



## IEC 60870-5-104 Server Communication Module

### PTQ-104S

The IEC 60870-5-104 Server Communication Module allows Quantum backplane I/O compatible processors to interface easily with IEC 60870-5-104 protocol-compatible hosts.

### Features and Benefits

The PTQ-104S module acts as an input/output module between the IEC-870-5-104 Ethernet network and the Quantum backplane. Data transfer between the ProTalk module and the Quantum processor is asynchronous from the actions on the network. Databases are defined by the user for the module to hold data as required by the protocol.

The PTQ-104S 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
<b>Debug/Configuration Port (Debug)</b>	

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*The PTQ-104 Server module is designed to address the application where a device using the IEC 60870-5-104 protocol must communicate with a Quantum processor.*

*As such, the IEC Server module can be used as a gateway in many SCADA installations in industries such as*

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

### How to Contact Us: Sales and Support

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Specification	Value
CFG Port (DEBUG)	DB-9M PC Compatible RS-232 only No hardware handshaking

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

## Functional Specifications

The PTQ-104S module accepts data read/write commands from a master/client on the network. In addition, the module can be configured to generate unsolicited messages in either a spontaneous or cyclic fashion.

The module has 4000 words of user defined internal register space that are accessible to the protocol driver and to the Quantum processor memory. Any of the supported database types can be individually located (within the total database size limit of 4000 words) and each database point is mapped within the module and can be assigned to one or more Groups. The supported database point types are:

Database Type	Description	Event Generation	Point Size
M_SP_NA	Monitored single-point database	State Change	1 bit
M_DP_NA	Monitored dual-point database	State Change	2 bits
M_ST_NA	Monitored step-point database	State Change	1 byte
M_ME_NA	Monitored normalized-point database	Dead-band	1 word
M_ME_NB	Monitored scaled-point database	Dead-band	1 word
M_ME_NC	Monitored short-float point database	Deadband	2 words
M_IT_NA	Monitored integrated total database	N/A	2 words
C_SC_NA	Command single-point database	N/A	1 bit
C_DC_NA	Command dual-point database	N/A	2 bit
C_RC_NA	Command step-point database	N/A	1 byte
C_SE_NA	Command normalized-point database	N/A	1 word
C_SE_NB	Command scaled-point database	N/A	1 word
C_SE_NC	Command short-float point database	N/A	2 words

## IEC 60870-5-104 Server 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 IEC 60870-5-104 Server functionality supported by the module includes:

- The IEC 60870-5-104 communication driver is built in accordance to the approved IEC specification
- The module functions as a Server on the network supporting data read/write commands from an IEC 60870-5-104 client on the network
- One TCP server socket
- Supports unsolicited messages, either cyclic or spontaneous (cyclic rate is configurable)
- Supports clock synchronization commands from client or from the Quantum
- Supports Group interrogation (Global, General 1 to 16, Global Counters, Counters 1 to 4)
- Event timestamping configurable by type (None, 24 bit, 56 bit)
- Event queue supports 99 points for each data type
- Optional user defined list of acceptable client host IP addresses
- Configurable Common ASDU address (sector) and Information Object Address
- An IEC Interoperability Document for the ProTalk is available which fully documents data types supported by the module

## 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:

### DNP 3.0 Server over Ethernet Communication Module (PTQ-DNPSNET)

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-104S                      IEC 60870-5-104 Server Communication Module

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