Wireless EtherNet/IP to DF1 Master/Slave Gateway

6202-WA-DFNT-DFCM3

The WA-DFNT-DFCM modules are ideal for the many applications where wireless EtherNet/IP connectivity can integrate DF1 devices into a system. The EtherNet/IP gateway is designed with both Client and Server support, enabling easy connection to Rockwell Automation PLCs. With the DF1 Master/Slave device support, the module provides a powerful interface to the many DF1 devices in the industrial marketplace today. Data is exchanged between devices and/or networks using a shared common database and an efficient wireless protocol. This common database provides "backbone" communications for various devices using different networks. Applications are found in most industries, especially Manufacturing, Oil and Gas, Electrical Power and Food Processing.

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The ProLinx Wireless EtherNet/IP to DF1 Master/Slave Gateway creates a powerful wireless connection between devices on an EtherNet/IP network and DF1 devices.

The EtherNet/IP protocol driver supports the Explicit Messaging implementation of the protocol. User-configurable as both a Client and a Server, the EtherNet/IP port is a very powerful data transfer tool.

The DF1 protocol driver supports Master or Slave implementations of the protocol on each DF1 port. All DF1 ports are individually configurable.

The PWP modules offer one-to-one or one-to-many interconnect scenarios. Data is exchanged between devices and/or networks using a shared common database and an efficient but powerful wireless protocol. This common database provides the "backbone" communications for various field devices using different networks.

EtherNet/IP

The EtherNet/IP protocol is one of the primary connectivity tools to the different Rockwell Automation platforms. The Explicit Messaging aspect of the protocol (only) has been implemented in the ProLinx units to provide the data transfer link between the ProLinx units and the Rockwell Automation hardware.

General Protocol Information	
Messaging	PCCC on CIP Explicit Messaging supported
Miscellaneous	125 word read and write data lengths Floating point data supported

EtherNet/IP Server Specifications

In Server mode, the module accepts commands from one or more clients to read/write data stored in the module's internal registers.

EtherNet/IP Server Specifications	
Connections	Five independent TCP server sockets permit remote clients to interact with all data contained in the module.
Data File	Data Table File Start - Fixed at N10 Data Table File Size - 100 or 1000 words
CIP Services Supported	0x4C - CIP Data Table Read 0x4D - CIP Data Table Write

EtherNet/IP Client Specifications

In Client mode, the module controls the read/write data transfer between the gateway and other EtherNet/IP devices. Data transfer can be initiated and executed without any ladder programming being required in the Rockwell Automation hardware.

EtherNet/IP Client Specifications	
General	One client
Command List	Support for 100 commands, each configurable for command, IP address, register to/from addressing and word/bit count.
Polling of command list	User configurable polling of commands, including disabled, continuous and on change of data (write only).

DF1 Master/Slave

The DF1 Master/Slave Protocol driver provides extensive support for both Master and Slave implementations of the protocol. The serial port on the gateway is user-configurable to support the DF1 protocol (Master or Slave, Error Checking, Baud rate, etc).

General Parameters	
Communication parameters	Local Station ID: 0 to 254 Ports 1 to 3 Baud Rate: 110 to 115K baud Stop Bits: 1 Data Size: 8 bits Parity: None, Even, Odd RTS Timing delays: 0 to 65535 milliseconds
Error Checking	BCC and CRC
Miscellaneous	Full hardware handshaking control, providing radio, smart modem and multi-drop support Floating point data supported

DF1 Master Protocol Specifications

The ports on the module can be individually configured as Master ports. When configured in master mode, the DFCM module is capable of reading and writing data to remote DF1 devices.

DF1 Master Driver	
DF1 Modes	Full-Duplex - Master (Module generates commands) Half-Duplex - Polling
Command List	Up to 100 commands per Master port, each fully-configurable for function, slave address, register to/from addressing and word/bit count
Polling of Command List	User-configurable polling of commands, including disabled, continuous, and on change of data (write only)

DF1 Slave Protocol Specifications

The ports on the module can be individually configured to support the Slave mode of the DF1 protocol. When in slave mode, the module can accept DF1 commands from a master to read/write data stored in the module's internal registers.

DF1 Slave Driver	
DF1 Modes	Full Duplex - Slave (not peer mode) Half Duplex - Polled
Configurable parameters per slave port	Data Table File Start (File N[x] 0 to 999) Data Table File Size (1 to 1000 words) Data Table location in database (0 to 3999)

ProSoft Wireless Protocol

ProSoft Wireless Protocol (PWP) offers versatility where a mix of control devices requires cooperation with each other. This involves sharing of information across the applications regardless of device or network type, often at high speed, and with high reliability. Wireless bandwidth utilization is optimized by using efficient communication methods. The protocol supports Unicast, Broadcast and Multicast group messaging. Efficiency is based on the fact each device on the "wireless" network can produce these types of messages and each device determines which of these messages to consume.

General Specifications - Radio Modules

These modules utilize a full function wireless network card, supporting RF data rates up to 11 Mbps. The modules function as a client, providing an ultra-fast wireless solution for the most demanding industrial applications.

These modules allow you to connect various field devices using different networks or protocols and share data between these devices "over-the-air." This is accomplished by exchanging shared common database information over-the-air with ProSoft Technology's efficient but powerful wireless protocol.

Specification	Description
Frequency	2.4 GHz band (2400 to 2483.5 MHz)*
Wireless medium	DSSS: Direct Sequence Spread Spectrum (802.11b)
Output power	32 mW (15 dBm)
Channel data rates	11, 5.5, 2, 1 Mbps
Channels: user selectable	1 through 11* **
Security	PWP + WEP 64/128 Encryption with WEP key rollover management
Antenna Ports	Two RP-SMA connectors, automatic antenna diversity
Bit Error Rate (BER)	Better than 10-5

* Varies with country regulation
** Some European countries such as France allow fewer channels

Hardware Specifications

Specification	Description
Power Supply	24 VDC nominal, 18 to 32 VDC allowed. Positive, Negative, GND Terminals.
Current Load	500 mA max@ 24 VDC
Operating Temperature	-20 to 50°C (-4 to 122°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Relative Humidity	5% to 95% (non-condensing)
Dimensions	**Standard:** 5.20H x 2.07W x 4.52D inches (13.2cmH x 5.25cmW x 11.48cmD) **Extended:** 5.20H x 2.73W x 4.52D inches (13.2cmH x 6.934cmW x 11.48cmD)
LED Indicators	Power and Module Status, Application Status, Serial Port Activity LED, Serial Activity and Error LED Status, RF Link Status, RF Data Status
Configuration Serial Port	Mini-DIN, RS-232 only No hardware handshaking
Application Serial Ports	Mini-DIN, RS-232/422/485 RS232 handshaking configurable RS422/485 screw termination included
Antenna ports	Two RP-SMA connectors, with automatic antenna diversity.
Shipped with each unit	Mini-DIN to DB-9M cables per serial port, 4 ft RS-232 configuration cable, 2.5mm screwdriver, CD (docs and Configuration utility), RS-422/485 DB9 to Screw Terminal Adaptor (1 to 4, depending on ports)

ProSoft Configuration Builder

ProSoft Configuration Builder (PCB) provides a quick and easy way to manage module configuration files customized to meet your application needs. PCB is not only a powerful solution for new configuration files, but also allows you to import information from previously installed (known working) configurations to new projects.

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 http://www.prosoft-technology.com for a complete list of products.

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