



GE Fanuc

Series 90 & VersaMax

Overview

Maple Systems' **Silver Series/HMI500 Series** Human-Machine Interfaces (Maple HMI's) communicate with GE Fanuc Series 90 and VersaMax PLCs using the SNP-X protocol. The GE PLC communication protocol must be set for SNP; in later versions of firmware the SNP protocol includes SNP-X which is what's actually used by the HMI's. When configured with EZware-500, the Maple HMI is the master in a point-to-point single master, single slave format. Please refer to the *Silver Series Installation and Operation Manual* for information on connecting multiple Maple HMI's to a single PLC port.

Compatible PLCs	
Family	Model
Series 90-30	311, 313, 323, 331, 340, 341, 351, 352, 363, 364, CMM311
Series 90-70	CMM711
Series 90 Micro	IC693UDR005, IC693UAL006, IC693UAA007, IC693UDR010 (if firmware version 3.01 or later is used which includes the SNP-X protocol)
VersaMax	CPU001, 002, 0005, E05, 10pt Nano, 14 - 28pt Micro

Communications Cable

For the Series 90-30, the Maple HMI can be connected to:

- the main SNP communications port located on the power supply module
- the CPU may have an RS232 or RS485 port that can be set up for SNP, this depends upon model CPU selected
- the Port 1 or 2 on the CMM311 communications coprocessor module wye cable, must be set up for SNP (the CMM311 is for the Series 90-30).

For the Series 90-70, the Maple HMI can be connected to:

- the port on the CMM711 communications coprocessor module which must be set up for SNP (the CMM711 is for the Series 90-70). Note, for the Series 90-70 PLC's, only the CMM711 communications module supports the SNP-X protocol needed to communicate with the Silver Series HMI500's.

For the VersaMax, the Maple HMI can be connected to:

- Port1 (via RS-232) located on the power supply module or main CPU of the PLC, set for SNP protocol
- Port2 (via RS-485) located on the power supply or main CPU.

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.maple-systems.com/cables.htm.

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 Modem Turnaround Delay must be set to 0.
The Level 2 Password in the PLC must be set to NULL
The port used must be set for SNP and the processor must use firmware version "S" or newer, which includes the SNP-X protocol.
The SNP-X port's Baud Rate, Parity, Data Bits, and Stop Bits settings must match the settings in EZware-500

Accessible PLC Memory

Register Memory

The following table lists the PLC's register memory ranges that the Maple HMI's are able to access. Please note that your PLC's memory range may be *smaller* or *larger* than that supported by these HMI's. The following register memory can be displayed in 16, 32, or 64 bit format on the Maple HMI's.

PLC Register Type	Address Range	Format	PLC Register Description
%R	1-10000	dddd	Data Memory Registers
%AI	1-10000	dddd	Analog Input Registers
%AQ	1-10000	dddd	Analog Output Registers

Discrete Memory

The following table lists the PLC's discrete memory ranges that the Maple HMI's are able to access. Please note that your PLC's memory range may be *smaller* or *larger* than that supported by these HMI's. The following discrete memory is displayable in single-bit format on the Maple HMI's.

PLC Bit Type	Address Range	Format	PLC Bit Description
%M	1-10000	dddd	Discrete Internals
%I	1-10000	dddd	Discrete Inputs
%Q	1-10000	dddd	Discrete Outputs

The following PLC memory areas are not currently supported by the Maple HMI'S:

- %T (Discrete Temporaries)
- %SA (SA Status Discrettes)
- %SB (SB Status Discrettes)
- %SC (SC Status Discrettes)
- %S (S Status Discrettes)
- %G (Genius Global Data)

Important Memory Considerations

If your PLC's memory range is smaller than the range supported by the Maple HMI's, 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-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 provides the recommended setting based upon the default settings most commonly used in the GE Fanuc Series 90 PLCs. The available port may determine whether RS232 or RS485 should be used.
- the **Options** column lists EZware-500's options; your PLC may not support every option

Name	Recommended Settings	Options	Important Notes
PLC type:	GE Fanuc Series 90 (SNP-X)		
Serial port I/F:	RS485	RS232, RS485	
Data Bits:	8	7 or 8	Must match the SNP-X port setting.
Stop Bits:	1	1 or 2	Must match the SNP-X port setting.
Baud Rate:	19200	9600,19200, 38400,57600, 115200	Must match the SNP-X port setting. Use the fastest baud rate supported by the PLC.
Parity:	Odd	Even, Odd, None	Must match the SNP-X port setting.
HMI station No.:	0	0-255	Does not apply to this protocol.
PLC station No.:	0	0-255	Does not apply to this protocol.
Multiple HMI:	Disable	Disable, Master, Slave	use for multiple OITs
HMI-HMI link speed:	38400	38400, 115200	use for multiple OITs
PLC time out constant (sec)	3.0	1.5 to 5.0	adjust if longer timeout is required
PLC block pack:	0	0-10	see <i>Silver Series Installation and Operation Manual</i>

Note: The Direct On-line Simulation does not work when connecting from a PC through a GE 9030 CMM311 card. The On-line Simulation does work from a PC via an HMI to a CMM311 module. The On-line Simulation also works from a PC to the 15 pin port on the base of a GE power supply (a 232 to 485 converter may be used in this case).