

INDUSTRIAL AUTOMATION PRODUCT

# 990-05-70-01-00

## 990 two-wire vibration transmitter

Radial vibration converted to a 4–20 mA current-loop signal

| IDENTITY      | VERIFIED VALUE                   |
|---------------|----------------------------------|
| Manufacturer  | Bently Nevada                    |
| System family | 990 vibration transmitter system |
| Part number   | 990-05-70-01-00                  |
| Country       | USA                              |
| HS code       | 8537101190                       |

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## Technical Specifications

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

| PARAMETER                    | TECHNICAL VALUE                      |
|------------------------------|--------------------------------------|
| Complete model               | 990-05-70-01-00                      |
| Full-scale range             | 0 to 125 um peak-to-peak             |
| System length                | 7.0 m                                |
| Mounting                     | DIN-rail clip                        |
| Agency approval              | None                                 |
| Transmitter type             | 2-wire, loop powered                 |
| Supply voltage               | +12 to +35 V DC                      |
| Process output               | 4 to 20 mA                           |
| Input system                 | 3300 NSv proximity transducer system |
| Frequency response           | 5 Hz to 6 kHz, +0/-3 dB              |
| Loop accuracy                | +/-1.5%                              |
| Prox Out scale factor        | 7.87 mV/um (200 mV/mil)              |
| Prox Out impedance           | 10 kohm for 10 Mohm load             |
| Maximum loop lead resistance | 1000 ohm at 35 V DC                  |
| Current limit                | 23 mA typical                        |
| Not OK current               | Below 3.6 mA                         |
| Power-up inhibit             | 3.6 mA for 2 to 3 s                  |

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# System Role and Architecture

Radial vibration converted to a 4–20 mA current-loop signal

FUNCTION 1

Accepts a matched 3300 NSv transducer signal

FUNCTION 2

Provides a loop-powered 4–20 mA vibration output

FUNCTION 3

Offers a buffered Prox Out for waveform checks

FUNCTION 4

Uses the 0 to 125 um peak-to-peak vibration range

## Matched system components

- 3300 NSv probe
- matched extension cable and Proximitior Sensor
- 12 to 35 VDC current loop
- PLC or DCS analog input

## SYSTEM INTEGRATION RECORD

| INTEGRATION ITEM           | DOCUMENTED ROLE                                |
|----------------------------|------------------------------------------------|
| Installed host / carrier   | 3300 NSv probe                                 |
| Companion hardware         | matched extension cable and Proximitior Sensor |
| Field connection           | 12 to 35 VDC current loop                      |
| Primary system function    | Accepts a matched 3300 NSv transducer signal   |
| Controlled acceptance duty | Pump radial-vibration monitoring               |

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# Applications and Engineering Context

**Pump radial-vibration monitoring**

Accepts a matched 3300 NSv transducer signal

**Compressor shaft-vibration trending**

Provides a loop-powered 4–20 mA vibration output

**DCS machinery condition input**

Offers a buffered Prox Out for waveform checks

**990 transmitter replacement**

Uses the 0 to 125 um peak-to-peak vibration range

**TECHNICAL NOTE**

Verify 990-05-70-01-00, the selected full-scale vibration range, total transducer length, mounting hardware, loop polarity and alarm scaling before removal; confirm Prox Out waveform and 4–20 mA scaling after installation.

**MODEL-SPECIFIC ACCEPTANCE EVIDENCE**

| CHECK              | ACCEPTANCE CONDITION                           |
|--------------------|------------------------------------------------|
| Identity           | 990-05-70-01-00 / 990-05-70-01-00 recorded     |
| Physical interface | 3300 NSv probe                                 |
| Companion check    | matched extension cable and Proximitior Sensor |
| Functional proof   | Accepts a matched 3300 NSv transducer signal   |
| Application test   | Pump radial-vibration monitoring               |

## 5 Engineering Precautions

- 1 Verify the complete 990-05-70-01-00 marking and its assigned 990 vibration transmitter system position before work.
- 2 Place the connected pump radial-vibration monitoring process in the approved maintenance state.
- 3 Isolate applicable power and radial vibration converted to a 4–20 ma current-loop signal field energy before disconnecting conductors.
- 4 Record connector, conductor, address, firmware and software identities before removal.
- 5 Use ESD controls and protect keyed interfaces, exposed contacts and electronic assemblies.

### RELATED PRODUCTS ON APTER POWER

| MODEL                                        | SYSTEM ROLE                                        | APTER POWER PAGE                                                       |
|----------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------|
| Bently Nevada 21000 28 05 00 030 04 02       | Related Bently Nevada machinery-monitoring product | <a href="#">View Bently Nevada 21000 28 05 00 030 04 02 page</a>       |
| Bently Nevada 330101 00 18 10 02 05          | Related Bently Nevada machinery-monitoring product | <a href="#">View Bently Nevada 330101 00 18 10 02 05 page</a>          |
| Bently Nevada 146054 34 20 02 05             | Related Bently Nevada machinery-monitoring product | <a href="#">View Bently Nevada 146054 34 20 02 05 page</a>             |
| Bently Nevada 21504 00 20 10 02              | Related Bently Nevada machinery-monitoring product | <a href="#">View Bently Nevada 21504 00 20 10 02 page</a>              |
| Bently Nevada 86517 01 01 01 02              | Related Bently Nevada machinery-monitoring product | <a href="#">View Bently Nevada 86517 01 01 01 02 page</a>              |
| Bently Nevada 86517 XX XX 01 02 MOD 159840 1 | Related Bently Nevada machinery-monitoring product | <a href="#">View Bently Nevada 86517 XX XX 01 02 MOD 159840 1 page</a> |
| Bently Nevada 21505 00 44 10 02              | Related Bently Nevada machinery-monitoring product | <a href="#">View Bently Nevada 21505 00 44 10 02 page</a>              |
| Bently Nevada 21747 00 20 10 02              | Related Bently Nevada machinery-monitoring product | <a href="#">View Bently Nevada 21747 00 20 10 02 page</a>              |

### MANUFACTURER SOURCE RECORD

Bently Nevada 990 Vibration Transmitter Datasheet

141612 Rev. Y

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