

CPU Modules - Communications

Port Specifications

The P3-550E and P3-530 CPUs have several communications ports. The following pages list specifications and pin-out diagrams for these ports.

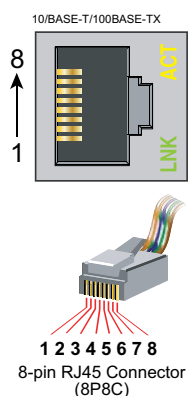
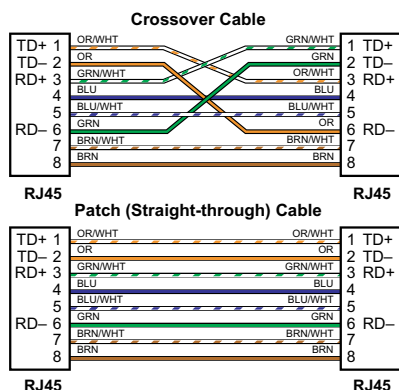
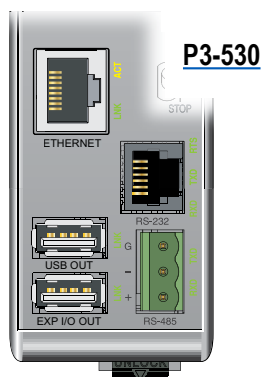
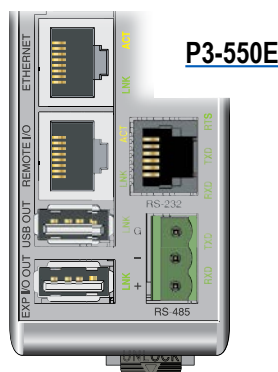
Remote I/O Port (P3-550E)

RJ-45 style connector used for connecting to a Remote I/O network consisting of P3-RX Remote Slaves and/or GS-EDRV100 units with GS drives.

Ethernet Port

RJ-45 style connector used for:

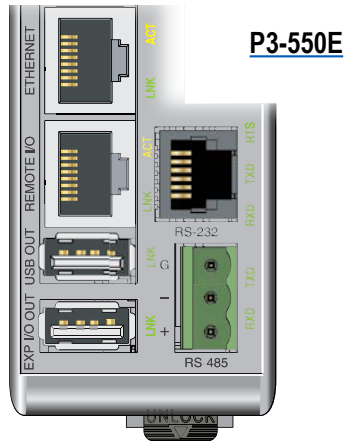
- Connection to a PC running the Productivity Suite programming software
- EtherNet/IP Scanner (CPU is the originator, up to 128 connections, max 32 devices) P3-550E
- EtherNet/IP Adapter (CPU is the target, up to 16 connections, max 4 devices) P3-550E
- Modbus TCP Client connections (Modbus requests sent from the CPU)
- Modbus TCP Server connections (Modbus requests received by the CPU)
- Outgoing E-mail



Ethernet Specifications		
Port Name	ETHERNET	REMOTE I/O P3-550E
Description	Standard transformer isolated Ethernet port with built-in surge protection for programming, online monitoring, Email (SMTP client), EtherNet/IP Scanner/Adapter and Modbus/TCP client/server connections (fixed IP or DHCP).	Standard transformer isolated Ethernet port with built-in surge protection for connection to the P3-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. (Cables available at automationdirect.com)	

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Port Specifications



P3-550E

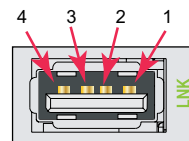
USB OUT Port

Used for data logging (P3-530) or data logging and project transfers (P3-550E) to and from a USB-FLASH Pen Drive.

EXP I/O OUT Port

USB port used only for Expansion I/O connections to local P3-RX modules in a Productivity3000 base with I/O.

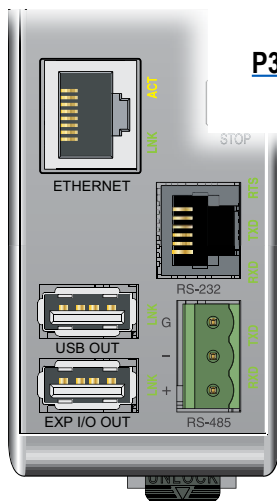
USB Type A Master Output Specifications		
Port Name	USB OUT	EXP I/O OUT
Description	Standard USB 2.0 Master output for connection to high-speed Flash drive (Sandisk SDCZ4-2048-A10 recommended) for data logging (P3-550E/P3-530) or program transfer (P3-550E), with built-in surge protection. Not compatible with older full speed USB devices. A 0.5 m male-to-female "port extender" cable is included to assist with Flash drive connection.	Proprietary USB 2.0 Master output for connection to 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: 6ft. 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



P3-530

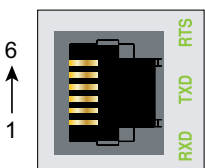
RS-232 Port

RJ-12 style connector used for:

- Modbus RTU Master connections
- Modbus RTU Slave connections
- ASCII full or half duplex communications
- Custom Protocol Incoming and Outgoing communications

EXP I/O OUT

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



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 Request to Send
6	GND Logic Ground

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, 9600, 19200, 33600, 38400, 57600, and 115200 bps.
+5V Cable Power Source	210mA maximum at 5V, $\pm 5\%$. 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)	3kV, 1,000pf
Minimum Output Voltage Swing	$\pm 5V$
Output Short Circuit Protection	$\pm 15mA$
Port Status LED	Green LED is illuminated when active for TXD, RXD and RTS
Cable Options	FA-ISOCON for converting RS-232 to isolated RS-485

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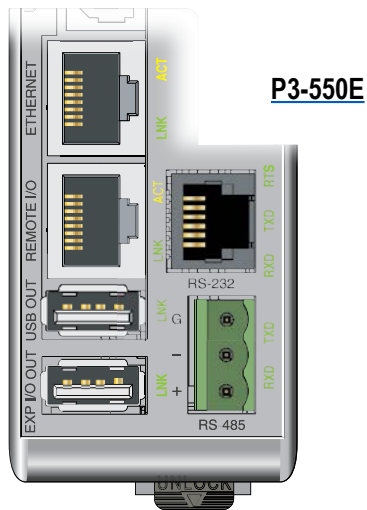
Port Specifications

RS-485 Port

A 3-pin removable terminal block used for:

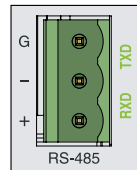
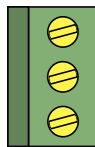
- Modbus RTU Master connections
- Modbus RTU Slave connections
- ASCII Incoming and Outgoing communications
- Custom Protocol Incoming and Outgoing communications

Removable connector included.



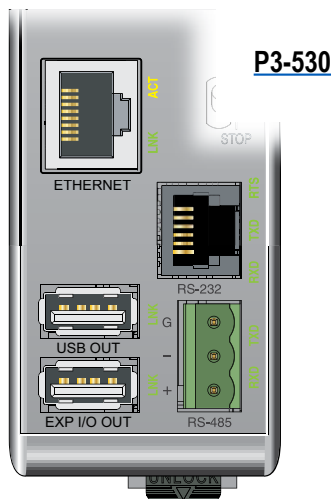
P3-550E

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, 9600, 19200, 33600, 38400, 57600, and 115200 bps.
TXD+ /RXD+	RS-485 transceiver high
TXD-/RXD-	RS-485 transceiver low
GND	Logic ground
Input Impedance	19kV
Maximum load	50 transceivers, 19kV each, 60V 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	1.5 V with 60V load
Fail safe inputs	Logic high input state if inputs are unconnected
Maximum Common Mode Voltage	-7.5 V to 12.5 V.
Port Status LED	Green LED illuminated when active for TXD and RXD
Cable Options	Q8302-1 (cut to length) or Belden 9841 equivalent



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

*Removable connector included.



P3-530

Terminal Block Specifications	
Number of Positions	3
Pitch	5mm
Wire Range	28-12 AWG Solid Conductor 30-12 AWG Stranded Conductor
Screw Driver Width	1/8 inch (3.175mm) maximum
Screw Size	M2.5
Screw Torque	4.5 lb·in (0.51 N·m)