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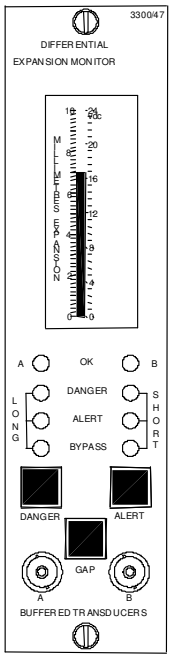
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Find the *GE / Bently Nevada 3300/47-09-04-00-00* at our website: *Click HERE*

3300/47 Complementary Input Differential Expansion Monitor

Bently Nevada™ Asset Condition Monitoring



Description

Many large machines requiring differential expansion monitoring do not have a convenient location for mounting the large proximity probes required to make this important measurement. Extremely large machines may require a monitoring range beyond the linear range of a single proximity probe observing a collar. The 3300/47 Complementary Input Differential Expansion Monitor provides an alternate measurement technique that allows increased monitoring ranges from standard transducers. It is extremely useful when extra large monitoring ranges are required. This is accomplished by using two proximity probes to observe a rotor collar in a complementary arrangement. The proximity probes are installed in such a way that when a collar moves beyond the linear range of one probe, it moves into the range of the other. This configuration allows the monitor to provide a range up to double the linear range of a single transducer.

Both the magnitude and direction of differential expansion are displayed on the LCD. The monitor provides four alarm setpoints (two over and two under alarms).

imagination at work

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Specifications

Inputs

Signal:

Accepts two proximity probe transducer signals.

Input Impedance:

10 k Ω.

Signal Scale Factor:

100 mV/mil (4 V/mm), 20 mV/mil (0.787 V/mm) or 10 mV/mil (3.92 V/mm). Jumper-selectable.

Power Consumption:

Nominal consumption of 1.5 watts.

Signal Conditioning

Accuracy:

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

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

Outputs

Recorder:

User-programmable for +4 mA to +20 mA, 0 to -10 Vdc, or +1 Vdc to +5 Vdc. Voltage or current outputs are proportional to programmed monitor full-scale. A single composite recorder output is provided on Channel A. 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: ±1.1% of signal, ±10 mV offset.

0 to -10 Vdc: ±1.1% of signal, ±15 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.

Buffered Transducer Outputs:

One coaxial connector per transducer on the front panel and one terminal connection per channel on the rear panel. All are short circuit protected.

Output Impedance:

100 Ω.

Transducer Supply Voltage:

-24 Vdc voltages are current limited per channel on individual monitor circuit board.

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. Alarm setpoints are stored in nonvolatile memory and are adjusted using tamper-proof switches on monitor circuit board and

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up/down switches on System Monitor front panel.

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.

Display

Meter:

Nonmultiplexing vertical bargraph type Liquid Crystal Display (LCD). 63 individual LCD segments per channel. Probe Gap indicated on a 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 per channel to indicate OK condition of monitor, transducers, and field wiring. Constant OFF indicates NOT OK condition or channel Bypassed (red Bypass LED will be ON). OK LED flashing at 1 Hz indicates transducer has been NOT OK but is now OK. OK LED flashing at 5Hz indicates error code(s) stored in memory.

Alarm:

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

Bypass:

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

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-55A

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Physical

Space Requirements:

One rack position (any position except 1 and 2 which are reserved for the 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.

Complementary Input Differential Expansion Monitor

3300/47-AXX -BXX-CXX-DXX

Option Descriptions

A: Full-scale Range Option

0 1	150-0-150 mils
0 2	0-300 mils
0 3	5-0-5 mm
0 4	0-10 mm
0 5	0.25-0-.25 in
0 6	0-.5 in
0 7	10-0-10 mm
0 8	0-20 mm
0 9	0 .5-0-.5 in
1 0	0-1.0 in
1 1	25-0-25 mm
1 2	0-50 mm
1 3	1.0-0-1.0 in
1 4	0-2.0 in

B: Transducer Input Option

0 1	7200 11 mm (not XL)
0 2	7200 14 mm or 3300 HTPS or 3300 XL 11 mm
0 3	25 mm
0 4	35 mm
0 5	50 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

Note: 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.

D: Agency Approval Option

0 0	Not required
0 1	CSA/NRTL/C

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

Spare Relay Module Assemblies

81544-01

No Relays

81545-01

Dual Epoxy Relays

81546-01

Dual Hermetic Relays

85119-01

Quad Relays

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

0.1 second

1 second

3 seconds

6 seconds

OK Mode Option

Nonlatching

Latching

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NOT OK Monitor Defeat

Disabled

Enabled

Alert Reset Option

Latching

Nonlatching

Danger Reset Option

Latching

Nonlatching

Recorder Outputs Option

+4 to +20 mA

+1 to +5 Vdc

0 to -10 Vdc

Alert Relay Mode Option

Normally de-energized

Normally energized

Danger Relay Mode Option

Normally de-energized

Normally energized

Danger Bypass Switch Option

Disabled

Enabled

Meter Response Time

Fast

Slow

Upscale Direction Option

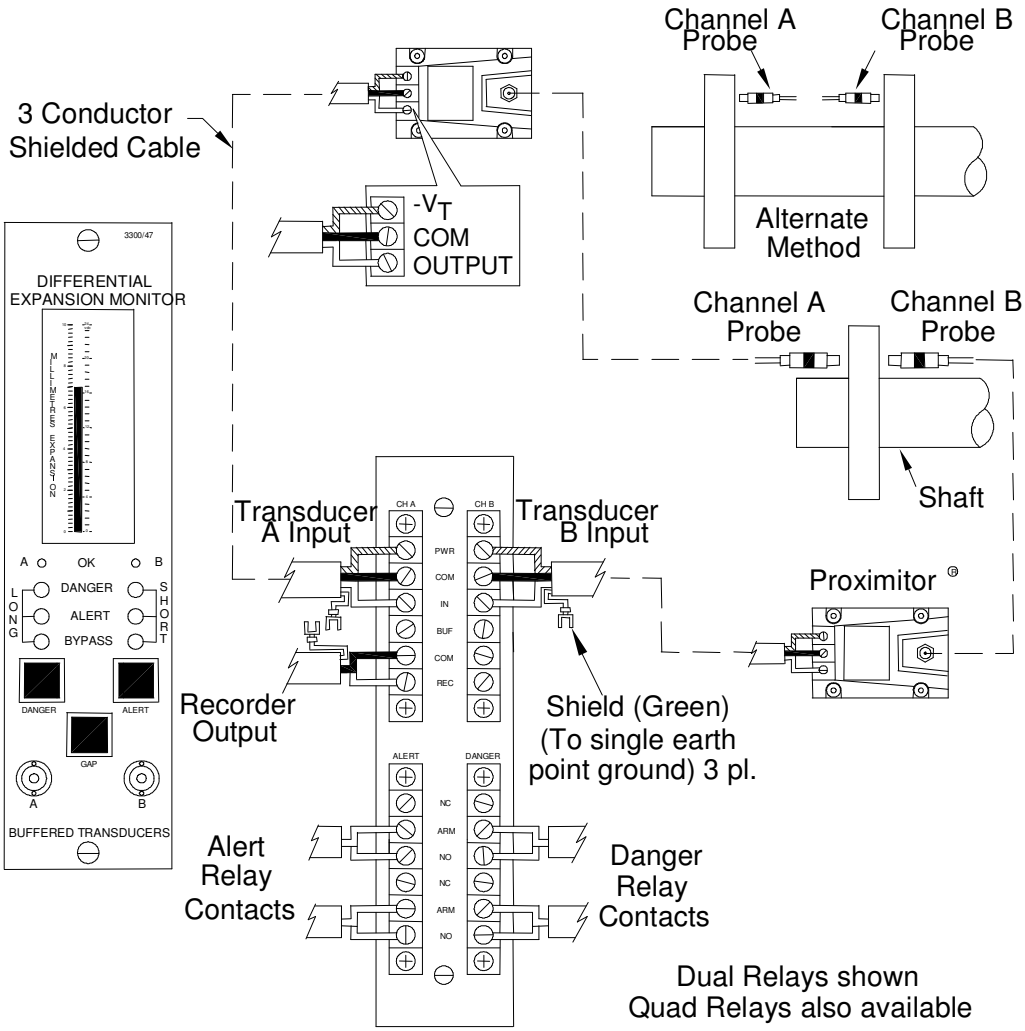
Toward Probe A

Away from Probe A

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Field wiring diagram

3300/47 Complementary Input Differential Expansion Monitor



Field wiring diagram for 3300/47 Complementary Input Differential Expansion Monitor

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