

# 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.



**Baker Hughes** 

## Specifications

### Inputs

Power Consumption	5.0 Watts typical with ModbusRS232/ RS422 I/O Module  5.6 Watts typical with Modbus RS485 I/O Module
Data Types	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.  Exact data types returned depend on module type and channel configuration.  Update Time: The data collection rate depends on rack configuration but will not exceed 1 second for all modules in the 3500 rack.

### 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.
<b>Ethernet</b>	
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

## Spares

Part Number	Description
04425545	Grounding Wrist Strap (single use)
137495-01	Firmware IC (Odd bank)
137494-01	Firmware IC (Even bank)
136180-01	3500/92 Communication Gateway Module.
125736-01	Modbus RS232/RS422 I/O Module.
133323-01	Modbus RS485 I/O Module.
136188-01	Ethernet/RS232 Modbus I/O Module*
136188-02	Ethernet/RS485 Modbus I/O Module*
Bently_Manuals	International Technical Documentation DVD



\* These spares include the Firmware Upgrade Kit (126M4118-01).

## Accessories

Part Number	Description
139036-01	9-pin D-SUB "Y"
<b>Serial Converters</b>	
02230411	RS232 to RS422 Converter - 110 Vac.
02230412	RS232 to RS422 Converter - 220 Vac.
<b>Ethernet Hubs</b>	
165M2516	24-port 100/1000 SFP BE based switch

Part Number	Description
<b>Ethernet Transceivers</b>	
02200260	15-Pin AUI male to Fiber Optic Cable (10BASE-FL) with ST connection
02200261	15-Pin AUI male to Thinnet (10BASE2)
<b>Ethernet Cabling – Standard 10 BASE-T Shielded, Category 5 Cable with RJ-45 Connectors</b>	
02175190	6 ft. length
02175191	10 ft. length
02175192	25 ft. length