Bently Nevada Service Manual

2300/20-02

1. Description

Manufacturer : Bently Nevada

3. Product Information

Manufacturer : Bently Nevada

Product No. : 2300/20-02

Product type : Vibration monitor

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
4-20mA Output (2300/20)
Two 4-20 mA outputs with internal current
loop power supply
4 to 20 mA output values are proportional to
the full-scale of the associated
measurement.
Software configuration may determine the
variable of each output. Voltage compliance:
0 to +12 Vdc range across load.
Load resistance: 0 to 600 Ω
Resolution: 0.3662 µA
Accuracy: 1% over operating temperature
range
Update rate: 100 ms
Configurable with default 2 mA clamp current
No output feedback determination
Caution: Two 4-20 mA outputs will
NOT work with an external powered
loop.
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)
2300/20-02: Monitor with 4-20 ma
Outputs
(including DIN rail mount assembly, manual

and monitor configuration software)

A: Approvals Option

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