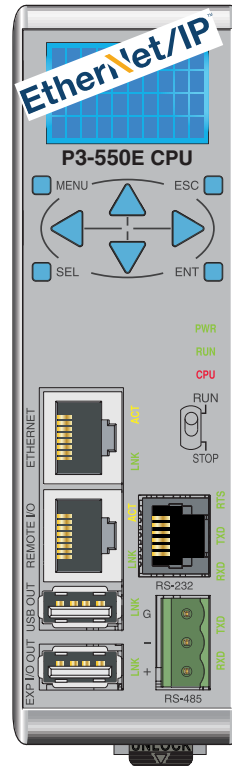


CPU Specifications			
User Memory	50MB (Includes program, data and documentation)		
Memory Type	Flash and Battery Backed RAM		
Retentive Memory	492K		
Scan Time	650µs (3K Boolean, 1K I/O)		
Display	LCD, 4x10 characters, backlit, 8 control buttons; LCD characters are 5x7 with a dot pitch of 0.45 mm; 2.25 mm x 3.15 mm		
Communications; 6 Integrated Ports	<p><b>ETHERNET:</b> (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)</p> <p><b>REMOTE I/O:</b> (10/100Mbps Ethernet) 16 P3-RS or RX Remote Base Groups, and 32 GS-EDRV100 (GS Drives)</p> <p><b>USB OUT:</b> (2.0) Data Logging or Project Transfer using SDCZ4-2048-A10 Pen Drive.</p> <p><b>EXP I/O OUT:</b> (2.0 Proprietary) 4 P3-EX Local Expansion Bases</p> <p><b>RS-232:</b> Modbus RTU and ASCII (half and full duplex)</p> <p><b>RS-485:</b> Removable Terminal Included, (1200-115.2k Baud) ASCII, Modbus</p>		
Hardware Limits of System	<p><b>17 Base Groups:</b> 1 Local (P3-550E) + 16 Remote (P3-RS / P3-RX)</p> <p><b>5 Bases per Base Group:</b> 1 P3-550E, P3-RS or P3-RX + 4 Expansion (P3-EX)</p> <p><b>85 Bases Total:</b> 1 (CPU) + 16 (Remote) + 68 (Expansion)</p> <p><b>59,840 Hardware I/O Points</b> (All 64-point I/O Modules)</p> <p><b>32 GS Series Drives</b> as Remote I/O</p>		
Instruction Types	<p>Application Functions</p> <p>Array Functions</p> <p>Counters/Timers</p> <p>Communications</p> <p>Data Handling</p>	<p>Drum Sequencers</p> <p>Math Functions</p> <p>PID</p> <p>Program Control</p> <p>String Functions</p>	<p>System Functions</p> <p>Contacts</p> <p>Coils</p> <p>HSI/HSO</p>
Real Time Clock Accuracy	<p>±5s per day typical at 25°C ambient: 1sec/day**</p> <p>±15s per day maximum at 60°C ambient: 2sec/day**</p>		

\*\* Revision B and Higher



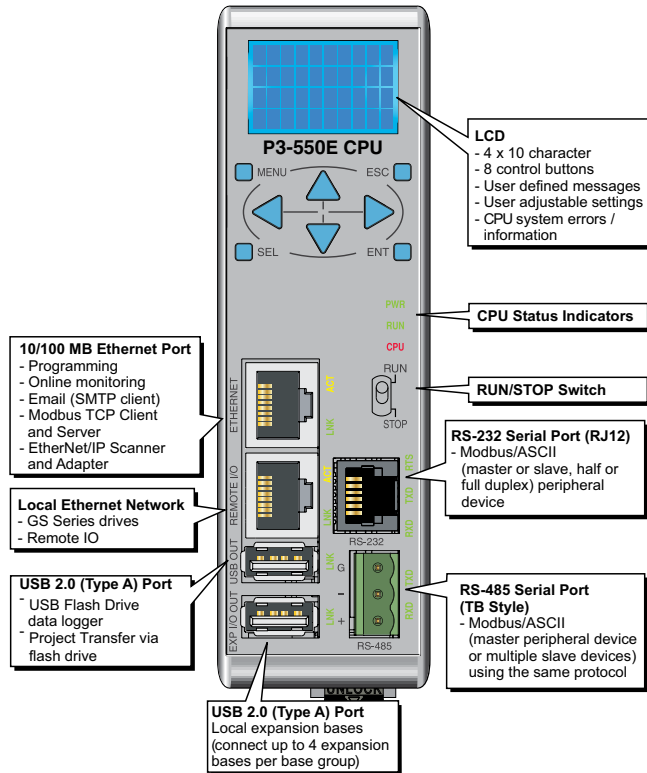
## P3-550E CPU

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

CPU Specifications	1
CPU Front Panel	2
CPU Installation Procedure	2
Battery Installation Procedure	3
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General Specifications	8
Hot Swap Information	8

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

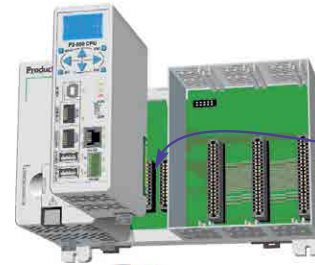
# CPU Front Panel



# CPU Installation Procedure

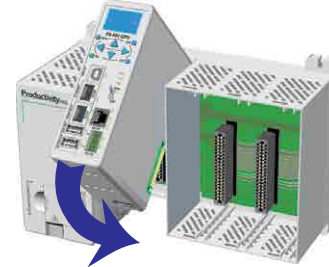
## Step One:

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.



## Battery (Optional)

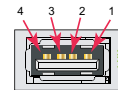
D2-BAT-1 | Coin type, 3.0V Lithium battery, 560mA, battery number CR2354

**Note:** Although not needed for program backup, an uninstalled battery is included with the P3-550E. 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 (Scandisk SDCZ4-2048-A10) for data logging, program transfer with built-in surge protection. Not compatible with older full speed USB devices. A 0.5 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	480Mbps	
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

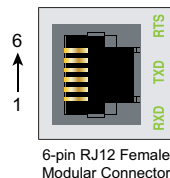
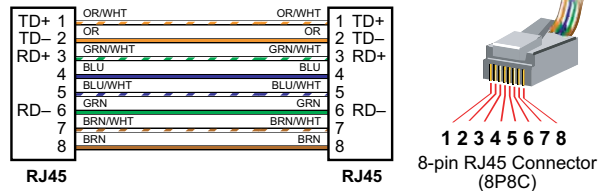
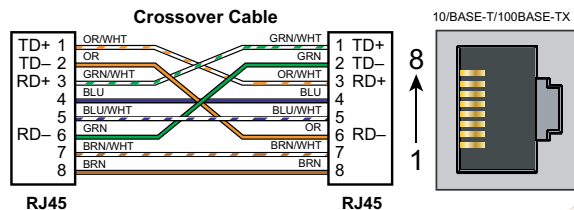
# Port Specifications

## 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 1the 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 is 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.	

## 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 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 & RTS
Cable Options	EA-MG-PGM-CBL D2-DSCBCL USB-RS232 with D2-DSCBCL FA-CABKIT FA-ISOCAN for converting RS-232 to isolated RS-485

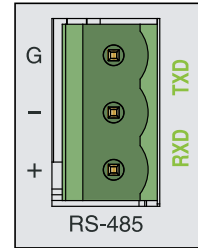


Pin #	Signal
1	GND Logic Ground
2	+5V 210 mA Maximum
3	RXD RS-232 Input
4	TXD RS-232 Output
5	RTS RS-232 Output
6	GND Logic Ground

# Port Specifications

## RS-485 Port Specifications

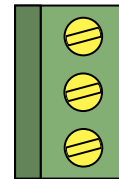
<b>Port Name</b>	<b>RS-485</b>
Description	Non-isolated RS-485 port connects the CPU as a Modbus/ASCII master or slave to a peripheral device. Includes ESD/EFT protection and automatic echo cancellation when transmitter is active
Data Rates	Selectable, 1200, 2400, 4800, 9600, 19200, 33600, 38400, 57600, and 115200
TXD/RXD+ & TXD/RXD-GND	RS-485 transceiver high & low Logic ground
Input Impedance	19k $\Omega$
Maximum Load	50 transceivers, 19k $\Omega$ each, 60 $\Omega$ termination
Output Short Circuit	$\pm$ 250mA, thermal shut-down protection
Electrostatic Discharge	$\pm$ 8kV protections per IEC1000-4-2
Electrical Fast Transient	$\pm$ 2kV protection per IEC1000-4-4
Differential Output	1.5 V with 60 $\Omega$ load minimum
Fail Safe Inputs	Logic high input state if inputs are unconnected
Maximum Common Mode	-7.5 V to 12.5 V
Port Status LED	Green LED illuminated when active for TXD and RXD
Cable Options	Recommend L19827-XXX from AutomationDirect.com



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

## Termination Connector Specifications

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



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

# Front Panel LCD Display Monitoring and Configuration

```
P3-550E
MODE= RUN
01-10-05
11:28:02

MENU
>M1PACINFO
>M2SYS CFG
>M3MONITOR

>M4CALENDA
>M5ERRHIST
>M6PWR UP
>M7LCD SET
>M8USB DRV
```

```
Automation
Direct.com
8006330405
Boot Up
```

```
M1:PACINFO
TYPE
P3-550E
MODE=STOP
```

```
M1:FIRMREV
LCD: 1.4
CPU:
1.0.5.15
```

```
M1:LADDER
MEMORY
50% USED
```

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

```
M1: IP ADR
###.###.##
#.###
```

```
M1: MAC ADR
##:##:##:
##:##:##
```

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

```
M2:SYS CFG
GRP: 00
BASE: 01
SLOT: 01
```

```
M3:MONITOR
>USER DATA
>I/O DATA
```

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	DO	AOF32

```
M4:DATE
>CHG DATE
>CHG TIME
>CHGFORMAT
```

```
M4:DATE
MM-DD-YY
07-26-06
```

```
M4:TIME
HH:MM:SS
14:34:46
```

```
M4:FORMAT
>DATE
>TIME
```

```
TIMEFORMAT
*HH-MM:SS
HH-MM US
HH-MM AS
```

```
DATEFORMAT
*MM-DD-YY
DD-MM-YY
YY-MM-DD
```

```
M5:ERRHIST
E00:E00002
E01:E00002
```

```
E01:E00002
25JUL06
15:45:30
ib file
```

```
M6:PWR UP
MONITOR
```

```
M6:PWR UP
<MONITOR
SET:
=YES -NO
```

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

```
M7:LCD SET
>KEY TEST
>CONTRAST
>BEEP
```

```
M7:KEYTEST
INPUT:
DOWN
```

```
M7:CONTRAS
-AUTO
-HIGH
-MID -LOW
```

```
M7:BEEP
-LOW -OFF
-MED
-HIGH
```

```
M8:USB DRV
>SAVE->PEN
>LOAD->PAC
>REMOVE
```

```
M8:USB DRV
WRITE PEN
PROGRESS:
ERR -1
```

```
M8:USB DRV
SAVE
COMPLETE
PRESS ESC
```

```
M8:USB DRV
SWITCH CPU
TO STOP OR
PRESS ESC
```

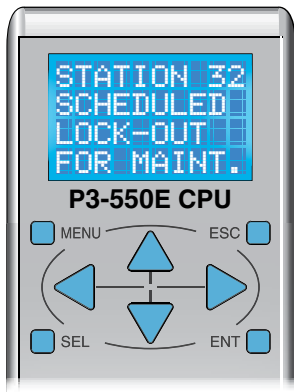
```
M8:USB DRV
WRITE PAC
PROGRESS:
ERR -3003
```

```
M8:USB DRV
LOAD PAC
COMPLETE
```

```
M8:USB DRV
REMOVE
PEN DRIVE
NOW
```

LCD Control Buttons	
Menu Button	Access the CPU'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

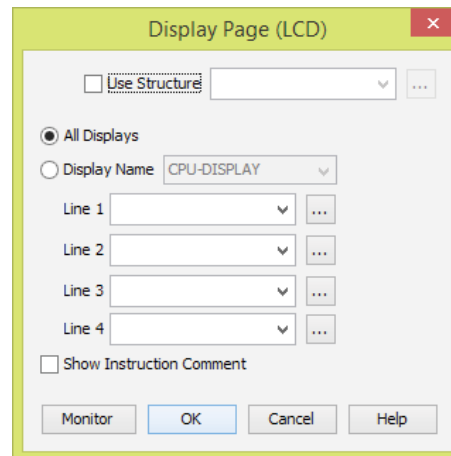
# Front Panel LCD Message Display



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

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

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.

**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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### 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

Document Name	Edition/Revision	Date
P3-550E-DS	1st Ed., Rev D	3/1/2019

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### 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 Productivity Suite Help File. Information can also be obtained at: <a href="http://www.automationdirect.com/P3000">www.automationdirect.com/P3000</a>
Weight	260g (9oz)

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

### IMPORTANT!



#### Important Hot-Swap 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.