Bently Nevada 3500 Series Service Manual

3500/53-02-00

1. Description

Manufacturer : Bently Nevada

3. Product Information

Manufacturer : Bently Nevada

Product No. : 3500/53-02-00

Product type : 3500/53 Electronic Overspeed Detection System

Made in U.S.A

3500/53 modules can be combined to form a 2-out-of-2 or a 2-out-of-3

(recommended) voting system.

Ordering Information

3500/53-02-00

Channel Option : 02 = Two Channel System

Agency Approval Option : 00 = None

Inputs Signal : Each Overspeed Detection module accepts a single transducer signal from a proximity probe transducer or magnetic pickup. The input signal range is +10.0 V to -24.0 V. The module internally limits signals that exceed this range.

Input Impedance : 20 k Ω

Power Consumption : 8.0 watts, typical.

Operating Temperature: -30 °C to +65 °C (-22 °F to +149 °F)

Storage Temperature: -40 °C to +85 °C (-40 °F to +185 °F)

Humidity: 95%, non-condensing.

Outputs

Front Panel LEDs

OK LED:

Indicates when the 3500/53

Module is operating properly.

TX/XR LED:

Indicates when the 3500/53

Module is communicating with

other modules in the 3500 rack.

Bypass LED:

Indicates when the 3500/53

Module is in Bypass Mode.

Test Mode LED:

Indicates when the 3500/53 is in

Test Mode.

Alarm LEDs:

Indicates that an alarm condition

has occurred with the associated

relay.

Buffered

Transducer

Outputs:

The front of each module has one

coaxial connector for buffered

output. Each connector is short

circuit and ESD protected.

Output

Impedance:

550 Ω.

Transducer

Power Supply:

-24 Vdc, 40 mA maximum.

Recorder:

+4 to +20 mA. Values are

proportional to module full-scale

range (rpm). Module operation is

unaffected by short circuits on

recorder output.

Voltage

Compliance

(current output):

0 to +12 Vdc range across load.

Load resistance is 0 to 600 Ω.

Resolution:

0.3662 µA per bit ±0.25% error at room temperature ±0.7% error over temperature range. Update rate approximately 100 ms.

Relays

Type:

Single-pole, double-throw (SPDT) relays.

Environmental

Sealing:

Epoxy sealed.

Arc Suppressers:

250 Vrms, installed as standard.

Contact Ratings

Max switched power:

dc: 120 W

ac: 600 VA.

Resistive Load

Max switched current:

5A

Min switched current:

100 mA @ 5 Vdc

Max switched voltage:

dc: 30 Vdc

ac: 250 Vac.

Contact Life:

100,000 @ 5 A, 24 Vdc or 120 Vac.

Operation:

Each relay is switch selectable for Normally De-energized or Normally Energized.

Hazardous Area Approvals

CSA/NRTL/C

Approval Option

(01)

Class I, Div 2

Groups A, B, C, D

T4 @ Ta = -20 °C to +65 °C (-4 °F to +150 °F)

Certification Number

CSA 150268-1002151 (LR 26744)

Physical

Monitor Module

Dimensions (Height x Width x Depth):

241.3 mm x 24.4 mm x 241.8 mm (9.50 in x 0.96 in x 9.52 in).

Weight:

0.82 kg (1.8 lb.).

I/O Modules

Dimensions

(Height x Width

x Depth):

241.3 mm x 24.4 mm x 99.1 mm

(9.50 in x 0.96 in x 3.90 in).

Weight:

0.45 kg (1.0 lb.).