

# TXR/TXA TRENDSETTER

## Datasheet



### OVERVIEW

The TXR/TXA series of transmitters consists of two systems, the TXR, Radial Vibration Transmitter System and the TXA, Thrust Transmitter System. Both systems contain three parts – a proximity probe, a matched extension cable and a transmitter. Both systems provide a 4 to 20 mA current loop output signal.

The TXR Vibration Transmitter System measures the radial vibration of a shaft or other part of a machine in relation to the location of the probe tip.

### 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

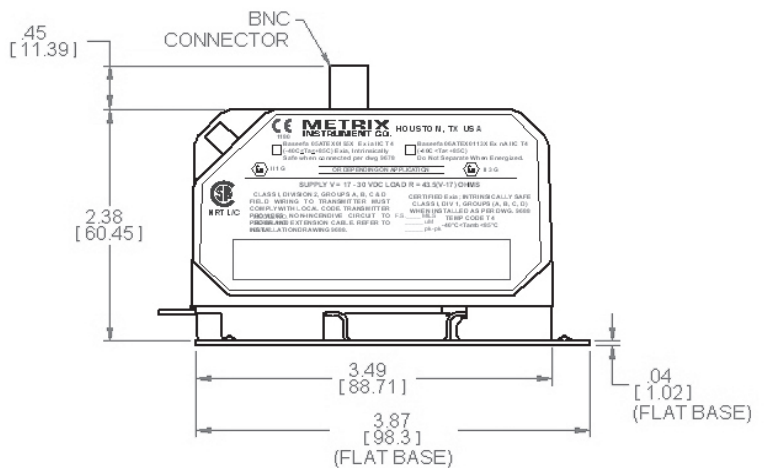
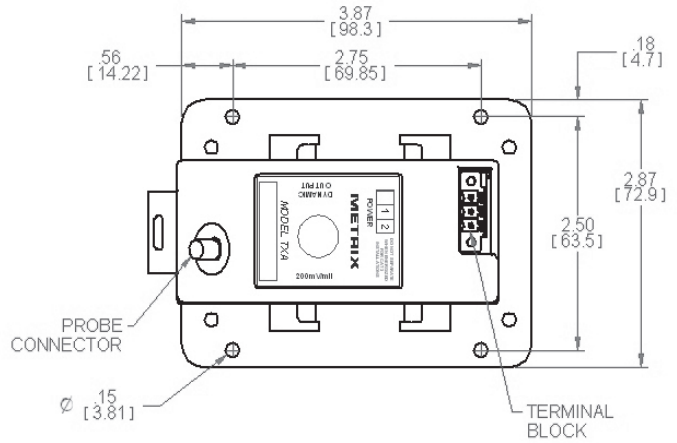
### SPECIFICATIONS

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.

<b>Operating Temp. Range</b>	-40°C to 85°C (-40°F to 185°F)
<b>Operating Humidity Range</b>	95% non-condensing, external environmental protection is required
<b>Power Requirements</b>	<ul style="list-style-type: none"> <li>• 17 to 30 VDC with a maximum start up current of 23 mA (-40°C to 85°C)</li> <li>• Max. loop resistance is determined by <math>R_L = 50 (V_s - 17)</math> ohms</li> </ul>
<b>Frequency Response</b>	<ul style="list-style-type: none"> <li>• 5 Hz to 5 kHz +0, -3 dB pk-pk vibration</li> <li>• 0 Hz to 20 Hz +0, -3 dB position</li> </ul>
<b>Linear Range</b>	<ul style="list-style-type: none"> <li>• 0.5 to 2.0 mm (20 to 80 mils); (8 mm probe)</li> <li>• 0.5 to 4.0 mm (20 to 160 mils); (11 mm probe)</li> </ul>
<b>Buffered Output</b>	<ul style="list-style-type: none"> <li>• 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</li> <li>• 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</li> <li>• 0 Hz to 3 kHz +0, -3 dB</li> </ul> <p>Note: The buffered output is intended for local diagnostics only and will not support loads that are less than 100k ohms.</p>
<b>4-20 mA Output</b>	<ul style="list-style-type: none"> <li>• 4 mA +/- .1 mA with no input vibration</li> <li>• 4 mA +/- .2 mA @ -40°C to 85°C with no input vibration</li> <li>• 20 mA +/- .5 mA @ -40°C to 85°C with full scale input vibration</li> <li>• <math>\leq 3.6</math> mA indicates "Not OK" condition</li> </ul>

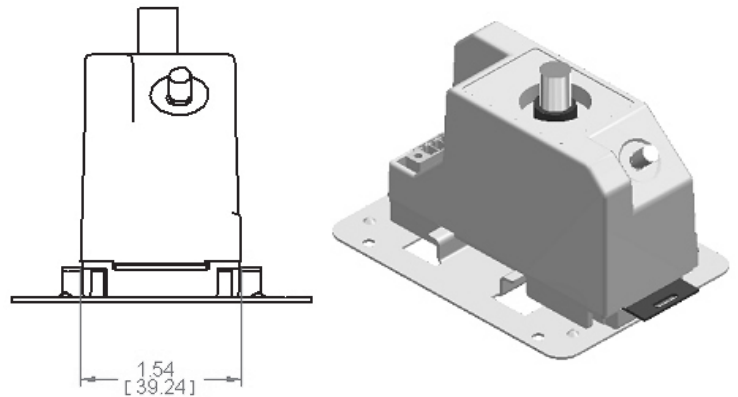
<b>Hazardous Area Ratings</b>	<ul style="list-style-type: none"> <li>• CSA Certified: Intrinsically Safe Class I, Div 1, Grps A, B, C &amp; D, Temp Code T4.</li> <li>• CSA Certified: Non-Incendive Class I, Div 2, Grps A, B, C &amp; D</li> <li>• BASEEFA Certified: Intrinsically Safe Ex ia IIC T4, Non-Incendive Ex ia IIC T4</li> </ul>
<b>Product Inputs</b>	<p><b>Trendsetter will support the following probes:</b></p> <ul style="list-style-type: none"> <li>• 10000 and 7200 series probes with 5, 8 or 11 mm tips and 5 or 9 meter system lengths</li> <li>• 3300 series probes with 5, 8 or 11 mm tips and 5 or 9 meter system lengths</li> <li>• RAM series probes with 5 mm tips and 5 or 7 meter system lengths</li> <li>• 3000 series probes with 0.190 or 0.300 in. tips and 15 or 20 foot system lengths</li> </ul> <p><b>Supply Voltage:</b> 17 to 30 VDC  <b>Maximum Loop Resistance:</b> <math>R_L = 50 (V_s - 17)</math> ohms</p> <p><b>Terminal Block:</b></p> <ul style="list-style-type: none"> <li>• Two piece, removable terminal block, for ease of installation</li> <li>• Accepts 16 to 28 AWG wire</li> </ul>
<b>Product Outputs</b>	<p>4-20 mA proportional to Shaft relative vibration or Shaft Position:</p> <p><b>Vibration (TXR):</b></p> <ul style="list-style-type: none"> <li>• 0-3 mils, 0-75 um pk-pk</li> <li>• 0-5 mils, 0-125 um pk-pk</li> <li>• 0-10 mils, 0-250 um pk-pk</li> </ul> <p>* TXR current output responds to vibrations above 0.2 mils. Contact us for special application needs.</p> <p><b>Position (TXA):</b></p> <ul style="list-style-type: none"> <li>• 20-80 mils, 0.5-2.0 mm; (5 mm, 8mm, 0.190 in. and 0.300 in. probe)</li> <li>• 20-160 mils, 0.5-4.0 mm; (11 mm probe)</li> </ul> <p><b>Not OK indication:</b> 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 <math>\leq 3.6</math> mA under the above conditions.</p>

## WEIGHT & DIMENSIONS



Weight = 0.6 pounds

(P/N 9647)




**NOTE:** All systems calibrated to AISI steel target material. If probe target material varies from AISI 4140 please contact the factory for custom material calibration.


## 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
	9 9 meters		10	10 mils, pk-pk
			15	15 mils, pk-pk
			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
	9 9 meters		10	10 mils, pk-pk
			15	15 mils, pk-pk
			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
	7 7 meters		10	10 mils, pk-pk
			15	15 mils, pk-pk
			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
	2 20 ft.		10	10 mils, pk-pk
			15	15 mils, pk-pk
			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"		

**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

All Products with Flat Base require a 9647 Plate (Example:5465E -0XX)

\*For negative polarity, please add an "N" after the designated number for the Range.

Example: TXA-729-31N

E= +200 (positive polarity)

F= - 200 (negative polarity)



**TXR MODEL NUMBER CONFIGURATION: TXR -A-B-C-D**

A - PROBE SERIES A	
10000/7200	72
3300	33
NSv 3309	39
3000	30
B - SYSTEM LENGTH	
5 meters	5
7 meters	7
9 meters	9
15 feet	1
20 feet	2

C - TIP CONFIGURATION	
5 or 8 mm tip applies to all 7200, 3300 and 3309 systems	0
0.190 tip for 3000 series only	1
0.3000 tip for 3000 series only	2
D - RANGE	
3 mils pk to pk displacement	3
4 mils pk to pk displacement	4
5 mils pk to pk displacement	5
10 mils pk to pk displacement	10
15 mils pk to pk displacement	15
20 mils pk to pk displacement	20

For negative polarity, buffered output, please add an "N" to the designated number for the Range. Ex: TXR-33505N

**TXA MODEL NUMBER CONFIGURATION: TXA -A-B-C-D**

A - PROBE SERIES A	
10000/7200	72
3300	33
NSv 3309	39
3000	30
B - SYSTEM LENGTH	
5 meters	5
7 meters	7
9 meters	9
15 feet	1
20 feet	2

C - TIP CONFIGURATION	
5 or 8 mm tip applies to all 7200, 3300 and 3309 systems	0
0.190 tip for 3000 series only	1
0.3000 tip for 3000 series only	2
11 mm tip, 7200 series only	3
D - RANGE	
20 to 80 mils	0
20 to 160 mils (11mm tip only)	1

- 1) 7 Meter system option only applies to 3309 series systems, also known as Ram Probe.
- 2) 15 and 20 ft systems apply to 3000 series only. This is for replacement only.
- 3) 0.190 and 0.300 Tip diameters apply to 3000 series only.
- 4) 11 mm Tip applies to 10000 series and 7200 only.

For negative polarity, buffered output, please add an "N" to the designated number for the Range. Ex: TXA-72931N