



# Compumotor

## 6000, 6K Series

### Overview

Maple Systems' **Silver Series/HMI500 Series** Human-Machine Interfaces (Maple HMIs) communicate with Compumotor 6000, and 6K Controllers using the Compumotor 6000 and 6K Series protocol. When configured with EZware-500, the Maple HMI is the Master in a point-to-point single master, single slave format.

### Compatible Controllers

Controller Family	Controller Model
6000	610n, 615n, 620n, 625n, 6270
6K	6Kn

### Communications Cable

The Maple HMI should be connected to the COM1 (via 3-wire RS-232), COM2 (via 3-wire RS-232 or 5-wire RS-485) or AUX (via 3-wire RS-232) serial communications port on the Compumotor Controller. Refer to Technical Note 1061 for information on communication cable part numbers and cable assembly instructions. If you will be assembling your own communications cable, cable assembly instructions are also available on our web site at [www.maple-systems.com](http://www.maple-systems.com).

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

# Controller Settings

Name	Setting	Options	Important Notes
Serial Port I/F:			The Controller has DIP switches to select the RS232 or RS485 settings.
COM1, AUX	RS232	No options	
COM2	RS232	RS485	
Baud Rate:	9600	1200, 2400, 4800, 9600, 19200	Must match the HMI Configuration setting. Use the fastest baud rate supported by both.
Data Bits:	8	No options	Must match the HMI Configuration setting.
Parity:	None	No options	Must match the HMI Configuration setting.
Stop Bits:	1	No options	Must match the HMI Configuration setting.

Use the following code in the Compumotor controller if the HMI is to be connected to the controller's COM2:

```

PORT2                ;COMMANDS TO COM2
ECHO1                ;ECHO ON
EOT13,10,62         ;DEFINE 'END OF TRANSMISSION' CHARS
DRPCHK0              ;CHECK FOR RP240
ERRBAD13,10,63,0    ;DEFINE 'ERROR' PROMPT
ERROK13,10,62,0    ;DEFINE 'GOOD' PROMPT
ERRLVL3              ;ERROR LEVEL 3
PORT1                ;FUTURE COMMANDS TO COM1

```

If the HMI is to be connected to the controller's COM1, the first line should be PORT1, and the last line should be PORT2. The code should be at the top of the program.

## Accessible Controller Commands and Memory

The following tables list the Controller commands and memory ranges that Maple's HMIs are able to access: (Please note that your Controller's memory range may be *smaller* or *larger* than that supported by Maple's HMIs.)

Register Memory:

The following table lists the controller’s register memory ranges that Maple HMIs are able to access.

Controller Register	Address	Format	Access	Data Range
VAR	1-225	BIN, 2-word Single Float	R/W	$\pm 999,999,999.99999999$
VARToInt	1-225	BIN, 2-word Decimal	R/W	$+2,147,483,648^1$
VARI	1-225	BIN, 2-word Decimal	R/W	$\pm 2,147,483,648$

<sup>1</sup>Reads a VAR register, and returns a rounded integer value.

**Discrete Memory:**

The following table lists the controller’s discrete memory ranges that Maple HMIs are able to access.

Since the HMI500 can address a maximum of 16 bits per register, the VARB’s 32 bit registers are split into two (High and Low) 16 bit registers. The VARB\_H 1-125 and VARB\_L 1-125 are 125x16x2=4000 bit registers. This is the same quantity as VARB1-125 (125x32=4000).

The address number must specify both the register and the bit:

VARB\_L 12300 = VARB123, bit 0

VARB\_L 12315 = VARB123, bit 15

VARB\_H 12300 = VARB123, bit 16

VARB\_H 12315 = VARB123, bit 31

Controller Register	Address	Format	Access	Data Range
VARB_H	100-12515	dddbb	R/W	0 = On, 1 = Off
VARB_L	100-12515	dddbb	R/W	

### Run Command:

The Maple HMIs have the ability to run programs that are stored in the Compumotor controller. Using EasyBuilder's Set Word object, select "RUN PRG" for the Device Type, 0 for the Device Address, and select "BIN" for format. For the Attribute, select "Set Constant" for style and enter the number 1 to 999 that refers to the program's name (prefixed by "PRG") stored in the Compumotor. When pressed during operation, the program of the same name in the Compumotor will run.

<b>Controller program</b>	<b>Program #</b>	<b>Format</b>	<b>Comments</b>
PRG (RUN PRG)	1-999	RUN_PRG, BIN, SetConstant=1	Use "PRGxxx"(xxx=1-999) as controller program name.

### *Important Controller Memory Considerations*

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

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

If the controller is busy while the HMI is requesting information, it may prevent communications and cause a communications error to be displayed on the HMI.

# EZware-500 Settings

The following table lists the communications settings that must be configured in EZware-500. These settings can be found in the Edit-Set System Parameters menu under the PLC tab. Please note:

- The **Recommended Settings** column lists EZware-500's recommended setting; your controller's default may be different
- The **Options** column lists EZware-500's options; your controller may not support every option

Name	Recommended Settings	Options	Important Notes
PLC Type:	Compumotor 6K		
Serial Port I/F:	RS232	RS232, RS485	
Data Bits:	8	7, 8	Must match the controller's configuration settings.
Stop Bits:	1	1, 2	Must match the controller's configuration settings.
Baud Rate:	9600	9600, 19200, 38400, 57600, 115200	Must match the controller's configuration settings. Use the fastest baud rate supported by both.
Parity:	None	Even, Odd, None	Must match the controller's configuration settings.
HMI station No:	0		Does not apply to this protocol.
PLC station No:	1	1, 2	Must match the controller port #.
Multiple HMI:	Disable	Disable, Master, Slave	Use for multiple HMIs.
HMI-HMI link speed	38400	38400, 115200	Use for multiple HMIs
PLC time out constant:	3.0	1.5 to 5.0	Adjust if longer time out is required
PLC block pack:	0	0-10	See Silver Series Installation and Operation Manual.