

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	Mitsubishi FX Series



Summary

Maple Systems' **HMI5000 Series** Human/Machine Interface Terminals (Maple HMIs) communicate with Mitsubishi MELSEC FX Series PLCs using the Monitor Interface protocol. When configured with EZware, the Maple HMI is the master in a point-to-point single master, single slave format.

Compatible PLCs

Family	Model
MELSEC FX & FX2C Series	FX-16 through FX-128
MELSEC FX ₀ Series	FX ₀ -14 through FX ₀ -30
MELSEC FX _{0S}	FX _{0S} -10 through FX _{0S} -24
MELSEC FX _{0N} Series	FX _{0N} -24 through FX _{0N} -60
MELSEC FX _{2N} Series	FX _{2N} -16 through FX _{2N} -128
FX _{1S} Supermicro	FX _{1S} -10 through FX _{1S} -30
FX _{1N} Supermicro	FX _{1N} -14 through FX _{1N} -60
FX _{2NC} Supermicro	FX _{2NC} -16 through FX _{2NC} -96

Communications Cable

The Maple HMI should be connected to the main programming port located on the PLC. 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 at www.maplesystems.com.

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

The MELSEC FX Series port's Baud Rate, Parity, Data Bits, and Stop Bits must match the settings in EZware.

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.

(Note: d=decimal)

PLC Register Type	Address Range	Format	PLC Register Description
D	0-7999*	dddd	Data Registers
TV	0-255	ddd	Timer Current Value
CV	0-199	ddd	16-Bit Counter Current Value
CV2	200-255	ddd	32-Bit Counter Current Value NOTE: Set Number of Words to 2
SD	8000-9999	dddd	Special Data Register

* 0-999 for FX0N and FX2

Discrete Memory

The following table lists the PLC's discrete 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 discrete memory is displayable in single-bit format on the Maple HMI.

(Note: d=decimal, o=octal)

PLC Bit Type	Address Range	Format	PLC Bit Description
X	0 to 377	ooo	Input Bits
Y	0 to 377	ooo	Output Bits
M	0 to 7999	dddd	Internal Control Relays
T	0 to 255	ddd	Timer complete bit (preset reached)
C	0 to 199	ddd	Counter complete bit (preset reached)
SM (Mitsubishi FX2n driver only)	8000 to 9999	dddd	Special Auxiliary Relay

Memory Not Supported

The following PLC memory areas are not currently supported by the Maple HMIs:

- S (States)

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-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 Mitsubishi MELSEC FX Series PLCs.
- The **Options** column lists EZware's options; your PLC may not support every option.

Name	Recommended Settings	Options	Important Notes
Name:	Mitsubishi FX _{0N} /FX ₂ Series or Mitsubishi FX _{2N} Series		Description label
HMI or PLC	PLC		
Location	Local	Local, Remote	Select <i>Local</i> if PLC directly connected to HMI, <i>Remote</i> if PLC connected thru another HMI.
PLC type	Mitsubishi FX _{0N} /FX ₂ Series or Mitsubishi FX _{2N} Series		
PLC I/F:	RS-485, 4W	RS-232, RS-485 2W, RS-485 4W, Ethernet	Must match the PLC port setting.

Name	Recommended Settings	Options	Important Notes
PLC default station no.:	0	0-255	Must match the PLC's default station no.
Settings: COM:	COM 1	COM1-COM3	Serial port of HMI connected to PLC.
Settings: Baud rate:	9600	4800, 9600, 19200, 38400, 57600, 115200	Must match the PLC port settings. Use the fastest baud rate supported by the PLC.
Settings: Data bits:	7	7 or 8	Must match the PLC's port setting.
Settings: Stop bits:	1	1 or 2	Must match the PLC's port setting.
Settings: Parity:	Odd	Even, Odd, None	Must match the PLC's port setting.
Settings: Timeout (sec)	1.0	0.1 to 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:	0		Not Applicable
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)
Max. read-command size (words):	32		Not Adjustable
Max. write-command size (words):	32		Not Adjustable