Bently Nevada 3500 Series Service Manual

3500/65-01-00 145988-02

1. Description

Manufacturer : Bently Nevada

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 MΩ 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 Ω 3-wire and

4-wire platinum

RTD (α =

0.00385)

-200°C to +850°C

(-328°F to +1562°F)

100 Ω 3-wire

and 4-wire

platinum RTD (α

= 0.00392)

-200°C to +700°C

(-328°F to +1292°F)

120 Ω 3-wire

and 4-wire

nickel RTD

-80°C to +260°C

(-112°F to +500°F)

10 Ω 3-wire and

4-wire copper

RTD

-100°C to +260°C,

(-148°F to +500°F)

Platinum RTDs with α = 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 ± 7 µA @ 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: ±3°C at +25°C (±5.4°F at +77°F).

Standard Rack: ±3°C at +25°C (±5.4°F at +77°F).

External

Termination

Bulkhead Rack: ±3°C at +25°C (±5.4°F at +77°F)

Standard Rack: ±3°C at +25°C (±5.4°F at +77°F)

Cold Junction Compensation

Sensor (used for TC measurements) ±2°C at +25°C (±3.6°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:
l This device may not cause harmful
interference.
l 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.