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DF1 Half/Full Duplex Master/Slave Communication Module

MVI71-DFCM

The MVI71 DF1 Master/Slave Communication Module is a PLC backplane compatible module that allows Rockwell Automation PLC I/O compatible processors to interface easily with DF1 protocol compatible devices and hosts. Devices commonly supporting the protocol include Rockwell Automation PLCs and power monitoring equipment, as well as several other third party devices in the marketplace.

Features and Benefits

The MVI71-DFCM Master/Slave Communications module allows Rockwell Automation PLC I/O compatible processors to interface easily with other DF1 protocol compatible devices. Compatible devices include not only Rockwell Automation PLCs (which all support the DF1 protocol) but also a wide assortment of end devices.

The module has two serial ports supporting the DF1 protocol, with each port user-configurable to act as a master or as a slave. Data transfer between the module and the PLC processor is asynchronous to the DF1 network, with the module's internal database being used to exchange data between the processor and the DF1 network.

General Specifications

- Single Slot – 1771 backplane compatible
- The module is recognized as an Input/Output module and has access to processor memory for data transfer between processor and module
- Ladder Logic is used for data transfer between module and processor. Sample ladder file included.
- Configuration data obtained from configuration text file downloaded to module. Sample configuration file included.

Hardware Specifications

| Specification | Description |
|------------------------|--------------------------------------------------------------------------------------|
| Form Factor | Single Slot 1771 chassis compatible BTR/BTW data transfer Local or remote rack |
| Backplane current load | 800 mA @ 5 V |
| Operating temperature | 0 to 60°C (32 to 140°F) |

DF1 Half/Full Duplex Master/Slave Communication Interface Module MVI71-DFCM

The MVI71-DFCM module is the ideal solution for many applications where DF1 protocol connectivity must be added to a PLC platform. The MVI71-DFCM module can be found in many industrial sectors and in the following applications:

- Foreign device data concentrator
- SCADA system pipelines and offshore platforms
- Food processing
- Mining
- Pulp and paper

How to Contact Us: Sales and Support

All ProSoft Technology products are backed with unlimited technical support. Contact our worldwide Technical Support team directly by phone or email:

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| Specification | Description |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Storage temperature | -40 to 85°C (-40 to 185°F) |
| Shock | 30g operational 50g non-operational |
| Vibration | 5 g from 10150 Hz |
| Relative humidity | 5 to 95% (non-condensing) |
| LED Indicators | Module status Backplane transfer status Application status Serial activity and error LED status |
| Debug/Configuration port (CFG) | |
| CFG Port (P1) | RJ45 (DB-9M with supplied cable) RS-232 only |
| Configuration Connector | RJ45 RS-232 Connector (RJ45 to DB-9 cable shipped with unit) |
| Application Ports | |
| Application Serial port (P2, P3) (Serial Modules) | (2) RJ45 RS-232/422/485 Application ports |

Functional Specifications

DF1 ports

- Full and half duplex modes supported
- CRC and BCC error checking
- Full hardware handshaking control provides radio, modem and Multi-drop support
- Memory usage is completely user configurable, supporting the storage and transfer of up to 5000 registers to/from the control processor
- Up to 125 word read and write command lengths supported
- Floating point data movement supported

DF1 Master Protocol Specifications The ports on the DF1 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, enabling the PLC platform to act as a SCADA sub-master.

- Command List: Up to 100 commands per Master port, each fully-configurable for function, slave address, register to/from addressing and word/byte count
- Status Data: Error codes available on an individual command basis. In addition, a slave status list is maintained per active master port.
- Polling of Command List: User-configurable polling of commands, including disabled, continuous, and on change of data (write only)

DF1 Slave Protocol Specifications

The module accepts DF1 commands from an attached DF1 master unit to read/write data stored in the module's internal registers. This data can be derived from other DF1 slave devices on the network through a master port or from the processor and is easily transferred to the processor's data registers.

Tested Hardware Connections

Several hardware connections have been tested by ProSoft Technology or have been customer field tested. To our knowledge, the following physical connections have been successful:

- RA Panel view (Full Duplex point-point, DFCM as slave)
- RA Processors (Full/Half duplex, DFCM as either master or slave)
- RA Power Monitors (485 Half-Duplex DFCM as Master)

Additional Products

ProSoft Technology offers a full complement of hardware and software solutions for a wide variety of industrial communication platforms.

Compatible products include:

DF1 Half/Full Duplex Master/Slave Communication Interface Module for SLC (MVI46-DFCM)

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