

Bently Nevada 3500 Series Service Manual

3500/50M-01-00 286566-02

1. Description

Manufacturer : Bently Nevada

3. Product Information

Manufacturer : Bently Nevada

Product No. : 3500/50M-01-00 286566-02

Product type : Tachometer Module

Made in U.S.A

I/O module type : 01 = I/O module with internal terminations

Agency approval option : 00 = None

Inputs

Signal

Each 3500/50M Tachometer

Module accepts up to two

transducer signals from

proximity probe transducers

or magnetic pickups.

Input signal

range

+10.0 V to -24.0 V

Signals exceeding this range

are limited internally by the

module.

Input

impedance

20 k Ω (standard)

40 k Ω (TMR)

7.15 k Ω (Internal Barrier)

Power

consumption 5.8 Watts, typical

Transducers

Accepts 1 to 2 proximity

transducer signals

Restrictions may apply to

magnetic pickups (see on

page 2).

Outputs

Front Panel LEDs

OK LED

Indicates when the 3500/50M

Tachometer Module is

operating properly.

TX/RX LED

Indicates when the

Tachometer Module is

communicating with other

modules in the 3500 rack.

Bypass LED

Indicates when the

Tachometer Module is in

Bypass Mode.

Buffered Transducer

Outputs

The front of each module has

one coaxial connector for

each channel.

Each connector is short circuit

and ESD protected.

Buffered outputs are available

at the I/O module via Euro

style connectors.

Output

Impedance 550 Ω

Transducer

Power Supply

24 Vdc, 40 mA maximum per channel

Recorder

+4 to +20 mA

Values are proportional to module full-scale range (rpm or rpm/min).

Individual recorder values are provided for each channel.

Monitor operation is unaffected by short circuits on recorder outputs.

Voltage

Compliance

(current

output)

0 to +12 Vdc range across load

Load resistance is 0 to 600 Ω

Resolution

0.3662 μ A per bit $\pm 0.25\%$ error

at room temperature $\pm 0.7\%$

error over temperature range

Update rate approximately

100 ms

Signal Conditioning

Specified at +25°C (+77°F)

Speed Input

The 3500/50M Tachometer

Module supports 1 to 255

events per revolution for

Rotor Acceleration and Zero

Speed channel types.

All other channel types

support 0.0039 to 255 events

per revolution.

All channel types support a

maximum full scale range of

99,999 rpm and a maximum

input frequency of 20 kHz.

Minimum input frequency for

proximity transducers is

0.0167 Hz (1 rpm for 1 event

per revolution).

Minimum input frequency for

passive magnetic pickups is

3.3 Hz.

RPM Accuracy

Less than 100 rpm = ± 0.1 rpm

100 to 10,000 rpm = ± 1 rpm

10,000 to 99,999 rpm = $\pm$

0.01% of true shaft speed

RPM/Min

Accuracy

± 20 rpm/min

Transducer Conditioning

Auto Threshold

Use for any input above

0.0167 Hz

(1 rpm for 1 event/revolution)

Minimum signal amplitude

for triggering is 1 volt peak-to-peak.

Manual

Threshold

User selectable from +9.5

Vdc to -23.5 Vdc

Minimum signal amplitude

for triggering is 500 millivolts

peak-to-peak

Hysteresis User selectable from 0.2 to

2.5 volts

Alarms

Alarm

Setpoints

Alarm 1 levels (setpoints)

can be set for each value

measured by the

Tachometer.

Alarm 2 setpoints can be set

for any two of the values

measured by the

Tachometer.

Alarm setpoints are set using

software configuration.

Alarms are adjustable and

can normally be set from 0

to 100% of full scale for each

measured value.

Alarm Time

Delays

Programmable alarm delays

for Alarm 1 and Alarm 2

Alarm 1 Time

Delay

From 1 to 60 seconds in 1

second intervals

Alarm 2 Time

Delay

From 1 to 60 seconds in 0.1

second intervals

Physical

Monitor Module (Main Board)

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)

Rack Space Requirements

Monitor

Module 1 full-height front slot

Ordering Considerations

To add the 3500/50M Tachometer Module to an

existing 3500 Monitoring System, you must

have the following versions of firmware and

software:

Firmware and Software Version

3500/22M Module

Firmware Revision (1.70)

3500/01 Configuration

Software

Version 4.20 or

later

3500/02 Data Acquisition

Software

Version 2.52 or

later

3500/03 Display Software Version 1.52 or

later

3500/50M Firmware Revision 5.30 or

later

3500/50M

Not compatible

with any version

of 3500/20

