

MANUFACTURER DOCUMENT PACKAGE

# Manufacturer's Manual

Reference package for procurement and maintenance review

BENTLY NEVADA

## 200152-XX-XX-XX MOD 323357-10-03-10

MODIFIED ACCELEROMETER INTERFACE CABLE WITH CONNECTOR ON THE ACCELEROMETER END

Used with the applicable 200150, 200155 and 200157 Accelerometers system configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official pages follow this cover with source pagination retained.

164986 Rev. Y

# 200150, 200155 and 200157 Accelerometers

## Datasheet

**Cordant™**

164986 Rev. Y



### Description

The 20015x Accelerometers are general purpose, wide frequency, case-mounted seismic transducers designed for use with Trendmaster ProTIMs.

The 200150 Accelerometer also operates with the Trendmaster 2000 system. The accelerometer interfaces with the 200100 Dual Acceleration to Velocity flexiTIM Module and the 89130-01 Acceleration-to-Velocity TIM (Transducer Interface Module), as well as the 1900/25 and 1900/27 monitors.

The 20015x Accelerometers feature a hermetically sealed, stainless steel case. This design provides an extremely rugged transducer that is well suited for harsh industrial environments. The transducer's top-mounted, 5-pin connector allows you to easily install and remove the interconnecting signal cable. A 3/8-24 threaded hole on the bottom of the sensor's casing accommodates several mounting options.

The 20015x Accelerometers contain a piezoelectric sensing device that generates a charge when it is subjected to vibration. The accelerometers electronically convert this charge to a differential voltage signal that is proportional to the acceleration that is parallel to the sensitive axis of the transducer.



**Baker Hughes** 

|                   |                                          |
|-------------------|------------------------------------------|
| Relative Humidity | 100% relative, condensing, non-submerged |
|-------------------|------------------------------------------|

## Physical

|                     |                                       |
|---------------------|---------------------------------------|
| Size (Hex x Height) | 17.5 mm x 45.7 mm (11/16 in x 1.8 in) |
| Weight              | 58 g (2.0 oz), typical                |
| Mounting Thread     | 3/8-24 female                         |
| Mounting Torque     | 2.7 to 6.8 N•m (2 to 5 ft•lbf)        |
| Sensing Element     | Ceramic                               |
| Sensing Geometry    | Shear                                 |

### Housing and connector material

|        |                      |
|--------|----------------------|
| 200150 | 316L stainless steel |
| 200155 | 316L stainless steel |
| 200157 | 316L stainless steel |

|                            |              |
|----------------------------|--------------|
| Electrical Connector (Top) | 5-pin 1/2-20 |
|----------------------------|--------------|

## Cables

|                             |                                                                                                                                                                                                                                                      |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature Range | -20°C to +100°C (-4°F to +212°F)<br><br>These cables may be used at lower temperatures if the installation prevents the cable from flexing or bending. Flexing these cables at temperatures below -20°C (-4°F) may damage the cables.                |
| Construction                | 4-conductor, 22 AWG with braided shield and drain wire (85% coverage, minimum), PVC outer jacket. Nickel-plated coupling nuts.                                                                                                                       |
| Seal                        | Connectors provide an IP67 seal to transducers and mating hardware. Connectors are molded to the cable. The addition of DC4 electrical insulating compound in the connectors provides additional protection against moisture during a thermal shock. |

### Minimum Bend Radius

|                      |                                                                                                                           |
|----------------------|---------------------------------------------------------------------------------------------------------------------------|
| 200151               | 63.5 mm (2.5 in)                                                                                                          |
| 200152               | 73.7 mm (2.9 in)                                                                                                          |
| Maximum Cable Length | 25 m (82 ft)<br><br>Custom products may be able to provide longer cable lengths for the 200150 and 200157 accelerometers. |

## Adhesive (see Mounting Hardware Options)

|                   |                                   |
|-------------------|-----------------------------------|
| Temperature Range | -55°C to +121°C (-67°F to +250°F) |
| Cure Time         | 24 hours                          |



Adhesive studs (Options **01** and **20**) are sold in kits containing frames to hold the studs to the substrate while the adhesive cures. The kit also contains provides a scouring pad and alcohol wipe to prepare the mounting surface and a packet of acrylic adhesive and materials to mix the two components.



Using adhesives and magnetic mounts attenuates high frequency signals that may be present.

## 200151-AA-BB-CC

### Accelerometer Interface Standard Cable, Connectors on Both Ends

#### A: Cable Length

|           |            |
|-----------|------------|
| <b>20</b> | 2.0 meters |
| <b>40</b> | 4.0 meters |
| <b>60</b> | 6.0 meters |

#### B: Armor Option

|           |                          |
|-----------|--------------------------|
| <b>02</b> | Blue cable without armor |
| <b>03</b> | Blue cable with armor    |

#### C: Coupling Nut

|           |                                                                                                                                                                    |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>00</b> | Standard coupling nut (see Figure 9)                                                                                                                               |
| <b>02</b> | Nylon coupling nut                                                                                                                                                 |
| <b>10</b> | Enhanced coupling nut. This option provides a better grip for tightening the cable to the accelerometer and is provided on both ends of the cable (see Figure 11). |

## 200152-AA-BB

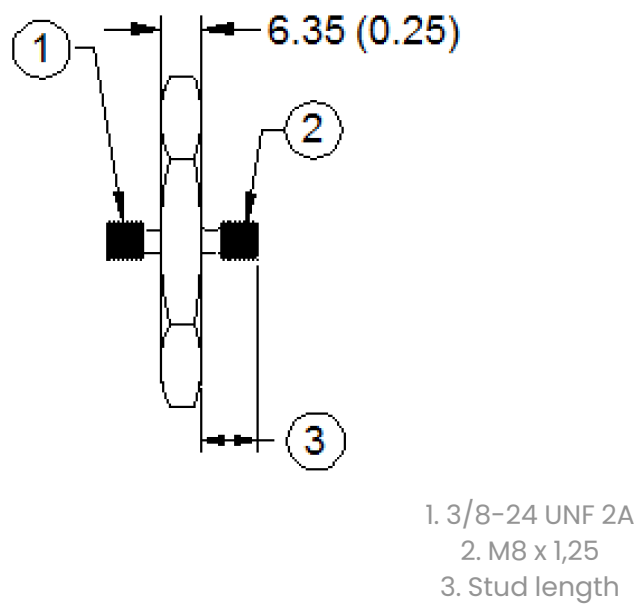
### Accelerometer Interface Standard Cable, Connector on Accelerometer End Only

#### A: Cable Length

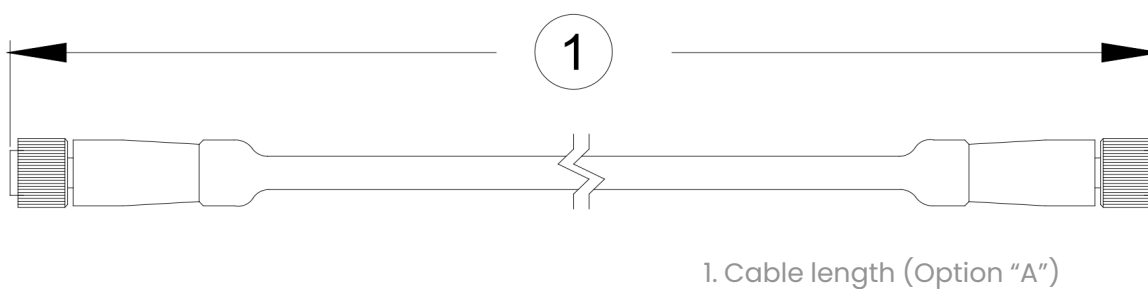
|           |            |
|-----------|------------|
| <b>04</b> | 4.0 meters |
| <b>15</b> | 15 meters  |
| <b>25</b> | 25 meters  |

#### B: Coupling Nut

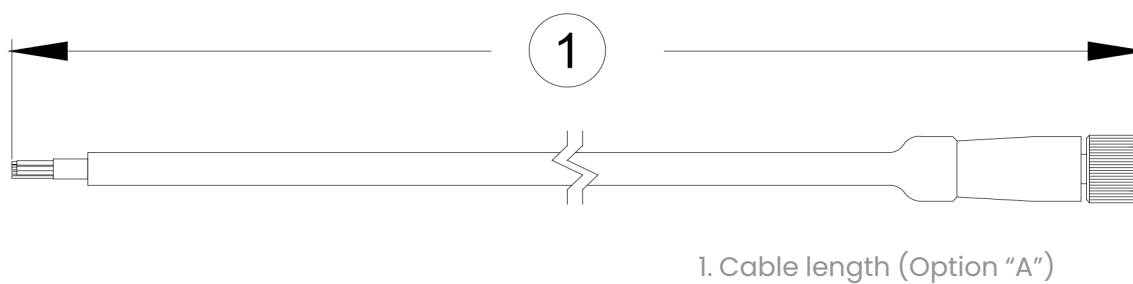
|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>00</b> | Standard coupling nut (see Figure 10)                                                                                                                                  |
| <b>10</b> | Enhanced coupling nut. This option provides a better grip for tightening the cable to the accelerometer and is provided on the accelerometer end only (see Figure 12). |



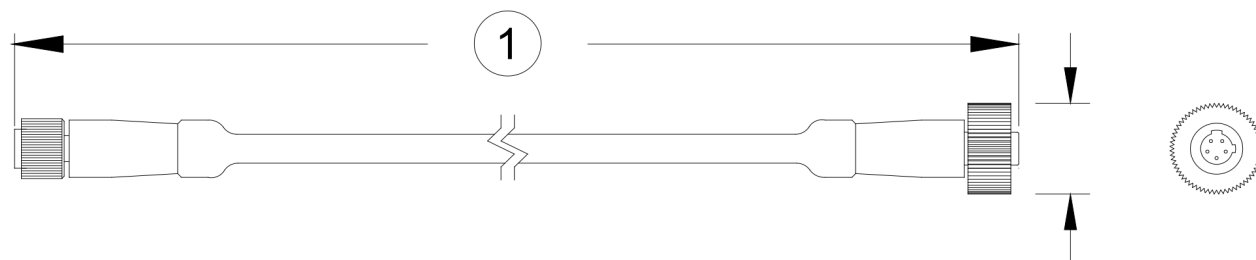
**Figure 8: Hex Plate Stud for "A" Option 22**



**Figure 9: 200151 With Standard Coupling Nut and No Armor**

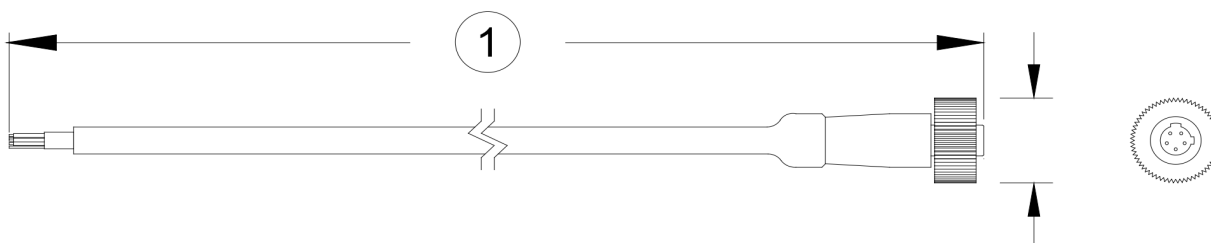


**Figure 10: 200152 With Standard Coupling Nut and No Armor**



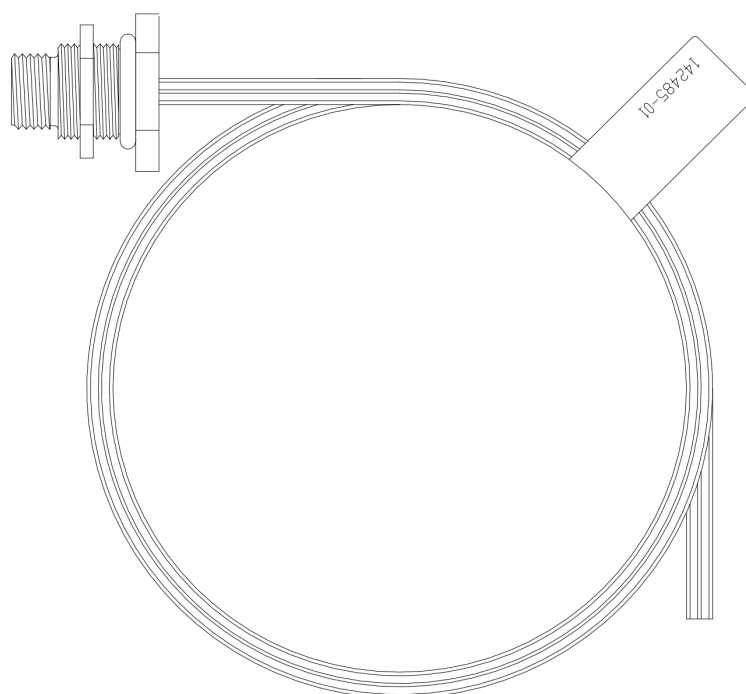
1. Cable Length (Option "A")

**Figure 11: 200151 With Enhanced Coupling Nut and No Armor**



1. Cable length (Option "A")

**Figure 12: 200152 With Enhanced Coupling Nut and No Armor**



**Figure 13: Housing Cable Adapter (Part Number 142485-01)**