

# Two-Wire, Process-Loop Indicator

## Optional NEMA 4X/7 Housing



### TX83A Series



- ✓ FM Intrinsic Safety Certification
- ✓ Powered by 1 to 5, 4 to 20 or 10 to 50 mA Signal
- ✓ 2.5V Max Voltage Drop
- ✓ 8.9 mm (0.35") LCD
- ✓ 2000-Count Zero Suppression or Elevation
- ✓ 100 to 2000 Count Span Adjust
- ✓ Selectable Dummy Right-Hand Zero
- ✓ -40 to 85°C Operation
- ✓ Compact, 74 mm (2.9") Dia Diecast Housing
- ✓ Waterproof to 35 kPa (5 psi)
- ✓ Shock Resistant to 55 g

### Options

- ✓ ½ EMT Conduit Fitting
- ✓ ½ NPT Pipe Fitting
- ✓ Relay-Track Mounting Adaptors
- ✓ External Explosion-Proof Housing
- ✓ Relay-Track Mounting

The TX83A is a 2-wire current-loop indicator that is powered directly by a 1 to 5 mA, 4 to 20 mA or 10 to 50 mA process loop signal. No separate power supply connections are required. This reduces overall hardware and field wiring costs and provides immunity from most electrical noise encountered in process control environments. The electronics are isolated from the case.

### Readout of Process Variables

The TX83A provides extensive zero and span adjustment capability, so that it can read out directly in percent or in engineering units for process variables such as pressure,



TX83A with EPW3-ATEX NEMA 4X/7 enclosure.

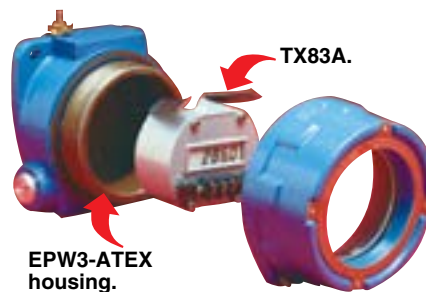


TX83A.



TX84.

All shown smaller than actual size.



EPW3-ATEX housing.

flow, temperature, or level. Its liquid crystal display provides 3½ active digits, a selectable dummy right-hand zero, and 4 programmable decimal points.

### Easy to Configure and Calibrate

Both span and zero are fine-tuned with precision multi-turn potentiometers. These are accessible through holes in the diecast cover, which are normally sealed with fluorosilicone plugs.

### Designed for Harsh Environments

All versions of the TX83A are rated for operation from -40 to 85°C (-40 to 185°F) with specified accuracy. The case is made of diecast metal and is waterproof to 35 kPa (5 psi). The electronics are firmly connected to the case top, so that the meter can withstand high vibration and shock.

### Intrinsic Safety Certification

Intrinsic safety certification allows the TX83A to be used in worst-case hazardous environments with no need for an explosion-proof housing, provided that an intrinsic safety barrier is used to limit the voltage and current that may be introduced in the hazardous environment. FM certification (USA) is for class I, II, III, division 1, groups A, B, C, D, E, F, G. The FM certification number is 5X2AO.AX (3610).

### Explosion-Proof Housing Options

Two external NEMA 7 explosion-proof and NEMA 4X waterproof, sand-cast, copper-free aluminum enclosures with corrosion resistance "safety-blue" polyester powder-coating for use in hazardous locations. FM, UL, cUL certification: class I, groups B, C, D; class II, groups E, F, G; and class III, Type 4X.

Option EPW3 is a single-height enclosure for one TX83A loop-powered indicator. Option EPW2 is a double-height enclosure for a TX83A loop-powered indicator on top and a TX1500 series isolated 2-wire 4 to 20 mA transmitter on the bottom for indicating transmitter applications. Available with 2 female ½ NPT pipe fittings, all required internal mounting hardware, and mounting flanges for a wall or bulkhead.

## Specifications

**Input Signal:** 1 to 5 mA, 4 to 20 mA or 10 to 50 mA (jumper-selectable)

**Linear Range:** 0.3 to 50 mA

**Protection:** 200 mA forward, 1000 mA reverse

**Forward Voltage Drop, Maximum:** 2.5 V up to 50 mA

**Input Resistance:** 50 Ω at 1 to 5 mA, 12.5 Ω at 4 to 20 mA, 5 Ω at 10 to 50 mA

**Zero Adjust:** -2000 to 2000 counts (4 jumper-selectable ranges plus fine adjustment)

**Span Adjust:** 0 to 2000 counts (with fine adjustment)

**NMR:** 46 dB, 50/60 Hz

**CMR (Meter to Case):** 120 dB, DC to 60 Hz

**CMV (Meter to Case):** 700 Vp

**RFI Susceptibility:** Less than ±0.5% of span with conduit fitting or external explosion-proof housing in 10V/m field strength at 27 or 440 MHz

### Accuracy at 25°C

**Maximum Error:**

±0.1% of span ±1 count 00 zero tempco

±0.1 count/°C typical,

±0.2 count/°C max

**Span Tempco:** ±0.005% of span/°C

typical, ±0.015% of span/°C max

### Analog-to-Digital Conversion

**Technique:** Dual-slope, average-value

**Polarity:** Automatic

**Integration Period:** 100 ms

**Read Rate:** 2.5/s

### Display

**Type:** 7-segment LCD

**Height:** 8.9 mm (0.35")

**Symbols:** -1.8.8.8.0 (3½ active digits plus jumper-selectable dummy right-hand zero)

**Decimal Points:** 4 positions, jumper-selectable

**Overrange:** 3 least-significant active digits blank

### Environmental

**Operating Temperature:**

-40 to 85°C (-40 to 185°F)

**Vibration:** 1.52 mm (0.06") double-amplitude cycled at 10 to 80 Hz

**Shock:** 55 g half-sine, 9 to 13 ms duration

**Waterproof Pressure:** 35 kPa maximum (5 psi)

### Mechanical

**Weight:** 14 oz (400 g)

**Diameter:** 74 mm (2.9")

**Height, Including Barrier:**

48 mm (1.9")

### Electrical Connections:

**TX83A:** 3-terminal barrier strip with #6 screws

**TX84:** ½ NPT male pipe fitting with two 0.3 meter #18 stranded wires

**TX84-2:** ½" EMT male conduit fitting with two 0.3 meter #18 stranded wires

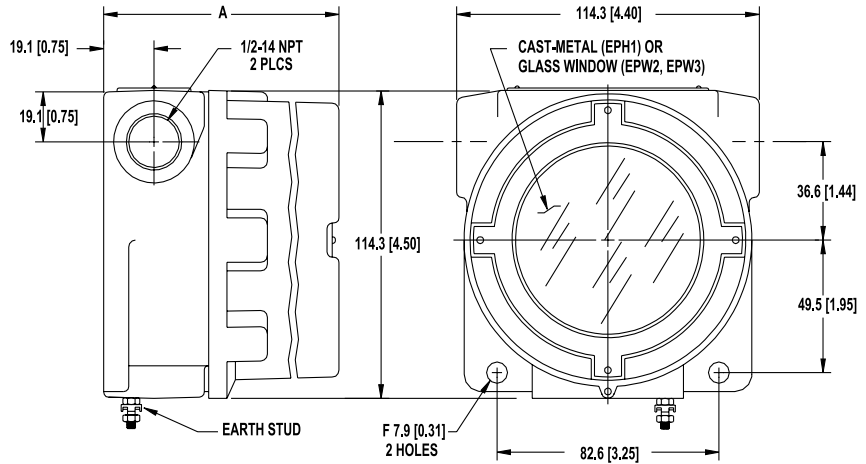
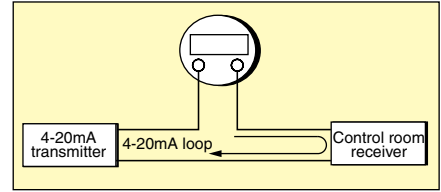
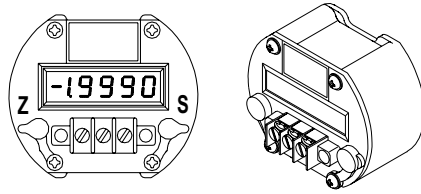
### Mounting Methods

#### TX83A:

- Surface mount with 4 #6 rear-entry screws from backside of bulkhead
- Snap mount into 63.5 mm (2.50") relay track
- Surface mount with two #8 front-entry screws  
Requires MAT1 adaptor plate

- Snap mount into 69.9 mm (2.75") or 76.2 mm (3.00") relay track  
Requires MAT1 adaptor plate
- Snap mount into DIN relay track  
Requires MDT1 rail clamp
- Push mount into explosion proof housing EPW3-ATEX

The TX83A process-loop indicator may be added to an existing 4 to 20 mA or 10 to 50 mA installation. No additional wiring is required, since the meter is powered directly by the current loop.



## To Order

Model No.	Configuration
TX83A	Flat surface or relay track mounting
TX84	NPT pipe mounting
TX84-2	EMT conduit mounting

### Mounting Options (TX83A Only)

Order Suffix	Description
-MAT1	Adaptor plate for surface mount or 69.9 mm relay track
-MDT1	Rail clamp for DIN relay track

### Options

Order Suffix	Description
-FS	Custom configuration and calibration

### Accessories

Model No.	Description
MXS1	Spring retainers for TX83A in explosion proof housing EPW3
MXS2	Spring retainers for TX83A in explosion proof housing EPW2
EPW3-ATEX	NEMA 4 and NEMA 7 rated environmental enclosure with window, single height; includes MXS1 hardware (supplied with Demko/ATEX certificate)
EPW2-ATEX	NEMA 4 and NEMA 7 rated environmental enclosure with window, double height for TX83A and TX1500 series transmitter; includes MXS1 and MXS2 hardware (supplied with Demko/ATEX certificate)

Comes complete with operator's manual.

**Ordering Examples:** TX84 current loop-indicator with NPT pipe mounting.

OCW-3