



BURNS[®]
ENGINEERING

Model T16
Miniature 2-wire Programmable
Temperature Transmitter
Instruction Manual

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Notes:



While this information is presented in good faith and is believed to be accurate, Burns Engineering cannot guarantee satisfactory results from reliance upon this information. For complete warranty information and product specification, contact Burns Engineering.

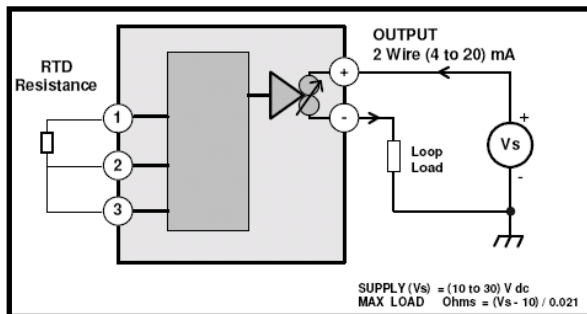
Safety Instructions:

General

- To maintain CE compliance all input wires must be less than 3 meters.
- This product contains no user serviceable parts or internal adjustments. No attempt should be made to repair this device.
- Disconnect all power sources before performing any maintenance.

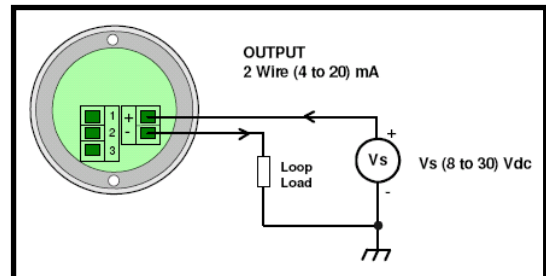
Installation

- This device must be installed by qualified personnel who are familiar with the national and international codes, laws, directives and standards that apply.
- All electrical wiring must be installed to comply with the area standards and regulations.
- De-energize all power before attempting electrical connection.
- Maximum operating conditions:
 - Supply: 30VDC (reverse protected to -30VDC)
 - Supply current on over voltage: +100 mA (When supply exceeds 30VDC, protection device will conduct)
 - Ambient temperature: -40°C to 85°C

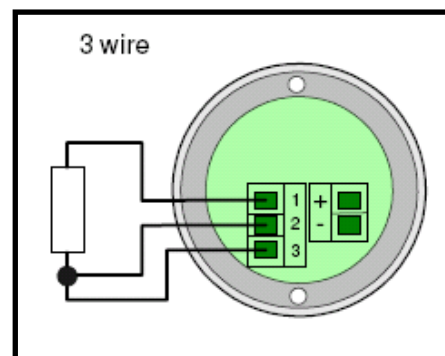


Mounting and Installation:

- To access the connections unscrew the two slotted screws on the connection head cover and remove the cover. Be sure to retain the gasket for reinstallation of cover.
- The T16 is integral to the miniature connection head and typically is provided programmed and pre-assembled to the sensor.
- A two-way – two-part connector is supplied for the 4 to 20mA loop connection. Twisted pair or shielded cable is recommended for the loop wiring.
- To comply with CE regulations the 4-20mA loop must be electrically grounded at one point, normally at the power supply.



- The loop load symbol represents other equipment in the loop such as an indicator, controller or signal conditioner, etc.
- For reference, 3 wire RTD hook up is shown in the figure.



Mounting and Installation: (continued)

- All sensor connections must be isolated from ground.
- Ensure the environment where the transmitter/connection head is located does not exceed the operating temperature range of -40°C to 85°C.

Application:

- Linearized temperature measurement with PT100, Platinum RTD only.
- For non-hazardous areas only.

Technical Characteristics:

- Compact for close coupling to sensor.
- Programmable using the TP16 programming device and software through USB-PC connection.
- Programmable temperature range based on specific sensor selected.

Specifications:

ACCURACY

±(0.2°C + 0.05% of the reading)

INPUT

Sensor Connection	2 or 3 wire terminal
Minimum Span	25°C
Thermal Drift	0.0025%/°C
Excitation Current	<200µA
Lead Resistance Effect	0.002 °C/Ohm
Max. Lead Resistance	20 Ohms per leg

OUTPUT

Output Type	2 wire current loop
Output Range	(4.0 to 20.0) mA
Output Connection	Screw terminal
Output Limits	(3.8 to 21.5) mA
Loop Voltage Effect	0.2 µ / V
Thermal Drift	1 µA / °C
Maximum Output Load	[(Vsupply - 10)/20]KΩ

GENERAL SPECIFICATION

Update Time	200 mS
Response Time	0.5 seconds
Start Up Time	4 seconds
(output current < 4 mA during start up)	
Warm-up Time (to full Accuracy)	1 minute
Power Supply	8VDC to 30VDC

ERROR SIGNAL

T16 can be configured to give an output of 3.8 or 21.5 mA when it receives an input outside the expected range

INPUT TYPES

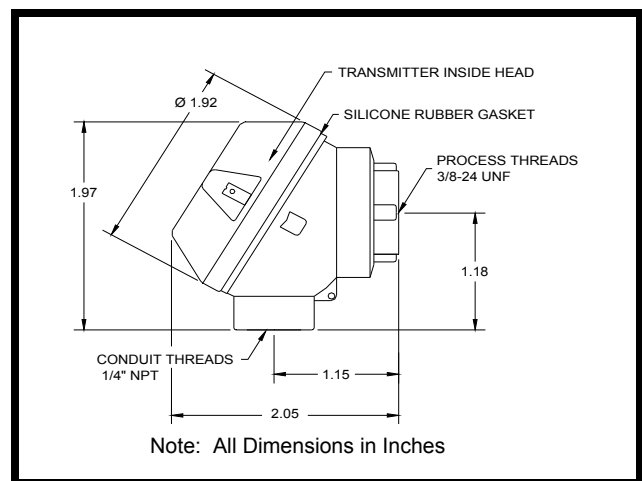
- PT100, RTD, IEC 60751 curve
- Range -200°C to 500°C
- Minimum Span 25 °C
- 3 wire sensor preferred, (2 wire acceptable. Contact Burns Applications Engineer for 2 wire usage)

ENVIRONMENTAL

Ambient Operating Range	-40°C to +85°C
Ambient Storage Temp	-50°C to +90°C
Ambient Humidity Range	10% to 90% RH (Non-condensing)

PHYSICAL

Height (process port to cap)	2.05 inches
Width (conduit port to cap)	1.97 inches
Weight	90 g
Conduit Threads	1/4" NPT
Process Threads	3/8-24 UNF



Approvals:

Not for use in hazardous environments.

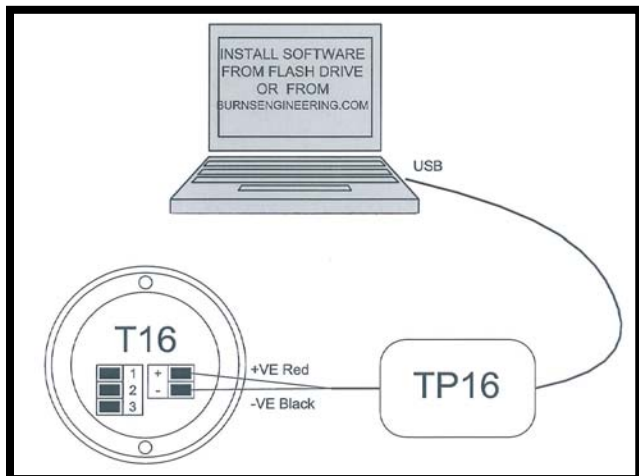
For CE compliance, see safety instructions on page 2.

Programming the T16:

Note: The TP16 Programming Module is the communication interface device required to program the T16 transmitter using a Windows based PC.

Note: Install the TP16 software according to the instruction guide provided with the TP16.

- Connect the TP16 per the diagram below. The red wire from the TP16 connects to the “+” terminal and the black wire connects to the “-” terminal.
- Open the TP16 programming software on your PC and select the options appropriate for the installation.
- See detailed instruction provided with the TP16 device and in the HELP section of the TP16 software.
- Save the profile to the T16.
- The profile may be saved to your PC for future reference (optional).



Notes:

