Programmable Transmitters w/ HART® Protocol

TT521

TT531

Overview

Models TT521 and TT531 are programmable transmitters designed for process control and other applications. Both models use HART® communication protocol and are PC programmable to accept a signal from a thermocouple, a Resistance Temperature Detector (RTD), or a millivolt signal. Model TT521 transmitter can be mounted at the field location in a standard DIN form B head or on a DIN rail inside a local box (with an AC807 Minco DIN rail adapter). Model TT531 can be mounted vertically or horizontally on a DIN rail.

• T/C, RTD, or mV input

• HART® Communication Protocol

• PC and field-programmable

• Galvanically isolated

• FM Approved Intrinsically Safe

• Single temperature measurement

• Difference temperature measurement

• Average temperature measurement

HART® Communication

By way of 2-wire HART® communication between the process computer and the TT521 or TT531, the transmitter is programmable, readable, and controllable.

• Up to 15 transmitters can be controlled in a multidrop system. (Parallel connection of all transmitters on 2 wires).

• Set-up, configuration and control can be done from a central monitoring room.

When each transmitter is connected to a 2-wire cable, a standard 4-20 mA signal can be used at the same time as the HART® communication.

Specifications subject to change

Specifications

Common Specifications:

Supply voltage: 8.0 - 30 VDC

Communication interface: HART® and PC interface

Temperature coefficient: < ± 0.005% of span/ °C

Effect of supply voltage change: < 0.005% of span/ VDC

Max. wire size: AWG14 (1.5 mm^2)

Air humidity: 0 - 95% RH

Dimensions:
TT521: Ø1.73 x 0.84 in (Ø44 x 20.2mm)
TT531: 4.29 x .0.93 x 4.09 in (109 x 23.5 x 104mm)

Tightness (enclosure/terminal):
TT521: IP 68 / IP00   TT531: IP50 / IP20

Weight:
TT521: 50 g   TT531: 145 g

TC Input:

Minimum measurement range:
Type E, J, K, T : 50°C
Max. offset: 50% of selected max. value

Basic accuracy:
Type E, J, K, T : <±0.5°C
Cold junction compensation (CJC): <±1.0°C

Temperature coefficient:
Type E, J, K, T: ± 0.025 °C / °C$_{amb}$
Sensor error detection: yes

RTD-input:

RTD type	Minimum value	Maximum value	Minimum span.
PD (Pt100)	-200°C	+850°C	25°C
PF (Pt1000)	-200°C	+850°C	25°C

Basic accuracy PD/PF (Pt100/1000): $\leq\pm0.1$°C
Temperature coefficient: $\leq\pm0.005$°C / °C

Current output:
Signal range: 4 - 20 mA
Load resistance: < (Vsup. - 8) / 0.023 [Ω]

Intrinsic Safety data: FM Approved Intrinsically Safe for Class 1, Div. 1, Groups A-D, Entity Approval (pending)
V_{max}: 30.0 VDC C_i: 1 nF
I_{max}: 120 mADC L_i: 10 μH
P_{max}: 0.84 W
Europe: ATEX II 1 G

Meets these European requirements:
EMC 2004/108/EC: Standard EN 61326-1

Access: Minco
Sales and Support | Americas: 763.571.3121 | Europe: (33) 5 61 03 24 01 | Asia Pacific: (65) 6511 3388

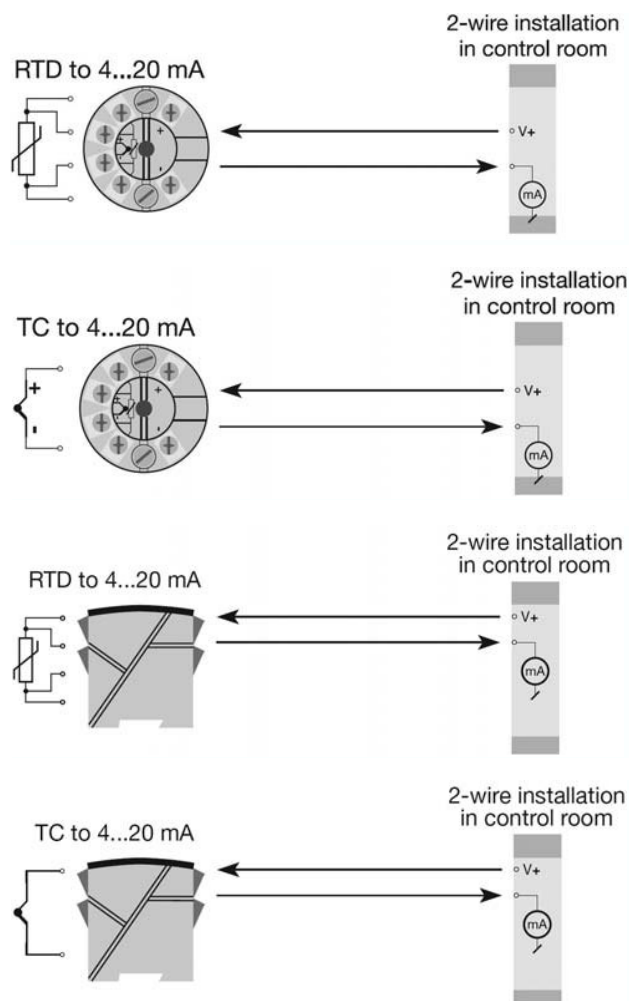## Specifications and order options

| TT521	Model Number: TT521 Temperature Transmitter with HART® Protocol TT531 DIN Rail Temperature Transmitter with HART® Protocol
PD	Sensor Type: PD = 100Ω Platinum RTD (0.00385) PF = 1000Ω Platinum RTD (0.00385) E = Type E Thermocouple J = Type J Thermocouple K = Type K Thermocouple T = Type T Thermocouple
(-25/200)	Temperature Range: Specify temperature range in either °C or °F. For example, -25° to +200°C = 4 to 20 mA.
C	Temperature Units: C = Celsius F = Fahrenheit
1	Calibration: 1 = Nominal 2 = Matched to sensor ±0.75% span For other calibration options, contact Minco
Y	Sensor Leads: Y = 2-lead RTD (or thermocouple) Z = 3-lead RTD X = 4-lead RTD
TT521PD(-25/200)C1Y = Sample part number	

Dimensions in inches (mm)
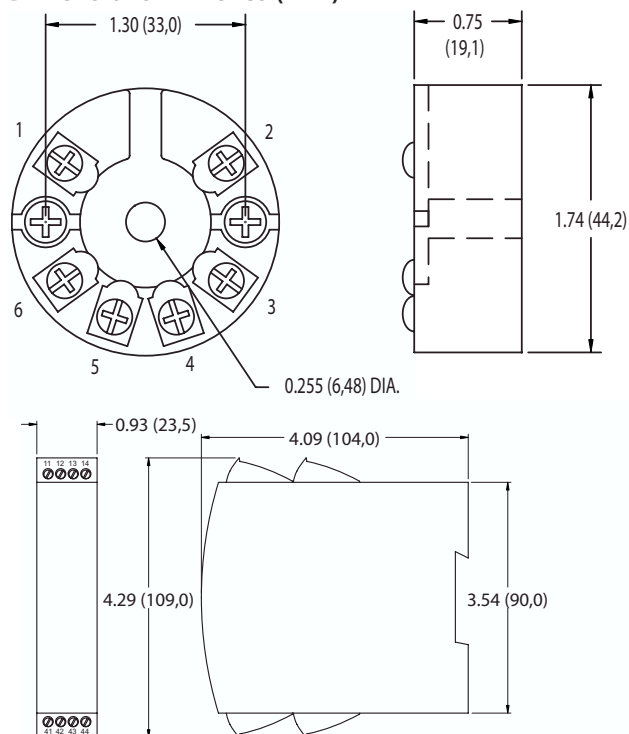
Wiring Diagrams

HART® Multidrop Wiring Diagram
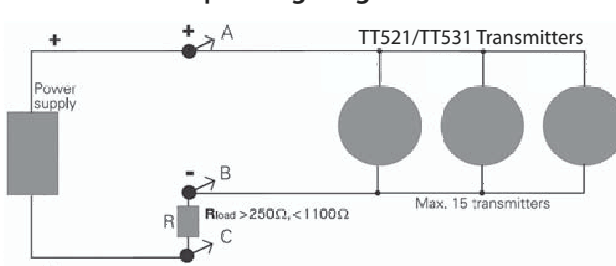
Specify and order products at:
www.minco.com/sensors_config

Specifications subject to change

INSTRUMENTS