

Installation Instructions

Original Instructions



Allen-Bradley

by ROCKWELL AUTOMATION

POINT I/O Input Modules

Catalog Numbers 1734-IB2, 1734-IB4, 1734-IB4K, 1734-IB8, 1734-IB8K, Series D

Catalog numbers with the suffix 'K' are conformal coated and their specifications are the same as non-conformal coated catalogs.

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Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

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Wire the Module



WARNING: If you connect or disconnect wiring while the field-side power is on, an electric 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.



WARNING: To comply with the CE Low Voltage Directive (LVD), this equipment must be powered from a source compliant with the following: Safety Extra Low Voltage (SELV) or Protected Extra Low Voltage (PELV).

Figure 2 - POINT I/O Module

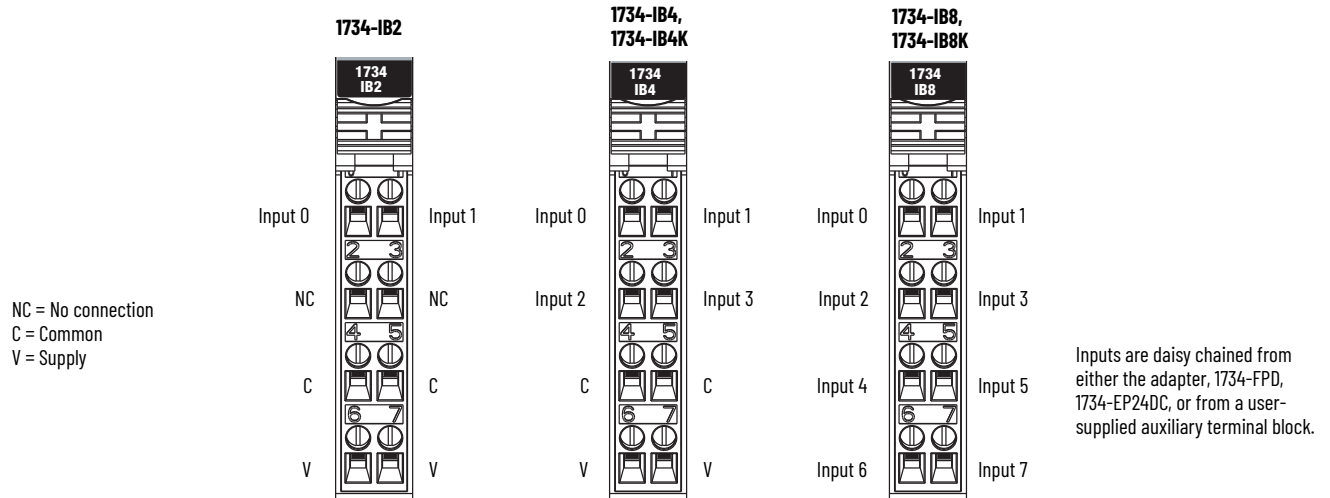


Figure 3 - Wiring for 1734-IB2 - Sinking Input

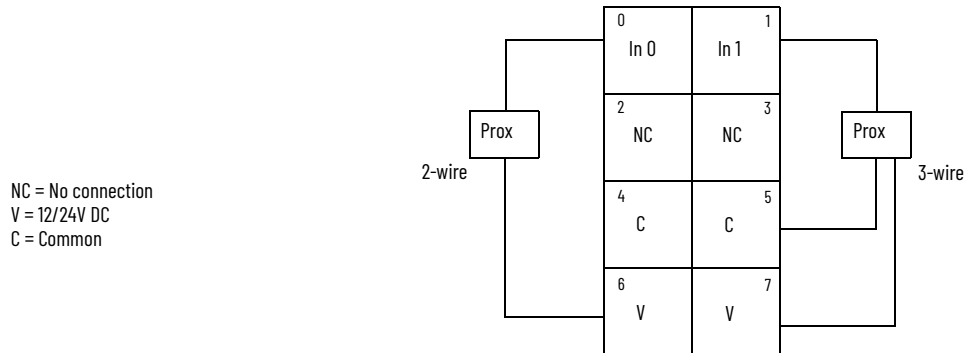


Table 1 - Module Wiring

Channel	Input	Common	Voltage
0	0	4	6
1	1	5	7

Connect common on 3-wire proximity switches. 12/24V DC is supplied through the internal power bus.

Figure 4 - Wiring for 1734-IB4, 1734-IB4K - Sinking Input

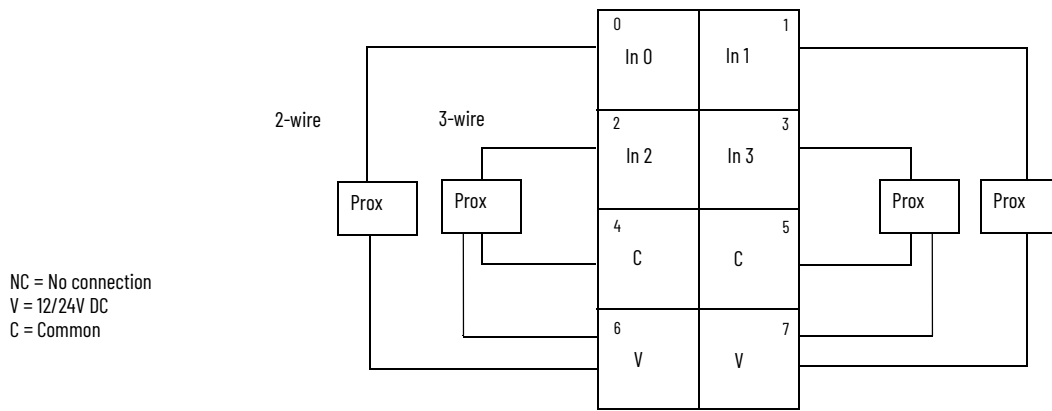


Table 2 - Module Wiring

Channel	Input	Common	Voltage
0	0	4	6
1	1	5	7
2	2	4	6
3	3	5	7

Connect common on 3-wire proximity switches. 12/24V DC is supplied through the internal power bus.

Wiring for 1734-IB8, 1734-IB8K - Sinking Input

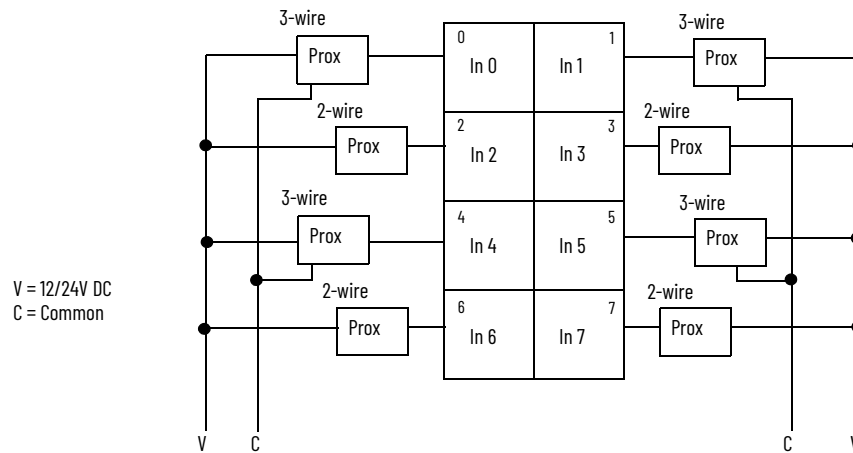


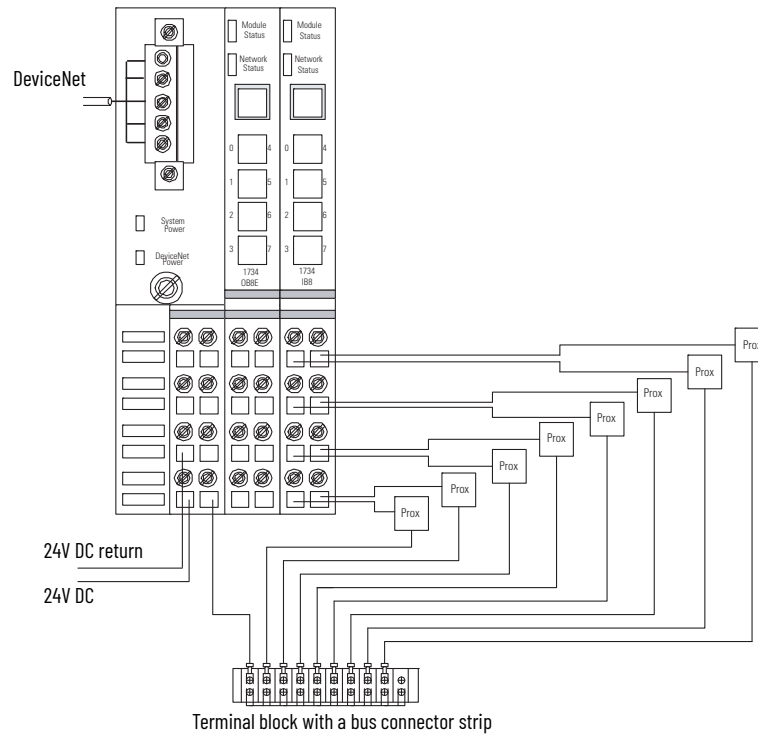
Table 3 - Module Wiring

Channel	Input	Channel	Input
0	0	4	4
1	1	5	5
2	2	6	6
3	3	7	7

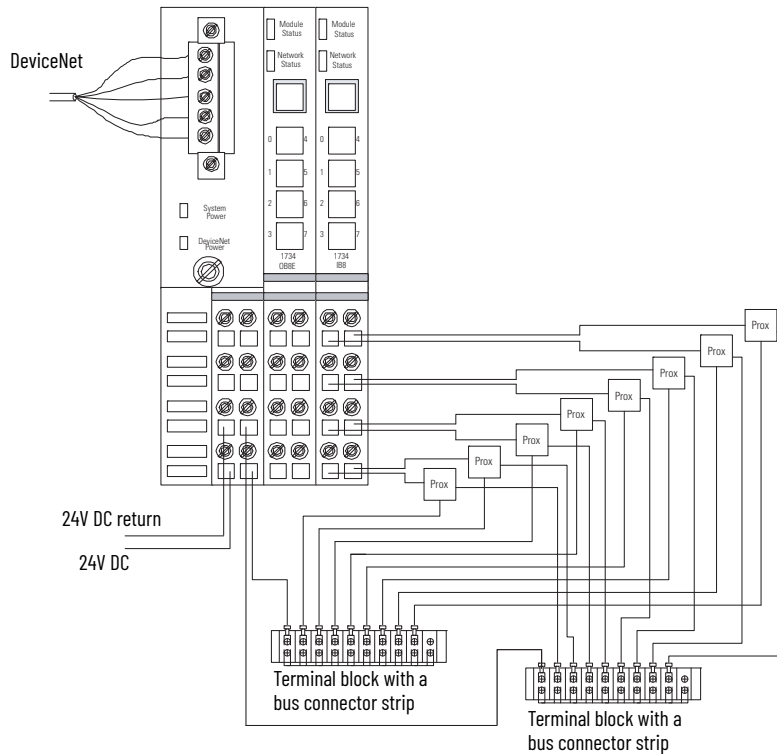
Daisy chain common and power connections from 1734 adapter, 1734-FPD, 1734-EP24DC, or from user-supplied external auxiliary terminal block.

Note: When connecting multiple wires in a termination point, make sure that both wires are the same gauge and type.

Wiring Example for 1734-IB8, 1734-IB8K Using 2-wire Proximity Switches



Wiring Example for 1734-IB8, 1734-IB8K Using 3-Wire Proximity Switches



Communicate with the Module

POINT I/O modules send (produce) and receive (consume) I/O data (messages). You map this data onto the processor memory.

These modules produce 1 byte of input data (scanner Rx). It does not consume I/O data (scanner Tx).

Default Data Map for 1734-IB2

Message size: 1 byte

	7	6	5	4	3	2	1	0
Produces (Rx)							I1	I0
Consumes (Tx)	No consumed data							
Where:	I1 = Channel 1, I0 = Channel 0, 0 = Off, 1 = On							

Default Data Map for 1734-IB4, 1734-IB4K

Message size: 1 byte

	7	6	5	4	3	2	1	0
Produces (Rx)					I3	I2	I1	I0
Consumes (Tx)	No consumed data							
Where:	I3 = Channel 3, I2 = Channel 2, I1 = Channel 1, I0 = Channel 0, 0 = Off, 1 = On							

Default Data Map for 1734-IB8, 1734-IB8K

Message size: 1 byte

	7	6	5	4	3	2	1	0
Produces (Rx)	I7	I6	I5	I4	I3	I2	I1	I0
Consumes (Tx)	No consumed data							
Where:	I7 = Channel 7, I6 = Channel 6, I5 = Channel 5, I4 = Channel 4, I3 = Channel 3, I2 = Channel 2, I1 = Channel 1, I0 = Channel 0, 0 = Off, 1 = On							

Interpret Status Indicators

See [Figure 5](#) and [Table 4](#) for information on how to interpret the status indicators.

Figure 5 - Module Status Indicators

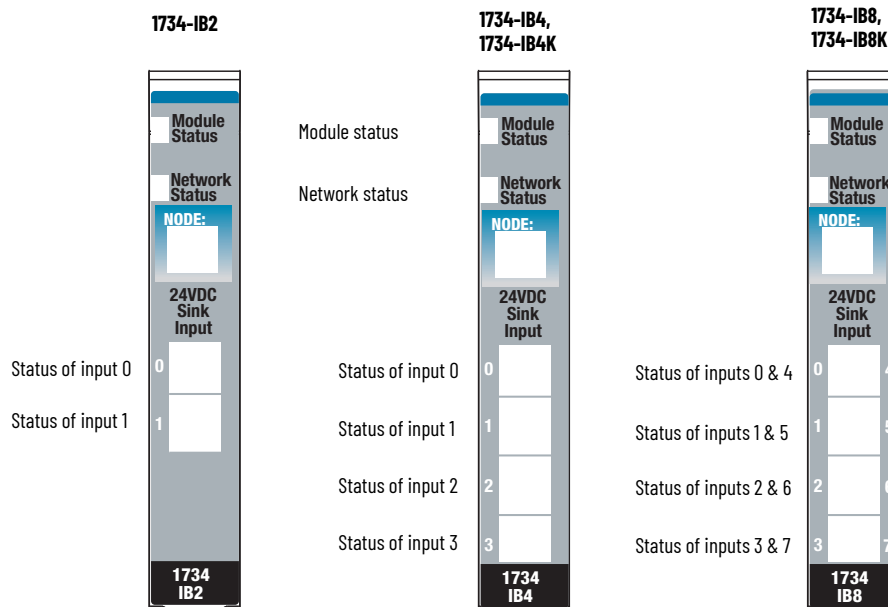


Table 4 - Indicator Status for Modules

	Status	Description
Module status	Off	No power is applied to the device.
	Green	The device is operating normally.
	Flashing green	The device needs commissioning due to missing, incomplete, or incorrect configuration.
	Flashing red	A recoverable fault is present.
	Red	An unrecoverable fault occurred that may require device replacement.
	Flashing red/green	The device is in self-test mode.
Network status	Off	The device is not online: - The device has not completed the dup_MAC-id test. - The device is not powered - Check the module status indicator.
	Flashing green	The device is online but has no connections in the established state.
	Green	The device is online and has connections in the established state.
	Flashing red	One or more I/O connections are in a timed-out state.
	Red	Critical link failure - Failed communication device. The device has detected an error that prevents it from communicating on the network.
	Flashing red/green	Communication faulted device - The device has detected a network access error and is in communication faulted state. The device has received and accepted an Identity Communication Faulted Request - Long protocol message.
I/O status	Off	The input is in the off state.
	Yellow	The input is in the on state.

Specifications

POINT I/O Input Module - 1734-IB2, 1734-IB4, 1734-IB4K, 1734-IB8, 1734-IB8K

Attribute	1734-IB2	1734-IB4, 1734-IB4K	1734-IB8, 1734-IB8K
Inputs per module	2 (1 group of 2), sinking	4 (1 group of 4), sinking	8 (1 group of 8), sinking
Voltage, on-state, min	10V DC		
Voltage, on-state, nom	24V DC		
Voltage, on-state, max	28.8V DC		
Current, on-state, min	2 mA		
Current, on-state, nom	4 mA @ 24V DC		
Current, on-state, max	5 mA		
Voltage, off-state, max	5V DC		
Current, off-state, min	1.5 mA		
Impedance, input, nom	3.6 kΩ		
Impedance, input, max	4.7 kΩ		
Input filter time ⁽¹⁾ Off-to-On On-to-Off	0.5 ms hardware plus 0...63 ms (user-selectable) 0.5 ms hardware plus 0...63 ms (user-selectable)		
Field wiring terminations	0 - Input 0 1 - Input 1 2 - No connection 3 - No connection 4 - Common 5 - Common 6 - User supply 7 - User supply	0 - Input 0 1 - Input 1 2 - Input 2 3 - Input 3 4 - Common 5 - Common 6 - User supply 7 - User supply	0 - Input 0 1 - Input 1 2 - Input 2 3 - Input 3 4 - Input 4 5 - Input 5 6 - Input 6 7 - Input 7

(1) Input Off-to-On filter time is the time from a valid input signal to recognition by the module. Input On-to-Off time is the time from a valid input signal to recognition by the module.

General Specifications⁽¹⁾

Attribute	1734-IB2	1734-IB4, 1734-IB4K	1734-IB8, 1734-IB8K
Terminal base screw torque	0.8 N•m (7 lb•in)		
Module location	1734-TB or 1734-TBS wiring base assembly		
Indicators, network status	1 green/red, logic side		
Indicators, module status	1 green/red, logic side		
Indicators, input status	2 yellow, logic side	4 yellow, logic side	8 yellow, logic side
POINTBus™ current, max	75 mA @ 5V DC		
Power dissipation @ 28.8V DC, max	0.7 W	1.0 W	1.6 W
Thermal dissipation @ 28.8V DC, max	2.4 BTU/hr	3.4 BTU/hr	5.5 BTU/hr
Isolation voltage	50V (continuous), Reinforced Insulation Type Tested @ 2500V DC for 60 s, field-side to system		
Field power supply voltage, nom	24V DC		
Field power voltage range	10...28.8V DC		
Dimensions, HxWxD, approx.	56 x 12 x 75.5 mm (2.2 x 0.47 x 2.97 in.)		
Wiring category ⁽²⁾⁽³⁾	1 - on signal ports		
Wire size	Determined by the installed terminal block.		
Weight, approx.	30.9 g (1.09 oz)	31.8 g (1.12 oz)	32.3 g (1.14 oz)
Enclosure type rating	None (open-style)		
Keypad position	1		
North American temp code	T4A		
UKEX/ATEX temp code	T4		
IECEX temp code	T4		

(1) IEC 3 24V DC input compliant.

(2) Use this conductor category information for planning conductor routing as described in Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

(3) Use this conductor category information for planning conductor routing as described in the appropriate System Level Installation Manual.

Environmental Specifications

Attribute	Value
Temperature, operating	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): -20 °C ≤ Ta ≤ +55 °C (-4 °F ≤ Ta ≤ +131 °F)
Temperature, surrounding air, max	55 °C (131 °F)
Temperature, nonoperating	IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock): -40...+85 °C (-40...+185 °F)
Relative humidity	IEC 60068-2-30 (Test Db, Unpackaged Nonoperating Damp Heat): 5...95% noncondensing
Vibration	IEC 60068-2-6 (Test Fc, Operating): 5 g @ 10...500 Hz
Shock, operating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 30 g
Shock, nonoperating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 50 g
Emissions	IEC 61000-6-4
ESD immunity	IEC 61000-4-2: 6 kV contact discharges 8 kV air discharges
Radiated RF immunity	IEC 61000-4-3: 10V/m with 1 kHz sine-wave 80% AM from 80...6000 MHz
EFT/B immunity	IEC 61000-4-4: ±4 kV @ 5 kHz on signal ports
Surge transient immunity	±1 kV line-line (DM) and ±2 kV line-earth (CM) on signal ports
Conducted RF immunity	IEC 61000-4-6: 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz