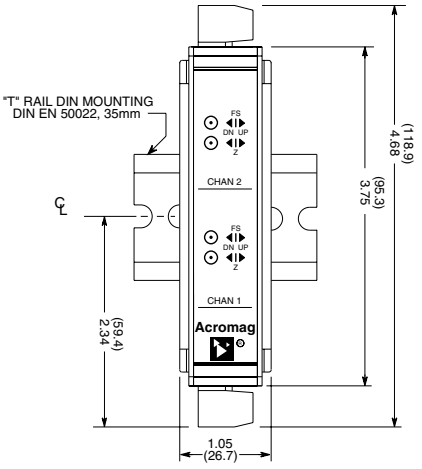
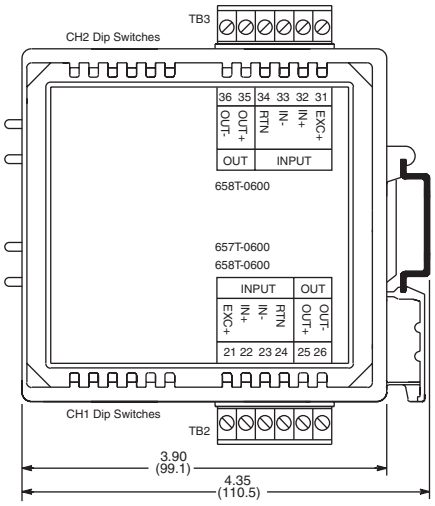
Isolated Transmitters: 600T Series

657T, 658T Multi-Channel, Two-Wire Transmitters



NOTE: ALL DIMENSION ARE IN INCHES (MILLIMETERS)



RTD / resistance input ◆ Single/dual channel loop-powered transmitter

Description

Models

657T: Single RTD input channel
658T: Dual RTD input channels

These units accept universal RTD or resistance input signals and output proportional DC current signals. The output can also be linearized to the input sensor signal. Single-channel 657T and dual-channel 658T units are ideal for panel shops and end-users who require a high-density signal conditioner that can accommodate a broad range of temperature measurement applications.

Configuration is fast and easy. First, you select the input type with a simple DIP switch. Then, you set your zero/full-scale output values using a toggle switch on the front panel to increase or decrease the signal until you read the desired output value on your voltmeter. The toggles make it easy to calibrate a normal (proportional) or reverse-acting (inverse) response in seconds. After completing the calibration, just press the mode/set toggle and your configuration settings are safely saved to nonvolatile memory.

Input Ranges

RTD: 100 ohm Pt, 120 ohm Ni, 10 ohm Cu
Resistance: 0 to 500 ohms

Output Range

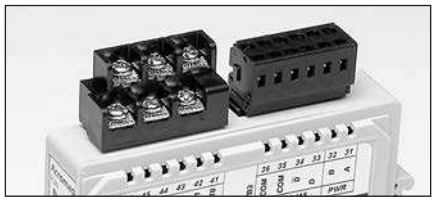
4 to 20mA DC

Power Requirement

12 to 50V DC (loop-powered)
Two-wire transmitter

Approvals

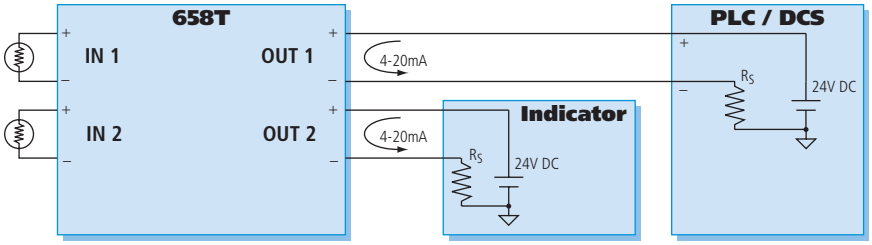
CE marked. UL, cUL listed
Class I; Division 2; Groups A, B, C, D.



Optional terminal blocks: barrier strip (left) and spring clamp (right). Cage clamp terminal is standard.

Key Features & Benefits

- Selectable RTD input types offer flexibility to fit many applications.
- DIP switch-configuration and self-ranging technologies speed installation without pots, jumpers, or software.
- Toggle-switch calibration simplifies field adjustments for faster and easier maintenance.
- Configuration lockout safety feature prevents tampering and accidental changes.
- Reverse-acting output capability enables inverse proportional control signals.
- Dual channel model saves space and reduces equipment costs.
- High-resolution Σ–Δ A/D converters deliver superior accuracy for reliable measurements.
- Lead break detection supports upscale or downscale failsafe mode.



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Tel: 248-295-0880 ■ Fax: 248-624-9234 ■ sales@acromag.com ■ www.acromag.com ■ 30765 S Wixom Rd, Wixom, MI 48393 USA

Isolated Transmitters: 600T Series

Performance Specifications

◆ General Input

Analog to Digital Converter (ADC)
16-bit S-D A/D converter.

Noise Rejection
Normal Mode: Better than 40dB @ 60Hz.
Common Mode: Better than 100dB @ 60Hz.

Input Overvoltage Protection
Bipolar Transient Voltage Suppressors (TVS).

Input Impedance
400K ohm at 10mV span;
input current, ±25nA, typical (±30nA, max.).

◆ RTD Input

RTD Input Ranges
100Ω Pt, 120Ω Ni, or 10Ω Cu; user-configured.

RTD	°C Range (°F Range)	Accuracy
Pt1	-200 to 850°C (-328 to 1562°F)	±0.25°C
Pt2	-200 to 850°C (-328 to 1562°F)	±0.25°C
Ni	-80 to 320°C (-112 to 608°F)	±0.25°C
Cu -	200 to 260°C (-328 to 500°F)	±1.00°C

Alpha: Pt1 (α = 1.3850), Pt2 (α = 1.3911), Ni α = 1.6720), Cu (α = 1.4272).

2, 3, or 4-wire configurations supported. Module provides sensor excitation, linearization, lead-wire compensation, and sensor break detection.

RTD Excitation Current
0.5mA DC typical, all types.

RTD Lead-Wire Compensation
25 ohms per lead.

RTD Break Detection
Configurable for either upscale or downscale.

◆ Resistance Input

Resistance Input Range
0 to 500 ohms.

Resistance Accuracy
±0.05 ohms.

◆ Output

Output Range
Range: 4 to 20mA DC, 3.8 to 22mA range typical.

Output Compliance
Rload = (Vsupply - 12V) / 0.02A

Output Response Control
Proportional/inverse selectable.

Ambient Temperature Effect
Better than ±0.006% of input span per °C or ±100ppm/°C, whichever is greater.

Output Response Time (for input step change)
700mS typical to 98% of final output value.

◆ Environmental

Ambient Temperature
Operating: -25 to 75°C (-13 to 167°F).
Storage: -40 to 85°C (-40 to 185°F).

Relative Humidity
5 to 95%, noncondensing.

Power Requirement
12 to 50V DC @ 25mA for each output channel.

Isolation
Not isolated.

Radiated Field Immunity (RFI)
Complies with EN61000-4-3 Level 3 and EN50082-1.

Electromagnetic Field Immunity (EMI)
Less than ±0.25% of output span effect.

Electrical Fast Transient (EFT)
Complies with EN61000-4-4 Level 3 and EN50082-1.

Electrostatic Discharge (ESD)
Complies with EN61000-4-2 Level 3 and EN50082-1.

Radiated Emissions
Meets or exceeds EN50081-1 for Class B equipment.

Approvals
CE marked, UL & cUL listed.
Hazardous Locations: Class I: Div. 2; Groups A, B, C, D.

◆ Physical

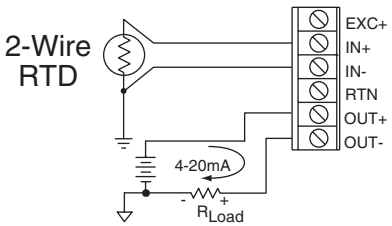
Enclosure
Case: Self-extinguishing NYLON type 6.6 polyamide thermoplastic UL94 V-2 NEMA Type 1 enclosure.

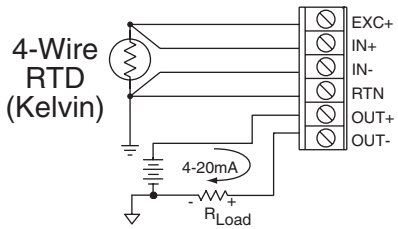
Connectors (Removable Terminal Blocks)
Wire Range: AWG #12-24.

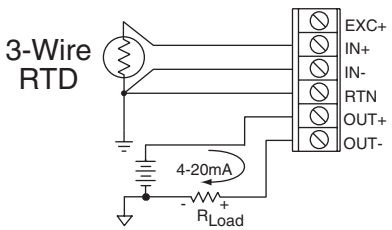
Printed Circuit Boards
Military grade FR-4 epoxy glass circuit board.

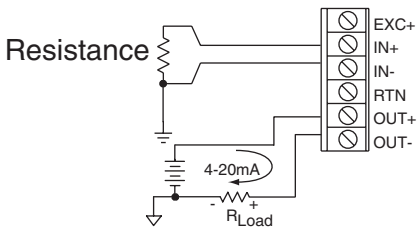
Dimensions
1.05W x 4.68H x 4.35D inches.
26.7W x 118.9H x 110.5D millimeters.

Shipping Weight
1 pound (0.45 Kg) packed.









Ordering Information

◆ Models

657T-0600 (add "-C" for factory calibration)
Single channel RTD 2-wire transmitter

658T-0600 (add "-C" for factory calibration)
Dual channel RTD 2-wire transmitter

Add "-C" suffix for optional factory configuration.

◆ Accessories (see Page 21)

PS5R-SD24
Power supply (24V DC, 2.5A).

TBK-B01
Optional terminal block kit, barrier strip style, 2 pcs.

TBK-S01
Optional terminal block kit, spring clamp style, 2 pcs.

DIN RAIL 3.0
DIN RAIL 16.7
DIN rail strip, Type T, 3 inches (75mm) or 16.7 inches (425mm)

20RM-16-DIN
19" rack-mount kit with DIN rail.
Holds sixteen 650T transmitters.

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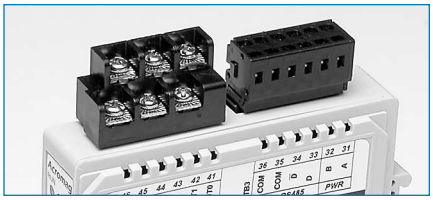
Isolated Transmitters: 600T Series

Accessories

◆ Terminal Blocks



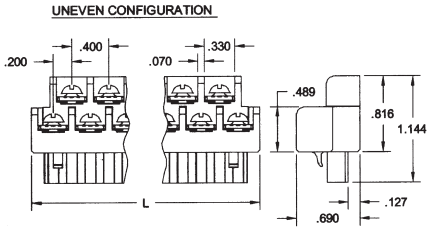
Barrier Strip Terminal Blocks*

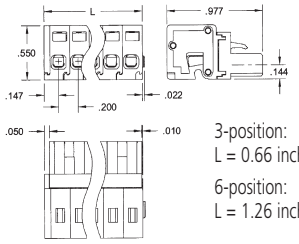
Spring Clamp Terminal Blocks*

Ordering Information

* I/O modules ship with cage clamp terminal blocks. Terminal block kits are for replacement purposes.

See I/O module information for compatibility





Wire range:
AWG #12-26

3-position:
L = 0.66 inches (16.9 mm)

6-position:
L = 1.26 inches (32.3 mm)

Barrier Strip

TBK-B01
Terminal block kit, two 6-position pieces

TBK-B02
Terminal block kit, four 6-position pieces

TBK-B03
Terminal block kit, one 3-position and three 6-position pieces

Spring Clamp

TBK-S01
Terminal block kit, two 6-position pieces

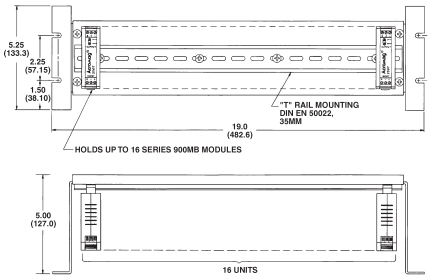
TBK-S02
Terminal block kit, four 6-position pieces

TBK-S03
Terminal block kit, one 3-position and three 6-position pieces

◆ Mounting Hardware

Din-Rail Mounting

For your convenience, Acromag offers several mounting accessories to simplify your system installation. Our 19" rack-mount kit provides a clean solution for mounting your I/O modules and a power supply. Or you can buy precut DIN rail strips for mounting on any flat surface.

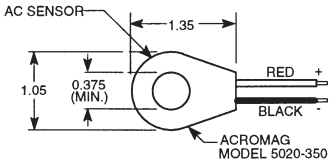


Ordering Information

20RM-16-DIN
19" rack-mount kit with DIN rail.

DIN RAIL 3.0
DIN RAIL 16.7
DIN rail strip, Type T, 3 inches (75mm) or 16.7 inches (425mm)

◆ AC Current Sensor



This external sensor measures a 0-20A AC signal and provides a DC mA output for an Ethernet input module. It enables remote mounting of the I/O module for safe monitoring of the AC signal.

Ordering Information

5020-350
AC current sensor

◆ Power Supplies

60W Universal Slimline Power Supply

Input Power Requirement
85 to 264V AC or 100 to 370V DC

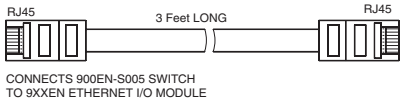
Output
24V DC, 2.5A (60W)

Ordering Information

PS5R-SD24
Universal 60W power supply

Visit www.acromag.com for additional models and more information.

◆ Cables



Ordering Information

5035-355
Ethernet straight cable, CAT5, 3 feet long, shielded

5035-360
Ethernet crossover cable, CAT5E, 5 feet long, shielded

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