |  |
| 5 GND                                   |  |  | GND                                       |  |



**9P D-Sub to 9P D-Sub:**

|  |   |  |   |
|--|---|--|---|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female  | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Modbus ASCII Controller<br>RS485 9P D-Sub |
| 1 RX-  | 6 Data-                                 |  | D-  |
| 2 RX+  | 9 Data+                                 |  | D+  |
| 5 GND  | 5 GND                                   |  | GND                                       |
|  |   |  |   |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.40   | Apr/17/2009 |             |



# MODBUS RTU

Supported Series : MODBUS RTU CONTROLLER

Website : <http://www.modbus.org>

## HMI Setting:

| Parameters   | Recommended | Options         | Notes |
|--------------|-------------|-----------------|-------|
| PLC type     | MODBUS RTU  |                 |       |
| PLC I/F      | RS485       | RS232/RS485     |       |
| Baud rate    | 9600        | 9600~115200     |       |
| Data bits    | 8           | 7, 8            |       |
| Parity       | Even        | Even, Odd, None |       |
| Stop bits    | 1           | 1, 2            |       |
| PLC sta. no. | 1           | 0-255           |       |

|                     |     |                   |     |
|---------------------|-----|-------------------|-----|
| Online simulator    | YES | Broadcast command | YES |
| Extend address mode | YES |                   |     |

## PLC Setting:

|                    |                     |
|--------------------|---------------------|
| Communication mode | Modbus RTU protocol |
|--------------------|---------------------|

## Device Address:

| Bit/Word | Device type    | Format  | Range         | Memo                           |
|----------|----------------|---------|---------------|--------------------------------|
| B        | 0x             | DDDDD   | 1 ~ 65535     | Output bit                     |
| B        | 1x             | DDDDD   | 1 ~ 65535     | Input bit (read only)          |
| B        | 3x_Bit         | DDDDDdd | 100 ~ 6553515 | Input Register bit (read only) |
| B        | 4x_Bit         | DDDDDdd | 100 ~ 6553515 | Output Register bit            |
| B        | 6x_Bit         | DDDDDdd | 100 ~ 6553515 | Output Register bit            |
| B        | 0x_multi_coils | DDDDD   | 1 ~ 65535     | Write multiple coils           |
| W        | 3x             | DDDDD   | 1 ~ 65535     | Input Register (read only)     |
| W        | 4x             | DDDDD   | 1 ~ 65535     | Output Register                |
| DW       | 5x             | DDDDD   | 1 ~ 65535     | 4x double word swap            |
| W        | 6x             | DDDDD   | 1 ~ 65535     | 4x single word write           |
| W        | 4x 32Bit       | DDDDD   | 1 ~ 65535     | 4x High/Low byte swap          |

## NOTE:

Address type “5x” is mapping to Hold Reg. The communication protocol of 5x is almost the same as “4x” except that “5x” swaps double word.

If 4x contains the following information:

|              |         |     |         |     |         |     |     |
|--------------|---------|-----|---------|-----|---------|-----|-----|
| Address      | 1       | 2   | 3       | 4   | 5       | 6   | ... |
| Data in word | 0x1     | 0x2 | 0x3     | 0x4 | 0x5     | 0x6 |     |
| Data         | 0x20001 |     | 0x40003 |     | 0x60005 |     |     |

For 5x, it will be:

|              |         |     |         |     |         |     |     |
|--------------|---------|-----|---------|-----|---------|-----|-----|
| Address      | 1       | 2   | 3       | 4   | 5       | 6   | ... |
| Data in word | 0x2     | 0x1 | 0x4     | 0x3 | 0x6     | 0x5 |     |
| Data         | 0x10002 |     | 0x30004 |     | 0x50006 |     |     |

Modbus RTU function code:

|                |      |                       |      |                          |
|----------------|------|-----------------------|------|--------------------------|
| 0x             | 0x01 | Read coil             | 0x05 | write single coil        |
| 0x_multi_coils | 0x01 | Read coil             | 0x0f | write multiple coils     |
| 1x             | 0x02 | Read discrete input   | N/A  | for write operation      |
| 3x             | 0x04 | Read input register   | N/A  | for write operation      |
| 4x             | 0x03 | Read holding register | 0x10 | write multiple registers |
| 5x             | 0x03 | Read holding register | 0x10 | write multiple registers |

(Note: reverse word order in double word format)

3xbit is equivalent to 3x


4xbit is equivalent to 4x

|    |      |                       |      |                       |
|----|------|-----------------------|------|-----------------------|
| 6x | 0x03 | Read holding register | 0x06 | write single register |
|----|------|-----------------------|------|-----------------------|


(Note: 6x is limited to device of one word only)

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

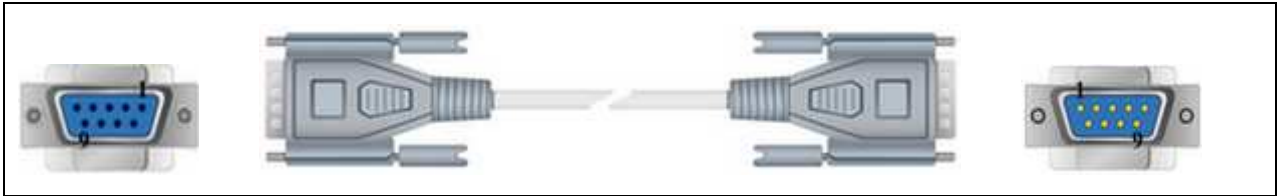
|  |                                    |                                      |   |         |
|--|------------------------------------|--------------------------------------|---|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Modbus RTU Controller RS232<br>9P D-Sub |         |
| 2 RX   | 6 RX                               | 8 RX                                 | TXD                                     |         |
| 3 TX   | 4 TX                               | 7 TX                                 | RXD                                     |         |
| 5 GND  | 5 GND                              | 5 GND                                | GND                                     |         |
|  |                                    |                                      | RTS                                     | circuit |
|  |                                    |                                      | CTS                                     |         |
|  |                                    |                                      |   |         |

9P D-Sub to 9P D-Sub:

|  |  |  |   |  |
|--|--|--|---|--|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | Modbus RTU Controller RS422<br>9P D-Sub |  |
| 1 RX-  |  |  | TX-                                     |  |
| 2 RX+  |  |  | TX+                                     |  |
| 3 TX-  |  |  | RX-                                     |  |
| 4 TX+  |  |  | RX+                                     |  |
| 5 GND  |  |  | GND                                     |  |
|  |  |  |   |  |

9P D-Sub to 9P D-Sub:

|   |   |  |   |  |
|---|---|--|---|--|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Modbus RTU Controller RS485<br>9P D-Sub |  |
| 1 RX-                                   | 6 Data-                                 |  | D-                                      |  |
| 2 RX+                                   | 9 Data+                                 |  | D+                                      |  |
| 5 GND                                   | 5 GND                                   |  | GND                                     |  |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description   |
|---------|-------------|---|
| V1.90   | May/05/2010 | Fixed when receiving data over 8 bytes from MODBUS RTU, LW-9570 fails to calculate correctly. |

## MODBUS RTU (0x/1x Range Adjustable)

Supported Series : MODBUS RTU CONTROLLER

Website : <http://www.modbus.org>

### HMI Setting:

| Parameters   | Recommended                         | Options                       | Notes |
|--------------|-------------------------------------|-------------------------------|-------|
| PLC type     | MODBUS RTU (0x/1x Range Adjustable) |                               |       |
| PLC I/F      | RS485                               | RS232/RS485                   |       |
| Baud rate    | 9600                                | 9600/19200/38400/57600/115200 |       |
| Data bits    | 8                                   | 7,8                           |       |
| Parity       | Even                                | Even, Odd, None               |       |
| Stop bits    | 1                                   | 1,2                           |       |
| PLC sta. no. | 1                                   | 0-255                         |       |

|                     |     |
|---------------------|-----|
| Online simulator    | YES |
| Extend address mode | YES |

### PLC Setting:

|                    |                     |
|--------------------|---------------------|
| Communication mode | Modbus RTU protocol |
|--------------------|---------------------|

### Device Address:

| Bit/Word | Device type    | Format  | Range         | Memo                           |
|----------|----------------|---------|---------------|--------------------------------|
| B        | 0x             | DDDDD   | 1 ~ 65535     | Output bit                     |
| B        | 1x             | DDDDD   | 1 ~ 65535     | Input bit (read only)          |
| B        | 3x_Bit         | DDDDDdd | 100 ~ 6553515 | Input Register bit (read only) |
| B        | 4x_Bit         | DDDDDdd | 100 ~ 6553515 | Output Register bit            |
| B        | 6x_Bit         | DDDDDdd | 100 ~ 6553515 | Output Register bit            |
| B        | 0x_multi_coils | DDDDD   | 1 ~ 65535     | Write multiple coils           |
| W        | 3x             | DDDDD   | 1 ~ 65535     | Input Register (read only)     |
| W        | 4x             | DDDDD   | 1 ~ 65535     | Output Register                |
| DW       | 5x             | DDDDD   | 1 ~ 65535     | 4x double word swap            |

|   |          |       |           |                       |
|---|----------|-------|-----------|-----------------------|
| W | 6x       | DDDDD | 1 ~ 65535 | 4x single word write  |
| W | 4x_32Bit | DDDDD | 1 ~ 65535 | 4x High/Low byte swap |

## NOTE:

Address type “5x” is mapping to Hold Reg. The communication protocol of “5x” is almost the same as “4x” except that “5x” swaps double words.

If 4x contains the following information:

|              |         |     |         |     |         |     |     |
|--------------|---------|-----|---------|-----|---------|-----|-----|
| Address      | 1       | 2   | 3       | 4   | 5       | 6   | ... |
| Data in word | 0x1     | 0x2 | 0x3     | 0x4 | 0x5     | 0x6 |     |
| Data         | 0x20001 |     | 0x40003 |     | 0x60005 |     |     |

For 5x, it will be:

|              |         |     |         |     |         |     |     |
|--------------|---------|-----|---------|-----|---------|-----|-----|
| Address      | 1       | 2   | 3       | 4   | 5       | 6   | ... |
| Data in word | 0x2     | 0x1 | 0x4     | 0x3 | 0x6     | 0x5 |     |
| Data         | 0x10002 |     | 0x30004 |     | 0x50006 |     |     |

Modbus RTU function code:

|                |                            |                               |
|----------------|----------------------------|-------------------------------|
| 0x             | 0x01 Read coil             | 0x05 Write single coil        |
| 0x_multi_coils | 0x01 Read coil             | 0x0f Write multiple coils     |
| 1x             | 0x02 Read discrete input   | N/A for writing operation     |
| 3x             | 0x04 Read input register   | N/A for writing operation     |
| 4x             | 0x03 Read holding register | 0x10 Write multiple registers |
| 5x             | 0x03 Read holding register | 0x10 Write multiple registers |

(Note: reverse word order in double words format)

3xbit is equivalent to 3x

4xbit is equivalent to 4x

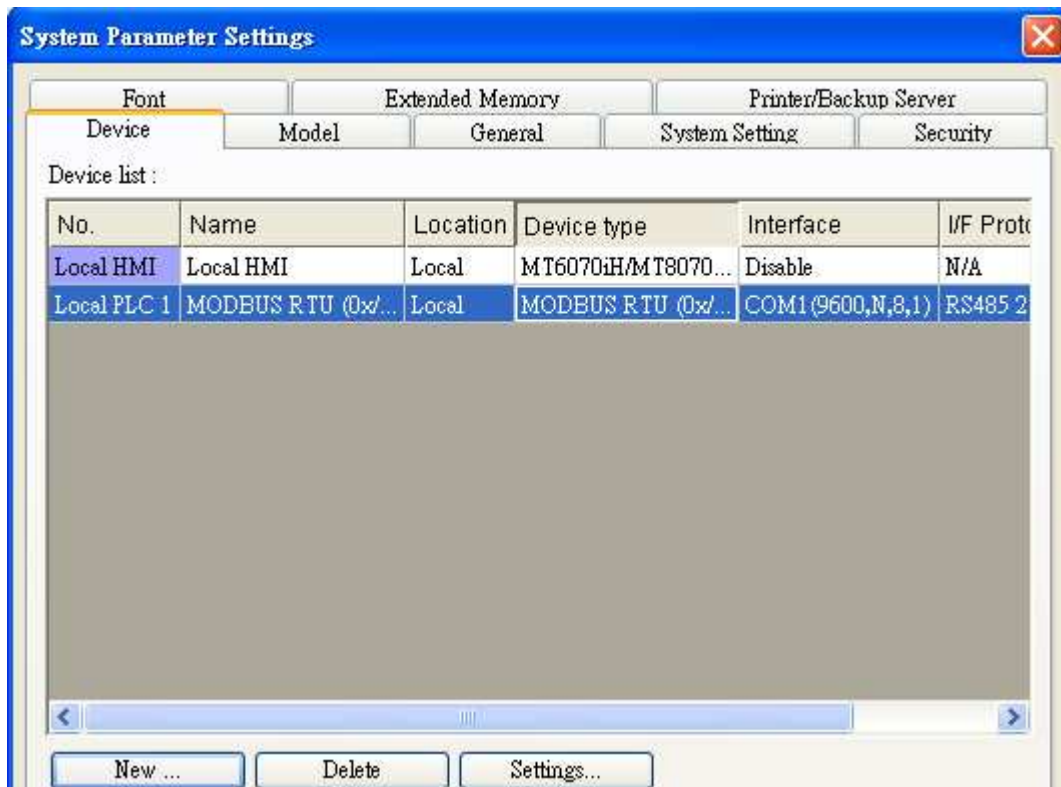
|    |                            |                            |
|----|----------------------------|----------------------------|
| 6x | 0x03 Read holding register | 0x06 Write single register |
|----|----------------------------|----------------------------|

(Note: 6x is limited to device of one word only)

## Setting Instructions:

- Go to [System Parameter Settings]  , click [New] to add a new device -Modbus

RTU (0x 1x range adjustable) , as shown below:



2. After adding Modbus RTU (0x 1x Range Adjustable) driver, [Add Address Range Limit] button will be enabled as below. Users can set maximum read/write command size here.

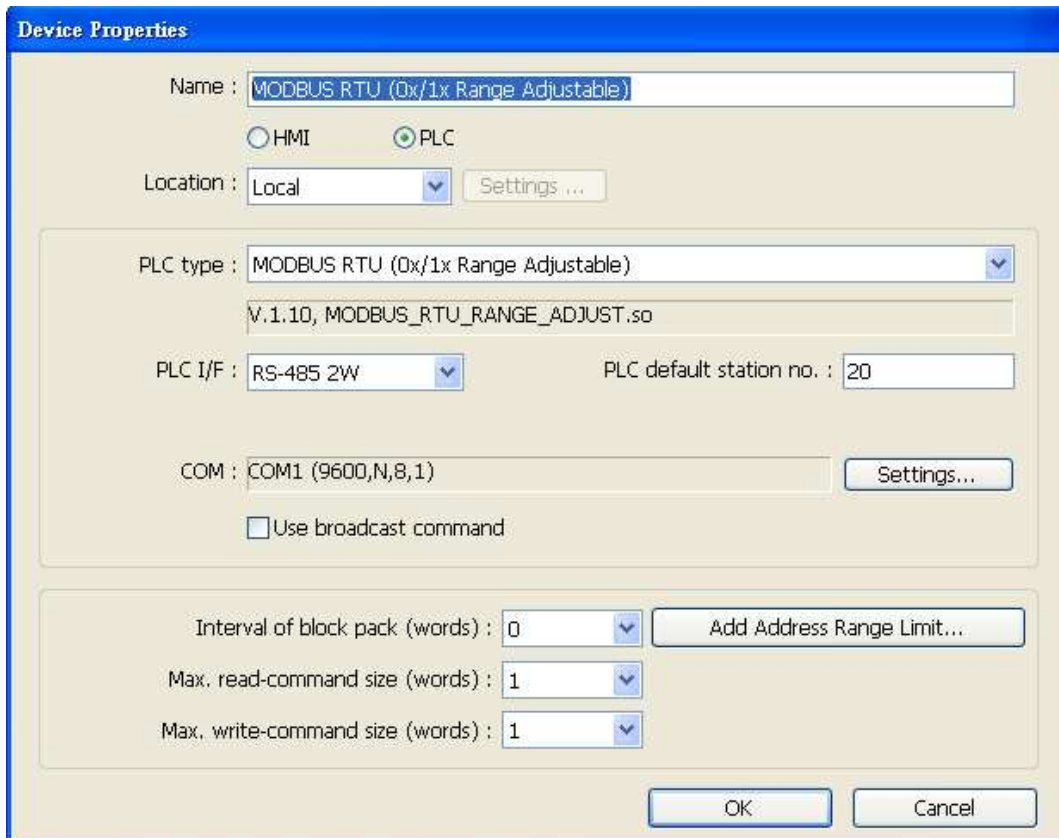
- Max.read-command size (words): Pull down to select PLC reading range.

Max. read-command size (words) :

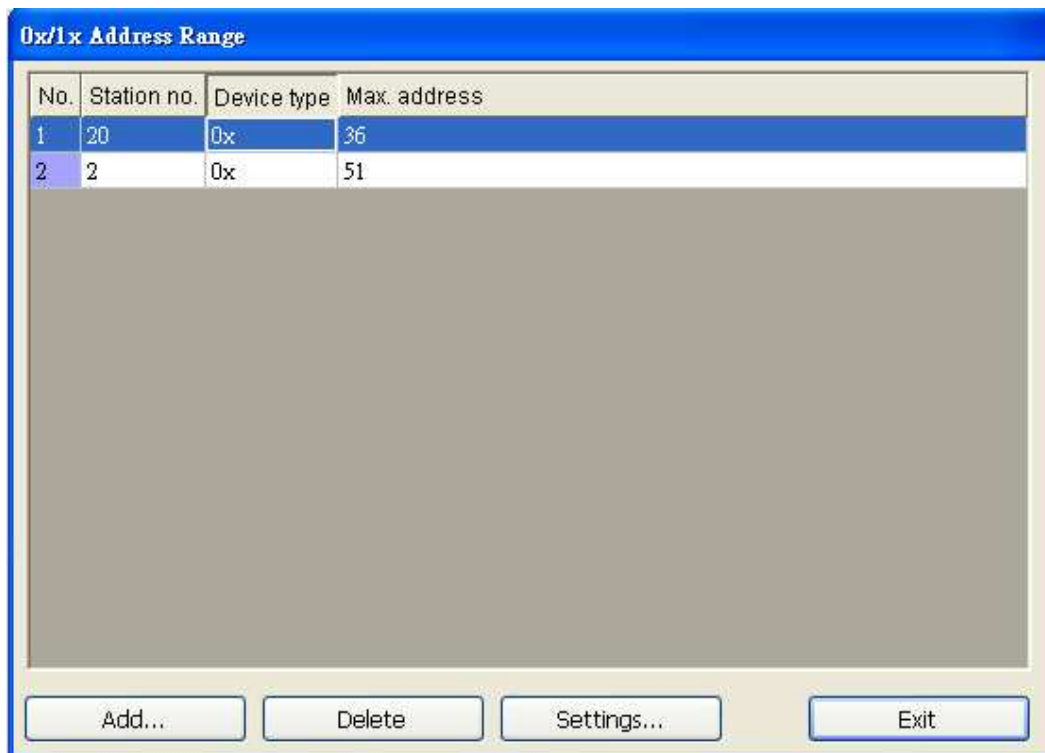
- Max.write-command size (words): Pull down to select PLC writing range.

Max. write-command size (words) :

Note: Setting [Add Address Range Limit] is enabled only when bit address is not a multiple of 16bit.



3. Click [Add Address Range Limit] button, Users can define 0x and 1x address range in [0x 1x Address Range] dialog box, referring to bit range of the device used.





Add : Set [Station No.], [Device Type], [Max. Address] then click [OK] to finish adding as below:



Delete : The selected items will be deleted.

Settings : Set [Station No.], [Device Type], [Max. Address] then click [OK] to finish adding as below:

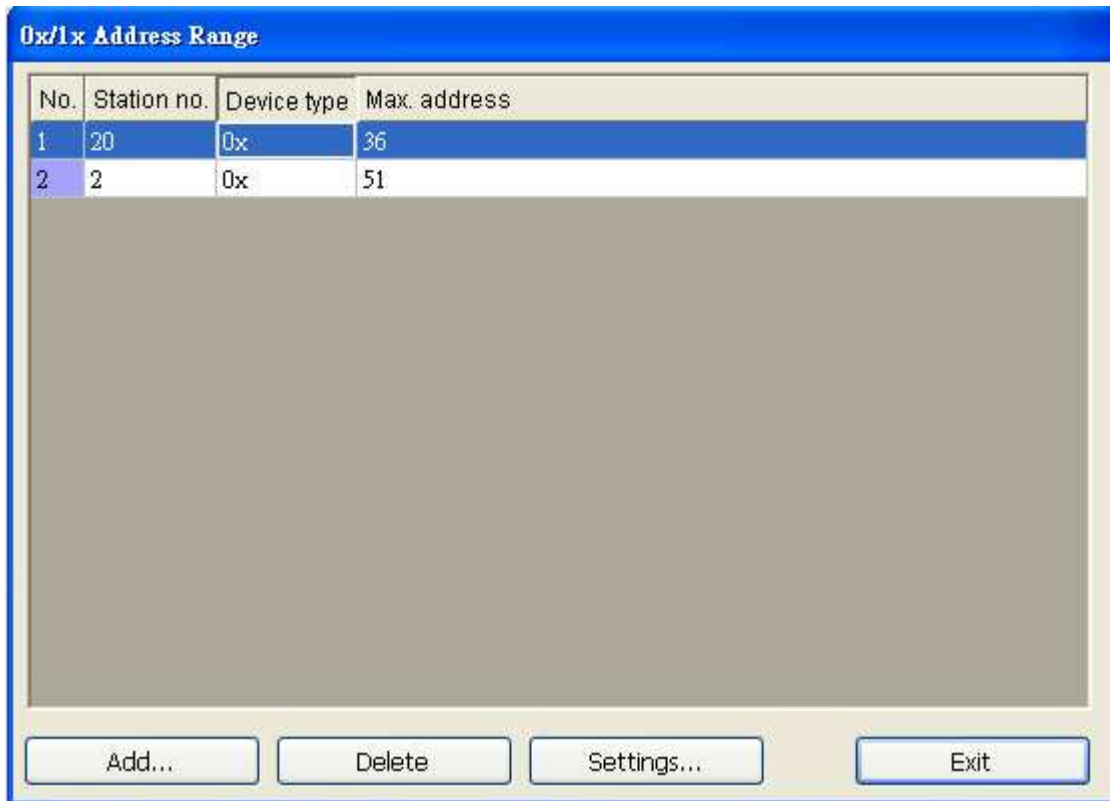


Example :

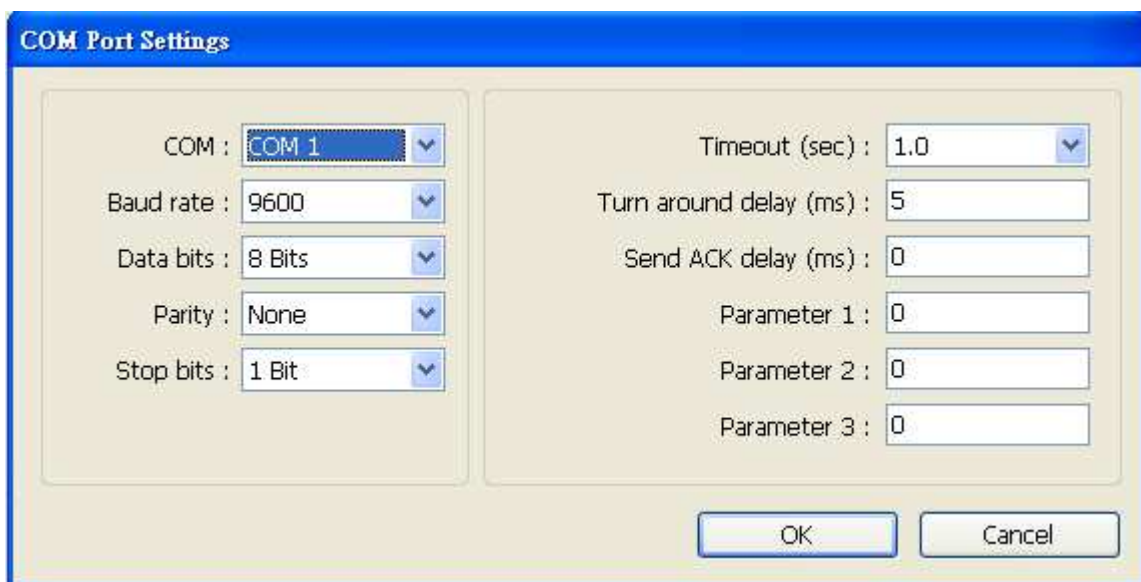
Take D2 and D8 of SCON as example, the settings depend on maximum bit range of different PLC types. Set [Station No.] and address first.

For D2, set [Station No.] to **20**, [Device Type] **0x**, [Max. Address] **36**.

For D8, set [Station No.] to **2**, [Device Type] **0x**, [Max. Address] **51**.




Note: If connecting with 2 or more PLC, click [Settings] in [Device Properties], and set 4 to [Turn around delay] as below.




After completing all settings above, the communication is enabled.

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

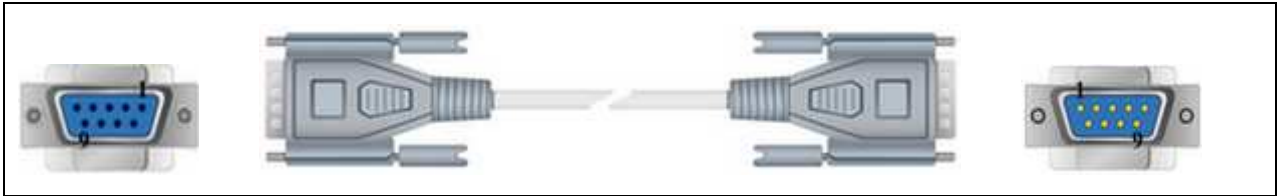
|  |                                    |                                      |   |         |
|--|------------------------------------|--------------------------------------|---|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Modbus RTU Controller RS232<br>9P D-Sub |         |
| 2 RX   | 6 RX                               | 8 RX                                 | TXD                                     |         |
| 3 TX   | 4 TX                               | 7 TX                                 | RXD                                     |         |
| 5 GND  | 5 GND                              | 5 GND                                | GND                                     |         |
|  |                                    |                                      | RTS                                     | circuit |
|  |                                    |                                      | CTS                                     |         |
|  |                                    |                                      |   |         |

9P D-Sub to 9P D-Sub:

|  |  |  |   |  |
|--|--|--|---|--|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | Modbus RTU Controller RS422<br>9P D-Sub |  |
| 1 RX-  |  |  | TX-                                     |  |
| 2 RX+  |  |  | TX+                                     |  |
| 3 TX-  |  |  | RX-                                     |  |
| 4 TX+  |  |  | RX+                                     |  |
| 5 GND  |  |  | GND                                     |  |
|  |  |  |   |  |

9P D-Sub to 9P D-Sub:

|   |   |  |   |  |
|---|---|--|---|--|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Modbus RTU Controller RS485<br>9P D-Sub |  |
| 1 RX-                                   | 6 Data-                                 |  | D-                                      |  |
| 2 RX+                                   | 9 Data+                                 |  | D+                                      |  |
| 5 GND                                   | 5 GND                                   |  | GND                                     |  |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Aug/25/2010 |             |

## MODBUS RTU (zero-based addressing)

Supported Series : MODBUS RTU CONTROLLER

Website : <http://www.modbus.org>

### HMI Setting:

| Parameters   | Recommended                        | Options         | Notes |
|--------------|------------------------------------|-----------------|-------|
| PLC type     | MODBUS RTU (zero-based addressing) |                 |       |
| PLC I/F      | RS485                              | RS232/RS485     |       |
| Baud rate    | 9600                               | 9600~115200     |       |
| Data bits    | 8                                  | 7,8             |       |
| Parity       | Even                               | Even, Odd, None |       |
| Stop bits    | 1                                  | 1,2             |       |
| PLC sta. no. | 1                                  | 0-255           |       |

|                     |     |                   |     |
|---------------------|-----|-------------------|-----|
| Online simulator    | YES | Broadcast command | YES |
| Extend address mode | YES |                   |     |

### PLC Setting:

|                    |                     |
|--------------------|---------------------|
| Communication mode | Modbus RTU protocol |
|--------------------|---------------------|

### Device Address:

| Bit/Word | Device type    | Format  | Range       | Memo                           |
|----------|----------------|---------|-------------|--------------------------------|
| B        | 0x             | DDDDD   | 0 ~ 65535   | Output bit                     |
| B        | 1x             | DDDDD   | 0 ~ 65535   | Input bit (read only)          |
| B        | 3x_Bit         | DDDDDdd | 0 ~ 6553515 | Input Register bit (read only) |
| B        | 4x_Bit         | DDDDDdd | 0 ~ 6553515 | Output Register bit            |
| B        | 0x_multi_coils | DDDDD   | 0 ~ 65535   | Write multiple coils           |
| W        | 3x             | DDDDD   | 0 ~ 65535   | Input Register (read only)     |
| W        | 4x             | DDDDD   | 0 ~ 65535   | Output Register                |
| DW       | 5x             | DDDDD   | 0 ~ 65535   | 4x double word swap            |
| W        | 6x             | DDDDD   | 0 ~ 65535   | 4x single word write           |

## NOTE:

Address type “5x” is mapping to Hold Reg. The communication protocol of 5x is almost the same as “4x” except that “5x” swaps double words.

If 4x contains the following information:

|              |         |     |         |     |         |     |     |
|--------------|---------|-----|---------|-----|---------|-----|-----|
| Address      | 1       | 2   | 3       | 4   | 5       | 6   | ... |
| Data in word | 0x1     | 0x2 | 0x3     | 0x4 | 0x5     | 0x6 |     |
| Data         | 0x20001 |     | 0x40003 |     | 0x60005 |     |     |

For 5x, it will be:

|              |         |     |         |     |         |     |     |
|--------------|---------|-----|---------|-----|---------|-----|-----|
| Address      | 1       | 2   | 3       | 4   | 5       | 6   | ... |
| Data in word | 0x2     | 0x1 | 0x4     | 0x3 | 0x6     | 0x5 |     |
| Data         | 0x10002 |     | 0x30004 |     | 0x50006 |     |     |

Modbus RTU function code:

|                |      |                       |      |                          |
|----------------|------|-----------------------|------|--------------------------|
| 0x             | 0x01 | Read coil             | 0x05 | write single coil        |
| 0x_multi_coils | 0x01 | Read coil             | 0x0f | write multiple coils     |
| 1x             | 0x02 | Read discrete input   | N/A  | for write operation      |
| 3x             | 0x04 | Read input register   | N/A  | for write operation      |
| 4x             | 0x03 | Read holding register | 0x10 | write multiple registers |
| 5x             | 0x03 | Read holding register | 0x10 | write multiple registers |

(Note: reverse word order in double word format)

3xbit is equivalent to 3x


4xbit is equivalent to 4x

|    |      |                       |      |                       |
|----|------|-----------------------|------|-----------------------|
| 6x | 0x03 | Read holding register | 0x06 | write single register |
|----|------|-----------------------|------|-----------------------|


(Note: 6x is limited to device of one word only)

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

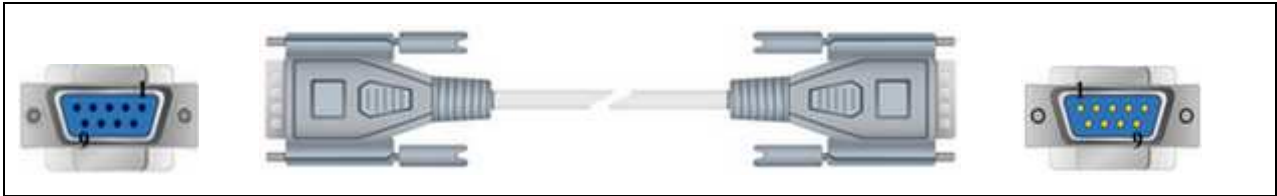
|  |                                    |                                      |   |         |
|--|------------------------------------|--------------------------------------|---|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Modbus RTU Controller RS232<br>9P D-Sub |         |
| 2 RX   | 6 RX                               | 8 RX                                 | TXD                                     |         |
| 3 TX   | 4 TX                               | 7 TX                                 | RXD                                     |         |
| 5 GND  | 5 GND                              | 5 GND                                | GND                                     |         |
|  |                                    |                                      | RTS                                     | circuit |
|  |                                    |                                      | CTS                                     |         |
|  |                                    |                                      |   |         |

9P D-Sub to 9P D-Sub:

|  |  |  |   |  |
|--|--|--|---|--|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | Modbus RTU Controller RS422<br>9P D-Sub |  |
| 1 RX-  |  |  | TX-                                     |  |
| 2 RX+  |  |  | TX+                                     |  |
| 3 TX-  |  |  | RX-                                     |  |
| 4 TX+  |  |  | RX+                                     |  |
| 5 GND  |  |  | GND                                     |  |
|  |  |  |   |  |

9P D-Sub to 9P D-Sub:

|   |   |  |   |  |
|---|---|--|---|--|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Modbus RTU Controller RS485<br>9P D-Sub |  |
| 1 RX-                                   | 6 Data-                                 |  | D-                                      |  |
| 2 RX+                                   | 9 Data+                                 |  | D+                                      |  |
| 5 GND                                   | 5 GND                                   |  | GND                                     |  |

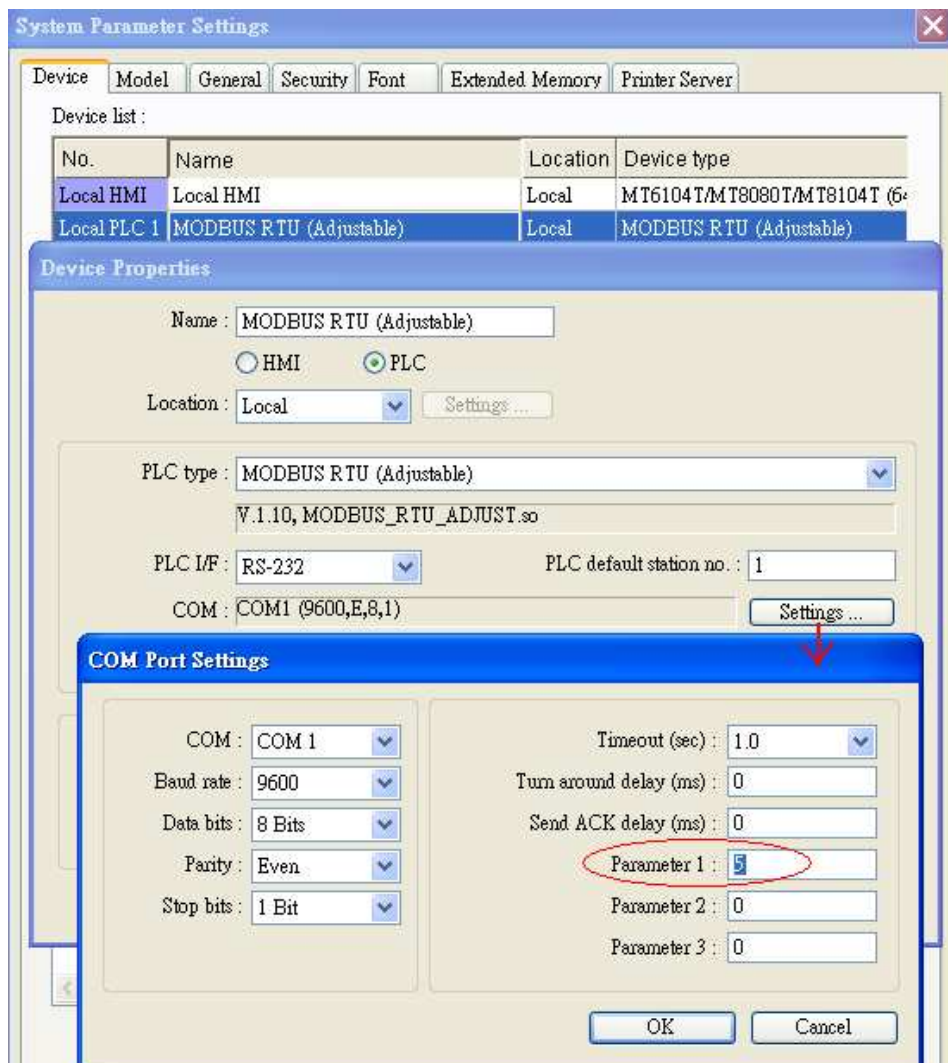


Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Note:

MODBUS RTU (adjustable) usage

Users can decide the address range via setting value on Parameter 1. For example, when users set 5 to Parameter 1, the address range will be 5 ~ 65535.



## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.30   | Aug/26/2009 |             |



## MODBUS Server (Modbus RTU Slave)

### HMI Setting:

| Parameters   | Recommended   | Options                 | Notes                                    |
|--------------|---------------|-------------------------|--|
| PLC type     | MODBUS Server |                         |  |
| PLC I/F      | RS232         | RS232, RS485            |  |
| Baud rate    | 9600          | 9600~115200<br>Ethernet | Ethernet supports UDP or TCP/IP protocol |
| Data bits    | 8             | 8                       |  |
| Parity       | Even          | Even, Odd,<br>None      |  |
| Stop bits    | 1             | 1                       |  |
| PLC sta. no. | 1             | 1-31                    | HMI Modbus Station No.                   |
| Port no.     |               | 502                     |  |

|                   |     |                     |    |
|-------------------|-----|---------------------|----|
| Online simulator  | YES | Extend address mode | NO |
| Broadcast command | NO  |                     |    |

### PLC Setting:

|                    |                     |
|--------------------|---------------------|
| Communication mode | Modbus RTU protocol |
|--------------------|---------------------|

### Modbus Server UDP Protocol Setting:

MODBUS Server (Ethernet) supports UDP communication protocol. To use UDP mode, go to [System Parameter Settings] in editing software, in [Device list] click [New], for [PLC type] select "Modbus Server", [PLC I/F] set to [Ethernet], and select [Use UDP (User Datagram Protocol)] to finish setting.

**Device Properties**

Name : MODBUS Server

HMI  PLC

Location : Local [Settings ...]

1. PLC type : MODBUS Server

2. V.1.00, MODBUS\_SERVER.so

PLC I/F : Ethernet

IP : Port = 502 [Settings...]

3.  Use UDP (User Datagram Protocol )

Station no. : 1

Use broadcast command

Interval of block pack (words) : 5

Max. read-command size (words) : 120

Max. write-command size (words) : 120

OK Cancel

Modbus Server Port No. can be changed by clicking [Settings].

Modbus Server Port No. can not be set identically to HMI Port No. When doing so, the warning message below will be shown requesting users to change setting.



Note:

A maximum of 64 Clients can be connected simultaneously.

Modbus Server Port No. can't be identical to HMI Port No.

## Modbus Server TCP/IP Protocol Setting:

MODBUS Server (Ethernet) supports TCP/IP communication protocol. Go to [System Parameter Settings] in editing software, in [Device list] click [New], for [PLC type] select “Modbus Server”, [PLC I/F] set to [Ethernet] to finish setting.

**Device Properties**

Name : MODBUS Server

HMI  PLC

Location : Local

PLC type : MODBUS Server

V.1.00, MODBUS\_SERVER.so

PLC I/F : Ethernet

IP : Local,Port=8000(=HMI Port)

Use UDP (User Datagram Protocol )

Station no. : 1

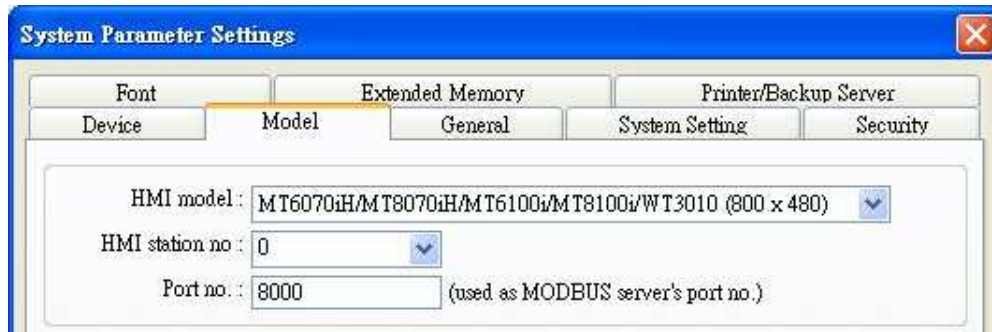
Use broadcast command

Interval of block pack (words) : 5

Max. read-command size (words) : 120

Max. write-command size (words) : 120

For Modbus Server TCP/IP, HMI Port No. is the same as Modbus Server Port No. To change Port No. go to [System Parameter Settings] / [Model], the default Port No. is “8000”, and it is allowed to change Modbus Server Port No. here.



### Device Address:

| Bit/Word | Device type | Format | Range     | Memo                           |
|----------|-------------|--------|-----------|--------------------------------|
| B        | LB          | dddd   | 0 ~ 9998  | Mapping to 0x/1x 1 ~ 9999      |
| W        | LW          | dddd   | 0 ~ 9998  | Mapping to 3x/4x 1 ~ 9999      |
| W        | RW          | dddd   | 0 ~ 55536 | Mapping to 3x/4x 10000 ~ 65536 |

LB0 = 0x0001, LB1 = 0x0002, LW0 = 3x0001, LW1 = 3x0002

Modbus RTU Server doesn't support function code 06(preset single register), please use function code 16(0x10, preset multiple registers).

### Modbus Server Function Code:


|                |      |                       |      |                          |
|----------------|------|-----------------------|------|--------------------------|
| 0x             | 0x01 | Read coil             | 0x05 | write single coil        |
| 0x_multi_coils | 0x01 | Read coil             | 0x0f | write multiple coils     |
| 1x             | 0x02 | Read discrete input   | N/A  | for write operation      |
| 3x             | 0x04 | Read input register   | N/A  | for write operation      |
| 4x             | 0x03 | Read holding register | 0x10 | write multiple registers |

### Wiring Diagram:


9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Modbus RTU Controller RS232<br>9P D-Sub |         |
|------------------------------------|------------------------------------|--------------------------------------|---|---------|
| 2 RX                               | 6 RX                               | 8 RX                                 | TXD                                     |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | RXD                                     |         |
| 5 GND                              | 5 GND                              | 5 GND                                | GND                                     |         |
|                                    |                                    |                                      | RTS                                     | circuit |
|                                    |                                    |                                      | CTS                                     |         |

## 9P D-Sub to 9P D-Sub:

|   |  |  |   |
|---|--|--|---|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female   |  |  | Modbus RTU Controller RS422<br>9P D-Sub |
| 1 RX-   |  |  | TX-                                     |
| 2 RX+   |  |  | TX+                                     |
| 3 TX-   |  |  | RX-                                     |
| 4 TX+   |  |  | RX+                                     |
| 5 GND   |  |  | GND                                     |
|  |  |  |   |


## 9P D-Sub to 9P D-Sub:

|  |   |  |   |
|--|---|--|---|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female  | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Modbus RTU Controller RS485<br>9P D-Sub |
| 1 RX-  | 6 Data-                                 |  | D-                                      |
| 2 RX+  | 9 Data+                                 |  | D+                                      |
| 5 GND  | 5 GND                                   |  | GND                                     |
|  |   |  |   |

## Direct connect (crossover cable):


|                 |              |                 |
|-----------------|--------------|-----------------|
| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |

|        |             |        |
|--------|-------------|--------|
| 5 BD4- | White/Blue  | 5 BD4- |
| 6 RX-  | Green       | 2 TX-  |
| 7 BD3+ | White/Brown | 7 BD3+ |
| 8 BD3- | Brown       | 8 BD3- |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: Setting more than one Modbus Server in HMI Device List is of no effect.

The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description     |
|---------|-------------|-----------------|
| V1.00   | Dec/30/2008 | Driver released |

## MODBUS TCP/IP (Ethernet)

Supported Series: Modbus RTU TCP/IP device.

Website: <http://www.modbus.org>

### HMI Setting:

| Parameters   | Recommended              | Options | Notes |
|--------------|--------------------------|---------|-------|
| PLC type     | MODBUS TCP/IP (Ethernet) |         |       |
| PLC I/F      | Ethernet                 |         |       |
| Port no.     | 502                      |         |       |
| PLC sta. no. | 1                        | 0~255   |       |


### Device Address:

| Bit/Word | Device type    | Format  | Range         | Memo                              |
|----------|----------------|---------|---------------|-----------------------------------|
| B        | 0x             | DDDDD   | 1 ~ 65535     | Input bit                         |
| B        | 1x             | DDDDD   | 1 ~ 65535     | Output bit                        |
| B        | 3x_bit         | DDDDDdd | 100 ~ 6553515 | Input Register bit<br>(read only) |
| B        | 4x_bit         | DDDDDdd | 100 ~ 6553515 | Output Register bit               |
| B        | 6x_bit         | DDDDDdd | 100 ~ 6553515 | Output Register bit               |
| B        | 0x_multi_coils | DDDDD   | 1 ~ 65535     | Write multiple coils              |
| W        | 3x             | DDDDD   | 1 ~ 65535     | Input Register                    |
| W        | 4x             | DDDDD   | 1 ~ 65535     | Output Register                   |
| DW       | 5x             | DDDDD   | 1 ~ 65535     | 4x double word swap               |
| W        | 6x             | DDDDD   | 1 ~ 65535     | 4x single word write              |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.50   | Aug/26/2009 |             |



## MODBUS TCP/IP (zero-based addressing)

Supported Series : Modbus RTU TCP/IP device.

Website: <http://www.modbus.org>

### HMI Setting:

| Parameters   | Recommended                           | Options | Notes |
|--------------|---------------------------------------|---------|-------|
| PLC type     | MODBUS TCP/IP (zero-based addressing) |         |       |
| PLC I/F      | Ethernet                              |         |       |
| Port no.     | 502                                   |         |       |
| PLC sta. no. | 1                                     | 0~255   |       |


### Device Address:

| Bit/Word | Device type    | Format  | Range       | Memo                           |
|----------|----------------|---------|-------------|--------------------------------|
| B        | 0x             | DDDDD   | 0 ~ 65535   | Input bit                      |
| B        | 1x             | DDDDD   | 0 ~ 65535   | Output bit                     |
| B        | 3x_Bit         | DDDDDdd | 0 ~ 6553515 | Input Register bit (read only) |
| B        | 4x_Bit         | DDDDDdd | 0 ~ 6553515 | Output Register bit            |
| B        | 6x_Bit         | DDDDDdd | 0 ~ 6553515 | Output Register bit            |
| B        | 0x_multi_coils | DDDDD   | 0 ~ 65535   | Write multiple coils           |
| W        | 3x             | DDDDD   | 0 ~ 65535   | Input Register                 |
| W        | 4x             | DDDDD   | 0 ~ 65535   | Output Register                |
| DW       | 5x             | DDDDD   | 0 ~ 65535   | 4x double word swap            |
| W        | 6x             | DDDDD   | 0 ~ 65535   | 4x single word write           |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.40   | Aug/27/2009 |             |

# MODBUS TCP/IP 32Bit

Supported Series: Modbus RTU TCP/IP device.

Website: <http://www.modbus.org>

## HMI Setting:

| Parameters   | Recommended         | Options | Notes |
|--------------|---------------------|---------|-------|
| PLC type     | MODBUS TCP/IP 32Bit |         |       |
| PLC I/F      | Ethernet            |         |       |
| Port no.     | 502                 |         |       |
| PLC sta. no. | 1                   | 0~255   |       |


## Device Address:

| Bit/Word | Device type    | Format  | Range         | Memo                           |
|----------|----------------|---------|---------------|--------------------------------|
| B        | 0x             | DDDDD   | 1 ~ 65535     | Input bit                      |
| B        | 1x             | DDDDD   | 1 ~ 65535     | Output bit                     |
| B        | 3x_Bit         | DDDDDdd | 100 ~ 6553515 | Input Register bit (read only) |
| B        | 4x_Bit         | DDDDDdd | 100 ~ 6553515 | Output Register bit            |
| B        | 6x_Bit         | DDDDDdd | 100 ~ 6553515 | Output Register bit            |
| B        | 0x_multi_coils | DDDDD   | 1 ~ 65535     | Write multiple coils           |
| W        | 3x             | DDDDD   | 1 ~ 65535     | Input Register                 |
| W        | 4x             | DDDDD   | 1 ~ 65535     | Output Register                |
| DW       | 5x             | DDDDD   | 1 ~ 65535     | 4x double word swap            |
| W        | 6x             | DDDDD   | 1 ~ 65535     | 4x single word write           |
| W        | 4x_32Bit       | DDDDD   | 1 ~ 65535     |                                |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.10   | Aug/27/2009 | Driver released. |

# Moeller XC-CPU101

Supported Series: MOELLER XC100/200 series

Website: <http://www.moeller.net>

## HMI Setting:

| Parameters   | Recommended       | Options      | Notes |
|--------------|-------------------|--------------|-------|
| PLC type     | Moeller XC-CPU101 |              |       |
| PLC I/F      | RS232             |              |       |
| Baud rate    | 38400             | 4800 ~ 57600 |       |
| Data bits    | 8                 |              |       |
| Parity       | None              |              |       |
| Stop bits    | 1                 |              |       |
| PLC sta. no. | 1                 |              |       |


## Device Address:

| Bit/Word | Device type | Format | Range    | Note |
|----------|-------------|--------|----------|------|
| B        | QX          | DDo    | 0 ~ 157  |      |
| B        | IX          | DDo    | 0 ~ 157  |      |
| W        | MW          | DDDD   | 0 ~ 4095 |      |
| W        | QW          | DD     | 0 ~ 15   |      |
| W        | IW          | DD     | 0 ~ 15   |      |

## Wiring Diagram:

9P D-Sub to 8P RJ45:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | PLC RS232 8P RJ45 |
|------------------------------------|------------------------------------|--------------------------------------|-------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 5 TD              |
| 3 TX                               | 4 TX                               | 7 TX                                 | 8 RD              |
| 5 GND                              | 5 GND                              | 5 GND                                | 4 GND             |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| 1.00    | Apr/01/2010 | Driver released. |

# Modicon Twido

Website : <http://www.modicon.com/>

## HMI Setting:

| Parameters   | Recommended | Options         | Notes                           |
|--------------|-------------|-----------------|---------------------------------|
| PLC type     | MODBUS RTU  |                 | Supports Extended Address Mode. |
| PLC I/F      | RS485       | RS232/RS485     |                                 |
| Baud rate    | 19200       | 19200           |                                 |
| Data bits    | 8           | 8               | Must set 8 for RTU mode         |
| Parity       | None        | Even, Odd, None |                                 |
| Stop bits    | 1           | 1               | Must set 8 for RTU mode         |
| PLC sta. no. | 1           | 0-247           |                                 |

## PLC Setting:


|                    |                   |
|--------------------|-------------------|
| Communication mode | 19200, None, 8, 1 |
| Select             | Modbus RTU Slave  |

## Device Address:

| Bit/Word | Device type | Format | Range    | Memo |
|----------|-------------|--------|----------|------|
| B        | 0x or 1x    | dddd   | 0 ~ 9999 | %Mi  |
| W        | 3x or 4x    | dddd   | 0 ~ 9999 | %MWi |

## Wiring Diagram:


### 9P D-Sub to 8P Mini-DIN:

| HMI COM1<br>RS485 2W 9P<br>D-Sub Female  | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Port1 RS485 8P Mini-DIN |         |
|--|---|--|-------------------------|---------|
| 1 RX-  | 6 Data-                                 |  | 2 B-                    |         |
| 2 RX+  | 9 Data+                                 |  | 1 A+                    |         |
| 5 GND  | 5 GND                                   |  | 5 DTP                   | circuit |
|  |   |  | 7 GND                   |         |
|  |   |  |                         |         |

### 9P D-Sub to Terminals:

| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Port2 RS485 3P Terminals |  |
|---|---|--|--------------------------|--|
| 1 RX-                                   | 6 Data-                                 |  | B-                       |  |
| 2 RX+                                   | 9 Data+                                 |  | A+                       |  |
| 5 GND                                   | 5 GND                                   |  | GND                      |  |
|   |   |  |                          |  |

### 9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Port2 RS232 9P D-Sub |  |
|--|------------------------------------|--------------------------------------|----------------------|--|
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TX                 |  |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RX                 |  |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                |  |
|  |                                    |                                      |                      |  |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.



## OEMAX Series

Supported Series: OEMax NX7/NX7s Controllers.

Website: <http://www.oemax.co.kr>

### HMI Setting:

| Parameters   | Recommended  | Options               | Notes |
|--------------|--------------|-----------------------|-------|
| PLC type     | OEMAX Series |                       |       |
| PLC I/F      | RS232        |                       |       |
| Baud rate    | 9600         | 9600, 19200,<br>38400 |       |
| Data bits    | 8            | 8                     |       |
| Parity       | None         | Even, Odd, None       |       |
| Stop bits    | 1            | 1                     |       |
| PLC sta. no. | 0            |                       |       |


### Device Address:

| Bit/Word | Device type | Format | Range      | Memo                       |
|----------|-------------|--------|------------|----------------------------|
| B        | R           | DDDdd  | 0 ~ 25515  |                            |
| B        | L           | DDDdd  | 0 ~ 25515  |                            |
| B        | M           | DDDDdd | 0 ~ 199915 |                            |
| B        | K           | DDDdd  | 0 ~ 25515  | Keep Contact               |
| B        | F           | DDDdd  | 0 ~ 99115  | Special Contact            |
| B        | TC          | DDD    | 0 ~ 255    | Timer/Counter              |
| W        | W           | DDDD   | 0 ~ 7999   | Data Register              |
| W        | SV          | DDD    | 0 ~ 255    | Timer/Counter Set Value    |
| W        | PV          | DDD    | 0 ~ 255    | Timer/Counter Preset Value |
| W        | SR          | DDD    | 0 ~ 255    | Special Register           |
| W        | WR          | DDD    | 0 ~ 255    |                            |
| W        | WL          | DDD    | 0 ~ 255    |                            |
| W        | WM          | DDDD   | 0 ~ 1999   |                            |
| W        | WK          | DDD    | 0 ~ 255    |                            |
| W        | WF          | DDD    | 0 ~ 991    |                            |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | PLC Port1 RS232 9P D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|--------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TXD                    |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RXD                    |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                    |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Dec/30/2008 | Driver released. |

## OMRON C/CQM1 Series

Supported Series: OMRON C, CPM, CPL, CQM Series (Host Link Protocol)

Website: <http://oeiweb.omron.com/oei/Products-PLC.htm>

### HMI Setting:

| Parameters   | Recommended         | Options             | Notes                 |
|--------------|---------------------|---------------------|-----------------------|
| PLC type     | OMRON C/CQM1 Series |                     |                       |
| PLC I/F      | RS232               | RS232, RS422, RS485 |                       |
| Baud rate    | 9600                | 9600, 19200         |                       |
| Data bits    | 7                   | 7 or 8              |                       |
| Parity       | Even                | Even, Odd, None     |                       |
| Stop bits    | 2                   | 1 or 2              |                       |
| PLC sta. no. | 0                   | 0-31                | Host Link Station No. |

|                     |     |                   |     |
|---------------------|-----|-------------------|-----|
| Online simulator    | YES | Broadcast command | YES |
| Extend address mode | YES |                   |     |

### PLC Setting:

|                    |                    |
|--------------------|--------------------|
| Communication mode | Host Link Protocol |
|--------------------|--------------------|

### Device Address:

| Bit/Word | Device type          | Format | Range      | Memo                   |
|----------|----------------------|--------|------------|------------------------|
| B        | IR                   | DDDDdd | 0 ~ 409515 | I/O and Internal Relay |
| B        | HR                   | DDDDdd | 0 ~ 409515 | Hold Relay             |
| B        | LR                   | DDDDdd | 0 ~ 409515 | Link Relay             |
| B        | IR (Force Set/Reset) | DDDDdd | 0 ~ 409515 |                        |
| B        | HR (Force Set/Reset) | DDDDdd | 0 ~ 409515 |                        |
| B        | LR (Force Set/Reset) | DDDDdd | 0 ~ 409515 |                        |
| B        | AR                   | DDDDdd | 0 ~ 409515 | Auxiliary Relay        |
| W        | AR_W                 | DDDD   | 0 ~ 4095   |                        |
| W        | IR W                 | DDDD   | 0 ~ 4095   |                        |

|   |      |      |          |               |
|---|------|------|----------|---------------|
| W | HR_W | DDDD | 0 ~ 4095 |               |
| W | LR_W | DDDD | 0 ~ 4095 |               |
| W | TC   | DDD  | 0 ~ 255  |               |
| W | DM   | DDDD | 0 ~ 9999 | Data Register |

## Wiring Diagram:

CPU Port (CPM2A,CQM1/1H,C200H/HS/ALPHA series)


Communication Module:

CPM1-CIF01 adapter (for CPM1/CPM1A/CPM2A series, CQM1/CQM1H series)

CPM1H-SCB41 communication module (for CQM1H-CPU51/61)

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | OMRON CPU RS232 9P D-Sub |         |
|------------------------------------|------------------------------------|--------------------------------------|--------------------------|---------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 SD                     |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RD                     |         |
| 5 GND                              | 5 GND                              | 5 GND                                | 9 GND                    |         |
|                                    |                                    |                                      | 4 RS                     | circuit |
|                                    |                                    |                                      | 5 CS                     |         |

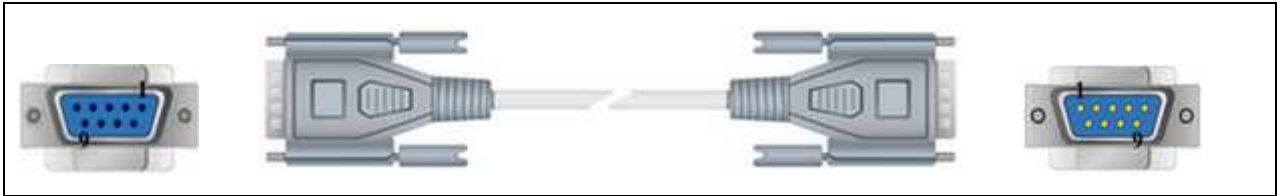
  


C200h-LK201,3G2A6-LK201 communication module

C200HW-COM02/03/04/05/06 communication module

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | OMRON CPU RS232 9P D-Sub |         |
|------------------------------------|------------------------------------|--------------------------------------|--------------------------|---------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 SD                     |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RD                     |         |
| 5 GND                              | 5 GND                              | 5 GND                                | 7 GND                    |         |
|                                    |                                    |                                      | 4 RS                     | circuit |
|                                    |                                    |                                      | 5 CS                     |         |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.80   | Apr/14/2010 |             |

## OMRON CJ/CS/CP

Supported Series: OMRON CP1L, CP1H, CJ1M, CJ2M, CJ1H, CJM1G, CS1H and CS1G. (Host Link Protocol FINS command), this driver supports Extend Addressing Mode.

Website: <http://oeiweb.omron.com/oei/Products-PLC.htm>

### HMI Setting:

| Parameters   | Recommended    | Options             | Notes                 |
|--------------|----------------|---------------------|-----------------------|
| PLC type     | OMRON CJ/CS/CP |                     |                       |
| PLC I/F      | RS232          | RS232, RS422, RS485 |                       |
| Baud rate    | 9600           | 9600~115200         |                       |
| Data bits    | 7              | 7 or 8              |                       |
| Parity       | Even           | Even, Odd, None     |                       |
| Stop bits    | 2              | 1 or 2              |                       |
| PLC sta. no. | 0              | 0-31                | Host Link Station No. |

|                   |     |                     |     |
|-------------------|-----|---------------------|-----|
| Online simulator  | YES | Extend address mode | YES |
| Broadcast command | NO  |                     |     |

### PLC Setting:

|                    |                    |
|--------------------|--------------------|
| Communication mode | Host Link Protocol |
|--------------------|--------------------|

### Device Address:


| Bit/Word | Device type | Format   | Range       | Memo                 |
|----------|-------------|----------|-------------|----------------------|
| B        | CIO_Bit     | DDDDDDdd | 0 ~ 3276715 | Channel I/O (CIO)    |
| B        | W_Bit       | DDDDDDdd | 0 ~ 3276715 | Work Area (WR)       |
| B        | H_Bit       | DDDDDDdd | 0 ~ 3276715 | Holding Area (HR)    |
| B        | D_Bit       | DDDDDDdd | 0 ~ 3276715 | Data Memory (DM)     |
| B        | A_Bit       | DDDDDDdd | 0 ~ 3276715 | Auxiliary Relay (AR) |
| B        | T_Bit       | DDDDDDdd | 0 ~ 3276715 | Timer (TIM)          |
| B        | C_Bit       | DDDDDDdd | 0 ~ 3276715 | Counter (CNT)        |
| B        | C_flag      | DDDD     | 0 ~ 4095    |                      |

| Bit/Word | Device type | Format | Range     | Memo                 |
|----------|-------------|--------|-----------|----------------------|
| B        | T_flag      | DDDD   | 0 ~ 4095  |                      |
| B        | LR_Bit      | DDDdd  | 0 ~ 19915 |                      |
| W        | T           | DDDDD  | 0 ~ 32767 | Timer (TIM)          |
| W        | H           | DDDDD  | 0 ~ 32767 | Holding Area (HR)    |
| W        | D           | DDDDD  | 0 ~ 32767 | Data Memory (DM)     |
| W        | A           | DDDDD  | 0 ~ 32767 | Auxiliary Relay (AR) |
| W        | W           | DDDDD  | 0 ~ 32767 | Work Area (WR)       |
| W        | C           | DDDDD  | 0 ~ 32767 | Counter (CNT)        |
| W        | CIO         | DDDDD  | 0 ~ 32767 | Channel I/O (CIO)    |
| W        | EM0 ~ EMC   | DDDDD  | 0 ~ 32767 | Extend Memory        |
| W        | LR          | DDD    | 0 ~ 199   |                      |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | OMRON CPU RS232 9P D-Sub |         |
|------------------------------------|------------------------------------|--------------------------------------|--------------------------|---------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 SD                     |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RD                     |         |
| 5 GND                              | 5 GND                              | 5 GND                                | 9 GND                    |         |
|                                    |                                    |                                      | 4 RS                     | circuit |
|                                    |                                    |                                      | 5 CS                     |         |



9P D-Sub to Terminals: CP1H/CP1L CP1W-CIF11 RS422

| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | CP1W-CIF11 RS422 Terminals |
|---|--|--|----------------------------|
| 1 RX-                                   |  |  | SDA                        |
| 2 RX+                                   |  |  | SDB                        |
| 3 TX-                                   |  |  | RDA                        |
| 4 TX+                                   |  |  | RDB                        |
| 5 GND                                   |  |  | FG                         |



CP1W-CIF11: SW1 ON, others OFF.

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description                 |
|---------|-------------|-----------------------------|
| V1.90   | Feb/01/2011 | Added registers: LR, LR_Bit |



## OMRON CJ1/CS1 (Ethernet)

Supported Series: OMRON CJ1M, CJ1H, CJ1G, CS1H, and CS1G. (Ethernet FINS)

Website: <http://oeiweb.omron.com/oei/Products-PLC.htm>

### HMI Setting:

| Parameters   | Recommended              | Options | Notes |
|--------------|--------------------------|---------|-------|
| PLC type     | OMRON CJ1/CS1 (Ethernet) |         |       |
| PLC I/F      | Ethernet                 |         |       |
| Port no.     | 9600                     |         |       |
| PLC sta. no. | 0                        |         |       |

### PLC Setting:

|                    |                        |
|--------------------|------------------------|
| Communication mode | FINS Ethernet protocol |
|--------------------|------------------------|

### Device Address:


| Bit/Word | Device type | Format   | Range       | Memo                             |
|----------|-------------|----------|-------------|----------------------------------|
| B        | CIO_Bit     | DDDDDDdd | 0 ~ 3276715 | Channel I/O (CIO)                |
| B        | W_Bit       | DDDDDDdd | 0 ~ 3276715 | Work Area (WR)                   |
| B        | H_Bit       | DDDDDDdd | 0 ~ 3276715 | Holding Area (HR)                |
| B        | A_Bit       | DDDDDDdd | 0 ~ 3276715 | Auxiliary Relay (AR) (Read only) |
| B        | D_Bit       | DDDDDDdd | 0 ~ 3276715 | Data Memory (DM)                 |
| B        | T_Bit       | DDDDDDdd | 0 ~ 3276715 | Timer (TIM)                      |
| B        | C_Bit       | DDDDDDdd | 0 ~ 3276715 | Counter (CNT)                    |
| B        | C_Flag      | DDDD     | 0 ~ 4095    |                                  |
| B        | T_Flag      | DDDD     | 0 ~ 4095    |                                  |
| W        | CIO         | DDDDDD   | 0 ~ 32767   | Channel I/O (CIO)                |
| W        | W           | DDDDDD   | 0 ~ 32767   | Work Area (WR)                   |
| W        | H           | DDDDDD   | 0 ~ 32767   | Holding Area (HR)                |
| W        | A           | DDDDDD   | 0 ~ 32767   | Auxiliary Relay (AR) (Read       |

|   |           |       |           |                  |
|---|-----------|-------|-----------|------------------|
|   |           |       |           | only)            |
| W | C         | DDDDD | 0 ~ 32767 | Counter (CNT)    |
| W | T         | DDDDD | 0 ~ 32767 | Timer (TIM)      |
| W | D         | DDDDD | 0 ~ 32767 | Data Memory (DM) |
| W | EM0 ~ EMC | DDDDD | 0 ~ 32767 | Extend Memory    |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.50   | Jun/30/2010 |             |

## OMRON E5CN

Supported Series: OMRON E5CN series temperature controller with communication options. E5EN/CN/GN/EZ/ZN series.

Website: <http://oeiweb.omron.com>

### HMI Setting:

| Parameters   | Recommended | Options                           | Notes |
|--------------|-------------|-----------------------------------|-------|
| PLC type     | OMRON E5CN  |                                   |       |
| PLC I/F      | RS485 2W    |                                   |       |
| Baud rate    | 9600        | 9600/19200/38400/<br>57600/115200 |       |
| Data bits    | 7           | 7,8                               |       |
| Parity       | Even        | Even, Odd, None                   |       |
| Stop bits    | 2           | 1,2                               |       |
| PLC sta. no. | 0           | 0-99                              |       |

|                     |     |                   |     |
|---------------------|-----|-------------------|-----|
| Online simulator    | YES | Broadcast command | YES |
| Extend address mode | YES |                   |     |

### Device Address:


| Bit/Word | Device type | Format | Range    | Memo                                  |
|----------|-------------|--------|----------|---------------------------------------|
| B        | Status_CH1  | DD     | 0 ~ 31   | Page40                                |
| B        | Status_CH2  | DD     | 0 ~ 31   |                                       |
| DW       | C0          | HHHH   | 0 ~ 270f | Read only (Hex) Page34                |
| DW       | C1          | HHHH   | 0 ~ 270f | Read/Write (Hex) Page35               |
| DW       | C2          | HHHH   | 0 ~ 270f | Read/Write (Hex) Page35               |
| DW       | C3          | HHHH   | 0 ~ 270f | Read/Write (Hex) Page36               |
| W        | Code00_00   | H      | 0        | Communications writing OFF (disabled) |
| W        | Code00_01   | H      | 0        | Communications writing ON(enabled)    |
| W        | Code01_00   | H      | 0        | Run                                   |
| W        | Code01_01   | H      | 0        | Stop                                  |
| W        | Code02_00   | H      | 0        | Multi-SP Set point 0                  |

| Bit/Word | Device type | Format | Range | Memo                  |
|----------|-------------|--------|-------|-----------------------|
| W        | Code02_01   | H      | 0     | Multi-SP Set point 1  |
| W        | Code02_02   | H      | 0     | Multi-SP Set point 2  |
| W        | Code02_03   | H      | 0     | Multi-SP Set point 3  |
| W        | Code03_00   | H      | 0     | AT cancel             |
| W        | Code03_01   | H      | 0     | AT execute            |
| W        | Code04_00   | H      | 0     | Write mode (Backup)   |
| W        | Code04_01   | H      | 0     | Write mode (Ram)      |
| W        | Code05_00   | H      | 0     | Save RAM data         |
| W        | Code06_00   | H      | 0     | Software reset        |
| W        | Code07_00   | H      | 0     | Move to setup area 1  |
| W        | Code08_00   | H      | 0     | Move to protect level |
| W        | Code01_10   | H      | 0     |                       |
| W        | Code01_11   | H      | 0     |                       |
| W        | Code01_F0   | H      | 0     |                       |
| W        | Code01_F1   | H      | 0     |                       |
| W        | Code02_10   | H      | 0     |                       |
| W        | Code02_11   | H      | 0     |                       |
| W        | Code02_F0   | H      | 0     |                       |
| W        | Code02_F1   | H      | 0     |                       |
| W        | Code03_10   | H      | 0     |                       |
| W        | Code03_11   | H      | 0     |                       |
| W        | Code03_F0   | H      | 0     |                       |
| W        | Code03_F1   | H      | 0     |                       |
| W        | Code09_00   | H      | 0     |                       |
| W        | Code09_01   | H      | 0     |                       |
| W        | Code09_10   | H      | 0     |                       |
| W        | Code09_11   | H      | 0     |                       |
| W        | Code09_F0   | H      | 0     |                       |
| W        | Code09_F1   | H      | 0     |                       |
| W        | Code0A_00   | H      | 0     |                       |
| W        | Code0B_00   | H      | 0     |                       |
| W        | Code0C_00   | H      | 0     |                       |
| W        | Code0C_01   | H      | 0     |                       |
| W        | Code0C_02   | H      | 0     |                       |
| W        | Code0C_0F   | H      | 0     |                       |
| W        | Code0C_10   | H      | 0     |                       |
| W        | Code0C_11   | H      | 0     |                       |

| Bit/Word | Device type | Format | Range | Memo |
|----------|-------------|--------|-------|------|
| W        | Code0C_12   | H      | 0     |      |
| W        | Code0C_1F   | H      | 0     |      |
| W        | Code0C_F0   | H      | 0     |      |
| W        | Code0C_F1   | H      | 0     |      |
| W        | Code0C_F2   | H      | 0     |      |
| W        | Code0C_FF   | H      | 0     |      |

## Wiring Diagram:

| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | OMRON E5CN |
|---|---|--|------------|
| 1 RX-                                   | 6 Data-                                 |  | 12 B       |
| 2 RX+                                   | 9 Data+                                 |  | 11 A       |
| 5 GND                                   | 5 GND                                   |  | GND        |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Note:

For communication with OMRON E5EZ, please set communication settings to 9600, E, 7, 2, station no. 1.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.21   | Dec/21/2010 |             |

## Panasonic FP

Supported Series: NAIS (Matsushita) FP series include FP-X, FP-Σ, FP0, FP1, FP2, FP2SH, FP10SH and FP3 Ethernet support FP-X with AFPX-COM5.

Website: <http://pewa.panasonic.com/>

### HMI Setting:

| Parameters   | Recommended  | Options                           | Notes  |
|--------------|--------------|-----------------------------------|--|
| PLC type     | Panasonic FP |                                   |  |
| PLC I/F      | RS232        | RS232/RS485                       |  |
| Baud rate    | 9600         | 9600, 19200, 38400, 57600, 115200 |  |
| Data bits    | 8            | 7 or 8                            |  |
| Parity       | Odd          | Even, Odd, None                   |  |
| Stop bits    | 1            | 1 or 2                            |  |
| PLC sta. no. | 1            | 0-255                             | Must match the PLC port setting.<br>FP3 must set to 0. |

### Device Address:


| Bit/Word | Device type | Format | Range     | Memo                            |
|----------|-------------|--------|-----------|---------------------------------|
| B        | X           | DDDDh  | 0 ~ 9999f | Input (X)                       |
| B        | Y           | DDDDh  | 0 ~ 9999f | Output (Y)                      |
| B        | R           | DDDDh  | 0 ~ 9999f | Internal Relay (R)              |
| B        | L           | DDDD   | 0 ~ 9999  | Link Relay (L)                  |
| B        | L_Bit       | DDDDh  | 0 ~ 9999f |                                 |
| B        | T           | DDDD   | 0 ~ 9999  | Timer (T)                       |
| B        | C           | DDDD   | 0 ~ 9999  | Counter (C)                     |
| W        | SV          | DDDD   | 0 ~ 9999  | Timer/Counter Set Value (SV)    |
| W        | EV          | DDDDD  | 0 ~ 65535 | Timer/Counter Elapse Value (EV) |
| W        | DT          | DDDDD  | 0 ~ 99999 | Data Register (DT)              |
| W        | LD          | DDDD   | 0 ~ 8447  | Link Register (LD)              |

|   |    |       |           |                        |
|---|----|-------|-----------|------------------------|
| W | WX | DDDD  | 0 ~ 9999  | Input (WX) (read only) |
| W | WY | DDDD  | 0 ~ 9999  | Output (WY)            |
| W | WR | DDDD  | 0 ~ 9999  | Internal Relay (WR)    |
| W | WL | DDDD  | 0 ~ 9999  | Link Relay (WL)        |
| W | FL | DDDDD | 0 ~ 99999 | File Register (FL)     |

## Wiring Diagram:

### 9P D-Sub to 5P Mini-DIN:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | FP0, FP2, FP2SH, FPM CPU<br>Tool Port RS232 5P Mini-DIN |
|------------------------------------|------------------------------------|--------------------------------------|---|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TXD   |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RXD   |
| 5 GND                              | 5 GND                              | 5 GND                                | 1 GND   |




### 9P D-Sub to 3P Terminals:


| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | FP0 CPU RS232 3P Terminals |
|------------------------------------|------------------------------------|--------------------------------------|----------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | S                          |
| 3 TX                               | 4 TX                               | 7 TX                                 | R                          |
| 5 GND                              | 5 GND                              | 5 GND                                | G                          |




## 9P D-Sub to 9P D-Sub:

|  |                                    |                                      |   |         |
|--|------------------------------------|--------------------------------------|---|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | FP1, FP2, FP2SH, FP10SH<br>CPU RS232 9P D-Sub |         |
| 2 RX   | 6 RX                               | 8 RX                                 | 2 TXD   |         |
| 3 TX   | 4 TX                               | 7 TX                                 | 3 RXD   |         |
| 5 GND  | 5 GND                              | 5 GND                                | 7 GND   |         |
|  |                                    |                                      | 4 RTS   | circuit |
|  |                                    |                                      | 5 CTS   |         |
|  |                                    |                                      | 8 CD  | circuit |
|  |                                    |                                      | 9 ER  |         |
|  |                                    |                                      |   |         |

## 9P D-Sub to 8P MiniDIN:

|  |  |  |                         |  |
|--|--|--|-------------------------|--|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | FP1 CPU RS422 8P Hirose |  |
| 1 RX-  |  |  | 2 TXDA                  |  |
| 2 RX+  |  |  | 5 TXDB                  |  |
| 3 TX-  |  |  | 3 RXDA                  |  |
| 4 TX+  |  |  | 6 RXDB                  |  |
| 5 GND  |  |  | 1 GND                   |  |
|  |  |  |                         |  |

**9P D-Sub to 15P D-Sub:**

|  |  |  |                         |         |
|--|--|--|-------------------------|---------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | FP3 CPU RS422 15P D-Sub |         |
| 1 RX-  |  |  | 9 TXDA                  |         |
| 2 RX+  |  |  | 2 TXDB                  |         |
| 3 TX-  |  |  | 10 RXDA                 |         |
| 4 TX+  |  |  | 3 RXDB                  |         |
| 5 GND  |  |  | 7 GND                   |         |
|  |  |  | 4 RTS+                  | circuit |
|  |  |  | 5 CTS+                  |         |
|  |  |  | 11 RTS-                 | circuit |
|  |  |  | 12 CTS-                 |         |
|  |  |  |                         |         |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description         |
|---------|-------------|---------------------|
| V1.80   | Apr/09/2010 | Added registers: FL |

## Panasonic FP (Ethernet)

Supported Series: NAIS (Matsushita) FP series include FP-X, FP-Σ, FP0, FP1, FP2, FP2SH, FP10SH and FP3 Ethernet support FP-X with AFPX-COM5.

Website: <http://pewa.panasonic.com/>

### HMI Setting:

| Parameters   | Recommended             | Options | Notes |
|--------------|-------------------------|---------|-------|
| PLC type     | Panasonic FP (Ethernet) |         |       |
| PLC I/F      | Ethernet                |         |       |
| Port no.     | 9094                    |         |       |
| PLC sta. no. | 1                       | 0~255   |       |

### Device Address:

| Bit/Word | Device type | Format | Range     | Memo                            |
|----------|-------------|--------|-----------|---------------------------------|
| B        | X           | DDDDh  | 0 ~ 9999f | Input (X)                       |
| B        | Y           | DDDDh  | 0 ~ 9999f | Output (Y)                      |
| B        | R           | DDDDh  | 0 ~ 9999f | Internal Relay (R)              |
| B        | L           | DDDD   | 0 ~ 9999  | Link Relay (L)                  |
| B        | L_Bit       | DDDDh  | 0 ~ 9999f |                                 |
| B        | T           | DDDD   | 0 ~ 9999  | Timer (T)                       |
| B        | C           | DDDD   | 0 ~ 9999  | Counter (C)                     |
| W        | SV          | DDDD   | 0 ~ 9999  | Timer/Counter Set Value (SV)    |
| W        | EV          | DDDDD  | 0 ~ 65535 | Timer/Counter Elapse Value (EV) |
| W        | DT          | DDDDD  | 0 ~ 99999 | Data Register (DT)              |
| W        | LD          | DDDD   | 0 ~ 8447  | Link Register (LD)              |
| W        | WX          | DDDD   | 0 ~ 9999  | Input (WX) (read only)          |
| W        | WY          | DDDD   | 0 ~ 9999  | Output (WY)                     |
| W        | WR          | DDDD   | 0 ~ 9999  | Internal Relay (WR)             |
| W        | WL          | DDDD   | 0 ~ 9999  | Link Relay (WL)                 |
| W        | FL          | DDDDD  | 0 ~ 99999 | File Register (FL)              |

## Wiring Diagram:

Direct connect (crossover cable):

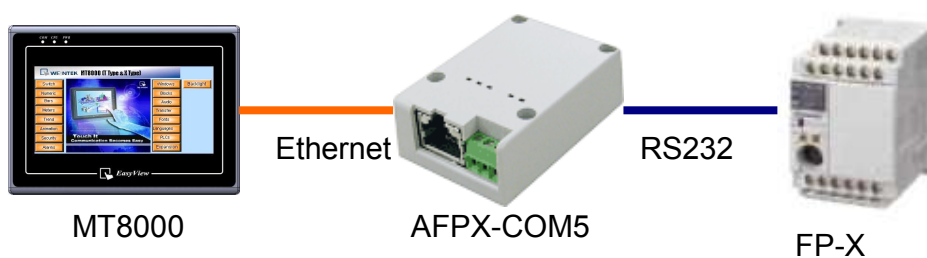
| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |

Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

Ethernet Connection TCP Port: 9094



**Driver Version:**

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.80   | Apr/12/2010 |             |

## Panasonic FP2 (Ethernet)

Supported Series: NAIS (Matsushita) FP2 series include FP2, FP2SH, and FP10SH CPU.

Website: <http://pewa.panasonic.com/>

### HMI Setting:

| Parameters   | Recommended              | Options | Notes |
|--------------|--------------------------|---------|-------|
| PLC type     | Panasonic FP2 (Ethernet) |         |       |
| PLC I/F      | Ethernet                 |         |       |
| Port no.     | 8500                     |         |       |
| PLC sta. no. | 2                        | 0~255   |       |


### Device Address:

| Bit/Word | Device type | Format | Range     | Memo                            |
|----------|-------------|--------|-----------|---------------------------------|
| B        | X           | DDDDh  | 0 ~ 9999f | Input (X)                       |
| B        | Y           | DDDDh  | 0 ~ 9999f | Output (Y)                      |
| B        | R           | DDDDh  | 0 ~ 9999f | Internal Relay (R)              |
| B        | L           | DDDD   | 0 ~ 9999  | Link Relay (L)                  |
| B        | L_Bit       | DDDDh  | 0 ~ 9999f |                                 |
| B        | T           | DDDD   | 0 ~ 9999  | Timer (T)                       |
| B        | C           | DDDD   | 0 ~ 9999  | Counter (C)                     |
| W        | SV          | DDDD   | 0 ~ 9999  | Timer/Counter Set Value (SV)    |
| W        | EV          | DDDDD  | 0 ~ 65535 | Timer/Counter Elapse Value (EV) |
| W        | DT          | DDDDD  | 0 ~ 99999 | Data Register (DT)              |
| W        | LD          | DDDD   | 0 ~ 8447  | Link Register (LD)              |
| W        | WX          | DDDD   | 0 ~ 9999  | Input (WX) (read only)          |
| W        | WY          | DDDD   | 0 ~ 9999  | Output (WY)                     |
| W        | WR          | DDDD   | 0 ~ 9999  | Internal Relay (WR)             |
| W        | WL          | DDDD   | 0 ~ 9999  | Link Relay (WL)                 |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Mar/11/2010 | Driver released. |

# Panasonic MINAS A4

Supported Series: Panasonic MINAS A4 series Servo Drive.

## HMI Setting:

| Parameters | Recommended             | Options       | Notes |
|------------|-------------------------|---------------|-------|
| PLC type   | Panasonic MINAS A4      |               |       |
| PLC I/F    | RS232                   |               |       |
| Baud rate  | 9600                    |               |       |
| Data bits  | 8                       |               |       |
| Parity     | None                    |               |       |
| Stop bits  | 1                       |               |       |
| Axis no.   | 0 (master station only) | 0 ~ F (slave) |       |

## Device Address:

| Bit/Word | Device type | Format | Range  | Memo   |
|----------|-------------|--------|--------|--|
| B        | Command 20  | D      | 0 ~ 7  | States <a href="#">(Note 3)</a>                              |
| B        | Command 27  | DD     | 0 ~ 31 | Input Signal <a href="#">(Note 3)</a>                        |
| B        | Command 28  | DD     | 0 ~ 31 | Output Signal <a href="#">(Note 3)</a>                       |
| W        | Command 01  | D      | 0      | CPU Version (Numeric format: 16-bit Hex)                     |
| W        | Command 05  | DD     | 0 ~ 11 | Driver Version (ASCII / 12 words)                            |
| W        | Command 06  | DD     | 0 ~ 11 | Motor Version (ASCII / 12 words)                             |
| W        | Command 21  | D      | 0 ~ 1  | command pulse counter<br>(Numeric format: 32-bit Signed)     |
| W        | Command 22  | D      | 0 ~ 1  | feedback pulse counter<br>(Numeric format: 32-bit Signed)    |
| W        | Command 24  | D      | 0      | present speed<br>(Numeric format: 16-bit Unsigned)           |
| W        | Command 25  | D      | 0      | present torque<br>(Numeric format: 16-bit Unsigned)          |
| W        | Command 26  | D      | 0 ~ 1  | present deviation counter<br>(Numeric format: 32-bit Signed) |
| W        | Command 84  | D      | 0      | write parameter to EEPROM<br><a href="#">(Note 1)</a>        |



|   |            |    |        |   |
|---|------------|----|--------|---|
| W | Command 90 | D  | 0      | present Alarm Data<br>(Numeric format: 16-bit Unsigned)     |
| W | Command 91 | DD | 1 ~ 14 | Alarm History (Note 4)<br>(Numeric format: 16-bit Unsigned) |
| W | Command 92 | DD | 1 ~ 14 | Batch Alarm (Note 4)<br>(Numeric format: 16-bit Unsigned)   |
| W | Command 93 | D  | 0      | clear Alarm History (include<br>EEPROM) (Note 1)            |
| W | Command 94 | D  | 0      | Alarm Clear (Note 1)  |
| W | Command 9B | D  | 0      | Absolute Clear (Note 1)                                     |
| W | Parameter  | HH | 0 ~ 7f | Individual Parameter (range: 0x00<br>~ 0x7F) (Note 2)       |

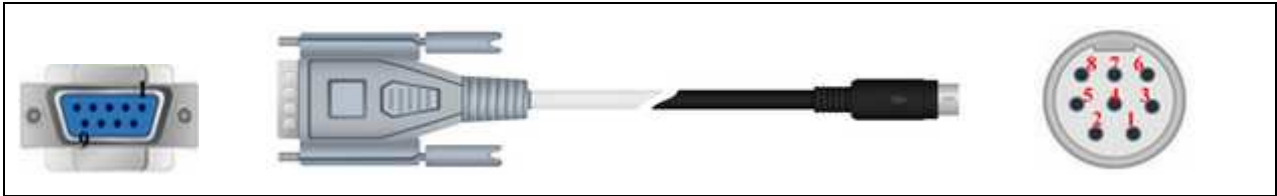
## Note:

1. Command 84, Command 93, Command 94, and Command 9B are write only. (These commands are able to use Set Bit Object and execute the write command after triggering Set Bit Object.). Commands other than these four are read only.
2. Parameter read/write: Use device type to define address control from 00~7F.  
For example: "address\_00" is mapping to "Parameter\_00".  
(Please refer to Panasonic MINAS A4 Series User Manual.)
3. Device address type can define MINAS A4 Driver's command list.  
Command 20, Command 27, and Command 28 are Bit type, use "Operating range" to map communication order status.  
For example: "Command 20\_3" means "Read state\_CCW".  
(Please refer to Panasonic MINAS A4 Series User Manual.)
4. Command 91 and Command 92 are word type, use "Operating range" to map the record of 14 alarms.  
For example: "Command 91\_1" means "Read alarm data\_First alarm".

## Wiring Diagram:

9P D-Sub to 8P Mini-DIN:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | MINAS A4 Driver CNX4 Port<br>RS232 8P Mini-DIN |
|------------------------------------|------------------------------------|--------------------------------------|--|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD  |
| 3 TX                               | 4 TX                               | 7 TX                                 | 5 RXD  |
| 5 GND                              | 5 GND                              | 5 GND                                | 4 GND  |



9P D-Sub to 8P Mini-DIN:

|   |   |  |  |
|---|---|--|--|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | MINAS A4 Driver CNX3/CNX4<br>Port RS485 2W 8P Mini-DIN |
| 1 RX-                                   | 6 Data-                                 |  | 7 D-   |
| 2 RX+                                   | 9 Data+                                 |  | 8 D+   |
| 5 GND                                   | 5 GND                                   |  |  |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

|   |                              |                              |
|---|------------------------------|------------------------------|
| <br>8P Mini-Din Female<br>MINAS A4 Driver<br>CNX3 / CNX4 Port | MINAS A4 Driver<br>CNX3 Port | MINAS A4 Driver<br>CNX4 Port |
|   | 7 D-                         | 3 TX                         |
|   | 8 D+                         | 5 RX                         |
|   | 4 GND                        | 4 GND                        |
|   |                              | 7 D-                         |
|   |                              | 8 D+                         |

RS485 cable / DVOP1970-005

|                                     |   |                                     |
|-------------------------------------|---|-------------------------------------|
| MINAS A4 Driver<br>8p Mini-DIN Male |   | MINAS A4 Driver<br>8p Mini-DIN Male |
| 7 D-                                | — | 7 D-                                |
| 8 D+                                | — | 8 D+                                |
| 4 GND                               | — | 4 GND                               |

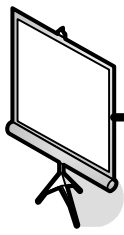
RS232 cable / DVOP1960

|                                    |   |                                     |
|------------------------------------|---|-------------------------------------|
| MINAS A4 Driver<br>9P D-SUB Female |   | MINAS A4 Driver<br>8p Mini-DIN Male |
| 3 RXD                              | — | 5 RXD                               |
| 2 TXD                              | — | 3 TXD                               |
| 5 GND                              | — | 4 GND                               |

HMI connected with single device:

Weintek HMI

Com RS232



Panasonic  
MINAS A4  
Driver X4

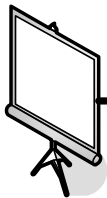


Station No. 0

HMI connected with multiple devices:

Weintek HMI

Com RS232



RS232

Panasonic  
MINAS A4  
Driver X4



Station No. 0

Driver X3

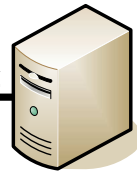
RS485

Driver X4 Driver X3



Station No. 1

RS485



Station No. F

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Jan/11/2010 |             |

## Parker ACR9000

Supported Series: Parker ACR9000.

Website: <http://www.parkermotion.com>

### HMI Setting:

| Parameters   | Recommended    | Options          | Notes |
|--------------|----------------|------------------|-------|
| PLC type     | Parker ACR9000 |                  |       |
| PLC I/F      | RS232          | RS485 4W / RS232 |       |
| Baud rate    | 38400          | 1200 - 38400     |       |
| Data bits    | 8              | 7,8              |       |
| Parity       | None           | Even, Odd, None  |       |
| Stop bits    | 1              | 1,2              |       |
| PLC sta. no. | 0              |                  |       |


|                  |     |                     |  |
|------------------|-----|---------------------|--|
| Online simulator | YES | Extend address mode |  |
|------------------|-----|---------------------|--|

### Device Address:

| Bit/Word | Device type | Format | Range      | Memo |
|----------|-------------|--------|------------|------|
| B        | P_Low16bit  | DDDDdd | 0 ~ 999915 |      |
| B        | P_High16bit | DDDDdd | 0 ~ 999915 |      |
| W        | P_Int32     | DDDD   | 0 ~ 99999  |      |
| W        | P_Float     | DDDD   | 0 ~ 99999  |      |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|  |                                    |                                      |                                      |
|--|------------------------------------|--------------------------------------|--------------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Parker AC9000 RS232 Port 9P<br>D-Sub |
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TXD                                |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RXD                                |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                                |
|  |                                    |                                      |                                      |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Dec/30/2008 | Driver released. |

# Parker Compax3

Supported Series: Parker Compax3 Servo Drive.

Website: <http://www.parker.com>

## HMI Setting:

### RS232

| Parameters   | Recommended    | Options         | Notes               |
|--------------|----------------|-----------------|---------------------|
| PLC type     | Parker Compax3 |                 |                     |
| PLC I/F      | RS232          |                 |                     |
| Baud rate    | 115200         |                 |                     |
| Data bits    | 8              | 7 or 8          |                     |
| Parity       | None           | Even, Odd, None |                     |
| Stop bits    | 1              | 1 or 2          |                     |
| PLC sta. no. | 0              | 0               | Must be 0 for RS232 |

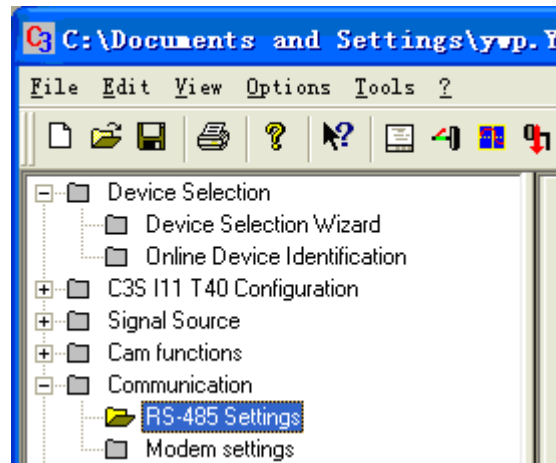
### RS485

| Parameters   | Recommended    | Options         | Notes   |
|--------------|----------------|-----------------|---|
| PLC type     | Parker Compax3 |                 |   |
| PLC I/F      | RS485 2W       |                 |   |
| Baud rate    | 9600           |                 |   |
| Data bits    | 8              | 7 or 8          |   |
| Parity       | None           | Even, Odd, None |   |
| Stop bits    | 1              | 1 or 2          |   |
| PLC sta. no. | 1              | 1-99            | Range from 1 to 99 for RS485, according to the PLC setting. |

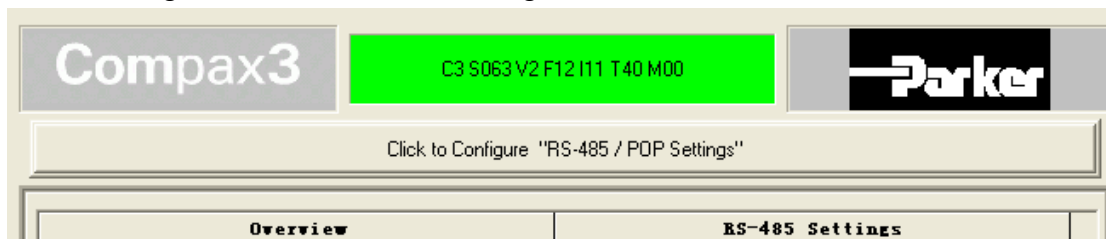
## PLC Setting:

How to set Compax 3 servo to RS485 mode?

1. Open C3 ServoManager2, select "Communication" => "RS-485 Settings".



2. Click to Configure "RS-485/POP Settings".



3. Set parameters as below:

| Master General    |          |
|-------------------|----------|
| Multicast Address | 98       |
| Device Address    | 1        |
| Baud rate         | 9600     |
| Connection Type   | Two wire |
| Parity            | No       |
| Stop bits         | 1        |
| Data bits         | 8        |

4. Download settings to Compax3 Servo.
5. Set EasyBuilder system parameter and connect with PLC for communication of HMI and Servo.


## Device Address:

| Bit/Word | Device type    | Format    | Range         | Memo                    |
|----------|----------------|-----------|---------------|-------------------------|
| B        | R_Low16bit     | DDDDDDDDh | 0 ~ 99999999f |                         |
| B        | R_High16bit    | DDDDDDDDh | 0 ~ 99999999f |                         |
| DW       | Register_Int   | DDDDDD    | 0 ~ 999999    | For Register INT32, U32 |
| DW       | Register_float | DDDDDD    | 0 ~ 999999    | For Register INT32, U32 |
| W        | Register_Short | DDDDDD    | 0 ~ 999999    | For Register INT16, U16 |

## Wiring Diagram:


9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Parker Compax3 PLC X10 9P<br>D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                              |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RXD                              |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                              |



9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Parker Compax3 PLC X10 9P<br>D-Sub |
|---|---|--|------------------------------------|
| 1 RX-                                   | 6 Data-                                 |  | 3 RXD                              |
| 2 RX+                                   | 9 Data+                                 |  | 7 TXD                              |
| 5 GND                                   | 5 GND                                   |  | 5 GND                              |
|   |   |  | 1 nable RS485<br>9 +5V             |
|   |   |  | circuit                            |





Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.70   | Mar/30/2009 |             |

## Parker SLVD Series

Supported Series : Parker SLVD Servo, SLVD1N, SLVD2N, SLVD5N, SLVD7N, SLVD10N, SLVD15N, SLVD17N.

Website: <http://www.parker.com/portal/site/PARKER/>

### HMI Setting:

| Parameters   | Recommended        | Options         | Notes |
|--------------|--------------------|-----------------|-------|
| PLC type     | Parker SLVD Series |                 |       |
| PLC I/F      | RS485 4W           |                 |       |
| Baud rate    | 9600               | 9600/19200      |       |
| Data bits    | 8                  | 7,8             |       |
| Parity       | Even               | Even, Odd, None |       |
| Stop bits    | 1                  | 1,2             |       |
| PLC sta. no. | 0                  |                 | 0-31  |

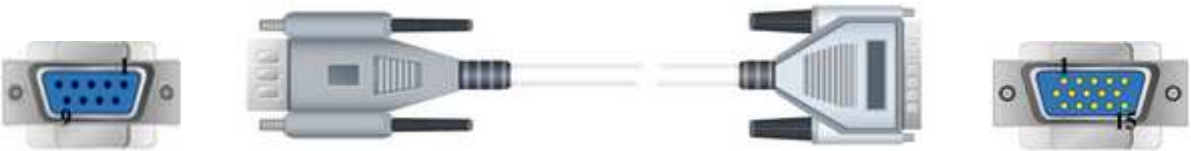
|                  |     |                     |  |
|------------------|-----|---------------------|--|
| Online simulator | YES | Extend address mode |  |
|------------------|-----|---------------------|--|

### Device Address:

| Bit/Word | Device type  | Format | Range      | Memo                  |
|----------|--------------|--------|------------|-----------------------|
| B        | Par_Binary   | DDDDdd | 0 ~ 999915 | Set bit parameter     |
| W        | Par_One_Word | DDDD   | 0 ~ 9999   | Set 2 bytes parameter |
| DW       | Par_Two_Word | DDDD   | 0 ~ 9999   | Set 4 bytes parameter |
| W        | Par_One_Byte | DDDD   | 0 ~ 9999   | Set 1 byte parameter  |
| W        | RESET        | D      | 0          |                       |
| W        | RUN          | D      | 0          |                       |

## Wiring Diagram:

9P D-Sub to 15P D-Sub:

|  |  |  |   |         |
|--|--|--|---|---------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | Parker SLVD Servo Serial Link<br>X1 15P D-Sub |         |
| 1 RX-  |  |  | 7 TX-   |         |
| 2 RX+  |  |  | 12 TX+  |         |
| 3 TX-  |  |  | 2 RX-   |         |
| 4 TX+  |  |  | 1 RX+   | circuit |
|  |  |  | 6 TER   |         |
| 5 GND  |  |  | 3 GND   |         |
|  |  |  |   |         |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Jan/27/2010 | Driver released. |

## SAIA PCD PGU Mode

Supported Series : SAIA PCD series PGU mode.

Website : <http://www.saia-burgess.com/>

### HMI Setting:


| Parameters   | Recommended       | Options         | Notes      |
|--------------|-------------------|-----------------|------------|
| PLC type     | SAIA PCD PGU Mode |                 | PDS driver |
| PLC I/F      | RS232             | RS232, RS485    |            |
| Baud rate    | 9600              | 9600, 19200     |            |
| Data bits    | 7                 | 7,8             |            |
| Parity       | Even              | Even, Odd, None |            |
| Stop bits    | 1                 | 1               |            |
| PLC sta. no. | 1                 | 0-255           |            |

### Device Address:

| Bit/Word | Device type | Format | Range    | Memo                       |
|----------|-------------|--------|----------|----------------------------|
| B        | Flag        | DDDD   | 0 ~ 8191 |                            |
| B        | Output      | DDD    | 0 ~ 511  |                            |
| B        | Input       | DDD    | 0 ~ 511  |                            |
| W        | Register    | DDDD   | 0 ~ 4095 |                            |
| W        | Counter     | DDDD   | 0 ~ 1599 |                            |
| W        | Timer       | DDDD   | 0 ~ 1599 |                            |
| W        | Reg_Float   | DDDD   | 0 ~ 4095 | support single float point |
| W        | Reg_Word    | DDDD   | 0 ~ 4095 |                            |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|  |  |  |                |         |
|--|--|--|----------------|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   |  |  | RS232 9P D-Sub |         |
| 2 RX   |  |  | 3 TXD          |         |
| 3 TX   |  |  | 2 RXD          |         |
| 5 GND  |  |  | 5 GND          |         |
| 7 RTS  |  |  | 6 DSR          |         |
|  |  |  | 7 RTS          | circuit |
|  |  |  | 8 CTS          |         |
|  |  |  |                |         |

6 DSR (Of PGU Port): PGU connected.

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.02   | Dec/30/2008 |             |

## SAIA PCD S-BUS Mode

Supported Series: SAIA PCD series S-Bus mode.

Website: <http://www.saia-burgess.com/>

### HMI Setting:

| Parameters   | Recommended         | Options            | Notes      |
|--------------|---------------------|--------------------|------------|
| PLC type     | SAIA PCD S-BUS Mode |                    | PDS driver |
| PLC I/F      | RS232               | RS232, RS485       |            |
| Baud rate    | 9600                | 9600, 19200, 38400 |            |
| Data bits    | 8                   | 7,8                |            |
| Parity       | None                | Even, Odd, None    |            |
| Stop bits    | 1                   | 1                  |            |
| PLC sta. no. | 0                   | 0-255              |            |

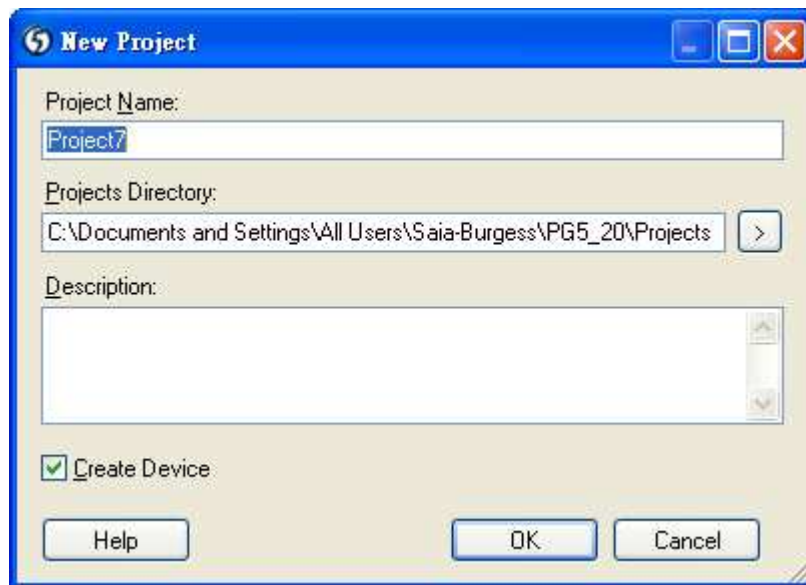
### PLC Setting:

|                    |  |
|--------------------|--|
| Communication mode | 9600,N,8,1 (default)                     |
| RS232              | Port 0-Type: RS232                       |
| RS485 2W           | S-BUS Mode: Data(S2), Port 1-Type: RS485 |

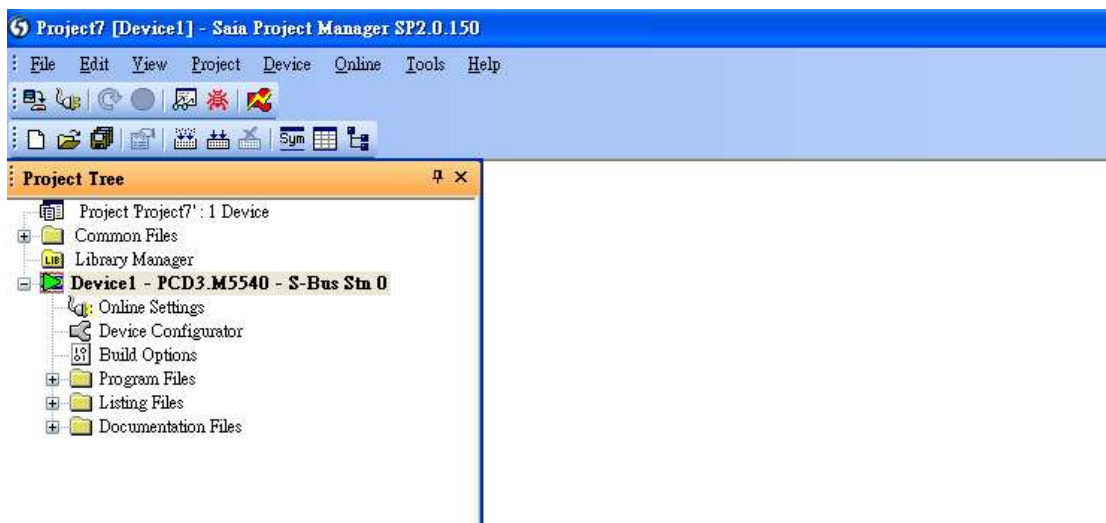
1. Open Saia Project Manager SP2.0.150 and create a new project.



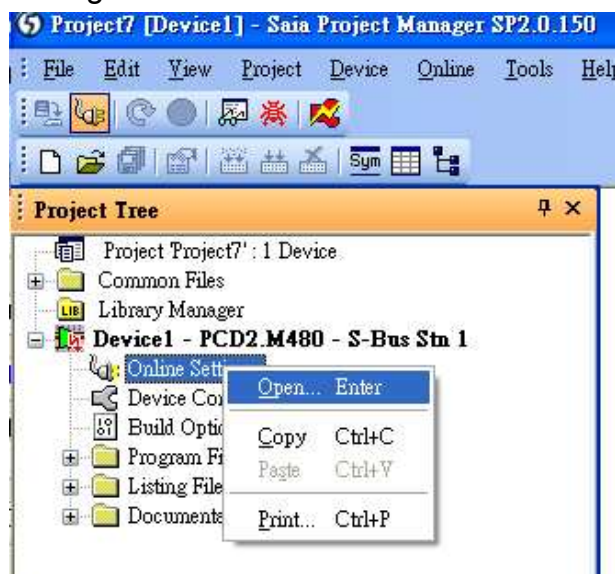
2. Give a project name.



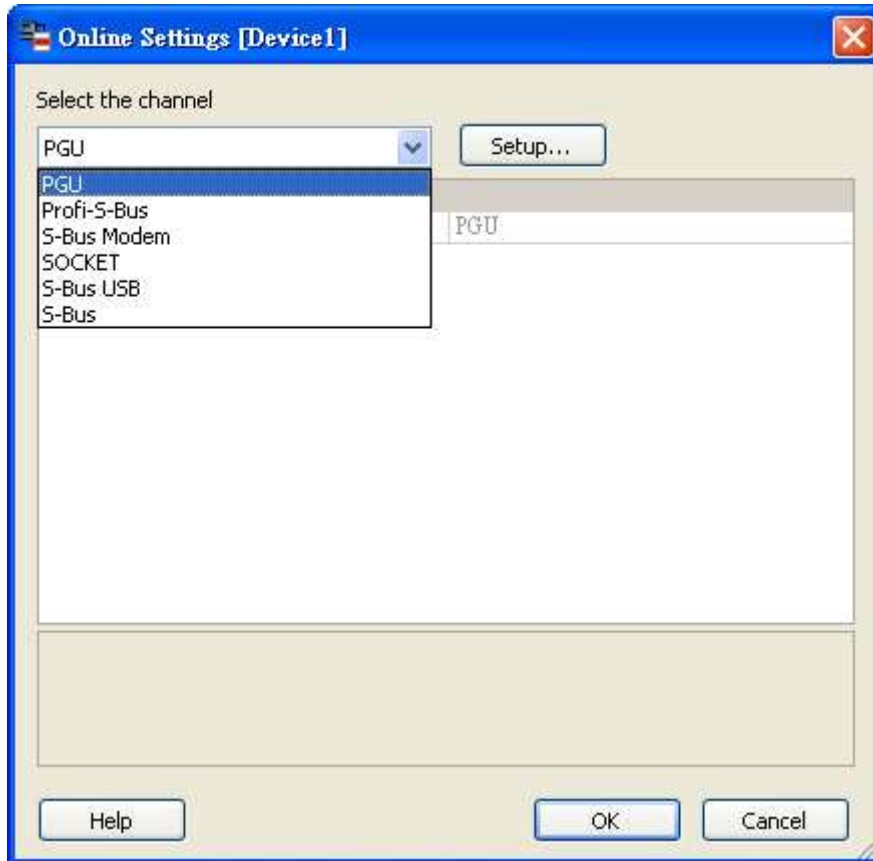
3. Create a new project as below.



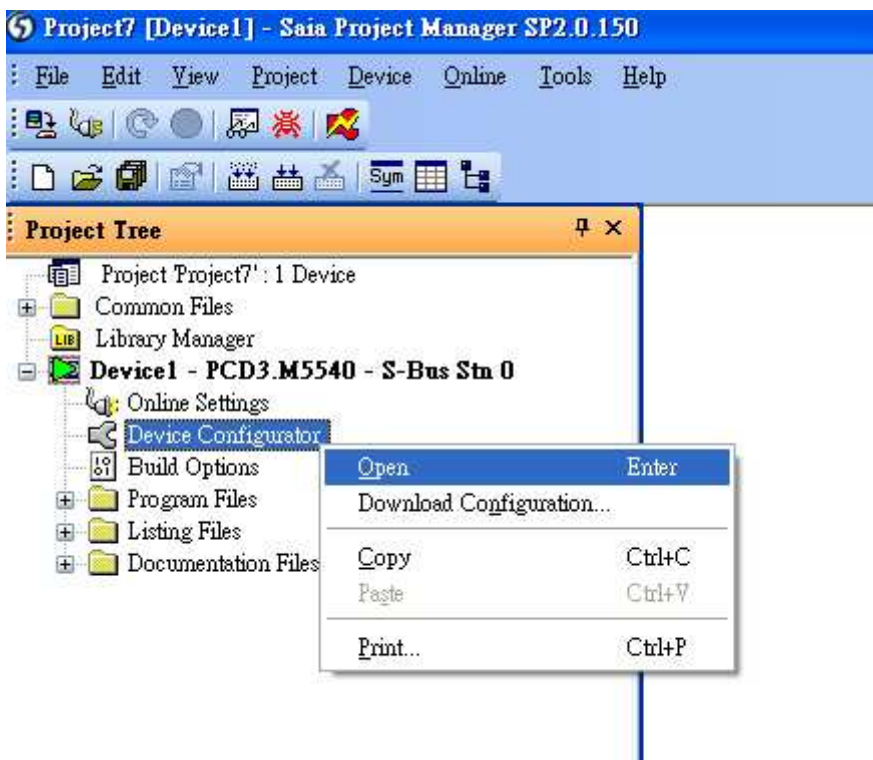
4. Go to "Online Setting".



5. Select "PGU".

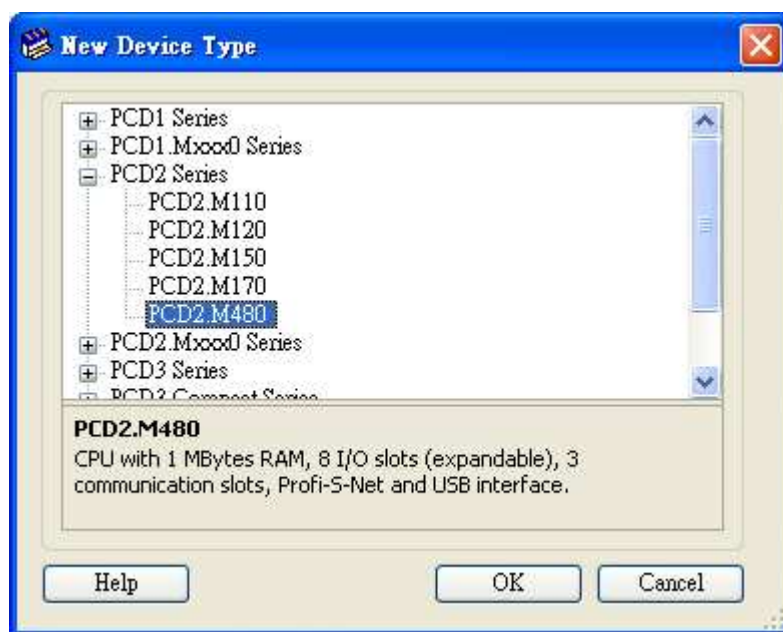
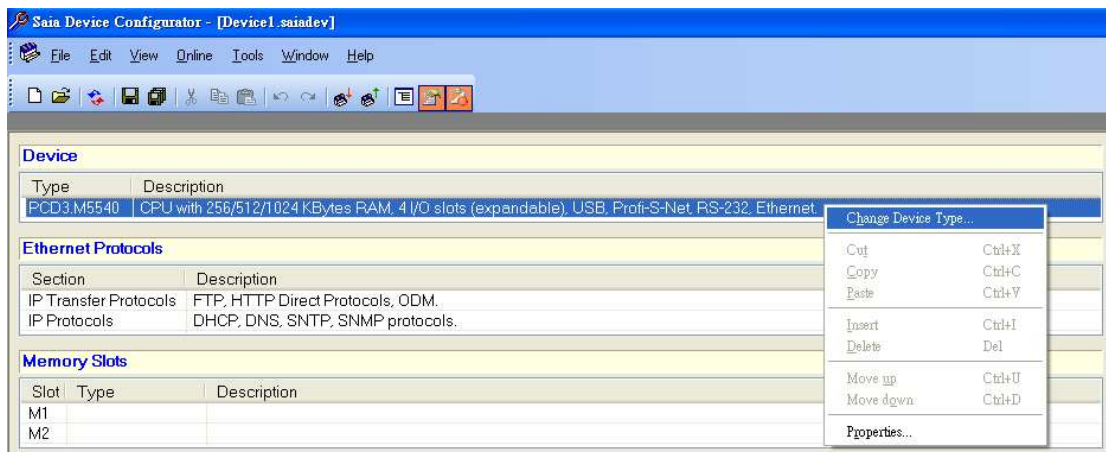


6. Go to "Device Configurator".

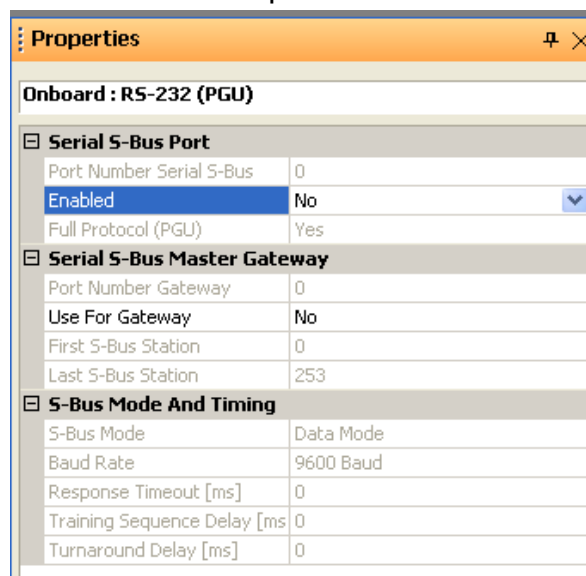




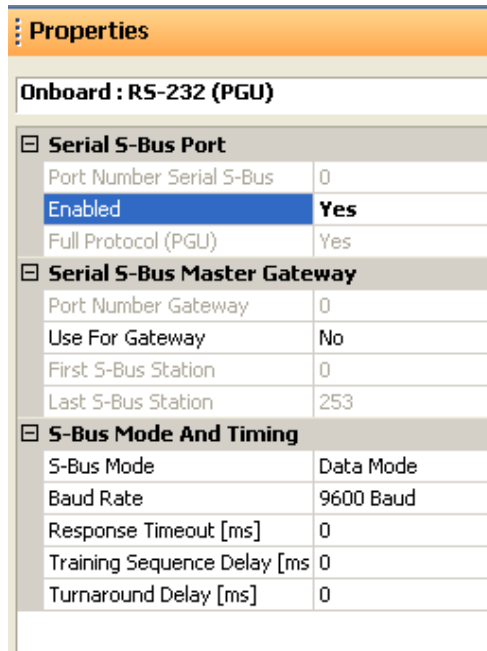
- Click "Change Device Type" to select your PLC model.



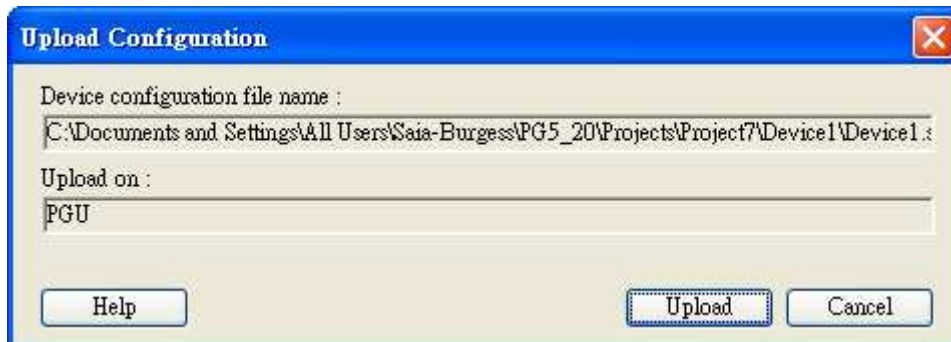
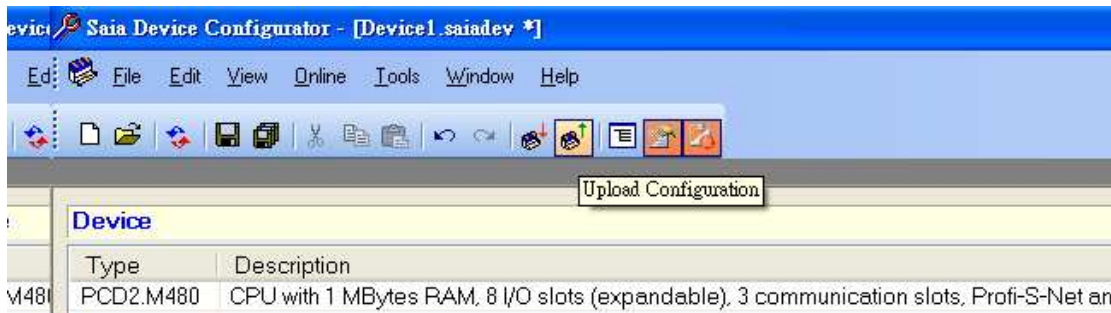
- Select RS232 (PGU) in Type and then right click mouse on Onboard Communications and select "Properties".



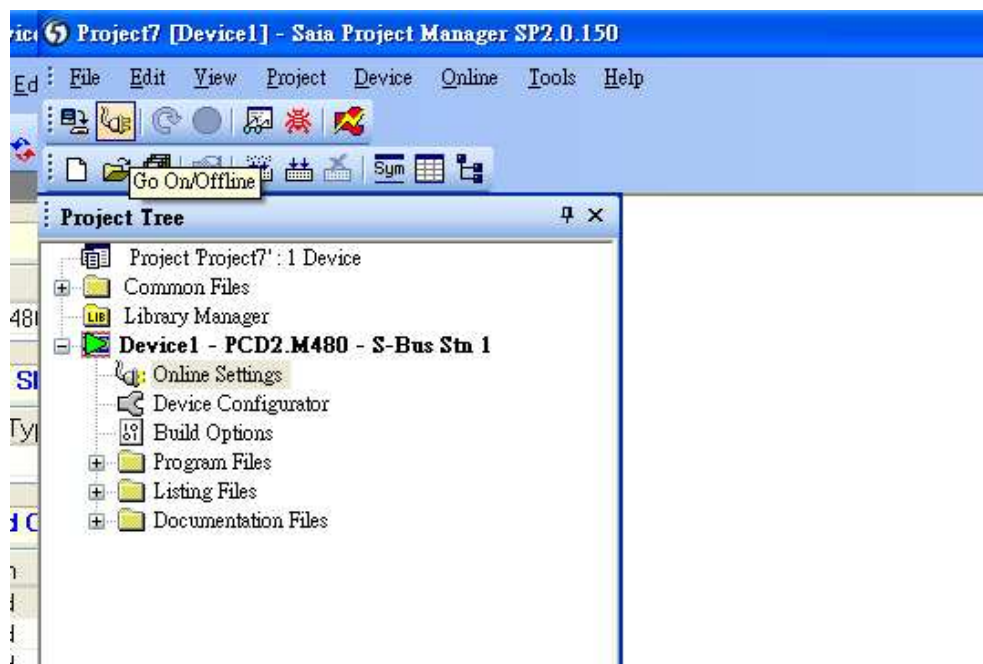
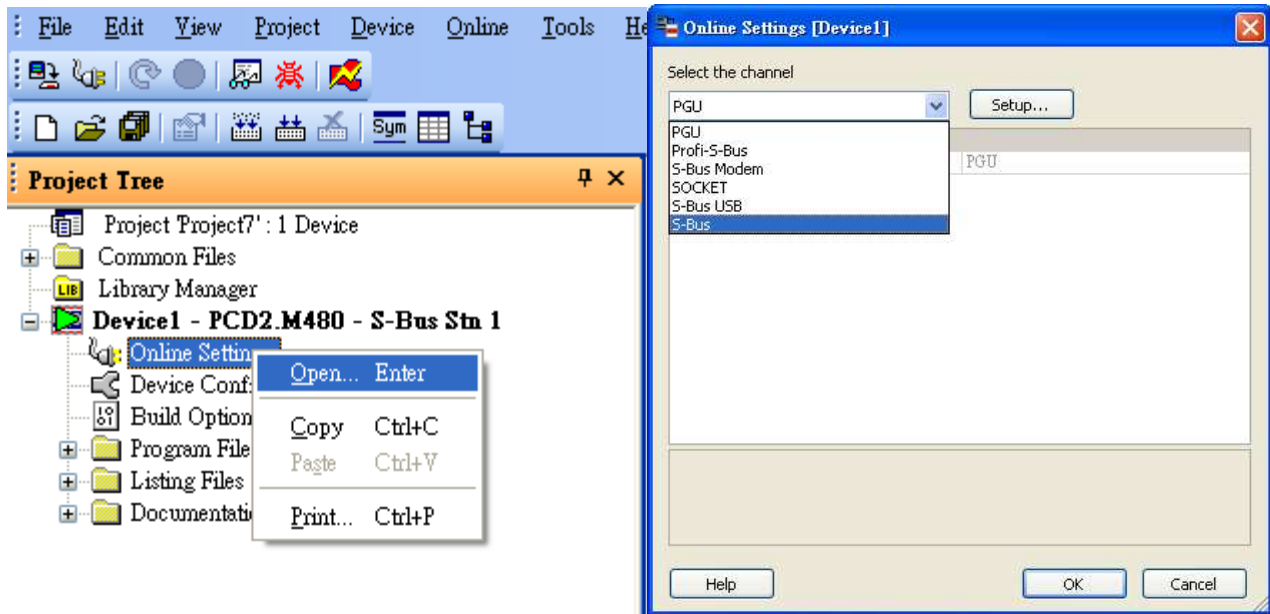
9. Select "Yes" in Series S-Bus Port: Enabled.



10. Set parameters in S-Bus Mode and Timing then upload to PLC.



11. Go to Online Settings >> Open to select S-Bus for finishing the PLC settings.




## Device Address:


| Bit/Word | Device type | Format | Range       | Memo                       |
|----------|-------------|--------|-------------|----------------------------|
| B        | Flag        | DDDD   | 0 ~ 8191    |                            |
| B        | Output      | DDDD   | 0 ~ 1023    |                            |
| B        | Input       | DDDD   | 0 ~ 1023    |                            |
| B        | Reg_Bit     | DDDDdd | 0 ~ 1638331 | dd: Bit no. (00~31)        |
| W        | Register    | DDDDD  | 0 ~ 16383   |                            |
| W        | Counter     | DDDD   | 0 ~ 1599    |                            |
| W        | Timer       | DDDD   | 0 ~ 1599    |                            |
| W        | Reg_Float   | DDDDD  | 0 ~ 16383   | support single float point |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|  |                                    |                                      |                                     |         |
|--|------------------------------------|--------------------------------------|-------------------------------------|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | SAIA PCD PGU Port RS232 9P<br>D-Sub |         |
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TXD                               |         |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RXD                               |         |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                               |         |
|  |                                    |                                      | 7 RTS                               | circuit |
|  |                                    |                                      | 8 CTS                               |         |
|  |                                    |                                      |                                     |         |

9P D-Sub to 9P D-Sub:

|  |   |  |                             |  |
|--|---|--|-----------------------------|--|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female  | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | SAIA PCD1 Port #1 (Port #0) |  |
| 1 RX-  | 6 Data-                                 |  | 11 (29)                     |  |
| 2 RX+  | 9 Data+                                 |  | 12 (28)                     |  |
| 5 GND  | 5 GND                                   |  |                             |  |
|  |   |  |                             |  |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Dec/22/2010 |             |

## SAIA S-BUS (Ethernet)

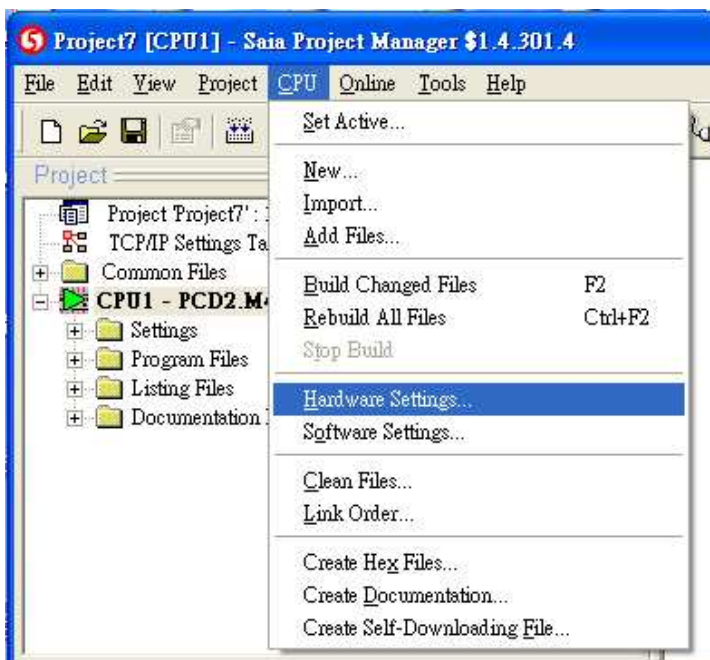
Supported Series : SAIA PCD series Ethernet-TCP/IP.

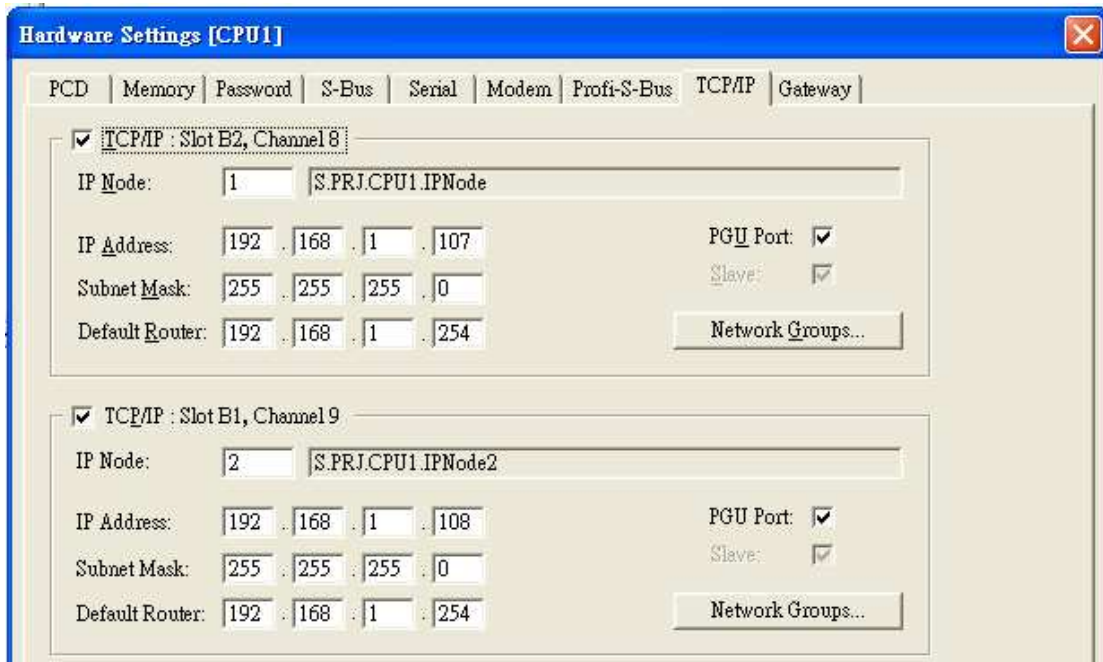
Website : <http://www.saia-burgess.com/>

### HMI Setting:

| Parameters   | Recommended           | Options | Notes |
|--------------|-----------------------|---------|-------|
| PLC type     | SAIA S-BUS (Ethernet) |         |       |
| PLC I/F      | Ethernet              |         |       |
| Port no.     | 5050                  |         |       |
| PLC sta. no. | 0                     |         |       |

### PLC Setting:





## Device Address:

| Bit/Word | Device type | Format | Range       | Memo                       |
|----------|-------------|--------|-------------|----------------------------|
| B        | Flag        | DDDD   | 0 ~ 8191    |                            |
| B        | Output      | DDDD   | 0 ~ 1023    |                            |
| B        | Input       | DDDD   | 0 ~ 1023    |                            |
| B        | Reg_Bit     | DDDDdd | 0 ~ 1638331 | dd: Bit no. (00 ~ 31)      |
| D        | Register    | DDDDD  | 0 ~ 16383   |                            |
| D        | Counter     | DDDD   | 0 ~ 1599    |                            |
| D        | Timer       | DDDD   | 0 ~ 1599    |                            |
| D        | Reg_Float   | DDDDD  | 0 ~ 16383   | support single float point |

## Wiring Diagram:

Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description              |
|---------|-------------|--------------------------|
| V1.10   | Nov/30/2010 | Added registers: Reg_Bit |

## Schleicher XCS 20C

Supported Series: Schleicher XCx-Systems Ethernet port. Schleicher XCS series, 20C model.

Website: <http://www.schleicher-electronic.com>

### HMI Setting:

| Parameters   | Recommended        | Options | Notes |
|--------------|--------------------|---------|-------|
| PLC type     | Schleicher XCS 20C |         |       |
| PLC I/F      | RS232              |         |       |
| Baud rate    | 38400              |         |       |
| Data bits    | 8                  |         |       |
| Parity       | N                  |         |       |
| Stop bits    | 1                  |         |       |
| PLC sta. no. | 0                  |         |       |

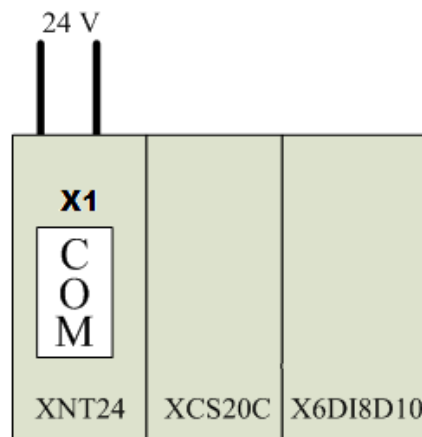
### Device Address:

| Bit/Word | Device type | Format | Range      | Memo       |
|----------|-------------|--------|------------|------------|
| B        | IX          | DDDDDo | 0 ~ 655357 | Input %IX  |
| B        | QX          | DDDDDo | 0 ~ 655357 | Output %QX |
| B        | MX          | DDDDDo | 0 ~ 655357 | %MX        |
| W        | IW          | DDDDD  | 0 ~ 65535  | %IW        |
| W        | QW          | DDDDD  | 0 ~ 65535  | %QW        |
| W        | MW          | DDDDD  | 0 ~ 65535  | %MW        |
| DW       | ID          | DDDDD  | 0 ~ 65535  | %ID        |
| DW       | QD          | DDDDD  | 0 ~ 65535  | %QD        |
| DW       | MD          | DDDDD  | 0 ~ 65535  | %WD        |

- Word address must be even.




## Wiring Diagram:



9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Schleicher XCS20 RS232 9P<br>D-Sub |
|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TD                               |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RD                               |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                              |



The illustration shows a 9P D-Sub to 9P D-Sub cable connection. It includes a 9P D-Sub Male connector, a Schleicher XCS20 RS232 9P D-Sub connector, and a 9P D-Sub Female connector.

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Feb/26/2010 |             |

# Schleicher XCX 300

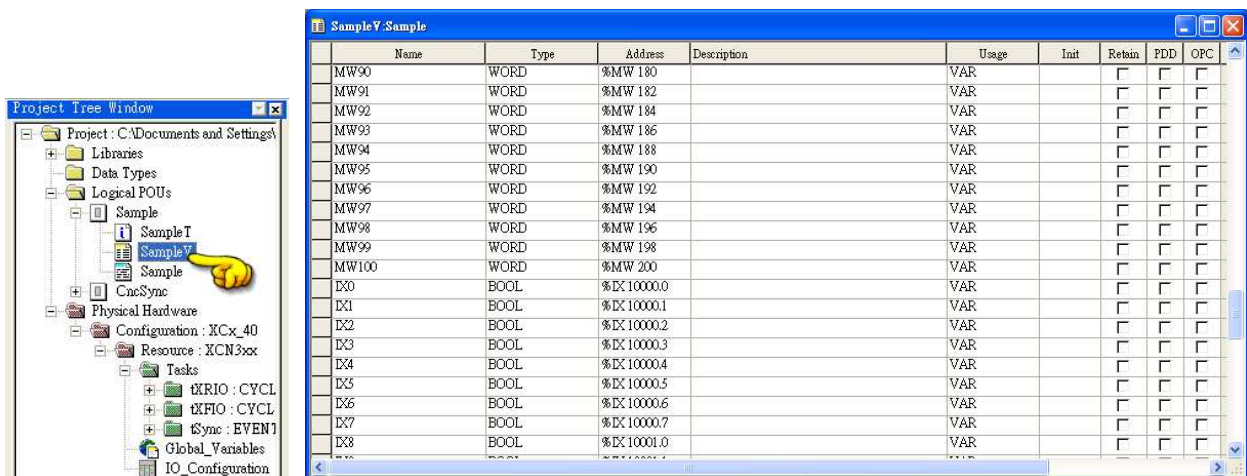
Website: <http://www.schleicher-electronic.com>

## HMI Setting:

| Parameters   | Recommended        | Options                   | Notes |
|--------------|--------------------|---------------------------|-------|
| PLC type     | Schleicher XCX 300 |                           |       |
| PLC I/F      | Ethernet           | RS232, RS422,<br>Ethernet |       |
| Port no.     | 20547              |                           |       |
| PLC sta. no. | 2                  |                           |       |

## PLC Setting:

A variable must be created for HMI access.



The screenshot shows the 'Sample Y, Sample' variable declaration window. On the left is the 'Project Tree Window' showing the project structure. The main window displays a table of variables:

| Name  | Type | Address     | Description | Usage | Init | Retain                   | PDD                      | OPC                      |
|-------|------|-------------|-------------|-------|------|--------------------------|--------------------------|--------------------------|
| MW90  | WORD | %MW 180     |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| MW91  | WORD | %MW 182     |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| MW92  | WORD | %MW 184     |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| MW93  | WORD | %MW 186     |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| MW94  | WORD | %MW 188     |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| MW95  | WORD | %MW 190     |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| MW96  | WORD | %MW 192     |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| MW97  | WORD | %MW 194     |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| MW98  | WORD | %MW 196     |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| MW99  | WORD | %MW 198     |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| MW100 | WORD | %MW 200     |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EX0   | BOOL | %EX 10000.0 |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EX1   | BOOL | %EX 10000.1 |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EX2   | BOOL | %EX 10000.2 |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EX3   | BOOL | %EX 10000.3 |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EX4   | BOOL | %EX 10000.4 |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EX5   | BOOL | %EX 10000.5 |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EX6   | BOOL | %EX 10000.6 |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EX7   | BOOL | %EX 10000.7 |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EX8   | BOOL | %EX 10001.0 |             | VAR   |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## Device Address:

| Bit/Word | Device type | Format | Range      | Memo       |
|----------|-------------|--------|------------|------------|
| B        | IX          | DDDDDo | 0 ~ 655357 | Input %IX  |
| B        | QX          | DDDDDo | 0 ~ 655357 | Output %QX |
| B        | MX          | DDDDDo | 0 ~ 655357 | %MX        |
| W        | IW          | DDDDD  | 0 ~ 65535  | %IW        |
| W        | QW          | DDDDD  | 0 ~ 65535  | %QW        |
| W        | MW          | DDDDD  | 0 ~ 65535  | %MW        |
| DW       | ID          | DDDDD  | 0 ~ 65535  | %ID        |


|    |    |       |           |     |
|----|----|-------|-----------|-----|
| DW | QD | DDDDD | 0 ~ 65535 | %QD |
| DW | MD | DDDDD | 0 ~ 65535 | %WD |

- Word address must be even.

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |




Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |




**9P D-Sub to 9P D-Sub:**

|                                    |                                    |                                      |                              |
|------------------------------------|------------------------------------|--------------------------------------|------------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Schleicher XCX300 RS232 Port |
| 2 RX                               | 6 RX                               | 8 RX                                 | TXD                          |
| 3 TX                               | 4 TX                               | 7 TX                                 | RXD                          |
| 5 GND                              | 5 GND                              | 5 GND                                | GND                          |


**9P D-Sub to 9P D-Sub:**

|   |  |  |                              |
|---|--|--|------------------------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | Schleicher XCX300 RS422 Port |
| 1 RX-                                   |  |  | TX-                          |
| 2 RX+                                   |  |  | TX+                          |
| 3 TX-                                   |  |  | RX-                          |
| 4 TX+                                   |  |  | RX+                          |
| 5 GND                                   |  |  | GND                          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description                                |
|---------|-------------|--|
| V1.00   | Nov/30/2009 | Driver released.                           |
| V1.10   | Jun/28/2010 | Support RS232, RS422 interface connection. |

## SEW Movilink

Supported Series: SEW Eurodrive series, model MOVITRAC-07 inverter, MovitracB.

Website: <http://sg.sew-eurodrive.com/>

### HMI Setting:

| Parameters   | Recommended  | Options | Notes |
|--------------|--------------|---------|-------|
| PLC type     | SEW Movilink |         |       |
| PLC I/F      | RS485 2W     |         |       |
| Baud rate    | 9600         |         |       |
| Data bits    | 8            |         |       |
| Parity       | Even         |         |       |
| Stop bits    | 1            |         |       |
| PLC sta. no. | 0            | 0~255   |       |

### Device Address:


| Bit/Word | Device type | Format     | Range          | Memo |
|----------|-------------|------------|----------------|------|
| B        | INDEX_Bit   | DDDDDDDDdd | 0 ~ 2552500031 |      |
| W        | INDEX       | DDDDDDDD   | 0 ~ 25525000   |      |

- The MOVITRAC-07 doesn't support Sub index ( other series may support ), please input 000.
- When input D and d, the correct format : Sub index 15, Index 8359, Format is 01508359.

### Wiring Diagram:

9P D-Sub to 4P:

|   |   |  |                   |
|---|---|--|-------------------|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Movitrac-07 RS485 |
| 1 RX-                                   | 6 Data-                                 |  | D- (Green)        |

|  |         |  |          |
|--|---------|--|----------|
| 2 RX+  | 9 Data+ |  | D+ (Red) |
| 5 GND  | 5 GND   |  |          |
|  |         |  |          |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.31   | Jun/25/2010 |             |

# SEW MOVITRAC LTE

Website : <http://www.seweurodrive.com/index.php>

## HMI Setting:

| Parameters   | Recommended      | Options | Notes |
|--------------|------------------|---------|-------|
| PLC type     | SEW MOVITRAC LTE |         |       |
| PLC I/F      | RS-485 2W        |         |       |
| Baud rate    | 115200           |         |       |
| Data bits    | 8                |         |       |
| Parity       | None             |         |       |
| Stop bits    | 1                |         |       |
| PLC sta. no. | 1                |         |       |

|                  |     |                     |    |
|------------------|-----|---------------------|----|
| Online simulator | YES | Extend address mode | NO |
|------------------|-----|---------------------|----|

## Device Address:

| Bit/Word | Device type | Format | Range | Memo                       |
|----------|-------------|--------|-------|----------------------------|
| W        | P-1         | D      | 0 ~ 1 | Max. speed limit           |
| W        | P-2         | D      | 0 ~ 1 | Min. speed limit           |
| W        | P-3         | D      | 0 ~ 1 | Acceleration ramp time     |
| W        | P-4         | D      | 0 ~ 1 | Deceleration ramp time     |
| W        | P-5         | D      | 0 ~ 1 | Stop mode select           |
| W        | P-6         | D      | 0 ~ 1 | Energy optimizer           |
| W        | P-7         | D      | 0 ~ 1 | Motor rated voltage        |
| W        | P-8         | D      | 0 ~ 1 | Motor rated current        |
| W        | P-9         | D      | 0 ~ 1 | Motor rated frequency      |
| W        | P-10        | D      | 0 ~ 1 | Motor rated speed          |
| W        | P-11        | D      | 0 ~ 1 | Voltage boost              |
| W        | P-12        | D      | 0 ~ 1 | Terminal / Keypad control  |
| W        | P-13        | D      | 0 ~ 1 | Trip log                   |
| W        | P-14        | D      | 0 ~ 1 | Extended menu access code  |
| W        | P-15        | D      | 0 ~ 1 | Digital input function set |
| W        | P-16        | D      | 0 ~ 1 | Analog input V / mA        |

|   |         |   |       |   |
|---|---------|---|-------|---|
| W | P-17    | D | 0 ~ 1 | Output switching frequency                                      |
| W | P-18    | D | 0 ~ 1 | User relay output select  |
| W | P-19    | D | 0 ~ 1 | User relay output limit   |
| W | P-20    | D | 0 ~ 1 | Preset speed 1  |
| W | P-21    | D | 0 ~ 1 | Preset speed 2  |
| W | P-22    | D | 0 ~ 1 | Preset speed 3  |
| W | P-23    | D | 0 ~ 1 | Preset speed 4  |
| W | P-24    | D | 0 ~ 1 | Deceleration ramp time 2  |
| W | P-25    | D | 0 ~ 1 | Analog output function select                                   |
| W | P-26    | D | 0 ~ 1 | Skip frequency hysteresis band                                  |
| W | P-27    | D | 0 ~ 1 | Skip frequency  |
| W | P-28    | D | 0 ~ 1 | V/F characteristic adjustment voltage                           |
| W | P-29    | D | 0 ~ 1 | V/F characteristic adjustment frequency                         |
| W | P-30    | D | 0 ~ 1 | Terminal mode restart function                                  |
| W | P-31    | D | 0 ~ 1 | Keypad mode restart function                                    |
| W | P-32    | D | 0 ~ 1 | DC injection enable / duration                                  |
| W | P-33    | D | 0 ~ 1 | Spin start  |
| W | P-34    | D | 0 ~ 1 | Brake chopper enable  |
| W | P-35    | D | 0 ~ 1 | Analog input scaling factor                                     |
| W | P-36    | D | 0 ~ 1 | Comms address; SBus enable/baudrate select; Trip enable / delay |
| W | P-37    | D | 0 ~ 1 | Access code definition  |
| W | P-38    | D | 0 ~ 1 | Parameter access lock   |
| W | P-39    | D | 0 ~ 1 | Analog input off-set  |
| W | P-40    | D | 0 ~ 1 | Display speed scaling factor                                    |
| W | P-00-01 | D | 0 ~ 1 | Analog input 1 value  |
| W | P-00-02 | D | 0 ~ 1 | Analog input 2 value  |




|   |         |   |       |                                  |
|---|---------|---|-------|----------------------------------|
| W | P-00-03 | D | 0 ~ 1 | Speed reference input            |
| W | P-00-04 | D | 0 ~ 1 | Digital input status             |
| W | P-00-05 | D | 0 ~ 1 | Reserved                         |
| W | P-00-06 | D | 0 ~ 1 | Reserved                         |
| W | P-00-07 | D | 0 ~ 1 | Applied motor voltage            |
| W | P-00-08 | D | 0 ~ 1 | DC bus voltage log               |
| W | P-00-09 | D | 0 ~ 1 | Heatsink temperature             |
| W | P-00-10 | D | 0 ~ 1 | Hours run meter                  |
| W | P-00-11 | D | 0 ~ 1 | Run time since last trip (1)     |
| W | P-00-12 | D | 0 ~ 1 | Run time since last trip (2)     |
| W | P-00-13 | D | 0 ~ 1 | Run time since last disable      |
| W | P-00-14 | D | 0 ~ 1 | Reserved                         |
| W | P-00-15 | D | 0 ~ 1 | DC bus voltage log               |
| W | P-00-16 | D | 0 ~ 1 | Thermistor temperature log       |
| W | P-00-17 | D | 0 ~ 1 | Motor current                    |
| W | P-00-18 | D | 0 ~ 1 | Software ID,IO and motor control |
| W | P-00-19 | D | 0 ~ 1 | Drive serial number              |
| W | P-00-20 | D | 0 ~ 1 | Drive identifier                 |

P-00-01 ~ P-00-20 read only.

## Wiring Diagram:

9P D-Sub to 8P RJ45:

|  |                                       |  |                   |
|--|---------------------------------------|--|-------------------|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Male  | HMI COM3<br>RS485 2W 9P<br>D-Sub Male |  | PLC RS485 8P RJ45 |
| 1 RX-  | 6 Data-                               |  | 5 -               |
| 2 RX+  | 9 Data+                               |  | 4 +               |
|  |                                       |  |                   |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | May/19/2011 | Driver released. |

# SHIMADEN MR13/FP93

Supported Series: MR13, FP93 devices

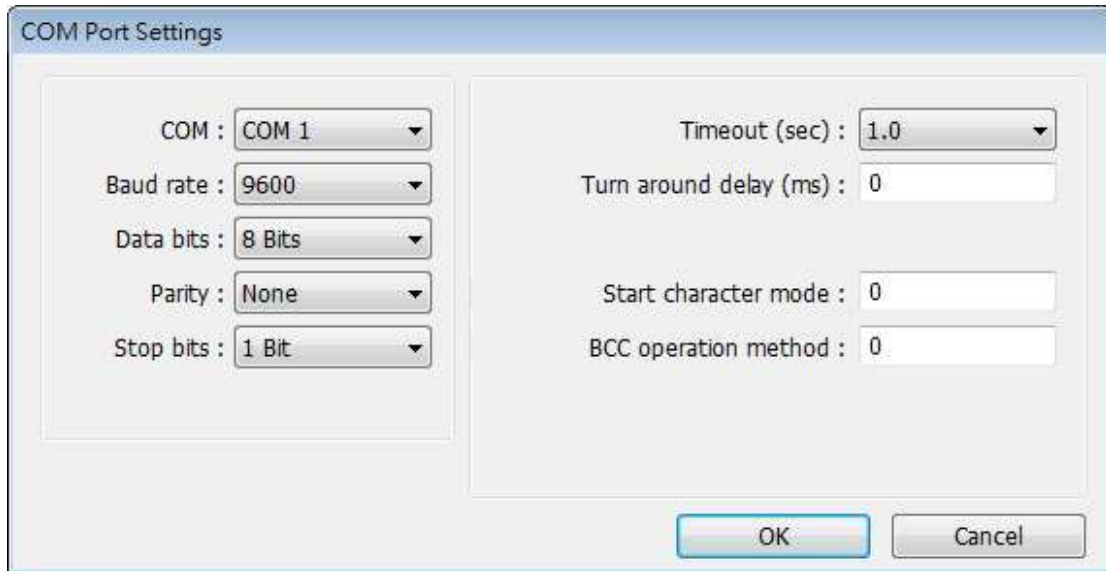
Website: <http://www.shimaden.co.jp>

## HMI Setting:

| Parameters           | Recommended          | Options  | Notes                |
|----------------------|----------------------|--|----------------------|
| PLC type             | SHIMADEN MR13/FP93   |  |                      |
| PLC I/F              | RS485                |  |                      |
| Baud rate            | 9600                 | 1200-19200   |                      |
| Data bits            | 7                    | 7 or 8   |                      |
| Parity               | E                    | None/Even  |                      |
| Stop bits            | 1                    | 1  |                      |
| PLC sta. no.         | 1                    | 1~255  |                      |
| Start Character Mode | Select 3 :<br>@_:_CR | 0, 1 : STX_ETX_CR<br>2 : STX_ETX_CR LF<br>3 : @_:_CR                   | For FP93, select 0,1 |
| BCC Operation Method | Select 3 : XOR       | 0, 1 : Addition<br>2 : Addition +2's complement<br>3 : XOR<br>4 : None |                      |

### Note :

Address 018C is a communication control register, only when it is set to 1 can this register be allowed to write to other registers.



### Device Address:

| Bit/Word | Device type | Format | Range    | Memo  |
|----------|-------------|--------|----------|---|
| W        | Channel 1   | HHHH   | 0 ~ ffff | Read/Write 1 <sup>st</sup> Channel Register |
| W        | Channel 2   | HHHH   | 0 ~ ffff | Read/Write 2 <sup>nd</sup> Channel Register |
| W        | Channel 3   | HHHH   | 0 ~ ffff | Read/Write 3 <sup>rd</sup> Channel Register |

### Wiring Diagram:

9P D-Sub to terminal:

| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | MR13/FP93 RS485 |
|---|---|--|-----------------|
| 1 RX-                                   | 6 Data-                                 |  | 25 -            |
| 2 RX+                                   | 9 Data+                                 |  | 24 +            |
| 5 GND                                   | 5 GND                                   |  | 23 GND          |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**MR13 Communication Parameter Settings**

| Data Address (hex) | Parameter                | Details of Parameter                | R /W |
|--------------------|--------------------------|-------------------------------------|------|
| 0100               | PV Value                 | Within measuring range              | R    |
| 0101               | E_SV Execution SV Value  | Within setting range                | R    |
| 0102               | OUT Control Output Value | Within range 0.0 ~ 100.0%           | R    |
| 0103               | Reserved                 |                                     |      |
| 0104               | Action Flag              | ( See detailed explanation below. ) | R    |
| 0105               | Event Output Flag        | ( See detailed explanation below. ) | R    |
| 0106               | Reserved                 |                                     |      |
| 0107               | Reserved                 |                                     |      |
| 0108               | REM Value                | Within setting range                | R    |
| 0109               | Reserved                 |                                     |      |
| 010A               | Reserved                 |                                     |      |
| 010B               | DI Input State Flag      | ( See detailed explanation below. ) | R    |

| Data Address (hex) | Parameter        | Details of Parameter   | R /W |
|--------------------|------------------|--|------|
| 0111               | RANGE            | Refer to the measuring range code list.                                    | R    |
| 0112               | Reserved         |  |      |
| 0113               | DP Decimal Point | Position of decimal point ( 0:Without decimal point 1:With decimal point ) | R    |

|      |                      |   |   |
|------|----------------------|---|---|
| 0114 | PV Sc_L Lower Limit  | For Linear Input:-1999 ~ 9999 unit                                | R |
| 0115 | PV Sc_H Higher Limit | For Thermocouple, and RTD Input: Measuring range to be displayed. | R |

| Data Address (hex) | Parameter | Details of Parameter  | R/W |
|--------------------|-----------|---|-----|
| 0120               | E_PRG     | Program Action Flag   | R   |
| 0121               | Reserved  |   |     |
| 0122               | Reserved  |   |     |
| 0123               | E_PRT     | The number of execution patterns<br>( When program is reset,<br>value=7FFEh ) | R   |
| 0124               | E_STP     | Execution step number<br>( When program is reset,<br>value=7FFEh )            | R   |
| 0125               | E_TIM     | Remaining time of execution step<br>( When program is reset,<br>value=7FFEh ) | R   |
| 0126               | E_PID     | Execution PID number<br>( When program is reset,<br>value=7FFEh )             | R   |

| Data Address (hex) | Parameter      | Details of Parameter            | R/W |
|--------------------|----------------|---------------------------------|-----|
| 0184               | AT Auto Tuning | 0:No execution      1:Execution | W   |

|      |           |                  |   |
|------|-----------|------------------|---|
| 018C | Operation | 0:Local    1:COM | W |
|------|-----------|------------------|---|

|      |                                   |   |   |
|------|-----------------------------------|---|---|
| 0190 | PROG RUN/RST<br>Program Run/Reset | 0 : RST, 1 : RUN<br><br>( Writing is possible only in CH1 ) | W |
|------|-----------------------------------|---|---|

|      |                          |   |   |
|------|--------------------------|---|---|
| 0191 | PROG HLD<br>Program Hold | 0 : Release, 1 : HLD<br><br>( Writing is possible only in CH1 ) | W |
|------|--------------------------|---|---|

|      |    |  |     |
|------|----|--|-----|
| 0300 | SV | Local SV Value, within set value limiter | R/W |
|------|----|--|-----|

| Data Address (hex) | Parameter                 | Details of Parameter  | R/W |
|--------------------|---------------------------|---|-----|
| 030A               | SV Limt_L    Lower Limit  | Within measuring range,<br>On condition that SV Limt_L<SV<br>Limt_H | R/W |
| 030B               | SV Limt_h    Higher Limit |   |     |

|      |          |                                     |     |
|------|----------|-------------------------------------|-----|
| 0314 | REM SC_L | Within measuring range              | R/W |
| 0315 | REM SC_H | On condition that REM SC_L≠REM SC_H |     |
| 0316 | REM Bias | Range: -1999 ~ 5000 unit            | R/W |
| 0317 | REM Filt | Range: 0 ~ 100 seconds              | R/W |

|      |        |  |     |
|------|--------|--|-----|
| 031A | REM-CH | Remote channel assignment<br>0 : OFF , 1 : CH1 , 2 : CH2 , 3 : CH3 | R/W |
|------|--------|--|-----|

| Data Address (hex) | Parameter    | Details of Parameter                                    | R/W |
|--------------------|--------------|---|-----|
| 0320               | SV Follow SW | CH2 & CH3 SV follow setting flag 1:<br>Follow 0:No      | R/W |
| 0321               | SV Follow    | Follow type deviation SV set value:<br>1999 ~ 5000 unit | R/W |

|      |                |  |     |
|------|----------------|--|-----|
| 0400 | FIX P          | Control Output Proportional Baud<br>Range: 0.0 ~ 999.9%(0.0:OFF)   | R/W |
| 0401 | FIX I          | Control Output Integral Time<br>Range: 0 ~ 6000 Seconds (0.0:OFF)  | R/W |
| 0402 | FIX D          | Control Output Derivative Time<br>Range 0 ~ 3600 Seconds (0.0:OFF) | R/W |
| 0403 | FIX MR         | Manual Reset Range: -50.0 ~ 50.0%                                  | R/W |
| 0404 | FIX DF         | Hysteresis Range: 1 ~ 999 unit                                     | R/W |
| 0405 | FIX OUT Limt_L | Control Output Lower Limit Output<br>Limiter Range: 0.0 ~ 99.9%    | R/W |
| 0406 | FIX OUT Limt_H | Control Output Higher Limit Output<br>Limiter Range: 0.1 ~ 100.0%  | R/W |
| 0407 | FIX SF         | Control Output Target Value Function<br>Range: OFF , 0.01 ~ 1.00   | R/W |
| 0408 | Prog P1        | PROG mode PB1<br>Range: 0.0 ~ 999.9% (0.0:OFF)                     | R/W |
| 0409 | Prog I1        | PROG mode IT1<br>Range: 0 ~ 6000 seconds (0.0:OFF)                 | R/W |
| 040A | Prog D1        | PROG mode DT1  | R/W |



|      |               |   |     |
|------|---------------|---|-----|
|      |               | Range: 0 ~ 3600 seconds (0.0:OFF)                                   |     |
| 040B | Prog MR1      | PROG mode MR1<br>Range: -50.0 ~ 50.0%                               | R/W |
| 040C | Prog DF1      | PROG mode DF1<br>Range: 1 ~ 999 unit                                | R/W |
| 040D | Prog O_Lmt_L1 | PROG mode lower limit side output limiter 1<br>Range: 0.0 ~ 99.9%   | R/W |
| 040E | Prog O_Lmt_H1 | PROG mode higher limit side output limiter 1<br>Range: 0.1 ~ 100.0% | R/W |
| 040F | Prog SF1      | PROG mode target value function 1<br>Range: OFF,0.01 ~ 1.00         | R/W |
| 0410 | Prog P2       | PROG mode PB2<br>Range: 0.0 ~ 999.9% (0.0:OFF)                      | R/W |
| 0411 | Prog I2       | PROG mode IT2<br>Range: 0 ~ 6000 seconds (0.0:OFF)                  | R/W |
| 0412 | Prog D2       | PROG mode DT2<br>Range: 0 ~ 3600 seconds (0.0:OFF)                  | R/W |
| 0413 | Prog MR2      | PROG mode MR2<br>Range: -50.0 ~ 50.0%                               | R/W |
| 0414 | Prog DF2      | PROG mode DF2<br>Range: 1 ~ 999 unit                                | R/W |
| 0415 | Prog O_Lmt_L2 | PROG mode lower limit side output limiter 2<br>Range: 0.0 ~ 99.9%   | R/W |
| 0416 | Prog O_Lmt_H2 | PROG mode higher limit side output limiter 2                        | R/W |

|      |               |   |     |
|------|---------------|---|-----|
|      |               | Range: 0.1 ~ 100.0%   |     |
| 0417 | Prog SF2      | PROG mode target value function 2<br>Range: OFF,0.01 ~ 1.00         | R/W |
| 0418 | Prog P3       | PROG mode PB3<br>Range: 0.0 ~ 999.9% (0.0:OFF)                      | R/W |
| 0419 | Prog I3       | PROG mode IT3<br>Range: 0 ~ 6000 seconds (0.0:OFF)                  | R/W |
| 041A | Prog D3       | PROG mode DT3<br>Range: 0 ~ 3600 seconds (0.0:OFF)                  | R/W |
| 041B | Prog MR3      | PROG mode MR3<br>Range: -50.0 ~ 50.0%                               | R/W |
| 041C | Prog DF3      | PROG mode DF3<br>Range: 1 ~ 999 unit                                | R/W |
| 041D | Prog O_Lmt_L3 | PROG mode lower limit side output limiter 3<br>Range: 0.0 ~ 99.9%   | R/W |
| 041E | Prog O_Lmt_H3 | PROG mode higher limit side output limiter 3<br>Range: 0.1 ~ 100.0% | R/W |
| 041F | Prog SF3      | PROG mode target value function 3<br>Range: OFF,0.01 ~ 1.00         | R/W |

|      |          |   |     |
|------|----------|---|-----|
| 0500 | EV1_MODE | 0:Not assigned 1:Higher limit deviation value<br>2:Lower limit deviation value<br>3:Out of range between higher & lower limits<br>4:Within range between higher & lower limits<br>5:Higher limit absolute value | R/W |
|------|----------|---|-----|

|      |               |   |     |
|------|---------------|---|-----|
|      |               | 6:Lower limit absolute value<br>7:Scaleover<br>8:Program RUN    9:Program END<br>10:Program STEP<br>Only when Subaddress=EV1_CH.  |     |
| 0501 | EV1 Set Point | 1.Higher limit deviation value alarm: 0 ~ 1999 unit<br>2.Lower limit deviation value alarm: 0 ~ -1999 unit<br>3.Out of range between higher & lower limits value alarm: 0 ~ 1999 unit<br>4.Within range between higher and lower limits value alarm: 0 ~ 1999 unit<br>5.Higher limit absolute value alarm: Within measuring range<br>6.Lower limit absolute value alarm: Within measuring range<br>Only when Subaddress=EV1_CH. | R/W |
| 0502 | EV1 Diffrent  | Alarm hysteresis 1 ~ 999 unit<br>Only when Subaddress=EV1_CH.   | R/W |
| 0503 | EV1 Inhibit   | Alarm stand by 1 ~ 4<br>Only when Subaddress=EV1_CH.  | R/W |
| 0504 | EV1 Delay     | Alarm delay time 0 ~ 9999 seconds<br>Only when Subaddress=EV1_CH.   | R/W |
| 0506 | EV1_CH        | Channel number setting<br>1:CH1, 2:CH2, 3:CH3   | R/W |
| 0510 | EV2_MODE      | 0:Not assigned    1:Higher limit deviation value  | R/W |

|      |               |   |     |
|------|---------------|---|-----|
|      |               | 2:Lower limit deviation value<br>3:Out of range between higher & lower limits<br>4:Within range between higher & lower limits<br>5:Higher limit absolute value<br>6:Lower limit absolute value<br>7:Scaleover<br>8:Program RUN    9:Program END<br>10:Program STEP<br>Only when Subaddress=EV2_CH.  |     |
| 0511 | EV2 Set Point | 1.Higher limit deviation value alarm: 0 ~ 1999 unit<br>2.Lower limit deviation value alarm: 0 ~ -1999 unit<br>3.Out of range between higher & lower limits value alarm: 0 ~ 1999 unit<br>4.Within range between higher and lower limits value alarm: 0 ~ 1999 unit<br>5.Higher limit absolute value alarm: Within measuring range<br>6.Lower limit absolute value alarm: Within measuring range<br>Only when Subaddress=EV2_CH. | R/W |
| 0512 | EV2 Diffrent  | Alarm hysteresis 1 ~ 999 unit<br>Only when Subaddress=EV2_CH.   | R/W |
| 0513 | EV2 Inhibit   | Alarm stand by 1 ~ 4<br>Only when Subaddress=EV2_CH.  | R/W |
| 0514 | EV2 Delay     | Alarm delay time 0 ~ 9999 seconds<br>Only when Subaddress=EV2_CH.   | R/W |

|      |               |  |     |
|------|---------------|--|-----|
| 0516 | EV2_CH        | Channel number setting<br>1:CH1, 2:CH2, 3:CH3  | R/W |
| 0520 | EV3_MODE      | 0:Not assigned 1:Higher limit deviation value<br>2:Lower limit deviation value<br>3:Out of range between higher & lower limits<br>4:Within range between higher & lower limits<br>5:Higher limit absolute value<br>6:Lower limit absolute value<br>7:Scaleover<br>8:Program RUN 9:Program END<br>10:Program STEP<br>Only when Subaddress=EV3_CH.   | R/W |
| 0521 | EV3 Set Point | 1.Higher limit deviation value alarm: 0 ~ 1999 unit<br>2.Lower limit deviation value alarm: 0 ~ -1999 unit<br>3.Out of range between higher & lower limits value alarm: 0 ~ 1999 unit<br>4.Within range between higher and lower limits value alarm: 0 ~ 1999 unit<br>5.Higher limit absolute value alarm: Within measuring range<br>6.Lower limit absolute value alarm: Within measuring range<br>Only when Subaddress=EV3_CH | R/W |
| 0522 | EV3 Diffrent  | Alarm hysteresis 1 ~ 999 unit<br>Only when Subaddress=EV3_CH.  | R/W |

|      |             |  |     |
|------|-------------|--|-----|
| 0523 | EV3 Inhibit | Alarm stand by 1 ~ 4<br>Only when Subaddress=EV3_CH.                     | R/W |
| 0524 | EV3 Delay   | Alarm delay time 0 ~ 9999 seconds<br>Only when Subaddress=EV3_CH.        | R/W |
| 0526 | EV3_CH      | Channel number setting<br>1:CH1, 2:CH2, 3:CH3                            | R/W |
| 0580 | DI          | DI setting flag<br>0:NON 1:FLW 2:RUN 3:HLD<br>4:ADV                      | R/W |
| 05B0 | MEM         | 1:EEP Program Memory<br>0:RAM Random Memory                              | R/W |
| 0600 | Out Actn    | Output characteristic setting flag<br>0:Rev Act. 1:Dir Act               | R/W |
| 0601 | Out Cyc     | Control output cycle<br>(Unit:0.5 seconds) Range: 0.5 ~<br>120.0 seconds | R/W |
| 0602 | Reserved    |  |     |
| 0603 | SOFTSW      | Soft start setting flag<br>0:OFF 1:ON                                    |     |
| 0610 | AT Point    | AT pointer Range: 0 ~ 5000 unit  | R/W |
| 0611 | Key Lock    | 0:OFF 1:LOCK1 2:LOCK2<br>3:LOCK3   | R/W |

- When Out\_Cyc is written, writing data is adjusted to 0.5 sec as one unit.
- The write command lock by keylock is the same as the screen lock. (Refer to the manual of the instrument.)

- If there is a change in EV1\_CH, EV2\_CH, EV3\_CH, the related parameters are initialized.

|      |         |                                  |     |
|------|---------|----------------------------------|-----|
| 0701 | PV Bias | PV bias Range: -1999 ~ 1999 unit | R/W |
| 0702 | PV Filt | PV filter Range: 0 ~ 100 seconds | R/W |

|      |      |   |     |
|------|------|---|-----|
| 0710 | PFLW | Setting of CH2, CH3 PV input follow<br>0:OFF 1:ON                           | R/W |
| 0711 | CH_P | Selection of CH2, CH3 PV display or not<br>0-0 Window<br>0: Without 1: With | R/W |

|      |        |  |     |
|------|--------|--|-----|
| 0800 | FP_MOD | Selection between FIX and PROG<br>0:FIX 1:PROG<br>(Writing possible only in CH1) | R/W |
| 0801 | PV_ST  | Setting of PV start 0:OFF 1:ON<br>(Writing possible only in CH1)                 | R/W |

|      |       |   |     |
|------|-------|---|-----|
| 0882 | STP   | The number of steps 1 ~ 9<br>(Writing possible only in CH1)                       | R/W |
| 0883 | RPT   | The number of execution repetitions 1<br>~ 9999<br>(Writing possible only in CH1) | R/W |
| 0884 | ST_SV | Start SV<br>(Writing possible only in CH1)  | R/W |

- For CH1, PFLW (window 1~30), CH\_P (window 1-29) display - - - . The read value is: 7FFEh, To a write command, error ( 0BH ) is returned.

|      |          |                     |     |
|------|----------|---------------------|-----|
| 08A0 | Step1 SV | Step No. 1 SV Value | R/W |
|------|----------|---------------------|-----|

|      |              |  |     |
|------|--------------|--|-----|
|      |              | (Writing possible only in CH1)                         |     |
| 08A1 | Step1 Time   | Step No. 1 Step Time<br>(Writing possible only in CH1) | R/W |
| 08A2 | Step1 PID No | Step No. 1 PID No.                                     | R/W |
| 08A3 | Reserved     |  |     |
| 08A4 | Step2 SV     | Step No. 2 SV Value<br>(Writing possible only in CH1)  | R/W |
| 08A5 | Step2 Time   | Step No. 2 Step Time<br>(Writing possible only in CH1) | R/W |
| 08A6 | Step2 PID No | Step No. 2 PID No.                                     | R/W |
| 08A7 | Reserved     |  |     |
| 08A8 | Step3 SV     | Step No. 3 SV Value<br>(Writing possible only in CH1)  | R/W |
| 08A9 | Step3 Time   | Step No. 3 Step Time<br>(Writing possible only in CH1) | R/W |
| 08AA | Step3 PID No | Step No. 3 PID No.                                     | R/W |
| 08AB | Reserved     |  |     |
| 08AC | Step4 SV     | Step No. 4 SV Value<br>(Writing possible only in CH1)  | R/W |
| 08AD | Step4 Time   | Step No. 4 Step Time<br>(Writing possible only in CH1) | R/W |
| 08AE | Step4 PID No | Step No. 4 PID No.                                     | R/W |
| 08AF | Reserved     |  |     |
| 08B0 | Step5 SV     | Step No. 5 SV Value<br>(Writing possible only in CH1)  | R/W |
| 08B1 | Step5 Time   | Step No. 5 Step Time<br>(Writing possible only in CH1) | R/W |
| 08B2 | Step5 PID No | Step No. 5 PID No.                                     | R/W |
| 08B3 | Reserved     |  |     |



|      |              |  |     |
|------|--------------|--|-----|
| 08B4 | Step6 SV     | Step No. 6 SV Value<br>(Writing possible only in CH1)  | R/W |
| 08B5 | Step6 Time   | Step No. 6 Step Time<br>(Writing possible only in CH1) | R/W |
| 08B6 | Step6 PID No | Step No. 6 PID No.                                     | R/W |
| 08B7 | Reserved     |  |     |
| 08B8 | Step7 SV     | Step No. 7 SV Value<br>(Writing possible only in CH1)  | R/W |
| 08B9 | Step7 Time   | Step No. 7 Step Time<br>(Writing possible only in CH1) | R/W |
| 08BA | Step7 PID No | Step No. 7 PID No.                                     | R/W |
| 08BB | Reserved     |  |     |
| 08BC | Step8 SV     | Step No. 8 SV Value<br>(Writing possible only in CH1)  | R/W |
| 08BD | Step8 Time   | Step No. 8 Step Time<br>(Writing possible only in CH1) | R/W |
| 08BE | Step8 PID No | Step No. 8 PID No.                                     | R/W |
| 08BF | Reserved     |  |     |
| 08C0 | Step9 SV     | Step No. 9 SV Value<br>(Writing possible only in CH1)  | R/W |
| 08C1 | Step9 Time   | Step No. 9 Step Time<br>(Writing possible only in CH1) | R/W |
| 08C2 | Step9 PID No | Step No. 9 PID No.                                     | R/W |

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Apr/08/2011 |             |

# SIEMENS S7-1200 (Ethernet)

Supported Series: SIEMENS S7-1200 series Ethernet.

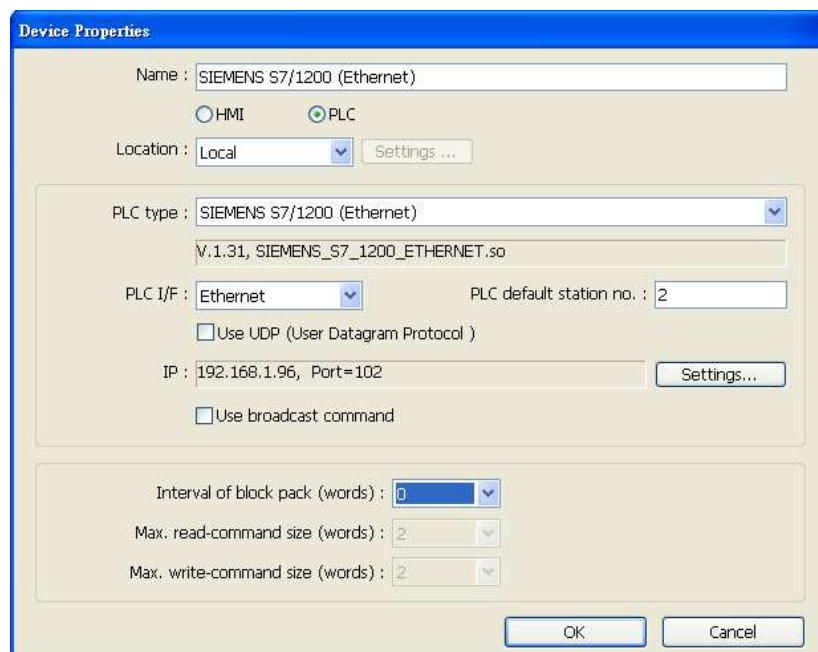
Website: <http://www.ad.siemens.com>

## HMI Setting:

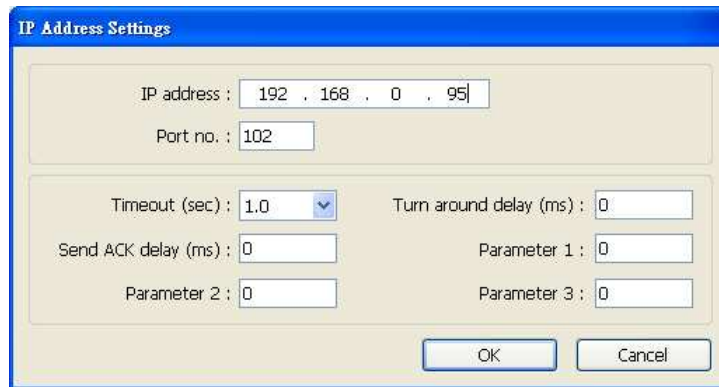
| Parameters             | Recommended                | Options           | Notes |
|------------------------|----------------------------|-------------------|-------|
| PLC type               | SIEMENS S7-1200 (Ethernet) |                   |       |
| PLC I/F                | Ethernet                   |                   |       |
| Port no.               | 102                        |                   |       |
| PLC sta. no.           | 2                          |                   |       |
| Interval of block pack | 0                          |                   |       |
| On-line simulator      | Yes                        | Multi-PLC connect | Yes   |

## PLC Setting:

1. In S7-1200 program software create PLC program and tag and then download to PLC.
2. Select Go offline, EasyBuilder will connect to PLC and get tag data. In PLC type select "SIEMENS S7-1200 (Ethernet)". Set Interval of block pack (words) to 0.



- Click “Settings...”, input PLC IP address.

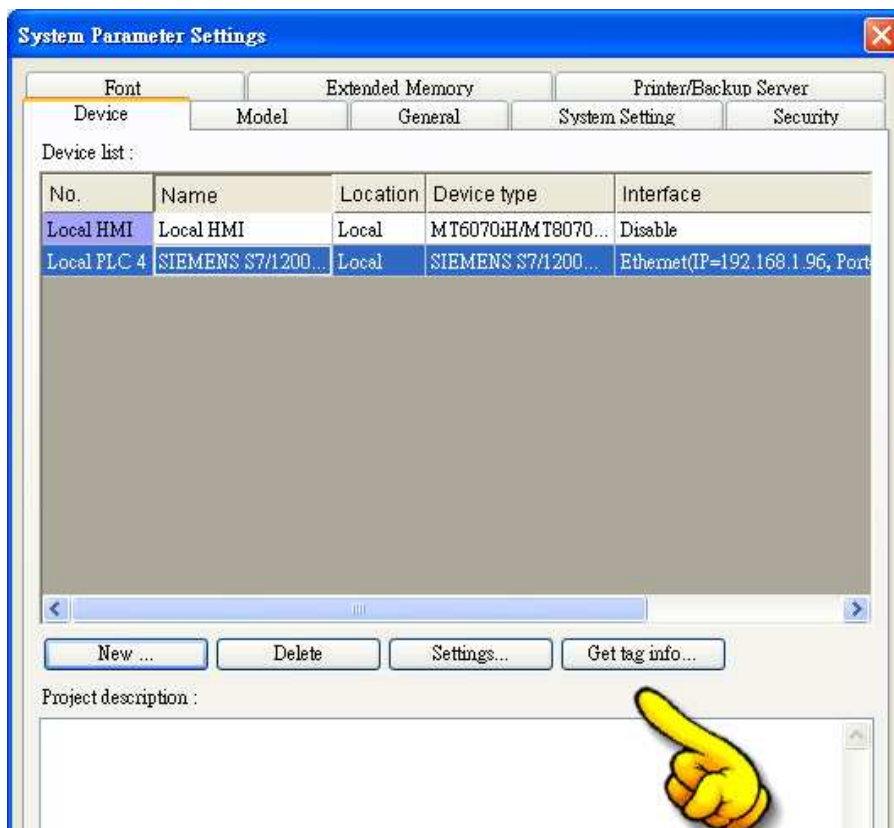


The IP Address Settings dialog box contains the following fields:

- IP address: 192 . 168 . 0 . 95
- Port no.: 102
- Timeout (sec): 1.0 (dropdown menu)
- Turn around delay (ms): 0
- Send ACK delay (ms): 0
- Parameter 1: 0
- Parameter 2: 0
- Parameter 3: 0

Buttons: OK, Cancel

- Check the PLC that is not connected to any PC. Click “Get tag info...”, it will show a successful message.

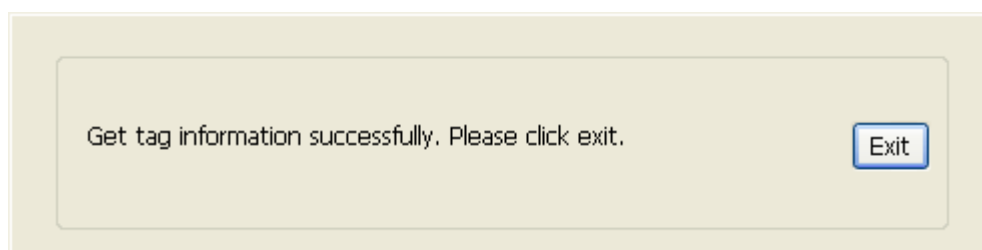


The System Parameter Settings dialog box has tabs for Font, Extended Memory, and Printer/Backup Server. The Device list table is as follows:

| No.         | Name               | Location | Device type        | Interface                      |
|-------------|--------------------|----------|--------------------|--------------------------------|
| Local HMI   | Local HMI          | Local    | MT6070:H/MT8070... | Disable                        |
| Local PLC 4 | SIEMENS S7/1200... | Local    | SIEMENS S7/1200... | Ethernet(IP=192.168.1.96, Port |

Buttons: New ..., Delete, Settings..., Get tag info...

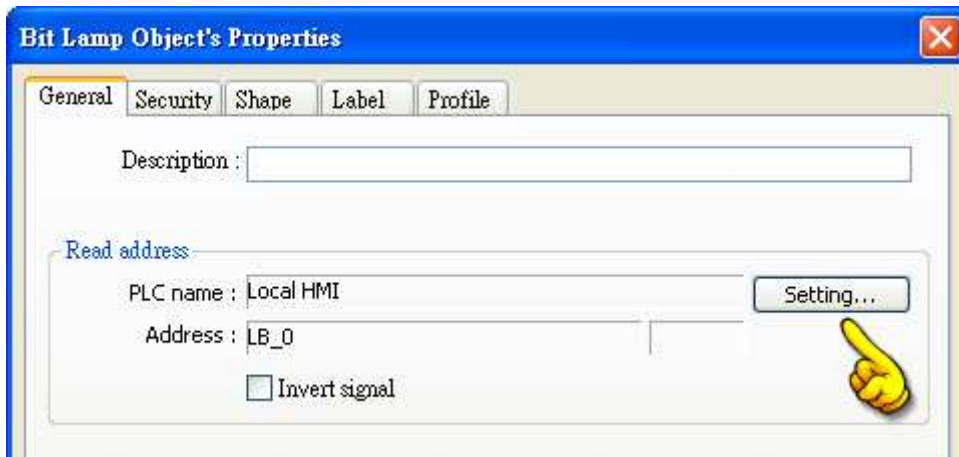
Project description:



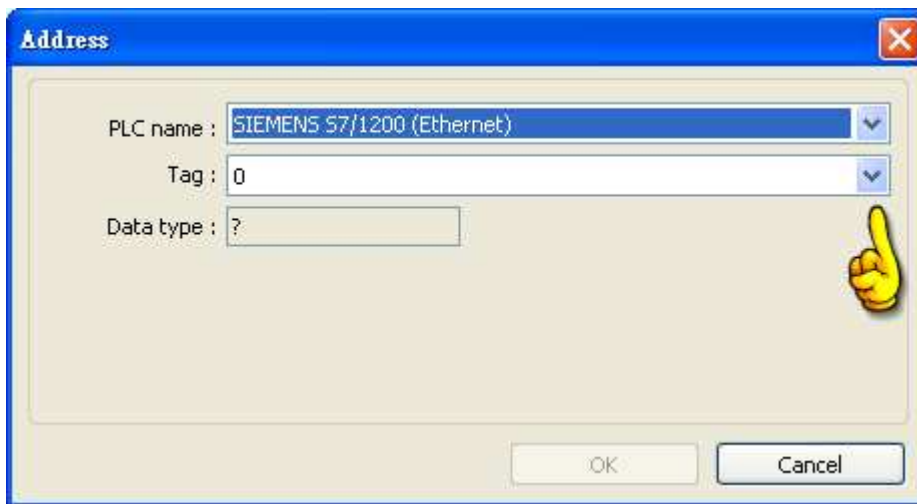
Get tag information successfully. Please click exit.

Exit

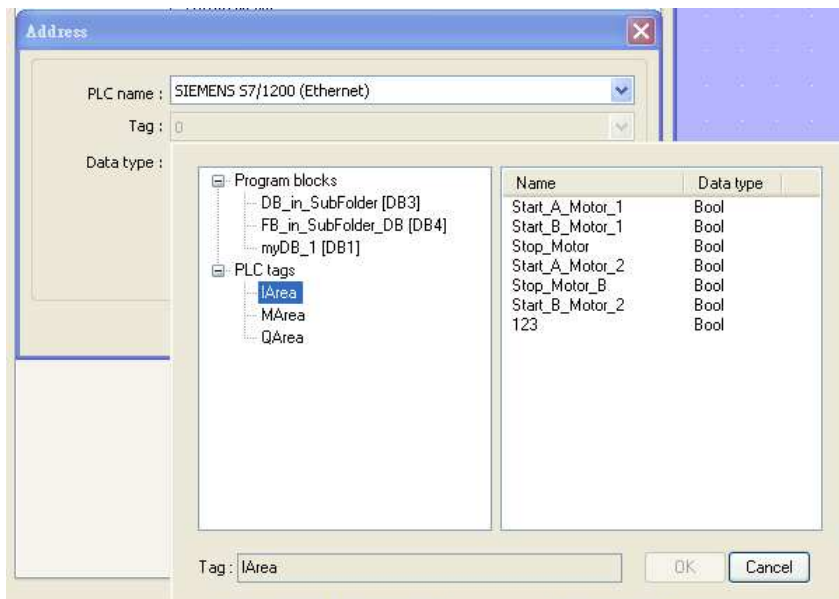
5. Create an object and click read address “Setting...”



6. In PLC name select S7-1200 then click Tag.



7. Select PLC tag.




## Support Device Type:

| S7-1200 data type | EasyBuilder data format                      | Memo        |
|-------------------|--|-------------|
| Bool              | bit  |             |
| Word              | 16-bit BCD, Hex, Binary, Unsigned            |             |
| Int               | 16-bit BCD, Hex, Binary, Signed              |             |
| DWord             | 32-bit BCD, Hex, Binary, Unsigned            |             |
| Dint              | 32-bit BCD, Hex, Binary, Signed              |             |
| Real              | 32-bit Float                                 |             |
| Array             | Word array for ASCII input and ASCII display | Length=word |

## Wiring Diagram:

Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.60   | Aug/15/2011 |             |

## SIEMENS S7-200

Supported Series: SIEMENS S7-200 series PLC  
(CPU212/214/215/216/221/222/224/226/226XM)

Website: <http://www.ad.siemens.com>

### HMI Setting:

| Parameters             | Recommended    | Options             | Notes  |
|------------------------|----------------|---------------------|--|
| PLC type               | SIEMENS S7-200 |                     |  |
| PLC I/F                | RS485 2w       | RS485 2w            |  |
| Baud rate              | 9600           | 9600, 19200, 187.5K | The HMI which has a sticker "MPI187.5" on the rear cover supports 187.5K |
| Data bits              | 8              | 7,8                 |  |
| Parity                 | Even           | Even, Odd, None     |  |
| Stop bits              | 1              | 1, 2                |  |
| PLC sta. no.           | 2              | 1 ~ 126             |  |
| Turn around delay (ms) | 5              |                     |  |
| Reserved 1             | 30             |                     | ACK delay time   |

|                   |     |                     |    |
|-------------------|-----|---------------------|----|
| Online simulator  | YES | Extend address mode | NO |
| Broadcast command | NO  |                     |    |

### PLC Setting:

|                    |                         |
|--------------------|-------------------------|
| Communication mode | Set station number to 2 |
|--------------------|-------------------------|

### Device Address:

| Bit/Word | Device type | Format | Range      | Memo                 |
|----------|-------------|--------|------------|----------------------|
| B        | I           | DDDDo  | 0 ~ 40957  | Input (I)            |
| B        | Q           | DDDDo  | 0 ~ 40957  | Output (O)           |
| B        | M           | DDDDo  | 0 ~ 40957  | Bit Memory           |
| B        | VW_Bit      | DDDDDo | 0 ~ 102397 | V Memory Bit Address |
| W        | VB          | DDDDD  | 0 ~ 10239  |                      |


|    |               |       |           |                      |
|----|---------------|-------|-----------|----------------------|
| W  | VW            | DDDDD | 0 ~ 10239 | V Memory             |
| W  | VW_Odd        | DDDDD | 0 ~ 10239 | V Memory             |
| DW | VD            | DDDDD | 0 ~ 10239 | V Memory Double Word |
| DW | VD_Odd        | DDDDD | 0 ~ 10239 | V Memory Double Word |
| W  | VW_String     | DDDDD | 0 ~ 10239 | String               |
| W  | VW_String_Odd | DDDDD | 0 ~ 10239 | String               |
| W  | VD_String     | DDDDD | 0 ~ 10239 | String               |
| W  | VD_String_Odd | DDDDD | 0 ~ 10239 | String               |
| W  | MB            | DDDDD | 0 ~ 10239 | Byte Memory          |
| W  | MW            | DDDDD | 0 ~ 10239 | Word Memory          |
| W  | MW_Odd        | DDDDD | 0 ~ 10239 | Word Memory          |
| W  | T             | DDD   | 0 ~ 127   | Timer                |
| W  | C             | DDD   | 0 ~ 127   | Counter              |

- Double word and floating point value must use VD device type.

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|   |   |  |  |
|---|---|--|--|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Siemens S7-200 CPU Port<br>RS485 2W 9P D-Sub |
| 1 RX-                                   | 6 Data-                                 |  | 8 D-   |
| 2 RX+                                   | 9 Data+                                 |  | 3 D+   |
| 5 GND                                   | 5 GND                                   |  | 5 GND  |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V2.30   | Aug/17/2009 |             |



## SIEMENS S7-200 (Ethernet)

Supported Series: SIEMENS S7-200 Ethernet Series PLC  
(CPU212/214/215/216/221/222/224/226/226XM)

Website: <http://www.ad.siemens.com>

### HMI Setting:

| Parameters   | Recommended               | Options | Notes |
|--------------|---------------------------|---------|-------|
| PLC type     | SIEMENS S7-200 (Ethernet) |         |       |
| PLC I/F      | Ethernet                  |         |       |
| Port no.     | 102                       |         |       |
| PLC sta. no. | 1                         | 0-31    |       |

### Device Address:


| Bit/Word | Device type | Format | Range      | Memo                 |
|----------|-------------|--------|------------|----------------------|
| B        | I           | DDDDo  | 0 ~ 40957  | Input (I)            |
| B        | Q           | DDDDo  | 0 ~ 40957  | Output (O)           |
| B        | M           | DDDDo  | 0 ~ 40957  | Bit Memory           |
| B        | VW_Bit      | DDDDDo | 0 ~ 102397 | V Memory Bit Address |
| W        | VW          | DDDDD  | 0 ~ 10239  | V Memory             |
| DW       | VD          | DDDDD  | 0 ~ 10239  | V Memory Double Word |
| W        | VW_String   | DDDDD  | 0 ~ 10239  | String               |
| DW       | VD_String   | DDDDD  | 0 ~ 10239  | String               |

- Double word and floating point value must use VD device type.

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Dec/30/2008 |             |

## SIEMENS S7-200 PPI

Supported Series: SIEMENS S7-200 series PLC  
(CPU212/214/215/216/221/222/224/226/226XM)

Website: <http://www.ad.siemens.com>

### HMI Setting:

| Parameters                | Recommended        | Options                | Notes   |
|---------------------------|--------------------|------------------------|---|
| PLC type                  | SIEMENS S7-200 PPI |                        |   |
| PLC I/F                   | RS485 2w           | RS485 2w               |   |
| Baud rate                 | 9600               | 9600, 19200,<br>187.5K | Only MT6000/8000V2 support<br>baud rate 187.5 K |
| Data bits                 | 8                  | 7,8                    |   |
| Parity                    | Even               | Even, Odd, None        |   |
| Stop bits                 | 1                  | 1, 2                   |   |
| Turn around<br>delay (ms) | 5                  |                        |   |
| ACK delay<br>time (ms)    | 30                 |                        |   |
| PLC sta. no.              | 2                  | 1 ~ 126                |   |

|                   |     |                     |     |
|-------------------|-----|---------------------|-----|
| Online simulator  | YES | Extend address mode | YES |
| Broadcast command | NO  |                     |     |

### PLC Setting:

|             |  |
|-------------|--|
| PLC setting | PLC sta. no. can not be the same as HMI sta. no. |
|-------------|--|

### Device Address:

| Bit/Word | Device type | Format | Range      | Memo                 |
|----------|-------------|--------|------------|----------------------|
| B        | I           | DDDDo  | 0 ~ 40957  | Input (I)            |
| B        | Q           | DDDDo  | 0 ~ 40957  | Output (O)           |
| B        | M           | DDDDo  | 0 ~ 40957  | Bit Memory           |
| B        | VW_Bit      | DDDDDo | 0 ~ 102397 | V Memory Bit Address |
| W        | VB          | DDDDD  | 0 ~ 10239  |                      |

|    |               |       |           |                      |
|----|---------------|-------|-----------|----------------------|
| W  | VW            | DDDDD | 0 ~ 10239 | V Memory             |
| W  | VW_Odd        | DDDDD | 0 ~ 10239 | V Memory             |
| DW | VD            | DDDDD | 0 ~ 10239 | V Memory Double Word |
| DW | VD_Odd        | DDDDD | 0 ~ 10239 | V Memory Double Word |
| W  | VW_String     | DDDDD | 0 ~ 10239 | String               |
| W  | VW_String_Odd | DDDDD | 0 ~ 10239 | String               |
| W  | VD_String     | DDDDD | 0 ~ 10239 | String               |
| W  | VD_String_Odd | DDDDD | 0 ~ 10239 | String               |
| W  | MB            | DDDDD | 0 ~ 10239 | Byte Memory          |
| W  | MW            | DDDDD | 0 ~ 10239 | Word Memory          |
| W  | MW_Odd        | DDDDD | 0 ~ 10239 | Word Memory          |
| W  | T             | DDD   | 0 ~ 127   | Timer                |
| W  | C             | DDD   | 0 ~ 127   | Counter              |

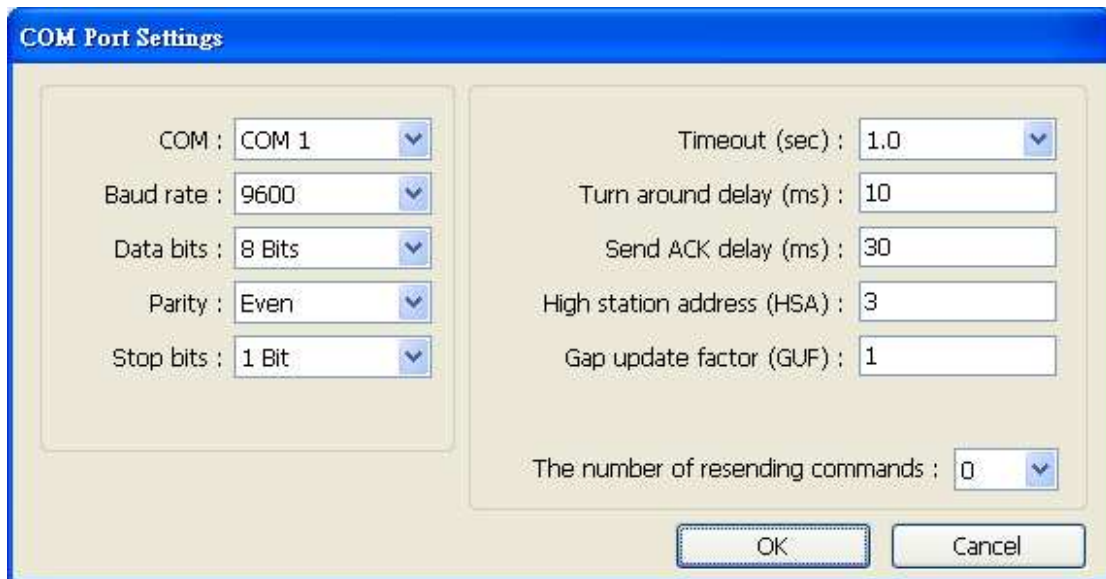
- Double Word and floating point value must use VD device type.

## Multi-HMIs-Multi-PLCs Communication Setting:



For S7-200 PLC, Multi-HMIs-Multi-PLCs communication can be achieved using S7/200 PPI driver, please refer to the settings below.

IN EB8000 COM Port Settings, two important parameters must be set:

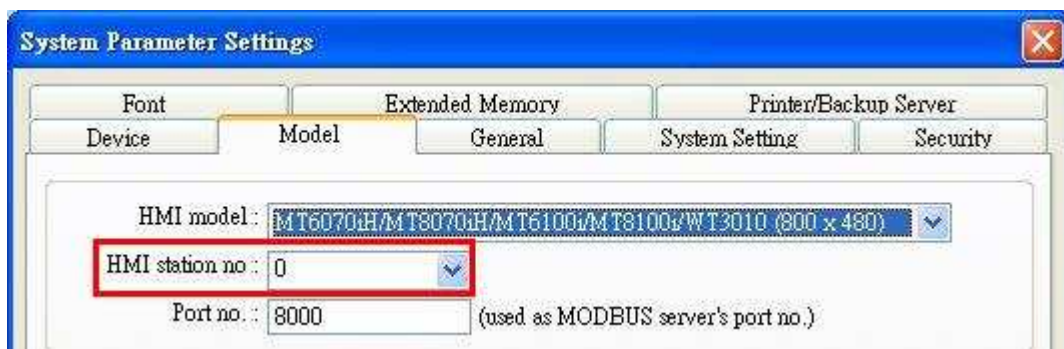


### 1. [High station address (HSA)]:

Setting Max. Station Number of HMI in PPI network.

For the effectiveness of system operation, it is highly recommended that the HMI station number starts from zero and go on sequentially. If there are 4 HMI in PPI network, set station no. from 0~3, and [High station address (HSA)] to 3.

Set HMI station number in [System Parameters] / [Model] / [HMI station no.]:



### 2. [Gap update factor(GUF)]:

The condition to pass a Token. In PPI network only HMI can hold a Token, PLC can only be controlled.

When the HMI that holds Token communicates with PLC for a number of times that equals to the value set here, HMI will pass the Token (control of PLC) to the next HMI. For example, if GUF is set to "1", HMI will pass the control of PLC to the next HMI when read or write the value in an address.

If GUF is set to a bigger value, the HMI that holds Token will control the PLC for a longer time and therefore the Token won't be passed to another HMI and cause failure in communicating with PLC.


A complete communication means HMI reads / writes PLC value for one time.

## Note:

- HMI sta. no. can not be the same as PLC sta. no.
- Highly recommended that HMI sta. no. starts from 0 and go on sequentially for the effectiveness of operation.
- Available for EB8000V4.50 and later.

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|   |   |  |  |
|---|---|--|--|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female   | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Siemens S7-200 CPU Port<br>RS485 2W 9P D-Sub |
| 1 RX-   | 6 Data-                                 |  | 8 D-   |
| 2 RX+   | 9 Data+                                 |  | 3 D+   |
| 5 GND   | 5 GND                                   |  | 5 GND  |
|  |   |  |  |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Aug/15/2011 | Driver released. |

## SIEMENS S7-300

Supported Series: SIEMENS S7-300 series PLC

Website: <http://www.ad.siemens.com>

### HMI Setting:

| Parameters   | Recommended          | Options     | Notes  |
|--------------|----------------------|-------------|--|
| PLC type     | SIEMENS S7-300       |             |  |
| PLC I/F      | RS232                |             |  |
| Baud rate    | 19200, 38400, 187.5K | 9600~187.5K | Must be same as the PLC setting. The HMI which has a sticker MPI187.5 on the rear cover supports 187.5K. |
| Data bits    | 8                    |             |  |
| Parity       | Odd                  |             |  |
| Stop bits    | 1                    |             |  |
| PLC sta. no. | 2                    |             | Must be same as the PLC setting.   |

### Device Address:


| Bit/Word | Device type      | Format    | Range         | Memo                         |
|----------|------------------|-----------|---------------|------------------------------|
| B        | I                | DDDDo     | 0 ~ 40957     | Input (I)                    |
| B        | Q                | DDDDo     | 0 ~ 40957     | Output (O)                   |
| B        | M                | DDDDo     | 0 ~ 40957     | Bit Memory                   |
| B        | DBnBit           | FFFFDDDDo | 0 ~ 409681927 | Data Register Bit            |
| B        | DB0Bit ~ DB99Bit | DDDDo     | 0 ~ 81927     |                              |
| W        | IW               | DDDD      | 0 ~ 4095      | Input (I)                    |
| W        | QW               | DDDD      | 0 ~ 4095      | Output (O)                   |
| W        | MW               | DDDD      | 0 ~ 4095      | Bit Memory                   |
| W        | MD               | DDDD      | 0 ~ 4094      |                              |
| W        | MB               | DDDD      | 0 ~ 4095      | Bit Memory Byte              |
| W        | DBBn             | FFFFDDDD  | 0 ~ 40968192  | Data Register Byte           |
| W        | DBn              | FFFFDDDD  | 0 ~ 40968192  | Data Register (must be even) |
| DW       | DBDn             | FFFFDDDD  | 0 ~ 40968192  | Data Register Double         |

|    |             |          |              |   |
|----|-------------|----------|--------------|---|
|    |             |          |              | Word<br>(must be multiple of 4)                         |
| DW | DBn_String  | FFFFDDDD | 0 ~ 40968192 | Data Register Double<br>Word<br>(must be multiple of 4) |
| DW | DBDn_String | FFFFDDDD | 0 ~ 40968192 | Data Register Double<br>Word<br>(must be multiple of 4) |
| W  | DB0-DB99    | DDDD     | 0 ~ 8192     | Data Register<br>(must be even)                         |

\* Double word and floating point value must use DBDn device type.

## Wiring Diagram:

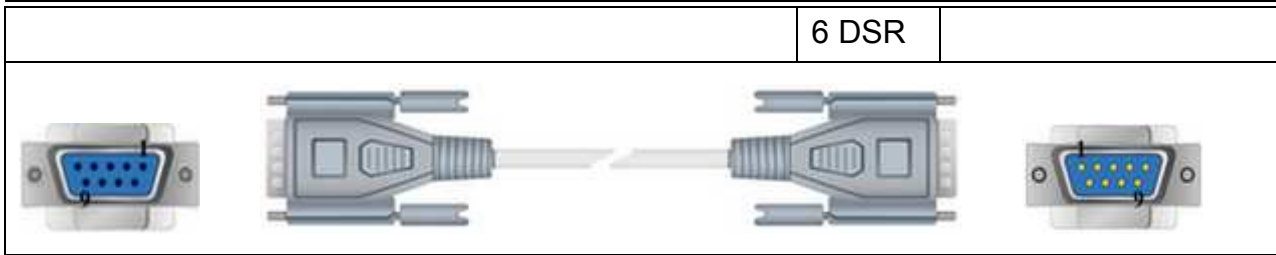
9P D-Sub to 9P D-Sub:

|  |                                    |                                      |  |         |
|--|------------------------------------|--------------------------------------|--|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Siemens S7-300 PC Adapter<br>RS232 Port 9P D-Sub |         |
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TXD  |         |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RXD  |         |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND  |         |
|  |                                    |                                      | 7 RTS  | circuit |
|  |                                    |                                      | 8 CTS  |         |
|  |                                    |                                      |  |         |

9P D-Sub to 9P D-Sub:

|                                    |                                    |                                      |  |         |
|------------------------------------|------------------------------------|--------------------------------------|--|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Systeme Helmholz SSW7-TS<br>RS232 9P D-Sub |         |
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                                      |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RXD                                      |         |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                                      |         |
|                                    |                                    |                                      | 7 RTS                                      | circuit |
|                                    |                                    |                                      | 8 CTS                                      |         |
|                                    |                                    |                                      | 4 DTR                                      | circuit |





Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description                 |
|---------|-------------|-----------------------------|
| V3.10   | May/24/2011 | Added registers: MB & DBBn. |

## SIEMENS S7-300/ET200S (Ethernet)

Supported Series: SIEMENS S7-300 Ethernet Series PLC, Ethernet module CP-343-1, CPU315-2 PN/DP, CPU317-2 PN/DP, CPU319-3 PN/DP, and ET200S.

Website: <http://www.ad.siemens.com>

### HMI Setting:

| Parameters   | Recommended                      | Options | Notes |
|--------------|----------------------------------|---------|-------|
| PLC type     | SIEMENS S7-300/ET200S (Ethernet) |         |       |
| PLC I/F      | Ethernet                         |         |       |
| Port no.     | 102                              |         |       |
| PLC sta. no. | 1                                | 0-31    |       |

### Device Address:

| Bit/Word | Device type    | Format    | Range         | Memo   |
|----------|----------------|-----------|---------------|--|
| B        | I              | DDDDo     | 0 ~ 40957     | Input (I)  |
| B        | Q              | DDDDo     | 0 ~ 40957     | Output (O)   |
| B        | M              | DDDDo     | 0 ~ 40957     | Bit Memory   |
| B        | DBnBit         | FFFFDDDDo | 0 ~ 409699997 |  |
| B        | DB0Bit-DB99Bit | DDDDDo    | 0 ~ 655327    | Data Register Bit                                    |
| W        | IW             | DDDD      | 0 ~ 4095      | Input (I)  |
| W        | QW             | DDDD      | 0 ~ 4095      | Output (O)   |
| W        | MW             | DDDD      | 0 ~ 4095      | Bit Memory   |
| W        | MD             | DDDD      | 0 ~ 4094      | Bit Memory Double Word                               |
| W        | DBn            | FFFFDDDD  | 0 ~ 40969999  | Data Register<br>(must be even)                      |
| DW       | DBDn           | FFFFDDDD  | 0 ~ 40969999  | Data Register Double Word<br>(must be multiple of 4) |
| DW       | DBn_String     | FFFFDDDD  | 0 ~ 40969999  |  |
| DW       | DBDn_String    | FFFFDDDD  | 0 ~ 40969999  |  |
| W        | DB0 ~ DB99     | DDDD      | 0 ~ 65532     | Data Register<br>(must be even)                      |
| W        | MB             | DDDD      | 0 ~ 4095      | Bit Memory Byte                                      |


|   |      |          |              |                    |
|---|------|----------|--------------|--------------------|
| W | DBBn | FFFFDDDD | 0 ~ 40969999 | Data Register Byte |
|---|------|----------|--------------|--------------------|

- Double word and floating point value must use DBDn device type.

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description                 |
|---------|-------------|-----------------------------|
| V2.10   | May/21/2011 | Added registers: MB & DBBn. |

# SIEMENS S7-300 MPI

Supported Series: SIEMENS S7-300 series PLC

Website: <http://www.siemens.com>

## HMI Setting:

| Parameters   | Recommended        | Options | Notes  |
|--------------|--------------------|---------|--|
| PLC type     | SIEMENS S7-300 MPI |         |  |
| PLC I/F      | RS-485 2W          |         |  |
| Baud rate    | 187.5K             |         | Only HMI with a sticker "MPI 187.5K" on the rear cover supports MPI communication. |
| Data bits    | 8                  |         |  |
| Parity       | Even               |         |  |
| Stop bits    | 1                  |         |  |
| PLC sta. no. | 2                  | 2 ~ 31  |  |

|                   |    |                     |     |
|-------------------|----|---------------------|-----|
| Online simulator  | NO | Extend address mode | Yes |
| Broadcast command | NO |                     |     |

## Device Address:

| Bit/Word | Device type      | Format    | Range         | Memo              |
|----------|------------------|-----------|---------------|-------------------|
| B        | I                | DDDDo     | 0 ~ 40957     | Input (I)         |
| B        | Q                | DDDDo     | 0 ~ 40957     | Output (O)        |
| B        | M                | DDDDo     | 0 ~ 40957     | Bit Memory        |
| B        | DBnBit           | FFFFDDDDo | 0 ~ 409699997 | Data Register Bit |
| B        | DB0Bit ~ DB99Bit | DDDDDo    | 0 ~ 655327    | Data Register Bit |
| W        | IW               | DDDD      | 0 ~ 4095      | Input (I)         |
| W        | QW               | DDDD      | 0 ~ 4095      | Output (O)        |
| W        | MW               | DDDD      | 0 ~ 4095      | Bit Memory        |
| W        | MD               | DDDD      | 0 ~ 4094      |                   |
| W        | MB               | DDDD      | 0 ~ 4095      | Bit Memory Byte   |
| W        | DBBn             | FFFFDDDD  | 0 ~ 40969999  | Data Register     |

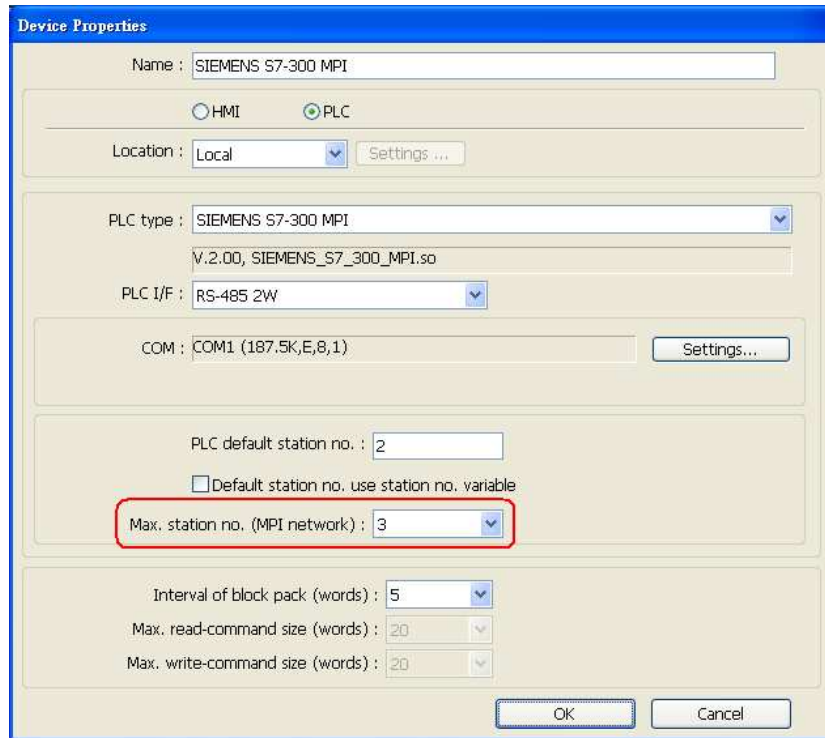
|   |             |          |              |   |
|---|-------------|----------|--------------|---|
| W | DBn         | FFFFDDDD | 0 ~ 40969999 | Data Register<br>(must be even)                 |
| W | DBDn        | FFFFDDDD | 0 ~ 40969999 | Data Register<br>Double Word<br>(multiple of 4) |
| W | DBn_String  | FFFFDDDD | 0 ~ 40969999 |   |
| W | DBDn_String | FFFFDDDD | 0 ~ 40969999 |   |
| W | DB0 ~ DB99  | DDDD     | 0 ~ 65532    | Data Register<br>(must be even)                 |

\* Double word and floating point value must use DBDn device type.

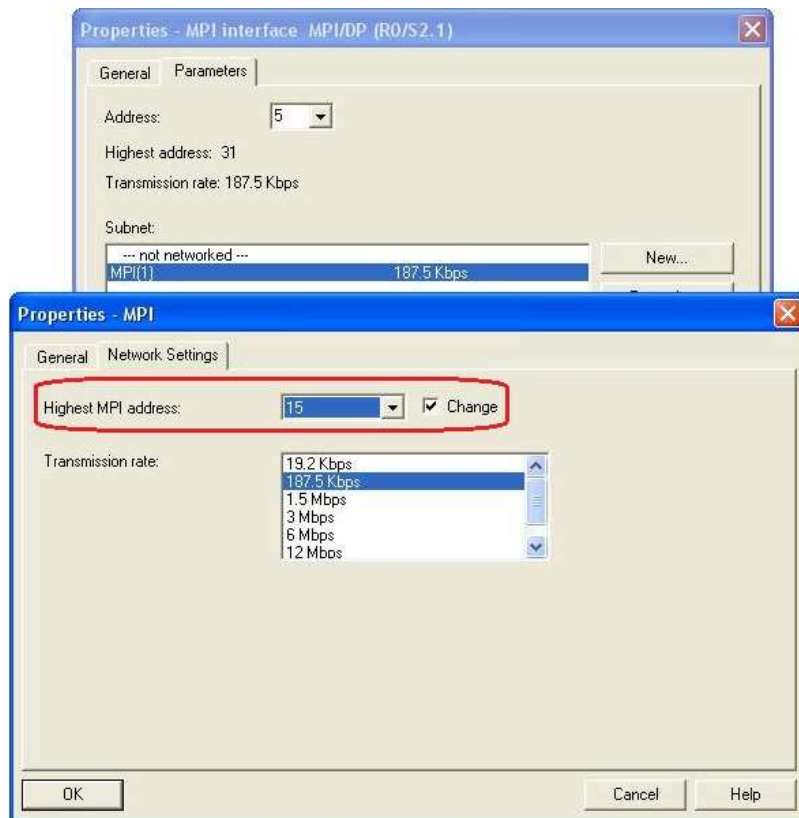
## Multi-HMIs-Multi-PLCs Communication Setting:



For SIEMENS S7-300 MPI driver in Multi-HMIs-Multi-PLCs communication, [Max. station no. (MPI network)] parameter must be correctly set. This setting is relevant to the station no. of the devices, as shown, two HMI (station no. 0, 1) and two PLC (station no. 2, 3) are in MPI network, Max. Station No. should be set to 3.



For the effectiveness of communication, users may set PLC device in STEP 7 as shown below. In Properties MPI / Network Settings, set Highest MPI address to the number closest to the actual device station number.




## Note:

- HMI sta. no. can not be the same as PLC sta. no.
- Highly recommended that the device station numbers start from 0 sequentially and correctly set [Max. station no. (MPI network)].
- Available for EB8000V4.50 and later.

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|   |   |  |                              |
|---|---|--|------------------------------|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female   | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | S7-300 MPI RS485 2W 9P D-Sub |
| 1 RX-   | 6 Data-                                 |  | 8 D-                         |
| 2 RX+   | 9 Data+                                 |  | 3 D+                         |
| 5 GND   | 5 GND                                   |  | 5 GND                        |
|  |   |  |                              |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description   |
|---------|-------------|---|
| V1.90   | May/26/2011 | Added registers: MB & DBBn                                |
| V2.00   | Aug/2/2011  | i Series HMI support Multi HMIs-Multi PLCs communication. |

## SIEMENS S7-400 (Ethernet)

Supported Series: SIEMENS S7-400 Ethernet PLC.

Website: <http://www.ad.siemens.com>

### HMI Setting:

| Parameters   | Recommended               | Options | Notes |
|--------------|---------------------------|---------|-------|
| PLC type     | Siemens S7-400 (Ethernet) |         |       |
| PLC I/F      | Ethernet                  |         |       |
| Port no.     | 102                       |         |       |
| Link type    | PG                        | PC, OP  |       |
| Rack         | 0                         | 0-7     |       |
| CPU slot     | 3                         | 2-31    |       |
| PLC sta. no. | 0                         | 0-31    |       |

### Device Address:

| Bit/Word | Device type    | Format    | Range         | Memo  |
|----------|----------------|-----------|---------------|---|
| B        | I              | DDDDo     | 0 ~ 40957     | Input (I)   |
| B        | Q              | DDDDo     | 0 ~ 40957     | Output (O)  |
| B        | M              | DDDDo     | 0 ~ 40957     | Bit Memory  |
| B        | DBnBit         | FFFFDDDDo | 0 ~ 409699997 |   |
| B        | DB0Bit-DB99Bit | DDDDDo    | 0 ~ 655327    | Data Register Bit                                       |
| W        | IW             | DDDD      | 0 ~ 4095      | Input (I)   |
| W        | QW             | DDDD      | 0 ~ 4095      | Output (O)  |
| W        | MW             | DDDD      | 0 ~ 4095      | Bit Memory  |
| W        | MD             | DDDD      | 0 ~ 4094      |   |
| W        | DBn            | FFFFDDDD  | 0 ~ 40969999  | Data Register<br>(must be even)                         |
| DW       | DBDn           | FFFFDDDD  | 0 ~ 40969999  | Data Register Double<br>Word<br>(must be multiple of 4) |
| DW       | DBn_String     | FFFFDDDD  | 0 ~ 40969999  |   |
| DW       | DBDn_String    | FFFFDDDD  | 0 ~ 40969999  |   |




|   |            |         |              |                                 |
|---|------------|---------|--------------|---------------------------------|
| W | DB0 ~ DB99 | DDDDD   | 0 ~ 65532    | Data Register<br>(must be even) |
| W | MB         | DDDD    | 0 ~ 4095     | Bit Memory Byte                 |
| W | DBBn       | FFFDDDD | 0 ~ 40969999 | Data Register Byte              |

\* Double word and floating point value must use DBDn device type.

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

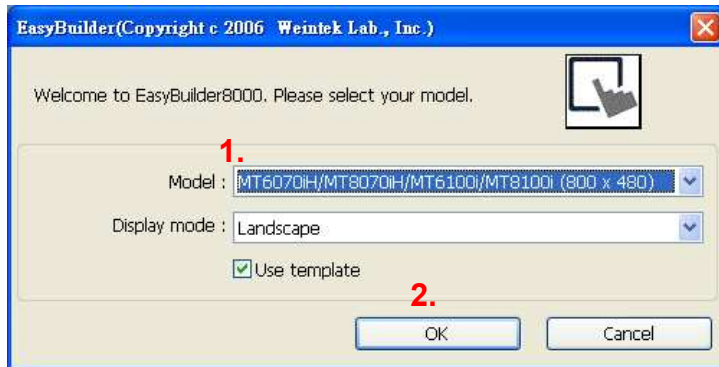
| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



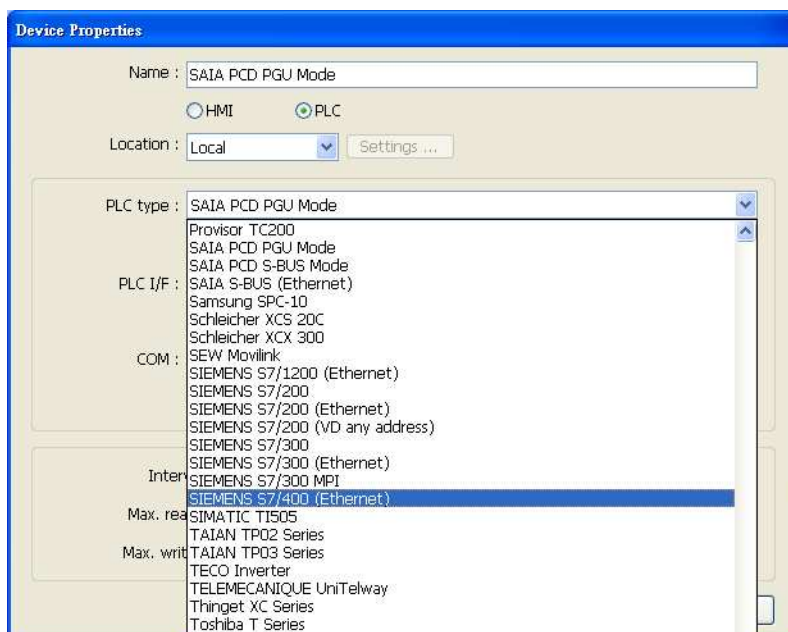
Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## EasyBuilder Device Setting Steps

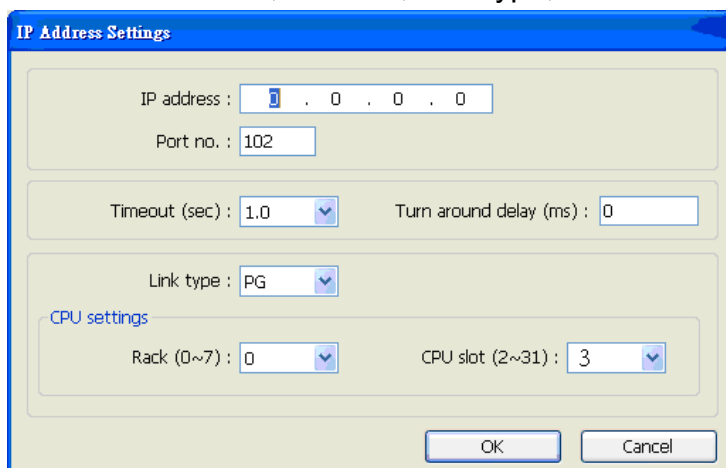
1. Open EasyBuilder, File/NEW, select HMI model and press [OK].



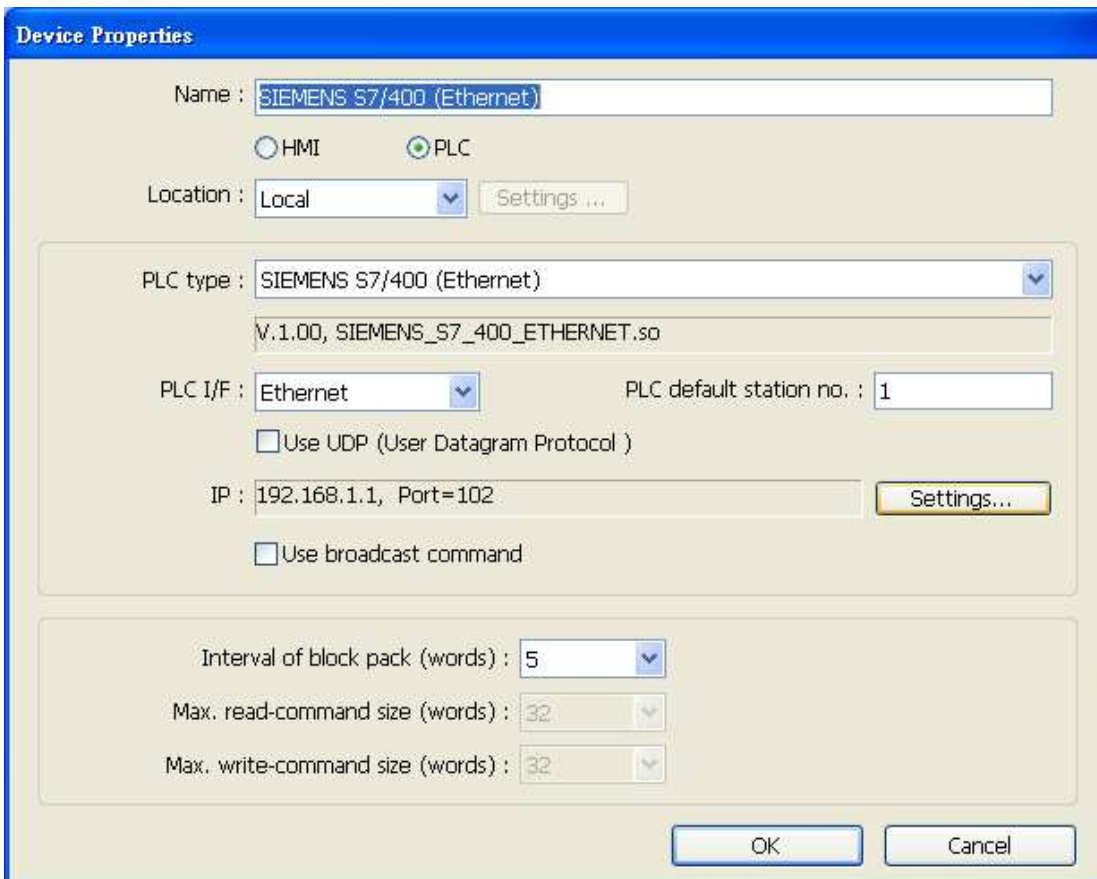
2. "System Parameter Settings" window is shown, click [New].
3. Select "SIEMENS S7-400(ETHERNET)".



4. Press [Settings].
5. Set S7-400 IP, Port no., Link type, Rack and CPU slot. (must match PLC settings)



6. The setting will be finished as below.



**Device Properties**

Name : SIEMENS S7/400 (Ethernet)

HMI  PLC

Location : Local

PLC type : SIEMENS S7/400 (Ethernet)

V.1.00, SIEMENS\_S7\_400\_ETHERNET.so

PLC I/F : Ethernet  PLC default station no. : 1

Use UDP (User Datagram Protocol )

IP : 192.168.1.1, Port=102

Use broadcast command

Interval of block pack (words) : 5

Max. read-command size (words) : 32

Max. write-command size (words) : 32

## Driver Version:

| Version | Date        | Description                |
|---------|-------------|----------------------------|
| V1.40   | May/19/2011 | Added registers: MB & DBBn |

## SIMATIC TI505

Supported Series: SIMATIC TI505 Series PLCs: TI520, TI525, TI530, TI535, TI545, TI555, TI560, TI565, TI575. Use NITP protocol in a point-to-point, single master, single slave format.

Website: [http://www.ad.siemens.de/simatic/controller/index\\_76.htm](http://www.ad.siemens.de/simatic/controller/index_76.htm)

### HMI Setting:


| Parameters   | Recommended   | Options        | Notes         |
|--------------|---------------|----------------|---------------|
| PLC type     | SIMATIC TI505 |                | NITP protocol |
| PLC I/F      | RS232         | RS232,         |               |
| Baud rate    | 19200         | 19200          |               |
| Data bits    | 7             | 7              |               |
| Parity       | Odd           | Odd            |               |
| Stop bits    | 1             | 1              |               |
| PLC sta. no. | 0             | Does not apply |               |

### Device Address:


| Bit/Word | Device type | Format | Range     | Memo                  |
|----------|-------------|--------|-----------|-----------------------|
| B        | CR          | DDDDD  | 1 ~ 65535 | Internal Relay        |
| B        | X           | DDDDD  | 1 ~ 65535 | Discrete Input Coils  |
| B        | Y           | DDDDD  | 1 ~ 65535 | Discrete Output Coils |
| W        | V           | DDDDD  | 1 ~ 65535 | User Data Registers   |
| W        | STW         | DDDDD  | 1 ~ 65535 | Status Word Registers |
| W        | TCP         | DDDDD  | 1 ~ 65535 | Timer/Counter Preset  |
| W        | TCC         | DDDDD  | 1 ~ 65535 | Timer/Counter Current |
| W        | WX          | DDDDD  | 1 ~ 65535 | Word Discrete Inputs  |
| W        | WY          | DDDDD  | 1 ~ 65535 | Word Discrete Outputs |

## Wiring Diagram:

9P D-Sub to 25P D-Sub:


| HMI COM1<br>RS232 9P<br>D-Sub Male  | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | SIMATIC TI505 RS232 25P<br>D-Sub |         |
|---|------------------------------------|--------------------------------------|----------------------------------|---------|
| 2 RX  | 6 RX                               | 8 RX                                 | 2 TXD                            |         |
| 3 TX  | 4 TX                               | 7 TX                                 | 3 RXD                            |         |
| 5 GND   | 5 GND                              | 5 GND                                | 7 GND                            |         |
|  |                                    |                                      | 4 RTS                            | circuit |
|   |                                    |                                      | 5 CTS                            |         |
|   |                                    |                                      | 6 DSR                            | circuit |
|   |                                    |                                      | 8 DCD                            |         |
|   |                                    |                                      | 20 DTR                           |         |

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | SIMATIC TI505 RS232 9P<br>D-Sub |         |
|--|------------------------------------|--------------------------------------|---------------------------------|---------|
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TXD                           |         |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RXD                           |         |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                           |         |
|  |                                    |                                      | 7 RTS                           | circuit |
|  |                                    |                                      | 8 CTS                           |         |
|  |                                    |                                      | 1 DCD                           | circuit |
|  |                                    |                                      | 4 DTR                           |         |
|  |                                    |                                      | 6 DSR                           |         |

**9P D-Sub to 9P D-Sub:**

|   |  |  |                                 |
|---|--|--|---------------------------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | SIMATIC TI505 RS422 9P<br>D-Sub |
| 1 RX-                                   |  |  | 7 DO (-)                        |
| 2 RX+                                   |  |  | 1 DO (+)                        |
| 3 TX-                                   |  |  | 8 DI (-)                        |
| 4 TX+                                   |  |  | 5 DI (+)                        |
| 5 GND                                   |  |  | 6 GND                           |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Apr/22/2009 |             |

# SIMATIC TI565/C400

Website: [http://www.ad.siemens.de/simatic/controller/index\\_76.htm](http://www.ad.siemens.de/simatic/controller/index_76.htm)

## HMI Setting:


| Parameters   | Recommended        | Options        | Notes |
|--------------|--------------------|----------------|-------|
| PLC type     | SIMATIC TI565/C400 |                |       |
| PLC I/F      | RS232              | RS232,         |       |
| Baud rate    | 19200              | 19200          |       |
| Data bits    | 7                  | 7              |       |
| Parity       | Odd                | Odd            |       |
| Stop bits    | 1                  | 1              |       |
| PLC sta. no. | 0                  | Does not apply |       |

## Device Address:


| Bit/Word | Device type | Format  | Range       | Memo                  |
|----------|-------------|---------|-------------|-----------------------|
| B        | CR          | DDDDD   | 1 ~ 65535   | Internal Relay        |
| B        | X           | DDDDD   | 1 ~ 65535   | Discrete Input Coils  |
| B        | Y           | DDDDD   | 1 ~ 65535   | Discrete Output Coils |
| B        | V_Bit       | DDDDDdd | 1 ~ 6553515 | User Data Registers   |
| W        | V           | DDDDD   | 1 ~ 65535   | User Data Registers   |
| W        | STW         | DDDDD   | 1 ~ 65535   | Status Word Registers |
| W        | TCP         | DDDDD   | 1 ~ 65535   | Timer/Counter Preset  |
| W        | TCC         | DDDDD   | 1 ~ 65535   | Timer/Counter Current |
| W        | WX          | DDDDD   | 1 ~ 65535   | Word Discrete Inputs  |
| W        | WY          | DDDDD   | 1 ~ 65535   | Word Discrete Outputs |

## Wiring Diagram:

9P D-Sub to 25P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male  | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | RS232 25P D-Sub |         |
|---|------------------------------------|--------------------------------------|-----------------|---------|
| 2 RX  | 6 RX                               | 8 RX                                 | 2 TXD           |         |
| 3 TX  | 4 TX                               | 7 TX                                 | 3 RXD           |         |
| 5 GND   | 5 GND                              | 5 GND                                | 7 GND           |         |
|   |                                    |                                      | 4 RTS           | circuit |
|   |                                    |                                      | 5 CTS           |         |
|   |                                    |                                      | 6 DSR           | circuit |
|   |                                    |                                      | 8 DCD           |         |
|   |                                    |                                      | 20 DTR          |         |
|  |                                    |                                      |                 |         |


9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | RS232 9P D-Sub |         |
|--|------------------------------------|--------------------------------------|----------------|---------|
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TXD          |         |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RXD          |         |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND          |         |
|  |                                    |                                      | 7 RTS          | circuit |
|  |                                    |                                      | 8 CTS          |         |
|  |                                    |                                      | 1 DCD          | circuit |
|  |                                    |                                      | 4 DTR          |         |
|  |                                    |                                      | 6 DSR          |         |
|  |                                    |                                      |                |         |



**9P D-Sub to 9P D-Sub:**

|   |  |  |                |
|---|--|--|----------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | RS422 9P D-Sub |
| 1 RX-                                   |  |  | 7 DO (-)       |
| 2 RX+                                   |  |  | 1 DO (+)       |
| 3 TX-                                   |  |  | 8 DI (-)       |
| 4 TX+                                   |  |  | 5 DI (+)       |
| 5 GND                                   |  |  | 6 GND          |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Aug/31/2011 | Driver released. |

## TAIAN TP02 Series

Supported Series: TAIAN TP02 series

Website: <http://www.taian-technology.com>

### HMI Setting:

| Parameters   | Recommended       | Options            | Notes                                 |
|--------------|-------------------|--------------------|---------------------------------------|
| PLC type     | TAIAN TP02 Series |                    |                                       |
| PLC I/F      | RS485 4W/2W       | RS485 4W/2W        | MMI 422 port: 4W; RS485 terminals: 2W |
| Baud rate    | 19200             | 9600, 19200, 38400 |                                       |
| Data bits    | 7                 | 7, 8               |                                       |
| Parity       | Even              | Even, Odd, None    |                                       |
| Stop bits    | 2                 | 1, 2               |                                       |
| PLC sta. no. | 1                 | 0-255              |                                       |

### PLC Setting:

RS422 port: WS041=120, WS042=1;

RS485 terminals: WS044=120, WS045=1.

### Device Address:


| Bit/Word | Device type | Format | Range    | Memo  |
|----------|-------------|--------|----------|---|
| B        | X           | DDD    | 1 ~ 384  | Input relay   |
| B        | Y           | DDD    | 1 ~ 384  | Output relay  |
| B        | C           | DDDD   | 1 ~ 2048 | Auxiliary relay                                     |
| W        | X           | DDD    | 1 ~ 369  | Input register (must be 1 or a multiple of plus 1)  |
| W        | Y           | DDD    | 1 ~ 369  | Output register (must be 1 or a multiple of plus 1) |
| W        | V           | DDDD   | 1 ~ 1024 | Auxiliary register                                  |
| W        | D           | DDDD   | 1 ~ 2048 | Auxiliary register                                  |
| W        | WS          | DDD    | 1 ~ 128  | System register                                     |
| W        | C           | DDDD   | 1 ~ 2033 | Auxiliary relay register (must                      |

| Bit/Word | Device type | Format | Range   | Memo                          |
|----------|-------------|--------|---------|-------------------------------|
|          |             |        |         | be 1 or a multiple of plus 1) |
| W        | WC          | DDD    | 1 ~ 912 | Constant register             |

## Wiring Diagram:


### 9P D-Sub to 9P D-Sub: TP02 Series MMI RS422 port

| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | TP02 Series PLC CPU RS422<br>9P D-Sub |
|---|--|--|---------------------------------------|
| 1 RX-                                   |  |  | 8 TX-                                 |
| 2 RX+                                   |  |  | 3 TX+                                 |
| 3 TX-                                   |  |  | 7 RX-                                 |
| 4 TX+                                   |  |  | 2 RX+                                 |
| 5 GND                                   |  |  |                                       |



### 9P D-Sub to 9P D-Sub: TP02 Series RS485 Terminals

| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | TP02 series PLC RS485<br>Terminals |
|---|---|--|------------------------------------|
| 1 RX-                                   | 6 Data-                                 |  | T/R-                               |
| 2 RX+                                   | 9 Data+                                 |  | T/R+                               |
| 5 GND                                   | 5 GND                                   |  |                                    |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Jan/25/2010 |             |

## TAIAN TP03 Series

Supported Series: TECO (TAIAN TP03) series PLC.

Website: <http://www.teco.com.tw/sa/en/>

### HMI Setting:

| Parameters   | Recommended       | Options         | Notes |
|--------------|-------------------|-----------------|-------|
| PLC type     | TAIAN TP03 Series |                 |       |
| PLC I/F      | RS485 4W          |                 |       |
| Baud rate    | 19200             | 9600, 19200     |       |
| Data bits    | 8                 | 8               |       |
| Parity       | None              | Even, Odd, None |       |
| Stop bits    | 2                 | 1               |       |
| PLC sta. no. | 1                 | 1-31            |       |


### Device Address:

| Bit/Word | Device type | Format | Range    | Memo |
|----------|-------------|--------|----------|------|
| B        | C           | DDDD   | 0 ~ 9999 |      |
| B        | M           | DDDD   | 0 ~ 9999 |      |
| B        | S           | DDDD   | 0 ~ 9999 |      |
| B        | T           | DDDD   | 0 ~ 9999 |      |
| B        | X           | OOO    | 0 ~ 377  |      |
| B        | Y           | OOO    | 0 ~ 377  |      |
| W        | D           | DDDD   | 0 ~ 9999 |      |
| W        | V           | DDDD   | 0 ~ 9999 |      |
| W        | Z           | DDDD   | 0 ~ 9999 |      |
| W        | T_Curent    | DDDD   | 0 ~ 9999 |      |
| W        | C_Curent    | DDDD   | 0 ~ 9999 |      |
| W        | T_Preset    | DDDD   | 0 ~ 9999 |      |
| W        | C_Preset    | DDDD   | 0 ~ 9999 |      |

## Wiring Diagram:

9P D-Sub to 8P Mini-DIN:

|   |  |  |                                       |
|---|--|--|---------------------------------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | TP03 PC/PDA Port RS422 8P<br>Mini-DIN |
| 1 RX-                                   |  |  | 4 TX-                                 |
| 2 RX+                                   |  |  | 7 TX+                                 |
| 3 TX-                                   |  |  | 1 RX-                                 |
| 4 TX+                                   |  |  | 2 RX+                                 |
| 5 GND                                   |  |  | 3 GND                                 |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Nov/13/2009 |             |

# TECO Inverter

Supported Series: TECO Inverter series, 7300CV model.

## HMI Setting:

| Parameters   | Recommended   | Options     | Notes |
|--------------|---------------|-------------|-------|
| PLC type     | TECO Inverter |             |       |
| PLC I/F      | RS232         | RS232/RS485 |       |
| Baud rate    | 38400         |             |       |
| Data bits    | 8             |             |       |
| Parity       | None          |             |       |
| Stop bits    | 1             |             |       |
| PLC sta. no. | 1             |             |       |

## Device Address:

| Bit/Word | Device type | Format  | Range         | Memo                           |
|----------|-------------|---------|---------------|--------------------------------|
| B        | 0x          | DDDDD   | 1 ~ 65535     | Output Bit                     |
| B        | 1x          | DDDDD   | 1 ~ 65535     | Input Bit (read only)          |
| B        | 3x_Bit      | DDDDDdd | 100 ~ 6553515 | Input Register Bit (read only) |
| B        | 4x_Bit      | DDDDDdd | 100 ~ 6553515 | Output Register Bit            |
| B        | 6x_Bit      | DDDDDdd | 100 ~ 6553515 |                                |
| B        | 0x (0x0f)   | DDDDD   | 1 ~ 65535     | Write Multiple Coils           |
| W        | 3x          | DDDDD   | 1 ~ 65535     | Input Register (read only)     |
| W        | 4x          | DDDDD   | 1 ~ 65535     | Output Register                |
| DW       | 5x          | DDDDD   | 1 ~ 65535     | 4x Double Word Swap            |
| W        | 6x          | DDDDD   | 1 ~ 65535     | 4x Single Word Write           |

## Wiring Diagram:



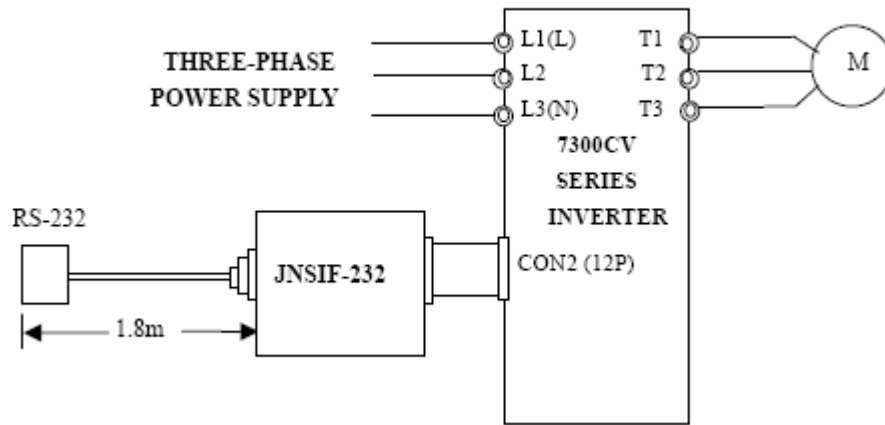
MT8000



JNSIF-232



**JNSIF-232Wiring Diagram:**



**9P D-Sub to 9P D-Sub:**

|                                    |  |  |                     |
|------------------------------------|--|--|---------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male |  |  | TECO Inverter RS232 |
| 2 RX                               |  |  | 2 TX                |
| 3 TX                               |  |  | 3 RX                |
| 5 GND                              |  |  | 5 GND               |
| 7 RTS                              |  |  | 7 VCC               |
|                                    |  |  |                     |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Jul/27/2009 | Driver released. |

# TELEMECANIQUE UniTelway

Supported Series: Modicon TSX Micro&Nano&Neza series PLC.

Website: <http://www.modicon.com>

## HMI Setting:

| Parameters   | Recommended             | Options         | Notes                           |
|--------------|-------------------------|-----------------|---------------------------------|
| PLC type     | TELEMECANIQUE UniTelway |                 |                                 |
| PLC I/F      | RS485 2W                | RS232/RS485     |                                 |
| Baud rate    | 19200                   | 9600~115200     |                                 |
| Data bits    | 8                       | 7,8             | Must set to 8 for this protocol |
| Parity       | Odd                     | Even, Odd, None |                                 |
| Stop bits    | 1                       | 1, 2            |                                 |
| HMI sta. no. | 5                       | 1-8             |                                 |
| PLC sta. no. | 0                       | 0-3             |                                 |

|                   |     |                     |     |
|-------------------|-----|---------------------|-----|
| Online simulator  | YES | Extend address mode | YES |
| Broadcast command | NO  |                     |     |

## PLC Setting:

|                    |                                       |
|--------------------|---------------------------------------|
| Communication mode | UniTelWay protocol, set PLC as master |
|--------------------|---------------------------------------|


## Device Address:

| Bit/Word | Device type | Format  | Range       | Memo              |
|----------|-------------|---------|-------------|-------------------|
| B        | S           | DDDDD   | 0 ~ 32767   | Internal relay    |
| B        | M           | DDDDD   | 0 ~ 32767   | Auxiliary relay   |
| B        | MW.B        | DDDDDdd | 0 ~ 3276715 | Data register bit |
| W        | MW          | DDDDD   | 0 ~ 32767   | Data register     |



## Wiring Diagram:

9P D-Sub to 9P D-Sub: TSX37-XX/TSX07-XX CPU

|  |   |  |   |
|--|---|--|---|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female  | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | TSX Series CPU Port RS485<br>2W 8P Mini-DIN |
| 1 RX-  | 6 Data-                                 |  | 2 D-  |
| 2 RX+  | 9 Data+                                 |  | 1 D+  |
| 5 GND  | 5 GND                                   |  | 7 GND                                       |
|  |   |  |   |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.30   | Sep/24/2009 |             |

# Topvert

Supported Series: TOPVERT G1/H1/P1 series.

Website: <http://www.toptek.biz/>

## HMI Setting:

| Parameters   | Recommended | Options | Notes |
|--------------|-------------|---------|-------|
| PLC type     | Topvert     |         |       |
| PLC I/F      | RS485 2W    |         |       |
| Baud rate    | 9600        |         |       |
| Data bits    | 7           |         |       |
| Parity       | None        |         |       |
| Stop bits    | 2           |         |       |
| PLC sta. no. | 1           |         |       |

|                     |     |                       |     |
|---------------------|-----|-----------------------|-----|
| Online simulator    | YES | Broadcast command     | YES |
| Extend address mode | YES | Broadcast station no. | 0   |

## PLC Setting:

|                    |                             |
|--------------------|-----------------------------|
| Communication mode | Pr 7-15 = 0 (7, N, 2 ASCII) |
|--------------------|-----------------------------|

## Device Address:

| Bit/Word | Device type | Format | Range       | Memo  |
|----------|-------------|--------|-------------|---|
| B        | PR_Bit      | DDDDdd | 0 ~ 6553515 | G=Groups, F=Function no.<br>dd=0~15 bit no. |
| W        | PR          | DDDD   | 0 ~ 65535   | G=Groups, F=Function no.                    |

## Note:

Max.read-command size (words): 16

Max.write-command size (words): 1

For G1/H1/P1 Series Inverter, if standard parameter address is in decimal=  $100 \times G + F$ :

G=Group (parameter group code 0~9); F=Function no. (parameter number 0~99)


For example: Pr5-20 (decimal Dec.) parameter address is expressed as  $100 \times 5 + 20 = 520$ .

| Parameter (PrX-XX) | Address (decimal)        |
|--------------------|--------------------------|
| 0-00               | $0 \times 100 + 0 = 0$   |
| 0-14               | $0 \times 100 + 14 = 14$ |
| 1-00               | $1 \times 100 + 0 = 100$ |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | TOPVERT RS485 2W |
|---|---|--|------------------|
| 1 RX-                                   | 6 Data-                                 |  | SG-              |
| 2 RX+                                   | 9 Data+                                 |  | SG+              |
| 5 GND                                   | 5 GND                                   |  |                  |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Dec/08/2010 | Driver released. |

## Toshiba T Series

Supported Series: Toshiba T series, S2E.

Website: <http://www.tic.toshiba.com>

### HMI Setting:

| Parameters   | Recommended      | Options                           | Notes                           |
|--------------|------------------|-----------------------------------|---------------------------------|
| PLC type     | Toshiba T Series |                                   |                                 |
| PLC I/F      | RS232            | RS232/RS485                       | In accordance with PLC port     |
| Baud rate    | 9600             | 9600, 19200, 38400, 57600, 115200 |                                 |
| Data bits    | 8                | 7,8                               |                                 |
| Parity       | Odd              | Even, Odd, None                   |                                 |
| Stop bits    | 1                | 1, 2                              |                                 |
| PLC sta. no. | 0                | 0-255                             | Must be same as the PLC setting |

|                  |     |                     |     |
|------------------|-----|---------------------|-----|
| Online simulator | YES | Extend address mode | YES |
|------------------|-----|---------------------|-----|

### PLC Setting:

|                    |                      |
|--------------------|----------------------|
| Communication mode | Must set PLC node ID |
|--------------------|----------------------|


### Device Address:

| Bit/Word | Device type | Format | Range     | Memo             |
|----------|-------------|--------|-----------|------------------|
| B        | X           | DDDDh  | 0 ~ 4095f | Input Bit        |
| B        | Y           | DDDDh  | 0 ~ 4095f | Output Bit       |
| B        | R           | DDDDh  | 0 ~ 8191f | Auxiliary Bit    |
| B        | S           | DDDDh  | 0 ~ 4095f | Special Bit      |
| B        | L           | DDDDh  | 0 ~ 4095f |                  |
| B        | Z           | DDDDh  | 0 ~ 8191f |                  |
| W        | T           | DDD    | 0 ~ 999   | Timer Register   |
| W        | C           | DDD    | 0 ~ 511   | Counter Register |

| Bit/Word | Device type | Format | Range    | Memo               |
|----------|-------------|--------|----------|--------------------|
| W        | D           | DDDD   | 0 ~ 8191 | Data Memory        |
| W        | SW          | DDD    | 0 ~ 255  | Special Register   |
| W        | XW          | DDD    | 0 ~ 255  | Input Register     |
| W        | YW          | DDD    | 0 ~ 255  | Output Register    |
| W        | RW          | DDD    | 0 ~ 999  | Auxiliary Register |
| W        | LW          | DDD    | 0 ~ 255  |                    |
| W        | W           | DDDD   | 0 ~ 1023 |                    |
| W        | F           | DDDD   | 0 ~ 8191 |                    |

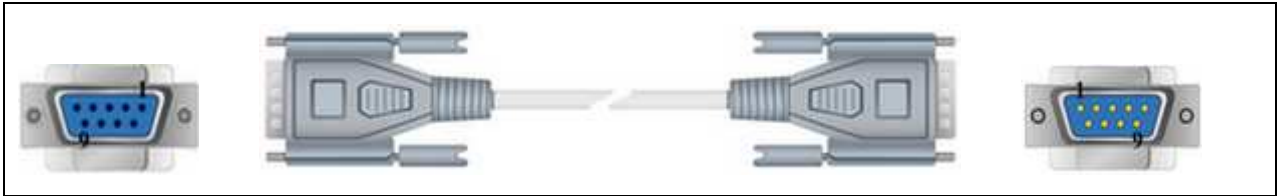
## Wiring Diagram:

9P D-Sub to 8P Mini-DIN:

| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Toshiba T1 PRG Port RS232<br>8P Mini-DIN |         |
|--|------------------------------------|--------------------------------------|--|---------|
| 2 RX   | 6 RX                               | 8 RX                                 | 6 TXD                                    |         |
| 3 TX   | 4 TX                               | 7 TX                                 | 8 RXD                                    |         |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                                    |         |
|  |                                    |                                      | 4 RTS                                    | circuit |
|  |                                    |                                      | 7 CTS                                    |         |
|  |                                    |                                      |  |         |

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Toshiba T2 PRG Port RS232<br>9P D-Sub |         |
|------------------------------------|------------------------------------|--------------------------------------|---------------------------------------|---------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                                 |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RXD                                 |         |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                                 |         |
|                                    |                                    |                                      | 7 RTS                                 | circuit |
|                                    |                                    |                                      | 8 CTS                                 |         |



9P D-Sub to 15P D-Sub:

|   |  |  |   |         |
|---|--|--|---|---------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | Toshiba T2 LINK Port RS422<br>15P D-Sub |         |
| 1 RX-                                   |  |  | 11 TXB                                  |         |
| 2 RX+                                   |  |  | 3 TXA                                   |         |
| 3 TX-                                   |  |  | 10 RXB                                  |         |
| 4 TX+                                   |  |  | 2 RXA                                   |         |
| 5 GND                                   |  |  | 7 SG                                    |         |
|   |  |  | 5 RTSA                                  | circuit |
|   |  |  | 4 CTSA                                  |         |
|   |  |  | 13 RTSB                                 | circuit |
|   |  |  | 12 CTSB                                 |         |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description  |
|---------|-------------|--|
| V1.20   | May/13/2011 | TOSHIBA T Series driver can now correctly read and write "L", "LW", "F" address types. |

## Toshiba TC mini Series

Supported Series: TOSHIBA MACHINE CO., JAPAN

WebSite: <http://www.toshiba-machine.co.jp>

### HMI Setting:


| Parameters | Recommended    | Options         | Notes                       |
|------------|----------------|-----------------|-----------------------------|
| PLC type   | Provisor TC200 |                 |                             |
| PLC I/F    | RS232          | RS232           | In accordance with PLC port |
| Baud rate  | 9600           | 9600, 19200     |                             |
| Data bits  | 8              | 7,8             |                             |
| Parity     | None           | Even, Odd, None |                             |
| Stop bits  | 1              | 1, 2            |                             |

### Device Address:

| Bit/Word | Device type | Format | Range    | Memo             |
|----------|-------------|--------|----------|------------------|
| B        | R_bit       | HHHh   | 0 ~ ffff | h : Bit no.(0~f) |
| B        | X_bit       | HHHh   | 0 ~ ffff | h : Bit no.(0~f) |
| B        | Y_bit       | HHHh   | 0 ~ ffff | h : Bit no.(0~f) |
| B        | L_bit       | HHHh   | 0 ~ ffff | h : Bit no.(0~f) |
| W        | P           | HHH    | 0 ~ fff  |                  |
| W        | V           | HHH    | 0 ~ fff  |                  |
| W        | X           | HHH    | 0 ~ fff  |                  |
| W        | Y           | HHH    | 0 ~ fff  |                  |
| W        | D           | HHH    | 0 ~ fff  |                  |
| W        | R           | HHH    | 0 ~ fff  |                  |
| W        | L           | HHH    | 0 ~ fff  |                  |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | TC mini series RS232 9P<br>D-Sub |         |
|--|------------------------------------|--------------------------------------|----------------------------------|---------|
| 2 RX   | 6 RX                               | 8 RX                                 | 2 TXD                            |         |
| 3 TX   | 4 TX                               | 7 TX                                 | 3 RXD                            |         |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                            |         |
|  |                                    |                                      | 7 RTS                            | circuit |
|  |                                    |                                      | 9 CTS                            |         |
|  |                                    |                                      |                                  |         |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.



# Toshiba VF-S11

Supported Series: Toshiba Invertor Protocol (ASCII code).

## HMI Setting:

| Parameters   | Recommended    | Options         | Notes |
|--------------|----------------|-----------------|-------|
| PLC type     | Toshiba VF-S11 |                 |       |
| PLC I/F      | RS485 2W       | RS422, RS485    |       |
| Baud rate    | 9600           | 9600, 19200     |       |
| Data bits    | 8              | 7 or 8          |       |
| Parity       | Even           | Even, Odd, None |       |
| Stop bits    | 1              | 1 or 2          |       |
| PLC sta. no. | 0              | 0-99            |       |

|                   |     |                     |     |
|-------------------|-----|---------------------|-----|
| Online simulator  | YES | Extend address mode | YES |
| Broadcast command | YES |                     |     |

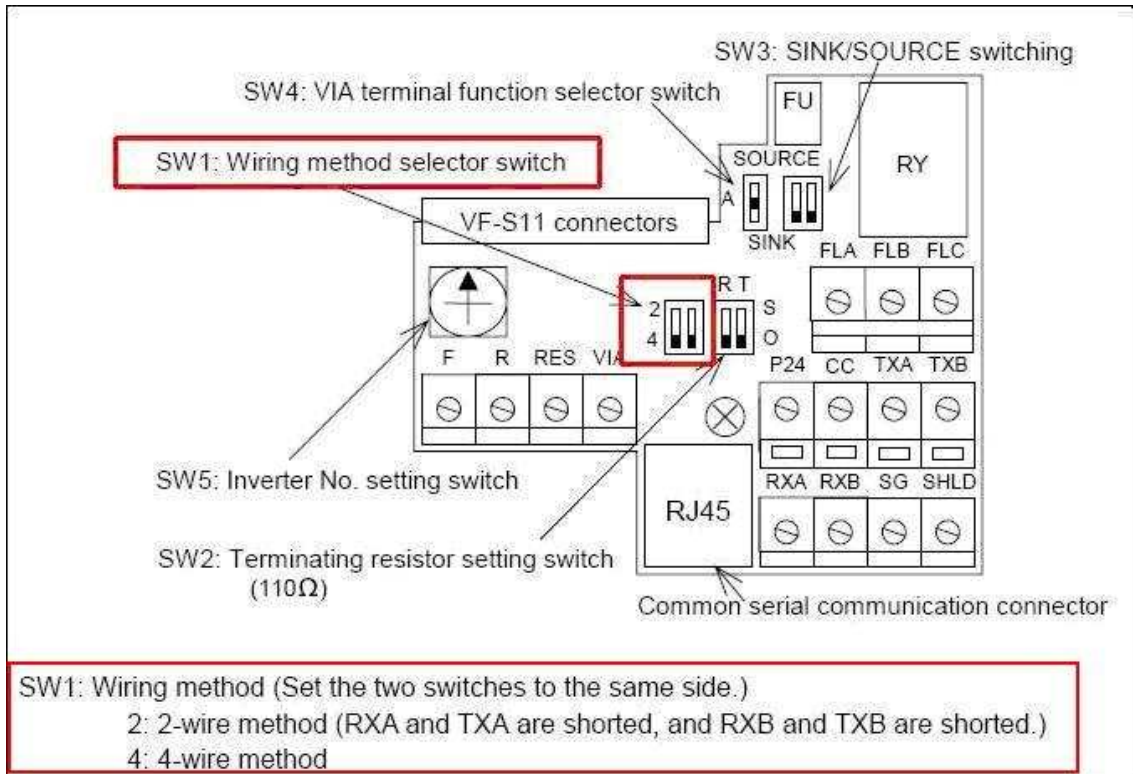
## Device Address:

| Bit/Word | Device type | Format | Range      | Memo                       |
|----------|-------------|--------|------------|----------------------------|
| B        | Cmd. No B   | HHHHdd | 0 ~ 270f15 |                            |
| W        | Cmd. No     | HHHH   | 0 ~ ffff   | Parameters and data memory |

## Wiring Diagram:

Note:

Before connecting with VF-S11, make sure the SW1 of both sides are in the correct position. (SW1: wiring method selector switch)



## RS-485

9P D-Sub to 8P RJ45:

|   |   |  |   |
|---|---|--|---|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Toshiba VFFS1-VFPS1 RS485<br>2W 8P RJ45 |
| 1 RX-                                   | 6 Data-                                 |  | 5                                       |
| 2 RX+                                   | 9 Data+                                 |  | 4                                       |
| 5 GND                                   | 5 GND                                   |  | 8                                       |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Aug/31/2009 |             |

## Trio (MODBUS RTU, TCP/IP)

Website : <http://www.triomotion.com>

### HMI Setting:

| Parameters   | Recommended               | Options              | Notes |
|--------------|---------------------------|----------------------|-------|
| PLC type     | Trio (MODBUS RTU, TCP/IP) |                      |       |
| PLC I/F      | RS485                     | RS232/RS485/Ethernet |       |
| Baud rate    | 9600                      | 9600~115200          |       |
| Data bits    | 8                         | 7, 8                 |       |
| Parity       | Even                      | Even, Odd, None      |       |
| Stop bits    | 1                         | 1, 2                 |       |
| Port no.     | 502                       |                      |       |
| PLC sta. no. | 1                         | 0-255                |       |

|                     |     |                   |     |
|---------------------|-----|-------------------|-----|
| Online simulator    | YES | Broadcast command | YES |
| Extend address mode | YES |                   |     |

### PLC Setting:


|                    |                     |
|--------------------|---------------------|
| Communication mode | Modbus RTU protocol |
|--------------------|---------------------|

### Device Address:


| Bit/Word | Device type | Format   | Range       | Memo |
|----------|-------------|----------|-------------|------|
| B        | VR_Bit      | DDDDdd   | 0 ~ 102315  |      |
| B        | Table_Bit   | DDDDDDdd | 0 ~ 3199915 |      |
| W        | VR          | DDDD     | 0 ~ 1023    |      |
| W        | Table       | DDDDDD   | 0 ~ 31999   |      |

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

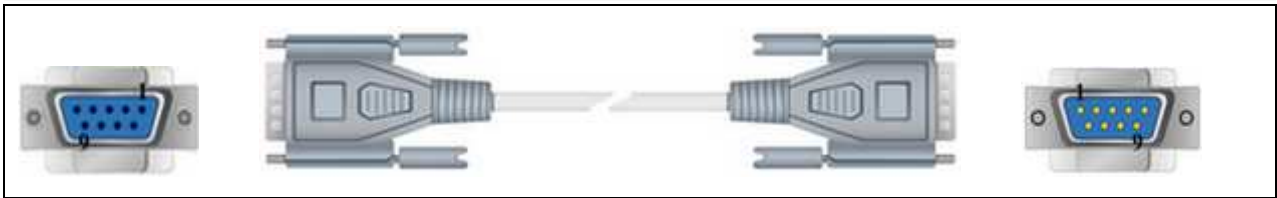
|  |                                    |                                      |   |         |
|--|------------------------------------|--------------------------------------|---|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Modbus RTU Controller RS232<br>9P D-Sub |         |
| 2 RX   | 6 RX                               | 8 RX                                 | TXD                                     |         |
| 3 TX   | 4 TX                               | 7 TX                                 | RXD                                     |         |
| 5 GND  | 5 GND                              | 5 GND                                | GND                                     |         |
|  |                                    |                                      | RTS                                     | circuit |
|  |                                    |                                      | CTS                                     |         |
|  |                                    |                                      |   |         |

9P D-Sub to 9P D-Sub:

|  |  |  |   |  |
|--|--|--|---|--|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female  |  |  | Modbus RTU Controller RS422<br>9P D-Sub |  |
| 1 RX-  |  |  | TX-                                     |  |
| 2 RX+  |  |  | TX+                                     |  |
| 3 TX-  |  |  | RX-                                     |  |
| 4 TX+  |  |  | RX+                                     |  |
| 5 GND  |  |  | GND                                     |  |
|  |  |  |   |  |

9P D-Sub to 9P D-Sub:

|   |   |  |   |  |
|---|---|--|---|--|
| HMI COM1<br>RS485 2W 9P<br>D-Sub Female | HMI COM3<br>RS485 2W 9P<br>D-Sub Female |  | Modbus RTU Controller RS485 9P<br>D-Sub |  |
| 1 RX-                                   | 6 Data-                                 |  | D-                                      |  |
| 2 RX+                                   | 9 Data+                                 |  | D+                                      |  |
| 5 GND                                   | 5 GND                                   |  | GND                                     |  |



Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | May/27/2011 | Driver released. |

# VIGOR

Supported Series: VIGOR M Series and VB Series.

Website: <http://www.vigorplc.com.tw/>

## HMI Setting:

| Parameters   | Recommended | Options                 | Notes |
|--------------|-------------|-------------------------|-------|
| PLC type     | VIGOR       |                         |       |
| PLC I/F      | RS232       | RS232, RS485<br>4wires, |       |
| Baud rate    | 19200       |                         |       |
| Data bits    | 7           |                         |       |
| Parity       | Even        |                         |       |
| Stop bits    | 1           |                         |       |
| PLC sta. no. | 1           |                         |       |

## Device Address:


| Bit/Word | Device type | Format | Range       | Memo |
|----------|-------------|--------|-------------|------|
| B        | X           | OOO    | 0 ~ 377     |      |
| B        | Y           | OOO    | 0 ~ 377     |      |
| B        | M           | DDDD   | 0 ~ 7999    |      |
| B        | T           | DDD    | 0 ~ 255     |      |
| B        | C           | DDD    | 0 ~ 255     |      |
| B        | SM          | DDDD   | 9000 ~ 9255 |      |
| W        | TV          | DDD    | 0 ~ 255     |      |
| W        | CV          | DDD    | 0 ~ 199     |      |
| W        | D           | DDDD   | 0 ~ 9255    |      |
| W        | CV2         | DDD    | 200 ~ 255   |      |
| W        | SD          | DDDD   | 9000 ~ 9255 |      |

## Wiring Diagram:

### 9P D-Sub to 6P Terminals:

|   |  |  |                             |
|---|--|--|-----------------------------|
| HMI COM1<br>RS485 4W 9P<br>D-Sub Female |  |  | Vigor M series 6P Terminals |
| 1 RX-                                   |  |  | TX-                         |
| 2 RX+                                   |  |  | TX+                         |
| 3 TX-                                   |  |  | RX-                         |
| 4 TX+                                   |  |  | RX+                         |
| 5 GND                                   |  |  | SG                          |
|   |  |  | 24V                         |
|   |  |  |                             |

### 9P D-Sub to 9P D-Sub:

|  |                                    |                                      |                         |
|--|------------------------------------|--------------------------------------|-------------------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | Vigor M series COM Port |
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TXD                   |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RXD                   |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND                   |
|  |                                    |                                      |                         |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Dec/30/2008 |             |

# XINJE XC Series

Supported Series: XINJE XC Series

Website: <http://www.xinje.com/0/index.html>

## HMI Setting:

| Parameters   | Recommended     | Options | Notes                            |
|--------------|-----------------|---------|----------------------------------|
| PLC type     | XINJE XC Series |         |                                  |
| PLC I/F      | RS232           | RS232   |                                  |
| Baud rate    | 19200           |         |                                  |
| Data bits    | 8               |         |                                  |
| Parity       | Even            |         |                                  |
| Stop bits    | 1               |         |                                  |
| PLC sta. no. | 1               | 0-255   | Must match the PLC port setting. |

## Device Address:

| Bit/Word | Device type | Format | Range       | Memo |
|----------|-------------|--------|-------------|------|
| B        | M           | DDDD   | 0 ~ 8511    |      |
| B        | X           | O000   | 0 ~ 1037    |      |
| B        | Y           | O000   | 0 ~ 1037    |      |
| B        | S           | DDDD   | 0 ~ 1023    |      |
| B        | T           | DDD    | 0 ~ 618     |      |
| B        | C           | DDD    | 0 ~ 634     |      |
| W        | D           | DDDD   | 0 ~ 8511    |      |
| W        | TD          | DDD    | 0 ~ 618     |      |
| W        | CD          | DDD    | 0 ~ 634     |      |
| W        | FD_1        | DDDD   | 0 ~ 5000    |      |
| W        | FD_2        | DDDD   | 8000 ~ 8511 |      |



## Wiring Diagram:

|                                    |                                    |                                      |                 |
|------------------------------------|------------------------------------|--------------------------------------|-----------------|
| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | XC series RS232 |
| 2 RX                               | 6 RX                               | 8 RX                                 | 5 TX            |
| 3 TX                               | 4 TX                               | 7 TX                                 | 4 RX            |
| 5 GND                              | 5 GND                              | 5 GND                                | 8 GND           |
|                                    |                                    |                                      |                 |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Jul/02/2009 | Driver released. |

# YAMAHA ERCD

## HMI Setting:

| Parameters   | Recommended | Options       | Notes                          |
|--------------|-------------|---------------|--------------------------------|
| PLC type     | YAMAHA ERCD |               |                                |
| PLC I/F      | RS232       |               |                                |
| Baud rate    | 9600        | 1200-19200    |                                |
| Data bits    | 8           | 7 or 8        |                                |
| Parity       | Odd         | None/Even/Odd |                                |
| Stop bits    | 1           | 1 or 2        |                                |
| PLC sta. no. | 0           |               | Needn't to set the station No. |


## Device Address:

| Bit/Word | Device type | Format | Range   | Memo  |
|----------|-------------|--------|---------|---|
| Word     | P           | DDD    | 0 ~ 999 | Read/Write, PNT point data  |
| Word     | SWI         | D      | 0       | Write only , RW0=program number<br>, Switches program number to run           |
| Word     | ORG         | D      | 0       | Write only , returns to origin  |
| Word     | RESET       | D      | 0       | Write only , reset program  |
| Word     | RUN         | D      | 0       | Write only , starts automatic operation                                       |
| Word     | X_ADD       | D      | 0       | Write only , X+ command   |
| Word     | X_SUB       | D      | 0       | Write only , X- command   |
| Word     | MOVD        | D      | 0       | Write only , directly moves to specified position<br>RW1=X-axis position(mm), |

|  |  |  |  |           |
|--|--|--|--|-----------|
|  |  |  |  | RW2=speed |
|--|--|--|--|-----------|

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

|  |                                    |                                      |          |         |
|--|------------------------------------|--------------------------------------|----------|---------|
| HMI COM1<br>RS232 9P<br>D-Sub Male   | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | PB RS232 |         |
| 2 RX   | 6 RX                               | 8 RX                                 | 3 TX     |         |
| 3 TX   | 4 TX                               | 7 TX                                 | 2 RX     |         |
| 5 GND  | 5 GND                              | 5 GND                                | 5 GND    |         |
|  |                                    |                                      | 7 RTS    | circuit |
|  |                                    |                                      | 8 CTS    |         |
|  |                                    |                                      |          |         |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.30   | Jan/04/2010 |             |

# YASKAWA MP Series Ethernet (Extension)

## HMI Setting:

| Parameters   | Recommended                            | Options | Notes |
|--------------|--|---------|-------|
| PLC type     | YASKAWA MP Series Ethernet (Extension) |         |       |
| PLC I/F      | Ethernet (UDP)                         |         |       |
| Port no.     | 10000                                  |         |       |
| PLC sta. no. | 1                                      |         |       |

## PLC Setting:

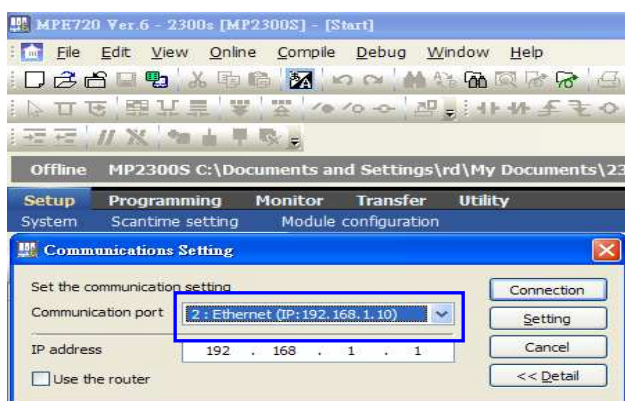
Yaskawa PLC Communication Parameter Settings

(1) PLC Factory Communication Parameter Settings:

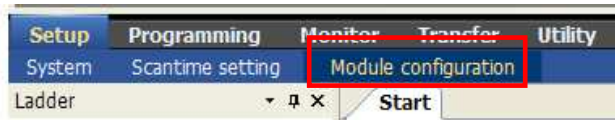
| Item                        | Set           |
|-----------------------------|---------------|
| IP Address                  | 192.168.1.1   |
| Subnet Mask                 | 255.255.255.0 |
| Gateway IP Address          | 0.0.0.0       |
| System Port No.             | 10000 (UDP)   |
| TCP Zero Window Timer Value | 3 (s)         |
| TCP Retry Time              | 500 (ms)      |
| TCP Close Time              | 60 (s)        |
| IP Assemble Time            | 30 (s)        |
| Max. Packet Length          | 1500 (bytes)  |

(2) Setting Steps:

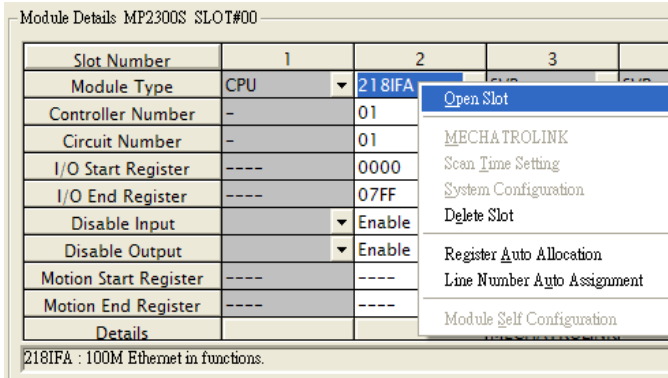
1. Set IP for PLC.



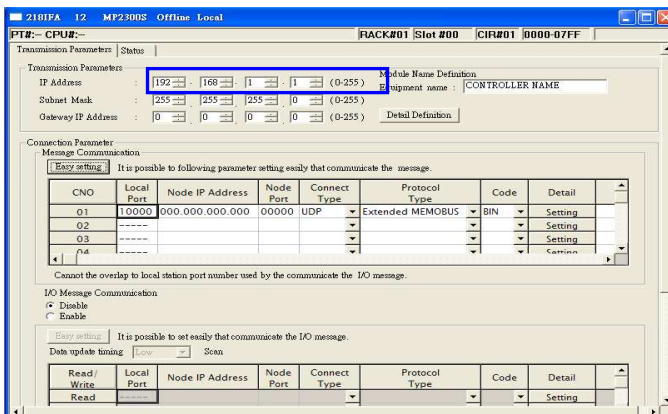
## 2. Communication parameter setting.



## 3. Go to Module Details and select [2181FA] for setting relevant parameters for Ethernet transmission.



## 4. The settings are shown below, PLC IP can't be repeated.

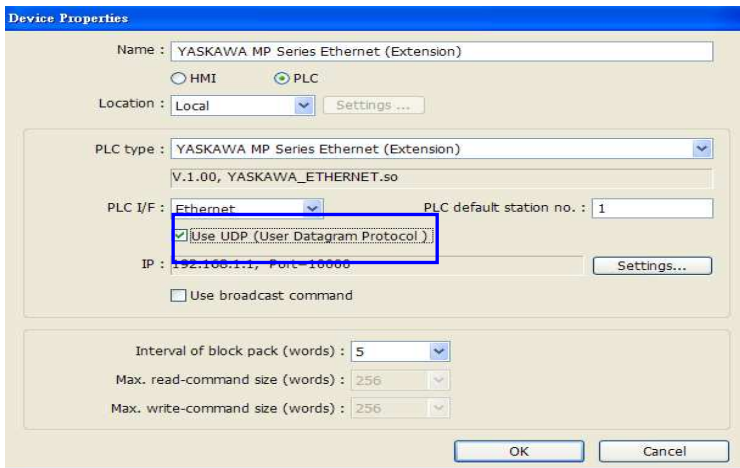


## 5. Download PLC communication parameters to PLC, and restart the controller.



### (3) HMI Settings:

1. Select Ethernet for PLC I/F.
2. Tick [UDP].
3. Set PLC IP and Port, the default Port is 10000.



## Device Address:

| Bit/Word | Device type | Format | Range      | Memo |
|----------|-------------|--------|------------|------|
| B        | SB          | DDDDh  | 0 ~ 8191f  |      |
| B        | IB          | HHHHh  | 0 ~ ffff   |      |
| B        | OB          | HHHHh  | 0 ~ ffff   |      |
| B        | MB          | DDDDh  | 0 ~ 65534f |      |
| W        | SW          | DDDD   | 0 ~ 8191   |      |
| W        | IW          | HHHH   | 0 ~ ffff   |      |
| W        | OW          | HHHH   | 0 ~ ffff   |      |
| W        | MW          | DDDD   | 0 ~ 65534  |      |
|          |             |        |            |      |

## Wiring Diagram:

Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

### Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.10   | Jul/21/2011 | Driver released. |



# YASKAWA MP2300Siec

## HMI Setting:

| Parameters        | Recommended              | Options                          | Notes |
|-------------------|--------------------------|----------------------------------|-------|
| PLC type          | YASKAWA MP2300Siec       |                                  |       |
| PLC I/F           | Ethernet                 |                                  |       |
| Port no.          | 44818                    |                                  |       |
| Assembly instance | Input::101<br>Output:111 | Input::101~106<br>Output:111~116 |       |
| PLC sta. no.      | 1                        |                                  |       |

## PLC Setting:

### MP2300Siec-Motion Works IEC Express (YASKAWA) Settings:

**Step 1.** Before HMI communicates with MP2300Siec using Ethernet/IP, the Instance Input and Instance Output of MP2300Siec device must be set correctly. Multiple Instances are allowed to be built at one time, please click [Save] after setting.

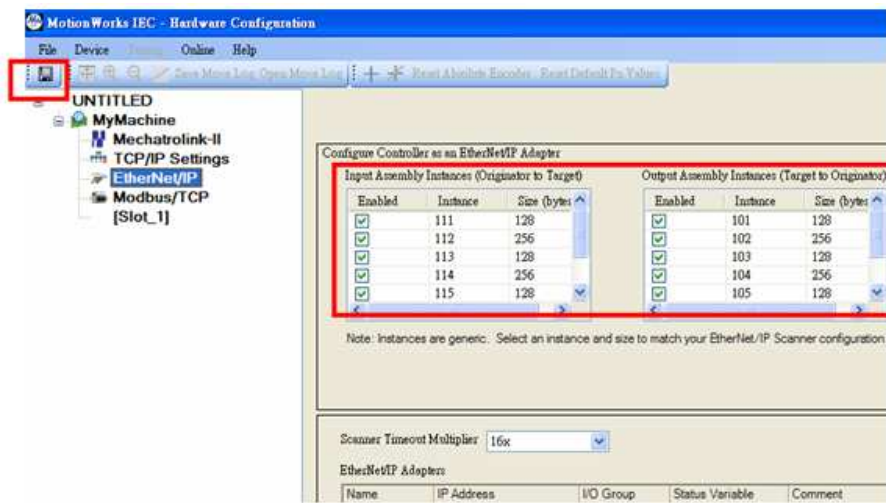


Fig. 1 Assembly Instances

**Step 2.** Global Variables will automatically add in E/IP Input and Output data, Input and Output data name and address type can be user-defined.

| Name  | Type           | Usage      | Description | Address   | Init                     | Retain                   | PDD                      | OPC                      | TB                       |
|---|----------------|------------|-------------|-----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| PLC_TASK_6  | EXT_TASK_IN... | VAR_GLO... |             | %MB1.1324 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PLC_TASK_7  | EXT_TASK_IN... | VAR_GLO... |             | %MB1.1388 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PLC_TASK_8  | EXT_TASK_IN... | VAR_GLO... |             | %MB1.1452 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PLC_TASK_9  | EXT_TASK_IN... | VAR_GLO... |             | %MB1.1516 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PLC_TASK_10   | EXT_TASK_IN... | VAR_GLO... |             | %MB1.1580 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PLC_TASK_11   | EXT_TASK_IN... | VAR_GLO... |             | %MB1.1644 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PLC_TASK_12   | EXT_TASK_IN... | VAR_GLO... |             | %MB1.1708 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PLC_TASK_13   | EXT_TASK_IN... | VAR_GLO... |             | %MB1.1772 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PLC_TASK_14   | EXT_TASK_IN... | VAR_GLO... |             | %MB1.1836 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PLC_TASK_15   | EXT_TASK_IN... | VAR_GLO... |             | %MB1.1900 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PLC_TASK_16   | EXT_TASK_IN... | VAR_GLO... |             | %MB1.1964 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| User Variables  |                |            |             |           |                          |                          |                          |                          |                          |
| NewVar200   | DWORD          | VAR_GLO... |             |           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| E/P Output latch #101, Qty: 128 Bytes, Address Range: %QB21448-%QB21615 |                |            |             |           |                          |                          |                          |                          |                          |
| E/P Output latch #102, Qty: 256 Bytes, Address Range: %QB22000-%QB22255 |                |            |             |           |                          |                          |                          |                          |                          |
| E/P Output latch #103, Qty: 128 Bytes, Address Range: %QB22512-%QB22639 |                |            |             |           |                          |                          |                          |                          |                          |
| E/P Output latch #104, Qty: 256 Bytes, Address Range: %QB23024-%QB23279 |                |            |             |           |                          |                          |                          |                          |                          |
| E/P Output latch #105, Qty: 128 Bytes, Address Range: %QB23536-%QB23663 |                |            |             |           |                          |                          |                          |                          |                          |
| E/P Output latch #106, Qty: 256 Bytes, Address Range: %QB24048-%QB24303 |                |            |             |           |                          |                          |                          |                          |                          |
| E/P Input latch #111, Qty: 128 Bytes, Address Range: %IB21448-%IB21615  |                |            |             |           |                          |                          |                          |                          |                          |
| E/P Input latch #112, Qty: 256 Bytes, Address Range: %IB22000-%IB22255  |                |            |             |           |                          |                          |                          |                          |                          |
| NewVar261   | DWORD          | VAR_GLO... |             | %ID22252  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| NewVar257   | DWORD          | VAR_GLO... |             | %ID22000  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| E/P Input latch #113, Qty: 128 Bytes, Address Range: %IB22512-%IB22639  |                |            |             |           |                          |                          |                          |                          |                          |
| E/P Input latch #114, Qty: 256 Bytes, Address Range: %IB23024-%IB23279  |                |            |             |           |                          |                          |                          |                          |                          |
| E/P Input latch #115, Qty: 128 Bytes, Address Range: %IB23536-%IB23663  |                |            |             |           |                          |                          |                          |                          |                          |
| E/P Input latch #116, Qty: 256 Bytes, Address Range: %IB24048-%IB24303  |                |            |             |           |                          |                          |                          |                          |                          |

Fig. 2 Global Variables

**Step 3.** When download Project to device (MP2300Siec), please go to (Fig. 3) Resource->Settings to access setting dialog (Fig. 4) for setting MP2300Siec IP address.

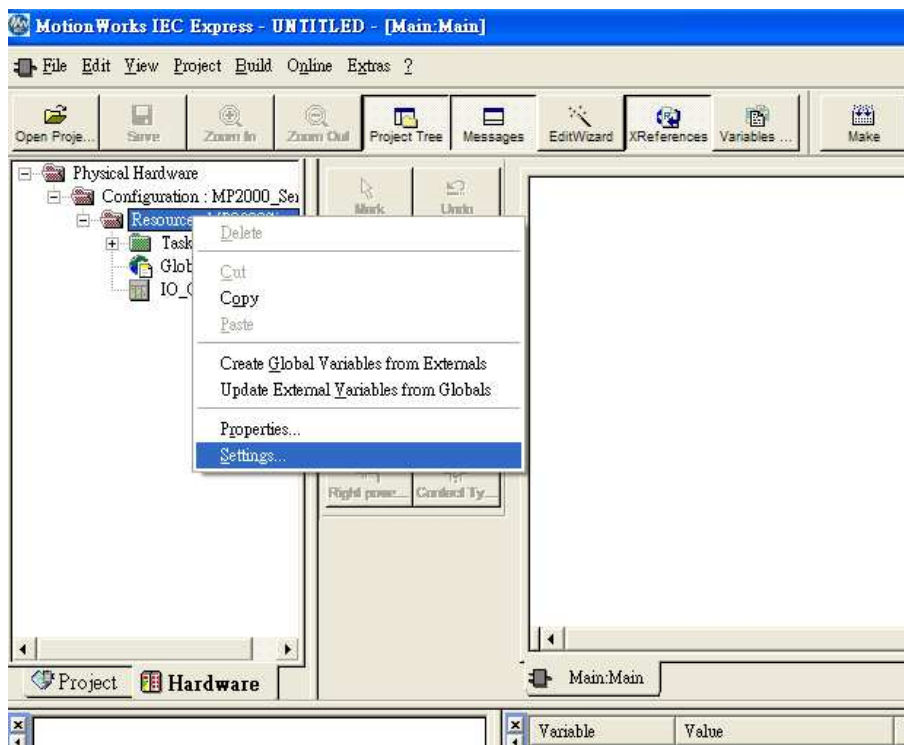


Fig. 3 Motion Works IEC Express – Settings

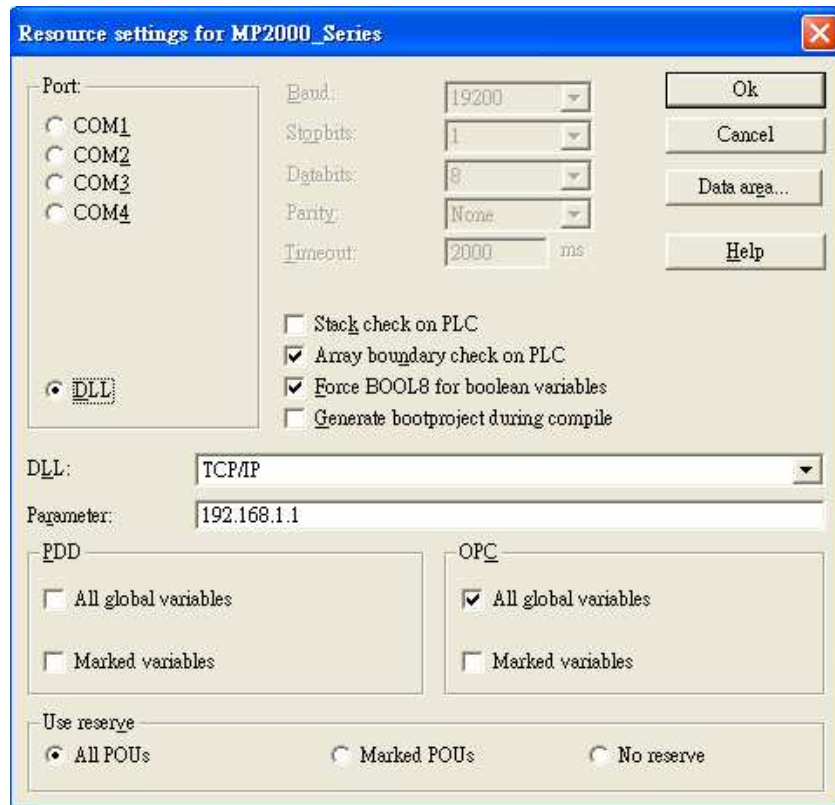


Fig. 4 Resource Settings

**Step 4.** Start compilation.

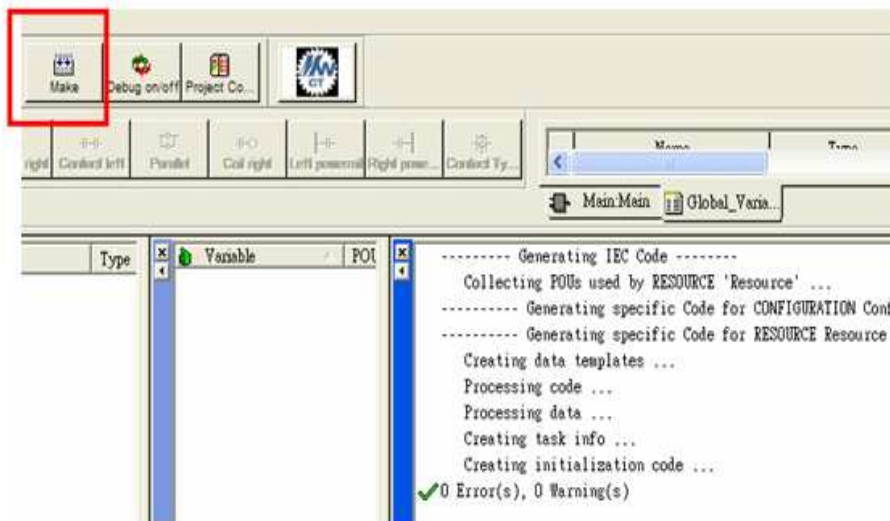


Fig. 5 Editing Screen

**Step 5.** Download project to device- MP2300Siec, and execute Cold.

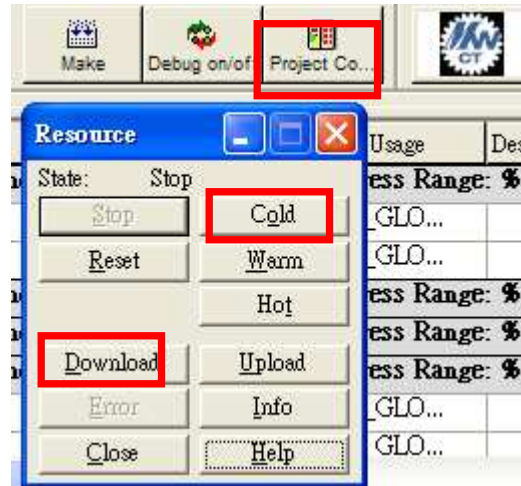


Fig. 6 Project Downloading

### EasyBuilder8000/EasyBuilder Pro Settings:

#### Step 1. System Parameter Settings

Open EasyBuilder8000/EasyBuilder Pro project, as shown in Fig. 7, Assembly Instance and Size must match the software default factory settings, and please don't select UDP. Fig.8 below shows how HMI Input / Output address is mapped to MP2300Siec device.

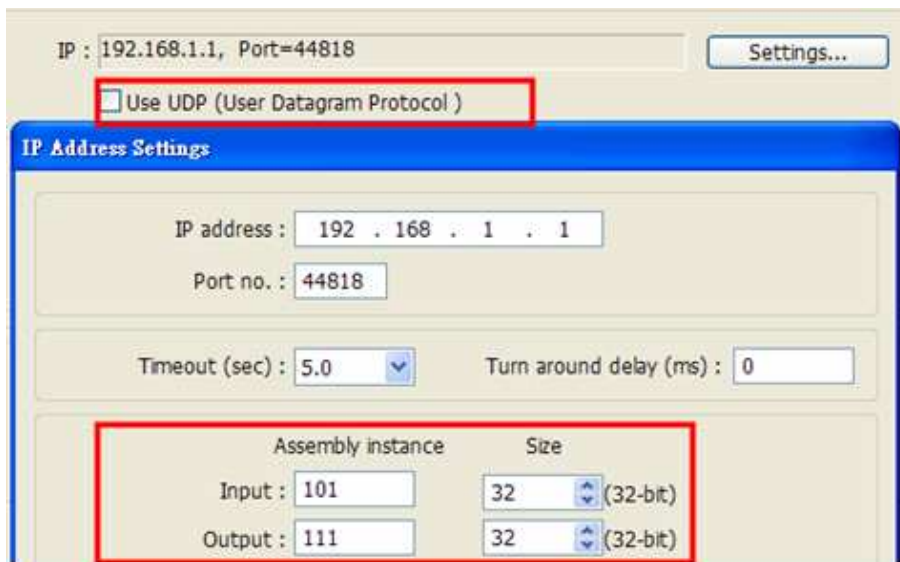


Fig. 7 Instance Setting

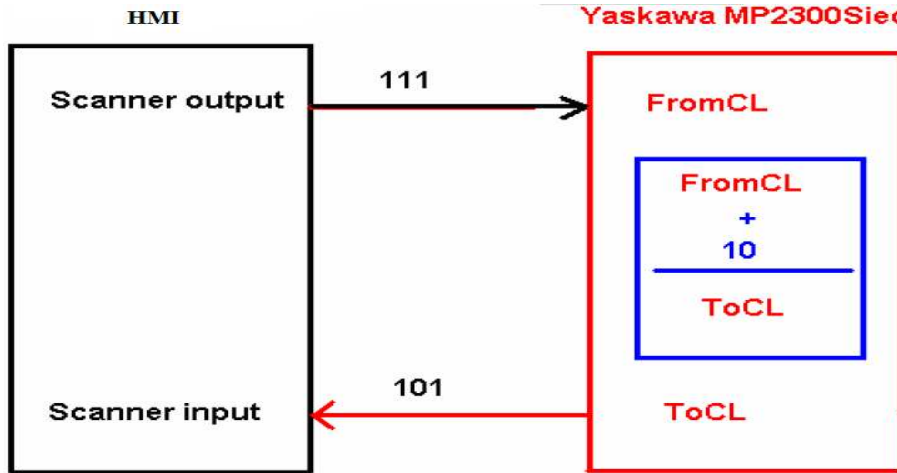


Fig.8 HMI and MP2300Siec I/O Mapping

**Step 2. Address Setting:**

Instance 101 and Instance 111 are defined as 128Bytes, on the project window , WORD objects can be used, with data typed defined as 32-Bit Unsigned, Input addresses set to 0、2、4、6.....62 for reading Instance 101 data.

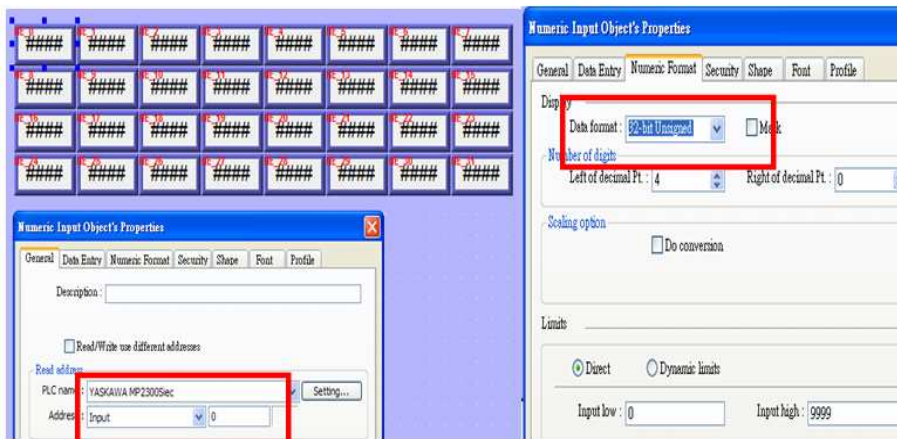


Fig. 9 Address Setting

**EasyBuilder8000/EasyBuilder Pro-Allen Bradley CompactLogix Tag Data Importing and Module Defined:**

**Step 1.** In EasyBuilder8000/EasyBuilder Pro project, when using Allen Bradley EIP driver to import CSV file (as in Fig. 10), please open AB Data Type Editor (Fig. 11), and right click on Module Defined to add New Data Type.

|    | A      | B                               | C           | D           | E                                    | F         |
|----|--------|---------------------------------|-------------|-------------|--------------------------------------|-----------|
| 1  | remark | CSV-Import-Export               |             |             |                                      |           |
| 2  | remark | Date = Fri Jul 22 15:40:47 2011 |             |             |                                      |           |
| 3  | remark | Version = RSLogix 5000 v18.00   |             |             |                                      |           |
| 4  | remark | Owner = user                    |             |             |                                      |           |
| 5  | remark | Company = abc                   |             |             |                                      |           |
| 6  |        | 0.3                             |             |             |                                      |           |
| 7  | TYPE   | SCOPE                           | NAME        | DESCRIPTION | DATA TYPE                            | SPECIFIER |
| 8  | TAG    |                                 | MP2300Sec:C |             | AB:ETHERNET_MODULE:C:0               |           |
| 9  | TAG    |                                 | MP2300Sec:I |             | AB:ETHERNET_MODULE_DINT_128Bytes:I:0 |           |
| 10 | TAG    |                                 | MP2300Sec:O |             | AB:ETHERNET_MODULE_DINT_128Bytes:O:0 |           |
| 11 | TAG    |                                 | Local:1:C   |             | AB:Embedded_IQ16F:C:0                |           |
| 12 | TAG    |                                 | Local:1:I   |             | AB:Embedded_IQ16F:I:0                |           |
| 13 | TAG    |                                 | Local:2:C   |             | AB:Embedded_OB16:C:0                 |           |
| 14 | TAG    |                                 | Local:2:I   |             | AB:Embedded_OB16:I:0                 |           |
| 15 | TAG    |                                 | Local:2:O   |             | AB:Embedded_OB16:O:0                 |           |
| 16 | TAG    |                                 | Bits        |             | BOOL[32]                             |           |
| 17 | TAG    |                                 | Timer1      |             | TIMER                                |           |
| 18 |        |                                 |             |             |                                      |           |
| 19 |        |                                 |             |             |                                      |           |

Fig. 10 RSLogix 5000 (Allen Bradley Software) Export Free Tag CSV File

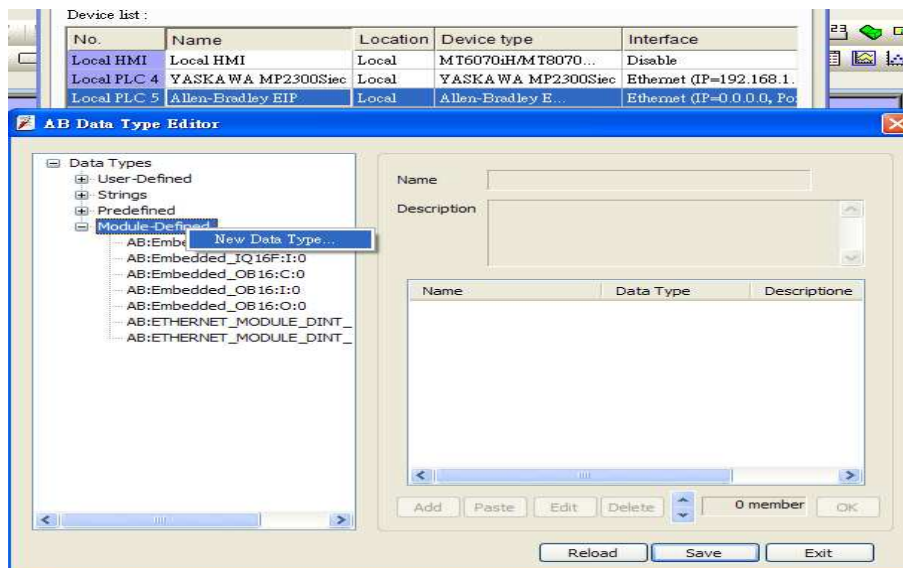


Fig.11 AB Data Type Editor

**Step 2.** As in Fig 12, in AB Data Type Editor add Name of the new data type. The Name must be set identically to the Data Type in Free Tag CSV file. As in Fig 14, Data Member Name must be set identically to the AB software (as Data in Fig. 13), then click [Save] (Fig. 15).

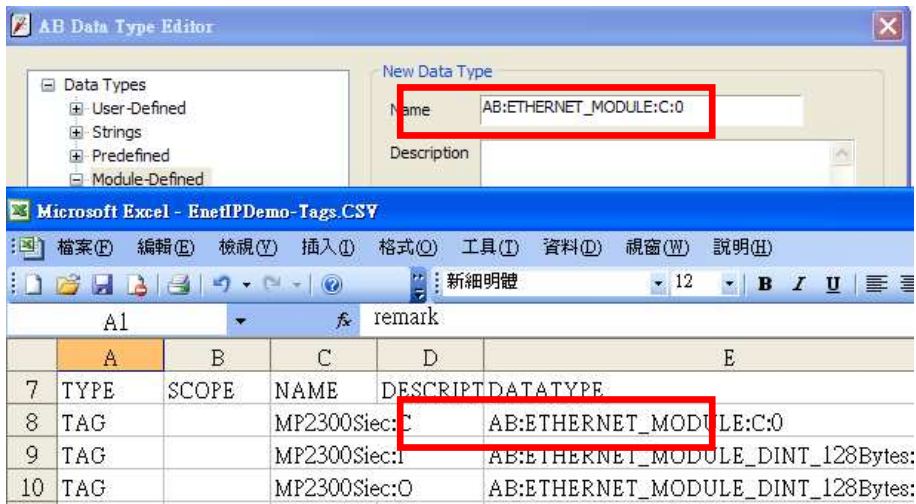


Fig.12 AB Data Type Editor

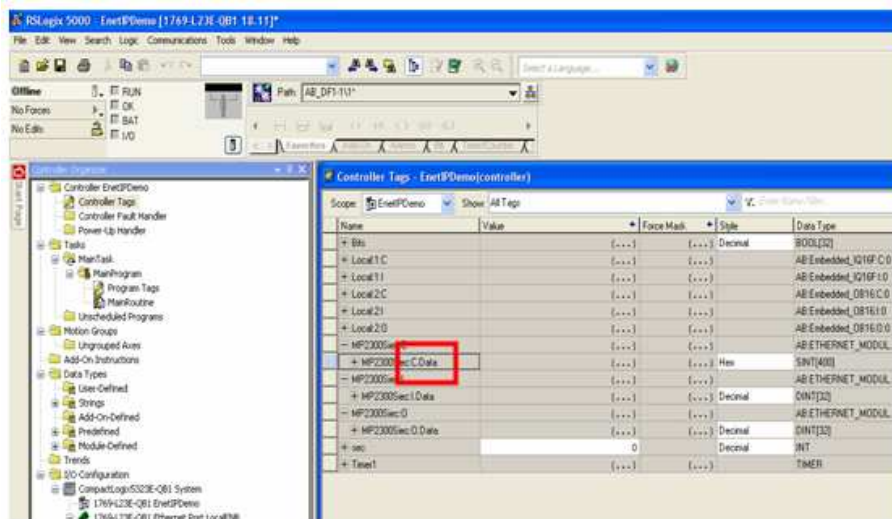


Fig.13 Tag Information

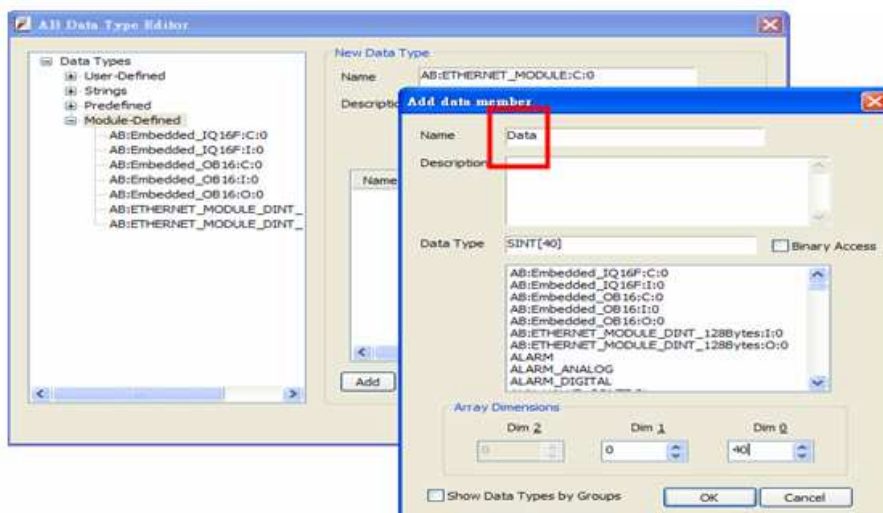


Fig.14 Add Data Member - Name Tag Information

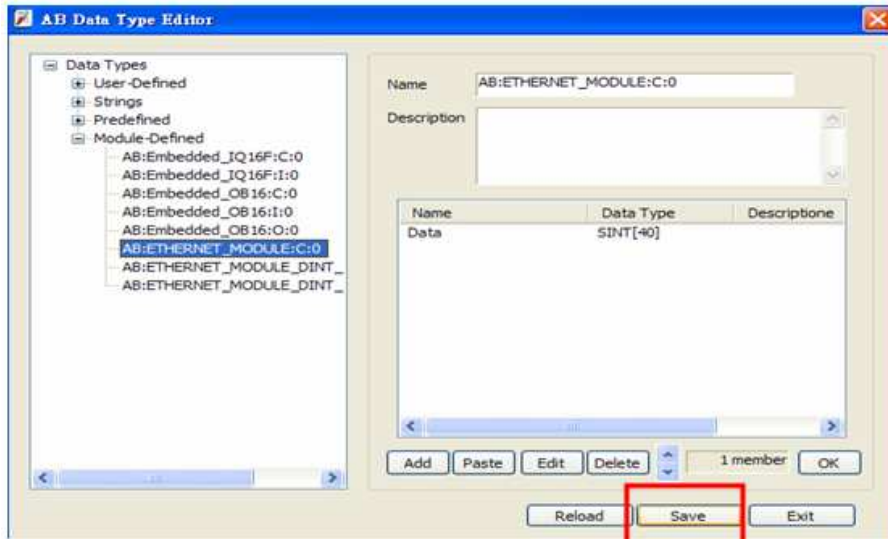


Fig. 15 Add Data Member-Settings - Save

**Step 3.** Import CSV file, Tag Information can be viewed from object address.

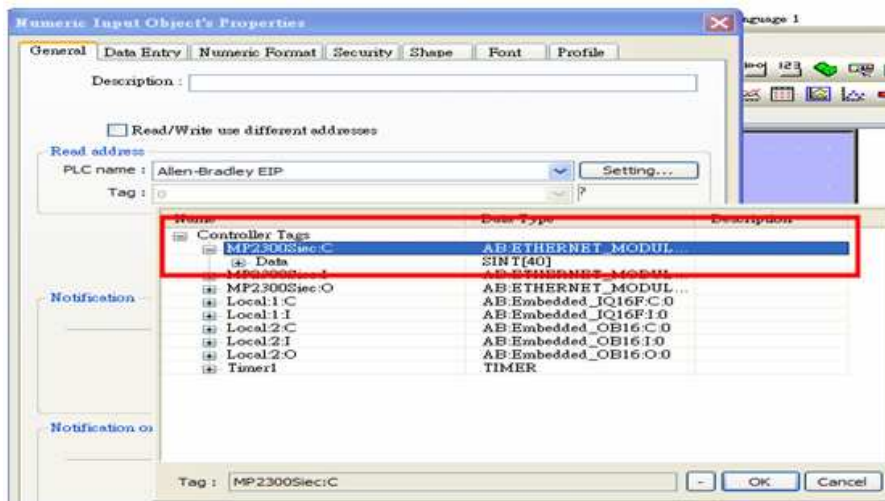


Fig.16 Tag Information

**Device Address:**


| Bit/Word | Device type | Format | Range       | Memo |
|----------|-------------|--------|-------------|------|
| B        | Input_Bit   | DDDDdd | 0 ~ 6553515 |      |
| B        | Output_Bit  | DDDDdd | 0 ~ 6553515 |      |
| DW       | Input       | DDDD   | 0 ~ 65535   |      |
| DW       | Output      | DDDD   | 0 ~ 65535   |      |



## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Aug/24/2011 | Driver released. |

# YASKAWA SMC 3010

Supported Series: YASKAWA SMC Series Servo Motor Controller.

## HMI Setting:

| Parameters | Recommended      | Options     | Notes |
|------------|------------------|-------------|-------|
| PLC type   | YASKAWA SMC 3010 |             |       |
| PLC I/F    | RS232            |             |       |
| Baud rate  | 19200            | 9600, 19200 |       |
| Data bits  | 8                |             |       |
| Parity     | None             |             |       |
| Stop bits  | 1                |             |       |

## Device Address:

| Bit/Word | Device type | Format | Range     | Memo       |
|----------|-------------|--------|-----------|------------|
| B        | AF          | D      | 0 ~ 1     |            |
| B        | BN          | D      | 0 ~ 1     | Write only |
| B        | BP          | D      | 0 ~ 1     | Write only |
| B        | BV          | D      | 0 ~ 1     | Write only |
| B        | CB          | DDDD   | 0 ~ 9999  | Write only |
| B        | CM          | D      | 0 ~ 1     | Read only  |
| B        | DV          | D      | 0 ~ 1     |            |
| B        | EB          | D      | 0 ~ 1     |            |
| B        | OE          | D      | 0 ~ 1     |            |
| B        | RS          | D      | 0 ~ 1     | Write only |
| B        | ST          | D      | 0 ~ 1     | Write only |
| B        | TB          | Do     | 0 ~ 17    | Read only  |
| B        | V_Bit       | DDDdd  | 0 ~ 99931 | *2         |
| B        | D_arr_Bit   | DDDdd  | 0 ~ 99931 |            |
| DW       | AC          | D      | 0 ~ 4     |            |
| DW       | DC          | D      | 0 ~ 4     |            |
| DW       | BL          | D      | 0 ~ 4     |            |
| W        | CD          | D      | 0 ~ 2     | Write only |
| W        | CE          | D      | 0 ~ 2     |            |
| DW       | DE          | D      | 0 ~ 4     |            |

| Bit/Word | Device type | Format | Range   | Memo       |
|----------|-------------|--------|---------|------------|
| DW       | DP          | D      | 0 ~ 4   |            |
| W        | DT          | D      | 0 ~ 2   |            |
| W        | EC          | D      | 0 ~ 2   |            |
| DW       | EM          | D      | 0 ~ 4   |            |
| W        | ER          | D      | 0 ~ 2   |            |
| W        | FA          | D      | 0 ~ 2   |            |
| DW       | FL          | D      | 0 ~ 4   |            |
| W        | FV          | D      | 0 ~ 2   |            |
| DW       | GR          | D      | 0 ~ 4   |            |
| DW       | JG          | D      | 0 ~ 4   |            |
| DW       | MM          | D      | 0 ~ 4   |            |
| W        | MT          | D      | 0 ~ 2   |            |
| W        | NA          | D      | 0 ~ 2   |            |
| W        | OP          | D      | 0 ~ 2   |            |
| DW       | PA          | D      | 0 ~ 4   | Write only |
| DW       | PR          | D      | 0 ~ 4   |            |
| DW       | SP          | D      | 0 ~ 4   |            |
| W        | TC          | D      | 0 ~ 2   | Read only  |
| W        | TM          | D      | 0 ~ 2   |            |
| W        | TW          | D      | 0 ~ 2   |            |
| DW       | VA          | D      | 0 ~ 4   |            |
| DW       | VD          | D      | 0 ~ 4   |            |
| DW       | VS          | D      | 0 ~ 4   |            |
| DW       | IL          | D      | 0 ~ 4   |            |
| DW       | IT          | D      | 0 ~ 4   |            |
| DW       | KD          | D      | 0 ~ 4   |            |
| DW       | KI          | D      | 0 ~ 4   |            |
| DW       | KP          | D      | 0 ~ 4   |            |
| DW       | OF          | D      | 0 ~ 4   |            |
| DW       | TL          | D      | 0 ~ 4   |            |
| DW       | VR          | D      | 0 ~ 4   |            |
| DW       | VT          | D      | 0 ~ 4   |            |
| DW       | PF          | D      | 0 ~ 4   | *1         |
| DW       | VF          | D      | 0 ~ 4   |            |
| DW       | V           | DDD    | 0 ~ 999 | *2         |
| F        | F           | DDD    | 0 ~ 999 | *2         |
| W        | D_array     | DDD    | 0 ~ 999 |            |

| Bit/Word | Device type | Format | Range   | Memo |
|----------|-------------|--------|---------|------|
| W        | R_array     | DDD    | 0 ~ 999 |      |


## Note:

- \*1 PF is the communication parameter of SMC\_3010, the default is 10.4, if the value is not 10.4, all values will be displayed incorrectly.
- \*2 User defined integer variable V000~V999, floating point variable F000~F999.

## Wiring Diagram:

9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | SMC3010 CN6 RS232 9P<br>D-Sub |         |
|------------------------------------|------------------------------------|--------------------------------------|-------------------------------|---------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TXD                         |         |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RXD                         |         |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                         |         |
|                                    |                                    |                                      | 7 RTS                         | circuit |
|                                    |                                    |                                      | 8 CTS                         |         |

Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.30   | Mar/29/2010 |             |

## YASKAWA SMC 3010 (Ethernet)

Supported Series: YASKAWA SMC Series Servo Motor Controller.

### HMI Setting:

| Parameters | Recommended                 | Options | Notes |
|------------|-----------------------------|---------|-------|
| PLC type   | YASKAWA SMC 3010 (Ethernet) |         |       |
| PLC I/F    | Ethernet                    |         |       |
| Port no.   | 23                          |         |       |

### Device Address:

| Bit/Word | Device type | Format | Range     | Memo       |
|----------|-------------|--------|-----------|------------|
| B        | AF          | D      | 0 ~ 1     |            |
| B        | BN          | D      | 0 ~ 1     | Write only |
| B        | BP          | D      | 0 ~ 1     | Write only |
| B        | BV          | D      | 0 ~ 1     | Write only |
| B        | CB          | DDDD   | 0 ~ 9999  | Write only |
| B        | CM          | D      | 0 ~ 1     | Read only  |
| B        | DV          | D      | 0 ~ 1     |            |
| B        | EB          | D      | 0 ~ 1     |            |
| B        | OE          | D      | 0 ~ 1     |            |
| B        | RS          | D      | 0 ~ 1     | Write only |
| B        | ST          | D      | 0 ~ 1     | Write only |
| B        | TB          | Do     | 0 ~ 17    | Read only  |
| B        | V_Bit       | DDDdd  | 0 ~ 99931 | *2         |
| B        | D_arr_Bit   | DDDdd  | 0 ~ 99931 |            |
| DW       | AC          | D      | 0 ~ 4     |            |
| DW       | DC          | D      | 0 ~ 4     |            |
| DW       | BL          | D      | 0 ~ 4     |            |
| W        | CD          | D      | 0 ~ 2     | Write only |
| W        | CE          | D      | 0 ~ 2     |            |
| DW       | DE          | D      | 0 ~ 4     |            |
| DW       | DP          | D      | 0 ~ 4     |            |
| W        | DT          | D      | 0 ~ 2     |            |
| W        | EC          | D      | 0 ~ 2     |            |

| Bit/Word | Device type | Format | Range   | Memo       |
|----------|-------------|--------|---------|------------|
| DW       | EM          | D      | 0 ~ 4   |            |
| W        | ER          | D      | 0 ~ 2   |            |
| W        | FA          | D      | 0 ~ 2   |            |
| DW       | FL          | D      | 0 ~ 4   |            |
| W        | FV          | D      | 0 ~ 2   |            |
| DW       | GR          | D      | 0 ~ 4   |            |
| DW       | JG          | D      | 0 ~ 4   |            |
| DW       | MM          | D      | 0 ~ 4   |            |
| W        | MT          | D      | 0 ~ 2   |            |
| W        | NA          | D      | 0 ~ 2   |            |
| W        | OP          | D      | 0 ~ 2   |            |
| DW       | PA          | D      | 0 ~ 4   | Write only |
| DW       | PR          | D      | 0 ~ 4   |            |
| DW       | SP          | D      | 0 ~ 4   |            |
| W        | TC          | D      | 0 ~ 2   | Read only  |
| W        | TM          | D      | 0 ~ 2   |            |
| W        | TW          | D      | 0 ~ 2   |            |
| DW       | VA          | D      | 0 ~ 4   |            |
| DW       | VD          | D      | 0 ~ 4   |            |
| DW       | VS          | D      | 0 ~ 4   |            |
| DW       | IL          | D      | 0 ~ 4   |            |
| DW       | IT          | D      | 0 ~ 4   |            |
| DW       | KD          | D      | 0 ~ 4   |            |
| DW       | KI          | D      | 0 ~ 4   |            |
| DW       | KP          | D      | 0 ~ 4   |            |
| DW       | OF          | D      | 0 ~ 4   |            |
| DW       | TL          | D      | 0 ~ 4   |            |
| DW       | VR          | D      | 0 ~ 4   |            |
| DW       | VT          | D      | 0 ~ 4   |            |
| DW       | PF          | D      | 0 ~ 4   | *1         |
| DW       | VF          | D      | 0 ~ 4   |            |
| DW       | V           | DDD    | 0 ~ 999 | *2         |
| W        | F           | DDD    | 0 ~ 999 | *2         |
| W        | D_array     | DDD    | 0 ~ 999 |            |
| W        | R_array     | DDD    | 0 ~ 999 |            |

## Note:


\*1 PF is the communication parameter of SMC\_3010, the default is 10.4, if the value is not 10.4, all values will be displayed incorrectly.

\*2 User defined integer variable V000~V999, floating point variable F000~F999.

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

**Driver Version:**

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.10   | Mar/29/2010 |             |



## Yokogawa FA-M3

Supported Series : FA-M3 CPU SP35-5N, SP55-5N CPU port, F3LC11 Computer Link module.

Website : <http://www.yokogawa.com/itc/itc-index-en.htm>

### HMI Setting:

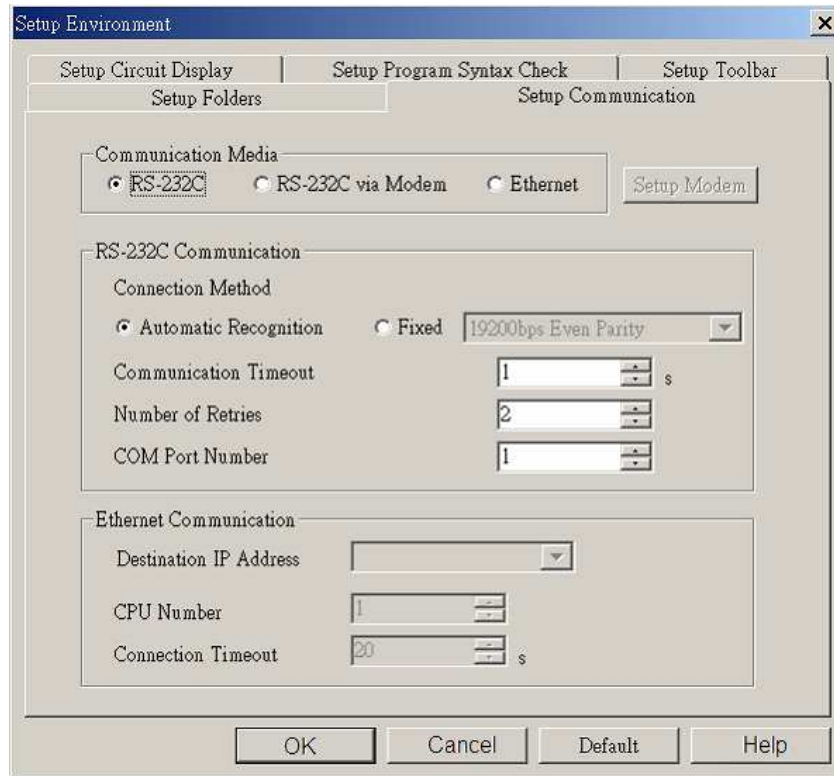
| Parameters   | Recommended    | Options         | Notes |
|--------------|----------------|-----------------|-------|
| PLC type     | Yokogawa FA-M3 |                 |       |
| PLC I/F      | RS232          |                 |       |
| Baud rate    | 19200          | 9600, 19200     |       |
| Data bits    | 8              | 8               |       |
| Parity       | Even           | Even, Odd, None |       |
| Stop bits    | 1              | 1               |       |
| PLC sta. no. | 1              | 1-31            |       |

### PLC Setting:

|                    |  |
|--------------------|--|
| Communication mode | Use Personal Communication Link<br>Use checksum<br>Use End Character |
|--------------------|--|

### WideField communication setting:

For WideField communication setting, select [Tool]/ [Set Environment], the default is [Automatic]. Using the Automatic Recognition, WideField software will connect the current PLC and get the PLC communication setting. If the PLC communication configuration is already known, select the [Fixed] mode, It will connect with the PLC quickly.



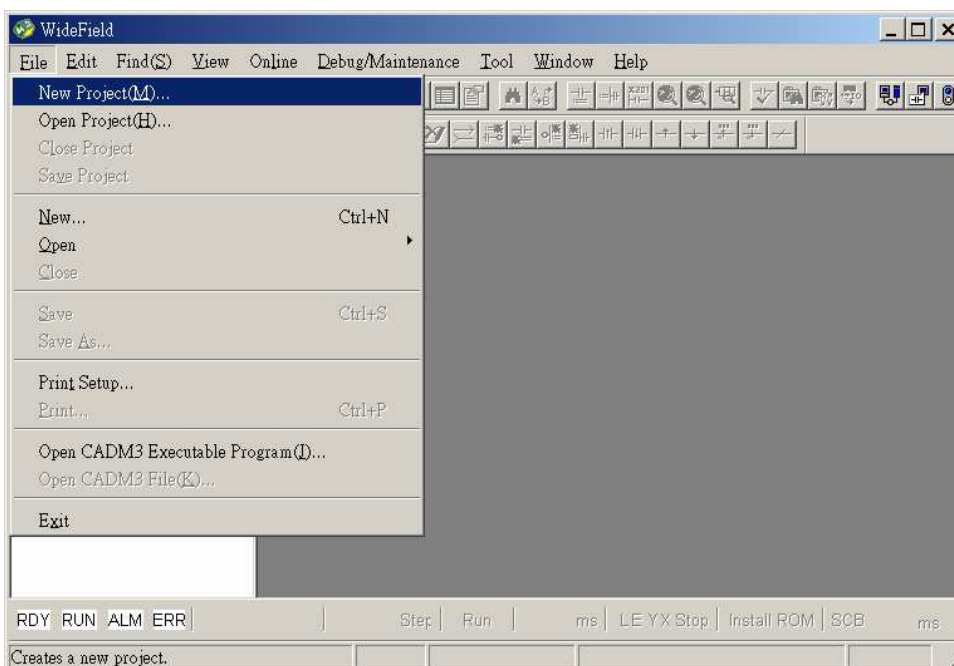
P.S Since Personal Computer link is used, when connecting to PLC it will delay about 20sec for testing communication.

## YOKOGAWA PLC Communcation Setting:

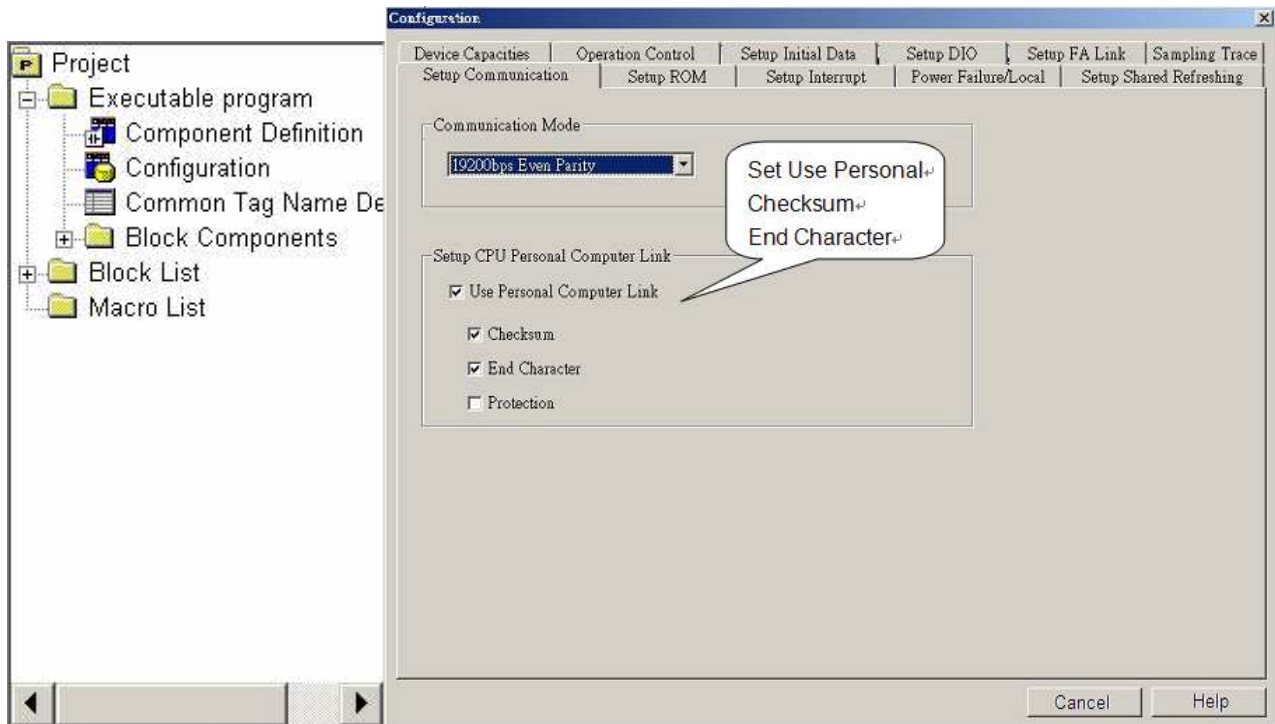
YOKOGAWA FA-M3

CPU SP55-5N (same SP35-5N)

[File] / [New Project] to create a new project.



Click [Configuration] to set up communication.




## Device Address:

| Bit/Word | Device type | Format | Range     | Memo |
|----------|-------------|--------|-----------|------|
| B        | X           | DDDDD  | 0 ~ 71664 |      |
| B        | Y           | DDDDD  | 0 ~ 71664 |      |
| B        | I           | DDDDD  | 1 ~ 16384 |      |
| B        | M           | DDDD   | 1 ~ 9984  |      |
| B        | L           | DDDDD  | 0 ~ 71024 |      |
| W        | D           | DDDDD  | 1 ~ 16384 |      |
| W        | B           | DDDDD  | 1 ~ 32768 |      |
| W        | V           | DDD    | 1 ~ 256   |      |
| W        | W           | DDDDD  | 1 ~ 71024 |      |
| W        | Z           | DDDD   | 1 ~ 1024  |      |

## Wiring Diagram:


9P D-Sub to 9P D-Sub:

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | CPU Port Cable KM11 RS232 |
|------------------------------------|------------------------------------|--------------------------------------|---------------------------|
| 2 RX                               | 6 RX                               | 8 RX                                 | 2 TXD                     |
| 3 TX                               | 4 TX                               | 7 TX                                 | 3 RXD                     |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                     |



9P D-Sub to 9P D-Sub: LC11

| HMI COM1<br>RS232 9P<br>D-Sub Male | HMI COM2<br>RS232 9P<br>D-Sub Male | HMI COM3<br>RS232 9P<br>D-Sub Female | LC11 Computer Link Module<br>RS232 Port |
|------------------------------------|------------------------------------|--------------------------------------|---|
| 2 RX                               | 6 RX                               | 8 RX                                 | 3 TXD                                   |
| 3 TX                               | 4 TX                               | 7 TX                                 | 2 RXD                                   |
| 5 GND                              | 5 GND                              | 5 GND                                | 5 GND                                   |
|                                    |                                    |                                      | 7 RTS                                   |
|                                    |                                    |                                      | 8 CTS                                   |
|                                    |                                    |                                      | circuit                                 |



Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

| Version | Date        | Description |
|---------|-------------|-------------|
| V1.20   | Oct/23/2009 |             |

## Yokogawa FA-M3 (Ethernet)

Supported Series : FA-M3 CPU SP35-5N, SP55-5N with F3LE01-5T/F3LE11-0T Ethernet module.

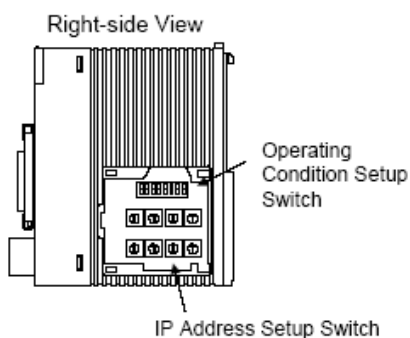
Website: <http://www.yokogawa.com/itc/itc-index-en.htm>

### HMI Setting:

| Parameters   | Recommended               | Options | Notes |
|--------------|---------------------------|---------|-------|
| PLC type     | Yokogawa FA-M3 (Ethernet) |         |       |
| PLC I/F      | Ethernet                  |         |       |
| Port no.     | 12289                     |         |       |
| PLC sta. no. | 1                         |         |       |

### PLC Setting:

|                    |  |
|--------------------|--|
| Communication mode | Set IP Address, and set all condition setup switch to OFF. |
|--------------------|--|



Example: Setting the IP address to 192.168.250.210

|              |     |     |     |     |
|--------------|-----|-----|-----|-----|
|              |     |     |     |     |
|              |     |     |     |     |
| Hexa decimal | C0  | A8  | FA  | D2  |
| Decimal      | 192 | 168 | 250 | 210 |


### Device Address:

| Bit/Word | Device type | Format | Range     | Memo |
|----------|-------------|--------|-----------|------|
| B        | X           | DDDDD  | 0 ~ 71664 |      |
| B        | Y           | DDDDD  | 0 ~ 71664 |      |
| B        | I           | DDDDD  | 1 ~ 16384 |      |
| B        | M           | DDDD   | 1 ~ 9984  |      |
| B        | L           | DDDDD  | 0 ~ 71024 |      |
| W        | D           | DDDD   | 1 ~ 8192  |      |
| W        | B           | DDDDD  | 1 ~ 32768 |      |
| W        | V           | DD     | 1 ~ 64    |      |
| W        | W           | DDDDD  | 1 ~ 71024 |      |
| W        | Z           | DDD    | 1 ~ 512   |      |

## Wiring Diagram:


Direct connect (crossover cable):

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 3 RX+           |
| 2 TX-           | Orange       | 6 RX-           |
| 3 RX+           | White/Green  | 1 TX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 2 TX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |



Through a hub:

| HMI RJ45 Female | Wire Color   | PLC RJ45 Female |
|-----------------|--------------|-----------------|
| 1 TX+           | White/Orange | 1 TX+           |
| 2 TX-           | Orange       | 2 TX-           |
| 3 RX+           | White/Green  | 3 RX+           |
| 4 BD4+          | Blue         | 4 BD4+          |
| 5 BD4-          | White/Blue   | 5 BD4-          |
| 6 RX-           | Green        | 6 RX-           |
| 7 BD3+          | White/Brown  | 7 BD3+          |
| 8 BD3-          | Brown        | 8 BD3-          |

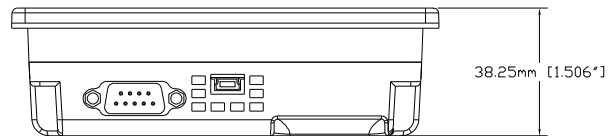


Note: The wiring diagrams above are drawn based on MT8100i structure, the actual placement of pins may vary according to HMI module.

## Driver Version:

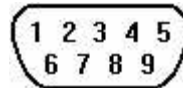
| Version | Date        | Description      |
|---------|-------------|------------------|
| V1.00   | Dec/30/2008 | Driver released. |

# MT6050i/MT8050i Com Port Pin Assignment



*Bottom View*

## MT6050i/MT8050i



Pin assignment of the 9 Pin, Male,

Pin assignment of the 9 Pin, Male, SUB-D, COM1 [RS-232]/ [RS-485], COM3 [RS-485] Port. Only Com1[RS485 2W] support MPI 187.5K.

| Pin# | Symbol | Com1[RS485] |        | Com1[RS232] | Com3[RS485] |
|------|--------|-------------|--------|-------------|-------------|
|      |        | 4 wire      | 2 wire |             |             |
| 1    | Rx-    | Rx-         | Data-  |             |             |
| 2    | Rx+    | Rx+         | Data+  |             |             |
| 3    | Tx-    | Tx-         |        |             |             |
| 4    | Tx+    | Tx+         |        |             |             |
| 5    | GND    | GND         |        |             |             |
| 6    | TxD    |             |        | Transmit    |             |
| 7    | Data-  |             |        |             | Data-       |
| 8    | Data+  |             |        |             | Data+       |
| 9    | RxD    |             |        | Receive     |             |

## Wiring Diagram:

MT6050i COM1 [RS-232]

9P D-SUB Female

|   |     |
|---|-----|
| 9 | RXD |
| 6 | TXD |
| 5 | GND |

PLC RS-232

Communication Com Port interface

|     |
|-----|
| TXD |
| RXD |
| GND |

MT6050i COM1 [RS-485 2w]

9P D-SUB Female

|   |       |
|---|-------|
| 1 | Data- |
| 2 | Data+ |

PLC RS-485 2w

Communication Com Port interface

|       |
|-------|
| Data- |
| Data+ |

MT6050i COM3\* [RS-485 2w]

9P D-SUB Female

|   |       |
|---|-------|
| 7 | Data- |
| 8 | Data+ |

PLC RS-485 2w

Communication Com Port interface

|       |
|-------|
| Data- |
| Data+ |

\*RS485 2W COM3 is only available for MT6050iv2

MT6050i COM1 [RS-485 4w]

9P D-SUB Female

|   |     |
|---|-----|
| 1 | RX- |
| 2 | RX  |
| 3 | TX- |
| 4 | TX+ |

PLC RS-485 2w

Communication Com Port interface

|     |
|-----|
| TX- |
| TX+ |
| RX- |
| RX+ |