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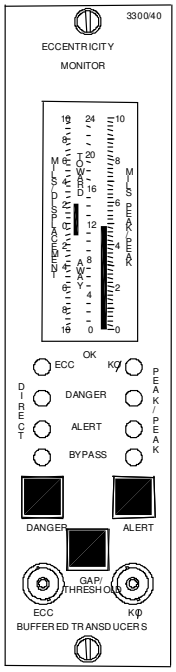
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Find the *GE / Bently Nevada 3300/40-03-01-00-00-00* at our website: *Click HERE*

3300/40 Eccentricity Monitor

Bently Nevada™ Asset Condition Monitoring



Description

Eccentricity is the measurement of shaft bow at slow-roll speed. This can be caused by:

- Fixed mechanical bow
- Temporary thermal bow
- Temporary bow due to any sort of sag or bow at rest (sometimes called gravity bow).

The 3300/40 Eccentricity Monitor provides on-line eccentricity monitoring. It allows you to identify the amplitude of thermal or gravity rotor bow. The monitor is suitable for virtually all types of rotating and reciprocating machinery, continuously measuring and monitoring one channel of eccentricity.

The monitor provides two types of eccentricity indication:

- **Direct eccentricity:** the instantaneous eccentricity value.
- **Peak-to-peak eccentricity:** the difference between the positive and the negative extremes of the rotor bow.

The monitor also provides information on Gap Voltage and Threshold Voltage (Keyphasor® trigger point).

imagination at work

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Specifications

Inputs

Signal:

Accepts two proximity probe signals, one for eccentricity and one for Keyphasor Input.

Input Impedance:

10 k Ω.

Signal Scale Factor:

200 mV/mil (8 V/mm), or

100 mV/mil (4 V/mm). Jumper selectable.

Keyphasor Transducer

Duty Cycle: 5% minimum

Input Impedance: 90 k Ω

(manual threshold):

Frequency: 0.017 to 10 Hz (1 to 600 cpm)

(automatic threshold):

Frequency: 1.69 to 10 Hz (100 to 600 cpm)

(simulated):

Update Rate: every 60 seconds

Power Consumption:

Nominal consumption of 1.5 watts.

Signal Conditioning

Frequency Response:

Peak-to-peak eccentricity 0.017 Hz to 10 Hz (1 to 600 cpm), direct eccentricity 0 to 10 Hz (0 to 600 cpm).

Accuracy:

Specified at ambient temperature of +25°C (+77°F).

Within ±0.33% of full-scale typical, ±1% maximum.

Outputs

Recorder:

User-programmable +4 to +20 mA, 0 to -10 Vdc, or +1 to +5 Vdc. Voltage or current outputs are proportional to programmed monitor full-scale. Individual recorder outputs are provided for the direct and the peak-to-peak channel. Monitor operation is unaffected by short circuits on recorder outputs.

Recorder accuracy (in addition to signal conditioning accuracy):

All specified at +25°C (+77°F).

- **+4 to +20 mA:** ±0.7% of signal, ±0.09 mA offset.
- **+1 to +5 Vdc:** ±0.8% of signal, ± 5 mV offset.
- **0 to -10 Vdc:** ±0.7% of signal, ±10 mV offset.

Output Impedance (voltage outputs):

100 Ω. Minimum load resistance is 10 k Ω.

Voltage Compliance (current outputs):

0 to +12 Vdc range across load. Load resistance is 0 to 600 Ω when using +4 to +20 mA option.

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Buffered Transducer Outputs:

One coaxial connector for eccentricity and one for the Keyphasor signal on front panel. Terminal connection for eccentricity signal on rear panel. All are short circuit protected.

Output Impedance:

100 Ω. User-programmable in Power Supply for -24 Vdc or -18 Vdc. Current limited on individual monitor circuit board.

Note: Contact your nearest sale professional if 3000 series transducers are to be used in a monitoring rack which also uses 3300 and/or 7200 series transducers.

Alarms

Alarm Setpoints:

Both alarms (Alert and Danger) are digitally adjustable from 0 to 100% of full-scale and can be set within LCD resolution (±1.6% of full-scale) to desired level. Once set, alarms are repeatable within ±0.4% of full-scale.

Relay Modules

Location:

One relay module can be installed behind each monitor. At least one alarm relay module must be ordered with each 3300 System.

Displays

Meter:

Nonmultiplexing vertical bargraph type Liquid Crystal Display (LCD). Individual 63-segment LCD per signal (direct and peak-to-peak). Probe Gap indicated on a third, center scale. LCD also displays error codes and monitor ADJUST mode.

Resolution:

Within ±1.6% of monitor full-scale.

Size:

83 mm (3.2 in), vertical dimension.

LED Indicators

OK:

One constant ON green LED for eccentricity and one constant ON green OK LED for Keyphasor transducer indicate OK condition of monitor, transducers, Keyphasor signal, operating range, and field wiring. Constant OFF indicates NOT OK condition or Monitor Bypassed (red Bypass LEDs will be ON). OK LED flashing at 1 Hz indicates transducer has been NOT OK but is now OK. OK LED flashing a 5Hz indicates error code(s) stored in memory.

Alarm:

Two red LEDs per channel indicate alarm status (individually for Alert and Danger, per channel). Flashing alarm LED indicates First Out (independent for Alert and Danger alarms).

Bypass:

Two red LEDs indicate status of Danger Bypass and Rack / Monitor Bypass functions.

Environmental Limits

Operating Temperature:

0°C to +65°C (+32°F to +150°F).

Storage Temperature:

-40°C to +85°C (-40°F to +185°F).

Relative Humidity:

To 95%, noncondensing.

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CE Mark Directives

EMC Directive

Certificate of Conformity: 158710

Low Voltage Directive

Certificate of Conformity: 135300

Hazardous Area Approvals

CSA/NRTL/C

Class I, Div 2

Groups A, B, C, D

T4 @ Ta = +65 °C

Certification Number

150368 – 1002151 (LR 26744)

ATEX

 II 3 G

EEx nC[L] IIC

T4 @ Ta = -20°C to +60°C

When installed per document number 132577-01.

Certification Number

BN26744C-55AHazardous Area Approvals

CSA/NRTL/C

Class 1 Division 2 Groups A,B,C,D

T4 @ Ta = 65°C

Physical

Space Requirements:

One rack position (any position except 1 and 2, which are reserved for Power Supply and System Monitor, respectively).

Weight

1 kg (2.2 lbs.).

Ordering Information

For spares, order the complete catalog number as described below. This includes a front panel assembly, monitor PWAs with sheet metal, and appropriate relay module. This unit is optioned, tested and ready to install in your system. Spare relay modules can be ordered separately

Eccentricity Monitor

3300/40-AXX-BXX-CXX-DXX-EXX

Note: The direct Channel Range is shipped from the factory as shown in the A ordering option. This range is field-programmable, independently from the peak-to-peak channel. The Direct Channel full-scale range cannot be less than the peak-to-peak range. For example, if the -04 full-scale range (0 to 30 mils pp) is selected, the direct channel must be either 30-0-30 mils or 50-0-50 mils.

Option Descriptions

A: Full-scale Range Option Peak-to-Peak Direct (pp)

0 1	0-5 mils pp, 5-0-5 mils
0 2	0-10 mils pp, 10-0-10 mils
0 3	0-20 mils pp, 20-0-20 mils
0 4	0-30 mils pp, 30-0-30 mils
0 5	0-50 mils pp, 50-0-50 mils
1 1	0-100 µm pp, 100-0-100 µm
1 2	0-200 µm pp, 200-0-200 µm
1 3	0-500 µm pp, 500-0-500 µm
1 4	0-1000 µm pp,1000-0-1000µm

B: Transducer Input Option

0 1	3300 or 7200 Proximitors® 200 mV/mil (8 V/mm).
0 2	7200 11 mm (not XL) Proximitor 100 mV/mil (3.94 V/mm).
0 3	7200 14 mm or 3300 HTPS or 3300 XL 11mm Proximitor 100 mV/mil (3.94 V/mm).

C: Alarm Relay Option

0 0	No Relays
0 1	Epoxy-sealed
0 2	Hermetically-sealed
0 3	Quad Relay (Epoxy-sealed only)
0 4	Spare Monitor-No SIM/SIRM

Notes:

1. At least one relay module must be ordered with each 3300 System. If one common relay module per system has been ordered, all other monitors of this type will be jumper-programmed at the factory to activate relay bus one.
2. Quad Relays are not available with Internal Safety Barriers option.

D: Agency Approval Option

0 0	Not Required

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0 1 CSA/NRTL/C

Note: CSA/NRTL/C option is only available with relays when the monitor is ordered in a system.

E: Intrinsic Safety Barriers

0 0 None

0 1 External

Spare Relay Module Assemblies

82925-01

No Relays

82926-01

Dual Epoxy Relays

82927-01

Dual Hermetic Relays

84153-01

Quad Relays

Note: External Safety Barriers must be ordered separately.

Field-programmable Options

These options are field-programmable via plug-in jumpers. **Bold text** indicates options as shipped from the factory.

First Out Option

Enabled

Disabled

Alarm Time Delay Option (Direct signal)

0.1 second

1 second

3 seconds

6 seconds

Danger Reset Option

Latching

Nonlatching

Recorder Outputs Option

+4 to +20 mA

+1 to +5 Vdc

0 to -10 Vdc

Recorder Clamping Mode

Not OK = 2mA

Non-Clamping

Keyphasor Signal Source Option

External Keyphasor transducer

System Keyphasor transducer

Simulated Keyphasor signal

Alert Relay Mode Option

Normally de-energized

Normally energized

Danger Relay Mode Option

Normally de-energized

Normally energized

Danger Bypass Switch Option

Disabled

Enabled

Keyphasor Signal Hysteresis Voltage Option

0.2 Vdc

0.5 Vdc

1.25 Vdc

2.00 Vdc

Keyphasor Signal Threshold Option

Manual

Automatic

Zero Adjust Range

Normal

Extended

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Direct Channel Alarms

Disabled

Enabled

Direct Channel Above 600 rpm

Enabled

Disabled

Timed OK/Monitor Defeat Option

Enabled

Disabled

OK Mode Option

Nonlatching

Latching

Alert Reset Option

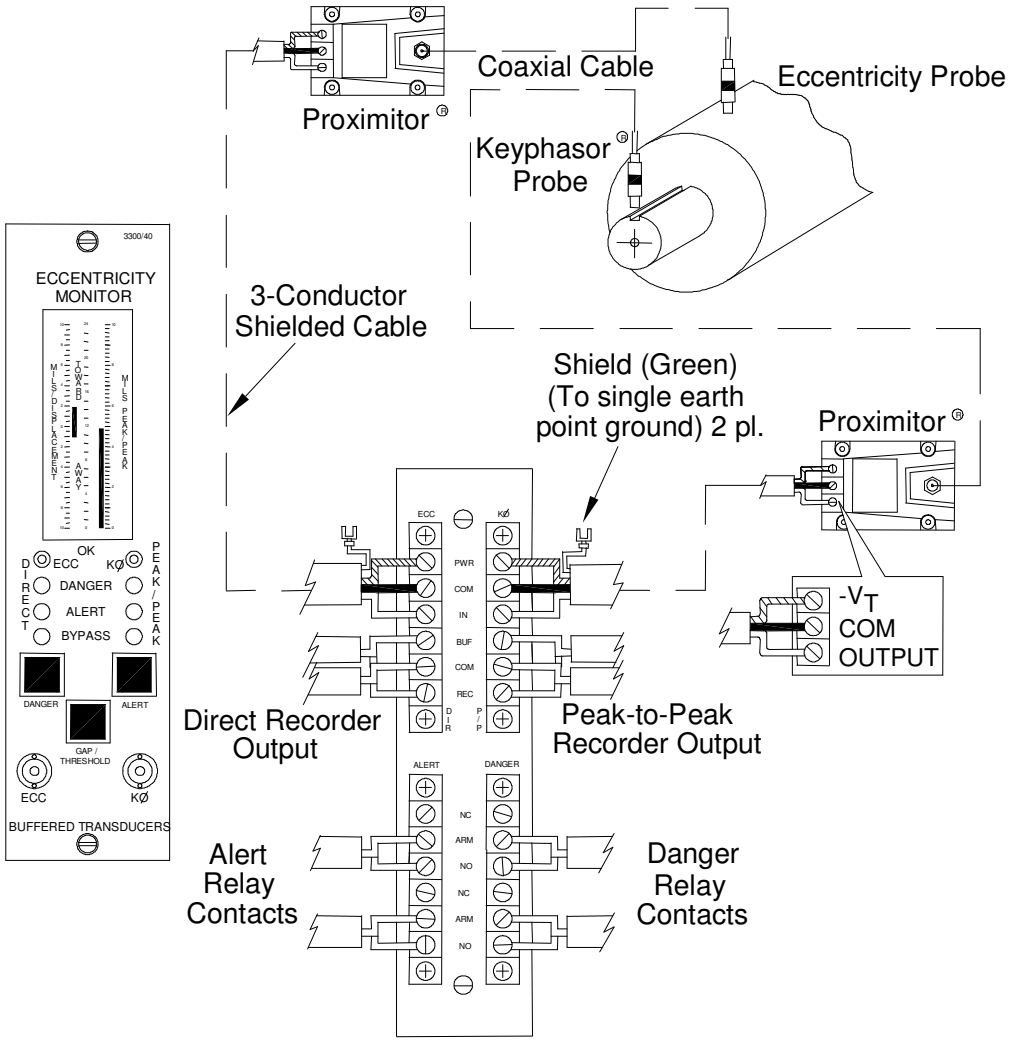
Latching

Nonlatching

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Field wiring diagram

3300/40 Eccentricity Monitor



Field wiring diagram for the 3300/40 Eccentricity Monitor

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