Bently Nevada Service Manual

2300/20_KIT-002-00

1. Description

Manufacturer : Bently Nevada

3. Product Information

Manufacturer : Bently Nevada

Product No : 2300/20_KIT-002-00

Product type : 2300/20 Condition Monitoring System Kit

Configuration : 002

1 Sensor and 1 Housing

1-2300/20 or 2300/25 Monitor

1-6 ft. (1.8 m) shielded Ethernet

cable

1-Housing Kit: 105M6193-01

(fiberglass housing for

nonhazardous area) or

105M6193-03 (stainless steel

housing for hazardous area) 18.03x 15.04 x 6.3 in.

1-Accelerometer sensor

(AM3100T2-Z2)

1-17 ft. (5.2 m) cable (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)