



Installation Instructions

Compact I/O Cable for DriveLogix™ 5730 Controller

(Cat. No. 20D-DL2-CR3, 20D-DL2-CL3)

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For More Information

For	Refer to this Document	Pub. No.
Information on how to install and use your 1769-ADN Adapter	Compact™ I/O 1769-ADN DeviceNet Adapter Installation Instructions	1769-IN001
Installation guides for 1769 Discrete Compact I/O module 1769-IA8I	Compact 1769-IA8I Individually Isolated 120V ac Input Module	1769-IN012
Installation guides for 1769 Discrete Compact I/O module 1769-IA16	Compact 1769-IA16 120V ac Input Module Installation Instructions	1769-IN006
Installation guides for 1769 Discrete Compact I/O module 1769-OW8	Compact 1769-OW8 AC/DC Relay Output Module Installation Instructions	1769-IN051
Installation guides for 1769 Discrete Compact I/O module 1769-OW8I	Compact 1769-OW8I Individually Isolated AC/DC Relay Output Module	1769-IN053
Installation guides for 1769 Discrete Compact I/O module 1769-IQ16	Compact 1769-IQ16 24V dc Sink/Source Input Module Installation Instructions	1769-IN007
Installation guides for 1769 Discrete Compact I/O module 1769-OB16	Compact 1769-OB16 Solid State 24V dc Source Output Module Installation Instructions	1769-IN054
Installation guides for 1769 Discrete Compact I/O module 1769-OB16P	Compact 1769-OB16P Solid State 24V dc Source Output Module Installation Instructions	1769-IN052
Installation guides for 1769 Discrete Compact I/O module 1769-OA8	Compact 1769-OA8 100 to 240V ac Solid State Output Module Installation Instructions	1769-IN055
Installation guides for 1769 Discrete Compact I/O module 1769-OV16	Compact 1769-OV16 Solid State 24V dc Sink Output Module Installation Instructions	1769-IN056
Installation guides for 1769 Discrete Compact I/O module 1769-IQ6XOW4	Compact 1769-IQ6XOW4 24V dc Sink/Source Input AC/DC Relay Output Module Installation Instructions	1769-IN050
Installation guides for 1769 Discrete Compact I/O module 1769-IM12	Compact 1769-IM12 240V ac Input Module Installation Instructions	1769-IN011
Installation guides for 1769 Analog Compact I/O module 1769-IF4	Compact 1769-IF4 Analog Input Module Installation Instructions	1769-IN048
Installation guides for 1769 Analog Compact I/O module 1769-OF2	Compact 1769-OF2 Analog Output Module Installation Instructions	1769-IN049
Installation guides for 1769 Analog Compact I/O module 1769-IF4XOF2 * For Series B DeviceNet adapters only	Compact 1769-IF4XOF2 Combination Analog Module Installation Instructions	1769-IN057
Information on how to install and use your 1769-IF4XOF2 module	Compact 1769-IF4XOF2 8-Bit Low-Resolution Analog I/O Combination Module User Manual	1769-UM008
Installation guides for 1769 High Speed Counter module 1769-HSC * For Series B DeviceNet adapters only	Compact 1769-HSC High Speed Counter Module Installation Instructions	1769-IN030
Installation guides for 1769 Thermocouple/mV module 1769-IT6	Compact 1769-IT6 Thermocouple/mV Input Module Installation Instructions	1769-IN026

For	Refer to this Document	Pub. No.
Information on how to install and use your 1769-IT6 module	Compact 1769-IT6 Thermocouple/mV Input Module User Manual	1769-UM004
Installation guides for 1769 RTD/resistance module 1769-IR6	Compact 1769-IR6 RTD/Resistance Input Module Installation Instructions	1769-IN027
Information on how to install and use your 1769-IR6 module	Compact 1769-IR6 RTD/Resistance Input Module User Manual	1769-UM005
Installation guides for 1769 power supplies	Compact 1769 Expansion I/O Power Supplies Installation Instructions	1769-IN028
Installation guides for 1769 cables	Compact I/O Communication Bus Expansion Cables Installation Instructions	1769-IN014
Installation guides for 1769 end caps and terminators	Compact I/O End Caps/Terminators Installation Instructions	1769-IN015

If you would like a manual, you can:

- download a free electronic version from the internet:
www.rockwellautomation.com/literature
- purchase a printed manual by:
 - contacting your local distributor or Rockwell Automation representative

Hazardous Location Considerations

This product must be installed in an enclosure. This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D or non-hazardous locations only. The following ATTENTION statement applies to use in hazardous locations.

ATTENTION



EXPLOSION HAZARD

- Substitution of components may impair suitability for Class I, Division 2.
- Do not replace components or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
- Do not connect or disconnect components unless power has been switched off or the area is known to be non-hazardous.
- All wiring must comply with N.E.C. article 501-4(b).

Overview

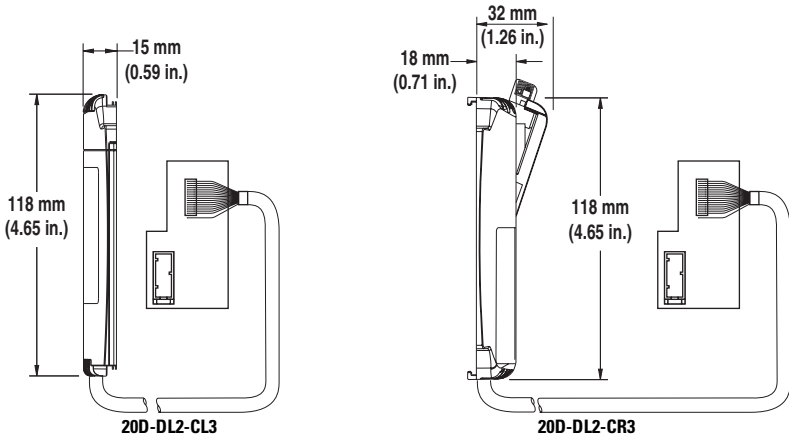
The 20D-DL2-CR3 and 20D-DI2-CL3 cables allow you to connect a DriveLogix5730 Phase II controller to a bank of Compact I/O. A maximum of two banks of I/O can be used a DriveLogix5730 Phase II controller. Each bank requires its own power supply. See System Configurations on page 5.

Cable Types and Length

Cables for Connecting Controllers to I/O Banks

Catalog Number	Cable Type	Length ⁽¹⁾
20D-DL2-CL3	Controller-to-left bank expansion	3.28 ft. (1 m)
20D-DL2-CR3	Controller-to-right bank expansion	3.28 ft. (1 m)

⁽¹⁾ Approximate cable length is measured from end-to-end of the cable only.



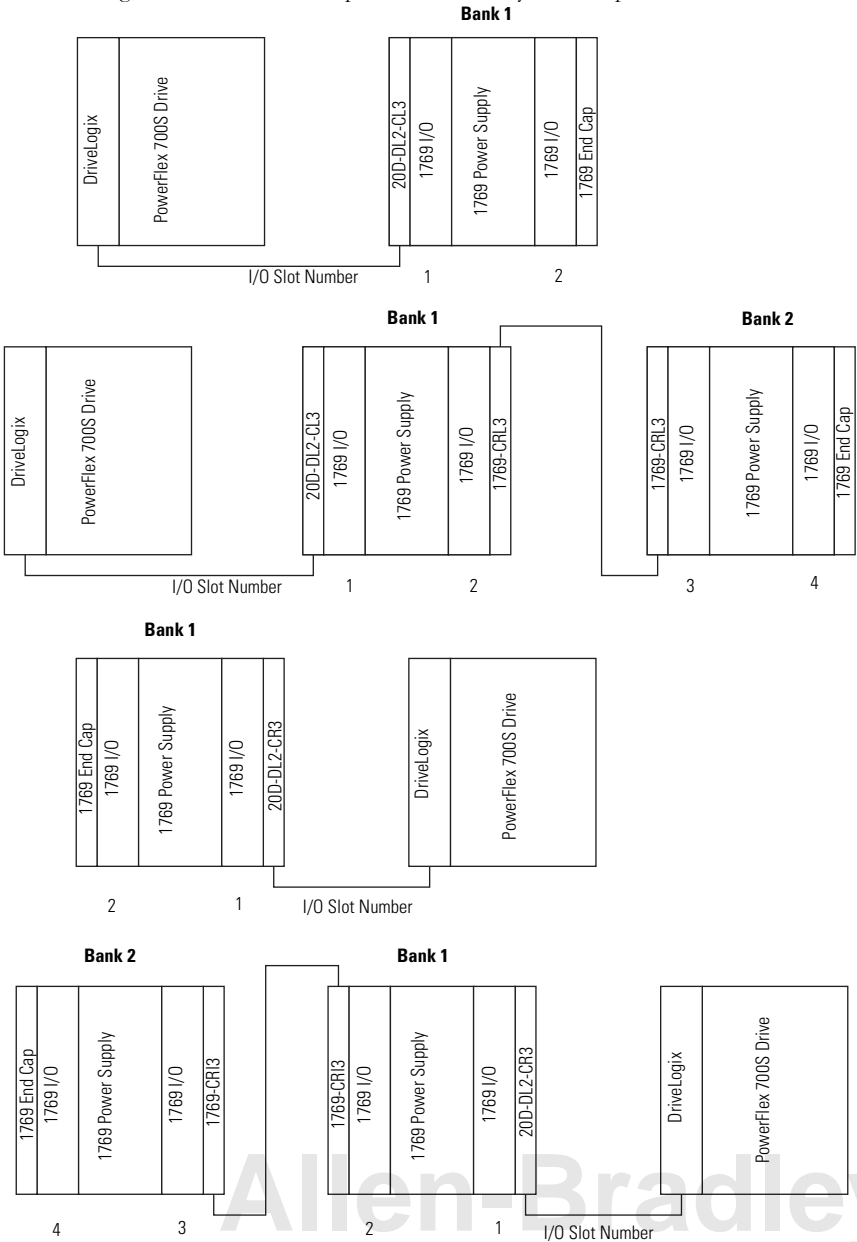
Cables for Connecting I/O Banks to I/O Banks

Catalog Number	Cable Type	Length ⁽¹⁾
1769-CLL1	Left bank-to-left bank expansion	1 ft. (305 mm)
1769-CLL3	Left bank-to-left bank expansion	3.28 ft. (1 m)
1769-CRR1	Right bank-to-right bank expansion	1 ft. (305 mm)
1769-CRR3	Right bank-to-right bank expansion	3.28 ft. (1 m)
1769-CRL1	Right bank-to-left bank expansion	1 ft. (305 mm)
1769-CRL3	Right bank-to-left bank expansion	3.28 ft. (1 m)

⁽¹⁾ Approximate cable length is measured from end-to-end of the cable only.

System Configurations

The following illustration show examples of four valid system setups.



Installation

Remove Power

ATTENTION



To avoid an electric shock hazard, verify that the voltage on the bus capacitors has discharged before performing any work on the drive. Measure the DC bus voltage at the +DC & –DC terminals of the Power Terminal Block. The voltage must be zero.

HOT surfaces can cause severe burns. Do not touch the heatsink surface during operation of the drive. After disconnecting power allow time for cooling.

Remove power before making or breaking cable connections. When you remove or insert a cable connector with power applied, an electrical arc may occur. An electrical arc can cause personal injury or property damage by:

- sending an erroneous signal to your system's field devices, causing unintended machine motion
- causing an explosion in a hazardous environment

Electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance.

Electrostatic discharge can damage integrated circuits or semiconductors if you touch bus connector pins or the terminal block. Follow these guidelines when handling 1769 Compact I/O components:

- Touch a grounded object to discharge static potential.
 - Wear an approved wrist-strap grounding device.
 - Do not touch the bus connector or connector pins.
 - Do not touch circuit components inside the module.
 - If available, use a static-safe workstation.
 - When not in use, keep cables in static shield packaging.
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What You Need to Do

- Step 1: Remove power from drive and Compact I/O
- Step 2: Remove the control cassette from the drive and the cover from the control cassette
- Step 3: Install the controller end of the cable
- Step 4: Replace the cover and control cassette
- Step 5: Connect the Compact I/O end of the cable

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Step 1: Removing Power from Drive and Compact I/O

ATTENTION

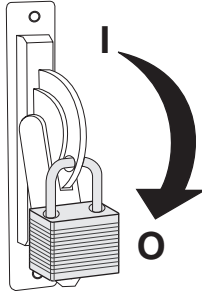
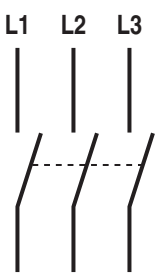


To avoid an electric shock hazard, verify that the voltage on the bus capacitors has discharged before performing any work on the drive. Measure the DC bus voltage at the +DC & -DC terminals of the Power Terminal Block. The voltage must be zero.

Remove power before making or breaking cable connections. When you remove or insert a cable connector with power applied, an electrical arc may occur. An electrical arc can cause personal injury or property damage by:

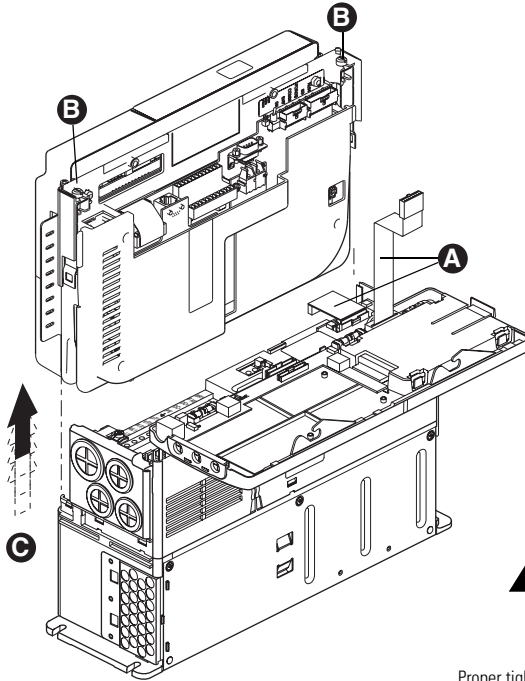
- sending an erroneous signal to your system's field devices, causing unintended machine motion
- causing an explosion in a hazardous environment

Electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance.



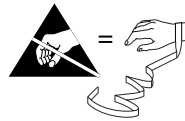
Task	Description
A	Turn off and lock out input power. Wait five minutes.
B	Verify that there is no voltage at the drive's input power terminals.
C	Measure the DC bus voltage at the +DC & -DC terminals on the Power Terminal Block. The voltage must be zero.

Step 2: Removing the Control Cassette from the Drive and the Covers from the Cassette



Removing the Cassette

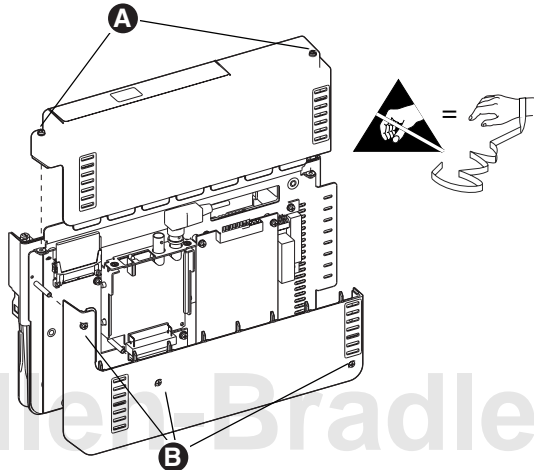
Task	Description
A	Open the door of the power structure and disconnect the cables that connect to the main board
B	Loosen screws on face of cassette
C	Remove the cassette



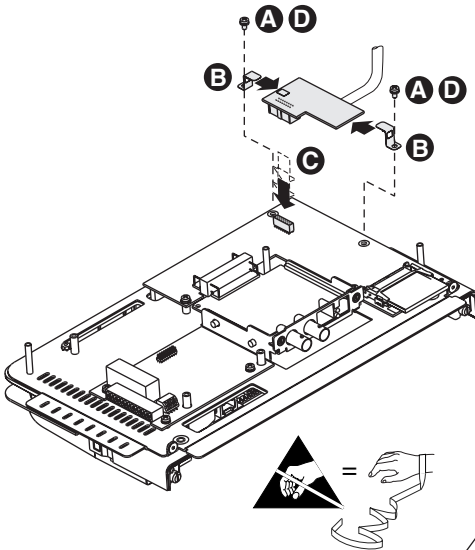
Proper tightening torque for reassembly is 6 lb.-in.

Removing the Side Covers

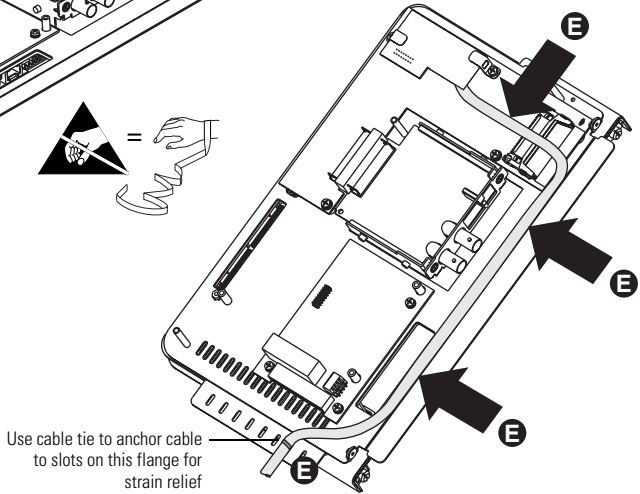
Task	Description
A	Loosen screws on face of front cover and remove the cover
B	Loosen screws on side of rear cover and remove the cover



Step 3: Installing the Controller End of the Cable



Task	Description
A	Remove screws
B	Install clips on controller end of cable
C	Plug controller end of cable into mating connector on the Logix Expansion Board
D	Install and tighten screws (7-10 lb.-in.)
E	Route and secure cable



Step 4: Replacing the Cover and Control Cassette

The procedure for replacing the cover and control cassette is the reverse of removing these components. Refer to Step 2: Removing the Control Cassette from the Drive and the Covers from the Cassette on page 9.

Step 5: Installing the Compact I/O End of the Cable

ATTENTION

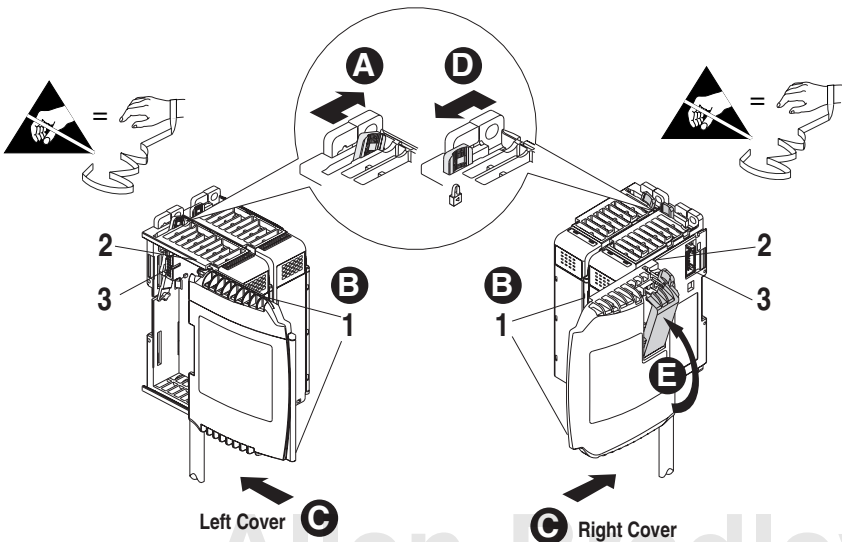


When energized bus connections break in hazardous environments, resulting sparks can cause explosions.

Risk of personal injury and/or equipment damage exists.

Securely lock the bus connectors (tasks D and E below) to avoid this hazard.

Task	Description
A	Unlock the Bus Lever on the I/O module accepting the cable cover by pushing the lever back and then right
B	Align both of the cable cover's tongues (1) with the grooves (2) on the side of the I/O module
C	Slide the cable cover back onto the module until the bus connectors (3) are aligned
D	Lock the Bus Lever on the I/O module by pushing the lever back and then left until locked
E	On a right-hand cable cover, lock the Bus Lever by pushing the lever back to the left until locked



TIP

Each I/O bank requires its own power supply. The 1769 cables extend the 1769 communication bus, but do not extend bus power.

**Specifications**

Approximate Shipping Weight (with carton)	3-foot cables: 350 g (0.77lbs.)
Storage Temperature	-40°C to +85°C (-40°F to +185°F)
Operating Temperature	0°C to +60°C (32°F to +140°F)
Operating Humidity	5% to 95% non-condensing
Operating Altitude	2000 meters (6561 feet)
Vibration	Operating: 10 to 500 Hz, 5G, 0.030 inches maximum peak-to-peak Relay Operation: 2G
Shock	Operating: 30G panel mounted (20G DIN rail mounted) Relay Operation: 7.5G panel mounted (5G DIN rail mounted) Non-Operating: 40G panel mounted (30G DIN rail mounted)
Agency Certification	C-UL certified (under CSA C22.2 No. 142) UL 508 listed CE compliant for all applicable directives
Hazardous Environment Class	Class I, Division 2, Hazardous Location, Groups A, B, C, D (UL 1604, C-UL under CSA C22.2 No. 213)



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Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

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