

# 3500/72M 176449-08

## 3500/72M Recip Rod Position Monitor

Bently Nevada 3500/72M 176449-08 is a four-channel reciprocating-rod position monitor. It conditions proximity signals and calculates rod-position and rod-drop measurements for compressor protection.

### PRODUCT SNAPSHOT

#### BRAND

Bently Nevada

#### FAMILY

3500 machinery protection system

#### PART

3500/72M 176449-08

#### ORIGIN / HS

USA / 8537101190

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PRODUCT OVERVIEW

Bently Nevada 3500/72M 176449-08 is a four-channel reciprocating-rod position monitor. It conditions proximity signals and calculates rod-position and rod-drop measurements for compressor protection.

1

Conditions up to four proximity-probe signals on reciprocating compressors

2

Calculates rod position, rod drop, gap, crank angle, and harmonic data

3

Compares conditioned measurements with configured alarm setpoints

4

Returns dynamic and static values through the 3500 rack communication path

SYSTEM COMPONENTS

3500 rack and power supply

compatible proximity transducers

keyphasor or crank-reference input

approved internal or external I/O module

RELATED PRODUCTS ON APTER POWER

| MODEL                 | SYSTEM ROLE                   | APTER POWER PAGE                  |
|-----------------------|-------------------------------|-----------------------------------|
| 330171-00-12-05-01-05 | 3300 XL proximity probe       | <a href="#">Open product page</a> |
| 200150-09-CN          | General-purpose accelerometer | <a href="#">Open product page</a> |

## TECHNICAL DATA

| PARAMETER                  | VALUE                           |
|----------------------------|---------------------------------|
| Part number                | 176449-08                       |
| Input channels             | 1 to 4 proximity probe signals  |
| Input impedance            | 10 kOhm                         |
| Power consumption          | 7.7 W nominal                   |
| Rod-position scale factors | 0.79 / 3.94 / 7.87 mV/um        |
| Front buffered outputs     | 1 coaxial connector per channel |

| PARAMETER                   | VALUE                                     |
|-----------------------------|-------------------------------------------|
| Buffered-output impedance   | 510 Ohm                                   |
| Transducer supply           | -24 V DC                                  |
| Peak-to-peak filter         | 1 to 600 Hz                               |
| Gap filter                  | -3 dB at 0.09 Hz                          |
| Position amplitude accuracy | +/-0.33% FS typical; +/-1% maximum        |
| Position angle accuracy     | +/-1 degree typical; +/-3 degrees maximum |

### TECHNICAL NOTE

Configure channel pairs for the selected rod-position function, match transducer scale factor and crank reference, and prove gap, phase, alarm, and trip behavior during controlled compressor commissioning.

# APPLICATIONS & PRECAUTIONS

## COMMON APPLICATIONS

### Reciprocating-compressor rod position

Conditions up to four proximity-probe signals on reciprocating compressors

### Rod-drop trending

Calculates rod position, rod drop, gap, crank angle, and harmonic data

### Hyper compressor displacement monitoring

Compares conditioned measurements with configured alarm setpoints

### Compressor rider-band and clearance assessment

Returns dynamic and static values through the 3500 rack communication path

## PRODUCT PRECAUTIONS

- 1 Verify 3500/72M 176449-08 and its I/O module before rack work.
- 2 Place compressor protection in the approved maintenance state.
- 3 Record channel pairing, full-scale range, scale factor, and alarms.
- 4 Preserve probe polarity and crank-reference assignment.
- 5 Use ESD controls and inspect rack and I/O connectors.
- 6 Confirm the selected measurement type for every channel pair.
- 7 Compare gap, rod position, and angle with controlled mechanical conditions.
- 8 Prove alarms, bypass status, relay voting, and historian values before service.

# ENGINEER FAQ

## Q1 What commissioning evidence should be retained for 3500/72M 176449-08?

Retain the full 3500/72M 176449-08 identity, as-left wiring and settings, measured functional-test results, final diagnostics, and authorization to return the affected equipment to service.

## Q3 How should the field connections for 3500/72M 176449-08 be recorded before replacement?

Record terminal or connector identity, polarity, shield, cable tag, channel assignment, and the as-found diagnostic state before disconnecting 3500/72M 176449-08.

## Q5 Which configuration check is essential when commissioning 3500/72M 176449-08?

Restore only the approved model-specific channel, range, address, scale, or interface settings and compare them with the physical installation before enabling the process function.

## Q7 What should be checked if 3500/72M 176449-08 reports an unstable or incorrect value?

Check seating, supply, grounding, shielding, matched components, mechanical installation, and the signal path before changing configuration or replacing additional hardware.

## Q2 Which installed hardware must be matched before fitting 3500/72M 176449-08?

Match the complete 3500/72M 176449-08 marking to 3500 rack and power supply and compatible proximity transducers, then confirm the assigned 3500 machinery protection system position and approved system configuration.

## Q4 What isolation is required before installing 3500/72M 176449-08?

Place reciprocating-compressor rod position in the approved maintenance state, isolate every applicable power, signal, and stored-energy source, and prove the work area safe.

## Q6 How can an engineer function-test 3500/72M 176449-08 after installation?

Apply a controlled input, reference, or limited output appropriate to 3500/72m recip rod position monitor, observe the system indication and diagnostics, and confirm the intended process response.

## Q8 Can 3500/72M 176449-08 be replaced by a visually similar model without review?

No. Verify the complete part number, electrical execution, connector arrangement, companion hardware, and approved software or rack configuration.