Chapter 10   Object's Security Guard

The EB8000's object's security guard includes two parts:

1. User password and operating object's setting
2. Object's Security

1. User password and operating object's setting

User can set the passwords and restrictions in the [Security] tab of [System parameters].

In the EB8000, the object has 7 items, including "none", and "A~F".

Each group of password must consist of 0-9 digits and the maximum passwords for users are 12sets.

After user fill in password, EB8000 will be following the security setting to limit the user to operate objects. For example, user 1 operating class as below illustration. That's means the user is permitted to operate "None", and A, C, E objects.

In addition to inputting the passwords to the system reserved [LW9220: password] register, which is a double words value, a correct process of password setting requires that user have to use [LW9219: user no. (1~12)] to appoint the existing user. In [LW9219: user no. (1~12)], it is necessary to use the digits 1~12 to represent User 1 ~ User 12 respectively.

When password was wrong, [LB 9060: password error] state will be ON; if password is correct, [LB 9060] is OFF.

When HMI is operated, user 1 to user 12 can read data of [LW9500: user 1's password] to [LW9522: user 12's password], totally 24 words.

User can change passwords even when the HMI is in operation. By using the system reserved register [LB9061: update password (set ON)], when switching its state from OFF to ON, the EB8000 will use the data saved in the system reserved registers from [LW9500] to [LW9522] to update the password table, and the new passwords will be available immediately. There is something important that the user's operation level will never be changed when the password table is updated.

To switch the current user can use [LB9050: user logout], when [LB9050] state from ON to OFF; at this time, the user only can operate the object of "class none".

Otherwise, [LW9222: classes can be operated for current user] record current user restrictions, bit0 = 1 means user restriction is class A; bit1=1 means user restriction is class B and so on.

2. Object's Security

| Safety control	"Safety control" is mainly used to avoid operator's incorrectly controlling an object in an unawareness situation. At present there are two methods of protection:
	[Min. press time (sec)]
	If only the time of continuously pressing an object is not less than the value of [Min. press time (sec)], user can operate the object successfully.

[Display confirmation request]

After pressing the object, a dialogue box, as shown in the picture below will display, the operator can decide whether or not to perform the operation according to the real situation. The dialogue box will close automatically when the time of the operator making the decision on whether or not to perform the operation is longer than the value of [Max. waiting time (sec)].
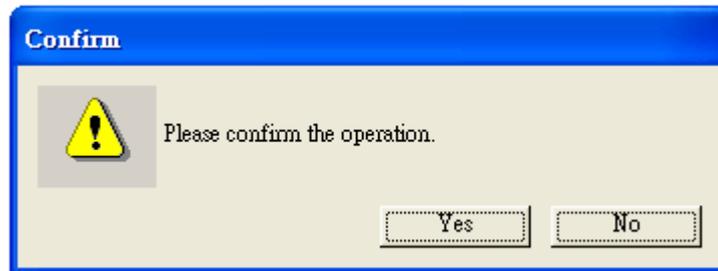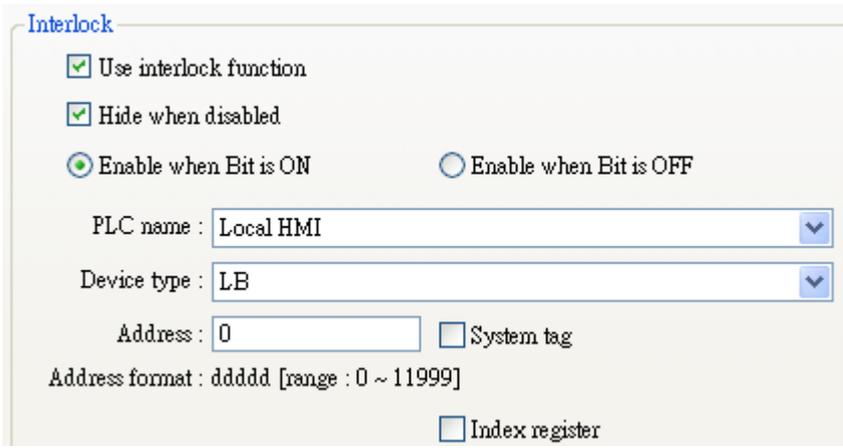

Message text ("Please confirm the operation.") in the window is defined in [System Message]. Text can be changed from [System Message] dialog. Click System Message icon from tool bar and then System Message dialog display. First part is set for operation confirmation.
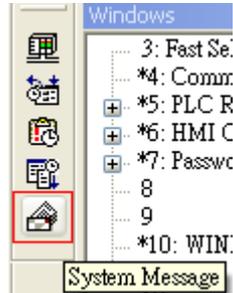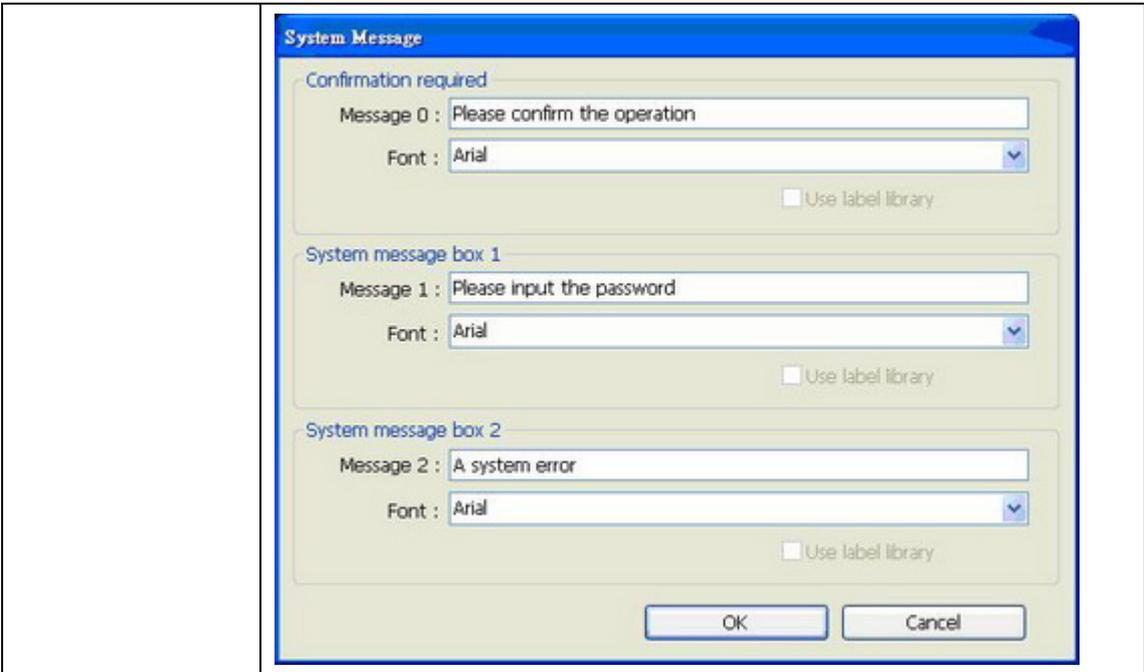
Interlock	When the function is applied to an object, whether or not to allow the object to be operated will decide the state of the appointed bit address (or called "Enable" address). "Enable" address must be in Bit address format. The content of the address can be set in a dialogue box as shown in the picture below. Fox example, supposed that the "Enable control" function is applied to some "Set Bit" object and the "Enable" bit address is set to [LB0], then the "Set Bit" object can be operated when the state of [LB0] is ON. The "Enable control" function also provides the following settings. **[Use interlock function]** The "Enable control" function can be used by selecting the check box **[Hide when disabled]** When using the "Enable control" function and the state of "Enable" bit address is set to OFF, the object will be hidden.

| User restriction	This function can be used to set the object's operation, deciding which level's operator is permitted to operate the object. When "Operator class" is selected as "None", it means the operation is open to the operators of all levels. The following settings are also available in the function: **[Disable protection permanently after initial activation]** Once the operator's current operation level conforms to the operation condition of the object, the system will stop checking the operation level of the object for good. In that case, even if the current security level is lower than the object's operation level, it will not affect the operation of the object. **[Display warning message if access denied]** When the operator's current security level does not conform to the operation condition of the object, a warning dialogue box, as shown in the picture below, will display when pressing the object. Window 7 is set as alert message for authority security. User can design the content of the message. **[Make invisible while protected]** When the operator's security level does not conform to the operation condition of the object, the object will be hidden.

Here an example for security as below.

First of all, building a new project, and go to System parameter/Security, and then enable three users to set different password and class.
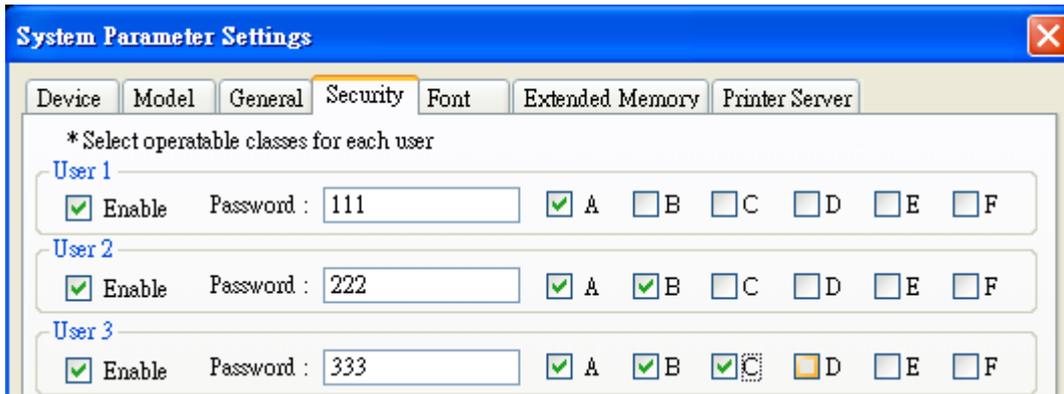
User 1 can operate object A, user 2 can operate object A and B, user 3 can operate object A, B, and C.

Setting objects in Window_10 as below illustration.
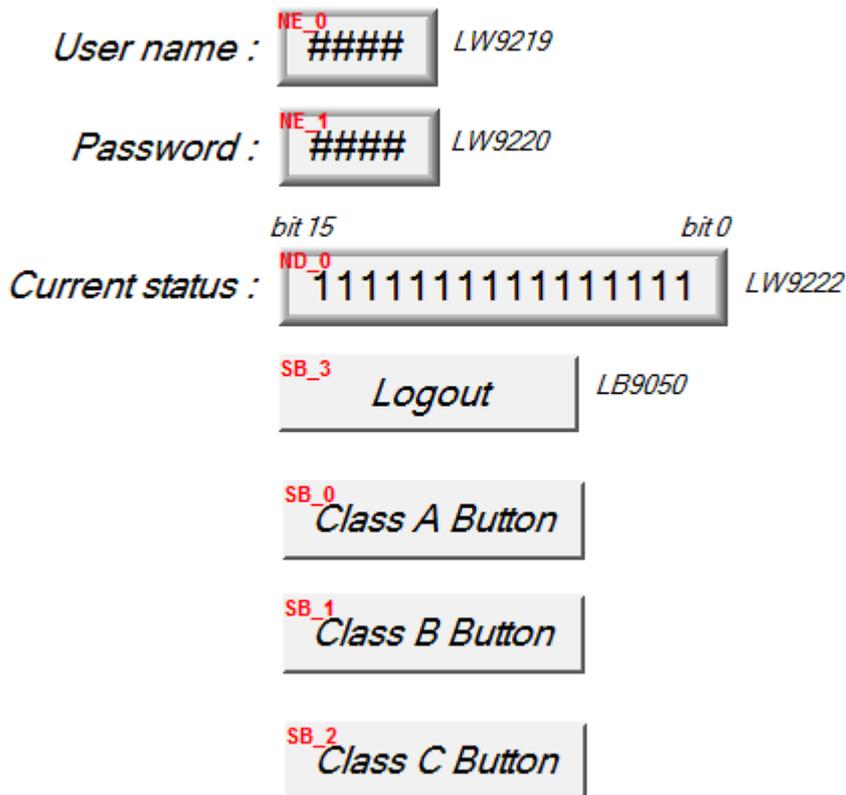
[NE_0] and [NE_1] are numeric input, address are [LW9219: user no. (1~12)] and [LW9220: password] for enter user ID and password. [LW9219] is for enter user ID (1~12), the length is 1 word, so this object need to choose 16-bit Unsigned data format, as below illustration.
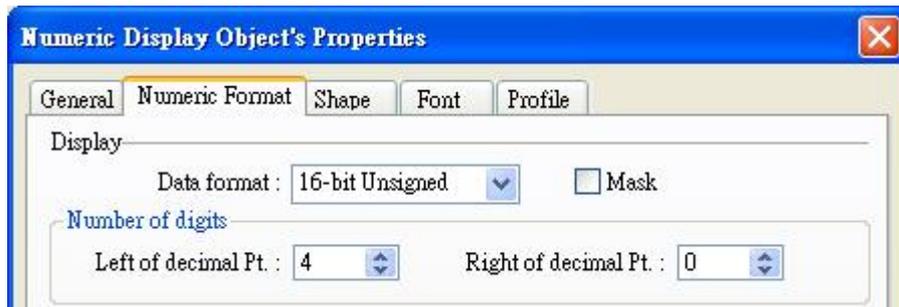
[LW9220] is for enter user password, the length is 2 words, so this object need to choose 32-bit Unsigned data format, as below illustration.


[ND_0] is numeric display object, address is [LW9222: classes can be operated for current user]. This is shown user's state. The data format is 16-bit Binary.
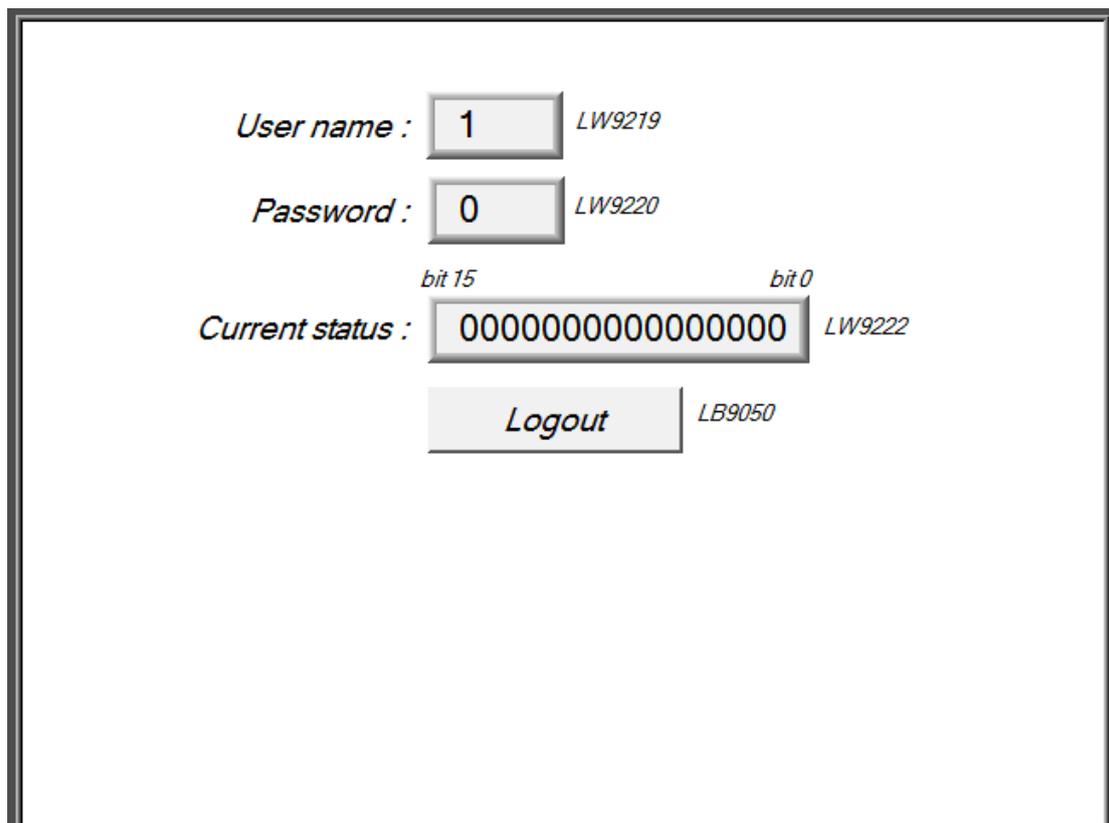

[SB_0]~[SB_2] are Set Bit objects, these three objects choose different class, but all select "Make invisible while protected". [SB_0] is class A, [SB_1] is class B, [SB_2] is class C. the setting of [SB_0] as below illustration.
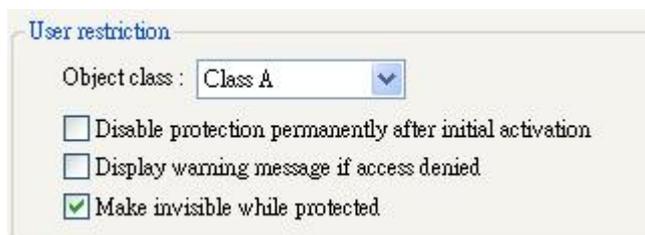
The Set Bit object (SB_3, LB9050: user logout) is for user logout, refer below illustration.
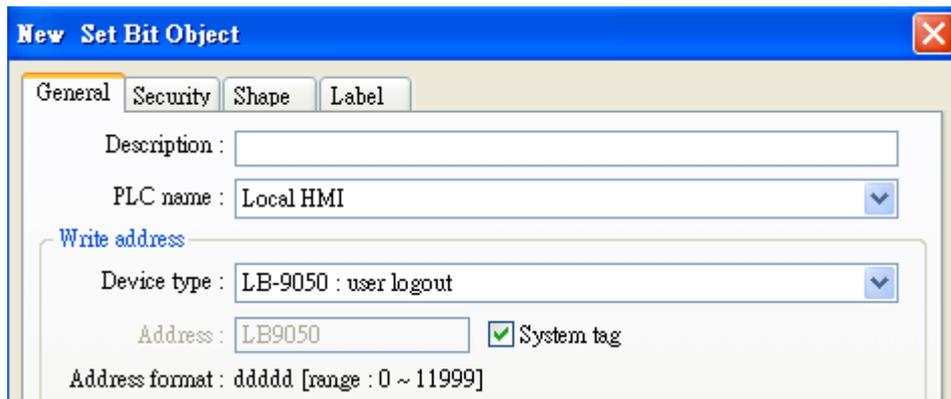
After finishing project, saving and compiling project. The illustration as below is initial screen in off-line simulation, at this time, no password has been enter, so [LW9222] is shown "0000000000000000". It means the user only can use object of "none", moreover, [SB_0]~[SB_2] belong to class A~ class C and select "Make invisible while protected", so [SB_0]~[SB_2] will be hidden.

After User enter the password (111) completely, the screen as below,

The user 1 is permitted to use object of class A, so [SB_0] appeared and allow user to operate. Now, [LW9222] bit 0 became 1, it means the user is allows to use object of class A.

Next, user enter the user 3's password (333), the screen as below,

From above illustration, user 3 is permitted to use object of class A, B and C. now, [LW9222] bit0~bit 3 all became 1, it means the user is allow to use object of class A, B and C.

Therefore, if press [LB9050] to logout, the system will return to initial state, and user is not allow to operate the object.

User name : 3   *LW9219*

Password : 333   *LW9220*

bit 15   *bit 0*

Current status : 0000000000000000   *LW9222*

Logout   *LB9050*