

POINT I/O

Use this document to install and wire the following components of your POINT™ I/O system:

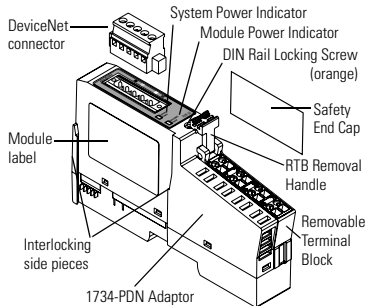
Interface: 1734-ADN, -PDN	Bases: 1734-TB, -TBS, -TB3, -TB3S (RTB usage covered)	Modules: 1734-IA2, IB2, -IB4, -IJ, -IK, -IM2, -IV2, -IV4, -IE2C, -OA2, -OE2C, -OW2, -OB2E, -OB4E, -VHSC24, -VHSC5
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POINT I/O modules have no switches to set. You set module parameters with a software configuration tool. To obtain EDS files for use in configuration, go to: <http://www.ab.com/networks/eds>

This product installation information is also available at: <http://www.ab.com/manuals/io/>

Installing the POINT I/O Adapter or Communication Interface

The 1734-ADN DeviceNet adapter and 1734-PDN communication interface install onto a DeviceNet network.



1. Position the interface above the DIN rail.
2. Press down firmly to install the interface on the DIN rail.
3. The locking mechanism will lock the interface to the DIN rail.
4. Remove safety end cap. Slide it up to expose backplane and power connections.

ATTENTION Do not discard end cap. Use end cap to cover exposed connections on the last terminal base in the chassis. Failure to do so could result in injury or equipment damage.



If installing a replacement interface to an existing system:

1. Position the interface above the DIN rail.
2. Slide the interface down allowing the interlocking side pieces to engage the adjacent module.
3. Press firmly to seat the interface on the DIN rail. The interface locking mechanism will snap into place.
4. To remove the interface from the DIN rail, pull up on the RTB removal handle to remove the terminal block.
5. Use a small bladed screwdriver to rotate the DIN rail locking screw to a vertical position.
6. This releases the locking mechanism. Then lift straight up to remove.

Installing the Field Potential Dist.

IMPORTANT

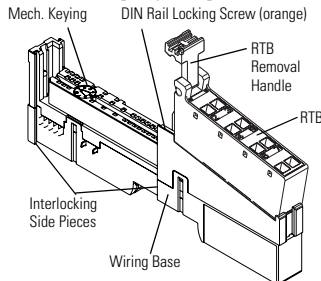
The 1734-FPD looks like the 1734-PDN but has no indicators.

The 1734-FPD installs onto a DeviceNet network using the same steps as the 1734-PDN communication interface with one additional step included.

After positioning the 1734-FPD above the DIN rail, engage the interlocking side pieces with the unit on the left.

Installing the POINT I/O Wiring Base

The wiring base consists of a base and a removable terminal block (RTB). The 1734-TB uses screw-clamp terminations; the 1734-TBS uses spring-clamp terminations.



Installing the Wiring Base

1. Position wiring base vertically above installed units (interface, power supply or existing module).
2. Slide the wiring base down allowing the interlocking side pieces to engage the adjacent module or interface.
3. Press firmly to seat the wiring base on the DIN rail. The wiring base will snap into place.
4. To remove the wiring base from the DIN rail, remove the module, and use a small bladed screwdriver to rotate the base locking screw to a vertical position. This releases the locking mechanism. Then lift straight up to remove.

Installing the Removable Terminal Block

A removable terminal block is supplied with your terminal base. To remove, pull up on the RTB removal handle.

ATTENTION



Do not pull on the installed wiring to remove a terminal block. A shock hazard exists if power is applied to the terminal block.

This allows the base to be removed and replaced as necessary without removing any of the wiring. To reinsert the removable terminal block:

1. Insert the end opposite the handle into the base unit. This end has a curved section that engages the wiring base.
2. Rotate the terminal block into the wiring base until it locks itself in place.

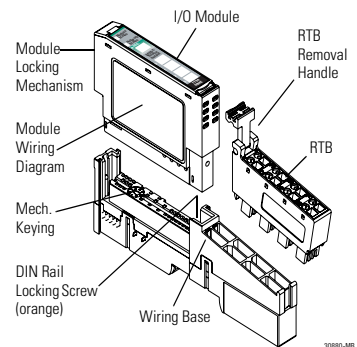
3. If an I/O module is installed, snap the RTB handle into place on the module.
4. Insert module straight down into wiring base and press to secure. Module locks into place.

Removing a Wiring Base

To remove a wiring base, you must remove any installed module, and remove the removable terminal block (if wired). Then follow these steps:

1. Remove the RTB (if wired).
2. Turn the wiring base locking screw to a vertical position to unlock the base from the DIN rail.
3. Slide base up to release it from its mating units.

Installing the I/O Module

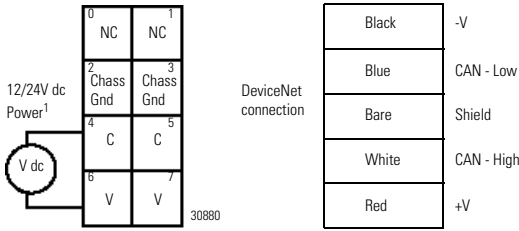


The module can be installed before, or after base installation. Make sure that the wiring base is correctly keyed before installing the module into the wiring base. In addition, make sure the wiring base locking screw is positioned horizontal according to the base.

1. Using a bladed screwdriver, rotate the keyswitch on the wiring base clockwise until the number required for the type of module being installed aligns with the notch in the base.
2. Make certain the DIN rail locking screw is in the horizontal position. (You cannot insert the module if the locking mechanism is unlocked.)
3. Insert the module straight down into the wiring base and press to secure. The module will lock into place.

Wiring Diagrams

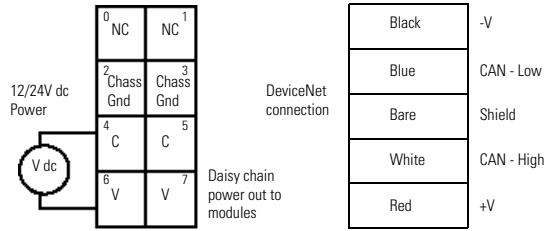
1734-ADN



NC = No Connection Chass GND = Chassis Ground
C = Common V = Supply

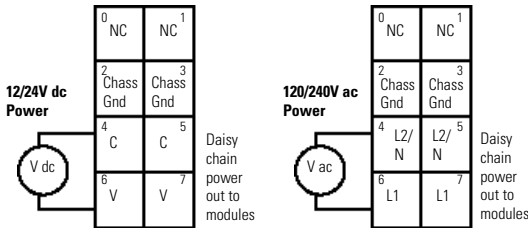
¹ Do not connect 120/240V ac power to this supply. This dc supply will be connected to the internal power bus.

1734-PDN



NC = No Connection Chass GND = Chassis Ground
C = Common V = Supply

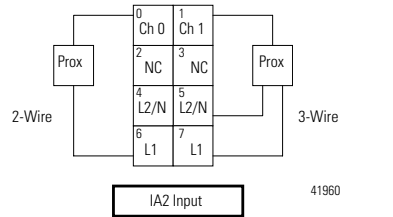
1734-FPD



V = 12/24V dc, C = Common Chass GND = Chassis Ground
This supply will be connected to the internal power bus.

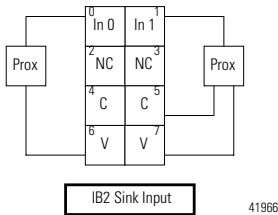
L2/N = Neutral, L1 = 120/240V ac
This supply will be connected to the internal power bus.

1734-IA2



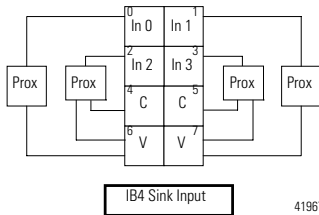
Ch 0 = Channel 0 Ch 1 = Channel 1 NC = No Connection
L2/N = 120V ac Neutral L1 = 120V ac

1734-IB2



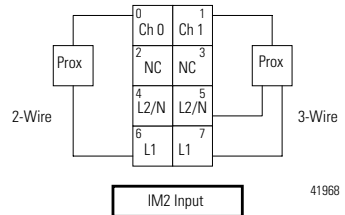
V = 12/24V dc, C = Common
Field power is supplied from power bus

1734-IB4



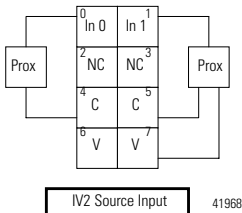
V = 12/24V dc, C = Common
Field power is supplied from power bus

1734-IM2



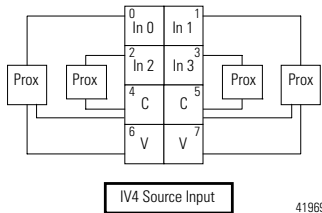
Ch 0 = Channel 0 Ch 1 = Channel 1 NC = No Connection
L2/N = 220V ac Neutral L1 = 220V ac

1734-IV2



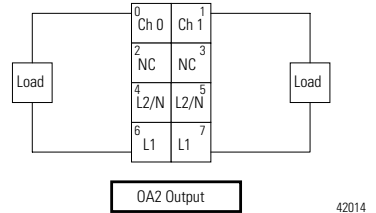
V = 12/24V dc, C = Common
Field power is supplied from power bus

1734-IV4



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

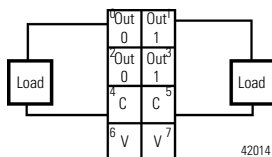
1734-OA2



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.

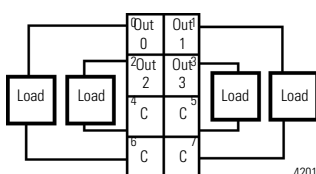
Wiring Diagrams

1734-OB2E



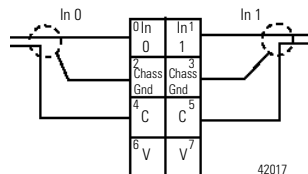
V = 12/24V dc, C = Common
Field power is supplied from power bus

1734-OB4E



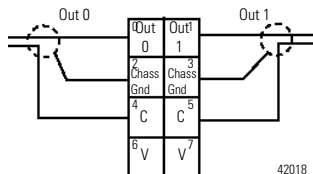
V = 12/24V dc, C = Common
Field power is supplied from power bus

1734-IE2C



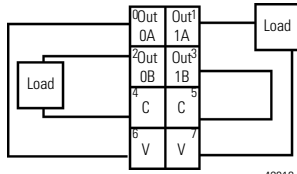
V = 12/24V dc, C = Common Chass GND = Chassis Ground
This supply will be connected to the internal power bus.

1734-OE2C



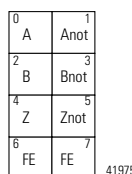
V = 12/24V dc, C = Common
Chass GND = Chassis Ground
This supply will be connected to the internal power bus.

1734-OW2



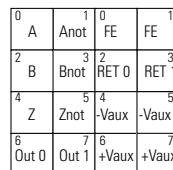
V = 12/24V dc, C = Common
This supply will be connected to the internal power bus.

1734-IJ, & 1734-IK



A, B, Z, Anot, Bnot, and Znot = inputs
FE = Functional Earth

1734-VHSC24, & 1734-VHSC5



A, B, Z, Anot, Bnot, and Znot = inputs
FE = Functional Earth
-Vaux = Auxiliary Supply
+Vaux = Auxiliary Supply

Specifications

General specifications - These specifications are **shared by all components** of the 1734 POINT I/O system.

Specification:	Value:	Specification:	Value:
Environ. Conditions Operating Temp. Storage Temp. Relative Humidity Shock Operating Non-operating Vibration	-20 to 55°C (-4 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6	Conductors Wire Size Category	14 AWG (2.5mm ²) - 22 AWG (0.25mm ²) solid or stranded max (18 AWG max if connecting 2 wires to same terminal) 3/64 inch (1.2mm) insulation max 2 ¹
Terminal Base Screw Torque	7 inch-pounds max	Agency Certification (When Product or Packaging is Marked)	CE marked for all applicable directives C-Tick marked for all applicable acts CUL listed – Class I, Division 2 Groups A, B, C and D certified CUL recognized DeviceNet conformance tested

¹ Use this conductor category information for planning conductor routing as described in the system level installation manual.

1734-TB, -TBS, -TB3 and -TB3S Specifications

Specification:	1734-TB, -TBS, -TB3, -TB3S	Specification:	1734-TB, -TBS, -TB3, -TB3S
Field Power Bus Voltage	240V ac (1734-TB, -TBS) 28.8V dc, 120/240V ac (1734-TB3, -TB3S)	Dimensions (HxWxL)	65mm x 12mm x 133.4mm (2.560in x 0.472in x 5.250in) (1734-TB, -TBS) 65mm x 12mm x 160mm (2.560in x 0.472in x 6.25in) (1734-TB3, -TB3S)
Current	10A max	Mass	2.94 oz/83.35 grams (1734-TB) 2.57 oz/73.86 grams (1734-TBS) 3.44 oz/97.5 grams (1734-TB3) 3.07 oz/87 grams (1734-TB3S)

1734-ADN Specifications

Specification	Value	Specification	Value
Expansion I/O Capacity	12 modules (Note: Total expansion up to 63 modules with 1734-EP24DC)	Input Overvoltage Protection	Reverse polarity protected
DeviceNet Communication Rate	125K bit/s (500m maximum) 250K bit/s (250m maximum) 500K bit/s (100m maximum)	DeviceNet Cable	Allen-Bradley part number 1485C-P1-Cxxx Refer to publication DN-2.5 for more information
Module Location	Starter module - left side of 1734 system	Input Voltage Rating	24V dc nominal
Power Supply	Note: In order to comply with CE Low Voltage Directives (LVD), you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this adapter.	Indicators	3 red/green status indicators Adapter status DeviceNet status PointBus status 2 green power supply status indicators: System Power (PointBus 5V power) Field Power (24V from field supply)
DeviceNet Input Voltage Range	11-25V dc DeviceNet specification	DeviceNet Power Requirements	24V dc (+4% = 25V dc max) @ 30mA maximum
Power Consumption	8.1W maximum @ 28.8V dc	Isolation Voltage	1250V rms/V ac
Power Dissipation	2.8W maximum @ 28.8V	Thermal Dissipation	9.5 BTU/hr maximum @ 28.8V dc
Field Power Bus Nominal Voltage	24V dc	Dimensions Inches (Millimeters)	3.0H x 2.16W x 5.25L (76.2H x 54.9W x 133.4L)
Supply Voltage Range	10-28.8V dc range,	Mass	9.0 oz/255 grams
Supply Current	10A maximum	Field Wiring Terminations Power Supply	0 - No Connection 2 - Chassis Ground 4 - Common 6 - Supply 1 - No Connection 3 - Chassis Ground 5 - Common 7 - Supply
Field Wiring Terminations DeviceNet	1 - Black Wire V 2 - Blue Wire CAN Low 3 - Bare Wire Shield 4 - White Wire CAN High 5 - Red Wire +V		

Power Supply Specifications

Power Supply	Note: In order to comply with CE Low Voltage Directives (LVD), you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this adapter.	Interruption	Output voltage will stay within specifications when input drops out for 10ms at 10V with maximum load.
Input Voltage Rating	24V dc nominal 10-28.8V dc range	Field Side Power Requirements	24V dc (+20% = 28.8V dc maximum) @ 400mA maximum
Inrush Current	6A maximum for 10ms	PointBus Output Current	1A maximum @ 5V dc ±5% (4.75 - 5.25)
Input Overvoltage Protection	Reverse polarity protected		

1734-PDN Specifications

Specification	Value:	Specification	Value:
Expansion I/O Capacity	12 modules	Module Location	Starter module - left side of 1734 system
Communication Rate	125K bits/s (500m max) 250K bits/s (250m max) 512K bits/s (100m max)	Indicators	2 green power supply status indicators System power (PointBus 5V power) DeviceNet power (24V from DeviceNet)
DeviceNet Power Req.	24V dc (+4% = 25V dc max @ 400mA max)	Dimensions (HxWxL)	76.2mm x 25.4mm x 133.4mm (3.0in x 1.0in x 5.25in)
DeviceNet Cable	Allen-Bradley PN 1485C-P1-Cxxx Refer to publication DN-2.5	Input Overvoltage Protection	Reverse polarity protected
Power Supply	Note: In order to comply with CE Low Voltage Directives (LVD), you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this interface.	Field Power Bus Voltage	10V to 28.8V dc, 120V ac or 240V ac
Field Wiring Power Supply	0 - No connection 1 - No connection 2 - Ground 3 - Ground 4 - Common 5 - Common 6 - Supply 7 - Supply	Current	10A max
Input Voltage Rating	24V dc nominal	Field Wiring Terminations DeviceNet	1 - Black -V 2 - Blue CAN Low 3 - Bare Drain 4 - White CAN High 5 - Red +V
Input Voltage Range	11-25V dc DeviceNet specification	Power Dissipation	1.2W max @ 25V
		Thermal Dissipation	4.1 BTU/hr max @ 25V dc

Specification	Value:	Specification	Value:
Inrush Current	6A for 5ms	Power Consumption	7.0W max @ 25V dc
Pointbus Output Current	1A maximum @ 5V dc $\pm 5\%$ (4.75-5.25)	Mass	4.56 oz/129.28 grams
Isolation Voltage	1528V rms/V ac		

1734-FPD Specifications

Specification	Value:	Specification	Value:
Pointbus Output Current	Pass through	Indicators	None
Input Current	10A max	Inrush Current	10A max
Module Location	Between I/O modules in 1734 system Breaks power bus	Dimensions (HxWxL)	76.2mm x 25.4mm x 133.4mm (3.00in x 1.00in x 5.25in)
Field Power Bus Voltage	264V ac max 12V dc, 24V dc/120V ac or 240V ac	Power Supply	0 - No connection 4 - Common 1 - No connection 5 - Common 2 - Ground 6 - Supply 3 - Ground 7 - Supply
Current	10A max		
Input Voltage Rating	12V dc, 24V dc, 120V ac, 240V ac nominal	Mass	4.38 oz/124.17 grams

1734-AC Input Modules (1734-IA2¹, -IM2²)

Specification	Value	Specification	Value
Module Location	1734-TB, -TBS, -TB3 or -TB3S wiring base assembly	Pointbus Current	75mA maximum @ 5V dc
Power Dissipation	0.7W maximum @ 28.8V dc	Thermal Dissipation	2.4 BTU/hr maximum @ 28.8V dc
Isolation Voltage	Tested at 1250V rms/V for 1s (1734-IA2) Tested at 1500V rms/V for 1s (1734-IM2)	Dimensions Inches (Millimeters)	2.21H x 0.47W x 2.97L (56.0H x 12.0W x 75.5L)
External AC Power Supply Voltage	120V ac, 60Hz nominal (1734-IA2) 220V ac, 60Hz nominal (1734-IM2)	External AC Power Supply Voltage Range	85-132V ac, 47-63Hz (1734-IA2) 159-264V ac, 47-63Hz (1734-IM2)
Field Wiring Terminations	0 - Input 0 1 - Input 1 2 - No Connection 3 - No Connection 4 - L2N 5 - L2/N 6 - L1 7 - L1	Mass	1.09 oz/30.90 grams

Input Specifications (1734-IA2, -IM2)

Number of Inputs	2 (1 group of 2) non-isolated, sinking	OFF-State Voltage	43V ac maximum
ON-State Voltage	1734-IA2 1734-IM2 65V ac minimum 159V ac minimum 120V ac nominal 220V ac nominal	ON-State Current	1734-IA2 1734-IM2 3.7mA minimum 5.7mA minimum 6.9mA nominal @ 120V ac, 60Hz 8.0mA nominal
OFF-State Current	2.5mA maximum (1734-IA2) 2.9mA maximum (1734-IM2)	Nominal Input Impedance	10.6k Ω (1734-IA2) 22.3k Ω (1734-IM2)
Delay Time ³ OFF to ON and ON to OFF	20ms hardware filter plus 1ms - 64ms digital filter programmable in increments of 1ms	Indicators	2 yellow input status, logic side 1 green/red network status, logic side 1 green/red module status, logic side
Keyswitch Position	8		

¹ This module is IEC3 120V ac input compliant.

² This module is IEC3 220V ac input compliant.

³ Off/on delay is time from a valid output "on" signal to output energization. On/off delay is time from a valid output "off" signal to output deenergization.

1734-AC Output Modules¹ (1734-OA2)

Specification	Value	Specification	Value
Module Location	1734-TB, TBS, TB3 or -TB3S wiring base assembly	Pointbus Current	75mA maximum @ 5V dc
Power Dissipation	0.8W maximum @ 28.8V dc	Thermal Dissipation	2.7 BTU/hr maximum @ 28.8V dc
Isolation Voltage	Tested at 1500V rms/V ac dc for 1s	Mass	1.09 oz/30.9 grams
External AC Power Supply Voltage	120/220V ac, 60Hz nominal	External AC Power Supply Voltage Range	85-264V ac, 47-63Hz
Dimensions Inches (Millimeters)	2.21H x 0.47W x 2.97L (56.0H x 12.0W x 75.5L)	Field Wiring Terminations	0 - Output 0 1 - Output 1 2 - No Connection 3 - No Connection 4 - L2N Return 5 - L2/N Return 6 - L1 7 - L1

Output Specifications

Outputs per Module	2 non-isolated, sourcing	ON-State Voltage Drop	1.0V maximum @ 0.75A
ON-State Voltage Range	74V ac minimum 120/220V ac nominal 264V ac maximum	Delay Time ² OFF to ON ON to OFF	1/2 cycle maximum 1/2 cycle maximum
ON-State Current	10mA minimum per channel 750mA maximum per channel	Indicators (field side indication, logic driven)	2 yellow status 2 green/red status
OFF-State Leakage	2.7mA max	Output Current Rating	1.5A (2 channels @ 0.75A each)
Surge Current	16A for 100ms, repeatable every 10s	Keyswitch Position	8

¹ This module is IEC3 120V/220V ac Output Compliant

¹ Off/on delay is time from a valid output "on" signal to output energization. On/off delay is time from a valid output "off" signal to output deenergization.

1734 DC Input Sink Modules¹ (1734-IB2, -IB4)

Specification:	Value:	Specification:	Value:
Module Location	1734-TB or -TBS terminal base unit	Pointbus Current	75mA max @ 5V dc
Inputs/Module	2 (1 group of 2) non-isolated, sinking (1734-IB2) 4 (1 group of 4) non-isolated, sinking (1734-IB4)	Input Filter Time ²	OFF to ON: 0-65ms (1ms default) ON to OFF: 0-65ms (1ms default)
ON-State Voltage	10V dc min 24V dc nominal 28.8 V dc max	ON-State Current	2mA min 4mA nominal @ 24V dc 5mA max
OFF-State Voltage	5V dc max	OFF-State Current	1.5mA min
Input Impedance	5.3K Ω max	Keyswitch Position	1
Indicators	2 yellow input status, logic side (1734-IB2) 4 yellow input status, logic side (1734-IB4) 1 green/red network status, logic side 1 green/red module status, logic side	Power Supply	0 - Input 0 1 - Input 1 2 - No Conn. (1734-IB2) - Input 2 (1734-IB4) 3 - No Conn. (1734-IB2) - Input 3 (1734-IB4) 4 - Common (1734-IB2) - User Supply (1734-IB4) 5 - Common (1734-IB2) - User Supply (1734-IB4) 6 - Supply 7 - Supply
Power Dissipation	0.7W max @ 28.8V dc (1734-IB2) 0.9W max @ 28.8V dc (1734-IB4)	Thermal Dissipation	2.4 BTU/hr max @ 28.8V dc (1734-IB2) 3.1 BTU/hr max @ 28.8V dc (1734-IB2)
Field Power Supply Voltage Voltage Range	24V dc nominal 10-28.8V dc	Isolation Voltage	1250V rms/V ac
Dimensions (HxWxL)	56mm x 12mm x 75.5mm (2.206in x 0.472in x 2.97in)	Mass	1.09 oz/30.90 grams - (1734-IB2) 1.12 oz/31.75 grams - (1734-IB4)

¹ 1734-IB2 and -IB4 specifications are IEC 1+ 24V dc input compliant

² Input OFF to ON, and ON to OFF, filter time is the time from a valid input signal to recognition by the module.

1734 DC Input Source Modules¹ (1734-IV2, -IV4,)

Specification:	Value:	Specification:	Value:	
Module Location	1734-TB or -TBS terminal base unit	Pointbus Current	75mA max @ 5V dc	
Inputs/Module	2 (1 group of 2) non-isolated, sourcing (1734-IV2) 4 (1 group of 4) non-isolated, sourcing (1734-IV4)	Input Filter Time ²	OFF to ON: 0-65ms (1ms default) ON to OFF: 0-65ms (1ms default)	
ON-State Voltage	10V dc min 24V dc nominal 28.8 V dc max	ON-State Current	2mA min 4mA nominal @ 24V dc 5mA max	
OFF-State Voltage	5V dc max	OFF-State Current	1.5mA min	
Input Impedance	5.3K Ω max	Keyswitch Position	1	
Power Dissipation	0.7W max @ 28.8V dc (1734-IV2) 0.9W max @ 28.8V dc (1734-IV4)	Thermal Dissipation	2.4 BTU/hr max @ 28.8V dc (1734-IV2) 3.1 BTU/hr max @ 28.8V dc (1734-IV4)	
Field Power Supply Voltage Voltage Range	24V dc nominal 10-28.8V dc	Isolation Voltage	1250V rms/V ac	
Indicators	2 yellow input status, logic side (1734-IV2) 4 yellow input status, logic side (1734-IV4) 1 green/red network status, logic side 1 green/red module status, logic side	Power Supply	0 - Input 0 1 - Input 1 2 - No Conn. (1734-IV2) Input 2 (1734-IV4) 3 - No Conn. (1734-IV2) Input 3 (1734-IV4)	4 - Common 5 - Common 6 - Supply (1734-IV2) Common (1734-IV4) 7 - Supply (1734-IV2) Common (1734-IV4)
Dimensions (HxWxL)	56mm x 12mm x 75.5mm (2.206in x 0.472in x 2.97in)	Mass	1.10 oz/31.19 grams - (1734-IV2) 1.12 oz/31.75 grams - (1734-IV4)	

¹ 1734-IV2 and -IV4 specifications are IEC 1+ 24V dc input compliant.

² Input OFF to ON, and ON to OFF, filter time is the time from a valid input signal to recognition by the module.

1734 DC Electronically Protected Output Modules (1734-OB2E, -OB4E)

Specification:	Value:	Specification:	Value:
Module Location	1734-TB or -TBS terminal base unit	Pointbus Current	75mA max @ 5V dc
Number of Outputs	2 (1734-OB2E) - 4 (1734-OB4E) nonisolated, sourcing	Keyswitch Position	1
ON-State Current	1.0mA min/channel	OFF-State Voltage	28.8V dc max
ON-State Voltage Range	10V dc min 24V dc nominal 28.8V dc max	Output Signal Delay ¹ OFF to ON ON to OFF	0.1ms max 0.1ms max
ON-State Voltage Drop	0.2V dc max	OFF-State Leakage	0.5mA max
Output Current Rating	Max 1.0A/output 2.0 max/module (1734-OB2E) 4.0 max/module (1734-OB4E)	Dimensions (HxWxL)	56mm x 12mm x 75.5mm (2.206in x 0.472in x 2.97in)
Surge Current	2A for 10ms, repeatable every 3s	Isolation Voltage	1250V rms/V ac
Power Dissipation	0.8W max @ 28.8V dc - (1734-OB2E) 1.2W max @ 28.8V dc - (1734-OB4E)	Thermal Dissipation	2.7 BTU/hr max @ 28.8V dc - (1734-OB2E) 4.1 BTU/hr max @ 28.8V dc - (1734-OB4E)
Field Wiring Terminations	0 - Output 0 1 - Output 1 2 - Output 0 (1734-OB2E) - Output 2 (1734-OB4E) 3 - Output 1 (1734-OB2E) - Output 3 (1734-OB4E) 4 - Common 5 - Common 6 - Supply (1734-OB2E) - Common (1734-OB4E) 7 - Supply (1734-OB2E) - Common (1734-OB4E)	External dc Power Supply Voltage Voltage Range	24V dc nominal 10 - 28.8V dc
		Indicators (Field side indication, logic driven)	2 yellow status (1734-OB2E) - 4 yellow status (1734-OB4E) 2 red fault (1734-OB2E) - 4 red fault (1734-OB4E) 2 green/red status
		Mass	1.15 oz/32.60 grams (1734-OB2E) 1.17 oz/33.43 grams (1734-OB4E)

¹ OFF to ON delay is time from a valid output ON signal to output energization. ON to OFF delay is time from a valid output OFF signal to output deenergization.

1734 Analog Modules (1734-IE2C, -OE2C)

Specification:	1734-IE2C Value:	1734-OE2C Value:	Specification:	1734-IE2C Value:	1734-OE2C Value:
Module Location	1734-TB or -TBS terminal base unit		Pointbus Current	75mA max @ 5V dc	
Inputs/Module	2 single-ended, non-isolated		Number of Outputs		2 single-ended, non-isolated
Input Current Terminal	4-20mA 0-20mA		Keyswitch Position	3	4
Output Current Terminal		0mA Output until module is configured 4-20mA user configurable 0-20mA user configurable	Resolution Current	16 bits - over 21mA 1.28µA/cnt, 0.32µA/cnt	13 bits over 21mA 2.56µA/cnt
Data Format	Signed Integer		Calibration	Factory Calibrated	
Conversion Type	Delta Sigma	Digital to Analog converter	Common Mode Rejection Ratio	120dB	
Conversion Rate	60ms/channel @ Notch = 50Hz 50ms/channel @ Notch = 60Hz 12ms/channel @ Notch = 250Hz 6ms/channel @ Notch = 500Hz	Digital to Analog converter	Step Response to 63% of Full Scale		24µs
External dc Power Supply Voltage Range	24V dc nominal 10-28.8V dc	24V dc nominal 10-28.8V dc (includes 5% ac ripple)	Step Response to Current Terminal	Notch Filter 60Hz 70ms 50Hz 80ms 250Hz 16ms 500Hz 8ms	
Supply Current	10mA @ 24V dc	50mA @ 24V dc (including outputs @ 20mA)			
Field Wiring Terminations	0 - Input 0 1 - Input 1 2 - Ground 3 - Ground	4 - Common 5 - Common 6 - Supply 7 - Supply	Normal Mode Rejection Ratio	-60dB -3dB Notch filter 13.1Hz @ Notch = 50Hz 15.7Hz @ Notch = 60Hz 65.5Hz @ Notch = 250Hz 131Hz @ Notch = 500Hz	
Absolute Accuracy ¹	0.1% of Full Scale @ 25°C	0.3% of Full Scale @ 25°C	Accuracy Drift w/Temp.	30ppm/°C	
Maximum Overload	Fault protected to 28.8V dc		Resist. Load on mA Output	0-330Ω	
Indicators	4 green/red indicators		Mass	1.22 oz/34.59 grams	1.26 oz/25.72 grams
Power Dissipation	0.5W max @ 28.8V dc	1.0W max @ 28.8V dc	Thermal Dissipation	1.7 BTU/hr max @ 28.8V dc	3.4 BTU/hr max @ 28.8V dc
Isolation Voltage	1250V rms/V ac No isolation between individual channels		Dimensions (HxWxL)	56mm x 12mm x 75.5mm (2.206in x 0.472in x 2.97in)	

¹ Includes offset, gain, non-linearity and repeatability error terms.**1734 Relay Module (1734-OW2)**

Specification:	Value:	Specification:	Value:
Module Location	1734-TB or -TBS terminal base unit	Pointbus Current	80mA max @ 5V dc
Number of Outputs ¹	2 Form A isolated (normally open) electromechanical relays	Keyswitch Position	7
OFF-State Leakage	1.2mA (max @ 240V ac) Bleed resistor through snubber circuit	Output Signal Delay	OFF to ON - 8ms max ON to OFF - 26ms max
Output Voltage Range (load dependent)	5-28.8V dc @ 2.0A resistive 48V dc @ 0.5A resistive 125V dc @ 0.25A resistive 125V ac @ 2.0A resistive 240V ac @ 2.0A resistive	Power Supply	0 - Output 0A 1 - Output 1A 2 - Output 0B 3 - Output 1B
Output Current Rating (at rated power)	<u>Resistive</u> 2A @ 5-28.8V dc 0.5A @ 48V dc 0.25A @ 125V dc <u>Inductive</u> 2A steady state @ 5-30V dc, L/R = 7ms 0.5A steady state @ 48V dc, L/R = 7ms 0.25A steady state @ 125V dc, L/R = 7ms 2A steady state, 15A make @ 125V ac, PF = cos θ = 0.4 2A steady state, 15A make @ 240V ac, PF = cos θ = 0.4	Power Rating (steady state)	250W max for 125V ac resistive output 480W max for 240V ac resistive output 60W max for 28.8V dc resistive output 24W max for 48V dc resistive output 31W max for 125V dc resistive output 250VA max for 125V ac inductive output 480VA max for 240V ac inductive output 60VA max for 30V dc inductive output 24VA max for 48V dc inductive output 31VA max for 125V dc inductive output

Specification:	Value:	Specification:	Value:
Isolation Voltage Between any 2 sets of contacts Customer load to logic	2550V dc for 1s 2550V dc for 1s	Field Power Supply Voltage Voltage Range Supply Current	None required 240V ac max 2A/channel max 4A/module
Initial Contact Resistance	30mΩ	Operate/Release Time	10ms max
Switching Frequency	1 operation/3s (0.3Hz at rated load) max	Bounce Time	1.2ms (mean)
Min. Contact Load	100μA at 100mV dc	Mass	1.30 oz/36.86 grams
Expected Life of Electrical Contacts	Min 100,000 operations @ rated loads	Indicators	2 green/red module/network status 2 yellow output status
Power Dissipation	0.5W max @ 28.8V dc	Thermal Dissipation	1.7 BTU/hr max @ 28.8V dc
Dimensions (HxWxL)	56mm x 12mm x 75.5mm (2.206in x 0.472in x 2.97in)		

¹ Module outputs are not fused. If external fusing is desired, you must provide external fusing.

1734-Counter Modules (1734-IJ, -IK)

Specification	Value	Specification	Value
Number of Inputs	1 - 1 group of A/Return, B/Breturn and Z/Zreturn	Input Voltage	5V (1734-IJ) 15-24V dc (1734-IK)
Input Current	19.1mA @ 5V dc (1734-IJ); 6.1mA @ 15V dc (1734-IK) 25.7mA @ 6V dc (1734-IJ); 10.2mA @ 24V dc (1734-IK)	Maximum ON-State Voltage	±6V (1734-IJ) For 1734-IK, see pub. 1734-TD002A-EN-P
Input OFF-State Current	≤0.250mA max	Input ON-State Current	≥5mA
Input OFF-State Voltage	≤1.25V dc (1734-IJ) / ≤1.8V dc (1734-IK)	Input ON-State Voltage	≥2.6V dc (1734-IJ); ≥12.5V dc (1734-IK)
Input Filter Selections (per A/B/Z group)	Off 10μs 100μs 1.0ms 10.0ms	Maximum Input Frequency	1.0MHz counter and encoder X1 configurations 500kHz encoder X2 configuration (no filter) 250kHz encoder X4 configuration (no filter)
Module Location	1734-TB, -TBS, -TB3, -TB3S wiring base assembly	Pointbus Current	160mA maximum
Keyswitch Position	2	Mass	1.15 oz/32.60 grams
Thermal Dissipation	3.75 BTU/hr maximum @ rated load (1734-IJ) 5.1 BTU/hr maximum @ rated load (1734-IK)	Power Dissipation	1.1W maximum @ rated load (1734-IJ) 1.5W maximum @ rated load (1734-IK)
Isolation Voltage (minimum)	Prequalified at 1250V ac/rms between: System side Chassis ground A/B/Z inputs	Field Wiring Terminations	0 - A 1 - Aret 2 - B 3 - Bret 4 - Z 5 - Zret 6 - Chassis ground 7 - Chassis ground
External dc Power	No additional external power required to power module.	DimensionsInches (Millimeters)	2.21H x 0.47W x 2.97L (56.0H x 12.0W x 75.5L)

1734-Very High Speed Counter Modules (1734-VHSC24, -VHSC5)

Specification	Value	Specification	Value
Module Location	1734-TB, -TBS, -TB3, -TB3S wiring base assembly	Keyswitch Position	2
Pointbus Current	180mA maximum	Field Power Bus	24V dc nominal; range 10-28.8V dc
Power Dissipation	1.9W maximum @ rated load (1734-VHSC24) 1.5W maximum @ rated load (1734-VHSC5)	Thermal Dissipation	6.5 BTU/hr maximum @ rated load (1734-VHSC24) 5.1 BTU/hr maximum @ rated load (1734-VHSC5)
Isolation Voltage (minimum)	Prequalified for 1250V ac/rms between: Module 1 System side (PointBus) Chassis ground A/B/Z inputs 00/01 and user power supply Module 2 System side Chassis ground Vaux ± User power supply common	Field Wiring Terminations	<u>Module 1</u> 0 - A 1 - Aret 2 - B 3 - Bret 4 - Z 5 - Zret 6 - Output 0 7 - Output 1 <u>Module 2</u> 0 - Chassis ground 1 - Chassis ground 2 - Return 0 3 - Return 1 4 - -V 5 - -V 6 - +V 7 - +V
External dc Power (does not represent power required to supply outputs)	No additional external power required to power module	Dimensions Inches (Millimeters)	2.21H x 0.47W x 2.97L (56.0H x 12.0W x 75.5L)

Mass	1.15 oz/32.60 grams		
Input Specifications			
Number of Inputs	1 - 1 group of A/Return, B/Breturn and Z/Zreturn	Maximum Input Frequency	1.0MHz counter and encoder X1 configurations 500kHz encoder X2 configuration (no filter) 250kHz encoder X4 configuration (no filter)
Input Voltage	15-24V dc(1734-VHSC24) 5V dc (1734-VHSC5)	Maximum ON-State Voltage	For 1734-VHSC24, see pub. 1734-TD002A-EN-P ± 6V (1734-VHSC5)
Input Current	6.1mA @ 15V dc (1734-VHSC24) 10.2mA @ 24V dc (1734-VHSC24) 19.1mA @ 5V dc (1734-VHSC5) 25.7mA @ 6V dc (1734-VHSC5)	Input Filter Selections	Off 10µs 100µs 1.0ms 10.0ms
Input OFF-State Current	≤0.250mA max	Input OFF-State Voltage	≤1.8V dc (1734-VHSC24); ≤1.25V dc (1734-VHSC5)
Input ON-State Current	≥5mA	Input ON-State Voltage	≥12.5V dc (1734-VHSC24); ≥2.6V dc (1734-VHSC5)
Output Specifications (1734-VHSC24, -VHSC4)			
Number of Outputs	1 isolated group of 2 capable of 0.5A @ 24V dc	Output Control	Outputs can be tied to any of 4 compare windows
Output Supply Volt. Range	10-28.8V dc	ON-State Current	0.5A maximum
OFF-State Leakage Current	≤0.5mA	Open Wire Detection	Open wire detected when output is turned off
Short Circuit Current	6A - Outputs are short circuit protected and either cycle until the fault is corrected, or latch off (depending upon programming) Short circuit detected when output is turned on.	Delay Time ¹ OFF to ON ON to OFF	25µs (load dependent) 150µs (load dependent)
ON-State Voltage Drop	≤0.3V dc @ 0.5A	¹ Off/on delay is time from a valid output "on" signal to output energization. On/off delay is time from a valid output "off" signal to output deenergization.	

European Communities (EC) Directive Compliance

If this product has the CE mark it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2 EMC — Generic Emission Standard, Part 2 — Industrial Environment
- EN 50082-2 EMC — Generic Immunity Standard, Part 2 — Industrial Environment

This product is intended for use in an industrial environment.

Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 - Equipment Requirements and Tests. For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as the Allen-Bradley publication Industrial Automation Wiring and Grounding Guidelines For Noise Immunity, publication 1770-4.1.

This equipment is classified as open equipment and must be mounted in an enclosure during operation to provide safety protection.

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