Temperature Input Modules

POINT I/O temperature modules can detect and communicate these electronic conditions:

Overrange alarm	• The channel overrange alarm is set if the input is greater than the maximum temperature (thermocouple or RTD range dependent), millivolt (+75V) or resistance (600 Ω) range value, or above the maximum range of the thermocouple or RTD. • The cold-junction compensator has its own over-range alarm. If the CJC temperature goes above 70 °C (158 °F), the over-range alarm is set.
Underrange alarm	• The channel underrange alarm is set if the input is less than the minimum temperature (thermocouple or RTD range dependent), millivolt (-75 mV) or resistance (10 Ω) range value, or below the minimum range of the thermocouple or RTD. • The cold-junction compensator has its own underrange alarm. If the CJC temperature goes below 0 °C (32 °F), the under-range alarm is set.
Level alarm (low-low, low, high, high-high)	• When the channel input goes below a low alarm or above a high alarm, a bit is set in the data table. All alarm status bits can be read individually or by reading the channel status byte (bits 2…5 for channel 0; bits 10…13 for channel 1). • Each channel alarm can be configured individually.
Open-wire alarm	• The module has the ability to check for a broken or detached wire. In any mode, if a broken/detached lead is detected, the data value is forced to maximum and the over-range alarm is set. Once the alarm is issued, it remains active as long as the input signal is faulted.

Cold-junction Compensation (1734-IT2I only)

When using thermocouples, cold-junction compensation is required at the termination of the thermocouple wire. Cold-junction can be accomplished in three ways:

- Enter an estimated temperature
- Use a 1734-TBCJC mounting base (recommended)
- Use external cold-junction compensators

Entering an estimated temperature is the least accurate way for cold-junction compensation. Using external compensators is the most expensive way, while using the 1734-TBCJC provides the easiest and most accurate method.

An open cold-junction compensator causes the input point to the maximum temperature value for the selected input type. This causes an alarm to be set. Once the alarm is issued, it remains active as long as the input signal is faulted (above maximum).

1734 Analog Temperature Input Modules Technical Specifications

	1734-IR2	**1734-IR2E**	**1734-IT2I**
External DC supply current, nom	15 mA @ 24V DC		—
Terminal base unit	1734-TB, 1734-TBS, 1734-TOP, or 1734-TOPS		1734-TBCJC
Keyswitch position	6		

[1] Includes offset, gain, non-linearity and repeatability error terms.

Analog Output Modules

1734 Analog Output Modules Technical Specifications

	1734-OE2C	**1734-OE2V**	**1734-OE4C**
Number of outputs	2		4
Output signal range	4…20 mA 0…20 mA	0…10V ±10V	4…20 mA 0…20 mA
Output resolution	13 bits - over 0…21 mA 2.5 µA/cnt	14 bits (13 plus sign) 1.28 mV/cnt in unipolar or bipolar mode	16 bits - over 0…21 mA 2.5 µA/cnt
Data format	Signed integer		
Accuracy	Current output: 0.1% Full Scale @ 25 °C[1]	Voltage output: 0.1% Full Scale @ 25 °C[1]	Current output: 0.1% Full Scale @ 25 °C[1]
Accuracy drift w/temp.	Current output: 30 ppm/°C	Voltage output: 5 ppm/°C	Current output: <50 ppm/°C
Step response to 63% of FS, output	Current output: 24 µs	Voltage output: 20 µs	Current output: 40 µs
Output conversion rate	16 µs	20 µs	1 µs
POINTBus current	75 mA @ 5V DC		
Power dissipation, max	750 Ω load on each output - 1.23W 0 Ω load on each output - 1.83W	1.0W	750 Ω load on each output - 1.86W 0 Ω load on each channel - 2.15W
Thermal dissipation, max	750 Ω load on each output - 4.19 BTU/hr 0 Ω load on each output - 6.24 BTU/hr	3.4 BTU/hr	750 Ω load on each output - 6.34 BTU/hr 0 Ω load on each channel 7.33 BTU/hr
Terminal base unit	1734-TB, 1734-TBS, 1734-TOP, or 1734-TOPS		
Keyswitch position	4		

[1] Includes offset, gain, non-linearity and repeatability error terms.

Each assembly includes a removable terminal block (RTB) provides 8 or 12 separate terminal locations for field wiring. The RTB also provides vertical access to wire and screw terminations. A separate terminal point is provided for each wire, including a shield ground terminal point for 2-point analog modules.

POINT I/O Removable Terminal Base Assembly
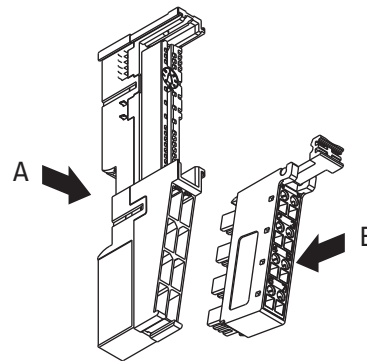
45103

Each terminal base assembly includes a base (A) that mounts onto the DIN-rail and a removable terminal block (B) for I/O wiring.

Once the RTB is wired properly, you never need to rewire terminations. The RTB separates independently of the I/O mounting base and I/O module to facilitate rapid installation and commissioning of the system. Each terminal is numbered on the bottom of the RTB to simplify troubleshooting during commissioning or maintenance cycles. Spare or replacement RTBs can be ordered separate from the terminal base assembly.
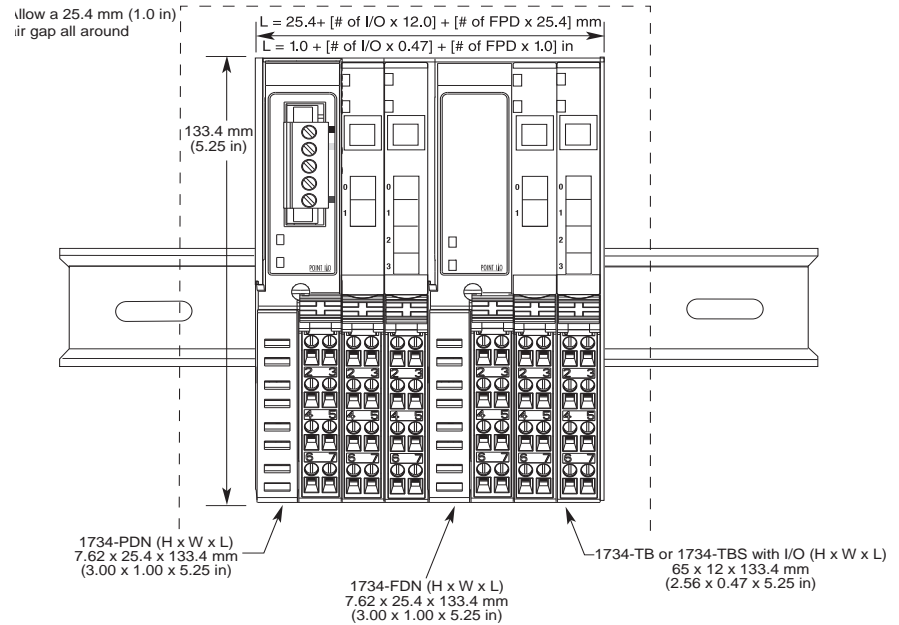
Terminal Base Assemblies

Terminal Base Assembly Cat. No.	Description	Terminal Base Screw Torque	Replacement RTB Cat. No.
1734-TB	Mounting base with 8-terminal cage-clamp RTB	0.6 Nm (7 lb-in)	1734-RTB
1734-TBS	Mounting base with 8-terminal spring-clamp RTB		1734-RTBS
1734-TB3	Mounting base with 12-terminal cage-clamp RTB		1734-RTB3
1734-TB3S	Mounting base with 12-terminal spring-clamp RTB		1734-RTB3S
1734-TBCJC[1]	Mounting base with cold-junction compensation RTB	0.5…0.6 Nm (5…7 lb-in)	1734-RTBCJC[1]

[1]   For use with the 1734-IT2I thermocouple input module.

Approximate Mounting Dimensions

POINT I/O with 1734-PDN Mounting Dimensions

Allow a 25.4 mm (1.0 in) air gap all around

L = 25.4+ [# of I/O x 12.0] + [# of FPD x 25.4] mm
L = 1.0 + [# of I/O x 0.47] + [# of FPD x 1.0] in

133.4 mm
(5.25 in)

1734-PDN (H x W x L)
7.62 x 25.4 x 133.4 mm
(3.00 x 1.00 x 5.25 in)

1734-FDN (H x W x L)
7.62 x 25.4 x 133.4 mm
(3.00 x 1.00 x 5.25 in)

1734-TB or 1734-TBS with I/O (H x W x L)
65 x 12 x 133.4 mm
(2.56 x 0.47 x 5.25 in)

| **IMPORTANT** | When mounting the 1734-IB8S, 1734-OB8S, and 1734-IE4S modules, ensure that there is 2 in. of clearance space above the POINT rail. |