



# Ultra-Miniature Temperature Transmitters

# TX93-A

## Thermocouple or RTD

- ✓ ±0.1% FS Accuracy
- ✓ 4-20 mA dc Output
- ✓ Only 1.40" (35.6mm) Diameter
- ✓ Upscale Break Protection
- ✓ J, K, T or E Thermocouple Input
- ✓ 100Ω Platinum RTD Input



NEWPORT Ultra-Miniature temperature transmitters convert millivolt inputs from thermocouples or resistance from RTD's into 4-20mA outputs. Transmitters are available in color-coded enclosures covering the four most popular thermocouple types (J, K, T and E) as well as three-wire 100 Ohm platinum RTD's.

Featuring state-of-the-art integrated circuits and electronic design these ultra-compact transmitters have a diameter of only 35.6mm (1.40") and are designed to fit in many compact thermowell protection heads such as the NEWPORT NB2.

TX93A and TX94A transmitters can eliminate long runs of costly field wiring in a variety of applications.

A stable 4-20 mA output signal is provided proportional to the transmitters specific input type and calibrated temperature range (see Range Code Table below). Adjustability of ±25% for zero and span is provided to facilitate some rangeability. The transmitted signal eliminates noise pickup, voltage drops, multiple cold junction errors and requires only a twisted pair of copper wire for loop connections.

All models and ranges of these NEWPORT ultra-miniature transmitters are available with fully epoxy-potted electronics (specify -P option) providing the ultimate protection in extreme environments.

## SPECIFICATIONS

**Output Range:** 4 to 20 mA dc

**Zero and Span Adjustment Range:** ±25%

**Accuracy:** ±0.1% FS (includes effects of linearity, hysteresis and repeatability)

**Frequency Response:** 3dB @ 3Hz

**Ambient Temp. Range:** -25 to 85°C (-13 to 185°F)

**Storage Temp. Range:** -65 to 125°C (-85 to 257°F)

**Supply Voltage:** 8 to 35 Vdc; 24 Vdc recommended

**Max Loop**  $V_s - 8V$

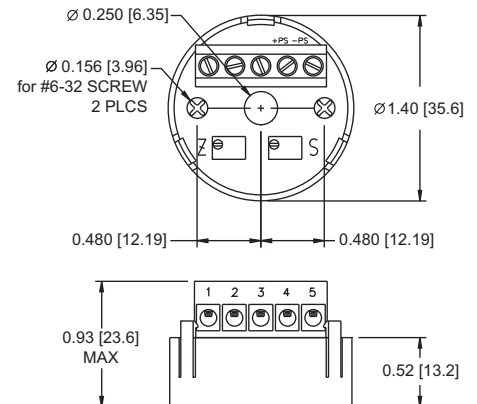
**Resistance:** 0.020A

### Dimensions:

35.6 D x 23.6 mm H (1.40 x 0.93") (height includes terminal strip)

**Weight:** 15g (0.53oz), 25 g (0.8 oz) if epoxy-potted

## MECHANICAL



To Order (Specify Model Number)		
Model No.	Price	Description
TX93A-(*)	\$85	Thermocouple transmitter (J,K,T, or E)
TX93A-(*)-P	99	Thermocouple transmitter, fully epoxy-potted electronics for extreme environments
TX94A-(*)	99	RTD transmitter (100 Ω Pt, alpha = 0.00385)
TX94A-(*)-P	115	RTD transmitter, fully epoxy-potted electronics for extreme environments
,FS	45	Special factory scaling

\* Insert range code from chart below.

## Range Codes

Model No.					Temperature Range
TX93A				TX94A	
J	K	T	E	RTD	
J1			E1	1	-40 to 49°C (-40 to 120°F)
J2	K2	T2	E2	2	-18 to 93°C (0 to 200°F)
J3	K3	T3	E3	3	-18 to 149°C (0 to 300°F)
J4	K4	T4	E4	4	-18 to 260°C (0 to 500°F)
J5	K5	T5	E5	5	-18 to 399°C (0 to 750°F)
J6	K6		E6	6	-18 to 538°C (0 to 1000°F)

**Ordering Examples:** TX93A-J4, type J, transmitter with 0 to 500°F range, \$85.

TX93A-K2-P, epoxy-potted type K, transmitter with 0 to 200°F range, \$99.

TX93A-J2,FS, type J transmitter factory scaled to 4-20 mA = 0 to 100°F, \$130.

**Notes:** (1) Thermocouple Models output proportional to mV output of thermocouple. Not linearized to temperature. (2) Non-Isolated unit for use with ungrounded probes. (3) Each unit supplied with complete operator's manual.