

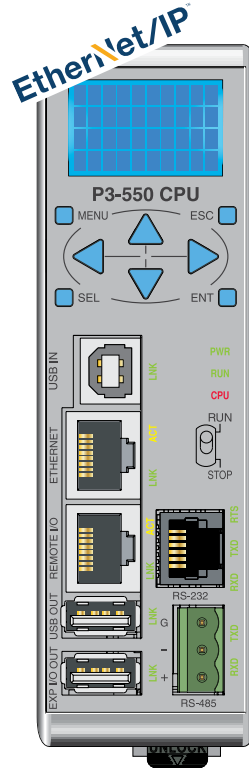
CPU Specifications

User Memory	50M (Includes program, data and documentation)	
Memory Type	Flash and Battery Backed RAM	
Retentive Memory*	Models C3 and earlier: 100K Models D and later: 492K	
Scan Time	650µs (3K Boolean, 1K I/O)	
Display	LCD, 4x10 characters, backlit, 8 control buttons; LCD characters are 5x7 with a dot pitch of 0.45mm; 2.25mm x 3.15mm	
Communications 7 Integrated Ports	USB IN: Programming, Monitoring, Debug, Firmware ETHERNET**: (10/100Mbps Ethernet) Programming, Monitoring, Debug, Firmware, Email SMTP Client, Modbus TCP Client (32 Slaves) and Server (32 Masters), EtherNet/IP Scanner (128 connections) and Adapter (16 connections) REMOTE I/O: (10/100Mbps Ethernet) 16 P3-RS or RX Remote Base Groups, and 32 GS-EDRV100 (GS Drives) USB OUT: (2.0) Data Logging or Project Transfer using SDC24-2048-A10 Pen Drive EXP I/O OUT: (2.0 Proprietary) 4 P3-EX Local Expansion Bases RS-232: Modbus RTU and ASCII (half and full duplex) RS-485: Removable Terminal Included, (1200-115.2k Baud) ASCII, Modbus	
Hardware Limits of System	17 Base Groups: 1 Local (P3-550) + 16 Remote (P3-RS / P3-RX) 5 Bases per Base Group: 1 P3-550, P3-RS or P3-RX + 4 Expansion (P3-EX) 85 Bases Total: 1 (CPU) + 16 (Remote) + 68 (Expansion) 59,840 Hardware I/O Points (All 64-point I/O Modules) 32 GS Series Drives as Remote I/O	
Instruction Types	Application Functions	Drum String Functions
	Array Functions	Sequencers System Functions
	Counters/Timers	Math Functions Contacts
	Communications	PID Coils
	Data Handling	Program Control HSI/HSO
Real Time Clock Accuracy	±5s per day typical at 25°C ambient: 1sec/day*** ±15s per day maximum at 60°C ambient: 2sec/day***	

*To utilize the 492K of retentive memory in the P3-550 rev. D or later CPU, you must use Productivity3000 software version 1.0.7.XX and firmware version 1.1.13.XX or later.

**For EtherNet/IP support in the P3-550 CPU, you must use ProductivitySuite software version 1.10.0.11 and firmware version 1.1.15.97 or later.

***Revision E or Higher

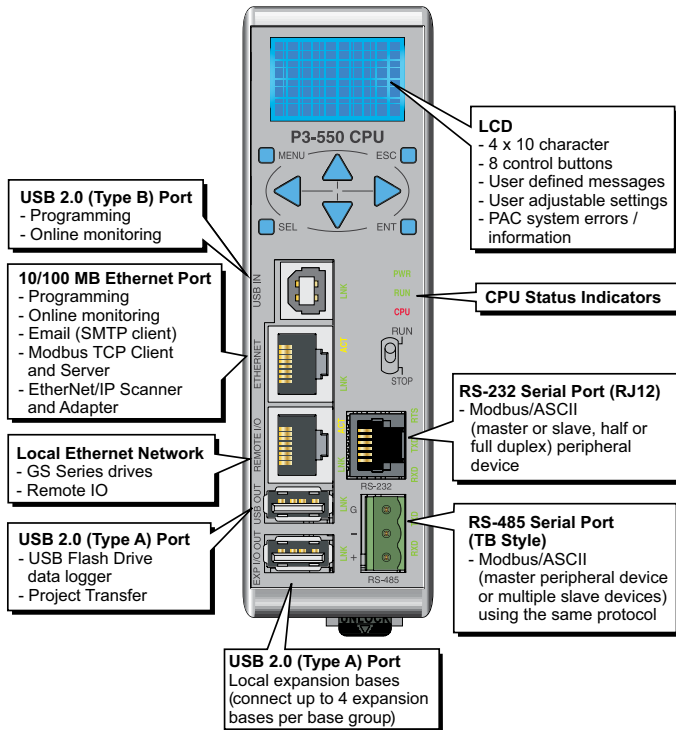


P3-550 CPU

The P3-550 is a full-featured, high-performance CPU for use with the Productivity3000 Programmable Automation Controller.

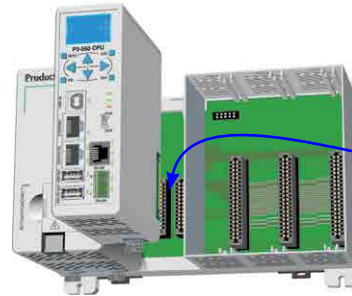
CPU Specifications	1
CPU Front Panel	2
CPU Installation Procedure	2
Battery Installation Procedure	3
USB Out Port Specifications	3
Exp I/O Out Port Specifications	3
RS-232 Port specifications	4
RS-485 Port specifications	4
Ethernet Port Specifications	5
Remote I/O Port Specifications	5
USB In Port Specifications	5
Front Panel LCD Display Monitoring and Configuration	6
Front Panel LCD Message Display	7
Safety Information	8
CPU Status Indicators	8
CPU Run/Stop Switch Specifications	8
General Specifications	8
Hot Swap Information	8

Warranty: Thirty-day money-back guarantee. Two-year limited replacement. (See www.automationdirect.com/P3000 for details).



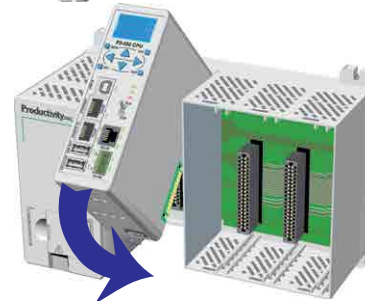
Step One:

Locate the two sockets next to the power supply; the CPU will be inserted into this location.



Step Two:

Insert the CPU at a 45° angle into the notch located at the top of the base and rotate down until seated.



Step Three:

Snap retaining tab into the locked position.



WARNING: Explosion hazard – Do not connect or disconnect connectors or operate switches while circuit is live unless the area is known to be non-hazardous. Do not hot swap.

AVERTISSEMENT: Risque d'explosion: ne pas connecter ou déconnecter les connecteurs ni actionner les commutateurs alors que le circuit est sous tension, à moins que la zone ne soit reconnue non dangereuse. Ne pas remplacer à chaud.

Battery Installation Procedure

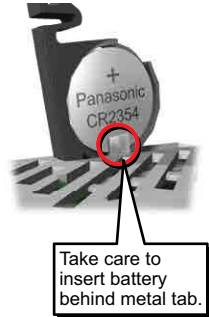
Step One:

Press spring lock and swing battery compartment away from CPU.



Step Two:

Insert battery and close compartment.



Take care to insert battery behind metal tab.

Battery (Optional)

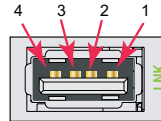
D2-BAT-1 Coin type, 3.0V Lithium battery, 560mA, battery number CR2354

Note: Although not needed for program backup, an uninstalled battery is included with the P3-550. 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.

Port Specifications

USB Type A Master Output Specifications

Port Name	USB OUT	EXP I/O OUT
Description	Standard USB 2.0 Master output for connection to high-speed Flash drive (Sandisk SDCZ4-2048-A10) for data logging or program transfer with built-in surge protection. Not compatible with older full speed USB devices. A 0.5m male-to-female "port extender" cable is included to assist with Flash drive connection.	Proprietary USB 2.0 Master output for connection with up to four P3-EX local expansion bases, with built-in surge protection.
Transfer Rate	480 Mbps	
Port Status LED	Green LED is illuminated when LINK is established to connected device	
Cables	None required	USB Type A to USB Type B: 6 ft. cable part # P3-EX-CBL6 (included with P3-EX module)



Mating face of USB type A female

USB OUT

Pin #	Signal
1	+5
2	- Data
3	+ Data
4	GND

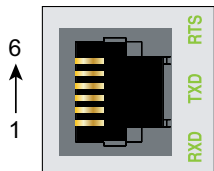
EXP I/O OUT

Pin #	Signal
1	Reset
2	- Data
3	+ Data
4	GND

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	210mA maximum at 5V, +/- 5%. Reverse polarity and overload protected.
TXD	RS-232 Transmit output
RXD	RS-232 Receive input
RTS	Handshaking output for flow control.
GND	Logic ground
Maximum Output Load (TXD/RTS)	3K V, 1,000pf
Minimum Output Voltage Swing	+/-5V
Output Short Circuit Protection	+/-15mA
Port Status LED	Green LED is illuminated when active for TXD, RXD and RTS



6-pin RJ12 Female Modular Connector

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

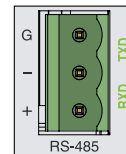
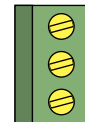
RS-485 Port Specifications

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	19K V
Maximum load	50 transceivers, 19K V each, 60 V termination
Output Short Circuit Protection	+/- 250mA, thermal shut-down protection
Electrostatic Discharge Protection	+/-8KV per IEC1000-4-2
Electrical Fast Transient Protection	+/-2KV per IEC1000-4-4.
Minimum Differential Output Voltage	1.5V with 60 V load
Fail safe inputs	Logic high input state if inputs are unconnected
Maximum Common Mode Voltage	-7.5V to 12.5V.
Port Status LED	Green LED illuminated when active for TXD and RXD
Cable Options	L19827-100, L19827-500, L19827-1000 or Belden 9841 equivalent.

Termination Connector Specifications

Number of Positions	Pitch	Screw Driver Width	Screw Size	Screw Torque
3	5 MM	1/8 Inch (3.175mm) maximum	M2.5	4.5 Lb-in
Wire Range	28-12 AWG Solid Conductor – 30-12AWG Stranded Conductor			

Removable Terminal Connector included. Spare connectors available (part no. PCON-KIT).



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

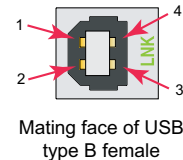
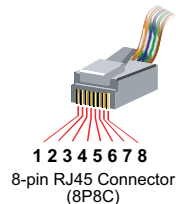
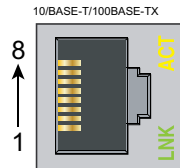
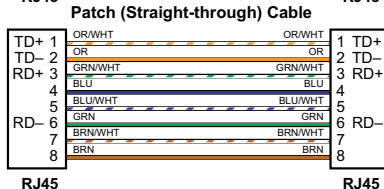
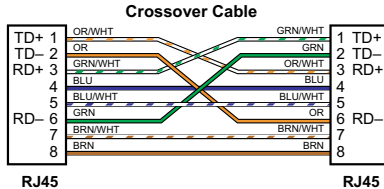
Port Specifications

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.	Standard transformer isolated Ethernet port with built-in surge protection for connection to the P3-RS/RX Remote I/O system. Supports 16 Remote I/O slaves and 32 GS Series drives.
Transfer Rate	10/100 Mbps	
Port Status LED	Green LED illuminated when network LINK is established. Yellow LED is illuminated when port is active (ACT).	
Cables	Use a Patch (straight through) cable when a switch or hub is used. Use a Crossover cable when a switch or hub is not used.	

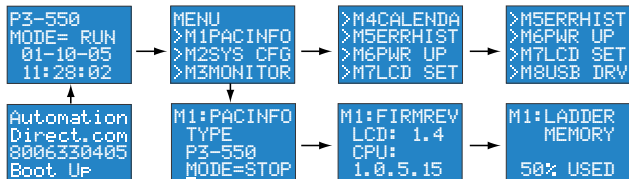
USB Type B Slave Input Specifications

Port Name	USB IN
Description	Standard USB 2.0 Slave input for programming and online monitoring, with built-in surge protection. Not compatible with older full speed USB devices.
Transfer Rate	480 Mbps
Port Status LED	Green LED is illuminated when LINK is established to programming software.
Cables	USB Type A to USB Type B: 3 ft. cable part # USB-CBL-AB3 6 ft. cable part # USB-CBL-AB6 10 ft. cable part # USB-CBL-AB10 15 ft. cable part # USB-CBL-AB15



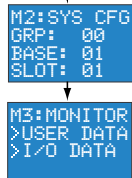
Pin #	Signal
1	+5
2	-Data
3	+Data
4	GND

Front Panel LCD Display Monitoring and Configuration



Hold **MENU** button to display menu options.
Use down arrow key to scroll through options.

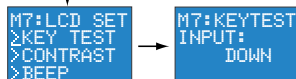
Press **SEL** button to select a menu option.



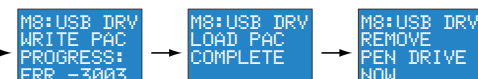
Steps For Using Monitor Menu		Data Type Monitor				
Step 1.)	Select User Data or I/O Data and press ENT	C	BCD16	SWRW	STR	AIS32
Step 2.)	Select Data Type and Press ENT	SBR	US16	S32	SSTR	AOS32
Step 3.)	Press ENT to Edit System ID, or when finished press ENT	SBRW	S16	BCD32	DI	AIF32
Step 4.)	Press SEL to monitor the value	SWR	F32	DO	AOF32	



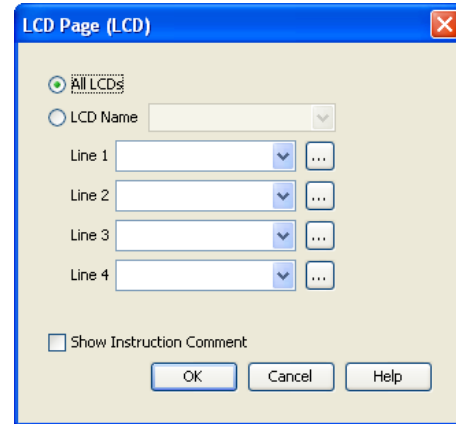
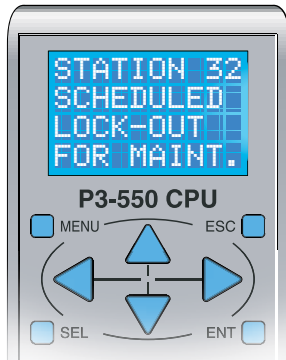
With **YES** selected, LCD will go directly to M3: MONITOR display upon power up.



LCD Control Buttons	
Menu Button	Access the PAC's LCD 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 LCD



Front Panel LCD Message Display



The CPU incorporates a 4 line x 10 character LCD for PAC system alarms and information and for displaying user defined messages.

LCD characters are 5x7 with a dot pitch of 0.45mm; 2.25mm x 3.15mm.

LCD 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.

For user-defined messages, the display is configured using the Productivity3000 Programming Software. An LCD Page instruction allows the user to program text into user-defined tags and display the messages based on the ladder execution.

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.

This publication is based on information that was available at the time it was printed. At AutomationDirect.com® we constantly strive to improve our products and services, so we reserve the right to make changes to the products and/or publications at any time without notice and without any obligation. This publication may also discuss features that may not be available in certain revisions of the product.

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, power down, or watch-dog time-out.



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

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)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Heat Dissipation	7W
Enclosure Type	Open Equipment
Agency Approvals	UL508 file E157382, Canada & USA UL1604 file E200031, Canada & USA CE (EN61131-2*) This equipment is suitable for use in Class 1, Division 2, Groups A, B, C and D or non-hazardous locations only.
Module Location	Controller slot in the local base in a Productivity3000 System
EU Directive	See the "EU Directive" topic in the Productivity3000 Help File. Information can also be obtained at: www.automationdirect.com/P3000
Weight	260g (9 oz)

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



Hot-Swapping Information

Note: This device cannot be Hot Swapped.

WARNING: Explosion hazard – Substitution of components may impair suitability for Class I, Division 2.

AVERTISSEMENT: Risque d'explosion : la substitution de composants peut compromettre la convenance pour la Classe I, Zone 2 ou pour la Classe I, Division 2.

Document Name	Edition/Revision	Date
P3-CPU-M	1st Ed. Revision O	3/1/2019

Copyright 2018, AutomationDirect.com Incorporated/All Rights Reserved Worldwide.