Quick Start

266 MHz Open Controller System Quick Start

(Cat. No. 1747-OCF)

Before you begin

Use this document as a guide to installing and powering-up your open controller system. You should already be familiar with the open controller system components. See the documentation references for detailed information.

Tools that you need

- small Phillips-head screwdriver
- grounding wriststrap

Additional documentation

Installation Instructions ship with each open controller component.
For additional information you may order printed copies of or download the following publications from The Automation Bookstore at *www.theautomationbookstore.com*:

This publication:	Has this publication number:
266MHz Open Controller Release Note	1747-6.16-RN1.1
Open Controller CPU User Manual	1747-6.16
Open Controller API Software User Manual	1747-6.19
Adding an Embedded IDE Drive to 1747-OC Series Open Controllers	1747-IN002A-US-P
Adding System Memory to 1747-OC Series Open Controllers	1747-IN003A-US-P

Handling the open controller system components

ATTENTION: Electrostatic discharge (ESD) might be present whenever you handle the components. ESD can cause internal circuit damage that might not be apparent during installation or initial use. Wear a grounding wriststrap while handling the components.

Take these precautions to guard against ESD damage:

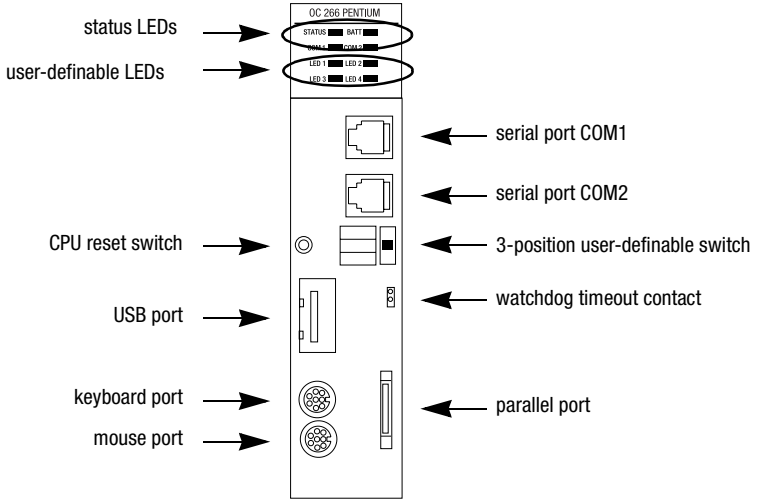
- Before handling the components, wear a grounding wriststrap and touch a grounding object to discharge any built-up static charge.
- Avoid touching connector pins on the components.
- If a component is not in use, store it in the anti-static packaging in which it was shipped.

Introducing the 1747-OCF Open Controller

The 1747-OCF open controller features a 266 MHz Pentium® class CPU and 512K battery-backed SRAM. You need to add your own:

- System memory (SO-DIMM SDRAM)
- IDE drive
  Any of the following can be used as an IDE drive:
  - CompactFlash™
  - IBM® microdrive
  - IDE-compatible ATA memory device (requires an open controller IDE interface module, 1747-OCIDE1)
  - 2.5” IDE hard drive (requires an open controller IDE interface module, 1747-OCIDE25)
  - Bootable PC Card in an open controller PCMCIA module (DOS applications)
- Operating system (e.g., MS-DOS®, Microsoft® Windows®, or RTOS)
- Application software

Figure 1
1747-OCF module (front)



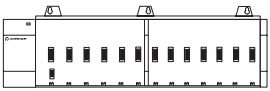
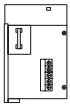
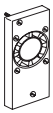
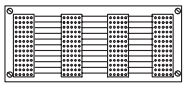
What ships with an open controller CPU module:

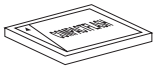
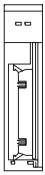
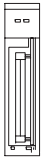
This component ships with the open controller CPU module:	
watchdog contact kit (4 pins and a 2-pin connector)	
LED mask	
LED cover (the cover is installed upside-down on the CPU so you can remove it to install your own LED mask)	
Diagnostic/utility disk	

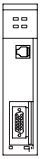
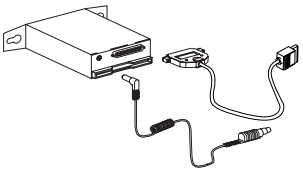
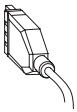
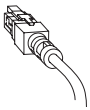
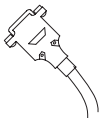
Available open controller system components

Start with an open controller CPU and add these components, some of which are optional.

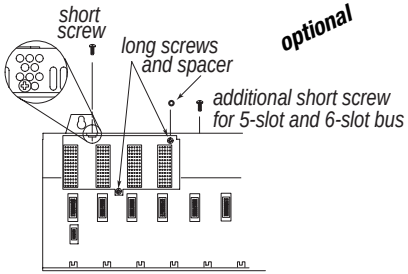
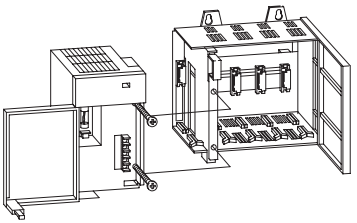
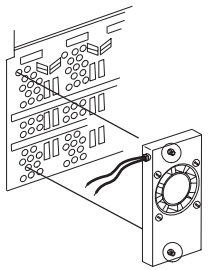
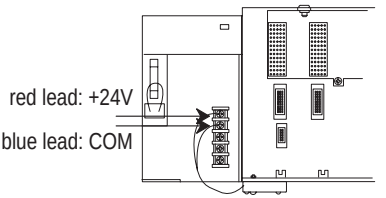
Important: You must add your own system memory, IDE drive, operating system, and application software to the open controller CPU.

System component:	Description:
chassis 	4 slots 1746-A4 7 slots 1746-A7 10 slots 1746-A10 13 slots 1746-A13 You need a series B or newer chassis if you plan to use a PCI expansion bus.
power supply 	1746-P2, -P3, -P4, or -P5
chassis fan ***optional*** 	1747-OCFAN1 Adding a chassis fan will increase the maximum temperature rating from 50°C to 60°C.
PCI expansion bus ***optional*** 	2 slots 1747-OCPCI2 3 slots 1747-OCPCI3 4 slots 1747-OCPCI4 5 slots 1747-OCPCI5 6 slots 1747-OCPCI6 Only required if you install any optional open controller modules (see below). The 1747-OCPCI5, -OCPCI6 only fit in the 7-slot and 13-slot 1746 chassis.
system memory SO-DIMM 	User-supplied; industry-standard 144-pin SO-DIMM SDRAM, 32-128 Mbytes. Available from: • Crucial Technology (www.crucial.com) P/N: CT16MxxS4Wzz; xx=capacity, zz=access time See specifications on page 9

System component:		Description:
CompactFlash mass storage ***optional***		User-supplied; type I or type II. 4-192 Mbytes. Available from: • SanDisk (www.sandisk.com) P/N: SDCFB-x-mmm; x= capacity (8-192 MBytes) • M-Systems (www.m-sys.com) P/N: CF-ATA-x-t-PX; x= capacity (4-48 MBytes), t=temp. • Centennial Technologies (www.cent-tech.com) P/N: CF-xM-H6; x=capacity (8-190 MBytes)
IBM Microdrive ***optional***		User-supplied; type II, 1" IBM microdrive, 170 or 340 MB. Available from: • IBM (www.ibm.com/harddrive or www.drive@us.ibm.com) P/N: DMDM-10xxx; xxx=capacity (170 or 340 MBytes)
IDE interface module ***optional***		Carrier module for user-supplied: internally-mounted 2.5" IDE drive 1747-OCIDE25 PC Card IDE-compatible ATA memory devices (flash or rotating media) 1747-OCIDE1 **Important:** The specifications of commercially-obtained PC Cards or 2.5" drives require you to derate the overall system shock, vibration, temperature, and humidity specifications to that of the drive.
PCMCIA interface module ***optional***		alone 1747-OCPCM1 with SystemSoft™ card and socket services 1747-OCPCM2 **Important:** The specifications of commercially-obtained PC Cards might require you to derate the overall system specifications.
A-B DH+/DH-485/RIO communication interface module *(Rev. D01 or greater only)* ***optional***		1 channel 1747-OCKTX 2 channels 1747-OCKTXD

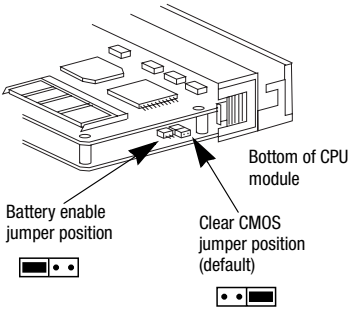
System component:		Description:
video interface module ***optional***		1747-OCVGA1
video and Ethernet interface module ***optional***		1747-OCVGAE
Ethernet interface module ***optional***		1747-OCENET
parallel port external floppy drive ***optional***		Available from: • Automation Value, Inc. (www.avllc.com) P/N: OC-FDD
parallel port adapter cable ***optional***		1747-OCP252
serial port adapter cables (two cables) ***optional***		1747-OCS92
serial port boot cable ***optional***		1747-OCSBC 9-pin, null modem serial cable

1 Prepare the chassis

Task:	Reference:
Install the PCI expansion bus (1747-OCPCIx)  *1746 chassis, series B (or newer)*	PCI Expansion Bus Installation Instructions publication 1747-5.16 **Steps** 1. Remove the screw(s) from the 1746 chassis backplane that line up with the holes on the bus 2. Attach spacer, if required 3. Attach the PCI expansion bus to the 1746 backplane with 3 screws (2 long, 1 short) *If you use the open controller CPU module stand-alone in the chassis, you don't need a PCI expansion bus. Before you install any open controller option modules, you must install the PCI expansion bus.*
Ground the chassis and install the power supply (chassis 1746-A4, -A7, -A10, -A13) (power supply 1746-P2, -P3, -P4, -P5) 	SLC 500 Power Supplies Installation Instructions publication 1746-5.1 **Steps** 1. Slide the power supply into the card guide on the left side of the chassis 2. Secure the power supply with 2 screws 3. Place the power supply jumper to match the input voltage 4. Connect line power to the power supply 5. Ground the chassis
Install the chassis fan (1747-OCFAN1) optional 	Chassis Fan Installation Instructions publication 1747-5.23 **Steps** 1. Snap the fan onto the bottom of the 1746 I/O chassis, as far left as possible, underneath the CPU module 2. Connect the fan to the power supply 

2 Prepare the open controller CPU module

Task:	Reference:
Enable the battery	Open Controller User Manual publication 1746-6.16

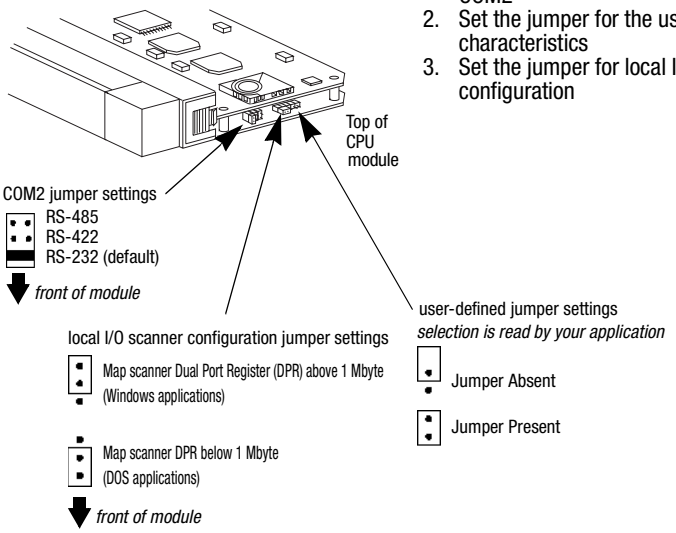


Steps

1. Move the jumper from the Clear CMOS position (default) to the Battery Enable position

Important: *The module must be powered for approximately two hours before the battery becomes fully charged.*

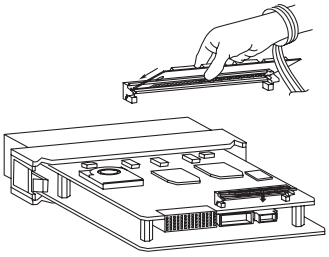
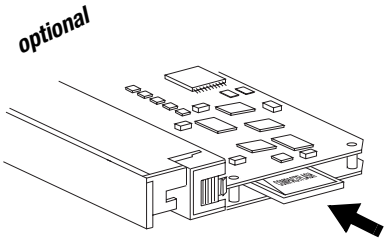
Set the jumpers	Open Controller User Manual publication 1746-6.16



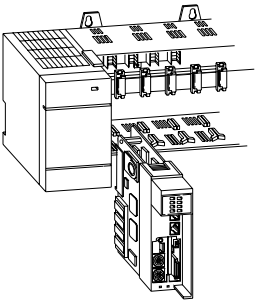
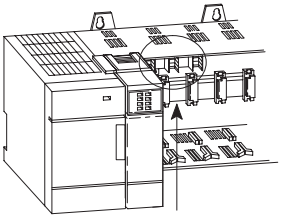
Steps

1. Set the jumper for the serial protocol for COM2
2. Set the jumper for the user-defined characteristics
3. Set the jumper for local I/O scanner configuration

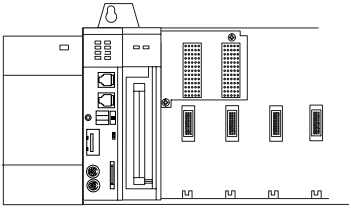
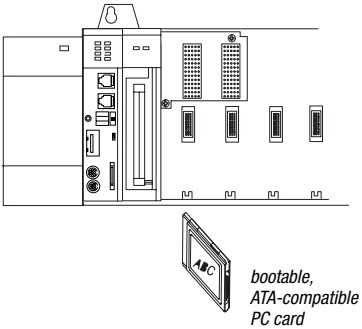
3 Install memory in the open controller CPU module

Task:	Reference:
Install system memory 	Open Controller CPU Module User Manual publication 1747-6.16 Adding System Memory to 1747-OC Series Open Controllers publication 1747-IN003A-US-P **Steps** 1. Position the SDRAM on the CPU 2. Snap the SDRAM tightly into place *Commercially-available SDRAM must meet the following specifications:* • *16Mx64* • *unbuffered* • *144 pin SO-DIMM* • *SDRAM, 66 MHz or PC100* • *non-parity* • *8 or 10 ns access time* • *3.3 volt*
Install CompactFlash  Bottom of CPU module	Open Controller CPU Module User Manual publication 1747-6.16 Adding an Embedded IDE Drive to 1747-OC Series Open Controllers publication 1747-IN002A-US-P **Steps** 1. Install CompactFlash into the CompactFlash socket on the CPU module *Note: You can substitute a 1" IBM microdrive in place of the CompactFlash.* *You might want to load software before installing the CompactFlash. See the Open Controller User Manual for more information.*

4 Install the CPU modules and any optional modules

Task:	Reference:
Install the open controller CPU module (1747-OCF) 	Open Controller CPU Module User Manual publication 1747-6.16 **Steps** 1. Slide the CPU module in the first slot (far left) of a 1746 chassis
Install any optional modules • video interface (1747-OCVGA1) • video and Ethernet interface (1747-OCVGAE) • Ethernet interface (1747-OCENET) • PCMCIA interface (1747-OCPCM1, -OCPCM2) • IDE interface (1747-OCIDE1, -OCIDE25) • A-B communication interface (1747-OCKTX, -OCKTXD)  *Install all option modules in slots on the PCI expansion bus.* ***IMPORTANT:*** *Install 1747-OCVGAE and 1747-OCENET in PCI slots 1, 2, or 3 only. See module Installation Instructions.*	Video Interface Module Installation Instructions publication 1747-5.15 Video and Ethernet Interface Module Installation Instructions publication 1747-5.37 Ethernet Interface Module Installation Instructions publication 1747-5.40 PCMCIA Interface Module Installation Instructions publication 1747-5.13 IDE Interface Module Installation Instructions publication 1747-5.29 or 1747-5.30 A-B Communication Interface Module Installation Instructions publication 1747-5.14 **Steps** 1. Prepare the module 2. Slide the module in any PCI slot, other than the first slot (slot 0 - far left) 3. Make any necessary connections to the option module *You must have already installed a PCI expansion bus with enough slots for the number of option modules you want to install.*

5 Power up the open controller system

Choose a method:	Reference:
Boot from a bootable CompactFlash	Open Controller CPU Module User Manual publication 1747-6.16
	*The operating system is already loaded on the CompactFlash*
OR **Use a bootable PC Card in the PCMCIA interface module**	Open Controller CPU Module User Manual publication 1747-6.16
 *bootable, ATA-compatible PC card*	*See the Open Controller CPU Module User Manual for required BIOS settings*

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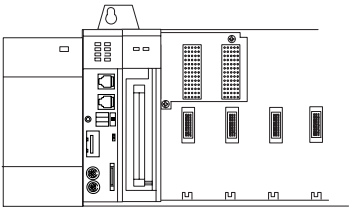
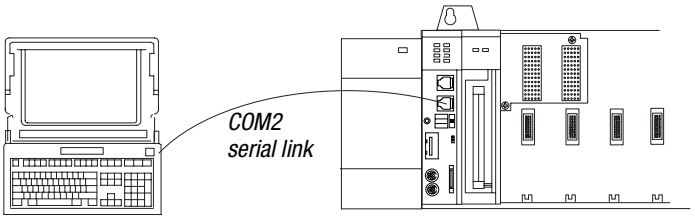
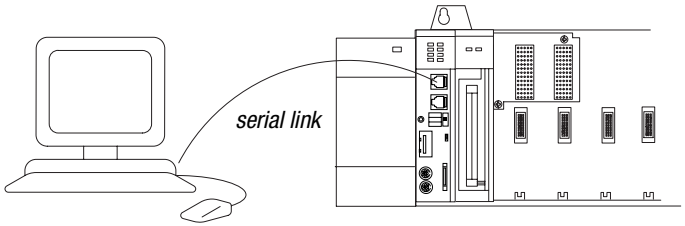
5 Power up the open controller system

Choose a method:	Reference:
OR **Use a bootable, IDE-compatible ATA memory device or 2.5" IDE hard drive**	Open Controller CPU Module User Manual publication 1747-6.16 IDE Interface Module Installation Instructions publications 1747-5.29 and 1747-5.30
	*See the Open Controller CPU Module User Manual or the IDE Interface Module Installation Instructions for required BIOS settings*
OR **Use a bootable floppy disk in a remote PC connected through COM2**	Open Controller CPU Module User Manual publication 1747-6.16
	*See the Open Controller CPU Module User Manual for required BIOS settings*
Run HOSTSVR on the remote PC (HOSTSVR comes on the open controller diagnostic utility disk)	

6 Load software on the open controller system

Choose a method:	Reference:
Use DOS INTERLNK through COM1 or COM2	Open Controller CPU Module User Manual publication 1747-6.16 DOS documentation

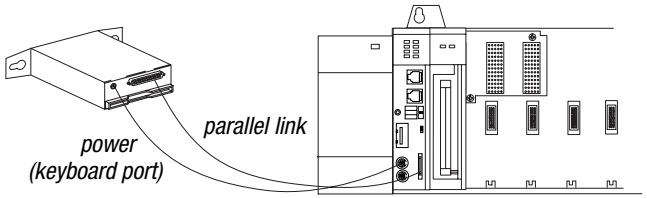


Run INTERSVR on the remote PC

The INTERLNK device statement must be in CONFIG.SYS of both the remote PC and the open controller

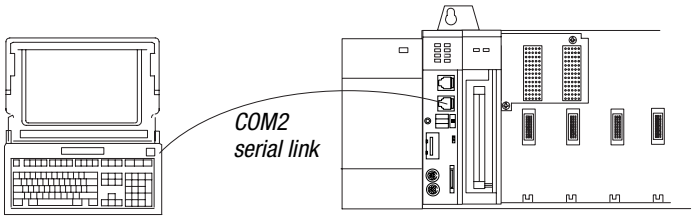
OR

Copy from a parallel port floppy drive	Open Controller CPU Module User Manual publication 1747-6.16 Floppy drive documentation



OR

Copy from a floppy disk in a remote PC through COM2	Open Controller CPU Module User Manual publication 1747-6.16



Run HOSTSVR on the remote PC

The open controller will only have access to drive A: on the remote PC

See the Open Controller CPU Module User Manual for required BIOS settings

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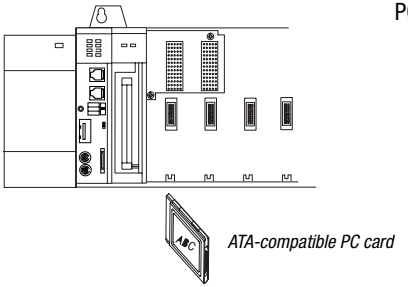
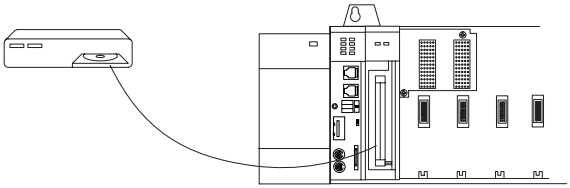
6 Load software on the open controller system

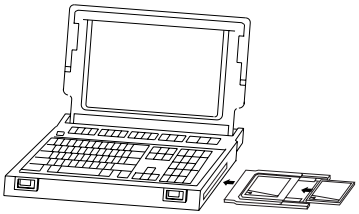
Choose a method:	Reference:
OR **Copy from a PC Card in the PCMCIA interface module**	Open Controller CPU Module User Manual publication 1747-6.16 PC Card documentation



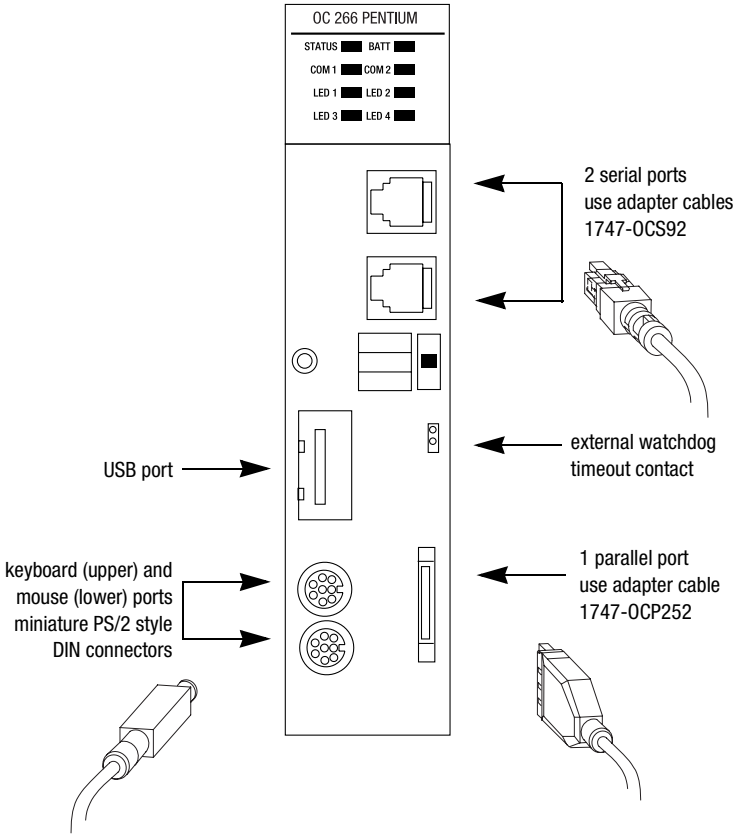
OR **Copy from an external IDE device connected to an IDE interface module**	Open Controller CPU Module User Manual publication 1747-6.16 IDE Interface Module Installation Instructions publication 1747-5.29 and 1747-5.30 Drive documentation



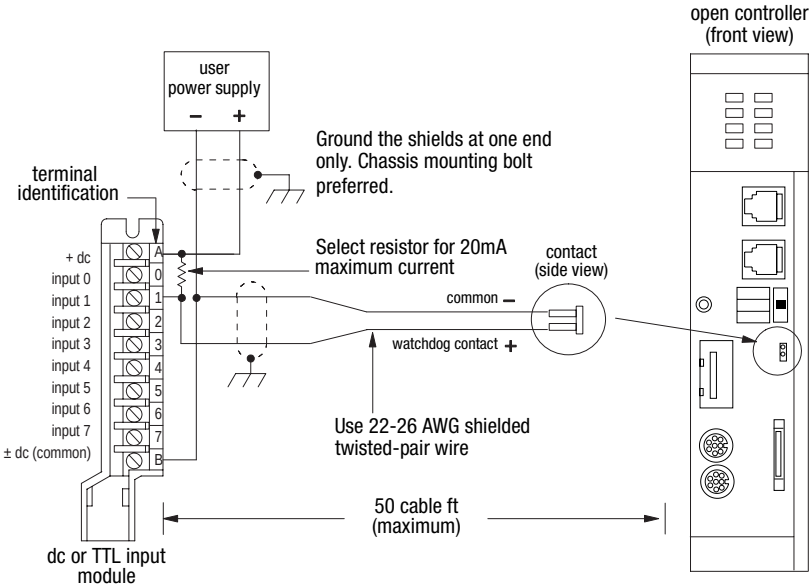
OR **Install the CompactFlash in PCMCIA slot of a notebook PC**	CompactFlash documentation **Steps** 1. Insert CompactFlash card into PCMCIA Type II adapter card 2. Insert adapter into PCMCIA slot of notebook computer PCMCIA Type II adapter card available from SanDisk (www.sandisk.com)



7 Make connections to the open controller CPU module



8 Connect the external watchdog timeout contact



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