

# Bently Nevada 3500 Series Service Manual

3500/65-01-00 145988-02

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## 1. Description

Manufacturer : Bently Nevada

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## 3. Product Information



Manufacturer : Bently Nevada

Product No. : 3500/65-01-00 145988-02

Product Type : 16-Channel Temperature Monitor

Made in U.S.A

I/O Module Type : 01 = RTD/Isolated Tip TC with Internal Terminations

Agency Approval Option : 00 = None

Dimensions ( D x W x H ) : 24.18 cm x 2.44 cm x 24.13 cm

Weight : 0.91 Kg

Specifications

Inputs

Power

Consumption 3 watts nominal

Signal

Accepts from 1 to 16 RTD or

isolated tip TC transducer

signals.

Input

Impedance

Greater than 1 M $\Omega$  for each

lead input.

Transducers

TCs

Type E

-100°C to +1000°C,

(-148°F to +1832°F)

Type J

0°C to +760 °C

(32°F to +1400 °F)

Type K

0°C to +1370°C

(32°F to +2498°F)

Type T

-160°C to +400°C,

( -256°F to + 752°F)

RTDs

100  $\Omega$  3-wire and

4-wire platinum

RTD ( $\alpha$  =

0.00385)

-200°C to +850°C

(-328°F to +1562°F)

100  $\Omega$  3-wire

and 4-wire

platinum RTD ( $\alpha$

= 0.00392)

-200°C to +700°C

(-328°F to +1292°F)

120  $\Omega$  3-wire

and 4-wire

nickel RTD

-80°C to +260°C

(-112°F to +500°F)

10  $\Omega$  3-wire and

4-wire copper

RTD

-100°C to +260°C,

(-148°F to +500°F)

Platinum RTDs with  $\alpha$  = 0.00385 are

the worldwide industrial standard



and are the recommended RTDs for all applications.

#### Outputs

##### Front Panel LEDs

OK LED Indicates when the 3500/65 is operating properly.

##### TX/RX LED

Indicates when the 3500/65 is communicating with other modules in the 3500 rack.

Bypass LED Indicates when the 3500/65 monitor is in Bypass Mode.

#### RTD

##### CurrentSource

##### Value

$913 \pm 7 \mu\text{A}$  @ 25°C per transducer (1 supply for the 4-wire RTD and 2 supplies for the 3-wire).

##### Signal Conditioning

Specified at +25°C (+77° F). Full-scale range for each channel is set in the field via 3500 Configuration Software.

No calibration is required

##### RTDs and TCs

Resolution 1°C or 1 °F.

##### Accuracy

##### Internal

##### Termination

Bulkhead Rack:  $\pm 3^\circ\text{C}$  at +25°C ( $\pm 5.4^\circ\text{F}$  at +77°F).

Standard Rack:  $\pm 3^\circ\text{C}$  at +25°C ( $\pm 5.4^\circ\text{F}$  at +77°F).

##### External

##### Termination

Bulkhead Rack:  $\pm 3^\circ\text{C}$  at +25°C ( $\pm 5.4^\circ\text{F}$  at +77°F)

Standard Rack:  $\pm 3^\circ\text{C}$  at +25°C ( $\pm 5.4^\circ\text{F}$  at +77°F)

##### Cold Junction Compensation

Sensor (used for TC measurements)  $\pm 2^\circ\text{C}$  at +25°C ( $\pm 3.6^\circ\text{F}$  at +77°F).

#### Alarms

##### Alarm

##### Setpoints

You can use software configuration to set Alert and Danger setpoints for the value measured by the monitor. Alarms are adjustable from 0 to 100% of full-scale for each measured value. The exception is when the full-scale range exceeds the range of the sensor. In this case, software will limit the setpoint to the range of the sensor. Accuracy of alarms are to within 0.13% of the desired value. The 3500/65 16-



channel temperature monitor has

both under- and over-alarm

setpoints.

Alarm

Time

Delays

You can use software to program

alarm delays as follows:

Alert

Delay

From 1 to 60 seconds in 1-second

increments.

Danger

Delay

From 1 to 60 seconds in 0.5-

second increments.

Proportional Values

Proportional values are temperature  
measurements used to monitor the machine.

The 16-channel temperature monitor returns  
temperature proportional values.

Environmental Limits

Operating

Temperature:

-30°C to +65°C (-22°F to

+150°F)

Storage

Temperature:

-40°C to +85°C (-40°F to

+185°F)

Physical

Main 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 0.91 kg (2.0 lbs.).

Rack Space Requirements

Main Module 1 full-height front slot

Compliance and Certifications

FCC

This device complies with part 15 of the

FCC Rules. Operation is subject to the

following two conditions:

I This device may not cause harmful

interference.

I This device must accept any

interference received, including

interference that may cause

undesired operation.

EMC

European Community Directive:

EMC Directive 2014/30/EU

Standards:

EN 61000-6-2 Immunity for

Industrial Environments

EN 61000-6-4 Emissions for



Industrial Environments

Electrical Safety

European Community Directive:

LV Directive 2014/35/EU

Standards:

EN 61010-1

RoHS

European Community Directive:

RoHS Directive 2011/65/EU

Maritime

ABS-Marine and Offshore Applications

DNV GL Rules for Classification – Ships,

Offshore Units, and High Speed and Light

Craft

Ordering Considerations

If you add the 3500/65 to an existing 3500

System your system will require the following or

later firmware and software versions:

3500/22 Module Firmware Revision 1.50

3500/01 Software Version 3.85

3500/02 Software Not supported\*

3500/03 Software Not supported\*

3500/93 Module Firmware Revision 2.02

System 1 Software

Revision 5.2

with Service

Pack 2 or later

\*Attempting to use the 3500/65 with

3500/02 or 3500/03 software may

prevent proper operation of the

software.

You cannot use external termination blocks

with internal termination I/O modules.

When ordering I/O Modules with external

terminations, you must order the external

termination blocks and cables separately.

When ordering I/O Modules for use with 4-Wire

RTDs, order with Modification 179952-01. For

further information, see the 3500/65 User

Guide.

This will result in an I/O Module

Mismatch and 562 ADC Failure in the

System Event List.

