

3500/92 Communication Gateway

Datasheet

Cordant™

141542 Rev. N



Description

The Bently Nevada™ 3500/92 Communication Gateway module provides extensive communication capabilities of all rack monitored values and statuses for integration with process control and other automation systems using both Ethernet TCP/IP and serial (RS232/RS422/RS485) communications capabilities. It also permits Ethernet communications with 3500 Rack Configuration Software and Data Acquisition Software.

Supported protocols include:

- Modicon Modbus protocol (via serial communications)
- Modbus/TCP protocol (a variant of serial Modbus used for TCP/IP Ethernet communications)
- Proprietary Bently Nevada protocol (for communication with 3500 Rack Configuration and Data Acquisition Software packages)



The Ethernet connection to the 3500/92 is an RJ45 connection for 10BASE-T star configuration Ethernet networks.

The 3500/92 supports the communication interfaces, communication protocols, and other features from the original 3500/90 with the exception of the primary value Modbus registers. The 3500/92 now has a Configurable Modbus Register Utility, which can provide the same functionality originally addressed by the primary value Modbus registers.



Specifications

Inputs

Power Consumption	<p>5.0 Watts typical with ModbusRS232/ RS422 I/O Module</p> <p>5.6 Watts typical with Modbus RS485 I/O Module</p>
Data Types	<p>Collects data from other modules in the rack, such as current measured values with time stamp, module statuses, and current alarm statuses, via a high speed internal network.</p> <p>Exact data types returned depend on module type and channel configuration.</p> <p>Update Time: The data collection rate depends on rack configuration but will not exceed 1 second for all modules in the 3500 rack.</p>

Outputs

OK LED	Indicates when the 3500/92 is operating properly.
TX/RX LED	Indicates when the 3500/92 is communicating with other modules in the 3500 rack.

Protocols

BNC Host Protocol	Communication with 3500 Configuration Software and 3500 Data Acquisition and Display Software over Ethernet TCP/IP.
Modbus	Based on AEG Modicon PI-MBUS-300 Reference Manual. Uses Remote Terminal Unit (RTU) transmission mode.
Ethernet	
Communication Link	Ethernet, 10Mbps, and conforms to IEEE802.3
Protocol	Ethernet TCP/IP frame and Modbus/TCP
Connection	RJ-45 (telephone jack style) for 10BASE-T Ethernet cabling

Environmental Limits

Main and I/O Module	
Operating Temperature	-30°C to +65°C (-22°F to +149°F)
Storage Temperature	-40°C to +85°C (-40°F to +185°F)
Humidity	95%, non-condensing

Physical

Main Board

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	0.82 kg (1.8 lb.)

I/O Modules

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	0.44 kg (0.96 lb.)

Rack Space Requirements

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



For specific cable lengths, please order through Bently Nevada Custom Products.



30 ft. - 100 ft. is ordered in 5ft. increments only. 100 ft. - 320 ft. is ordered in 10ft. increments only

Serial Cabling (RS232): RS232 Cable, Host to 3500/92

130419-AAAA-BB

A: Cable Length

0 0 1 0	10 feet (3 meters)
0 0 2 5	25 feet (7.5 meters)
0 0 5 0	50 feet (15 meters)
0 1 0 0	100 feet (30.5 meters)

B: Assembly Instructions

0 1	Not Assembled
0 2	Assembled

RS232 Cable, Honeywell PLCG to 3500/92

130420-AAAA-BB

A: Cable Length

0010	10 feet (3 meters)
0025	25 feet (7.5 meters)
0050	50 feet (15 meters)
0100	100 feet (30.5 meters)

B: Assembly Instructions

01	Not Assembled
02	Assembled

130119-01 RS232 Cable, Host Computer to RS232/RS422 Converter

Serial Cabling (RS422/RS485):



RS422 Cables can be used for rack-to-rack connections when using ModbusRS485 I/O Modules. The final rack-to-host connection is application specific and may require a custom cable.

RS422 PVC Insulated Cable, RS232/RS422 Converter to 3500/92

130530-AAAA-BB

A: Cable Length

0010	10 feet (3 meters)
0025	25 feet (7.5 meters)
0050	50 feet (15 meters)
0100	100 feet (30.5 meters)
0250	250 feet (75 meters)
0500	500 feet (150 meters)

B: Assembly Instructions

01	Not Assembled
02	Assembled

RS422 PVC Insulated Cable, 3500/92 to 3500/92

129665-AAAA-BB

A: Cable Length

0010	10 feet (3 meters)
0025	25 feet (7.5 meters)

0050	50 feet (15 meters)
0100	100 feet (30.5 meters)
0250	250 feet (75 meters)
0500	500 feet (150 meters)

B: Assembly Instructions

01	Not Assembled
02	Assembled

RS422 Teflon Insulated Cable, RS232/RS422 Converter to 3500/92

131109-AAAA-BB

A: Cable Length

0010	10 feet (3 meters)
0025	25 feet (7.5 meters)
0050	50 feet (15 meters)
0100	100 feet (30.5 meters)
0250	250 feet (75 meters)
0500	500 feet (150 meters)

B: Assembly Instructions

01	Not Assembled
02	Assembled

131108-AAAA-BB

A: Cable Length

0010	10 feet (3 meters)
0025	25 feet (7.5 meters)
0050	50 feet (15 meters)
0100	100 feet (30.5 meters)
0250	250 feet (75 meters)

0500	500 feet (150 meters)
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B: Assembly Instructions

01	Not Assembled
02	Assembled

RS422/RS485 Extension Cable

130531-AA-BB

Used with Cables 130530, 129665, 131109, and 131108 for lengths greater than 500 feet (152 meters).


 Standard length is 500 feet (152 meters).

A: Assembly Instructions

01	Not Assembled
02	Assembled

B: Insulation

01	PVC Insulated
02	Teflon® Insulated

 The total RS485 cable run can be up to 4000 feet (1220 meters). The total RS422 cable run can be up to 4000 feet (1220 meters) between each rack.