Product Group: SG2 Programmable Relay
Number: AN-SG2-021

Date Issued: 9/15/2017
Revision: Original

Title: Multiplexer Instruction

Summary: We will define and demonstrate the Multiplexer Instruction.

We will be using the SG2 Client V3.4 in conjunction with Windows 7. Examples will be shown using a Ladder Logic program with the SG2-10HR-A model.

Procedure:
A Multiplexer instruction can be used for providing different output values based on the state of two Input Signals.

1. Using the SG2 Client software, duplicate the program as shown in Figure 1 below.

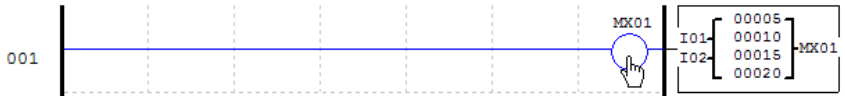


Figure 1

The Multiplexer edit Contact/Coil window, shown in Figure 2, opens when Multiplexer coil ⊖ MX01 is placed in the last column.

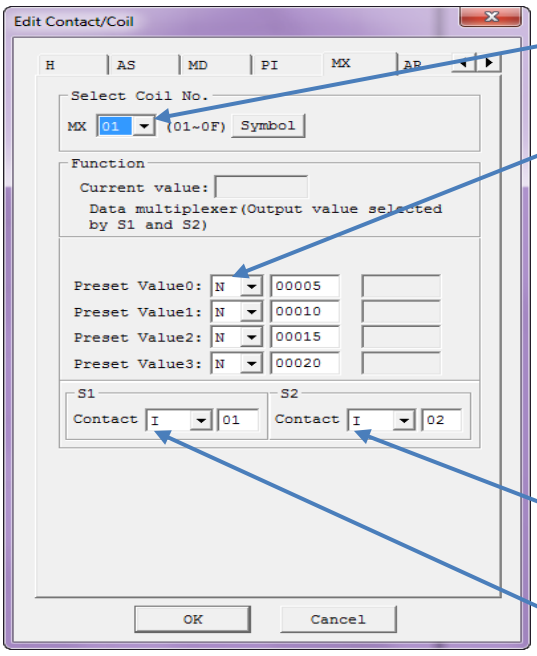


Figure 2

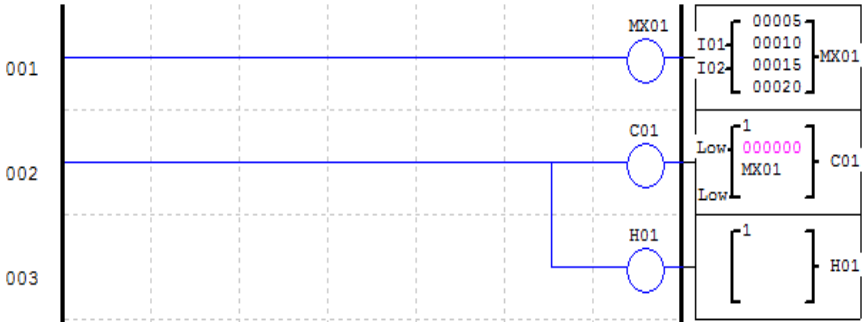
1. Multiplexer Selection:
15 Multiplexer instructions are available.

2. Preset Value 0-3:
Set Value 0: Type N Set to 5 (shown as 00005)
Set Value 1: Type N Set to 10 (shown as 00010)
Set Value 2: Type N Set to 15 (shown as 00015)
Set Value 3: Type N Set to 20 (shown as 00020)
Output information that will be displayed.
13 preset types available including N (Numeric Constant), A (Analog Input) etc.
Range: -32768~32768

3. S2: Selection Bit 2 *(Signal Input 2)*
22 contacts types to selection from

4. S1: Selection Bit 1 *(Signal Input 1)*
22 contact types to select from

The below program shows the numeric output of the MX01 coil being used to set the preset value of the C01 counter and the C01 preset will be displayed on the SG2 HMI screen.



MX01 is set as shown on previous page.

C01: Mode 1
Preset Type: MX01

H01: Mode 1
C01 Preset shown on line 1.

Figure 3

The Multiplexer output is determined by the input signal conditions of S1 and S2, "X" shows the active Signal Input.

S1	S2	Preset Value	Output Value
		0	5
	X	1	10
X		2	15
X	X	3	20

Figure 4

Running this program in the simulator, set to Keypad View, shows how the Input Signal conditions changes the C01 preset value. Figures 5 through 8 show various states.

Neither S1 or S2 is active

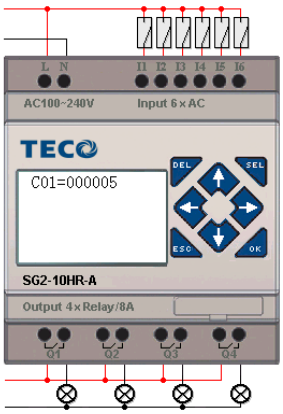


Figure 5

S2 is Active

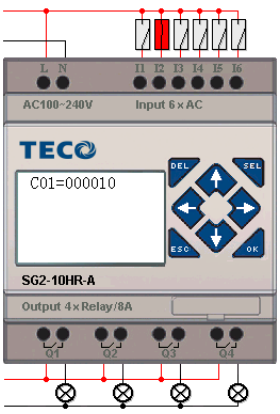


Figure 6

S1 is Active

Figure 7

Both S1 and S2 are Active

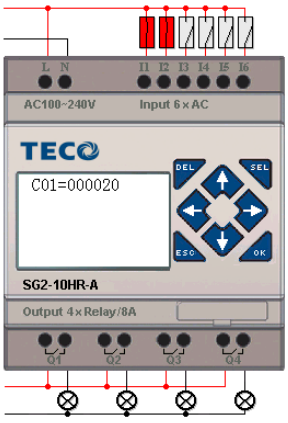


Figure 8