# Chapter 11 Index Register

The EB8000 provides 32 index registers, and user can enjoy more flexible approach to application of the addresses. Even if on machine running, with index register user can change object's read / write address without change contents of object directly. The addresses of the 32 index registers are as follows:

INDEX 0 [LW9200] (16-bit)

……

……

INDEX 15 [LW9215] (16-bit)

INDEX 16 [LW9230] (32-bit)

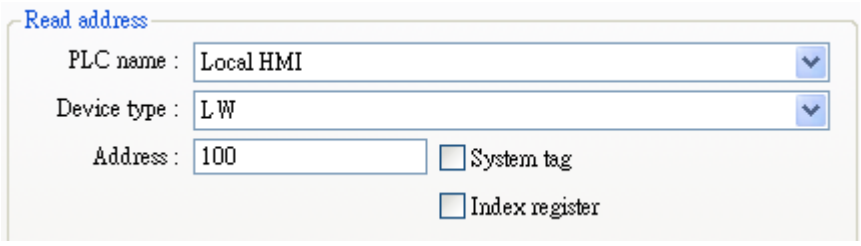
……

……

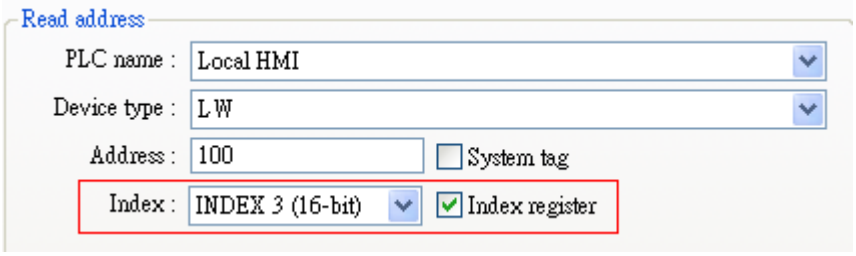
INDEX 31 [LW9260] (32-bit)

INDEX 0 ~ INDEX 15 are 16-bit register and range is up to 65536 words; and INDEX 16 ~ INDEX 31 are 32-bit register and range is up to 4G words.

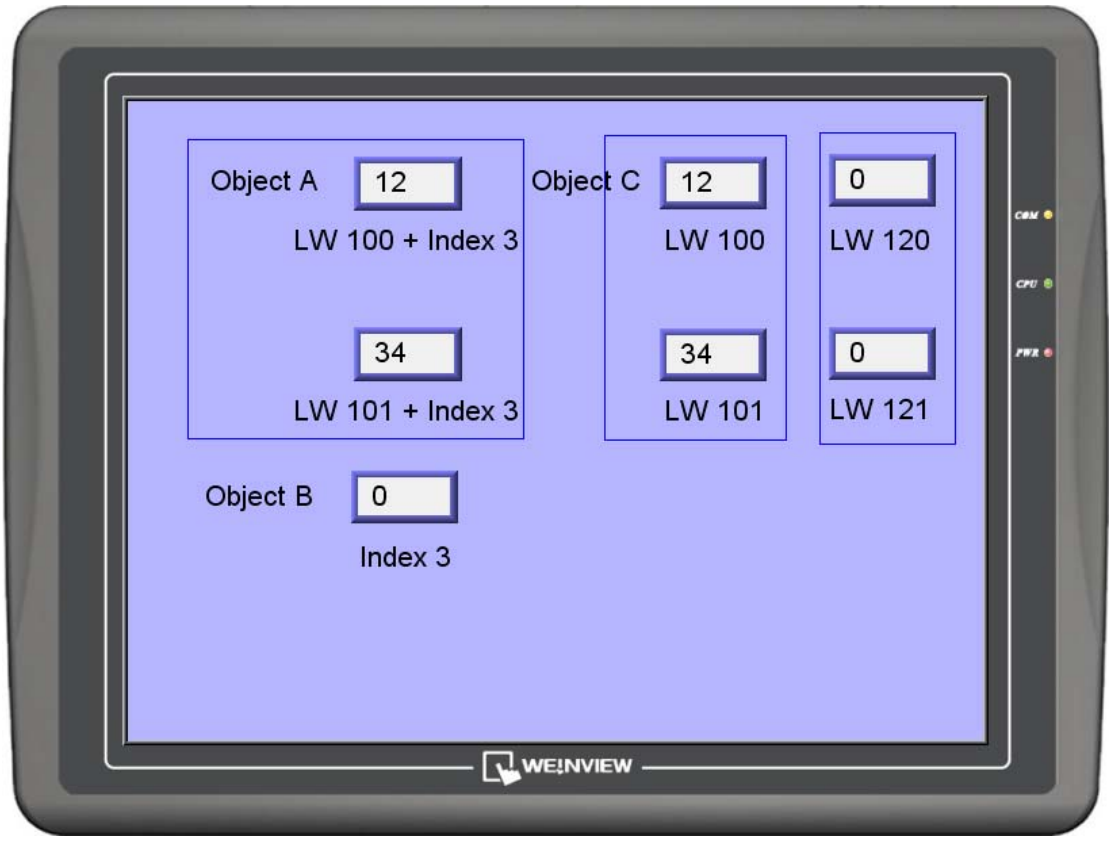
Here is an example to describe how to use the index registers. See the picture below, the "Read address" will be read as [LW100] while [Index register] is not selected.



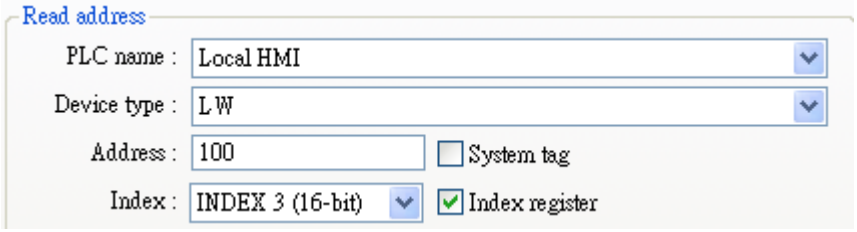

But in the picture below, the "Read address" becomes [LW (100 + Index 3)] while [Index register] is selected. And Index 3 represents the value at LW9203 (16bit) address index 3; in other words, if the value at the [LW9203] address is 5, the "Read address" in the picture below became [LW105]. That's mean [LW100+5].



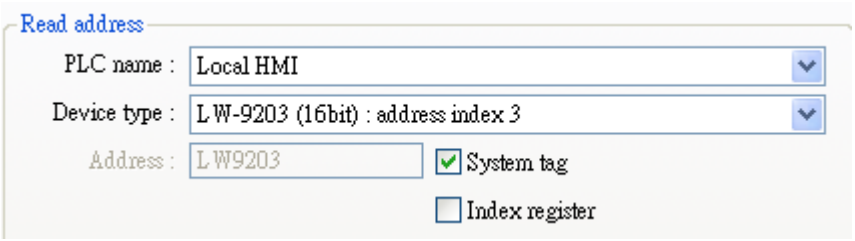

By using of the index registers, user can change object's reading and writing addresses online without changing the object's content. For example, in the picture below, Index 3 as 0, that's mean the value at the [LW9203] address is 0, so to reading the content of [LW100 + Index 3] and [LW101 + Index 3] will write to the [LW100] and [LW101].



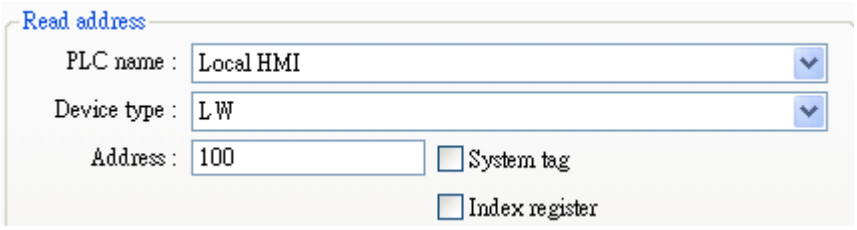
At this time, the setting of Object A's "Read address" as follows:



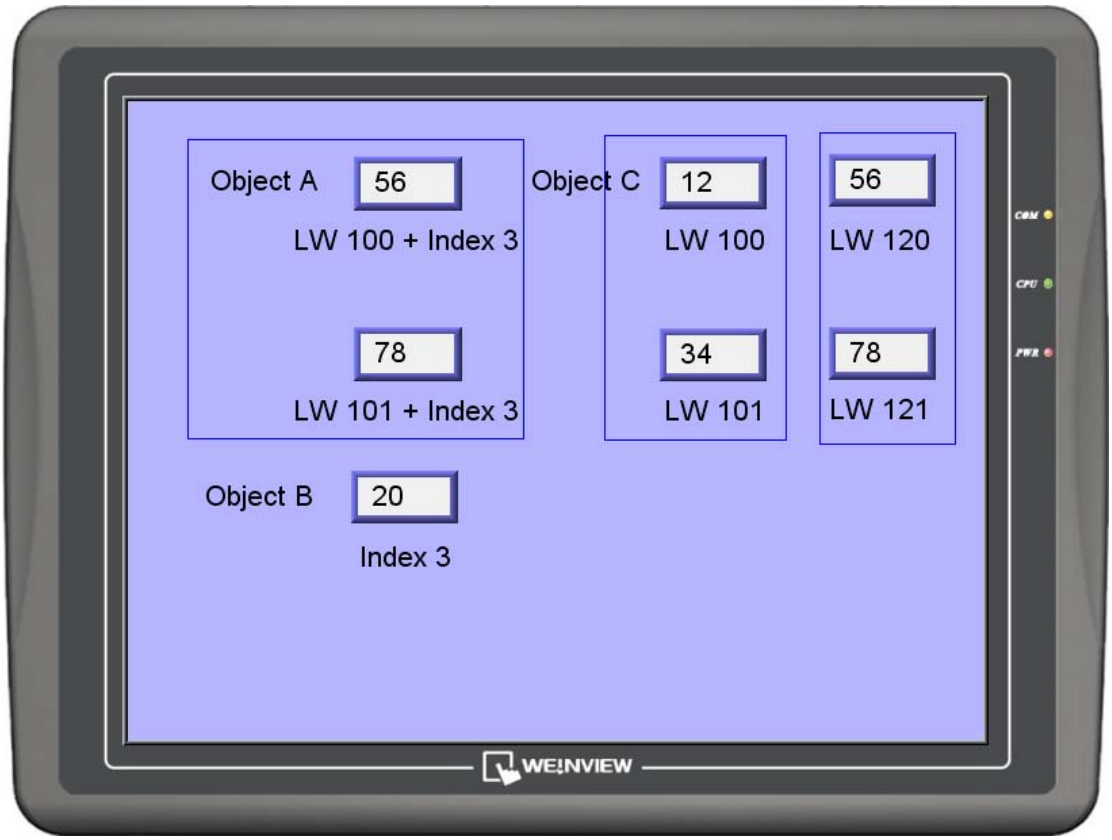

And the setting of Object B's "Read address" as follows:




And the setting of Object C's "Read address" as follows:



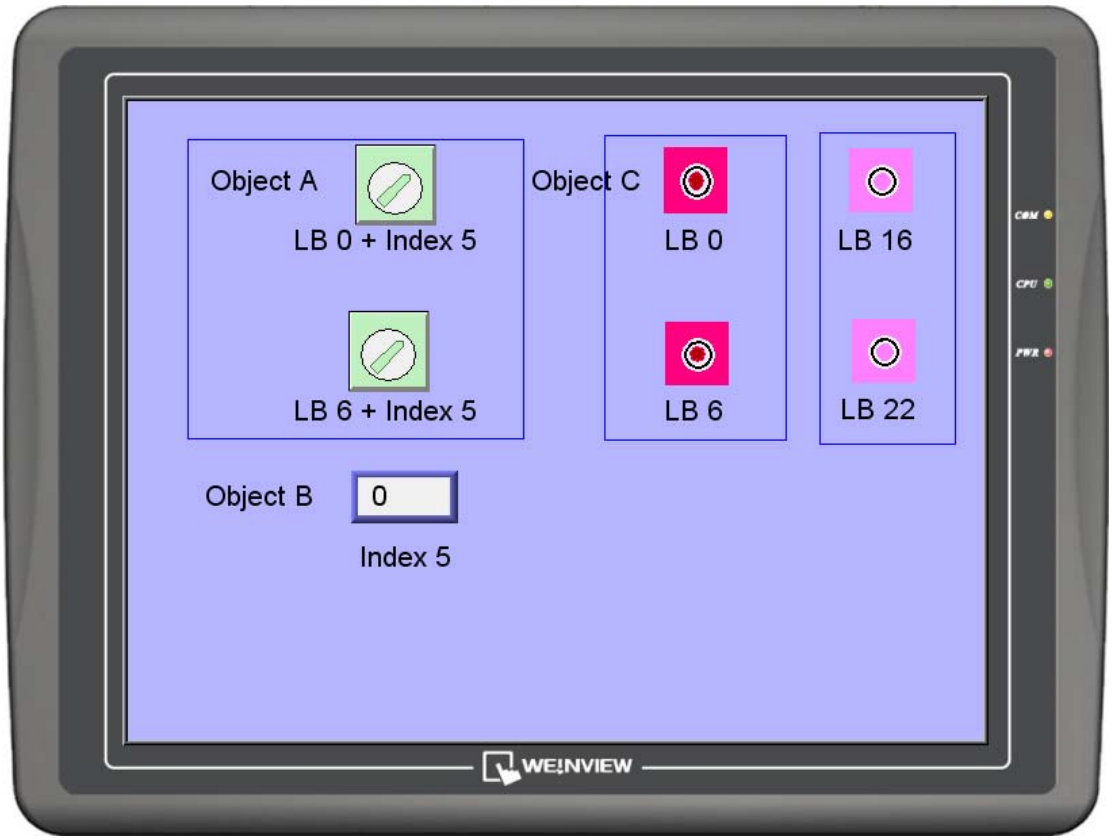

Now, if user set Index 3 value to 20, reading the content of [LW100 + Index 3] and [LW101 + Index 3] will write to the [LW120] and [LW121]. Refer to the picture below. That's to say the [LW100+20=LW120] and [LW101+20=LW121].




The index register also working with LB, but it has regularization.

**1 word = 16 bit, that's the value of index register as 1, it will assign to bit 16.**

See the picture below, the "Bit Lamp" of [LB0] and [LB6] will be control by "Toggle Switch" of [LB0+Index 5] and [LB6+Index 5] while Index 5 as 0.




Now, if user set Index 5 value to 1, and then the “Bit Lamp” of [LB16] and [LB22] will be control by “Toggle Switch” of [LB0+Index 5] and [LB6+Index 5]. That’s to say the [LB0+16=LB16] and [LB6+16=LB22].