

### About This Application Note

This application note provides information for conversion of 1746sc-CTR4 four channel installation with a replacement using the eight-channel 1746sc-CTR8. When replacing a CTR4 with a CTR8, no wiring changes are required since the first four channels of the CTR8 are identical to the CTR4.

### Replacing the 1746sc-CTR4 with the 1746sc-CTR8

To convert your program from using a 1746sc-CTR4 to the 1746sc-CTR8, there are several items to take into account.

Verify whether the power supply will support the additional load of the CTR8.

You will need to check the supply current output capability of the power supply in the rack and the requirements of all the cards installed in the rack. The CTR8 has a higher current draw than the CTR4.

Rack Power Supply Capacity				
	P1	P2	P4	P4
5 VDC Capacity	2 A	5 A	3.6 A	10 A
24 VDC Capacity	0.46 A	0.96 A	0.87 A	2.88 A

Module Current Requirements		
	CTR4	CTR8
5 VDC Requirement	175 mA	225 mA
24 VDC Requirement	75 mA	125 mA

Please note that the power supply loading calculation in RSLogix500 does not take into account data about "other" modules.

You will have to manually add the loading of the CTR8 and all your other cards in the rack and compare the total to the capability of the power supply attached to the rack.

**Power Supply Loading - (informational only)**

**Rack:**  
☒ 1  
☐ 2  
☐ 3

**Estimated Loading for Rack:**  
 5V Current Load (mA): 500  
 24V Current Load (mA): 175  
 Power Load (W): 6.7

**Power Supply Used:**  
☒ 1746 - P1/P7  
☐ 1746 - P2/P5/P6  
☐ 1746 - P3  
☐ 1746 - P4

**Estimated Margin for Rack:**  
 5V Current (mA): 1500  
 24V Current (mA): 285  
 Power Load (W): 14.3

**Messages:**  
 "Other" card detected - no current load was taken into account for the card(s).

Buttons: OK, Help

Verify the filter jumper settings.

A 15 kHz hardware filter is available by using the onboard jumpers JP2 and JP3. To activate the filter, remove the shunt. JP2 is for Channels 0-3 and JP3 jumper is for Channels 4-7. When replacing a CTR4 with a CTR8, set the Filter jumper JP2 on the CTR8 to match the Filter jumper JP2 that was previously set on the CTR4.

Replace the module in the program.

The CTR4 Module will need to be deleted from the IO Configuration of the PLC, and in that same slot the CTR8 with its module ID Code 10401 will have to be entered. In doing so, the input and output data tables related to the module will be expanded by 16 registers each compared to the register usage required for the CTR4.

**I/O Configuration**

**Racks:**  
 1: 1746-A4 4-Slot Rack  
 2: I/O Rack Not Installed  
 3: I/O Rack Not Installed

Buttons: Read IO Config., PowerSupply....

#	Part #	Description
0	1747-L532C/D	5/03 CPU - 16K Mem. OS302
1	OTHER	I/O Module - ID Code = 10401
2		
3		

Buttons: Adv Config, Help, Hide All Cards

**Current Cards Available**  
 Filter: All IO

Part #	Description
1746-I*8	Any 8pt Discrete Input Module
1746-I*16	Any 16pt Discrete Input Module
1746-I*32	Any 32pt Discrete Input Module
1746-O*8	Any 8pt Discrete Output Module
1746-O*16	Any 16pt Discrete Output Module
1746-O*32	Any 32pt Discrete Output Module
AMCI-153x	AMCI Series 1500 Resolver Module
AMCI-1561	AMCI Series 1561 Resolver Module
1746-BAS-5/01	BASIC Module - 500 - 5/01
1746-BAS-5/02	BASIC Module - M0/M1 capable
1746-BAS-T	BASIC Module - 500 - 5/01
1746-BAS-T	BASIC Module - M0/M1 capable
1747-BSN	Backup Scanner Module
1746-BTM	Barrel Temperature Module
1747-DCM-1/4	Node Adapter Module (1/4 Rack)
1747-DCM-1/2	Node Adapter Module (1/2 Rack)
1747-DCM-3/4	Node Adapter Module (3/4 Rack)
1747-DCM-FULL	Node Adapter Module (Full Rack)
1747-DCM-7	Distributed I/O Scanner 7 I/O Rack