CPU Specifications

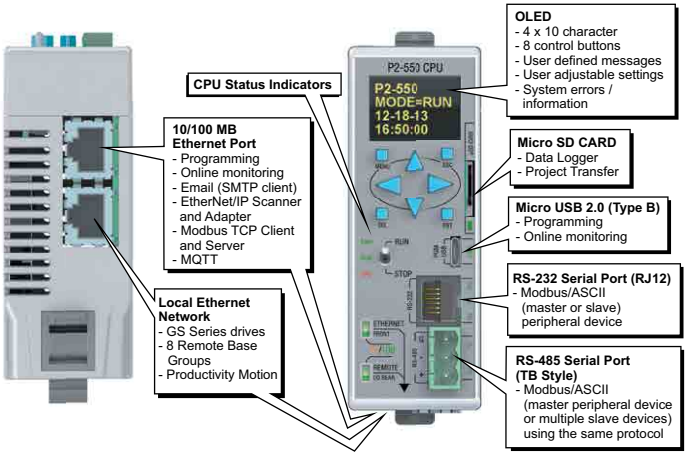
User Memory	50MB (Includes program, data and documentation)
Memory Type	Flash and Battery Backed RAM
Retentive Memory	500kB
Scan Time	500µs (3K Boolean, 240 I/O)
Display	OLED, 4x10 characters, 8 control buttons
Communications; 5 Integrated Ports	**USB:** Programming, Monitoring, Debug, Firmware **ETHERNET:** (10/100Mbps Ethernet) Programming, Monitoring, Debug, Firmware, Email SMTP Client, Modbus TCP Client (32 Servers) and Server (16 Clients), EtherNet/IP Scanner (32 Adapters) and Adapter (4 scanners) with 8 connections per device. **REMOTE I/O:** 16 GS Series Drives, 8 Remote Base Groups, 4 ProtosX TCP couplers, 4 PS-AMC modules **RS-232:** (RJ12, 1200-115.2k Baud) ASCII, Modbus **RS-485:** Removable Terminal Included, (1200–115.2 k Baud) ASCII, Modbus RTU.
Data Logging/Project Transfer	Micro SD card slot
Hardware Limits of System	**9 Base Groups:** 1 Local (P2-550) + 8 Remote (P2-RS and/or P1-RX) + 4 ProtosX TCP couplers + 4 PS-AMC 4,320 Hardware I/O points (All 32 point modules)
Instruction Types	Application Functions, PID Array Functions, Program Control Counters/Timers, String Functions Communications, System Functions Data Handling, Contacts Drum Sequencers, Coils Math Functions, Motion Control
Real Time Clock Accuracy	±5s per day typical at 25°C ±15s per day maximum at 60°C

Document Name	Edition/Revision	Date
P2-550-DS	4th Ed., Rev A5	7/10/2024

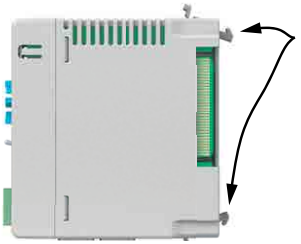
P2-550 CPU

The P2-550 is a full-featured, high-performance CPU for use with the Productivity2000 system.

CPU Front and Bottom Panels

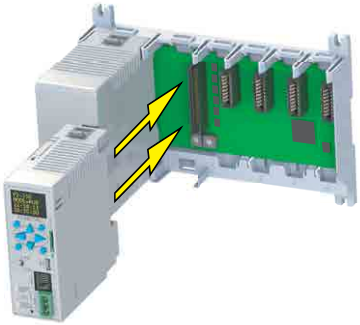


CPU Installation Procedure



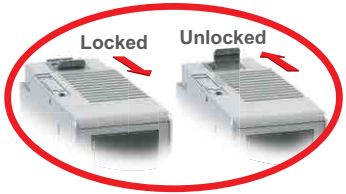
Step One:

Unlock both locking tabs



Step Two:

Seat CPU on support platform and push towards base until circuit board is fully engaged into connector



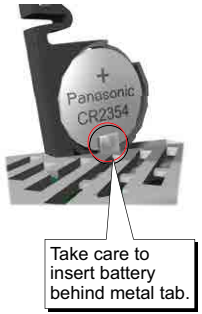
Step Three:

Snap retaining tab into the locked position.

Battery Installation Procedure

Step One:
Press spring lock and swing battery compartment away from CPU.

Step Two:
Insert battery and close compartment.



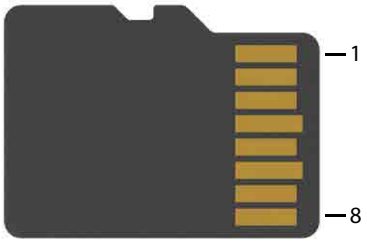
Battery (Optional)

D2-BAT-1	Coin type, 3.0 V Lithium battery, 560mA, battery number CR2354

Note: Although not needed for program backup, an uninstalled battery is included with the P2-550. Install this battery if you want the CPU to retain the Time and Date along with any Tagname values that you have set up as retentive.

Micro SD Specifications

Port Name	**MICRO SD**			
Description	Standard Micro SD socket for data logging or program transfer			
Maximum Card Capacity	32GB			
Transfer Rate (ADATA microSDHC Class 4 memory card)	Mbps	Minimum	Typical	Maximum
	Read	14.3	14.4	14.6
	Write	4.8	4.9	5.1
Port Status LED	Green LED is illuminated when card is inserted/ detected			

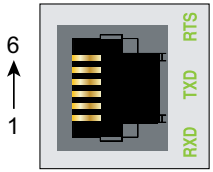


Note: Card not included with unit.

Port Specifications

RS-232 Specifications

Port Name	RS-232
Description	Non-isolated RS-232 DTE port connects the CPU as a Modbus/ASCII master or slave to a peripheral device. Includes ESD and built-in surge protection
Data Rates	Selectable,1200, 2400, 4800, 9600, 19200, 33600, 38400, 57600, and 115200
+5V Cable Power Source	210 mA maximum at 5V, ± 5%. Reverse polarity and overload protected
TXD	RS-232 Transmit output
RXD	RS-232 Receive input
RTS	Handshaking output for modem control
GND	Logic ground
Maximum Output Load (TXD/RTS)	3kΩ, 1000 pf
Minimum Output Voltage Swing	±5V
Output Short Circuit Protection	±15mA
Port Status LED	Green LED is illuminated when active for TXD, RXD and RTS
Cable Options	EA-MG-PGM-CBL D2-DSCBL USB-RS232 with D2-DSCBL FA-CABKIT FA-ISOCON for converting RS-232 to isolated RS-485

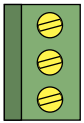


6-pin RJ12 Female Modular Connector

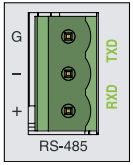
Pin #	Signal	
6	GND	Logic Ground
5	RTS	RS-232 Output
4	TXD	RS-232 Output
3	RXD	RS-232 Input
2	+5V	210mA Maximum
1	GND	Logic Ground

RS-485 Port Specifications

Port Name	RS-485
Description	Non-isolated RS-485 port connects the CPU as a Modbus/ASCII master or slave to a peripheral device. Includes ESD/EFT protection and automatic echo cancellation when transmitter is active
Data Rates	Selectable, 1200, 2400, 4800, 9600, 19200, 33600, 38400, 57600, and 115200
TXD+/RXD+	RS-485 transceiver high
TXD-/RXD-	RS-485 transceiver low
GND	Logic ground
Input Impedance	19kΩ
Maximum Load	50 transceivers, 19 kΩ each, 60 Ω termination
Output Short Circuit Protection	±250mA, thermal shut-down protection
Electrostatic Discharge Protection	Contact ±4KV, Air ±8KV per IEC1000-4-2 Cable is installed for testing
Electrical Fast Transient Protection	±1KV per IEC1000-4-4
Minimum Differential Output Voltage	1.5 V with 60Ω load
Fail Safe Inputs	Logic high input state if inputs are unconnected
Maximum Common Mode Voltage	-7.5 V to 12.5
Port Status LED	Green LED illuminated when active for TXD and RXD
Cable Options	Go to AutomationDirect.com for RS-485 cables



Removable connector included. Spare connectors available (part no. P3-RS485CON).



Pin #	Signal
G	GND
–	TXD-/RXD-
+	TXD+/RXD+

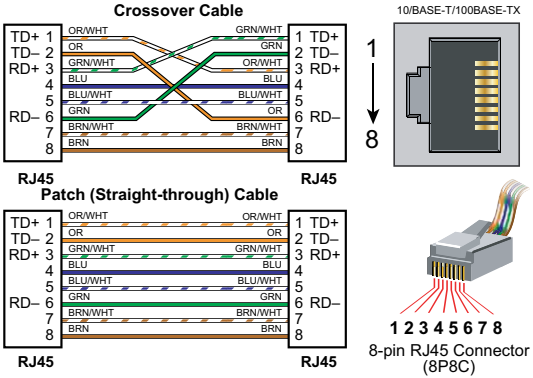
Port Specifications

Ethernet Specifications

Port Name	ETHERNET	REMOTE I/O
Description	Standard transformer isolated Ethernet port with built-in surge protection for programming, online monitoring, Email (SMTP client), Modbus/TCP client/server connections (fixed IP or DHCP) and EtherNet/IP Scanner/ Adapter connections.	Standard transformer isolated Ethernet port with built-in surge protection for connection to 16 GS Series Drives, 8 Remote Base Groups, and 4 PS-AMC modules.
Transfer Rate	10 Mbps (Orange LED) and 100 Mbps (Green LED) (auto-crossover)	
Port Status LED	LED is solid when network LINK is established. LED flashes when port is active (ACT).	

Micro USB Type B Slave Input Specifications

Port Name	MICRO USB
Description	Standard Micro USB Slave input for programming and online monitoring, with built-in surge protection. Not compatible with older full speed USB devices.
Transfer Rate	480Mbps
Port Status LED	Green LED is illuminated when LINK is established to programming software.
Cables	USB Type A to Micro USB Type B: 6ft. cable part # USB-CBL-AMICB6 15ft. cable part # USB-CBL-AMICB15

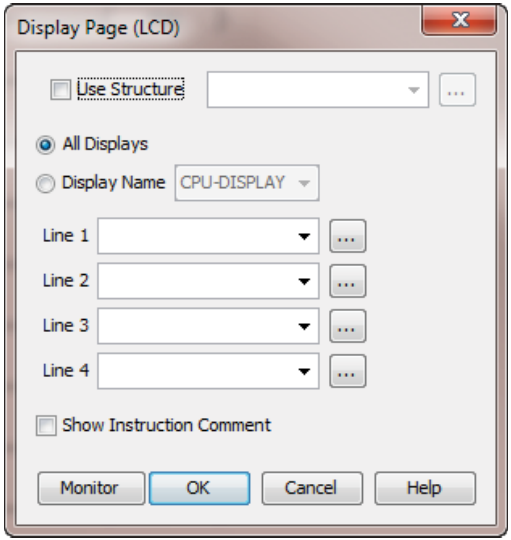


Front Panel OLED Message Display

The CPU incorporates a 4 line x 10 character OLED for system errors and information or for displaying user-defined messages.

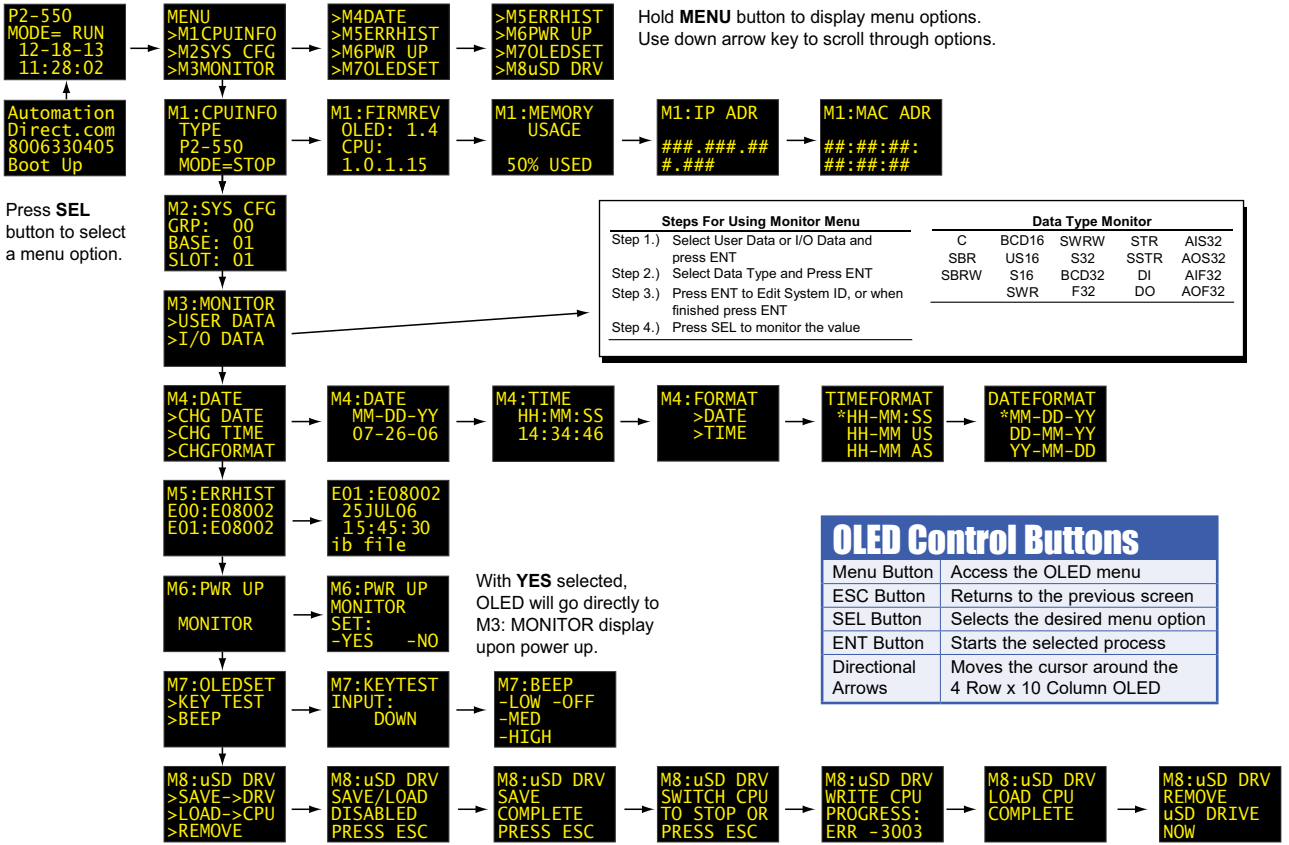
OLED control buttons located beneath the display allow the user to navigate through a menu and arrow buttons allow for configuration of time and date settings.

Note: There is a built in time-out for the OLED of 4 hours. Only a button press or power up will turn it back on.



For user-defined messages, the display is configured using the Productivity Suite Programming Software. An OLED Page instruction allows the user to program text into user-defined tags and display the messages based on the ladder execution.

Front Panel OLED Display Monitoring and Configuration



OLED Control Buttons

Menu Button	Access the OLED menu
ESC Button	Returns to the previous screen
SEL Button	Selects the desired menu option
ENT Button	Starts the selected process
Directional Arrows	Moves the cursor around the 4 Row x 10 Column OLED

WARNING: To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes.

Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.

If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call Technical Support at 770-844-4200.

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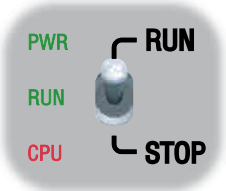
CAUTION Battery May Explode If Mistreated.
Do Not Recharge, Disassemble Or Dispose Of In Fire.

CPU Status Indicators

PWR	Green LED is illuminated when power is ON
RUN	Green LED is illuminated when CPU is in RUN mode
CPU	Red LED is illuminated during power ON reset, or power down.



Removable Terminal Block Specifications

Part Number	P3-RS485CON
Number of Positions	3 Screw Terminals
Pitch	5mm
Wire Range	28–12 AWG Solid Conductor 30–12 AWG Stranded Conductor
Screw Driver Width	1/8 inch (3.175 mm) Maximum*
Screw Size	M2.5
Screw Torque	4.5 lb·in (0.51 N·m)

*Recommended Screwdriver TW-SD-MSL-1

General Specifications

Operating Temperature	0° to 60°C (32° to 140°F)
Storage Temperature	-20° to 70°C (-4° to 158°F)
Humidity	5 to 95% (non-condensing)
Altitude	2,000 meters max
Pollution Degree	2
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Heat Dissipation	3.81 W
Overvoltage Category	II
Enclosure Type	Open Equipment
Module Location	Controller slot in the local base in a Productivity2000 System
Weight	158g (5.6 oz)
Agency Approvals	UL 61010-1 and UL 61010-2-201 File E139594, Canada and USA CE (EN 61131-2 EMC, EN 61010-1 and EN 61010-2-201 Safety)*

*Meets EMC and Safety requirements. See the D.O.C. for details.

IMPORTANT!

Hot-Swapping Information
Note: This device cannot be Hot Swapped.

CPU Run/Stop Switch Specifications

RUN position	Executes user program, run-time edits possible
STOP position	Does not execute user program, normal program load position