

ORBIT 60 SERIES

Bridge Module

Datasheet

Bently Nevada Machinery Condition Monitoring

177M4869 Rev. -



Description

The Bridge Module (BRG) connects two Orbit 60 Chassis together by connecting the bridge of one chassis to the bridge on another chassis forming a single Orbit 60 system. Two bridges can be installed in each chassis to provide redundant capability. A maximum of two chassis can be bridged together in a single Orbit 60 system. All data from both chassis is available across the bridge links.

Redundant bridging is supported if a second bridge module is installed in each chassis. Failure of one bridge module, or the connection between modules, forces an automatic transition to the redundant pair of bridges to continue communication.

The bridge module can extending the physical size and reach of an Orbit 60 system via a single mode, OS1 or OS2, Fiber Optic Link up to 2000 m long. A total of 6 dB of attenuation can exist between the ends of the fiber connection. This allows for multiple patch panel connections and fiber repairs without an impact to system communication.



The module OK LEDs indicate when the module is functioning properly, and the LINK LED indicates when the module is communicating with the rest of its chassis. The Bridge Link LED indicates the communication status of the bridge-to-bridge connection.

There are no limitations on where different types of modules may be installed in bridged systems. For systems offering protection, bridge modules and their connections are included in the protection path. Any bridge module faults result in Protection Fault indications to the user.





Bridge


Bridge Module (BRG)	
Communications	
1 Fiber Optic Port for Bridge-to-Bridge Connection	10 Gbps – Single Mode, OS1/OS2 fiber required
Connector	LC Duplex
Supported Connections	Bridge-to-Bridge ONLY, proprietary protocol
Cable Length	2,000 meters (6,560 feet) max
Maximum Cable Signal Attenuation	6 db max
Bridge Modules LED Indicators	
Module OK LED	Indicates the operational status of the module.
Link LED	Indicates communication status for the module to the rest of its chassis
Bridge LED (Utility Side)	Indicates bridge-to-bridge connection status.
Physical Characteristics	
Required Rack Space	1 Slot
Power Consumption	
Typical	8.7 Watts
Maximum	11.3 Watts

Environmental Limits	
Chassis Operating Temperature Range (indoor use only)	3U Chassis: -30°C to +70°C (-22°F to 158°F) 
Module Temperature Rating Certification	-30°C to +70°C (-22°F to 158°F) <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> When using a Bridge module, temperatures over 58°C (136°F) require forced air convection with a minimum airspeed of 0.5 m/s.</div>
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


Environmental Limits

Altitude	< 2000 m (6,562 ft)
	 <p>Higher altitudes are possible but are site specific applications. Contact Bently Nevada support if you require higher altitudes.</p>
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

While the system has been tested and capable of achieving the design life when operating in environments up to 70°C, whenever operating any electronics system in elevated humidity or temperatures exceeding 40°C, adding environmental controls maximizes 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

SIL 2

See the SIL User Guide (134M0398) for details regarding SIL implementation.

* Approvals pending

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 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



II 3 G
Ex ec nC IIC T4 Gc
Ex nA nC IIC T4 Gc

T4 @ Ta= -30°C to +70°C (-22°F to +158°F)

Ordering Information



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 bntechsupport.com and access the Bently Nevada Media Library.

Bridge Module

Ordering Option	Description
60R/BRG01-AAA-B • Bridge	
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
2	SIL 2

Industrial Bridge Fiber Cables

Ordering Option	Description
60X/BIC01-AA	
AA – Cable Length	
02	2 meters
03	3 meters
06	6 meters

Copyright 2023 Baker Hughes Company. All rights reserved.



Bentley Nevada and Orbit Logo are registered trademarks of Bentley Nevada, a Baker Hughes business, in the United States and other countries. The Baker Hughes logo is a trademark of Baker Hughes Company. All other product and company names are trademarks of their respective holders. Use of the trademarks does not imply any affiliation with or endorsement by the respective holders.

Baker Hughes provides this information on an "as is" basis for general information purposes. Baker Hughes does not make any representation as to the accuracy or completeness of the information and makes no warranties of any kind, specific, implied or oral, to the fullest extent permissible by law, including those of merchantability and fitness for a particular purpose or use. Baker Hughes hereby disclaims any and all liability for any direct, indirect, consequential or special damages, claims for lost profits, or third party claims arising from the use of the information, whether a claim is asserted in contract, tort, or otherwise. Baker Hughes reserves the right to make changes in specifications and features shown herein, or discontinue the product described at any time without notice or obligation. Contact your Baker Hughes representative for the most current information.

The information contained in this document is the property of Baker Hughes and its affiliates; and is subject to change without prior notice. It is being supplied as a service to our customers and may not be altered or its content repackaged without the express written consent of Baker Hughes. This product or associated products may be covered by one or more patents. See [Bentley.com/legal](https://www.bentley.com/legal).

1631 Bentley Parkway South, Minden, Nevada USA 89423
Phone: 1.775.782.3611 (US) or [Bentley.com/support](https://www.bentley.com/support)
[Bentley.com](https://www.bentley.com)