

DeviceNet Scanner/Slave Network Interface for Quantum PTQ-DNET

The DeviceNet Scanner/Slave Module is an interface between DeviceNet slave devices and a Schneider Electric Quantum processor.

DeviceNet is a low-level network that provides connections between simple industrial devices (sensors, actuators) and higher-level devices (controllers). DeviceNet is based on the Common Industrial Protocol (CIP) and shares all the common aspects of CIP with adaptations to fit the message frame size of DeviceNet.

The DeviceNet Scanner/Slave supports complete specifications according to CAN bus and ISO 11898 standards and the Common Industrial Protocol (CIP) for the upper layers of their network protocol.



Features	Benefits
Licensed Backplane Technology	<ul style="list-style-type: none"> ◆ Manufactured under license from Schneider Electric[®] ◆ High-speed data transfer between PTQ module and Quantum[®] processor ◆ Installs as a Generic NOM module, ladder logic programming not required for most applications
DeviceNet Protocol Interface	<ul style="list-style-type: none"> ◆ Connect up to 63 slave devices on a single DeviceNet network ◆ Supports either Scanner or Slave modes ◆ Supports Auto Device Replacement (ADR); consists of Node Recovery and Configuration Recovery ◆ DeviceNet bandwidth can be saved by not transferring I/O values unless a change-of-state (COS) has occurred
Backed by ProSoft Technology	<ul style="list-style-type: none"> ◆ 20-year history of delivering high-quality, reliable solutions designed with you in mind ◆ Free, unlimited, worldwide Technical Support by phone for pre-sale, set-up, or troubleshooting support helps you get going sooner and stay running longer ◆ Three-Year Warranty ensures reliability and protects against equipment failures ◆ Free ProSoft Software tools tightly integrate with our hardware...a simple and quick, total solution to help you make our products fit your applications

Configuration

ProSoft Configuration Builder (PCB) provides a PC-based software configuration solution for quick and easy management of module configuration files, as well as viewing communication and network diagnostics.

PCB is not only a powerful solution for new configuration files, but also allows you to import information from previously installed (known working) configurations into new projects.

DeviceNet Scanner

The PTQ-DNET product allows Schneider Electric Quantum compatible processors to easily communicate with DeviceNet slave compatible devices. The module supports slave mode allowing the scanner to act as a slave to another scanner. This module must be located in the chassis with the processor; no remote placement is supported in this version of the firmware.

DeviceNet Specifications

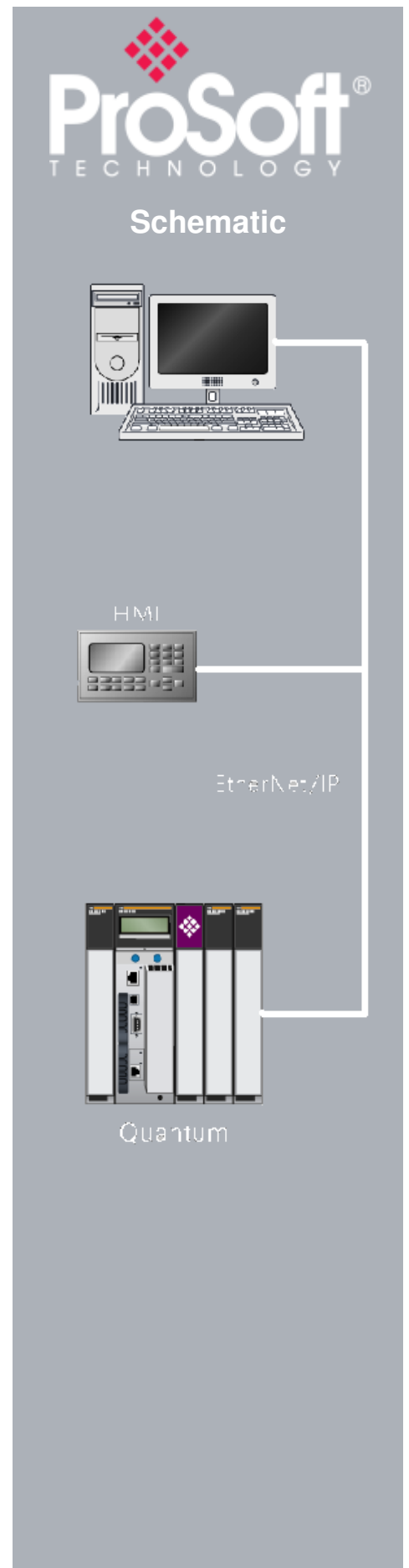
- Cyclic data supporting 973 Input Words and 990 Output words
- Use of CAN technology
- Small size and low cost
- Linear bus topology
- Ability to operate at three data rates:
 - 125 K baud up to 500 m maximum
 - 250 K baud up to 250 m maximum
 - 500K baud up to 100 m maximum
- Various media containing both signal and power conductors
- Low loss, low delay cable
- Support of various media for drop line or trunk line
- Support of drop lines as long as 6 m/20 feet
- Support of as many as 64 nodes
- Node removal without severing the network
- Ability to support both isolated and non-isolated
- Physical Layers simultaneously
- Support of sealed media
- Protection from wiring errors

General Specifications

The PTQ-DNET Scanner Module provides connectivity to DeviceNet from Schneider Electric Quantum platform controllers. The scanner is a DeviceNet master and can scan up to 63 DeviceNet devices and is capable of transferring up to 1024 words of Input and Output data to the controller. All DeviceNet data transports are supported, including Strobed, Polled, Change-of-state, and Cyclic. Databases are defined in the module to hold the data required by the protocol.

Key Features

- Shared Inputs - multiple scanner modules can acquire the inputs from a specific input device without using separate connections.
- Embedded EDS - allows the EDS to be retrieved directly from the module.
- Change of State
 - Change of state enables the scanner module to perform a scan:
 - whenever a network data change occurs, or
 - at a user-configurable heartbeat rate
 - Because data is only sent on an as-needed basis, this feature increases system performance by reducing network traffic.
- Cyclic I/O
 - Cyclic I/O allows you to instruct the scanner module to perform a scan at a specific send rate.
 - Because data is only sent at a periodic rate, this feature increases system performance by reducing network traffic.
- Single Slot - Quantum backplane compatible
- Uses producer/consumer technology to allow shared inputs between scanners without separate connections.
- The module is recognized as an options module with access to State RAM memory for data transfer
- ProSoft Technology DeviceNet Configuration software allows for module setup, configuration, diagnostics, and debugging.
- Configuration data is stored in non-volatile memory in the ProTalk Q module
- Local rack support: The module must be placed in the same rack as the processor
- Compatible with all common programming applications, including Unity Pro and Concept.



Functional Specifications

Module has been tested and certified according to ODVA guidelines to guarantee proper interoperability on a DeviceNet network.

- **DeviceNet Data:**
 - Strobe, poll, COS, or cyclic I/O data
 - Configurable data parameters include: Complete data mapping between PLC scan and I/O image tables and DeviceNet devices
 - Background poll rate
 - Strobe or poll for each node
- **PLC Processor-to-Scanner Communication**
 - Synchronous Transfer: 973 Input Words and 990 Output words, plus status and control data
- Easy-to-use drag and drop configuration view via DeviceNet Configuration Software PSW-DNET.
- Unity Pro and Concept Function Blocks provided
- **Electronic Keying** allows the scanner to match device by device type, vendor, product code and major revision for I/O exchange
- **Embedded EDS** - allows the EDS to be retrieved directly from the module
- **Slave Mode** - allows the scanner to act as a slave to another scanner
- **Auto Scan** - enables the scanner to automatically generate a scan list of devices on the network
- Supports **CIP Explicit Messaging** via PLC ladder logic
- Supports Auto Device Replacement (ADR); consists of Node Recovery and Configuration Recovery
 - Node Recovery - this feature causes the node number of the replacement device to be automatically changed to the node number of the original device. The replacement device's node number must be writable over the DeviceNet network and must initially be set to 63
 - Configuration Recovery - this feature causes the replacement device's configuration to be made identical to the original device. The replacement device's configuration must be writable over the DeviceNet network. Configuration Recovery files are stored in the master scanner that is communicating with the original device through RSNetWorx for DeviceNet
- Provides processor module status and access to scanner network diagnostic tables such as node idle, node status, and node fault information
- Acts as an I/O data server for explicit peer-to-peer messaging
- DeviceNet transfer of I/O data can be scheduled (cyclic data)
- Quantum 140 CPU 311 10 not supported

Additional Products

ProSoft Technology offers a full complement of hardware and software solutions for a wide variety of industrial communication platforms. Visit our web site at www.prosoft-technology.com for a complete list of products, including:

PTQ-DFNT	EtherNet/IP Client/Server Communication Module.
PSW-RSNetWorx-DNET	RSNetWorx for DeviceNet Configuration Software (Rockwell Automation part number 9357-DNETL3)



Additional Products

ProSoft Technology® offers a full complement of hardware and software solutions for a wide variety of industrial communication platforms. For a complete list of products, visit our web site at: www.prosoft-technology.com

Ordering Information

To order this product, please use the following:

DeviceNet Scanner/Slave Network Interface for Quantum

PTQ-DNET

To place an order, please contact your local ProSoft Technology distributor. For a list of ProSoft Technology distributors near you, go to: www.prosoft-technology.com and select Distributors from the menu.

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fax to +33 (0) 5.61.78.40.52

Hardware Specifications

Specification	Value
Power Consumption	DeviceNet Current Load: 50 mA maximum Backplane Current Load: 1100 mA maximum @ 5 Vdc \pm 5%
Communication Rates	125 Kbits/s, 250 Kbits/s, 500 Kbits/s
Messaging Capabilities	Master: Poll, strobe, COS, or cyclic Explicit: Initiate and respond
Isolation	Optical isolation between: Backplane and channel 1 1 M Ω resistor from Channels 1 to chassis
Immunity Radiated Fields	10V/m, 27...1000 MHz
Module Location	Quantum local I/O chassis
Network Address	00 to 63
Operating Temperature	0°C to 60°C (32°F to 140°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Relative Humidity	5% to 95% (without condensation)
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
Weight	0.9 kg (1.9 lb)
Certifications	UL, CE, C-Tick, CSA Class I Div 2 Hazardous

Agency Approvals & Certifications

CSA/cUL	C22.2 No. 213-1987
CSA CB Certified	IEC61010
ATEX	EN60079-0 Category 3, Zone 2 EN60079-15



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