Bently Nevada Service Manual

2300/20_KIT-003-00

1. Description

Manufacturer : Bently Nevada

3. Product Information

Manufacturer : Bently Nevada

Product No : 2300/20_KIT-003-00

Product type : 2300/20 Condition Monitoring System Kit

Configuration : 003

2 Sensors

1-2300/20 Monitor

1-6 ft. (1.8 m) shielded Ethernet cable

2-Accelerometer sensors (AM3100T2-Z2)

2-12 ft. (3.6 m) cables (9571) (Excluding Keyphasor sensor and 24 Vdc power supply

Approvals option : 00

Dimensions (HxWxD). approx : 7.62cm x 12.7cm x 12.7cm

Weight : 1.03 Kg

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
l Display monitor
information
l LCD contrast
adjustment
l 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)