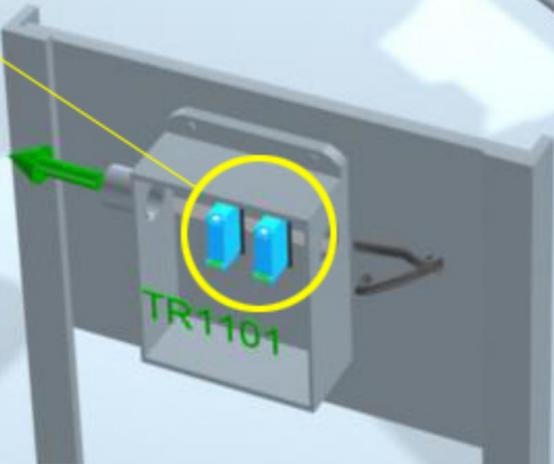




PLC/DCS



**ProVibTech**  
Innovative Machine Monitoring



## TR1101 Seismic Vibration Transmitter

The TR1101 is a cost-effective solution for monitoring case vibration on balance of plant machines. The TR1101 conditions the signal from an accelerometer or velocity transducer and provides a 4-20mA output in acceleration, velocity or displacement.

### Features

- ✓ Measures machinery case vibration
- ✓ 4-20mA output in acceleration, velocity or displacement
- ✓ Buffered output up to 300 meters (1,000 feet)
- ✓ Compatible with other manufacturers' sensors (accelerometer or velocity sensor)
- ✓ Aluminum casted (copper free) case with epoxy potting for better environmental protection and reliability
- ✓ Compact size



### Specifications

#### Electrical

Power Supply:

22-30VDC, 100mA (Non isolated)

Frequency Response ( $\pm 3$ dB):

Acceleration: 2.0 - 10 KHz

Velocity: 2 - 10 KHz (velocity sensor)

Velocity: 10 - 5 KHz (accelerometer)

Displacement: 10 - 3 KHz (velocity sensor)

Acceleration (low frequency): 1.0 - 100Hz

Velocity (low frequency): 1.0 - 100Hz (TM079VD)

Displacement (low frequency): 1.0 - 100Hz (TM079VD)

Sensor Interface:

Sensitivity:

100mV/g nominal for accelerometer or

4.0mV/mm/sec (100mV/in/sec) nominal for velocity sensor

40mV/mm/sec (1000mV/in/sec) nominal for velocity

TM079VD or 4mV/ $\mu$ m (100mV/mil) nominal for displacement TM079VD

Current Source:

Nominal 4mA@24VDC

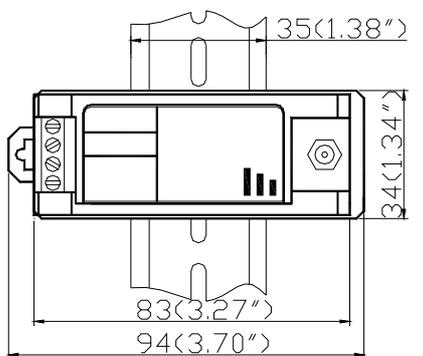
Connectors:

GAP/Buf: gap and buffered output

SIG: sensor signal

COM: signal com

4-20mA: 4-20mA output



DIN Rail Mount

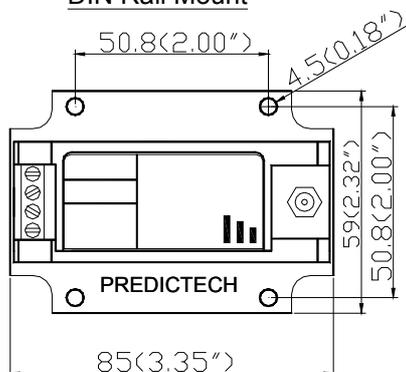


Plate Mount



### Electrical Specifications Continued

#### Buffered Output:

- Original vibration, un-filtered
- Impedance: 100  $\Omega$
- Maximum cable distance: 300m (1,000ft)
- Sensitivity: same as the sensor

#### Overall Vibration:

- 4-20mA, source
- Driving load resistance up to 750  $\Omega$

#### System Self-test:

- System OK: output 4-20mA
- System Not OK: output < 3.0mA

### Physical

- Height: 75mm (2.95")
- Weight: 1.0kg (2.0 lbs)

### Environmental

#### Temperature:

- Operation: -40°C to +70°C
- Storage: -40°C to +100°C

#### Humidity:

- 90% non-condensing

### Order Information

\*Factory Default

**TR1101-AXX-EXX-GXX**

#### AXX: Full Scale

- A00\*: 0 - 200um pk-pk
- A01: 0 - 500um pk-pk
- A02: 0 - 100um pk-pk
- A03: 0 - 10mil pk-pk
- A04: 0 - 25mil pk-pk
- A05: 0 - 5.0mil pk-pk
- A06: 0 - 50mm/s pk
- A07: 0 - 100mm/s pk
- A08: 0 - 20mm/s pk
- A09: 0 - 2.0ips pk
- A10: 0 - 4.0ips pk
- A11: 0 - 1.0ips pk

#### AXX: Full Scale Continued

- A12: 0 - 5.0g pk
- A13: 0 - 10g pk
- A14: 0 - 5.0g pk (low frequency)
- A15: 0 - 10g pk (low frequency)
- A16: 0 - 50mm/s pk (low frequency, E01, E04)
- A17: 0 - 100mm/s pk (low frequency, E01, E04)
- A18: 0 - 500um pk-pk (low frequency, E04)
- A19: 0 - 200um pk-pk (low frequency, E04)
- A20: 0 - 2.0ips pk (low frequency, E04)
- A21: 0 - 4.0ips pk (low frequency, E01, E04)
- A22: 0 - 20mil pk-pk (low frequency, E04)
- A23: 0 - 10mil pk-pk (low frequency, E04)
- A24: 0 - 2.0ips (50 mm/s) rms
- A25: 0 - 1.0ips (25 mm/s) rms
- A26: 0 - 0.8ips (20 mm/s) rms
- A27: 0 - 0.5ips (12.5 mm/s) rms

#### EXX: Sensor Type (not included)

- E00\*: Accelerometer TM0782A, TM0783A, TM0784A, TM0785A, TM0786A or any current mode accelerometer with 100mV/g
- E01: Velocity sensor TM0793V, TM0796V or any current mode velocity sensor with 4mV/mm/sec
- E02: 330500, 330525 velocity sensor
- E03: 330750 velocity sensor
- E04: TM079VD low frequency sensor

#### GXX: Mount

- G00\*: DIN rail mount
- G01: Plate mount

### TR1101 Accessories

The TR1101 requires an external accelerometer or velocity sensor to work as a system.

**TM0782A, TM0783A, TM0784A, TM0785A, TM0786A:**  
Accelerometer

**TM0793V, TM0796V:** Velocity sensor

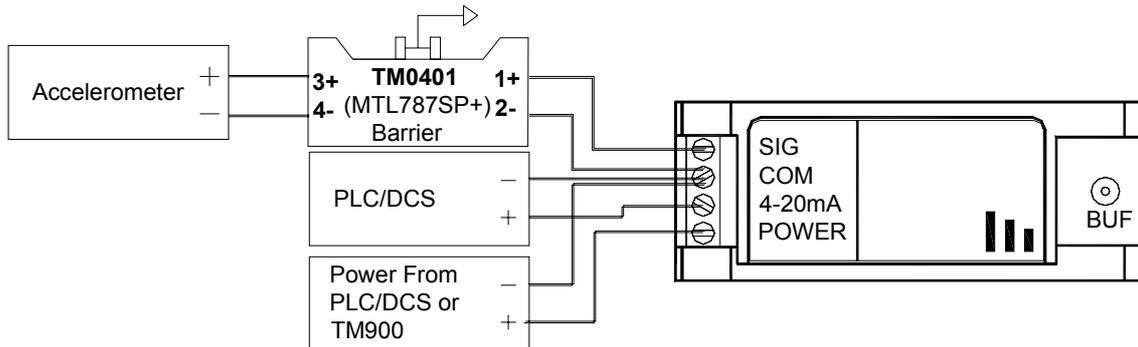
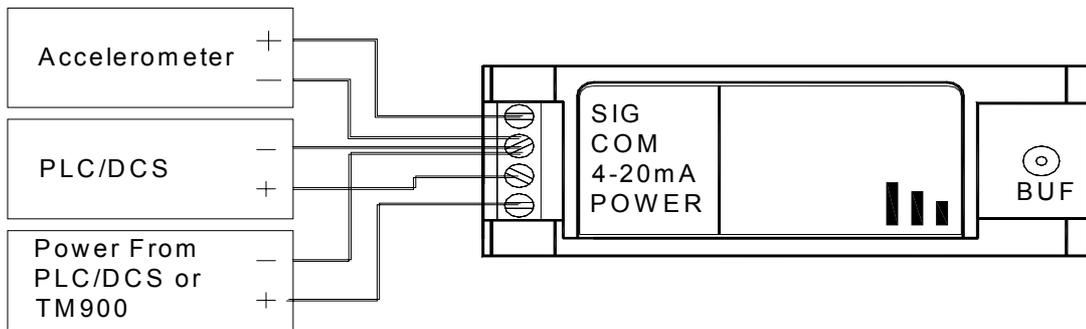
**TM079VD:** Low frequency velocity and displacement sensor

**TM900:** Power converter

**TM0200:** 3-1/2 digit display unit



**Field-Wiring Diagram**



Note:

Other barriers available:

TM0402: (STAHL 9001/51-280-091-141)

TM0407: (STAHL 9160/13-11-11)



## Accelerometer TM0782A

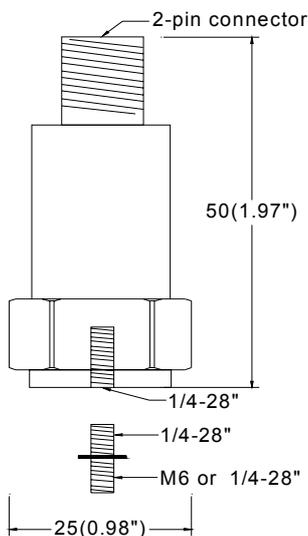
### General Purpose, Industrial Piezoelectric Accelerometers

The TM0782A-K accelerometer kit consists of one accelerometer and one 5 meter cable. This accelerometer kit directly interfaces with ProvibTech's signal conditioners: distributed transmitter monitors (DTM), transmitters (TR), dual monitors (DM) and PT580 vibration switches to measure case vibration in acceleration or velocity.

### Specifications

#### Electrical

- Sensitivity: 100mV/g, @ 25°C, ±10%
- Frequency Response: 0.5 - 10,000Hz (±3dB)
- Acceleration Range: 50g
- Isolation: Fully isolated
- Electrical Noise: 0.0007g
- Power Requirement: 2 - 10mA constant current  
18 - 30VDC
- Bias Voltage: 10 - 14VDC



- Resonance Frequency: 30 kHz
- Maximum Transmission Distance: 300 meters (1,000 feet)

#### Environmental and Physical

- Temperature Range: -50°C to +120°C
- Environmental Protection: IP67
- Weight: 90 grams
- Case Material: Stainless Steel
- Mounting: 1/4-28UNF tapped hole
- Installation Torque: 29N x M
- Hazardous Area Approval:
  - ATEX: II 1 G, Ex ia IIC T4
  - CSA: Class I, Div. 1, Groups A, B, C and D
  - PCEC, Ex ia IIC T4

#### Connection

- A: Power (red)
- B: COM (white)
- Shield



### Order Information

#### **TM0782A-M**

Accelerometer with mounting screw 1/4-28" to M6×1

#### **TM0782A-E**

Accelerometer with mounting screw 1/4-28" to 1/4-28"

#### **TM0782A-K-M**

Accelerometer kit includes:

- ✓ TM0782A accelerometer
- ✓ Mounting screw (1/4-28" to M6×1)
- ✓ TM0702-05

#### **TM0782A-K-E**

Accelerometer kit includes:

- ✓ TM0782A accelerometer
- ✓ Mounting screw (1/4-28" to 1/4-28")
- ✓ TM0702-05

### **Accessories:**

(Standard cable length is 5 meters. XX = 05)



**TM0702-XX:** Aluminum MIL connector with XX meters cable, 6.35mm diameter.  
< 120°C (250°F)



**TM0703-XX:** Seal tight boot connector with XX meters cable, 6.35mm diameter.  
< 120°C (250°F)



**TM0704-XX:** Stainless steel MIL connector with armored XX meters cable,  
4.83mm diameter. < 150°C (300°F)



**TM0705-XX:** Cornered MIL connector with XX meters cable, 6.35mm diameter.  
< 120°C (250°F)

**TM0710:** Mounting screw 1/4-28" - M6×1

**TM0711:** Mounting screw 1/4-28" - 1/4-28"

**TM0712:** Mounting screw 1/4-28" - M8

**TM0713:** Mounting screw 1/4-28" - M10