


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	Panasonic MINAS A4 Series AC Servo Driver (serial)	

Summary

Maple Systems' **HMI5000 Series** Human/Machine Interface Terminals (Maple HMIs) can communicate with Panasonic MINAS A4 Series AC Servo Driver via the serial port.

Communications Cable

The Maple HMI can be connected directly to the CN X3 or X4 serial port (Mini-Din 8P). 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:

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 Type	Address Range	Format	PLC Register Description
Command 01	0 to 0	d ¹	CPU version (Numeric format: 16-bit hex)
Command 05	0 to 0	d	Driver version (ASCII characters, 12 words)

PLC Register Type	Address Range	Format	PLC Register Description
Command 06	0 to 0	d	Motor version (ASCII characters, 12 words)
Command 21	0 to 0	d	Command Pulse Counter (Numeric format: 32-bit signed)
Command 22	0 to 0	d	Feedback Pulse Counter (Numeric format: 32-bit signed)
Command 24	0 to 0	d	Present Speed (Numeric format: 16-bit unsigned)
Command 25	0 to 0	d	Present Torque (Numeric format: 16-bit unsigned)
Command 26	0 to 0	d	Present Deviation Counter (Numeric format: 32-bit signed)
Command 84	0 to 0	d	Write Parameter to EEPROM ²
Command 90	0 to 0	d	Present Alarm Data (Numeric format: 16-bit unsigned)
Command 91	1 to 14	d	Alarm History ⁴ (Numeric format: 16-bit unsigned)
Command 92	1 to 14	d	Batch Alarm ⁴ (Numeric format: 16-bit unsigned)
Command 93	0 to 0	d	Clear Alarm History (including EEPROM) ²
Command 94	0 to 0	d	Clear Alarm ²
Command 9B	0 to 0	d	Absolute Clear ²
Parameter	0 to 7F	hh ¹	Individual Parameter (range: 0x00 ~0x7F) ³
Comm2D_S	0-1	d	Command 2D single-turn date (Numeric format: 32-bit signed)
Comm2D_M	0-1	d	Command 2D multi-turn date (Numeric format: 32-bit signed)

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

NOTE²: Command 84, Command 93, Command 94, and Command 9B are write only data types, (use the Set Bit object). All other commands are read only.

NOTE³: Parameter read/write: Use Device Type to define address control from 00~7F.
For example: "Address_00" is mapped to "Parameter_00". Refer to the Panasonic MINAS A4 Series user manual for details.

NOTE⁴: Command 91 and Command 92 are word types. Use "Operating range" to map the record of 14 alarms. For example: "Command 91_1" means "Read alarm data_First alarm."

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.

PLC Bit Type	Address Range	Format	PLC Bit Description
Command 20	0 to 7	d ¹	States ²
Command 27	0 to 31	d	Input Signal ²
Command 28	0 to 31	d	Output Signal ²

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

NOTE²: Device address type can define MINAS A4 Driver's command list.

Command 20, Command 27, and Command 28 are Bit data types. Use "Operating range" to map communication order status.

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 that does not exist. 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 that 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 Panasonic MINAS A4 Servo Drive.
- The **Options** column lists EZware's options; your PLC may not support every option

Name	Recommended Settings	Options	Important Notes
Name:	Panasonic MINAS A4		The HMI will automatically put the PLC Type in this field but you can edit this field to provide a unique description

Name	Recommended Settings	Options	Important Notes
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
PLC type:	Panasonic MINAS A4		
PLC I/F:	RS-232	RS-232, RS-485 2W, RS-485 4W, Ethernet	
PLC default station no.:	0	0-F	Must be set to 0 (master station only)
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:	None	None, Even Odd, Mark	Must match the baud rate in the controller.
Settings: Stop bits:	1	1 bit or 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):	1	0-512	See the HMI5000 Series Programming Manual. (Maple P/N 1010-1007)

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