

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

1900/65 GENERAL PURPOSE EQUIPMENT MONITOR

1900/65A 167699-02

GENERAL-PURPOSE EQUIPMENT MONITOR DISPLAY

Used with the applicable 1900/65A monitoring system configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Bently Nevada official manufacturer documentation

1900/65A General Purpose Equipment Monitor

Bently Nevada* Asset Condition Monitoring



Description

The 1900/65A General Purpose Equipment Monitor is designed to continuously monitor and protect equipment that is used in a variety of applications and industries. The monitor's low cost makes it an ideal solution for general-purpose machines and processes that can benefit from continuous monitoring and protection.

Inputs

The 1900/65A provides four transducer inputs and four temperature inputs. Software can configure each transducer input to support 2- and 3-wire accelerometers, velocity sensors or proximity sensors. Each temperature input supports Type E, J, K, and T thermocouples, and 2- or 3-wire RTDs.

Outputs

The 1900/65A provides six relay outputs, four 4-20 mA recorder outputs, and a dedicated buffered output. The user can use the 1900 Configuration software to configure the relay contacts to open or close according to the OK, Alert and Danger statuses of any channel or combination of channels, and to provide data from any variable from any channel on any recorder output. The dedicated buffer output can provide the signal for each transducer input.

A Modbus® Gateway option allows the monitor to provide static variables, statuses, event list, time and date information directly to any Modbus client, including Distributed Control Systems (DCSs), Supervisory Control and Data Acquisition (SCADA) systems, Programmable Logic Controllers (PLCs), or System 1® software. The monitor uses an internal counter and a Modbus client/master time reference to generate time and date information. Users can upgrade monitors without the Modbus Gateway by ordering the 1900/01 Communications Upgrade (see the Ordering Information section). The 1900/65A supports Modbus communications via Ethernet and a software-configurable RS232/485 serial port.

Configuration

The user defines monitor operation and the Modbus Gateway register map by using software running on a laptop or PC to create a configuration file and download the file to the monitor through the built-in Ethernet connection. The 1900/65A permanently stores configuration information in non-volatile memory, and can upload this information to the PC for changes.

Display Module

The 1900/65A supports an optional display/keypad to view channel information or make minor configuration changes. This allows the 1900/65A to operate as a stand-alone package. If desired, the user can mount the display up to 75 metres (250 feet) from the Monitor Module



Feature List

- Continuous monitoring and protection is suitable for auto-shutdown applications
- Stand-alone operation on general-purpose equipment
- Optional Modbus communications via 10BaseT/100BaseTX Ethernet, or software-configurable 485/232 serial port
- Small package. Monitor Module: 196.9 mm x 149.4 mm x 74.4 mm (7.75" x 5.88" x 2.93"). Monitor Module with attached Display Module: 196.9 mm x 149.4 mm x 97.8 mm (7.75" x 5.88" x 3.85")
- DIN rail or bulkhead mounting options
- 18 to 36 Vdc power input. (optional 110-220 Vac external supply)
- 24-bit ADC conversion
- Four vibration/position/speed inputs
- Four temperature inputs
- Configurable scale factors and full scale ranges
- Up to four processed variables per channel with independent integration and filter control
- Internal OK checking with status
- Independent Alert and Danger setpoints
- 200-entry event list
- Six relay outputs. Relay operation is programmable
- Buffered outputs for each transducer channel
- Four configurable 4-20 mA recorder outputs
- Optional NEMA 4X/IP66 fiberglass housing with window for display
- Painted or stainless steel weatherproof door for panel-mount display
- Hazardous area approvals
- Maritime Approvals

Specifications

Inputs

Transducer Inputs

Users can configure Channels 1 through 4 to accept input from acceleration, velocity or displacement transducers.

Transducer Channel Types

Channel Types define the functionality for processing that will be applied to an input signal and the kind of variables or measurement values that will be derived from this input. Channel Types also define the kind of sensor that must be used. Transducer Channel Types include:

- Acceleration or Reciprocating Acceleration
- Velocity or Reciprocating Velocity
- Radial Vibration (shaft vibration)
- Thrust (shaft axial displacement)
- Position
- Speed

Acceleration and Reciprocating Acceleration Channel Types

The Acceleration Channel Type and Reciprocating Acceleration Channel Type support two- and three-wire acceleration sensors. The Reciprocating Acceleration channel type has timed OK channel defeat disabled.

Acceleration Variables and Reciprocating Acceleration Variables

Acceleration Variables and Reciprocating Acceleration Variables are filtered and processed measurements from

Specifications and Ordering Information
Part Number 173401-01
Rev. J (06/13)

Alert LED	Indicates when the monitor is functioning properly	Display Module Dimensions (L x W x H)	196.9 mm x 149.4 mm x 32.8 mm (7.75 in x 5.88 in x 1.29 in)
	Indicates an Alert condition		
	Indicates a Danger condition		
Danger LED	Indicates a Danger condition	Weight	0.40 kg (0.89 lb)
Bypass LED	Indicates that the monitor is in Bypass mode		
Trip Multiply LED	Indicates that the monitor is in Trip Multiply mode	Mounting DIN Rail Option	35 mm DIN rail
Channel LED	Indicates channel is active		
Display	Liquid Crystal Display (LCD) with backlight 68.6 mm (2.7 in) wide x 35.6 mm (1.4 in) high	Bulkhead Option	Bulkhead mounting plate
Power Requirements		Weatherproof Enclosure Option	NEMA 4X/IP66 Fiberglass Housing with window, 300.2 mm x 249.4 mm x 209.8 mm (11.82 in x 9.82 in x 8.26 in) The 1900 Configuration Software package contains everything necessary to install, configure, and maintain the 1900/65A monitor.
Input Voltage Range	18 to 36 Vdc	• FeaturesTools for installing and troubleshooting • Simple display to help with configuration • Ability to browse network for 1900 monitors • Network configuration • Configuration for channels, variables, setpoints, tag names, recorders and filters • Configuration for the optional Modbus Gateway • Configuration for relays and relay voting logic • Off-line configuration allowing use of software when hardware is not available	
Operating Current	0.35 A typical, 1.0 A maximum		
Operating Power	8.5 W typical, 14 W maximum		
Physical			
Monitor Module Dimensions (L x W x H)	196.9 mm x 149.4 mm x 74.4 mm (7.75 in x 5.88 in x 2.93 in)		
Weight	0.77 kg (1.70 lb)		

Ordering Information

1900/65A General Purpose Equipment Monitor

1900/65A-AXX-BXX-CXX-DXX-EXX

A: Power Option

- 00 18 to 36 Vdc
- 01 110 to 220 Vac @ 50 to 60 Hz (external supply)

B: Display Option

- 00 No display
- 01 Attached display (no cable)
- 02 Display with 10' PVC cable
- 03 Display with 10' unassembled PVC cable
- 04 Display with 10' TEF cable
- 05 Display with 10' unassembled TEF cable
- 06 Display with 50' PVC cable
- 07 Display with 50' unassembled PVC cable
- 08 Display with 50' TEF cable
- 09 Display with 50' unassembled TEF cable
- 10 Display with 100' PVC cable
- 11 Display with 100' unassembled PVC cable
- 12 Display with 100' TEF cable
- 13 Display with 100' unassembled TEF cable
- 14 Display with 250' PVC cable
- 15 Display with 250' unassembled PVC cable
- 16 Display with 250' TEF cable
- 17 Display with 250' unassembled TEF cable

C: Mounting Option

- 00 None
- 01 DIN rail mount (see Figure 1)

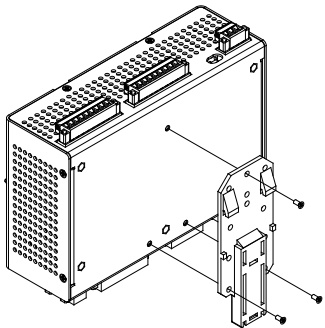


Figure 1: DIN Rail Mount

- 02 Bulkhead Mount (see Figure 2)

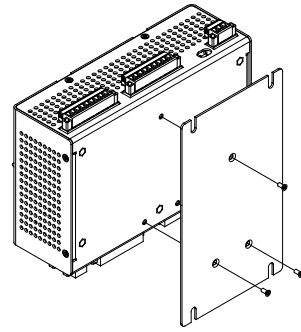


Figure 2: Bulkhead Mount

- 03 Fiberglass NEMA 4X/IP66 WP housing with window in door (see Figure 3)

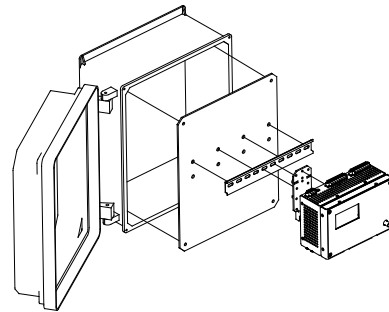


Figure 3: NEMA 4X/IP66 WP Housing

- 04 1900/55 replacement kit (see Figure 4)

Note: Uses existing 1900/55 weather-proof housing and requires power option A01 (110/220 Vac to 24 Vdc external power supply)

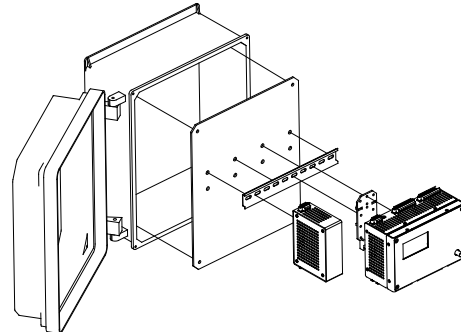


Figure 4: 1900/55 Replacement Kit

- 07 ProTIM Housing, Wiring and Mounting Hardware

168547-0250-01-02	75 m (250 ft) PVC cable, assembled	168944	Painted steel NEMA 4 weatherproof door for panel-mount display assembly
168547-0250-02-01	75 m (250 ft) PVC cable, unassembled	02295055	Fiberglass NEMA 4X/IP66 weatherproof housing with window in door
168547-0250-02-02	75 m (250 ft) TEF cable, assembled	02245002	MTL 728(-) barrier
168628	75 m (250 ft) TEF cable, unassembled	172555	MTL 796(-) barrier
168629	Stainless steel NEMA 4X weatherproof door for panel-mount display assembly	169825-01	Modbus/TCP (Ethernet) to Modbus/RTU (Serial) Converter
			Training CD

Dimensions

Note: All dimensions shown in millimeters (inches) except as noted.

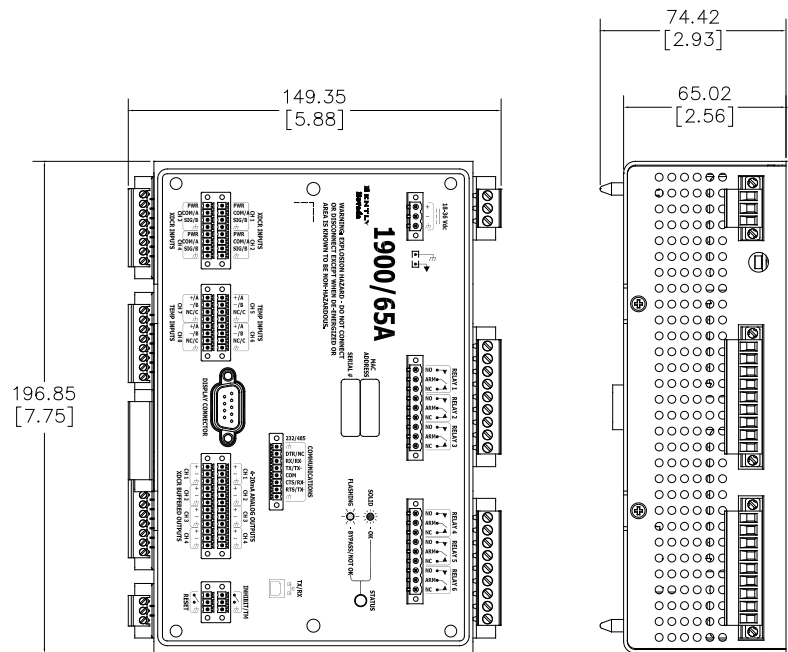


Figure 5: Monitor Module Dimensions

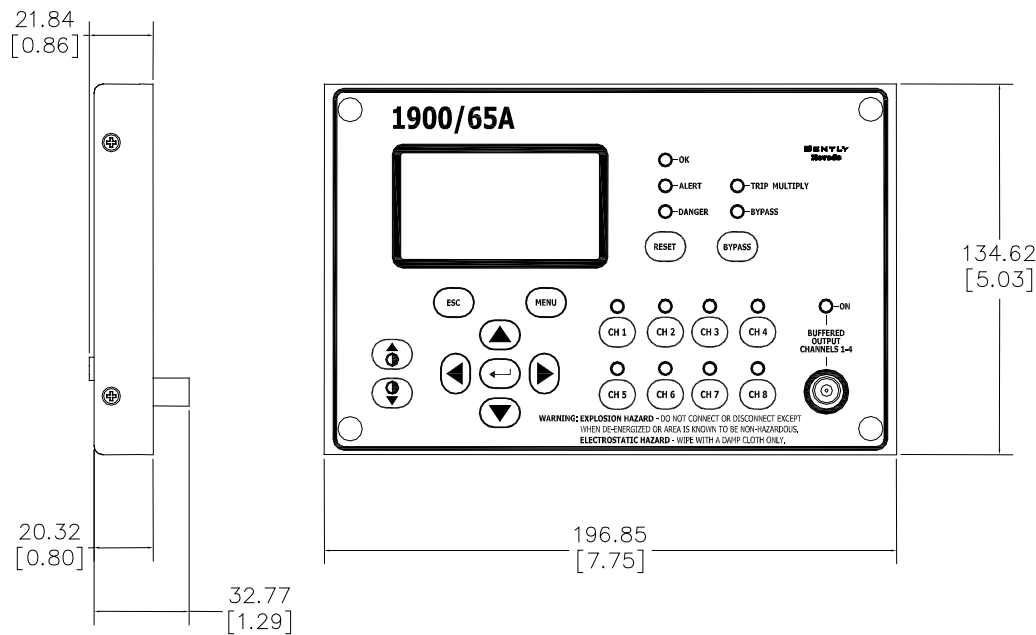


Figure 6: Display Module Dimensions

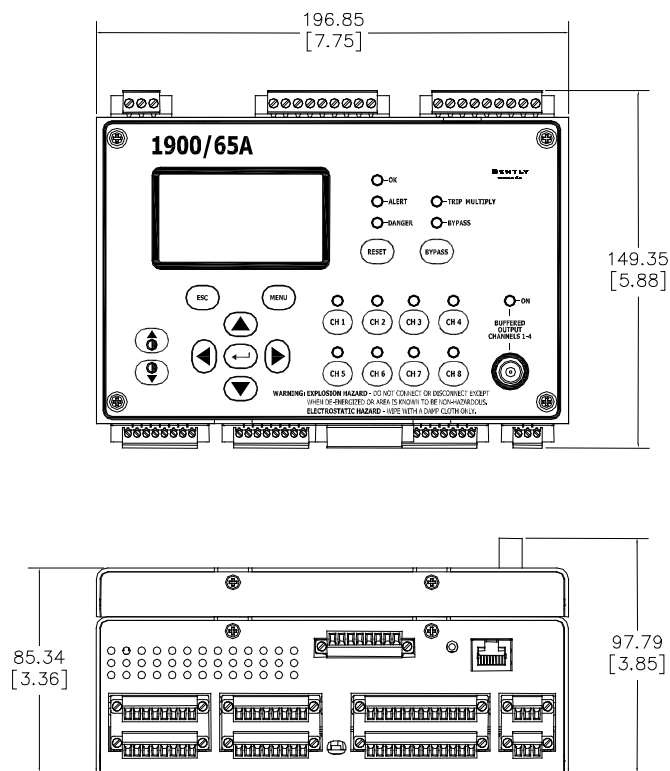


Figure 7: Combined Dimensions

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