



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] |
|-------------------------------|---------------------------|



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

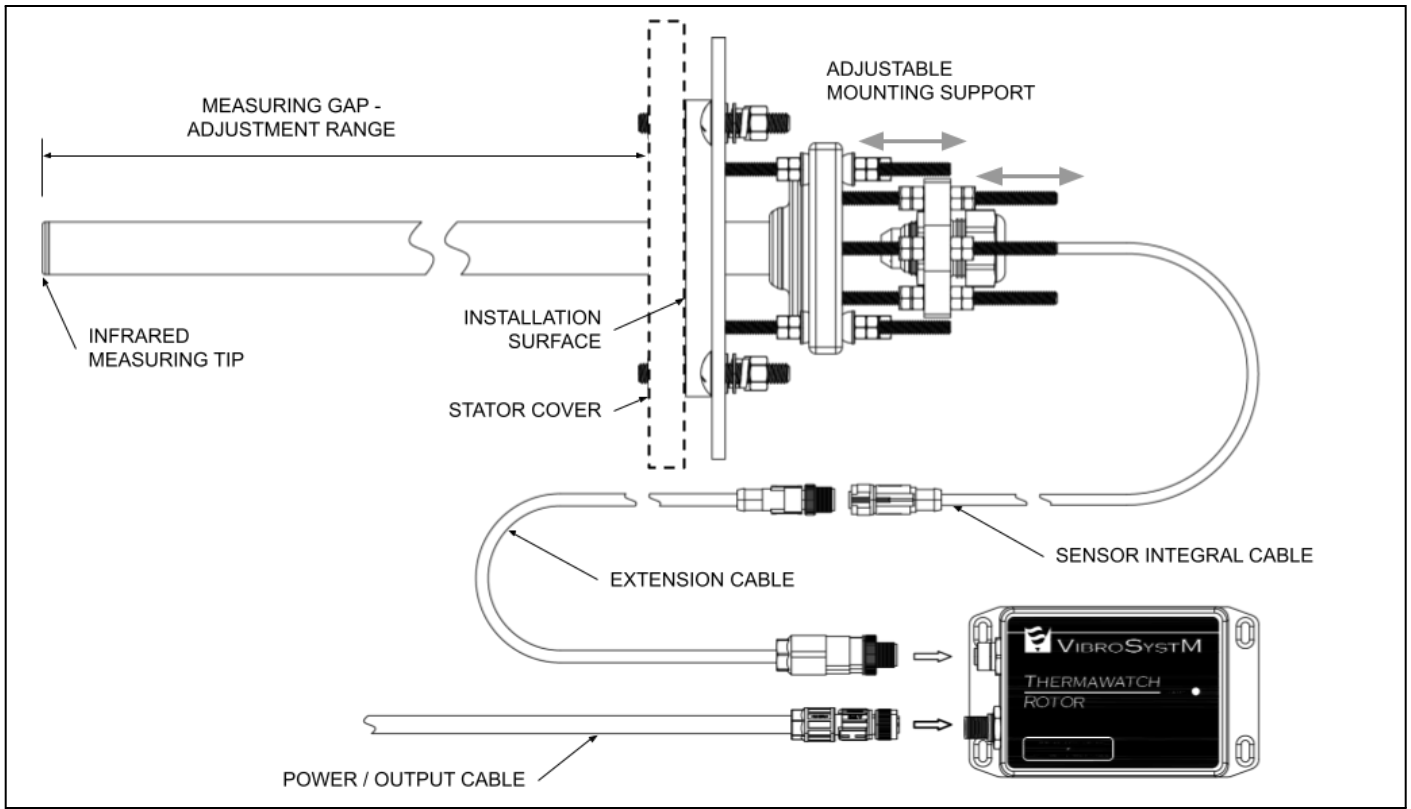
Physical Characteristics

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

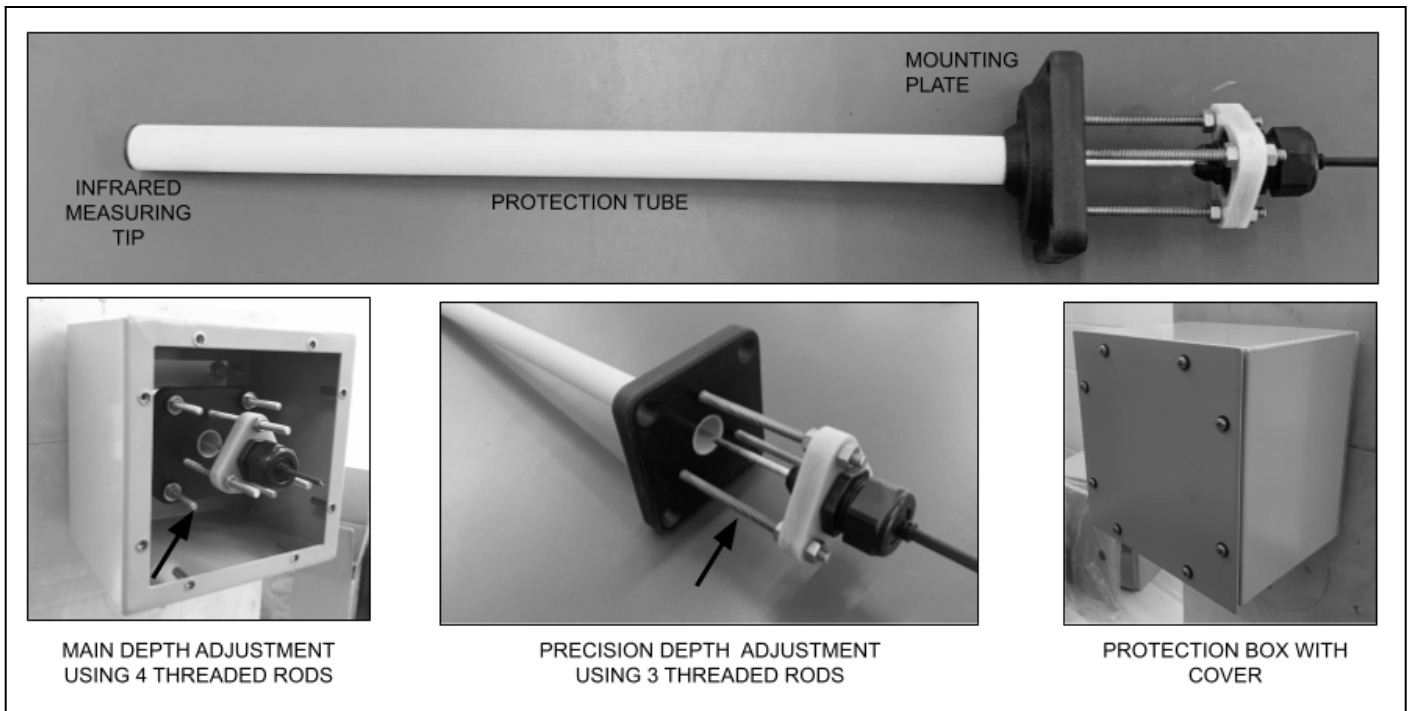
FR4 and reinforced nylon
Stainless steel and brass hardware
Included, with optional extension
20.3 x 20.3 x 15.5 cm [8.1 x 8.1 x 6.1 in]
20.3 x 20.3 x 31.0 cm [8.1 x 8.1 x 12.2 in]
Mild steel with gray ANSI 61 powder coating
14 gauge (1.78 mm [0.070 in])
Bolted on stator cover in line with pole-ends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



TWR-200 FOR GMD - MEASURING CHAIN OVERVIEW

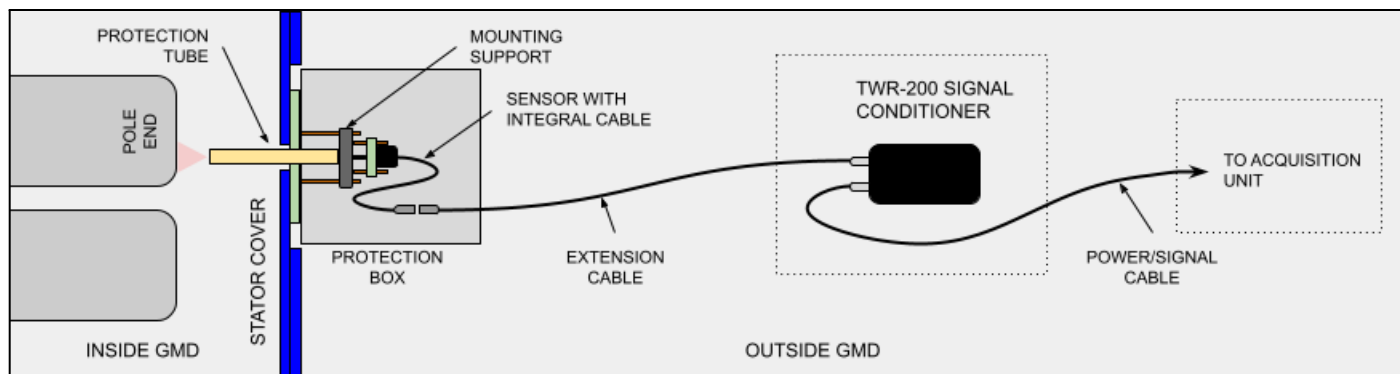


MOUNTING SUPPORT OVERVIEW

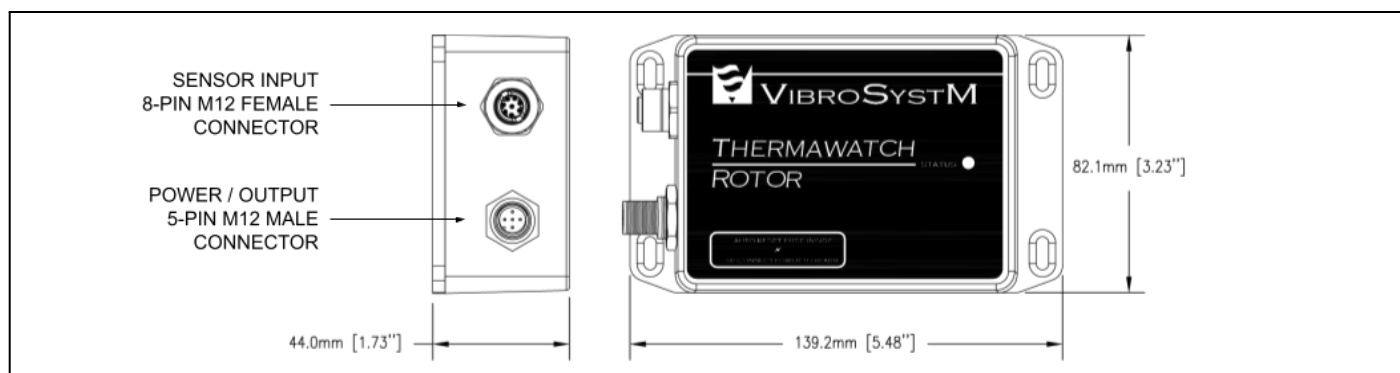




COMPLETE SYSTEM INSTALLATION OVERVIEW



SIGNAL CONDITIONER FOR GMD



TWR-200 FOR GMD PRODUCT INFORMATION

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