

Miniature Low-Cost Temperature Transmitters MTX



- ✓ Two-Wire Design
- ✓ 4-20 mA dc Output
- ✓ $\pm 0.1\%$ Accuracy
- ✓ Upscale Break Protection
- ✓ Non-Isolated
- ✓ Mountable in Any Standard Protection Head
- ✓ Accepts J, K, T, E Thermocouple or 100ohm Platinum RTD Inputs



Manuals



Manuals



Mechanical

The non-isolated, low-cost MTX Series transmitters convert thermocouple or RTD signals into a 4-20 mA dc signal output that is directly referenced to the mV input of a thermocouple or resistance of a 100 ohm platinum RTD.

For Thermocouple transmitters, the 4-20mA output is not linearized. T/C transmitters are available for type K, J, T, and E with color coding for each T/C type. The transmitters for RTD's are available with the 4-20mA output directly proportional to the input resistance or with the 4-20mA output linearized to temperature.

Note: RTD's are slightly non-linear with the resistance diverging from actual temperature by approximately 1% at the mid point of full scale. (For linearized RTD transmitters, specify "RTD-L". Non-linearized transmitters are the more popular choice).

The MTX transmitters mount directly in NEWPORT's standard [protection heads](#) for connection to your sensor.

[Click here for Ultra-Miniature Transmitters](#)



SPECIFICATIONS

Output Range: 4-20 mA dc

Zero and Span Adjustment Range: ±25% for °F and ±10% for °C

Accuracy: ±0.1% of span (includes effects of linearity, hysteresis and repeatability) referenced to the mV input

Frequency Response: 3dB @ 3 Hz

Operating Temperature Range:

-40 to 85°C (-40 to 185°F)

Storage Temperature Range:

-46 to 121°C (-50 to 250°F)

Supply Voltage:

8-50 Vdc, 24V recommended

Max Loop $V_s - 8$

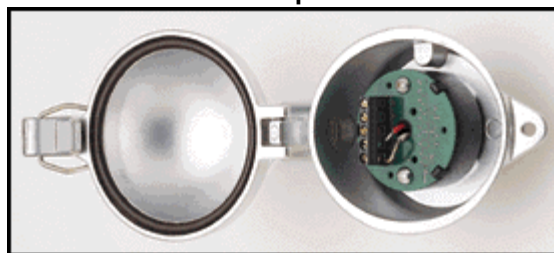
Resistance: 0.020A

Dimensions: 44.5 mm Dia. x 31.75 mm H (1.75" x 1.25")

Weight: 15 g (0.53 oz.);

34 g (1.23 oz.) **Note:** Thermocouple Models output proportional to mV output of thermocouple. Not linearized to temperature.

Industrial Thermocouple Protection Head



Available from Newport

RANGE CODES

Range	J	K	T	E	RTD	RTD-L
-40 to 140°F	-	-	-	-	P01	P01-L
0 to 200°F	J01	K01	T01	E01	P02	P02-L
0 to 300°F	J02	K02	T02	E02	P03	P03-L
0 to 500°F	J03	K03	T03	E03	P04	P04-L
0 to 750°F	J04	K04	T04	E04	P05	P05-L
0 to 1000°F	J05	K05	-	E05	P06	P06-L
0 to 100°C	J06	K06	T06	E06	P07	P07-L
0 to 150°C	J07	K07	T07	E07	P08	P08-L
0 to 250°C	J08	K08	T08	E08	P09	P0-L9
0 to 400°C	J09	K09	T09	E09	P10	P10-L
0 to 500°C	J10	K10	-	E10	-	-
FS	FS	FS	FS	FS	FS	FS

- Not an available range

Product Selection (Specify Model Number, see variations below in partnumber builder table)

Part Number	Description	Qty.
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Thermocouple Transmitters

MTX-K01	Thermocouple K transmitter with 0 to 200°F range	
MTX-J03	Thermocouple J transmitter with 0 to 500°F	

MTX-K03	range Thermocouple K transmitter with 0 to 500°F range
MTX-T03	Thermocouple T transmitter with 0 to 500°F range
MTX-E03	Thermocouple E transmitter with 0 to 500°F range
MTX-K05	Thermocouple K transmitter with 0 to 1000°F range

RTD Transmitters

MTX-P01	RTD transmitter (100 ohm Pt100, alpha = 0.00385) with -40 to 140°F range
MTX-P02	RTD transmitter (100 ohm Pt100, alpha = 0.00385) with 0 to 200°F range
MTX-P04-L	RTD transmitter (100 ohm Pt100, alpha = 0.00385) with the 4-20mA output linearized to temperature and 0 to 500°F range

Probe and Transmitter Assembly

NB1TXA-J2	MTX-J01 Transmitter in Cast Iron Head with 12"L, 1/4" O.D., ungrounded junction, 304SS sheath probe.
NBSTXA-K3	MTX-K02 Transmitter in Aluminum Head with 12"L, 1/4" O.D., ungrounded junction, 304SS sheath probe.
PRTXA-1-12	MTX-P01 RTD Transmitter in Cast Iron Head with 12"L, 1/4" O.D., ungrounded junction, 304SS sheath RTD probe.

Accessories

PSR-24S	Regulated power supply, 24Vdc, 400 mA, UL, screw terminals
PSR-24L	Regulated power supply, 24Vdc, 400 mA, UL, stripped leads
558B	Process loop indicator
RAIL-35-2	2m (6.5') section 35 mm DIN rail



Part Number Builder

(1)	(2)	(3)	(4)	(5)	(6)
MTX	-				

Option Descriptions

(1) Transmitter Type

Select

MTX for Thermocouple or RTD transmitter

NB1TXA for Thermocouple transmitter with Cast-Iron head and 12 inch probe

NBSTXA for Thermocouple transmitter with Aluminum head and 12 inch probe

PRTXA for RTD transmitter with Cast-Iron head and 12 inch RTD probe

(2) Input Type

Select

Nothing(leave field blank) for RTD probe assemblies

J for Type J thermocouple (Iron-Constantan)

K for Type K thermocouple (Chromega®-Alomega®)

T for Type T thermocouple (Copper-Constantan) (ranges 05 and 10 excluded)

E for Type E thermocouple (Chromega®-Constantan)

P for RTD Pt100, alpha 0.00385

(3) Range for transmitter only,not for probe assemblies

Select

Nothing(leave field blank) for probe assemblies

01 for 0 to 200°F (Thermocouple)-40 to 140°F (RTD)

02 for 0 to 300°F (Thermocouple) 0 to 200°F (RTD)

03 for 0 to 500°F (Thermocouple) 0 to 300°F (RTD)

04 for 0 to 750°F (Thermocouple) 0 to 500°F (RTD)

05 for 0 to 1000°F (Thermocouple J K E only) 0 to 750°F (RTD)

06 for 0 to 100°C (Thermocouple) 0 to 1000°F (RTD)

07 for 0 to 150°C (Thermocouple) 0 to 100°C (RTD)

08 for 0 to 250°C (Thermocouple) 0 to 150°C (RTD)

09 for 0 to 400°C (Thermocouple) 0 to 250°C (RTD)

10 for 0 to 500°C (Thermocouple J K E only) 0 to 400°C (RTD)

(4) Range for Thermocouple probe assemblies only

Select

Nothing(leave field blank) for single transmitter units

2 for 0 to 200°F (TC)

3 for 0 to 300°F (TC)

4 for 0 to 500°F (TC)

5 for 0 to 750°F (TC)

6 for 0 to 1000°F (TC types J K E)

7 for 0 to 100°C (TC)

8 for 0 to 150°C (TC)

9 for 0 to 250°C (TC)

10 for 0 to 400°C (TC)

11 for 0 to 500°C (TC types J K E)

(5) Range for RTD probe assemblies only

Select

Nothing(leave field blank) for single transmitter units

1-12 for -40 to 140°F (RTD)

2-12 for 0 to 200°F (RTD)

3-12 for 0 to 300°F (RTD)

4-12 for 0 to 500°F (RTD)

5-12 for 0 to 750°F (RTD)

6-12 for 0 to 1000°F (RTD)

7-12 for 0 to 100°C (RTD)

8-12 for 0 to 150°C (RTD)

9-12 for 0 to 250°C (RTD)

10-12 for 0 to 400°C (RTD)

(6) Linearized RTD

Select

Nothing (leave field blank) for standard non-linearized transmitter

-L for for the 4-20mA output linearized to temperature and selected range

NOTE: All combinations may not be valid, check spec sheet for valid part numbers.