# 2300/20 and 2300/25 2300 Vibration Monitors

# Datasheet

Bently Nevada Machinery Condition Monitoring

105M0340 Rev. AC



# Description

The 2300 Vibration Monitors provide cost-effective continuous vibration monitoring and protection capabilities for less critical and spared machinery. They are specifically designed to continuously monitor and protect essential medium to low criticality machinery in a wide range of industries including: oil & gas, power generation, water treatment, pulp and paper, manufacturing, mining, cement, and other industries.

The 2300 Vibration Monitors deliver vibration monitoring and high vibration level alarming. They include two channels of seismic or proximity measurement inputs from various accelerometer, Velomitor and Proximitor types, a speed input channel for time-synchronous measurements, and outputs for relay contacts. The 2300/20 monitor features a configurable 4-20 mA output which interfaces more points to a DCS. The 2300/25 monitor features System 1 Classic connectivity for Trendmaster SPA interface which enables users to leverage existing DSM SPA infrastructure.

The 2300 Vibration Monitors are designed for using on a broad range of machine trains or individual casings where the sensor point count fits the monitor's channel count and where advanced signal processing is desired.



# **Monitor Key Features**

#### 2300/20

- Two 4-20 mA outputs with internal current loop power supply.
- Continuous monitoring and protection
- Two acceleration/velocity/proximity inputs with synchronized sampling for advanced diagnostics.
- One dedicated speed channel supporting Proximity probes, Magnetic pickup and Proximity switch type sensors.
- Supports process variable on all three input channels.
- Key measurements (Acceleration pk, Acceleration rms, Velocity pk, Velocity rms, Displacement pp, Displacement rms, Speed) real-time provided with alarm configuration.
- Each channel has one measurement group, and can add additional two bandpass measurements and several nX measurements (depends on the device availability).
- LCD and LED for real time value and status display.
- Ethernet 10/100 Base-T communication for configuration using Bently Nevada Monitor Configuration software (Included) with RSA encryption.
- Local contacts for positive engagement of monitor bypass, configuration lockout, and latched alarm/relay reset.
- Two relay outputs with programmable setpoints.
- Three buffered transducer outputs (including Keyphasor signal) providing short circuit and EMI protection. Buffered outputs for each signal are through BNC connectors.
- Modbus over Ethernet.
- Alarm Data Capture



Caution: Two 4-20 mA outputs will **NOT** work with an external powered loop.

#### 2300/25

- Trendmaster SPA interface.
- Continuous monitoring and protection.
- Two Acceleration/Velocity/Proximity inputs with synchronized sampling for advanced diagnostics.
- One dedicated speed channel supporting Proximity probes, Magnetic pickup and Proixmity switch type sensor.
- Support process variable on all three input channels.
- Key measurements (Acceleration pk, Acceleration rms, Velocity pk, Velocity rms, Displacement pp, Displacement rms, Speed) real-time provided with alarm configuration.
- Each channel has one measurement group, and can add additional two bandpass measurements and several nX measurements (depends on the device availability).
- LCD and LED for real time value and status display.
- Ethernet 10/100 Base-T communication for configuration using Bently Nevada Monitor Configuration software (included) with RSA encryption.
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- Two relay outputs with programmable setpoints.
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- Modbus over Ethernet.
- Alarm Data Capture



# **Specifications**

# Inputs

| Power Input |                      |
|-------------|----------------------|
| DC Input    | 18~36 Vdc, max 7.5 W |

| Channel Types                   |                        |  |
|---------------------------------|------------------------|--|
| ICP Acceleromete                | rs                     |  |
| Configurable<br>Bandpass filter | 0.2 Hz to 20 kHz       |  |
| Scale Factor<br>range           | 5 to 1000 mV/g         |  |
| Full scale range                | 2 to 80 g peak         |  |
| Current Sink<br>Source          | 3.3 mA ± 5%            |  |
| Open Circuit<br>Voltage         | -21 to -24 Vdc         |  |
| Velocity                        |                        |  |
| Configurable<br>Bandpass filter | 0.2 Hz to 20 kHz       |  |
| Scale Factor<br>range           | 5 to 1000 mV/in/s      |  |
| Full scale range                | 0 to 50 in/s peak      |  |
| Radial Vibration                |                        |  |
| Configurable<br>Bandpass filter | 0.2 Hz to 20 kHz       |  |
| Scale Factor<br>range           | 5 to 1000 mV/mil       |  |
| Full scale range                | 0 to 160 mil peak-peak |  |
| Thrust Channel                  |                        |  |
| Scale Factor<br>range           | 5 to 1000 mV/mil       |  |

#### **Channel Types**

#### **Process Variable Channel**

# Support most of unit with default on Temperature

| Configurable   | -0.25 to -22 V (greater   |
|----------------|---------------------------|
| Upper OK limit | than lower OK)            |
| Configurable   | -0.25 to -22 V (less than |
| Lower OK limit | 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 0.1 Vdc resolution

| Interfaces                     |                            |  |
|--------------------------------|----------------------------|--|
| Proximity Transducer Interface |                            |  |
| Supply Voltage                 | -22.8 to -25.2 Vdc         |  |
| Maximum Rated<br>Current       | 15 mA                      |  |
| Short Circuit<br>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<br>limit | −2.75 ±0.05 V |  |
| Rpm range             | 1 to 60,000   |  |

| Other Inputs                                                                |                                                                                                                             |  |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--|
| Magnetic Pick                                                               | up                                                                                                                          |  |
| Input voltage                                                               | Adapt to sensor 284947<br>output                                                                                            |  |
| RPM range                                                                   | 200 to 120,000                                                                                                              |  |
| Contact Inputs                                                              |                                                                                                                             |  |
| Monitor<br>provides 3<br>contact<br>capabilities<br>with input<br>terminals | Configuration lock<br>Latched alarm/relay reset<br>function<br>Monitor Bypass                                               |  |
| Activate                                                                    | 0 to 10 kΩ                                                                                                                  |  |
| De-activate                                                                 | 150 k $\Omega$ to infinite                                                                                                  |  |
| Button Inputs                                                               |                                                                                                                             |  |
| External button to reset latched alarm and relay                            |                                                                                                                             |  |
| One buried<br>button<br>provides 3<br>functions                             | <ul> <li>Display monitor<br/>information</li> <li>LCD contrast<br/>adjustment</li> <li>Reset settings to default</li> </ul> |  |
| Display Monitor Information                                                 |                                                                                                                             |  |
| Reset listed<br>settings to<br><b>Default</b>                               | <ul><li>User account name</li><li>IP Address</li><li>FW/HW version</li></ul>                                                |  |
| Jumper Betwe                                                                | en 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<br>outputs are available<br>on the monitor<br>through BNC<br>connectors | 2 Vibration Outputs<br>1 Speed Output           |
| Relays                                                                                 |                                                 |
| Relays provide two<br>dry-contact outputs                                              | May be normally<br>energized or<br>de-energized |
|                                                                                        | No output feedback<br>determination             |

| Relay Circuit Specification in<br>Non-Hazardous Area |                                       |  |
|------------------------------------------------------|---------------------------------------|--|
| Туре                                                 | Single pole, double<br>throw          |  |
| Sealing                                              | Epoxy sealed                          |  |
| Contact life                                         | 100,000 cycles @ 5<br>amps<br>250 Vac |  |
|                                                      | 200,000 @ 1 amp, 24<br>Vdc            |  |
| Insulationresistance                                 | 1000 MΩ minimum @<br>500 Vdc          |  |
| Relay closed contact<br>resistance                   | 1Ω maximum                            |  |
| Relay open contact<br>resistance                     | 1MΩ minimum                           |  |
| Maximum switched<br>contact voltage                  | 250 Vac / 250 Vdc                     |  |
| Maximum breaking<br>contact current                  | 6 A @250 Vac / 6 A<br>@24 Vdc         |  |
| Maximum switched<br>power                            | 1500VA AC / 150 Watts<br>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  $\Omega$ 

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



### SPA Output (2300/25)

| Input signal<br>range | High AC: 8 Vpp Low AC: 1.6 Vpp<br>DC GAP: 0 to -20 Vdc (max<br>measurable AC signal is 1<br>Vpp). |
|-----------------------|---------------------------------------------------------------------------------------------------|
| Accuracy              | High/Low AC: ±1% of Full-Scale<br>at 100 Hz DC GAP: ±0.5 V<br>(measurable AC accuracy:<br>±20 mV) |
| Frequency<br>response | 10 Hz to 3000 Hz ±5%                                                                              |

| <b>Relay Circuit S</b> | pecification in |  |
|------------------------|-----------------|--|
| Hazardous Area         |                 |  |

| Indicates when the monitor is operating properly.                                                  |  |  |
|----------------------------------------------------------------------------------------------------|--|--|
| Indicates hardware fault that<br>is impacting alarm<br>determination.                              |  |  |
| Indicates the alarm/relays<br>have been intentionally<br>inhibited from operation.                 |  |  |
| Indicates user initiated bypass action.                                                            |  |  |
| Indicates if relays have been activated.                                                           |  |  |
| Indicates the Ethernet status and monitor communicating with remote software.                      |  |  |
| Indicates the speed channel<br>has valid speed signal input<br>OR operating correctly when<br>AUX. |  |  |
| Channel Alarm Status                                                                               |  |  |
| Engages if any channel is in alert state.                                                          |  |  |
| 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<br>100Base-TX. Conforms to<br>IEEE802.3<br>RJ-45 for 10Base-T/100Base-TX<br>Ethernet cabling<br>Cable length: 100 meters (328 ft.) |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | maximum                                                                                                                                                   |

# **Environmental Limits**

| Operating<br>Temperature               | -30°C to +65°C<br>(-22°F to +149°F)                                           |
|----------------------------------------|-------------------------------------------------------------------------------|
| Storage<br>Temperature                 | -40°C to +85°C<br>(-40°F to +185°F)                                           |
| Humidity                               | Up to 95%, non-condensing                                                     |
| Vibration<br>Limitation                | 3 g                                                                           |
| Battery Life for<br>Real Time<br>Clock | Powered: 38 years @ 50°C<br>(122°F)<br>Un-powered: 12 years @<br>50°C (122°F) |

# Physical

| Dimensions<br>(Width x<br>Depth x<br>Height) | 127 mm x 127 mm x 76.2 mm<br>(5 in. x 5 in. x 3 in.) |
|----------------------------------------------|------------------------------------------------------|
| Weight                                       | 1.03 kg (2.26 lbs)                                   |
| Mounting                                     | Panel mount or DIN rail<br>(adapter included)        |

# **System 1 Evolution Connectivity**

2300 monitors connect to System 1 Evolution and support current value and time-based data collection of all static values, waveforms, and spectral data. This includes System1 Software's full suite of plots and tools for condition monitoring and asset management.

When an alarm is triggered on the 2300 monitor, the following high-resolution alarm data is forwarded to System 1.

# **Trend Measurements:**

|                 | Duration   | Intervals           |
|-----------------|------------|---------------------|
| Pre-Event Data  | 10 minutes | l second            |
|                 | 20 seconds | 100<br>milliseconds |
| Post-Event Data | 10 seconds | 100<br>milliseconds |
|                 | 1 minute   | l 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.)



# **Compliance and Certifications**

### FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

### EMC

EN 61000-6-2:2005

EN 61000-6-4: 2007 +A1

EN 61326-1: 2013

EN 61326-2-3: 2013

EMC Directive 2014/30/EU

### **Electrical Safety**

EN 61010-1: 2010

LV Directive 2014/35/EU

### ATEX

EN 60079-0: 2012/A11:2013

EN 60079-11: 2012

EN60079-15: 2010

EN60079-7: 2015

ATEX Directive 2014/34/EU

### **RoHS**

RoHS Directive 2011/65/EU

# India-Battery EPR Marking

GE Oil & Gas India Private Limited

EPR Certificate No.: 1.1595372902047E+20

# **Hazardous Area Approvals**

For the detailed listing of country and product-specific approvals, refer to the Approvals Quick Reference Guide (108M1756).

For additional technical documentation, please log in to <u>bntechsupport.com</u> and access the Bently Nevada Media Library.

#### **cNRTLus**

Class I, Division 2/ Zone 2

AEx nA nC [ic] IIC T4 Gc Class I, Division 2, Groups A, B, C, and D; T4

# ATEX/IECEx

#### 2300/20



II 3 G Ex na nC [ic] IIC T4 Gc Ex ec nC [ic] IIC T4 Gc

T4 @ Ta = -30°C to +65°C

#### 2300/25



II 3 G Ex na nC ic [ic] IIC T4 Gc Ex ec nC ic [ic] IIC T4 Gc

T4 @ Ta = -30°C to +65°C



| Ordering  | Information |
|-----------|-------------|
| Underling |             |
|           |             |



For the detailed listing of country and product-specific approvals, refer to the *Approvals Quick Reference Guide* (108M1756).

For additional technical documentation, please log in to <u>bntechsupport.com</u> and access the Bently Nevada Media Library.

# 2300 Series Vibration Monitor

#### 2300/20-AA: Monitor with 4-20 ma Outputs

(including DIN rail mount assembly, manual and monitor configuration software)

#### **A: Approvals Option**

| 00 | None                                                            |
|----|-----------------------------------------------------------------|
| 02 | Multiple Explosive Atmosphere<br>Certifications(ATEX/IECEx/CSA) |

## 2300/25-AA: Monitor with SPA Outputs

(including DIN rail mount assembly, manual and monitor configuration software)

#### **A: Approvals Option**

| 00 | None                                                             |
|----|------------------------------------------------------------------|
| 02 | Multiple Explosive Atmosphere<br>Certifications (ATEX/IECEx/CSA) |

### 2300/20 KIT-AAA-BB

Bently Nevada 2300/20 Condition Monitoring System Kit

#### A: Configuration

| 001 | 2 Sensors and 1 Housing                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | <ul> <li>1-2300/20 Monitor</li> <li>1-6 ft. (1.8 m) shielded Ethernet cable</li> <li>1-Housing Kit: 105M6193-01 (fiberglass housing for nonhazardous area) or 105M6193-03 (stainless steel housing for hazardous area) 18.03 x 15.04 x 6.3 in.</li> <li>2-Accelerometer sensors (AM3100T2-Z2)</li> <li>2-17 ft. (5.2 m) cables (9571)</li> <li>(Excluding Keyphasor sensor and 24 Vdc power supply1)</li> </ul>          |
| 002 | 1 Sensor and 1 Housing                                                                                                                                                                                                                                                                                                                                                                                                   |
|     | <ul> <li>1-2300/20 or 2300/25 Monitor</li> <li>1-6 ft. (1.8 m) shielded Ethernet cable</li> <li>1-Housing Kit: 105M6193-01 (fiberglass housing for nonhazardous area) or 105M6193-03 (stainless steel housing for hazardous area) 18.03 x 15.04 x 6.3 in.</li> <li>1-Accelerometer sensor (AM3100T2-Z2)</li> <li>1-17 ft. (5.2 m) cable (9571)</li> <li>(Excluding Keyphasor sensor and 24 Vdc power supply1)</li> </ul> |
| 003 | 2 Sensors                                                                                                                                                                                                                                                                                                                                                                                                                |
|     | <ul> <li>1-2300/20 Monitor</li> <li>1-6 ft. (1.8 m) shielded Ethernet cable</li> <li>2-Accelerometer sensors (AM3100T2-Z2)</li> </ul>                                                                                                                                                                                                                                                                                    |

• (Excluding Keyphasor sensor and 24 Vdc power supplyl)

• 2-12 ft. (3.6 m) cables (9571)



| 004     | 2 Velomitors and 1 Housing                                                                                                                                                                                                                                                                                                                                                           |                                                                                                    | details in the Accessories section to                                                                                                                                                                                                                                                                                                                       |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | <ul> <li>1-2300/20 Monitor</li> <li>1-6 ft. (1.8 m) shielded Ethernet cable</li> <li>1-Housing Kit: 105M6193-01 (fiberglass housing for nonhazardous area) or 105M6193-03 (stainless steel housing for hazardous area) 18.03 x 15.04 x 6.3 in</li> </ul>                                                                                                                             | 2300/25 KIT-AAA-BB<br>Bently Nevada 2300/25 Condition Monitoring<br>System Kit<br>A: Configuration |                                                                                                                                                                                                                                                                                                                                                             |
|         | <ul> <li>2-Velomitor sensors (330500)</li> <li>2-17 ft. (5.2 m) cable (9571)</li> <li>(Excluding Keyphasor sensor and 24 Vdc power supply1)</li> </ul>                                                                                                                                                                                                                               | 001                                                                                                | <ul> <li>2 Sensors and 1 Housing</li> <li>1-2300/25 Monitor</li> <li>1-6 ft. (1.8 m) shielded Ethernet</li> </ul>                                                                                                                                                                                                                                           |
| 005     | <ul> <li>1 Velomitor and 1 Housing <ul> <li>1-2300/20 Monitor</li> <li>1-6 ft. (1.8 m) shielded Ethernet cable</li> <li>1-Housing Kit: 105M6193-01 (fiberglass housing for nonhazardous area) or 105M6193-03 (stainless steel housing for hazardous area) 18.03 x 15.04 x 6.3 in.</li> <li>1-Velomitor sensor (330500)</li> <li>1-17 ft. (5.2 m) cable (9571)</li> </ul> </li> </ul> |                                                                                                    | <ul> <li>1-Housing Kit: 105M6193-01<br/>(fiberglass housing for<br/>nonhazardous area) or<br/>105M6193-03 (stainless steel<br/>housing for hazardous area)<br/>18.03 x 15.04 x 6.3 in.</li> <li>2-Accelerometer sensors<br/>(200350)</li> <li>2-17 ft. (5.2 m) cables (9571)</li> <li>(Excluding Keyphasor sensor<br/>and 24 Vdc power supply 1)</li> </ul> |
|         | <ul> <li>(Excluding Keyphasor sensor and<br/>24 Vdc power supply))</li> </ul>                                                                                                                                                                                                                                                                                                        | 002                                                                                                | 1 Sensor and 1 Housing                                                                                                                                                                                                                                                                                                                                      |
| 006     | <ul> <li>2 Velomitors</li> <li>1-2300/20 Monitor</li> <li>1-6 ft. (1.8 m) shielded Ethernet cable</li> <li>2-Velomitor sensors (330500)</li> <li>2-12 ft. (3.6 m) cable (9571)</li> <li>(Excluding Keyphasor sensor and 24 Vdc power supply1)</li> </ul>                                                                                                                             |                                                                                                    | <ul> <li>1-2300/25 Monitor</li> <li>1-6 ft. (1.8 m) shielded Ethernet cable</li> <li>1-Housing Kit: 105M6193-01 (fiberglass housing for nonhazardous area) or 105M6193-03 (stainless steel housing for hazardous area) 18.03 x 15.04 x 6.3 in.</li> </ul>                                                                                                   |
| B: Appr | rovals Options                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                    | 1-Accelerometer sensor     (200250)                                                                                                                                                                                                                                                                                                                         |
| 00      | None                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                    | • 1-17 ft. (5.2 m) cable (9571)                                                                                                                                                                                                                                                                                                                             |
| 02      | Multiple Explosive Atmosphere<br>Certifications (ATEX/IECEx/CSA                                                                                                                                                                                                                                                                                                                      |                                                                                                    | <ul> <li>(Excluding Keyphasor sensor<br/>and 24 Vdc power supply<sup>1</sup>)</li> </ul>                                                                                                                                                                                                                                                                    |
|         | <sup>1</sup> Three kinds of power supplies<br>provide different temperature and<br>power ranges. Verify the necessary                                                                                                                                                                                                                                                                |                                                                                                    |                                                                                                                                                                                                                                                                                                                                                             |



| 003 | 2 Sensors                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | <ul> <li>1-2300/25 Monitor</li> <li>1-6 ft. (1.8 m) shielded Ethernet cable</li> <li>2-Accelerometer sensors (200350)</li> <li>2-12 ft. (3.6 m) cables (9571)</li> <li>(Excluding Keyphasor sensor and 24 Vdc power supply<sup>1</sup>)</li> </ul>                                                                                                                                                              |
| 004 | 2 Velomitors and 1 Housing                                                                                                                                                                                                                                                                                                                                                                                      |
|     | <ul> <li>1-2300/25 Monitor</li> <li>1-6 ft. (1.8 m) shielded Ethernet cable</li> <li>1-Housing Kit: 105M6193-01 (fiberglass housing for nonhazardous area) or 105M6193-03 (stainless steel housing for hazardous area) 18.03 x 15.04 x 6.3 in.</li> <li>2-Velomitor sensors (330500)</li> <li>2-17 ft. (5.2 m) cable (9571)</li> <li>(Excluding Keyphasor sensor and 24VDC power supply<sup>1</sup>)</li> </ul> |
| 005 | 1 Velomitor and 1 Housing                                                                                                                                                                                                                                                                                                                                                                                       |
|     | <ul> <li>1-2300/25 Monitor</li> <li>1-6 ft. (1.8 m) shielded Ethernet cable</li> <li>1-Housing Kit: 105M6193-01 (fiberglass housing for nonhazardous area) or 105M6193-03 (stainless steel housing for hazardous area) 18.03 x 15.04 x 6.3 in.</li> <li>1-Velomitor sensor (330500)</li> <li>1-17 ft. (5.2 m) cable (9571)</li> <li>(Excluding Keyphasor sensor and 24 Vdc power supply<sup>1</sup>)</li> </ul> |

| 006 | 2 Velomitors                                                                                                                                                                                                                                 |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | <ul> <li>1-2300/25 Monitor</li> <li>1-6 ft. (1.8 m) shielded Ethernet cable</li> <li>2-Velomitor sensors (330500)</li> <li>2-12 ft. (3.6 m) cable (9571)</li> <li>(Excluding Keyphasor sensor and 24VDC power supply<sup>1</sup>)</li> </ul> |

# **B: Approvals Option**

| <b>00</b> None                                                         |                                                                                                                                                             |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>02</b> Multiple Explosive Atmosphere Certifications (ATEX/IECEx/CSA |                                                                                                                                                             |
| I<br>A<br>F<br>C<br>F                                                  | Three kinds of power supplies<br>provide different temperature and<br>power ranges. Verify the necessary<br>details in the Accessories section to<br>ollow. |



## System 1 Software

2300/20 can interface to System 1 V16.2 or higher for expanded condition monitoring and analysis. System 1 software and the 2300 device connectivity (P/N 3071/13) are sold separately. Refer to document 108M5214 for System 1 detailed information.

### 3071/13-AA-BB

System 1 2300 Series Device Import

#### A: Not available for 2300 monitor

00

#### B: Quantity of 2300 Monitoring Systems

## Numeric [1->n]

# Accessories

| 110M7102-01     | Power supply for DIN rail<br>mounting, 100/240 AC to<br>24 DC/1.3 A<br>Certifications (CID2 by UL)<br>(-25°C ~70°C,<br>22.5 x 99 x 107 mm) (One power<br>can drive max 4 monitors.)         |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 106M6694-<br>01 | Power supply for DIN rail<br>mounting, 110/220AC to<br>24VDC/5A<br>Certifications (ATEX, IECEx, CID2<br>by UL) (-40°C ~70°C,<br>40 x 130 x 12 mm) (One power<br>can drive max 10 monitors.) |
| 106M7607-<br>01 | Power supply for DIN rail<br>mounting, 100/240AC to<br>24DC/2.5A<br>Certifications (ATEX) (-25°C<br>~70°C, 40 x 99 x 114 mm) (One<br>power can drive max 6<br>monitors.)                    |

| 105M6193-01     | Fiberglass NEMA 4X/IP66<br>weatherproof housing with<br>window in door (includes<br>mounting plate for monitor) |
|-----------------|-----------------------------------------------------------------------------------------------------------------|
| 105M6193-<br>02 | Stainless Steel Housing for 2300<br>KIT (can only be used in non-<br>hazardous area)                            |
| 105M6193-<br>03 | Stainless Steel Housing for 2300<br>KIT (can be used in hazardous<br>area)                                      |



# **Proximity Transducer System**

Refer to the following proximity transducer system datasheets for details.

| 172036 | 3300 5mm     |
|--------|--------------|
| 141194 | 3300 XL 8mm  |
| 146256 | 3300 XL 11mm |
| 147385 | 3300 XL NSV  |

| 02120015 | Bulk Cable from Proximity sensor to monitor (500 ft.) |
|----------|-------------------------------------------------------|
|          |                                                       |

9571-AA2

Low cost cable for accelerometer

#### A: From "02" to "99" Increments of 1.0 foot

| INCREMENTS OF 1.0 FOOT |    |
|------------------------|----|
| EXAMPLE: 12 = 12 FEET  |    |
| 2 5 = 25 FEET          |    |
| MIN LENGTH = 2.0 FEET  |    |
| MAX LENGTH = 99 FEET   | ~~ |

| 84661-AA2 | Armored cable for 2 -wire transducer |
|-----------|--------------------------------------|
|           |                                      |

A: From "03" to "99" Increments of 1.0 foot

|                       | INCREMENTS OF 1.0 FOOT |
|-----------------------|------------------------|
|                       | EXAMPLE: 1 2 = 12 FEET |
|                       | 2 5 = 25 FEET          |
| MIN LENGTH = 3.0 FEET |                        |
|                       | MAX LENGTH = 99 FEET   |
|                       |                        |



The CB2W100 cable is not recommended for use with the 200350 Accelerometer. The O-ring will not form a proper seal with the accelerometer.

#### A: Cable Length

| 015 | 15 ft. (4.8 m)   |  |
|-----|------------------|--|
| 032 | 32 ft. (9.8 m)   |  |
| 064 | 64 ft. (19.5 m)  |  |
| 112 | 112 ft. (34.1 m) |  |
| 125 | 125 ft. (38.1 m) |  |
| 150 | 150 ft. (45.7 m) |  |
| 200 | 200 ft. (61.0 m) |  |
| 250 | 250 ft. (76.2 m) |  |

<sup>2</sup> Cable lengths greater than 30 meters (100 feet) will experience some attenuation of amplitudes at higher frequencies when using the AM3100T2-Z2 Accelerometer.

# Splash Proof Cable for 2-wire transducer

#### 9571 Mod : 285031-AA2

Cable for 2-wire extension with Splash Proof Connection. This cable assembly provides an equivalent IP66 level of protection.

| A: Cable Lengths |                 |
|------------------|-----------------|
| 16               | 16 ft. (4.8 m)  |
| 32               | 32 ft. (9.8 m)  |
| 64               | 64 ft. (19.5 m) |





For conducted RF performance, metal conduit with both ends grounded is required for Proximitor 3300-NSV cables and Accelerometer 330400 cable.

<sup>2</sup> Cable lengths greater than 30 meters (100 feet) will experience some attenuation of amplitudes at higher frequencies when using the AM3100T2-Z2 Accelerometer.

| 286244 | Magnetic mounting base ¼-28<br>threaded hole |
|--------|----------------------------------------------|
|        |                                              |

# **Ethernet Cables**

#### 138131-AAA

Standard 10 Base-T/100 Base-TX Shielded Category 5 Cable with RJ-45 connectors (solid conductor)

#### A: Cable Length

| V   |                  |
|-----|------------------|
| 006 | 6 ft. (1.8 m)    |
| 010 | 0 10 ft. (3.0 m) |
| 025 | 25 ft. (7.6 m)   |
| 040 | 40 ft. (12.2 m)  |
| 050 | 50 ft. (15.2 m)  |
| 075 | 75 ft. (22.9 m)  |
| 085 | 85 ft. (25.9 m)  |
| 100 | 100 ft. (30.5 m) |
|     |                  |

### Spares

| 105M6203-01 | 35mm DIN rail mount and screws (included with 2300/20 monitor) |
|-------------|----------------------------------------------------------------|
| 106M3210    | 10-pin 4-20mA output<br>connector                              |

| 105M0340 Rev. AC |
|------------------|
|------------------|

| 106M2223 | 5-pin contact input connector<br>(Alarm Reset)                |
|----------|---------------------------------------------------------------|
| 106M3408 | 5-pin contact input connector<br>(Alarm Inhibit, Config lock) |
| 106M3211 | 16-pin transducer input connector                             |
| 106M3212 | 6-pin relay output connector                                  |
| 106M2231 | 3-pin power input connector                                   |

### Accessories

| 02120015             | Bulk Cable from Proximity sensor to monitor (500 ft.)                                                                                                                   |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9571-AA <sup>2</sup> | Low cost cable for 2-wire transducer                                                                                                                                    |
| 2 n<br>s<br>h<br>A   | Cable lengths greater than 30<br>neters (100 feet) will experience<br>ome attenuation of amplitudes at<br>igher frequencies when using the<br>M3100T2-Z2 Accelerometer. |

### Software

| 100M9465- | BN Monitor Configuration                                                                                                                             |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 01        | SW/FW DVD                                                                                                                                            |
|           | <ul> <li>BNMC version 5.2 or<br/>greater</li> <li>2300 series monitor<br/>firmware</li> <li>(DVD includes 2300<br/>Series Software Guide)</li> </ul> |

# **Additional Information**

- 2300 Series Operation and Maintenance Manual (Document 105M0341)
- 2300 Field Wiring Diagram (Document 106M5801)
- 2300 Series Software Guide (Document 107M7626)
- 2300 Series Monitor Installation Guide (Document 121M3029)



# **Graphs and Figures**



Figure 1: 105M6193-03 Weatherproof Housing











Figure 3: 200350 Accelerometer Sensor





Figure 4: AM3100T2-Z2 Accelerometer Sensor



Figure 5: 330400/330425 Accelerometer Sensor

















#### Figure 8: 330525 Velomitor



Figure 9: 190501 Velomitor





#### Figure 10: 100M0741 Proximity Switch



#### Figure 11: 284947 Magnetic Pickup



2300/20 and 2300/25 2300 Vibration Monitors Datasheet

105M0340 Rev. AC



Figure 12: 2300 Series Monitor Recommended Clearance



# Wiring Diagram



## Figure 13: 2300/20 Wiring Diagram

2300/20 and 2300/25 use the same interface connector for recorder output or SPA output.







2300/20 and 2300/25 use the same interface connector for recorder output or SPA output.



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