# Bently Nevada 135489-04

## Proximitor I/O Module with Internal Barriers

Bently Nevada 135489-04 is the Proximitor I/O module with internal barriers and internal terminations for the 3500/40M machinery-protection monitor. It combines the rear-rack field interface with the internal-barrier option required by a correctly engineered intrinsically safe transducer system.



## Technical Specifications

| | |
|---|---|
| **Product Identity** | |
| Manufacturer | Bently Nevada |
| Complete part number | 135489-04 |
| Compatible monitor | 3500/40M |
| I/O dimensions | 241.3 × 24.4 × 163.1 mm (H × W × D) |
| Rack space | One full-height rear I/O slot |
| **Functional Configuration** | |
| Termination | Internal |
| Barrier design | Internal barriers; system approval must be verified |
| Transducer allocation | Proximity-transducer inputs |
| **Performance & Power** | |
| 3500 monitor buffered output | 3500/40M front-panel coaxial outputs, one per channel, 550 Ω output impedance |
| **Environment** | |
| Operating temperature | 0 to +65 °C |
| Storage temperature | –40 to +85 °C |

Selected original manufacturer pages follow on pages 3–5.

## Compatibility & Selection Guide

**System compatibility.** 135489-04 is the 3500/40M internal-barrier I/O option AA = 03. The monitor uses 3500 Rack Configuration Software; channels 1/2 and 3/4 form two programmable pairs, allowing two measurement functions to operate at the same time. The general minimum software versions are 3500/01 v2.50, 3500/02 v2.20 and 3500/03 v1.21. Alert setpoints are available for every active measured value, with Danger setpoints for any two active values per channel.

## Wiring & Installation Reference

### Field connections

Follow the actual module terminal markings and applicable approved barrier drawing.

Review 3500 Internal Barriers document 141495 and the monitor user guide before connecting field circuits.

### Installation and replacement

**Verify the approved circuit.** Match the barrier option, transducer and approval drawing; do not infer approval from the part family.

**Check depth and environment.** Allow for the 163.1 mm I/O depth and the 0 to +65 °C operating range.

**Connect and validate.** Use the applicable installation instructions and verify channel configuration before returning the system to service.

**Installation precautions.** Do not substitute another 135489 suffix without verifying the monitor and transducer allocation. Intrinsic safety depends on the complete approved installation, not the I/O module alone.

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

Manufacturer sources: 3500/40M Proximitor Monitor 141535 Rev. R.

## Environmental Limits

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|---|---|
| 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 / IECEx approvals.

| Proximitor Barrier | |
|---|---|
| Circuit Parameters | Vmax (PWR) = 26.25V<br>(SIG) = 13.65 V<br>Imax (PWR) = 110.48 mA<br>(SIG) = 2.74mA<br>Rmin (PWR) = 237.6 Ω<br>(SIG) = 4985 Ω |
| Channel Parameters (entity) | Vmax = 27.45 V<br>Imax = 113.24 mA<br>Rmin (PWR) = 237.6 Ω<br>(SIG) = 4985 Ω |

## Alarms

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|---|---|
| Alarm Setpoints | Use Rack Configuration Software to set alert levels for each value measured by the monitor and Danger setpoints for any two of the values measured by the monitor.<br>Alarms are adjustable from 0 to 100% of full-scale for each measured value. However, when the full-scale range exceeds the range of the transducer, the range of the transducer will limit the setpoint. |
| Accuracy of alarm setpoints | Within 0.13% of the desired value |

### Alarm Time Delays



You can program alarm delays using **Rack Configuration Software.**



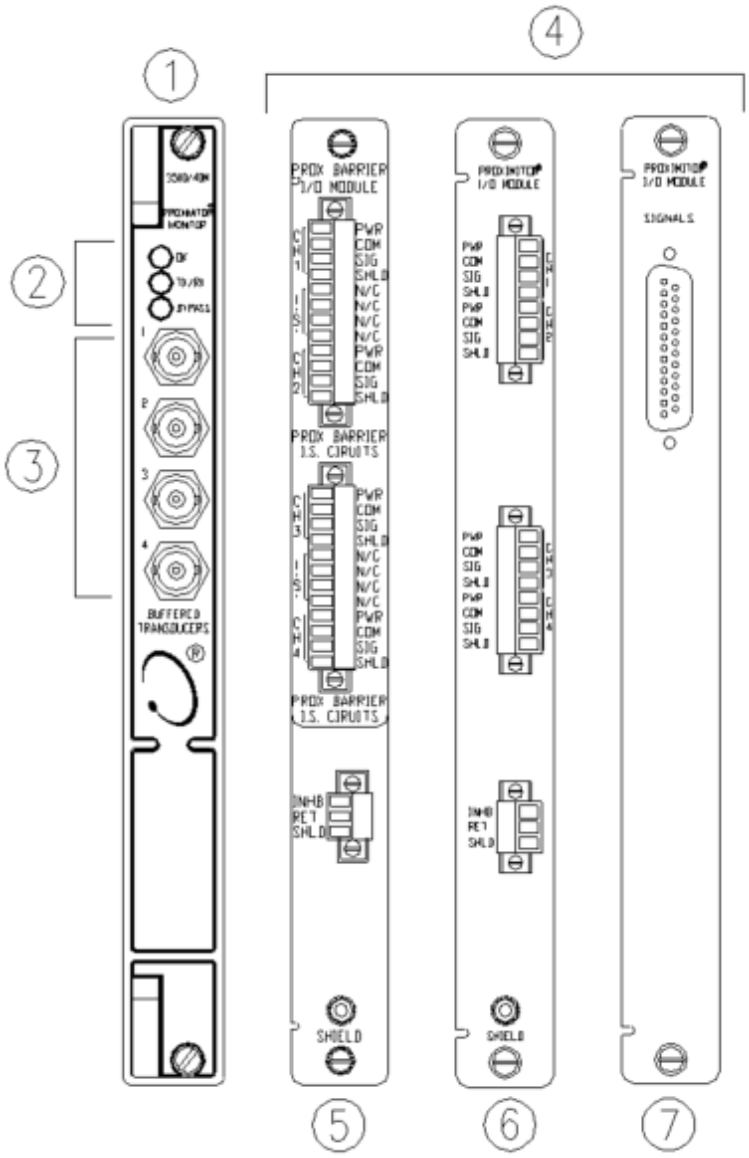
Baker Hughes

| | |
|---|---|
| **0007** | 7 feet (2.1 meters) |
| **0010** | 10 feet(3.0 meters) |
| **0025** | 25 feet (7.6 meters) |
| **0050** | 50 feet (15.2 meters) |
| **0100** | 100 feet (30.5 meters) |
| **B: Assembly Instructions** | |
| **01** | Not assembled |
| **02** | Assembled |

## Spares

| | |
|---|---|
| 176449-01 | 3500/40M Proximitor Monitor |
| 125680-01 | Proximitor I/O Module with Internal Terminations |
| 126615-01 | Proximitor I/O Module with External Terminations |
| 135489-04 | Proximitor I/O Module with Internal Barriers and Internal Terminations |
| 143488 | 3500/40M Monitor User Guide |
| 00580434 | Internal I/O Module connector header, Euro style, 8-pin |
| 00502133 | Internal I/O Module connector header, Euro style, 12-pin |
| 166M4363 | Connector header, push-in-spring type (alternative for PN 00580441) |
| 166M2389 | Connector header, push-in-spring type (alternative for PN 00580434) |

## Graphs and Figures




1. Main Module Front View
2. Status LEDs
3. Buffered Transducer Outputs
4. I/O modules
5. Barrier I/O module, Internal Termination
6. I/O Module, Internal Termination
7. I/O Module, External Termination

**Figure 1: Assorted 3500/40M Proximitor Monitor Views**