



## DNP 3.0 Server over Ethernet Communication Module

PTQ-DNPSNET-Q

*With the growing usage of the DNP protocol over Ethernet technology in the industrial marketplace, this product has a wide variety of application uses. Industries that use this technology include:*

- Power and distribution applications
- Petrochemical
- Water and Gas Applications
- SCADA and DCS applications

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## DNP 3.0 Server over Ethernet Communication Module

### PTQ-DNPSNET-Q

The DNP 3.0 Server over Ethernet Communications Module supports the implementation of the DNP 3.0 (Distributed Network Protocol) over Ethernet, allowing Quantum processors to easily communicate with host systems supporting the protocol. The module supports DNP Subset Level 2 features and some Level 3 features.

### Features and Benefits

The PTQ-DNPSNET-Q (Distributed Network Protocol Module over Ethernet) allows Schneider Electric Quantum processors to easily communicate with other DNP protocol-compatible devices.

The module supports DNP Subset Level 2 features and some of the Level 3 features allowing the many SCADA systems supporting the DNP protocol to be integrated into the Quantum platform. The module acts as an input/output module between the DNP network and the Quantum processor. The data transfer from the Quantum processor is asynchronous from the actions on the DNP network. Databases are user defined and stored in the module to hold the data required by the protocol.

The PTQ-DNPSNET-Q module is a powerful communication interface for Quantum platform processors. Developed under license from Schneider Electric, the module incorporates proprietary backplane technology that enables powerful data access to the Quantum processor.

### General Specifications

- Single Slot - Quantum backplane compatible
- The module is recognized as an Options module and has access to PLC memory for data transfer
- Configuration data is stored in non-volatile memory in the ProTalk module
- Up to six modules can be placed in a rack
- Local rack - The module must be placed in the same rack as processor.
- Compatible with common Quantum / Unity programming tools.
- Quantum data types supported: 0x, 1x, 3x, 4x
- High speed data transfer across backplane provides quick data update times.
- Sample function blocks available.

## Hardware Specifications

Specification	Value
Backplane Current Load	800 mA @ 5 V
Operating Temperature	0 to 60°C (32 to 140°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Relative Humidity	5% to 95% (non-condensing)
Vibration	Sine vibration 4-100 Hz in each of the 3 orthogonal axes
Shock	30G, 11 mSec. in each of the 3 orthogonal axes
Dimensions (HxWxD), Approx.	250 x 103.85 x 40.34 mm 9.84 x 4.09 x 1.59 in
LED Indicators	Module Status Backplane Transfer Status Serial Port Activity LED Serial Activity and Error LED Status

### Debug/Configuration Port (Debug)

CFG Port (DEBUG)	DB-9M PC Compatible RS-232 only No hardware handshaking
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### Application Ports

Application Ethernet port	RJ45 Connector Link and Activity LED indicators Electrical Isolation 1500 V rms at 50 Hz to 60 Hz for 60 s, applied as specified in section 5.3.2 of IEC 60950: 1991 Ethernet Broadcast Storm Resiliency = less than or equal to 5000 [ARP] frames-per-second and less than or equal to 5 minutes duration
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## Functional Specifications

The PTQ-DNPSNET-Q module accepts data read/write commands from a master/client on the network. The module accepts DNP commands to control and monitor the data stored in the DNP databases. In addition, the module can be configured to generate unsolicited messages.

The module has 4000 data words of internal register space that are accessible to the protocol driver and to the Quantum processors memory. Memory usage is user configurable within these 4000 words. Each of the supported database types can be individually sized and each database point is mapped within the module. The supported database point types are:

- Binary Input: 512 Points (512 words)
- Binary Output: 512 Points (512 words)
- Counter: 128 Points (128 words)
- Analog Input: 512 Words
- Analog Output: 512 Words

Total point counts must be configured such that Class 0 responses do not exceed 2048 bytes in size

## DNP 3.0 Server over Ethernet Specifications

Operating in the Server mode, the module accepts commands from a Client(s) to read/write data stored in the module's internal registers. This data is easily and continuously transferred between the ProTalk module and the Quantum processor's data registers.

The Server functionality supported by the module includes:

- The DNP on Ethernet communication driver is built in accordance with the DNP organizations WAN/LAN Recommended Practices
- Ethernet port supporting TCP (events, monitor and control) and UDP (monitor and control)
- Supports DNP 3.0 in a Level 2 implementation
- The module functions as a Server on the network supporting data read/write commands from masters/clients on the network
- Report-by-Exception data is logged to the module's database and reported on TCP socket
- Supports unsolicited messaging
- Analog deadband configurable at module level
- Supports clock synchronization from client or from Quantum (configurable synchronization frequency)
- Supports timestamp events (BI/AI). Configurable enable/disable for AI
- User defined list of acceptable host IP addresses
- Event queue supports 200 events per data type(BI/AI)
- DNP Object Definition documents are available

## Additional Products

ProSoft Technology offers a full complement of hardware and software solutions for a wide variety of industrial communication platforms. Compatible products in the ProTalk product line also include:

### IEC 60870-5-104 Server Communication Module (PTQ-104S)

Visit our web site at <http://www.prosoft-technology.com> for a complete list of products.

## Ordering Information

To order this product, please use the following:  
PTQ-DNPSNET-Q DNP 3.0 Server over Ethernet  
Communication Module

To place an order, please contact your local ProSoft Technology distributor. For a list of ProSoft distributors near you, go to <http://www.prosoft-technology.com>

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