

# POINT I/O Modules

Bulletin 1734  
Selection Guide



**Allen-Bradley**



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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 [SGL-1.1](http://literature.rockwellautomation.com) available from your local Rockwell Automation sales office or online at <http://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.

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

<b>WARNING</b> 	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.
<b>IMPORTANT</b>	Identifies information that is critical for successful application and understanding of the product.
<b>ATTENTION</b> 	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 consequence.
<b>SHOCK HAZARD</b> 	Labels may be on or inside the equipment, such as a drive or motor, to alert people that dangerous voltage may be present.
<b>BURN HAZARD</b> 	Labels may be on or inside the equipment, such as a drive or motor, to alert people that surfaces may reach dangerous temperatures.

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provide support for higher density (8 channel) POINT I/O modules and management of wiring of field devices to the POINT I/O solution.

#### 1734 Terminal Modules Technical Specifications

	1734-CTM	1734-VTM
POINTBus current (mA)	—	
Power dissipation	—	
Thermal dissipation	—	
Terminal base unit	1734-TB, 1734-TBS, 1734-TOP, or 1734-TOPS	
Keyswitch position	5	
Isolation voltage	250V (continuous), Basic Insulation Type Type tested at 1600V DC for 60 s, field-side to system	
Field power supply voltage range	10...28.8V DC, 120/240V AC	
Field power supply current, max	2 A per point, 4 A module	
Terminal base screw torque	Determined by installed terminal block	
Field wiring terminations	0 - Common 1 - Common 2 - Common 3 - Common 4 - Common 5 - Common 6 - Common 7 - Common	0 - Voltage out 1 - Voltage out 2 - Voltage out 3 - Voltage out 4 - Voltage out 5 - Voltage out 6 - Voltage out 7 - Voltage out

### 1734-4IOL 4 Channel IO-Link Master Module

The POINT I/O 4 Channel IO-Link Master module provides four channels that can be individually configured as IO-Link master or as a standard digital I/O module. The IO-Link channel master module can be configured to fit any IO-Link and/or discrete application.

In IO-Link Master mode, the module supports four channels for IO-Link master communication with IO-Link compatible devices. In standard digital I/O mode, the module supports four channels of digital input or output. Digital input channels support IEC61131-2 type 1 input. Channels can also be disabled if not in use.

#### 1734-4IOL Module Technical Specifications

	1734-4IOL
Number of inputs	4 single-ended, non-mutual isolated, configurable
Number of outputs	
Communication rate, IO-Link	4.8 kB; 38.4 kB; 230.4 kB

**1734-4IOL Module Technical Specifications**

Device cable length, IO-Link, max	20 m
Terminal base screw torque	0.8 Nm (7 lb-in.)
Module location	1734-TB, 1734-TBS, 1734-TB3, 1734-TB3S, 1734-TOP, 1734-TOPS, 1734-TOP3, or 1734-TOP3S wiring base assembly
POINTBus current, max	100 mA @ 5V DC
Power dissipation, max	1.5 W @ 28.8V DC
Thermal dissipation, max	5.12 BTU/hr @ 28.8V DC
Isolation voltage	50V (continuous), Basic Insulation Type Tested at 2121V DC for 60 s, field-side to system. No isolation between individual channels.
Field power bus supply, nom	24V DC
Field power bus supply, min	19.2V DC
Field power bus supply, max	28.8V DC
Indicators	1 green/red – module status indicator 1 green/red – network status indicator 4 yellow – channel status indicators 4 green – IO-Link status indicators
Wiring category <sup>(1)</sup>	2 – on signal ports
Wire size	0.25...2.5 mm <sup>2</sup> (22...14 AWG) solid or stranded copper wire rated at 75 °C (167 °F), or greater. 1.2 mm (3/64 in.) insulation max
Wire type	Copper
Dimensions, approx., HxWxD	56 x 12 x 75.5 mm (2.21 x 0.47 x 2.97 in.)
Weight, approx.	36 g (1.27 oz)
Enclosure type rating	None (open-style)
Keypress position	2 (specialty)

<sup>(1)</sup> Use this conductor category information for planning conductor routing as described in Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

**Specialty I/O Modules Environmental Specifications****1734 Specialty I/O Modules Environmental Specifications**

Attribute	Value
Operating temperature	-20...55°C (-4...131°F)
Nonoperating Temperature	-40...85°C (-40...185°F)
Relative humidity	5...95% noncondensing
Operating shock	30 g
Nonoperating shock	50 g

**1734 Specialty I/O Modules Environmental Specifications**

Vibration	5 g @ 10...500 Hz
Enclosure type rating	None (open-style)
Mounting type	DIN Rail
Certifications	c-UL-us, CE, RCM, KC

## Counter Modules

The POINT I/O counter modules serve as signal conditioners and function blocks (that is, counters) between the customer process signals on the mounting base, and the POINTBus backplane containing the command information. The three main functional blocks are the customer digital I/O interface, the counter ASIC, and the microprocessor.

The counter modules accept feedback from:

- Encoders (either single-ended or differential)
- Pulse generators
- Mechanical limit switches
- Frequencies up to 1 MHz

A filter is available with four settings: 50 Hz, 500 Hz, 5 kHz, 50 kHz. The filter can be turned off to achieve the fastest counting rate.

The modules return the count or frequency in the form of a 24-bit binary number (0...16,777,215) expressed in a 32-bit word. Each counter has a user-selectable preset and rollover value associated with it.

The counter modules operate in the following modes.

- Counter mode — read incoming single-phase pulses, return a binary count.
- Encoder mode — read incoming two-phase quadrature pulses, return a binary count.
- Period/rate mode — count internal clocks during the on period, return a frequency (1734-VHSC24 and 1734-VHSC5 outputs are updated only at the end of the period).
- Continuous/rate mode — count internal clocks during the on period, return a frequency (1734-VHSC24 and 1734-VHSC5 outputs are updated continuously during this period).
- Rate measurement mode — read pulses during the sample period, return a frequency.
- Pulse width modulation (PWM) mode — generate a pulse width modulated signal (1734-VHSC24 and 1734-VHSC5 only).
- Pulse generator mode — generates a pulse of defined width, returns width and quantity of trigger (1734-VHSC24 and 1734-VHSC5 only).