Bently Nevada 133827-01

RTD/TC Non-Isolated I/O Module with External Terminations

Bently Nevada 133827-01 is the external-termination, non-isolated RTD/TC I/O module for the 3500/60 temperature-monitoring system. It links remote temperature-sensor terminations to a six-channel machinery temperature monitor. The non-isolated input design accepts RTDs, thermocouples or a mixture of both, supporting equipment with different temperature-sensor types. The associated 3500/60 conditions each input and compares the measured temperature with programmed alarm limits; proportional recorder outputs are not part of the 3500/60 configuration.



Technical Specifications

Product Identity	
Manufacturer	Bently Nevada
Complete part number	133827-01
Compatible system	3500/60 temperature monitor
I/O dimensions	241.3 × 24.4 × 99.1 mm (H × W × D)
Rack space	One full-height rear I/O slot
Functional Configuration	
Monitor channels	Six
Input design	RTD/TC; non-isolated
Termination	External
Thermocouples	E, J, K and T (type-dependent ranges)
RTDs	Supported platinum, nickel and copper RTD types
Performance & Power	
Recorder outputs	Not provided by the 3500/60
Environment	
Operating temperature	–30 to +65 °C
Storage temperature	–40 to +85 °C

Selected original manufacturer pages follow on pages 3–5.

Compatibility & Selection Guide

System compatibility. 133827-01 works with the 3500/60 and 3500 Rack Configuration Software. Software settings define the sensor type, full-scale range and alarm levels for each of the six channels. RTD-only, thermocouple-only and mixed RTD/TC configurations are supported. The 3500/60 platform also supports triple modular redundant temperature monitoring with three adjacent monitors and system voting to avoid single-point failures.

Wiring & Installation Reference

Field connections

Configure each channel for its actual RTD or thermocouple type.

Use 133908-01 or 133916-01 external blocks with the selected 134544 cable.

Installation and replacement

Match the sensor. Record the sensor type and selected temperature range for each channel.

Check the termination. Confirm the external connection arrangement and the correct I/O part number.

Verify the system. Use the 3500/60 and 3500/61 user guide for connections, then check readings and alarm settings.

Installation precautions. Use the applicable 3500 monitor user guide and the actual module markings for terminal assignments and service procedures. Match the complete I/O part number, monitor revision and transducer configuration before reconnecting field circuits.

View connection reference (PDF) · PDF page 5 | View module reference · PDF page 5

Manufacturer sources: 3500/60 and 3500/61 Temperature Modules 141540 Rev. L.

Specifications

Inputs

Signal	Accepts from 1 to 6 RTD or TC transducer signals.
Input Impedance	10 MΩ for each lead input.
Power Consumption	
3500/60	Nominal consumption of 7 watts.
3500/61	Nominal consumption of 9 watts.

Tranducers

TCs	
Type E	-100 ºC to +1000 ºC, (-148 ºF to +1832 ºF).
Type J	-18 ºC to +760 ºC, (+0 ºF to +1400 ºF).
Type K	-18 ºC to +1370 ºC, (+0 ºF to +2498 ºF)
.Type T	-160 ºC to +400 ºC, (-256 ºF to +752 ºF).
RTDs	
100Ω 3-wire & 4-wire platinum RTD (alpha = 0.00385)	-200º C to +850º C (-328 ºF to +1562 ºF). With external barriers: -50 ºC to +850 ºC (-122 ºF to +1562 ºF).
100Ω 3-wire & 4-wire platinum RTD (alpha = 0.00392)	-200 ºC to +700 ºC (-328 ºF to +1292 ºF). With external barriers: -50 ºC to +260 ºC (-122 ºF to + 1292 ºF).
120Ω 3-wire & 4-wire nickel RTD	-80 ºC to +260 ºC (-112 ºF to +500 ºF). With external barriers: -50 ºC to +260 ºC (-122 ºF to + 500 ºF).
10Ω 3-wire & 4-wire copper RTD	-100 ºC to +260 ºC, (-148 ºF to +500 ºF). With external barriers: -50 ºC to +260 ºC (-122 ºF to +500 ºF).
	Platinum RTD's with 0.00385 alphas are the worldwide industrial standard and are recommended for all applications
I/O Modules	
	Isolated I/O Module System Isolation: 500Vdc Channel to Channel Isolation: 250 Vdc Isolation is only required for fault scenarios and these voltages will not be present on

When using any of the isolated thermocouple I/O modules (-03 or -04 I/O ordering option) with Type E thermocouples, the available full-scale range will be reduced if the 3500 system is operated in an ambient temperature above +35C. The reduced range will be -60C to +1000C (-76F to +1832F). Rack configuration software will allow the user to configure a channel down to -100C but the system will not function properly in this scenario and therefore should not be configured to operate with these settings.

	Termination, 12-position, Blue.
00580444	Connector Header, Internal Termination, 15-position, Green.
134542	3500/60 & 3500/61 User Guide

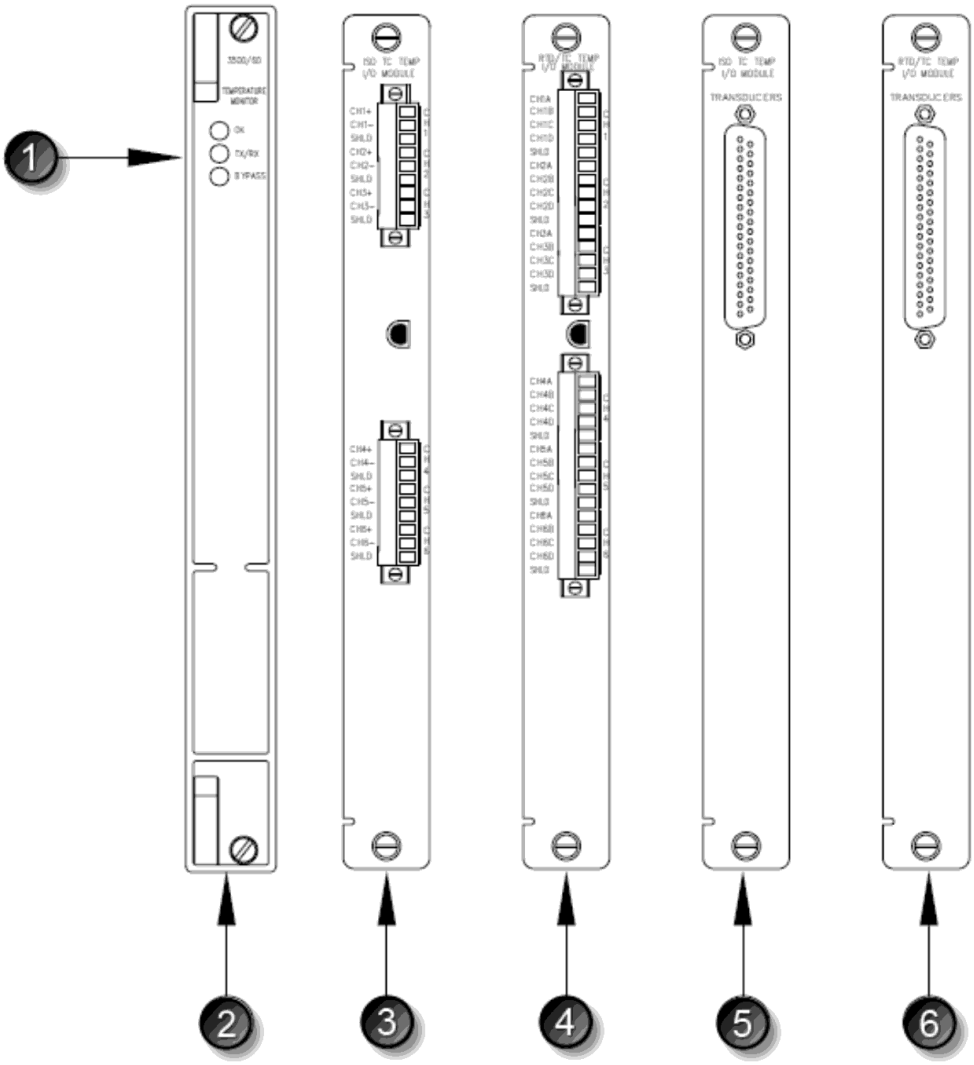
3500/60 -Specific

163179-01	3500/60 Temperature Monitor (without recorders)
133827-01	3500/60 RTD/TC Non-Isolated I/O Module, External Terminations.
133819-01	3500/60 RTD/TC non-Isolated I/O Module, Internal Terminations
133835-01	3500/60 TC Isolated I/O Module, Internal Terminations.
133843-01	3500/60 TC Isolated I/O Module, External Terminations.
136711-01	3500/60 RTD/TC I/O Module with Internal Barriers and Internal Terminations. (Not-Isolated)

3500/61 -Specific

163179-02	3500/61 Temperature Monitor (with recorders)
133819-02	3500/61 RTD/TC Non-Isolated I/O Module Internal Terminations.
133827-02	3500/61 RTD/TC Non-Isolated I/O Module External Terminations.
133835-02	3500/61 TC Isolated I/O Module Internal Terminations.
133843-02	3500/61 TC Isolated I/O Module External Terminations.
133892-01	3500/61 Recorder Output External Termination Block (Terminal Strip connectors).
133900-01	3500/61 Recorder Output External Termination Block (Euro Style connectors).
136711-02	3500/61 RTD/TC I/O Module with Internal Barriers and Internal Terminations. (Not-Isolated)

Graphs and Figures



1. Status LEDs
2. 3500/60 Main Module Front View
3. ISO TC Temp I/O Module (Internal Terminations)
4. RTD/TC Temp I/O Module (Internal Terminations)
5. ISO TC Temp I/O Module (External Terminations)
6. RTD/TC Temp I/O Module (External Terminations)

Figure 1: Front and Rear Views of the 3500/60 Temperature Monitor (Without Recorder Outputs)