

# Proximity Probe Transmitter

## Trendsetter Model TXR (Radial) and TXA (Axial)



This new Trendsetter transmitter is a 2-wire loop-powered transmitter combining an eddy current probe driver and a signal conditioner in a single package. It provides a 4-20 mA output proportional to overall peak to peak displacement and operates with Metrix probes and extension cables as well as 4 major probe systems. A DC voltage output and dynamic signal is available at the BNC connector. The TXR Transmitter is designed for radial vibration while the TXA Transmitter is designed for axial position vibration.

### Features

- Cost effective alternative to dedicated rack mount monitors
- Loop-powered driver/transmitter
- Compatible with 4 major probe systems
- Easily factory calibrated to non-standard shaft material
- DIN Rail mounting (flat mounting base available) (P/N 9647)
- BNC for access to dynamic output and probe gap
- PBT plastic material

### Machines using Shaft Monitoring

- Oil lubricated fluid film bearing machines:
  - Centrifugal Pumps
  - Turbo Compressors
  - Steam and Gas Turbines
  - Large Fans and Blowers
  - Gear Box Shafts
  - Generators
  - Large Electric Motors

### Specifications

Unless otherwise noted, all specifications are specified at 21°C (70°F), +24 Vdc power supply, gap set to 1.27 mm (50 mils) and using Metrix AISI 4140 steel target.

#### Operating Temperature Range:

-40°C to 85°C (-40°F to 185°F)

#### Operating Humidity Range:

95% non-condensing, external environmental protection is required

#### Power Requirements:

- 17 to 30 VDC with a maximum start up current of 23 mA (-40°C to 85°C)
- Maximum loop resistance is determined by  $R_L = 50 (V_s - 17)$  ohms

#### Frequency Response:

- 5 Hz to 5 kHz +0, -3 dB pk-pk vibration
- 0 Hz to 20 Hz +0, -3 dB position

#### Linear Range:

- 0.5 to 2.0 mm (20 to 80 mils); (8 mm probe)
- 0.5 to 4.0 mm (20 to 160 mils); (11 mm probe)

#### Buffered Output:

- 7.87 V/mm (200 mV/mil) +/- 5% when calibrated as a system, +/- 12% including interchangeability error when measured in 0.25 mm (10 mils) increments over linear range
- 3.94 V/mm (100 mV/mil) +/- 5% for 11 mm probes when calibrated as a system, +/- 12% including interchangeability error when measured in 0.25 mm (10 mils) increments over the linear range
- 0 Hz to 3 kHz +0, -3 dB

Note: The buffered output is intended for local diagnostics only and will not support loads that are less than 100k ohms.

#### 4-20 mA Output:

- 4 mA +/- .1 mA with no input vibration
- 4 mA +/- .2 mA @ -40°C to 85°C with no input vibration
- 20 mA +/- .5 mA @ -40°C to 85°C with full scale input vibration
- $\leq 3.6$  mA indicates "Not OK" condition

# Proximity Probe Transmitter Trendsetter Model TXR (Radial) and TXA (Axial)

## Specifications (continued)

### Hazardous Area Ratings:

- CSA Certified: Intrinsically Safe Class I, Div 1, Grps A, B, C & D, Temp Code T4.
- CSA Certified: Non-Incendive Class I, Div 2, Grps A, B, C & D
- BASEEFA Certified: Intrinsically Safe Ex ia IIC T4, Non-Incendive Ex ia IIC T4

### Product Inputs:

Trendsetter will support the following probes:

- 10000 and 7200 series probes with 5, 8 or 11 mm tips and 5 or 9 meter system lengths
- 3300 series probes with 5, 8 or 11 mm tips and 5 or 9 meter system lengths
- RAM series probes with 5 mm tips and 5 or 7 meter system lengths
- 3000 series probes with 0.190 or 0.300 in. tips and 15 or 20 foot system lengths

Supply Voltage: 17 to 30 VDC

Maximum Loop Resistance:  $R_L = 50 (V_s - 17)$  ohms

Terminal Block:

- Two piece, removable terminal block, for ease of installation
- Accepts 16 to 28 AWG wire

### Product Outputs:

4-20 mA proportional to Shaft relative vibration or Shaft Position:

Vibration (TXR):

- 0-3 mils, 0-75 um pk-pk
- 0-5 mils, 0-125 um pk-pk
- 0-10 mils, 0-250 um pk-pk

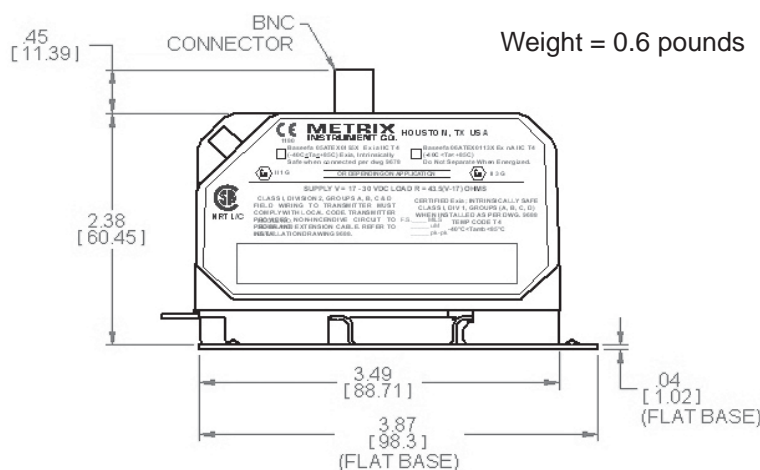
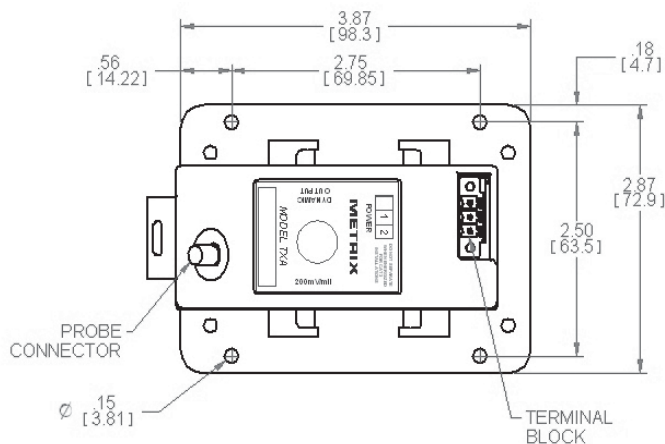
\* TXR current output responds to vibrations above 0.2 mils. Contact METRIX for special application needs.

Position (TXA):

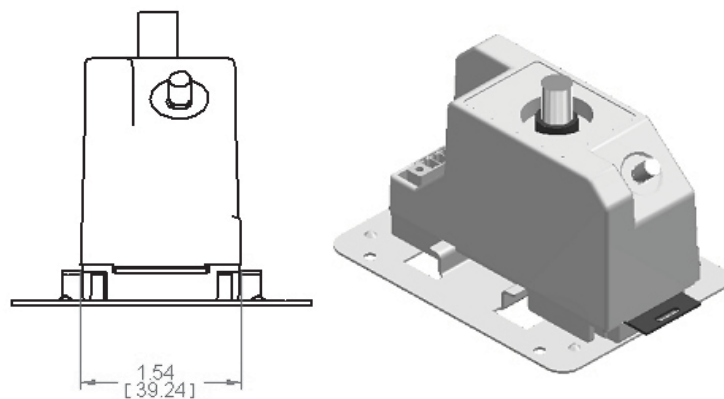
- 20-80 mils, 0.5-2.0 mm; (5 mm, 8mm, 0.190 in. and 0.300 in. probe)
- 20-160 mils, 0.5-4.0 mm; (11 mm probe)

Not OK indication: A not OK condition is normally caused by an open probe coil or cable, probe gap outside the linear range or supply voltage below 16Vdc. The TXR and TXA output will be  $\leq 3.6$  mA under the above conditions.

## Weight & Dimensions



(P/N 9647)




# Proximity Probe Transmitter

## Trendsetter Model TXR (Radial) and TXA (Axial)


### How to Select

#### For Series 10000 and 7200

TXR - 72 -   -   -  


Probe Series	System Length	Tip Diameter	4-20 mA Range*	
5 or 9 	5 5 meters	0 5&8 mm	3	3 mils, pk-pk
			4	4 mils, pk-pk
			5	5 mils, pk-pk
			10	10 mils, pk-pk
			15	15 mils, pk-pk
9 9 meters		20	20 mils, pk-pk	

TXA - 72 -   -   -  


Probe Series	System Length	Tip Diameter	4-20 mA Range*	
5 or 9 	5 5 meters	0 5&8 mm	0	20 to 80 mils
	9 9 meters	3 11 mm	1	20 to 160 mils

#### For Series 3300 & 3300 XL

TXR - 33 -   -   -  


Probe Series	System Length	Tip Diameter	4-20 mA Range*	
5 or 9 	5 5 meters	0 5&8 mm	3	3 mils, pk-pk
			4	4 mils, pk-pk
			5	5 mils, pk-pk
			10	10 mils, pk-pk
			15	15 mils, pk-pk
9 9 meters		20	20 mils, pk-pk	

TXA - 33 -   -   -  


Probe Series	System Length	Tip Diameter	4-20 mA Range*	
5 or 9 	5 5 meters	0 5&8 mm	0	20 to 80 mils
	9 9 meters			

#### For Series 3309 NSv or Replacement for RAM Series

TXR - 39 -   -   -  


Probe Series	System Length	Tip Diameter	4-20 mA Range*	
5 or 7 	5 5 meters	0 5 mm	3	3 mils, pk-pk
			4	4 mils, pk-pk
			5	5 mils, pk-pk
			10	10 mils, pk-pk
			15	15 mils, pk-pk
7 7 meters		20	20 mils, pk-pk	

TXA - 39 -   -   -  


Probe Series	System Length	Tip Diameter	4-20 mA Range*	
5 or 7 	5 5 meters	0 5 mm	0	20 to 80 mils
	7 7 meters			

#### For Series 3000

TXR - 30 -   -   -  

Probe Series	System Length	Tip Diameter	4-20 mA Range*	
15 or 20 	1 15 ft.	1 0.190"	3	3 mils, pk-pk
			4	4 mils, pk-pk
			5	5 mils, pk-pk
			10	10 mils, pk-pk
			15	15 mils, pk-pk
2 20 ft.	2 0.300"	20	20 mils, pk-pk	

TXA - 30 -   -   -  

Probe Series	System Length	Tip Diameter	4-20 mA Range*	
15 or 20 	1 15 ft.	1 0.190"	0	20 to 80 mils
	2 20 ft.	2 0.300"		

\*For negative polarity, please add an "N" after the designated number for the Range.  
Example: TXA-729-31N

# Proximity Probe Transmitter

## Trendsetter Model TXR (Radial) and TXA (Axial)

### Cross-Reference from 5465/5488 to Trendsetter TXR/TXA

Configurator						DESCRIPTION					Cross-Reference	
Base M/N	-	Probe Series	System Length	-	Tip Dia	Range*	Probe Series	Axis	System Length	Tip Diameter		Range
TXR	-	30	1	-	1	0	Metrix MX3000	Radial	15 ft	0.190"	10 mils, pk-pk	5465E-106
TXR	-	30	1	-	1	5	Metrix MX3000	Radial	15 ft	0.190"	5 mils, pk-pk	5465E-105
TXR	-	30	1	-	1	3	Metrix MX3000	Radial	15 ft	0.190"	3 mils, pk-pk	5465E-121
TXR	-	30	1	-	2	0	Metrix MX3000	Radial	15 ft	0.300"	10 mils, pk-pk	5465E-108
TXR	-	30	1	-	2	5	Metrix MX3000	Radial	15 ft	0.300"	5 mils, pk-pk	5465E-107
TXR	-	30	1	-	2	3	Metrix MX3000	Radial	15 ft	0.300"	3 mils, pk-pk	5465E-123
TXR	-	30	2	-	1	0	Metrix MX3000	Radial	20 ft	0.190"	10 mils, pk-pk	5465E-129
TXR	-	30	2	-	1	5	Metrix MX3000	Radial	20 ft	0.190"	5 mils, pk-pk	5465E-128
TXR	-	30	2	-	1	3	Metrix MX3000	Radial	20 ft	0.190"	3 mils, pk-pk	N/A
TXR	-	30	2	-	2	0	Metrix MX3000	Radial	20 ft	0.300"	10 mils, pk-pk	N/A
TXR	-	30	2	-	2	5	Metrix MX3000	Radial	20 ft	0.300"	5 mils, pk-pk	N/A
TXR	-	30	2	-	2	3	Metrix MX3000	Radial	20 ft	0.300"	3 mils, pk-pk	5465E-126
TXR	-	33	5	-	0	0	Metrix MX3300	Radial	5 meter	5 & 8 mm	10 mils, pk-pk	5465E-143
TXR	-	33	5	-	0	3	Metrix MX3300	Radial	5 meter	5 & 8 mm	3 mils, pk-pk	5465E-140
TXR	-	33	5	-	0	5	Metrix MX3300	Radial	5 meter	5 & 8 mm	5 mils, pk-pk	5465E-142
TXR	-	33	9	-	0	0	Metrix MX3300	Radial	9 meter	5 & 8 mm	10 mils, pk-pk	5465E-153
TXR	-	33	9	-	0	3	Metrix MX3300	Radial	9 meter	5 & 8 mm	3 mils, pk-pk	5465E-150
TXR	-	33	9	-	0	5	Metrix MX3300	Radial	9 meter	5 & 8 mm	5 mils, pk-pk	5465E-152
TXR	-	39	5	-	0	0	Metrix MX3309	Radial	5 meter	5 mm	10 mils, pk-pk	N/A
TXR	-	39	5	-	0	3	Metrix MX3309	Radial	5 meter	5 mm	3 mils, pk-pk	N/A
TXR	-	39	5	-	0	5	Metrix MX3309	Radial	5 meter	5 mm	5 mils, pk-pk	5465E-137
TXR	-	39	7	-	0	0	Metrix MX3309	Radial	7 meter	5 mm	10 mils, pk-pk	N/A
TXR	-	39	7	-	0	3	Metrix MX3309	Radial	7 meter	5 mm	3 mils, pk-pk	N/A
TXR	-	39	7	-	0	5	Metrix MX3309	Radial	7 meter	5 mm	5 mils, pk-pk	5465E-139
TXR	-	72	5	-	0	5	Metrix 10000 / MX7200	Radial	5 meter	5 & 8 mm	5 mils, pk-pk	5465E-103
TXR	-	72	5	-	0	3	Metrix 10000 / MX7200	Radial	5 meter	5 & 8 mm	3 mils, pk-pk	5465E-124
TXR	-	72	5	-	0	0	Metrix 10000 / MX7200	Radial	5 meter	5 & 8 mm	10 mils, pk-pk	5465E-104
TXR	-	72	9	-	0	5	Metrix 10000 / MX7200	Radial	9 meter	5 & 8 mm	5 mils, pk-pk	5465E-119
TXR	-	72	9	-	0	3	Metrix 10000 / MX7200	Radial	9 meter	5 & 8 mm	3 mils, pk-pk	5465E-125
TXR	-	72	9	-	0	0	Metrix 10000 / MX7200	Radial	9 meter	5 & 8 mm	10 mils, pk-pk	5465E-120
TXA	-	30	1	-	1	0	Metrix MX3000	Axial	15 ft	0.190"	20 to 80 mils	5488E-103
TXA	-	30	1	-	2	0	Metrix MX3000	Axial	15 ft	0.300"	20 to 80 mils	5488E-105
TXA	-	30	2	-	1	0	Metrix MX3000	Axial	20 ft	0.190"	20 to 80 mils	5488E-104
TXA	-	30	2	-	2	0	Metrix MX3000	Axial	20 ft	0.300"	20 to 80 mils	5488E-106
TXA	-	33	5	-	0	0	Metrix MX3300	Axial	5 meter	5 & 8 mm	20 to 80 mils	5488E-107
TXA	-	33	9	-	0	0	Metrix MX3300	Axial	9 meter	5 & 8 mm	20 to 80 mils	5488E-108
TXA	-	39	5	-	0	0	Metrix MX3309	Axial	5 meter	5 mm	20 to 80 mils	5488E-122
TXA	-	39	7	-	0	0	Metrix MX3309	Axial	7 meter	5 mm	20 to 80 mils	5488E-123
TXA	-	72	5	-	0	0	Metrix 10000 / MX7200	Axial	5 meter	5 & 8 mm	20 to 80 mils	5488E-101
TXA	-	72	5	-	3	1	Metrix 10000 / MX7200	Axial	5 meter	11 mm	20 to 160 mils	5488E-118
TXA	-	72	9	-	0	0	Metrix 10000 / MX7200	Axial	9 meter	5 & 8 mm	20 to 80 mils	5488E-102
TXA	-	72	9	-	3	1	Metrix 10000 / MX7200	Axial	9 meter	11 mm	20 to 160 mils	5488E-119

\*For negative polarity, please add an "N" after the designated number for the Range.  
Example: TXA-729-31N