



TEL-TRU MANUFACTURING COMPANY

RTD TEMPERATURE TRANSMITTER

MODEL TT111



PRODUCT FEATURES:

- High Accuracy ($\pm 0.1\%$)
- 2-wire loop powered 4-20mA output
- Linearized output to temperature
- Input RTD Pt100 with 3-wire compensation
- Analog design, potentiometer adjustable
- Factory calibrated fixed ranges
- Metal housing
- Fits standard connection heads

DESCRIPTION:

The TT111 Series analog 2-wire, or loop powered, temperature transmitters offer the most effective price/performance ratio in the industry. Factory calibrated for fixed range, they provide a 4-20mA output linearized to temperature for Pt100. The wide temperature range makes the TT111 an excellent choice for temperature signal transmission.

Precision 20-turn potentiometers allow fine adjustment of ZERO and SPAN. TT111 transmitters are high quality, very accurate, completely linearized and fit into industry standard connection heads.

SPECIFICATIONS:

@Vnom = 24VDC,
T.ambient = 25°C, Span nom. = 100°C

Pt100, 3-wire, $\alpha = 0.00385$, DIN EN 60751

4-20 mA loop powered,
linear to temperature

$\pm 0.01\%$ FS

12-32 VDC, polarity protected

0.02%/V

$\pm 0.01\%$ FS/°C

$\pm 0.01\%$ FS/°C

$\pm 0.05\%$ FS/year

0.8 mA

500 ohm max.

0.1% FS (includes effects of linearity,
hysteresis and repeatability)

20-turn potentiometer,
 $\pm 10\%$ for zero and span

Rmax. = $[V_{supply} - 9VDC] / 20mA$

Over-scale limit (27.0 mA) or
Under-scale limit (2.2 mA)

30 seconds

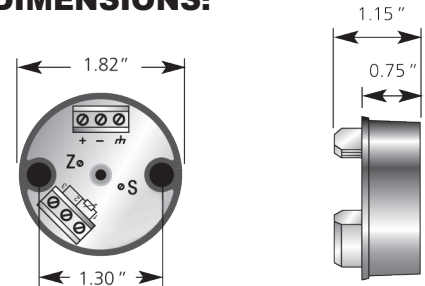
-40°C.....80°C (-40°F...176°F)

-40°C.....80°C (-40°F...176°F)

Die Cast Zinc, Enamel Painted

1.82" dia. x 1.15" H.

DIMENSIONS:



Input:

Output:

Linearization:

Power Supply:

Supply Effect:

Zero Drift:

Span Drift:

Long Term Drift:

Excitation Current RTD:

Sensor Lead Resistance RTD:

Accuracy:

Span/Zero Adjustment:

Maximum Loop Resistance:

Open Circuit Detection:

Warmup:

Ambient Operating Temperature:

Storage Temperature:

Housing Material:

Housing Dimensions:

Input	Temperature Ranges		Code
	C°	F°	
Pt100 3-wire (A)			
•	-50/+50	(-58/+122)	73
•	0/+50	(32/+122)	75
•	0/+100	(32/+212)	76
•	0/+200	(32/+392)	78
•	0/+300	(32/+572)	80
•	0/+400	(32/+752)	81
•	0/+600	(32/+1112)	CW

*Custom ranges available - 10 piece min/range
Contact factory with specific range requirement

HOW TO ORDER:

Model	Input Code	Range Code
TT111	A	76

Ex.: Connection Head Type Fixed Range RTD
Temperature Transmitter, Type Pt100, 0/+100°C
(32/+212°F)

Information furnished by Tel-Tru is believed to be accurate and reliable. However, no responsibility is assumed by Tel-Tru for its use. Specifications subject to change without notice.

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World-Class Instruments Since 1916

TT11111



TEL-TRU MANUFACTURING COMPANY

RTD TEMPERATURE TRANSMITTER

MODEL TT211



PRODUCT FEATURES:

- High Accuracy ($\pm 0.1\%$)
- 2-wire loop powered 4-20mA output
- Linearized output to temperature
- Input RTD Pt100 with 3-wire compensation
- Analog design, potentiometer adjustable
- Factory calibrated fixed ranges
- DIN Rail-Mounted

DESCRIPTION:

The TT211 Series analog 2-wire, or loop powered, temperature transmitters offer the most effective price/performance ratio in the industry. Factory calibrated for fixed range, they provide a 4-20mA output linearized to temperature for Pt100. The wide temperature range makes the TT211 an excellent choice for temperature signal transmission.

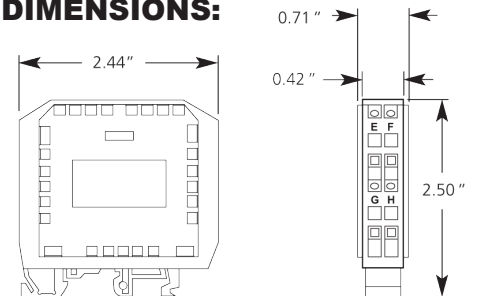
Precision 20-turn potentiometers allow fine adjustment of ZERO and SPAN. TT211 transmitters are high quality, very accurate and feature completely linearized output to temperature. They are DIN rail-mounted conforming to DIN standard 46277 package which is very compact.

SPECIFICATIONS:

@Vnom = 24VDC,
T.ambient = 25°C, Span nom. = 100°C

Input:	Pt100, 3-wire, $\alpha=0.00385$, DIN EN 60751
Output:	4-20 mA loop powered, linear to temperature
Linearization:	$\pm 0.01\%$ FS
Power Supply:	12-32 VDC, polarity protected
Supply Effect:	0.02%/V
Zero Drift:	$\pm 0.01\%$ FS/°C
Span Drift:	$\pm 0.01\%$ FS/°C
Long Term Drift:	$\pm 0.05\%$ FS/year
Excitation Current RTD:	0.8 mA
Sensor Lead Resistance:	500 ohms max.
Accuracy:	0.1% FS (includes effects of linearity, hysteresis and repeatability)
Span/Zero Adjustment:	20-turn potentiometer, $\pm 10\%$ for zero and span
Maximum Loop Resistance:	$R_{max} = [V_{supply} - 9VDC] / 20mA$
Open Circuit Detection:	Over-scale limit : 27.0mA, Under-scale limit : 2.2mA
Warmup:	30 seconds
Ambient Operating Temperature:	-40°C.....80°C (-40°F...176°F)
Storage Temperature:	-40°C.....80°C (-40°F...176°F)
DIN Rail:	DIN 46277
Housing Material:	Polyamide
Housing Dimensions:	2.44" W x 2.50" H x 0.71" D

DIMENSIONS:



Input	Temperature Ranges		Code
	C°	F°	
Pt100 3-wire (A)			
•	-50/+50	(-58/+122)	73
•	0/+50	(32/+122)	75
•	0/+100	(32/+212)	76
•	0/+200	(32/+392)	78
•	0/+300	(32/+572)	80
•	0/+400	(32/+752)	81
•	0/+600	(32/+1112)	CW
•	0/+800	(32/+1472)	CX

*Custom ranges available - 10 piece min/range
Contact factory with specific range requirement

HOW TO ORDER:

Model	Input Code	Range Code
TT211	A	80

Ex.: DIN Rail-mounted Fixed Range RTD Temperature Transmitter, Type Pt100, 0/+300°C (32/+572°F)

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TEL-TRU MANUFACTURING COMPANY

THERMOCOUPLE TEMPERATURE TRANSMITTER MODEL TT112



PRODUCT FEATURES:

- 2-wire loop powered 4-20mA output
- Linearized output to voltage
- Input T/C with cold junction compensation
- Analog design, potentiometer adjustable
- Factory calibrated fixed ranges
- Metal housing
- Fits standard connection heads

DESCRIPTION:

The TT112 loop powered transmitter receives and measures signals from thermocouples and sends an output current of 4-20 mA which is directly proportional to the thermocouple millivolt input. A TT112 transmitter is available for thermocouple sensor types J, K, T, or E.

The wide temperature range makes the TT112 an excellent choice for temperature signal transmission. It is factory calibrated and designed for highest performance and lowest cost.

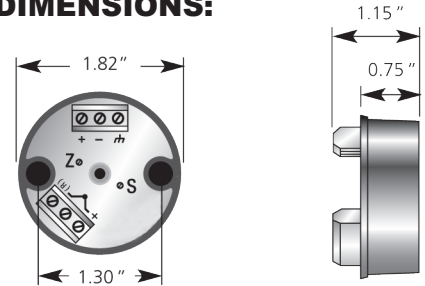
Precision 20-turn potentiometers allow fine adjustment of ZERO and SPAN. TT112 units fit into industry standard connection heads.

SPECIFICATIONS:

@Vnom = 24VDC,
T.ambient = 25°C, Span nom. = 100°C

Input:	T/C type J, K, T or E
Output:	4-20 mA loop powered,
Linearization:	Linear to mV, not to temperature
Power Supply:	12-32VDC, polarity protected
Supply Effect:	0.02%/V
Temperature Drift (including cold junction drift):	Zero Drift: ±0.01% FS/°C Span Drift: ±0.01% FS/°C
Sensor Lead Resistance:	10K ohms max.
Accuracy:	0.15% FS (includes effects of linearity, hysteresis and repeatability)
Span/Zero Adjustment:	20-turn potentiometer, ±10% for zero and span
Maximum Loop Resistance:	$R_{max.} = [V_{supply} - 9VDC] / 20mA$
Warmup:	30 seconds
Ambient Operating Temperature:	-40°C.....80°C (-40°F...176°F)
Storage Temperature:	-40°C.....80°C (-40°F...176°F)
Housing Material:	Die Cast Zinc, Enamel Painted
Housing Dimensions:	1.82" dia. x 1.15" H

DIMENSIONS:



Input				Temperature Ranges		Code
J	K	T	E	C°	F°	
•		•	•	0/+100	(32/+212)	76
•	•	•	•	0/+200	(32/+392)	78
•	•	•	•	0/+300	(32/+572)	80
•	•	•	•	0/+400	(32/+752)	81
•	•		•	0/+600	(32/+1112)	CW
•	•			0/+800	(32/+1472)	CX
	•			0/+1000	(32/+1182)	CY
	•			0/+1200	(32/+2192)	CZ

*Custom ranges available - 10 piece min/range
Contact factory with specific range requirement

CUSTOM BUILDER:

Model	Input Code	Range Code
TT112	J	78

Ex.: Connection Head Type Fixed Range Thermocouple Temperature Transmitter, Type J, 0/+200°C (32/+392°F)

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TEL-TRU MANUFACTURING COMPANY

THERMOCOUPLE TEMPERATURE TRANSMITTER MODEL TT212



PRODUCT FEATURES:

- 2-wire loop powered 4-20mA output
- Linearized output to voltage
- Input T/C with cold junction compensation
- Analog design, potentiometer adjustable
- Factory calibrated fixed ranges
- DIN Rail-Mounted

DESCRIPTION:

The TT212 loop powered transmitter receives and measures signals from thermocouples and sends an output current of 4-20mA which is directly proportional to the thermocouple millivolt input. A TT212 transmitter is available for thermocouple sensor types J, K, T, or E.

The wide temperature range make the TT212 an excellent choice for temperature signal transmission. It is factory calibrated for fixed range and designed for highest performance and lowest cost.

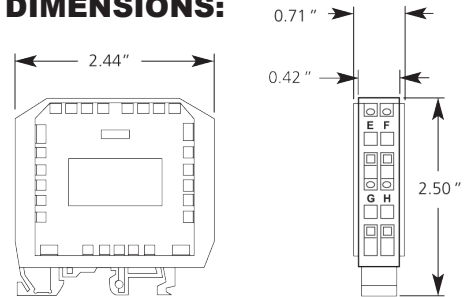
Precision 20-turn potentiometers allow fine adjustment of ZERO and SPAN. TT212 is DIN rail-mounted conforming to DIN standard 46277 package which is very compact.

SPECIFICATIONS:

@Vnom = 24VDC,
T.ambient = 25°C, Span nom. = 100°C

Input:	T/C type J, K, T, or E
Output:	4-20 mA loop powered
Linearization:	Linear to mV, not to temperature
Power Supply:	12-32 VDC, polarity protected
Supply Effect:	0.02%/V
Temperature Drift (including cold junction drift):	Zero Drift: ±0.01% FS/°C Span Drift: ±0.01% FS/°C
Sensor Lead Resistance:	10K ohm max.
Accuracy:	0.15% FS (includes effects of linearity, hysteresis and repeatability)
Span/Zero Adjustment:	20-turn potentiometer, ±10% for zero and span
Maximum Loop Resistance:	Rmax. = [Vsupply - 9VDC] / 20mA
Warmup:	30 seconds
Ambient Operating Temperature:	-40°C.....80°C (-40°F...176°F)
Storage Temperature:	-40°C.....80°C (-40°F...176°F)
DIN Rail:	DIN 46277
Housing Material:	Polyamide
Housing Dimensions:	2.44" W x 2.50" H x 0.71" D

DIMENSIONS:



Input				Temperature Ranges		Code
J	K	T	E	°C	°F	
•		•	•	0/+100	(32/+212)	76
•	•	•	•	0/+200	(32/+392)	78
•	•	•	•	0/+300	(32/+572)	80
•	•	•	•	0/+400	(32/+752)	81
•	•		•	0/+600	(32/+1112)	CW
•	•			0/+800	(32/+1472)	CX
	•			0/+1000	(32/+1182)	CY
	•			0/+1200	(32/+2192)	CZ

*Custom ranges available - 10 piece min/range
Contact factory with specific range requirement

HOW TO ORDER:

Model	Input Code	Range Code
TT212	J	76

Ex.: DIN Rail-mounted Fixed Range Thermocouple Temperature Transmitter, Type J, 0/+100°C (32/+212°F)

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