

# Ultra-Miniature Temperature Transmitters

## Thermocouple or RTD (Pt100)

TX93A/TX94A



items shown smaller than actual size.

- ✓  $\pm 0.1\%$  FS Accuracy
- ✓ 4 to 20 mA DC Output
- ✓ Only 35.6 mm (1.4") Diameter
- ✓ Upscale Break Protection
- ✓ J, K, T, or E Thermocouple Input
- ✓ 100  $\Omega$  Platinum RTD Input

NEWPORT Ultra-Miniature temperature transmitters convert millivolt inputs from thermocouples or resistance from RTDs 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 RTDs.

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**. Newport also provides complete thermocouple and RTD assemblies.

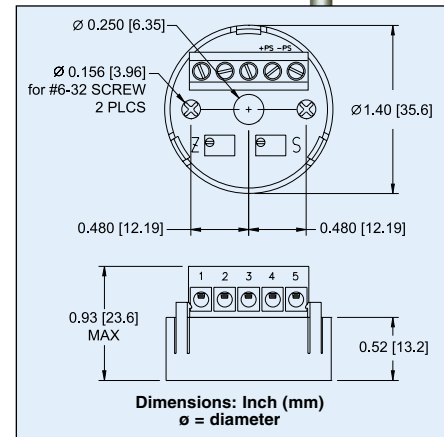
**TX93A** and **TX94A** transmitters can eliminate long runs of costly field wiring in a variety of applications. A stable 4-20 mA output signal is provided proportional to the transmitters specific input type and calibrated temperature range (see Range Code Table below). Adjustability of  $\pm 25\%$  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:**  $\pm 25\%$   
**Accuracy:**  $\pm 0.1\%$  FS (includes effects of linearity, hysteresis and repeatability)  
**Frequency Response:** 3 dB @ 3 Hz  
**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**  $V_s - 8$   
**Resistance:** 0.020A  
**Dimensions:** 35.6 D x 23.6 mm H (1.40 x 0.93") (height includes terminal strip)  
**Weight:** 15g (0.53 oz), 25 g (0.8 oz) if epoxy-potted

### Mechanical



**To Order Visit [newportUS.com/tx93a\\_tx94a](http://newportUS.com/tx93a_tx94a) for Pricing and Details**

Model No.	Description
TX93A-(*)	Thermocouple transmitter (J, K, T or E)
TX93A-(*)-P	Thermocouple transmitter, fully epoxy-potted electronics for extreme environments
TX94A-(*)	RTD transmitter (100 $\Omega$ Pt, alpha = 0.00385)
TX94A-(*)-P	RTD transmitter, fully epoxy-potted electronics for extreme environments
NB2TX93A-(*)	TX93A mounted into a NB2 aluminum protection head, with 12" ungrounded probe (J, K, T, E), 304 SS sheath, 1/4" diameter
PRTX94A-(*)	TX94A mounted into a PR14 miniature aluminum protection head, with 12" sheath length, 1/4" probe diameter
,FS	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)

**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.

**Ordering Example:** TX93A-J4, Type J, transmitter with -18 to 260°C (0 to 500°F) range.  
 NB2TX93A-J2, specifies a Type J transmitter assembly with -18 to 93°C (0 to 200°F) range.  
 TX93A-J2,FS, specifies a Type J transmitter factory scaled to 4-20 mA = 0 to 100°F.