

3500/33 16-Channel Relay Module

Datasheet

Cordant™

162301 Rev. AC



Description

The Bently Nevada™ 3500/33 16-Channel Relay Module is a full-height module that provides 16 relay outputs. You can place any number of 16-channel relay modules in any of the slots to the right of the Transient Data Interface (TDI) Module.

Each output of the 3500/33 16-Channel Relay Module can be independently programmed to perform voting logic.

Each relay of the module includes Alarm Drive Logic. Programming for the Alarm Drive Logic uses AND and OR logic and may use the following:

- Alarming inputs (alert and danger statuses)
- Not-OK
- Individual Measured Variables from any monitor channel or any combination of monitor channels in the rack

You can program the Alarm Drive using the 3500 Rack Configuration Software.



Specifications

Inputs

Power Consumption	5.8 watts typical
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Outputs

Front Panel LEDs	
OK LED	Illuminated when the 3500/33 16-Channel Relay Module is operating properly.
TX/RX LED	Transmit and receive flashes when the 3500/33 16-Channel Relay Module is communicating with other modules in the 3500 rack.
CH Alarm LED	Illuminated when Relay channel is in an alarm state.
Relay Type	Single-pole Double-throw (SPDT)
Relay Environmental Sealing	Epoxy-sealed
Relay Arc Suppressor	250 Vrms Installed as standard
Relay Contact Life	10,000 cycles
Relay Operation	Four groups of four channels are switch selectable for Normally De-energized (ND) or Normally Energized (NE) operation.

Physical

Main Module	
Dimensions (height x width x depth)	241 mm x 24.4 mm x 242 mm (9.50 in x 0.96 in x 9.52 in)
Weight	0.7 kg (1.6 lb)
I/O Module	
Dimensions (height x width x depth)	241 mm x 24.4 mm x 99.1 mm (9.50 in x 0.96 in x 3.90 in)
Weight	0.4 kg (1.0 lb)

Rack Space Requirements

Main Module	1 full-height front slot
I/O Modules	1 full-height rear slot

Contact Ratings for Standard Systems

Standard Relays

Min Switched Current	100 mA @ 5 Vdc
DC Specifications (Resistive Load)	
Max Switched Current	5 A
Max Switched Power	70 W @ 24 Vdc 10 W @ 48 Vdc 9 W @ 60 Vdc
Max Switched Voltage	125 Vdc
AC Specifications (Resistive Load)	
Max Switched Current	5 A
Max Switched Power	1200 VA
Max Switched Voltage	250 Vac

	WARNING
	HAZARDOUS VOLTAGE RISK OF ELECTRIC SHOCK OR BURN When you connect the field wiring to the 3500/3316-Channel Relay Module, conductors may be exposed, creating a shock hazard at high voltages.

Contact Ratings for Failsafe Systems and Hazardous Area Systems

Standard Relays

Min Switched Current	100 mA @ 5 Vdc
DC Specifications (Resistive Load)	
Max Switched Current	5 A
Max Switched Voltage	30 Vdc

- Minimum switched load for standard (silver) contacts is 100 mA @ 5 Vdc.
- Minimum switched load for Low Current (gold-plated) contacts is 1 mA @ 1 Vdc.

	WARNING
	EXPLOSION HAZARD RISK OF BODILY INJURY Disconnect power prior to servicing. Do not disconnect while circuit is live unless area is known to be non-hazardous. Consult manual prior to servicing.

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.

04425545	Grounding Wrist Strap (single use)
162291	16-Channel Relay Module User Guide
00580453	Connector Header Internal Termination 16-position Green
166M2381	Connector Header Push-in-Spring Type (Alternative for PN 00580453)

3500/33 AA-BB

A: Output Module

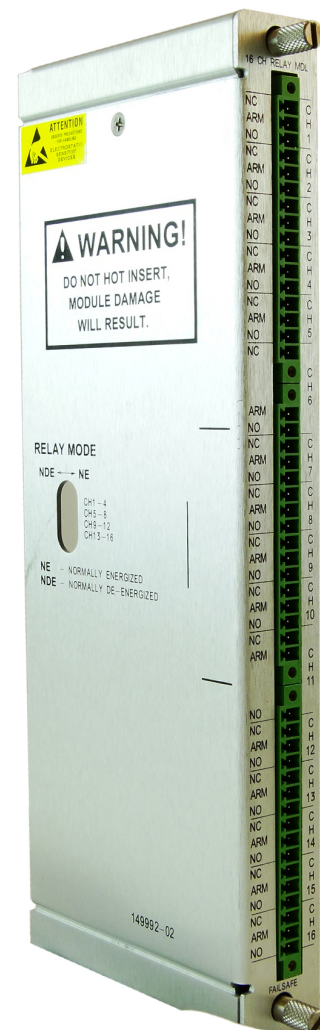
01	16-Channel Relay Output Module
02	16-Channel Failsafe Relay Output Module
03	Low Current 16-Channel Relay Output Module
04	Low Current 16-Channel Failsafe Relay Output Module

B: Hazardous Area Approval Option

00	None
01	cNRTLus (Class 1, Division 2)
02	ATEX / IECEx / CSA (Class 1, Zone 2)

Spares

149986-01	Spare 16-Channel Relay Control Module
149992-01	Spare 16-Channel Relay Output Module
149992-02	Spare 16-Channel Failsafe Relay Output Module
149992-03	Spare 16-Channel Low Current Relay Output Module
149992-04	Spare 16-Channel Low Current Failsafe Relay Output Module



Ordering Considerations

- The 3500/33 16-Channel Relay Module requires the 3500 Rack Config, version 3.3 or later.
- The 3500/33 requires the 3500 Data Acquisition Software, version 2.40 or later.
- The 3500/33 16-Channel Relay Module requires the 3500 Data Display Software, version 1.40 or later.
- When ordered with the multiple approvals option (-02), the 3500 monitor is certified to Zone 2 standards, including ATEX and North American zones.
- The Zone 2 standards specify increased spacing requirements at higher voltages. The 3500/33 16-Channel Relay Module does not meet these spacing requirements. Thus, the module ordered with the multiple approvals option is limited to a lower voltage than those with the other approvals options.
- Using higher voltages violates the hazardous area certificates associated with the multiple approvals option.
- The North American Division 2 standards associated with the CSA-only approvals option (-01) have been de-rated to 30 Vrms to comply with 61010-1 type test requirements.
- If the 3500/33 16-Channel Relay Module is part of a functional safety (SIL) system, the functional safety certificate requires the restricted voltage. Higher voltages are not allowed for functional safety (SIL) systems.

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Bently Nevada, a Baker Hughes Company
1631 Bently Parkway South, Minden, Nevada USA 89423
<https://bntechsupport.com>