


C O N T R O L L E R I N F O R M A T I O N S H E E T

Maple Model(s)	PLC or Controller
HMI5000 Series	Danfoss FC Series Adjustable Frequency Drives



Summary

Maple Systems' **HMI5000 Series** Human/Machine Interface Terminals (Maple HMIs) can communicate with Danfoss FC Series VLT® Automation Drive via the RS485 port.

Models Supported

- **FC models (including FC051, FC100, FC200, and FC300)**
- **VLT Micro Driver**

Communications Cable

The Maple HMI can be connected directly to the RS485 serial port. A list of communications cables offered by Maple Systems as well as cable assembly instructions to assist you in assembling your own communications cable are available on our website.

WARNING *If your communications cable is not wired exactly as shown in our cable assembly instructions, damage to the HMI or loss of communications can result.*

PLC Settings:

Communication Parameters	9600, Even, 8, 1
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Accessible PLC Memory

Register Memory

The following table lists the PLC's register memory ranges that the Maple HMIs are able to access. Please note that your PLC's memory range may be *smaller* or *larger* than that supported by these HMIs. The following register memory can be displayed in 16 or 32 bit format on the Maple HMI.

PLC Register	Address Range	Format	PLC Register Description
Parameter 09	0 to 9999	dddd ¹	Set parameter (Word)
Reference 10	0 to 1	d	Control Bus Reference (Word)
Par_Index 11	0 to 999999	dddd(dd) ²	Set Parameter (Index) (DWord)

NOTE¹: d=decimal, h=hexadecimal, o=octal format

NOTE²: Para_Index 310.1 = 31001, Para_Index 310.0 = 31000

Additional Notes:

- RW100 sets PCD1 Control Word of Station #1
- RW101 reads PCD1 Status Word of Station #1
- RW102 sets PCD2 Control Word of Station #2
- RW103 reads PCD2 Status Word of Station #2
- RW104 sets PCD3 Control Word of Station #3
- RW105 reads PCD3 Status Word of Station #3
- RW106 sets PCD4 Control Word of Station #4
- RW107 reads PCD4 Status Word of Station #4

Discrete Memory

Discrete Memory access is not supported for this driver.

Important Memory Considerations

If your PLC’s memory range is smaller than the range supported by the Maple HMIs, it is possible to configure the HMI to monitor a PLC memory address which does not exist. Since this can cause unpredictable results, when you configure the HMI please ensure that all selected PLC memory addresses are valid for your PLC model.

Do not configure the HMI to write to any PLC memory address which should only be written to by the PLC.

EZware Settings

The following table lists the communications settings that must be configured in EZware. These settings can be found in the *Edit-Set System Parameters* menu under the *Device* tab. Please note:

- The **Recommended Settings** column provides the recommended setting based upon the default settings most commonly used in the Danfoss FC Series adjustable frequency drive.
- The **Options** column lists EZware’s options; your PLC may not support every option

Name	Recommended Settings	Options	Important Notes
Name:	Danfoss FC Series		The HMI will automatically put the PLC Type in this field but you can edit this field to provide a unique description
HMI or PLC:	PLC		
Location:	Local	Local, Remote	Select <i>Local</i> if the PLC is directly connected to the HMI; <i>Remote</i> if the PLC is connected thru another HMI

Name	Recommended Settings	Options	Important Notes
PLC type:	Danfoss FC Series		
PLC I/F:	RS-485 2W	RS-232, RS-485 2W, RS-485 4W, Ethernet	Ethernet not supported with this driver.
PLC default station no.:	1	0-31	
Settings: COM:	COM1	COM1	
Settings: Baud Rate:	9600	1200-187.5K	Must match the baud rate in the controller.
Settings: Data bits:	8	8 bits, 7 bits	Must match the baud rate in the controller.
Settings: Parity:	Even	None, Even, Odd, Mark	Must match the baud rate in the controller.
Settings: Stop bits:	1	1 bit, 2 bits	Must match the baud rate in the controller.
Settings: Timeout (sec):	1.0	0.1 – 25.5	Adjust if longer timeout is required.
Settings: Turn around delay (ms):	0	0 – 1000	Timeout period between HMI polls.
Settings: Send ACK delay (ms):	0	0 – 1000	Time HMI waits for ACK response from PLC.
Settings: Parameter 1:	0		Not Applicable
Settings: Parameter 2:	0		Not Applicable
Settings: Parameter 3:	0		Not Applicable
Interval of block pack (words):	5	0-512	See <i>HMI5000 Series Programming Manual</i> (Maple P/N 1010-1007)

Name	Recommended Settings	Options	Important Notes
Max. read-command size (words):	2		Not Adjustable
Max. write command size (words):	32		Not Adjustable