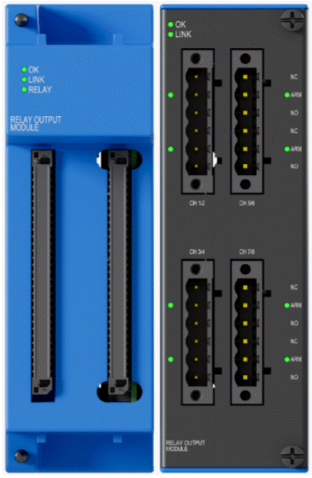
ORBIT 60 SERIES
Relay Modules
Datasheet

Bently Nevada Machinery Condition Monitoring

137M0699 Rev. -



Description

Relay modules provide a set of relays that you can program to actuate based on alarm conditions defined in other modules. They are programmable with standard logic elements(True AND, Normal AND, OR and NOT) to combine various alarms and statuses(alarm statuses, OK statuses and other statuses (Bypass, Protection State, Test Mode, Inhibit, Attention, Protection Fault, etc.)) into relay activation conditions. Use Orbit Studio to program the voting logic.

You can also program relays to operate as a system or group protection fault relay, especially when the protection fault relay on the SIM does not provide adequate granularity of system health - typically for multiple machines in one system.

Pairs of relays within the module function as a single Double-Pole, Double-Throw relay when appropriately configured. All relay types are available for SIL system implementation.

Electromechanical Relay (EMR)

This relay drives a load directly, or through, an interposing relay. This module takes two slots. It features **8 Epoxy Sealed, Single-Pole Double-Throw Electromechanical Relays.** This module supports an AC voltage range of 5-250 Vac for loads of 100 mA to 4 A. The module also supports DC voltages and loads of 5-30 Vdc at 4 A.

Solid State Relay (SSR)

This relay connects to an external system's discrete input for low current communication. It occupies a single slot and features **8 Solid-State Relays.** This module supports secondary voltages up to 125 Vdc and loads of 0.1-125 mA.

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Electromagnetic Relay (EMR)

Electromagnetic Relay (EMR)	
Characteristics	
Type	Electromechanical Single-Pole, Double-Throw
Number of Relay Outputs	8
Environmental	Epoxy Sealed
Arc Suppressor	250 Vrms, installed standard
Contact Life	100,000 cycles @ 5 A, 24 Vdc or 240 Vac
Operation	Each relay is configurable for Normally De-Energized or Normally Energized
Contact Rating for Standard Systems	
Minimum Switched Current	100 mA
DC Maximum Switched Current	4 A @ 30 Vdc
DC Maximum Switched Voltage	30 Vdc
AC Maximum Switched Voltage	250 Vrms
AC Maximum Switched Current	4 A
Maximum Switched Power	180 W or 1800 VA
Contact Rating for Hazardous Area Systems	
Maximum Switched Current	4 A
DC Maximum Switched Voltage	30 Vdc
AC Maximum Switched Voltage	160 Vrms

Solid State Relay (SSR)

Solid State Relay (SSR)	
Characteristics	
Type	Solid State Single-Pole, Double-Throw
Number of Relay Outputs	8
Environmental	Plastic Encapsulated
Arc Suppressor	150 Vdc, installed standard
Contact Life	100,000 cycles @4.5 A, 30 VDC or 240 AC
Operation	Each relay is configurable for Normally De-Energized or Normally Energized
Contact Rating for Standard Systems	
Minimum Switched Current	1 mA
DC Maximum Switched Current	125 mA @ 125 Vdc
DC Maximum Switched Voltage	125 Vdc
Maximum Switched Power	650 mW
Contact Rating for Hazardous Area Systems	
Maximum Switched Current	125 mA
DC Maximum Switched Voltage	50 Vdc

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

Maritime*

ABS Rules for Condition of Classification, Part 1

- Steel Vessels Rules
- Offshore Units and Structures

Functional Safety*

SIL 2

* Approvals pending

Hazardous Area Approvals

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

CSA/NRTL/C

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 +65˚C (-22˚F to +149˚F)

ATEX/IECEx

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

T4 @ Ta= -30˚C to +65˚C (-22˚F to +149˚F)

Ordering Information

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

Electromechanical Relay Module

Ordering Option	Description
60R/RLY01-AAA-BB	
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
BB – SIL Level	
00	No SIL
02	SIL 2

Solid State Relay Module

Ordering Option	Description
60R/RLY02-AAA-BB	
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
BB – SIL Level	
00	No SIL
02	SIL 2

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