Description

The Condition Monitoring Module (CMM) listens to all information within the system, including all measurements, waveforms, digital transducer signals, system controls, status information, system configuration information, process data from external systems, and alarm and events logs. It only listens, with no capability to write, allowing interface to System 1 over the business networks, with no risk to the protection system.

Each module occupies two slots within the system. Placing multiple CMM modules allows the connection of two independent System 1 clients to the Orbit 60 System. Data is transferred to System 1 continuously, but in the event the connection is lost, non-volatile storage buffers historical data until the information is off-loaded to the host software. System 1 can configure the CMM module to extract additional measurements and waveforms from system sensor data. Without System 1, the customer can use the CMM module to collect data to diagnose machinery issues when an alarm event occurs in the hardware.

Each module has two independently configurable RJ-45 Ethernet ports. OK LEDs indicate proper operation and LINK LEDs show good communication to the system.
## Condition Monitoring Module (CMM)

### Power Consumption
- **Maximum**: 14.2 W
- **Typical**: 10.5 W

### Data Communications
- **2 Ethernet ports - utility or rear side**: Independent Ethernet ports 1000/100/10 Base-T Auto-negotiation
- **Connector**: RJ-45
- **Cable Length**: 100 meters (328 feet) max

### LEDs
- **Module OK LED**: Indicates when the module is functioning properly
- **LINK LED**: Indicates when the module is communicating to the rest of the system

### Physical
- **Required Rack Space**: 2 Slots

## Environmental Limits

### Chassis Operating Temperature Range
- **3U Chassis**: -30°C to +70°C (-22°F to 158°F)
- **6U Chassis**: -30°C to +65°C (-22°F to 149°F)

### Module Temperature Rating - Certification
- **-30°C to +70°C (-22°F to 158°F)**

**You must still meet the Chassis Operating Temperature Range defined above.**

### Storage Temperature Range
- **-40°C to +85°C (-40°F to 185°F)**

### Relative Humidity
- **0% to 95% rH non-condensing operating and storage**

### Vibration
- **Without Isolators**: 0 g to 0.35 g @ 57–500 Hz
- **With Isolators**: 0 g to 5 g @ 57–500 Hz

### Shock
- **2” Incline Drop**

### Altitude
- **< 2000 m (6,562 ft)**

**Higher altitudes are possible but are site specific applications. Contact Bently Nevada support if you require higher altitudes.**

### Pollution Degree
- **Pollution Degree 2**

### Installation Category
- **Category II**
Verify that temperature ratings on the wiring cables match the operating temperature range.

CAUTION

LOCATION TEMPERATURE AND HUMIDITY

If you install the hardware in a location where temperatures may exceed 40°C (104°F) or in excessive humidity, you should consider supplying environmental controls. High temperatures will reduce the operational life of the system.
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
European Community Directive:
EMC Directive 2014/30/EU
Standards:
EN 61000-6-2; Immunity for Industrial Environments
EN 61000-6-4; Emissions for Industrial Environments

Electrical Safety
European Community Directive:
LV Directive 2014/35/EU
Standards:
EN 61010-1;
EN 61010-2-201;

RoHS
European Community Directive:
RoHS Directive 2011/65/EU

Cyber Security
Designed to meet IEC 62443-4-2

*Maritime
ABS Rules for Condition of Classification, Part 1
- Steel Vessels Rules
- Offshore Units and Structures
  * Approvals pending

Functional Safety
This component is non-interfering with the safety system. The system SIL 2 certification does not require this component be SIL certified.

Hazardous Area Approvals

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

cNRTLus
Class I, Zone 2: AEx/Ex ec nC IIC T4 Gc;
Class I, Zone 2: AEx/Ex nA nC IIC T4 Gc;
Class I, Division 2, Groups A, B, C, D T4;
Class I, Division 2, Groups A, B, C, D T4 (N.I.);
T4 @ Ta= -30°C to +70°C (-22°F to +158°F)

ATEX/IECEX
Ex nA IIC T4 Gc
Ex ec nC IIC T4 Gc
T4 @ Ta= -30°C to +70°C (-22°F to +158°F)
Ordering Information


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

Condition Monitoring Module

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<th>Ordering Option</th>
<th>Description</th>
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AAA – Hazardous Area Certifications

| 00   | No Hazardous Area               |
| 01   | CSA/NRTL/C (Class I, Div 2)     |
| 02   | Multi (CSA, ATEX, IECEx)        |
| XXX  | Country Specific Approvals      |

B – SIL Level

| 0    | No SIL                         |
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