DF1 Master/Slave to HART Analog Gateway
5108-DFCM-HART / 5128-DFCM-HART

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 Master/Slave to HART Analog Gateway

5108-DFCM-HART / 5128-DFCM-HART

The HART Analog Input Gateway provides a clean way to integrate HART Analog instruments with existing controller platforms on a DF1 network. The gateway works well for field applications where it can be installed closer to HART instrument, saving on copper cable and installation costs. The gateway also saves valuable rack space for other in-chassis options. The gateways provide extremely fast channel update times (all channels updating simultaneously in 67 ms) making the HART Analog Input Gateway ideal for applications where high speeds and point-to-point connectivity are required. These gateways are available in 4 and 8 Analog input channel options.

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)

HART Analog

The HART Analog Protocol exists in 4 and 8 channel implementations. This driver can be configured on an individual channel basis to operate as a HART Master Station and supports all the available HART commands including Universal, Common Practice and Device Specific Commands. Each HART channel is independently configured to interface with the internal database in the module.

The auto-poll mode allows the module to automatically collect data from each HART instrument on the channel and store the data in the module's database without the use of user commands. The module automatically generates HART commands 0, 3, 13, 14 and 15.

General Parameters	
Communication parameters	Number of HART Preambles: 2 to 50 Enable Handheld: Y or N Primary Master: Y or N
Configurable Parameters per Channel	Auto-Poll Enable, Short / Long Address Retries, Retries After Error Poll Time After Error, Number of Commands, Slave List Error Pointer
HART Driver	
Command List	Up to 100 fully configurable commands per channel
Polling of command list	User configurable polling of commands, including disabled, continuous, on change of data (write only) and dynamically user or automatic enabled.
Isolated HART Analog Input Specifications	
Input Range	Current: 4 to 20mA with HART
Resolution	16bits
Input Filter	First Order Sync: 10 Hz
Current Input Resistance	247.6 ohms +/- 1%

Isolated HART Analog Input Specifications	
Open circuit detection time	1/2 second maximum
Over current	+/-40mA continuous, maximum
Common Mode Noise Rejection	105dB
Calibrated Accuracy @ 25°C	4 to 20 mA: 0.05% of reading
Input Isolation Voltage	2500 V RMS per UL 1577, transformer isolated
24V DC Isolation Voltage	1500 VDC

HART® is a registered trademark of the HART Communication Foundation

Configuration

ProSoft Configuration Builder (PCB) provides a quick and easy way to manage module configuration files and view module 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 to new projects.

General Specifications

The ProLinx® Communication Modules provide connectivity for two or more dissimilar network types. The modules, encased in sturdy extruded aluminum, are stand-alone DIN-rail mounted protocol gateways, providing communication between many of the most widely used protocols in industrial automation today.

Hardware Specifications

Specification	Description
Power Supply Input	24 VDC nominal 18 to 32 VDC allowed Positive, Negative, GND Terminals 2.5 mm screwdriver blade
Current Load	1-4 ch: 190 mA max@ 32 VDC max 5-8 ch: 250 mA max@ 32 VDC max
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 in. (13.2cmH x 5.25cmW x 11.48cmD) Extended: 5.20H x 2.73W x 4.52D in. (13.2cmH x 6.934cmW x 11.48cmD)
LED Indicators	Power and Module Status Application Status HART Channel Activity (Green)

ProLinx

Specification	Description
Configuration Serial Port	DB-9M RS-232 only No hardware handshaking
HART Interface	Four or eight HART Point-to-Point channels (5x08 = 4 inputs; 5x28 = 8 inputs) Screw terminals for each channel
Electrical Isolation	1500 Vrms at 50 Hz to 60 Hz for 60 s, applied as specified in section 5.3.2 of IEC 60950: 1991
Common Mode Rejection	105db @ DC
Over current	+/- 40mA continuous, maximum
Overvoltage Protection	All HART Inputs: 90V 3-electrode gas discharge tube, surge arrestor: 30V MOV for voltage protection, 300mA poly switch resettable fuse for over current protection
Accuracy	4 to 20 mA: 0.05% of reading @ 25°C
24VDC loop output power	1 Internal 24VDC supply for each 4 channels. Screw terminals for Isolated 24VDC loop power May be used to provide HART loop power
Shipped with Each Unit	Mini-DIN to DB-9M serial cables 4 ft RS-232 configuration cable 2.5mm screwdriver CD (docs and Configuration utility) RS-422/485 DB-9 to Screw Terminal Adaptor (1 or 4, depending on ports, serial protocol modules only) HART Terminal Block connector
Certifications	CE and ATEX

Additional Products

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

Compatible products in this product line also include:

EtherNet/IP to HART Analog Gateway

(5208-DFNT-HART / 5228-DFNT-HART)

Modbus TCP/IP to HART Analog Gateway

(5208-MNET-HART / 5228-MNET-HART)

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