

INDUSTRIAL AUTOMATION PRODUCT

3500/45 140072-04

Four-Channel Position Monitor

Bently Nevada 3500/45 140072-04 is a four-channel Position Monitor for the 3500 rack. It converts position-transducer inputs into machinery displacement values, recorder outputs and protection alarms.

IDENTITY	VERIFIED VALUE
Manufacturer	Bently Nevada
System family	3500 Machinery Protection System
Part number	140072-04
Country	USA
HS code	8537101190

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3500/45 140072-04

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Technical Specifications

Technical values below are limited to the named Bently Nevada product record.

PARAMETER	TECHNICAL VALUE
Signal inputs	1 to 4
Supported transducers	Proximator; RPT; DC LVDT
Power consumption	7.7 W typical
Power with internal barriers	8.8 W typical
Proximator/RPT input impedance	10 kOhm
DC LVDT input impedance	1 MOhm
Proximator/RPT excitation	-24 Vdc
DC LVDT excitation	+15 Vdc
Recorder output	4-20 mA
Recorder load	0-600 Ohm
Recorder resolution	0.3662 uA per bit
Recorder update rate	100 ms or less
Thrust sensitivity	3.94 or 7.87 mV/um
Differential expansion sensitivity	0.394 or 0.787 mV/um
Direct-filter response	-3 dB at 1.2 Hz
Gap-filter response	-3 dB at 0.41 Hz
Measurement accuracy	+/-0.33% FS typical; +/-1% maximum
Alarm setpoint accuracy	Within 0.13% of desired value
Operating temperature	-30 to +65 degC
Storage temperature	-40 to +85 degC
Relative humidity	95% non-condensing

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System Role and Architecture

Bently Nevada 3500/45 140072-04 is a four-channel Position Monitor for the 3500 rack. It converts position-transducer inputs into machinery displacement values, recorder outputs and protection alarms.

FUNCTION 1

Processes four channels of machine-position and displacement measurements

FUNCTION 2

Supports thrust, differential-expansion, case-expansion and valve-position channel pairs

FUNCTION 3

Conditions Proximitors, rotary-position-transducer and DC-LVDT signals

FUNCTION 4

Compares measured position with configured Alert and Danger setpoints

Matched system components

- 3500 rack
- 135137-01 or approved Position I/O module
- Proximitors, RPT or DC LVDT sensors
- 3500 Rack Configuration Software

SYSTEM INTEGRATION RECORD

INTEGRATION ITEM	DOCUMENTED ROLE
Installed host / carrier	3500 rack
Companion hardware	135137-01 or approved Position I/O module
Field connection	Proximitors, RPT or DC LVDT sensors
Primary system function	Processes four channels of machine-position and displacement measurements
Controlled acceptance duty	Turbine thrust-position protection

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Applications and Engineering Context

Turbine thrust-position protection

Processes four channels of machine-position and displacement measurements

Differential-expansion monitoring

Supports thrust, differential-expansion, case-expansion and valve-position channel pairs

Case-expansion measurement

Conditions Proximitor, rotary-position-transducer and DC-LVDT signals

Steam-valve position supervision

Compares measured position with configured Alert and Danger setpoints

TECHNICAL NOTE

Confirm channel-pair function, sensor excitation, scale, mechanical zero and travel direction; then prove recorder scaling and Alert/Danger action through the full controlled movement range.

MODEL-SPECIFIC ACCEPTANCE EVIDENCE

CHECK	ACCEPTANCE CONDITION
Identity	3500/45 140072-04 / 140072-04 recorded
Physical interface	3500 rack
Companion check	135137-01 or approved Position I/O module
Functional proof	Processes four channels of machine-position and displacement measurements
Application test	Turbine thrust-position protection

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Engineering Precautions

1

Confirm 140072-04 and the paired rear I/O execution before removing the monitor.

2

Isolate transducer excitation and recorder loops before disturbing rack connections.

3

Record every channel-pair function, scale, zero, polarity and alarm delay.

4

Do not interchange Proximitytor, RPT and DC-LVDT excitation arrangements.

5

Use ESD controls and protect buffered-output connectors during handling.

RELATED PRODUCTS ON APTER POWER

MODEL	SYSTEM ROLE	APTER POWER PAGE
3500/20 125744-02	3500 rack interface module	Open product page
3500/60 163179-01	Six-channel temperature monitor	Open product page
3500/64M 140734-05	Four-channel dynamic-pressure monitor	Open product page
3500/40M 176449-01	Four-channel Proximitytor monitor	Open product page
3500/32M 149986-02	Four-channel relay control module	Open product page

MANUFACTURER SOURCE RECORD

3500/45 Position Monitor Datasheet

141537 Rev. T

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