# Bently Nevada 140482-01

## Prox/Velom I/O Module with External Terminations

Bently Nevada 140482-01 is the external-termination Prox/Velom I/O module for the 3500 machinery-protection system. With the 3500/42M Proximitor Seismic Monitor, it interfaces with proximity and acceleration transducers, Velomitor sensors and High Temperature Velocity Sensors (HTVS) for vibration and position monitoring. It is also an external-termination I/O option for the 3500/72M Recip Rod Position Monitor. This rear-rack module connects field sensor circuits through external termination hardware; signal processing and alarm functions are provided by the associated monitor.



## Technical Specifications

| | |
|---|---|
| **Product Identity** | |
| Manufacturer | Bently Nevada |
| Complete part number | 140482-01 |
| Module type | Prox/Velom I/O module with external terminations |
| System series | 3500 Machinery Protection System |
| Compatible monitors | 3500/42M Proximitor Seismic Monitor; 3500/72M Recip Rod Position Monitor |
| Associated monitor spare numbers | 176449-02 (3500/42M); 176449-08 (3500/72M) |
| I/O ordering options | AA = 10 for 3500/42M; AA = 02 for 3500/72M |
| I/O dimensions | 241.3 × 24.4 × 99.1 mm (H × W × D) |
| Rack space | One full-height rear I/O slot |
| **Functional Configuration** | |
| Termination type | External; termination blocks and cables are separate items |
| Monitor input channels | 1–4 transducer inputs; channels 1/2 and 3/4 configured as pairs |
| Sensors with 3500/42M | Proximity / acceleration transducers, Velomitor or HTVS |
| Sensors with 3500/72M | Proximity probes for rod-position, rod-drop and hyper-compressor measurements |
| External input block options | 125808-08: Euro-style connectors; 128015-08: terminal-strip connectors |
| Configuration software | 3500 Rack Configuration Software; monitor-specific version requirements apply |
| **Performance & Power** | |
| Standard input impedance | 10 kΩ for Proximitor and acceleration inputs with 3500/42M |
| Transducer power supply | –24 Vdc from the monitor assembly |
| 3500/42M recorder outputs | 4–20 mA per channel; 0–600 Ω load; 0 to +12 Vdc compliance |
| **Environment** | |
| Operating temperature | –30 to +65 °C |
| Storage temperature | –40 to +85 °C |

Selected original manufacturer pages follow on pages 3–5.

## Compatibility & Selection Guide

**System compatibility.** 140482-01 corresponds to I/O option AA = 10 for the 3500/42M and AA = 02 for the 3500/72M. Both monitors use 3500 Rack Configuration Software and accept up to four transducer inputs, configured in channel pairs. The 3500/42M supports configured vibration and position functions. The 3500/72M uses proximity-probe signals for rod-position, rod-drop and hyper-compressor measurements; it requires Rack Configuration v3.20 or later, while Rod Position Single 2 and Pair 2 channel types require v6.0 or later.

## Wiring & Installation Reference

### Field connections

Match the actual channel-pair jumper positions to the connected transducer types.

Use 125808-08 or 128015-08 input blocks with matched cables; select recorder hardware separately.

### Installation and replacement

**Confirm I/O identity.** Match the full part number and external termination arrangement.

**Check sensor configuration.** Verify the Prox/Accel, Velomitor or HTVS selection and jumper positions.

**Verify operation.** Check configured measurements, recorder signals and alarms after connection.

**Installation precautions.** Use the applicable 3500 monitor user guide and the actual module markings for terminal assignments and service procedures. Match the complete I/O part number, monitor revision and transducer configuration before reconnecting field circuits.

View connection reference (PDF) · PDF page 5 | View module reference · PDF page 5

Manufacturer sources: 3500/42M Proximitor Seismic Monitor 143694 Rev. AE / 3500/72M Recip Rod Position Monitor 146478 Rev. M.

| Filter Tracking / Stepping (Requires a valid speed signal) | |
|---|---|
| Switch from nominal to higher filter set | Current shaft speed ≥ 1.1 x (nominal shaft speed) |
| Switch from higher to nominal filter set | Current shaft speed ≤ 1.05 x (Nominal Shaft Speed) |
| Shaft speed error condition | Nominal filter set used |

## Environmental Limits

| | |
|---|---|
| Operating Temperature | When used with Internal/External Termination I/O Module:<br>-30°C to +65°C (-22°F to +150°F)<br>When used with Internal Barrier I/O Module (Internal Termination):<br>0°C to +65°C (32°F to +150°F) |
| Storage Temperature | -40°C to +85°C (-40°F to +185°F). |
| Humidity | 95%, noncondensing |

## Physical

| Monitor Module (Main Board) | |
|---|---|
| Dimensions (Height x Width x Depth) | 241.3 mm x 24.4 mm x 241.8 mm<br>(9.50 in x 0.96 in x 9.52 in) |
| Weight | 0.91 kg (2.0 lb) |
| **I/O Modules (non-barrier)** | |
| Dimensions (Height x Width x Depth) | 241.3 mm x 24.4 mm x 99.1 mm<br>(9.50 in x 0.96 in x 3.90 in) |
| Weight | 0.20 kg (0.44 lb) |
| **I/O Modules (barrier)** | |
| Dimensions (Height x Width x Depth) | 241.3 mm x 24.4 mm x 163.1 mm<br>(9.50 in x 0.96 in x 6.42 in) |
| Weight | 0.46 kg (1.01 lb) |

## Rack Space Requirements

| | |
|---|---|
| Monitor | 1 full-height front slot |
| I/O Modules | 1 full-height rear slot |

## Barrier Parameters

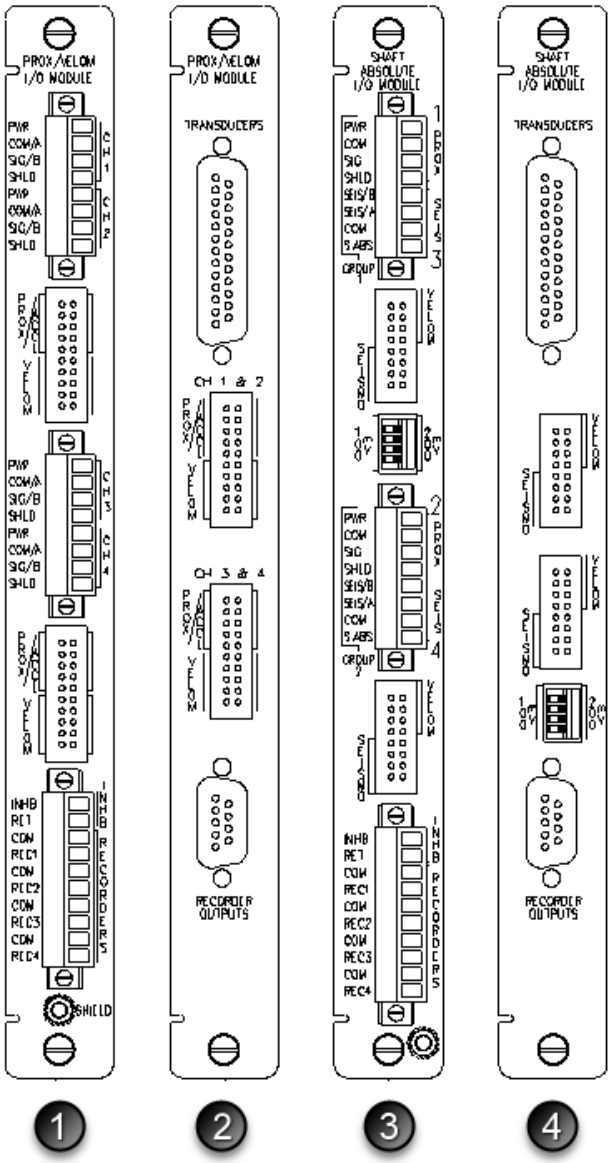
The following parameters apply to CSA-NRTL/C and ATEX approvals.

| Proximitor Barrier | |
|---|---|
| Circuit Parameters | Vmax (PWR) = 26.80 V<br>(SIG) = 14.05 V<br>Imax (PWR) = 112.8 mA<br>(SIG) = 2.82 mA Rmin<br>(PWR) = 237.6 Ω<br>(SIG) = 4985 Ω |
| Channel Parameters (entity) | Vmax = 28.0 V<br>Imax = 115.62 mA<br>Rmin (PWR) = 237.6 Ω<br>(SIG) = 4985 Ω |
| **Seismic Barrier** | |
| Circuit Parameters | Vmax (PWR) = 27.25 V<br>Imax (PWR) = 91.8 mA<br>Rmin (PWR) = 297 Ω |
| Channel Parameters (entity) | Vmax = 27.25 V<br>Imax = 91.8 mA<br>Rmin (PWR) = 297 Ω |

## I/O Module Types

| AA Ordering Option | I/O Part Number | I/O Description | Transducer Type |
|---|---|---|---|
| 01 | 128229-01 | Prox/Seismic I/O Module with internal terminations | Seismoprobe<br>Prox/Accel and Velomitor are supported but are not recommended. |
| 02 | 128240-01 | Prox/Seismic I/O Module with external terminations | Seismoprobe<br>Prox/Accel and Velomitor are supported but are not recommended. |
| 04 | 135489-01 | I/O Module with internal Barriers, internal terminations, 4 x Prox/Accel | Prox/Accel on channels 1 through 4 |
| 05 | 135489-02 | I/O Module with internal barriers, internal terminations, 2 x Prox/Accel and 2 x Velomitor | Prox/Accel on channels 1 and 2<br>Velomitor on channels 3 and 4 |
| 06 | 135489-03 | I/O Module with internal barriers, internal terminations, 4 x Velomitor | Velomitor on channels 1 through 4 |
| 07 | 138708-01 | Shaft Absolute I/O Module with internal terminations | Prox/Accel or Velomitor or Seismorprobe |
| 08 | 138700-01 | Shaft Absolute I/O Modules with external terminations | Prox/Accel or Velomitor or Seismorprobe |
| 09 | 140471-01 | Prox/Velom I/O Module with internal terminations | Prox/Accel, Velomitor or HTVS |
| 10 | 140482-01 | Prox/Velom I/O Module with external terminations | Prox/Accel, Velomitor or HTVS |

External termination blocks cannot be used with Internal Termination I/O Modules. When ordering I/O modules with external terminations, order the external termination blocks and cable separately for each I/O module.




1. Prox/Velom I/O Module, Internal Terminations
2. Prox/Velom I/O Module, External Terminations
3. Shaft Absolute I/O Module, Internal Terminations
4. Shaft Absolute I/O Module, External Terminations

**Figure 2: Additional I/O Modules for Legacy 3500/42M**