Bently Nevada Service Manual

2300/25-02

1. Description

Manufacturer : Bently Nevada

3. Product Information

Manufacturer : Bently Nevada

Product No. : 2300/25-02

Product type : Monitor with SPA Outputs

Made in U.S.A

Inputs

Power Input

DC Input 18~36 Vdc, max 7.5 W

Channel Types

ICP Accelerometers

Configurable

Bandpass filter

0.2 Hz to 20 kHz

Scale Factor

range

5 to 1000 mV/g

Full scale range 2 to 80 g peak

Current Sink

Source

3.3 mA ± 5%

Open Circuit

Voltage

-21 to -24 Vdc

Velocity

Configurable

Bandpass filter

0.2 Hz to 20 kHz

Scale Factor

range

5 to 1000 mV/in/s

Full scale range 0 to 50 in/s peak

Radial Vibration

Configurable

Bandpass filter

0.2 Hz to 20 kHz

Scale Factor

range

5 to 1000 mV/mil

Full scale range 0 to 160 mil peak-peak

Thrust Channel

Scale Factor

range

5 to 1000 mV/mil

Channel Types

Process Variable Channel

Support most of unit with default on

Temperature

Channel Hardware Specification

Configurable

Upper OK limit

-0.25 to -22 V (greater

than lower OK)

Configurable

Lower OK limit

-0.25 to -22 V (less than

upper OK)

Accuracy: ±1% of full scale range

Independent 24-bit ADCs on input channels

Supports Bently transducer or 2/3 wires

custom transducer for Accelerometers,

Velomitor and Proximitor.

Speed/Keyphasor

Keyphasor transducers support multiple events per revolution and event ratios for speed inputs up to 20 kHz.

Threshold voltage resolution

0.1 Vdc

Interfaces

Proximity Transducer Interface

Supply Voltage -22.8 to –25.2 Vdc

Maximum Rated Current

15 mA

Short Circuit Current

15.1 mA to 23.6 mA

Accuracy ±1% of full scale range

Input Impedance 3-wire Voltage Mode, 10 kΩ

RPM range 1 to 120,000

Proximity Switch Interface

Supply Voltage -10 to -24 Vdc

Interfaces

Lower Not Ok limit

-2.75 ±0.05 V

Rpm range 1 to 60,000

Other Inputs

Magnetic Pick up

Input voltage Adapt to sensor 284947 output

RPM range 200 to 120,000

Contact Inputs

Monitor provides 3 contact capabilities with input terminals

Configuration lock

Latched alarm/relay reset function

Monitor Bypass

Activate 0 to 10 kΩ

De-activate 150 kΩ to infinite

Button Inputs

External button to reset latched alarm and relay

One buried button provides 3 functions

I Display monitor information

I LCD contrast adjustment

I Reset settings to default

Display Monitor Information

Reset listed

settings to
Default
l User account name
l IP Address
l FW/HW version
Jumper Between COM & Chassis GND
Jumpers are 2-pin terminal interfaces that
connects COM to the Chassis ground (GND).
Alternatively, COM can be connected to an
earth ground separately through a terminal.
Outputs
Buffered Output
Three buffered
outputs are available
on the monitor
through BNC
connectors
2 Vibration Outputs
1 Speed Output
Relays
Relays provide two
dry-contact outputs
May be normally
energized or
de-energized
No output feedback
determination
Relay Circuit Specification in
Non-Hazardous Area
Type Single pole, double
throw
Sealing Epoxy sealed
Contact life 100,000 cycles @ 5
amps
250 Vac
200,000 @ 1 amp, 24
Vdc
Insulationresistance 1000 MΩ minimum @
500 Vdc
Relay closed contact
resistance
1 Ω maximum
Relay open contact
resistance
1 MΩ minimum
Maximum switched
contact voltage
250 Vac / 250 Vdc
Maximum breaking
contact current
6 A @250 Vac / 6 A
@24 Vdc
Maximum switched
power
1500VA AC / 150 Watts
DC
Relay Circuit Specification in
Hazardous Area
Maximum

switched
contact
voltage and
current
6 A @24 Vac / 5 A @ 30 Vac /
5.8 A @24 Vdc / 4 A @30 Vdc
SPA Output (2300/25)
Input signal
range
High AC: 8 Vpp Low AC: 1.6 Vpp
DC GAP: 0 to -20 Vdc (max
measurable AC signal is 1
Vpp).
Accuracy High/Low AC: ±1% of Full-Scale
at 100 Hz DC GAP: ±0.5 V
(measurable AC accuracy:
±20 mV)
Frequency
response
10 Hz to 3000 Hz ±5%
Relay Circuit Specification in
Hazardous Area
LEDs
OK Indicates when the monitor is
operating properly.
Protection
fault
Indicates hardware fault that
is impacting alarm
determination.
User inhibit Indicates the alarm/relays
have been intentionally
inhibited from operation.
Bypass Indicates user initiated bypass
action.
Relay status Indicates if relays have been
activated.
TX/RX Indicates the Ethernet status
and monitor communicating
with remote software.
SPEED/AUX
channel
status
Indicates the speed channel
has valid speed signal input
OR operating correctly when
AUX.
Channel Alarm Status
Alert LED Engages if any channel is in
alert state.
Danger LED Engages if any channel is in
danger state.
LCD Display
Allows viewing machine speed, vibration
measurements value, setpoints, and
configuration information.
Communications
Ethernet Ethernet, 10Base-T and
100Base-TX. Conforms to

IEEE802.3

RJ-45 for 10Base-T/100Base-TX

Ethernet cabling

Cable length: 100 meters (328 ft.)

maximum

Environmental Limits

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 Up to 95%, non-condensing

Vibration

Limitation

3 g

Battery Life for

Real Time

Clock

Powered: 38 years @ 50°C

(122°F)

Un-powered: 12 years @

50°C (122°F)

Trend Measurements:

Duration Intervals

Pre-Event Data 10 minutes 1 second

20 seconds 100

milliseconds

Post-Event Data 10 seconds 100

milliseconds

1 minute 1 second

Spectrums/Waveforms:

Duration Intervals

Pre-Event Data 2.5 minutes 10 seconds

Post-Event Data 1 minute 10 seconds

In the event of a network disruption

between the 2300 and System 1, the

2300 can store up to at least 5 alarm

data captures. (This requires System 1

Evolution 21.1 or newer and Firmware

release 3.2 or newer for 2300.)

Physical

Dimensions

(Width xDepth xHeight)

127 mm x 127 mm x 76.2 mm

(5 in. x 5 in. x 3 in.)

Weight 1.03 kg (2.26 lbs)

Mounting Panel mount or DIN rail

(adapter included)

2300/25-02: Monitor with SPA Outputs

(including DIN rail mount assembly, manual

and monitor configuration software)

A: Approvals Option

02 =Multiple Explosive Atmosphere Certifications(ATEX/IECEx/CSA)