11. Index Register

This chapter explains how to use Index Register.

11.1.   Overview

EasyBuilder Pro provides Index Registers for changing addresses flexibly. With Index Registers, user can change the object's read/write address directly on HMI without changing its settings. There are 32 Index Registers, divided into 16-bit and 32-bit.
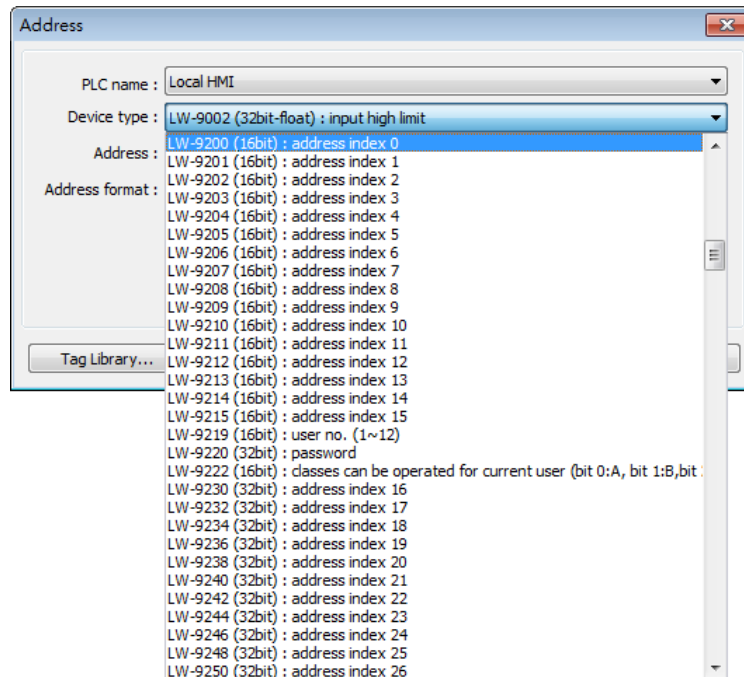
The corresponding address of 16-bit Index Register 0 to 15: LW-9200 (16bit) to LW-9215 (16bit)
The maximum offset range is 65536 words.
The corresponding address of 32-bit Index Register 16 to 31: LW-9230 (32bit) to LW-9260 (32bit)
The maximum offset range is 4294967296 words.
When using [Index register], the address is designated by the following equation:
The constant set in [Address] + the value in the chosen Index Register.

Note

■   Index Registers work for the **Word** registers. For **Bit** registers, adding 1 to the value in the Index Register, the offset is 16 bits.

11.2.   Examples of Index Register

The following explains the way to designate the register while Index Register is used.
If **not** selecting **[Index register]** check box and set address to [LW-10]. The system will directly
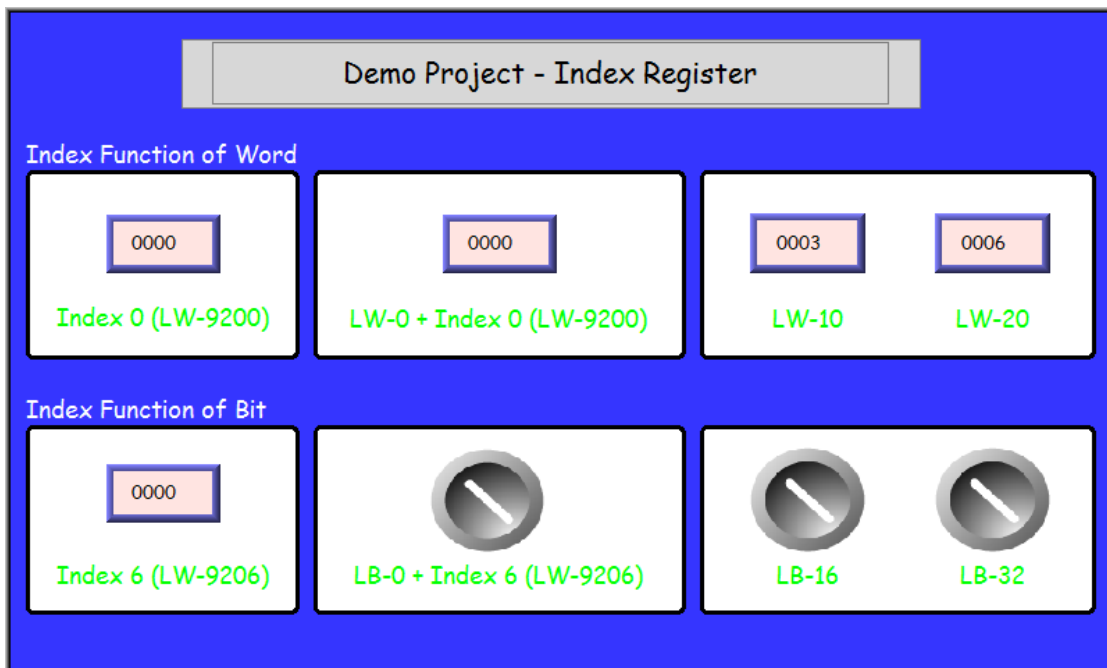
read / write LW-10.
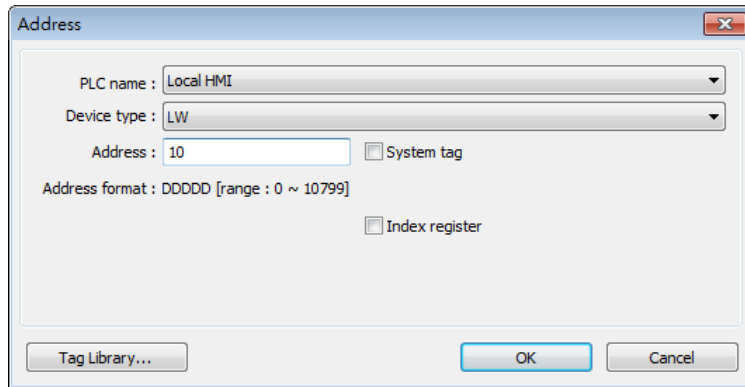
If select **[Index register]** check box and set [Index] to [INDEX 0 (16-bit)], the system will read / write [LW(10 + value in Index Register 0)].

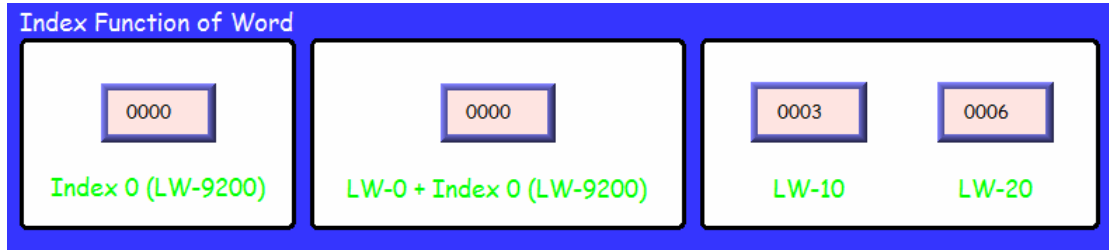If the data in [LW-9200] is "5", the designated address is [LW(10+5)] = [LW-15].
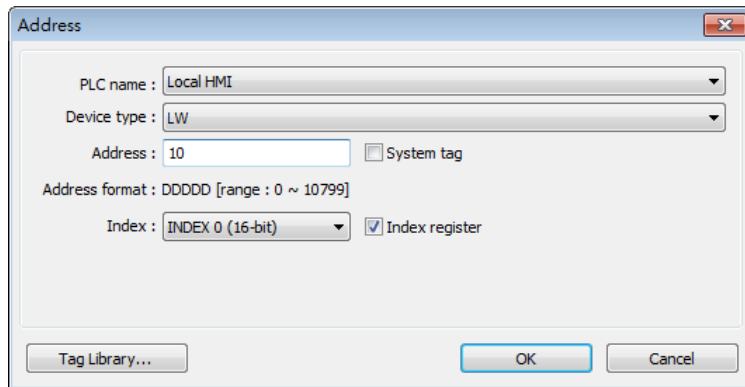
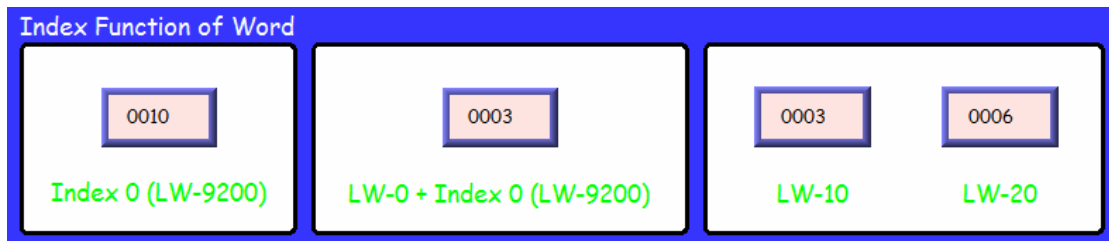Here's a demo project shown as an example:

Example 1

The following shows an example of using a Word register and select [Index register]. If the value in [LW-0] is 0, in [LW-10] is 3, and in [LW-20] is 6, the result is:

If the value in Index 0 (LW-9200) is 0, then [LW0 + Index 0] = read [LW-0].

If the value in Index 0 (LW-9200) is 10, then [LW0 + Index 0] = read [LW-10] = 3.

Example 2

The following shows an example of using a Bit register and select [Index register].

If the state of [LB-16] is ON, and the state of [LB-32] is OFF.

Since 1 Word equals to 16 Bit, adding 1 in Index Register, the offset is 16 bits.

If Index 6 (LW-9206) is set to 1, then switch [LB-0 + Index6] reads LB-16 which is in ON state.

If Index 6 (LW-9206) is set to 2, then switch [LB-0 + Index6] reads LB-32 which is in OFF state.

✎Note

■ When using Index Registers for Bit register, the offset is 16 bits. For example, if the Bit register is LB-0, and set the value in Index Register to 1, then LB-16 will be activated. If set the value in Index Register to 2, then LB-32 will be activated.

⬇ Click the icon to download the demo project. Please confirm your internet connection.
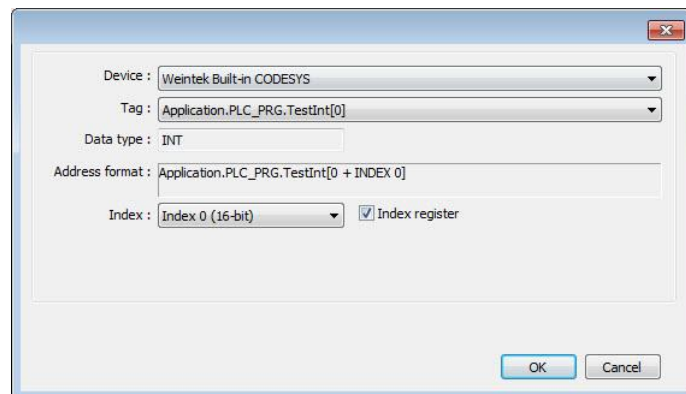
11.3.   Examples of Using Tag-Based PLC and Index Registers

Index Registers only support one-dimensional array variables.

Example 1: INT

If **[Index register]** is enabled and [Index] is set to [Index 0 (16-bit)], the system will read / write "Application.PLC_PRG.TestInt[0 + value in Index Register 0]".
If the data in [LW-9200] is "5", the actual address is "Application.PLC_PRG.TestInt[5]".

Device :	Weintek Built-in CODESYS
Tag :	Application.PLC_PRG.TestInt[0]
Data type :	INT
Address format :	Application.PLC_PRG.TestInt[0 + INDEX 0]
Index :	Index 0 (16-bit) ☑ Index register

OK   Cancel

Example 2: Bit

If **[Index register]** is enabled and [Index] is set to [Index 1 (16-bit)], the system will read / write "Application.PLC_PRG.TestBool[0 + value in Index Register 1]".
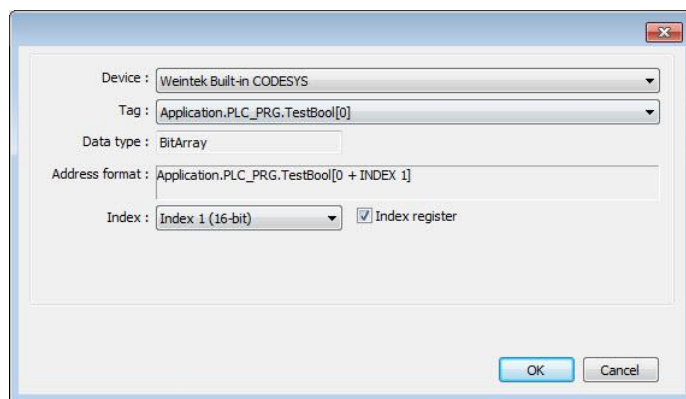If the data in [LW-9201] is "7", the designated address is "Application.PLC_PRG.TestBool[7]".

Note that, unlike its non-tag counterpart, the 16-bit offset is not necessary for Bit array tags.