IEC 60870-5-101 Slave Communication Module

PTQ-101S

The PTQ-101S Slave module is designed to address the application where a host systems using the IEC 60870-5-101 protocol must communicate with a Quantum processor. As such, the IEC Slave 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*

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IEC 60870-5-101 Slave Communication Module

PTQ-101S

The IEC 60870-5-101 Slave Communication Module is a Quantum backplane compatible module that allows Quantum processors to interface easily with IEC 60870-5-101 protocol compatible hosts. This module has two powerful and highly configurable IEC 60870-5-101 Slave ports, allowing the many SCADA and field devices supporting the IEC protocol to be integrated into the Quantum platform.

Features and Benefits

The PTQ-101S module is the fastest and easiest way to add IEC 60870-5-101 protocol interface support to the Quantum platform. It is a single slot, backplane compatible solution for the Schneider Electric Quantum platform.

The PTQ-101S module acts as an input/output module between the IEC 60870-5-101 telecontrol network and the Schneider Electric Quantum backplane. The data transfer from the Quantum processor is asynchronous from the actions on the network. A 4000-word register space in the module exchanges data between the processor and the telecontrol network.

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: 3x, 4x
- High speed data transfer across backplane provides quick data update times
- Sample ladder file 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

Specification	Value
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 Serial Activity and Error Status
Debug/Configuration Port (Debug)	
CFG Port (DEBUG)	DB-9M PC Compatible RS-232 only No hardware handshaking
Application Ports	
Application Serial Ports (PRT1, PRT2)	DB-9M PC Compatible RS-232/422/485 jumper selectable RS-422/485 screw termination included RS-232 handshaking configurable 500V Optical isolation from backplane
Certifications	cULus, ATEX, CE

Functional Specifications

The PTQ-101S module accepts commands from a master on the network. In addition, the module's port can be configured to generate event or periodic 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.

IEC supported data types

The supported datatypes are:

M_SP_NA	Monitored single-point database
M_DP_NA	Monitored dual-point database
M_ST_NA	Monitored step-point database
M_ME_NA	Monitored normalized-point database
M_ME_NB	Monitored scaled-point database
M_ME_NC	Monitored short-float point database
M_IT_NA	Monitored integrated total database
C_SC_NA	Command single-point database
C_DC_NA	Command dual-point database
C_RC_NA	Command step-point database
C_SE_NA	Command normalized-point database
C_SE_NB	Command scaled-point database
C_SE_NC	Command short-float point database

IEC 60870-5-101 Slave Specifications

The module accepts commands from a Master to read/write data stored in the module's internal registers. This data is and continuously transferred between the module and the processor's data registers. Functionality supported by the module includes:

- The IEC 60870-5-101 communication driver is built in accordance to the approved IEC specification
- Configurable for balanced or unbalanced mode
- Supports cyclic or spontaneous monitored messages
- Supports clock synchronization commands from a master or from the Quantum
- Event timestamping configurable by type
- Event queue supports 99 points for each data type
- Configurable data link address, Common ASDU address and Information Object Address
- Short and Long pulse duration configurable at module level
- Supports Group interrogation

An IEC Interoperability Document for the ProTalk is available which fully documents data types supported by the module

Redundant Slave Ports: The module supports a primary/secondary slave port configuration. In this mode, a single host polls the module via redundant physical layer connections. For example, if PRT 2 is connected to a satellite network and the network fails, PRT 3 could be used to communicate with the unit using landlines.

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 Master/Slave Communication Module (PTQ-DNP)

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-101S	IEC 60870-5-101 Slave 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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