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Allen-Bradley

Allen-Bradley I/O Modules

1732, 1734, 1734D, 1738, 1746, 1747, 1756, 1761, 1762, 1764, 1769, 1771, 1790, 1791, 1791D, 1791P, 1791R, 1792D, 1794, 1797, 1798, 1799

Wiring Diagrams

Rockwell Automation

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Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. *Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls* (Publication SGI-1.1 available from your local Rockwell Automation sales office or online at http://www.literature.rockwellautomation.com) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

WARNING 	Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.
ATTENTION 	Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard and recognize the consequences.
SHOCK HAZARD 	Labels may be located on or inside the drive to alert people that dangerous voltage may be present.
BURN HAZARD 	Labels may be located on or inside the drive to alert people that surfaces may be dangerous temperatures.

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Introduction

The purpose for showing these connection diagrams here is to illustrate the following attributes of each I/O module, I/O block, or fixed I/O controller:

- the number of inputs and/or outputs
- whether there is a single common for all I/O, a common for a set of I/O separate from other sets of I/O, or a signal return for each I/O circuit so that each I/O circuit is isolated from all others
- whether an output is a current source or a current sink
- whether an input is a source load or a sink load

To fit them into this concise format, these diagrams are intentionally simplified to the point that they do not show the type of cables, twisted pairs, cable shields or the grounding of cable shields. We make an exception where the cable shield must be connected at an I/O terminal.

For those input modules or blocks that can tolerate the leakage current of proximity sensors, we usually show a proximity sensor at one input and hard contacts at the others for ease of illustration.

IMPORTANT

Many of the catalog numbers included in this publication have specific wiring guidelines and recommendations that are listed in the product's technical documentation (e.g. installation instructions or user manuals) but not here because the purpose of this publication is to show connection diagrams and basic information required to wire each I/O module.

For a full description of how to use each of the catalog numbers listed in this publication, see the individual product's technical documentation.

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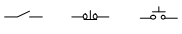
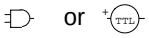
Abbreviations

In these diagrams we used the following abbreviations:

no	normally open (contact outputs)
nc	normally closed (contact outputs)
n.c.	no connection (do not connect to this terminal)

Symbols

In these diagrams we used the following symbols:

ac power source	
ac/dc power source	
dc power source	
output load	
current-signal analog sensor	
voltage-signal analog sensor	
RTD	
thermocouple	
3-wire proximity sensor	
4-wire proximity sensor	
hard-contact switching devices	
TTL switching device	

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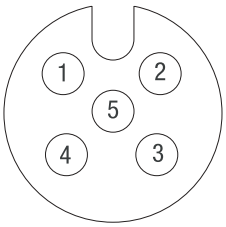
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1732 ArmorBlock I/O

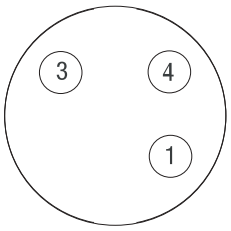
1732D-8CFGM12



Self-configuring Connector
(view into connector)

Pin 1 Sensor Source Voltage
Pin 2 Input or Output B
Pin 3 Return
Pin 4 Input or Output A
Pin 5 Not Used

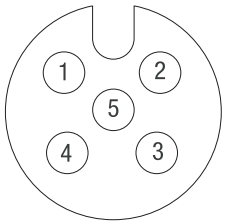
1732D-8CFGM8



Self-configuring Connector
(view into connector)

Pin 1 Sensor Source Voltage
Pin 3 Return
Pin 4 Input or Output

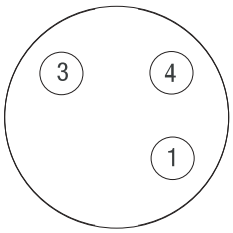
1732D-IB8M12



Input Micro-Connector
(view into connector)

Pin 1 Sensor Source Voltage
Pin 2 Input B
Pin 3 Return
Pin 4 Input A
Pin 5 Not used

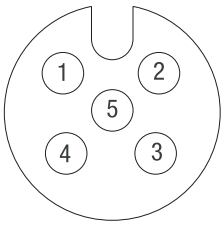
1732D-IB8M8



Input Pico-Connector
(view into connector)

Pin 1 Sensor Source Voltage
Pin 3 Return
Pin 4 Input

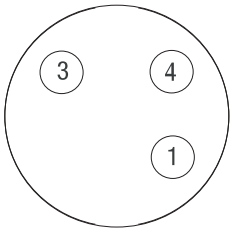
1732D-OB8EM12



Output Micro-Connector
(view into connector)

Pin 1 Not Used
Pin 2 Output B
Pin 3 Return
Pin 4 Output A
Pin 5 Not Used

1732D-OB8EM8

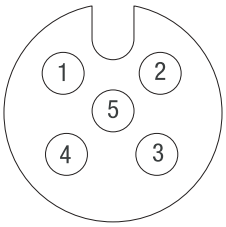


Output Pico-Connector
(view into connector)

Pin 1 Not Used
Pin 3 Return
Pin 4 Output

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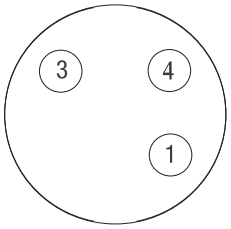
1732P-8CFGM12



Self-configuring Connector
(view into connector)

Pin 1 Sensor Source Voltage
Pin 2 Input or Output B
Pin 3 Return
Pin 4 Input or Output A
Pin 5 Not Used

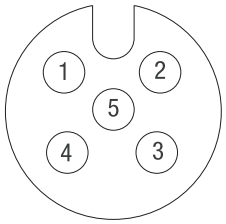
1732P-8CFGM8



Self-configuring Connector
(view into connector)

Pin 1 Sensor Source Voltage
Pin 3 Return
Pin 4 Input or Output

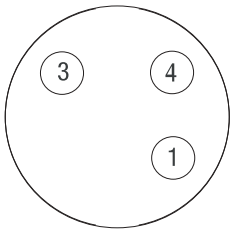
1732P-IB8M12



Input Micro-Connector
(view into connector)

Pin 1 Sensor Source Voltage
Pin 2 Input B
Pin 3 Return
Pin 4 Input A
Pin 5 Not used

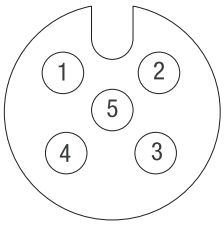
1732P-IB8M8



Input Pico-Connector
(view into connector)

Pin 1 Sensor Source Voltage
Pin 3 Return
Pin 4 Input

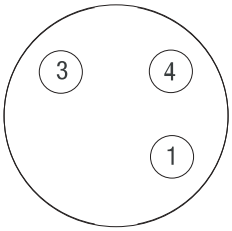
1732P-OB8EM12



Output Micro-Connector
(view into connector)

Pin 1 Not Used
Pin 2 Output B
Pin 3 Return
Pin 4 Output A
Pin 5 Not Used

1732P-OB8EM8



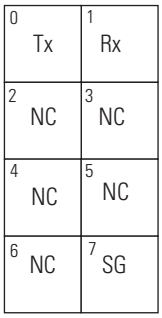
Output Pico-Connector
(view into connector)

Pin 1 Not Used
Pin 3 Return
Pin 4 Output

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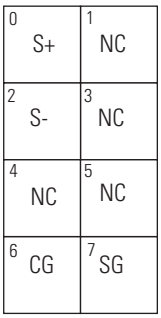
1734 POINT I/O Modules

1734-232ASC



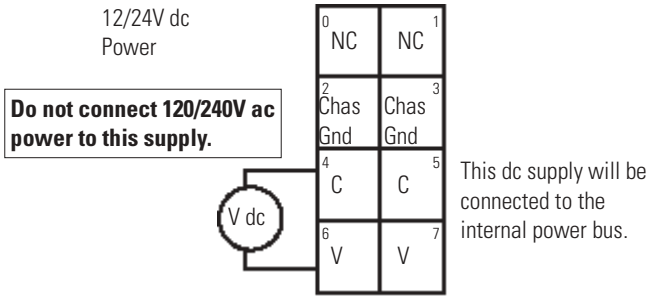
Tx = Transmit
NC = No Connection
Rx = Receive
SG = Signal Ground

1734-485ASC



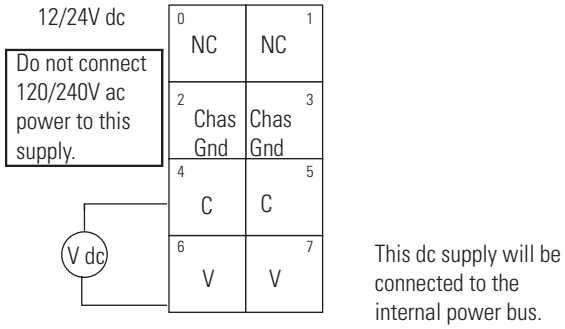
Tx, S+ = Transmit
NC = No Connection
CG = Chassis Ground
Rx, S- = Receive
SG = Signal Ground

1734-ADN, -ADNX, -ACNR, -AENT, -APB



NC = No Connection
C = Common
Chas Gnd = Chassis Ground
V = Supply

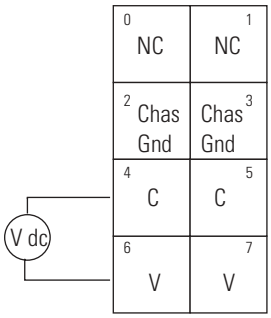
1734-EP24DC



V = 12/24V dc, C = Common
CHAS GND = Chassis ground

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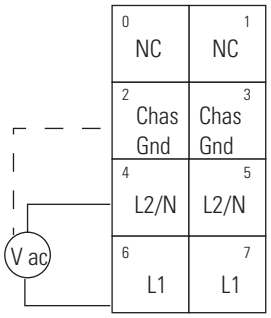
1734-FPD (12/24V dc)



This dc supply will be connected to the internal power bus.

NC = No Connection
C = Common
Chas Gnd = Chassis Ground
V = 12/24V dc

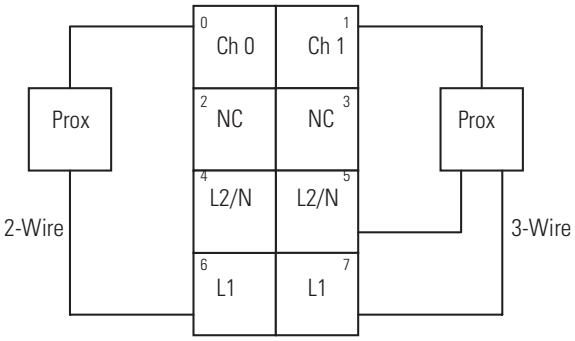
1734-FPD (120/240V ac)



This ac supply will be connected to the internal power bus.

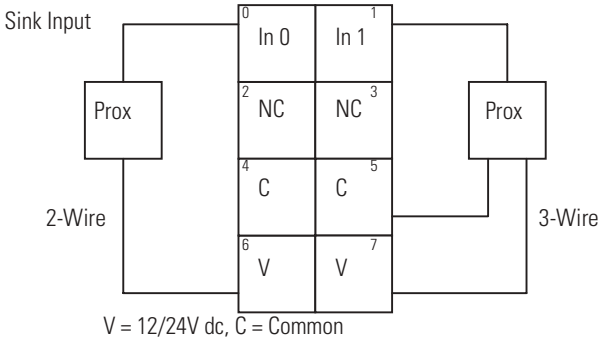
NC = No Connection
L1 = 120/240V ac
Chas Gnd = Chassis Ground
L2/N = ac Neutral

1734-IA2



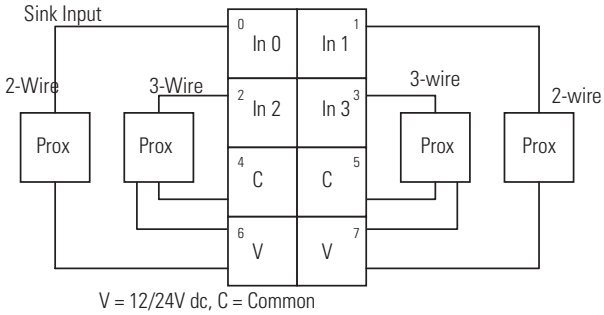
Ch 0 = Channel 0
NC = No Connection
L1 = 120V ac
Ch 1 = Channel 1
L2/N = 120V ac Neutral

1734-IB2



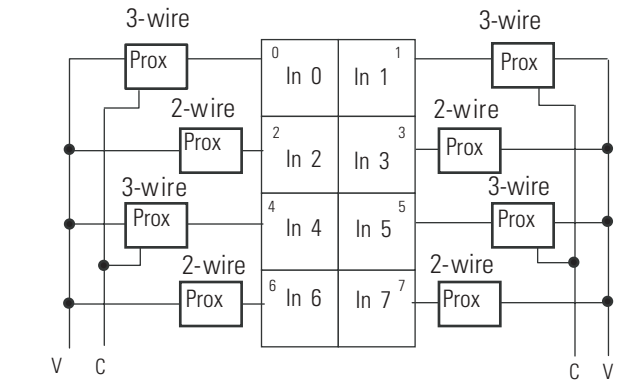
V = 12/24V dc, C = Common
12/24V dc is supplied through the internal power bus

1734-IB4



V = 12/24V dc, C = Common
12/24V dc is supplied through the internal power bus

1734-IB8

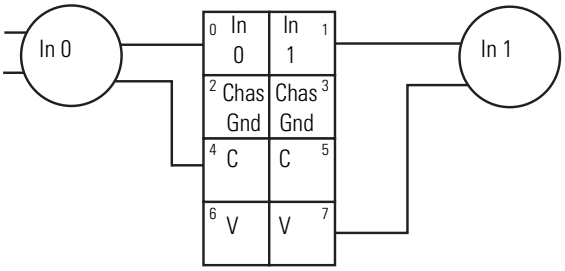


V = 12/24V dc
C = Common

Daisy chain common and power connections from 1734 Adapter, 1734-FPD, 1734-EP24DC or from user supplied external auxiliary terminal block.

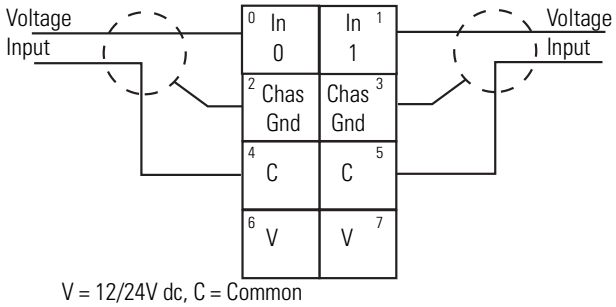
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1734-IE2C



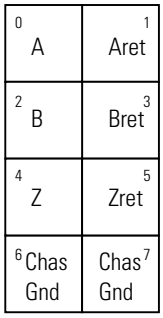
V = 12/24V dc, C = Common
12/24V dc is supplied from the internal power bus

1734-IE2V



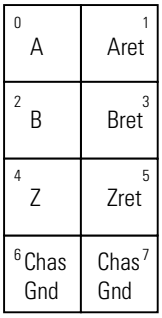
V = 12/24V dc, C = Common
12/24V dc is supplied from the internal power bus

1734-IJ



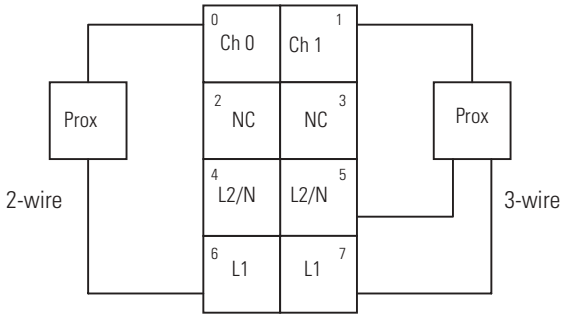
A, B, Z, Aret, Bret, and Zret = inputs
Chas Gnd = Chassis Ground

1734-IK



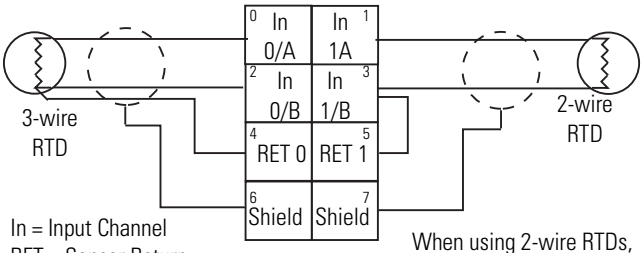
A, B, Z, Aret, Bret, and Zret = inputs
Chas Gnd = Chassis Ground

1734-IM2



Ch 0 = Channel 0 input
NC = No connection
L1 = 220V ac
Ch 1 = channel 1 input
L2/N = 220V ac Neutral

1734-IR2

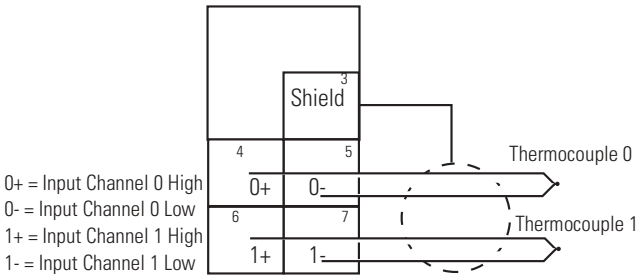


In = Input Channel
RET = Sensor Return
Shield = Sensor Cable Shield

When using 2-wire RTDs, jumper In/B to RET.

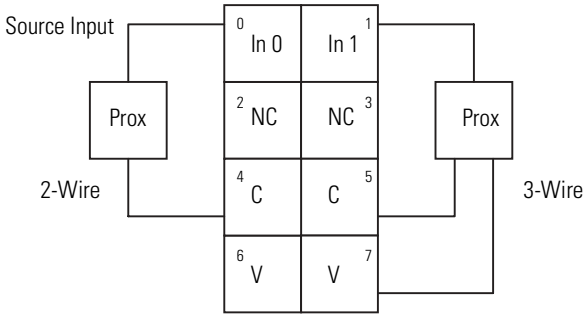
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1734-IT2I



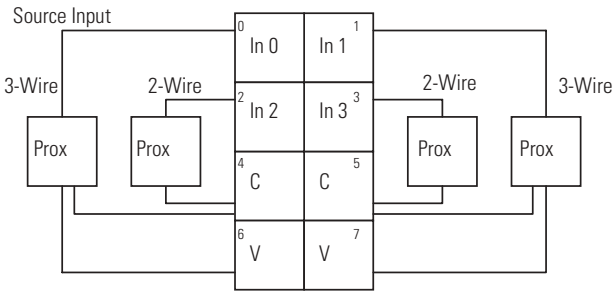
Use the 1734-TBCJC wiring base assembly for cold junction compensation.

1734-IV2



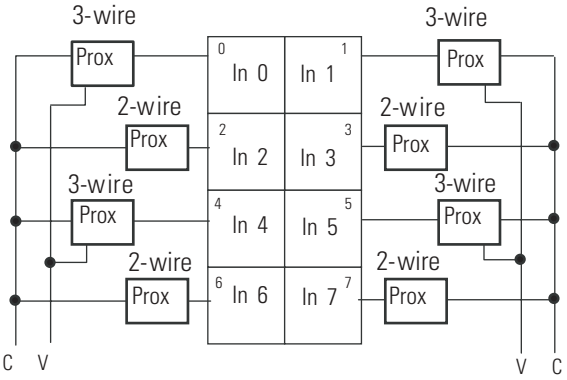
V = 12/24V dc, C = Common
12/24V dc is supplied through the internal power bus

1734-IV4



V = 12/24V dc, C = Common
12/24V dc is supplied through the internal power bus

1734-IV8

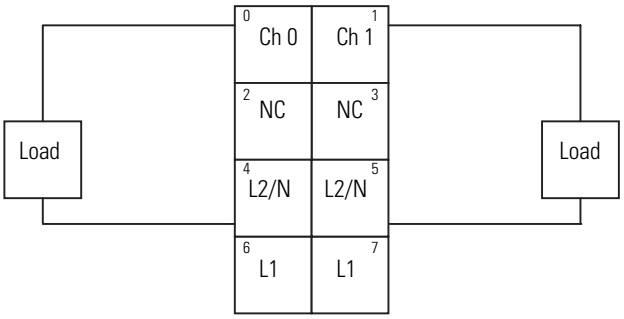


V = 12/24V dc
C = Common

Daisy chain common and power connections from 1734 Adapter, 1734-FPD, 1734-EP24DC or from user supplied external auxiliary terminal block.

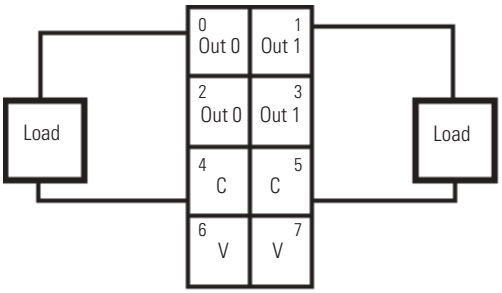
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1734-OA2



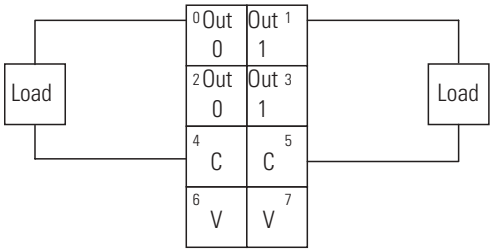
Ch 0 = Channel 0 Ch 1 = Channel 1
NC = No Connection L2/N = 120/220V ac Return
L1 = 120/220V ac Supply
Field power is supplied from the internal power bus.

1734-OB2



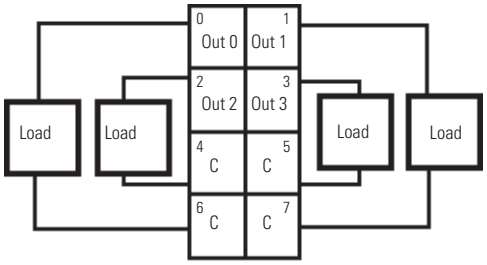
V = 12/24V dc, C = Common
Field power is supplied from internal power bus

1734-OB2E, -OB2EP



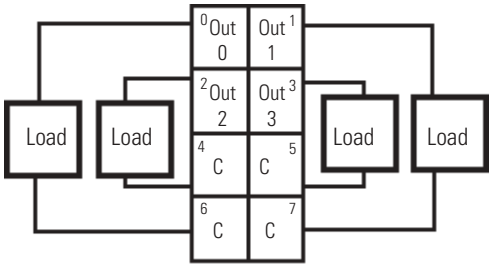
V = 12/24V dc, C = Common
Field power is supplied from the internal power bus
Module power is supplied from the internal power bus

1734-OB4



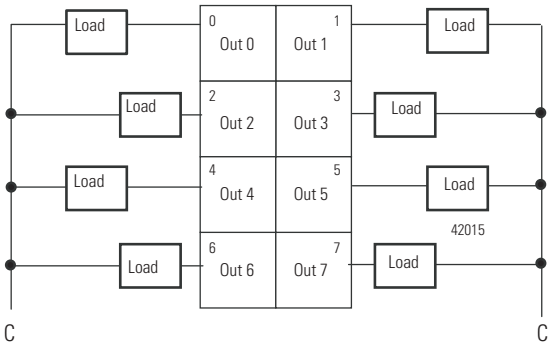
V = 12/24V dc, C = Common
Field power is supplied from internal power bus

1734-OB4E



V = 12/24V dc, C = Common
Field power is supplied from the internal power bus
Module power is supplied from the internal power bus

1734-OB8

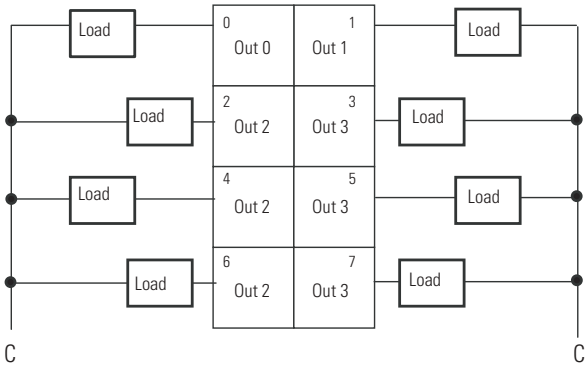


Common must be daisy chained from a 1734 adapter, 1734-FPD, 1734-EP24DC, or from a user-supplied auxiliary terminal block.

The 24V dc power to the module is supplied by the internal power bus and comes from the same 1734 adapter, 1734-FPD, or 1734-EP24DC as common.

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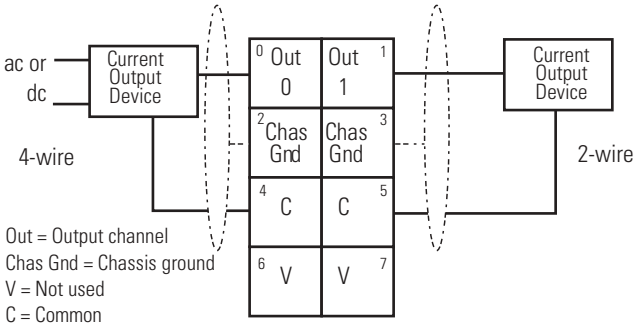
1734-OB8E



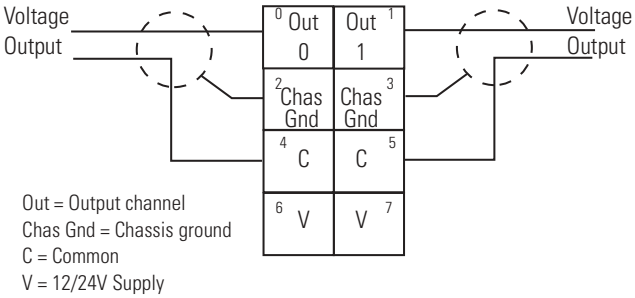
Common must be daisy chained from a 1734 adapter, 1734-FPD, 1734-EP24DC, or from a user-supplied auxiliary terminal block.

The 24V dc power to the module is supplied by the internal power bus and comes from the same 1734 adapter, 1734-FPD, or 1734-EP24DC as common.

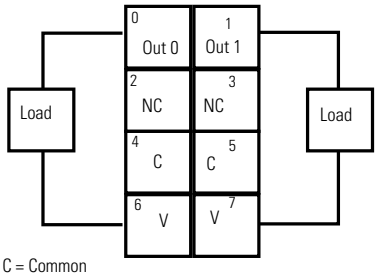
1734-OE2C



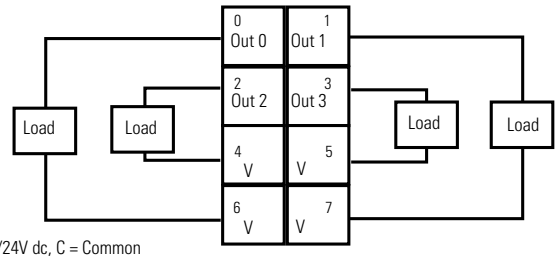
1734-OE2V



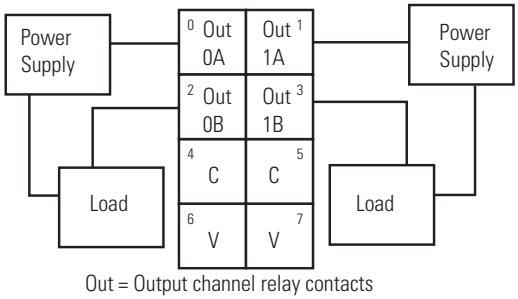
1734-OV2E



1734-OV4E

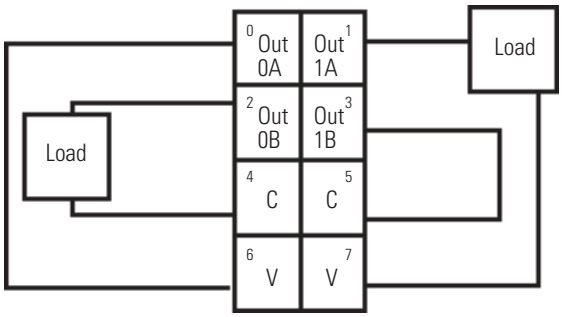


1734-OW2 Load Powered by External Power Bus



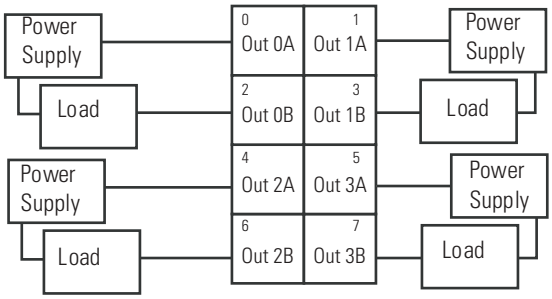
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1734-OW2 Load Powered by Internal Power Bus



Out = Output channel relay contacts
V = Supply (can range from +5V dc to 240V ac)
C = Common

1734-OW4 Load Powered by External Power Bus

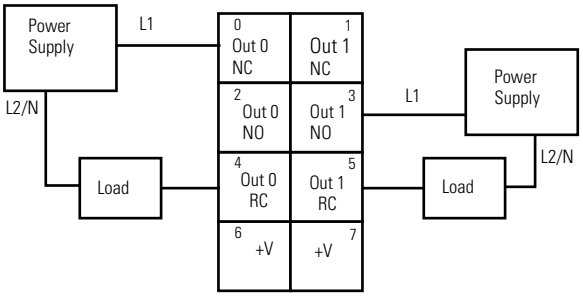


Out = Output channel relay contacts

Supply voltage can range from +5V dc to 240V ac, depending on relay load. 12/24V dc power for the module is provided by the external power supply.

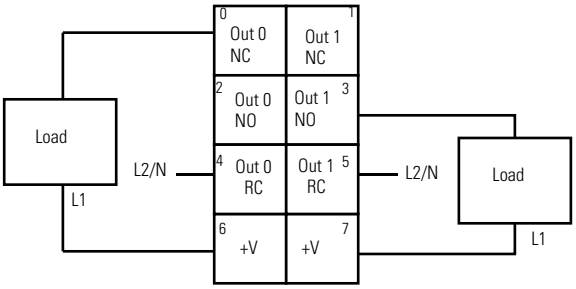
The power supply voltage may be daisy chained from a 1734 adapter, 1734-FPD or 1734-EP24DC communication interface. Each channel is individually isolated and may have a unique supply and/or voltage as necessary.

1734-OX2 Load Powered by External Power Bus



Out = Output channel relay contacts
Power Supply = can range from +5V dc to 240V ac
RC = Relay Common

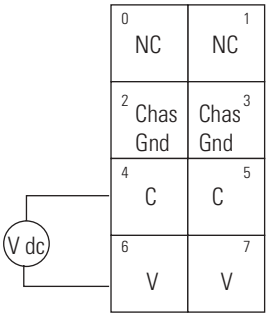
1734-OX2 Load Powered by Internal Power Bus



NC = Normally closed
NO = Normally open
RC = Relay Common
+V = Positive Supply

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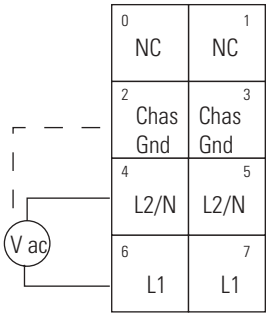
1734-PDN (12/24V dc)



This supply will be connected to the internal power bus.

NC = No Connection
C = Common
Chas Gnd = Chassis Ground
V = 12/24V dc

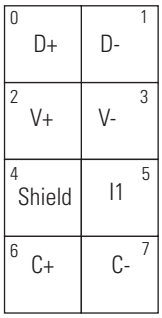
1734-PDN 120/240V ac



This supply will be connected to the internal power bus.

NC = No Connection
L1 = 120/240V ac
Chas Gnd = Chassis Ground
L2/N = ac Neutral

1734-SSI



D = Data
C = Clock
I1 = Digital Sourcing Input 1
V = SSI Sensor

1734-VHSC24

Module 1		Module 2	
0 A	1 Aret	0 Chas Gnd	1 Chas Gnd
2 B	3 Bret	2 RET 0	3 RET 1
4 Z	5 Zret	4 -Vaux	5 -Vaux
6 Out 0	7 Out 1	6 +Vaux	7 +Vaux

A, B, Z, Aret, Bret, and Zret = inputs
Chas Gnd = Chassis Ground
-Vaux = Auxiliary Supply
+Vaux = Auxiliary Supply

1734-VHSC5

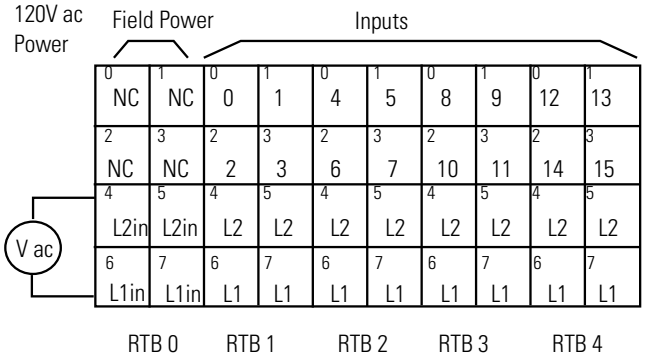
Module 1		Module 2	
0 A	1 Aret	0 Chas Gnd	1 Chas Gnd
2 B	3 Bret	2 RET 0	3 RET 1
4 Z	5 Zret	4 -Vaux	5 -Vaux
6 Out 0	7 Out 1	6 +Vaux	7 +Vaux

A, B, Z, Aret, Bret, and Zret = inputs
Chas Gnd = Chassis Ground
-Vaux = Auxiliary Supply
+Vaux = Auxiliary Supply

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1734D POINTBlock I/O Modules

1734D-IA16, -IA16S

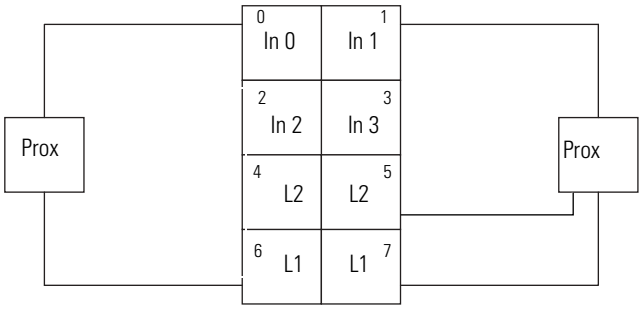


This supply will be connected to the internal power bus.

NC = No Connection
L2/N = AC Return/Neutral
Chas Gnd = Chassis Ground
L1 = AC Power

1734D-IA16, -IA16S Input

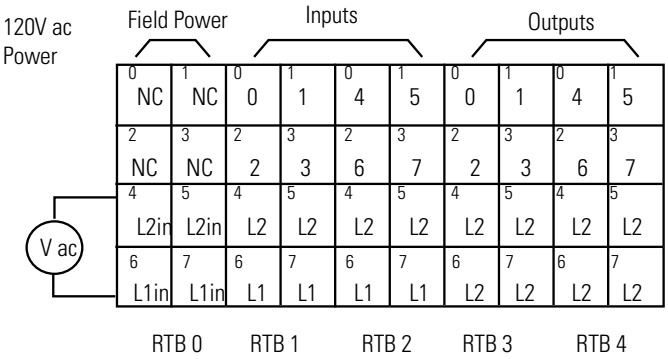
RTB 1



L1 = 120V ac
L2 = Return

Repeat for RTB 2, 3, and 4

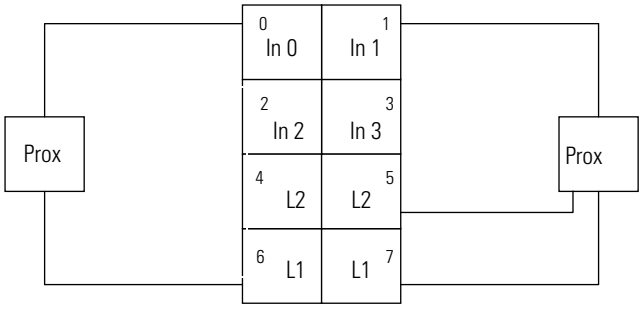
1734D-IA8XOA8, -IA8XOA8S



This supply will be connected to the internal power bus.

NC = No Connection
L2/N = AC Return/Neutral
Chas Gnd = Chassis Ground
L1 = AC Power

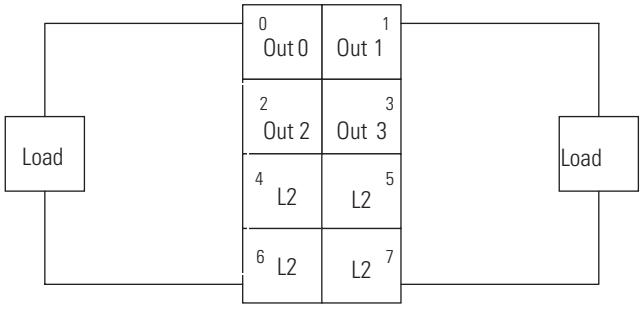
1734D-IA8XOA8, -IA8XOA8S Input



L1 = 120V ac
L2 = Return

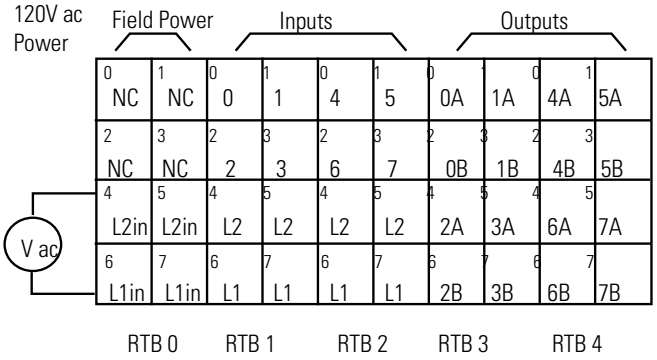
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1734D-IA8XOA8, -IA8XOA8S Output



L1 = 120V ac
L2 = Return

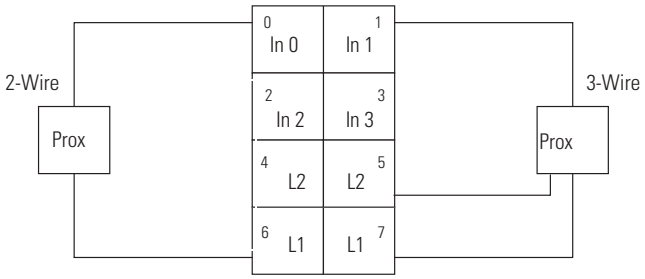
1734D-IA8XOW8, -IA8XOW8S



This supply will be connected to the internal power bus.

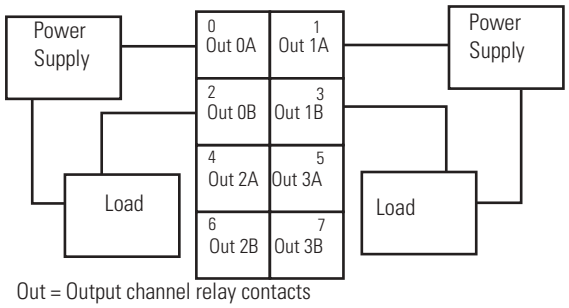
NC = No connection
L2/N = AC Return/Neutral L1 = AC Power

1734D-IA8XOW8, -IA8XOW8S Input



L1 = 120V ac
L2 = Return

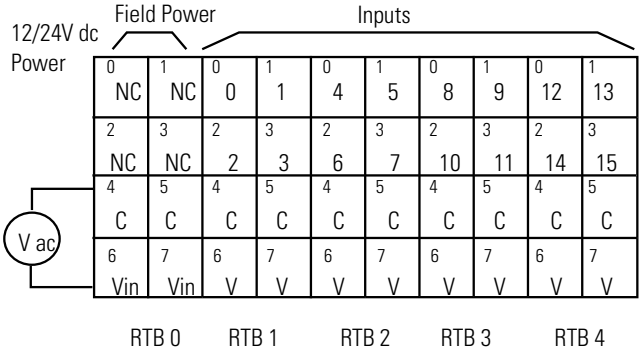
1734D-IA8XOW8, -IA8XOW8S Output (Load Powered by External Power)



Out = Output channel relay contacts
L1 = 120V ac
L2 = Return

NOTE: This module cannot be powered by an internal power load.

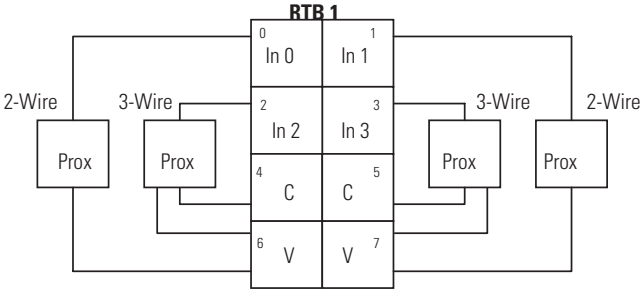
1734D-IB16, -IB16S



This supply will be connected to the internal power bus.

NC = No Connection Chas Gnd = Chassis Ground
C = Common V = Supply

1734D-IB16, -IB16S Sink Input

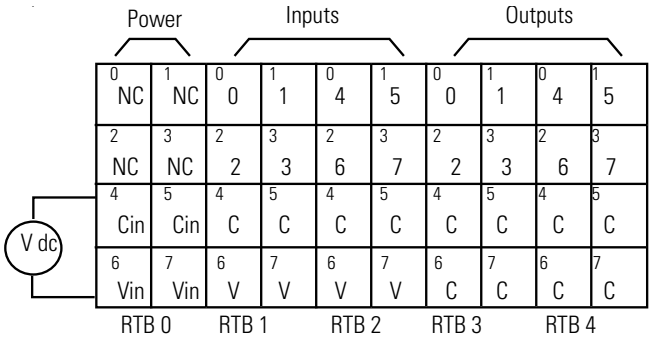


V = 12/24V dc
C = Common

Repeat for RTB 2, 3, and 4

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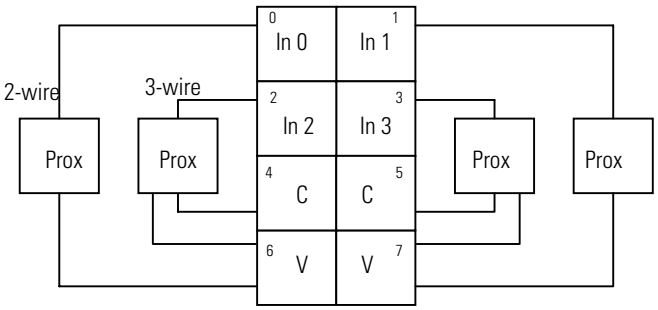
1734D-IB8XOB8E, -IB8XOB8ES



This supply will be connected to the internal power bus.

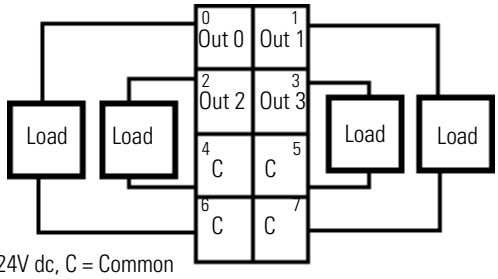
NC = No Connection
Chas Gnd = Chassis Ground
C = Common
V = Supply

1734D-IB8XOB8E, -IB8XOB8ES Sink Input



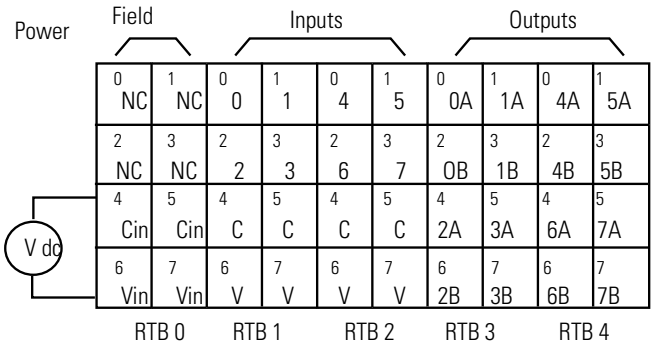
V = 12/24V dc
C = Common

1734D-IB8XOB8E, -IB8XOB8ES Output



V = 12/24V dc, C = Common
Field power is supplied from internal power bus

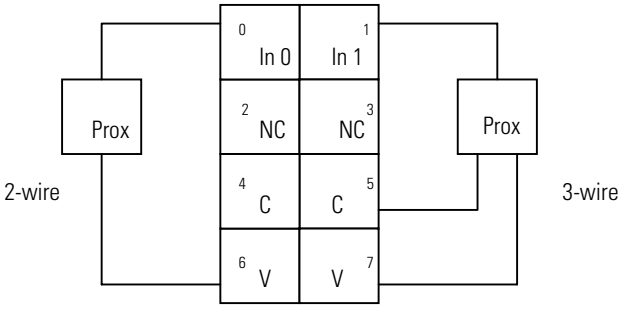
1734D-IB8XOW8, -IB8XOW8S



This supply will be connected to the internal power bus.

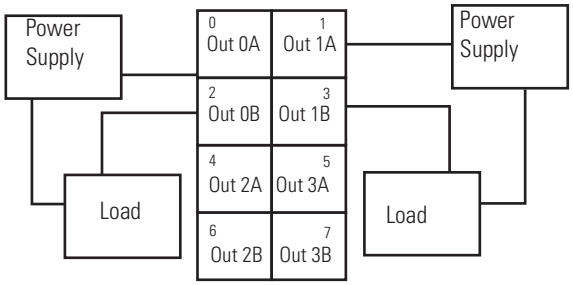
NC = No Connection
Chas Gnd = Chassis Ground
C = Common
V = Supply

1734D-IB8XOW8, -IB8XOW8S Sink Input



V = 12/24V dc
C = Common

1734D-IB8XOW8, -IB8XOW8S Output (Load Powered by External Power)



Out = Output channel relay contacts
Power Supply = can range from +5V dc to 240V ac
C = Common

NOTE: This module cannot be powered by an internal power load.

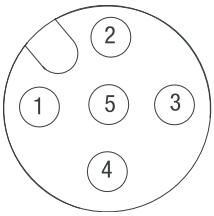
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Notes:

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1738 ArmorPoint

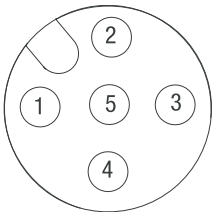
1738-232ASCM12



(view into connector)

Pin 1 No Connect
Pin 2 Tx +
Pin 3 Rx +
Pin 4 Common
Pin 5 No Connect

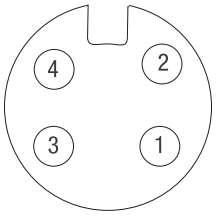
1738-485ASCM12



(view into connector)

Pin 1 Tx -
Pin 2 Tx +
Pin 3 Rx +
Pin 4 Rx -
Pin 5 No Connect

1738-ACNR

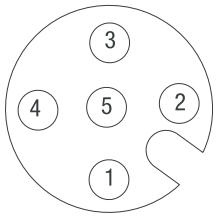


Male In Connector
(view into connector)

Pin 1 - User Power +
Pin 2 - Adapter Power +
Pin 3 - Adapter Power -
Pin 4 - User Power -

1738-ADN12

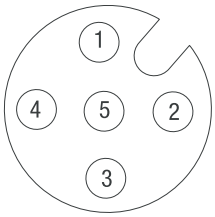
Male In Connector



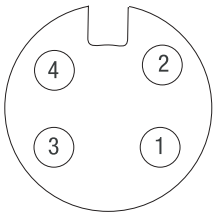
(view into connector)

Pin 1 Drain
Pin 2 +V
Pin 3 -V
Pin 4 CAN_High
Pin 5 CAN_Low

Female Out Connector



DeviceNet Auxiliary Power



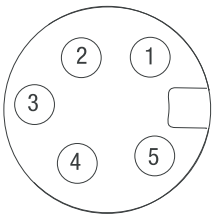
Male In Connector

(view into connector)

Pin 1 User Power +
Pin 2 Adapter Power +
Pin 3 Adapter Power -
Pin 4 User Power -

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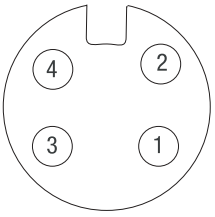
1738-ADN18



Male In Connector
(view into connector)

Pin 1	Drain
Pin 2	+V
Pin 3	-V
Pin 4	CAN_High
Pin 5	CAN_Low

DeviceNet Auxiliary Power

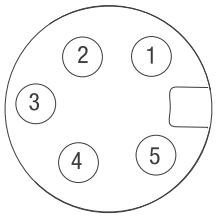


Male In Connector
(view into connector)

Pin 1	User Power +
Pin 2	Adapter Power +
Pin 3	Adapter Power -
Pin 4	User Power -

1738-ADN18P

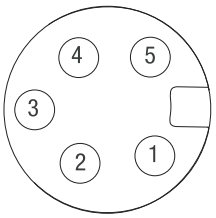
Male In Connector



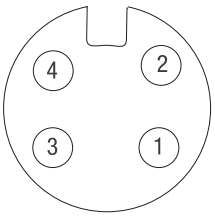
(view into connector)

Pin 1	Drain
Pin 2	+V
Pin 3	-V
Pin 4	CAN_High
Pin 5	CAN_Low

Female Out Connector



DeviceNet Auxiliary Power

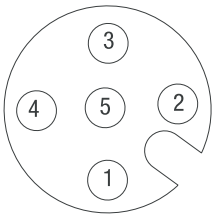


Male In Connector
(view into connector)

Pin 1	User Power +
Pin 2	Adapter Power +
Pin 3	Adapter Power -
Pin 4	User Power -

1738-ADNX

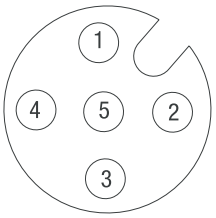
Male In Connector



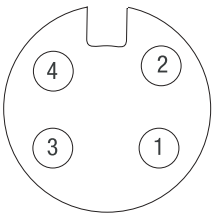
(view into connector)

Pin 1	Drain
Pin 2	+V
Pin 3	-V
Pin 4	CAN_High
Pin 5	CAN_Low

Female Out Connector
(Subnet out)



DeviceNet Auxiliary Power

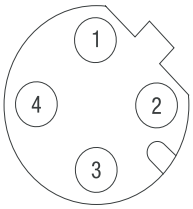


Male In Connector
(view into connector)

Pin 1	User Power +
Pin 2	Adapter/Subnet +
Pin 3	Adapter/Subnet -
Pin 4	User Power -

1738-AENT

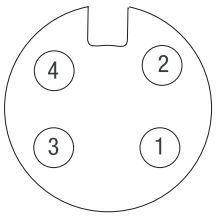
Network Connector



Female In Connector
(view into connector)

Pin 1	Tx +
Pin 2	Rx +
Pin 3	Tx -
Pin 4	Rx -

Auxiliary Power



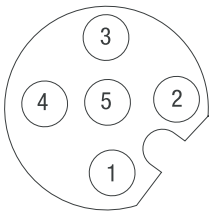
Male In Connector
(view into connector)

Pin 1	User Power +
Pin 2	Adapter Power +
Pin 3	Adapter Power -
Pin 4	User Power -

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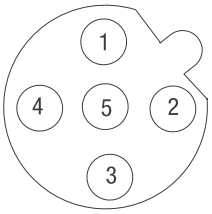
1738-APB

Male In Connector

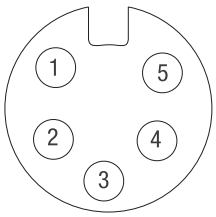


(view into connector)
Pin 1 +5VBUS
Pin 2 A-Line
Pin 3 GNDBUS
Pin 4 B-Line!
Pin 5 Shield

Female In Connector



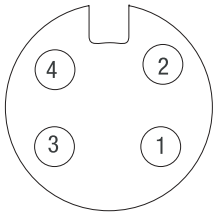
Male Auxiliary



Male In connector
((view into connector)
Pin 1 User Power -
Pin 2 Adapter Power -
Pin 3 Protective GND
Pin 4 Adapter Power +
Pin 5 User Power +

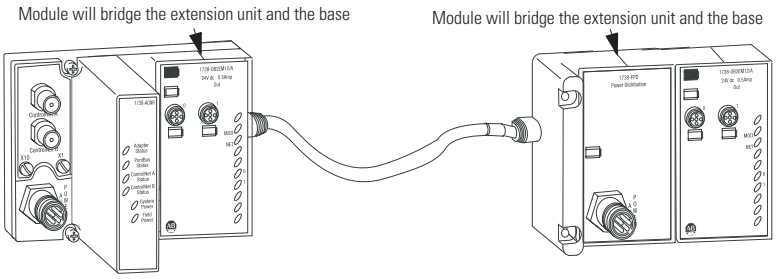
IMPORTANT Profibus Adapter Network connections have earth grounded metal rings. This should be considered when choosing shielded cables and grounding techniques.

1738-EP24DC

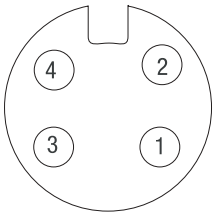


Male In Connector
(view into connector)
Pin 1 User Power +
Pin 2 Adapter +
Pin 3 Adapter -
Pin 4 User Power -

1738-EXT1, -EXT3

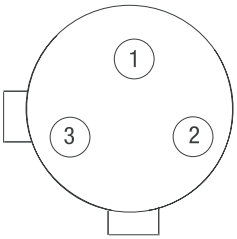


1738-FPD



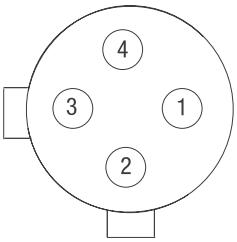
Male In Connector
(view into connector)
Pin 1 User Power +
Pin 2 No Connect
Pin 3 No Connect
Pin 4 User Power -

1738-IA2M12AC3



(view into connector)
Pin 1 Chassis
Pin 2 L1
Pin 3 Input 0 (M12-A)
Input 1 (M12-B)

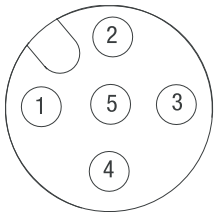
1738-IA2M12AC4



(view into connector)
Pin 1 L1
Pin 2 L2/N
Pin 3 Input 0 (M12-A)
Input 1 (M12-B)
Pin 4 Chassis

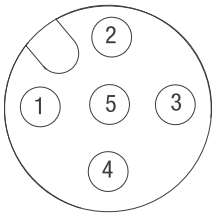
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1738-IB2M12



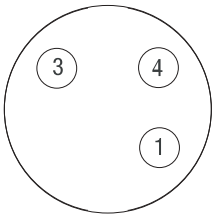
(view into connector)
Pin 1 24V dc
Pin 2 No Connect
Pin 3 Common
Pin 4 Input 0 (M12-A)
Input 1 (M12-B)
Pin 5 No Connect

1738-IB4M12



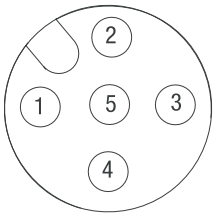
(view into connector)
Pin 1 24V dc
Pin 2 No Connect
Pin 3 Common
Pin 4 Input 0 (M12-A)
Input 1 (M12-B)
Input 2 (M12-C)
Input 3 (M12-D)
Pin 5 No Connect

1738-IB4M8



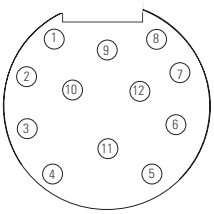
(view into connector)
Pin 1 24V dc
Pin 3 Common
Pin 4 Input 0 (M8-A)
Input 1 (M8-B)
Input 2 (M8-C)
Input 3 (M8-D)

1738-IB8M12



(view into connector)
Pin 1 24V dc
Pin 2 I nput 1 (M12-A)
Input 3 (M12-B)
Input 5 (M12-C)
Input 7 (M12-D)
Pin 3 Common
Pin 4 Input 0 (M12-A)
Input 2 (M12-B)
Input 4 (M12-C)
Input 6 (M12-D)
Pin 5 No Connect

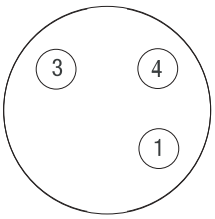
1738-IB8M23



(view into connector)

Pin 1	Input 0	Pin 7	Input 6
Pin 2	Input 1	Pin 8	Input 7
Pin 3	Input 2	Pin 9	Return (Com)
Pin 4	Input 3	Pin 10	Return (Com)
Pin 5	Input 4	Pin 11	24V dc
Pin 6	Input 5	Pin 12	Chassis

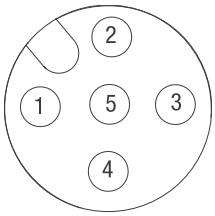
1738-IB8M8



(view into connector)

Pin 1	24V dc	Pin 4	Input 0 (M8-A)
Pin 3	Common		Input 1 (M8-B)
			Input 2 (M8-C)
			Input 3 (M8-D)
			Input 4 (M8-E)
			Input 5 (M8-F)
			Input 6 (M8-G)
			Input 7 (M8-H)

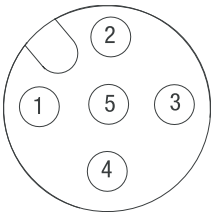
1738-IE2CM12



(view into connector)
Pin 1 24V dc
Pin 2 Input 0 (M12-A)
Input 1 (M12-B)
Pin 3 Common
Pin 4 Common
Pin 5 No Connect

IMPORTANT Analog and specialty modules have earth grounded metal rings. This should be considered when choosing shielded cables and grounding techniques.

1738-IE2VM12

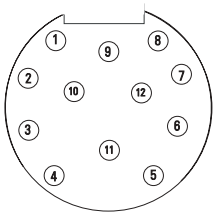


(view into connector)
Pin 1 24V dc
Pin 2 Input 0 (M12-A)
Input 1 (M12-B)
Pin 3 Common
Pin 4 Common
Pin 5 No Connect

IMPORTANT Analog and specialty modules have earth grounded metal rings. This should be considered when choosing shielded cables and grounding techniques.

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1738-IJM23

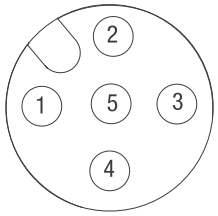


(view into connector)

Pin 1	+A
Pin 2	-A
Pin 3	+B
Pin 4	-B
Pin 5	+Z
Pin 6	-Z
Pin 7	Chassis
Pin 8	Chassis
Pin 9	Return (Com)
Pin 10	Return (Com)
Pin 11	5V dc
Pin 12	Chassis

IMPORTANT Analog and specialty modules have earth grounded metal rings. This should be considered when choosing shielded cables and grounding techniques.

1738-IR2M12

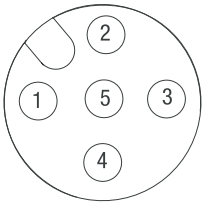


(view into connector)

Pin 1	No Connect
Pin 2	Input 0A (M12-A) Input 1A (M12-B)
Pin 3	Input 0C (M12-A) Input 1C (M12-B)
Pin 4	Input 0B (M12-A) Input 1B (M12-B)
Pin 5	No Connect

IMPORTANT Analog and specialty modules have earth grounded metal rings. This should be considered when choosing shielded cables and grounding techniques.

1738-IT2IM12

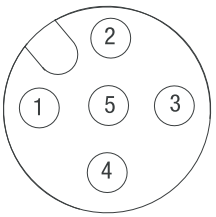


(view into connector)

Pin 1	CJC +
Pin 2	TC 0 + (M12-A) TC 1 + (M12-B)
Pin 3	CJC -
Pin 4	TC 0 - (M12-A) TC 1 - (M12-B)
Pin 5	No Connect

IMPORTANT Analog and specialty modules have earth grounded metal rings. This should be considered when choosing shielded cables and grounding techniques.

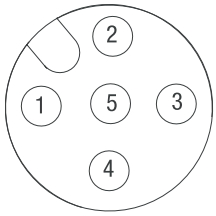
1738-IV4M12



(view into connector)

Pin 1	24V dc
Pin 2	No Connect
Pin 3	Common
Pin 4	Input 0 (M12-A) Input 1 (M12-B) Input 2 (M12-C) Input 3 (M12-D)
Pin 5	No Connect

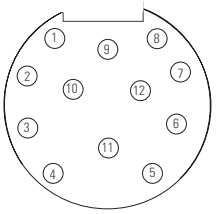
1738-IV8M12



(view into connector)

Pin 1	24V dc
Pin 2	Input 1 (M12-A) Input 3 (M12-B) Input 5 (M12-C) Input 7 (M12-D)
Pin 3	Common
Pin 4	Input 0 (M12-A) Input 2 (M12-B) Input 4 (M12-C) Input 6 (M12-D)
Pin 5	No Connect

1738-IV8M23

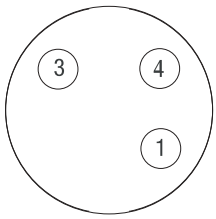


(view into connector)

Pin 1	Input 0	Pin 7	Input 6
Pin 2	Input 1	Pin 8	Input 7
Pin 3	Input 2	Pin 9	Return (Com)
Pin 4	Input 3	Pin 10	Return (Com)
Pin 5	Input 4	Pin 11	24V dc
Pin 6	Input 5	Pin 12	Chassis

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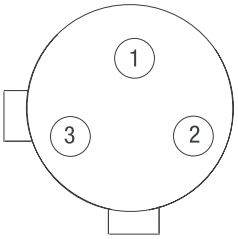
1738-IV8M8



(view into connector)

Pin 1	24V dc	Pin 4	Input 0 (M8-A)
Pin 3	Common		Input 1 (M8-B)
			Input 2 (M8-C)
			Input 3 (M8-D)
			Input 4 (M8-E)
			Input 5 (M8-F)
			Input 6 (M8-G)
			Input 7 (M8-H)

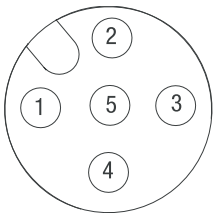
1738-OA2M12AC3



(view into connector)

Pin 1	Chassis
Pin 2	L2/N
Pin 3	Output 0 (M12-A)
	Output 1 (M12-B)

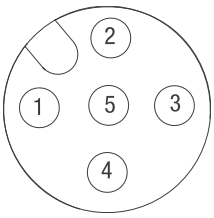
1738-OB2EM12



(view into connector)

Pin 1	24V dc
Pin 2	No Connect
Pin 3	Common
Pin 4	Output 0 (M12-A)
	Output 1 (M12-B)
Pin 5	No Connect

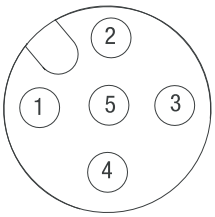
1738-OB2EPM12



(view into connector)

Pin 1	24V dc
Pin 2	No Connect
Pin 3	Common
Pin 4	Output 0 (M12-A)
	Output 1 (M12-B)
Pin 5	No Connect

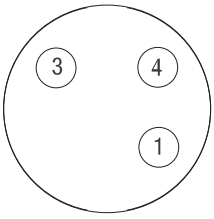
1738-OB4EM12



(view into connector)

Pin 1	24V dc
Pin 2	No Connect
Pin 3	Common
Pin 4	Output 0 (M12-A)
	Output 1 (M12-B)
	Output 2 (M12-C)
	Output 3 (M12-D)
Pin 5	No Connect

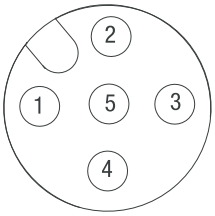
1738-OB4EM8



(view into connector)

Pin 1	24V dc
Pin 3	Common
Pin 4	Output 0 (M8-A)
	Output 1 (M8-B)
	Output 2 (M8-C)
	Output 3 (M8-D)

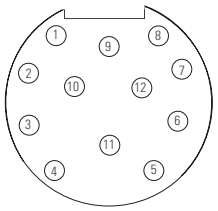
1738-OB8EM12



(view into connector)

Pin 1	24V dc
Pin 2	Output 1 (M12-A)
	Output 3 (M12-B)
	Output 5 (M12-C)
	Output 7 (M12-D)
Pin 3	Common
Pin 4	Output 0 (M12-A)
	Output 2 (M12-B)
	Output 4 (M12-C)
	Output 6 (M12-D)
Pin 5	No Connect

1738-OB8EM23

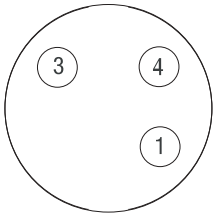


(view into connector)

Pin 1	Output 0
Pin 2	Output 1
Pin 3	Output 2
Pin 4	Output 3
Pin 5	Output 4
Pin 6	Output 5
Pin 7	Output 6
Pin 8	Output 7
Pin 9	Return (Com)
Pin 10	Return (Com)
Pin 11	24V dc
Pin 12	Chassis

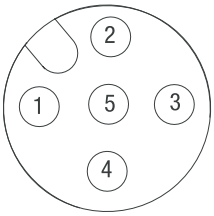
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1738-OB8EM8



(view into connector)
Pin 1 24V dc
Pin 3 Common
Pin 4 Output 0 (M8-A)
Output 1 (M8-B)
Output 2 (M8-C)
Output 3 (M8-D)
Output 4 (M8-E)
Output 5 (M8-F)
Output 6 (M8-G)
Output 7 (M8-H)

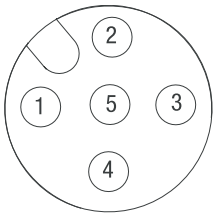
1738-OE2CM12



(view into connector)
Pin 1 Output 0 (M12-A)
Output 1 (M12-B)
Pin 2 24V dc
Pin 3 Common
Pin 4 Common
Pin 5 No Connect

IMPORTANT Analog and specialty modules have earth grounded metal rings. This should be considered when choosing shielded cables and grounding techniques.

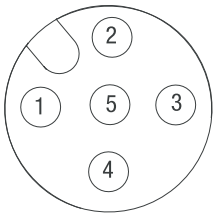
1738-OE2VM12



(view into connector)
Pin 1 Output 0 (M12-A)
Output 1 (M12-B)
Pin 2 24V dc
Pin 3 Common
Pin 4 Common
Pin 5 No Connect

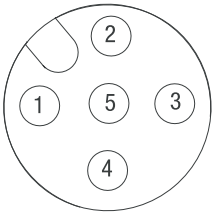
IMPORTANT Analog and specialty modules have earth grounded metal rings. This should be considered when choosing shielded cables and grounding techniques.

1738-OV4EM12



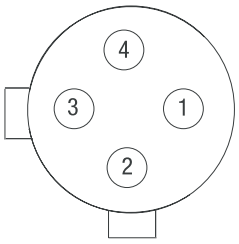
(view into connector)
Pin 1 24V dc
Pin 2 No Connect
Pin 3 Common
Pin 4 Output 0 (M12-A)
Output 1 (M12-B)
Output 2 (M12-C)
Output 3 (M12-D)
Pin 5 No Connect

1738-OW4M12



(view into connector)
Pin 1 24V dc
Pin 2 Output 0B (M12-A)
Output 1B (M12-B)
Output 2B (M12-C)
Output 3B (M12-D)
Pin 3 Common
Pin 4 Output 0A (M12-A)
Output 1A (M12-B)
Output 2A (M12-C)
Output 3A (M12-D)
Pin 5 No Connect

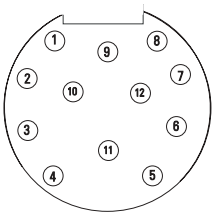
1738-OW4M12AC4



(view into connector)
Pin 1 L1
Pin 2 L2/N
Pin 3 Output 0A (M12-A)
Output 1A (M12-B)
Output 2A (M12-C)
Output 3A (M12-D)
Pin 4 Output 0B (M12-A)
Output 1B (M12-B)
Output 2B (M12-C)
Output 3B (M12-D)

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1738-SSIM23

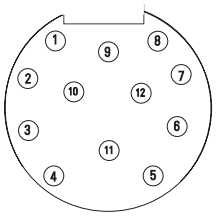


(view into connector)

Pin 1	Data +
Pin 2	Data -
Pin 3	V +
Pin 4	V -
Pin 5	Shield
Pin 6	Input 0
Pin 7	Clock +
Pin 8	Clock -
Pin 9	Return (Com)
Pin 10	Return (Com)
Pin 11	24 V dc
Pin 12	Chassis

IMPORTANT Analog and specialty modules have earth grounded metal rings. This should be considered when choosing shielded cables and grounding techniques.

1738-VHSC24M23



(view into connector)

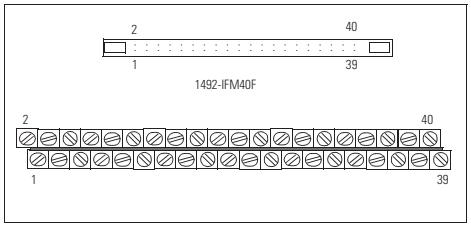
Pin 1	+A
Pin 2	~A
Pin 3	+B
Pin 4	~B
Pin 5	+Z
Pin 6	~Z
Pin 7	Output 0
Pin 8	Output 1
Pin 9	Return (Com)
Pin 10	Return (Com)
Pin 11	24V dc
Pin 12	Chassis

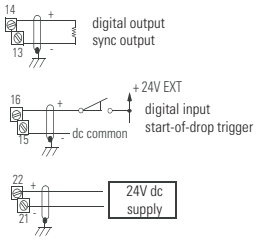
IMPORTANT Analog and specialty modules have earth grounded metal rings. This should be considered when choosing shielded cables and grounding techniques.

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1746 I/O Modules

1746-BLM

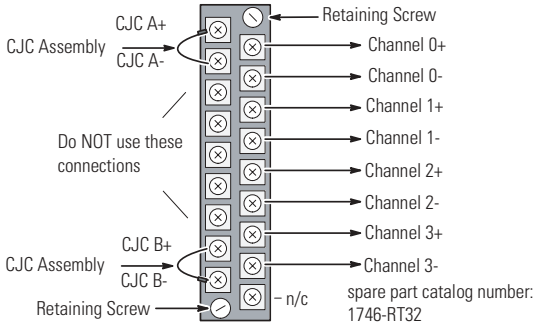




We recommend making connections to the 1746-BLM module with:
-- Interface module (1492-IFM40F)
-- Interface cable (1492-CABLE010H)

Description	Axis 1	Axis 2	Axis 3	Axis 4	System
Reserved					4, 3, 2, 1
Digital OUT-	17	13	9	5	
Digital OUT+ (+24EXT)	18	14	10	6	
Digital IN-	19	15	11	7	
Digital IN+	20	16	12	8	
-24V dc RET					21
+24V dc EXT					22
Analog OUT- (GND)	23	27	31	35	
Analog OUT+	24	28	32	36	
Analog IN-	25	29	33	37	
Analog IN+	26	30	34	38	
Excitation- (-10V)					39
Excitation+ (+10V)					40

1746-BTM

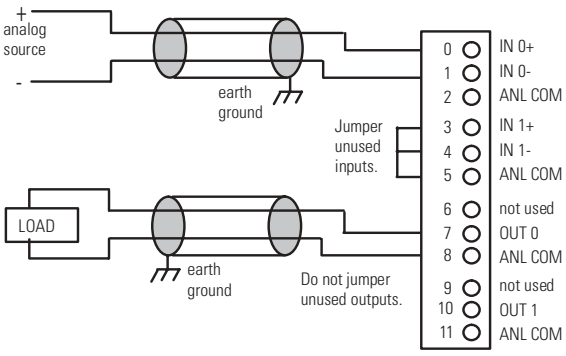


ATTENTION

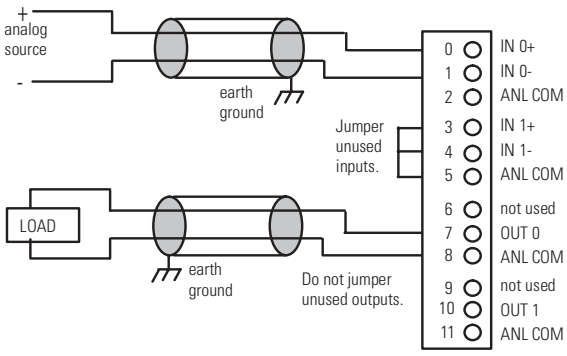


Do not remove or loosen the cold junction compensating thermistors located on the terminal block. Both thermistors are critical to ensure accurate thermocouple input readings at each channel. The module will not operate in the thermocouple mode if a thermistor is removed

1746-FIO4I



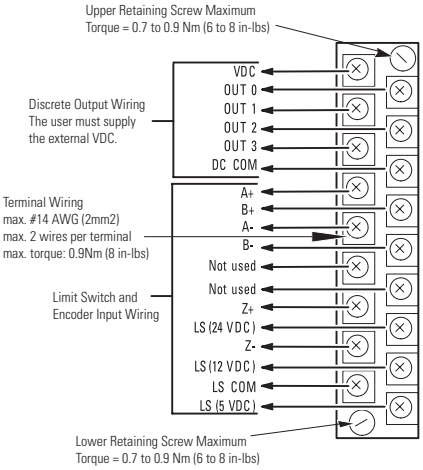
1746-FIO4V

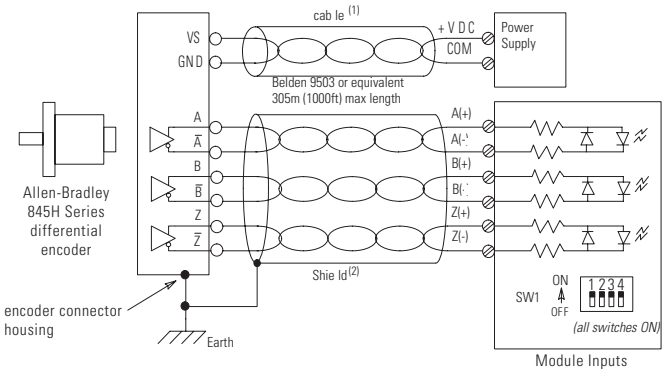


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1746-HSCE Differential Encoder

Input and Output Connections

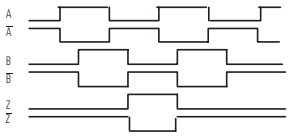




1. Refer to your encoder manual for proper cable type and length.
2. Due to the topology of the module's input circuits, terminating the shield at the encoder end provides the highest immunity to EMI interference. Connect EARTH ground directly to the encoder connector housing.

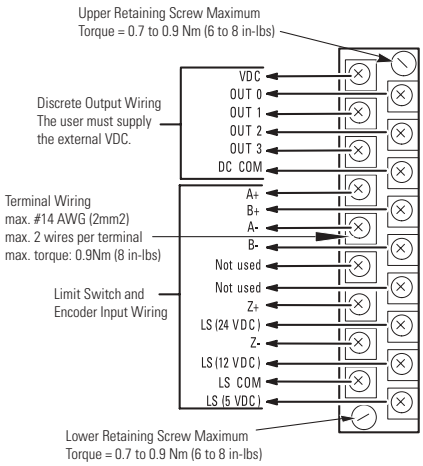
Differential Encoder Output Waveforms

The figure below shows the different encoder output waveforms. If your encoder matches these waveforms, the encoder signals can be directly connected to the associated screw terminals on the module. For example, the A lead from the encoder is connected to the module's A+ screw. If your encoder does not match these waveforms, some wiring modifications may be necessary. See the High-Speed Counter Module User Manual, publication 1746-6.5 for a description of these modifications.

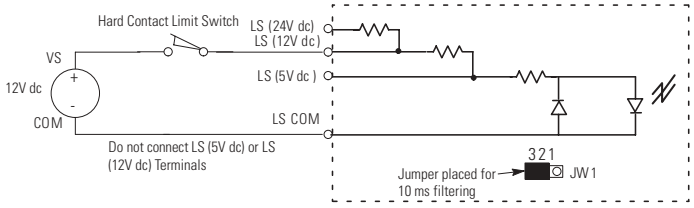


1746-HSCE Limit Switch (12V dc Hard Contact)

Input and Output Connections



1746-HSCE module

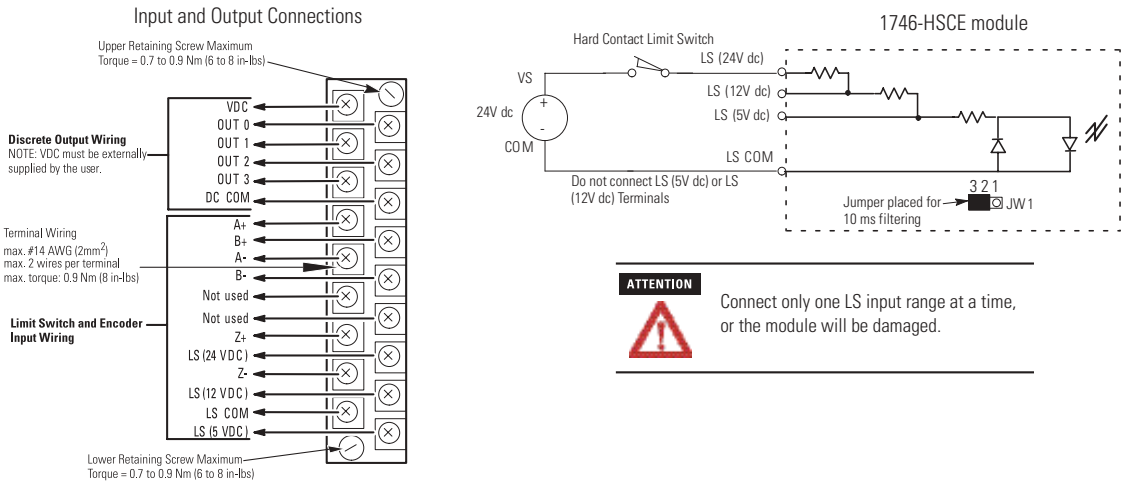


ATTENTION

Connect only one LS input range at a time, or the module will be damaged.

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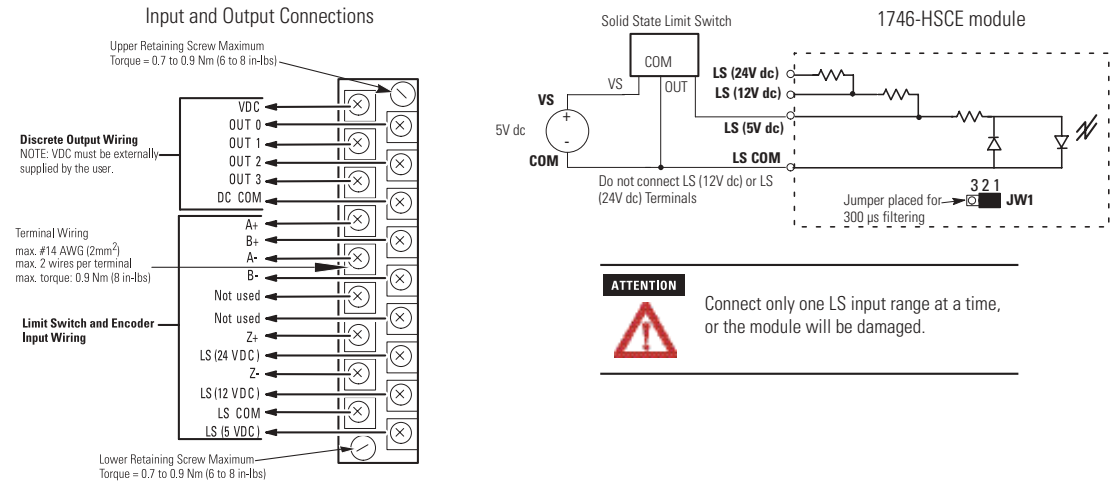
1746-HSCE Limit Switch (24V dc Hard Contact)



ATTENTION

Connect only one LS input range at a time, or the module will be damaged.

1746-HSCE Limit Switch (5V dc Solid State)

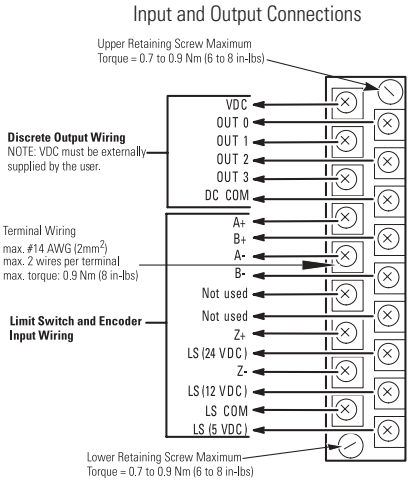


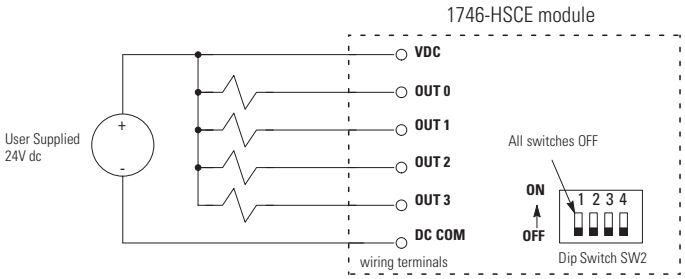
ATTENTION

Connect only one LS input range at a time, or the module will be damaged.

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1746-HSCE Outputs

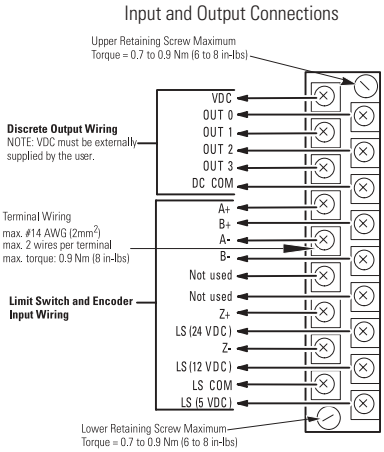


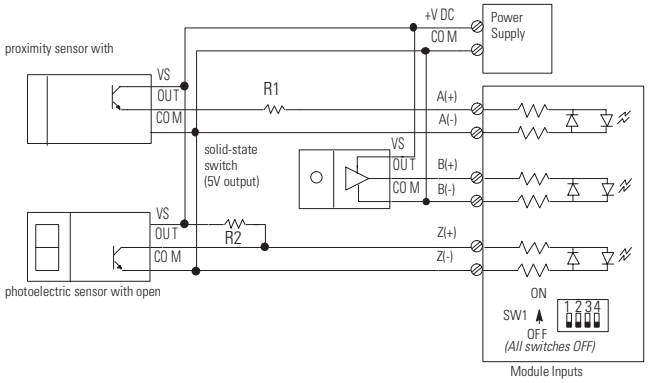


ATTENTION Do not use incandescent lamps as output indicators. The high peak inrush current required to heat the filament can damage the module's output circuits. Use LED type indicators that satisfy the output circuit ratings, such as Allen-Bradley 800A and 800T LED indicators.

The outputs are not electrically isolated from each other. (They are referenced to the same output common terminal.) However, outputs are isolated from the rest of the circuitry to a level of 1500 volts.

1746-HSCE Single-Ended (Discrete Devices)





IMPORTANT This diagram shows the sensors operation from a common power supply. Separate power supplies for each circuit can be used.

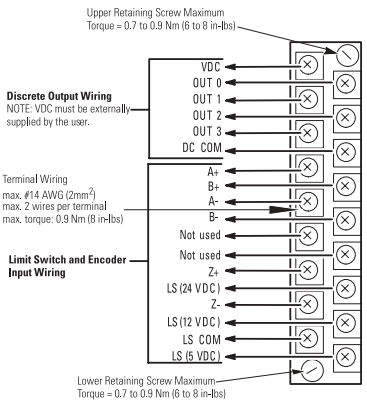
The resistor (R1) value depends on the power supply value (VS).

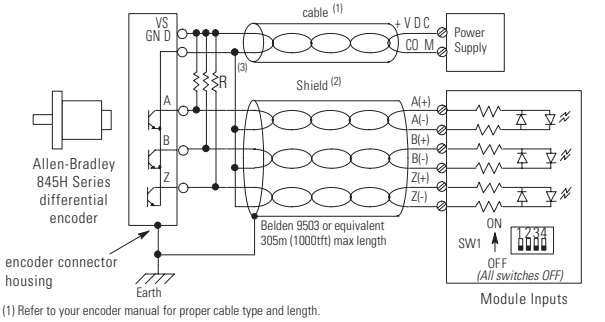
The pullup resistor (R2) value depends on the power supply value (VS).

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1746-HSCE Single-Ended Encoder (Open-Collector)

Input and Output Connections





(1) Refer to your encoder manual for proper cable type and length.

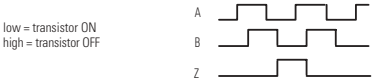
(2) Due to the topology of the module's input circuits, terminating the shield at the encoder end provides the highest immunity to EMI interference. Connect EARTH ground directly to the encoder connector housing.

(3) The pullup resistor (R) value depends on the power supply value (VS). The table below lists the resistor values for typical power supply values. These resistors must be located at the encoder end of the cable.

VS Value	R Value	Maximum Output Leakage
+5V dc	150 ohm 1/4W 5%	6.3 mA
+12V dc	1800 ohm 1/4W 5%	1.5 mA
+24V dc	4700 ohm 1/4W 5%	1.2 mA

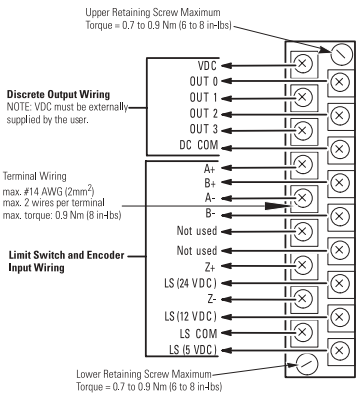
Single-Ended Encoder Output Waveforms

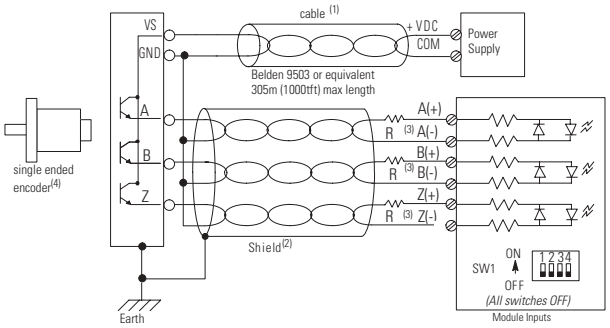
The figure below shows the single-ended output waveforms. When the waveform is low, the encoder output transistor is ON.



1746-HSCE Single-Ended Encoder (Sourcing)

Input and Output Connections





(1) Refer to your encoder manual for proper cable type and length.

(2) Due to the topology of the module's input circuits, terminating the shield at the encoder end provides the highest immunity to EMI interference. Connect EARTH ground directly to the encoder connector housing.

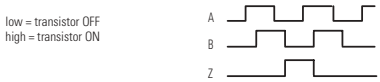
(3) The resistor (R) value depends on the power supply value (VS). The table below lists the resistor values for typical power supply values. These resistors must be located at the encoder end of the cable.

(4) The Allen-Bradley 845H sourcing encoder is not compatible with this module.

VS Value	R Value	Maximum Output Leakage
+5V dc	no resistor needed	6.3 µA
+12V dc	1800 ohm 1/4W 5%	1.5 µA
+24V dc	4700 ohm 1/4W 5%	1.2 µA

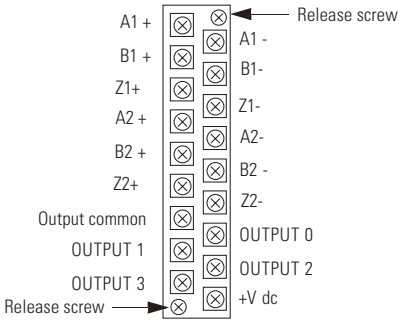
Single-Ended Encoder Output Waveforms (Sourcing)

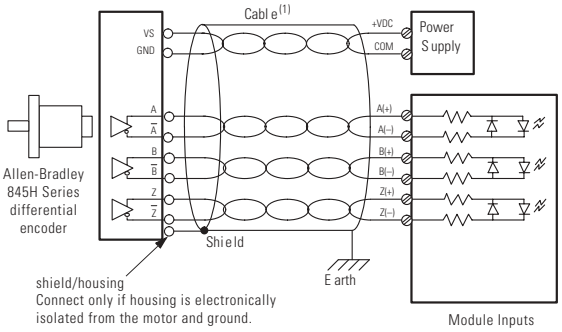
The figure below shows the single-ended encoder output waveforms. When the waveform is low, the encoder output transistor is OFF.



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1746-HSCE2 – Differential Encoder

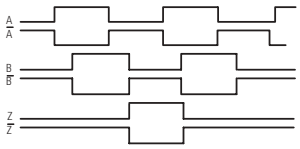




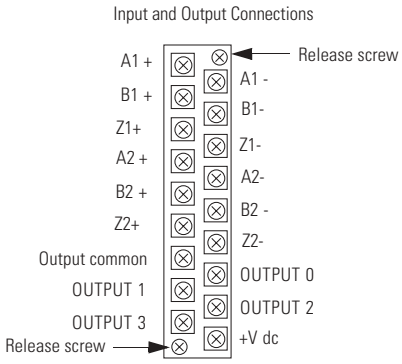
1 Refer to your encoder manual for proper cable type. The type of cable used should be twisted pair, individually shielded cable with a maximum length of 300m (1000 ft.).

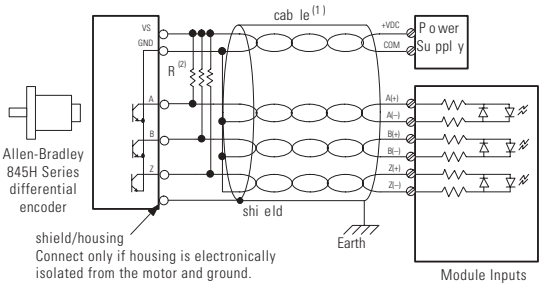
Differential Encoder Output Waveforms

The figure below shows the different encoder output waveforms. If your encoder matches these waveforms, the encoder signals can be directly connected to the associated screw terminals on the module. For example, the A lead from the encoder is connected to the module's A+ screw. If your encoder does not match these waveforms, some wiring modifications may be necessary. See the user's manual for your encoder.



1746-HSCE2 Single-Ended Encoder (Open-Collector)





1. Refer to your encoder manual for proper cable type. The type of cable used should be twisted pair, individually shielded cable with a maximum length of 300m (1000 ft.).(2)

2. External resistors are needed if not internal to the encoder. The pull-up resistor (R) value depends on the power supply value. The table below shows resistor values for typical supply voltages. To calculate the resistor value, use one of the following formulas:

For 5V dc jumper position: $R = \frac{(V_{CC} - V_{min})}{I_{min}}$

For 24V dc jumper position: $R = \left[\frac{(V_{CC} - V_{min})}{I_{min}} - 1K\Omega\right]$

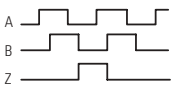
where: R = pull-up resistor value
V_{CC} = power supply voltage
V_{min} = 4.2V dc
I_{min} = 6.3mA

Power Supply Voltage (V_{CC})	Pull-up Resistor Value (R)[1]
5V dc	127 W
12V dc	238 W
24V dc	2140 W

1 Resistance values may change, depending upon your application.

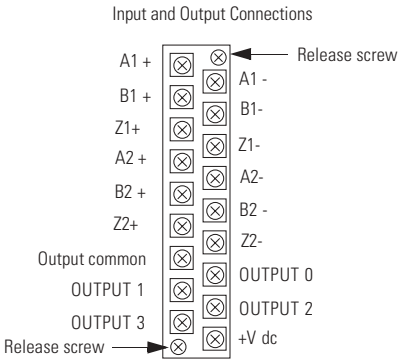
Single-Ended Encoder Output Waveforms

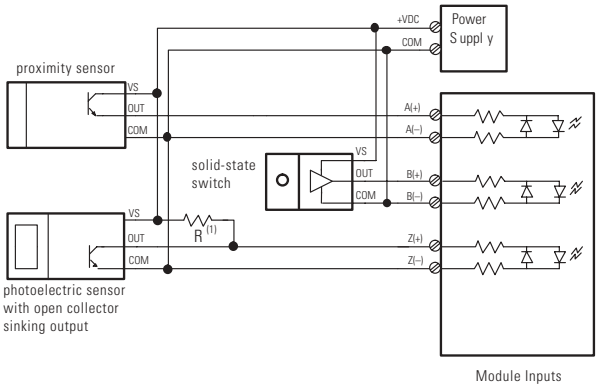
The figure below shows the single-ended encoder output waveforms. When the waveform is low, the encoder output transistor is on. When the waveform is high, the encoder output transistor is off.



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1746-HSCE2 Single-Ended (Discrete Devices)





1. External resistors are needed if not internal to the encoder. The pull-up resistor (R) value depends on the power supply value. The table below shows resistor values for typical supply voltages. To calculate the resistor value, use one of the following formulas:

For 5V dc jumper position: $R = \frac{(V_{CC} - V_{min})}{I_{min}}$

For 24V dc jumper position: $R = \left[\frac{(V_{CC} - V_{min})}{I_{min}} - 1K\Omega\right]$

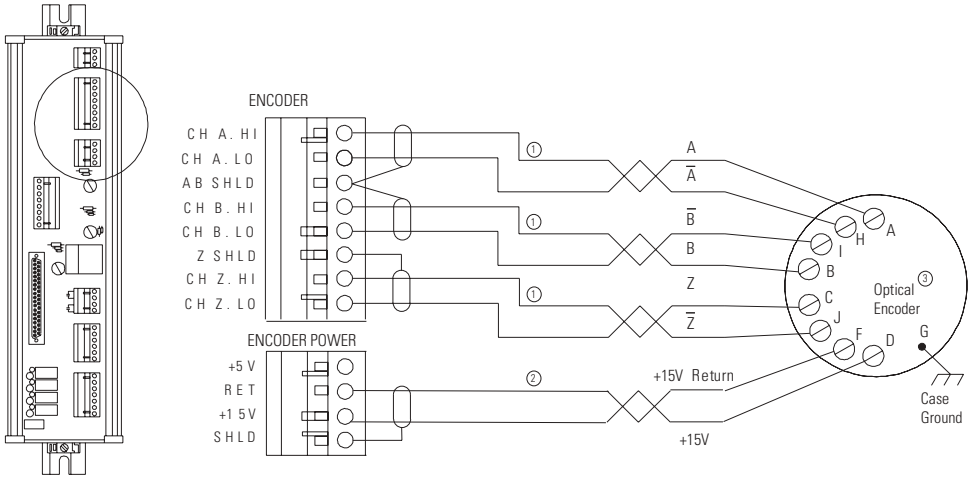
where: R = pull-up resistor value
V_{CC} = power supply voltage
V_{min} = 4.2V dc
I_{min} = 6.3mA

Power Supply Voltage (V_{CC})	Pull-up Resistor Value (R)[1]
5V dc	127 W
12V dc	238 W
24V dc	2140 W

1 Resistance values may change, depending upon your application.

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1746-HSRV – Wiring a 15V Encoder

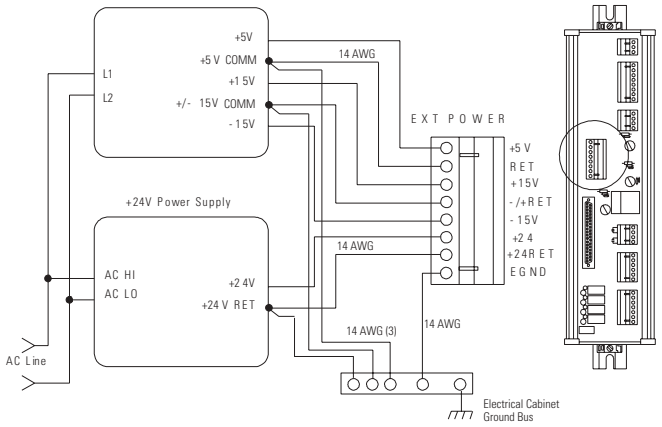


[1] Use three pair 22 gauge individually twisted and shielded cable.

[2] Use one pair 18 gauge twisted and shielded cable.

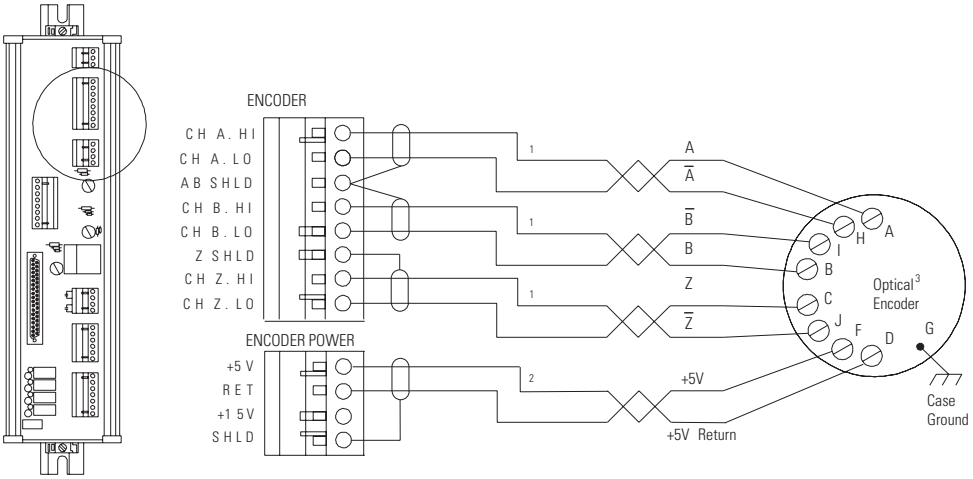
[3] Encoders must have +5V compatible differential line drive outputs on channels A, B, and Z (DS 8830 or equivalent (845H)).

Wiring the power supply



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1746-HSRV – Wiring a 5V Encoder

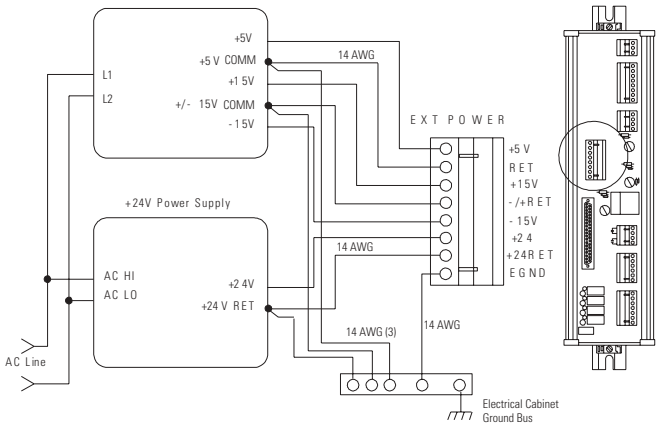


[1] Use three pair 22 gauge individually twisted and shielded cable.

[2] Use one pair 18 gauge twisted and shielded cable.

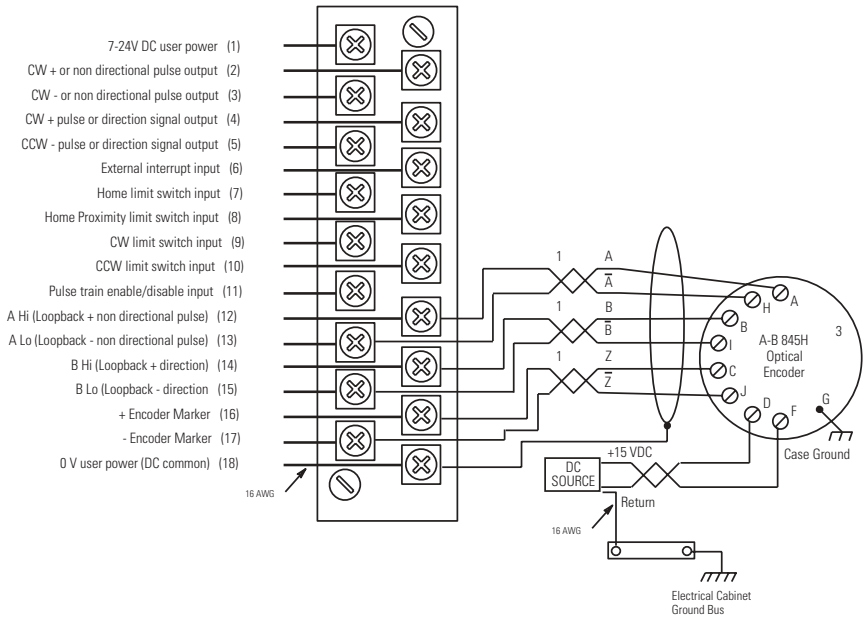
[3] Encoders must have +5V compatible differential line drive outputs on channels A, B, and Z (DS 8830 or equivalent (845H)).

Wiring the power supply



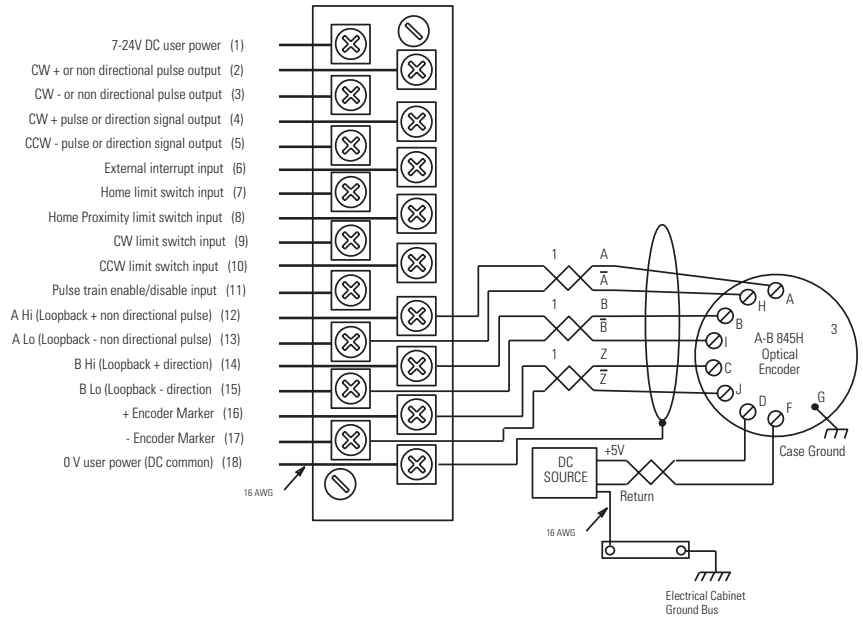
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1746-HSTP1 – Wiring a 15V Encoder



1. Use 3-pair, #22 gauge individually twisted and shielded pair, Belden 9504 or equivalent.
2. Use 1-pair, #18 gauge twisted and shielded cable.
3. Encoders must have +5V compatible differential line drive outputs on channels A, B and Z. (DS8830 or equivalent - Allen-Bradley 845H).
4. +15V from encoder power source - connect encoder return to 0V user power (DC common) at the power supply sources.

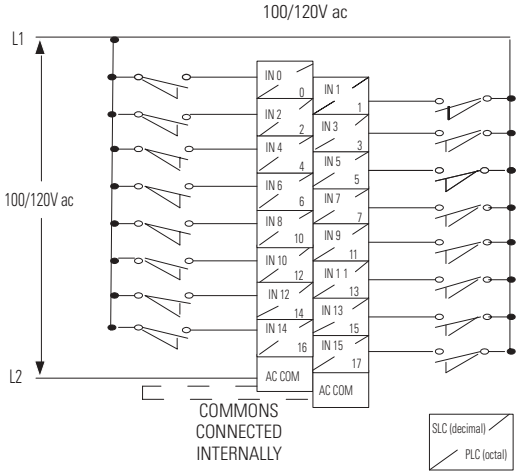
1746-HSTP1 – Wiring a 5V Encoder



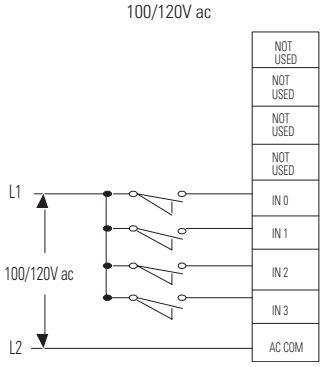
1. Use 3-pair, #22 gauge individually twisted and shielded pair, Belden 9504 or equivalent.
2. Use 1-pair, #18 gauge twisted and shielded cable.
3. Encoders must have +5V compatible differential line drive outputs on channels A, B and Z. (DS8830 or equivalent - Allen-Bradley 845H).
4. +5V from encoder power source - connect encoder return to 0V user power (DC common) at the power supply sources.

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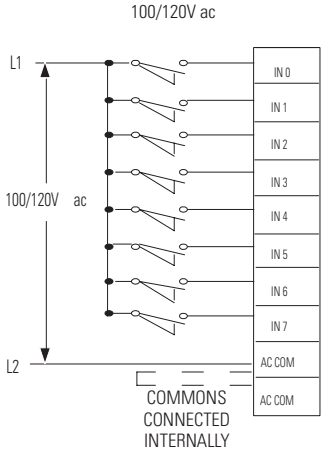
1746-IA16



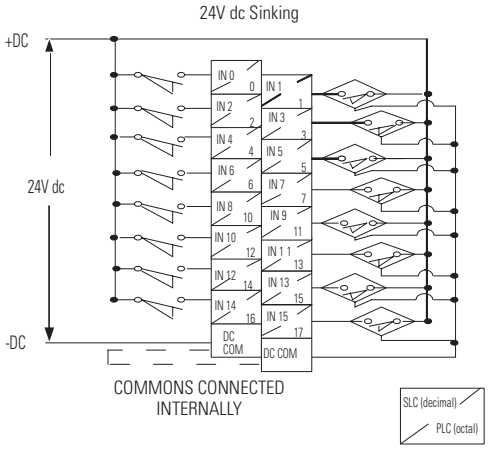
1746-IA4



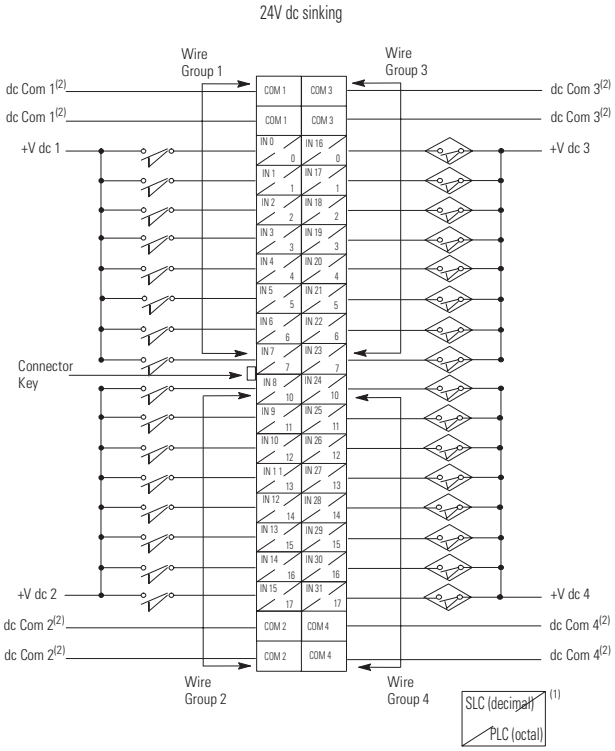
1746-IA8



1746-IB16



1746-IB32



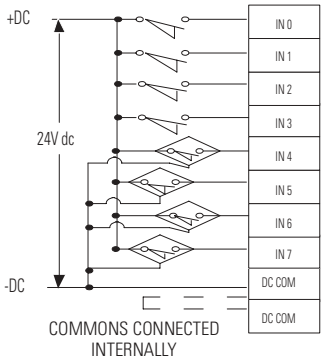
(1) See decimal and octal coding information at the top of the page.

(2) The dc Com pins on the 1746-IB32 input module are isolated between the four groups and the two com pins in each group are connected internally. To maintain group isolation provided by 32-point I/O modules, use a 1492 terminal block that provides group isolation. Consult 1492 documentation or your Allen-Bradley Sales Office for additional information.

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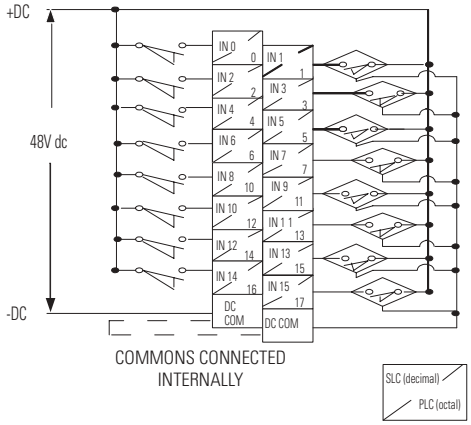
1746-IB8

24V dc Sinking



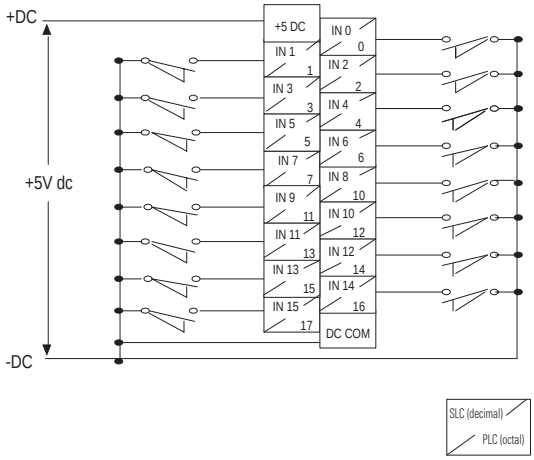
1746-IC16

48V dc Sinking



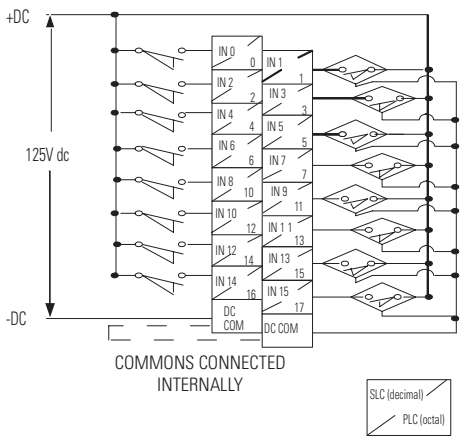
1746-IG16

TTL Input (Low = True)



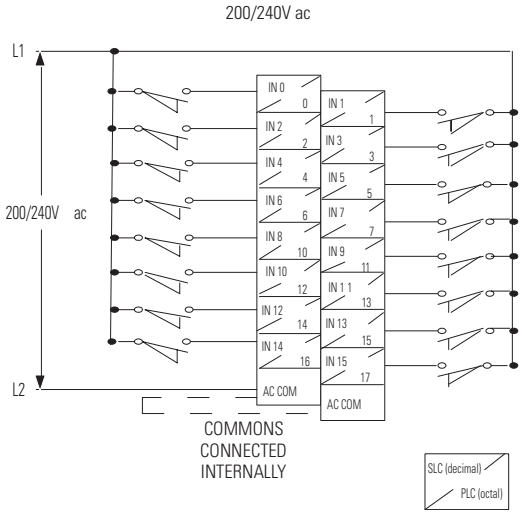
1746-IH16

125V dc Sinking

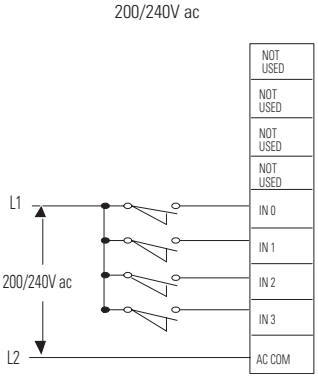


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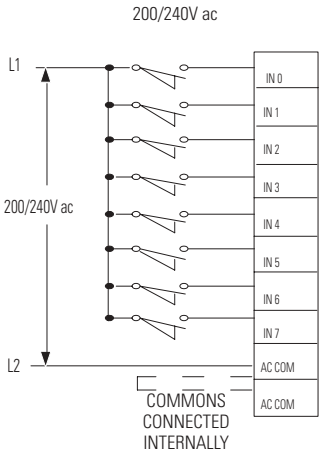
1746-IM16



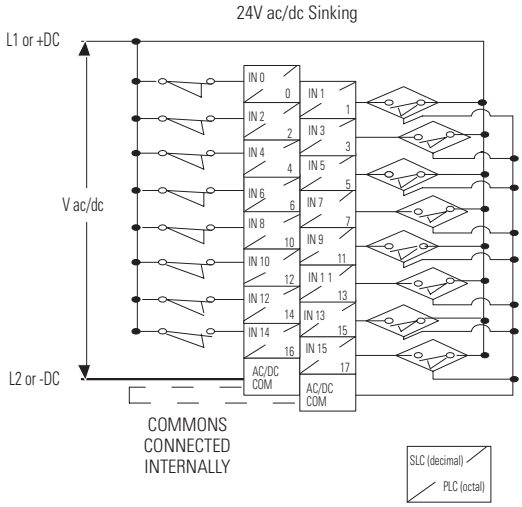
1746-IM4



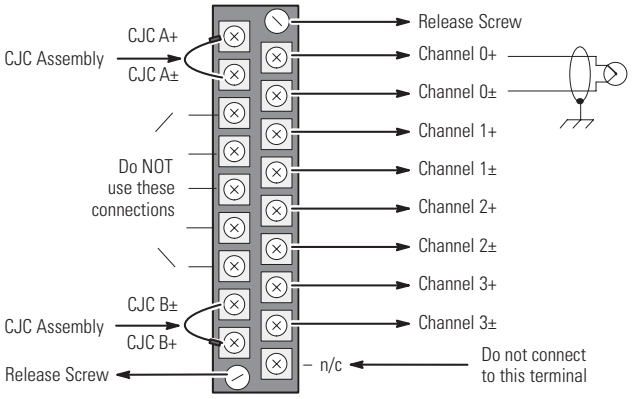
1746-IM8



1746-IN16



1746-INT4



Cold Junction Compensation (CJC)

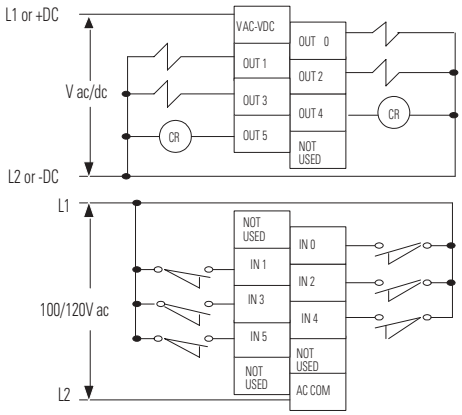
ATTENTION

Do not remove or loosen the cold junction compensating thermistors located on the terminal block. Both thermistors are critical to ensure accurate thermocouple input readings at each channel. The module will not operate in the thermocouple mode if a thermistor is removed.

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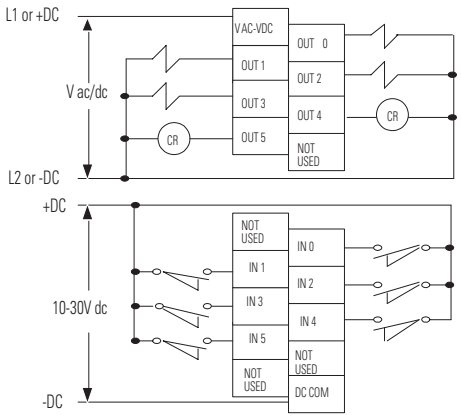
1746-IO12

100/120V ac INPUT - RELAY OUTPUT



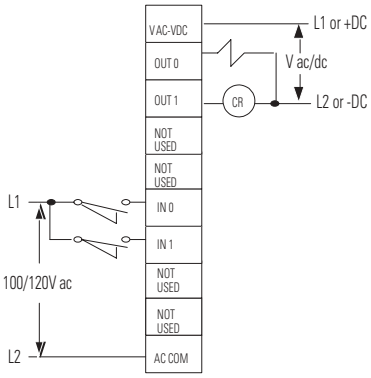
1746-IO12DC

24V dc INPUT - RELAY OUTPUT



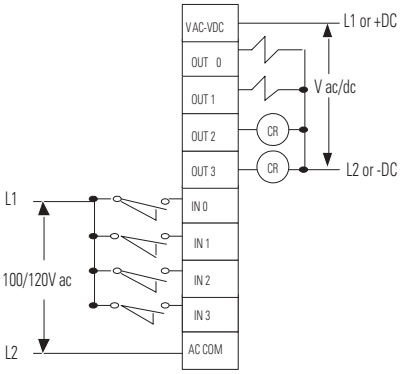
1746-IO4

100/120V ac Input - Relay Output



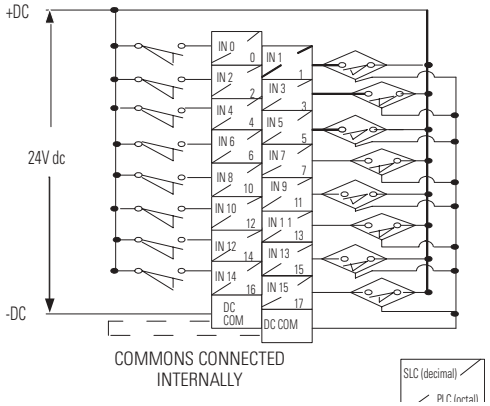
1746-IO8

100/120V ac Input - Relay Output



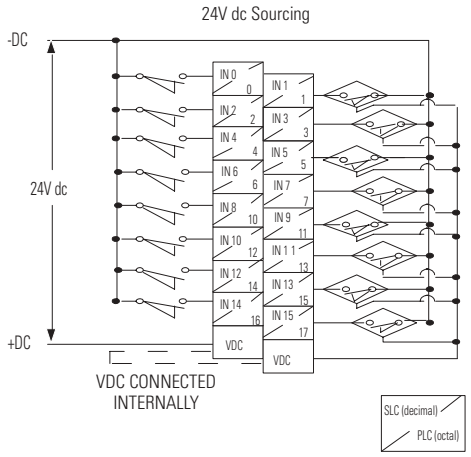
1746-ITB16

24V dc Sinking

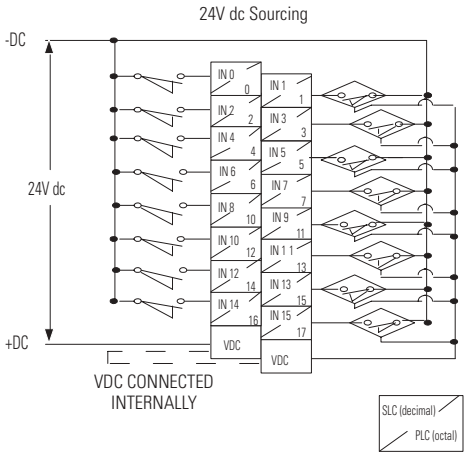


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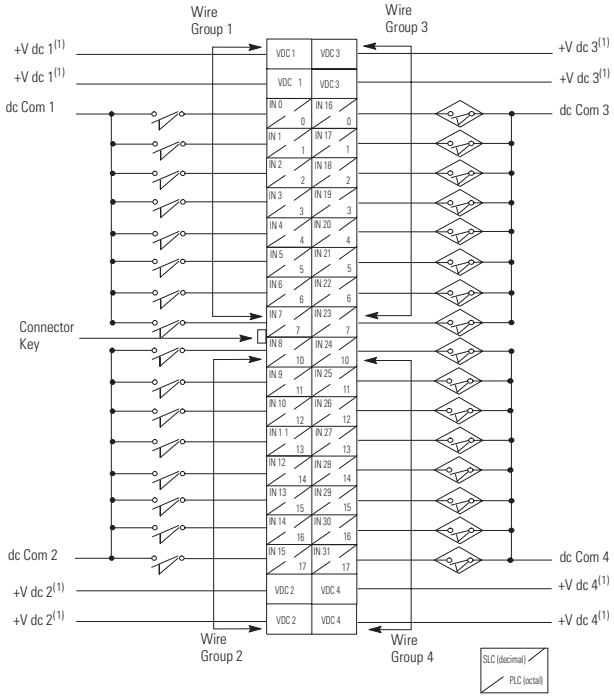
1746-ITV16



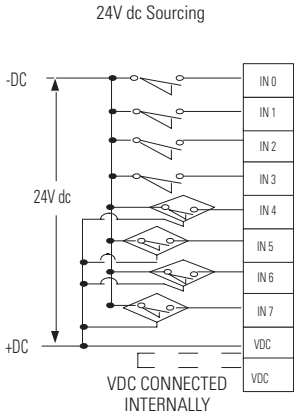
1746-IV16



1746-IV32



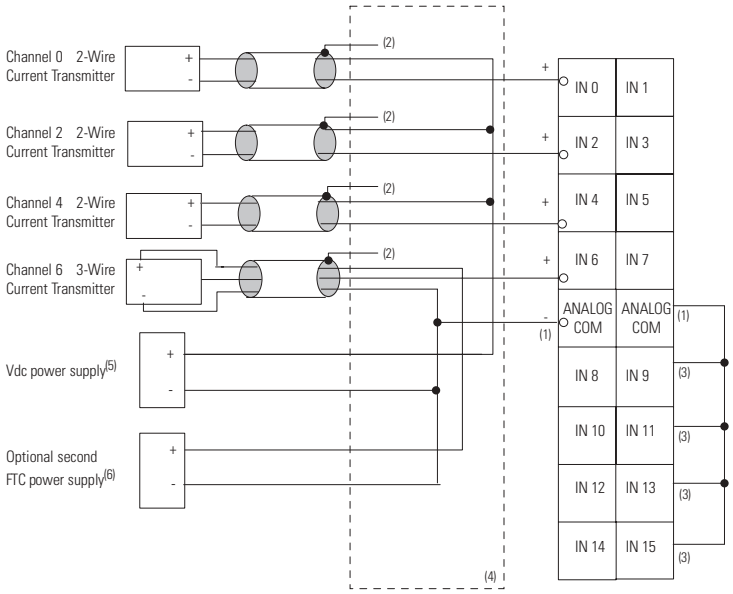
1746-IV8



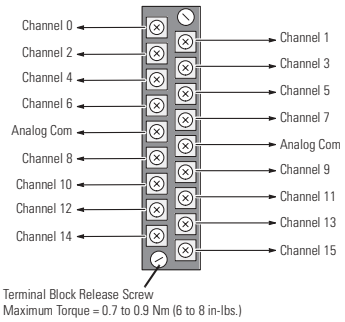
(1) The V dc pins on the 1746-IV32 input module are isolated between the four groups and the two V dc pins in each group are connected internally. To maintain group isolation provided by 32-point I/O modules, use a 1492 terminal block that provides group isolation. Consult 1492 documentation or your Allen-Bradley Sales Office for additional information.

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1746-NI16I



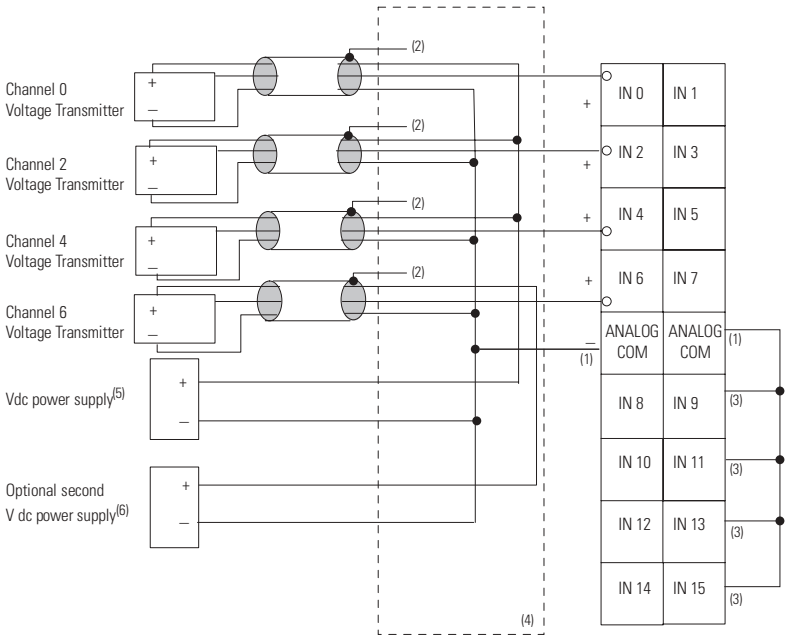
Terminal Block Spare Part Catalog Number 1746-RT25G



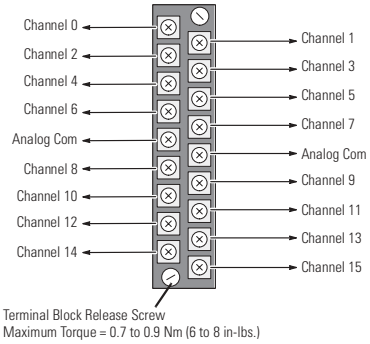
1. There are two common terminals for all of the 16 current inputs. These two analog common terminals are connected internally.
2. All shield wires should be connected to chassis mounting screws.
3. Unused channels should be connected to the analog common terminals (0 Volts).
4. If separate shielded cables are used for each analog input channel, interposing terminal blocks are needed to terminate up to 16 common wires. Then 1 to 4 common wires should be wired from the interposing terminal block to the 2 common terminals on the 1746-NI16I module.
5. The module does not provide loop power for analog inputs. Use a power supply that matches the transmitter specifications.
6. More than one power supply can be used if all supplies are class 2.

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1746-NI16V

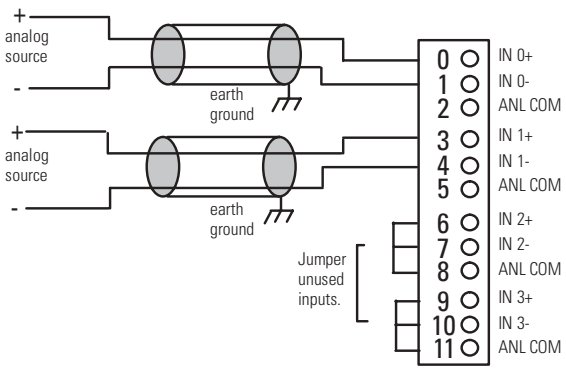


Terminal Block Spare Part Catalog Number 1746-RT25G



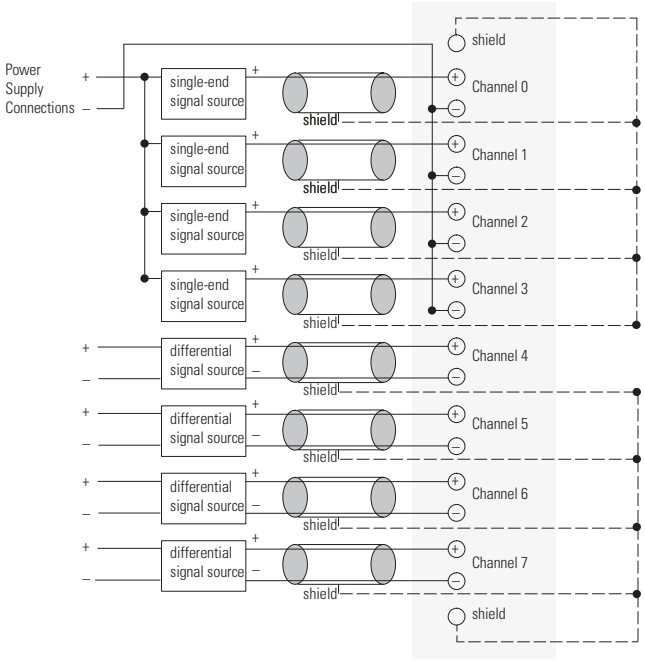
1. There are two common terminals for all of the 16 voltage inputs. These two analog common terminals are connected internally.
2. All shield wires should be connected to chassis mounting screws.
3. Unused channels should be connected to the analog common terminals (0 Volts).
4. If separate shielded cables are used for each analog input channel, interposing terminal blocks are needed to terminate up to 16 common wires. Then 1 to 4 common wires should be wired from the interposing terminal block to the 2 common terminals on the 1746-NI16V module.
5. The module does not provide loop power for analog inputs. Use a power supply that matches the transmitter specifications.
6. More than one power supply can be used if all supplies are class 2.

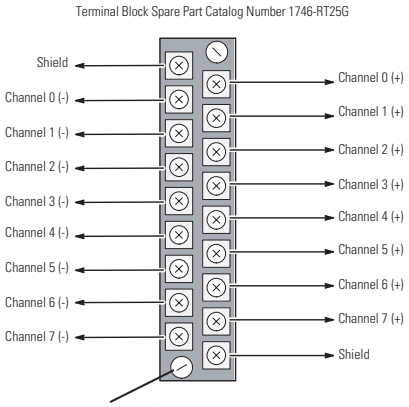
1746-NI4



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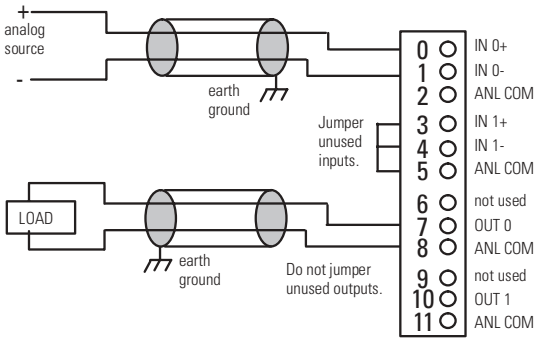
1746-NI8



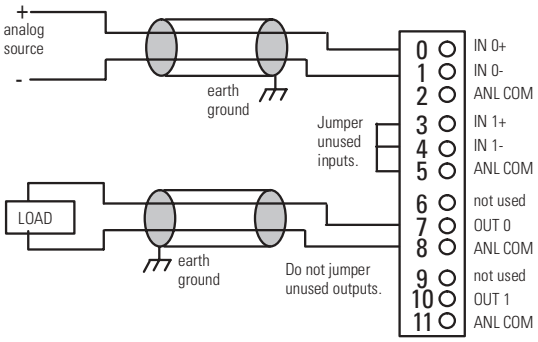


1. Use unshielded communication cable (Belden 8761) and keep the length as short as possible.
2. Connect only one end of the cable shield to earth ground.
3. Connect the shield drain wires for channels 0 to 3 to the top shield terminal.
4. Connect the shield drain wires for channels 4 to 7 to the bottom shield terminal.
5. Shield terminals are internally connected to chassis ground which is connected to earth ground via the SLC backplane.
6. Single-ended source commons may be jumpered together at the terminal block.
7. The channels are not isolated from each other.
8. If a differential signal source has an analog common, it cannot and must not be connected to the module.
9. The common mode voltage range is ±10.5 volts. The voltage between any two terminals must be less than 15 volts when connected in a single-ended configuration.
10. The module does not provide power for the analog inputs.
11. Use a power supply that matches the transmitter (sensor) specifications.

1746-NIO4I

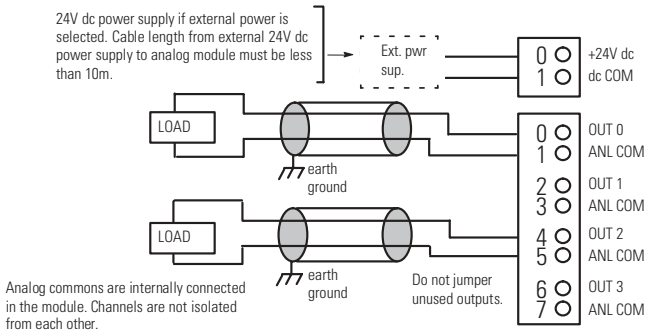


1746-NIO4V

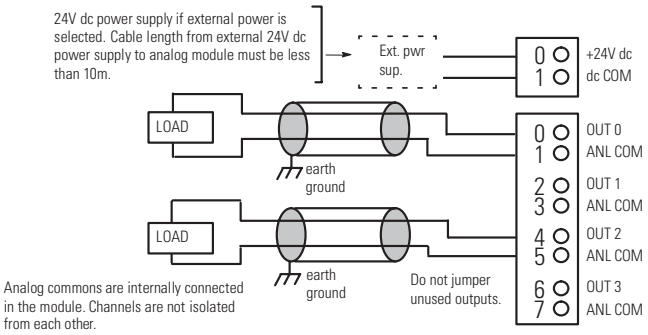


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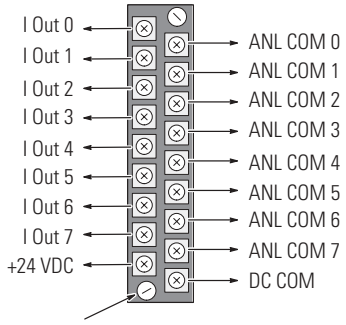
1746-NO4I



1746-NO4V



1746-NO8I



Terminal Block Release Screw
Maximum Torque = 0.7 to 0.9 Nm (6 to 8 in-lbs.)

Terminal Block Spare Part Catalog Number 1746-RT25G

ATTENTION

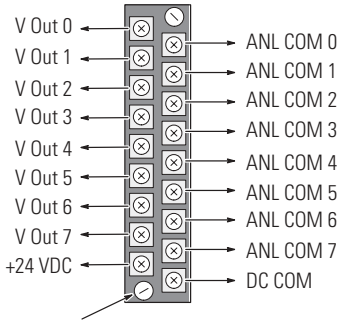


Disconnect power to the SLC before attempting to install, remove, or wire the removable terminal block. To avoid cracking the removable terminal block, alternate the removal of the slotted terminal block release screws.

IMPORTANT

Channels are not isolated from each other. All analog commons (ANL COM) are connected together internally.

1746-NO8V



Terminal Block Release Screw
Maximum Torque = 0.7 to 0.9 Nm (6 to 8 in-lbs.)

Terminal Block Spare Part Catalog Number 1746-RT25G

ATTENTION



Disconnect power to the SLC before attempting to install, remove, or wire the removable terminal block. To avoid cracking the removable terminal block, alternate the removal of the slotted terminal block release screws.

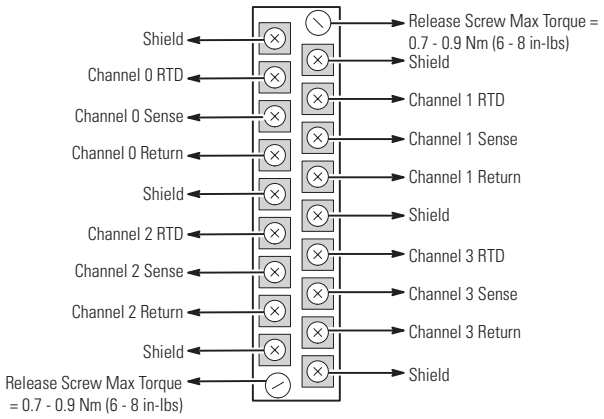
IMPORTANT

Channels are not isolated from each other. All analog commons (ANL COM) are connected together internally.

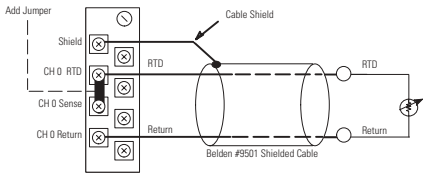
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1746-NR4

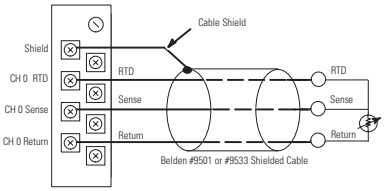
Terminal Connections



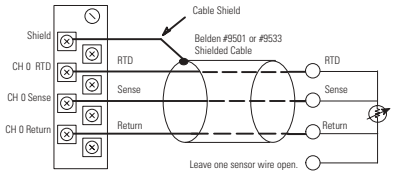
2-Wire RTD



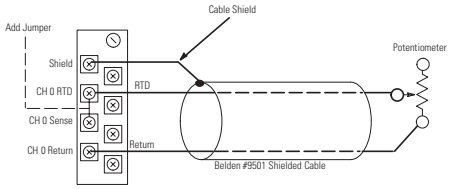
3-Wire RTD



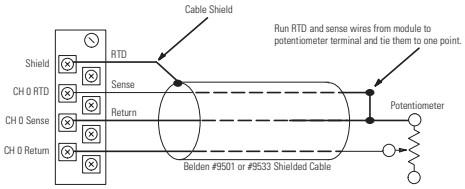
4-Wire RTD



2-Wire Potentiometer



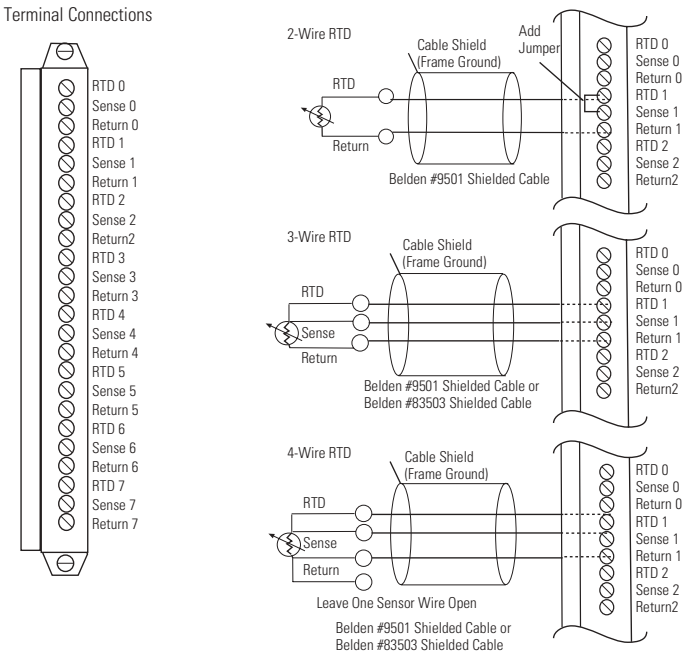
3-Wire Potentiometer



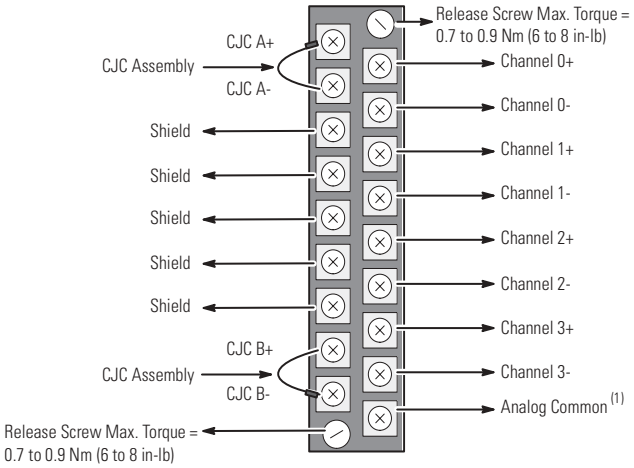
Potentiometer wiper arm can be connected to either the RTD or Return terminal, depending on whether you want increasing or decreasing resistance.

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1746-NR8



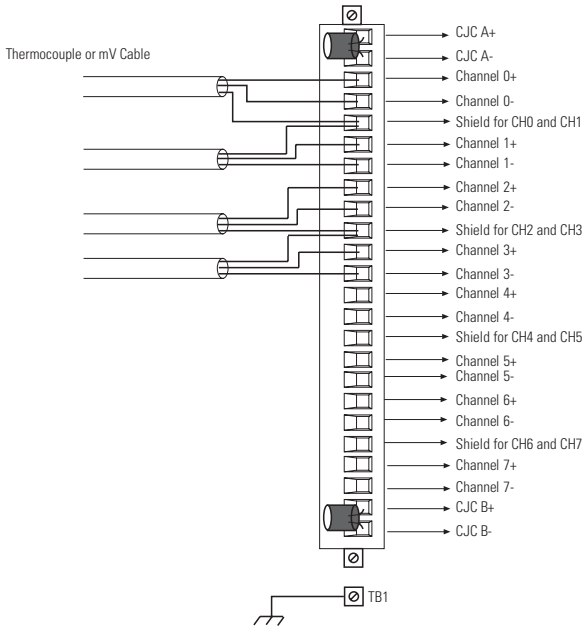
1746-NT4



Cold Junction Compensation (CJC)

ATTENTION Do not remove or loosen the cold junction compensating thermistor assemblies located between the two upper and lower CJC terminals on the terminal block. Both thermistor assemblies are critical to ensure accurate thermocouple input readings at each channel. The module will not operate in the thermocouple mode if either assembly is removed.

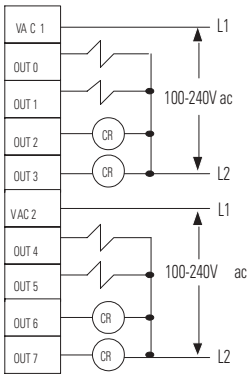
1746-NT8



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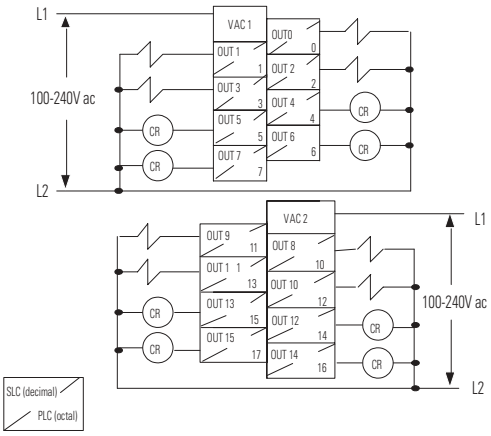
1746-OA8

100 to 240V ac Triac Output



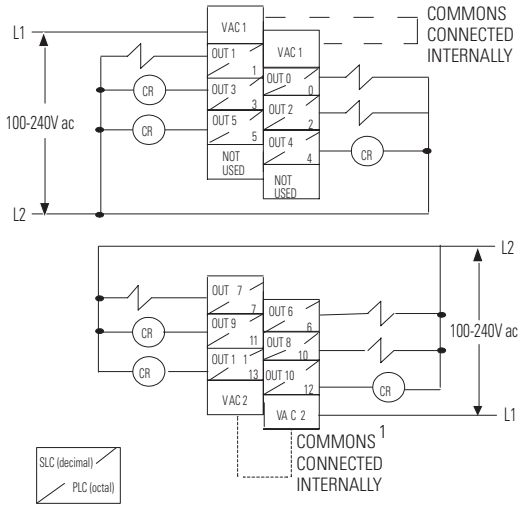
1746-OA16

100 to 240V ac Triac Output



1746-OAP12

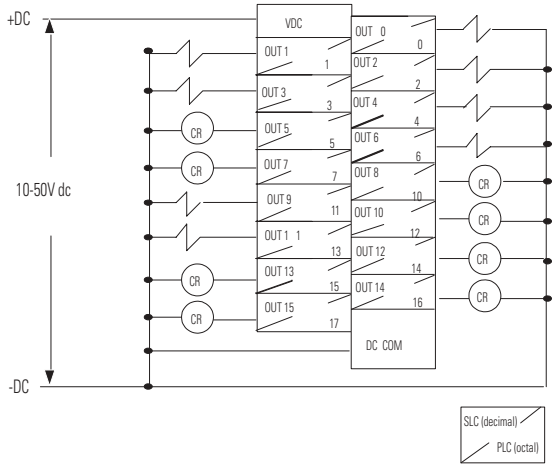
100 to 240V ac High Current Triac Output



1. This module provides fused commons for short circuit protection.

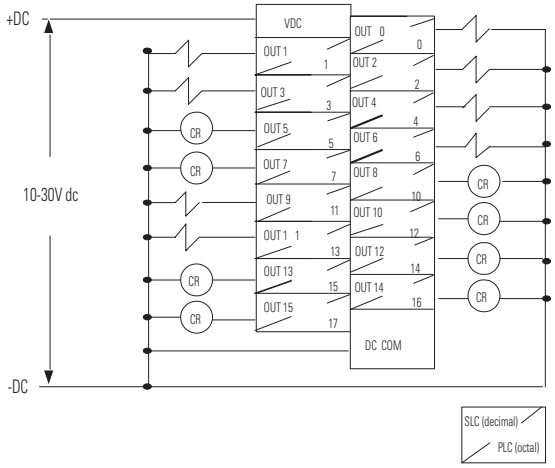
1746-OB16

Transistor Output-Sourcing



1746-OB16E

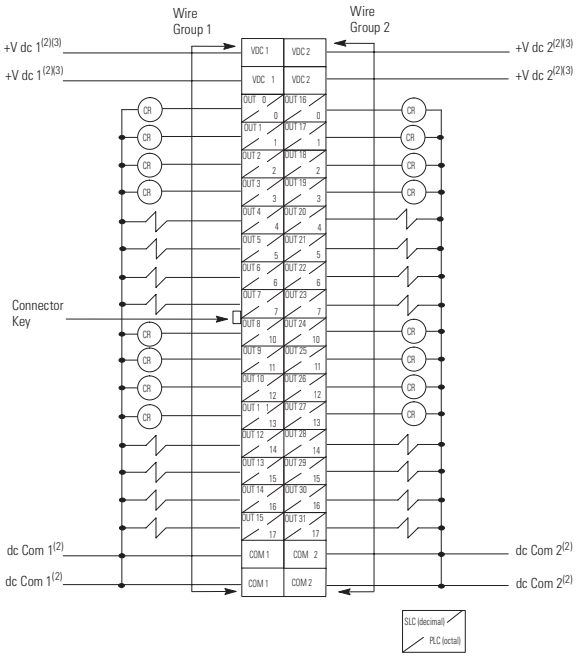
Transistor Output-Sourcing (electronically protected)



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1746-OB32

5 to 50V dc Transistor Output Sourcing

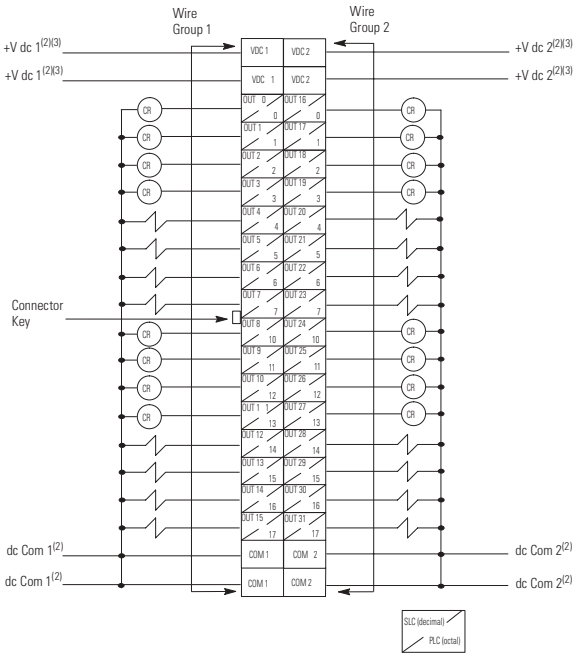


1. The V dc and dc Com pins on the 1746-OB32 and 1746-OB32E output module are isolated between the two groups and the two V dc and two dc Com pins in each group are connected internally.

2. Both V dc pins must be connected to the dc power source if current for a common group is expected to exceed 2 amps. To maintain group isolation provided by 32-point I/O modules, use a 1492 terminal block that provides group isolation.

1746-OB32E

10 to 30V dc Electronically Protected Sourcing

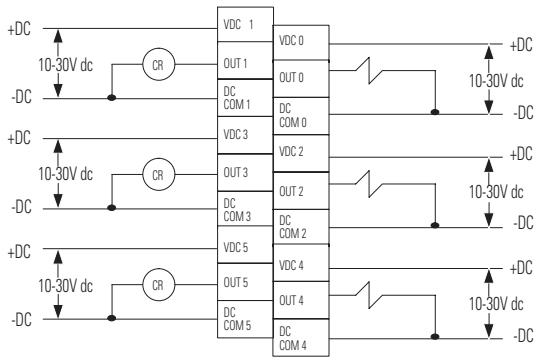


1. The V dc and dc Com pins on the 1746-OB32 and 1746-OB32E output module are isolated between the two groups and the two V dc and two dc Com pins in each group are connected internally.

2. Both V dc pins must be connected to the dc power source if current for a common group is expected to exceed 2 amps. To maintain group isolation provided by 32-point I/O modules, use a 1492 terminal block that provides group isolation.

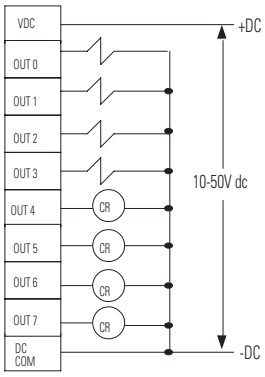
1746-OB6EI

10 to 30V dc Transistor Output-Sourcing
Channel-to-Channel Isolated (electronically protected)



1746-OB8

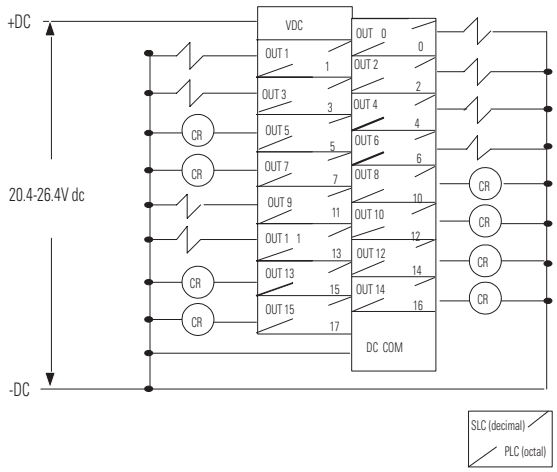
10 to 50V dc Transistor Output-Sourcing



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1746-OBP16

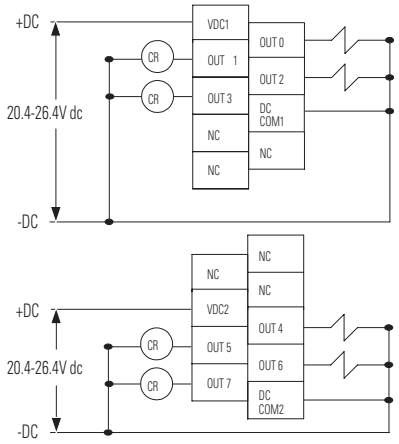
Transistor Output-Sourcing [1]



1. This module provides fused commons for short circuit protection.

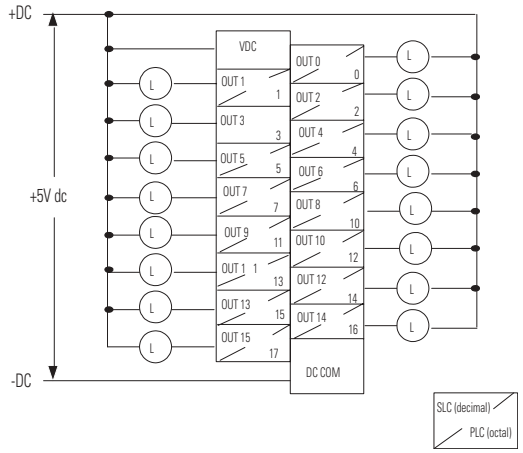
1746-OBP8

20.4 to 26.4V dc Transistor Output-Sourcing



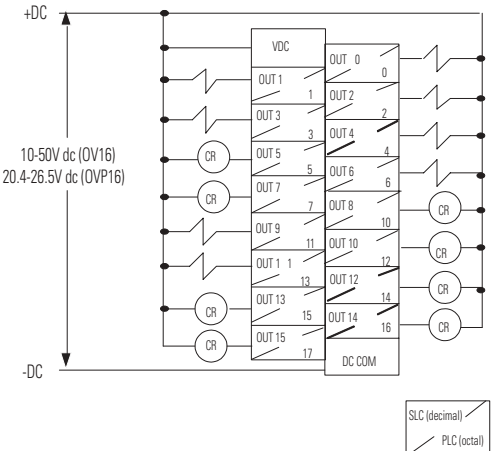
1746-OG16

TTL Output (Low = True)



1746-OV16

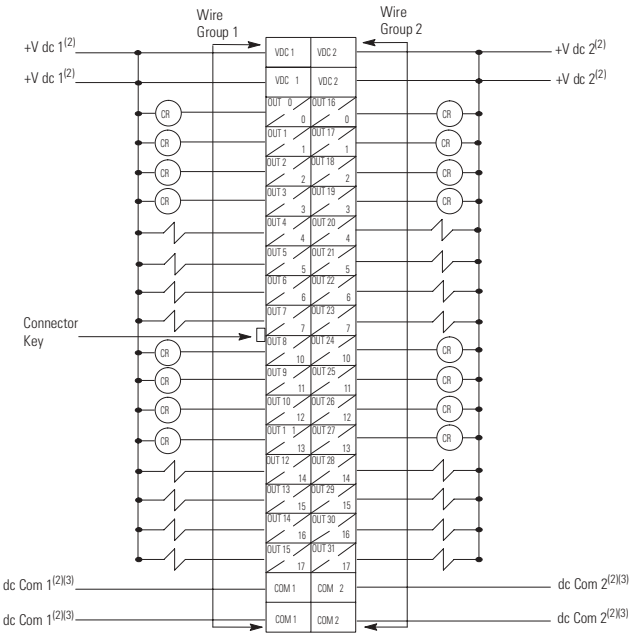
10 to 50V dc OR 20.4 to 26.4V dc Transistor Output Sinking



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1746-OV32

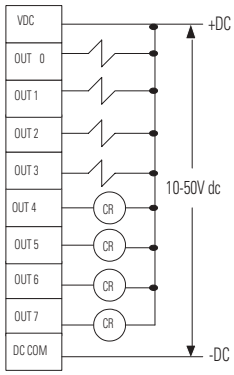
5 to 50V dc Transistor Output Sinking



1. The V dc and dc Com pins on the 1746-OV32 output module are isolated between the two groups. Also, the two V dc and two V Com pins in each group are connected internally.
2. Both dc Com pins must be connected to the dc power source if current for a common group is expected to exceed 2 amps. To maintain group isolation provided by 32-point I/O modules, use a 1492 terminal block that provides group isolation.

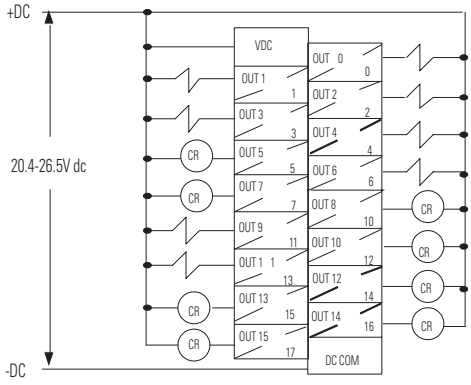
1746-OV8

10 to 50V dc Transistor Output Sinking



1746-OVP16

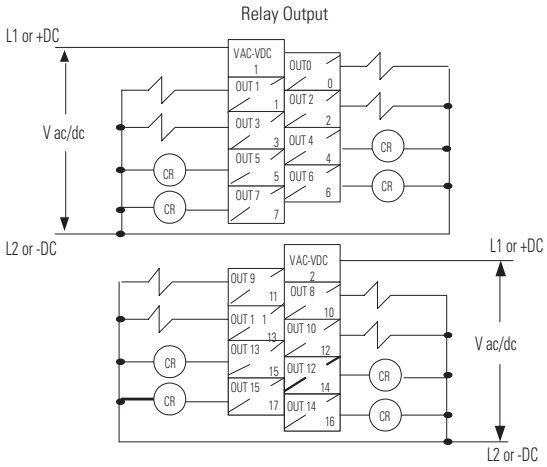
10 to 50V dc OR 20.4 to 26.4V dc Transistor Output Sinking [1]



1. This module provides fused commons for short circuit protection.

1746-OW16

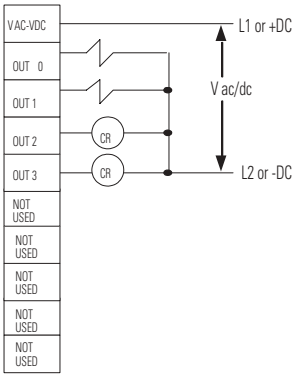
Relay Output



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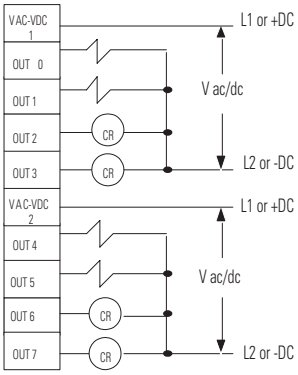
1746-OW4

Relay Output



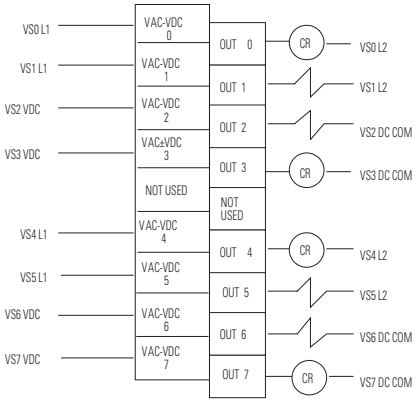
1746-OW8

Relay Output

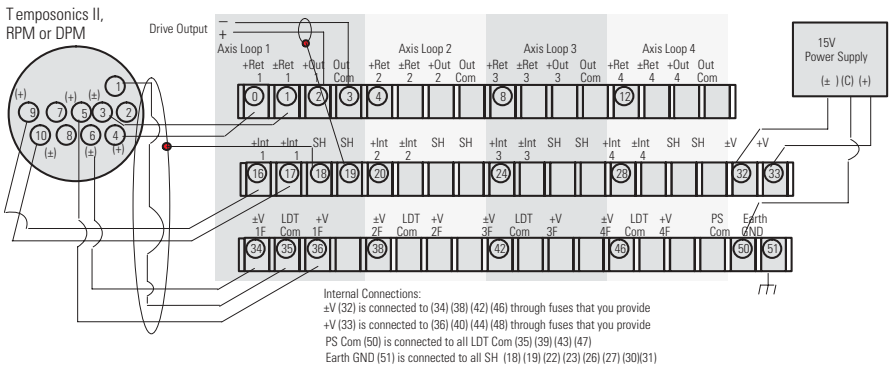


1746-OX8

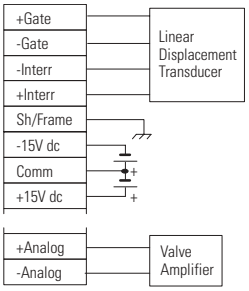
Channel-to-Channel Isolated Relay Output



1746-QS Typical Connections to IFM Terminal Block



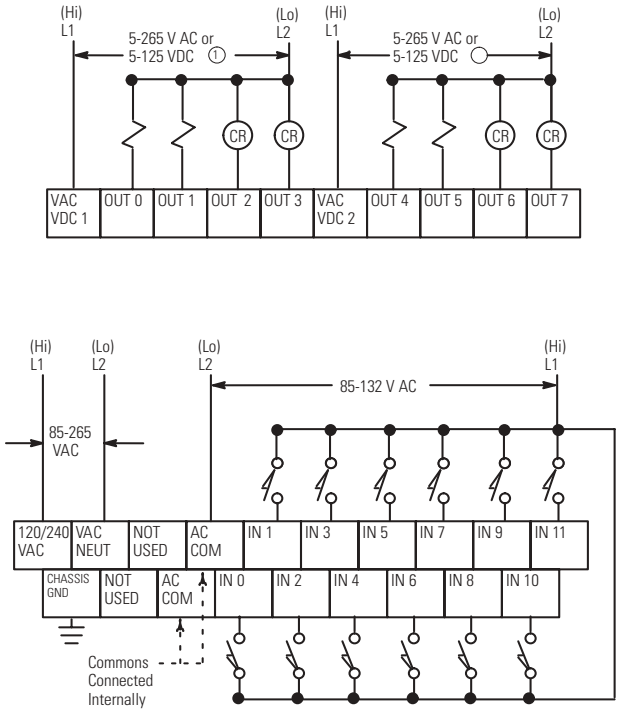
1746-QV



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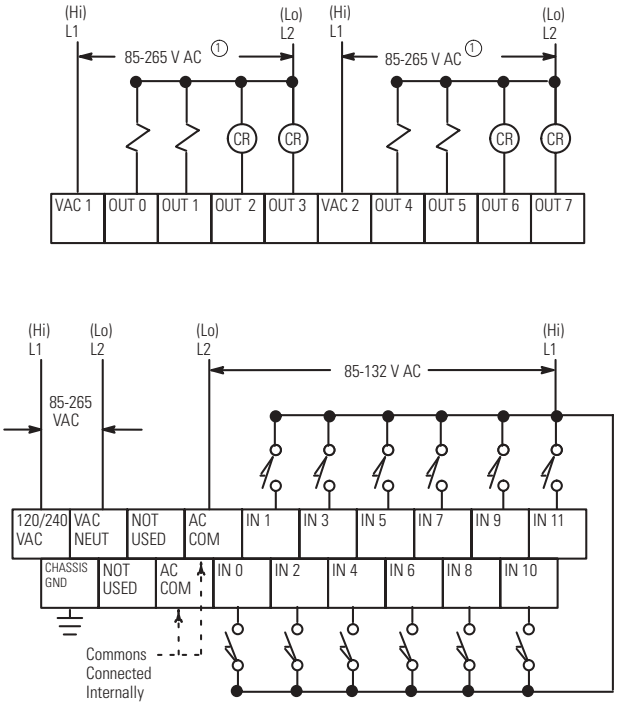
1747 I/O on Fixed Hardware Controllers

1747-L20A



The outputs are isolated in groups as shown. Therefore, different voltages can be applied to each group as the specific application requires.

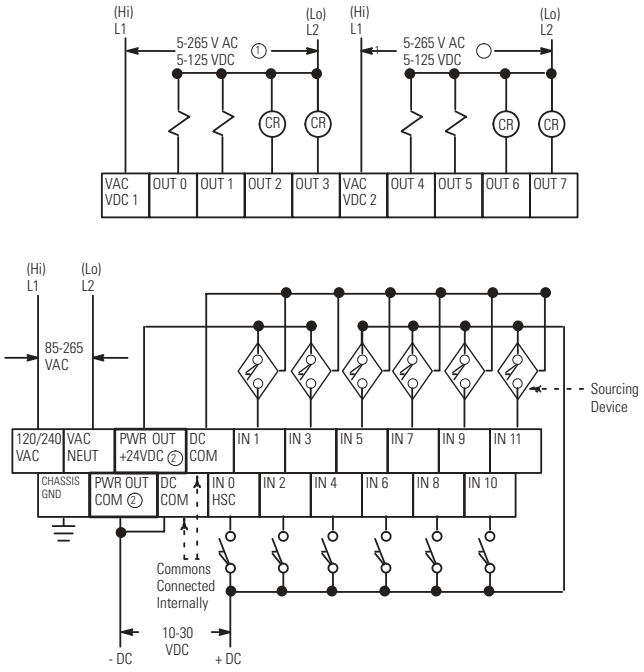
1747-L20B



The outputs are isolated in groups as shown. Therefore, different voltages can be applied to each group as the specific application requires

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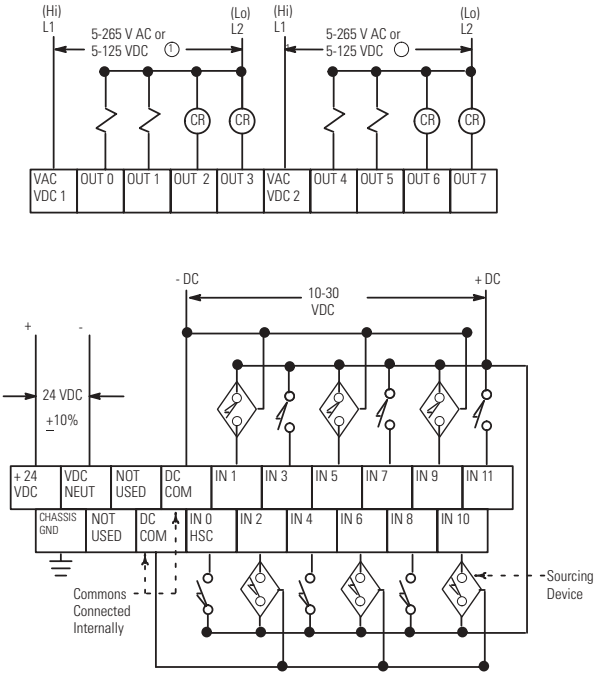
1747-L20C



1. The outputs are isolated in groups as shown. Therefore, different voltages can be applied to each group as the specific application requires.

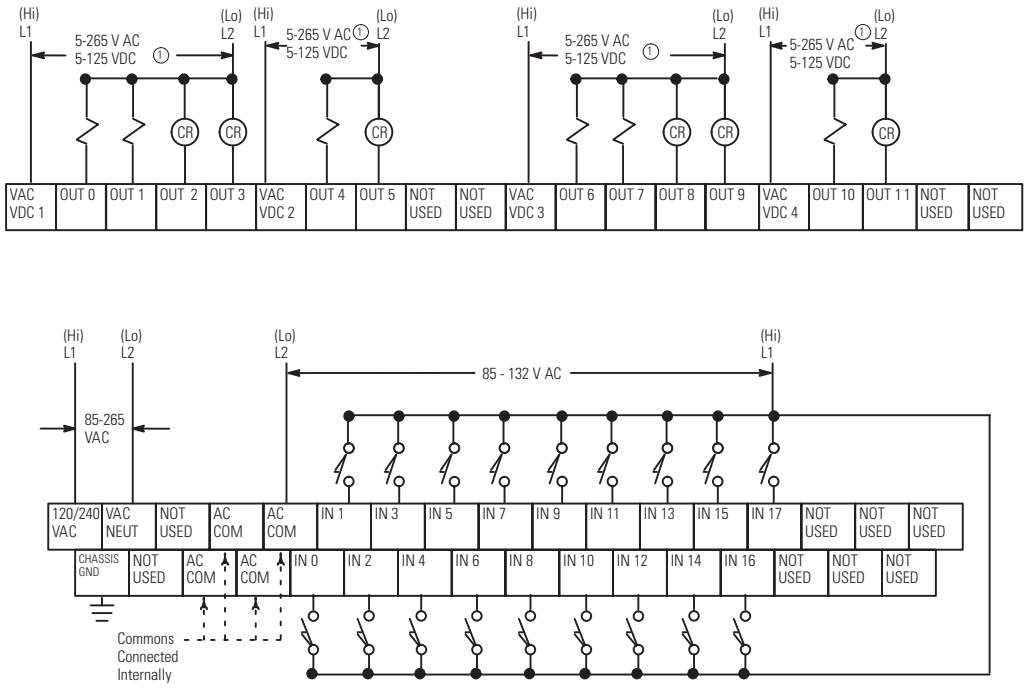
2. 24V dc, 200mA user power is available for sensors.

1747-L20F



The outputs are isolated in groups as shown. Therefore, different voltages can be applied to each group as the specific application requires.

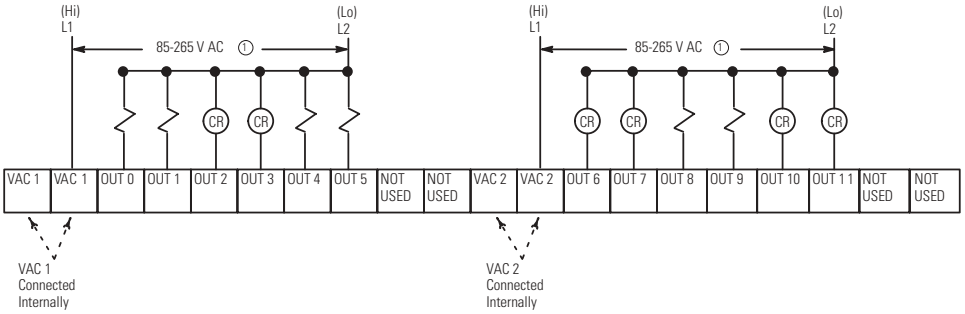
1747-L30A

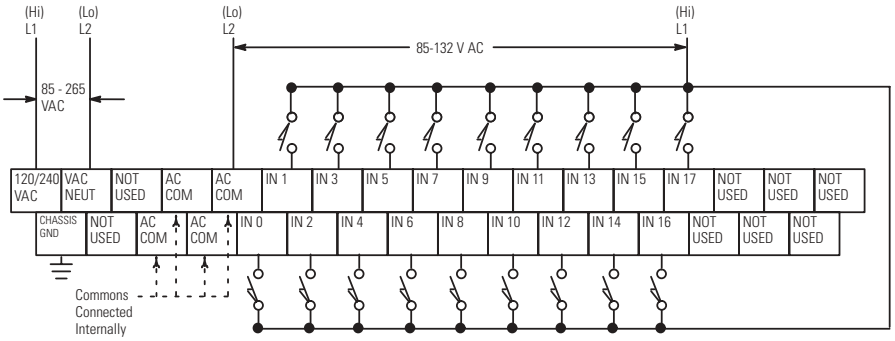


These outputs are isolated in groups as shown. Therefore, different voltages can be applied to each group as the specific application requires.

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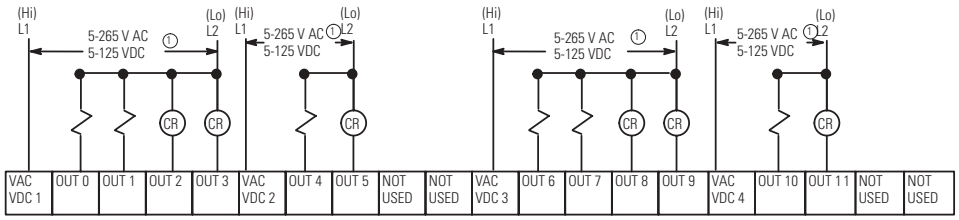
1747-L30B

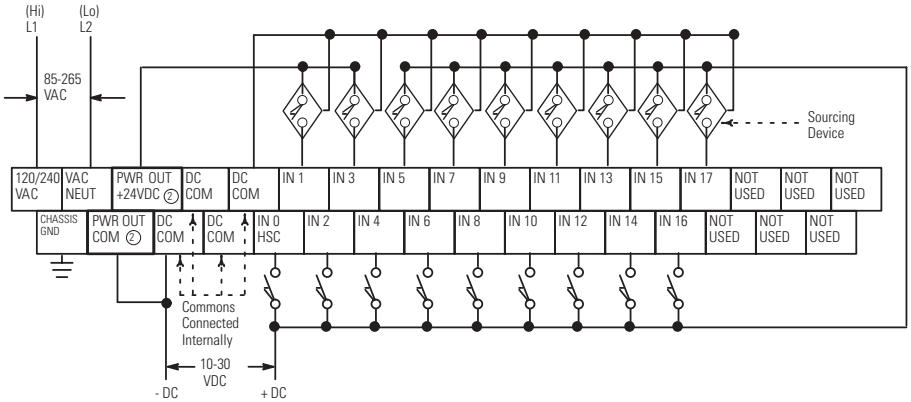




These outputs are isolated in groups as shown. Therefore, different voltages can be applied to each group as the specific application requires.

1747-L30C

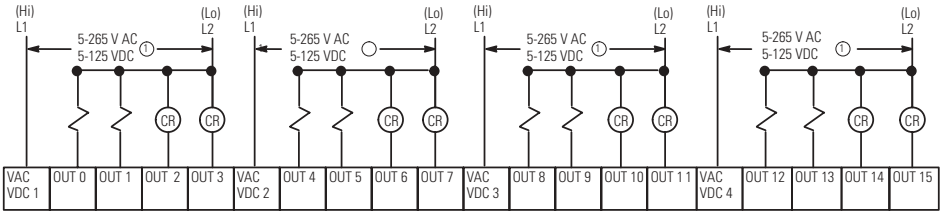


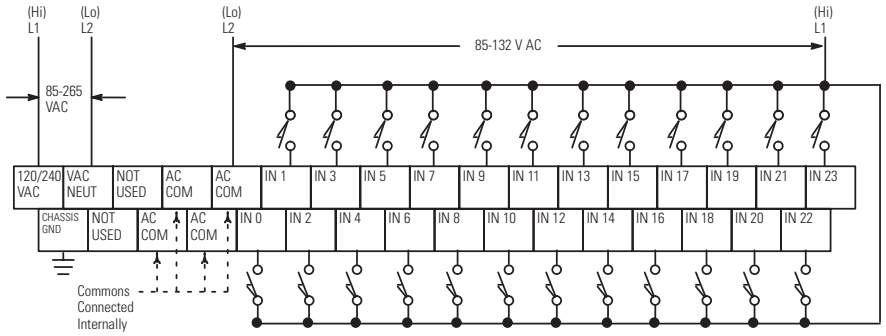


1. The outputs are isolated in groups as shown. Therefore, different voltages can be applied to each group as the specific application requires.
2. 24 VDC, 200mA user power is available for sensors.

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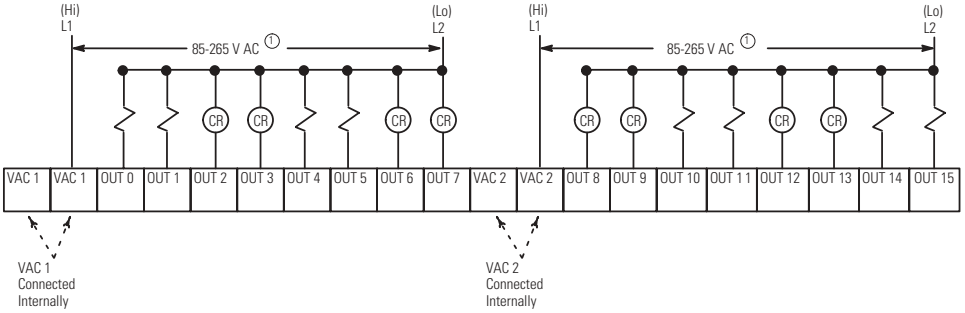
1747-L40A

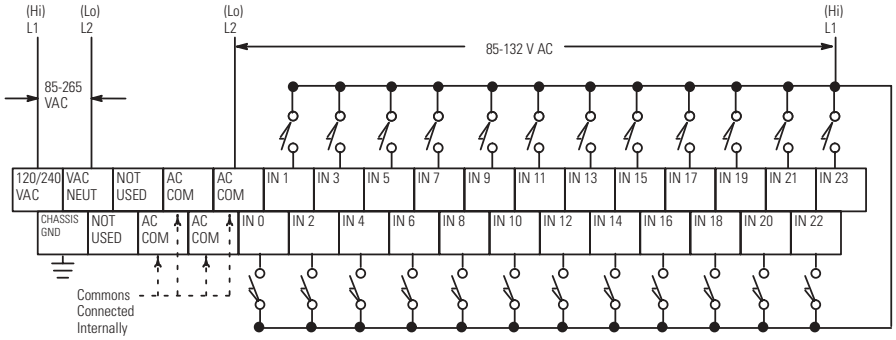




The outputs are isolated in groups as shown. Therefore, different voltages can be applied to each group as the specific application requires.

1747-L40B

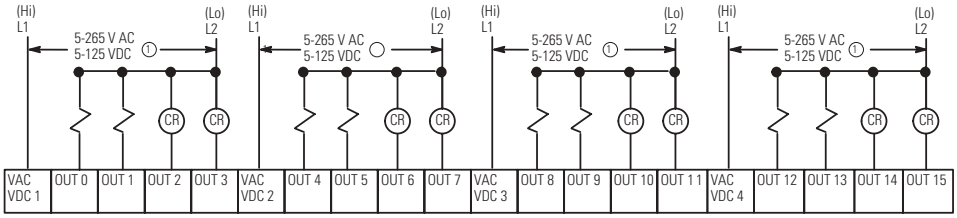


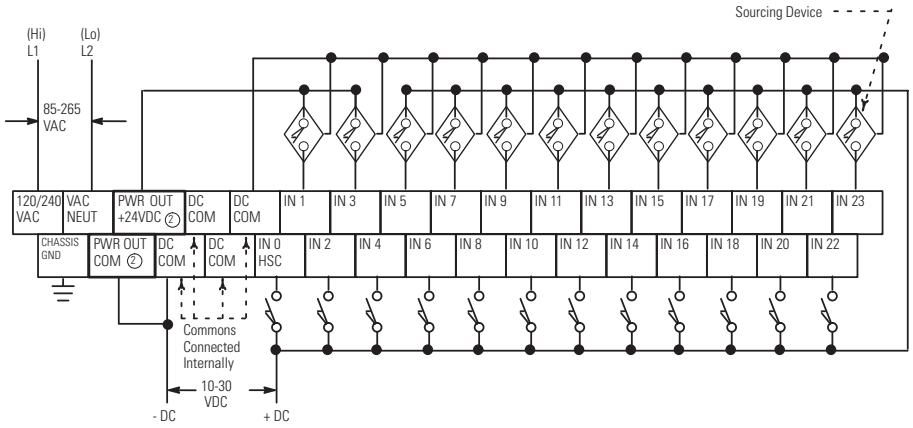


The outputs are isolated in groups as shown. Therefore, different voltages can be applied to each group as the specific application requires.

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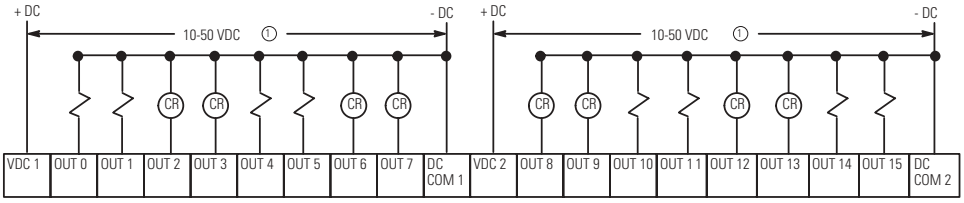
1747-L40C

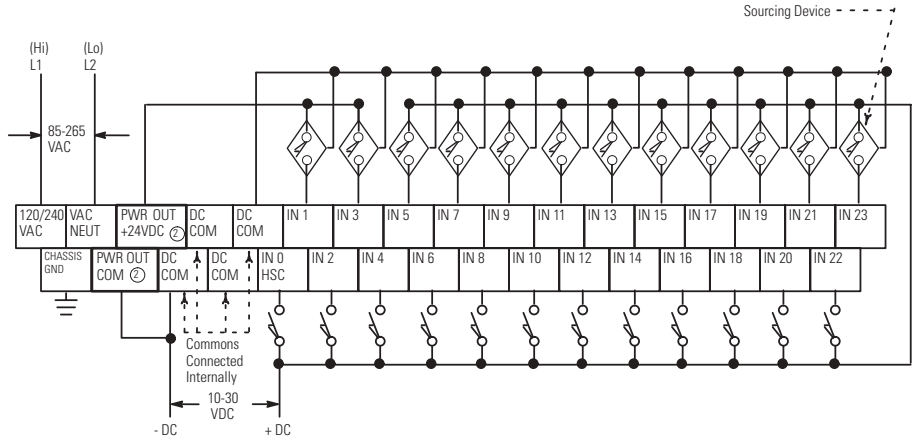




1. The outputs are isolated in groups as shown. Therefore, different voltages can be applied to each group as the specific application requires.
2. 24 VDC, 200mA user power is available for sensors.

1747-L40E

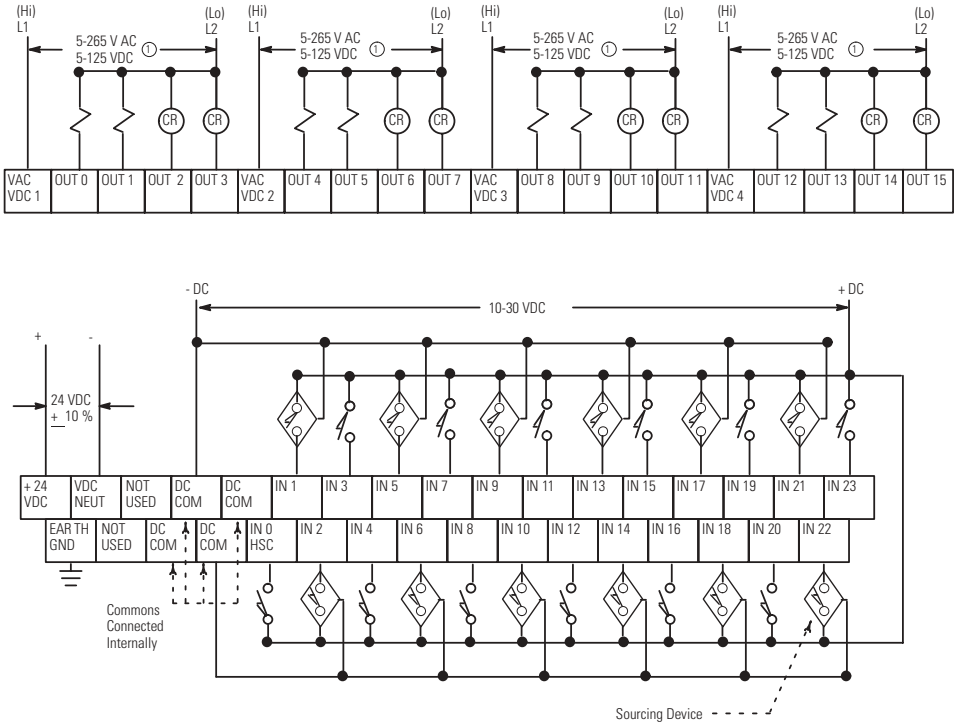




1. The outputs are isolated in groups as shown. Therefore, different voltages can be applied to each group as the specific application requires.
2. 24 VDC, 200mA user power is available for sensors.

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1747-L40F

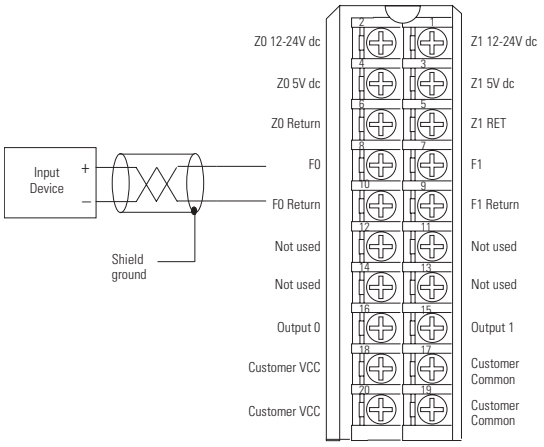


1. The outputs are isolated in groups as shown. Therefore, different voltages can be applied to each group as the specific application requires.

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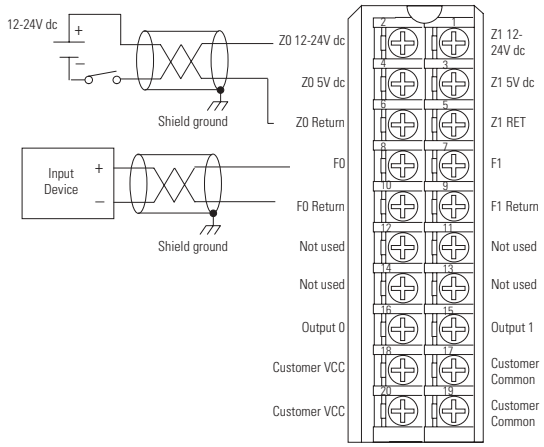
1756 ControlLogix I/O Modules

1756-CFM - Standard Flowmeter Wiring



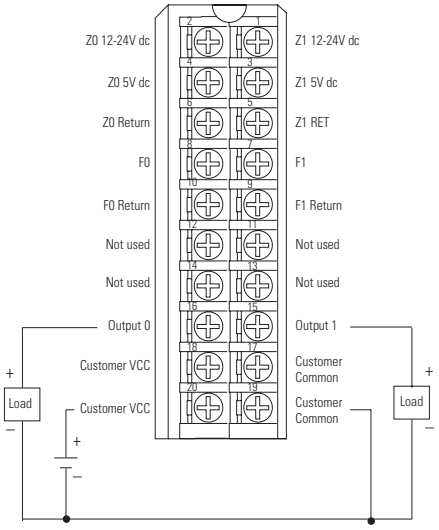
NOTES: 1. This wiring diagram can be used in applications with 50mV (magnetic pickup), 1.3V (TTL), and 4V (preamp level) thresholds. You must use RSLogix 5000 to choose the appropriate threshhold level for your application.
2. Do not connect more than 2 wires to any single terminal.

1756-CFM - Standard Prover/Detector Wiring



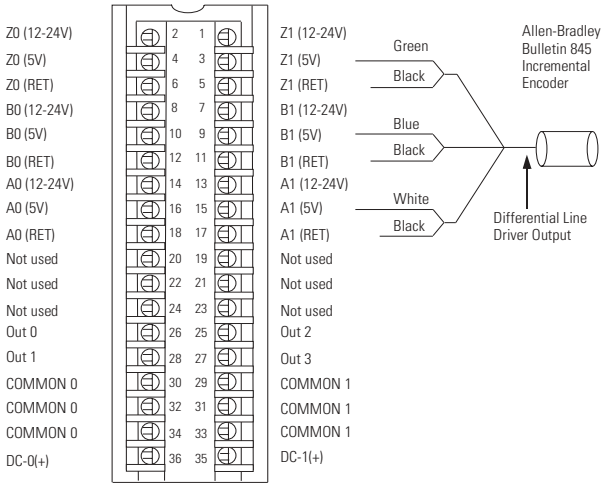
NOTE: 1. The wiring example above shows a 12-24V dc standard prover connected to the module. If you use a 5V dc standard prover, make sure the positive wire is connected to the 5V terminal (e.g. Z0 5V dc).
2. Do not connect more than 2 wires to any terminal.

1756-CFM - Standard Output



NOTES: 1. If separate power sources are used, do not exceed the specified isolation voltage.
2. Do not connect more than 2 wires to any single terminal.

1756-HSC - 845 Incremental Encoder

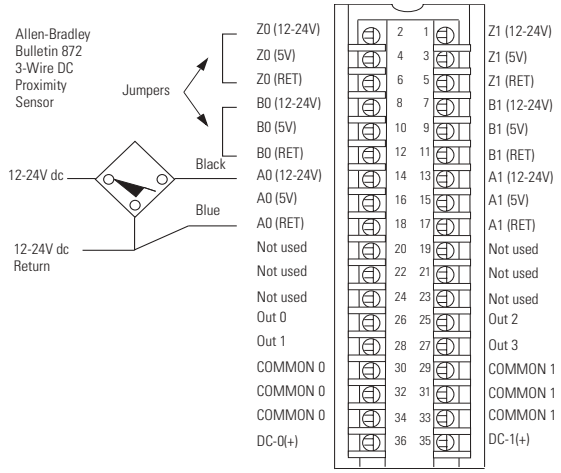


Application:	A1 Connections:	B1 Connections:	Z1 Connections:
Differential Line Driver Output (40mA)	White - A1 (5V) Black of white - A1 (RET)	Blue - B1 (RET) Black of blue - B1 (5V)	Green - Z1 (5V) Black of green - Z1 (RET)

NOTE: Do not connect more than 2 wires to any single terminal.

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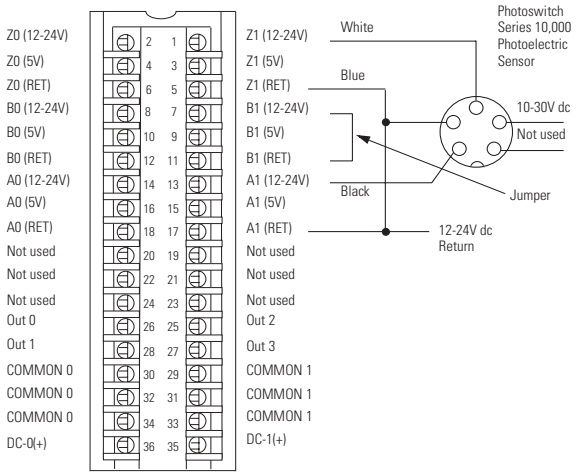
1756-HSC - 872 3-Wire DC Proximity Sensor



Application:	A0 Connections:	B0 Connections:	Z0 Connections:
PNP (Sourcing) N.O.	Black - A0 (12-24V) Blue, PS(-)- A0 (RET)	Jumper B0 (12-24V) to B0 (RET)	Jumper Z0 (12-24V) to Z0 (RET)

NOTE: Do not connect more than 2 wires to any single terminal.

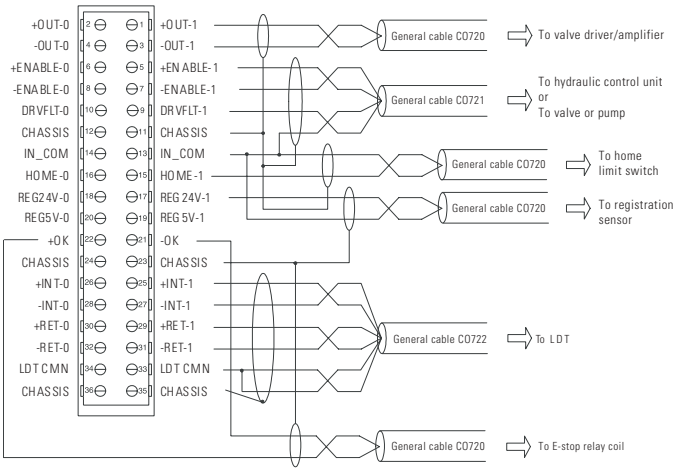
1756-HSC - Photoswitch Series 10,000 Photoelectric Sensor



Application:	A1 Connections:	B1 Connections:	Z1 Connections:
Any	Black - A1 (12-24V) Blue - A1 (RET)	Jumper B1 (12-24V) to B1 (RET)	White - Z1 (12-24V) Blue - Z1 (RET)

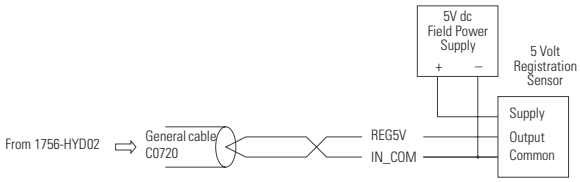
NOTE: Do not connect more than 2 wires to any single terminal.

1756-HYD02

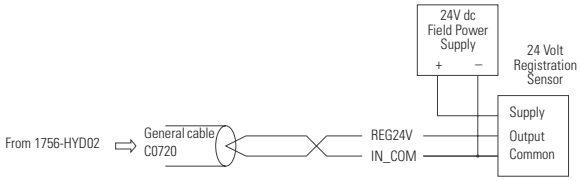


NOTES:
1. This is a general wiring example illustrating Axis 1 wiring only. Other configurations are possible with Axis wiring identical to Axis 1.
2. Make sure that any transducer connected t othe 1756-HYD02 module uses an external interrogation signal.
3. Do exceed the specified isolation voltage between power sources.

1756-HYD02 - Wiring 5V Sensors

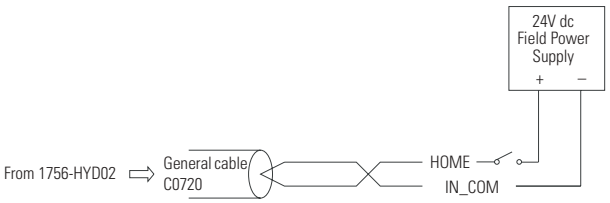


1756-HYD02 - Wiring 24V Sensors

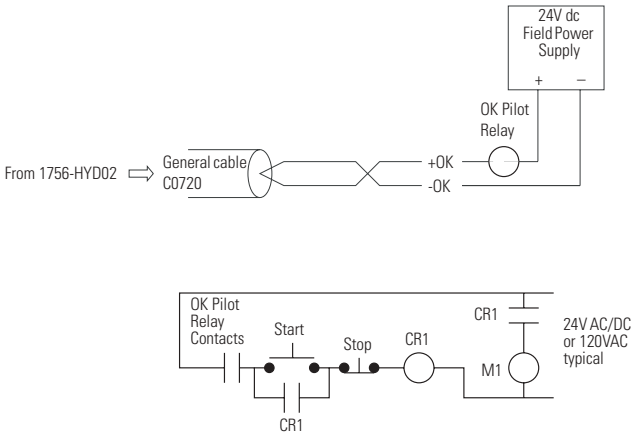


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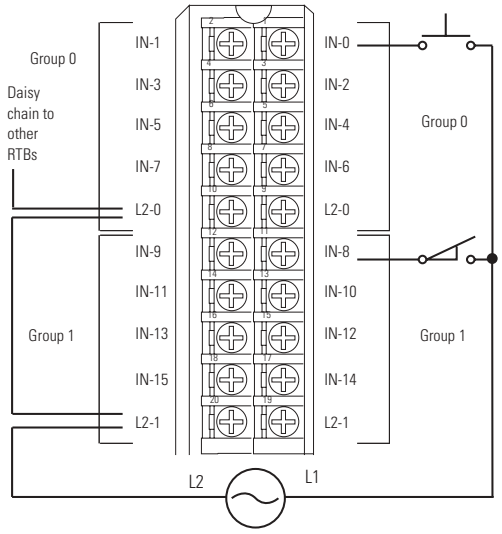
1756-HYD02 - Wiring Home Limit Switch



1756-HYD02 - Wiring OK Contacts

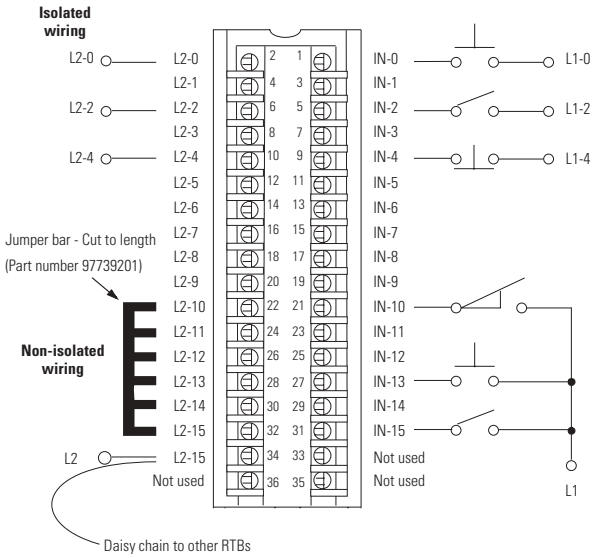


1756-IA16



NOTES: 1. All terminals with the same name are connected together on the module. For example, L2 can be connected to any terminal marked L2-0.
2. When you daisy chain from a group to another RTB, always connect the daisy chain as shown above. Do not connect more than 2 wires to any single terminal.
3. This wiring example shows a single voltage source.

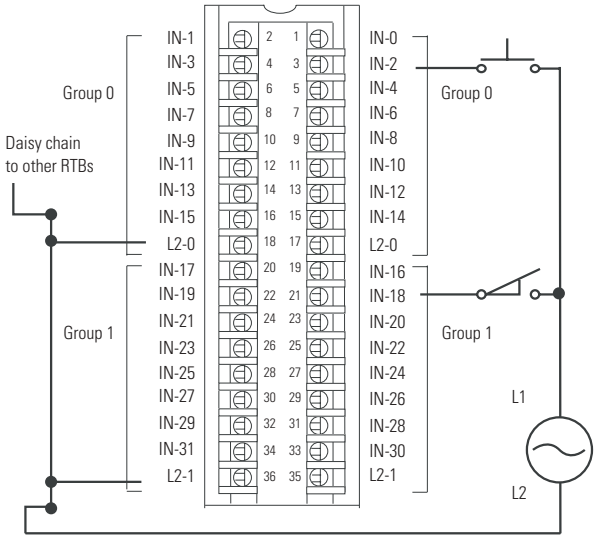
1756-IA16I



NOTES **1.** All terminals with the same name are connected together on the module. For example, L2 can be connected to either terminal marked L2-15.
2. When you use the second L2-15 terminal to daisy chain to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above. Do not connect more than 2 wires to any single terminal.

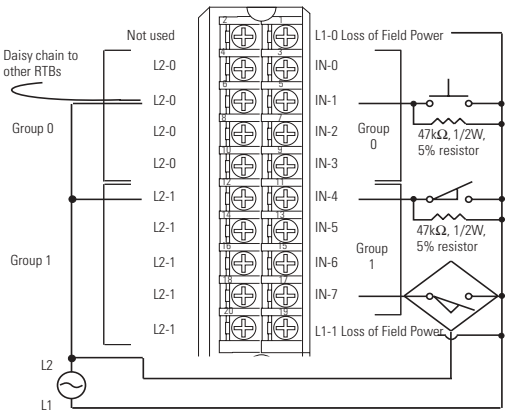
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1756-IA32



NOTES:
1. All terminals with the same name are connected together on the module. For example, L2 can be connected to any terminal marked L2-0.
2. When you daisy chain from a group to another RTB, always connect the daisy chain as shown above. Do not connect more than 2 wires to any single terminal.
3. This wiring example shows a single voltage source.
4. If separate power sources are used, do not exceed the specified isolation voltage.

1756-IA8D



NOTES:
1. All terminals with the same name are connected together on the module. For example, L2 can be connected to any terminal marked L2-0.
2. This wiring example shows a single voltage source.
3. When you daisy chain from a group to other RTBs, alway connect the daisy chain to the terminal directly connected to the supply wire, as shown above. Do not connect more than 2 wires to any single terminal.
4. If separate power sources are used, do not exceed the specified isolation voltage.

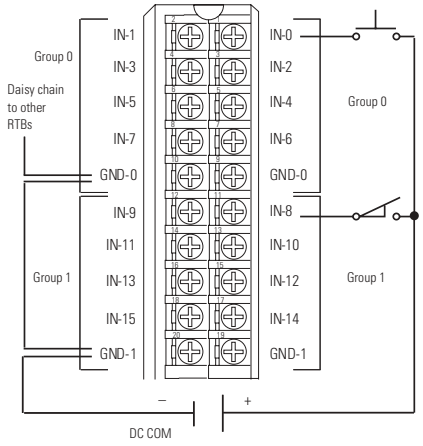
Resistors are not necessary if Wire Off diagnostic is not used.

To Determine Leakage Resistor
(P/S = Field side power supply)
R_{LEAK}Maximum = (P/S Voltage-19V ac)/1.5mA
R_{LEAK}Minimum = (P/S Voltage-20V ac)/2.5mA

Recommended Values

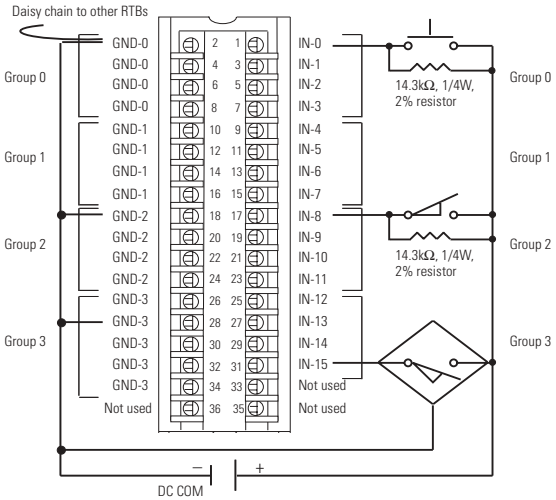
P/S Voltage	R_{LEAK}, 1/2W, 5%
100V ac +/-10%	43kΩ
110V ac +/-10%	47kΩ
115V ac +/-10%	47kΩ
120V ac +/-10%	51kΩ

1756-IB16



NOTES:
1. All terminals with the same name are connected together on the module. For example, DC COM can be connected to either terminal marked GND-0.
2. When you daisy chain from a group to another RTB, always connect the daisy chain as shown above. Do not connect more than 2 wires to any single terminal.
3. This wiring example shows a single voltage source.
4. If separate power sources are used, do not exceed the specified isolation voltage.

1756-IB16D



NOTES:
1. All terminals with the same name are connected together on the module.
2. This wiring example shows a single voltage source.
3. When you daisy chain from a group to other RTBs, alway connect the daisy chain to the terminal directly connected to the supply wire, as shown above. Do not connect more than 2 wires to any single terminal.
4. Resistors are not necessary if Wire Off diagnostic is not used.
5. If separate power sources are used, do not exceed the specified isolation voltage.

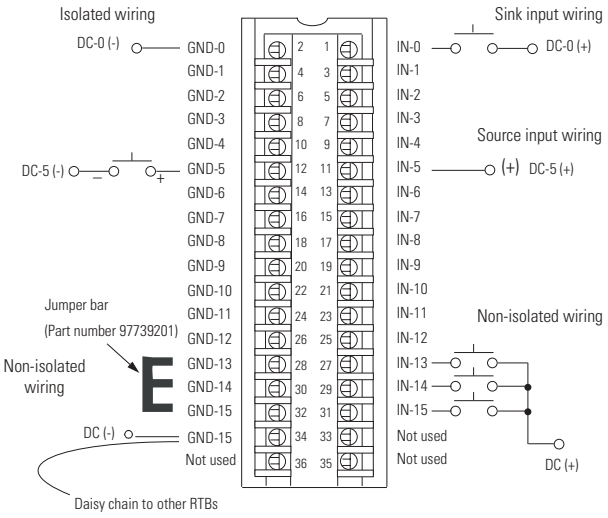
To Determine Leakage Resistor
(P/S = Field side power supply)
R_{LEAK}Maximum = (P/S Voltage- 4.6V dc)/1.21mA
R_{LEAK}Minimum = (P/S Voltage- 5V dc)/1.5mA

Recommended Values

P/S Voltage	R_{LEAK}, 1/4W, 2%
12V dc +/-5%	5.23kΩ
24V dc +/-5%	14.3kΩ

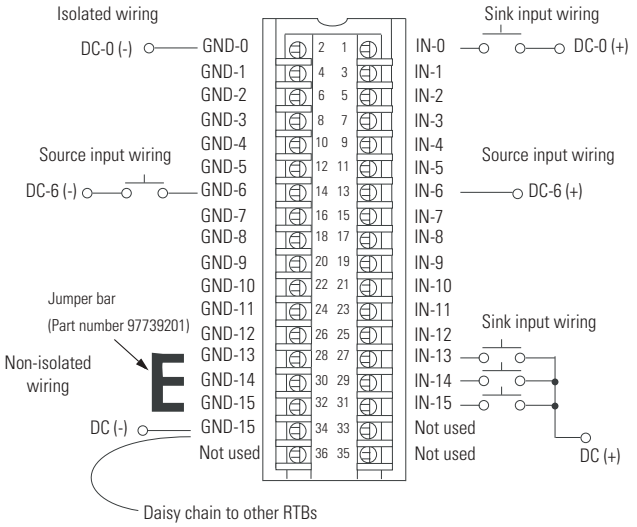
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1756-IB16I



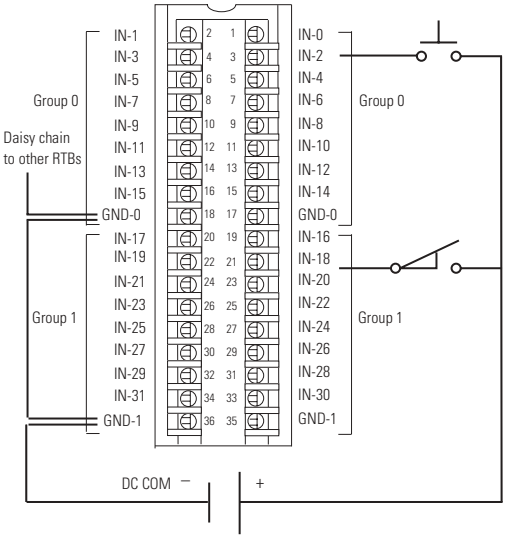
NOTES:
1. All terminals with the same name are connected together on the module. For example, DC (-) can be connected to either terminal marked GND-15.
2. When you use the second GND-15 terminal to daisy chain to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above. Do not connect more than 2 wires to any single terminal.
3. Each input can be wired in a sink or source configuration, as shown above.
4. If separate power sources are used, do not exceed the specified isolation voltage.

1756-IB16ISOE



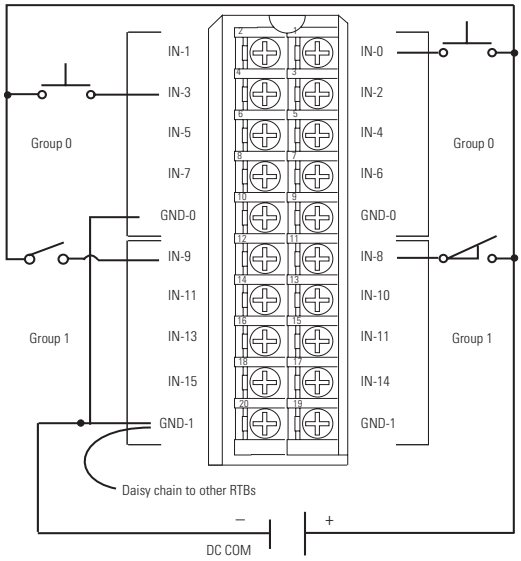
NOTES:
1. All terminals with the same name are connected together on the module. For example, DC (-) can be connected to either terminal marked GND-15.
2. When you use the second GND-15 terminal to daisy chain to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above.
3. If separate power sources are used, do not exceed the specified isolation voltage.
4. Do not connect more than 2 wires to any single terminal.
5. The jumper bar is part number 97739201; use this number to order additional bars.

1756-IB32/B



NOTES:
1. All terminals with the same name are connected together on the module. For example, DC COM can be connected to either terminal marked GND-1.
2. When you daisy chain to other RTBs, always connect the daisy chain as shown above. Do not connect more than 2 wires to any single terminal at any time.
3. This wiring example shows a single voltage source.
4. If separate power sources are used, do not exceed the specified isolation voltage.

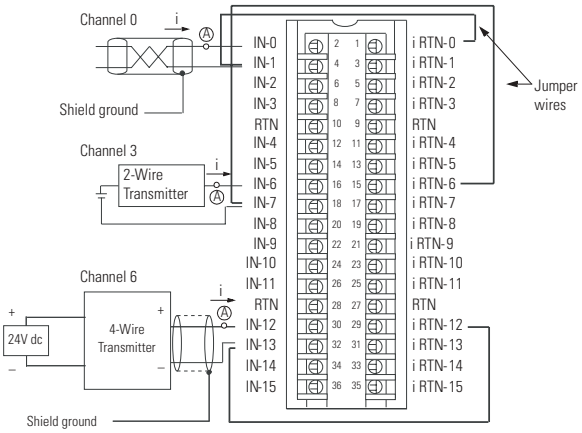
1756-IC16



NOTES:
1. All terminals with the same name are connected together on the module. For example, DC COM can be connected to any terminal marked GND-1.
2. When you daisy chain from a group to another RTB, always connect the daisy chain to the terminal directly connected to the supply wire, as shown above. Do not connect more than 2 wires to any single terminal.
3. This wiring example shows a single voltage source.
4. If separate power sources are used, do not exceed the specified isolation voltage.

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1756-IF16 – Differential Current Applications



NOTES:

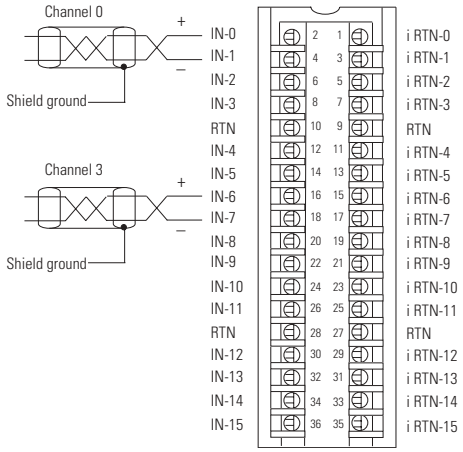
1. Use the table below when wiring your module in differential current mode.

This channel:	Uses these terminals:	This channel:	Uses these terminals:
Channel 0	IN-0 (+), IN-1 (-) & i RTN-0	Channel 4	IN-8 (+), IN-9 (-) & i RTN-8
Channel 1	IN-2 (+), IN-3 (-) & i RTN-2	Channel 5	IN-10 (+), IN-11 (-) & i RTN-10
Channel 2	IN-4 (+), IN-5 (-) & i RTN-4	Channel 6	IN-12 (+), IN-13 (-) & i RTN-12
Channel 3	IN-6 (+), IN-7 (-) & i RTN-6	Channel 7	IN-14 (+), IN-15 (-) & i RTN-14

2. All terminals marked RTN are connected internally.
3. A 249 current loop resistor is located between IN-x and i RTN-x terminals.
4. If multiple (+) or multiple (-) terminals are tied together, connect that tie point to a RTN terminal to maintain the module's accuracy.
5. Place additional loop devices (e.g. strip chart recorders, etc.) at the A location in the current loop.
6. Do not connect more than two wires to any single terminal.

IMPORTANT: When operating in 4 channel, high speed mode, only use channels 0, 2, 4 and 6.

1756-IF16 – Differential Voltage Applications

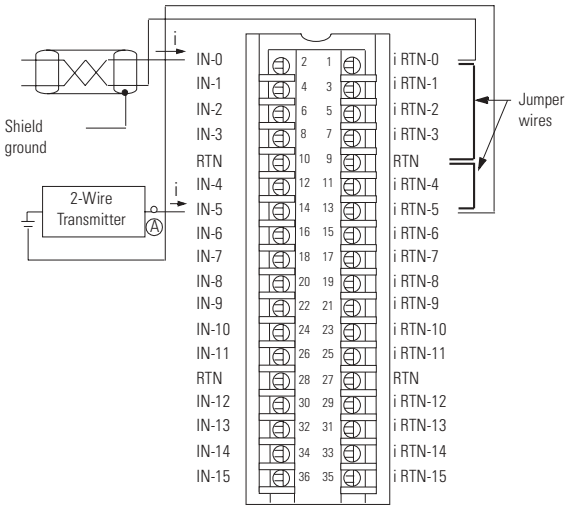


NOTES: 1. Use the following chart when wiring your module in differential mode

This channel:	Uses these terminals:	This channel:	Uses these terminals:
Channel 0	IN-0 (+) & IN-1 (-)	Channel 4	IN-8 (+) & IN-9 (-)
Channel 1	IN-2 (+) & IN-3 (-)	Channel 5	IN-10 (+) & IN-11 (-)
Channel 2	IN-4 (+) & IN-5 (-)	Channel 6	IN-12 (+) & IN-13 (-)
Channel 3	IN-6 (+) & IN-7 (-)	Channel 7	IN-14 (+) & IN-15 (-)

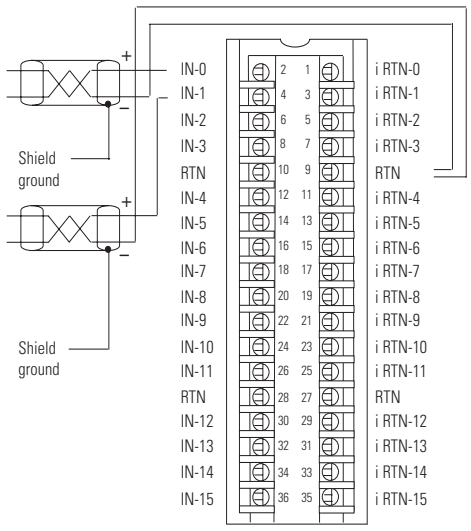
2. When operating in 4 channel, high speed mode, only use channels 0, 2, 4 and 6
3. All terminals marked RTN are connected internally.
4. If multiple (+) or multiple (-) terminals are tied together, connect that tie point to terminal to maintain the module's accuracy.
5. Terminals marked RTN and i RTN are not used for differential voltage wiring.
6. Do not connect more than 2 wires to any single terminal.

1756-IF16 – Single-Ended Current Applications



NOTES: 1. All terminals marked RTN are connected internally.
2. A 249Ω current loop resistor is located between IN-x and i RTN-x terminals.
3. For current applications, all terminals marked i RTN must be wired to terminals marked RTN.
4. Place additional loop devices (e.g. strip chart recorders, etc.) at the A location.
5. Do not connect more than 2 wires to any single terminal.

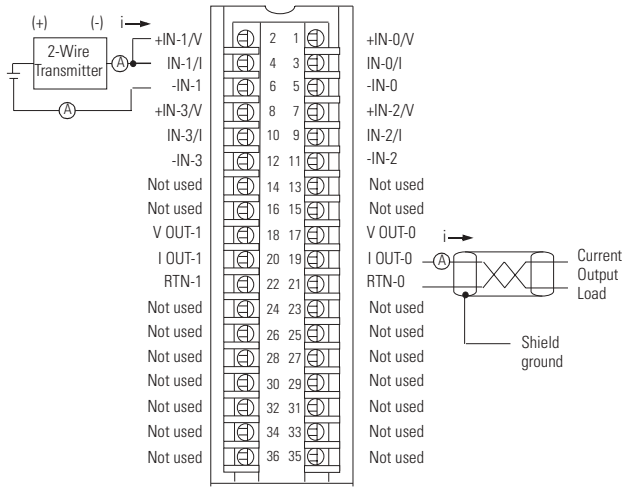
1756-IF16 – Single-Ended Voltage Applications



NOTES: 1. All terminals marked RTN are connected internally.
2. Terminals marked i RTN are not used for single-ended voltage wiring.
3. Do not connect more than 2 wires to any single terminal.

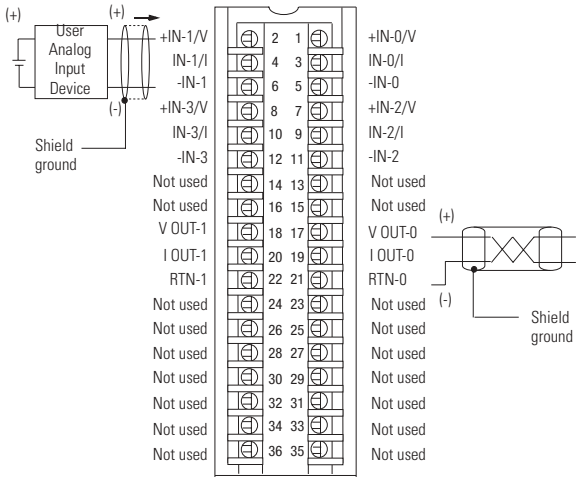
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1756-IF4FXOF2F Current Mode

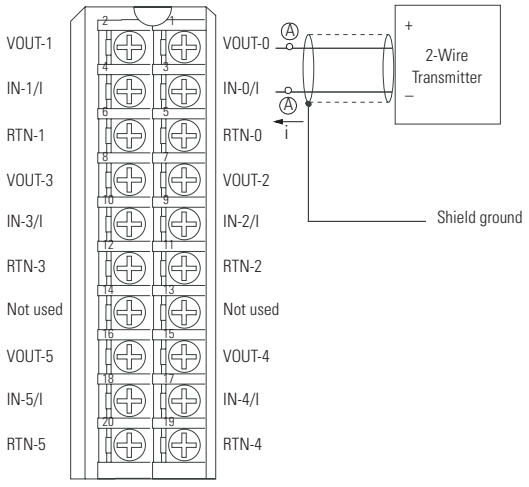


NOTE: Place additional loop devices (e.g. strip chart recorders) at any A location.

1756-IF4FXOF2F Voltage Mode



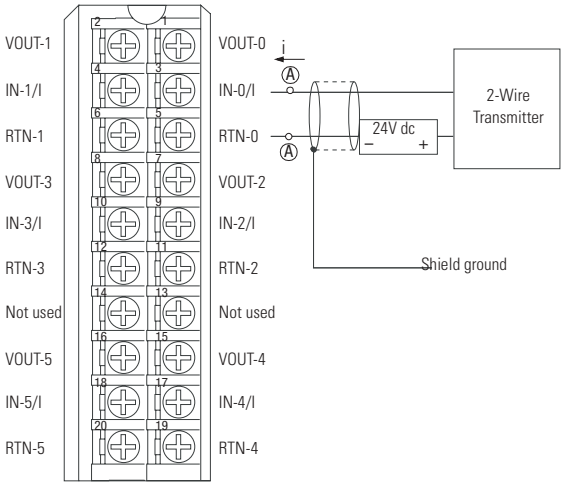
1756-IF6CIS - 2-Wire transmitter connected to the module and the module providing 24V dc loop power



NOTES: 1. Do not connect more than 2 wires to any single terminal.

2. Place additional loop devices (e.g. strip chart recorders) at either A location in the current loop.

1756-IF6CIS - 2-Wire transmitter connected to the module and an external, user-provided power supply providing 24V dc loop power



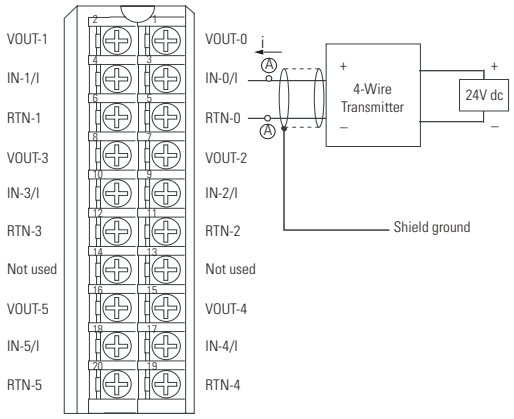
NOTES: **1.** If separate power sources are used, do not exceed the specified isolation voltage.

2. Do not connect more than 2 wires to any single terminal.

3. Place additional loop devices (e.g. strip chart recorders) at either A location in the current loop.

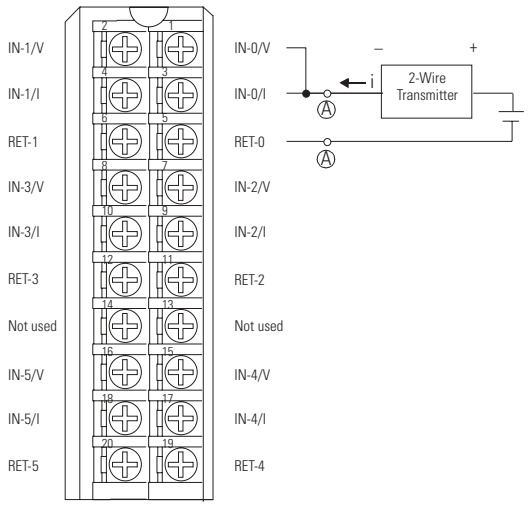
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1756-IF6CIS - 4-Wire transmitter connected to the module and an external, user-provided power supply providing 24V dc loop power



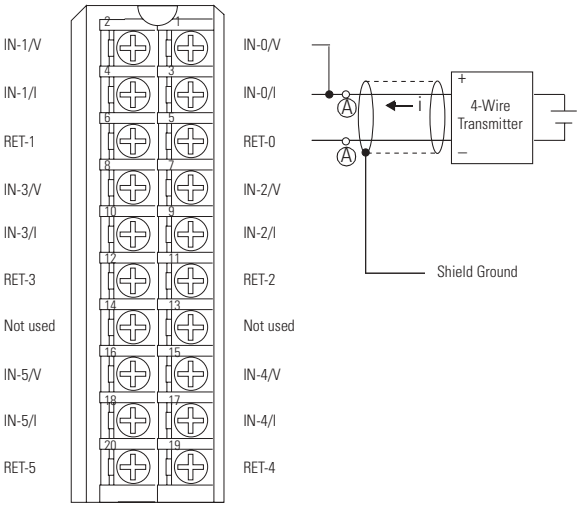
NOTES:
1. If separate power sources are used, do not exceed the specified isolation voltage.
2. Do not connect more than 2 wires to any single terminal.
3. Place additional loop devices (e.g. strip chart recorders) at either A location in the current loop.

1756-IF6I - Current Application with 2-Wire Transmitter



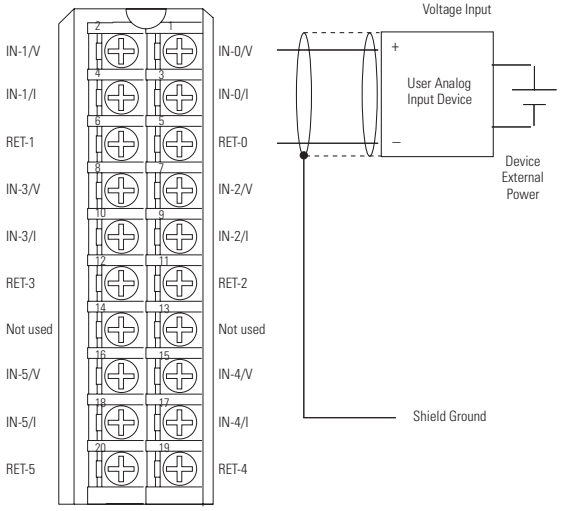
NOTES:
1. Place additional loop devices (e.g. strip chart recorders, etc.) at either A location.
2. If separate power sources are used, do not exceed the specified isolation voltage.

1756-IF6I - Current Application with 4-Wire Transmitter



NOTES:
1. Place additional loop devices (e.g. strip chart recorders, etc.) at either A location.
2. Do not connect more than 2 wires to any single terminal.

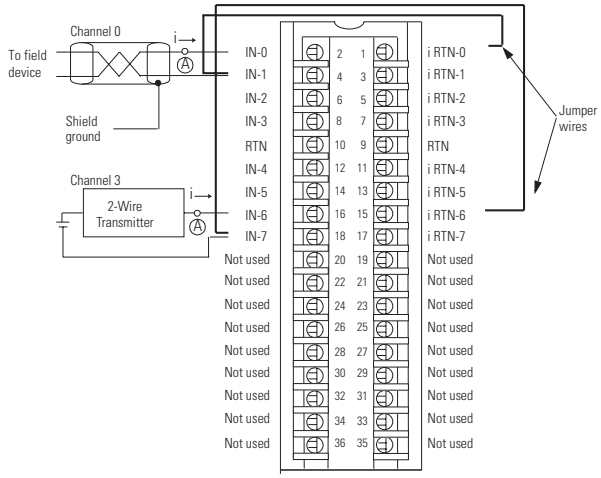
1756-IF6I - Voltage Application



NOTES: Do not connect more than 2 wires to any single terminal.

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1756-IF8 – Differential Current Applications

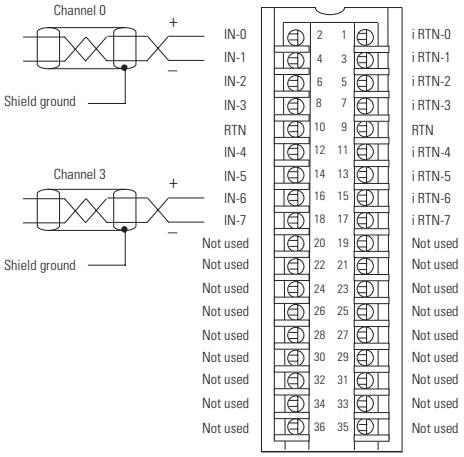


NOTES: 1. Use the following chart when wiring your module in differential mode

This channel:	Uses these terminals:	This channel:	Uses these terminals:
Channel 0	IN-0, IN-1 & i RTN-0	Channel 2	IN-4, IN-5 & i RTN-4
Channel 1	IN-2, IN-3 & i RTN-2	Channel 3	IN-6, IN-7 & i RTN-6

2. When operating in 2 channel, high speed mode, only use channels 0 and 2.
3. All terminals marked RTN are connected internally.
4. A 249Ω current loop resistor is located between IN-x and i RTN-x terminals.
5. If multiple (+) or multiple (-) terminals are tied together, connect that tie point to a RTN terminal to maintain the module's accuracy.
6. Place additional loop devices (e.g. strip chart recorders, etc.) at the A location.
7. If separate power sources are used, do not exceed the specified isolation voltage.
8. Do not connect more than 2 wires to any single terminal.

1756-IF8 – Differential Voltage Applications

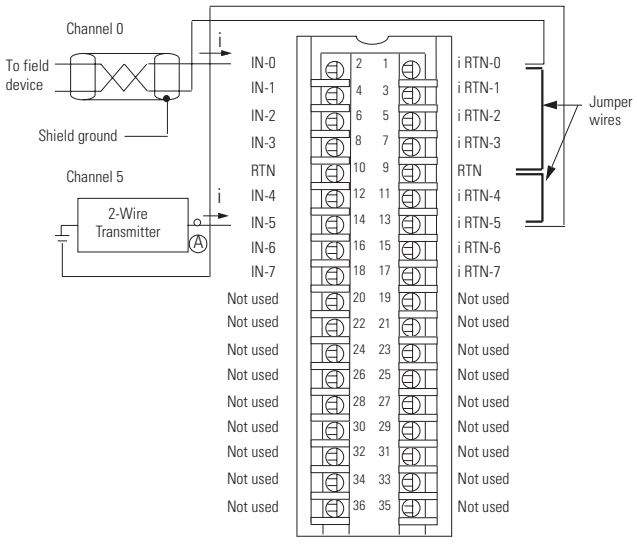


NOTES: 1. Use the following chart when wiring your module in differential mode

This channel:	Uses these terminals:	This channel:	Uses these terminals:
Channel 0	IN-0 & IN-1	Channel 2	IN-4 & IN-5
Channel 1	IN-2 & IN-3	Channel 3	IN-6 & IN-7

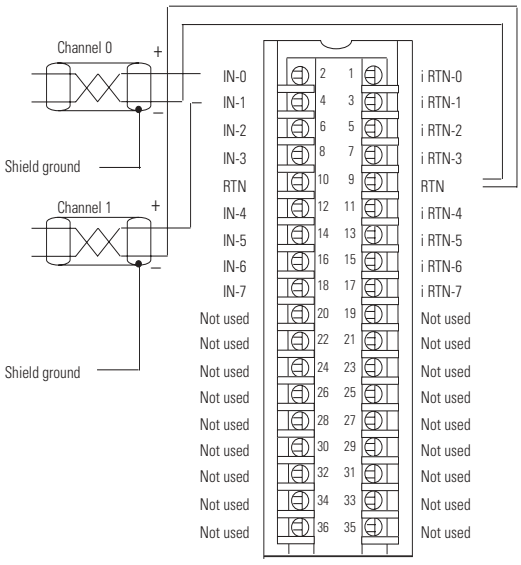
2. When operating in 2 channel, high speed mode, only use channels 0 and 2.
3. All terminals marked RTN are connected internally.
4. If multiple (+) or multiple (-) terminals are tied together, connect that tie point to a RTN terminal to maintain the module's accuracy.
5. Terminal marked RTN or i RTN are not used in differential voltage applications.
6. Do not connect more than 2 wires to any single terminal.

1756-IF8 – Single-Ended Current Applications



NOTES: 1. All terminals marked RTN are connected internally.
2. For current applications, all terminals marked iRTN must be wired to terminals marked RTN.
3. A 249Ω current loop resistor is located between IN-x and i RTN-x terminals.
4. Place additional loop devices (e.g. strip chart recorders, etc.) at the A location.
5. Do not connect more than 2 wires to any single terminal.

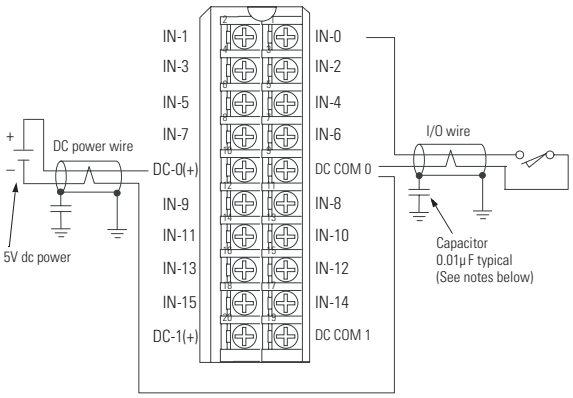
1756-IF8 – Single-Ended Voltage Applications



NOTES: 1. All terminals marked RTN are connected internally.
2. Terminals marked iRTN are not used for single-ended voltage wiring.
3. Do not connect more than 2 wires to any single terminal.

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1756-IG16



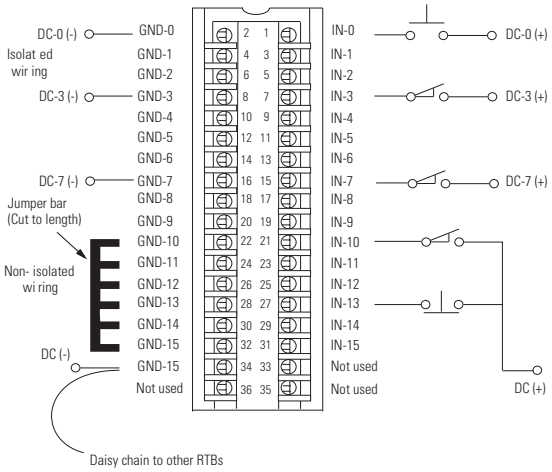
GENERAL NOTES:

1. We recommend you use Belden M 8761 cable where shielded cables are shown.
2. Do not connect more than two wires to any single terminal.

CE REQUIREMENT NOTES:

1. DC power wire and I/O wire should not exceed 10m (30ft) in length.
2. The 0.01µF capacitors shown above must be rated for 2000V dc.

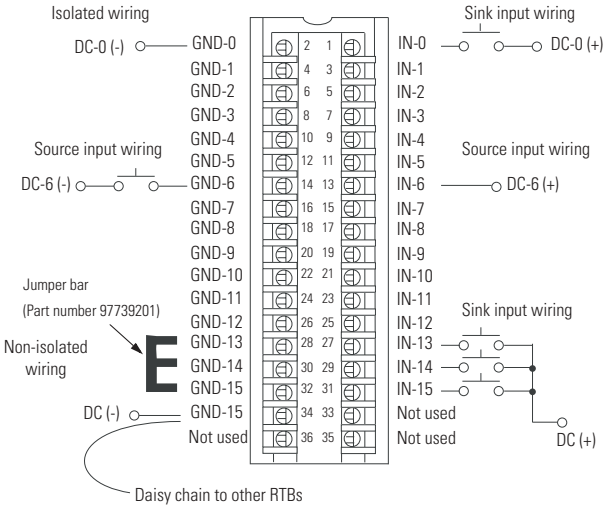
1756-IH16I



NOTES:

1. All terminals with the same name are connected together on the module. For example, DC (-) can be connected to either terminal marked GND-15.
2. When you use the second GND-15 terminal to daisy chain to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above. Do not connect more than 2 wires to any single terminal.
3. If separate power sources are used, do not exceed the specified isolation voltage.

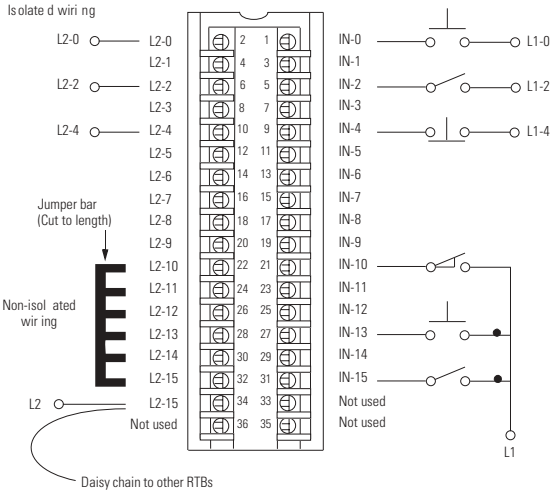
1756-IH16ISOE



NOTES:

1. All terminals with the same name are connected together on the module. For example, DC (-) can be connected to either terminal marked GND-15.
2. When you use the second GND-15 terminal to daisy chain to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above.
3. If separate power sources are used, do not exceed the specified isolation voltage.
4. Do not connect more than 2 wires to any single terminal.
5. The jumper bar is part number 97739201; use this number to order additional bars.

1756-IM16I

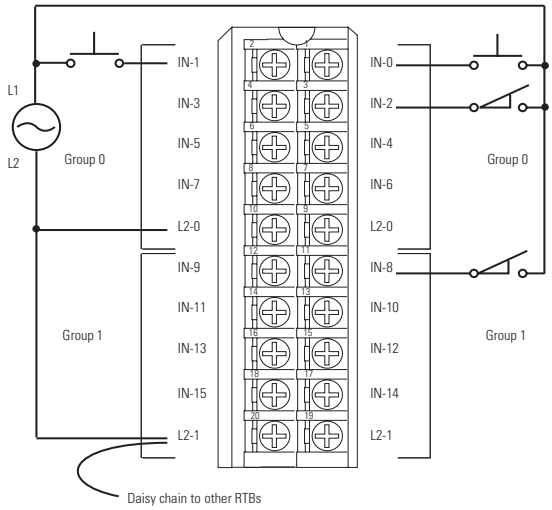


NOTES:

1. All terminals with the same name are connected together on the module. For example, L2 can be connected to either terminal marked L2-15.
2. When you use the second L2-15 terminal to daisy chain to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above. Do not connect more than 2 wires to any single terminal.
3. If separate power sources are used, do not exceed the specified isolation voltage.

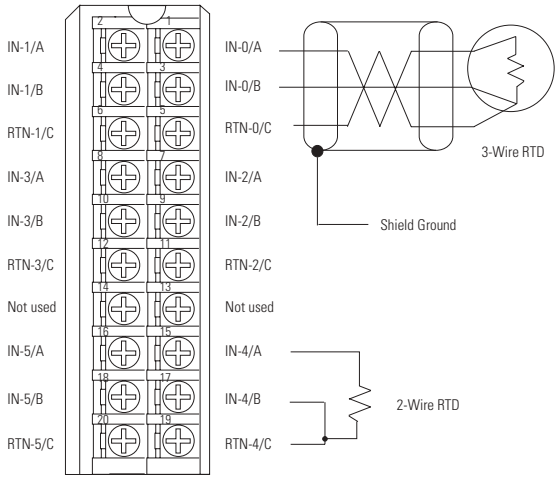
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1756-IN16



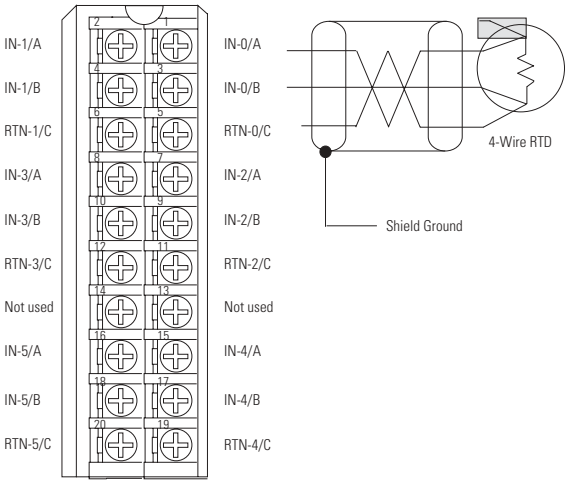
NOTES:
1. All terminals with the same name are connected together on the module.For example, L2 can be connected to any terminal marked L2-0.
2. When you daisy chain from a group to another RTB, always connect the daisy chain to the terminal directly connected to the supply wire, as shown above.
3. This wiring example shows a single voltage source.
4. If separate power sources are used, do not exceed the specified isolation voltage.
5. Do not connect more than 2 wires to any single terminal.

1756-IR6I – 2 or 3-Wire RTD



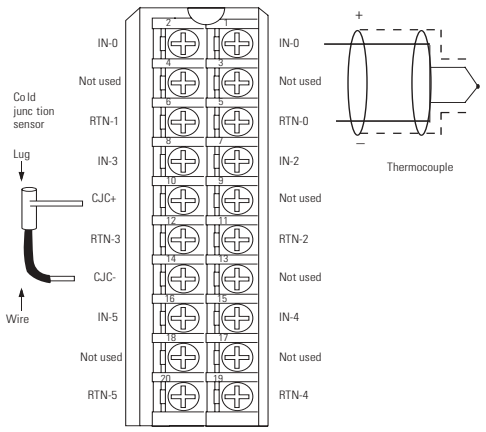
NOTES:
1. For 2-wire resistor applications, including calibration, make sure IN-x/B and RTN-x/C are shorted together. The example above shows IN-4/B and RTN-4/C shorted together.
2. Do not connect more than 2 wires to any single terminal.

1756-IR6I – 4-Wire RTD



NOTES:
1. Wiring is exactly the same as the 3-wire RTD with one wire left open.
2. Do not connect more than 2 wires to any single terminal.

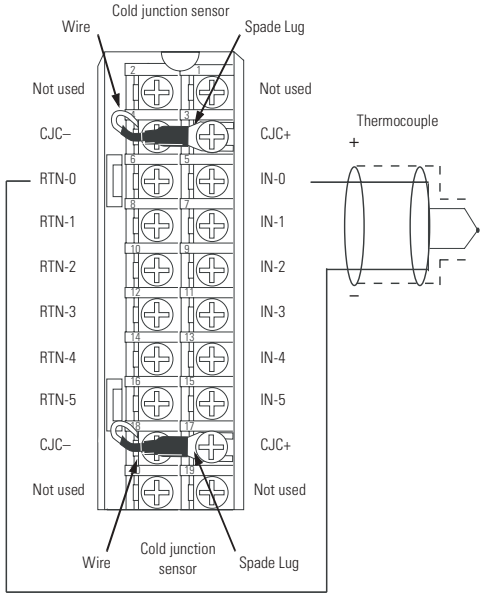
1756-IT6I



NOTES:
1. If separate power sources are used, do not exceed the specified isolation voltage.
2. Do not connect more than 2 wires to any single terminal.
3. The part number for the cold junction sensor used on the 1756-IT6I module is 94238301.

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1756-IT6I2

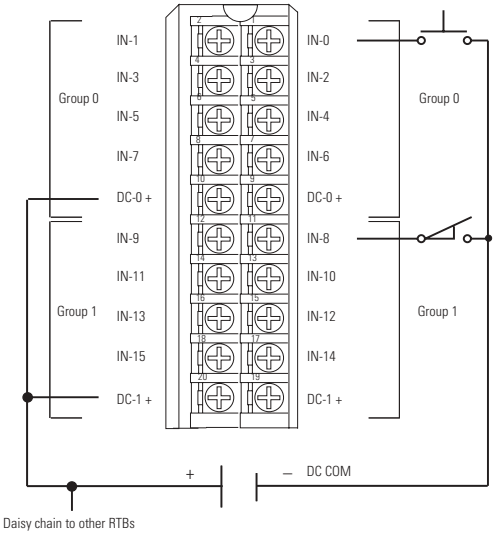


NOTES:

1. Do not connect more than 2 wires to any single terminal.

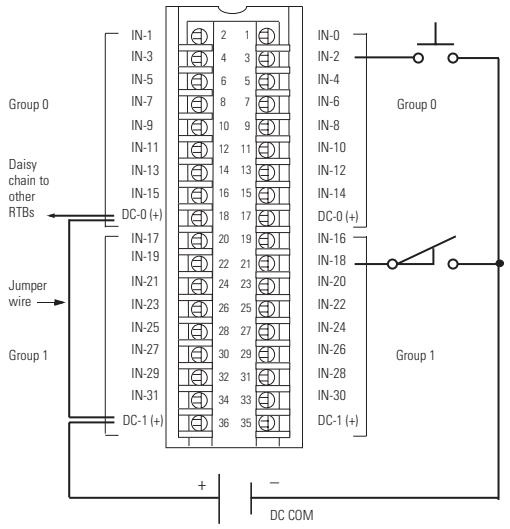
2. The part number for the cold junction sensor used on the 1756-IT6I2 module is 94286501.

1756-IV16



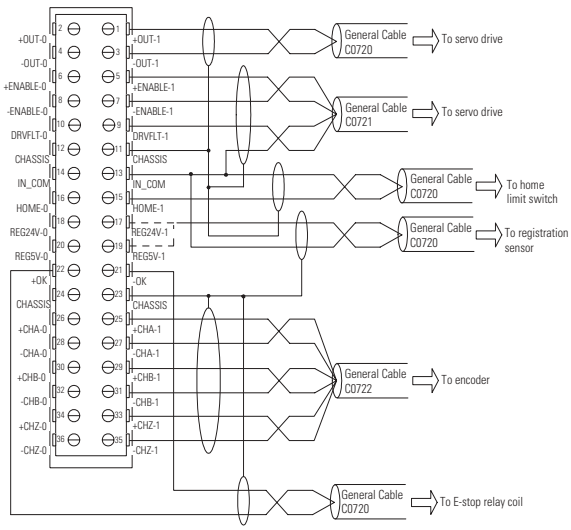
NOTES:
1. All terminals with the same name are connected together on the module. For example, DC (+) can be connected to either terminal marked DC-1+. If you are daisy chain wiring from one of these terminals to other RTBs, only connect wiring to one terminal.
2. When you daisy chain from a group to another RTB, always connect the daisy chain to the terminal directly connected to the supply wire, as shown above. Do not connect more than 2 wires to any single terminal.
3. This wiring example shows a single voltage source.
4. If separate power sources are used, do not exceed the specified isolation voltage.

1756-IV32



NOTES:
1. All terminals with the same name are connected together on the module. For example, DC (+) can be connected to either terminal marked DC-1 (+).
2. Do not physically connect more than two wires to a single RTB terminal. When jumpering I/O groups together and daisy chain wiring to adjacent modules, follow the wiring method shown above.
3. This wiring example shows a single voltage source.
4. If separate power sources are used, do not exceed the specified isolation voltage.

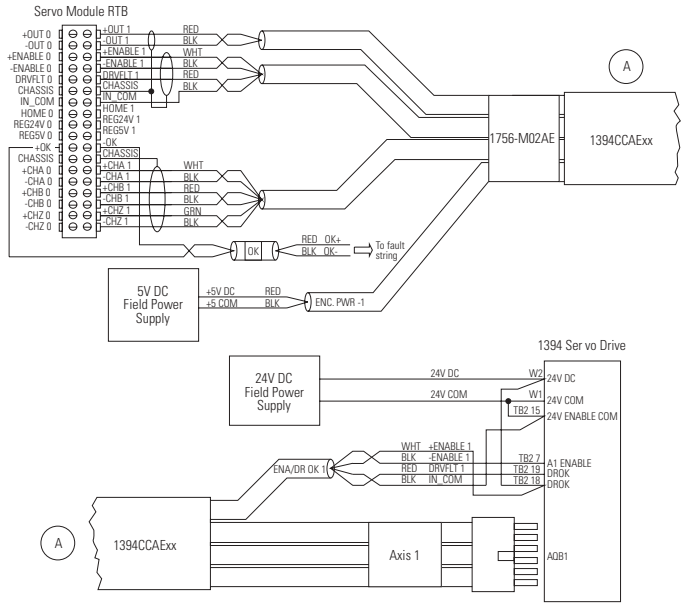
1756-MO2AE – Wiring to a Servo Module RTB



This is a general wiring example illustrating Axis 1 wiring only. Other configurations are possible with Axis 0 wiring identical to Axis 1.

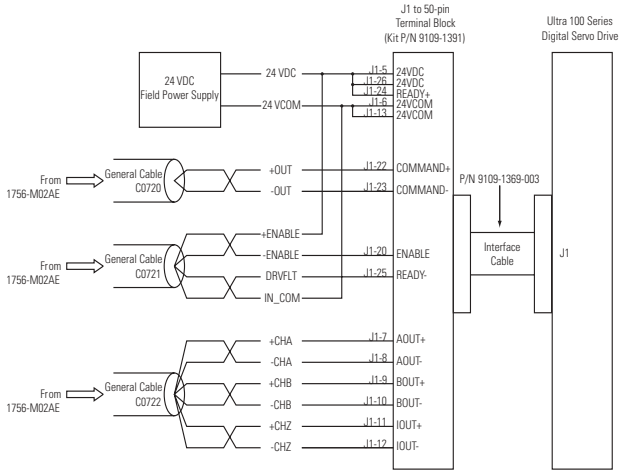
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1756-M02AE – Wiring to 1394 Servo Drive (in Torque Mode only)



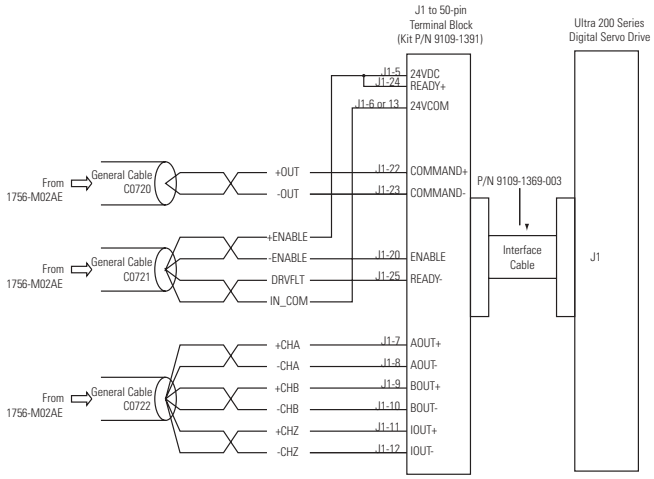
NOTES:
1. The wiring diagram illustrates Axis 1 wiring only. Other configurations are possible.
2. The 1394-CCAExx cable is wired to connect to torque command reference input pins.
3. An external +5V power supply is required to power the encoder driver circuit of the 1394 servo drive.Because this connection is shared by all four axis encoder driver circuits, only one connection is needed to the +5V field supply.
4. The xx in the cable number is the length of the cable. Options are 5, 10, 25 and 50 feet.

1756-M02AE – Wiring to an Ultra 100 Series Drive



This is general wiring example only. Other configurations are possible. For more information, refer to the Ultra 100 series installation manual, publication number 1398-5.2.

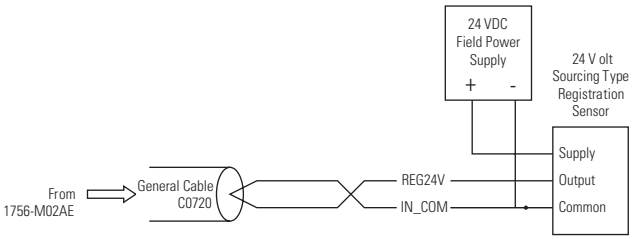
1756-M02AE – Wiring to an Ultra 200 Series Drive



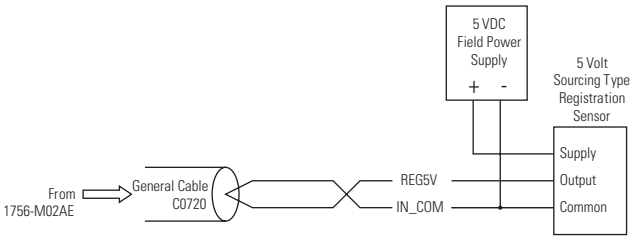
This is general wiring example only. Other configurations are possible. For more information, refer to the Ultra 200 series installation manual, publication number 1398-5.0.

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1756-M02AE – Wiring 24V Registration Sensors

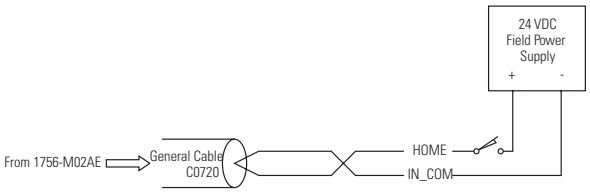


1756-M02AE – Wiring 5V Registration Sensors



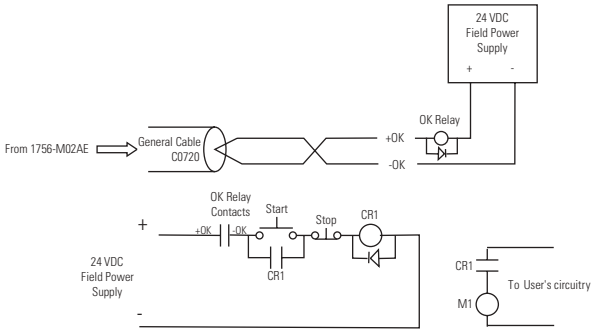
The registration inputs to the servo module support 24V or 5V registration sensors. These inputs must be wired to receive source current from the sensor. Only use sourcing type registration sensors.

1756-M02AE – Wiring Home Limit Switch Input



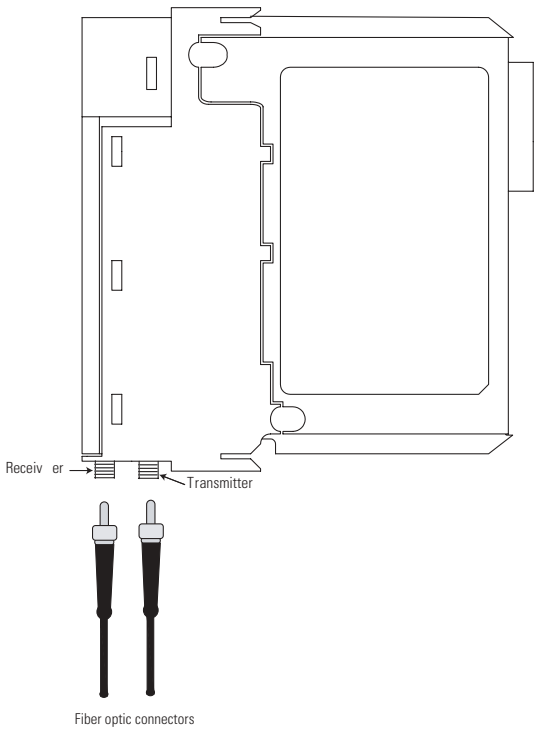
The home limit switch inputs to the servo module are designed for 24V nominal operation. These inputs should be wired for current sourcing operation.

1756-M02AE – Wiring OK Contacts



When the OK Relay is loaded with an inductive load, use a counter-EMF suppression diode across the load. The maximum rating of the OK relay contacts must not exceed 60V dc.

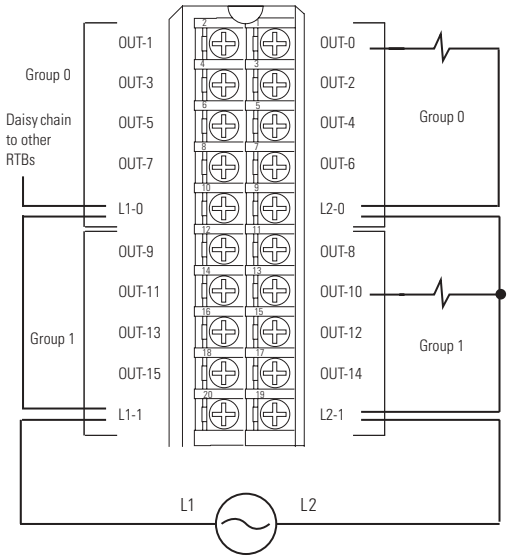
1756-M08SE and 1756-M16SE



Fiber optic connectors

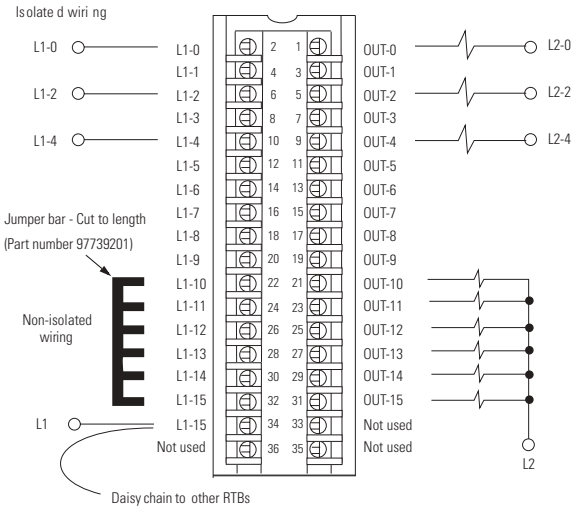
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1756-OA16



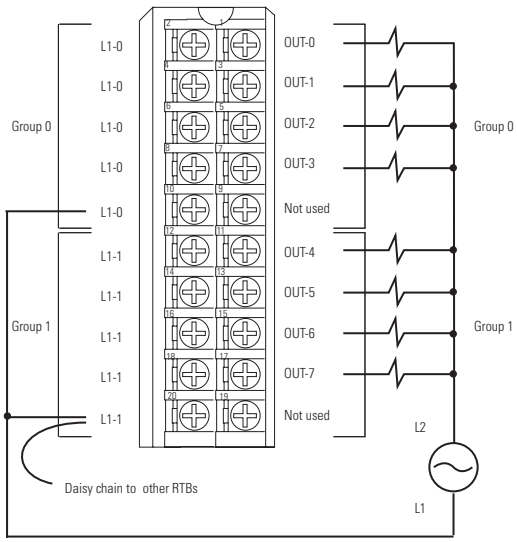
NOTES: 1. This wiring example shows a single voltage source.
2. When you daisy chain from a group to other RTBs, always connect the daisy chain as shown. Do not connect more than 2 wires to any single terminal at any time.

1756-OA16I



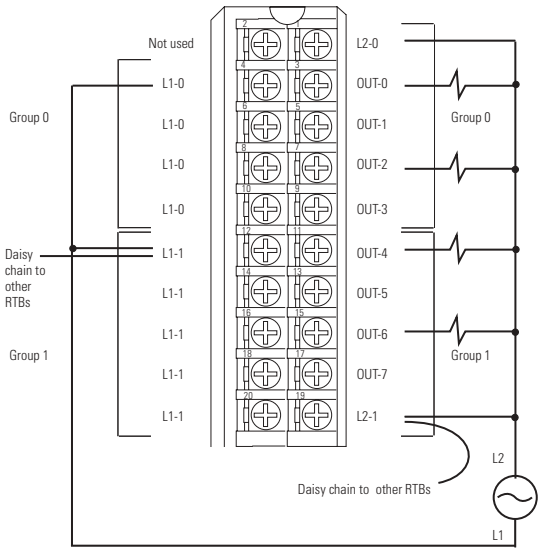
NOTES: 1. All terminals with the same name are connected together on the module. For example, L1 can be connected to either terminal marked L1-15.
2. When you use the second L1-15 terminal to daisy chain to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above. Do not connect more than 2 wires to any single terminal.

1756-OA8



NOTES: 1. All terminals with the same name are connected together on the module. For example, L1 can be connected to any terminal marked L1-0.
2. When you daisy chain from a group to another RTB, always connect the daisy chain to the terminal directly connected to the supply wire, as shown above. Do not connect more than 2 wires to any single terminal.
3. This wiring example shows a single voltage source.

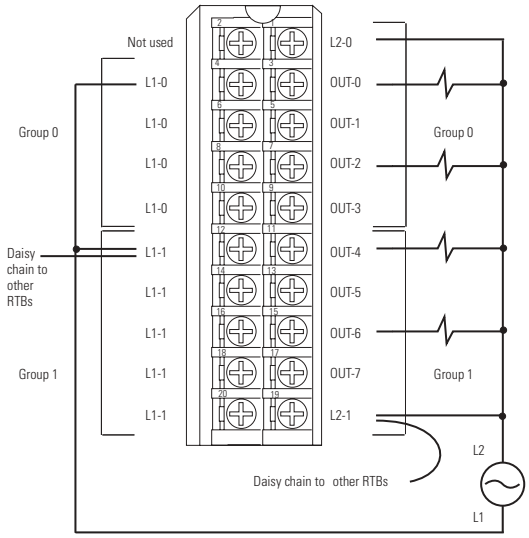
1756-OA8D



NOTES: 1. All terminals with the same name are connected together on the module. For example, L1 can be connected to any terminal marked L1-0.
2. When you daisy chain from a group to another RTB, always connect the daisy chain to the terminal directly connected to the supply wire, as shown above. Do not connect more than 2 wires to any single terminal.
3. This wiring example shows a single voltage source.

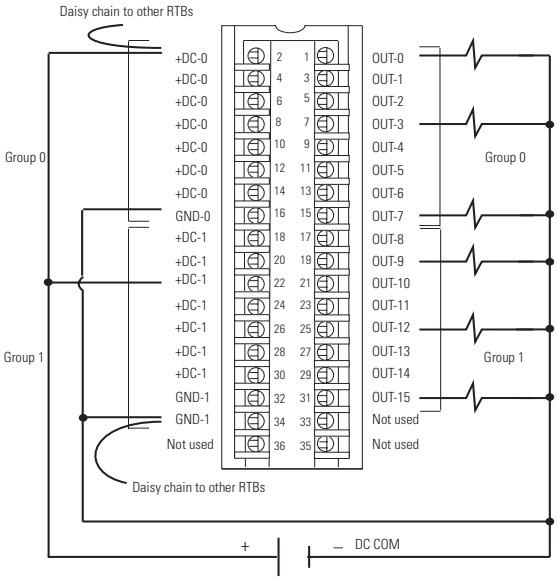
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1756-OA8E



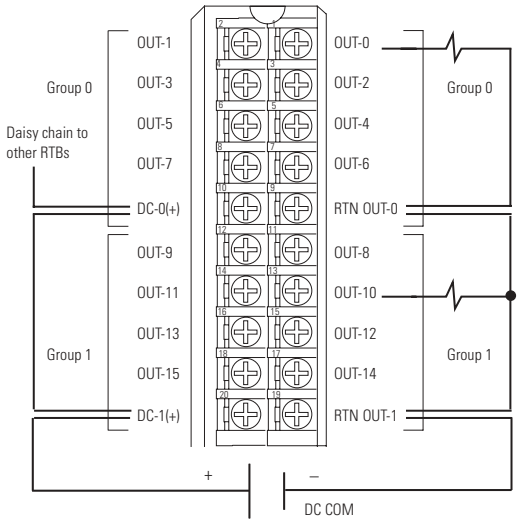
NOTES:
1. All terminals with the same name are connected together on the module. For example, L1 can be connected to any terminal marked L1-0.
2. When you daisy chain from a group to another RTB, always connect the daisy chain to the terminal directly connected to the supply wire, as shown above. Do not connect more than 2 wires to any single terminal.
3. This wiring example shows a single voltage source.

1756-OB16D



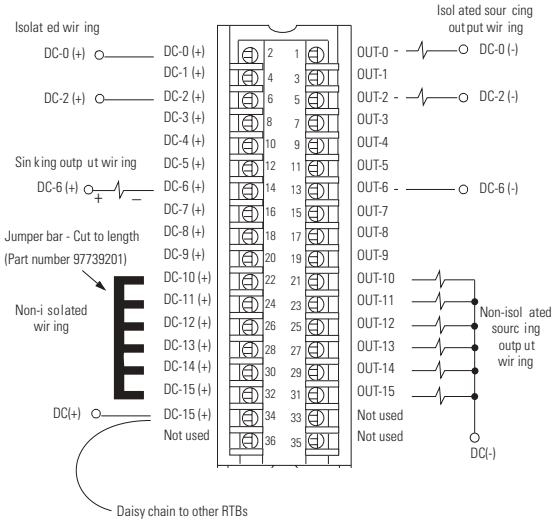
NOTES
1. All terminals with the same name are connected together on the module. For example, DC COM can be connected to either terminal marked GND-1.
2. When you daisy chain to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above. Do not connect more than 2 wires to any single terminal.
3. This wiring example shows a single voltage source.
4. If separate power sources are used, do not exceed the specified isolation voltage.

1756-OB16E



NOTES:
1. When you daisy chain from a group to another RTB, always connect the daisy chain as shown above. Do not connect more than 2 wires to any single terminal.
2. This wiring example shows a single voltage source.
3. If separate power sources are used, do not exceed the specified isolation voltage.

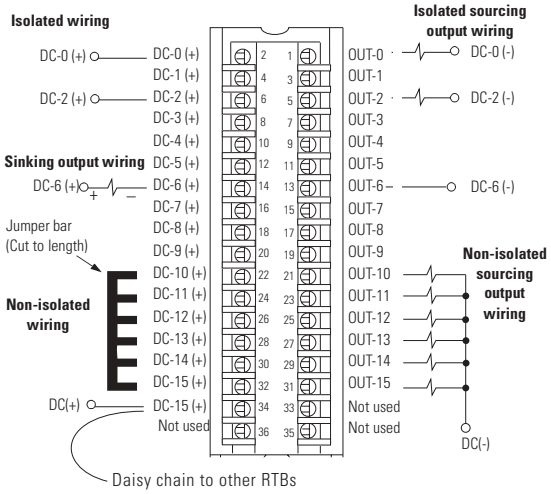
1756-OB16I



NOTES:1. All terminals with the same name are connected together on the module. For example, DC (+) can be connected to either terminal marked DC-15.
2. When you use the second DC-15 (+) terminal to daisy chain to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above. Do not connect more than 2 wires to any single terminal.
3. Outputs can be wired in a sink or source configuration as shown above.
4. If separate power sources are used, do not exceed the specified isolation voltages.

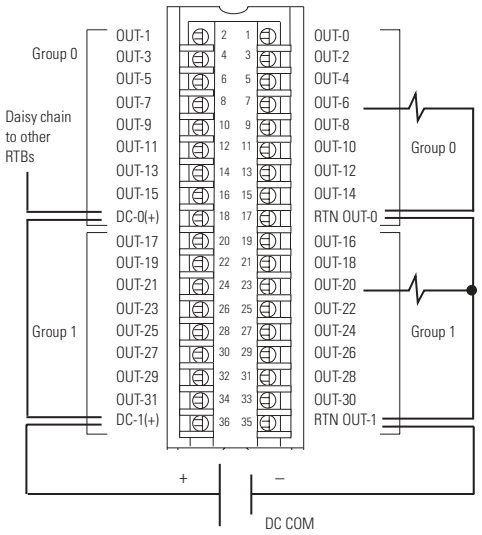
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1756-OB16IS



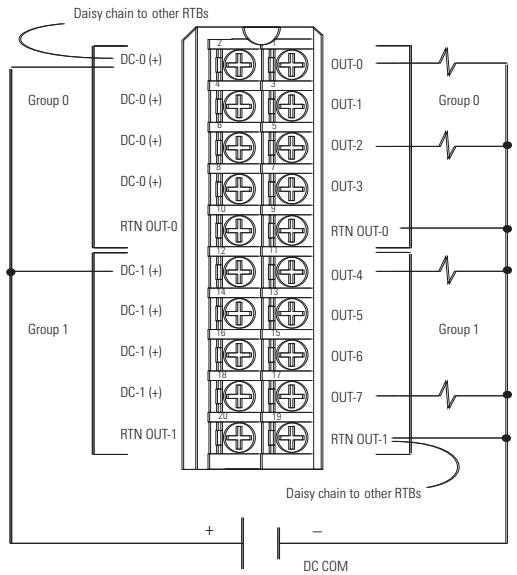
NOTES:1. All terminals with the same name are connected together on the module. For example, DC (+) can be connected to either terminal marked DC-15.
2. When you use the second DC-15 (+) terminal to daisy chain to other RTBs, always connect the daisy chain as shown in the example above. Do not connect more than 2 wires to any single terminal.
3. Outputs can be wired in a sink or source configuration as shown above.
4. If separate power sources are used, do not exceed the specified isolation voltages.

1756-OB32



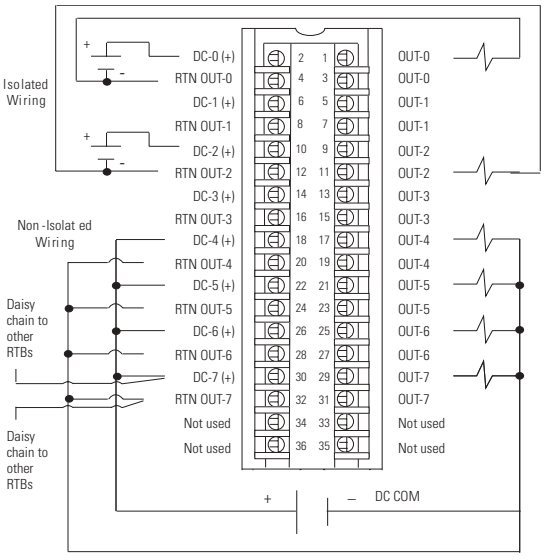
NOTES: 1. When you daisy chain from a group to another RTB, always connect the daisy chain as shown above. Do not connect more than 2 wires to any single terminal.
2. This wiring example uses a single voltage source.
3. If separate power sources are used, do not exceed the specified isolation voltage.

1756-OB8



NOTES: 1. All terminals with the same name are connected on the module. For example, DC COM can be connected to either terminal marked RTN OUT-1.
2. When you daisy chain from a group to another RTB, always connect the daisy chain to the terminal directly connected to the supply wire, as shown. Do not connect more than 2 wires to any single terminal.
3. This wiring example shows a single voltage source.
4. If separate power sources are used, do not exceed the specified isolation voltage.

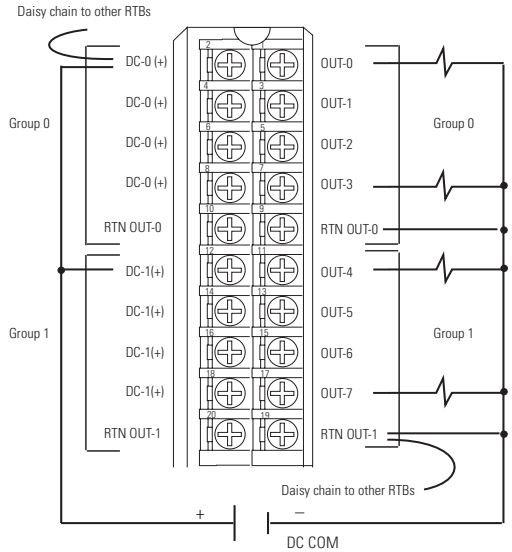
1756-OB8EI



NOTES 1. All terminals with the same name are connected together on the module. For example, the load can be connected to either terminal marked OUT-0.
2. When you daisy chain to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above. Do not connect more than 2 wires to any single terminal.
3. If separate power sources are used, do not exceed the specified isolation voltage.

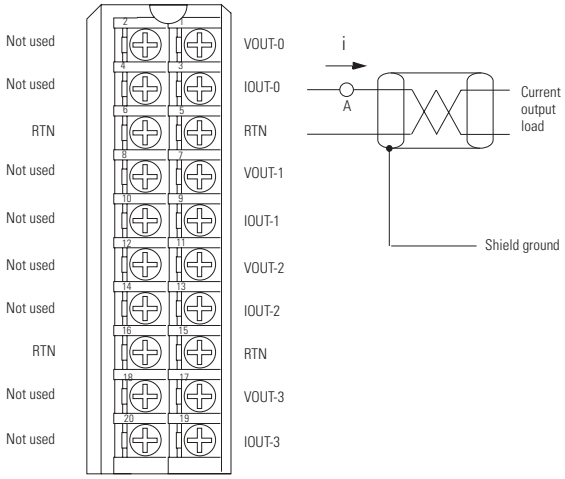
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1756-OC8



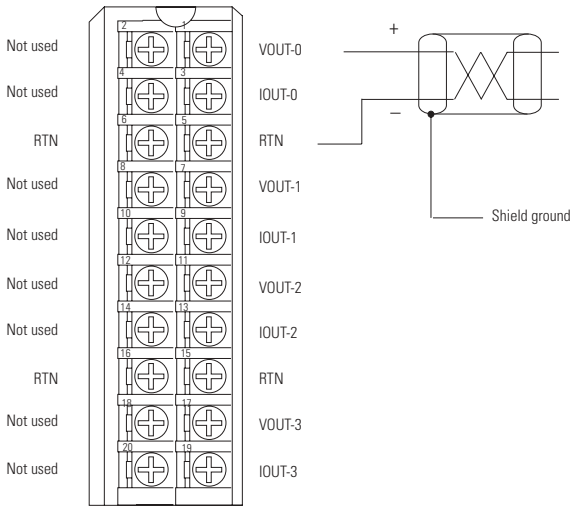
NOTES:
1. All terminals with the same name are connected together on the module. For example, DC COM can be connected to either terminal marked RTN OUT-1.
2. When you daisy chain from a group to another RTB, always connect the daisy chain to the terminal directly connected to the supply wire, as shown above. Do not connect more than 2 wires to any single terminal.
3. This wiring example shows a single voltage source.
4. If separate power sources are used, do not exceed the specified isolation voltage.

1756-OF4 – Current Applications



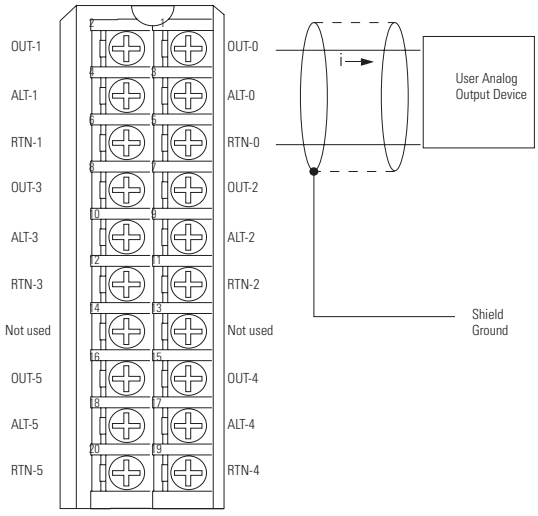
NOTES:
1. Place additional loop devices (e.g strip chart recorders) at the A location shown above.
2. Do not connect more than 2 wires to any single terminal.
3. All RTN terminals are connected internally.

1756-OF4 – Voltage Applications



NOTES:
1. Do not connect more than 2 wires to any single terminal.
2. All RTN terminals are connected internally.

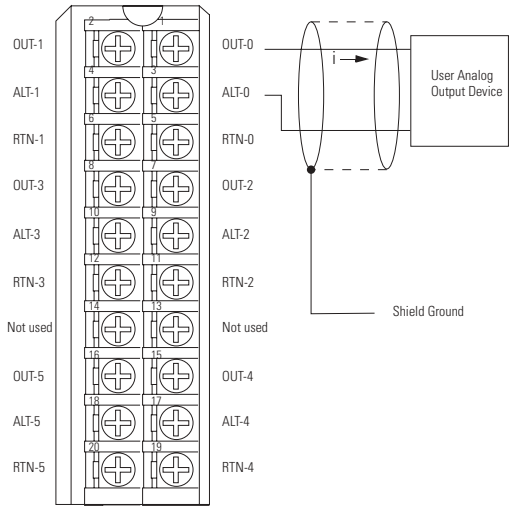
1756-OF6CI – 0 - 550Ω Applications



NOTES:
1. Place additional devices anywhere in the loop.
2. Do not connect more than 2 wires to any single terminal.

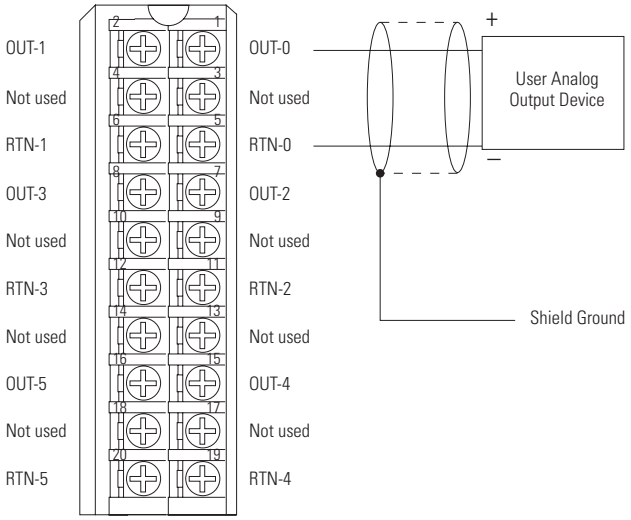
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1756-OF6CI – 551 - 1000Ω Applications



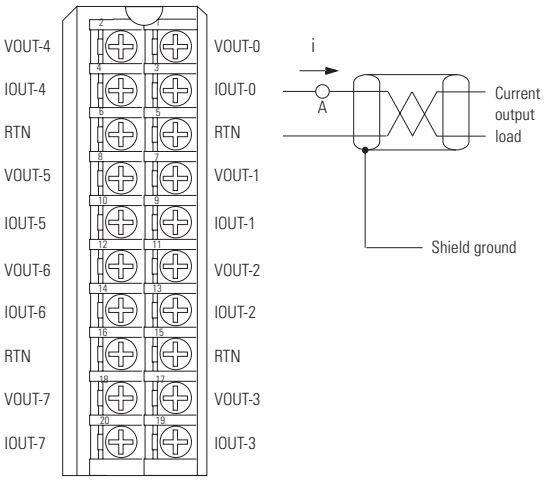
NOTES: 1. Place additional devices anywhere in the loop.
2. Do not connect more than 2 wires to any single terminal.

1756-OF6VI



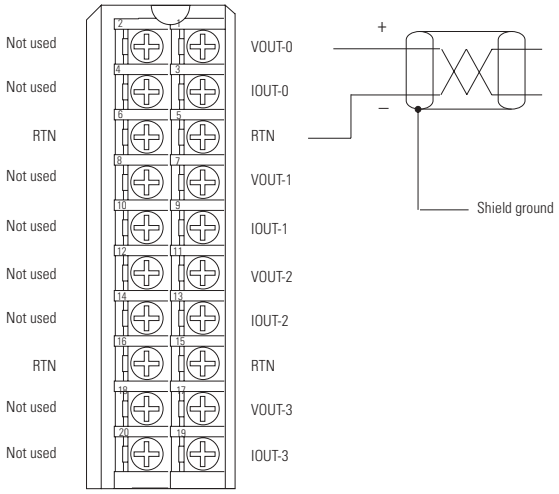
NOTES: Do not connect more than 2 wires to any single terminal.

1756-OF8 – Current Applications



NOTES: 1. Place additional loop devices (e.g strip chart recorders) at the A location shown above.
2. Do not connect more than 2 wires to any single terminal.
3. All RTN terminals are connected internally.

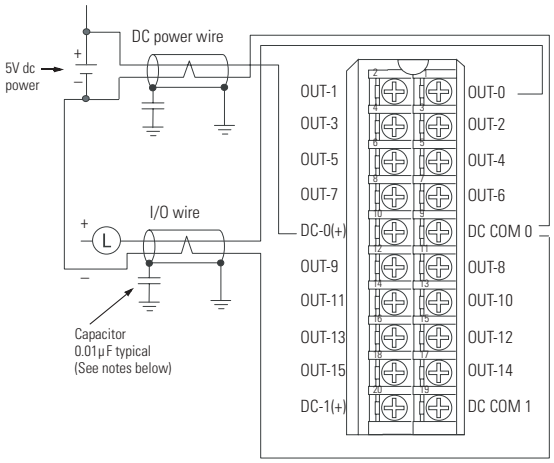
1756-OF8 – Voltage Applications



NOTES: 1. Do not connect more than 2 wires to any single terminal.
2. All RTN terminals are connected internally.

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1756-OG16



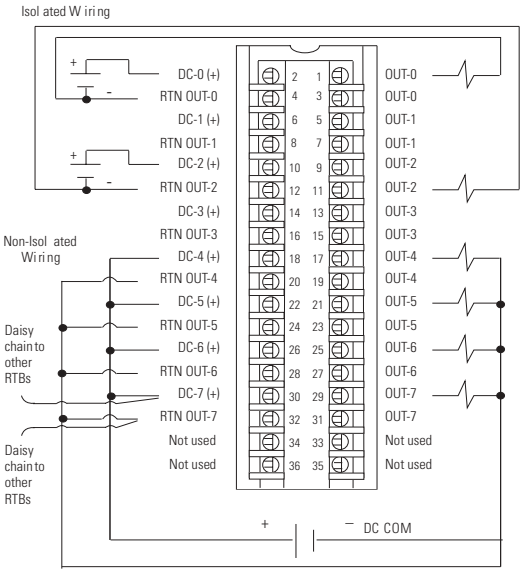
GENERAL NOTES:

1. We recommend you use Belden M 8761 cable where shielded cables are shown.
2. Do not connect more than two wires to any single terminal.

CE REQUIREMENT NOTES:

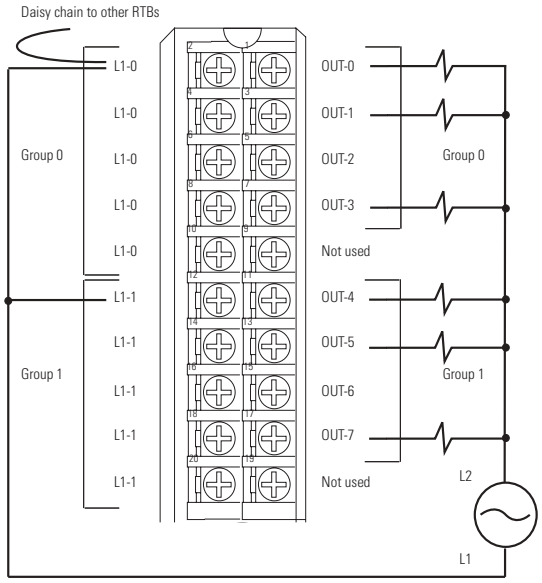
1. DC power wire and I/O wire should not exceed 10m (30ft) in length.
2. The 0.01µF capacitors shown must be rated for 2000V dc.

1756-OH8I



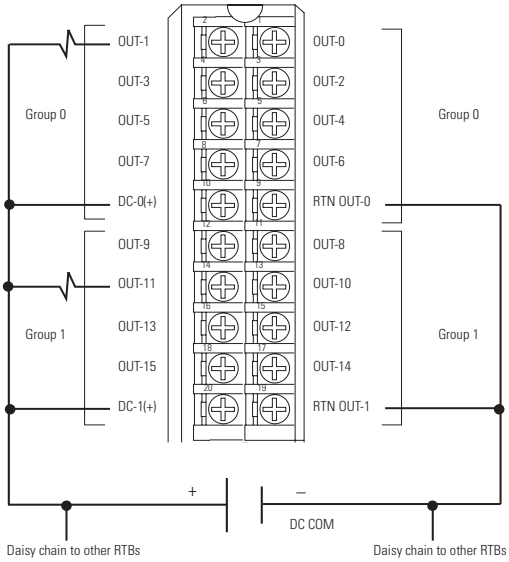
NOTES
1. All terminals with the same name are connected together on the module. For example, the load can be connected to either terminal marked OUT-0.
2. When you daisy chain to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above. Do not connect more than 2 wires to any single terminal.
3. If separate power sources are used, do not exceed the specified isolation voltage.

1756-ON8



NOTES:
1. All terminals with the same name are connected together on the module. For example, L1 can be connected to any terminal marked L1-1.
2. When you daisy chain from a group to another RTB, always connect the daisy chain to the terminal directly connected to the supply wire, as shown above. Do not connect more than 2 wires to any single terminal.
3. This wiring example shows a single voltage source.

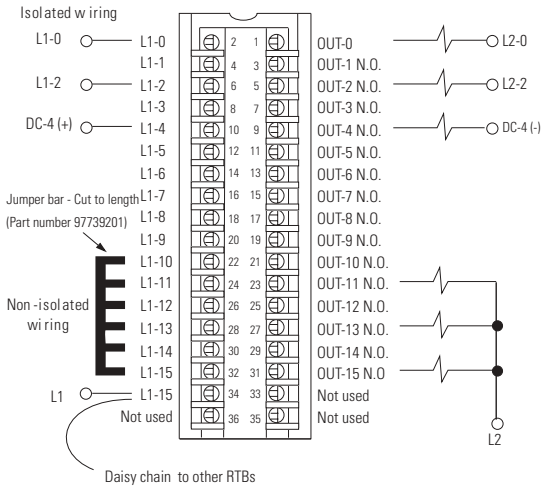
1756-OV16E



NOTES:
1. When you daisy chain from a group to another RTB, always connect the daisy chain to the terminal directly connected to the supply wire, as shown above. Do not connect more than 2 wires to any single terminal.
2. This wiring example shows a single voltage source.
3. If separate power sources are used, do not exceed the specified isolation voltage.

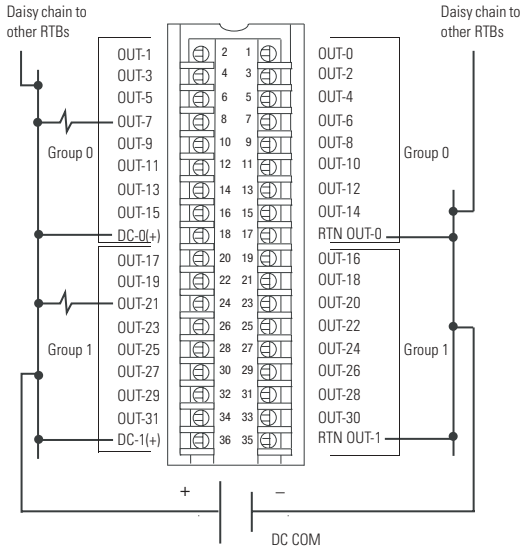
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1756-OW16I



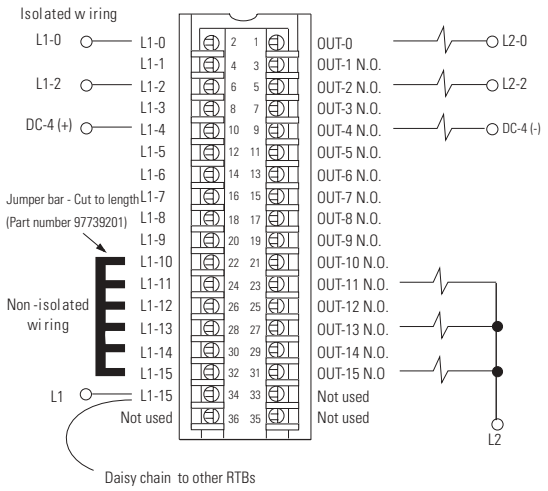
NOTES: 1. All terminals with the same name are connected together on the module. For example, L1 can be connected to either terminal marked L1-15.
2. When daisy chaining the second L1-15 terminal to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above. Do not connect more than 2 wires to any single terminal.
3. If separate power sources are used, do not exceed the specified isolation voltage.

1756-OV32E



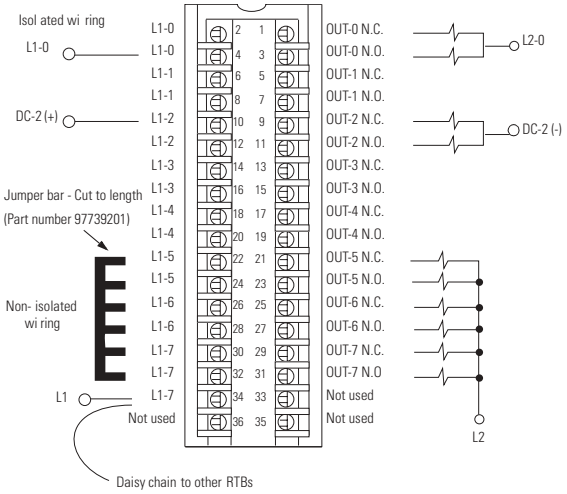
NOTES: **1.** When you daisy chain from a group to another RTB, always connect the daisy chain to the terminal directly connected to the supply wire, as shown above.
2. This wiring example uses a single voltage source.
3. If separate power sources are used, do not exceed the specified isolation voltage
4. Do not physically connect more than two wires to a single RTB terminal.

1756-OW16I



NOTES: 1. All terminals with the same name are connected together on the module. For example, L1 can be connected to either terminal marked L1-15.
2. When daisy chaining the second L1-15 terminal to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above. Do not connect more than 2 wires to any single terminal.
3. If separate power sources are used, do not exceed the specified isolation voltage.

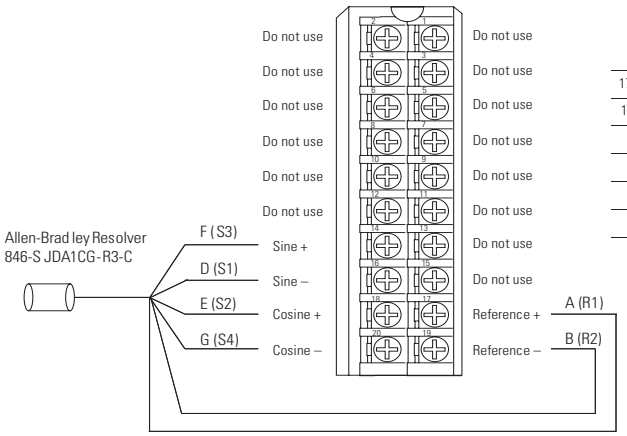
1756-OX8I



NOTES: 1. All terminals with the same name are connected together on the module. For example, L1-0 can be connected to either terminal marked L1-0.
2. When you use the third L1-7 terminal to daisy chain to other RTBs, always connect the daisy chain to the terminal directly connected to the supply wire, as shown in the example above. Do not connect more than 2 wires to any single terminal.
3. If separate power sources are used, do not exceed the specified isolation voltage.

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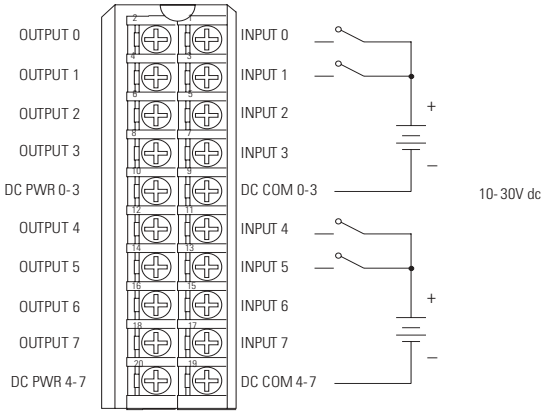
1756-PLS Resolver Module



RTB Terminal Number	846-SJxNxCG-R3 846-SAxNxCG-R3 Allen-Bradley Resolvers Designation	845-CA-E-25 845-CA-F-25 Connector Cables Color Pairs	Resolver Signal Name
17 (Reference+)	A	White	R1
19 (Reference-)	B	Black of white	R2
14 (Sine+)	F	Black of red	S3
16 (Sine-)	D	Red	S1
18 (Cosine+)	E	Green	S2
20 (Cosine-)	G	Black of green	S4

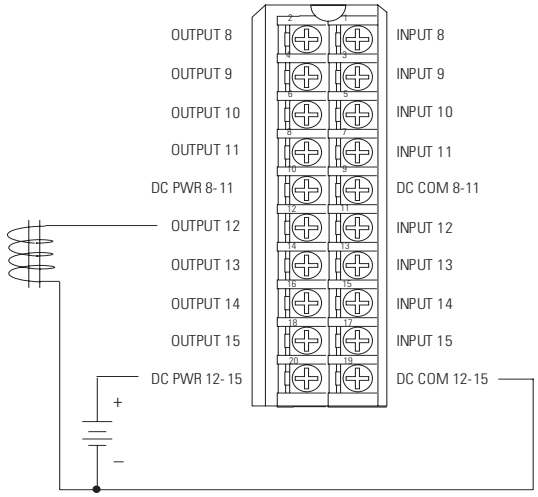
NOTE: Do not connect more than 2 wires to any single terminal.

1756-PLS Left Section I/O Module



NOTE: Do not connect more than 2 wires to any single terminal.

1756-PLS Right Section I/O Module



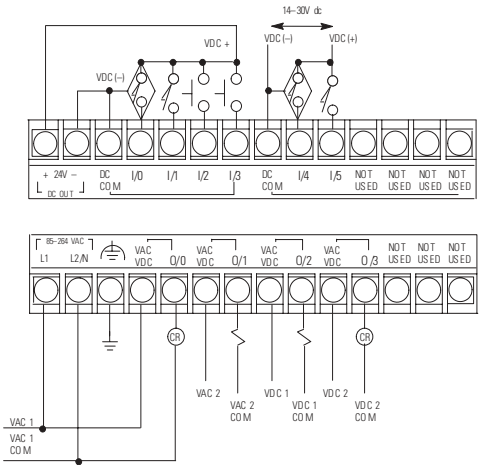
NOTE: Do not connect more than 2 wires to any single terminal.

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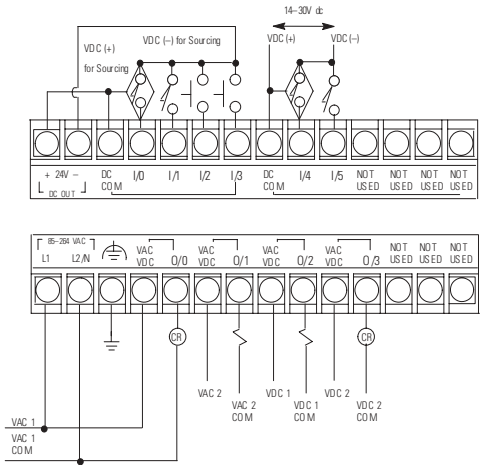
1761 Controller I/O on MicroLogix 1000 Controllers

1761-L10BWA

Sinking Input Configuration

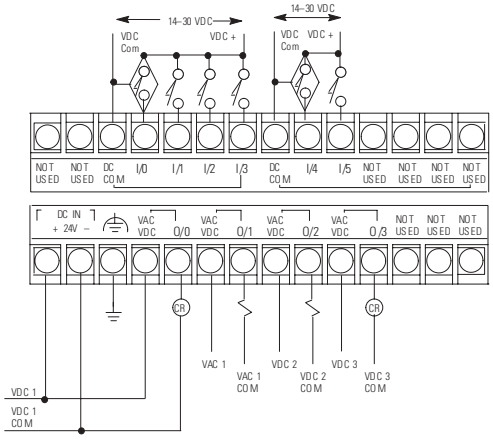


Sourcing Input Configuration

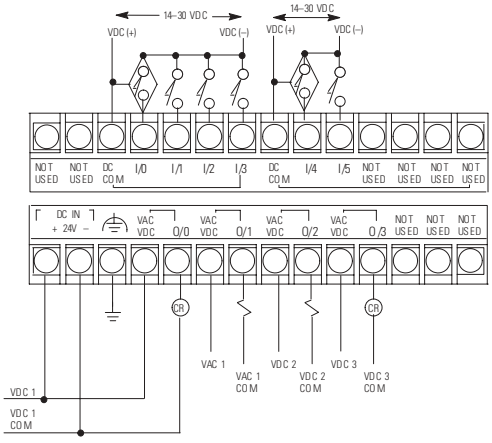


1761-L10BWB

Sinking Input Configuration



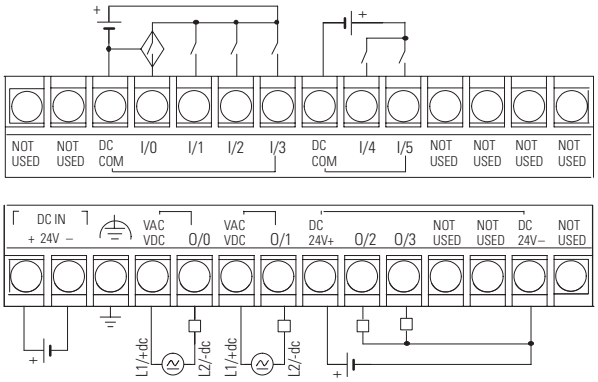
Sourcing Input Configuration



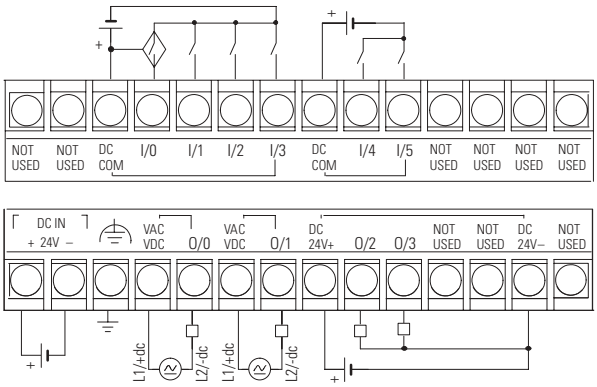
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1761-L10BXB

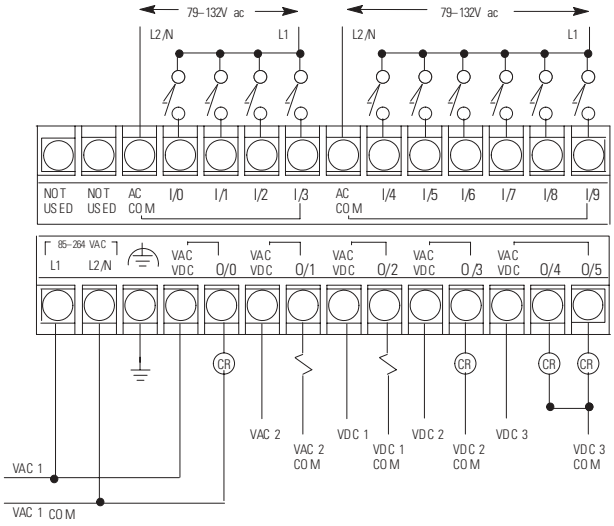
24V dc In, 24V dc and Relay Out
Showing sinking (source load) configuration of inputs.



24V dc In, 24V dc and Relay Out
Showing sourcing (sink load) configuration of inputs.

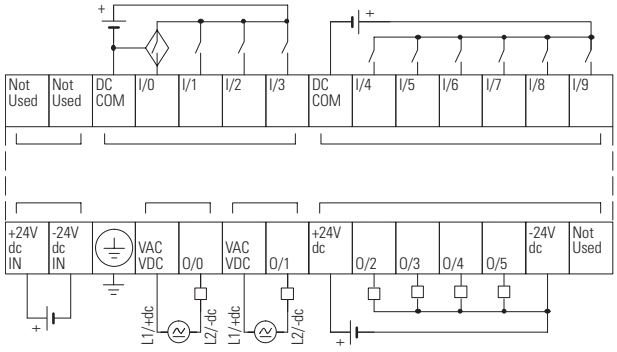


1761-L16AWA

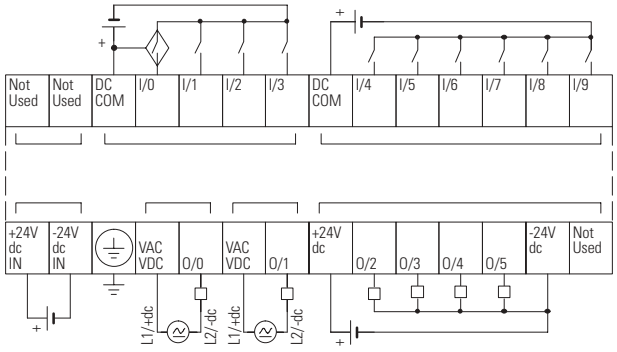


1761-L16BBB

24V dc In, 24V dc and Relay Out
Showing sinking (source load) configuration of inputs.

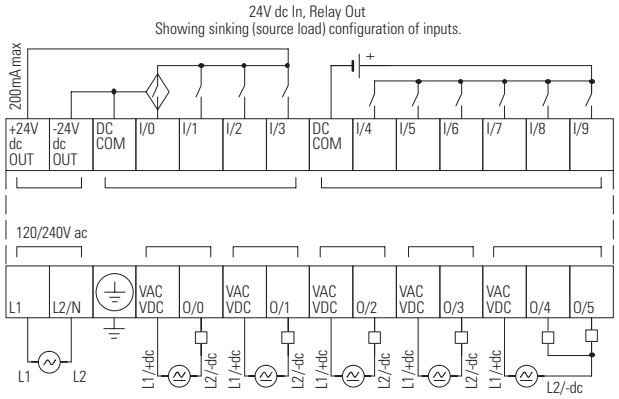


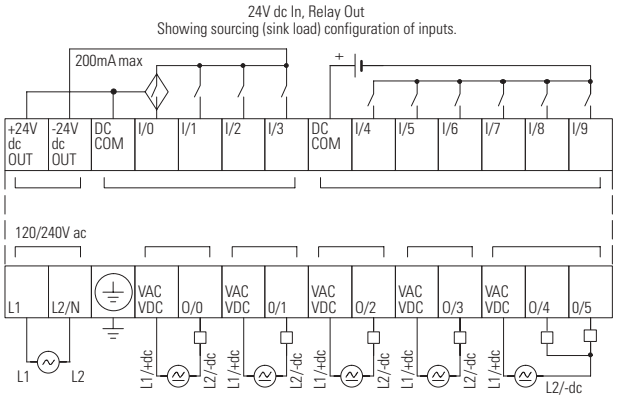
24V dc In, 24V dc and Relay Out
Showing sourcing (sink load) configuration of inputs.



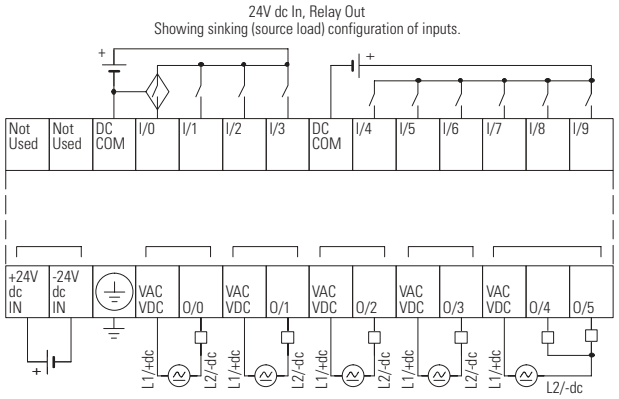
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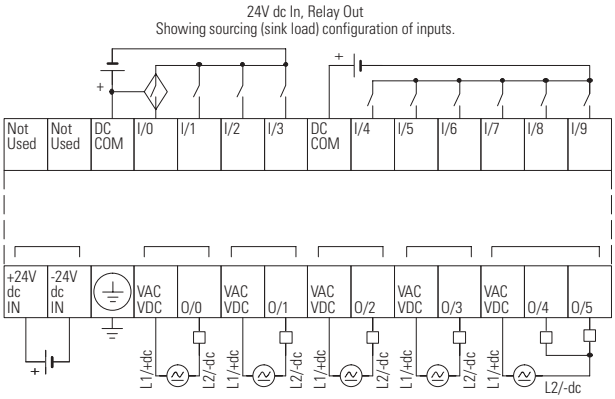
1761-L16BWA



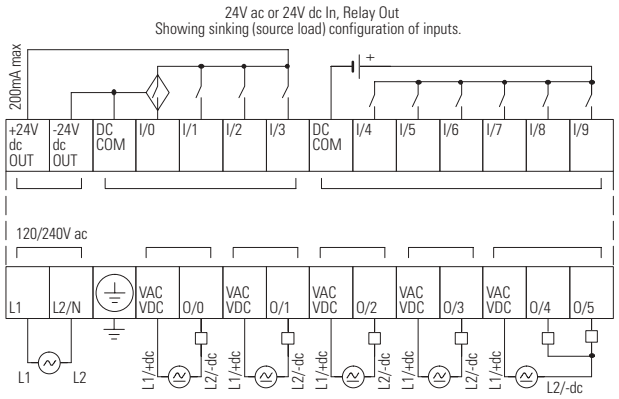


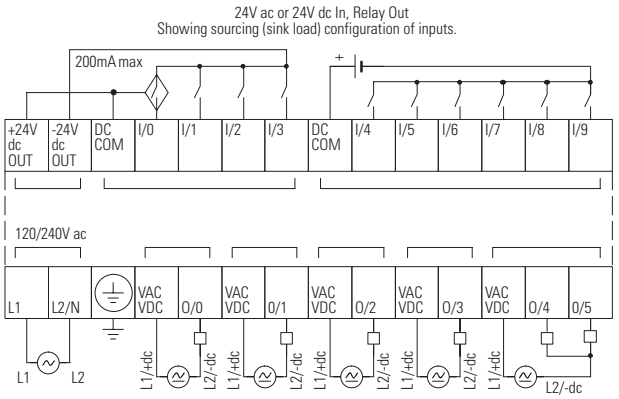
1761-L16BWB





1761-L16NWA

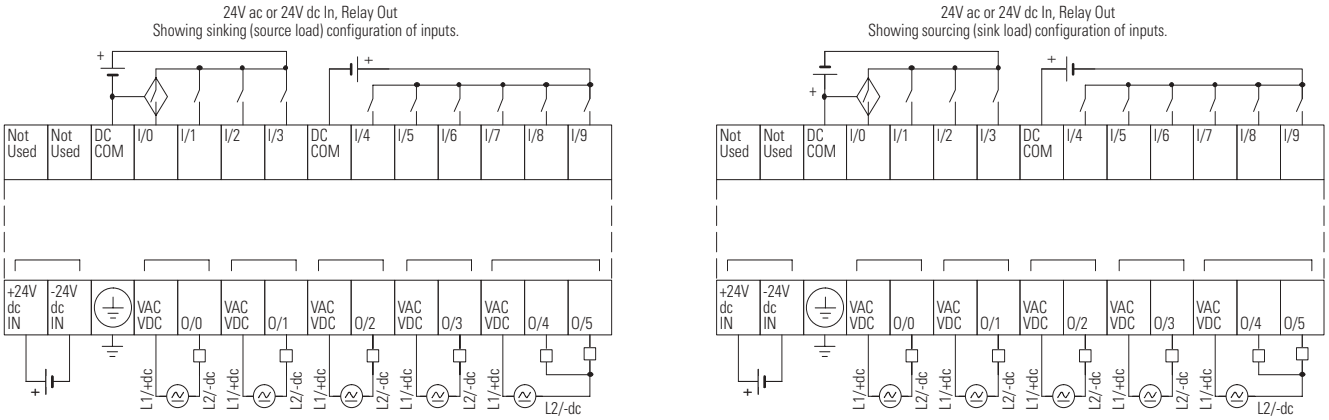




Input circuits on this module are capable of 24V ac or 24V dc operation.

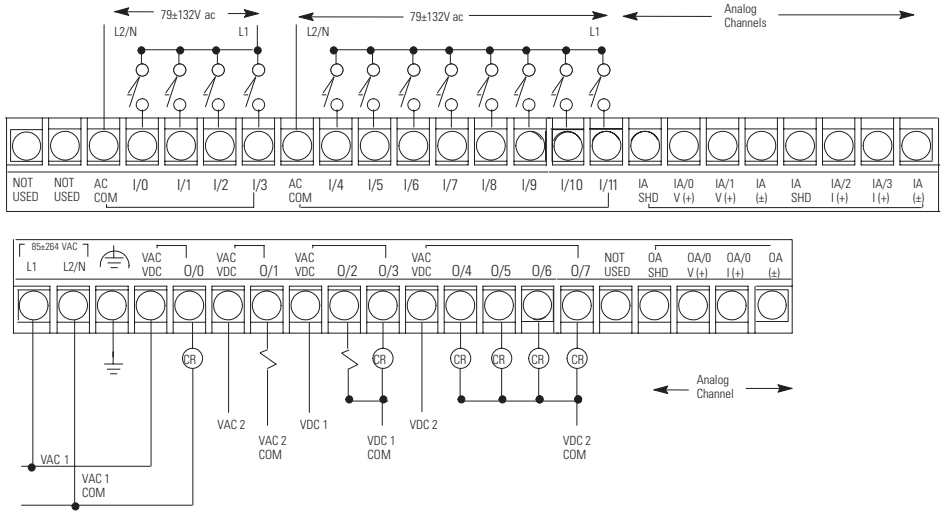
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1761-L16NWB



Input circuits on this module are capable of 24V ac or 24V dc operation.

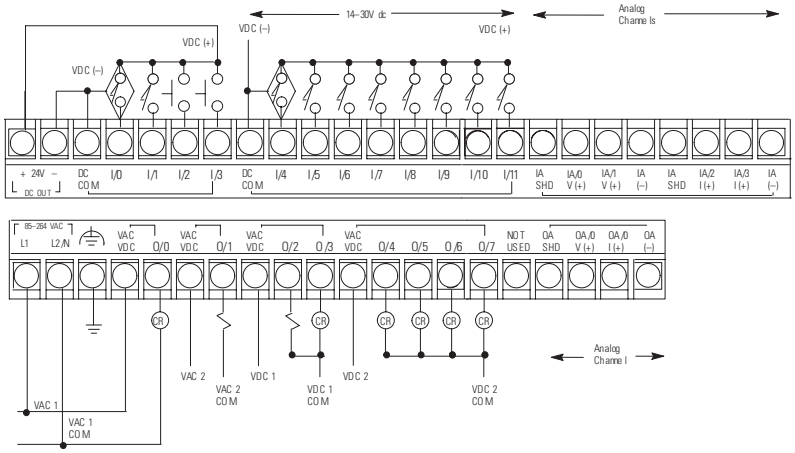
1761-L20AWA-5A



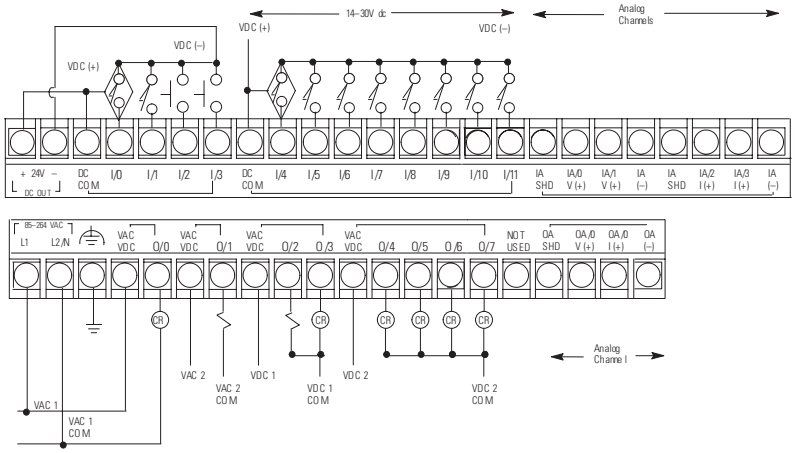
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1761-L20BWA-5A

Sinking Input Configuration



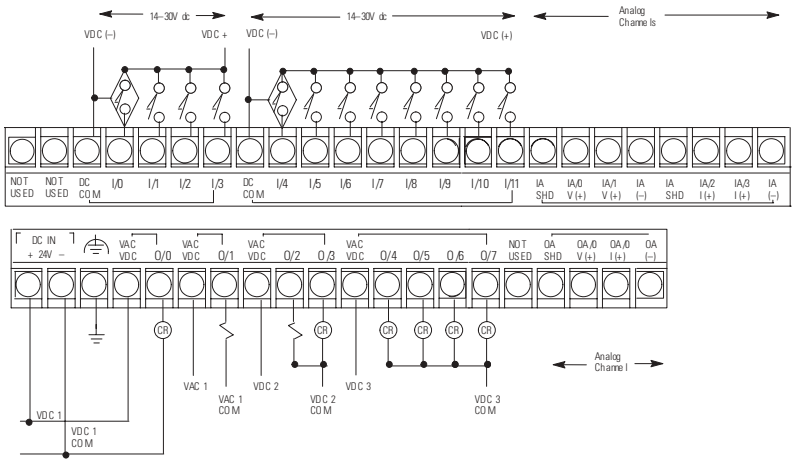
Sourcing Input Configuration



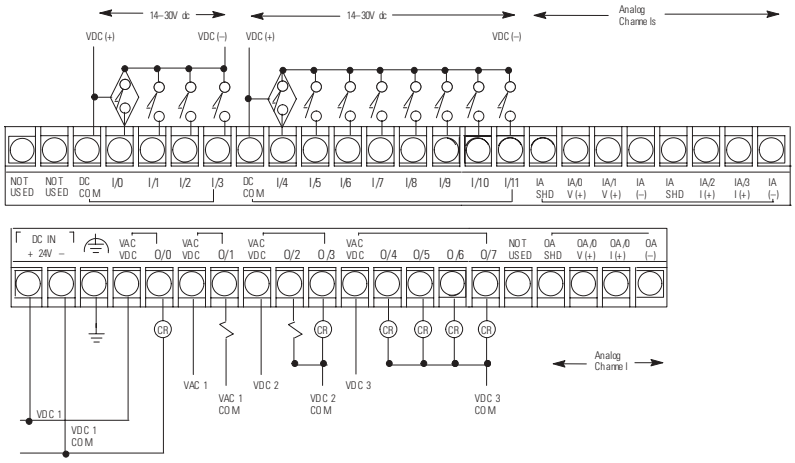
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1761-L20BWB-5A

Sinking Input Configuration



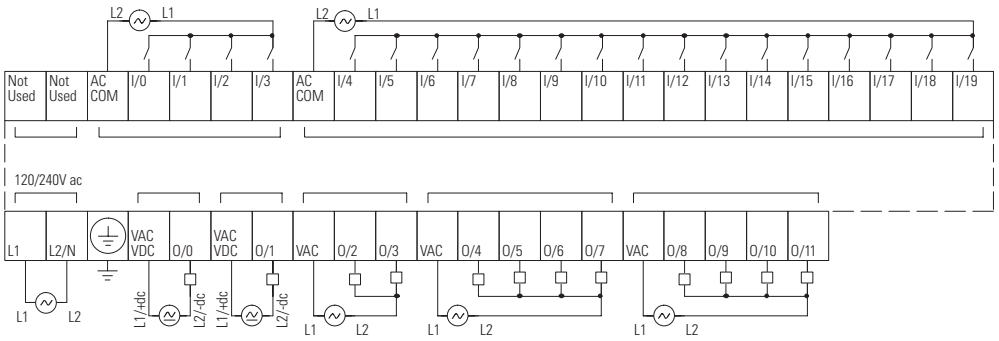
Sourcing Input Configuration



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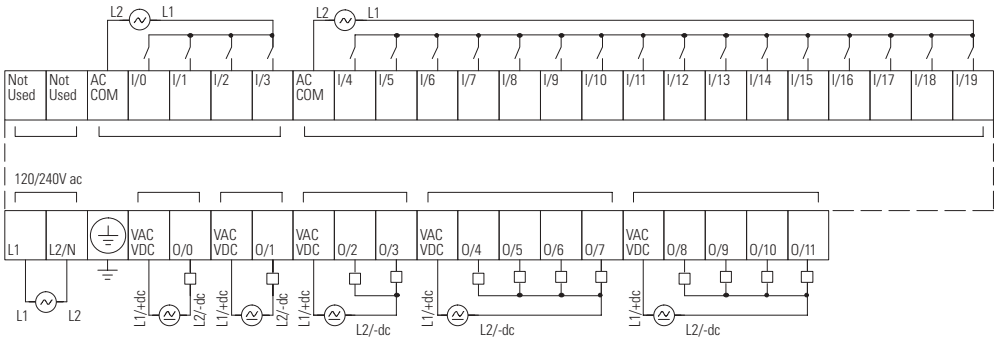
1761-L32AAA

120V ac In, 120/240V ac and Relay Out



1761-L32AWA

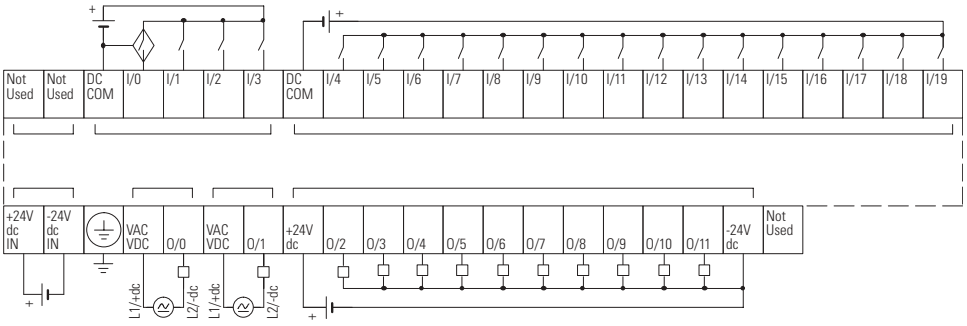
120V ac In, Relay Out



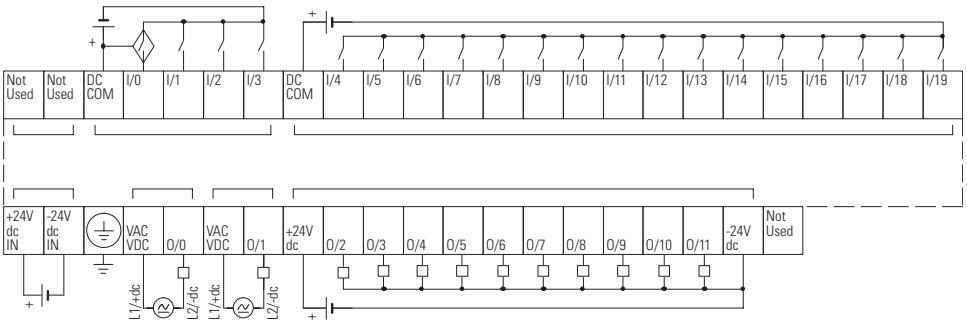
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1761-L32BBB

24V dc In, 24V dc and Relay Out
Showing sinking (source load) configuration of inputs.



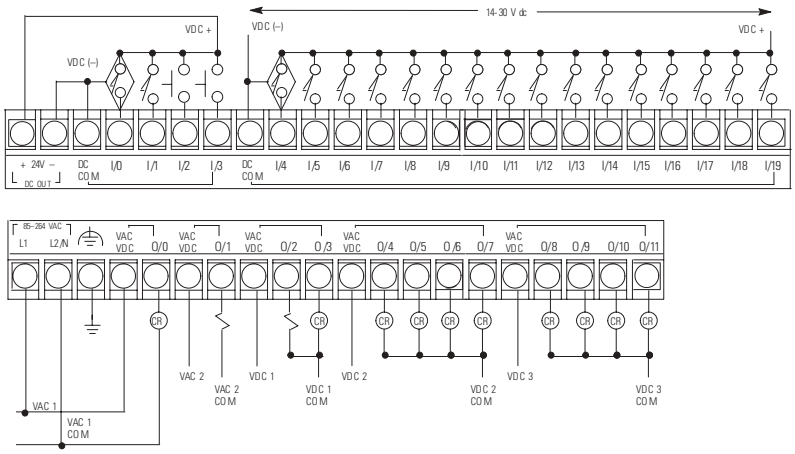
24V dc In, 24V dc and Relay Out
Showing sourcing (sink load) configuration of inputs.



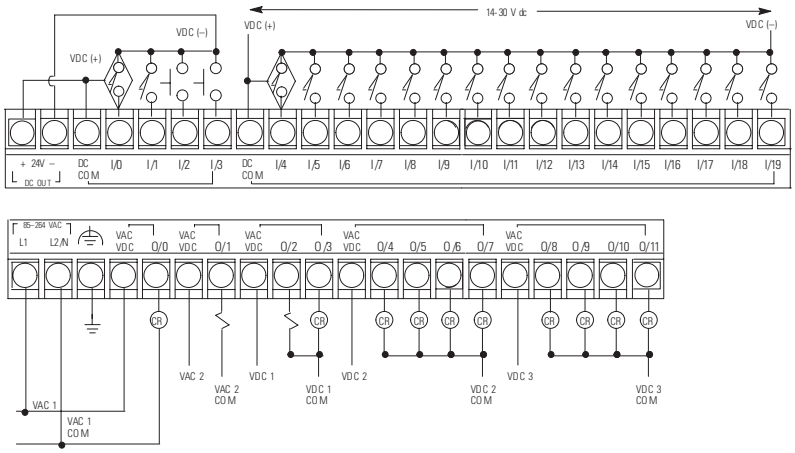
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1761-L32BWA

Sinking Input Configuration



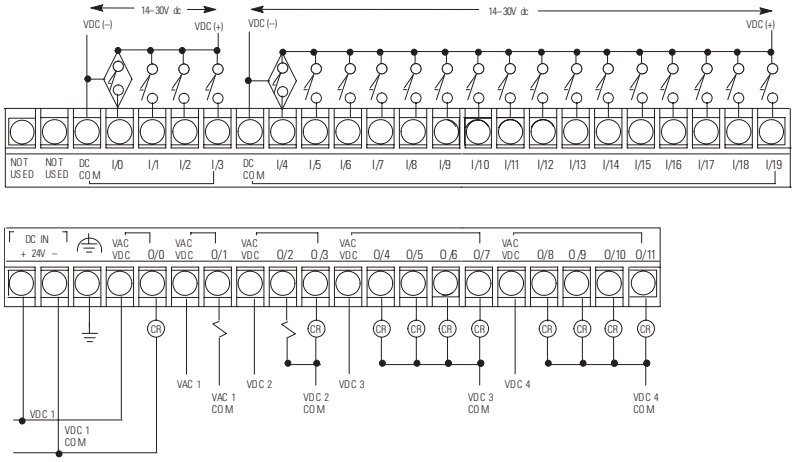
Sourcing Input Configuration



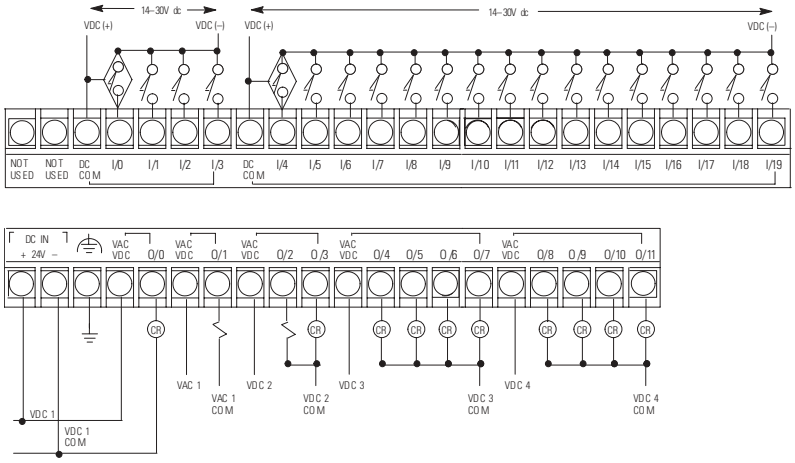
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1761-L32BWB

Sinking Input Configuration



Sourcing Input Configuration



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1762 I/O on MicroLogix 1200 Controllers

Unlike the other product sections in this document, this section does not list the 1762 catalog numbers in alphabetical order; instead, we first list the embedded controller I/O catalog numbers first because of their regular use in most 1762 applications.

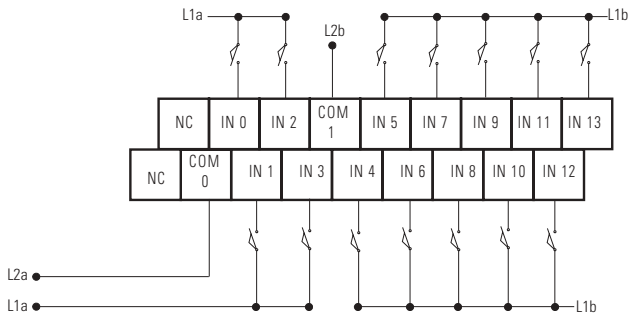
IMPORTANT

As you use this section, keep the following in mind:

- Catalog numbers that begin with 1762-Lxx (e.g. 1762-L24AWA) represent embedded I/O products
- Catalog numbers that begin in any combination other than 1762-Lxx (e.g. 1762-IA8) represent expansion I/O products

1762-L24AWA
1762-L24AWAR

Input Wiring

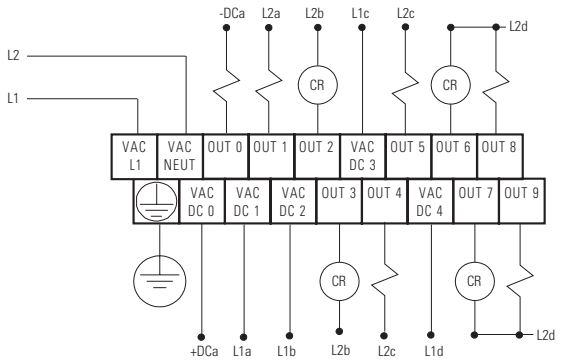


Terminal Groupings

Input Group	Common Terminal	Input Terminals
Group 0	AC COM 0	I/0 through I /3
Group 1	AC COM 1	I/4 through I /13

NC - No connection

Output Wiring



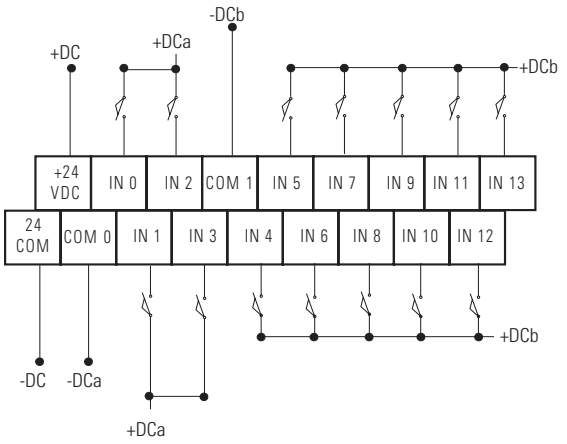
Terminal Groupings

Output Group	Voltage Terminal	Output Terminal
Group 0	VAC/VDC 0	O/0
Group 1	VAC/VDC 1	O/1
Group 2	VAC/VDC 2	O/2 through O/3
Group 3	VAC/VDC 3	O4 through O /5
Group 4	VAC/VDC 4	O/6 through O/9

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1762-L24BWA
1762-L24BWAR

Sinking Input Wiring



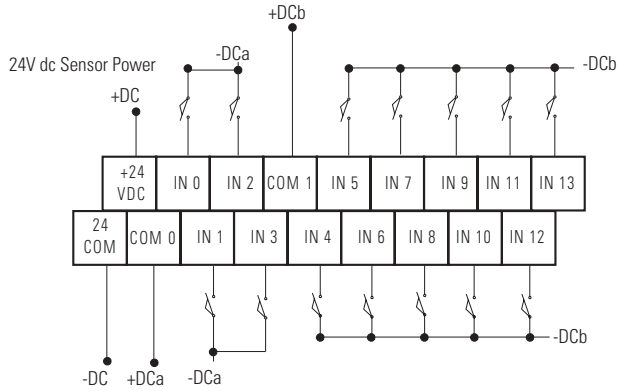
Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	DC COM 0	I/0 through I /3
Group 1	DC COM 1	I/4 through I /13

ATTENTION

The 24V dc sensor power source must not be used to power output circuits. It should only be used to power input devices (e.g. sensors, switches).

Sourcing Input Wiring



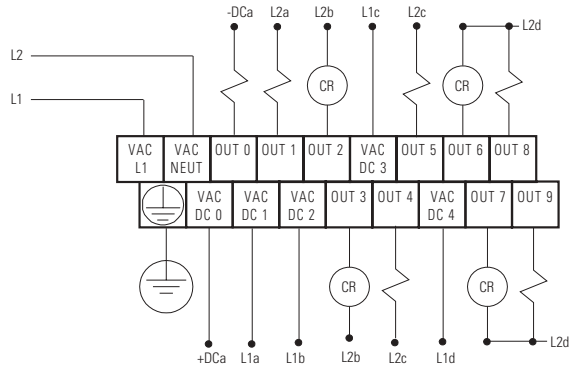
Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	DC COM 0	I/0 through I /3
Group 1	DC COM 1	I/4 through I /13

ATTENTION

The 24V dc sensor power source must not be used to power output circuits. It should only be used to power input devices (e.g. sensors, switches).

Output Wiring



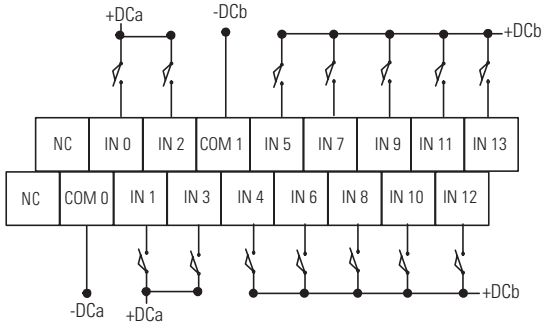
Terminal Groupings

Output Group	Voltage Terminal	Output Terminal
Group 0	VAC/VDC 0	O/0
Group 1	VAC/VDC 1	O/1
Group 2	VAC/VDC 2	O/2 through O/3
Group 3	VAC/VDC 3	O4 through O /5
Group 4	VAC/VDC 4	O/6 through O/9

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1762-L24BXB
1762-L24BXBR

Sinking Input Wiring

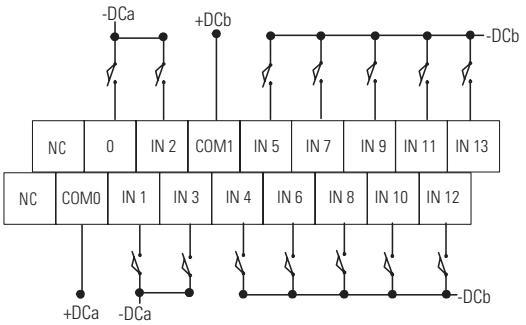


Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	DC COM 0	I/0 through I /3
Group 1	DC COM 1	I/4 through I /13
Group 0	AC COM 0	I/0 through I /3

NC - No connection

Sourcing Input Wiring

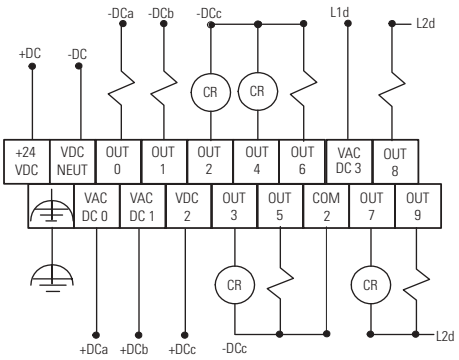


Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	DC COM 0	I/0 through I /3
Group 1	DC COM 1	I/4 through I /13
Group 0	AC COM 0	I/0 through I /3

NC - No connection

Output Wiring



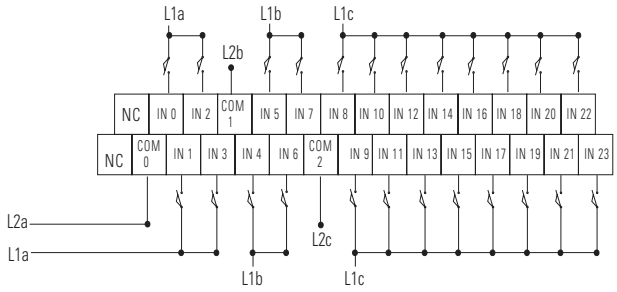
Terminal Groupings

Output Group	Voltage Terminal	Output Terminal
Group 0	VAC/VDC 0	O/0
Group 1	VAC/VDC 1	O/1
Group 2	VDC 2, VD C COM 2	O/2 thr ough O/6
Group 3	VAC/VDC 3	O/7 thr ough O/9

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1762-L40AWA
1762-L40AWAR

Input Wiring

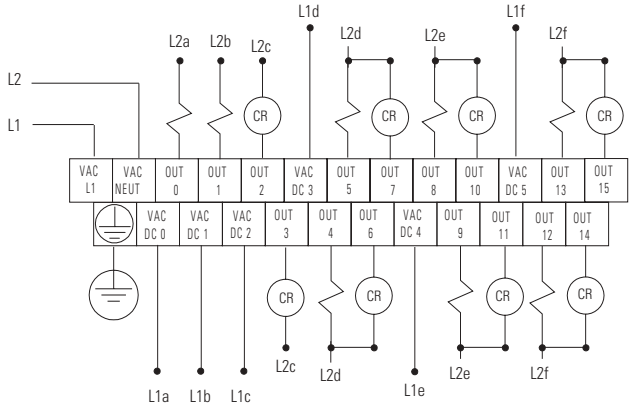


Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	AC COM 0	I/0 through I/3
Group 1	AC COM 1	I/4 through I/7
Group 2	AC COM 2	I/8 through I/23

NC - No connection

Output Wiring



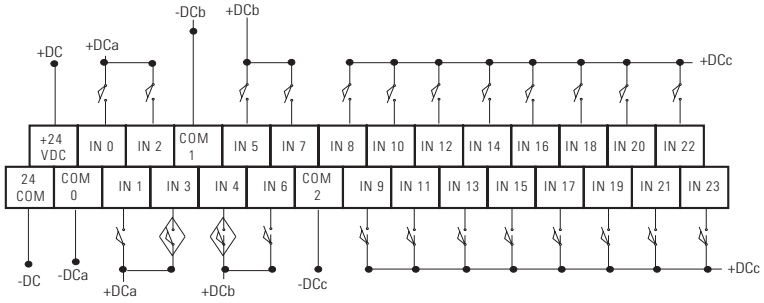
Terminal Groupings

Output Group	Voltage Terminal	Output Terminal
Group 0	VAC/VDC 0	O/0
Group 1	VAC/VDC 1	O/1
Group 2	VAC/VDC 2	O/2 thr ough O/3
Group 3	VAC/VDC 3	O/4 thr ough O/7
Group 4	VAC/VDC 4	O/8 thr ough O/11
Group 5	VAC/VDC 5	O/12 thr ough O/15

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1762-L40BWA
1762-L40BWAR

Sinking Input Wiring



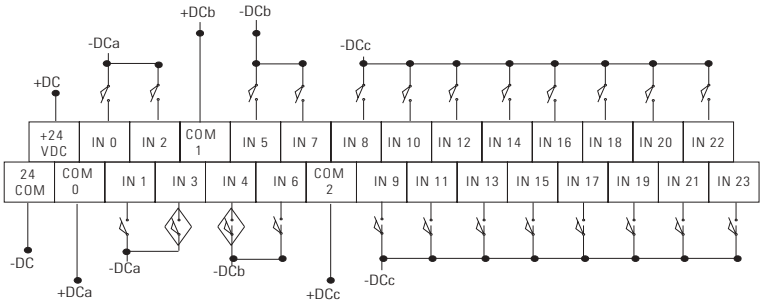
Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	DC COM 0	I/0 through I/3
Group 1	DC COM 1	I/4 through I/7
Group 2	DC COM 2	I/8 through I/23

ATTENTION

The 24V dc sensor power source must not be used to power output circuits. It should only be used to power input devices (e.g. sensors, switches).

Sourcing Input Wiring



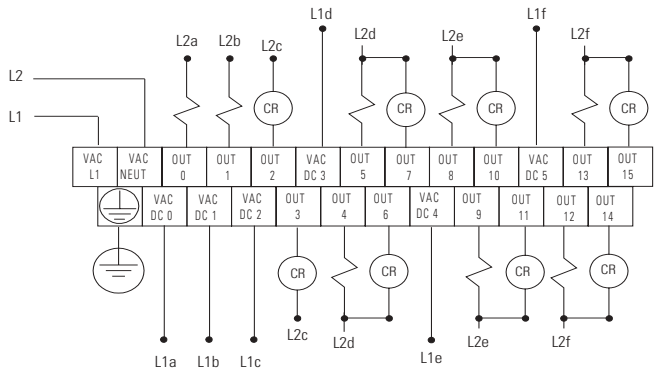
Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	DC COM 0	I/0 through I/3
Group 1	DC COM 1	I/4 through I/7
Group 2	DC COM 2	I/8 through I/23

ATTENTION

The 24V dc sensor power source must not be used to power output circuits. It should only be used to power input devices (e.g. sensors, switches).

Output Wiring



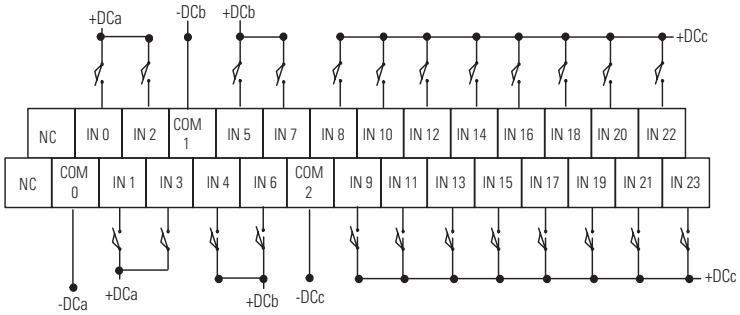
Terminal Groupings

Output Group	Voltage Terminal	Output Terminal
Group 0	VAC/VDC 0	O/0
Group 1	VAC/VDC 1	O/1
Group 2	VAC/VDC 2	O/2 through O/3
Group 3	VAC/VDC 3	O/4 through O/7
Group 4	VAC/VDC 4	O/8 through O/11
Group 5	VAC/VDC 5	O/12 through O/15

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1762-L40BXB
1762-L40BXBR

Sinking Input Wiring

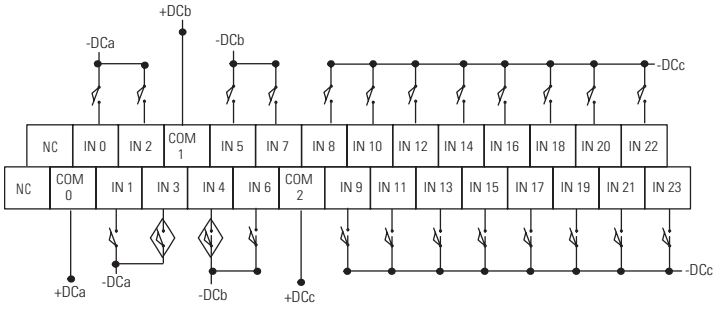


Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	DC COM 0	I/0 through I/3
Group 1	DC COM 1	I/4 through I/7
Group 2	DC COM 2	I/8 through I/23

NC - No connection

Sourcing Input Wiring

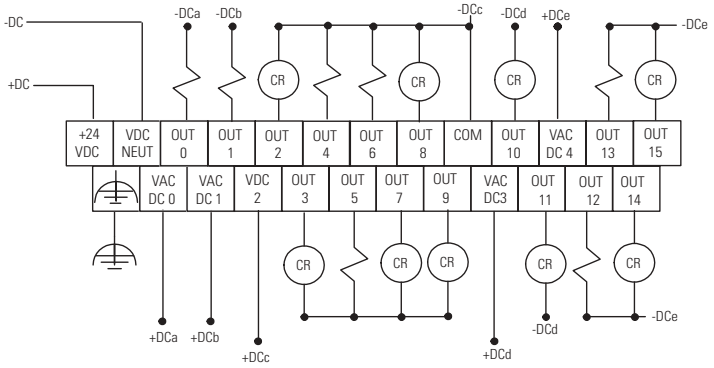


Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	DC COM 0	I/0 through I/3
Group 1	DC COM 1	I/4 through I/7
Group 2	DC COM 2	I/8 through I/23

NC - No connection

Output Wiring

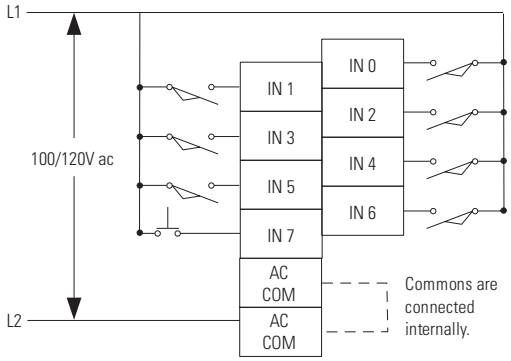


Terminal Groupings

Output Group	Voltage Terminal	Output Terminal
Group 0	VAC/VDC 0	O/0
Group 1	VAC/VDC 1	O/1
Group 2	VDC 2, VDC COM 2	O/2 through O/9
Group 3	VAC/VDC 3	O/10 through O/11
Group 4	VAC/VDC 4	O/12 through O/15

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1762-IA8



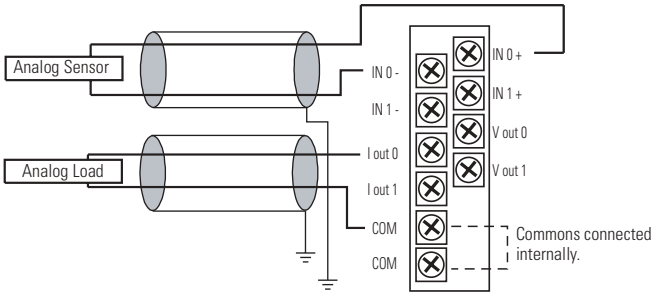
ATTENTION Be careful when stripping wires. Wire fragments that fall into a module could cause damage when power is applied. Once wiring is complete, ensure the module is free of all metal fragments.

A current limiting resistor can be used to limit inrush current; however, the operating characteristics of the ac input circuit will be affected. If a 6.8KΩ resistor is placed in series with the input, the inrush current is reduced to 35 mA. In this configuration the minimum on-state voltage increases to 92V ac. Before adding the resistor in a hazardous environment, be sure to consider the operating temperature of the resistor and the temperature limits of the environment. The operating temperature of the resistor must remain below the temperature limit of the environment.

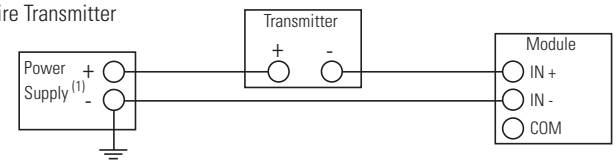
Also, this product is intended to be mounted to a well-grounded mounting surface such as a metal panel. Additional grounding connections from the module's mounting tabs or DIN rail (if used) are not required unless the mounting surface cannot be grounded.

1762-IF2OF2

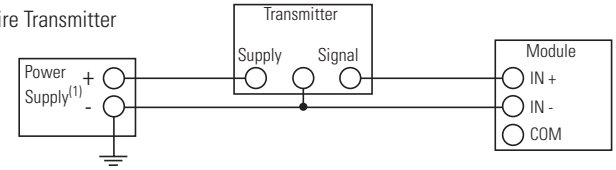
Differential Sensor Transmitter Types



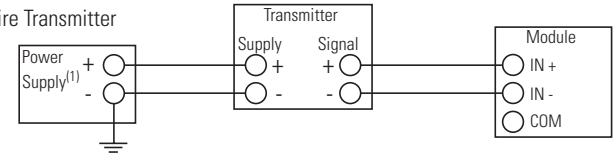
2-Wire Transmitter



3-Wire Transmitter



4-Wire Transmitter



ATTENTION Analog outputs may fluctuate for less than a second when power is applied or removed. This characteristic is common to most analog outputs. While the majority of loads will not recognize this short signal, it is recommended that preventive measures be taken to ensure that connected equipment is not affected.

Grounding the cable shield at the module end only usually provides sufficient noise immunity. However, for best cable shield performance, earth ground the shield at both ends, using a 0.01µF capacitor at one end to block AC power ground currents, if necessary.

All power supplies rated N.E.C. Class 2.

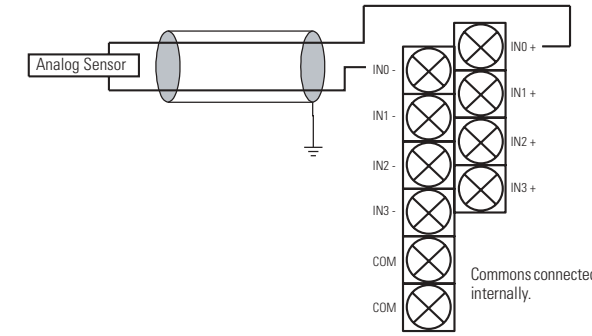
Select the input type, current or voltage, using the switch located on the module's circuit board and the input type/range selection bits in the Configuration Data File.

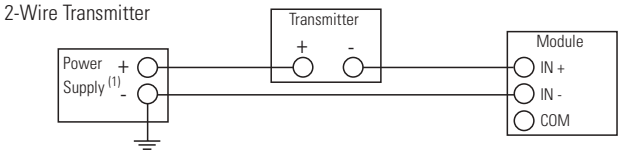
The output type selection, current or voltage, is made by wiring to the appropriate terminals, Iout or Vout, and by the type/range selection bits in the Configuration Data File.

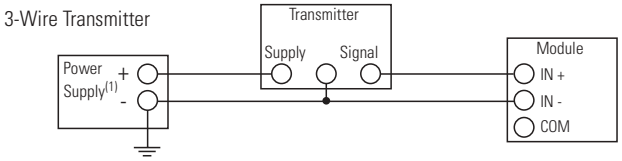
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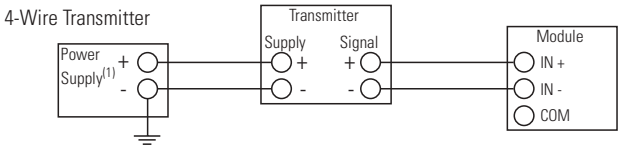
1762-IF4

Differential Sensor Transmitter Types







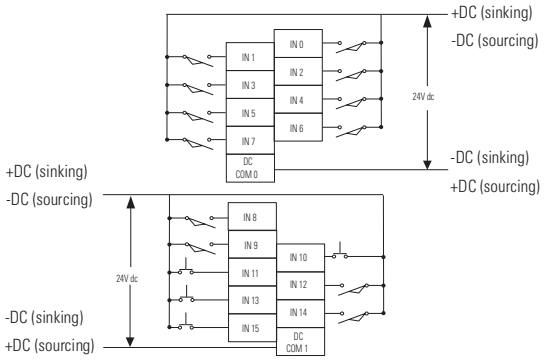


Grounding the cable shield at the module end only usually provides sufficient noise immunity. However, for best cable shield performance, earth ground the shield at both ends, using a 0.01µF capacitor at one end to block AC power ground currents, if necessary.

All power supplies rated N.E.C. Class 2.

Select the input type, current or voltage, using the switch located on the module's circuit board and the input type/range selection bits in the Configuration Data File.

1762-IQ16



ATTENTION



Be careful when stripping wires. Wire fragments that fall into a module could cause damage when power is applied. Once wiring is complete, ensure the module is free of all metal fragments.

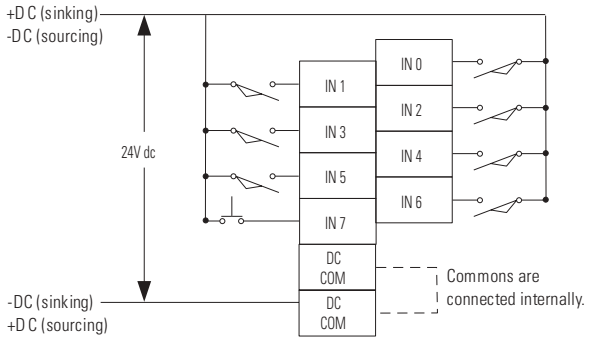
Miswiring of the module to an AC power source will damage the module.

Sinking/Sourcing Inputs - Sourcing/sinking describes the current flow between the I/O module and the field device. Sourcing I/O circuits supply (source) current to sinking field devices. Sinking I/O circuits are driven by a current sourcing field device. Field devices connected to the negative side (DC Common) of the field power supply are sinking field devices. Field devices connected to the positive side (+V) of the field supply are sourcing field devices.

Also, this product is intended to be mounted to a well-grounded mounting surface such as a metal panel.

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1762-IQ8



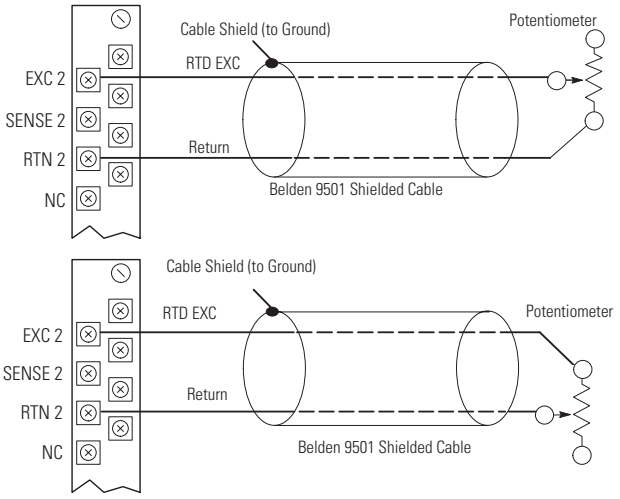
ATTENTION Be careful when stripping wires. Wire fragments that fall into a module could cause damage when power is applied. Once wiring is complete, ensure the module is free of all metal fragments.

Miswiring of the module to an AC power source will damage the module.

Sinking/Sourcing Inputs - Sourcing/sinking describes the current flow between the I/O module and the field device. Sourcing I/O circuits supply (source) current to sinking field devices. Sinking I/O circuits are driven by a current sourcing field device. Field devices connected to the negative side (DC Common) of the field power supply are sinking field devices. Field devices connected to the positive side (+V) of the field supply are sourcing field devices.

Also, this product is intended to be mounted to a well-grounded mounting surface such as a metal panel.

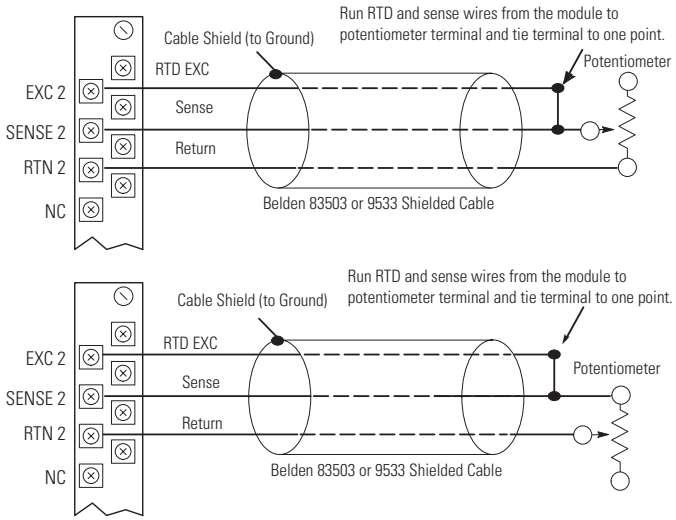
1762-IR4 2-Wire Potentiometer Interconnection



TIP: The potentiometer wiper arm can be connected to either the EXC or return terminal depending on whether you want increasing or decreasing resistance.

IMPORTANT: Using 2-wire configurations does not permit the module to compensate for resistance error due to lead wire length. The resulting analog data includes the effect of this uncompensated lead wire resistance. The module continues to place the uncompensated analog data in the input data file, but the open-circuit status bit (OCx) is set in word 4 of the input data file for any enabled channel using a 2-wire configuration. These status bits may be used in the control program to indicate that the analog data includes error due to uncompensated lead wires.

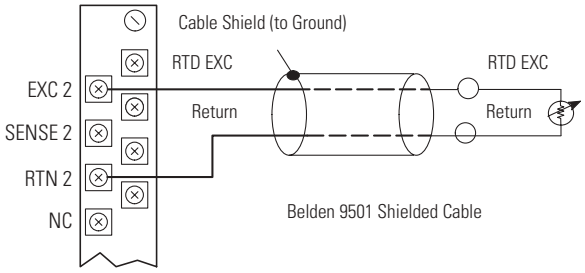
1762-IR4 3-Wire Potentiometer Interconnection



TIP: The potentiometer wiper arm can be connected to either the EXC or return terminal depending on whether you want increasing or decreasing resistance.

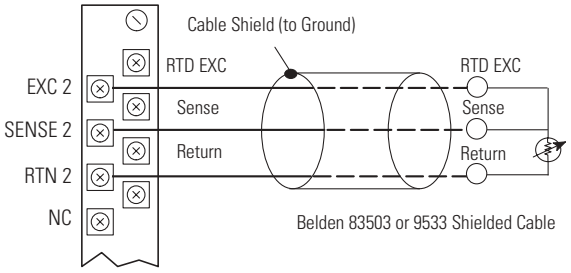
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1762-IR4 2-Wire RTD

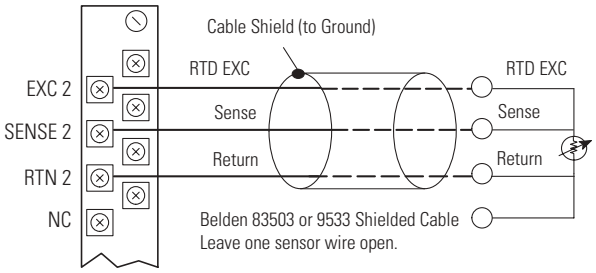


IMPORTANT: Using 2-wire configurations does not permit the module to compensate for resistance error due to lead wire length. The resulting analog data includes the effect of this uncompensated lead wire resistance. The module continues to place the uncompensated analog data in the input data file, but the open-circuit status bit (OCx) is set in word 4 of the input data file for any enabled channel using a 2-wire configuration. These status bits may be used in the control program to indicate that the analog data includes error due to uncompensated lead wires.

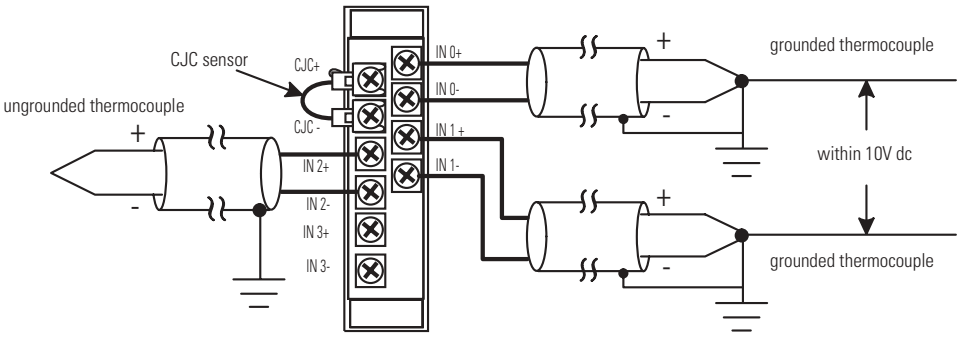
1762-IR4 3-Wire RTD



1762-IR4 4-Wire RTD



1762-IT4



COLD JUNCTION COMPENSATION

To obtain accurate readings from each of the channels, the temperature between the thermocouple wire and the input channel must be compensated for. A cold junction compensating thermistor has been integrated in the terminal block. The thermistor must remain installed to retain accuracy.

ATTENTION

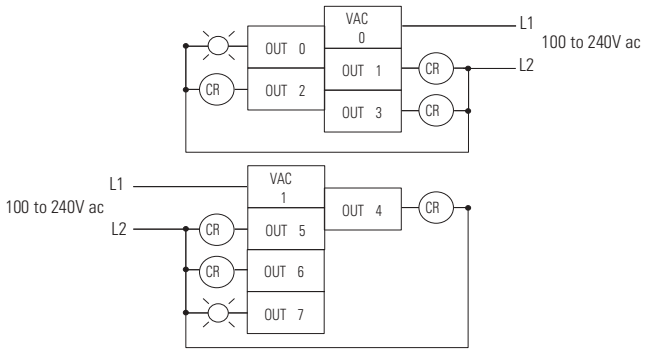
Do not remove or loosen the cold junction compensating thermistor assembly. This assembly is critical to ensure accurate thermocouple input readings at each channel. The module will operate in the thermocouple mode, but at reduced accuracy if the CJC sensor is removed.

IMPORTANT: When using grounded and/or exposed thermocouples that are touching electrically conductive material, the ground potential between any two channels cannot exceed ±10V dc, or temperature readings will be inaccurate.

TIP: When using an ungrounded thermocouple, the shield must be connected at the module end.

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1762-OA8

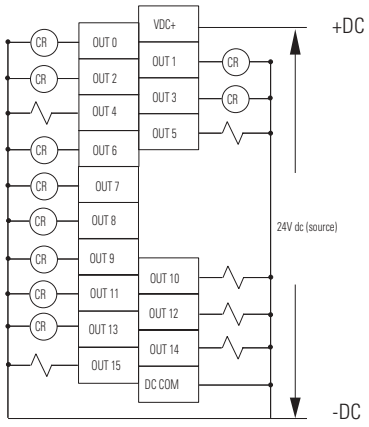


ATTENTION Be careful when stripping wires. Wire fragments that fall into a module could cause damage when power is applied. Once wiring is complete, ensure the module is free of all metal fragments.

Miswiring of the module to an AC power source will damage the module.

To limit the effects of leakage current through triac outputs, a loading resistor can be connected in parallel with your load. For typical 120V ac applications, use a 15k ohm, 2W resistor. For typical 240V ac applications, use a 15k ohm, 5W resistor.

1762-OB16

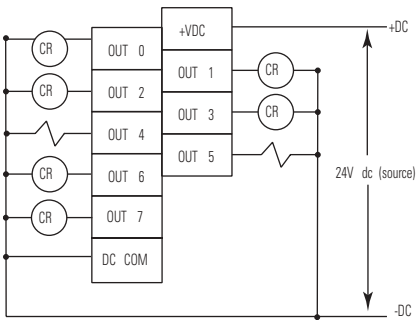


ATTENTION Be careful when stripping wires. Wire fragments that fall into a module could cause damage when power is applied. Once wiring is complete, ensure the module is free of all metal fragments.

Miswiring of the module to an AC power source will damage the module.

Surge Suppression – Connecting surge suppressors across your external inductive load will extend the life of the relay contacts. For additional details, refer to Industrial Automation Wiring and Grounding Guidelines, Allen-Bradley publication 1770-4.1.

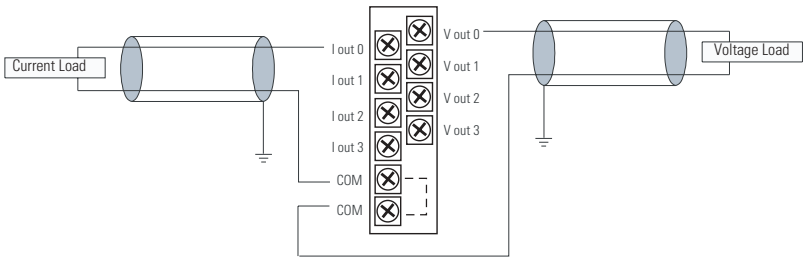
1762-OB8



ATTENTION Be careful when stripping wires. Wire fragments that fall into a module could cause damage when power is applied.
Once wiring is complete, ensure the module is free of all metal fragments.

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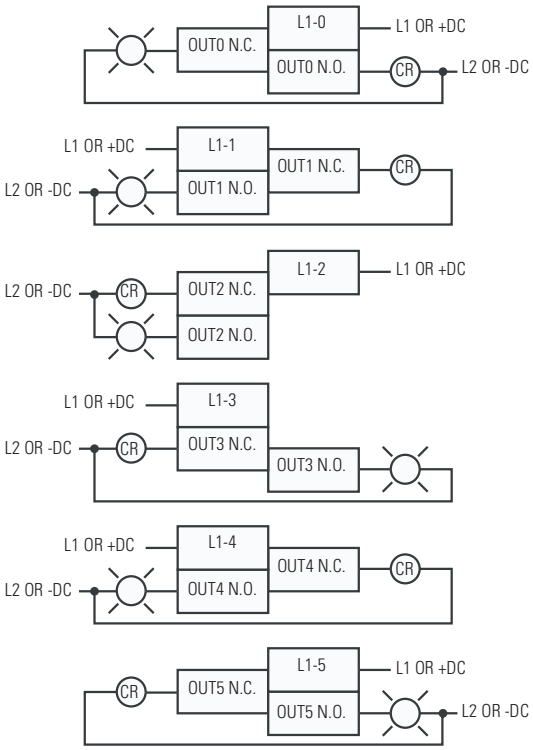
1762-OF4



ATTENTION Analog outputs may fluctuate for less than a second when power is applied or removed. This characteristic is common to most analog outputs. While the majority of loads will not recognize this short signal, it is recommended that preventive measures be taken to ensure that connected equipment is not affected.

TIP Grounding the cable shield at the module end only usually provides sufficient noise immunity. However, for best cable shield performance, earth ground the shield at both ends, using a 0.01 µF capacitor at one end to block AC power ground currents, if necessary.

1762-OX6I

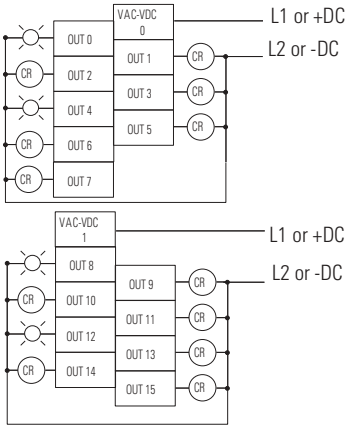


This product is intended to be mounted to a well-grounded mounting surface such as a metal panel. Additional grounding connections from the module's mounting tabs or DIN rail (if used) are not required unless the mounting surface cannot be grounded. For more information, refer to Industrial Automation Wiring and Grounding Guidelines, Allen-Bradley publication 1770-4.1.

Surge Suppression – Connecting surge suppressors across your external inductive load will extend the life of the relay contacts. For additional details, refer to publication 1770-4.1.

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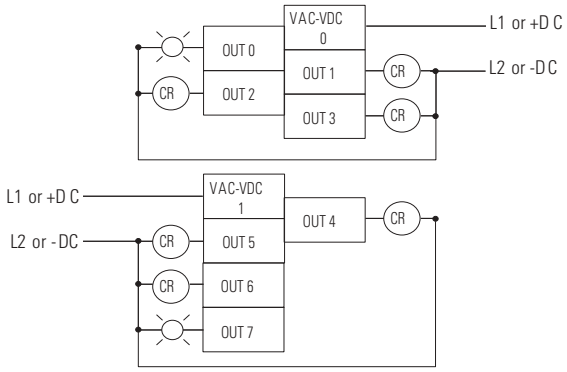
1762-OW16



ATTENTION Be careful when stripping wires. Wire fragments that fall into a module could cause damage when power is applied. Once wiring is complete, ensure the module is free of all metal fragments.

Surge Suppression – Connecting surge suppressors across your external inductive load will extend the life of the relay contacts. For additional details, refer to Industrial Automation Wiring and Grounding Guidelines, Allen-Bradley publication 1770-4.1.

1762-OW8



ATTENTION Be careful when stripping wires. Wire fragments that fall into a module could cause damage when power is applied. Once wiring is complete, ensure the module is free of all metal fragments.

Surge Suppression – Connecting surge suppressors across your external inductive load will extend the life of the relay contacts. For additional details, refer to Industrial Automation Wiring and Grounding Guidelines, Allen-Bradley publication 1770-4.1.

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Notes:

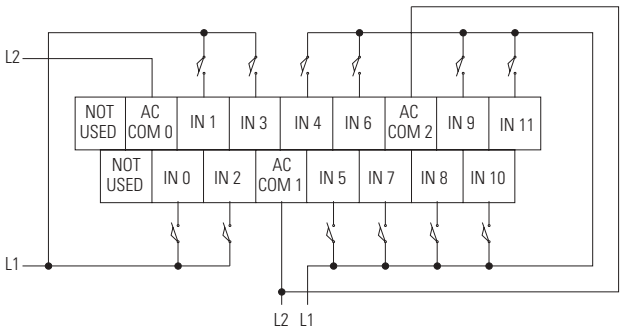
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1764 Controller I/O on MicroLogix 1500 Controllers

IMPORTANT Expansion I/O for the MicroLogix 1500 controllers is accomplished with the 1769 Compact I/O modules. For more information on wiring the 1769 Compact I/O modules, see Chapter 11.

1764-24AWA

Input Terminals

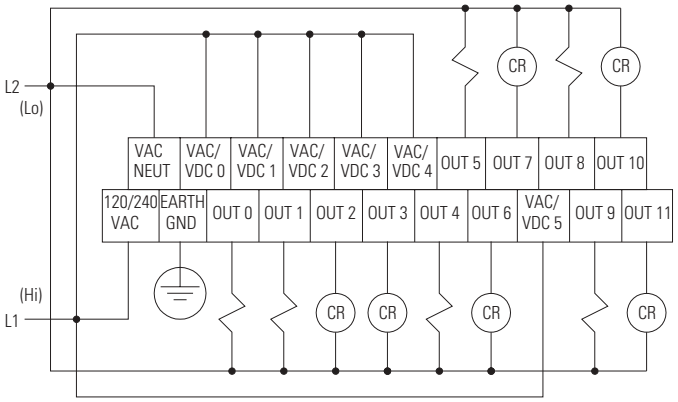


"NOT USED" terminals are not intended for use as connection points.

Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	AC COM 0	I/0 through I/3
Group 1	AC COM 1	I/4 through I/7
Group 2	AC COM 2	I/8 through I/11

Output Terminals



Terminal Groupings

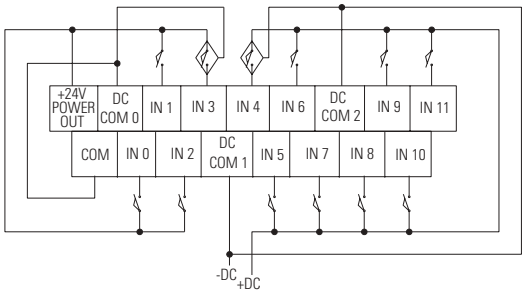
Output Group	Voltage Terminal	Output Terminal
Group 0	VAC/VDC 0	O/0
Group 1	VAC/VDC 1	O/1
Group 2	VAC/VDC 2	O/2
Group 3	VAC/VDC 3	O/3
Group 4	VAC/VDC 4	O/4 through O/7
Group 5	VAC/VDC 5	O/8 through O/11

Publication CIG-WD001B-EN-P - May 2005

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1764-24BWA - Sinking Inputs

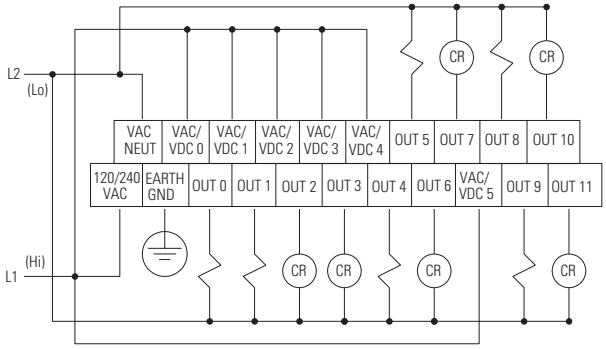
Input Terminals



Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	DC COM 0	I/0 through I/3
Group 1	DC COM 1	I/4 through I/7
Group 2	DC COM 2	I/8 through I/11

Output Terminals

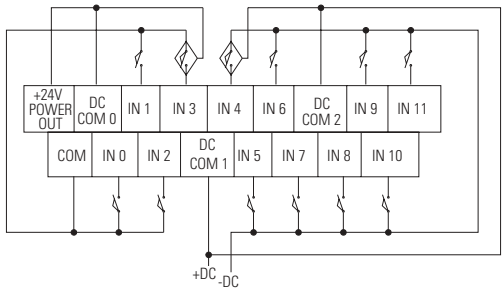


Terminal Groupings

Output Group	Voltage Terminal	Output Terminal
Group 0	VAC/VDC 0	O/0
Group 1	VAC/VDC 1	O/1
Group 2	VAC/VDC 2	O/2
Group 3	VAC/VDC 3	O/3
Group 4	VAC/VDC 4	O/4 through O/7
Group 5	VAC/VDC 5	O/8 through O/11

1764-24BWA - Sourcing Inputs

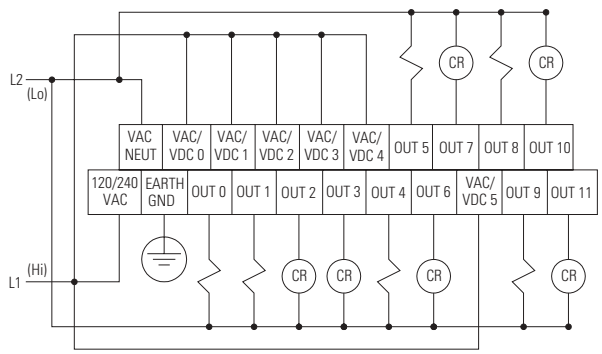
Input Terminals



Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	DC COM 0	I/0 through I/3
Group 1	DC COM 1	I/4 through I/7
Group 2	DC COM 2	I/8 through I/11

Output Terminals



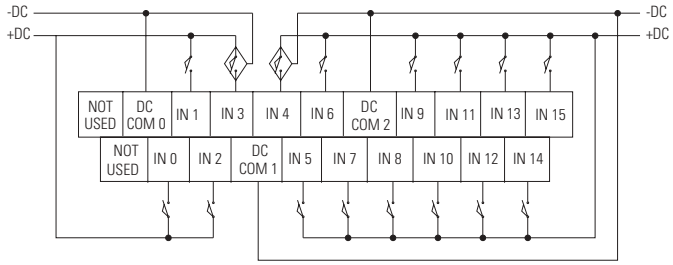
Terminal Groupings

Output Group	Voltage Terminal	Output Terminal
Group 0	VAC/VDC 0	O/0
Group 1	VAC/VDC 1	O/1
Group 2	VAC/VDC 2	O/2
Group 3	VAC/VDC 3	O/3
Group 4	VAC/VDC 4	O/4 through O/7
Group 5	VAC/VDC 5	O/8 through O/11

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1764-28BXB - Sinking Inputs

Input Terminals

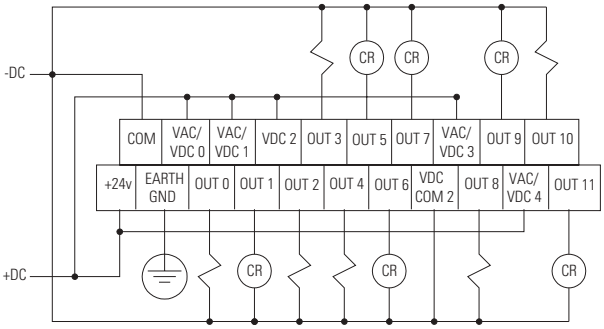


"NOT USED" terminals are not intended for use as connection points.

Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	DC COM 0	I/0 through I/3
Group 1	DC COM 1	I/4 through I/7
Group 2	DC COM 2	I/8 through I/15

Output Terminals (FET Outputs are Sourcing Only)



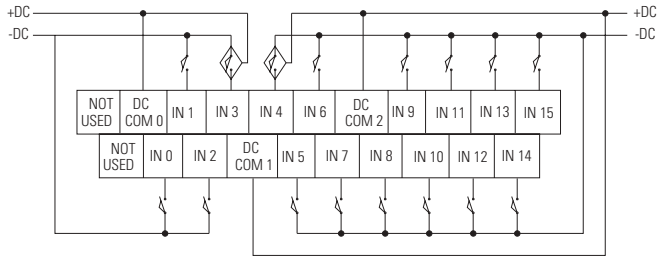
Outputs 2 - 7 are FET outputs

Terminal Groupings

Output Group	Voltage Terminal	Output Terminal
Group 0	VAC/VDC 0	O/0
Group 1	VAC/VDC 1	O/1
Group 2	VDC 2, VDC COM 2	O/2 through O/7
Group 3	VAC/VDC 3	O/8 and O/9
Group 4	VAC/VDC 4	O/10 and O/11

1764-28BXB - Sourcing Inputs

Input Terminals

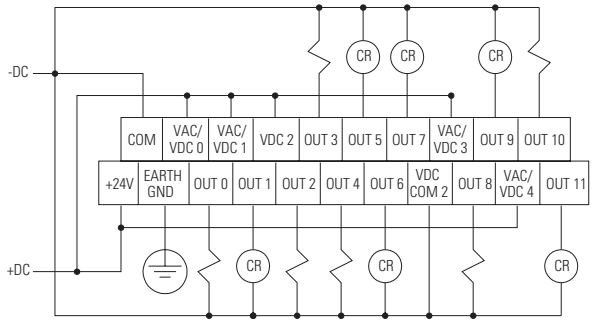


"NOT USED" terminals are not intended for use as connection points.

Terminal Groupings

Input Group	Common Terminal	Input Terminal
Group 0	DC COM 0	I/0 through I/3
Group 1	DC COM 1	I/4 through I/7
Group 2	DC COM 2	I/8 through I/15

Output Terminals (FET Outputs are Sourcing Only



Outputs 2 - 7 are FET outputs

Terminal Groupings

Output Group	Voltage Terminal	Output Terminal
Group 0	VAC/VDC 0	O/0
Group 1	VAC/VDC 1	O/1
Group 2	VDC 2, VDC COM 2	O/2 through O/7
Group 3	VAC/VDC 3	O/8 and O/9
Group 4	VAC/VDC 4	O/10 and O/11

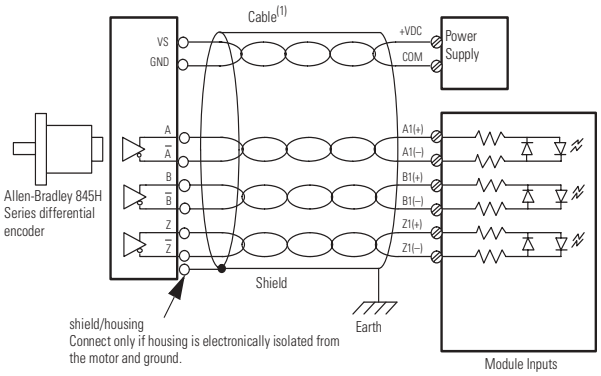
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Notes:

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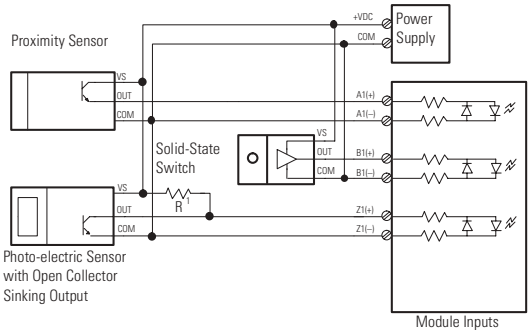
1769 Compact I/O Modules

1769-HSC – Differential Encoder applications



1. Refer to your encoder manual for proper cable type. The type of cable used should be twisted pair, individually shielded cable with a maximum length of 300m (1000 ft.).

1769-HSC – Discrete Device applications



1. External resistors are required if they are not internal to the sensor. The pull-up resistor (R) value depends on the power supply value. The table below shows the maximum resistor values for typical supply voltages. To calculate the maximum resistor value, use the following formula:

$$R = \frac{(Vdc - Vmin)}{Imin}$$

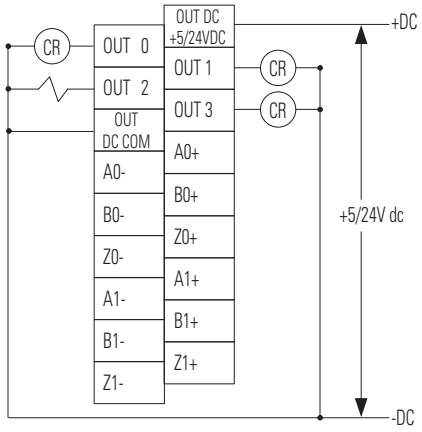
where: R = maximum pull-up resistor value
Vdc = power supply voltage
Vmin = 2.6V dc
Imin = 6.8 mA

Power Supply Voltage (V dc)	Maximum Pull-Up Resistor Value (a)
5V dc	352 Ω
12 V dc	1382 Ω
24 V dc	3147 Ω

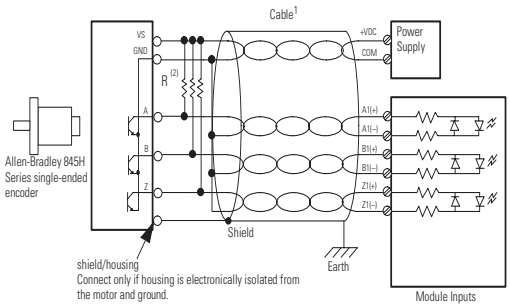
(a) Resistance values may change, depending on your application. The minimum resistor (R) value depends on the current sinking capability of the sensor. Refer to your sensor's documentation.

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1769-HSC – Output Device applications



1769-HSC – Single-Ended Encoder applications



1. Refer to your encoder manual for proper cable type. The type of cable used should be twisted pair, individually shielded cable with a maximum length of 300m (1000ft).
2. External resistors are required if they are not internal to the sensor. The pull-up resistor (R) value depends on the power supply value. The table below shows the maximum resistor values for typical supply voltages. To calculate the maximum resistor value, use the following formula:

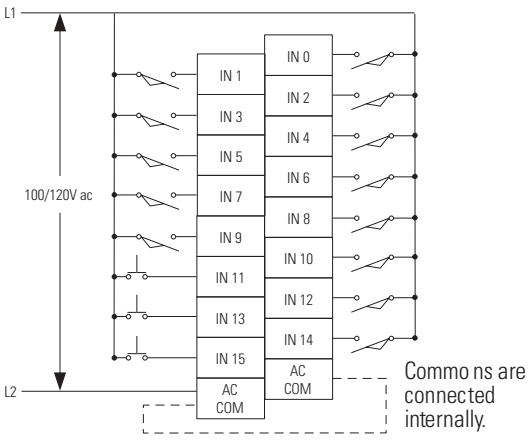
$$R = \frac{(Vdc - Vmin)}{Imin}$$

where: R = maximum pull-up resistor value
Vdc = power supply voltage
Vmin = 2.6V dc
Imin = 6.8 mA

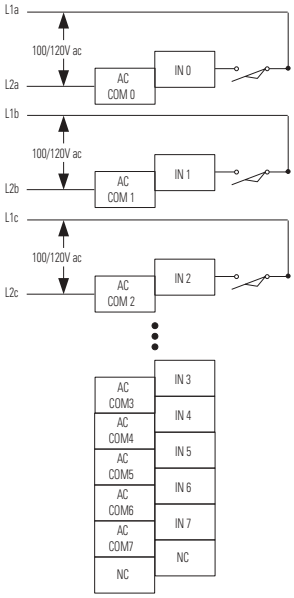
Power Supply Voltage (V dc)	Maximum Pull-Up Resistor Value [a]
5V dc	352 Ω
12 V dc	1382 Ω
24 V dc	3147 Ω

(a) Resistance values may change, depending on your application. The minimum resistor (R) value depends on the current sinking capability of the sensor. Refer to your sensor's documentation.

1769-IA16

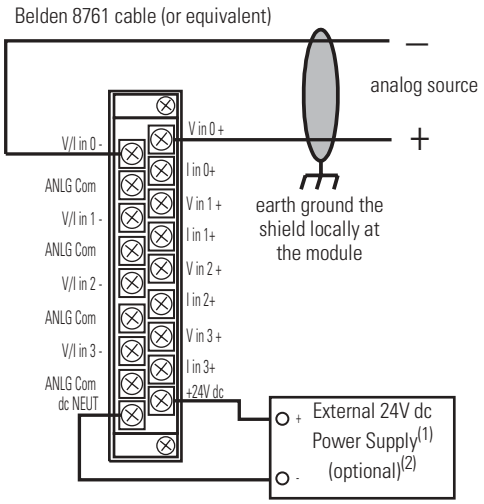


1769-IA8I



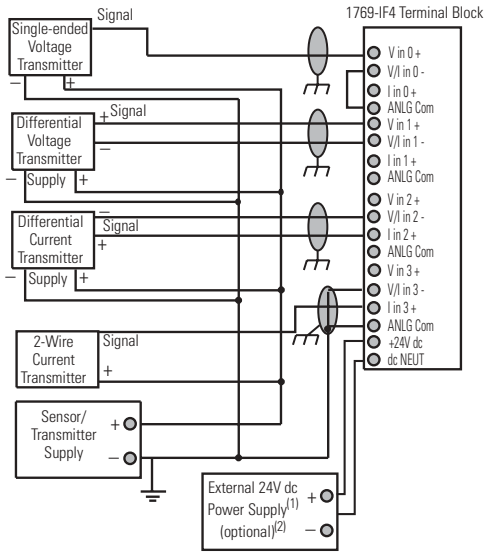
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1769-IF4 – Differential Inputs applications



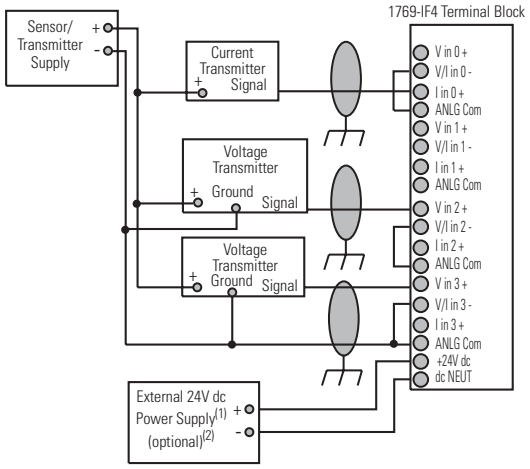
1. The external power supply must be rated Class 2, with a 24V dc range of 20.4 to 26.4V dc and 60 mA minimum.
2. Series B and later modules provide this option.

1769-IF4 – Mixed Transmitter Type applications



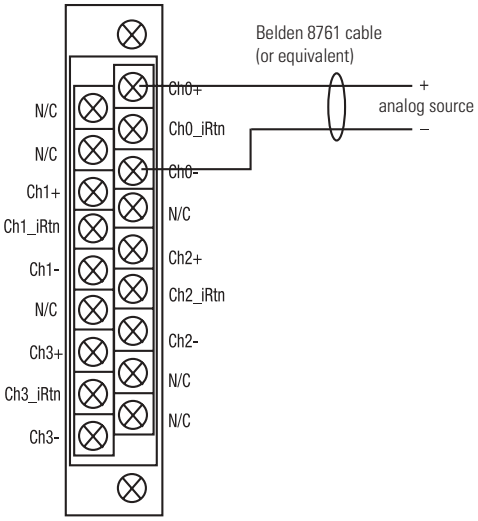
1. The external power supply must be rated Class 2, with a 24V dc range of 20.4 to 26.4V dc and 60 mA minimum.
2. Series B and later modules provide this option.

1769-IF4 – Single-Ended Sensor/Transmitter Type applications



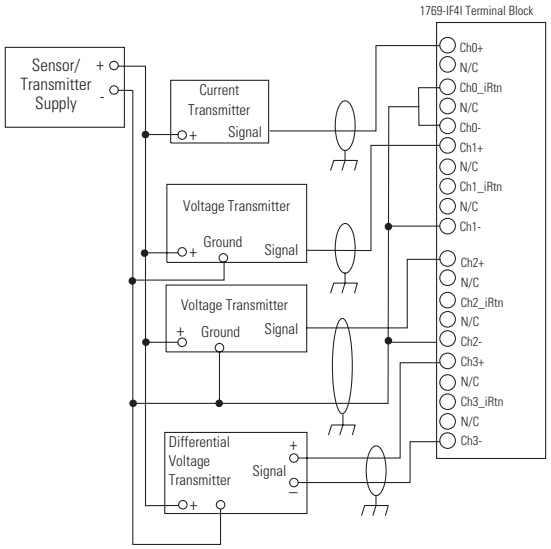
1. The external power supply must be rated Class 2, with a 24V dc range of 20.4 to 26.4V dc and 60 mA minimum.
2. Series B and later modules provide this option.

1769-IF4I – Differential Inputs applications

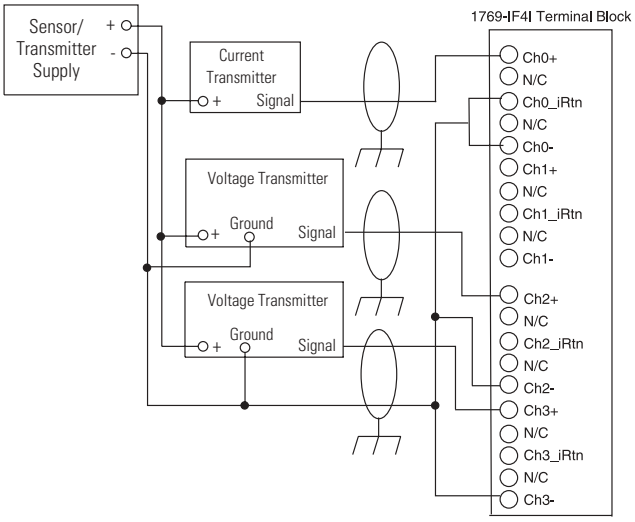


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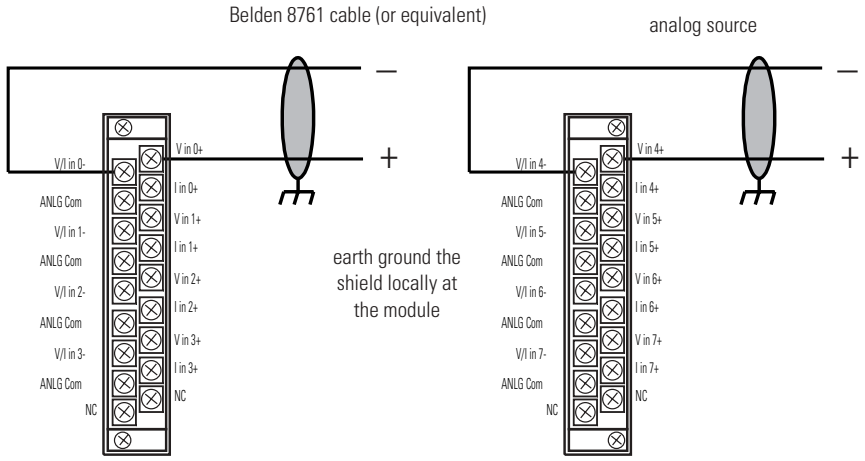
1769-IF4I – Mixed Transmitter Type applications



1769-IF4I – Single-Ended Sensor/Transmitter Type applications

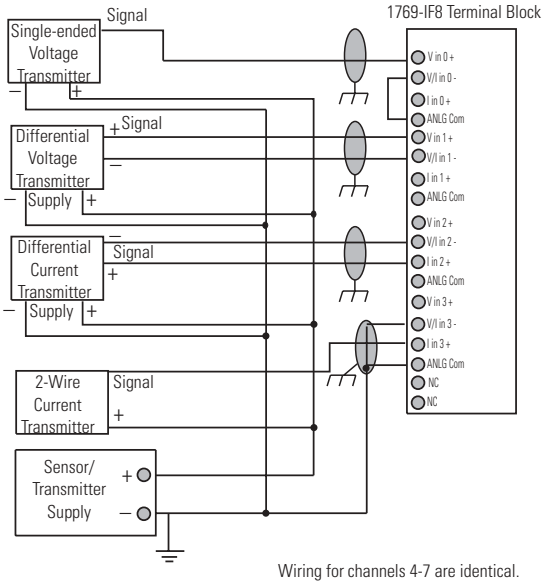


1769-IF8 – Differential Inputs applications



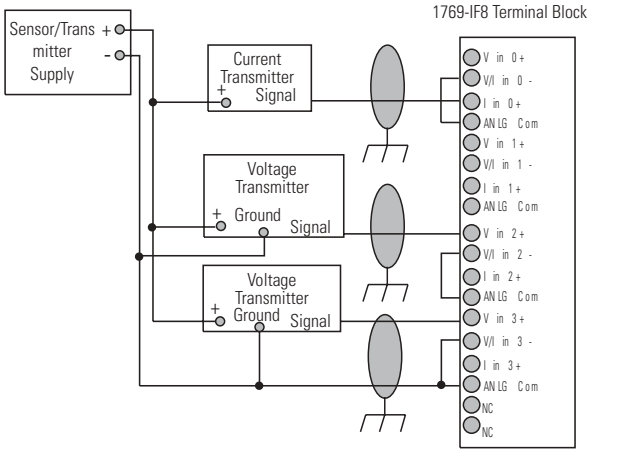
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1769-IF8 – Mixed Transmitter Type applications



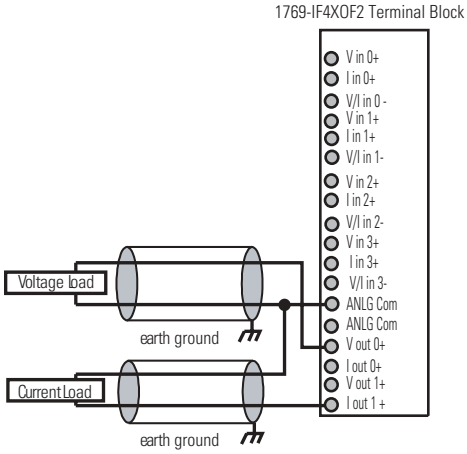
Wiring for channels 4-7 are identical.

1769-IF8 – Single-Ended Sensor/Transmitter Type applications

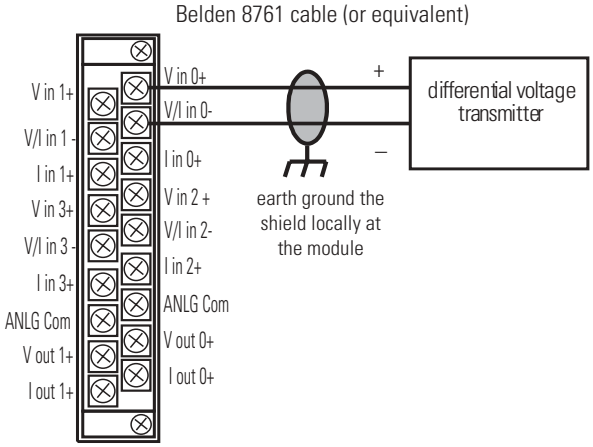


Wiring for channels 4-7 are identical.

1769-IF4XOF2 – Analog Output Device applications

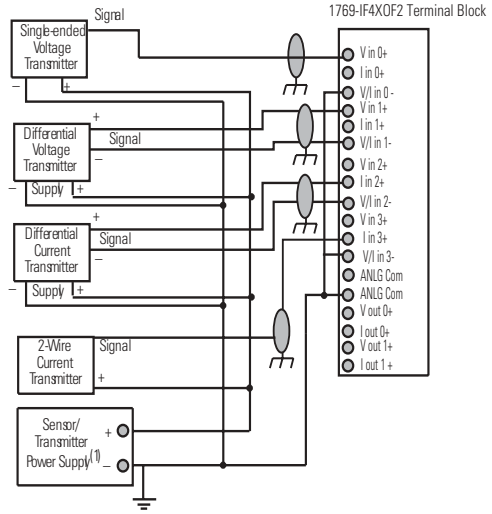


1769-IF4XOF2 – Differential Input applications



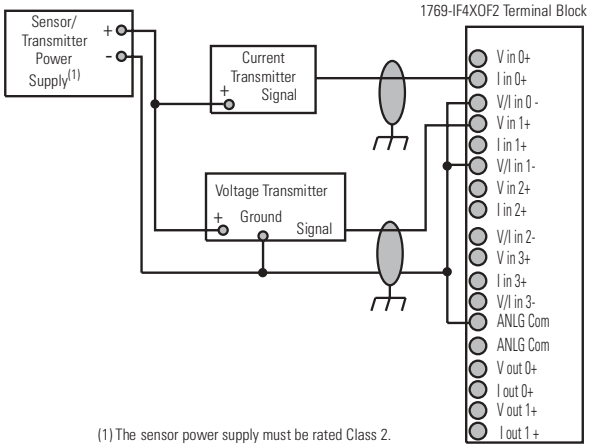
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1769-IF4XOF2 – Mixed Transmitter Type applications



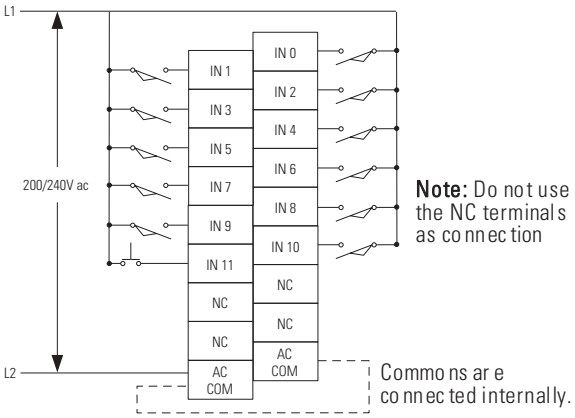
1. The sensor power supply must be rated Class 2.

1769-IF4XOF2 – Single-Ended Sensor/Transmitter applications

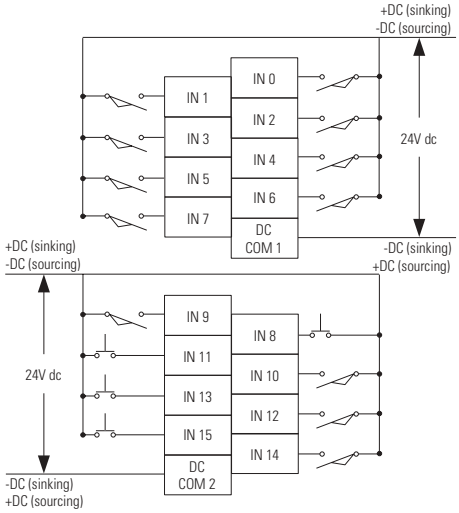


(1) The sensor power supply must be rated Class 2.

1769-IM12

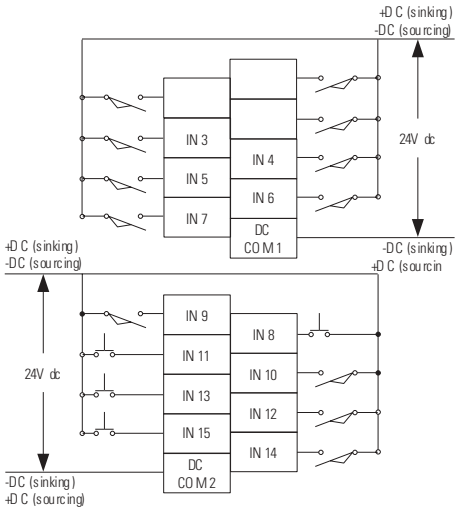


1769-IQ16

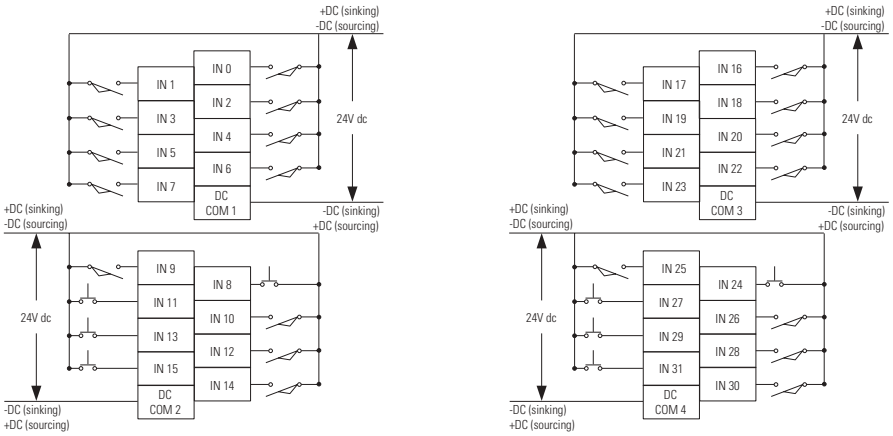


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1769-IQ16F

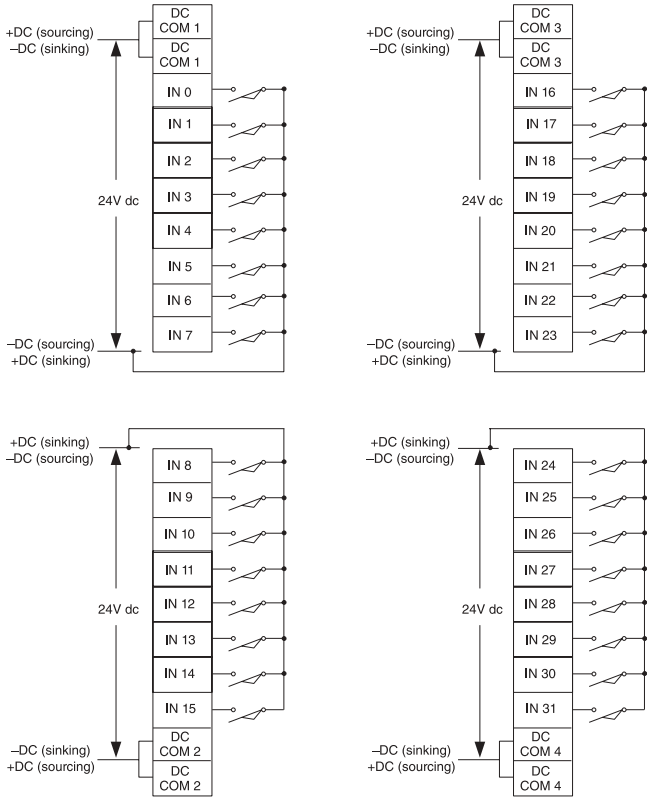


1769-IQ32

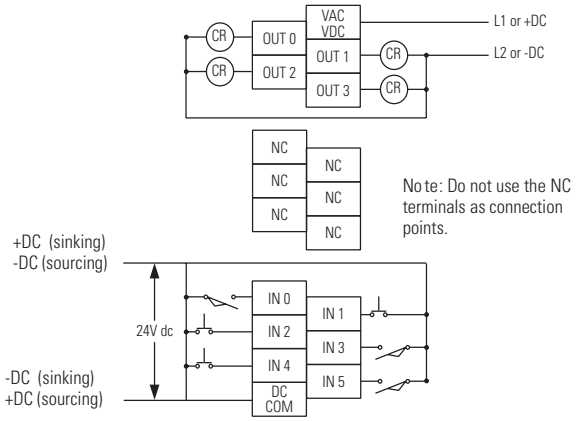


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1769-IQ32T



1769-IQ6XOW4

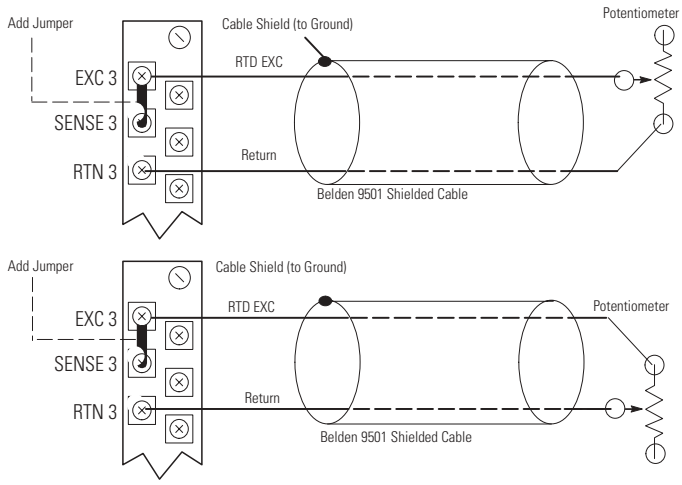


(1) Surge Suppression - Connecting surge suppressors across your external inductive load will extend the life of the relay contacts. For additional details, refer to Industrial Automation Wiring and Grounding Guidelines, Allen-Bradley publication 1770-4.1.

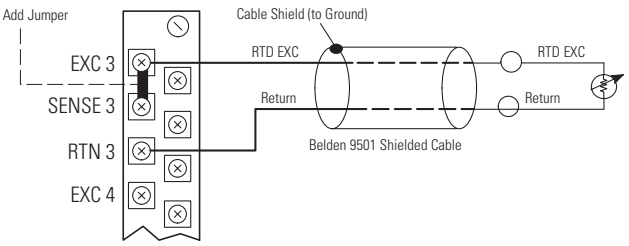
(2) Sinking/Sourcing Inputs - Sourcing/sinking describes the current flow between the I/O module and the field device. Sourcing input circuits supply (source) current to sinking field devices. Sinking input circuits are driven by a current sourcing field device. Europe: DC sinking input and sourcing output module circuits are the commonly used options.

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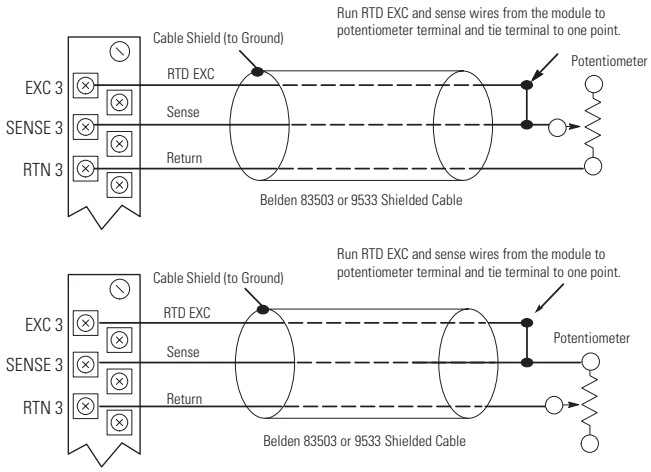
1769-IR6 – 2-Wire Potentiometer Interconnection applications



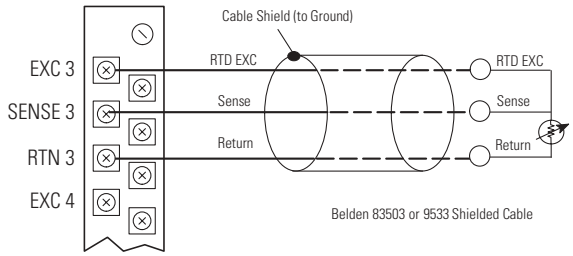
1769-IR6 – 2-Wire RTD applications



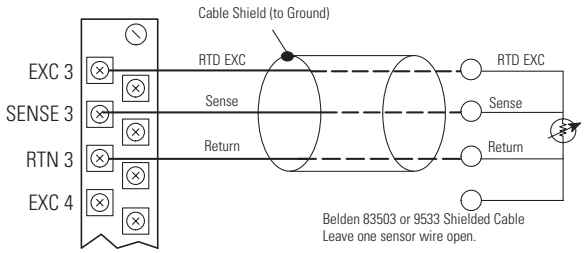
1769-IR6 – 3-Wire Potentiometer Interconnection applications



1769-IR6 – 3-Wire RTD applications

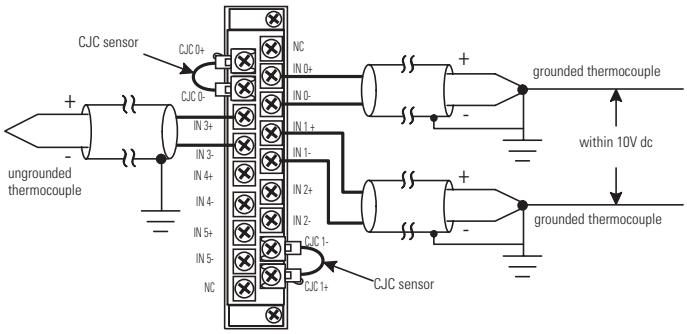


1769-IR6 – 4-Wire RTD applications

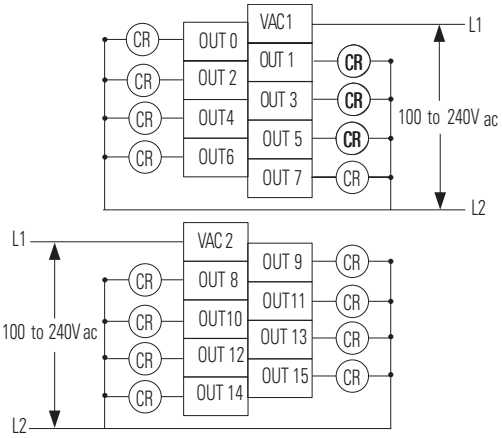


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1769-IT6

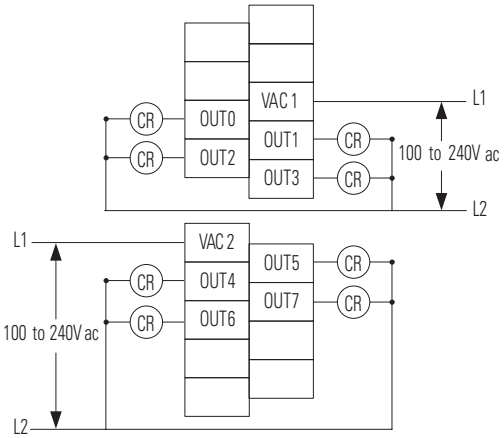


1769-OA16

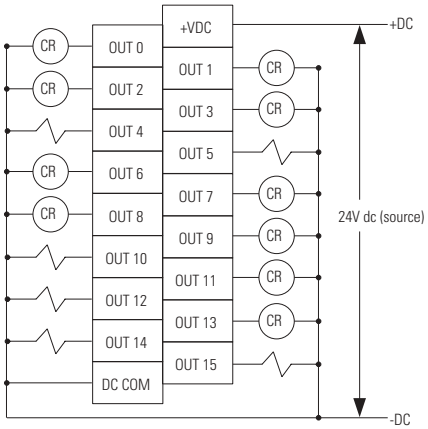


(1) Surge Suppression - Connecting surge suppressors across your external load will extend the life of the triac outputs. For additional details, refer to Industrial Automation Wiring and Grounding Guidelines, Allen-Bradley publication 1770-4.1.

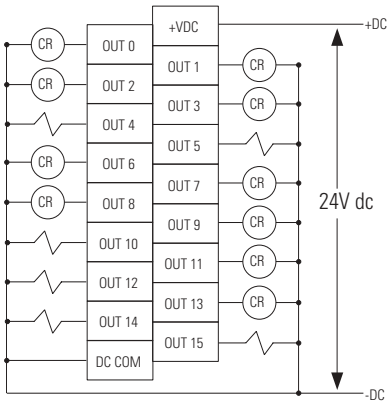
1769-OA8



1769-OB16

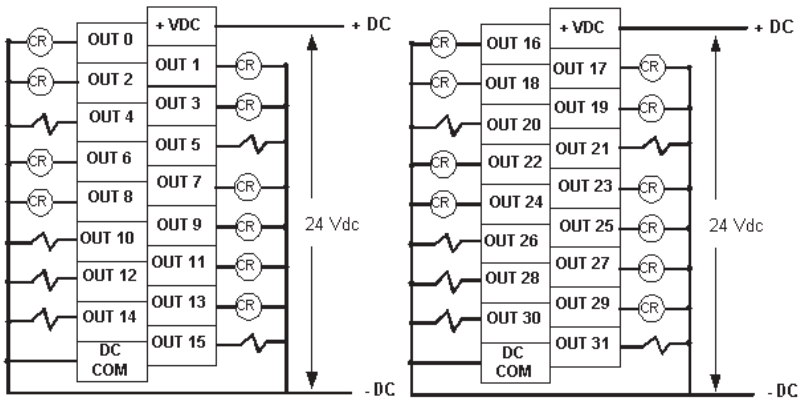


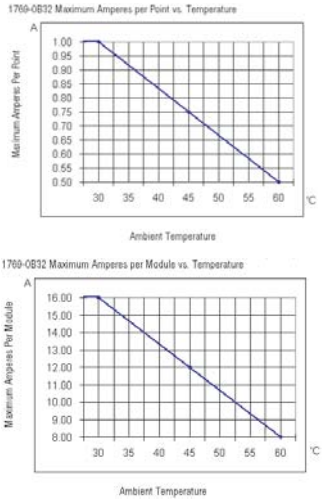
1769-OB16P



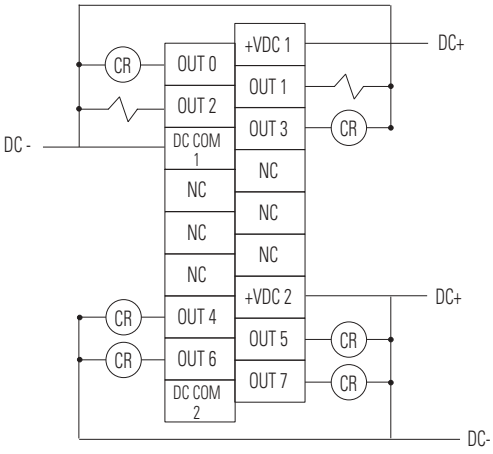
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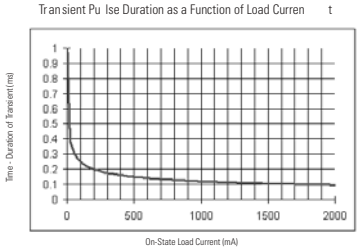
1769-OB32





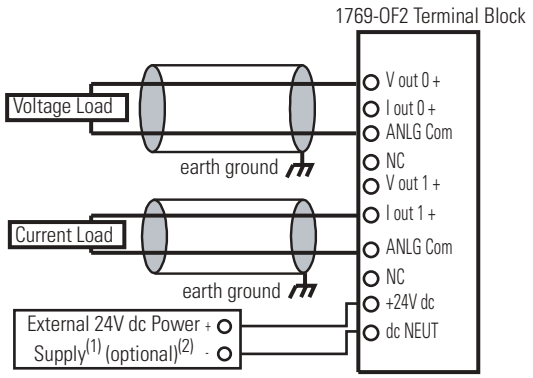
1769-OB8





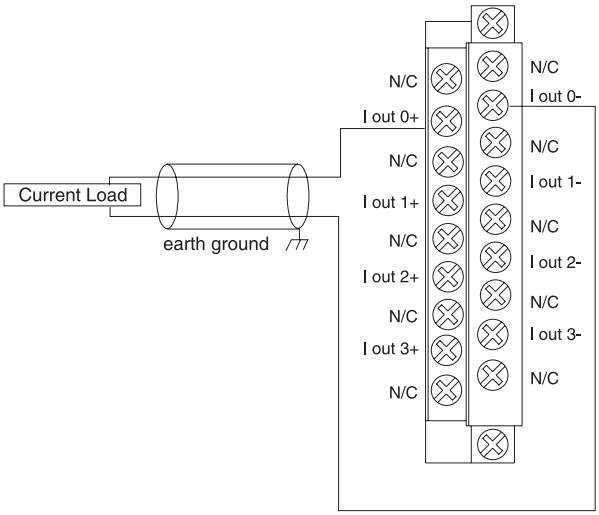
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1769-OF2

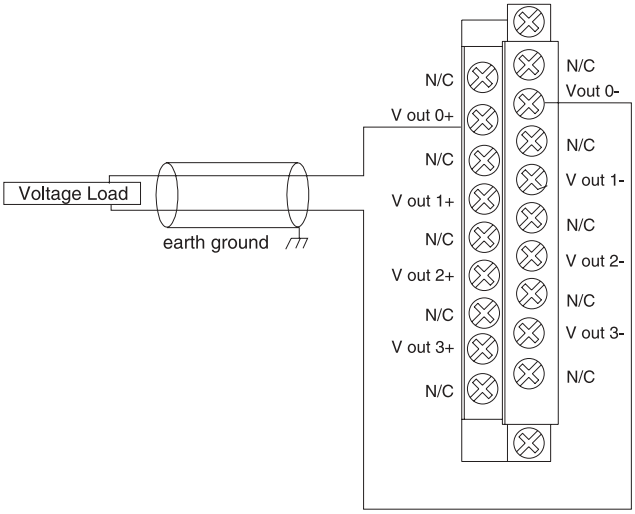


1. The external power supply must be rated Class 2, with a 24V dc range of 20.4 to 26.4V dc and 60 mA minimum.
2. Series B and later modules provide this option.

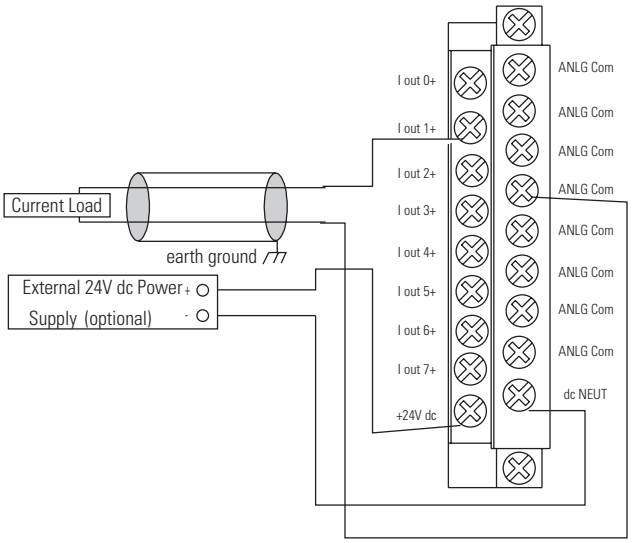
1769-OF4CI



1769-OF4VI

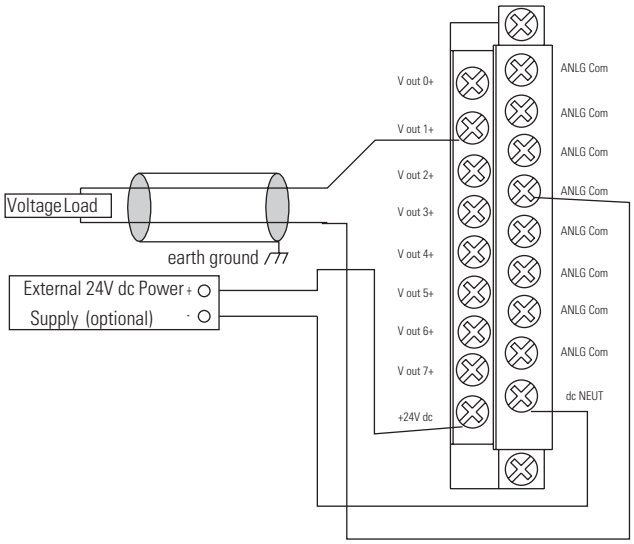


1769-OF8C

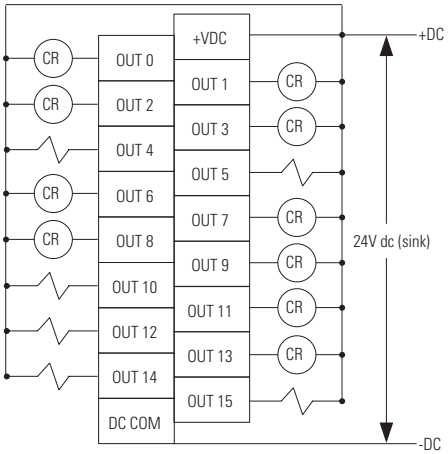


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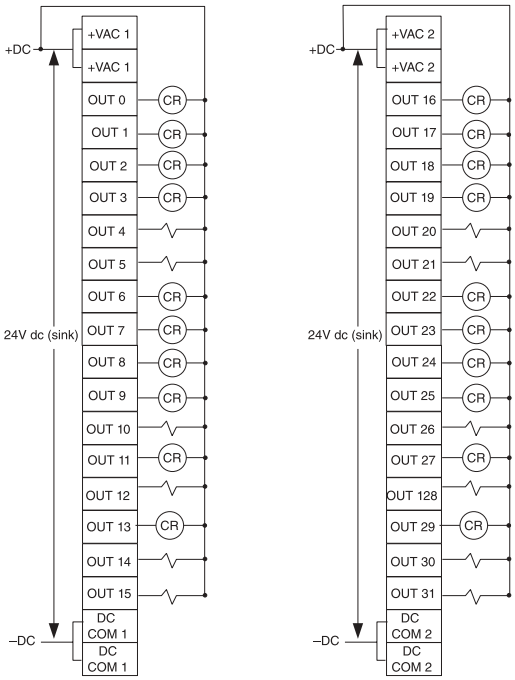
1769-OF8V



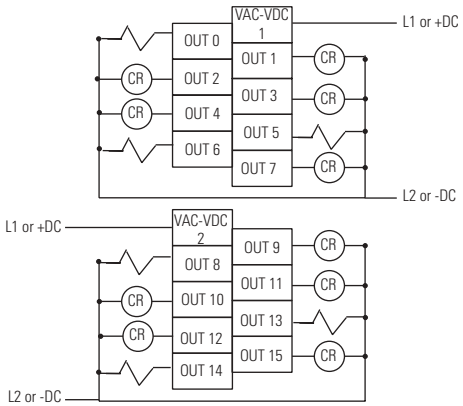
1769-OV16



1769-OV32T



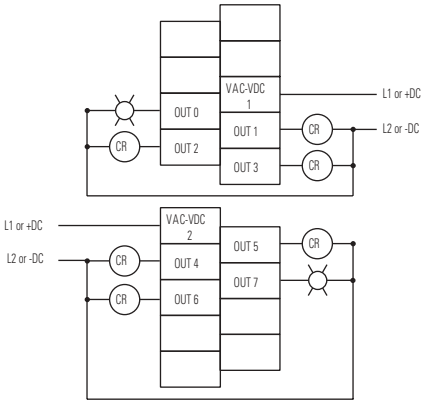
1769-OW16



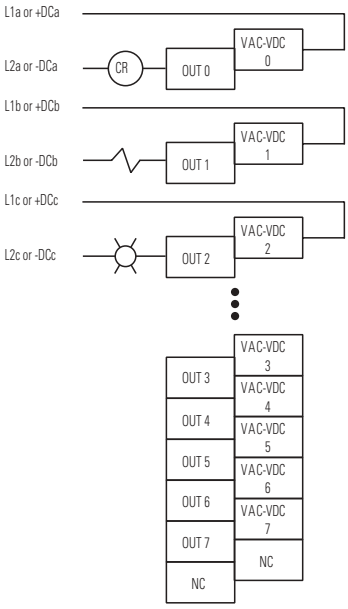
(1) Surge Suppression - Connecting surge suppressors across your external inductive load will extend the life of the relay contacts. For additional details, refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

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1769-OW8



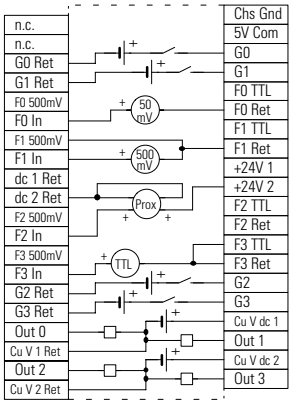
1769-OW8I



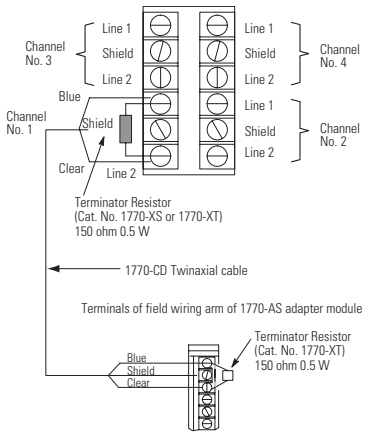
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1771 I/O Modules

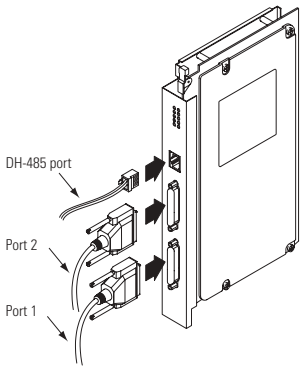
1771-CFM



1771-DA



NOTE: Absence of a terminator resistor can cause block transfer errors



1771-DB

Ports 1 and 2 can be configured for RS-232, RS-422 and RS-485 communications. pin configurations for these modes are listed in the table below.

Pin	RS-232	RS-422	RS-485
1	chassis/shield	chassis/shield	chassis/shield
2	TXD	N/A [2]	N/A [2]
3	RXD	N/A [2]	N/A [2]
4	RTS	N/A [2]	N/A [2]
5	CTS	N/A [2]	N/A [2]
6	DSR	N/A [2]	N/A [2]
7	common	common	common
8	DCD	N/A [2]	N/A [2]
9	common	common	common
10	common	common	common
14	N/A [1]	TXD	TXD/RXD
16	N/A [1]	RXD	N/A [2]
18	N/A [1]	RXD'	N/A [2]
20	DTR	N/A [2]	N/A [2]
25	N/A [1]	TXD'	TXD'/RXD'

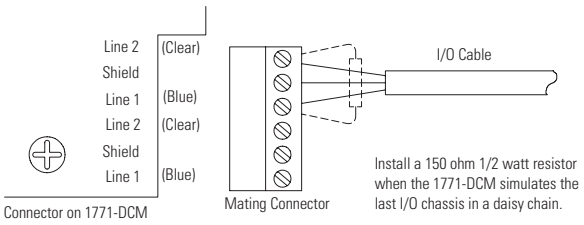
1- These pins are not a No Connection (N/C). In RS-232 mode, the RS-422 and RS-485 load is still present and should not be connected to any device in this mode.

2- In RS-422 and RS-485 modes, these pins are still connected to their RS-232 drivers and receivers. Do not use these pins in either RS-422 or RS-485 mode.

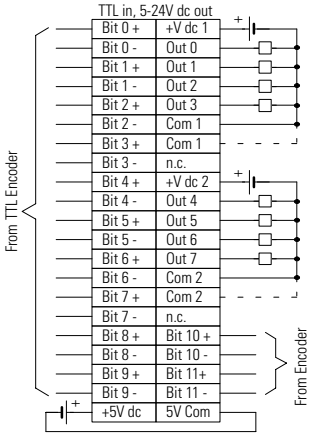
Important: Pins 1 1, 12, 13, 15, 17, 19, 21, 22, 23 and 24 are a No Connection (N/C)

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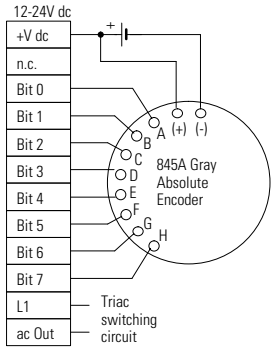
1771-DCM



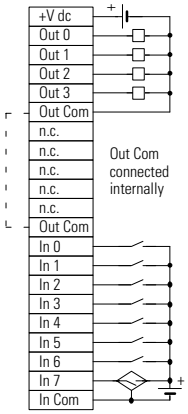
1771-DE (WG)



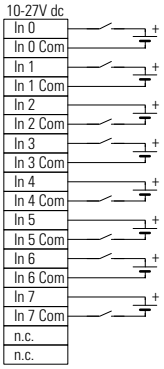
1771-DL (WB)



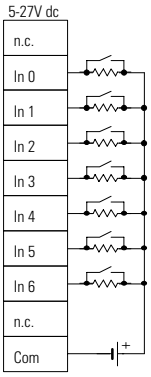
1771-DR (WG)



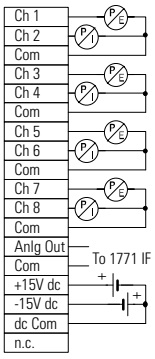
1771-DS (WF)



1771-DW (WA)

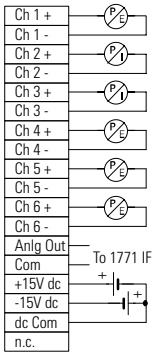


1771-E1 (WF)



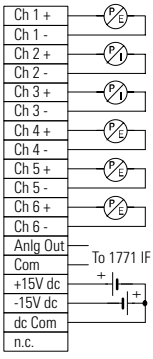
External loop power needed.

1771-E2 (WF)



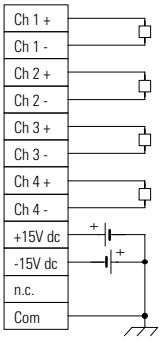
External loop power needed.

1771-E3 (WF)



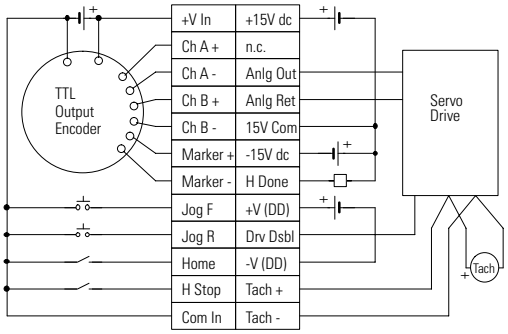
External loop power needed.

1771-E4 (WF)

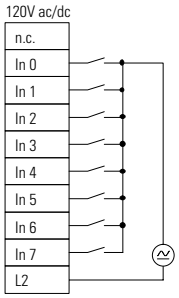


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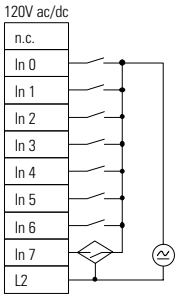
1771-ES (WB)



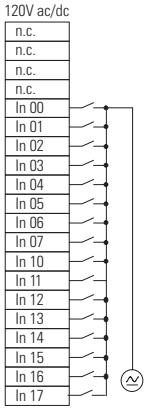
1771-IA (WA)



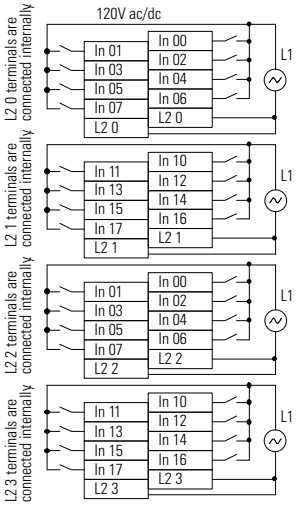
1771-IA2 (IA)



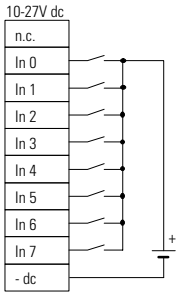
1771-IAD/C (WH)



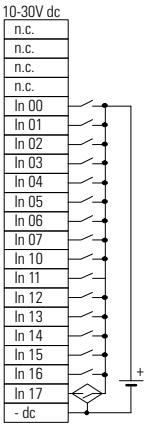
1771-IAN (WN)



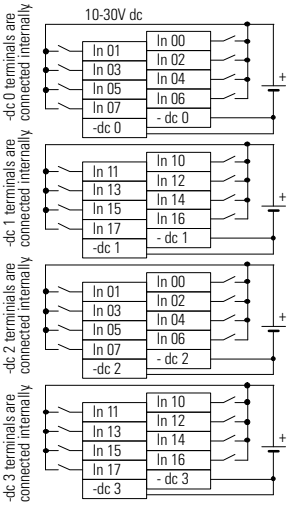
1771-IB (WA)



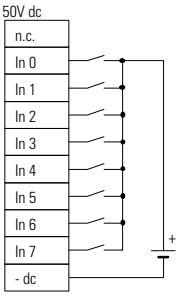
1771-IBD (WH)



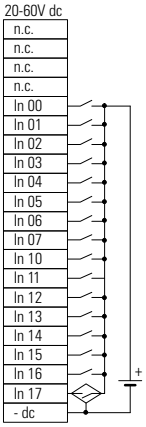
1771-IBN (WN)



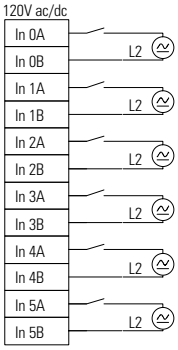
1771-IC (WA)



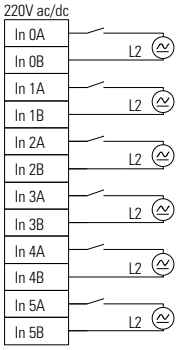
1771-ICD (WH)



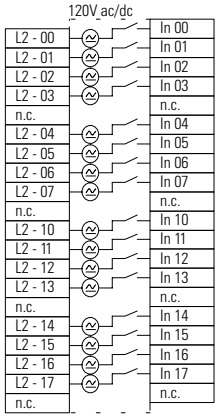
1771-IDI (WD)



1771-IDO1 (WD)

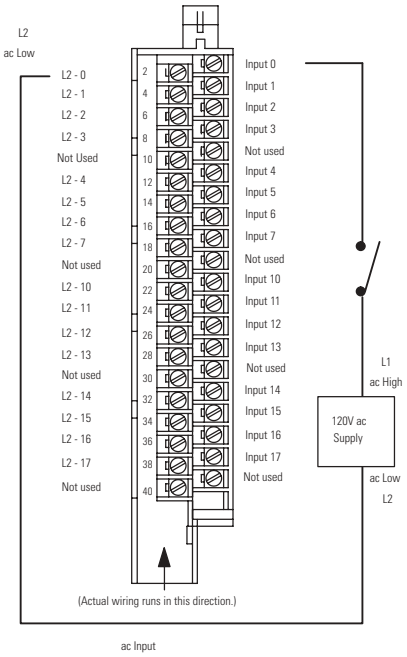


1771-ID16 (WN)



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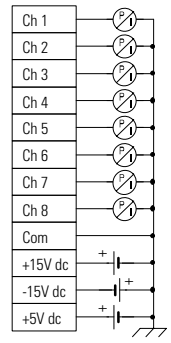
1771-ID16GM



NOTES: Maintain isolation between phases to prevent module damage.

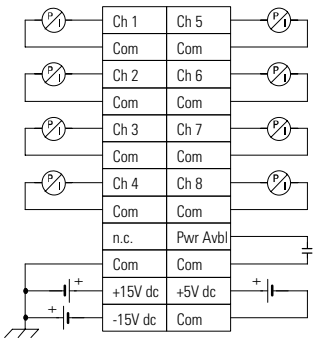
Do not use any 1771 ac output modules to drive the 1771-IND16GM input module.

1771-IE (WB)



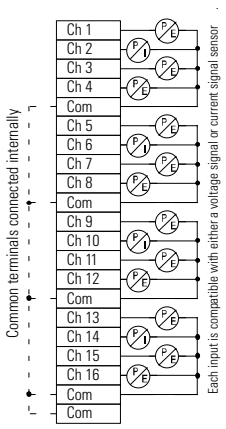
External loop power needed.
Factory configured for either voltage or current.

1771-IF (WB)



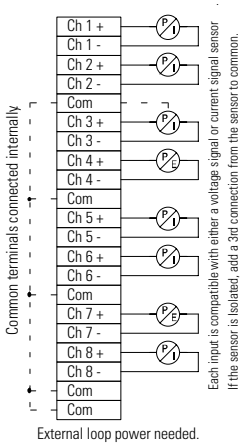
Common terminals connected internally.
External loop power needed.
Power available must connect to common to enable operation.

1771-IFE (WG) Single Ended



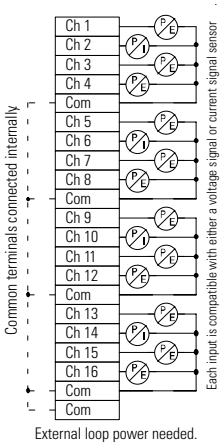
External loop power needed.

1771-IFE (WG) Differential



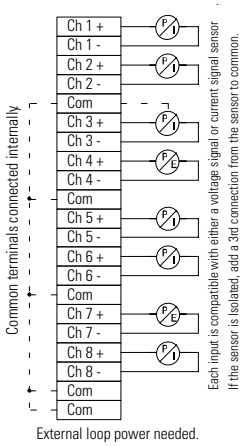
External loop power needed.

1771-IFF (WG) Single Ended



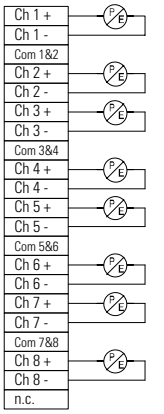
External loop power needed.

1771-IFF (WG) Differential



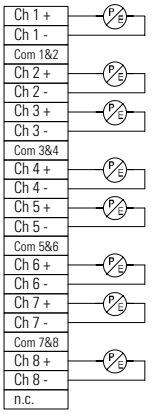
External loop power needed.

1771-IFM (WG)



External loop power needed.

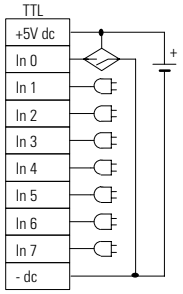
1771-IFMS (WG)



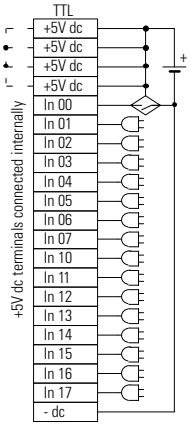
External loop power needed.

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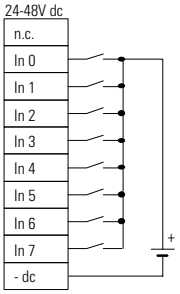
1771-IG (WC)



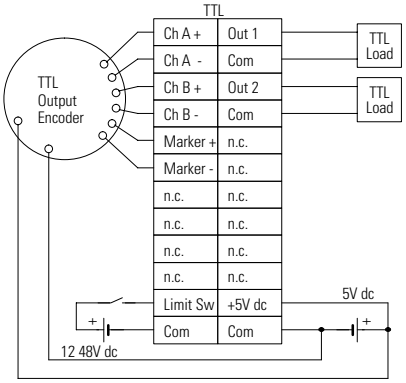
1771-IGD (WH)



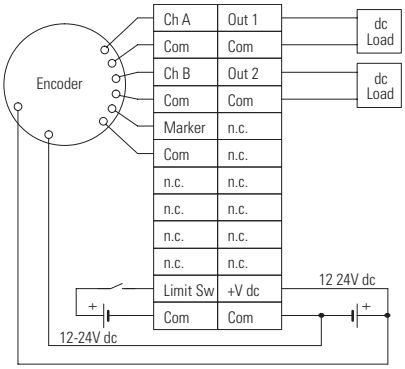
1771-IH (WA)



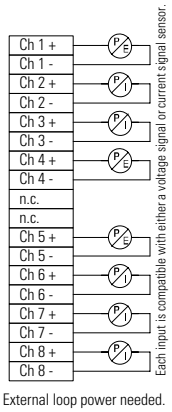
1771-IJ (WB)



1771-IK (WB)

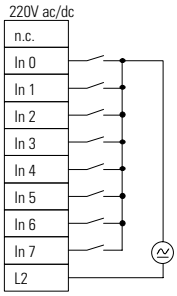


1771-IL/B (WF)

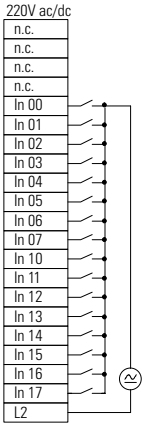


External loop power needed.

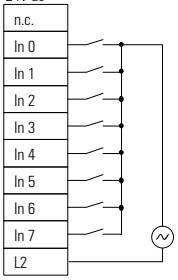
1771-IM (WA)



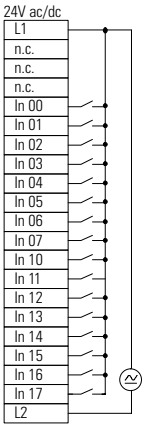
1771-IMD (WH)



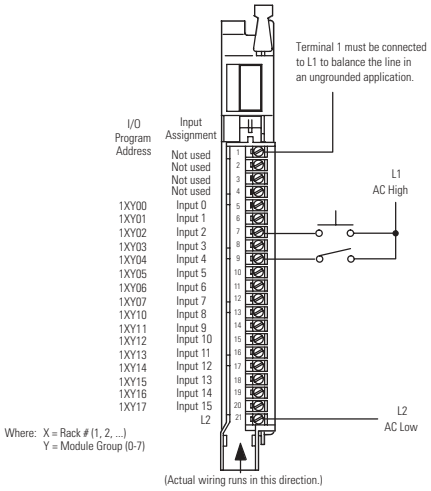
1771-IN (WA)



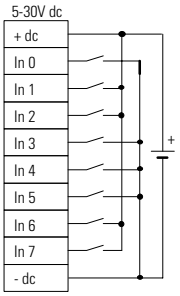
1771-IND (WH)



1771-IND1

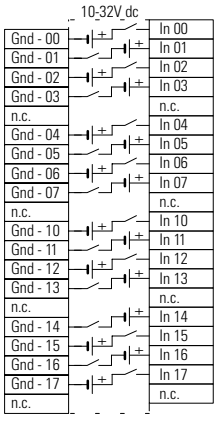


1771-IQ (WC)

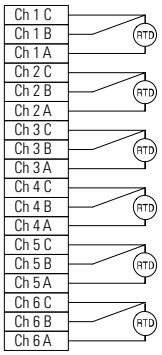


Each is switch selectable as either a source load or sink load

1771-IQ16 (WN)



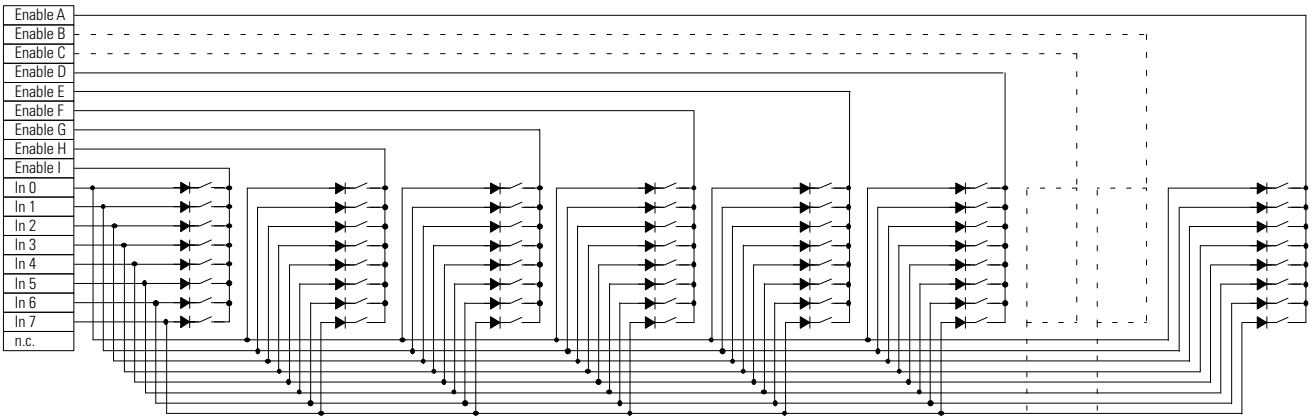
1771-IR/B (WF)



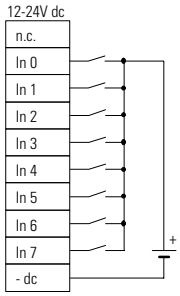
Loop power provided internally.

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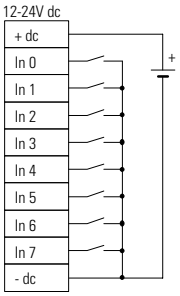
1771-IS (WF)



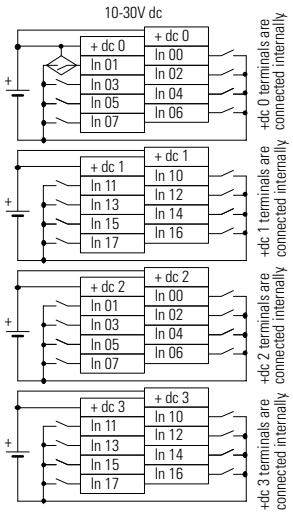
1771-IT (WA)



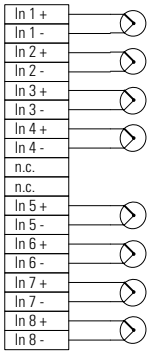
1771-IV (WA)



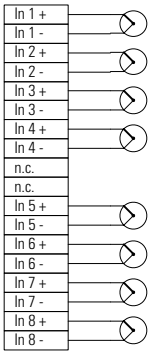
1771-IVN (WN)



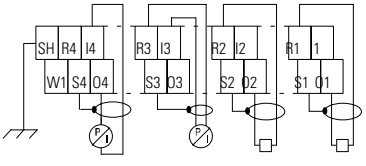
1771-IXE/B (WI)



1771-IXHR (WI)

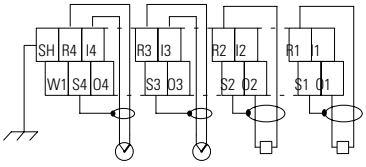


1771-NB4S (RT44)



S1 thru S4 are connected internally to SH.
Input loop power provided internally if connected as shown for 4.

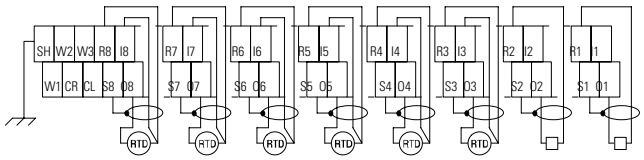
1771-NB4T (RT41)



S1 thru S4 are connected internally to SH.

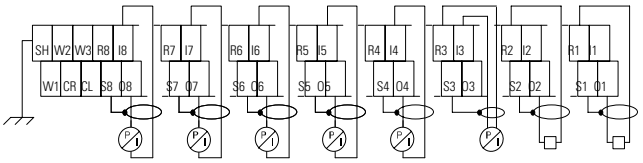
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1771-NBRC (RTP4)



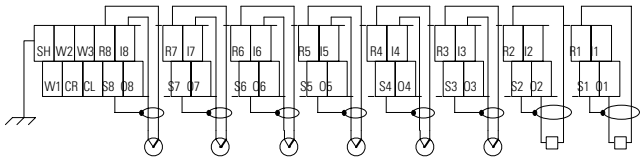
S1 thru S8 are connected internally to SH. Input loop power provided internally .

1771-NBSC (RTP4)



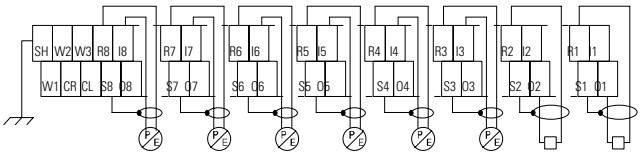
S1 thru S8 are connected internally to SH. Input loop power provided internally if connected as shown for 4 thru 8.

1771-NBTC (RTP1)



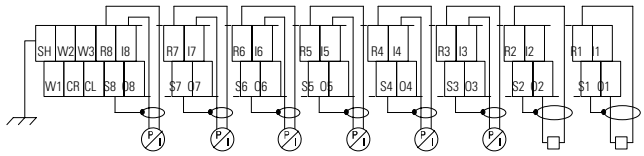
S1 thru S8 are connected internally to SH.

1771-NBV1 (RTP4 Voltage, RTP3 Current)



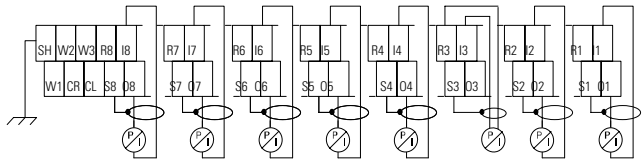
S1 thru S8 are connected internally to SH. External loop power needed.

1771-NBVC (RTP4 Voltage, RTP3 Current)



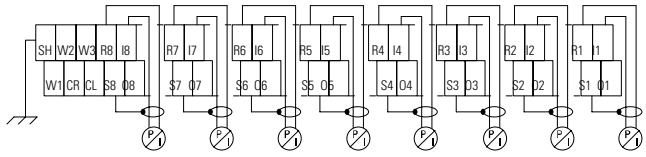
S1 thru S8 are connected internally to SH. External loop power needed.

1771-NIS (RTP4)



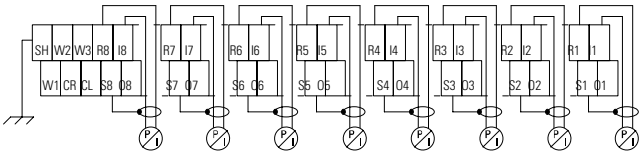
S1 thru S8 are connected internally to SH. Input loop power provided internally if connected as shown for 4 thru 8.

1771-NIV (RTP4 Voltage, RTP3 Current)



S1 thru S8 are connected internally to SH. External loop power needed.

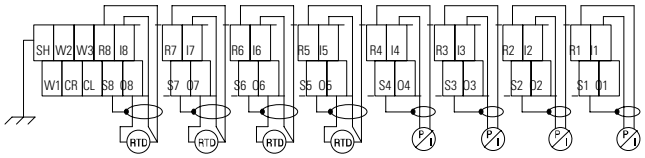
1771-NIV1 (RTP4 Voltage, RTP3 Current)



S1 thru S8 are connected internally to SH. External loop power needed.

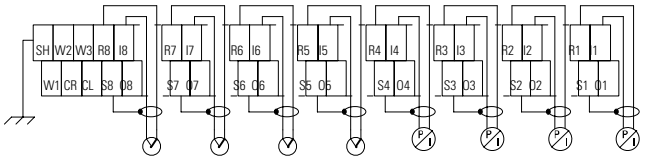
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1771-NIVR (RTP4)



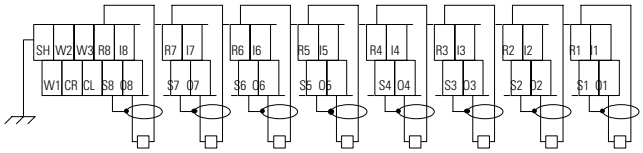
S1 thru S8 are connected internally to SH. External loop power needed.

1771-NIVT (RTP1)



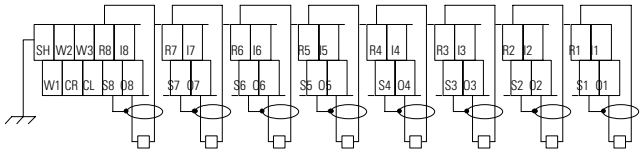
S1 thru S8 are connected internally to SH. External loop power needed.

1771-NOC (RTP4 or RTP3)



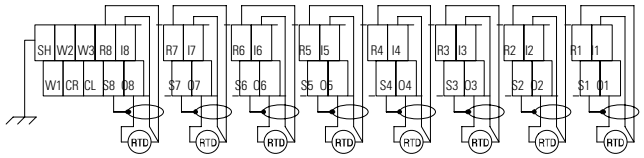
S1 thru S8 are connected internally to SH.

1771-NOV (RTP4 or RTP3)



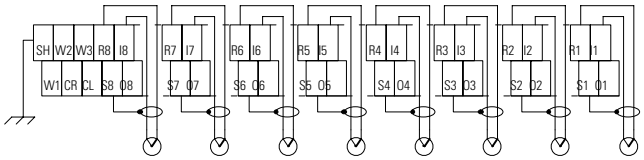
S1 thru S8 are connected internally to SH.

1771-NR (RTP4)



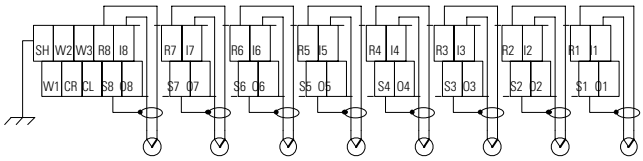
S1 thru S8 are connected internally to SH. Input loop power provided internally .

1771-NT1 (RTP1)



S1 thru S8 are connected internally to SH.

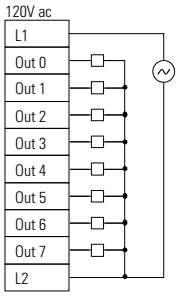
1771-NT2 (RTP1)



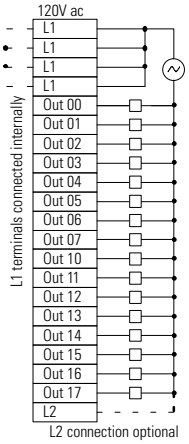
S1 thru S8 are connected internally to SH.

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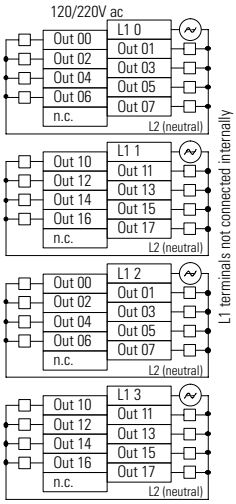
1771-OA (WA)



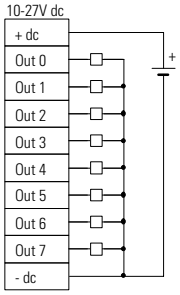
1771-OAD (WH)



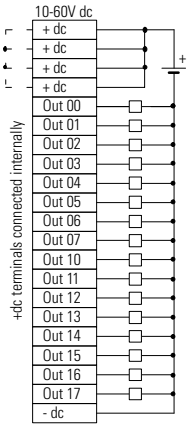
1771-OAN (WN)



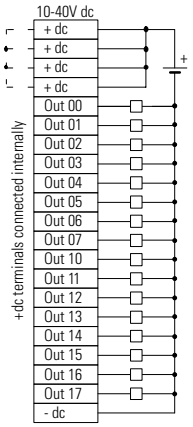
1771-OB (WA)



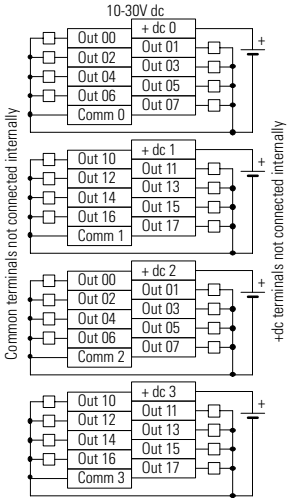
1771-OBD (WH)



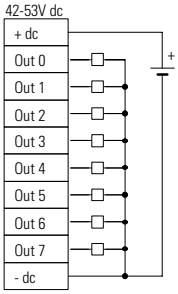
1771-OBDS (WH)



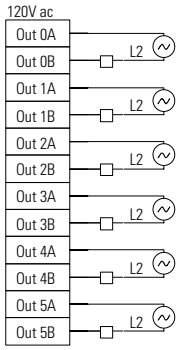
1771-OBN (WN)



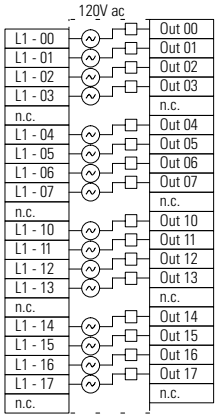
1771-OC (WA)



1771-OD (WD)

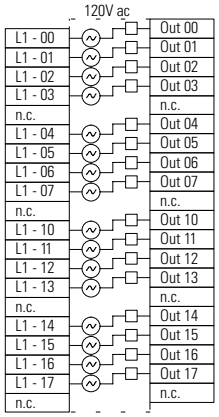


1771-OD16 (WN)

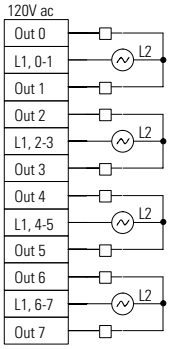


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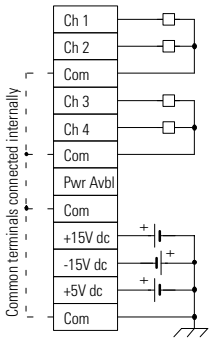
1771-ODD (WN)



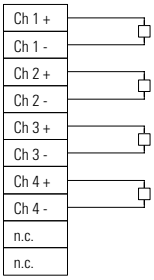
1771-ODZ (WD)



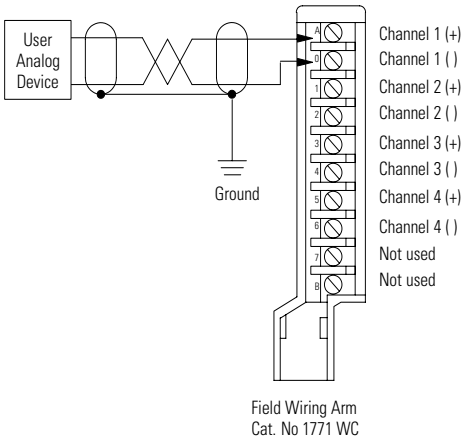
1771-OF/B (WB)



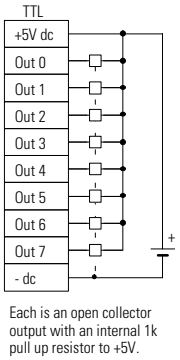
1771-OFE (WC)



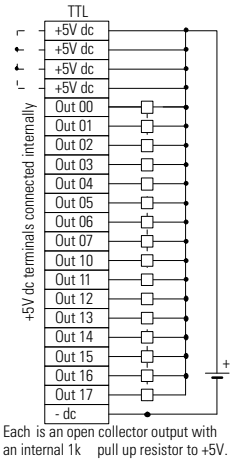
1771-OFE1, -OFE2, -OFE3



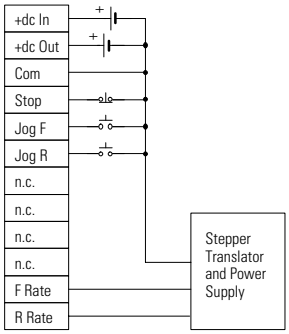
1771-OG (WC)



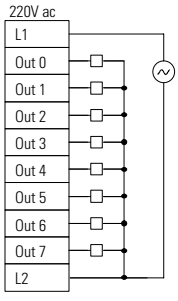
1771-OGD (WH)



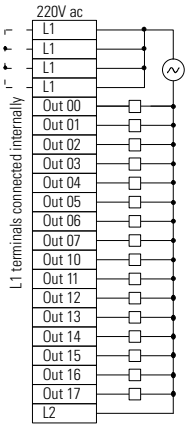
1771-OJ (WB)



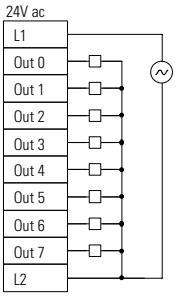
1771-OM (WA)



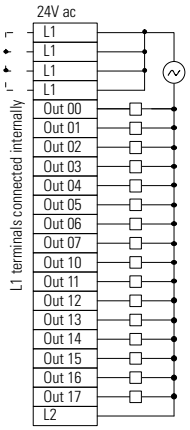
1771-OMD (WH)



1771-ON (WA)

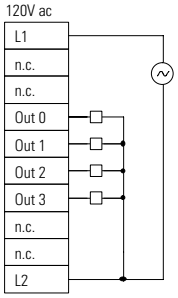


1771-OND (WH)

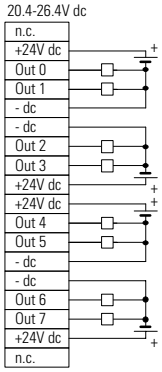


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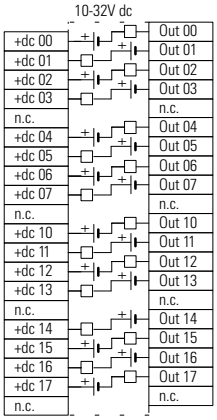
1771-OP (WA)



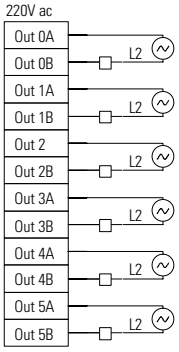
1771-OQ (WF)



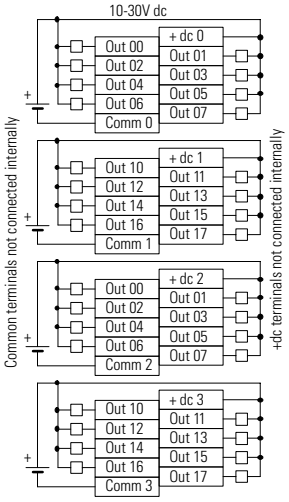
1771-OQ16 (WN)



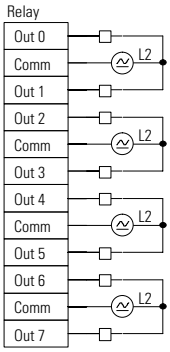
1771-OR (WD)



1771-OVN (WN)

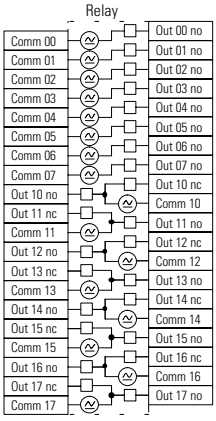


1771-OW (WD)

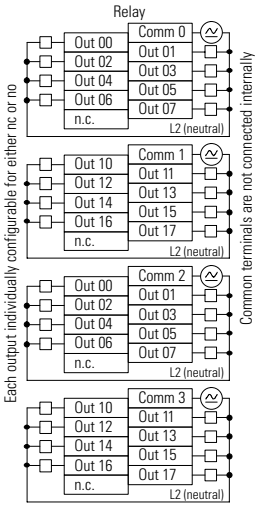


Each output individually configurable for either normally open or normally closed.

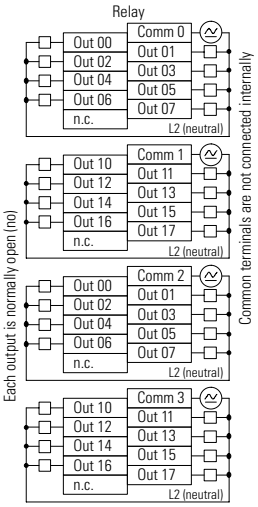
1771-OW16/B (WN)



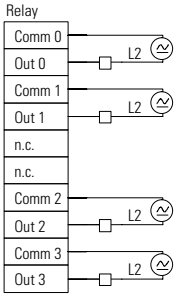
1771-OWN (WN)



1771-OWNA (WN)



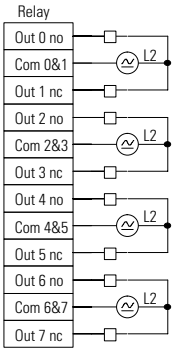
1771-OX (WC)



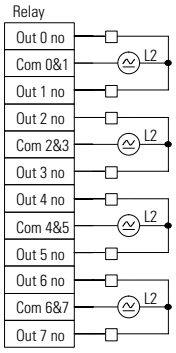
Each output individually configurable for either normally open or normally closed.

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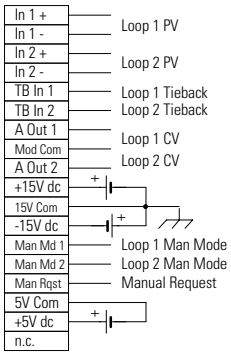
1771-OYL (WD)



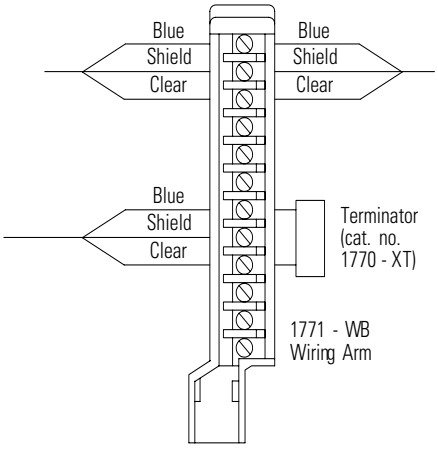
1771-OZL (WD)



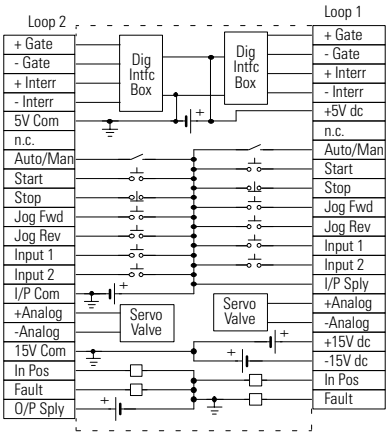
1771-PD (WF)



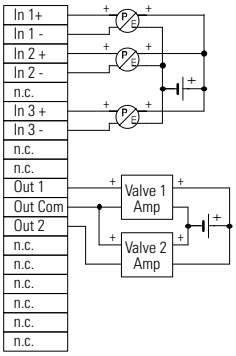
1771-PM



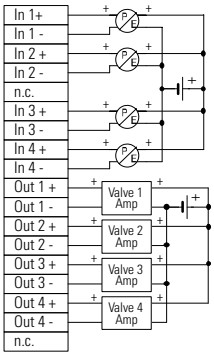
1771-QB (WN)



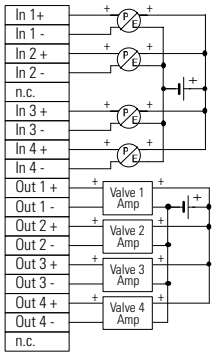
1771-QD (WF)



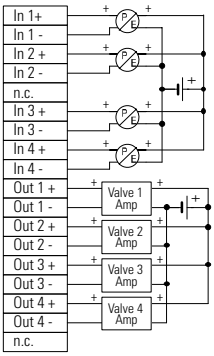
1771-QDC (WF)



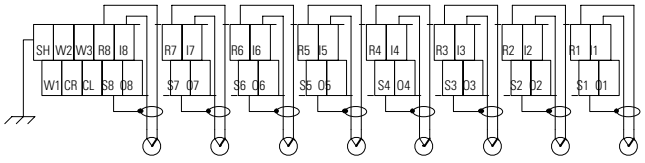
1771-QH (WF)



1771-QI (WF)

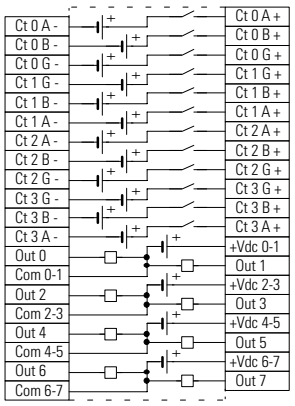


1771-TCM (RTP1)



S1 thru S8 are connected internally to SH.

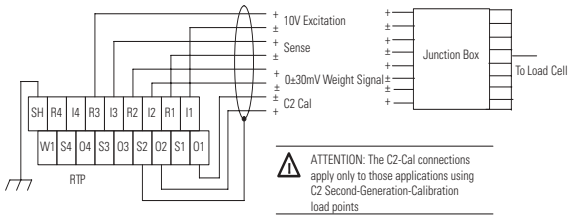
1771-VHSC (WN)



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1771-WS

Connecting Wires from the Junction Box to the Remote Termination Panel - Using the



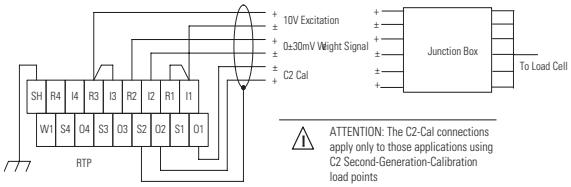
I1	± Excitation to junction box
R1	± Sense from junction box
S1	Shield
O1	± C2-Cal from junction box [1]
I2	± Signal from junction box
R2	+ Signal from junction box
S2	Shield
O2	+ C2-Cal from junction box [1]
I3	+ Sense from junction box

R3	+ Excitation to junction box
S3	Shield
O3	Not Used
I4	Not Used
R4	Not Used
S4	Shield
O4	Not Used
SH	Ground
W1	Not Used

[1] These connections apply only to those applications using C2 Second-Generation-Calibration load points. A sense loop is required when using C2 Second-Generation-Calibration.

1771-WS

Connecting Wires from the Junction Box to the Remote Termination Panel - With the Module-Generated



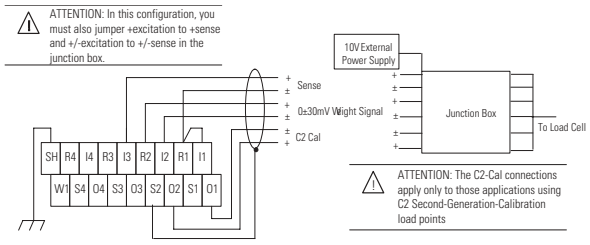
I1	± Excitation to junction box
R1	I1 on RTP
S1	Shield
O1	± C2-Cal from junction box [1]
I2	± Signal from junction box
R2	+ Signal from junction box
S2	Shield
O2	+ C2-Cal from junction box [1]
I3	R3 on RTP

R3	+ Excitation to junction box
S3	Shield
O3	Not Used
I4	Not Used
R4	Not Used
S4	Shield
O4	Not Used
SH	Ground
W1	Not Used

[1] These connections apply only to those applications using C2 Second-Generation-Calibration load points. A sense loop is required when using C2 Second-Generation-Calibration.

1771-WS

Connecting Wires from the Junction Box to the Remote Termination Panel - With the Voltage

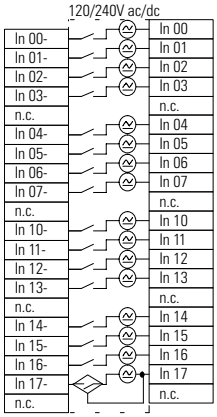


I1	1 on RTP
R1	± Sense from junction box
S1	Shield
O1	± C2-Cal from junction box [1]
I2	± Signal from junction box
R2	+ Signal from junction box
S2	Shield
O2	+ C2-Cal from junction box [1]
I3	+ Sense from junction box

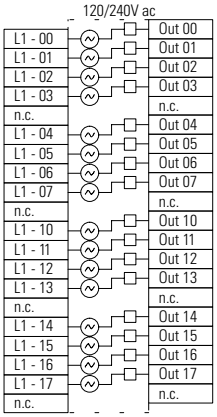
R3	Not Used
S3	Shield
O3	Not Used
I4	Not Used
R4	Not Used
S4	Shield
O4	Not Used
SH	Ground
W1	Not Used

[1] These connections apply only to those applications using C2 Second-Generation-Calibration load points. A sense loop is required when using C2 Second-Generation-Calibration.

1771-sc IM16



1771-sc OMI16 (WN)



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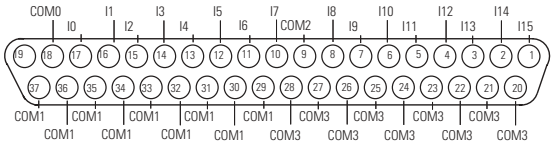
Notes:

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1790 CompactBlock LDX I/O Modules

IMPORTANT The catalog numbers included in this chapter are organized alphabetically according to connector type. The modules that use D-shell connectors are listed first, followed by the modules that use terminal blocks.

1790-16BVOX

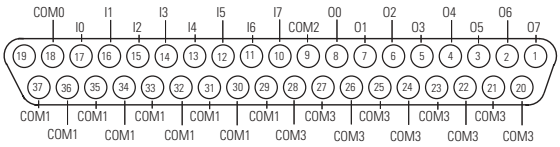


For inputs 0-7: Sinking inputs - wire Com 1 to Field Power (+) 24V dc, wire Com 0 to Field Power (-) GND
Sourcing inputs - wire Com 1 to Field Power (-) GND, wire Com 0 to Field Power (+) 24V dc

For inputs 8-15: Sinking inputs - wire Com 3 to Field Power (+) 24V dc, wire Com 2 to Field Power (-) GND
Sourcing inputs - wire Com 3 to Field Power (-) GND, wire Com 2 to Field Power (+) 24V dc

Note: All Com 1 and Com 3 are internally connected - Com 1 is used for inputs 0-7, Com 3 is used for inputs 8-15.

1790-8BV8BX

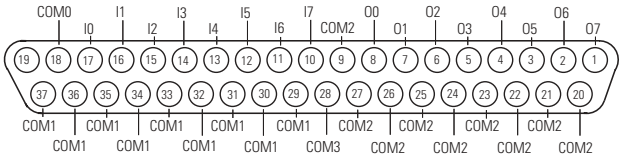


Sinking inputs - wire Com 1 to Field Power (+) 24V dc, wire Com 0 to Field Power (-) GND

Sourcing inputs - wire Com1 to Field Power (-) GND, wire Com 0 to Field Power (+) 24V dc
Note: all Com 1 are internally connected.

Sinking outputs -wire Com 2 to Field Power (+) 24Vdc, wire Com 3 to Field Power (-) GND
Note: all Com 3 are internally connected.

1790-8BV8VX

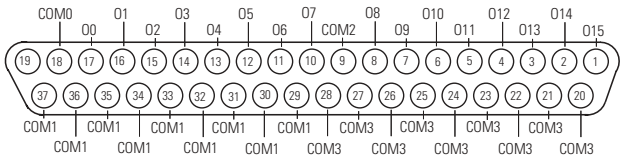


Sinking inputs - wire Com 1 to Field Power (+) 24V dc, wire Com 0 to Field Power (-) GND

Sourcing inputs - wire Com1 to Field Power (-) GND, wire Com 0 to Field Power (+) 24V dc
Note: all Com 1 are internally connected.

Sinking outputs -wire Com 2 to Field Power (+) 24Vdc, wire Com 3 to Field Power (-) GND
Note: all Com 2 are internally connected.

1790-OB16X

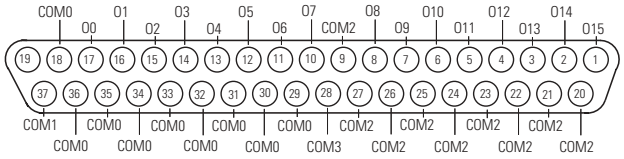


Sourcing outputs - wire Com 0 and Com 2 to Field Power (+) 24V dc, wire Com 1 and Com 3 to Field Power (-) GND

Note: all Com 1 and Com 3 are internally connected.

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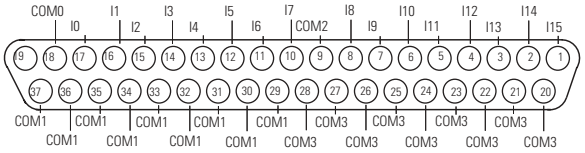
1790-OV16X



Sinking outputs - wire Com 0 and Com 2 to Field Power (+) 24V dc, wire Com 1 and Com 3 to Field Power (-) GND

Note: all Com 0 and Com 2 are internally connected.

1790D-16BVO

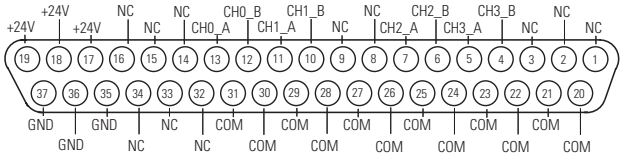


For inputs 0-7: Sinking inputs - wire Com 1 to Field Power (+) 24V dc, wire Com 0 to Field Power (-) GND
Sourcing inputs - wire Com 1 to Field Power (-) GND, wire Com 0 to Field Power (+) 24V dc

For inputs 8-15: Sinking inputs - wire Com 3 to Field Power (+) 24V dc, wire Com 2 to Field Power (-) GND
Sourcing inputs - wire Com 3 to Field Power (-) GND, wire Com 2 to Field Power (+) 24V dc

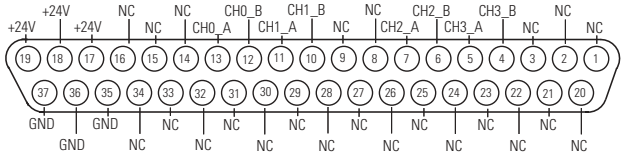
Note: All Com 1 and Com 3 are internally connected - Com 1 is used for inputs 0-7, Com 3 is used for inputs 8-15.

1790D-4RO



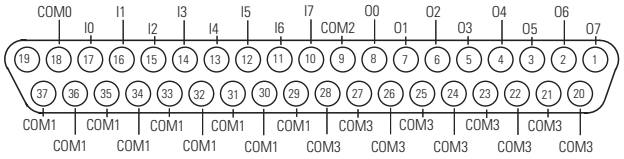
Wire pins 17, 18, 19 to Field Power (+) 24Vdc
Wire pins 35, 36, 37 to Field Power (-) GND

1790D-4TO



Wire pins 17, 18, 19 to Field Power (+) 24Vdc
Wire pins 35, 36, 37 to Field Power (-) GND

1790D-8BV8B

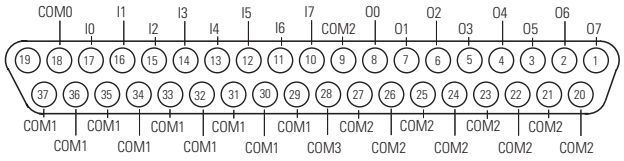


Sinking inputs - wire Com 1 to Field Power (+) 24V dc, wire Com 0 to Field Power (-) GND

Sourcing inputs - wire Com1 to Field Power (-) GND, wire Com 0 to Field Power (+) 24V dc
Note: all Com 1 are internally connected.

Sinking outputs -wire Com 2 to Field Power (+) 24Vdc, wire Com 3 to Field Power (-) GND
Note: all Com 3 are internally connected.

1790D-8BV8V



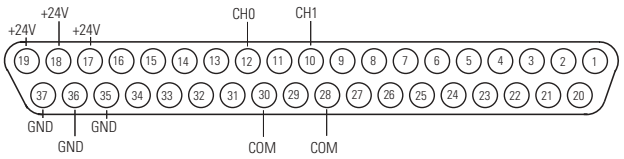
Sinking inputs - wire Com 1 to Field Power (+) 24V dc, wire Com 0 to Field Power (-) GND

Sourcing inputs - wire Com1 to Field Power (-) GND, wire Com 0 to Field Power (+) 24V dc
Note: all Com 1 are internally connected.

Sinking outputs -wire Com 2 to Field Power (+) 24Vdc, wire Com 3 to Field Power (-) GND
Note: all Com 2 are internally connected.

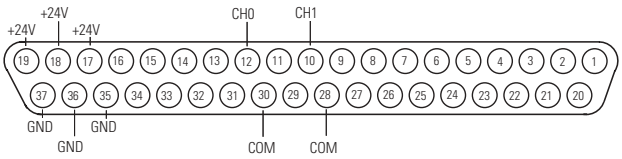
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1790D-NOC2



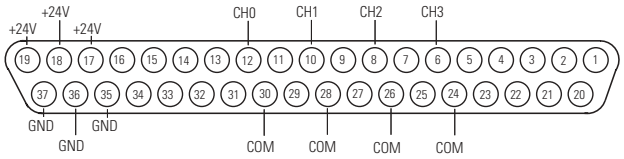
Wire pins 17, 18 and 19 to Field Power (+) 24Vdc
Wire pins 35, 36 and 37 to Field Power (-) GND

1790D-NOV2



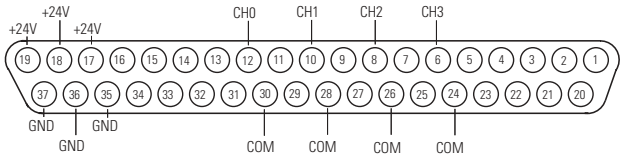
Wire pins 17, 18 and 19 to Field Power (+) 24Vdc
Wire pins 35, 36 and 37 to Field Power (-) GND

1790D-N4CO



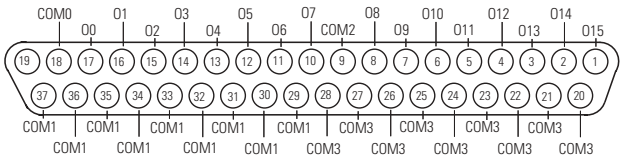
Wire pins 17, 18 and 19 to Field Power (+) 24Vdc
Wire pins 35, 36 and 37 to Field Power (-) GND

1790D-N4VO



Wire pins 17, 18 and 19 to Field Power (+) 24Vdc
Wire pins 35, 36 and 37 to Field Power (-) GND

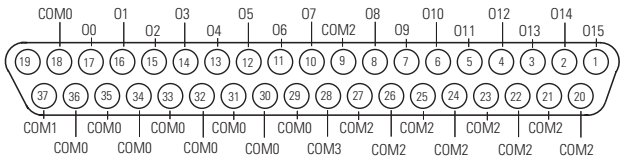
1790D-OB16



Sourcing outputs - wire Com 0 and Com 2 to Field Power (+) 24V dc, wire Com 1 and Com 3 to Field Power (-) GND

Note: all Com 1 and Com 3 are internally connected.

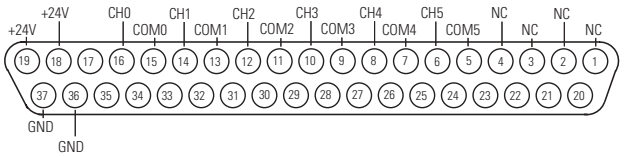
1790D-OV16



Sinking outputs - wire Com 0 and Com 2 to Field Power (+) 24V dc, wire Com 1 and Com 3 to Field Power (-) GND

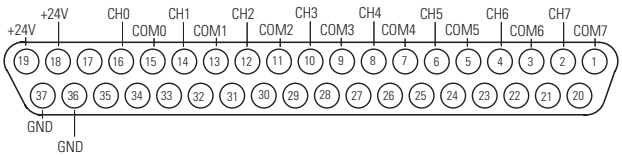
Note: all Com 0 and Com 2 are internally connected.

1790D-OW6



Wire pins 18 and 19 to Field Power (+) 24Vdc
Wire pins 36 and 37 to Field Power (-) GND

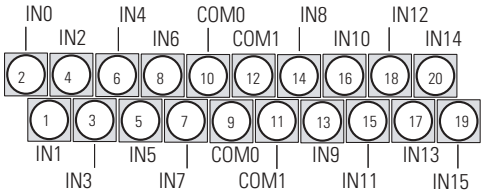
1790D-OW8X



Wire pins 18 and 19 to Field Power (+) 24Vdc
Wire pins 36 and 37 to Field Power (-) GND

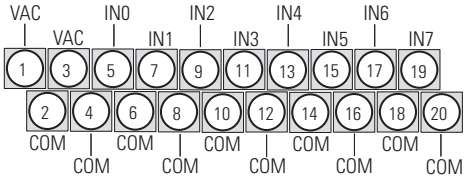
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1790-T16BVOX



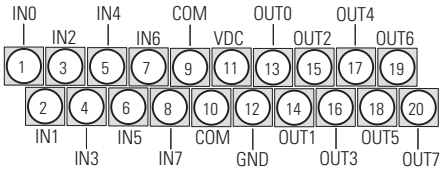
For inputs 0-7 - Sinking inputs - wire Com 0 and Com 1 to Field Power (-) GND
Sourcing inputs - wire Com 0 and Com 1 to Field Power (+) 24V dc
For inputs 8-15 - Sinking inputs - wire Com 2 and Com 3 to Field Power (-) GND
Sourcing inputs - wire Com 2 and Com 3 to Field Power (+) 24V dc

1790-T8A0X



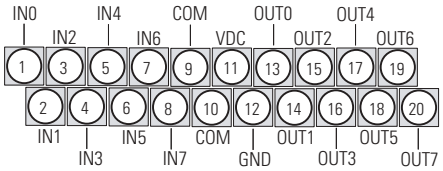
Wire 120Vac Field Power across VAC (pin 1) and COM (pin 2)
Note: all VAC are internally connected. All COM are internally connected.

1790-T8BV8BX



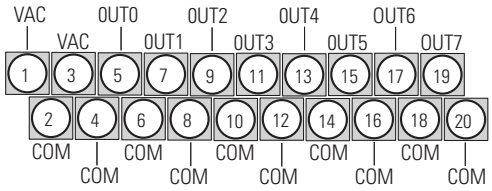
Sinking inputs - wire COM (pin 9) to Field Power (-) GND
Sourcing inputs - wire COM (pin 9) to Field Power (+) 24Vdc
Note: both COM (pins 9 and 10) are internally connected.
Sourcing outputs -wire VDC (pin 11) to Field Power (+) 24Vdc, wire GND (pin 12) to Field Power (-) GND

1790-T8BV8VX



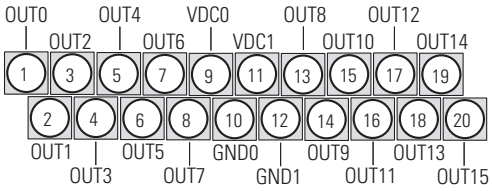
Sinking inputs - wire COM (pin 9) to Field Power (-) GND
Sourcing inputs - wire COM (pin 9) to Field Power (+) 24V dc
Note: both COM (pins 9 and 10) are internally connected.
Sinking outputs -wire VDC (pin 11) to Field Power (+) 24Vdc, wire GND (pin 12) to Field Power (-) GND

1790-TOA8X



Wire 120 V ac Field Power to VAC (pin 1) and COM (pin 2)
NOTE: All VAC are internally connected. All COM are internally connected.

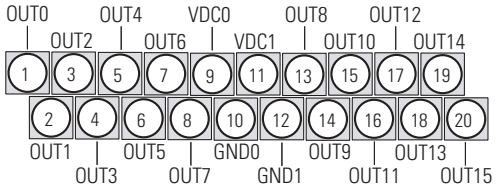
1790-TOB16X



Sourcing outputs - wire VDC0 (pin 9) and VDC1 (pin 11) to Field Power (+) 24V dc, wire GND0 (pin 10) and GND1 (pin 12) to Field Power (-) GND

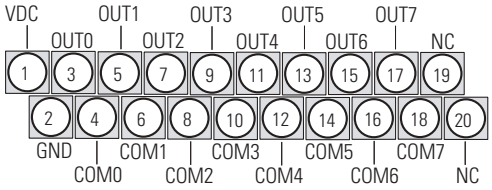
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1790-TOV16X



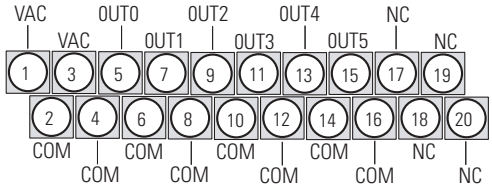
Sinking outputs - wire VDC0 (pin 9) and VDC1 (pin 11) to Field Power (+) 24V dc, wire GND0 (pin 10) and GND1 (pin 12) to Field Power (-) GND

1790-TOW8X



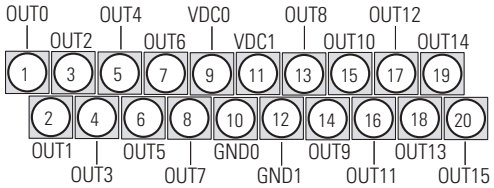
Wire VDC (pin 1) to Field Power (+) 24V dc
Wire GND (pin 2) to Field Power (-) GND

1790D-TOA6



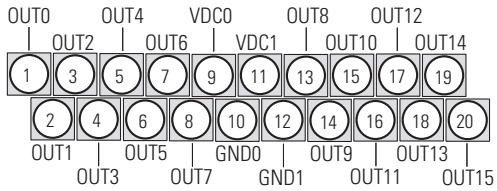
Wire 120Vac Field Power to VAC (pin 1) and COM (pin 2)
Note: all VAC are internally connected. All COM are internally connected.

1790D-TOB16



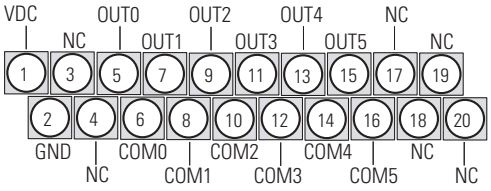
Sourcing outputs - wire VDC0 (pin 9) and VDC1 (pin 11) to Field Power (+) 24V dc, wire GND0 (pin 10) and GND1 (pin 12) to Field Power (-) GND

1790D-TOV16



Sinking outputs - wire VDC0 (pin 9) and VDC1 (pin 11) to Field Power (+) 24V dc, wire GND0 (pin 10) and GND1 (pin 12) to Field Power (-) GND

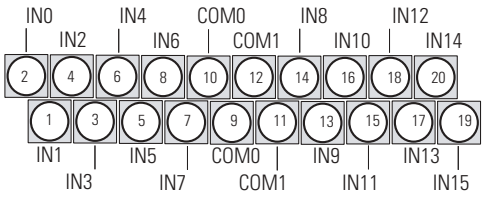
1790D-TOW6



Wire VDC (pin 1) to Field Power (+) 24V dc
Wire GND (pin 2) to Field Power (-) GND

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1790D-T16BVO

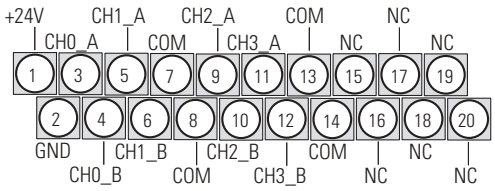


For inputs 0-7 - Sinking inputs - wire COM 0 (pin 9) to Field Power (-) GND
Sourcing inputs - wire COM 0 (pin 9) to Field Power (+) 24V dc

For inputs 8-15 - Sinking inputs - wire COM 1 (pin 11) to Field Power (-) GND
Sourcing inputs - wire COM 1 (pin 11) to Field Power (+) 24V dc

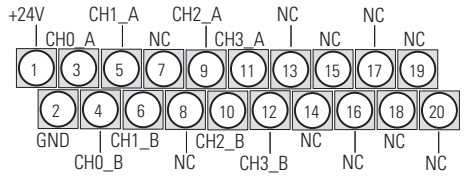
Note: Both COM 0 are internally connected - COM 0 is used for inputs 0-7, COM 1 is used for input 8-15. Both COM 1 are internally connected.

1790D-T4RO



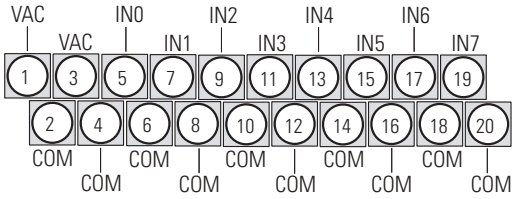
Wire pin 1 to Field Power (+) 24Vdc
Wire pin 2 to Field Power (-) GND

1790D-T4TO



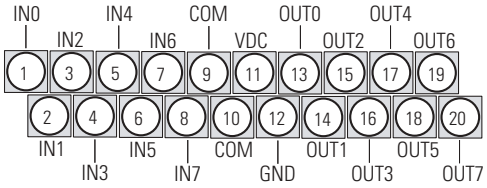
Wire pin 1 to Field Power (+) 24V dc
Wire pin 2 to Field Power (-) GND

1790D-T8AO



Wire 120Vac Field Power across VAC (pin 1) and COM (pin 2)
Note: all VAC are internally connected. All COM are internally connected.

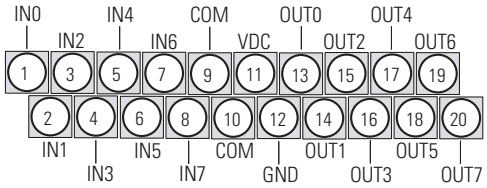
1790D-T8BV8B



Sinking inputs - wire COM (pin 9) to Field Power (-) GND
Sourcing inputs - wire COM (pin 9) to Field Power (+) 24Vdc
Note: both COM (pins 9 and 10) are internally connected.

Sourcing outputs -wire VDC (pin 11) to Field Power (+) 24Vdc, wire GND (pin 12) to Field Power (-) GND

1790D-T8BV8V

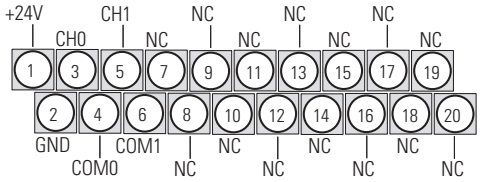


Sinking inputs - wire COM (pin 9) to Field Power (-) GND
Sourcing inputs - wire COM (pin 9) to Field Power (+) 24V dc
Note: both COM (pins 9 and 10) are internally connected.

Sinking outputs -wire VDC (pin 11) to Field Power (+) 24Vdc, wire GND (pin 12) to Field Power (-) GND

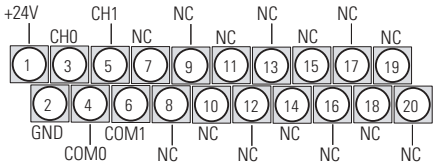
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1790D-TNOC2



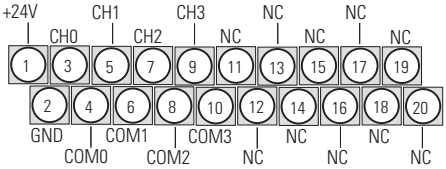
Wire pin 1 to Field Power (+) 24Vdc
Wire pin 2 to Field Power (-) GND

1790D-TNOV2



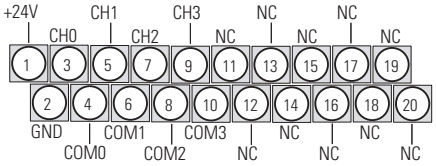
Wire pin 1 to Field Power (+) 24Vdc
Wire pin 2 to Field Power (-) GND

1790D-TN4CO



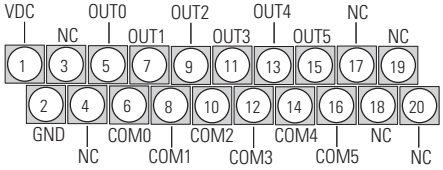
Wire pin 1 to Field Power (+) 24Vdc
Wire pin 2 to Field Power (-) GND

1790D-TN4VO



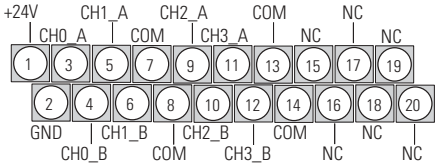
Wire pin 1 to Field Power (+) 24Vdc
Wire pin 2 to Field Power (-) GND

1790P-T0W6



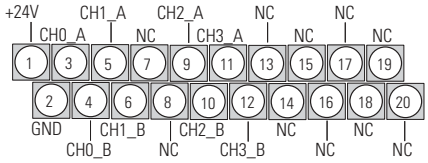
Wire VDC (pin 1) to Field Power (+) 24V dc
Wire GND (pin 2) to Field Power (-) GND

1790P-T4R0



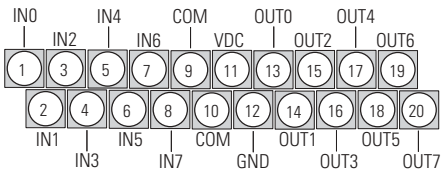
Wire pin 1 to Field Power (+) 24V dc
Wire pin 2 to Field Power (-) GND

1790P-T4T0



Wire pin 1 to Field Power (+) 24V dc
Wire pin 2 to Field Power (-) GND

1790P-T8BV8B

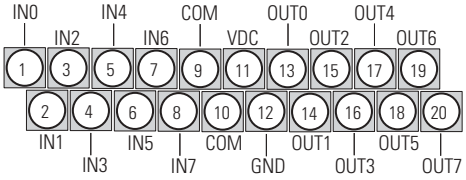


Sinking inputs - Wire COM (pin 9) to Field Power (-) GND
Sourcing inputs - Wire COM (pin 9) to Field Power (+) 24V dc
Note: Both COM (pins 9 and 10) are internally connected.

Sourcing outputs - Wire VDC (pin 11) to Field Power (+) 24V dc, and wire GND (pin 12) to Field Power (-) GND

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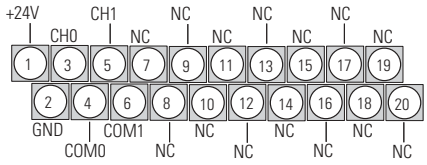
1790P-T8BV8V



Sinking inputs - Wire COM (pin 9) to Field Power (-) GND
Sourcing inputs - Wire COM (pin 9) to Field Power (+) 24V dc
Note: Both COM (pins 9 and 10) are internally connected.

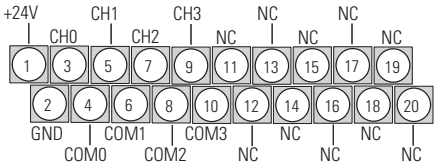
Sourcing outputs - Wire VDC (pin 11) to Field Power (+) 24V dc, and wire GND (pin 12) to Field Power (-) GND

1790P-TN0C2



Wire pin 1 to Field Power (+) 24V dc
Wire pin 2 to Field Power (-) GND

1790P-TN4C0

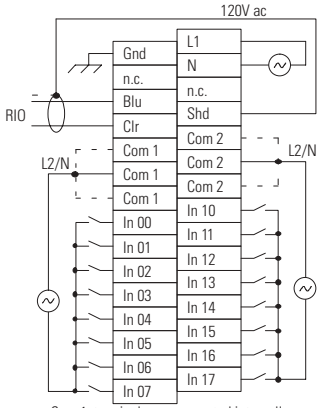


Wire pin 1 to Field Power (+) 24V dc
Wire pin 2 to Field Power (-) GND

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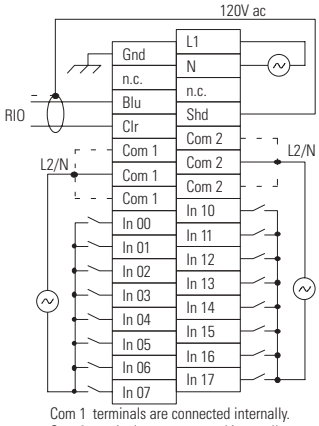
1791 I/O Blocks

1791-16AOB



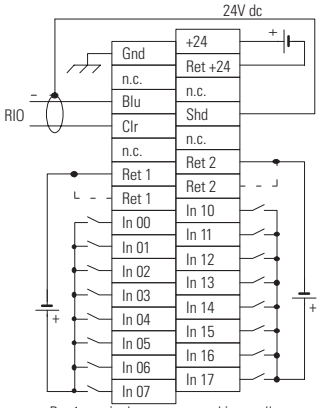
Com 1 terminals are connected internally.
Com 2 terminals are connected internally.

1791-16ACB



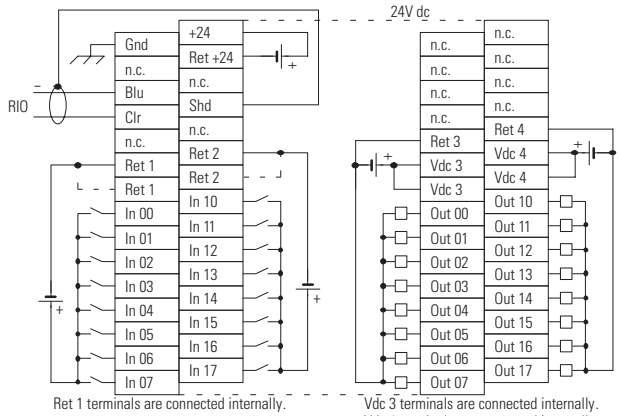
Com 1 terminals are connected internally.
Com 2 terminals are connected internally.

1791-16AOB



Ret 1 terminals are connected internally.
Ret 2 terminals are connected internally.

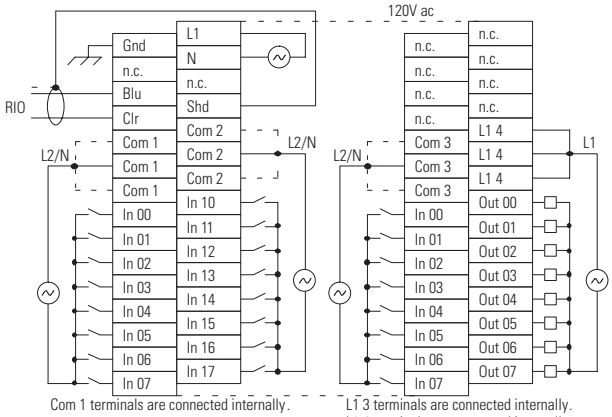
1791-16BCB



Ret 1 terminals are connected internally.
Ret 2 terminals are connected internally.

Vdc 3 terminals are connected internally.
Vdc 4 terminals are connected internally.
Each output must be fused externally.

1791-24A8B

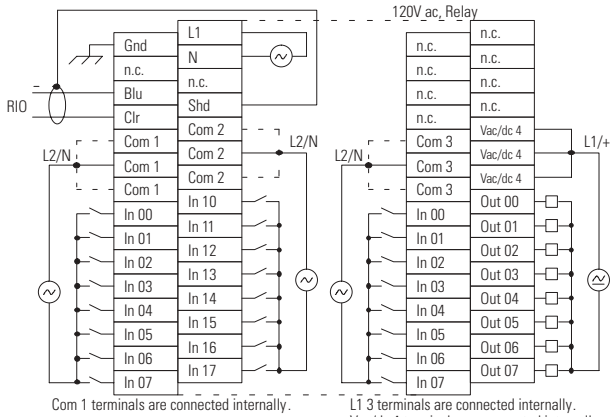


Com 1 terminals are connected internally.
Com 2 terminals are connected internally.

L1 3 terminals are connected internally.
L1 4 terminals are connected internally.
Each output must be fused externally.

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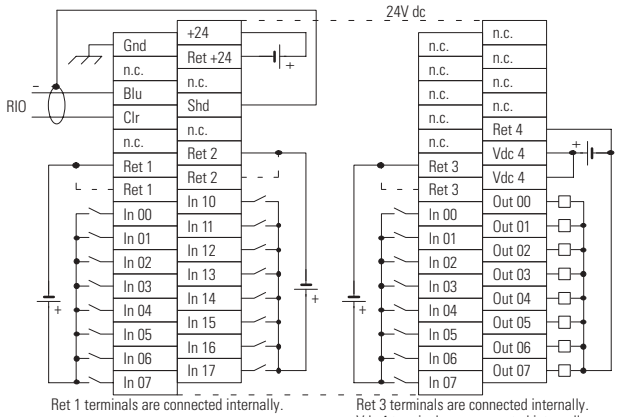
1791-24ARB



Com 1 terminals are connected internally.
Com 2 terminals are connected internally.

L1 3 terminals are connected internally.
Vac/dc 4 terminals are connected internally.
Each output must be fused externally.

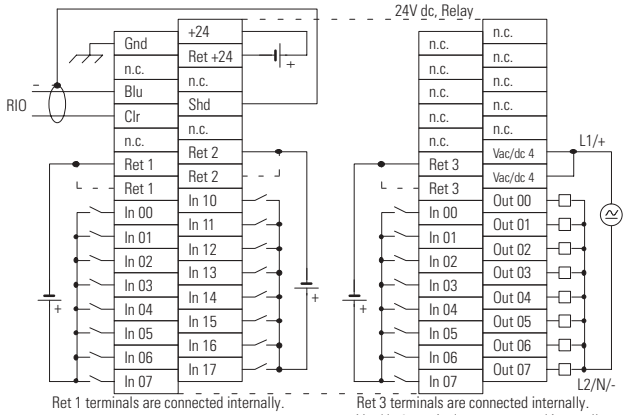
1791-24B8B



Ret 1 terminals are connected internally.
Ret 2 terminals are connected internally.

Ret 3 terminals are connected internally.
Vdc 4 terminals are connected internally.
Each output must be fused externally.

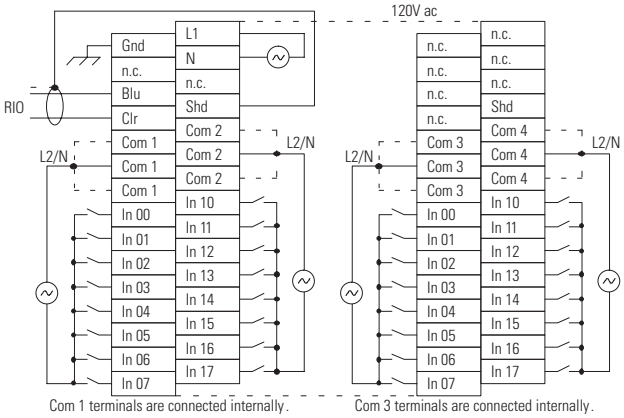
1791-24BRB



Ret 1 terminals are connected internally.
Ret 2 terminals are connected internally.

Ret 3 terminals are connected internally.
Vac/dc 4 terminals are connected internally.
Each output must be fused externally.

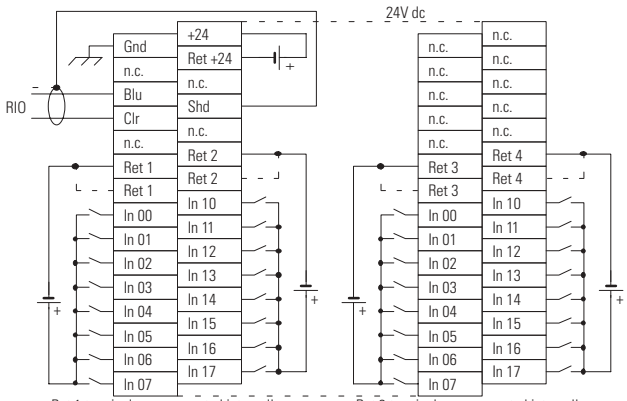
1791-32AOB



Com 1 terminals are connected internally.
Com 2 terminals are connected internally.

Com 3 terminals are connected internally.
Com 4 terminals are connected internally.

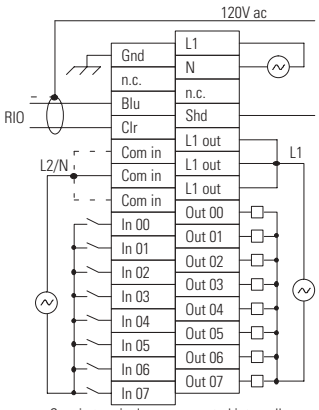
1791-32BOB



Ret 1 terminals are connected internally.
Ret 2 terminals are connected internally.

Ret 3 terminals are connected internally.
Ret 4 terminals are connected internally.

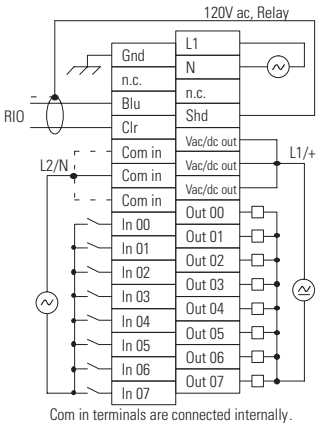
1791-8ACB



Com in terminals are connected internally.
L1 out terminals are connected internally.
Each output must be fused externally.

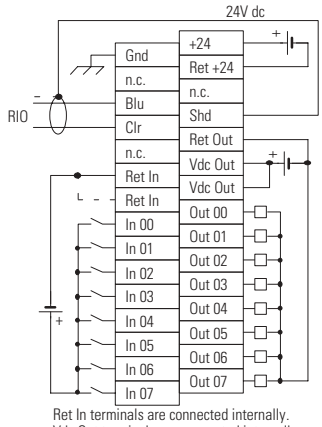
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1791-8ARB



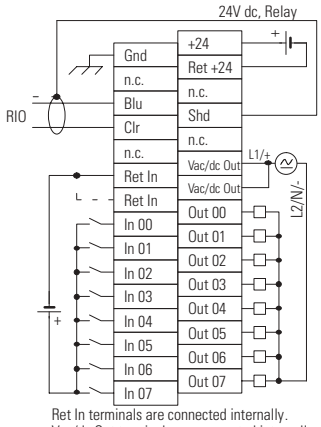
Com in terminals are connected internally.
L1 out terminals are connected internally.
Each output must be fused externally.

1791-8BCB



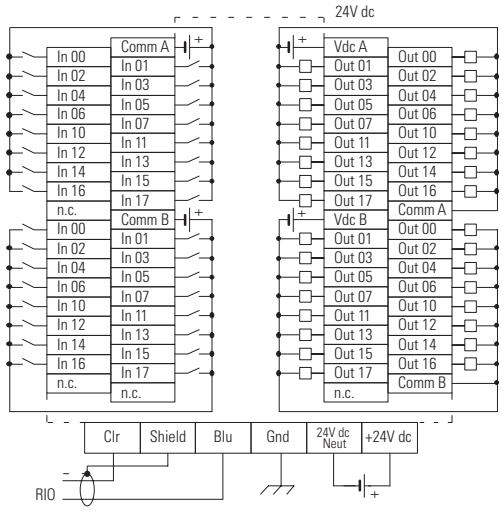
Ret In terminals are connected internally.
Vdc Out terminals are connected internally.
Each output must be fused externally.

1791-8BRB

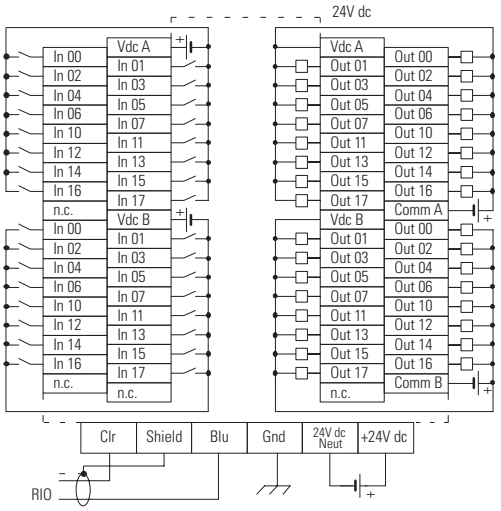


Ret In terminals are connected internally.
Vac/dc Out terminals are connected internally.
Each output must be fused externally.

1791-IOBW

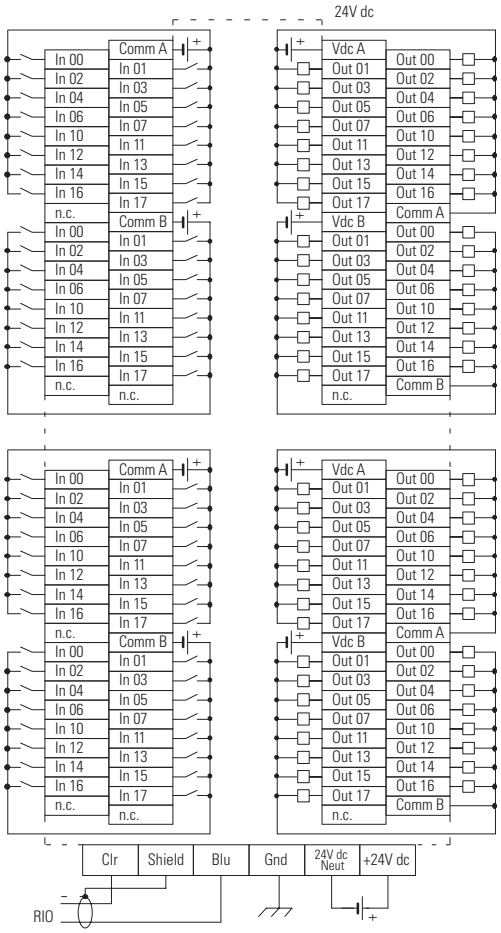


1791-IOVW

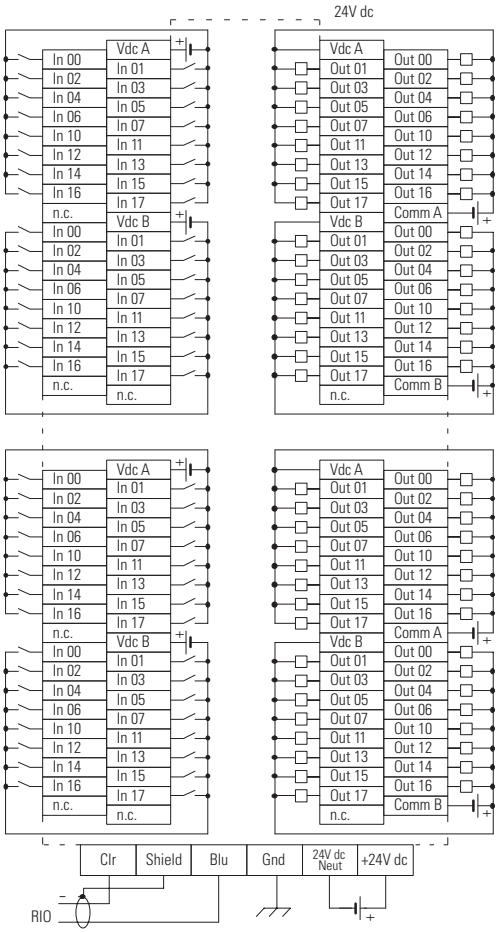


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1791-IOBX

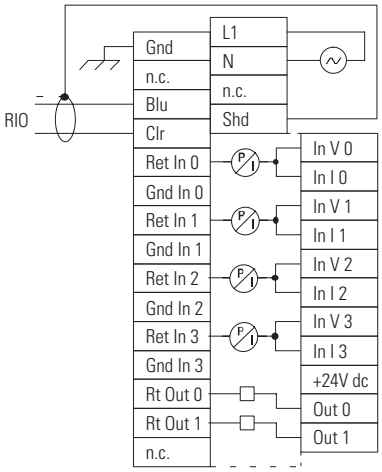


1791-IOVX

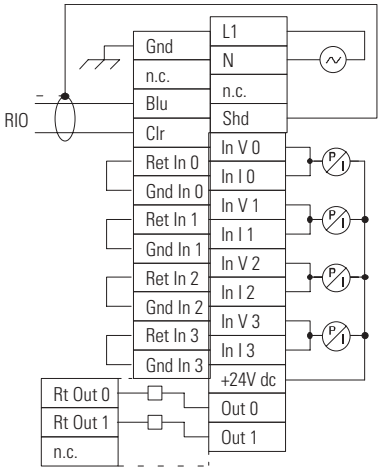


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1791-N4C2 – Current applications

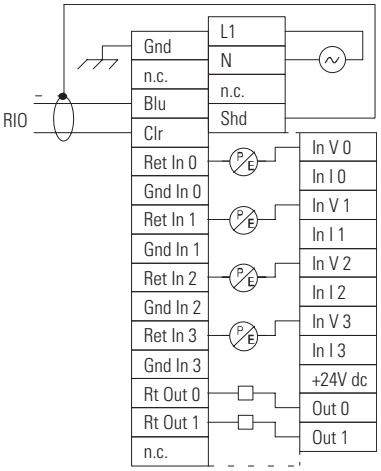


Connected this way, external input loop power is needed.



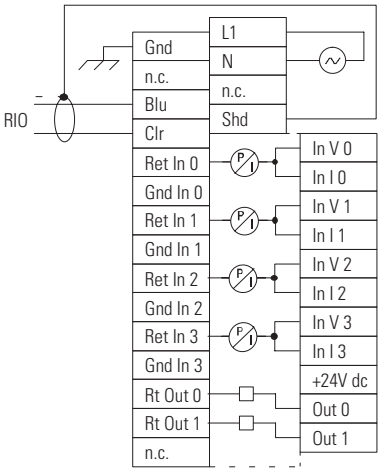
Input loop power provided internally.

1791-N4C2 – Voltage applications

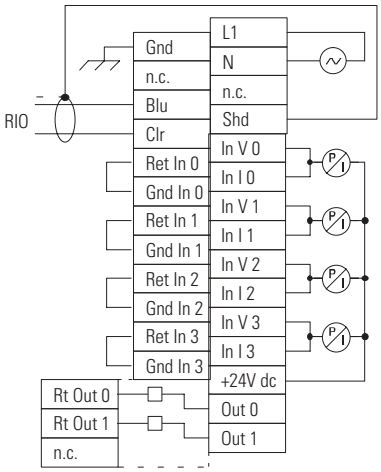


External input loop power needed.

1791-N4V2 – Current applications

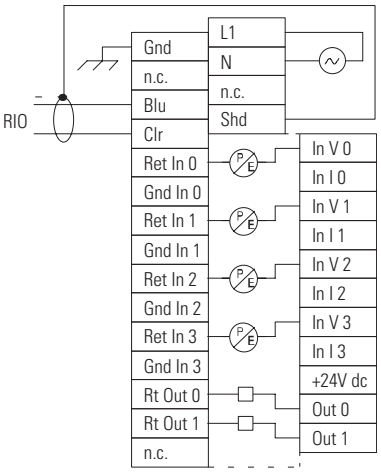


Connected this way, external input loop power is needed.



Input loop power provided internally.

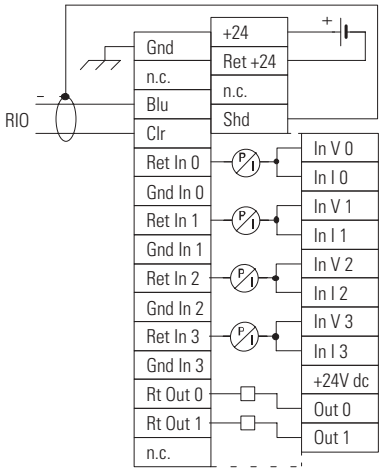
1791-N4V2 – Voltage applications



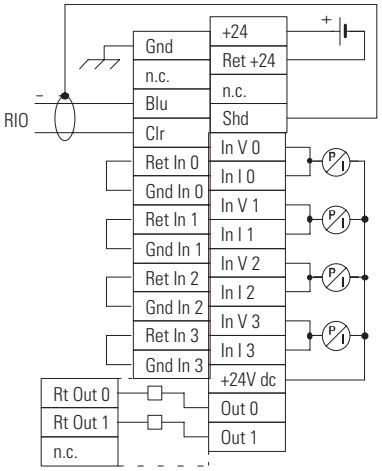
External input loop power needed.

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1791-NDC – Current applications

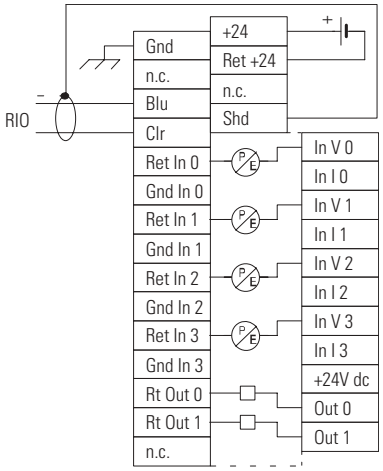


Connected this way, external input loop power is needed.



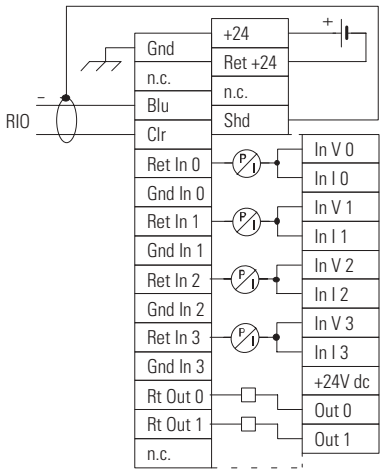
Input loop power provided internally.

1791-NDC – Voltage applications

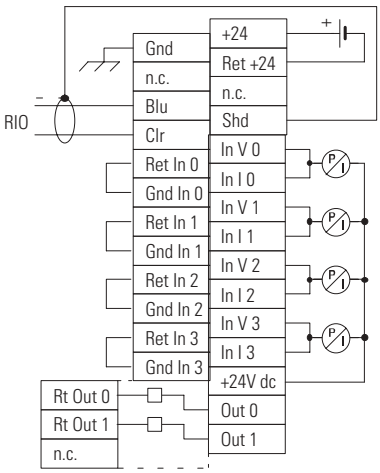


External input loop power needed.

1791-NDV – Current applications

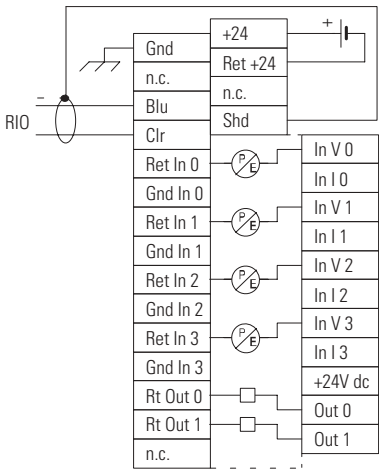


Connected this way, external input loop power is needed.



Input loop power provided internally.

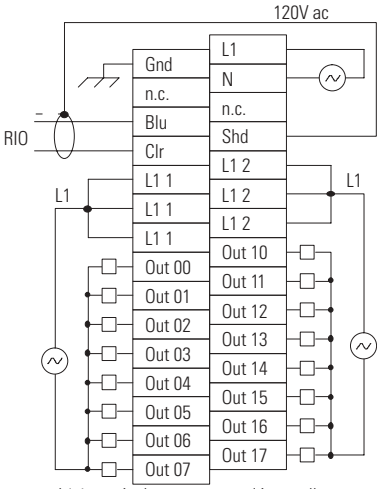
1791-NDV – Voltage applications



External input loop power needed.

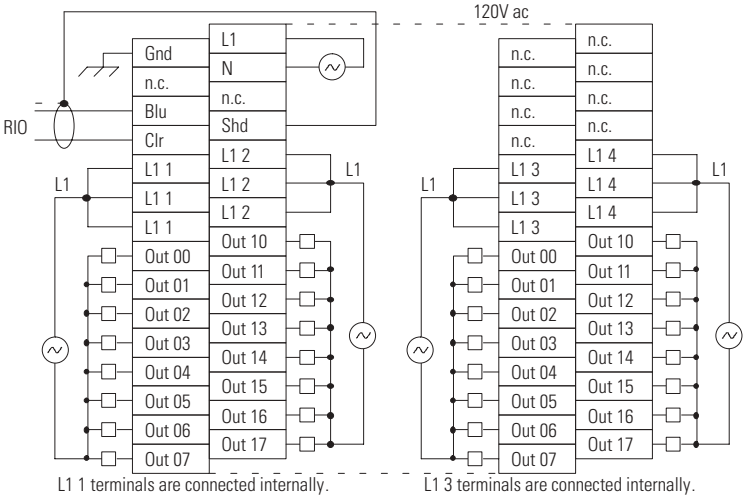
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1791-OA16B



L1 1 terminals are connected internally.
L1 2 terminals are connected internally.
Each output must be fused externally.

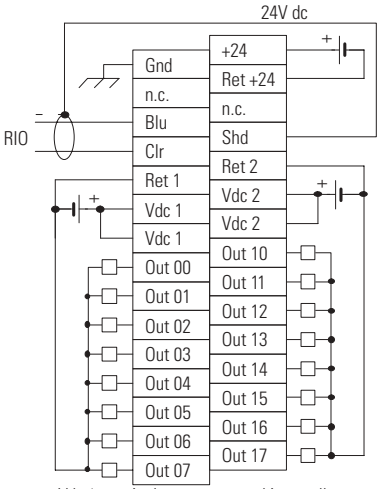
1791-OA32B



L1 1 terminals are connected internally.
L1 2 terminals are connected internally.

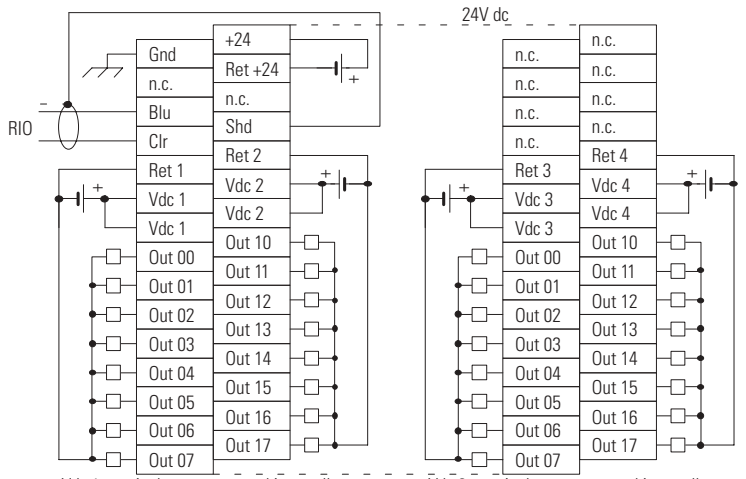
L1 3 terminals are connected internally.
L1 4 terminals are connected internally.
Each output must be fused externally.

1791-OB16B



Vdc 1 terminals are connected internally.
Vdc 2 terminals are connected internally.
Each output must be fused externally.

1791-OB32B



Vdc 1 terminals are connected internally.
Vdc 2 terminals are connected internally.

Vdc 3 terminals are connected internally.
Vdc 4 terminals are connected internally.
Each output must be fused externally.

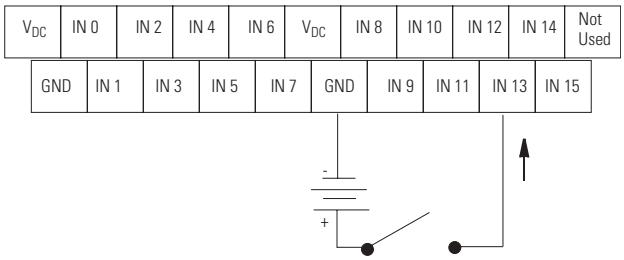
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Notes:

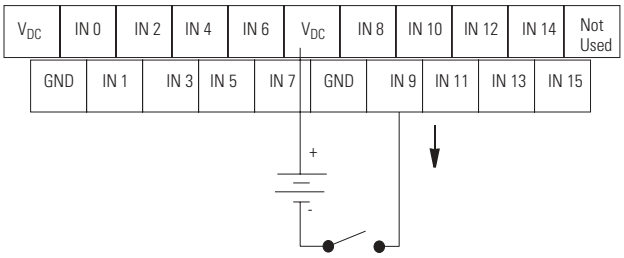
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1791D CompactBlock I/O Blocks

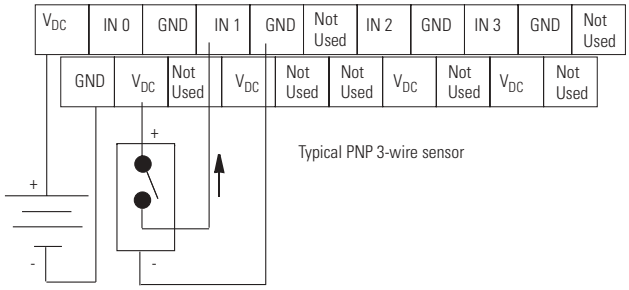
1791D-16BO, -16BOX



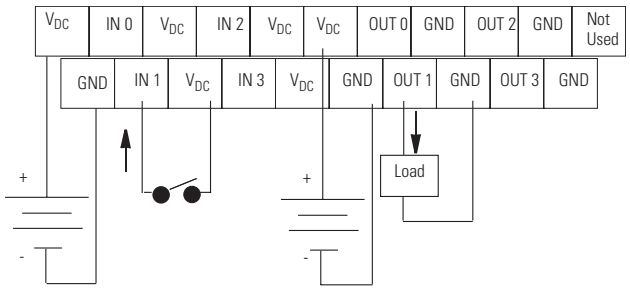
1791D-16VO, -16VOX



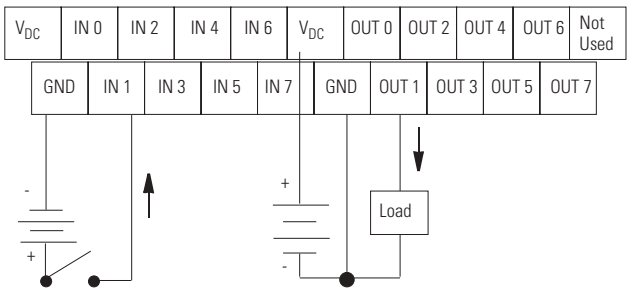
1791D-4BO



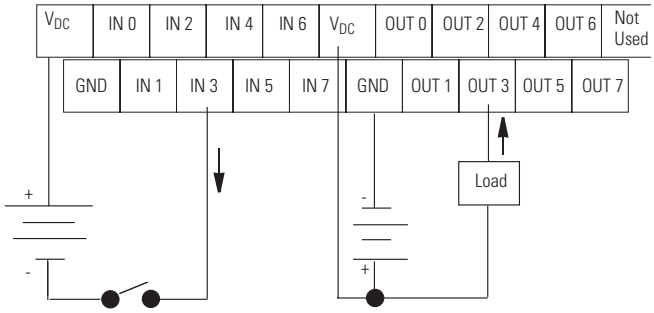
1791D-4B4P



1791D-8B8P

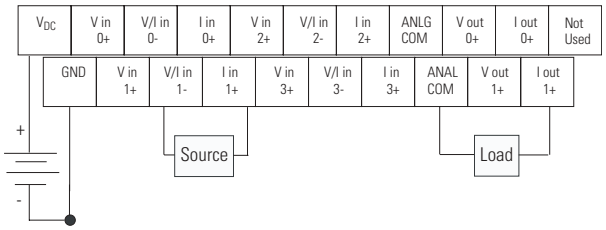


1791D-8V8P

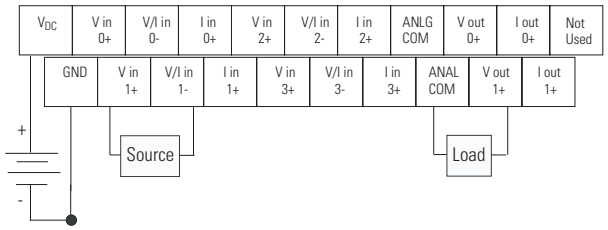


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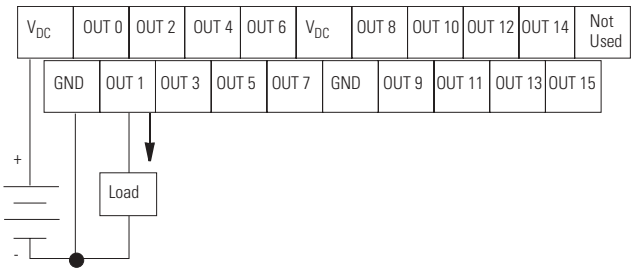
1791D-N4CV2X – Current



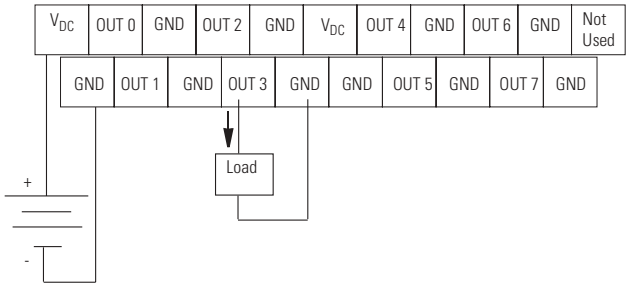
1791D-N4CV2X – Voltage



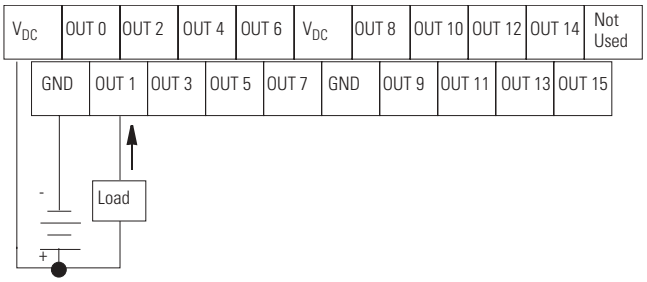
1791D-OB16P, -OB16PX



1791D-OB8P



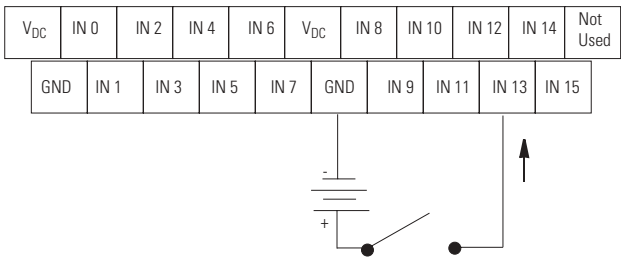
1791D-OV16P, -OV16PX



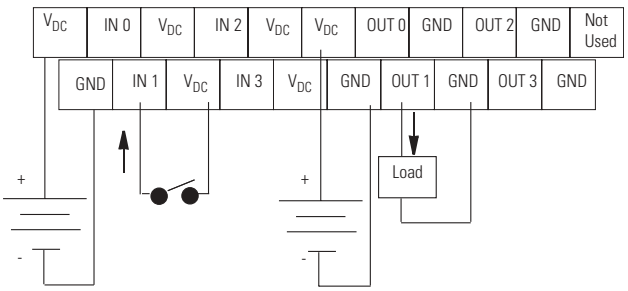
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1791P CompactBlock I/O Blocks

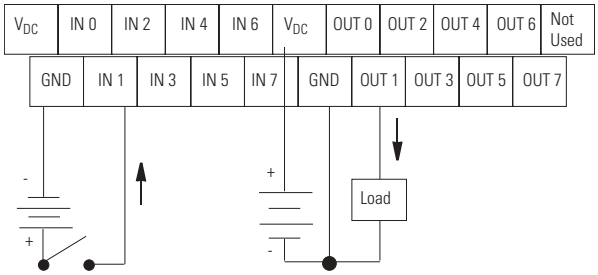
1791P-16BO



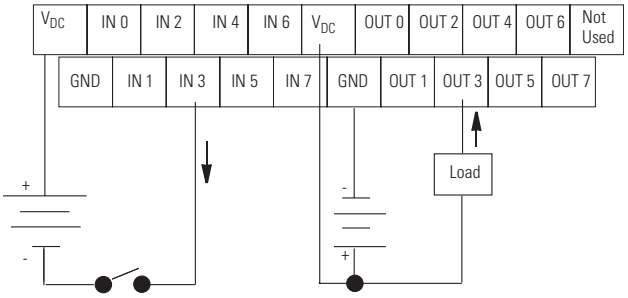
1791P-4B4P



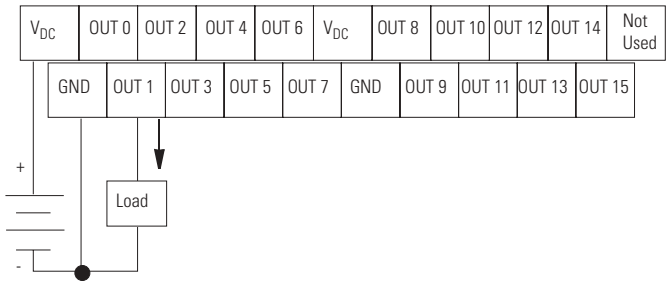
1791P-8B8P



1791P-8V8P



1791P-OB16P



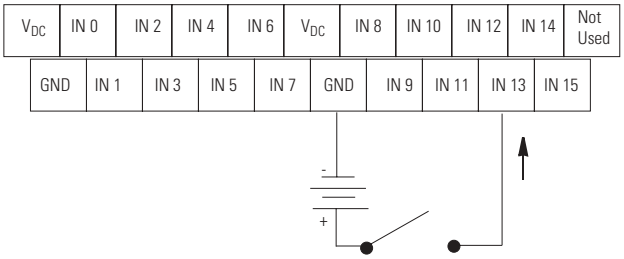
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Notes:

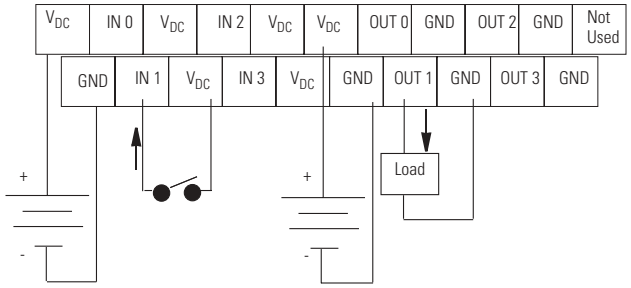
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1791R CompactBlock I/O Blocks

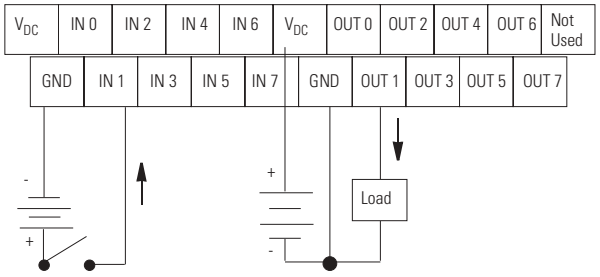
1791R-16BO



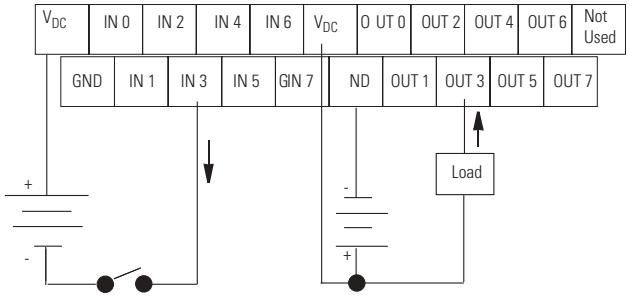
1791R-4B4P



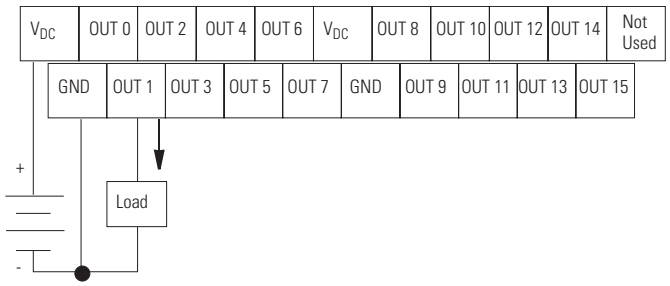
1791R-8B8P



1791R-8V8P



1791P-OB16P



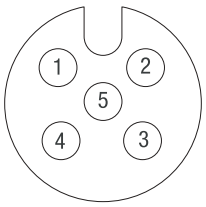
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Notes:

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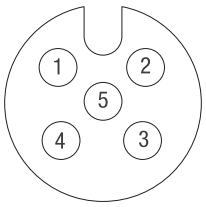
1792D ArmorBlock MaXum I/O Blocks

1792D-12BT4PE



Input Micro-Connector

(view into socket)
Pin 1 Sensor Source voltage
Pin 2 Input B
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 Physical Earth

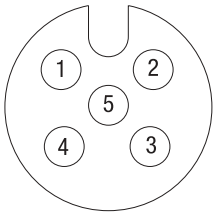


Output Micro-Connector

(view into socket)
Pin 1 Not Used
Pin 2 Output B
Pin 3 Auxiliary Power Ground
Pin 4 Output A
Pin 5 Physical Earth

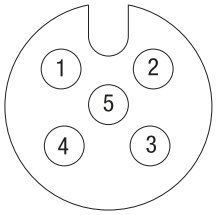
[1]Logic Ground is approximately 0.4V above DeviceNet V- measured at the module.

1792D-12BVT4D



Input M icro- Conn ector
(View into Socket)

Pin 1 Sensor Source voltage
Pin 2 Input B
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 Not Used

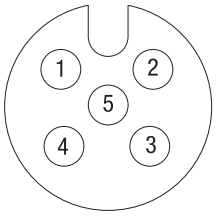


Output Micr o-C onnect or
(View into Socket)

Pin 1 Not Used
Pin 2 Output B
Pin 3 Auxiliary Power Ground
Pin 4 Output A
Pin 5 Not Used

[1]Logic Ground is approximately 0.4V above DeviceNet V- measured at the module.

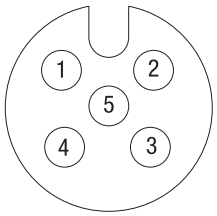
1792D-16BVTOCD



Input Micro Connector
(View into Socket)
Pin 1 Sensor Source Voltage A
Pin 2 Input B
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 Sensor Source Voltage B

[1]Logic Ground is approximately 0.4V above DeviceNet V-measured at the module.

1792D-16BVT0D

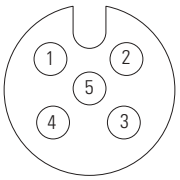


Input Micro Connector
(View into Socket)
Pin 1 Sensor Source Voltage
Pin 2 Input B
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 Not Used

1Logic Ground is approximately 0.4V above DeviceNet V-measured at the module.

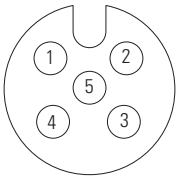
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1792D-2BVA2D



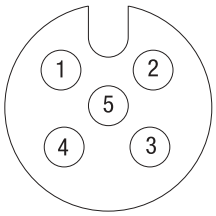
Input Micro Connector
(View into Socket)
Pin 1 Sensor Source Voltage
Pin 2 Alarm
Pin 3 Return Logic Ground[1]
Pin 4 Input
Pin 5 Not Used

[1](Logic Ground is approximately 0.4V above DeviceNet V-measured at the module).



Output Micro Connector
(View into Socket)
Pin 1 Not used
Pin 2 Not used
Pin 3 Auxiliary Power Ground
Pin 4 Output
Pin 5 Not Used

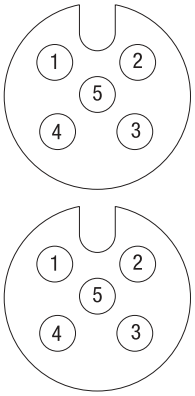
1792D-2BVOD



Input Micro Connector
(View into Sockets)
Pin 1 Sensor Source Voltage
Pin 2 Not Used
Pin 3 Return Logic Ground[1]
Pin 4 Input
Pin 5 Not Used

[1.] Logic Ground is approximately 0.4V above DeviceNet V-measured at the module.

1792D-4BV4D

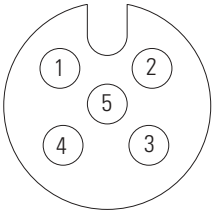


Input Micro-Connector
(View into Socket)
Pin 1 Sensor Source voltage
Pin 2 Not Used
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 Not Used

Output Micro-Connector
(View into Socket)
Pin 1 Not Used
Pin 2 Not Used
Pin 3 Auxiliary Power Ground
Pin 4 Output A
Pin 5 Not Used

[1]Logic Ground is approximately 0.4V above DeviceNet V- measured at the module.

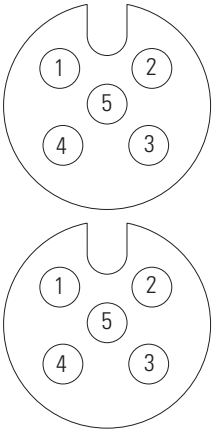
1792D-4BVOD



Input Micro-Connector
(View into Socket)
Pin 1 Sensor Source Voltage
Pin 2 Not Used
Pin 3 Return Logic Ground[1]
Pin 4 Input
Pin 5 Not Used

[1.] Logic Ground is approximately 0.4V above DeviceNet V-measured at the module.

1792D-4BVT4D



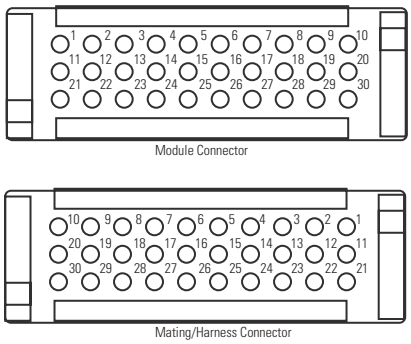
Input Micro-Connector
(View into Sockets)
Pin 1 Sensor Source Voltage
Pin 2 Input B
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 Not Used

Output Micro-Connector
(View into Sockets)
Pin 1 Not Used
Pin 2 Output B
Pin 3 Auxiliary Power Ground
Pin 4 Output A
Pin 5 Not Used

[1] Logic Ground is approximately 0.4V above DeviceNet V-measured at the module.

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1792D-88HC

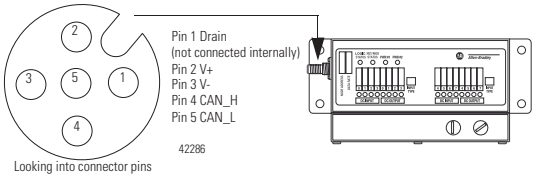


Pin Number	Signal
1	PWR1+
2	IN_0 (GRP 1)
3	IN_1 (GRP 1)
4	IN_2 (GRP 1)
5	IN_3 (GRP 1)
6	IN_0 (GRP 2)
7	IN_1 (GRP 2)
8	IN_2 (GRP 2)
9	IN_3 (GRP 2)
10	PWR 2+
11	PWR 1+
12	PWR 1-
13	PWR 1-
14	PWR 1-
15	PWR 1-

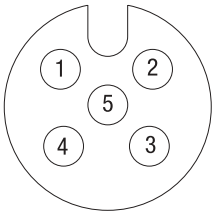
Pin Number	Signal
16	PWR 2-
17	PWR 2-
18	PWR 2-
19	PWR 2-
20	PWR 2+
21	PWR 1+
22	OUT_0 (GRP 1)
23	OUT_1 (GRP 1)
24	OUT_2 (GRP 1)
25	OUT_3 (GRP 1)
26	OUT_0 (GRP 2)
27	OUT_1 (GRP 2)
28	OUT_2 (GRP 2)
29	OUT_3 (GRP 2)
30	PWR 2+

Connect the DeviceNet Cable to the Module

Connect the DeviceNet wiring to the 5-pin micro-connector on the module. The micro-connector pinout is shown below.



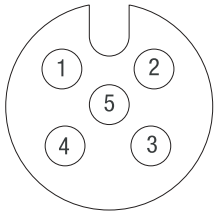
1792D-8BIO8E



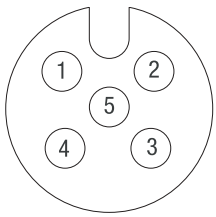
Input/ Output Micro-Connector
(View into Socket)
Pin 1 Sensor Source Voltage
Pin 2 Output B
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 Not Used

1Logic Ground is approximately 0.4V above DeviceNet V-measured at the module.

1792D-8BT8PE



Input Micro-Connector
(view into socket)
Pin 1 Sensor Source voltage
Pin 2 Input B
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 PE

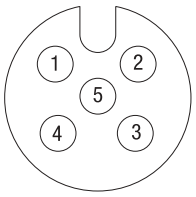


Output Micro-Connector
(view into socket)
Pin 1 Not Used
Pin 2 Output B
Pin 3 Auxiliary Power Ground
Pin 4 Output A
Pin 5 PE

[1]Logic Ground is approximately 0.4V above DeviceNet V- measured at the module.

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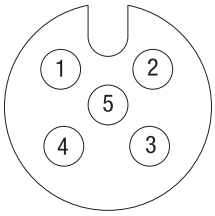
1792D-8BV0D



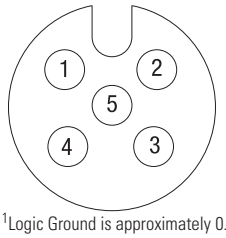
Input Micro-Connector
(View into Socket)
Pin 1 Sensor Source voltage
Pin 2 Not Used
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 Not Used

[1]Logic Ground is approximately 0.4V above DeviceNet V- measured at the module.

1792D-8BVT8CD



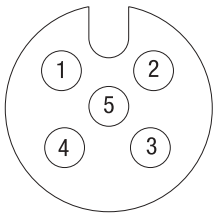
Input Micro-Connector
(View into Socket)
Pin 1 Sensor Source voltage A
Pin 2 Input B
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 Sensor Source voltage B



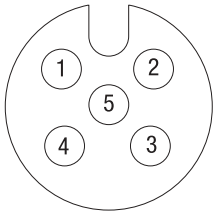
Output Micro-Connector
(View into Socket)
Pin 1 Not Used
Pin 2 Output B
Pin 3 Auxiliary Power Ground
Pin 4 Output A
Pin 5 Not Used

[1]Logic Ground is approximately 0.4V above DeviceNet V- measured at the module.

1792D-8BVT8D



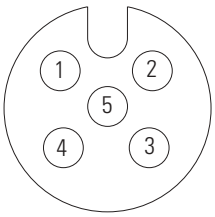
Input Micro-Connector
(View into Socket)
Pin 1 Sensor Source voltage
Pin 2 Input B
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 Not Used



Output Micro-Connector
(View into Socket)
Pin 1 Not Used
Pin 2 Output B
Pin 3 Auxiliary Power Ground
Pin 4 Output A
Pin 5 Not Used

[1]Logic Ground is approximately 0.4V above DeviceNet V- measured at the module.

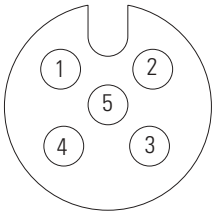
1792D-8BVTOD



Input Micro-Connector
(View into Sockets)
Pin 1 Sensor Source Voltage
Pin 2 Input B
Pin 3 Return Logic Ground[1]
Pin 4 Input A
Pin 5 Not Used

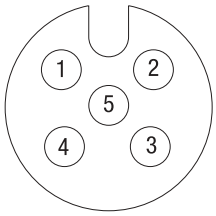
[1]. Logic Ground is approximately 0.4V above DeviceNet V-measured at the module.

1792D-OB4D



Micro-Connector
(View into Sockets)
Pin 1 Not Used
Pin 2 Not Used
Pin 3 Auxiliary Power Ground
Pin 4 Output
Pin 5 Not Used

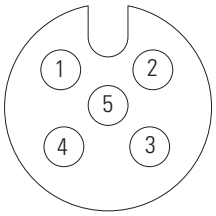
1792D-OB8D



Output Micro-Connector
(View into Sockets)
Pin 1 Not Used
Pin 2 Not Used
Pin 3 Auxiliary Power Ground
Pin 4 Output A
Pin 5 Not Used

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1792D-OVT16E

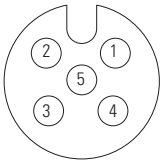


Micro-Connector
(View into Sockets)
Pin 1 Auxiliary +24V dc
Pin 2 Output B
Pin 3 Not used
Pin 4 Output A
Pin 5 Not Used

Cable Bases

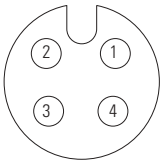
1792D-CB12

DeviceNet Male Connector



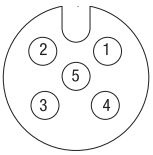
Pin 1 Drain
Pin 2 V+
Pin 3 V-
Pin 4 CAN_H
Pin 5 CAN_L

Auxilary Output Male Connector



Pin 1 24Vdc
Pin 2 24Vdc
Pin 3 Return
Pin 4 Return

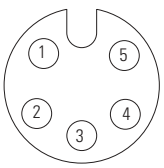
1792D-CB12JP



Pin 1 Drain
Pin 2 V+
Pin 3 V-
Pin 4 CAN_H
Pin 5 CAN_L

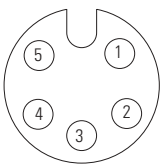
1792D-CB18

DeviceNet In Connector (looking into pins)



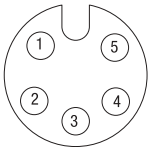
Pin 1 Drain
Pin 2 V+
Pin 3 V-
Pin 4 CAN_H
Pin 5 CAN_L

DeviceNet Out Connector (looking into sockets)



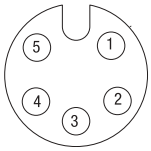
1792D-CB18JP

DeviceNet In (pins)



Pin 1 Drain
Pin 2 V+
Pin 3 V-
Pin 4 CAN_H
Pin 5 CAN_L

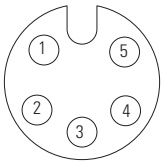
DeviceNet Out (sockets)



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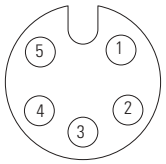
1792D-CB18P

DeviceNet In Connector (looking into pins)

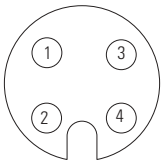


Pin 1 Drain
Pin 2 V+
Pin 3 V-
Pin 4 CAN_H
Pin 5 CAN_L

DeviceNet Out Connector (looking into sockets)

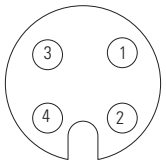


Auxiliary Output Power In Connector (looking into pins)



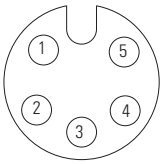
Pin 1 24Vdc
Pin 2 Not Used
Pin 3 Not Used
Pin 4 Return

Auxiliary Output Power In Connector (looking into sockets)



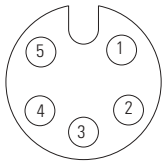
1792D-CB18PT

DeviceNet In Connector (looking into pins)

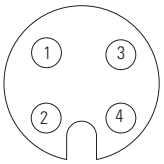


Pin 1 Drain
Pin 2 V+
Pin 3 V-
Pin 4 CAN_H
Pin 5 CAN_L

DeviceNet Out Connector (looking into sockets)

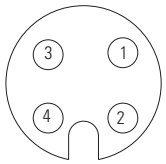


Auxiliary Output Power In Connector (looking into pins)



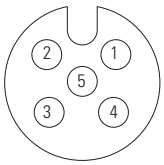
Pin 1 24Vdc
Pin 2 Not Used
Pin 3 Not Used
Pin 4 Return

Auxiliary Output Power In Connector (looking into sockets)



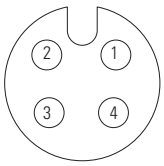
1792D-CBFM

DeviceNet Male Connector



Pin 1 Drain
Pin 2 V+
Pin 3 V-
Pin 4 CAN_H
Pin 5 CAN_L

Auxilary Output Male Connector

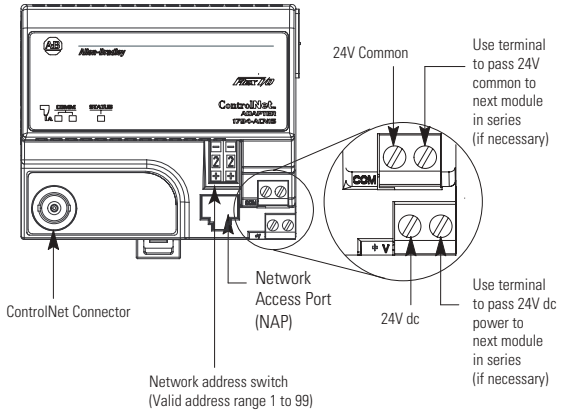


Pin 1 24Vdc
Pin 2 24Vdc
Pin 3 Return
Pin 4 Return

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1794 FLEX I/O Modules

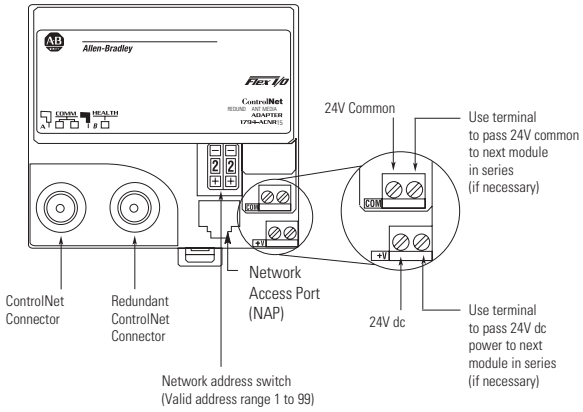
1794-ACN15, 1794-ACN15K



WARNING

If you connect or disconnect the ControlNet cable with power applied to the adapter or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

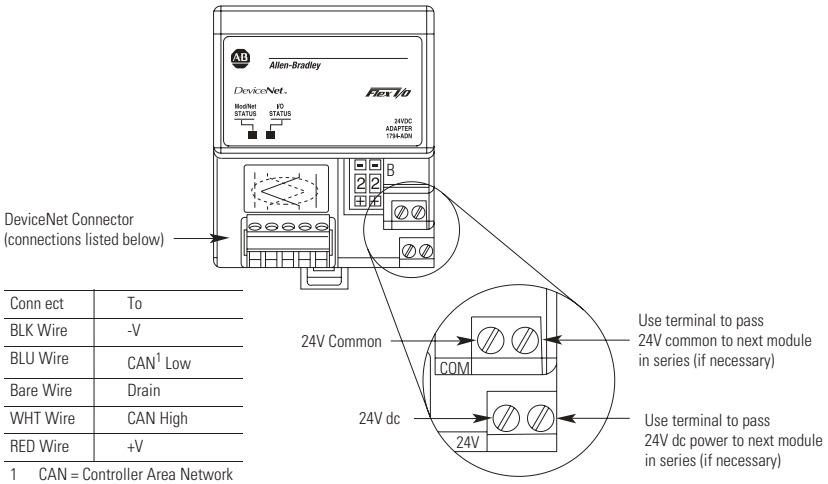
1794-ACNR15, 1794-ACNR15K



WARNING

If you connect or disconnect the ControlNet cable with power applied to the adapter or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

1794-ADN, 1794-ADNK



Conn ect	To
BLK Wire	-V
BLU Wire	CAN[1] Low
Bare Wire	Drain
WHT Wire	CAN High
RED Wire	+V

1 CAN = Controller Area Network

ATTENTION

When connecting wiring, torque terminal screws D, E, F and G to 7 pound-inches (0.8Nm).

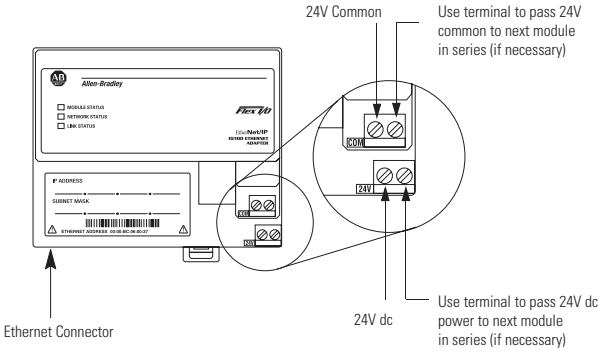
Power wiring must be less than 3 meters (9.8 ft) in length.

WARNING

If you connect or disconnect the DeviceNet cable with power applied to the adapter or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

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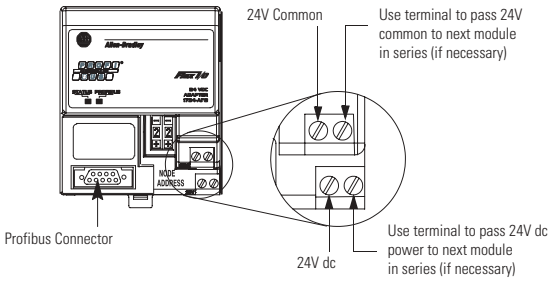
1794-AENT



WARNING

If you connect or disconnect the Ethernet cable with power applied to the adapter or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

1794-APB

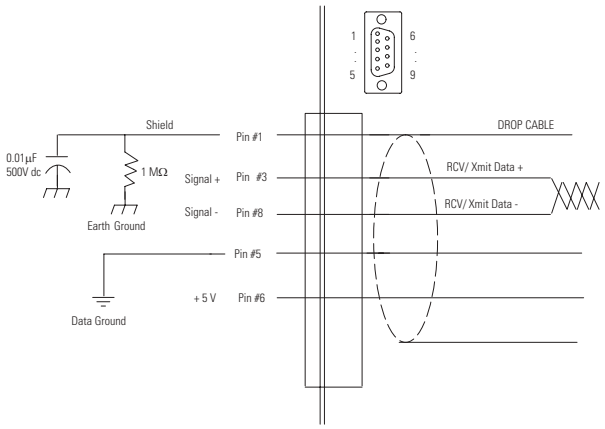


WARNING

When you connect or disconnect the PROFIBUS cable while power is on, an electrical arc can occur This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

Connect the PROFIBUS drop cable to the 9-pin D-shell connector according to the following pin assignments and graphic:

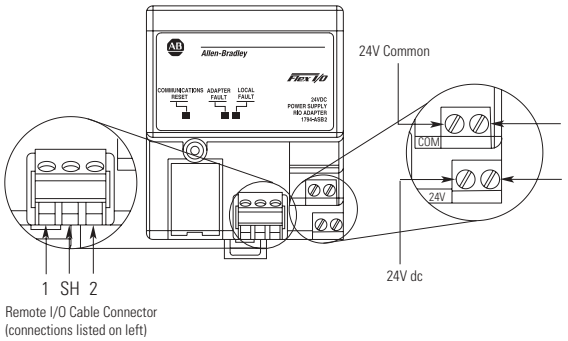
Pin #	RS-485 Reference	Signal	Description
1		Shield	Shield, RC to earth ground
2		RP	not used
3	B/B'	RXD/TXD-P	Receive/transmit data - P
4		CTNR-P	not used
5	C/C'	DGND	Data ground
6		VP	Voltage plus (+5V)
7		RP	not used
8	A/A'	RXD/TXD-N	Receive/transmit data - N
9		CTNR-N	not used
Metal Shell			Earth Ground



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1794-ASB, 1794-ASB2, 1794-ASBK, 1794-ASB2K

Connect:	To:
BLU Wire	1
Shield Wire	SH
CLR Wire	2



ATTENTION

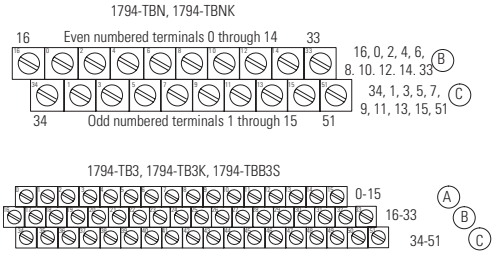
If this is the last adapter, you must terminate the remote I/O link here. Use a terminating resistor connected across terminals 1 and 2. Refer to your processor manual for information on the size of the resistor.

Power wiring must be less than 10 meters (33ft) in length.

WARNING

If you connect or disconnect the network cable with power applied to the adapter or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

1794-IA16

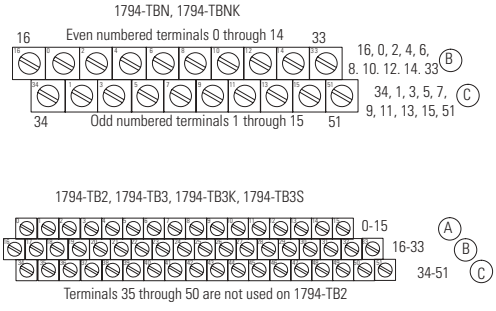


	Input Terminals		120V ac Supply [1]		Input Terminals		120V ac Supply [1]
Channel	TB3, TB3K, TB3S	TBN, TBNK	TB3, TB3K, TB3S	Channel	TB3, TB3K, TB3S	TBN, TBNK	TB3, TB3K, TB3S
0	A-0	B-0	C-35	8	A-8	B-8	C-43
1	A-1	C-1	C-36	9	A-9	C-9	C-44
2	A-2	B-2	C-37	10	A-10	B-10	C-45
3	A-3	C-3	C-38	11	A-11	C-11	C-46
4	A-4	B-4	C-39	12	A-12	B-12	C-47
5	A-5	C-5	C-40	13	A-13	C-13	C-48
6	A-6	B-6	C-41	14	A-14	B-14	C-49
7	A-7	C-7	C-42	15	A-15	C-15	C-50

A = Input terminals on the 1794-TB3, TB3K and TB3S. B0 - B14 and C1 -C15 are input terminals on the 1794-TBN and TBNK.
B = B-16 through B-33 are internally connected on the 1794-TB3, TB3K and -TB3S. B-16 and B-33 are internally connected on the 1794-TBN and TBNK. Connect 120V ac L2 to B-16.
C = C-34 through C-51 are internally connected on the 1794-TB3, TB3K and -TB3S. C-34 and C-51 are internally connected on the 1794-TBN and TBNK. Connect 120V ac L1 to C-34.

1 - Auxiliary terminal strips are required when using the 1794-TBN or TBNK.

1794-IA8, 1794-IA8K



Input Channel	1794-TB2, 1794-TB3, 1794-TB3K, 1794-TBB3S		1794-TBN, 1794-TBNK	
	Input Terminals	120V ac Supply	Input Terminals	120V ac Supply
0	A-0	A-1[1]/C-35	B-0	C-1[2]
1	A-2	A-3[1]/C-37	B-2	C-3[2]
2	A-4	A-5[1]/C-39	B-4	C-5[2]
3	A-6	A-7[1]/C-41	B-6	C-7[2]
4	A-8	A-9[1]/C-43	B-8	C-9[2]
5	A-10	A-11[1]/C-45	B-10	C-11[2]
6	A-12	A-13[1]/C-47	B-12	C-13[2]
7	A-14	A-15[1]/C-49	B-14	C-15[2]
A = input terminals B = common terminals C = power terminals (C-34 through C-51 for TB3, TB3K and TB3S; C-34 and C-51 for TB2)			B = even numbered terminals B-0 through B-14, ac common terminals B-16 and B-33 C = Power Terminals C-34 and C-51, and odd numbered terminals 1 through 15	

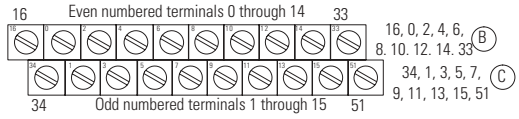
Connect 120V ac L2 (common) to B-16
Connect 120V ac L1 to C-34

1 A-1, 3, 5, 7, 9, 11, 13 and 15 on 1794-TB3, -TB3K, -TB3S, and -TB2 are internally connected in the module to 120V ac L1.
2 C-1, 3, 5, 7, 9, 11, 13 and 15 on 1794-TBN and TBNK are internally connected in the module to 120V ac L1.

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1794-IA8I

1794-TBN, 1794-TBNK



1794-TB2, 1794-TB3, 1794-TB3K, 1794-TBB3S



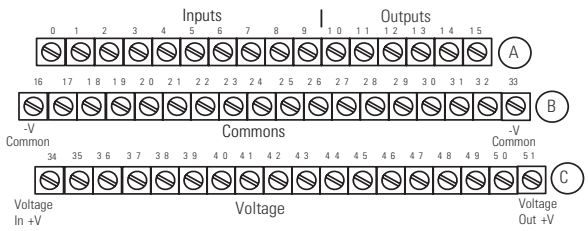
Terminals 35 through 50 are not used on 1794-TB2

Input Channel	1794-TB2, 1794-TB3, 1794-TB3K, 1794-TBB3S		1794-TBN, 1794-TBNK	
	Input Terminals	120V ac Common L2	Input Terminals	120V ac Common L2
0	A-0	A-1	B-0	C-1
1	A-2	A-3	B-2	C-3
2	A-4	A-5	B-4	C-5
3	A-6	A-7	B-6	C-7
4	A-8	A-9	B-8	C-9
5	A-10	A-11	B-10	C-11
6	A-12	A-13	B-12	C-13
7	A-14	A-15	B-14	C-15
A = even numbered input terminals 0 thru 14 for customer input connections; corresponding odd numbered 120V ac common L2 terminals 1 through 15 for customer connections from isolated power supply			B = even numbered input terminals 0 through 14 for customer input connections C = odd numbered terminals 1 through 15 for 120V ac L2 common connections from isolated power supply	

Auxiliary terminal strips are required to connect 120V ac L1 of each isolated power supply to the input device that it is driving.

1794-IB10XOB6

1794-TB3, 1794-TB3K, 1794-TB3S



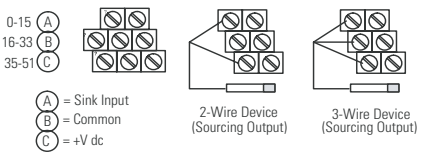
Connect +V to C-34

Connect +V common to B-16

Use B-33 and C-51 for daisy chaining to next terminal base unit

(1794-TB3 shown)

2 and 3-Wire Input Wiring



	Input [1]	Common	Supply
Sink Input Channel			
0	A-0	B-17	C-35
1	A-1	B-18	C-36
2	A-2	B-19	C-37
3	A-3	B-20	C-38
4	A-4	B-21	C-39
5	A-5	B-22	C-40
6	A-6	B-23	C-41
7	A-7	B-24	C-42
8	A-8	B-25	C-43
9	A-9	B-26	C-44
Source Output Channel			
0	A-10	B-27	C-45
1	A-11	B-28	C-46
2	A-12	B-29	C-47
3	A-13	B-30	C-48
4	A-14	B-31	C-49
5	A-15	B-32	C-50
+V dc	C-34 through C-51		
Common	B-16 through B-33		

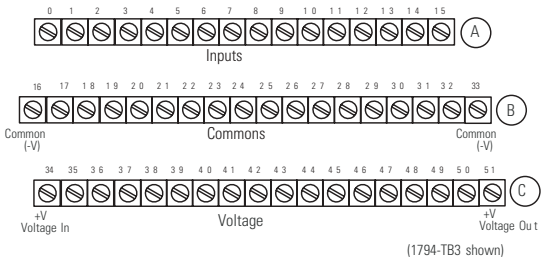
1. Two-wire input devices use input and supply terminals. Three-wire devices use input, common and supply terminals.

+V common internally connected to terminal 16 through 33.
+V dc power internally connected to terminal 34 through 51.

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1794-IB16, 1794-IB16K, 1794-IB8

1794-TB3, 1794-TB3K, 1794-TB3S



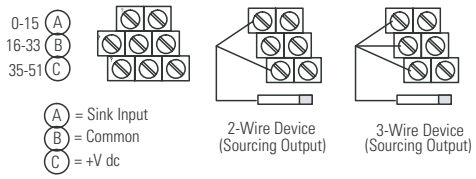
(1794-TB3 shown)

Connect +V to C-34

Connect +V common to B-16

Use B-33 and C-51 for daisy chaining to next terminal base unit

2 and 3-Wire Input Wiring



Input [1] Channel	Input Terminal	Supply Terminal	Common [2] Terminal
0	A-0	C-35	B-17
1	A-1	C-36	B-18
2	A-2	C-37	B-19
3	A-3	C-38	B-20
4	A-4	C-39	B-21
5	A-5	C-40	B-22
6	A-6	C-41	B-23
7	A-7	C-42	B-24
8	A-8	C-43	B-25
9	A-9	C-44	B-26
10	A-10	C-45	B-27
11	A-11	C-46	B-28
12	A-12	C-47	B-29
13	A-13	C-48	B-30
14	A-14	C-49	B-31
15	A-15	C-50	B-32
+V dc	C-34 through C-51		
Common	B-16 through B-33		

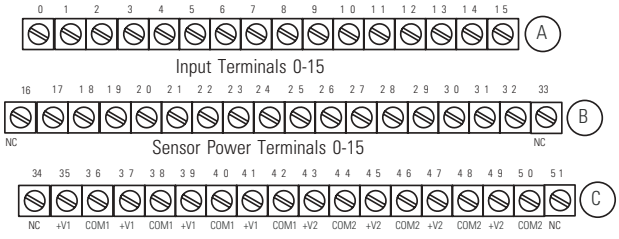
1. 1794-IB8 - Inputs 0 through 7; 1794-IB16 - Inputs 0 through 15

2. Two-wire input devices use input and supply terminals. Three-wire devices use input, common and supply terminals.

+V common internally connected to terminal 16 through 33.
+V dc power internally connected to terminal 34 through 51.

1794-IB16D

1794-TB32, -TB32S



(1794-TB32 shown)

+V2 = Terminals 43, 45, 47 and 49 -
Voltage applied to Inputs 0-15 and Sensor power 0-15

COM1, COM2 = Terminals 36, 38, 40, 42, 44, 46, 48 and 50 -
Common for inputs 0 through 15 and sensor power 0 through 15

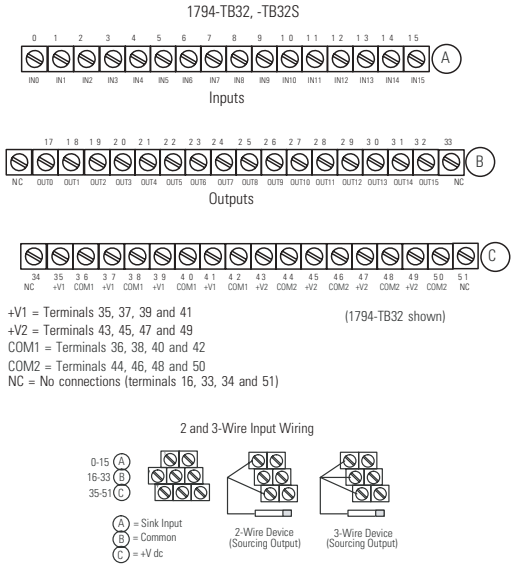
NC = No connections (terminals 16, 33, 34 and 51)

+V1 = Terminals 35, 37, 39 and 41 (not used)

Input Channel	Input Terminal	Sensor Power Terminal	Common	Supply
0	A-0	B-17	-V common connected to terminals 36, 38, 40, 42, 44, 46, 48 and 50	+V2 connected to terminals 43, 45, 47 and 49
1	A-1	B-18		
2	A-2	B-19		
3	A-3	B-20		
4	A-4	B-21		
5	A-5	B-22		
6	A-6	B-23		
7	A-7	B-24		
8	A-8	B-25		
9	A-9	B-26		
10	A-10	B-27		
11	A-11	B-28		
12	A-12	B-29		
13	A-13	B-30		
14	A-14	B-31		
15	A-15	B-32		
+V2 dc power	Power terminals 43, 45, 47 and 49 (power terminals are internally connected together in the module)			
COM dc	Common terminals 36, 38, 40, 42, 44, 46, 48 and 50 (common terminals are internally connected together in the module)			

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1794-IB16XOB16P

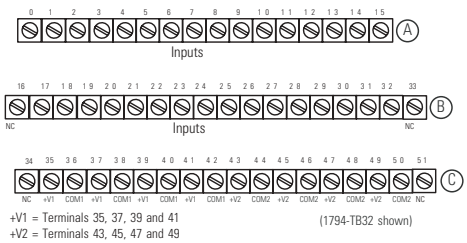


Input Channel	Input Terminal	Common	Supply[1]
0	A-0	V1 common connected to terminals 36, 38, 40 and 42	+V1 connected to terminals 35, 37, 39 and 41
1	A-1		
2	A-2		
3	A-3		
4	A-4		
5	A-5		
6	A-6		
7	A-7		
8	A-8		
9	A-9		
10	A-10		
11	A-11		
12	A-12		
13	A-13		
14	A-14		
15	A-15		
+V1 dc power	Power terminals 35, 37, 39 and 41		
Com1 dc Return	Common terminals 36, 38, 40 and 42		

Output Channel	Output Terminal	Common
0	B-17	V2 Return connected to terminals 44, 46, 48 and 50
1	B-18	
2	B-19	
3	B-20	
4	B-21	
5	B-22	
6	B-23	
7	B-24	
8	B-25	
9	B-26	
10	B-27	
11	B-28	
12	B-29	
13	B-30	
14	B-31	
15	B-32	
+V2 dc power	Power terminals 43, 45, 47 and 49	
Com2 dc Return	Common terminals 44, 46, 48 and 50	

1. 2-wire input devices use input and supply terminals; 3-wire devices use input, common and supply terminals.

1794-IB32



Input Channel	Input Terminal	Common	Supply[1]
0	A-0	V1 common connected to terminals 36, 38, 40 and 42	+V1 connected to terminals 35, 37, 39 and 41
1	A-1		
2	A-2		
3	A-3		
4	A-4		
5	A-5		
6	A-6		
7	A-7		
8	A-8		
9	A-9		
10	A-10		
11	A-11		
12	A-12		
13	A-13		
14	A-14		
15	A-15		
+V1 dc power	Power terminals 35, 37, 39 and 41		
Com1 dc Return	Common terminals 36, 38, 40 and 42		

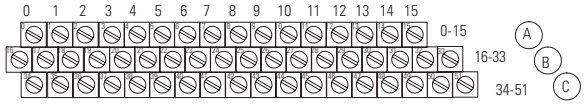
Input Channel	Input Terminal	Common	Supply[1]
16	B-17	V2 common connected to terminals 44, 46, 48 and 50	+V2 connected to terminals 43, 45, 47 and 49
17	B-18		
18	B-19		
19	B-20		
20	B-21		
21	B-22		
22	B-23		
23	B-24		
24	B-25		
25	B-26		
26	B-27		
27	B-28		
28	B-29		
29	B-30		
30	B-31		
31	B-32		
+V2 dc power	Power terminals 43, 45, 47 and 49		
Com2 dc Return	Common terminals 44, 46, 48 and 50		

1. 2-wire input devices use input and supply terminals; 3-wire devices use input, common and supply terminals.

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1794-IC16

1794-TB3, 1794-TB3K, 1794-TB3S



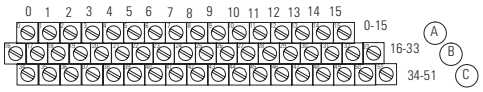
Connect +V to C-34
Connect +V common to B-16
Use B-33 and C-51 for daisy-chaining to the next terminal base unit.

1794-TB3, 1794-TB3K, 1794-TB3S							
Input Channel	Input Terminal	Supply Terminal	Common [1] Terminal	Input Channel	Input Terminal	Supply Terminal	Common [1] Terminal
0	A-0	C-35	B-17	8	A-8	C-43	B-25
1	A-1	C-36	B-18	9	A-9	C-44	B-26
2	A-2	C-37	B-19	10	A-10	C-45	B-27
3	A-3	C-38	B-20	11	A-11	C-46	B-28
4	A-4	C-39	B-21	12	A-12	C-47	B-29
5	A-5	C-40	B-22	13	A-13	C-48	B-30
6	A-6	C-41	B-23	14	A-14	C-49	B-31
7	A-7	C-42	B-24	15	A-15	C-50	B-32
Common	B-16 through B-33			+V dc	C-34 through C-51		

1. 2-wire devices use input and supply terminals; 3-wire input devices use input, common and supply terminals.

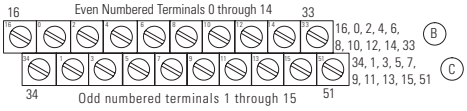
1794-ID2

1794-TB2, 1794-TB3, 1794-TB3K, 1794-TB3S



Terminals 35 through 50 are not used on 1794-TB2

1794-TBN, 1794-TBNF, 1794-TBNK



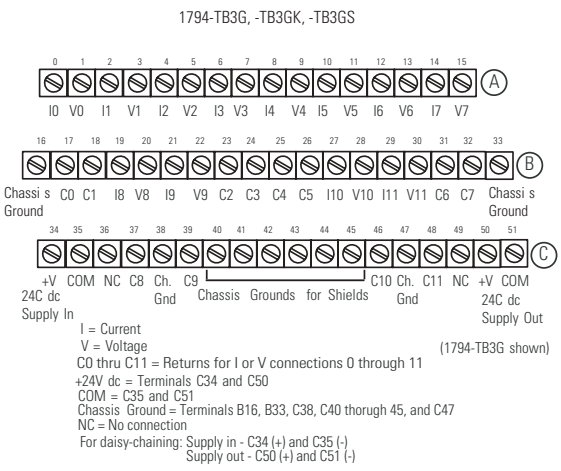
Connect +V to C-34
Connect +V common to B-16
Use B-33 and C-51 for daisy-chaining to the next terminal base unit.

	Terminal Base Units 1794-TB2, -TB3, -TB3K and -TB3S			Terminal Base Units [1] 1794-TBN, -TBNK and -TBNF		Terminal Base Units 1794-TB2, -TB3, -TB3K and -TB3S			Terminal Base Units [1] 1794-TBN, -TBNK and -TBNF
	Input	OV dc (common)	12/24V dc	Input		Input	OV dc (common)	12/24V dc	Input
	Pulse Counter Channel 0					Pulse Counter Channel 1			
A+	A-0	B-17	C-35	B-0	A+	A-8	B-25	C-43	B-8
A-	A-1	B-18	C-36	C-1	A-	A-9	B-26	C-44	C-9
B+	A-2	B-19	C-37	B-2	B+	A-10	B-27	C-45	B-10
B-	A-3	B-20	C-38	C-3	B-	A-11	B-28	C-46	C-11
Z+	A-4	B-21	C-39	B-4	Z+	A-12	B-29	C-47	B-12
Z-	A-5	B-22	C-40	C-5	Z-	A-13	B-30	C-48	C-13
G+	A-6	B-23	C-41	B-6	G+	A-14	B-31	C-49	B-14
G-	A-7	B-24	C-42	C-7	G-	A-15	B-32	C-50	C-15
Common	Terminals 16 and 33 (1794-TB2, -TBN, -TBNK and -TBNF) Terminals 16 through 33 (1794-TB3, -TB3K, -TB3S)								
+V dc	Terminals 34 and 51 (1794-TB2, -TBN, -TBNK and -TBNF) Terminals 34 through 51 (1794-TB3, -TB3K, -TB3S)								

1. Auxiliary terminal blocks are required when using these terminal base units.

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1794-IE12



ATTENTION

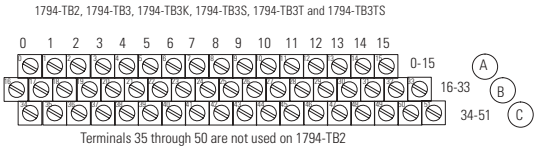
To reduce susceptibility to noise, power analog modules and digital modules from separate power supplies. Do not exceed a length of 33 ft (10m) for dc power cabling.

Do not daisy chain power or ground from this terminal base unit to any ac or dc digital module terminal base units.

Do not exceed a length of 33 ft (10m) for signal cabling.

Channel	Signal Type	Label Marking	1794-TB3G, -TB3GK, -TB3GS	
			Input	Common Terminal
Input 0	Current	I0	A-0	B-17
	Voltage	V0	A-1	
Input 1	Current	I1	A-2	B-18
	Voltage	V1	A-3	
Input 2	Current	I2	A-4	B-23
	Voltage	V2	A-5	
Input 3	Current	I3	A-6	B-24
	Voltage	V3	A-7	
Input 4	Current	I4	A-8	B-25
	Voltage	V4	A-9	
Input 5	Current	I5	A-10	B-26
	Voltage	V5	A-11	
Input 6	Current	I6	A-12	B-31
	Voltage	V6	A-13	
Input 7	Current	I7	A-14	B-32
	Voltage	V7	A-15	
Input 8	Current	I8	B-19	C-37
	Voltage	V8	B-20	
Input 9	Current	I9	B.21	C-39
	Voltage	V9	B-22	
Input 10	Current	I10	B-27	C-46
	Voltage	V10	B-28	
Input 11	Current	I11	B-29	C-48
	Voltage	V11	B-30	
-V dc Common	Terminals 35 and 51 are internally connected in the terminal base unit.			
+V dc Power	Terminals 34 and 50 are internally connected in the terminal base unit.			
Chassis Ground (Shield)	Terminals 16, 33, 38, 40 through 45, and 47 are internally connected to chassis ground.			

1794-IE4XOE2



ATTENTION

Only connect either a voltage input or a current input per channel, not both.

To reduce susceptibility to noise, power analog and digital modules from separate power supplies. Do not exceed a length of 3M (9.8 ft) for DC power cabling.

Connect +V to C-34
Connect +V common to B-16
Use B-33 and C-51 for daisy-chaining to the next terminal base unit.

		TB2, TB3, TB3K, TB3S, TB3T, TB3TS	TB2, TB3, TB3K, TB3S	TB3T, TB3TS				TB2, TB3, TB3K, TB3S, TB3T, TB3TS	TB3T, TB3TS
Channel	Signal Type	Input Terminals	Common Terminals		Shield	Channel	Signal Type	Output Terminals	Shield
In 0	Current	A-0	B-17	B-17	C-39	Out 0	Current Signal	A-8	C-43
	Voltage	A-1	B-18	B-17	C-39		Current Common	A-9[1]	C-43
In 1	Current	A-2	B-19	B-19	C-40		Voltage Signal	A-10	C-44
	Voltage	A-3	B-20	B-19	C-40		Voltage Common	A-11[1]	C-44
In 2	Current	A-4	B-21	B-21	C-41	Out 1	Current Signal	A-12	C-45
	Voltage	A-5	B-22	B-21	C-41		Current Common	A-13[1]	C-45
In 3	Current	A-6	B-23	B-23	C-42		Voltage Signal	A-14	C-46
	Voltage	A-7	B-24	B-23	C-42		Voltage Common	A-15[1]	C-46
Common for TB2, TB3, TB3K, TB3S: B-16 through B-33 Common for TB3T and TB3TS: B16, 17, 19, 21, 23, 25, 27, 29, 31 and 33.						+V dc Power for 1794-TB2: C-34 and C-51; +V dc Power for 1794-TB3, TB3K and TB3S: C-34 through C-51 +V dc Power for 1794-TB3T and -TB3TS: C-34, 35, 50 and 51			

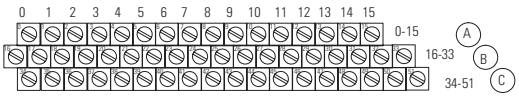
Connect any signal wiring shields to functional ground as near as possible to the module when using the 1794-TB2, -TB3, -TB3K, and -TB3S. With the 1794-TB3T and -TB3TS, use terminals C-39 through C-46.

1. A-9, A-11, A-13 and A-15 are internally connected in the module to +V dc common.

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1794-IE8, 1794-IE8K

1794-TB2, 1794-TB3, 1794-TB3K, 1794-TB3S, 1794-TB3T, 1794-TB3TS



Terminals 35 through 50 are not used on 1794-TB2

ATTENTION Only connect either a voltage input or a current input per channel, not both.

To reduce susceptibility to noise, power analog and digital modules from separate power supplies. Do not exceed a length of 3M (9.8 ft) for DC power cabling.

Connect +V to C-34
Connect +V common to B-16
Use B-33 and C-51 for daisy-chaining to the next terminal base unit.

		TB2, TB3, TB3K, TB3S, TB3T, TB3TS	TB2, TB3, TB3K, TB3S	TB3T, TB3TS				TB2, TB3, TB3K, TB3S, TB3T, TB3TS	TB2, TB3, TB3K, TB3S	TB3T, TB3TS	
Channel	Signal Type	Input Terminals	Common Terminals		Shield	Channel	Signal Type	Input Terminals	Common Terminals		Shield
0	Current	A-0	B-17	B-17	C-39	4	Current	A-8	B-25	B-25	C-43
	Voltage	A-1	B-18	B-17	C-39		Voltage	A-9	B-26	B-25	C-43
1	Current	A-2	B-19	B-19	C-40	5	Current	A-10	B-27	B-27	C-44
	Voltage	A-3	B-20	B-19	C-40		Voltage	A-11	B-28	B-27	C-44
2	Current	A-4	B-21	B-21	C-41	6	Current	A-12	B-29	B-29	C-45
	Voltage	A-5	B-22	B-21	C-41		Voltage	A-13	B-30	B-39	C-45
3	Current	A-6	B-23	B-23	C-42	7	Current	A-14	B-31	B-31	C-46
	Voltage	A-7	B-24	B-23	C-42		Voltage	A-15	B-32	B-31	C-46

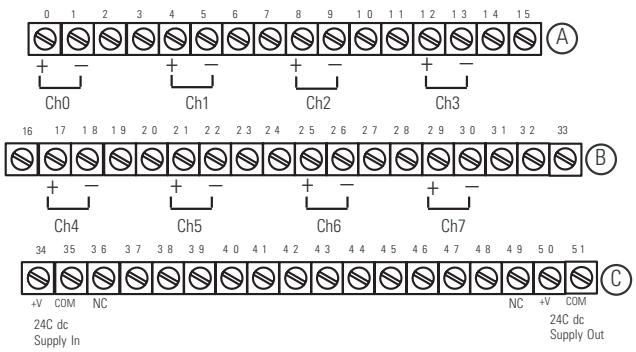
Common for 1794-TB2, -TB3S: B-16 through B-33
Common for 1794-TB3T and -TB3TS: B-16, 17, 19, 21, 23, 25, 27, 29, 31 and 33

+V dc Power for 1794-TB2: C-34 and C-51;
+V dc Power for 1794-TB3, TB3K and TB3S: C-34 through C-51
+V dc Power for 1794-TB3T and -TB3TS: C-34, 35, 50 and 51

Connect any signal wiring shields to functional ground as near as possible to the module when using the 1794-TB2, -TB3, -TB3K, and -TB3S. With the 1794-TB3T and -TB3TS, use terminals C-39 through C-46.

1794-IE8H

1794-TB3G, -TB3GK, -TB3GS (1794-TB3G shown)

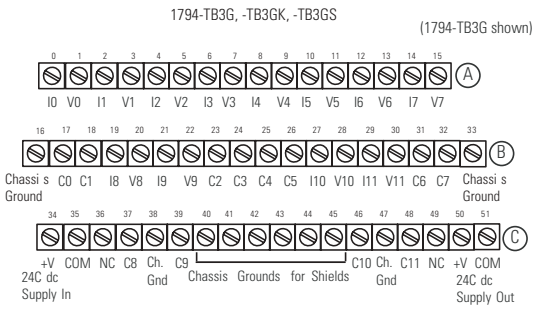


+24V dc = Terminals C-34 and C-50
COM = C-35 and C-51
NC = No connection
For daisy-chaining: Supply in - C-34 (+) and C-35 (-)
Supply out - C-50 (+) and C-51 (-)

Input	Input Source	Input Signal	Input Return	Input	Input Source	Input Signal	Input Return
Input 0	A-0	A-1	A-2	Input 4	B-17	B-18	B-19
Input 1	A-4	A-5	A-6	Input 5	B-21	B-20	B-23
Input 2	A-8	A-9	A-10	Input 6	B-25	B-26	B-27
Input 3	A-12	A-13	A-14	Input 7	B-29	B-30	B-31
+V	Terminals 34 and 50						
-V	Terminals 35 and 51						

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1794-IE8XOE4



I = Current
V = Voltage
C0 through C11 = Returns for I or V connections 0 through 11
+24V dc = Terminals C34 and C50
COM = C35 and C51
Chassis Ground = Terminals B16, B33, C38, C40 through 45, and C47
NC = No connection
For daisy-chaining: Supply in - C34 (+) and C35 (-), Supply out - C50(+) and C51 (-)

ATTENTION

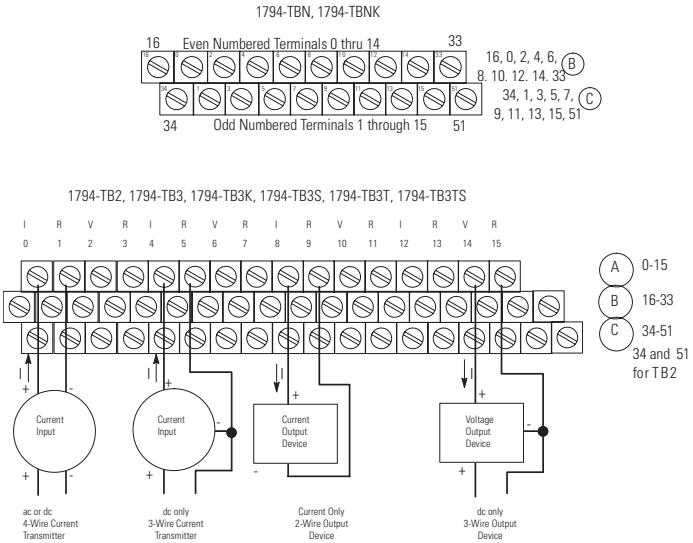
To reduce susceptibility to noise, power analog modules and digital modules from separate power supplies. Do not exceed a length of 33 ft (10m) for dc power cabling.

Do not daisy chain power or ground from this terminal base unit to any ac or dc digital module terminal base units.

Do not exceed a length of 33 ft (10m) for signal cabling.

Channel	Signal Type	Label Marking	1794-TB3G, -TB3GK, -TB3GS	
			Input/Output	Common Terminal
Input 0	Current	I0	A-0	B-17
	Voltage	V0	A-1	
Input 1	Current	I1	A-2	B-18
	Voltage	V1	A-3	
Input 2	Current	I2	A-4	B-23
	Voltage	V2	A-5	
Input 3	Current	I3	A-6	B-24
	Voltage	V3	A-7	
Input 4	Current	I4	A-8	B-25
	Voltage	V4	A-9	
Input 5	Current	I5	A-10	B-26
	Voltage	V5	A-11	
Input 6	Current	I6	A-12	B-31
	Voltage	V6	A-13	
Input 7	Current	I7	A-14	B-32
	Voltage	V7	A-15	
Output 0	Current	I8	B-19	C-37
	Voltage	V8	B-20	
Output 1	Current	I9	B-21	C-39
	Voltage	V9	B-22	
Output 2	Current	I10	B-27	C-46
	Voltage	V10	B-28	
Output 3	Current	I11	B-29	C-48
	Voltage	V11	B-30	
-V dc Common	Terminals 35 and 51 are internally connected in the terminal base unit.			
+V dc Power	Terminals 34 and 50 are internally connected in the terminal base unit.			
Chassis Ground (Shield)	Terminals 16, 33, 38, 40 through 45, and 47 are internally connected to chassis ground.			

1794-IF2XOF2I



ATTENTION

Only connect either a voltage signal or a current signal per channel, not both.

To reduce susceptibility to noise, power analog and digital modules from separate power supplies. Do not exceed a length of 3M (9.8 ft) for DC power cabling.

			1794-TB2, -TB3, -TB3K, -TB3S, -TB3T, -TB3TS		1794-TBN, -TBNK
Channel	Signal Type	Label Markings	Input/Output Terminal	Shield (TB3T/TB3TS)	Input Terminal
Input 0	Current Input	I0	A-0	C-39	B-0
	Current Return	I0 Ret	A-1		C-1
	Voltage Input	V0	A-2	C-40	B-2
	Voltage Return	V0 Ret	A-3		C-3
Input 1	Current Input	I1	A-4	C-41	B-4
	Current Return	I1 Ret	A-5		C-5
	Voltage Input	V1	A-6	C-42	B-6
	Voltage Return	V1 Ret	A-7		C-7
Output 0	Current Output	I0	A-8	C-43	B-8
	Current Return	I0 Ret	A-9		C-9
	Voltage Output	V0	A-10	C-44	B-10
	Voltage Return	V0 Ret	A-11		C-11
Output 1	Current I Output	I1	A-12	C-45	B-12
	Current Return	I1 Ret	A-13		C-13
	Voltage Output	V1	A-14	C-46	B-14
	Voltage Return	V1 Ret	A-15		C-15
Common	TB2, TB3, TB3K TB3S: Terminals 16 through 33 are internally connected in the terminal base unit. TB3T, TB3TS: Terminals 16, 17, 19, 21, 23, 25, 27, 29, 31, and 33 are internally connected in the terminal base unit TBN, TBNK: Terminals 16 and 33 are internally connected in the terminal base unit.				
+V dc	TB2, TBN, TBNK: Terminals 34 and 51 are internally connected in the terminal base unit. TB3, TB3K, TB3S: Terminals 34 through 51 are internally connected in the terminal base unit. TB3T, TB3TS: Terminals 34, 35, 50, and 51 are internally connected in the terminal base unit				
Chassis Gnd	TB3T, TB3TS: Terminals 39 through 46 are internally connected to chassis gnd				

Connect any signal wiring shields to functional ground as near as possible to the module when using the 1794-TB2, -TB3, -TB3K, and -TB3S. With the 1794-TB3T and -TB3TS, use terminals C-39 through C-46 for signal wiring shields.
Connect +V to C-34.
Connect +V common to B-16.
Use B-33 and C-51 for daisy chaining to the next terminal base unit.

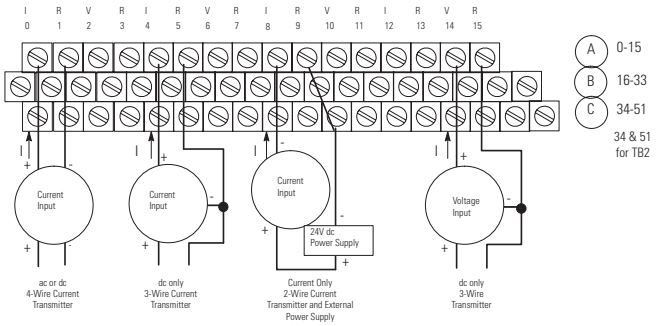
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1794-IF4I

1794-TBN, 1794-TBNK



1794-TB2, 1794-TB3, 1794-TB3K, 1794-TB3S, 1794-TB3T, 1794-TB3TS



ATTENTION

Only connect either a voltage input or a current input per channel, not both.

To reduce susceptibility to noise, power analog and digital modules from separate power supplies. Do not exceed a length of 3M (9.8 ft) for DC power cabling.

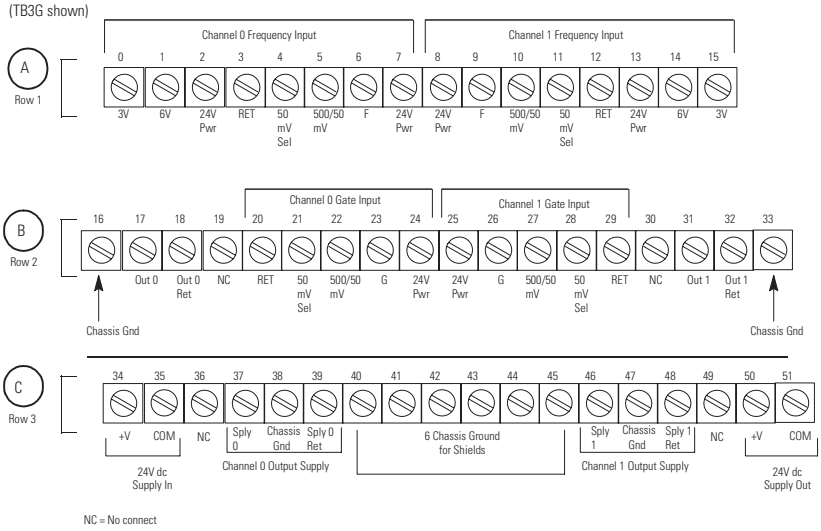
	1794-TB2, -TB3, -TB3K, -TB3S, -TB3T, -TB3TS				1794-TBN, -TBNK
Input Channel	Signal Type	Label Markings	Input Terminal	Shield (TB3T/TB3TS)	Input Terminal
0	Current Input	I0	A-0	C-39	B-0
	Current Return	I0 Ret	A-1		C-1
	Voltage Input	V0	A-2	C-40	B-2
	Voltage Return	V0 Ret	A-3		C-3
1	Current Input	I1	A-4	C-41	B-4
	Current Return	I1 Ret	A-5		C-5
	Voltage Input	V1	A-6	C-42	B-6
	Voltage Return	V1 Ret	A-7		C-7
2	Current Input	I2	A-8	C-43	B-8
	Current Return	I2 Ret	A-9		C-9
	Voltage Input	V2	A-10	C-44	B-10
	Voltage Return	V2 Ret	A-11		C-11
3	Current Input	I3	A-12	C-45	B-12
	Current Return	I3 Ret	A-13		C-13
	Voltage Input	V3	A-14	C-46	B-14
	Voltage Return	V3 Ret	A-15		C-15
Common	TB2, TB3, TB3K, TB3S: Terminals 16 through 33 are internally connected in the terminal base unit TB3T, TB3TS: Terminals 16, 17, 19, 21, 23, 25, 27, 29, 31, and 33 are internally connected in the terminal base unit TBN, TBNK: Terminals 16 and 33 are internally connected in the terminal base unit				
+V dc	TB2,TBN, TBNK: Terminals 34 and 51 are internally connected in the terminal base unit TB3, TB3K, TB3S: Terminals 34 through 51 are internally connected in the terminal base unit TB3T, TB3TS: Terminals 34, 35, 50, and 51 are internally connected in the terminal base unit				
Chassis Gnd	TB3T, TB3TS: Terminals 39 through 46 are internally connected to chassis gnd				

Connect any signal wiring shields to functional ground as near as possible to the module when using the 1794-TB2, -TB3, -TB3K, -TB3S, -TBN and -TBNK.
With the 1794-TB3T and -TB3TS, use terminals C-39 through C-46 for signal wiring shields.
Connect +V to C-34.
Connect +V common to B-16.
Use B-33 and C-51 for daisy chaining to the next terminal base unit.

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1794-IJ2, 1794-IJ2K

Connections are for 1794-TB3G, -TB3GK and -TB3GS (TB3G shown)



NC = No connect

All '24V Pwr' and 'RET' terminals are sourced power provided for the sensors. Do not connect external power to these terminals.

These outputs provide power for up to four 24Vdc devices at 15mA each--for a total of 60mA. Channel 0 '24V Pwr' and channel 1 '24V Pwr' are each current limited to 30mA maximum.

	Channel 0 Terminals[5]			Channel 1 Terminals[5]		
Type of Inputs	Power	Input	RET[6]	Power	Input	RET[6]
Frequency						
24V dc IEC 3 Proximity[1,2]	A-7	A-6	A-3	A-8	A-9	A-12
24V dc Contact Switch[3]	A-7	A-6	A-3	A-8	A-9	A-12
500mV ac Magnetic Pickup	A-7	A-5	A-3	A-8	A-10	A-12
50mV ac Magnetic Pickup[4]	A-7	A-5	A-3	A-8	A-10	A-12
6V ac Vortex	A-2	A-1	A-3	A-13	A-14	A-12
3V ac Vortex	A-2	A-0	A-3	A-13	A-15	A-12

1 As defined by standard IEC 1131-2.
2 RET not used on 2-wire devices.
3 Add external resistor from 24V to F or G for wire-off detection (0.4mA).
4 Add a jumper between 50mV and RET (Frequency - channel 0=4 to 3; channel 1=11 to 12). (Gate - channel 0=21 to 20; channel 1=28 to 29).
5 Connect cable shields to Chassis Gnd terminals.
6 All 4 RET terminals (ch 0 and 1, Freq, Gate) are internally connected together.

	Channel 0 Terminals[5]			Channel 1 Terminals[5]		
Type of Inputs	Power	Input	RET[6]	Power	Input	RET[6]
Gate						
24V dc IEC 3 Proximity[1,2]	B-24	B-23	B-20	B-25	B-26	B-29
24V dc Contact Switch[3]	B-24	B-23	B-20	B-25	B-26	B-29
500mV ac Magnetic Pickup	B-24	B-22	B-20	B-25	B-27	B-29
50mV ac Magnetic Pickup[4]	B-24	B-22	B-20	B-25	B-27	B-29

1 As defined by standard IEC 1131-2.
2 RET not used on 2-wire devices.
3 Add external resistor from 24V to F or G for wire-off detection (0.4mA).
4 Add a jumper between 50mV and RET (Frequency - channel 0=4 to 3; channel 1=11 to 12). (Gate - channel 0=21 to 20; channel 1=28 to 29).
5 Connect cable shields to Chassis Gnd terminals.
6 All 4 RET terminals (ch 0 and 1, Freq, Gate) are internally connected together.

	Channel 0 Terminals[1]				Channel 1 Terminals[1]			
Output Alarm Connections	Sply +	Sply RET	Out +	Out RET	Sply +	Sply RET	Out +	Out RET
Supply Connection	C-37	C-39			C-46	C-48		
Output Connection			B-17	B-18			B-31	B-32

1 Connect cable shields to Chassis Gnd terminals.

ATTENTION

To reduce the susceptibility to noise, power analog modules and digital modules from separate power supplies. Do not exceed a length of 10m (33ft) for dc power cabling.

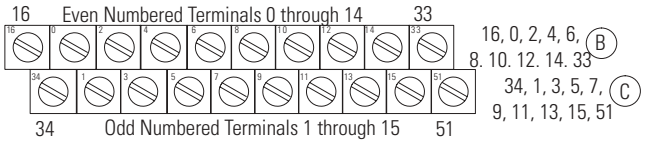
Do not daisy chain power or ground from this module to any ac or dc digital module terminal base unit.

Also, total current draw through the terminal base unit is limited to 10A. Separate power connections to the terminal base unit may be necessary.

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1794-IM8

1794-TBN, 1794-TBNK



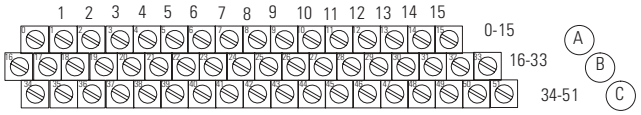
Connect 220V ac L2 to B-16; B-16 and B-33 are connected internally.
Connect 220V ac L1 to C-34; C-34 and C-51 are connected internally.
Use B-33 and C-51 for daisy chaining to the next terminal base unit.

Input Channel	Input Terminals	220V ac Supply[1]
0	B-0	C-1
1	B-2	C-3
2	B-4	C-5
3	B-6	C-7
4	B-8	C-9
5	B-10	C-11
6	B-12	C-13
7	B-14	C-15

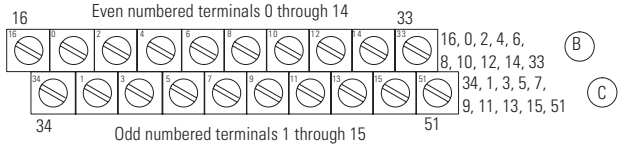
1. Terminals C-1, 3, 5, 7, 9, 11, 13 and 15 are connected internally to 220V ac L1.

1794-IP4

1794-TB3, -TB3K, -TB3S



1794-TBN, -TBNK, -TBNF



Connect +V to C-34
Connect +V common to B-16
Use B-33 and C-51 for daisy chaining to the next terminal base unit.

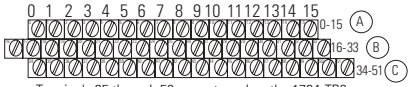
Channel	Signal Name[1]	Terminal Base Units 1794-TB3, -TB3K and -TB3S			Terminal Base Units[2] 1794-TBN, -TBNK -TBNF
		Input	0V dc (Common)	12/24V dc	Input
16-Bit Period Time Measurement					
0	N	A-0	B-17	C-35	B-0
	$\overline{N}$	A-1	B-18	C-36	C-1
1	N	A-2	B-19	C-37	B-2
	$\overline{N}$	A-3	B-20	C-38	C-3
2	N	A-4	B-21	C-39	B-4
	$\overline{N}$	A-5	B-22	C-40	C-5
3	N	A-6	B-23	C-41	B-6
	$\overline{N}$	A-7	B-24	C-42	C-7
32-Bit Period Time Measurement					
0	D	A-8	B-25	C-43	B-8
	$\overline{D}$	A-9	B-26	C-44	C-9
1	D	A-10	B-27	C-45	B-10
	$\overline{D}$	A-11	B-28	C-46	C-11
2	D	A-12	B-29	C-47	B-12
	$\overline{D}$	A-13	B-30	C-48	C-13
3	D	A-14	B-31	C-49	B-14
	$\overline{D}$	A-15	B-32	C-50	C-15
	Common	Terminals 16 through 33			Terminals 16 and 33
	+V dc	Terminals 34 through 51			Terminals 34 and 51

1 Any unused signals have to be connected to the associated common.
2 Auxilary terminal blocks are required when using these terminal base units.

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1794-IR8

1794-TB2, -TB3, -TB3K, -TB3S, -TB3T, -TB3TS



Terminals 35 through 50 are not used on the 1794-TB2

ATTENTION

Use the following Belden cables for connecting the RTD to the terminal base unit.

RTD Type	Length of Run/Humidity Level	Belden Cable Number
2-wire	Not applicable	9501
3-wire	Less than 100 ft (30.5m) with normal humidity	9533
	Over 100 ft (30.5m) or high humidity[1]	8350 3

1 Greater than 55% for more than 8 hours

To reduce the susceptibility to noise, power analog modules and digital modules from separate power supplies. Do not exceed a length of 3m (9.8ft) for dc power cabling.

Do not daisy chain power or ground from the RTD terminal base unit to any ac or dc digital module terminal base unit.

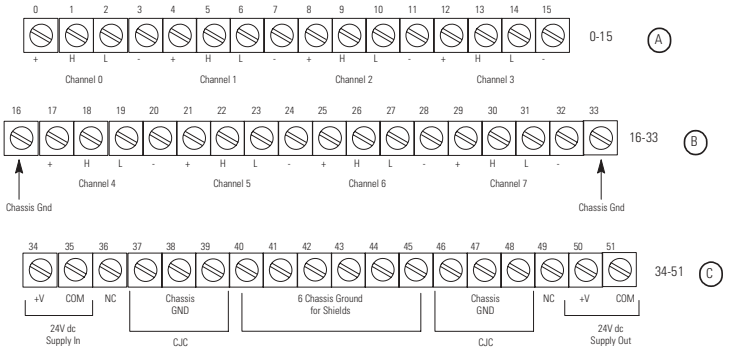
Channel	High Signal	Low Signal	Signal Return[1]	Shield Return	
				TB2, TB3, TB3S	TB3T, TB3TS
0	A-0	A-1	B-17	B-18	C-39
1	A-2	A-3	B-19	B-20	C-40
2	A-4	A-5	B-21	B-22	C-41
3	A-6	A-7	B-23	B-24	C-42
4	A-8	A-9	B-25	B-26	C-43
5	A-10	A-11	B-27	B-28	C-44
6	A-12	A-13	B-29	B-30	C-45
7	A-14	A-15	B-31	B-32	C-46
Common	B-16 through B-33 for 1794-TB2, -TB3, -TB3K and -TB3S B-16, B-17, B-19, B-21, B-23, B-25, B-27, B-29, B-31 and B-33 for 1794-TB3T and -TB3TS				
+V dc	C-34 through C-51 for 1794-TB3, -TB3K and -TB3S; C-34 and C-51 for 1794-TB2 C-34, C-35, C-50 and C-51 for 1794-TB3T and -TB3TS				

1. When using a 2-wire RTD, jumper the signal return to the low signal terminal.
2. B-18, B-20, B-22, B-24, B-26, B-28, B-30 and B-32 are tied to Common on 1794-TB2, -TB3, -TB3K, -TB3S; C-39 through C-46 are tied to chassis ground on 1794-TB3T and 1794-TB3ST

Connect +V to C-34
Connect +V common to B-16
Use B-33 and C-51 for daisy chaining to the next terminal base unit

1794-IRT8, 1794-IRT8K

Connections for 1794-TB3G, -TB3GK and -TB3GS (TB3G shown)

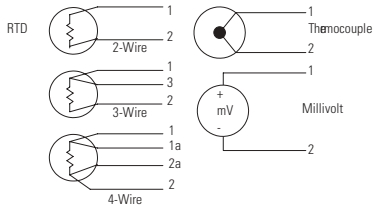


NC = No connect

ATTENTION

To reduce the susceptibility to noise, power analog modules and digital modules from separate power supplies. Do not exceed a length of 3m (9.8ft) for dc power cabling.

Do not daisy chain power or ground from this module to any ac or dc digital module terminal base unit.



Type of Input	Connect the following				
	H	L	+	-	Shield[1]
RTD - 2-wire			1	2	
RTD - 3-wire		3	1	2	
RTD - 4-wire	1a	2a	1	2	
Thermocouple		1		2	
Millivolt		1		2	

1 Terminals B-16, B-33 and C-40 through C-45 are Chassis Gnd for signal wire shields.

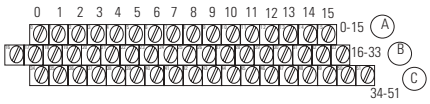
RTD or Thermocouple Channel	1794-TB3G, -TB3GK and -TB3GS Terminal Base Units			
	High Signal Terminal (H)	Low Signal Terminal (L)	RTD Source Current (+)	Signal Return (-)
0	A-1	A-2	A-0	A-3
1	A-5	A-6	A-4	A-7
2	A-9	A-10	A-8	A-11
3	A-13	A-14	A-12	A-15
4	B-18	B-19	B-17	B-20
5	B-22	B-23	B-21	B-24
6	B-26	B-27	B-25	B-28
7	B-30	B-31	B-29	B-32
+V dc	C-34 and 50 - Connect +V to C-34			
Common	C-35 and 51 - Connect +V common to C-35			

Input	CJC Sensor			
	+	Chassis Ground	–	CJC Tail[1]
CJC1	37	38	39	5 (22)
CJC2	46	47	48	12 (29)

1 - Use pins 5 and 12 when channels 0-7 are configured as thermocouples. Use pins 12 and 29 when only channels 4-7 are configured as thermocouples.

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1794-TB2, -TB3, -TB3K, -TB3S, -TB3T, -TB3TS



Terminals 35 through 50 are not used on the 1794-TB2

ATTENTION



To reduce the susceptibility to noise, power analog modules and digital modules from separate power supplies. Do not exceed a length of 3m (9.8ft) for dc power cabling.

Do not daisy chain power or ground from this terminal base unit to any ac or dc digital module terminal base unit.

1794-IT8

Channel	High Signal	Low Signal	Shield Return [1]	
			TB2, TB3, TB3K, TB3S	TB3T, TB3TS
0	A-0	A-1	B-17	C-39
1	A-2	A-3	B-19	C-40
2	A-4	A-5	B-21	C-41
3	A-6	A-7	B-23	C-42
4	A-8	A-9	B-25	C-43
5	A-10	A-11	B-27	C-44
6	A-12	A-13	B-29	C-45
7	A-14	A-15	B-31	C-46
Common	B-16 through B-33 for 1794-TB2, -TB3, -TB3K and -TB3S B-16, B-17, B-19, B-21, B-23, B-25, B-27, B-29, B-31 and B-33 for 1794-TB3T and -TB3TS			
+V dc	C-34 through C-51 for 1794-TB3, -TB3K and -TB3S; C-34 and C-51 for 1794-TB2 C-34, C-35, C-50 and C-51 for 1794-TB3T and -TB3TS			

1. B-17, B-19, B-21, B-23, B-25, B-27, B-29 and B-31 are tied to Common on 1794-TB2, -TB3, -TB3S; C-39 through C-46 are tied to chassis ground on 1794-TB3T and 1794-TB3TS

Use 1794-TB3T or -TB3TS for thermocouple or millivolt inputs. Use 1794-TB2, -TB3 and -TB3S for millivolt inputs only.
Connect +V to C-34.
Connect +V common to B-16.
Use B-33 and C-51 for daisy chaining to the next terminal base unit.

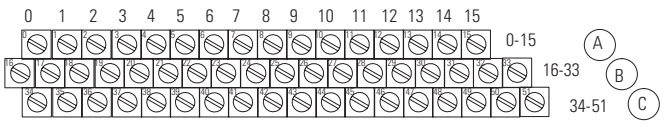
1794-TG3T and 1794-TB3TS

Input	CJC Sensor			
	+	Chassis Ground	–	CJC Tail
CJC1	36	37	38	A0 through A7 (any terminal)
CJC2	47	48	49	A8 through A15 (any terminal)

The tail of the cold junction compensator shares a terminal with an input.

1794-IV16

1794-TB2, -TB3, -TB3K, -TB3S



Terminals 35 through 50 are not used on the 1794-TB2

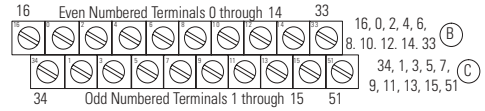
1794-TB2, -TB3, -TB3K, -TB3S					
Input Channel	Input Terminal	Common Terminal	Input Channel	Input Terminal	Common Terminal
0	A-0	B-17	8	A-8	B-25
1	A-1	B-18	9	A-9	B-26
2	A-2	B-19	10	A-10	B-27
3	A-3	B-20	11	A-11	B-28
4	A-4	B-21	12	A-12	B-29
5	A-5	B-22	13	A-13	B-30
6	A-6	B-23	14	A-14	B-31
7	A-7	B-24	15	A-15	B-32
Common	B-16 through B-33		+V dc	C-34 through C-51 (C-34 and C-51 for TB2)	

Connect +V to C-34.
Connect +V common to B-16.
Use B-33 and C-51 for daisy chaining to the next terminal base unit.

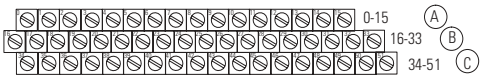
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1794-OA16

1794-TBN, -TBNK



1794-TB2, -TB3, -TB3K, -TB3S



Terminals 35 through 50 are not used on 1794-TB2

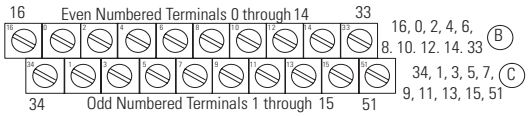
	Output Terminals		120V ac Common[1]		Output Terminals		120V ac Common[1]
Channel	1794-TB2, -TB3, -TB3K, -TB3S	1794-TBN, -TBNK	1794-TB2, -TB3, -TB3K, -TB3S	Channel	1794-TB2, -TB3, -TB3K, -TB3S	1794-TBN, -TBNK	1794-TB2, -TB3, -TB3K, -TB3S
0	A-0	B-0	B-17	8	A-8	B-8	B-25
1	A-1	C-1	B-18	9	A-9	C-9	B-26
2	A-2	B-2	B-19	10	A-10	B-10	B-27
3	A-3	C-3	B-20	11	A-11	C-11	B-28
4	A-4	B-4	B-21	12	1-12	B-12	B-29
5	A-5	C-5	B-22	13	A-13	C-13	B-30
6	A-6	B-6	B-23	14	A-14	B-14	B-31
7	A-7	C-7	B-24	15	A-15	C-15	B-32

For TB2, -TB3, -TB3K and -TB3S:
A = Output terminals.
B = B-17 through B-32 are connected internally to 120V ac common L2. Connect 120V ac common L2 to B-16.
C = Power terminals (C-34 and C-51 for TB2; C-34 through C-51 for TB3 and TB3S) are connected internally. Connect 120V ac L1 to terminal C-34.
For -TBN and -TBNK: Connect 120V ac common L2 to B-16. Connect 120V ac L1 to C-34.
B = Even numbered output terminals 0 through 14; B-16 and B-33 are connected internally.
C = Odd numbered output terminals 1 through 15; C-34 and C-51 are connected internally.

1. When using the 1794-TBN and -TBNK, an auxiliary terminal block must be used to provide connection points for each channel's second sensor wire, 120V ac common. Use B-33 and C-51 for daisy chaining to the next terminal base unit.

1794-OA8, 1794-OA8K

1794-TBN, -TBNK, -TBNF



1794-TB2, -TB3, -TB3K, -TB3S



Terminals 35 through 50 are not used on 1794-TB2

Output Channel	1794-TB2, -TB3, -TB3K, -TB3S		1794-TBN, -TBNK, -TBNF	
	Output Terminal	Common Terminal[1]	Output Terminal	Common Terminal[2]
0	A-0	A-1 /B-17	B-0	C-1
1	A-2	A-3 /B-19	B-2	C-3
2	A-4	A-5 /B-21	B-4	C-5
3	A-6	A-7 /B-23	B-6	C-7
4	A-8	A-9 /B-25	B-8	C-9
5	A-10	A-11 /B-27	B-10	C-11
6	A-12	A-13 /B-29	B-12	C-13
7	A-14	A-15 /B-31	B-14	C-15

A = output terminals
B = common terminals - 120V ac Common L2
C = Power terminal (C-34 through 51 for TB3, TB3K and TB3S) (C-34 and C-51 for TB2)

B = even numbered terminals 0 through 14, ac common L2 terminals 16 and 33
C = Power Terminals C-34 and C-51, and odd numbered common terminals 1 through 15

1. A-1, 3, 5, 7, 9, 11, 13 and 15 on 1794-TB3, -TB3K, -TB3S and -TB2 are connected internally to 120V ac common L2.
2. C-1, 3, 5, 7, 9, 11, 13 and 15 on 1794-TBN, -TBNK and -TBNF are connected internally to 120V ac common L2.

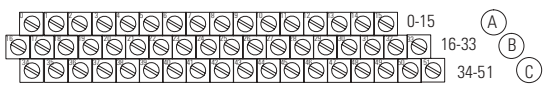
Connect 120V ac L1 to C-34.
Connect 120V ac L2 common to B-16.
Use B-33 and C-51 for daisy chaining to the next terminal base unit.

1794-OA8I

1794-TBN, -TBNK, -TBNF



1794-TB2, -TB3, -TB3K, -TB3S



Terminals 35 through 50 are not used on 1794-TB2

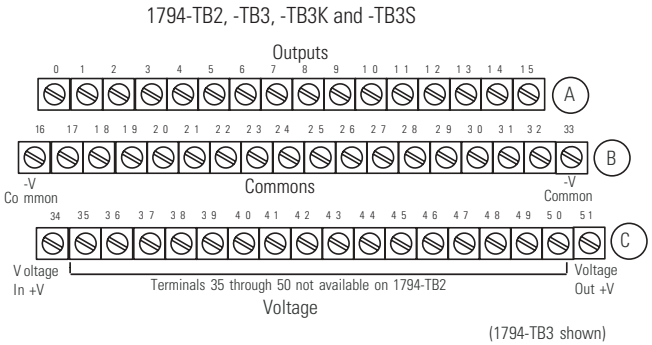
Output Channel	1794-TB2, -TB3, -TB3K, -TB3S		1794-TBN, -TBNK, -TBNF	
	Output Terminal	120V ac L1 Terminal	Output Terminal	120V ac L1 Terminal
0	A-0	A-1	B-0	C-1
1	A-2	A-3	B-2	C-3
2	A-4	A-5	B-4	C-5
3	A-6	A-7	B-6	C-7
4	A-8	A-9	B-8	C-9
5	A-10	A-11	B-10	C-11
6	A-12	A-13	B-12	C-13
7	A-14	A-15	B-14	C-15

A = even numbered output terminals 0 through 14
odd numbered 120V ac L1 terminals 1 through 15

B = even numbered output terminals 0 through 14
C = odd numbered 120V ac L1 terminals 1 through 15

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1794-OB16, 1794-OB16D, 1794-OB16P, 1794-OB16PK, 1794-OB8



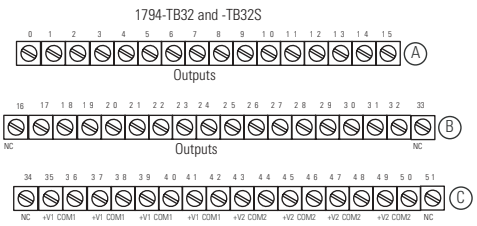
(1794-TB3 shown)

Connect +V to C-34.
Connect +V common to B-16.
Use B-33 and C-51 for daisy chaining to next terminal base unit.

Output[1] Channel	Output Terminal	Common Terminal
0	A-0	B-17
1	A-1	B-18
2	A-2	B-19
3	A-3	B-20
4	A-4	B-21
5	A-5	B-22
6	A-6	B-23
7	A-7	B-24
8	A-8	B-25
9	A-9	B-26
10	A-10	B-27
11	A-11	B-28
12	A-12	B-29
13	A-13	B-30
14	A-14	B-31
15	A-15	B-32
+V dc	C-34 and C-51 for 1794-TB2 C-34 through B-51 for the 1794-TB3, -TB3K and -TB3S	
Common	B-16 through B-33	

1. 1794-OB8 uses only outputs 0 through 7.

1794-OB32P



(1794-TB32 shown)

+V1 = Terminals 35, 37, 39 and 41
+V2 = Terminals 43, 45, 47 and 49
COM1 = Terminals 36, 38, 40 and 42
COM2 = Terminals 44, 46, 48 and 50
NC = No connections (terminals 16, 33, 34 and 51)

Output Channel	Output Terminal	Common
0	A-0	Connect common to terminals 36, 38, 40 and 42
1	A-1	
2	A-2	
3	A-3	
4	A-4	
5	A-5	
6	A-6	
7	A-7	
8	A-8	
9	A-9	
10	A-10	
11	A-11	
12	A-12	
13	A-13	
14	A-14	
15	A-15	

For Outputs 0 through 15, use +V1 and COM1	
+V1 dc power	Power terminals 35, 37, 39 and 41
Com1 dc Return	Common terminals 36, 38, 40 and 42

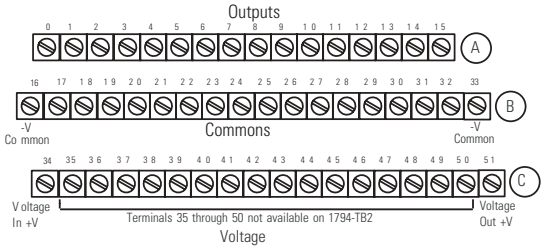
Output Channel	Output Terminal	Common
16	B-17	Connect common to terminals 44, 46, 48 and 50
17	B-18	
18	B-19	
19	B-20	
20	B-21	
21	B-22	
22	B-23	
23	B-24	
24	B-25	
25	B-26	
26	B-27	
27	B-28	
28	B-29	
29	B-30	
30	B-31	
31	B-32	

For Outputs 16 through 31, use +V2 and COM2	
+V2 dc power	Power terminals 43, 45, 47 and 49
Com2 dc Return	Common terminals 44, 46, 48 and 50

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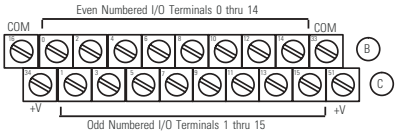
1794-OB8EP, 1794-OB8EPK

1794-TB2, -TB3, -TB3K, -TB3S



(1794-TB3 shown)

1794-TBN, -TBNK



Connect +V to C-34.
Connect +V common to B-16.
Use B-33 and C-51 for daisy chaining to next terminal base unit.

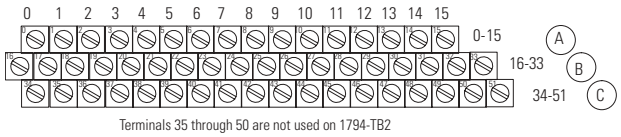
	1794-TB2, -TB3, -TB3K, -TB3S		1794-TBN, -TBNK	
Output Channel	Output Terminal	Common Terminal[1]	Output Terminal	Common Terminal[2]
0	A-0	A-1/B-17	B-0	C-1
1	A-2	A-3/B-18	B-2	C-3
2	A-4	A-5/B-19	B-4	C-5
3	A-6	A-7/B-20	B-6	C-7
4	A-8	A-9/B-21	B-8	C-9
5	A-10	A-11/B-22	B-10	C-11
6	A-12	A-13/B-23	B-12	C-13
7	A-14	A-15/B-24	B-14	C-15
+V dc	C-34 through C-51 for 1794-TB3, -TB3K and -TB3S C-34 and C-51 for 1794-TB2, -TBN and -TBNK			
Common	B-16 through B-33 for 1794-TB2, -TB3, -TB3K, -TB3S B-16 and B33 for 1794-TBN and -TBNK			

1. For the 1794-TB2, -TB3, -TB3K, -TB3S terminal bases, the A-1, A-3, A-5, A-7, A-9, A-11, A-13 and A-15 are connected internally to 24V dc common.

2. For the 1794-TBN and -TBNK terminal bases, the C-1, C-3, C-5, C-7, C-9, C-11, C-13 and C-15 are connected internally to 24V dc common.

1794-OC16

1794-TB2, -TB3, -TB3K, -TB3S



Terminals 35 through 50 are not used on 1794-TB2

Connect +V to C-34.
Connect +V common to B-16.
Use B-33 and C-51 for daisy chaining to next terminal base unit.

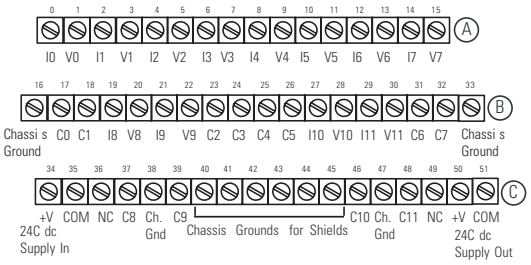
1794-TB2, -TB3, -TB3K, -TB3S					
Output Channel	Output Terminal	Common Terminal	Output Channel	Output Terminal	Common Terminal
0	A-0	B-17	8	A-8	B-25
1	A-1	B-18	9	A-9	B-26
2	A-2	B-19	10	A-10	B-27
3	A-3	B-20	11	A-11	B-28
4	A-4	B-21	12	A-12	B-29
5	A-5	B-22	13	A-13	B-30
6	A-6	B-23	14	A-14	B-31
7	A-7	B-24	15	A-15	B-32
Common	B-16 through B-33		+V dc	C-34 through C-51 (C-34 and C-51 for TB2)	

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1794-OE12

1794-TB3G, -TB3GK, -TB3GS

(1794-TB3G shown)



I = Current
V = Voltage
C0 through C11 = Returns for I or V connections 0 through 11
+24V dc = Terminals C34 and C50
COM = C35 and C51
Chassis Ground = Terminals B16, B33, C38, C40 through 45, and C47
NC = No connection
For daisy-chaining: Supply in - C34 (+) and C35 (-), Supply out - C50(+) and C51 (-)

ATTENTION



To reduce susceptibility to noise, power analog modules and digital modules from separate power supplies. Do not exceed a length of 33 ft (10m) for dc power cabling.

Do not daisy chain power or ground from this terminal base unit to any ac or dc digital module terminal base units.

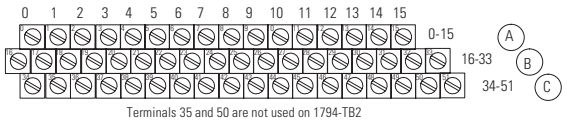
Do not exceed a length of 33 ft (10m) for signal cabling.

Channel	Signal Type	Label Marking	1794-TB3G, -TB3GK, -TB3GS	
			Output	Common Terminal
Output 0	Current	I0	A-0	B-17
	Voltage	V0	A-1	
Output 1	Current	I1	A-2	B-18
	Voltage	V1	A-3	
Output 2	Current	I2	A-4	B-23
	Voltage	V2	A-5	
Output 3	Current	I3	A-6	B-24
	Voltage	V3	A-7	
Output 4	Current	I4	A-8	B-25
	Voltage	V4	A-9	
Output 5	Current	I5	A-10	B-26
	Voltage	V5	A-11	
Output 6	Current	I6	A-12	B-31
	Voltage	V6	A-13	
Output 7	Current	I7	A-14	B-32
	Voltage	V7	A-15	
Output 8	Current	I8	B-19	C-37
	Voltage	V8	B-20	
Output 9	Current	I9	B.21	C-39
	Voltage	V9	B-22	
Output 10	Current	I10	B-27	C-46
	Voltage	V10	B-28	
Output 11	Current	I11	B-29	C-48
	Voltage	V11	B-30	
-V dc Common	Terminals 35 and 51 are internally connected in the terminal base unit.			
+V dc Power	Terminals 34 and 50 are internally connected in the terminal base unit.			
Chassis Ground (Shield)	Terminals 16, 33, 38, 40 through 45, and 47 are internally connected to chassis ground.			

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1794-OE4, 1794-OE4K

1794-TB2, -TB3, -TB3K, -TB3S, -TB3T, -TB3TS

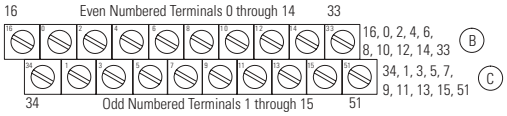


Terminals 35 and 50 are not used on 1794-TB2

		TB2, TB3, TB3K, TB3S, TB3T, TB3TS	TB3T, TB3TS			TB2, TB3, TB3K, TB3S, TB3T, TB3TS	TB3T, TB3TS
Output Channel	Signal Type	Output Terminal	Shield	Output Channel	Signal Type	Input Terminal	Shield
0	Current Signal	A-0	C-39	2	Current Signal	A-8	C-43
	Current Common	A-1[1]	C-39		Current Common	A-9[1]	C-43
	Voltage Signal	A-2	C-40		Voltage Signal	A-10	C-44
	Voltage Common	A-3[1]	C-40		Voltage Common	A-11[1]	C-44
1	Current Signal	A-4	C-41	3	Current Signal	A-12	C-45
	Current Common	A-5[1]	C-41		Current Common	A-13[1]	C-45
	Voltage Signal	A-6	C-42		Voltage Signal	A-14	C-46
	Voltage Common	A-7[1]	C-42		Voltage Common	A-15[1]	C-46
Common for TB2, TB3, TB3K, TB3S: B-16 through B-33 Common for TB3T and TB3TS: B-16, 17, 19, 21, 23, 25, 27, 29, 31, and 33				+ V dc Power for TB2: C-34 and C-51 + Vdc Power for TB3, TB3K and TB3S: C-34 through C-51 + V dc Power for TB3T and TB3TS: C-34, 35, 50, and 51			

1 A-1, 3, 5, 7, 9, 11, 13, and 15 are internally connected in the module to +V common.

1794-TBN and -TBNK



Output Channel	Signal Type	Output Terminal	Output Channel	Signal Type	Output Terminal
0	Current Signal	B-0	2	Current Signal	B-8
	Current Common	C-1		Current Common	C-9
	Voltage Signal	B-2		Voltage Signal	B-10
	Voltage Common	C-3		Voltage Common	C-11
1	Current Signal	B-4	3	Current Signal	B-12
	Current Common	C-5		Current Common	C-13
	Voltage Signal	B-6		Voltage Signal	B-14
	Voltage Common	C-7		Voltage Common	C-15
Common	B-16 and B-33		+ V dc	C34 and C-51	

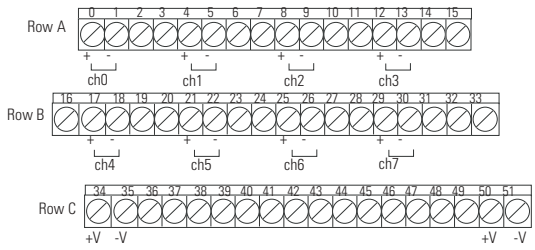
ATTENTION Only connect either a voltage signal or a current signal per channel, not both.

To reduce susceptibility to noise, power analog and digital modules from separate power supplies. Do not exceed a length of 3M (9.8 ft) for DC power cabling.

Connect +V to C-34.
Connect +V common to B-16.
Use B-33 and C-51 for daisy chaining to the next terminal base unit.
Connect any signal wiring shield to functional ground as near as possible to the module when using the 1794-TB2, -TB3, -TB3K -TB3S, -TBN or -TBNK. With the 1794-TB3T and -TB3TS, use terminals C-39 through C-46.

1794-OE8H

1794-TB3G, -TB3GK, -TB3GS



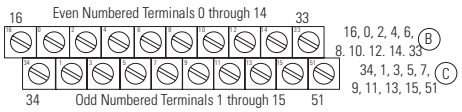
+24V dc = Terminals C-34 and C-50
-V = C-35 and C-51
NC = No connection
For daisy-chaining: Supply in - C-34 (+) and C-35 (-)
Supply out - C-50 (+) and C-51 (-)

Output	Output +	Output -	Output	Output +	Output -
Output 0	A-0	A-1	Output 4	B-17	B-18
Output 1	A-4	A-5	Output 5	B-21	B-22
Output 2	A-8	A-9	Output 6	B-25	B-26
Output 3	A-12	A-13	Output 7	B-29	B-30
+V	Terminals 34 and 50				
-V	Terminals 35 and 51				

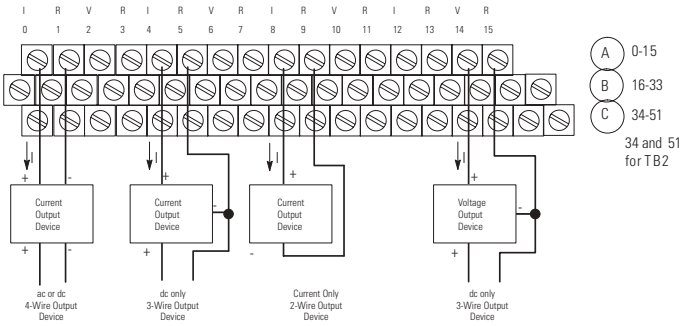
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1794-OF4I

1794-TBN, -TBNK



1794-TB2, -TB3, -TB3K, -TB3S, -TB3T, -TB3TS



ATTENTION Only connect either a voltage signal or a current signal per channel, not both.

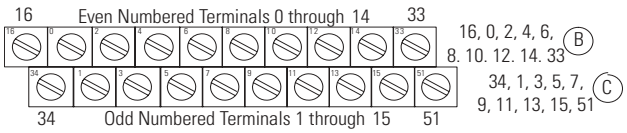
To reduce susceptibility to noise, power analog and digital modules from separate power supplies. Do not exceed a length of 3M (9.8 ft) for DC power cabling.

1794-TB2, -TB3, -TB3K, -TB3S, -TB3T, -TB3TS					1794-TBN, -TBNK
Output Channel	Signal Type	Label Markings	Terminal	Shield (TB3T/TB3TS)	Terminal
0	Current Output	I0	A-0	C-39	B-0
	Current Return	I0 Ret	A-1		C-1
	Voltage Output	V0	A-2	C-40	B-2
	Voltage Return	V0 Ret	A-3		C-3
1	Current Output	I1	A-4	C-41	B-4
	Current Return	I1 Ret	A-5		C-5
	Voltage Output	V1	A-6	C-42	B-6
	Voltage Return	V1 Ret	A-7		C-7
2	Current Output	I2	A-8	C-43	B-8
	Current Return	I2 Ret	A-9		C-9
	Voltage Output	V2	A-10	C-44	B-10
	Voltage Return	V2 Ret	A-11		C-11
3	Current Output	I3	A-12	C-45	B-12
	Current Return	I3 Ret	A-13		C-13
	Voltage Output	V3	A-14	C-46	B-14
	Voltage Return	V3 Ret	A-15		C-15
Common	TB2, TB3, TB3K, TB3S: Terminals 16 through 33 are internally connected in the terminal base unit TB3T, TB3TS: Terminals 16, 17, 19, 21, 23, 25, 27, 29, 31, and 33 are internally connected in the terminal base unit TBN, TBNK: Terminals 16 and 33 are internally connected in the terminal base unit				
+V dc	TB2, TBN, TBNK: Terminals 34 and 51 are internally connected in the terminal base unit TB3, TB3K, TB3S: Terminals 34 through 51 are internally connected in the terminal base unit TB3T, TB3TS: Terminals 34, 35, 50, and 51 are internally connected in the terminal base unit				
Chassis Gnd	TB3T, TB3TS: Terminals 39 through 46 are internally connected to chassis gnd				

Connect +V to C-34.
Connect +V common to B-16.
Use B-33 and C-51 for daisy chaining to the next terminal base unit.
Connect any signal wiring shield to functional ground as near as possible to the module when using the 1794-TB2, -TB3, -TB3K, -TB3S, -TBN or -TBNK. With the 1794-TB3T and -TB3TS, use terminals C-39 through C-46.

1794-OM8

1794-TBN, -TBNK, -TBNF



Connect 220V ac L2 common to B-16.
Connect 220V ac L1 to C-34.
Use B-33 and C-51 for daisy chaining to the next terminal base unit.

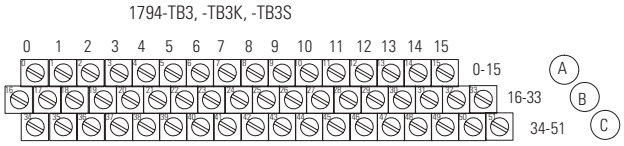
	1794-TBN, -TBNK, -TBNF	
Output Channel	Output Terminal	Common Terminal[1]
0	B-0	C-1
1	B-2	C-3
2	B-4	C-5
3	B-6	C-7
4	B-8	C-9
5	B-10	C-11
6	B-12	C-13
7	B-14	C-15

B = even numbered output terminals 0 through 14, ac common terminals 16 and 33
C = power terminals C-34 and C-51, and odd numbered output common terminals 1 through 15

1. C-1, 3, 5, 7, 9, 11, 13, and 15 are internally connected in the module to 220V ac common L2.

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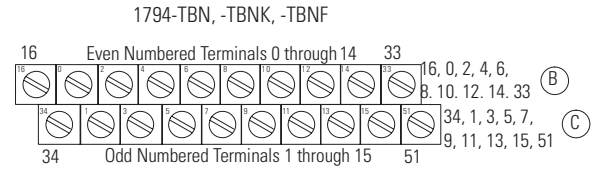
1794-OV16, 1794-OV16P

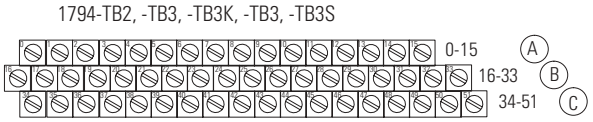


Connect +V to C-34.
Connect +V common to B-16.
Use B-33 and C-51 for daisy chaining to the next terminal base unit.

1794-TB3, -TB3K, -TB3S					
Output Channel	Output Terminal	Power Terminal	Output Channel	Output Terminal	Power Terminal
0	A-0	C-35	8	A-8	C-43
1	A-1	C-36	9	A-9	C-44
2	A-2	C-37	10	A-10	C-45
3	A-3	C-38	11	A-11	C-46
4	A-4	C-39	12	A-12	C-47
5	A-5	C-40	13	A-13	C-48
6	A-6	C-41	14	A-14	C-49
7	A-7	C-42	15	A-15	C-50
Common	B-16 through B-33		+V dc	C-34 through C-51	

1794-OW8, 1794-OW8K





Terminals 35 and 50 are not used on 1794-TB2

ATTENTION



Do not attempt to increase load current or wattage capability beyond the maximum rating by connecting 2 or more outputs in parallel. The slightest variation in relay switching time may cause one relay to momentarily switch the total load current.

Apply only +24V dc power to the power terminals on the terminal base unit. Make certain that all relay wiring is properly connected before applying any power to the module.

Total current draw through the terminal base unit is limited to 10A. Separate power connections to the terminal base unit may be necessary.

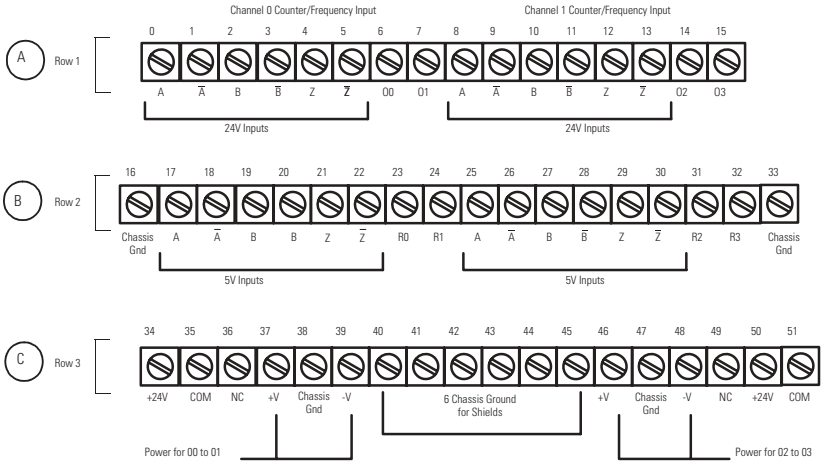
Output Channel	1794-TB2, -TB3, -TB3K, -TB3S Output Terminal	1794-TBN, -TBNK, -TBNF Output Terminal
0	A-0	B-0
	A-1	C-1
1	A-2	B-2
	A-3	C-3
2	A-4	B-4
	A-5	C-5
3	A-6	B-6
	A-7	C-7
4	A-8	B-8
	A-9	C-9
5	A-10	B-10
	A-11	C-11
6	A-12	B-12
	A-13	C-13
7	A-14	B-14
	A-15	C-15
	A = output terminals B = dc common terminals C = power terminals (C-34 through C-51 for 1794-TB3, -TB3K -TB3S; C-34 and C-51 for 1794-TB2)	B = even numbered output terminals 0-14, 24V dc common terminals 8-16 and B-33 C = odd numbered output terminals 1-15; 24V dc power terminals C-34 and C-51

Connect +24V dc to C-34.
Connect +24V dc common to B-16.
Use B-33 and C-51 for daisy chaining to the next terminal base unit.

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1794-VHSC

Connections for 1794-TB3G, -TB3GK and -TB3GS (TB3G shown)



Where: A, Ā = incremental encoder input A (+5 or +24V dc)
B, B̄ = incremental encoder input B (+5 or +24V dc)
Z, Z̄ = incremental encoder input Z (+5 or +24V dc)
O = sourcing outputs
R = returns for sourcing outputs
+V = +5 or +24V dc isolated power externally supplied for outputs (1A max)
-V = negative isolated power connection (1A max)
+24V dc = 24V dc terminal base power for module
COM = return for +24V dc terminal base power for module
Chassis Gnd = chassis ground for input or output cable shields
NC = No connect

Incremental Encoder Inputs	Channel 0		Channel 1	
	+24V Inputs	+5V Inputs	+24V Inputs	+5V Inputs
Input A	A-0	B-17	A-8	B-25
Input Ā	A-1	B-18	A-9	B-26
Input B	A-2	B-19	A-10	B-27
Input B̄	A-3	B-20	A-11	B-28
Input Z	A-4	B-21	A-12	B-29
Input Z̄	A-5	B-22	A-13	B-30

Outputs	Sourcing Out	Return	Outputs	Sourcing Out	Return
Output 0 (O0)	A-6	B-23	Output 0 (O2)	A-14	B-31
Output 1 (O1)	A-7	B-24	Output 1 (O3)	A-15	B-32
+24V Terminal Base Power	Terminals C-34 and C-50				
24V COM	Terminals C-35 and C-51				
+5V or +24V power (this isolated power is externally supplied for outputs with a 1A max.)	Terminals C-37 and C-46				
-V output power	Terminals C-39 and C-48				
Chassis Ground	Terminals C-16, B-33 and C-38, C-40 through C-45, C-47				

ATTENTION



To reduce the susceptibility to noise, power analog modules and digital modules from separate power supplies. Do not exceed a length of 3m (9.8ft) for dc power cabling.

Total current draw through the terminal base unit is limited to 10A. Separate power connections to the terminal base unit may be necessary.

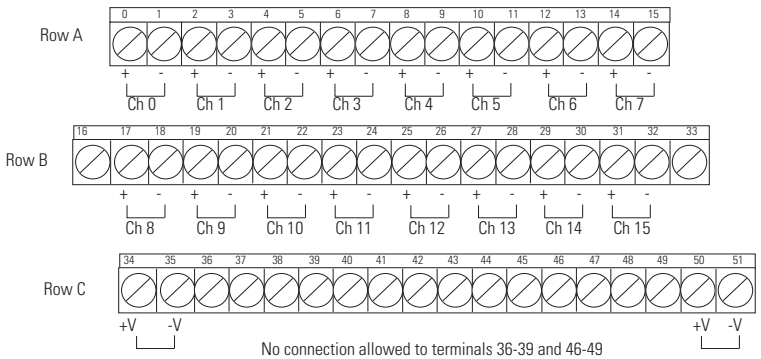
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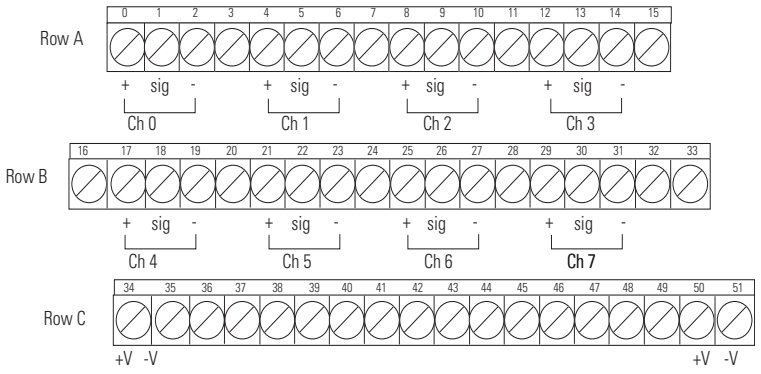
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1797 FLEX Ex Modules

1797-IBN16

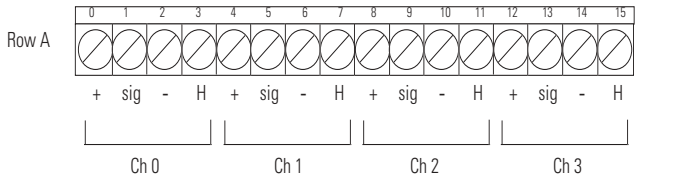


1797-IE8



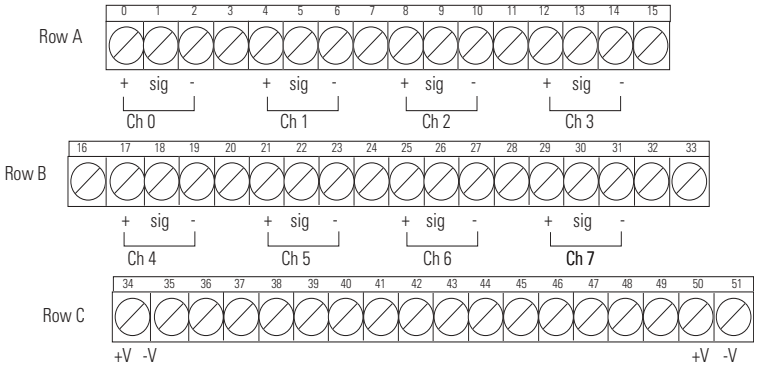
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1797-IE8H



No connection allowed to terminals 36-39 and 46-49

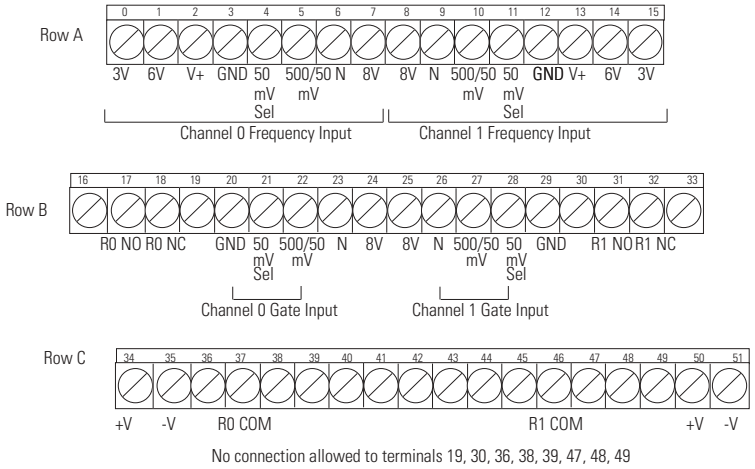
1797-IE8NF



No connection allowed to terminals 3, 7, 11, 15, 20, 24, 28, 32, 36-39 and 46-49

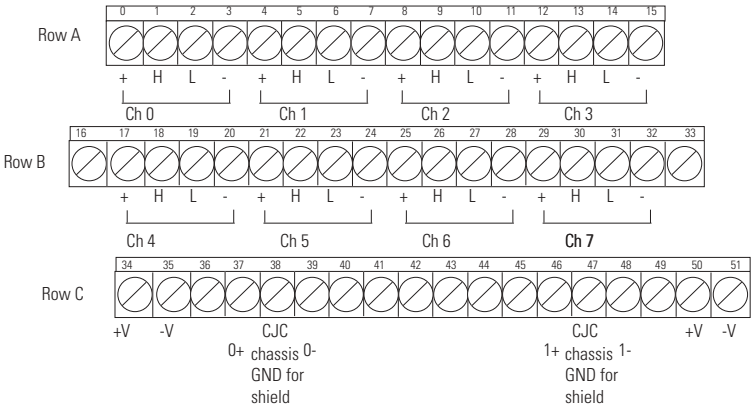
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1797-IJ2



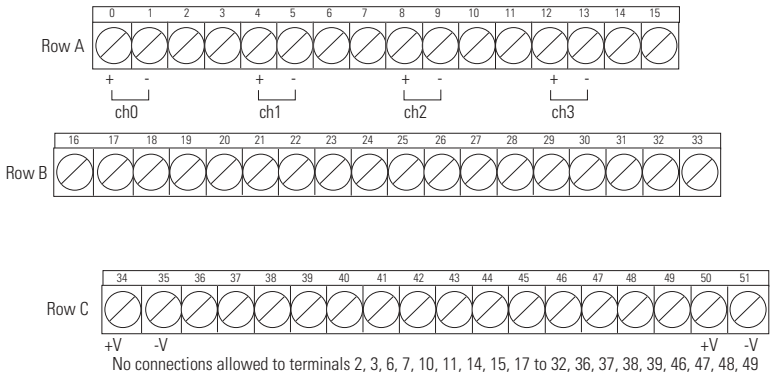
No connection allowed to terminals 19, 30, 36, 38, 39, 47, 48, 49

1797-IRT8



No connection allowed to terminals 36 and 49

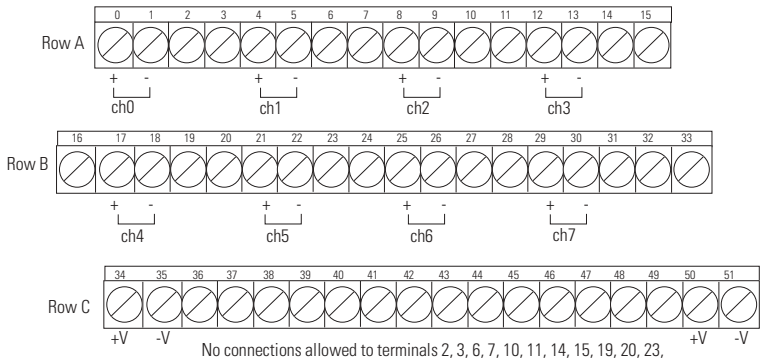
1797-OB4D



No connections allowed to terminals 2, 3, 6, 7, 10, 11, 14, 15, 17 to 32, 36, 37, 38, 39, 46, 47, 48, 49

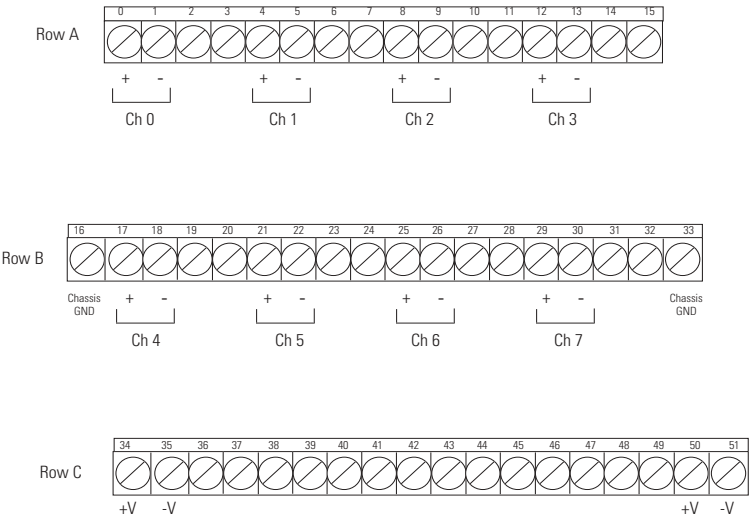
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1797-OE8



No connections allowed to terminals 2, 3, 6, 7, 10, 11, 14, 15, 19, 20, 23, 24, 27, 28, 31, 32, 36, 37, 38, 39, 46, 47, 48, 49

1797-OE8H

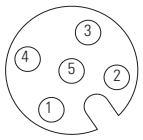


No connection allowed to terminals 2, 3, 6, 7, 10, 11, 14, 15, 19, 20, 23, 24, 27, 28, 31, 32, 36-39 and 46-49

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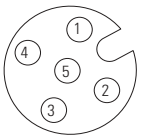
1798 FLEX Armor I/O Modules

1798-DFTP1

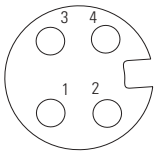


Male M12 Micro Connector (In)
(View into Socket)

Pin 1 Drain Wire
Pin 2 +Voltage
Pin 3 -Voltage
Pin 4 Controller Area Network (CAN) High
Pin 5 Controller Area Network (CAN) Low



Female M12 Micro Connector
(Daisy Chain Out)

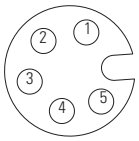


Male Power Connector

The connection to the power connector should be a 4-pin female mini quick disconnect connector.

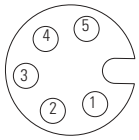
Pin 1 Output Power +
Pin 2 Sensor Power + (Red wire)
Pin 3 Sensor Power -
Pin 4 Output Power -

1798-DFTP2

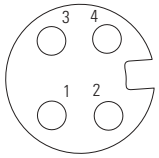


Male M18 Mini Connector (In)
(View into Socket)

Pin 1 Drain Wire
Pin 2 +Voltage
Pin 3 -Voltage
Pin 4 Controller Area Network (CAN) High
Pin 5 Controller Area Network (CAN) Low



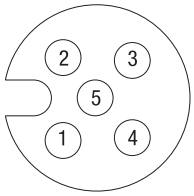
Female M18 Mini Connector
(Daisy Chain Out)



Male Power Connector

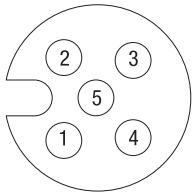
Pin 1 Output Power +
Pin 2 Sensor Power +
Pin 3 Sensor Power -
Pin 4 Output Power -

1798-IB4, -IB4D and -IB8



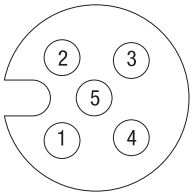
Female Input Micro- Connector
(View into Socket)
Pin 1 Sensor Power
Pin 2 Input B (IB8 Modules Only)
Pin 3 Sensor Common
Pin 4 Input A
Pin 5 Not Used

1798-IE4



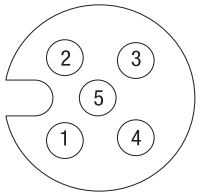
Female Input Micro-Connector
(View into Socket)
Pin 1 Sensor Power
Pin 2 Current Input
Pin 3 Sensor Common
Pin 4 Voltage Input
Pin 5 Not Used

1798-OB4E and -OB8E



Female Output Micro Connector
(View into Socket)
Pin 1 Not Used
Pin 2 Output B (OB8E modules only)
Pin 3 Output Common
Pin 4 Output A
Pin 5 Not Used

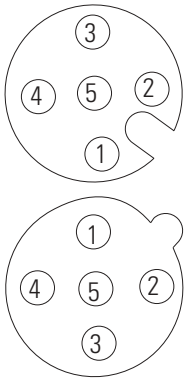
1798-OE2



Female Input Micro- Connector
(View into Socket)
Pin 1 Sensor Power
Pin 2 Current Output
Pin 3 Sensor Common
Pin 4 Voltage Output
Pin 5 Not Used

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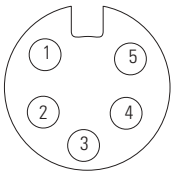
1798-PFTP1



Male M12 Connector
(PBUS IN)

Pin 1 +5V BUS
Pin 2 A-Line
Pin 3 GNDBUS
Pin 4 B-Line
Pin 5 Shield

Female M12 Connector
(PBUS OUT)



Power Connector
(Male Connector)

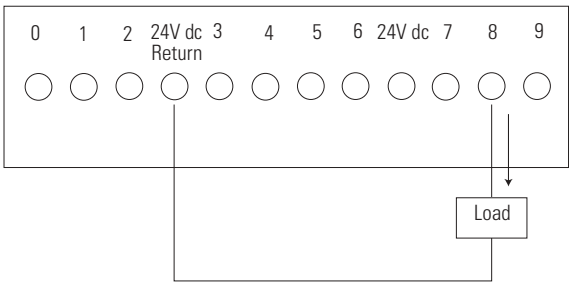
Pin 1 Output Power -
Pin 2 Sensor Power -
Pin 3 Protective Gnd
Pin 4 Sensor Power +
Pin 5 Output Power +

The connection to the power connector should be a 5-pin female mini quick disconnect connector.

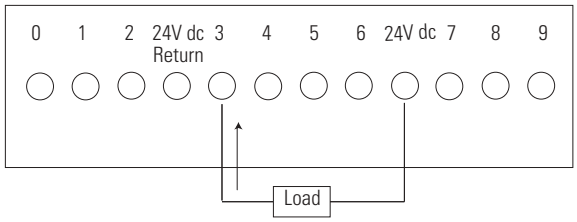
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1799 Embedded I/O Cards

1799-D10U10B, 1799-D10U10BL, 1799-D10U10BZC, 1799-ZCIOB
Outputs Sourcing

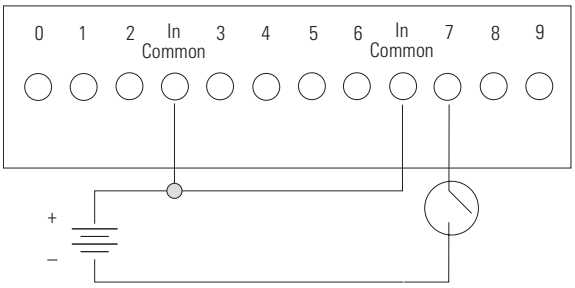


1799-D10U10V, 1799-D10U10VL, 1799-D10U10VZC, 1799-ZCIOV
Outputs Sinking

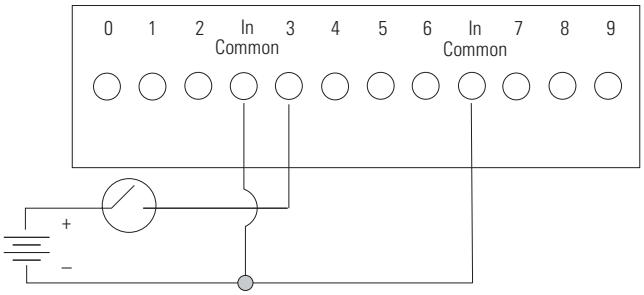


1799-D10U10B, 1799-D10U10BL, 1799-D10U10BZC, 1799-ZCIOB, 1799-D10U10V, 1799-D10U10VL, 1799-D10U10VZC, 1799-ZCIOV

Inputs Sourcing



Inputs Sinking



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For an additional level of technical phone support for installation, configuration and troubleshooting, we offer TechConnect Support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit http://support.rockwellautomation.com.

Installation Assistance

If you experience a problem with a hardware module within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your module up and running:

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Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

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Rockwell tests all of our products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned:

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Outside United States	Please contact your local Rockwell Automation representative for return procedure.

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Corporate Headquarters
Rockwell Automation, 777 East Wisconsin Avenue, Suite 1400, Milwaukee, WI, 53202-5302 USA, Tel: (1) 414.212.5200, Fax: (1) 414.212.5201

Headquarters for Allen-Bradley Products, Rockwell Software Products and Global Manufacturing Solutions
Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
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