MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GE VERSAMAX

IC200CPUE05-MX

ETHERNET CPU MODULE

Used with the applicable VersaMax controllers configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: GE official manufacturer documentation

Chapter 3

CPU Module Datasheet: CPUE05

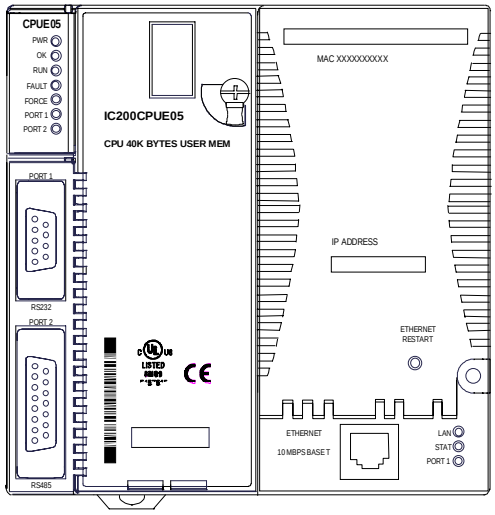
This chapter describes the appearance, features, and functionality of the following VersaMax PLC CPU module:

- IC200CPUE05: CPU with Two Serial Ports, Embedded Ethernet Interface, and 64K Configurable Memory

IC200CPUE05: CPU with Two Serial Ports, Embedded Ethernet Interface, and 64K Configurable Memory

VersaMax® PLC CPU IC200CPUE05 shares the basic features of the other VersaMax PLC CPUs. It provides powerful PLC functionality in a small, versatile system. CPUE05 can serve as the system controller for up to 64 modules with up to 2048 I/O points. Two serial ports provide RS-232 and RS-485 interfaces for serial communications. CPUE05 also provides a built-in Ethernet Interface. The RS-232 serial port can be configured for Local Station manager operation to provide access to diagnostic information about the Ethernet interface. CPUE05 has 64kB of configurable memory.

In addition, CPUE05 is compatible with the EZ Program Store device, which can be used to write, read, update, and verify programs, configuration, and reference tables data without a programmer or programming software.



Features

- 64kB of configurable memory
- Programming in Ladder Diagram, Sequential Function Chart, and Instruction List
- Compatible with EZ Program Store device.
- Non-volatile flash memory for program storage
- Battery backup for program, data, and time of day clock
- Run/Stop switch
- Floating point (real) data functions
- Embedded RS-232 and RS-485 communications
- Embedded Ethernet interface
- 70mm height when mounted on DIN rail with power supply

CPU with Two Serial Ports, Embedded Ethernet Interface, and 64K Configurable Memory: IC200CPUE05

Module Specifications

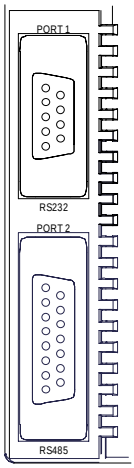
Size	4.95" (126mm) x 5.04" (128mm)		
Program storage	System flash, battery-backed RAM		
Backplane current consumption: IC200CPUE05	no serial port converter or EZ Program Store device	5V output: 160mA	3.3V output: 650mA*
	with serial port converter or EZ Program Store device	5V output: 260mA	
Floating point	yes		
Boolean execution speed	0.5ms/K (typical)		
Realtime clock accuracy (for timer functions)	100ppm (0.01%) or +/- 9sec/day		
Time of day clock accuracy	23ppm (0.0023%) or +/- 2sec/day @ 30C. 100 ppm (0.01%) or +/- 9sec/day @ full temperature range		
Embedded communications	RS-232, RS-485, Ethernet interface		
Configurable memory	64K bytes maximum		
Ethernet Interface Specifications			
Number of SRTP server connections	8		
Ethernet data rate	10Mbps		
Physical interface	10BaseT RJ45		
WinLoader support	via CPU port		
Number of Ethernet Global Data configuration-based exchanges	32		
EGD Exchange limits	100 data ranges and 1400 bytes of data per exchange; 1200 total data ranges across all exchanges.		
Time Synchronization	NTP - client only		
Selective Consumption of EGD	yes		
Load EGD configuration from PLC to programmer	yes		
Remote Station Manager over UDP	yes		
Local Station Manager (RS-232)	via CPU port		
Configurable Advanced User Parameters	yes		

* CPUE05 requires a power supply with expanded 3.3V.

IC200CPUE05: CPU with Two Serial Ports, Embedded Ethernet Interface, and 64K Configurable Memory

Serial Ports

The two serial ports are software-configurable for SNP slave or RTU slave operation. 4-wire and 2-wire RTU are supported. If a port is being used for RTU, it automatically switches to SNP slave mode if necessary. Port 1 can also be configured for Local Station Manager operation to provide access to diagnostic information about the Ethernet interface. Both ports default to SNP slave and both automatically revert to SNP slave when the CPU is in Stop mode, if configured for Serial I/O. Either port can be software-configured to set up communications between the CPU and various serial devices. An external device can obtain power from Port 2 if it requires 100mA or less at 5VDC.



Port 1: is an RS-232 port with a 9-pin female D-sub connector. The pinout of Port 1 allows a simple straight-through cable to connect with a standard AT-style RS-232 port.

Port 1 can be configured for either CPU serial communications (SNP, RTU, Serial I/O), or local Station Manager use. If Port 1 has been configured for CPU use, it can be forced to local Station Manager operation using the Restart pushbutton. Once forced, Port 1 remains available for station manager use until the PLC is power cycled, or the Restart pushbutton is pressed.

If Port 1 is configured as a local Station Manager, it cannot be used for CPU serial communications or for firmware upgrades using Winloader. The Restart pushbutton will NOT toggle it to the CPU serial protocols.

Port 2: is an RS-485 port with a 15-pin female D-sub connector. This can be attached directly to an RS-485 to RS-232 adapter (IC690ACC901). Port 2 can be used for program, configuration, and table updates with the EZ Program Store module.

The following table compares the functions of Port 1 and Port 2.

	Port 1	Port 2
CPU Protocols (SNP slave, RTU slave, Serial I/O)	Defaults to SNP slave	Defaults to SNP slave
Local Station Manager	Yes (see above)	no
Firmware Upgrade	PLC in Stop/No I/O mode, Port 1 not disabled or in Local Station Manager mode.	no
Smart module firmware upgrade	PLC in Stop/No I/O mode, Port 1 configured for CPU protocol	PLC must be in Stop/No IO mode.
EZ Program Store device	No	Read, Write, Verify, and Update. PLC must be in Stop/No IO mode.

CPU with Two Serial Ports, Embedded Ethernet Interface, and 64K Configurable Memory: IC200CPUE05

Cable Lengths

Maximum cable lengths the total number of feet from the CPU to the last device attached to the cable are:

Port 1 (RS-232) = 15 meters (50 ft.)
Port 2 (RS-485) = 1200 meters (4000 ft.)

Serial Port Baud Rates

	Port 1	Port 2
RTU protocol	1200, 2400, 4800, 9600, 19.2K, 38.4*K, 57.6*K	1200, 2400, 4800, 9600, 19.2K, 38.4*K, 57.6*K
Serial I/O protocol	4800, 9600, 19.2K, 38.4K*, 57.6K*	4800, 9600, 19.2K, 38.4K*, 57.6K*
SNP protocol	4800, 9600, 19.2K, 38.4K*	4800, 9600, 19.2K, 38.4K*
Local Station Manager (this is independent of serial protocol baud rate)	1200, 2400, 4800, 9600, 19.2K, 38.4K, 57.6K, 115.2K	na
Firmware Upgrade via WInloader	2400, 4800, 9600, 19.2K, 38.4K, 57.6K, 115.2K	na

* Only available on one port at a time.

The VersaPro software allows configuration of RTU and Serial I/O at 115.2K baud. However, these baud rates are not supported by the CPU. If a configuration using these baud rates is stored to the PLC:

1. For RTU, an “Unsupported Feature in Configuration” fault is logged and the PLC transitions to Stop Faulted mode.
2. For Serial I/O, the same fault is logged when the transition to Run mode occurs. The PLC will immediately transition to Stop Faulted mode.