Proximity Probe Transducers

Seismic Transducers

User Manual

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SENSOR-CAT-ENG-A-8

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8mm, 5mm Proximity Probe TM0180, and TM0105 Systems

Introduction to proximity probe transducer

Proximity probe transducer has been widely used in measuring the static and dynamic distance between the target and the probe. With its high quality, highly reliable, and long life cycle, TM series proximity probe has been used to measure shaft vibration, radial and axial shaft position and differential expansion between case and rotor. In addition, the proximity probe transducer can be used for diagnostic purposes, providing solutions to problem that may develop on rotating machinery. Some of these problems include early shaft crack detection, misalignment of the shaft within the machine casing, rotor imbalance, abnormal bearing wear. With no moving parts to wear out or degrade, the transducer system can last extremely long periods of time before requiring calibration or service. This allows installation of the proximity probe transducer during normal machine maintenance outages and connection of the transducers to monitoring and diagnostic equipment at a later time.

TM proximity probe transducer has been designed to meet API670 standard, The system consists of probe, extension cable and driver. In some case, the TM transmitter-monitor can directly interface with probe and extension cable without the need of driver. This makes the field installation much easier. Due to the low components counts, the reliability has also been increased.

TM0180 (TM0105) series proximity probe transducer, with 8mm (5mm) diameter on probe tip, is the most commonly used probe system. It can be used for all kind of rotation machines. Primary types of measurements made on rotating machinery using the TM0180 (TM0105) proximity probe transducer are:

- ✓ Radial vibration for indicating bearing condition and measuring such machine malfunctions as rotor imbalance, misalignment, and shaft crack.
- ✓ Axial thrust position for determining thrust bearing wear or potential bearing failure. Also, axial vibration can be measured with proximity probes at this location.
- ✓ Shaft average radial position for determining attitude angle, an indicator of rotor stability and shaft alignment.
- ✓ Vibration amplitude and phase angle for diagnostic information in Polar and Bode formats or for vector monitoring.
- ✓ Eccentricity to measure the amount of shaft bow during startup of large turbine machinery.
- ✓ Phase reference for measuring shaft rotation speed and phase angle of shaft vibration for monitoring and diagnostic purposes.

Components of TM0180 (TM0105) proximity probe transducer

Probe

An improved version of TM0180 (TM0105) probe has been introduced as the standard 8mm (5mm) probe. With the new

design, the probe has longer life cycle, and more durable. In addition, the up-graded extension cable, connector and the insulating material on the probe tip made the probe works better in hush area.

TM0180 (TM0105) probe comes with 0.5m and 1.0m standard cable. You can also order 5.0m and 9.0m with integrates the probe and extension cable together as one part.

The probe can be selected in English or Metric unit, you can also pick up the reverse mount option.

Extension Cable

ProvibTech utilizes an up-graded extension cable for better system performance and life cycle.

You can select various extension cable lengths based on the probe cable length. The total length of the probe and the extension cable can be 5m or 9m.

The connector on extension cable is also standard, which is compatible with many manufacture's system.

Driver

With modern electronics, the driver of TM0180 (TM0105) has higher accuracy. The exchanging rate is also improved. The insulation of the driver to ground is a standard feature for all the drivers. The total length of cable between the probe and the driver should be 5m or 9m. The distance between the driver and the monitor can be up to 300m (1000 ft). The three wire shielded cable should be used to connect ProvibTech's driver and its monitor system.

Hazardous Area

The TM0180 (TM0105) proximity probe transducer has been approved by agency for hazardous area. Please consult ProvibTech or its office for further information.

System Specifications

Electrical

Power Supply:
Voltage: -23 ~ -30VDC
Current: < 12mA.

Linear Range:
2.0mm (80mils) begins at 0.25mm (10mils) from probe face (ANSI4140).
Range is 0.25 ~ 2.25mm (10 ~ 90 mils).

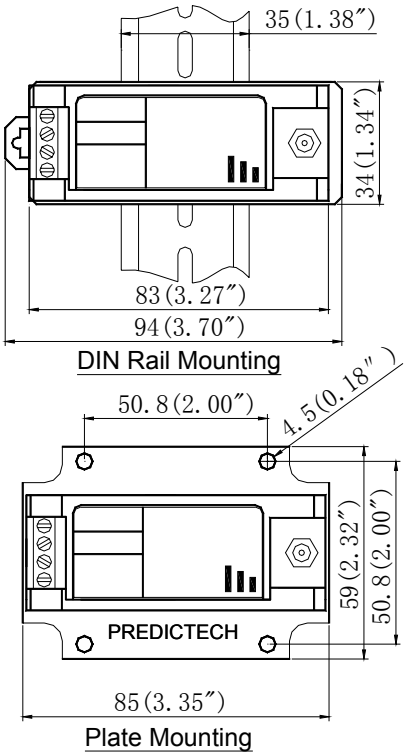
Sensitivity:
8.0 mV/um (200mV/mil) ± 4% typical if calibrated as a system. ±6.5% typical including interchangeability errors.

Temperature Sensitivity:
Probe and 5 meters cable. From -35 °C to 120 °C, tolerance is within ±0.3‰/℃ in the middle of the linear range. At 2.25mm (90mil), nominal ±0.5‰/℃.

Linearity (Deviation from straight line):
Within±0.0254mm (±1.0 mil) of a straight line, if calibrated as a system. ±0.038mm (±1.5mil) typical including interchangeability errors.

Frequency Response (±3db):
0 ~ 10.0kHz.

Minimum Target Size:
15mm (0.6 inch) in diameter.



Environmental

Probe Driver Temperature:
Operation: -40°C ~ +80°C.
Storage: -50°C ~ +100°C.

Probe Temperature:
Operation/Storage: -40°C ~ +177°C.

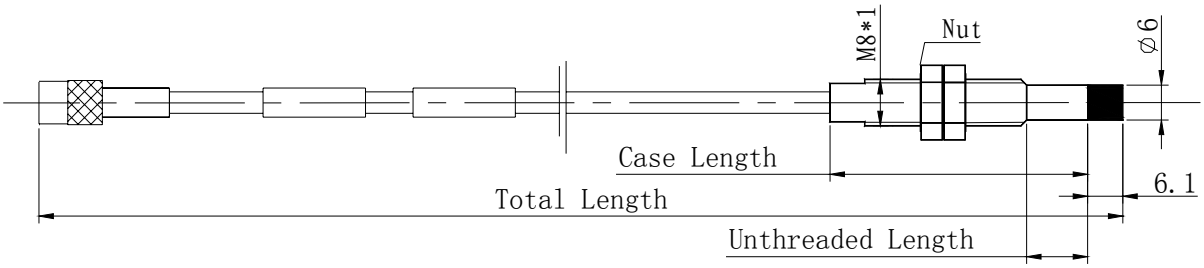
Extension cable Temperature:
Operation/Storage: -40°C ~ +177°C.

Humidity:
100% non-condensing.

Physical

Driver Dimension: Height: 75mm (2.95″).

Driver Mounting:
35mm DIN rail mounting or
Plate mounting.



TM0105 Probe 5mm

Standard 5mm TM0105 Probes

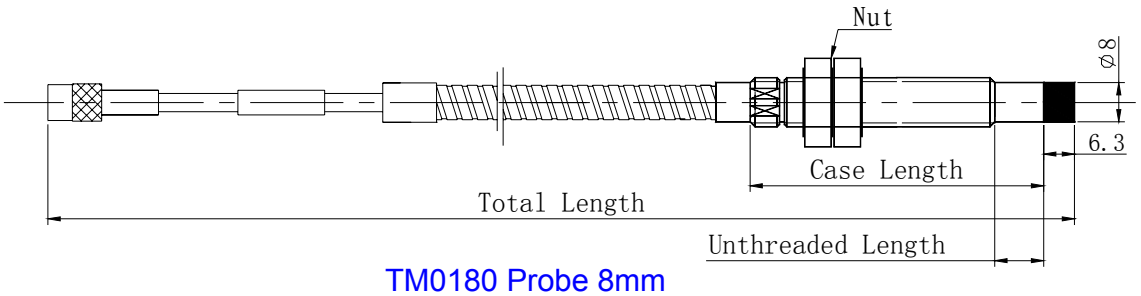
(Work with TM0181 cable and TM0182 driver)

TM0105	**-XX**	**-XX**	**-XX**	**-XX**	**-XX**
Standard 5mm probe	**Probe type**	**Unthreaded Length**	**Case Length**	**Total Length**	**Connector Type**
1/4″-28UNF; without armor	-01	Standard: 00 (0.0 in) Increment: 05 (0.5 in) Maximum: Case length - 1.0 in	Standard: 20 (2.0 in) Increment: 05 (0.5 in) Minimum: 10 (1.0 in) Maximum: 95 (9.5 in)	05 (0.5m) 10 (1.0m) 50 (5.0m) 90 (9.0m)	00 (none) 02 (yes)
1/4″-28UNF; with armor	-02				
M8×1; without armor	-07	Standard: 00 (0 mm) Increment: 01 (10 mm) Maximum: Case length – 20 mm	Standard: 05 (50 mm) Increment: 01 (10 mm) Minimum: 02 (20 mm) Maximum: 25 (250 mm)		
M8×1; with armor	-08				

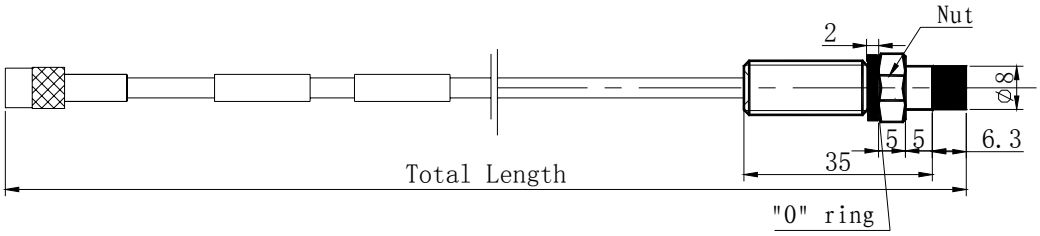
7200 Series 5mm TM0105 Probes

(Work with TM0181-21747 cable and TM0182-18745 driver)

TM0105	-XXXXX	-XX	-XX	-XX	-XX
7200 5mm probe	**Probe type**	**Unthreaded Length**	**Case Length**	**Total Length**	**Connector Type**
1/4″-28UNF; without armor	-21500	Standard: 00 (0.0 in) Increment: 05 (0.5 in) Maximum: Case length - 1.0 in	Standard: 20 (2.0 in) Increment: 05 (0.5 in) Minimum: 10 (1.0 in) Maximum: 95 (9.5 in)	05 (0.5m) 10 (1.0m) 50 (5.0m) 90 (9.0m)	00 (none) 02 (yes)
1/4″-28UNF; with armor	-21501				
M8×1; without armor	-22812	Standard: 00 (0 mm) Increment: 01 (10 mm) Maximum: Case length – 20 mm	Standard: 05 (50 mm) Increment: 01 (10 mm) Minimum: 02 (20 mm) Maximum: 25 (250 mm)		
M8×1; with armor	-22813				



TM0180 Probe 8mm



TM0180 Reverse Mount Probe 8mm

Standard 8mm TM0180

(Work with TM0181 cable and TM0182 driver)

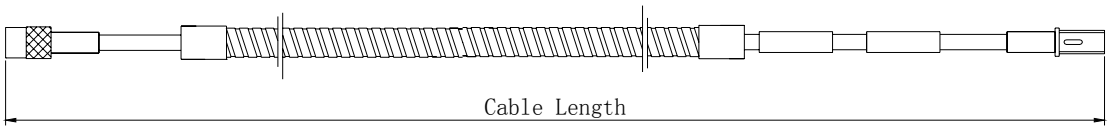
TM0180	**-XX**	**-XX**	**-XX**	**-XX**	**-XX**
Standard 8mm probe	**Probe type**	**Unthreaded Length**	**Case Length**	**Total Length**	**Connector Type**
3/8″-24UNF; without armor	-01	Standard: 00 (0.0 in) Increment: 05 (0.5 in) Maximum: Case length - 1.0 in	Standard: 20 (2.0 in) Increment: 05 (0.5 in) Minimum: 10 (1.0 in) Maximum: 95 (9.5 in)	05 (0.5m) 10 (1.0m) 50 (5.0m) 90 (9.0m)	00 (none) 02 (yes)
3/8″-24UNF; with armor	-02				
M10×1; without armor	-07	Standard: 00 (0 mm) Increment: 01 (10 mm) Maximum: Case length – 20 mm	Standard: 05 (50 mm) Increment: 01 (10 mm) Minimum: 02 (20 mm) Maximum: 25 (250 mm)		
M10×1; with armor	-08				
Reverse mount 3/8″-24UNF; without armor	-06	02 (0.2 in)	12 (1.2 in)	05 (0.5m) 10 (1.0m)	02 (yes)
Reverse mount M10 × 1; without armor	-05	05 (5 mm)	03 (30 mm)		

7200 Series 8mm TM0180 Probes

(Work with TM0181-21747 cable and TM0182-18745 driver)

TM0180	-XXXXX	-XX	-XX	-XX	-XX
7200 8mm probe	**Probe type**	**Unthreaded Length**	**Case Length**	**Total Length**	**Connector Type**
3/8″-24UNF; without armor	-21504	Standard: 00 (0.0 in) Increment: 05 (0.5 in) Maximum: Case length - 1.0 in	Standard: 20 (2.0 in) Increment: 05 (0.5 in) Minimum: 10 (1.0 in) Maximum: 95 (9.5 in)	05 (0.5m) 10 (1.0m) 50 (5.0m) 90 (9.0m)	00 (none) 02 (yes)
3/8″-24UNF; with armor	-21505				
M10×1; without armor	-22810	Standard: 00 (0 mm) Increment: 01 (10 mm) Maximum: Case length – 20 mm	Standard: 05 (50 mm) Increment: 01 (10 mm) Minimum: 02 (20 mm) Maximum: 25 (250 mm)		
M10×1; with armor	-22811				
Reverse mount 3/8″-24UNF; without armor	-21508	02 (0.2 in)	12 (1.2 in)	05 (0.5m) 10 (1.0m)	02 (yes)

Extension Cable TM0181



Extension Cable

Extension Cable for 5mm and 8mm Probes

(Work with TM0180 probe and TM0182 driver)

TM0181	-XXXXX	-XXX	-XX
Probe Type	**Model**	**Cable Length**	**Armor**
Standard 5mm and 8mm probes		-030 (3.0 m) -040 (4.0 m) -045 (4.5 m) -080 (8.0 m) -085 (8.5 m)	-00 (No) -01 (Yes)
7200 series 5mm and 8mm probes	-21747		
10000 series 5mm and 8mm probes	-7402		
3000 series 0.190″ and 0.300″ probes	-4454	-156(156 inches)	Yes

The total length of the probe + cable should be either 5.0 meters or 9.0 meters.

Proximity Driver for 5mm and 8mm Probes

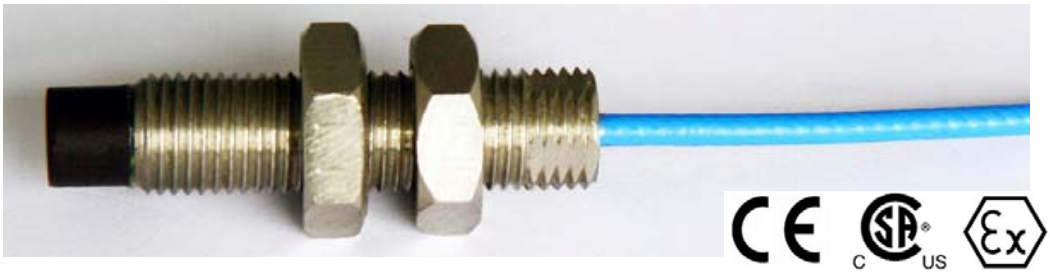
(Work with TM0180 probe and TM0181 cable)

TM0182	-AXX	-BXX	-CXX
Probe Type	**Cable Length**	**Hazardous Area Certification**	**Mounting**
Standard 8mm probes	-A50 (standard 8mm probe, 5m) -A90 (standard 8mm probe, 9m)	-B00 (no) -B01 (multiple**)	-C00 (DIN rail) -C01 (Plate mounting)
Standard 5mm probes	-A55 (standard 5mm probe, 5m) -A95 (standard 5mm probe, 9m)		
3300 8mm/5mm probes	-A53 (3300 8mm probe, 5m, 330130) -A93 (3300 8mm probe, 9m, 330130)		
7200 8mm/5mm probes	-A57 (7200 8mm / 5mm probe, 5m, 18745) -A97 (7200 8mm / 5mm probe, 9m, 18745)		

The total length of the probe + cable should be either 5.0 meters or 9.0 meters.

** PCEC, Ex ia IIC T4; ATEX, II 1 G, EEx ia IIC T4; CSA, class 1, Div. 1 & Div. 2, groups A/B/C/D

11mm Proximity Probe TM0110 System



Up to 4mm (160mil) linear range

The 11mm probe has up to 4mm (160mil) linear range. The probe is excellent choice for accurately measure shaft position with relatively long linear range compared with 8mm probe. TM proximity probe transducer has been designed to meet industrial standard, The system consists of probe, extension cable and driver. In some case, the TM transmitter-monitor can directly interface with probe and extension cable without the need of driver. This makes the field installation much easier. Due to the less components, the reliability has also been increased.

Components of TM0110 proximity probe transducer

Probe – TM0110

An improved version of TM0110 probe has been introduced as the standard 11mm probe. With the new design, the probe has longer life cycle, and more durable. In addition, the up-graded extension cable, connector and the insulating material on the probe tip made the probe works better in hush area.

TM0110 probe comes with 0.5m and 1.0m standard cable. You can also order 5.0m and 9.0m with integrates the probe and extension cable together as one part.

The probe can be selected in English or Metric unit, you can also pick up the reverse mount option.

Extension Cable – TM0181

ProvibTech utilizes an up-graded extension cable for better system performance and life cycle.

You can select various extension cable lengths based on the probe cable length. The total length of the probe and the extension cable can be 5m or 9m.

The TM0181 extension cable can be used with both 8mm system and 11mm system.

Driver – TM0182

With modern electronics, the driver (TM0182) has been designed with higher accuracy. The exchanging rate is also improved. The insulation of the driver to ground is a standard feature for all the drivers. The distance between the driver and the monitor can be up to 300m (1000 ft). The three wire shielded cable should be used to connect ProvibTech's driver and its monitor system.

Less interchangeable error

Adopting modern VLSI technology, ProvibTech's 11mm proximity probe transducer has been improved greatly in interchangeability. Any part, includes probe, extension cable or driver can be pick-up to form a system randomly.

System Specifications

Electrical

Power Supply:

Voltage: -23 ~ -30VDC

Current: < 12mA.

Linear Range:

4.0mm (160mils) begins at 0.40mm (16mils) from probe surface (ANSI4140).

Range is 0.40 ~ 4.40mm (16 ~ 173 mils).

Sensitivity:

4.0 mV/um (100mV/mil) ± 10% typical if calibrated as a system. ±16% typical including interchangeability errors.

Temperature Sensitivity:

Probe and 5 meters cable. From -30 °C to 120 °C, typical tolerance is within ±0.4‰/℃ reference with the middle of the linear range.

Linearity (Deviation from straight line):

Within±0.06mm (±2.4 mil) of a straight line, if calibrated as a system. ±0.16mm (±6.5mil) typical including interchangeability errors.

Frequency Response (±3db):

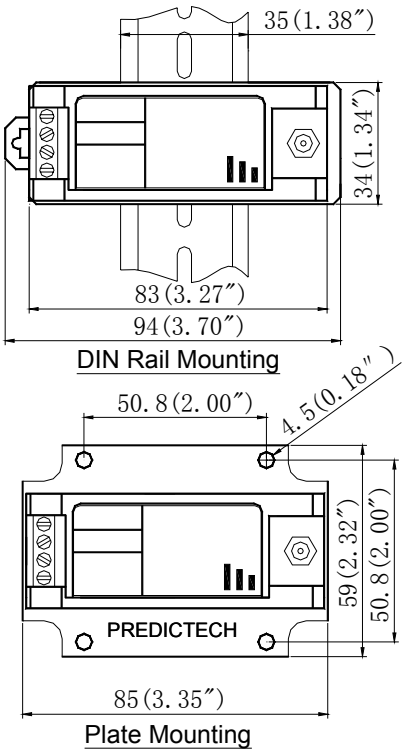
0 ~ 3.0kHz.

Minimum Target Size:

33mm (1.3 inch) in diameter.

Environmental

Probe Driver Temperature:



Operation: -40°C ~ +80°C.

Storage: -50°C ~ +100°C.

Probe Temperature:

Operation/Storage: -40°C ~ +177°C.

Cable Temperature:

Operation/Storage: -40°C ~ +177°C.

Humidity:

100% non-condensing.

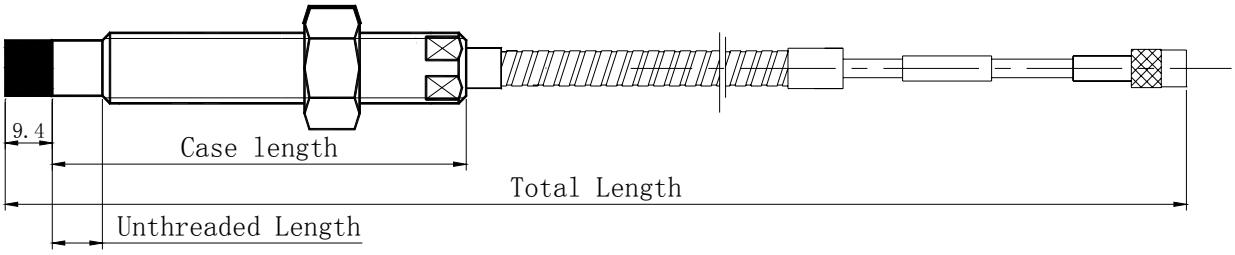
Physical

Driver Dimension: Height: 75mm (2.95″).

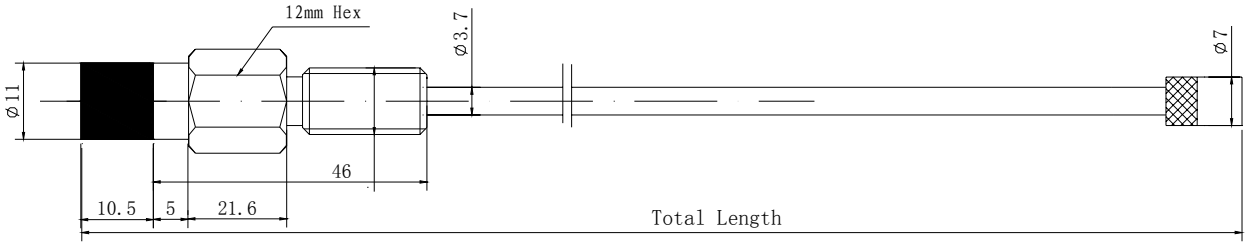
Driver Mounting:

35mm DIN rail mounting or

Plate mounting.



11mm Probe TM0110



TM0110 Reverse Mount

Standard 11mm TM0110 Probes

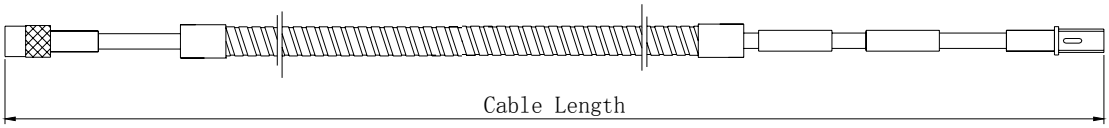
(Work with TM0181 cable and TM0182 driver)

TM0110	**-XX**	**-XX**	**-XX**	**-XX**	**-XX**
Standard 11mm probe	**Probe type**	**Unthreaded Length**	**Case Length**	**Total Length**	**Connector Type**
1/2″-20UNF; without armor	-02	Standard: 00 (0.0 in) Increment: 05 (0.5 in) Maximum: Case length - 1.0 in	Standard: 30 (3.0 in) Increment: 05 (0.5 in) Minimum: 10 (1.0 in) Maximum: 95 (9.5 in)	05 (0.5m) 10 (1.0m) 50 (5.0m) 90 (9.0m)	00 (none) 02 (yes)
1/2″-20UNF; with armor	-03				
M14×1.5; without armor	-00	Standard: 00 (0 mm) Increment: 01 (10 mm) Maximum: Case length – 20 mm	Standard: 05 (50 mm) Increment: 01 (10 mm) Minimum: 02 (20 mm) Maximum: 25 (250 mm)		
M14×1.5; with armor	-01				
Reverse mount M10 × 1; without armor	-05	02 (0.2 in)	12 (1.2 in)	05 (0.5m) 10 (1.0m)	02 (yes)
Reverse mount 3/8″-24UNF; without armor	-06	05 (5 mm)	30 (30 mm)		

7200 Series 11mm TM0110 Probes

(Work with TM0181-24710 cable and TM0182-19049 driver)

TM0110	-XXXXX	-XX	-XX	-XX	-XX
Standard 11mm probe	**Probe type**	**Unthreaded Length**	**Case Length**	**Total Length**	**Connector Type**
1/2″-20UNF; without armor	-19048	Standard: 00 (0.0 in) Increment: 05 (0.5 in) Maximum: Case length – 8.0 in	Standard: 30 (3.0 in) Increment: 05 (0.5 in) Minimum: 15 (1.5 in) Maximum: 95 (9.5 in)	05 (0.5m) 10 (1.0m) 50 (5.0m) 90 (9.0m)	00 (none) 02 (yes)
1/2″-20UNF; with armor	-24798				
M14×1.5; without armor	-26179	Standard: 00 (0 mm) Increment: 01 (10 mm) Maximum: Case length – 210 mm	Standard: 05 (50 mm) Increment: 01 (10 mm) Minimum: 03 (30 mm) Maximum: 25 (250 mm)		
M14×1.5; with armor	-26180				
Reverse mount 3/8″-24UNF; without armor	-29776			05 (0.5m) 10 (1.0m) 50 (5.0m) 90 (9.0m)	02 (yes)



Extension Cable

Extension Cable for 11mm Probes

(Work with TM0110 probe and TM0182 driver)

TM0181	-XXXXX	-XXX	-XX
Probe Type	**Model**	**Cable Length**	**Armor**
Standard 11mm probes	-	-040 (4.0 m) -045 (4.5 m) -080 (8.0 m) -085 (8.5 m)	-00 (No) -01 (Yes)
7200 series 11mm probes	-24710		

The total length of the probe + cable should be either 5.0 meters or 9.0 meters.

Probe Driver for 11mm Probes

(Work with TM0180 probe and TM0181 cable)

TM0182	-AXX	-BXX	-CXX
Probe Type	**Cable Length**	**Hazardous Area Certification**	**Mounting**
Standard 11mm probes	-A51 (standard 11mm probe, 5m) -A91 (standard 11mm probe, 9m)	-B00 (no) -B01 (multiple**)	-C00 (DIN rail) -C01 (plate mounting)
7200 11mm probes	-A52 (7200 11mm probe, 5m) -A92 (7200 11mm probe, 9m)		

The total length of the probe + cable should be either 5.0 meters or 9.0 meters.

** PCEC, Ex ia IIC T4; ATEX, II 1 G, EEx ia IIC T4; CSA, class 1, Div. 1 & Div. 2, groups A/B/C/D

25mm Proximity Probe TM0120 System

Up to 12mm (500mil) linear range

The 25mm probe has up to 12mm (470mil) linear range. The probe is designed for measure differential expansion. TM0120 utilize advanced technology that integrating the probe, extension cable and the driver into one integral unit. This integral proximity probe has better linearity, better temperature sensitivity. It's easier in field installation.

Components of TM0120 proximity probe transducer

An improved version of TM0120 probe has been introduced as the standard 25mm probe. With the new design, the probe has only one component – the proximity probe. The insulating material on the probe tip made the probe works better in hush area.

TM0120 probe comes with 1m, 5m or 9m standard cable. Extension cable will be the typical dual wire shielded cable.

TM0120 has a smooth body option. The cable exit can be rear or side.

The probe thread is either in English or in Metric unit.

System Specifications

Electrical

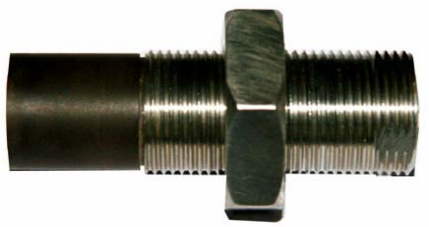
Power Supply:

Voltage: -15 ~ -30VDC

Current: < 12mA.

Linear Range:

12mm (470mils) begins at about 2mm (80mils) from probe surface (ANSI4140).



Sensitivity:0.8 mV/um (20mV/mil) ± 4% typical if calibrated as a system.

Temperature Sensitivity:

Probe and 5 meters cable. Within the operation temperature range, typical tolerance is within ±5% FS.

Linearity (Deviation from straight line):

Within±0.25mm (±10 mil) of a straight line.

Frequency Response (±3db):

0 ~ 2.0kHz.

Minimum Target Size:

67mm (2.6 inch) in diameter.

Environmental

Probe Temperature:

Operation: -35°C ~ +85°C.

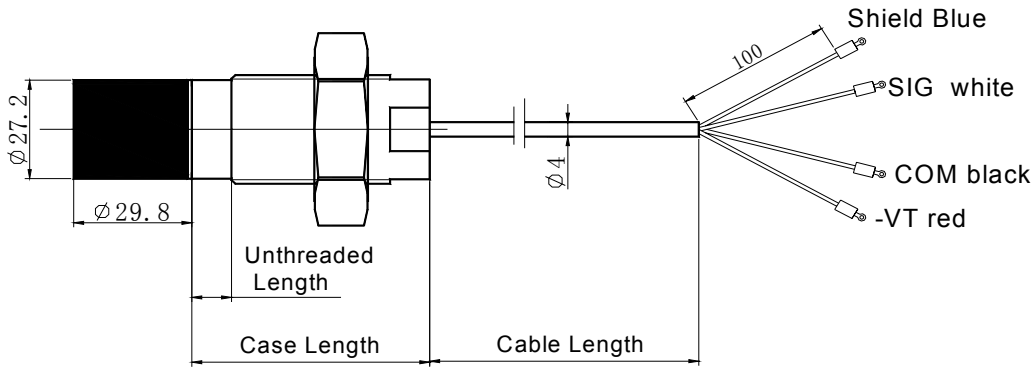
Storage: -50°C ~ +100°C.

Humidity:

100% non-condensing.

25mm TM0120 Integral Proximity Probe Selection Table

TM0120	-XX	-XX	-XX	-XX
25mm integral probe	**Probe type**	**Unthreaded Length**	**Case Length**	**Total Length**
1.25-12 UNF; no armor; standard	-02	Standard: 00 (0.0 in) Increment: 01 (0.1 in) Maximum: Case length - 1.0 in	Standard: 30 (3.0 in) Increment: 01 (0.1 in) Minimum: 20 (2.0 in) Maximum: 95 (9.5 in)	10 (1.0m) 50 (5.0m) 90 (9.0m)
1.25-12 UNF; with armor; standard	-03			
M30×2; no armor; standard	-00	Standard: 00 (0 mm) Increment: 01 (10 mm) Maximum: Case length – 20 mm	Standard: 07 (70 mm) Increment: 01 (10 mm) Minimum: 50 (50 mm) Maximum: 25 (250 mm)	
M30×2; with armor; standard	-01			
Smooth body, side exit; no armor	-04	Standard: 30 (3.0 in) Increment: 01 (0.1 in) Minimum: 30 (3.0 in) Maximum: 95 (9.5 in)	Same as Unthreaded Length	
Smooth body, side exit; with armor	-05			
Smooth body, rear exit; no armor	-06	Standard: 30 (3.0 in) Increment: 01 (0.1 in) Minimum: 20 (2.0 in) Maximum: 95 (9.5 in)	Same as Unthreaded Length	
Smooth body, rear exit; with armor	-07			



TM0120 Probe 25mm

Accelerometer TM0782A

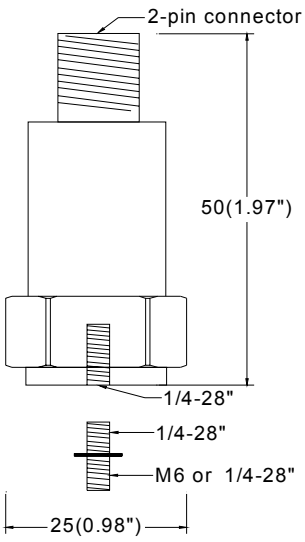
General Purpose, Industrial Piezoelectric Accelerometers

The TM0782A-K accelerometer kit consists of one accelerometer and one 5 meter cable. This accelerometer kit directly interfaces with ProvibTech's signal conditioners: DTM, TR transmitters, DM Dual Monitors 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
GOST R: 0ExiaIICT4X

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

TM0782A-M-S

Accelerometer with mounting screw 1/4-28” to M6×1 Hazardous area approval

TM0782A-E-S

Accelerometer with mounting screw 1/4-28” to 1/4-28” Hazardous area approval

.

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), Maximum Length is 10 meters.

TM0705-XX: Cornered MIL connector with XX meters cable, 6.35mm diameter. < 120°C (250°F), Maximum Length is 10 meters.

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

Accelerometer with Integral Cable TM0783A

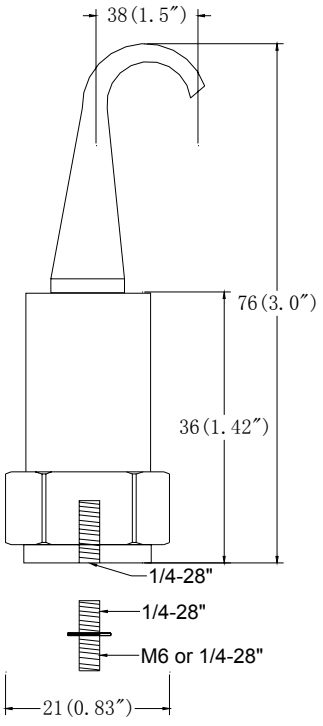
General Purpose, Industrial Piezoelectric Accelerometers

The TM0783A is an accelerometer with 3-meter integral cable. This accelerometer will directly interface with DTM20/DM1201/PT2060-20 and other monitoring systems to measure acceleration, velocity or displacement depend on customers requirement.

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.
Resonance Frequency:
30kHz.
Maximum Transmission Distance:
300meter (1000 ft).

Environmental and Physical

Temperature Range:
-50°C ~ +120°C
Environmental protection:
IP67
Weight:
90 grams.
Case Material:
Stainless steel.
Mounting:
1/4-28UNF tapped hole.
Installation Torque:
29N*M.

Pin Connection

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

Ordering Information

TM0783A-M

Accelerometer includes:
- ✓ Accelerometer
- ✓ Mounting screw (1/4-28″ to M6)
- ✓ 3m cable

TM0783A-E

Accelerometer includes:
- ✓ Accelerometer
- ✓ Mounting screw (1/4-28″ to 1/4-28″)
- ✓ 3m cable

Accessories

TM0710: Mounting screw 1/4-28″ - M6
TM0711: Mounting screw 1/4-28″ - 1/4-28″
TM0712: Mounting screw 1/4-28″ - m8
TM0713: Mounting screw 1/4-28″ - -m10

Accelerometer TM0784A

General Purpose, Portable Meter Accelerometers

TM0784A is ideal for battery powered portable meter to measure acceleration with lower power supply voltage.

Specifications

Electrical

Sensitivity:

100mV/g, @ 25°C, ±10%.

Frequency Response:

0.5 ~ 10,000Hz (±3dB).

Acceleration Range:

10g.

Isolation:

Case and circuit is fully isolated.

Electrical Noise:

0.0007g.

Power Requirement:

2 ~ 5mA constant current.

9 ~ 30VDC.

Nominal Bias Voltage:

6.0 VDC.

Resonance Frequency:

20kHz.

Maximum Transmission Distance:

300meter (1000 ft).

Environmental and Physical

Temperature Range:

-50°C ~ +120°C

Environmental protection:

IP67

Weight:

90 grams.

Case Material:

Stainless steel.

Mounting:

1/4-28UNF tapped hole.

Installation Torque:

29N*M.

Ordering Information

TM0784A-K

Accelerometer

Accessories:

PT600-TP: accelerometer tip, 50mm
PT600-MG: magnet for accelerometer
PT908-CB: cable from accelerometer to PT908

Hi-temperature Accelerometer TM0785A

Hi-temperature, Internally Amplified Piezoelectric Accelerometers

The TM0785A hi-temperature accelerometer will directly interface with DTM20/DM1201/PT2060-20 and other monitoring systems to measure acceleration, velocity or displacement depend on customers requirement.

Specifications

Electrical

Sensitivity:

100mV/g, @ 25°C, ±10%.

Frequency Response:

1.0 ~ 10,000Hz (±3dB).

Acceleration Range:

50g.

Isolation:

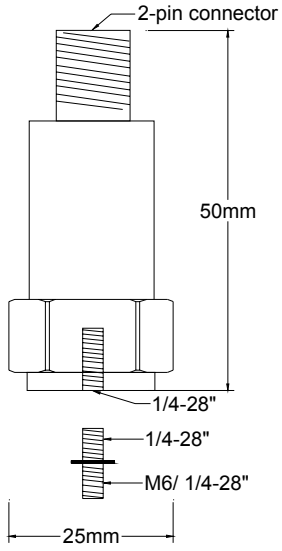
Fully isolated.

Power Requirement:

2 ~ 4 mA constant current.

18 ~ 30VDC.

Resonance Frequency:



20kHz.

Maximum Transmission Distance:

300meter (1000 ft).

Environmental and Physical

Temperature Range:

-50°C ~ +150°C

Environmental protection:

IP67

Weight:

135 grams.

Case Material:

Stainless steel.

Mounting:

1/4-28UNF tapped hole.

Installation Torque:

29N*M.

Pin Connection

A: Power (red)

B: COM (white)

Shield

Ordering Information

TM0785A-M

Accelerometer kit includes:

- ✓ TM0785A accelerometer
- ✓ Mounting screw (1/4-28″ to M6)

TM0785A-E

Accelerometer kit includes:

- ✓ TM0785A accelerometer
- ✓ Mounting screw (1/4-28″ to 1/4-28″)

Accessories:

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

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

TM0710: Mounting screw 1/4-28″ - M6

TM0711: Mounting screw 1/4-28″ - 1/4-28″

TM0712: Mounting screw 1/4-28″ - M8

TM0713: Mounting screw 1/4-28″ - M10

Ultra-hi-temperature Accelerometer TM0787A

Ultra-hi-temperature, Piezoelectric Accelerometers

The TM0787A accelerometer will direct interface with DTM20/DM1201 or PT2060 to measure acceleration or velocity based on customers requirement.

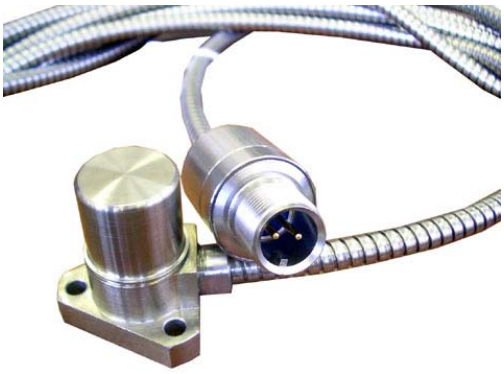
Specifications

Electrical

Sensitivity:
100 mV/g pk @25°C, +/-2%
Maximum Vibration Input:
50 g pk (with power 24 VDC)
Output Impedance:
Less than 200 ohms
Shock Limit:
5,000 g pk
Frequency response:
+/-.5 dB from 20 Hz to 7,500 Hz
+/- 3 dB from 2 Hz to 12,000 Hz
Sensitivity vs. Temp:
Less than .05%/°C
Cross Axis Response:
Less than 3%
Power:
18 to 30 VDC, 2 to 20 mA. Not polar sensitive
Resonance Frequency:
More than 30 kHz
Electromagnetic Compatibility:
CE Mark

Environmental and Physical

Temperature Range:
Accelerometer and Cable -45°C to 325°C
Charge amplifier: -45°C to 125°C
Environmental protection:
IP67, NEMA 4X
Weight:
135 grams.



Case Material:
Stainless steel.
Mounting:
3 Mounting holes. Each has 4.7 mm diameters
The holes are on a 30.5mm circle with 120° each.

Pin Connection

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

Ordering Information

TM0787A-AA

AA: Integral Cable Length
AA = 03: 3.0 meter (9.8 ft)
AA = 05: 5.0 meter (16.3 ft)
AA = 10: 10.0 meter (32.8 ft)

Accessories:

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

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

Velocity Transducer TM0793V

Piezoelectric Velocity Transducer

The TM0793V velocity transducer will directly interface with DTM20/DM1201/PT2060-20 and other monitoring systems to measure velocity or displacement depend on customers requirement.

Specifications

Electrical

Sensitivity:

4.0mV/mm/sec (100mV/in/sec), @ 25°C, ±10%.

Velocity Range:

5.0V pk.

Amplitude Nonlinearly:

1%.

Frequency Response:

1.5 ~ 7,000Hz (±3dB).

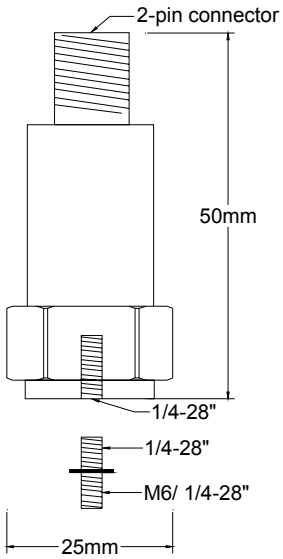
Isolation:

Fully isolated.

Electrical Noise:

100 uin/sec.

Transverse Sensitivity:



< 5% or axial.

Power Requirement:

2 ~ 10mA constant current.

18 ~ 30VDC.

Resonance Frequency:

15kHz.

Maximum Transmission Distance:

300meter (1000 ft).

Environmental and Physical

Temperature Range:

-50°C ~ +120°C

Environmental protection:

IP67

Weight:

250 grams.

Case Material:

Stainless steel.

Mounting:

1/4-28UNF tapped hole.

Hazardous Area Approval:

PCEC, Ex ia IIC T4; ATEX, II 1 G, EEx ia IIC T4; CSA, class 1, Div. 1 & Div. 2, groups A/B/C/D

Pin Connection

A: Power (red)

B: COM (white)

Ordering Information

TM0793V-K-M

Velocity sensor kit includes:

- ✓ TM0793V velocity sensor
- ✓ Mounting screw (1/4-28″ to M6)
- ✓ TM0702-05

TM0793V-K-E

Velocity sensor kit includes:

- ✓ TM0793V velocity sensor
- ✓ Mounting screw (1/4-28″ to 1/4-28″)

- ✓ TM0702-05

TM0793V-M

Velocity sensor kit includes:

- ✓ TM0793V velocity sensor
- ✓ Mounting screw (1/4-28″ to M6)

TM0793V-E

Velocity sensor kit includes:

- ✓ TM0793V velocity sensor
- ✓ Mounting screw (1/4-28″ to 1/4-28″)

TM0793VS-K-M

TM0793VS-K-E

TM0793VS-M

TM0793VS-E

Velocity sensor kit with multiple explosion approval

Accessories:

(Standard cable length is 5meters. 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
TM0711: Mounting screw 1/4-28″ - 1/4-28″
TM0712: Mounting screw 1/4-28″ - M8
TM0713: Mounting screw 1/4-28″ - M10

Low Frequency Velocity/Displacement Transducer TM079VD

TM079VD is specially designed for measure low frequency vibration. TM079VD has been widely used in low frequency measurement.

Features:

- ✓ Measure frequency down to 30 rpm in velocity or displacement
- ✓ ICP loop powered. Can be used with most accelerometer interface instruments
- ✓ Stainless steel hermetically sealed case
- ✓ Ideal for hydro power plants, cooling tower, fin-fan and win-turbine
- ✓ Large signal output, high signal/noise ratio

Specifications

Electrical

Sensitivity:
Velocity:
40 mV/mm/s (1000mV/in/sec), pk, @ 25°C, ±10%
Displacement:
4.0mV/μm (100mV/mil), pk –pk, @ 25°C, ±10%
Maximum Amplitude:
Velocity: 100 mm/s pk
Displacement: 2000 μm pk-pk
Frequency Response:
0.5 ~ 20 Hz (±3dB)
Isolation:
Fully isolated, case to circuit
Power Requirement:
3 ~ 10mA constant current.
18 ~ 30VDC.
Output impedance:
50Ω
Output Bias Voltage:
12VDC nominal
Maximum Transmission Distance:
300 meter (1000 ft).

Environmental and Physical

Temperature Range:
-20°C ~ +70°C
Environmental protection:
IP67

Weight:
1400 grams.
Case Material:
Stainless steel.
Mounting:
3/4 NPT or M20
Mounting torque:
29N×M

Pin Connection

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

Order Information

TM079VD-V-K-AXX-BXX
Vertical mounting low frequency sensor
TM079VD-H-K-AXX-BXX
Horizontal mounting low frequency sensor

AXX: Sensitivity
A00: Velocity: 40 mV/mm/s (1000mV/in/sec), pk
A01: Displacement: 4.0mV/μm (100mV/mil), pk –pk
BXX: Mounting Stud
B00: 3/4 NPT
B01:M20