



TWR™-200 THERMAWATCH ROTOR FOR GMD - MINING INDUSTRY

Fast-Response Non-Contact Rotor Pole-End Temperature Monitoring

GENERAL SPECIFICATIONS

Measuring Chain

Operation^{1, 2}

• Measuring type	Infrared technology
• Temperature measuring range (target only)	0 to 200 °C [32 to 392 °F]
• Accuracy	± 5 °C [± 9 °F]
• Repeatability	± 1 °C [± 1.8 °F]
• Bandwidth	Up to 300 Hz without attenuation
• Measuring Distance	Up to 12.7 cm [5 in] without attenuation
• Viewing Angle	± 45°
• Measuring gap - Adjustment Range	From inner stator cover surface to TWR-200 sensor tip
Option A - Short:	16 to 32 cm [6.3 to 12.6 in]
Option B - Medium:	26 to 42 cm [10.2 to 16.5 in]
Option C - Long:	36 to 52 cm [14 to 20.5 in]

Environment

• Temperature range	
Operating	Refer to individual components
Storage	-20 to 70 °C [-4 to 158 °F]
• Humidity	Up to 95%, non-condensing

Note 1: Each TWR-200 measuring chain is calibrated with a blackbody source. Response varies depending on the infrared emissivity of the target.

Note 2: The components of a TWR-200 measuring chain (sensor, signal conditioner and sensor extension cable) are not calibrated together. Components are therefore readily interchangeable.

Signal Conditioner

Operation

• Output	4 to 20mA
• Load at output	500Ω max.

Power Requirements

• Voltage	24 Vdc ± 15%
• Consumption	75 mA max.

Connection

• Sensor	8-pin M12 female
• Power/Output	5-pin M12 male
• Maximum cable length - power / output cable	300 m [984 ft]

Environment

• Operating temperature range	0 to 55 °C [32 to 131 °F]
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Physical Characteristics

- Body
- Mounting
- Status indicator

Aluminum, painted black
4 Slots for (M3.5) [#6] screws
Multicolor LED

Sensor

Environment

- Operating temperature range
 - Stator insertion tip
 - Integral cable

0 to 100 °C [32 to 212 °F]
0 to 80 °C [32 to 176 °F]

Physical Characteristics

- Stator insertion tip - rigid section
 - External body
 - External diameter
 - Mounting
- Integral cable - flexible section
 - Material
 - Length
 - Diameter
 - Connectors

Metallic tube with cross linked polyolefin outer jacket
5.2 mm max.
Using adjustable mounting support system

PVC outer jacket, with PUR molded head connector
30 cm [12 in]
5 mm [0.20 in]
4-pin M12 male

Extension Cable

Environment

- Operating temperature range

0 to 80 °C [32 to 176 °F]

Physical Characteristics

- Material
- Length
- Diameter
- Connectors
 - Sensor end
 - Conditioner end

PUR outer jacket, with PUR molded head connector
30m [98.4 ft] (*can be cut to desired length*)
5 mm [0.20 in]

4-pin M12 female
4-pin M12 male (*included - to be installed at site*)

Adjustable Mounting Support System

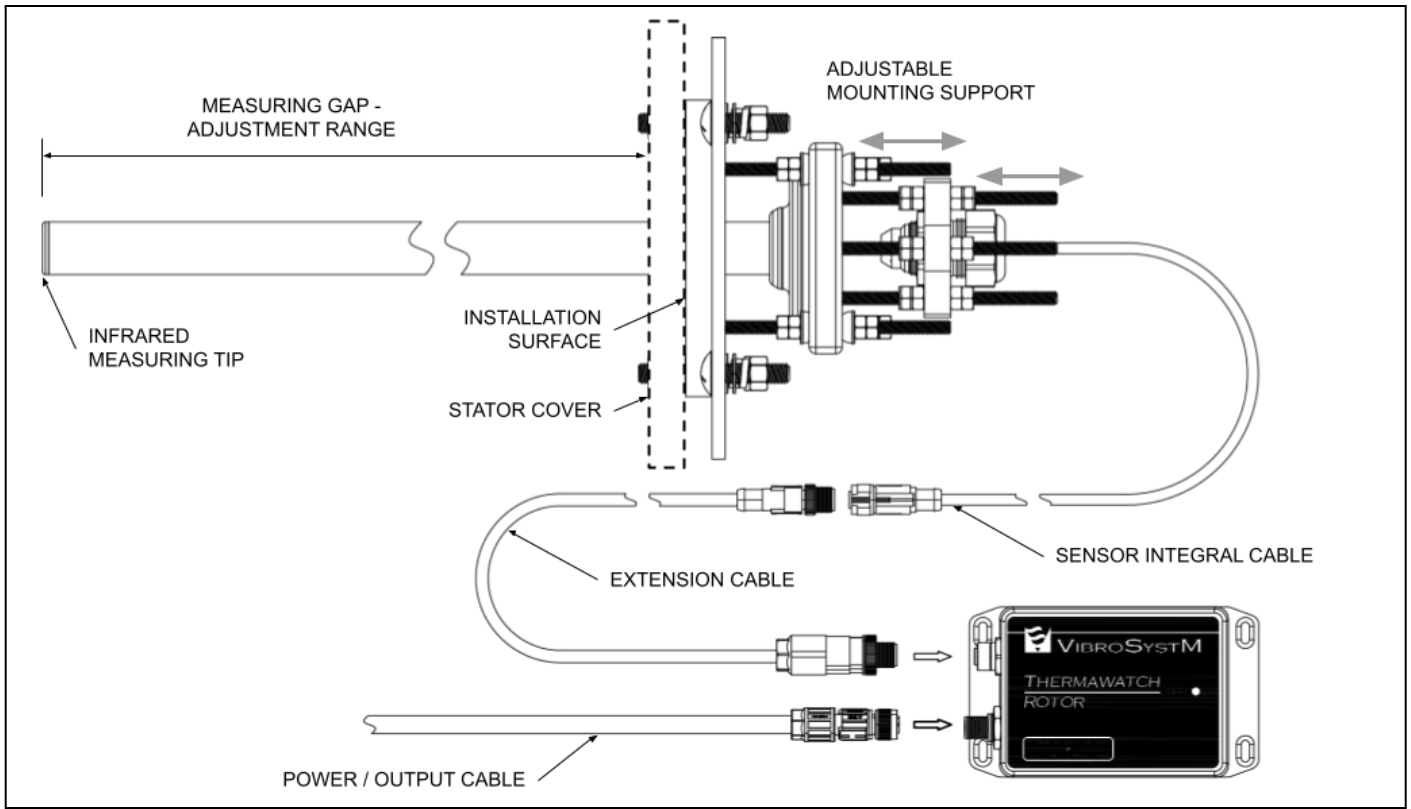
Physical Characteristics

- Core material
- Assembly material
- Protection box
 - Dimension
 - Dimension - with extension
 - Material
 - Frame and cover thickness
- Typical installation method
- Adjustments

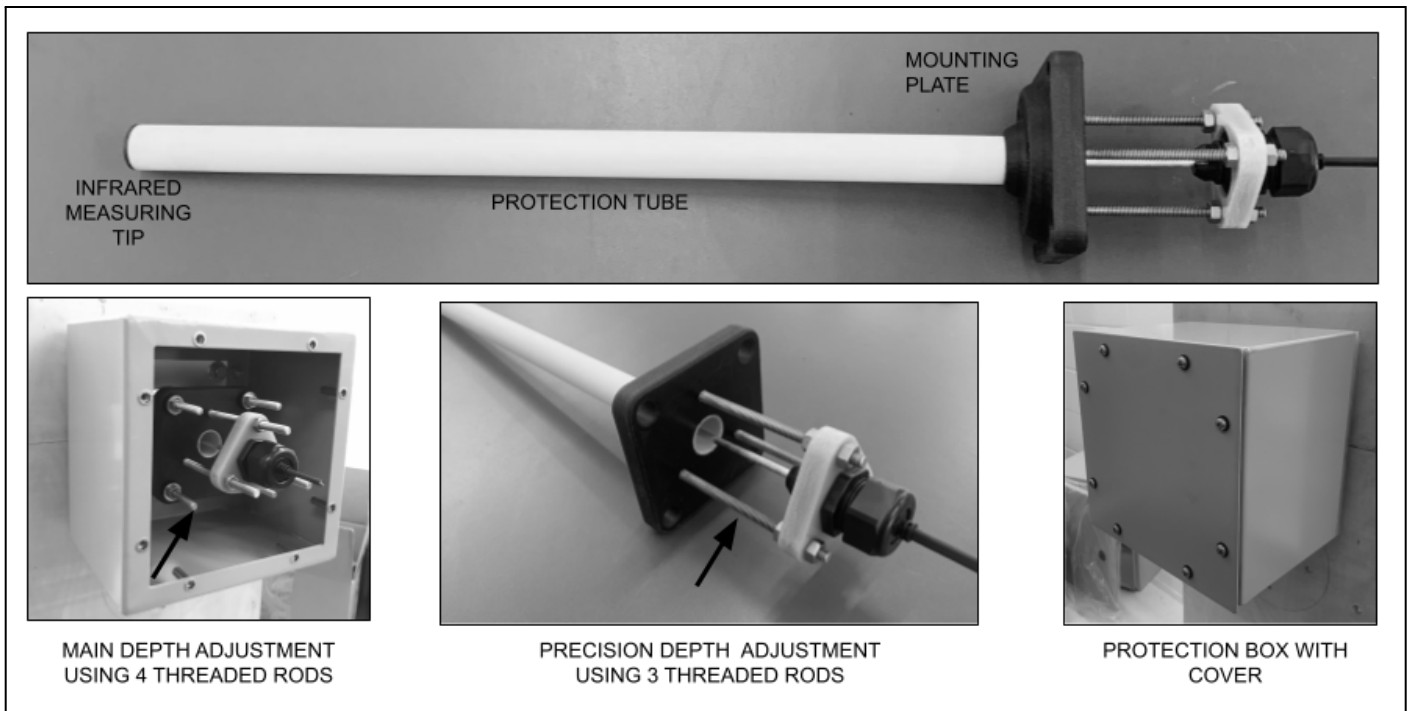
FR4 and reinforced nylon
Stainless steel and brass hardware
Included, with optional extension
20.3 x 20.3 x 15.5 cm [8.1 x 8.1 x 6.1 in]
20.3 x 20.3 x 31.0 cm [8.1 x 8.1 x 12.2 in]
Mild steel with gray ANSI 61 powder coating
14 gauge (1.78 mm [0.070 in])
Bolted on stator cover in line with pole-ends
Insertion depth and angle



TWR-200 FOR GMD - MEASURING CHAIN OVERVIEW

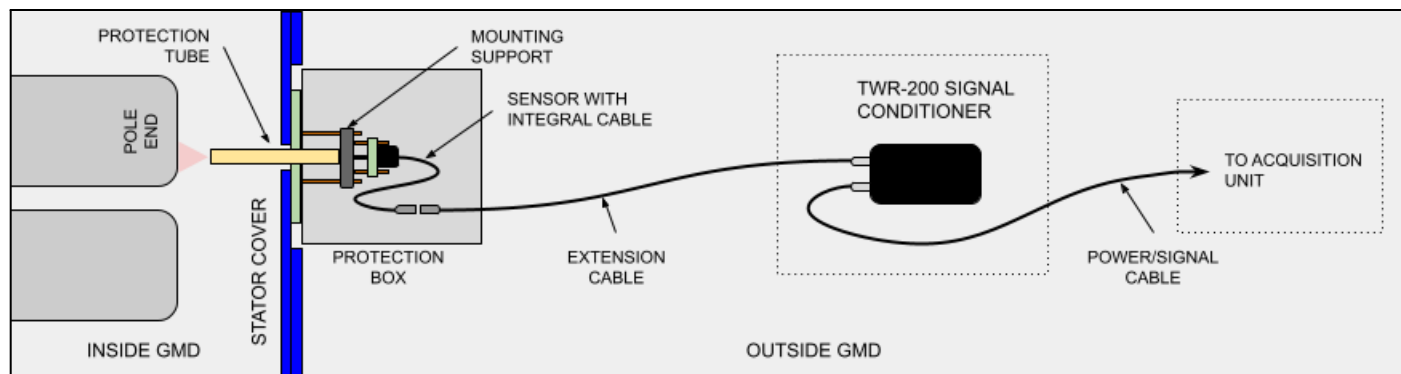


MOUNTING SUPPORT OVERVIEW

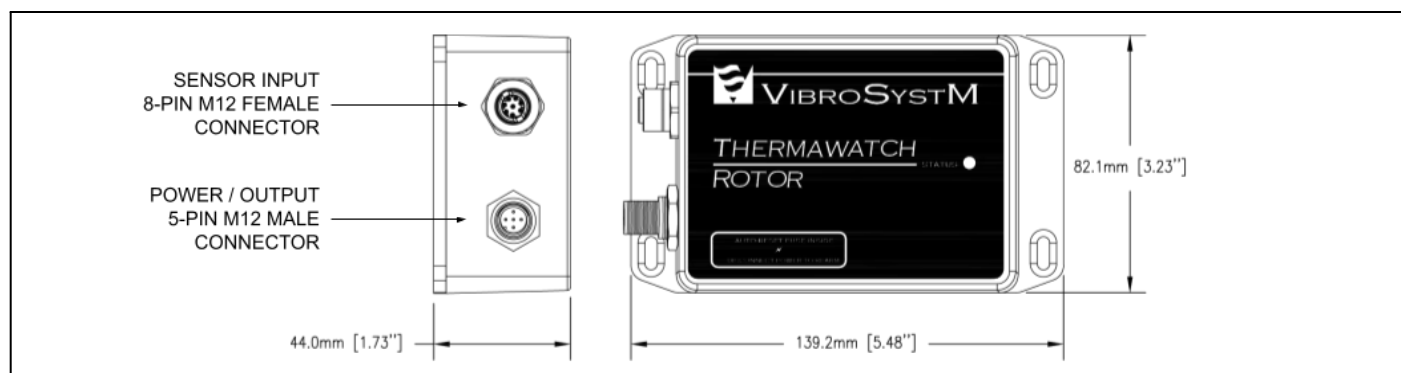




COMPLETE SYSTEM INSTALLATION OVERVIEW



SIGNAL CONDITIONER FOR GMD



TWR-200 FOR GMD PRODUCT INFORMATION

Product Number	Description
VSM-TWR200- (S,M or L)	TWR-200 ThermaWatch Rotor Temperature sensor (short, medium, or long)
VSM-LGMD-TWR200	TWR-200 ThermaWatch Rotor Signal conditioner for GMD
VSM-CBL-TWR200-30	TWR-200 ThermaWatch Rotor 30m Extension cable
VSM-SUPP-TWRGMD- (S,M or L)	TWR-200 ThermaWatch Rotor Adjustable mounting support (short, medium, or long)
VSM-PBOX-TWR200	Protection box of the TWR-200 for GMD