SPECIFICATIONS

In This Chapter...

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NOTE: P3-550 discontinued as of 06/2023. Please consider P3-550E as a replacement.

NOTE: P3-16TD3P discontinued as of 10/2022. Please consider P3-16TD1 or P3-16TD2 as a replacement.

NOTE: The P3-RS module has been discontinued as of 6/20. Use P3-RX or a P1-RX system as a replacement.

Overview

CPU System

The Productivity3000® system. is a modular system that requires a base to accommodate the various modules. Bases are available in sizes of 3, 5, 8 and 11 I/O module slots. It contains additional dedicated slots for the power supply and the CPU unit. You can place any I/O module into any slot without power budget or module type restrictions.

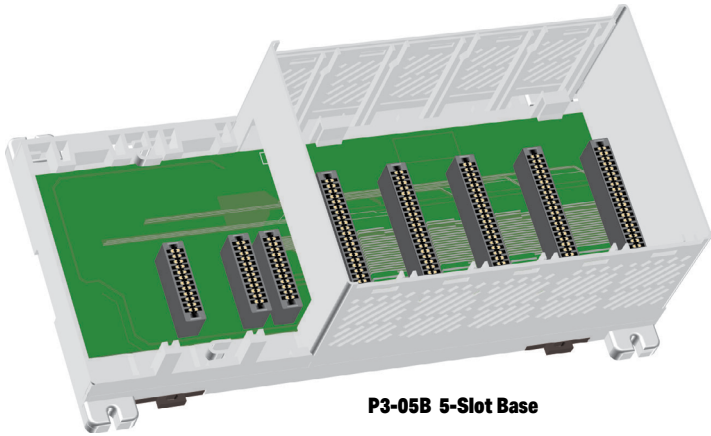
The backplane incorporates a discrete and analog I/O processor which unloads the I/O module communication task from the CPU. This distributed processing architecture results in outstanding performance at a very low cost. The backplane includes a USB 2.0 high-speed (480 Mbps) communication path directly from the CPU to specialty modules and to the discrete and analog module backplane processor.

Up to 4 local expansion bases can be "daisy chained" from the CPU base using a P3-EX expansion module and the (included) expansion cable. Expansion bases can be any size, and in any order, for a maximum number of 55 slots of local I/O when using 11 slot bases.

The base supports hot swapping and has electronic module keying for each slot.

P3-03B, P3-05B, P3-08B, P3-11B Bases

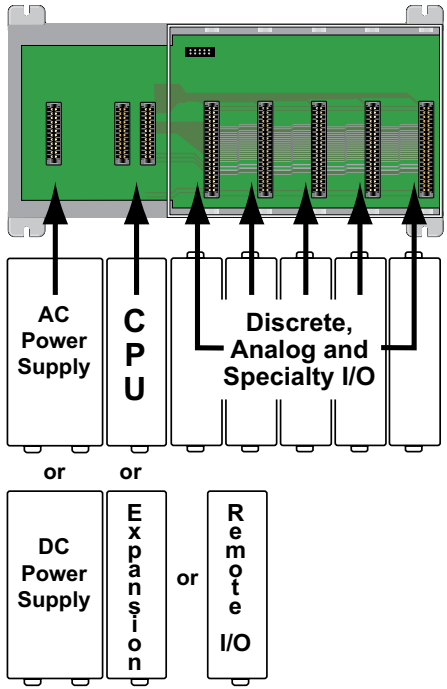
The P3-03B, P3-05B, P3-08B, and P3-11B are 3, 5, 8, and 11-slot, local, expansion, and remote I/O bases.

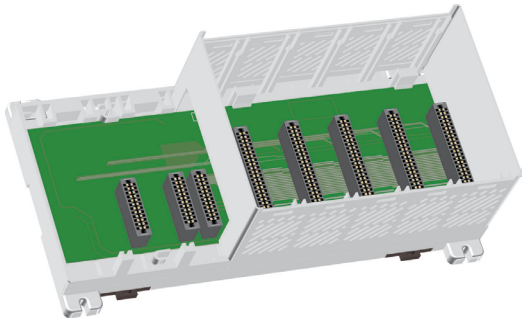


P3-05B 5-Slot Base

NOTE: *See Chapter 5 for base dimensions.*

Base Configuration





Base Specifications	
Input or Output Modules per Base	3, 5, 8, or 11
Power Supply Slots	1 (P3-01AC or P3-01DC)
CPU Slots	1 (P3-622, P3-550(E)/530, P3-RS/RX and P3-EX compatible)
Module Types Supported	Discrete, analog and specialty
Module Placement Restrictions	None. Any I/O module may be installed in any I/O slot without power supply budget or module type restrictions.
I/O Module Hot Swap Support	Yes. (All discrete and analog modules can be software enabled for Hot Swap operation)
Module Keying	Electronic to slot
Maximum Number of Local Bases	5

General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F)
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
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	2.5 W
Weight	P3-03B: 1.365 lbs (21.8 oz.), 619g P3-05B: 1.658 lbs (26.5 oz.), 752g P3-08B: 2.158 lbs (34.5 oz.), 978g P3-011B: 2.682 lbs (42.9 oz.), 1216g
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

P3-01AC and P3-01DC Power Supplies

There are two power supplies available; both provide isolated 24VDC, 5VDC, and 3.3 VDC to the Productivity®3000 bases.

The P3-01AC input power supply requires power from an external 100-240 VAC source.

The P3-01DC input power supply requires power from an external 24-48 VDC source.

No Power Budgeting

No power budgeting is required with either power supply. Any combination of I/O modules may be installed in any slots without power budget considerations.

P3-01AC

P3-01DC

Terminal Block Specifications (both models)	
Number of Positions	4 screw terminals
Pitch	0.3 inch (7.62 mm)
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) solid conductor 22–14 AWG (0.324 to 2.08 sq. mm) stranded conductor 3/64 inch (1.2 mm) insulation maximum
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	7–9 inch-pounds (0.882–1.02 N·m)

P3-01AC Specifications

P3-01AC

IMPORTANT!

Hot-Swapping Information

Note: This device cannot be Hot Swapped.

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

P3-01AC User Specifications	
Input Voltage Range (Tolerance)	100 to 240 VAC (-15% / +10%)
Rated Operating Frequency	50 to 60 Hz with ± 5% tolerance
Maximum Input Power	72W
Cold Start Inrush Current	12A 3ms
Maximum Inrush Current (Hot Start)	12A 3ms
Input Fuse Protection (Internal)	Micro fuse 250V, 2A, slow blow Non-replaceable
Efficiency	83%
Output	24VDC @ 1.4 A (± 10%) 5VDC @ 2.1 A (± 5%) 3.3 VDC @ 6.1 A (± 5%)
Maximum Output Power	57W combined
Heat Dissipation	17W
Isolated User 24VDC Output	None
Output Protection for Over Current, Over Voltage, and Over Temperature	Self resetting for all three voltage outputs to base
Under Input Voltage Lock-out	55–65 VAC
Over Input Voltage Lock-out	265–280 VAC
Input Transient Protection	Varistor, plus input choke and filter
Operating Design Life	10 years at full load at 40°C ambient and 5 years at 60°C (140°F) ambient

P3-01AC General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F)
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Enclosure Type	Open equipment
Voltage Withstand (dielectric)	1900VDC applied for 2s
Insulation Resistance	>10MΩ @ 500VDC
Module Location	Power supply slot in any local, expansion, or remote base in a Productivity3000® system..
Weight	345g (12.1 oz)
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.

*Meets EMC and Safety requirements. See the Declaration of Conformity for details.

P3-01DC Specifications

P3-01DC

IMPORTANT!

Hot-Swapping Information

Note: This device cannot be Hot Swapped.

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

P3-01DC User Specifications

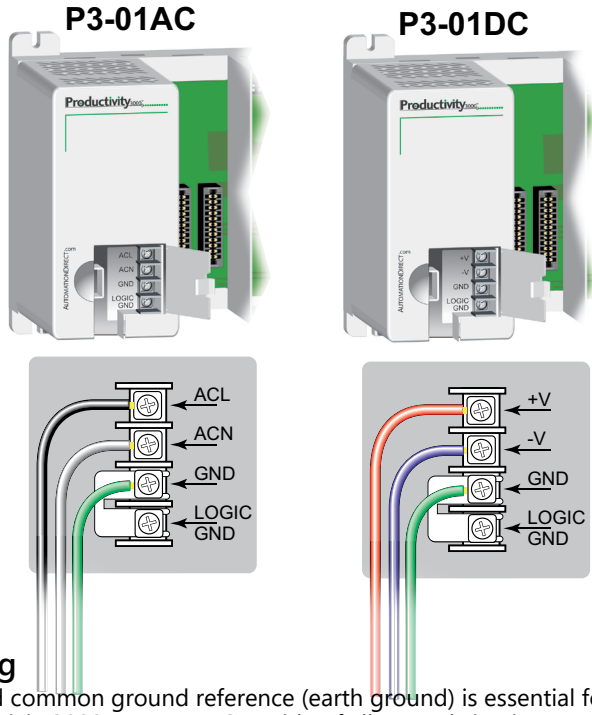
Input Voltage Range (Tolerance)	24 to 48 VDC (-15% / +20% at 55°C) 24 to 48 VDC (-10% / +20% at 60°C)	
Maximum Input Ripple	< ± 5%	
Maximum Input Power	67W	
Cold Start Inrush Current	10.5 A, 210µS @ 24VDC	
Maximum Inrush Current (Hot Start)	10.5 A, 210µS @ 24VDC	
Input Fuse Protection (Internal)	Micro fuse 250V, 4A, slow blow non-replaceable	
Input Reverse Polarity Protection	Yes	
Output	F1 Rev. or lower: 24VDC @ 1.4 A (±10%) 5VDC @ 2.1 A (±5%) 3.3 VDC @ 6.1 A (±5%)	F2 Rev. or higher: 24VDC @ 1A (±10%) 5VDC @ 2.0 A (±5%) 3.3 VDC @ 6.09 A (±5%)
Maximum Output Power	57W Combined	
Heat Dissipation	14W	
Isolated User 24VDC Output	None	
Output Protection for Over Current, Over Voltage and Over Temperature	Self resetting for all three voltage outputs to base	
Under Input Voltage Lock-out	< 19.8 VDC	
Over Input Voltage Lock-out	None	
Input Transient Protection	Varistor, plus input choke and filter	
Operating Design Life	10 years at full load at 40°C ambient and 5 years at 60°C (140°F) ambient	

P3-01DC General Specifications

Operating Temperature	0°C– 60°C (32°F–140°F)
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Enclosure Type	Open equipment
Voltage Withstand (dielectric)	750VDC applied for 2s
Insulation Resistance	>10MΩ @ 500VDC
Module Location	Power supply slot in any local, expansion, or remote base in a Productivity3000® system..
Weight	558g (19.7 oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

Power Connections



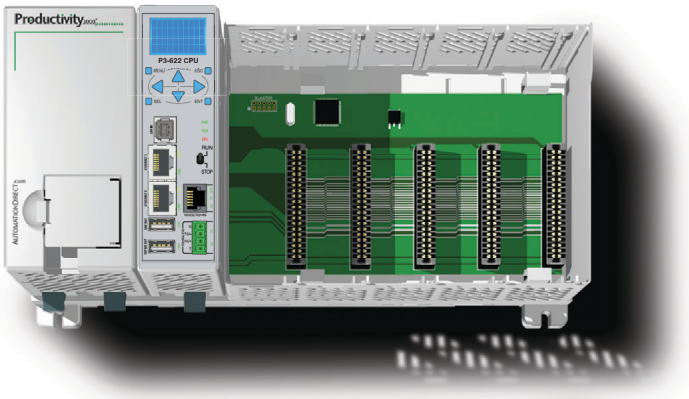
Grounding

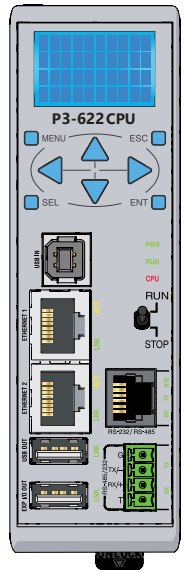
A good common ground reference (earth ground) is essential for proper operation of the Productivity3000® system.. One side of all control circuits, power circuits and the ground lead must be properly connected to earth ground by either installing a ground rod in close proximity to the enclosure or by connecting to the incoming power system ground. There must be a single-point ground (i.e. copper bus bar) for all devices in the enclosure that require an earth ground.

Productivity3000® CPU Modules

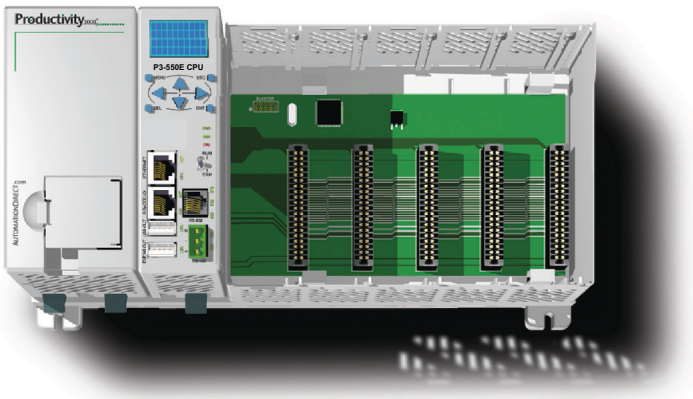
Each Productivity3000 System requires one CPU module mounted in the controller slot in the first base of the local base group. The CPU stores and executes the user's program. There are three CPU modules available:

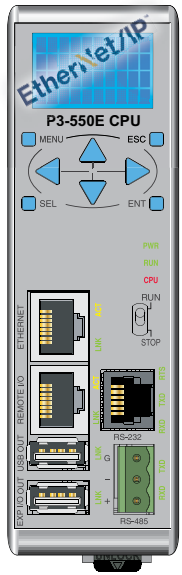
P3-622





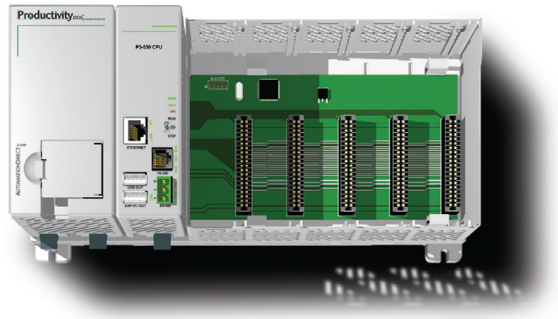
P3-550E

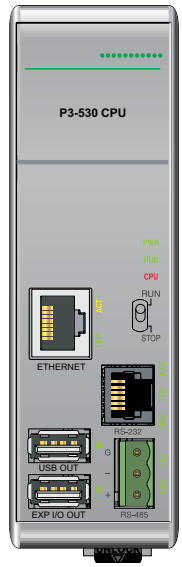




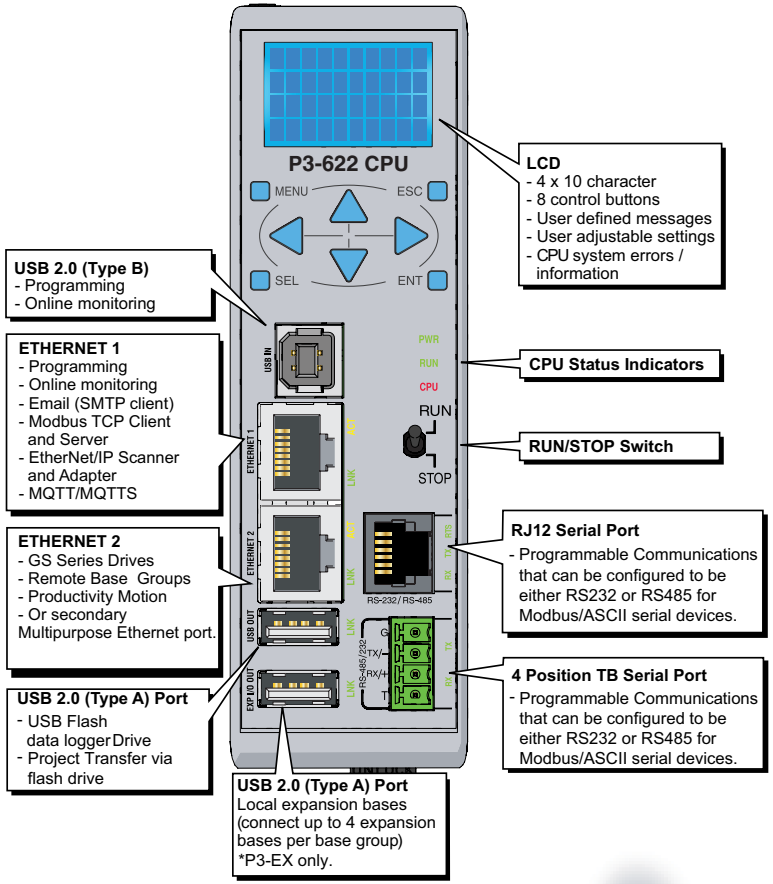
Productivity®3000 CPU Modules

P3-530

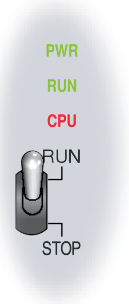




P3-622 Specifications



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

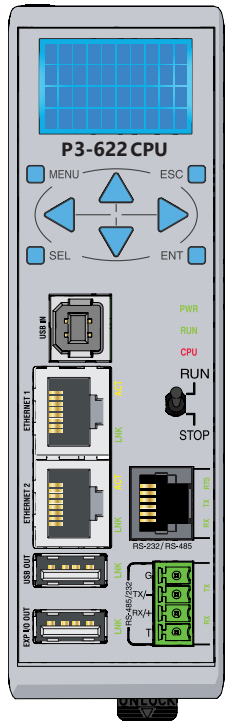


CPU Run/Stop Switch	
RUN position	Executes user program, run-time edits possible
STOP position	Does not execute user program, normal program load position

P3-622 Specifications

CPU Specifications			
User Memory	50MB (Includes program, data and documentation)		
Memory Type	Flash and battery-backed RAM		
Retentive Memory**	492K		
Scan Time	2.4 ms (3K Boolean, 1K I/O)		
Display	LCD, 4x10 characters, back-lit, 8 control buttons		
Communications; 6 Integrated Ports	**USB IN:** Programming, monitoring, debug, firmware **ETHERNET1:** (10/100 Mbps Ethernet) programming, monitoring, debug, firmware, Email SMTP Client, MQTT/MQTTS, Modbus TCP Client (32 slaves) and server (32 masters), EtherNet/IP scanner (128 scanner connections) and adapter (16 connections) **ETHERNET2*:** (10/100 Mbps Ethernet) 32 GS Drives, 16 remote base groups, 4 ProtosX TCP couplers, 4 PS-AMC modules **USB OUT:** (2.0) Data logging or project transfer **EXP I/O OUT:** (2.0 Proprietary) 4 P3-EX local expansion bases **RJ12:** RS-232/485 Programmable **TB (4-Pin):** RS-485/232 programmable, removable terminal included.		
Hardware Limits of System	**17 Base Groups** 1 local (P3-622) + 16 remote (P3-RS / P3-RX) **5 Bases per Base Group** 1 P3-622 or 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 Array functions Counters/timers Communications Data handling	Drum sequencers Math functions PID Program control String functions	System functions Contacts Coils HSI/HSO Motion control
Real Time Clock Accuracy	±1s typical at 25°C (77°F) ambient ±2s per day maximum at 60°C (140°F) ambient		

**The 'ETHERNET 2' port can be configured as 'Default (Remote I/O)' or 'User Defined'. If 'User Defined' is selected this port will have the same specification as the 'ETHERNET 1' port with the exception that this port does not have Default Gateway or DNS capability.*



IMPORTANT!

Hot-Swapping Information

Note: This device cannot be Hot Swapped.

P3-622 Specifications

General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F)
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
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	2297mW
Overvoltage Category	II
Enclosure Type	Open equipment
Module Location	Controller slot in the local base in a Productivity3000® system.
Weight	235g (8.28 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 Declaration of Conformity for details.*

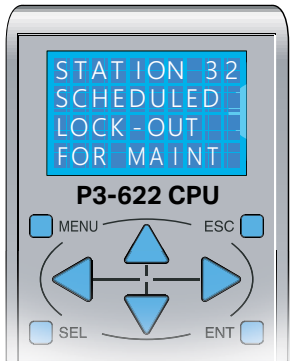
NOTE: *The most recent Productivity Suite software and firmware versions may be required to support new modules and new features.v*

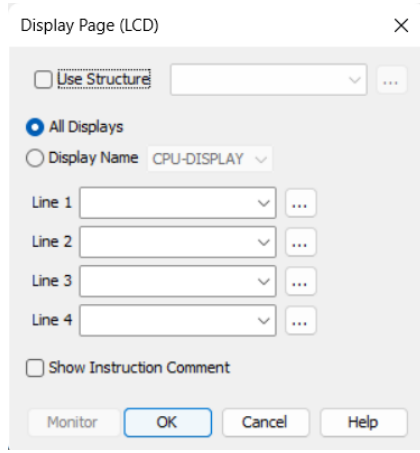
P3-622 LCD Message Display

The P3-622 CPU incorporates a 4 line x 10 character LCD for CPU system alarms and information or for displaying user-defined messages.

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 ProductivitySuite 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.

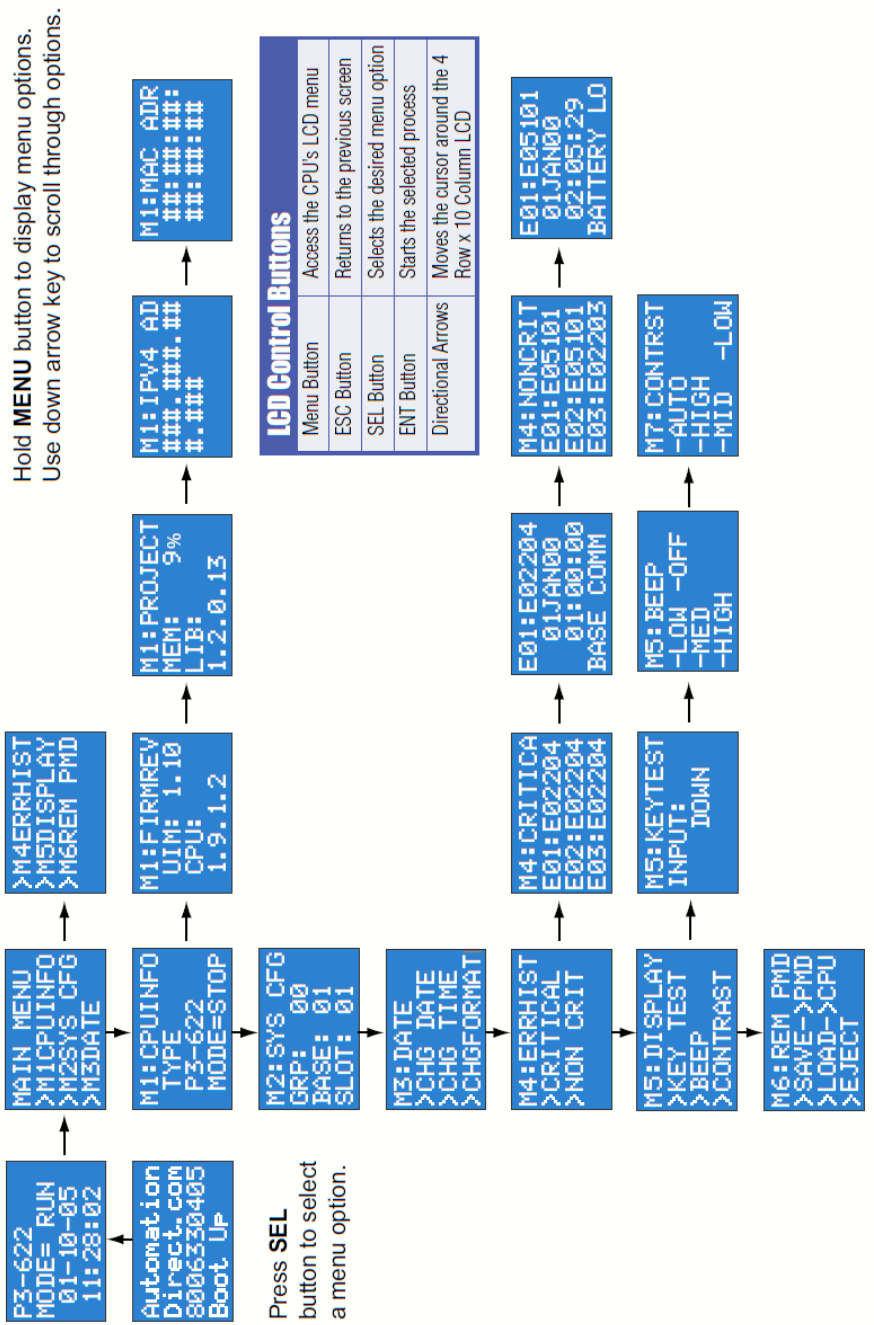




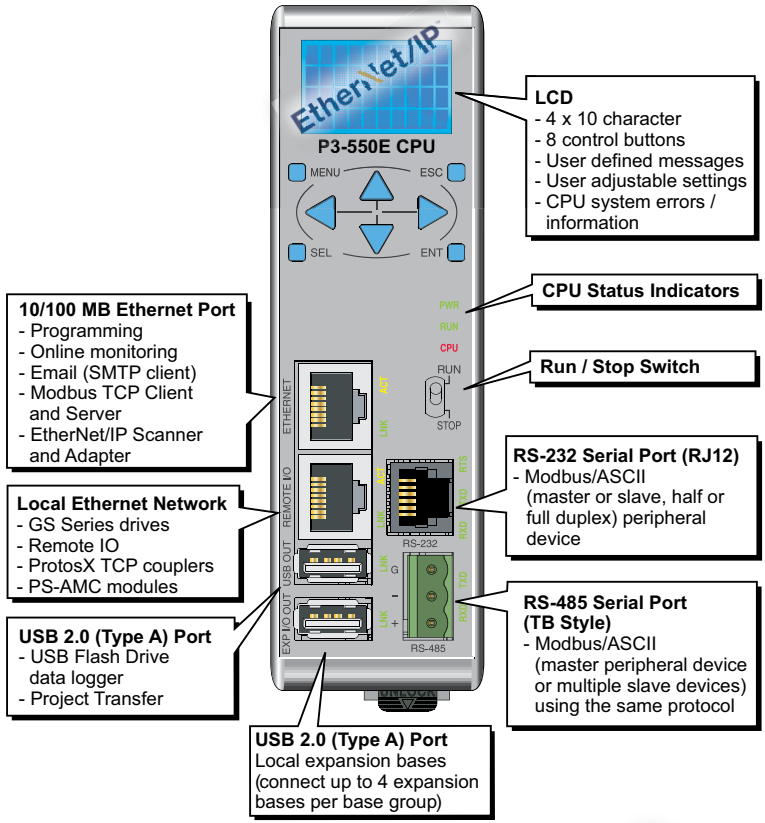
LCD Control Buttons	
Menu Button	Access the CPU's LCD menu
ESC Button	Returns to the previous screen
SEL Button	Selects the desired menu option
ENT Button	Starts the selected process
Directional Arrows	Moves the cursor around the 4 Row x 10 Column LCD

NOTE: *A replacement LCD display is available at automationdirect.com. Order Part number P3-LCD.*

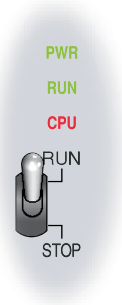
P3-622 Front Panel LCD Monitoring and Configuration



P3-550E Specifications



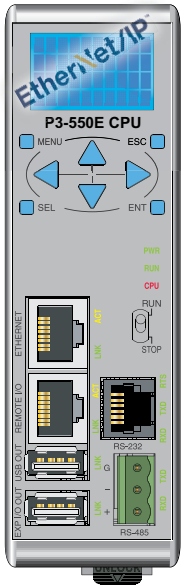
CPU Status Indicators	
PWR	Green LED is illuminated when power is on
RUN	Green LED is illuminated when CPU is in RUN mode
CPU	Red LED is illuminated during power on reset, power down, or watch-dog time-out.



CPU Run/Stop Switch	
RUN position	Executes user program, run-time edits possible
STOP position	Does not execute user program, normal program load position

P3-550E Specifications

CPU Specifications			
User Memory	50MB (Includes program, data and documentation)		
Memory Type	Flash and battery-backed RAM		
Retentive Memory**	492K		
Scan Time	600µs (3K Boolean, 1K I/O)		
Display	LCD, 4x10 characters, back-lit, 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	**ETHERNET:** (10/100 Mbps Ethernet) programming, monitoring, debug, firmware, Email SMTP Client, Modbus TCP Client (32 slaves) and server (32 masters), EtherNet/IP scanner (128 scanner connections) and adapter (16 connections) REMOTE I/O: (10/100 Mbps Ethernet) 16 P3-RS or RX remote base groups, 4 ProtosX TCP couplers, 4 PS-AMC modules, and 32 GS Drives **USB OUT:** (2.0) Data logging or project transfer using USB-FLASH Pen Drive **EXP I/O OUT:** (2.0 Proprietary) 4 P3-EX local expansion bases **RS-232:** Modbus RTU, ASCII full or half duplex **RS-485:** Removable terminal Included, (1200-115.2k Baud) ASCII, Modbus		
Hardware Limits of System	**17 Base Groups** 1 local (P3-550E) + 16 remote (P3-RS / P3-RX) **5 Bases per Base Group** 1 P3-550E or 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)		
Instruction Types	Application functions Array functions Counters/timers Communications Data handling	Drum sequencers Math functions PID Program control String functions	System functions Contacts Coils HSI/HSO Motion control
Real Time Clock Accuracy	±5s typical at 25°C (77°F) ambient: 1sec/day** ±15s per day maximum at 60°C (140°F) ambient: 2 sec/day**		



General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F)
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
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
Module Location	Controller slot in the local base in a Productivity3000® system.
Weight	260g (9oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*
*** Revision B and higher.*

IMPORTANT!

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

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

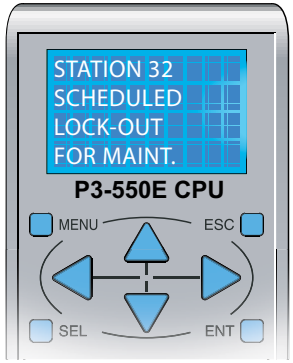
***NOTE:** The most recent Productivity Suite software and firmware versions may be required to support new modules and new features.*

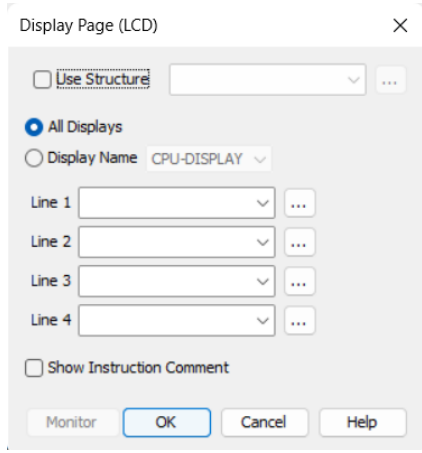
P3-550E LCD Message Display

The P3-550E CPU incorporates a 4 line x 10 character LCD for CPU system alarms and information or for displaying user-defined messages.

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 ProductivitySuite 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.

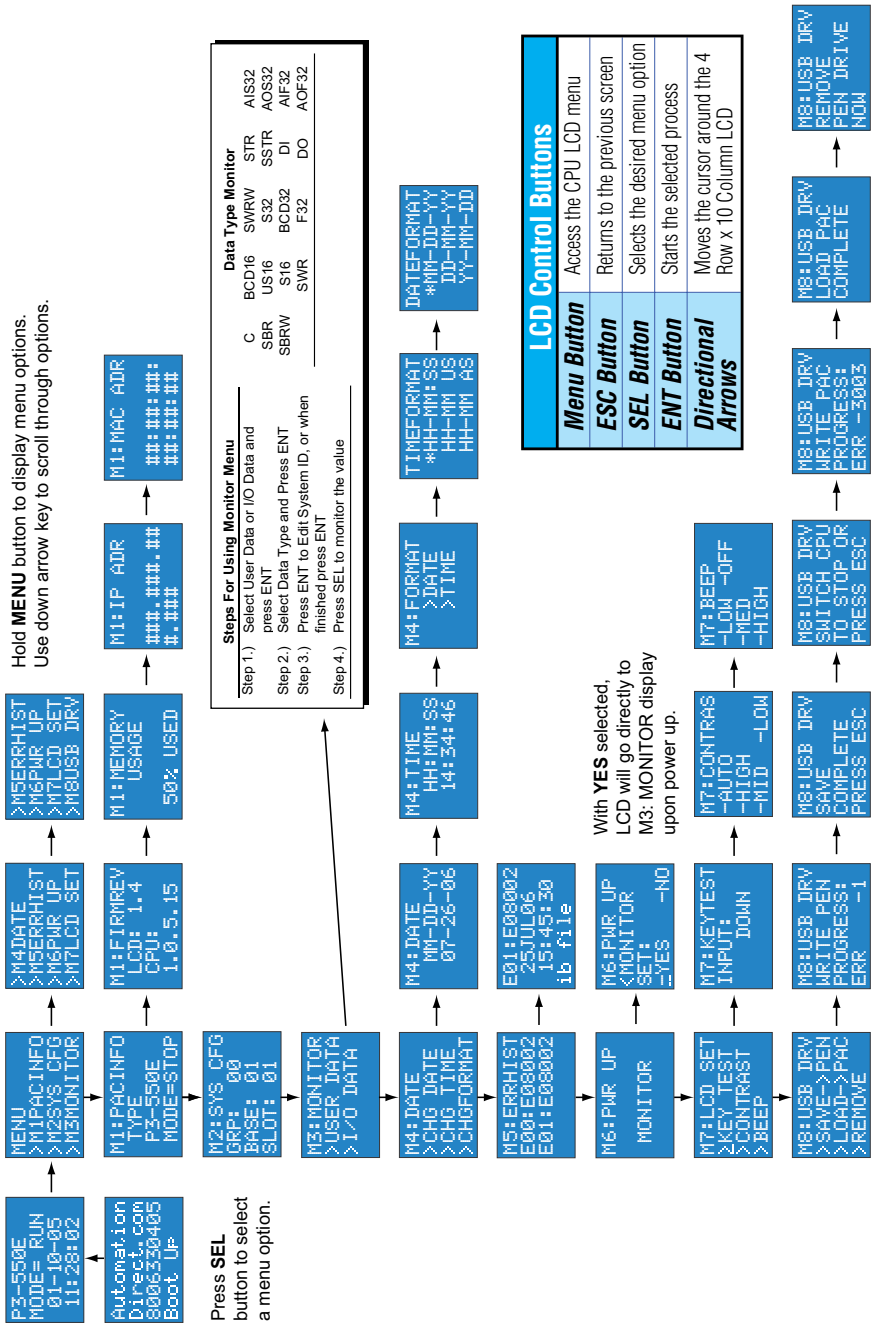




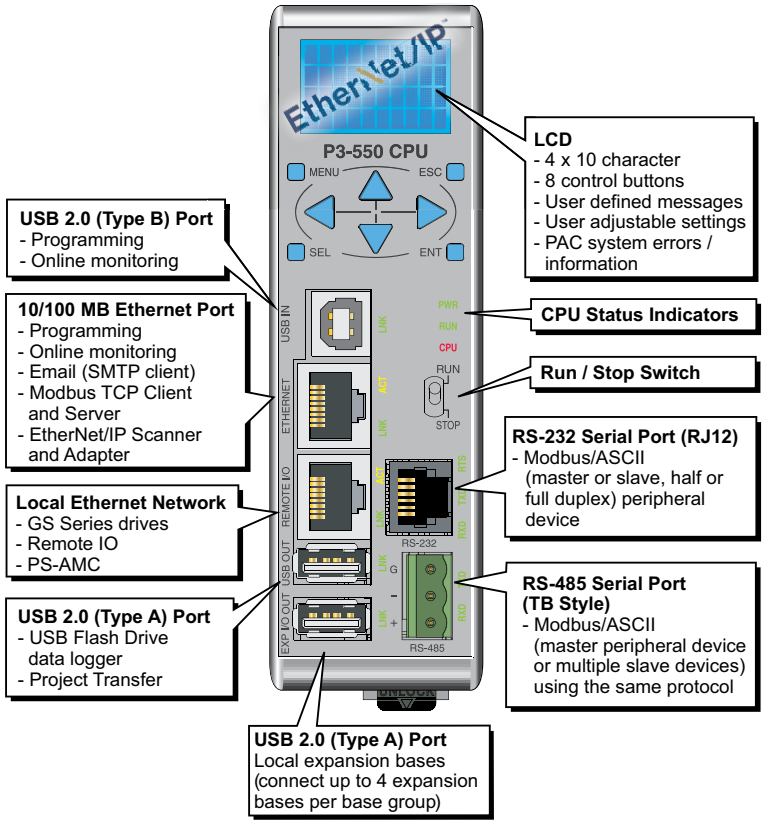
LCD Control Buttons	
Menu Button	Access the CPU's LCD menu
ESC Button	Returns to the previous screen
SEL Button	Selects the desired menu option
ENT Button	Starts the selected process
Directional Arrows	Moves the cursor around the 4 Row x 10 Column LCD

NOTE: *A replacement LCD display is available at automationdirect.com. Order Part number P3-LCD.*

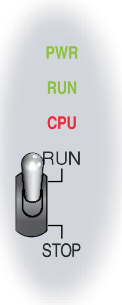
P3-550E Front Panel LCD Monitoring and Configuration



P3-550 Specifications (Retired 06/2023)



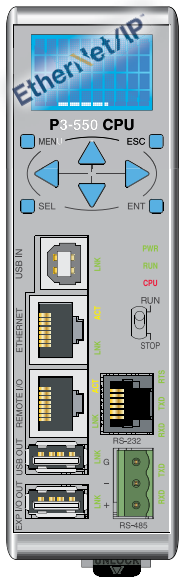
CPU Status Indicators	
PWR	Green LED is illuminated when power is on
RUN	Green LED is illuminated when CPU is in RUN mode
CPU	Red LED is illuminated during power on reset, power down, or watch-dog time-out.



CPU Run/Stop Switch	
RUN position	Executes user program, run-time edits possible
STOP position	Does not execute user program, normal program load position

P3-550 Specifications (Retired 06/2023)

CPU Specifications			
User Memory	50MB (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	600µs (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; 7 Integrated Ports	**USB IN:** Programming, monitoring, debug, firmware **ETHERNET:** (10/100 Mbps Ethernet) programming, monitoring, debug, firmware, Email SMTP client, EtherNet/IP scanner/adapter (128 Scanner connections) and Modbus TCP client (32 slaves) and server (32 masters) REMOTE I/O: (10/100 Mbps Ethernet) 16 P3-RS/RX remote base groups, 4 ProtosX TCP couplers, 4 PS-AMC modules, and 32 GS Drives **USB OUT:** (2.0) Data logging or project transfer using SDCZ4-2048-A10 Pen Drive **EXP I/O OUT:** (2.0 Proprietary) 4 P3-EX local expansion bases **RS-232:** (RJ12, 1200-115.2k Baud) Modbus RTU, ASCII full or half duplex **RS-485:** Removable terminal included, (1200-115.2k Baud) ASCII, Modbus		
Hardware Limits of System	**17 Base Groups** 1 Local (P3-550(E)) + 16 remote (P3-RS/RX) **5 Bases per Base Group** 1 P3-550(E) or P3-RS/RX + 4 expansion (P3-EX) **85 Bases Total** 1 P3-550(E), 16 P3-RS/RX, & 68 P3-EX **59,840 Hardware I/O Points** (All 64-point I/O modules)		
Instruction Types	Application functions Array functions Counters/timers Communications	Data handling Drum sequencers Math functions PID	Program control String functions System functions High-speed I/O Motion control
Real Time Clock Accuracy	±5s typical at 25°C (77°F) ambient ±15s per day maximum at 60°C (140°F) ambient		



NOTE: *To utilize the 492K of retentive memory in the P3-550(E) rev. D or later CPU, you must use Productivity® 3000 software version 1.0.7.XX and firmware version 1.1.13.XX or later.*

General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F)
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
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
Module Location	Controller slot in the local base in a Productivity3000® system.
Weight	260g (9oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

IMPORTANT!

Hot-Swapping Information

Note: This device cannot be Hot Swapped.

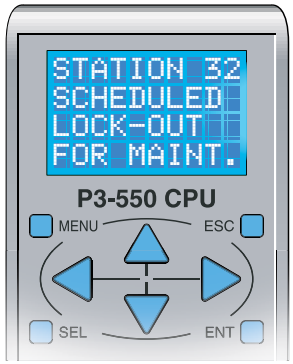
WARNING: Explosion hazard – Substitution of components may impair suitability for Class I, Division 2.

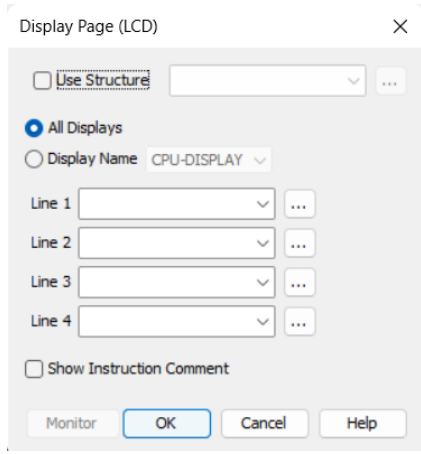
P3-550 LCD Message Display

The P3-550 CPU incorporates a 4 line x 10 character LCD for CPU system alarms and information or for displaying user-defined messages.

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 ProductivitySuite 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.

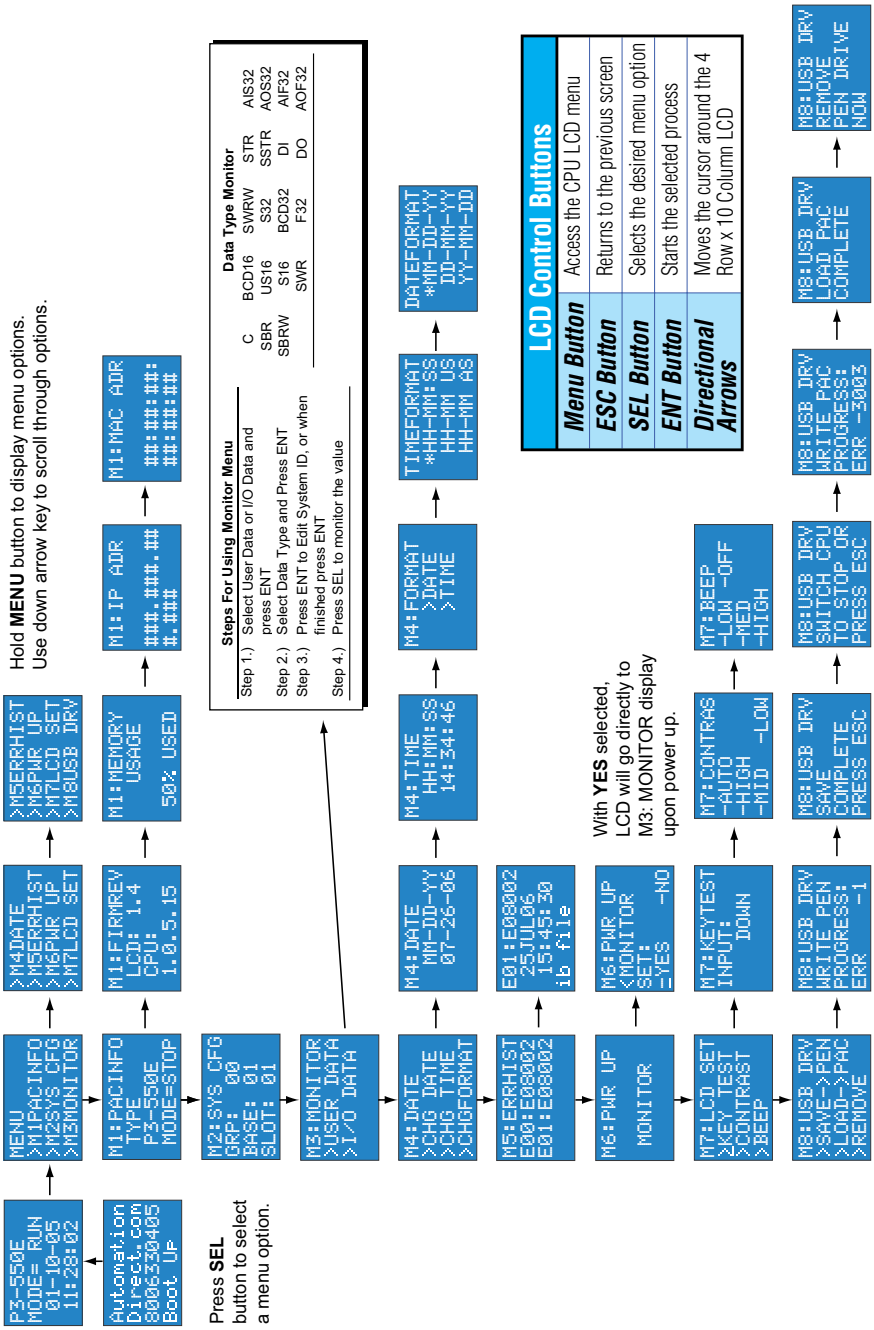




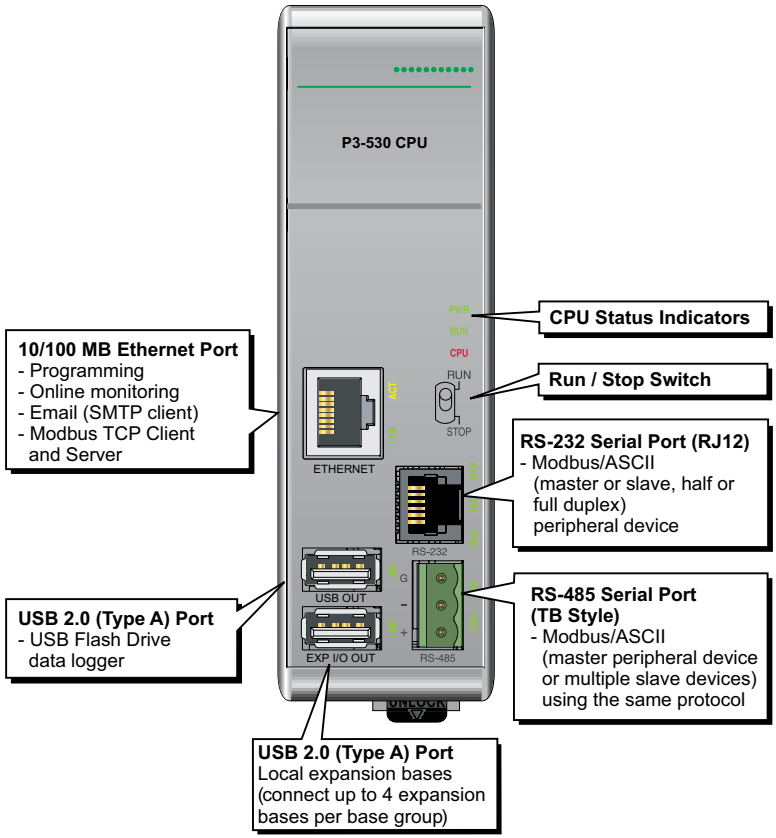
LCD Control Buttons	
Menu Button	Access the CPU's LCD menu
ESC Button	Returns to the previous screen
SEL Button	Selects the desired menu option
ENT Button	Starts the selected process
Directional Arrows	Moves the cursor around the 4 Row x 10 Column LCD

NOTE: *A replacement LCD display is available at automationdirect.com. Order Part number P3-LCD.*

P3-550 Front Panel LCD Monitoring and Configuration

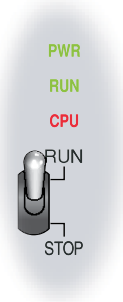


P3-530 Specifications



NOTE: *P3-530 CPU has no LCD display.*

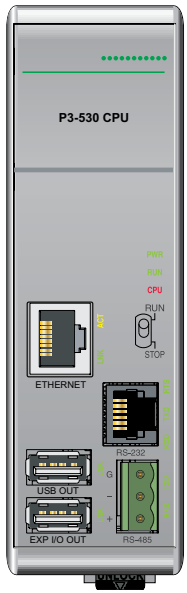
CPU Status Indicators	
PWR	Green LED is illuminated when power is on
RUN	Green LED is illuminated when CPU is in RUN mode
CPU	Red LED is illuminated during power on reset, power down, or watch-dog time-out.



CPU Run/Stop Switch	
RUN position	Executes user program, run-time edits possible
STOP position	Does not execute user program, normal program load position

CPU Specifications

User Memory	25MB (Includes program, data and documentation)	
Memory Type	Flash and Battery Backed RAM	
Retentive Memory	492K	
Scan Time	600µs (3K Boolean, 1K I/O)	
Communications; 5 Integrated Ports	**ETHERNET:** (10/100 Mbps Ethernet)programming, monitoring, debug, firmware, Email SMTP Client, Modbus TCP Master (64 Slaves) and Slave (8 Masters) **USB OUT:** (2.0) Data Logging using SDCZ4-2048-A10 Pen Drive **EXP I/O OUT:** (2.0 Proprietary) 4 P3-EX Local Expansion Bases **RS-232:** (RJ12, 1200-115.2k Baud) Modbus RTU, ASCII full or half duplex **RS-485:** Removable Terminal Included, (1200-115.2k Baud) ASCII, Modbus	
Hardware Limits of System	**5 Bases Total** 1 P3-530 + 4 Expansion (P3-EX) **3520 Hardware I/O Points** (All 64-point I/O Modules)	
Instruction Types	Application Functions Array Functions Counters/Timers Communications Data Handling Drum Sequencers	Math Functions PID Program Control String Functions System Functions High Speed I/O
Real Time Clock Accuracy	±5s typical at 25°C ±15s per day maximum at 60°C	



General Specifications

Operating Temperature	0°C– 60°C (32°F–140°F)
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
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
Module Location	Controller slot in the local base in a Productivity3000® system.
Weight	260g (9oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

IMPORTANT!

Hot-Swapping Information

Note: This device cannot be Hot Swapped.

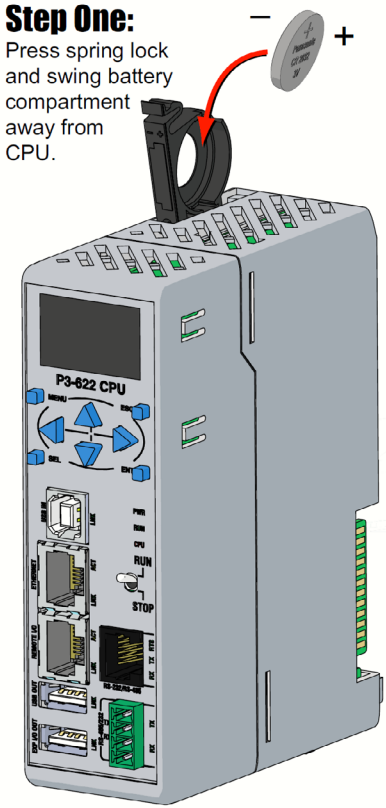
WARNING: Explosion hazard – Substitution of components may impair suitability for Class I, Division 2.

NOTE: *The most recent Productivity Suite software and firmware versions may be required to support new modules and new features.*

Battery (Optional)

A battery is included with some CPU modules, but is not installed. The battery can be installed to retain the Time and Date along with any Tagname values that are set up as retentive.

The battery is not needed for program backup.

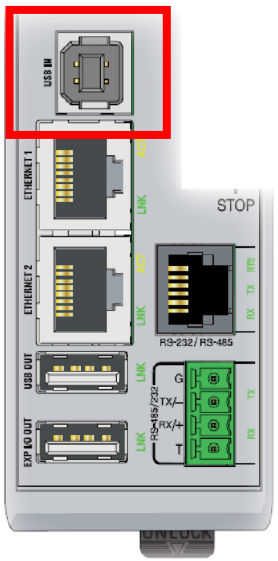


Battery (Optional)	
D2-BAT-1	Coin type, 3.0 V Lithium battery, 560mA, battery number CR2354

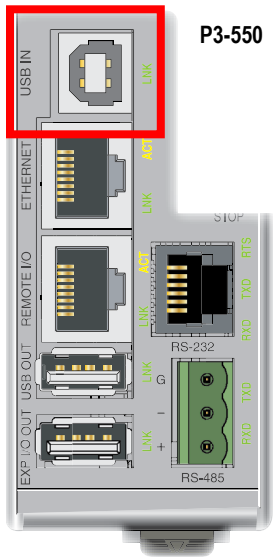
CPU Port Specifications

The P3 CPUs (P3-622, P3-550(E), & P3-530) have multiple communications ports. The following pages contain the individual port specifications and pin-out diagrams.

P3-622



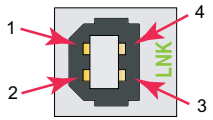
P3-550



USB IN Port P3-622 & P3-550

Used exclusively for connecting to a PC running the ProductivitySuite programming software.

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 1.0/1.1 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: 3ft cable part # USB-CBL-AB3 6ft cable part # USB-CBL-AB6 10ft cable part # USB-CBL-AB10 15ft cable part # USB-CBL-AB15

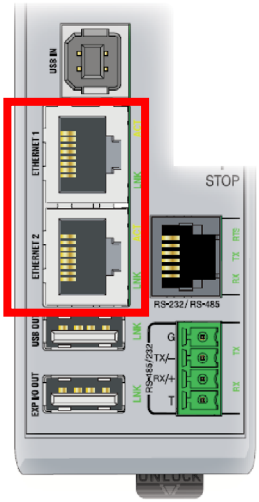


Mating face of USB type B female

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

P3-622 Ethernet Ports

P3-622



Ethernet 1 Port

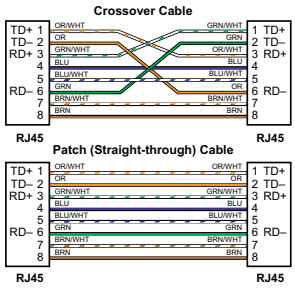
RJ-45 style connector used for:

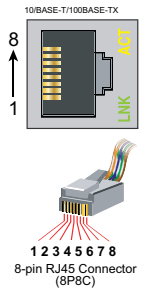
- Connection to a PC running the ProductivitySuite programming software
- EtherNet/IP Scanner (CPU is the originator, up to 128 connections, max 32 devices)
- EtherNet/IP Adapter (CPU is the target, up to 16 connections, max 4 devices) Modbus TCP Client connections (Modbus requests sent from the CPU)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

Ethernet 2 Port

RJ-45 style connector used for:

- Connection to a Remote I/O network of devices using the Productivity Remote Protocol, e.g. P3-RX remotes slaves, ProtosX couplers, PS-AMC modules, and GS drives.
- Can be user defined and used as a secondary multipurpose ethernet port with the exception that this port shares Default Gateway and DNS capability with the Ethernet 1 Port.





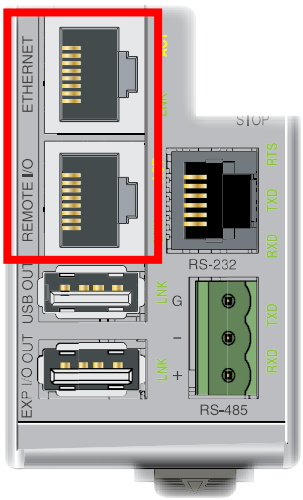
Ethernet Specifications

Port Name	ETHERNET1	ETHERNET2*
Description	Standard transformer isolated Ethernet port with built-in surge protection for programming, online monitoring, MQTT/MQTTS, Email (SMTP client), Modbus/TCP client/server connections (fixed IP or DHCP) and Ether-Net/IP Scanner/ Adapter.	Standard transformer isolated Ethernet port with built-in surge protection for connection to the P3-RS/RX, ProtosX remote I/O, GS Drives with optional communication mudules, and PS-AMC modules.
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. Both ports support Auto MDI/MDI-X. (Cables are available at automationdirect.com; e.g., C5E-STPBL-S10)	

**The 'ETHERNET 2' port can be configured as 'Default (Remote I/O)' or 'User Defined'. If 'User Defined' is selected this port will have the same specification as the 'ETHERNET 1' port and shares Default Gateway and DNS capability with the Ethernet 1 Port.*

P3-550(E) & P3-530 Ethernet Ports

P3-550(E)



Ethernet Port

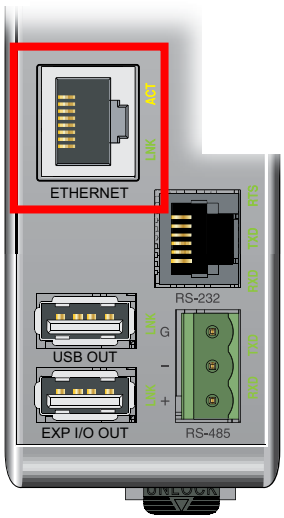
RJ-45 style connector used for:

- Connection to a PC running the ProductivitySuite programming software
- Modbus TCP Client connections (Modbus requests sent from the CPU)
- Modbus TCP Server connections (Modbus requests received by the CPU)
- Outgoing E-mail

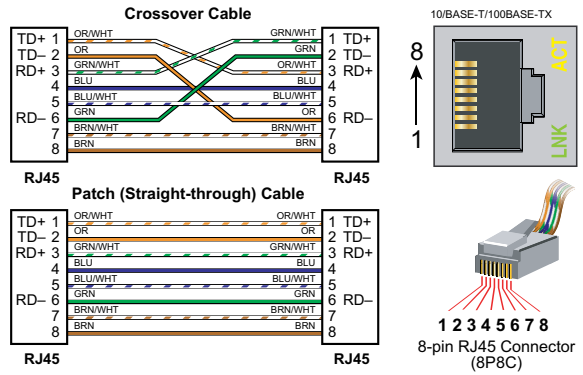
Remote I/O Port P3-550(E)

RJ-45 style connector used for connecting to a Remote I/O network consisting of P3-RS/RX Remote Slaves, ProtosX TCP couplers, PS-AMC modules, and GS drives.

P3-530

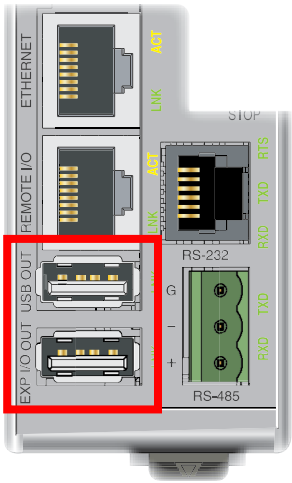


Ethernet Specifications		
Port Name	ETHERNET	REMOTE I/O P3-550(E)
Description	Standard transformer isolated Ethernet port with built-in surge protection for programming, online monitoring, Email (SMTP client), Modbus/TCP client/server connections (fixed IP or DHCP) and EtherNet/IP Scanner/ Adapter [P3-550(E)].	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, 4 ProtosX TCP couplers, 4 PS-AMC modules, 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 are available at automationdirect.com)	



USB Ports

P3-622
P3-550(E)



USB OUT Port

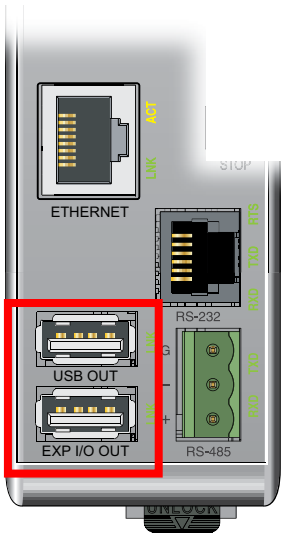
Used for data logging (P3-622/P3-550(E)/P3-530) or project transfers (P3-622/P3-550(E) only) to and from a USB-FLASH Pen Drive (may work with other pen drives).

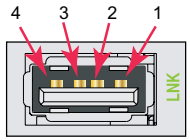
EXP I/O OUT Port

USB port used only for Expansion I/O connections to local P3-EX modules in a Productivity®3000 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 (Recommended pen drive: Sandisk SDCZ4-2048-A10) for data logging (P3-622, P3-550(E)/P3-530) or program transfer (P3-622/P3-550(E) only) 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: 6ft cable part # P3-EX-CBL6 (included with P3-EX module)

P3-530





Mating face of USB type A female

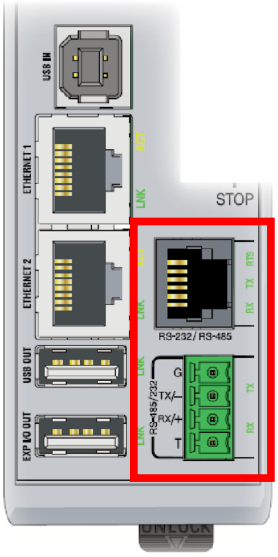
USB OUT

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

EXP I/O OUT

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

P3-622 CPU Programmable RS-232/RS-485 Ports

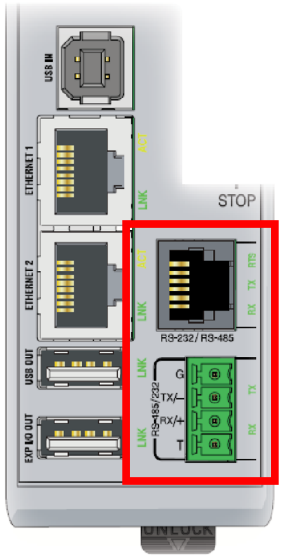


P3-622

RS-232 Specifications	
Port Name	**RS-485**
TXD	RS-232 Transmit output
RXD	RS-232 Receive input
RTS	Handshaking output for modem control (RJ12 only)
GND	Logic ground
Maximum Output Load (TXD/RTS)	3kΩ, 1000pf
Minimum Output Voltage Swing	±5V
Output Short Circuit Protection	±15mA

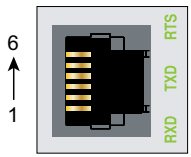
RS-485 Specifications	
TXD+/RXD+	RS-485 transceiver high
TXD-/RXD-	RS-485 transceiver low
GND	Logic ground
Input Impedance	19kΩ
Termination Resistance (TB jumper wire “T” to “+”)	120Ω. To use, add jumper between pin 1 and pin 2. Resistor is internally connected between pins 1 and 3.
Maximum Load	50 transceivers, 19kΩ each, 60Ω termination
Output Short Circuit Protection	±250mA, thermal shut-down protection
Electrostatic Discharge Protection	Contact ±4KV, Air ±8KV per IEC61000-4-2 Cable is installed for testing
Electrical Fast Transient Protection	±1kV per IEC61000-4-4
Mimimum Differential Output Voltage	1.5 V with 60Ω load
Fail Safe Inputs	Logic high input state if inputs are connected
Maximum Common Mode Voltage	-7.5 V to 12.5 V

P3-622 CPU Programmable RS-232/RS-485 Ports



P3-622

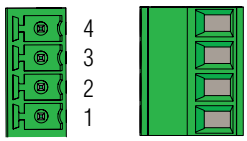
RJ12 Connector	
Description	Programmable RS232/485 Port - Non-isolated RS-232 DTE port connects the CPU as a Modbus RTU Master /Slave or ASCII peripheral device. Includes selectable internal termination for RS485 mode. - Non-isolated RS-485 port connects the CPU as a Modbus/ASCII master or slave to a peripheral device. Includes support to enable internal termination. 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
+5V Cable Power	210mA maximum at 5V when in RS-232 mode, ±5%. Reverse polarity and overload protected.
Port Status LED	Green LED illuminated when active for TXD, RXD and RTS
Cable Options	EA-MG-PGM-CBL D2-DSCBL USB-RS232-1 with D2-DSCBL FA-CABKIT



6-pin RJ12 Female Modular Connector

Pin#	RS232	RS485
6	GND	GND
5	RTS	
4	TXD	TXRX-
3	RXD	TXRX+
2	+5V, 210mA	Do not connect
1	GND	GND

4 Position Terminal Block	
Description	Programmable RS485/232 Port - 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 - 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
Port Status LED	Green LED illuminated when active for TXD and RXD
Cable Options	Go to AutomationDirect.com for RS232 and RS-485 cable selection.

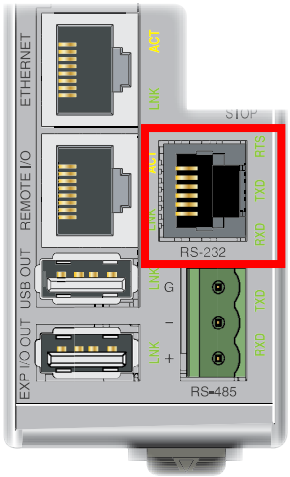


PCON-KIT

Pin #	RS232	RS485
4	GND	GND
3	TXD	TXRX-
2	RXD	TXRX+
1	Do not connect	TERMINATE

P3-550(E) and P3-530 RS-232/RS-485 Ports

P3-550(E)



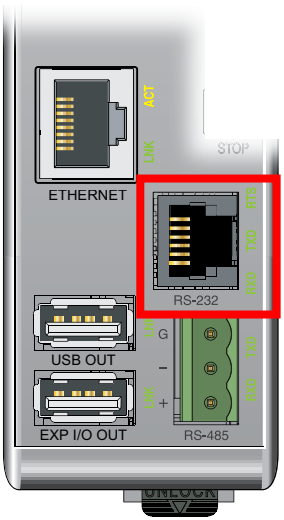
RS-232 Port

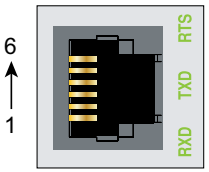
RJ-12 style connector used for:

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

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 Baud.
+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, 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
Cable Options	FA-ISOCON for converting RS-232 to isolated RS-485

P3-530

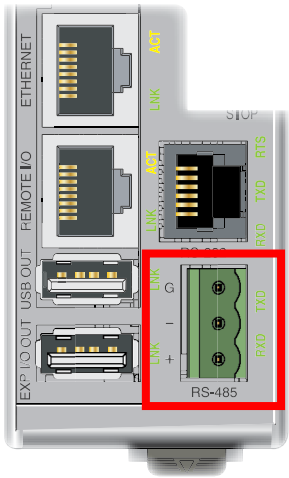




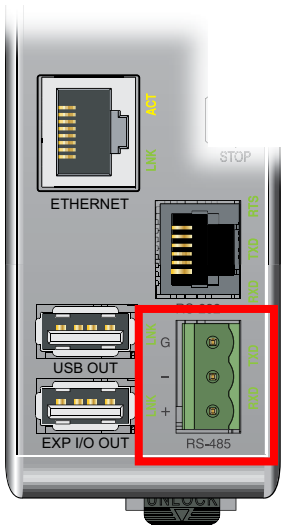
6-pin RJ12 Female Modular Connector

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

P3-550(E)



P3-530



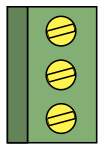
RS-485 Port

A 3-pin removable terminal block used for:

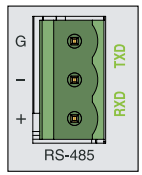
- Modbus RTU Master connections
- Modbus RTU Slave connections
- ASCII Incoming and Outgoing communications
- Custom Protocol Incoming and Outgoing communications

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	19kΩ
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 *	L19827-100, L19827-500, L19827-1000 or Belden 9841 equivalent



Removable connector included.



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

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 (3.175 mm) maximum
Screw Size	M2.5
Screw Torque	4.5 lb·in (0.51 N·m)

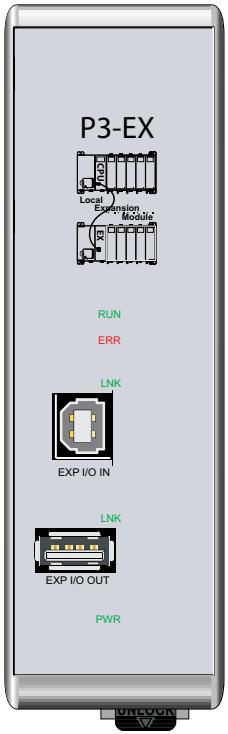
Productivity3000® System Expansion

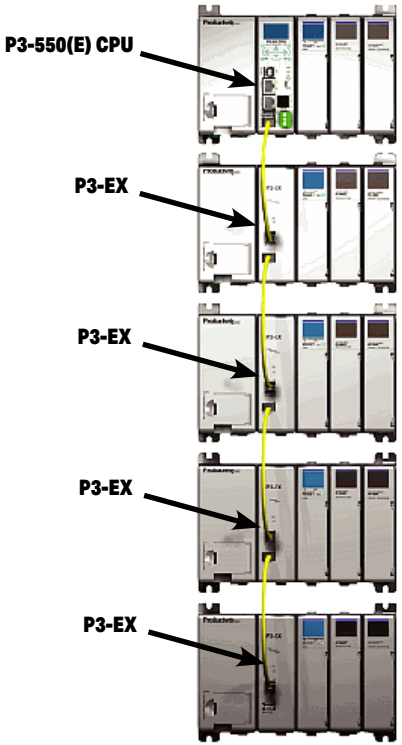
The Productivity3000® system. can be expanded by using the P3-EX, P3-RS, P3-RX, or PS-AMC modules when using the **P3-622** or **P3-550(E)** CPU or expanded with the P3-EX module when using the **P3-530** CPU. The local, expansion, and remote I/O (**P3-622 & P3-550(E)** only) are assigned preconfigured or user-defined tag names which can be easily referenced in the ladder logic program.

P3-EX Expansion Module

The P3-EX high-performance expansion module provides local I/O expansion to a CPU or Remote I/O. Includes 6-foot USB expansion cable.w

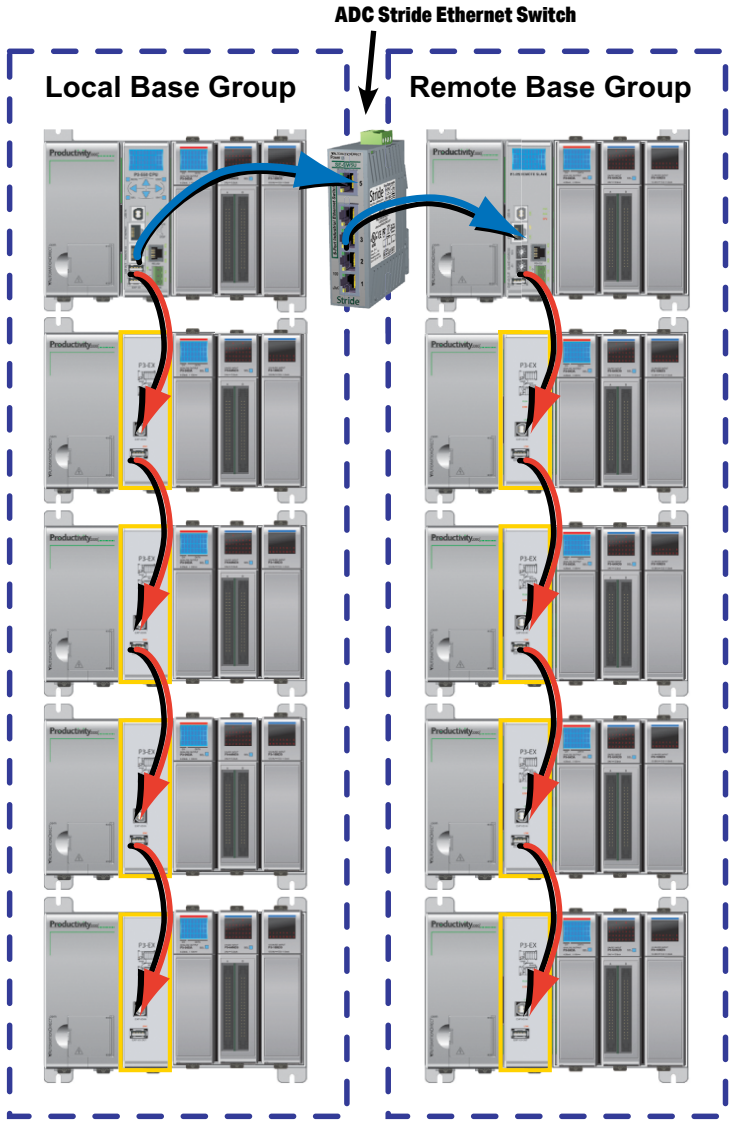
The system can have up to 68 expansion bases by adding four expansion bases at the CPU base and four expansion bases per Remote I/O Slave (up to 16 slaves). Each expansion base uses the P3-EX expansion module for USB-based I/O bus connectivity.





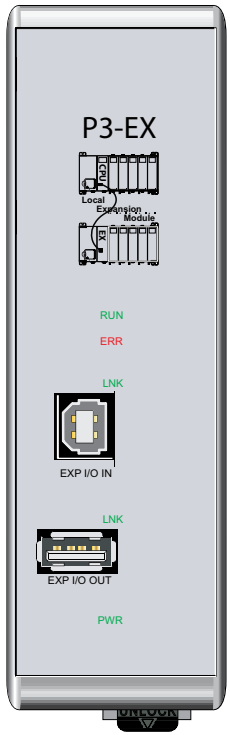
A 6-foot USB cable is included with the P3-EX module (Replacement cable: part number P3-EX-CBL6).

P3-EX Expansion Module Example



P3-EX Module Specifications

Mounting Location	Controller slot of expansion base
Expansion Connectors	1 USB 2.0 Type A, 1 USB 2.0 Type B
Maximum Number of Expansion Modules per CPU or Remote Slave	4
Maximum Distance Between Modules	15 feet
Status Indicators	PWR - Green LED is illuminated when power is on. RUN - Green LED is illuminated when not in reset. Reset occurs during power-up, a watchdog timeout, or if an expansion cable is disconnected. ERR - Red LED is illuminated when a USB fault is detected. LINK - Green LED is illuminated when a USB link is established.
I/O Capabilities Max. Number of I/O per CPU System Max. Number of Expansion I/O Bases	59,840 (CPU base with 4 expansion bases plus 16 remote bases with 4 expansion bases per remote, with 11 64-point I/O modules per base) 68 (4 per CPU, 4 per remote base)
Module Setup	Automatic hardware verification
Expansion I/O Addressing	Automatic via tag names
USB Cables	6 foot: P3-EX-CBL6 (USB Type A to USB Type B)



General Specifications

Operating Temperature	0°C– 60°C (32°F–140°F)
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
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	1W
Enclosure Type	Open equipment
Module Location	Controller slot in a local expansion base in a Productivty3000® system.
Weight	194g (6.24 oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

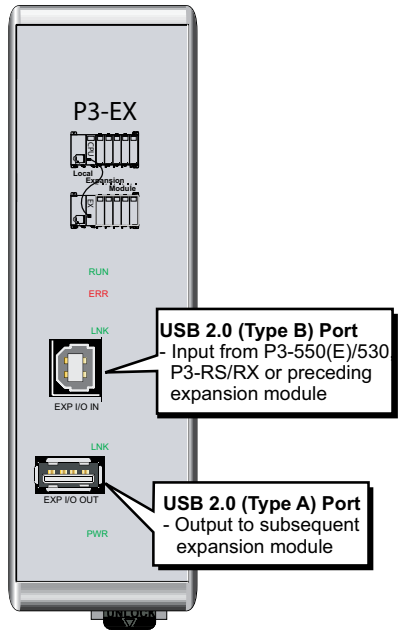
IMPORTANT!

Hot-Swapping Information

Note: This device cannot be Hot Swapped.

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

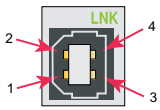
Expansion Module Status Indicators	
PWR	Green LED is illuminated when power is on.
RUN	Green LED is illuminated when not in reset. Reset occurs during power-up, a watchdog timeout, or an expansion cable is disconnected.
ERR	Red LED is illuminated when a USB fault is detected.
LNK	Green LED is illuminated when a USB link is established.



Port Specifications

Exp I/O Port Specifications		
Port Name	EXP I/O IN	EXP I/O OUT
Description	Proprietary USB 2.0 slave input for connection with a CPU, remote slave, or preceding P3-EX expansion base. The P3-EX Expansion Module includes the 6 foot USB cable P3-EX-CBL6.	Proprietary USB 2.0 master output for connection with the next P3-EX expansion base. Includes built-in surge protection.
Transfer Rate	480 Mbps	
Port Status LED	Green LED is illuminated when LINK is established to connected device	
Cables	USB Type A to USB Type B: 6ft cable part no. P3-EX-CBL6	

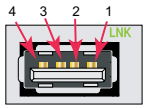
EXP I/O IN



Mating face of USB type B female

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

EXP I/O OUT

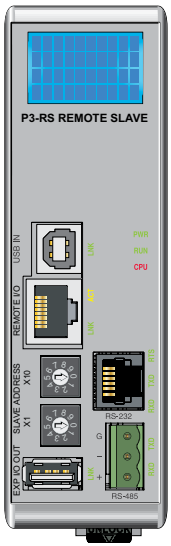


Mating face of USB type A female

Remote Slave Modules

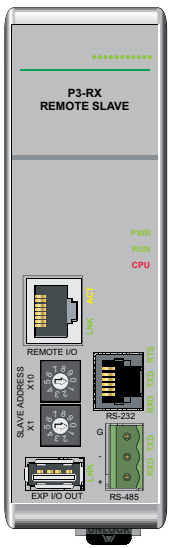
The P3-RS and P3-RX are high-performance Remote Slave modules. Both modules feature several communications ports which support USB Expansion I/O, Ethernet Remote I/O, and serial devices. The P3-RS also includes a 4 line x 10 character LCD display and an additional USB IN (type B) port for remote CPU programming and monitoring.

Up to 16 Remote Slaves can be connected to a single P3-550(E) for a remote I/O network.

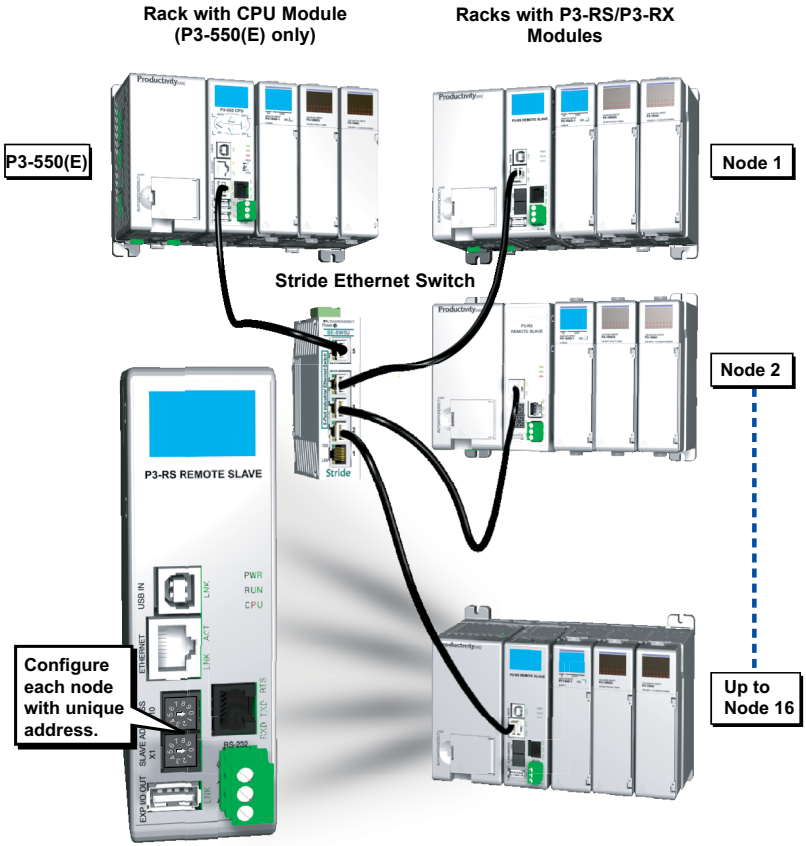


P3-RS

NOTE: *The P3-RS module is discontinued as of 06/20. Please use P3-RX as a replacement.*



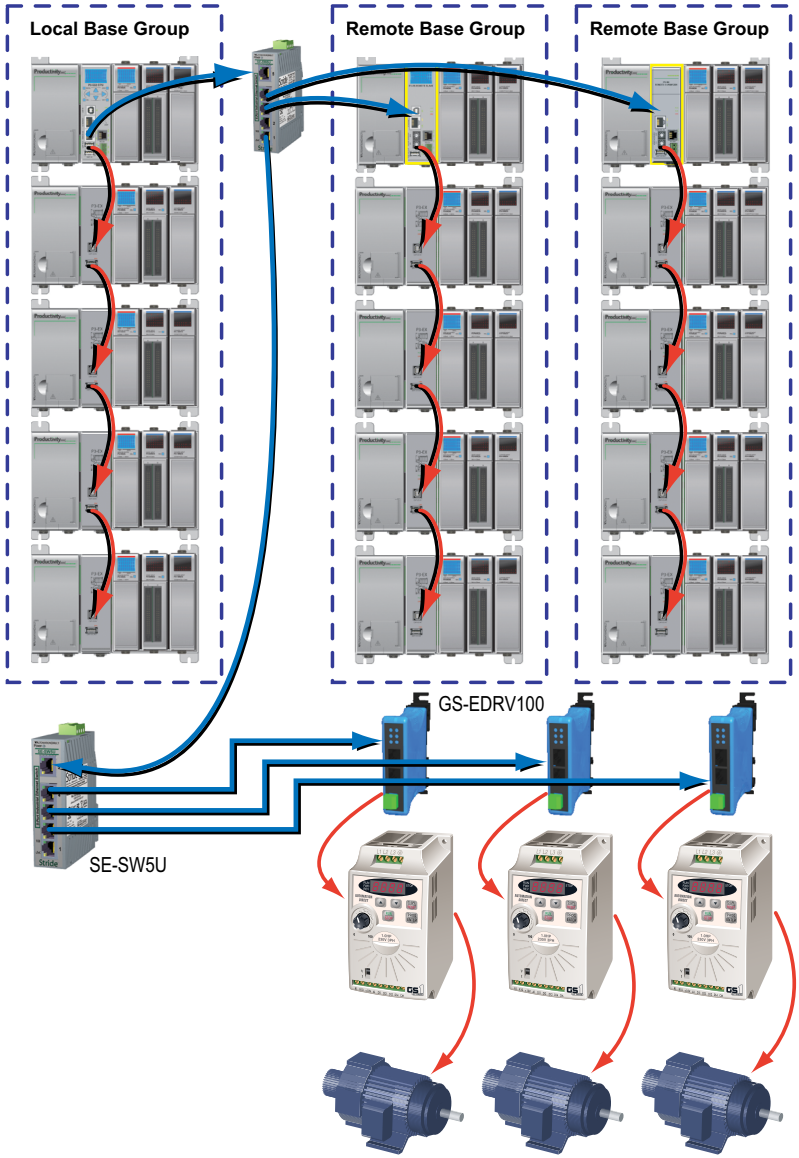
P3-RX



P3-RS/P3-RX Remote Slave Module Example (P3-622 Or P3-550(E) only)

Add up to 4 bases to each group using P3-EX expansion modules with USB connections.

Add up to 16 Remote Base Groups using P3-RS/RX Remote Slave modules and up to 32 GS Drives on the Remote I/O Ethernet Network.



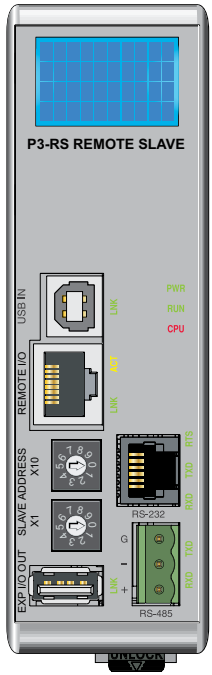
P3-RS Remote Slave Module Specifications

NOTE: *The P3-RS module is discontinued as of 06/20. Please use P3-RX as a replacement.*

Remote Slave Specifications P3-RS	
Mounting Location	Controller slot
Display	LCD, 4x10 characters, backlit, LCD characters are 5x7 with a dot pitch of 0.45 mm; 2.25 mm x 3.15 mm
Communications - 5 Integrated Ports	**USB IN:** (2.0, Type B) Programming, monitoring, debug **REMOTE I/O:** (10/100 Mbps Ethernet) 1 P3-550(E) **EXP I/O OUT:** (2.0, Type A, Proprietary) 4 P3-EX local expansion bases **RS-232:** (RJ12, 1200-115.2k Baud) ASCII, Modbus **RS-485:** (removable terminal included, 1200-115.2k Baud) ASCII, Modbus
Max. Number of Ethernet Remote I/O Bases	16
Max. Number of Expansion I/O Bases	68 (4 per CPU, 4 per remote base)
Max. Number of I/O per CPU System	59,840 (CPU Base with 4 expansion bases plus 16 remote bases with 4 expansion bases per remote, with 11 64-point I/O modules per base)

General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F)
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
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	4W
Enclosure Type	Open equipment
Module Location	Controller slot in a remote base in a Productivity3000® system.
Weight	260g (9oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*



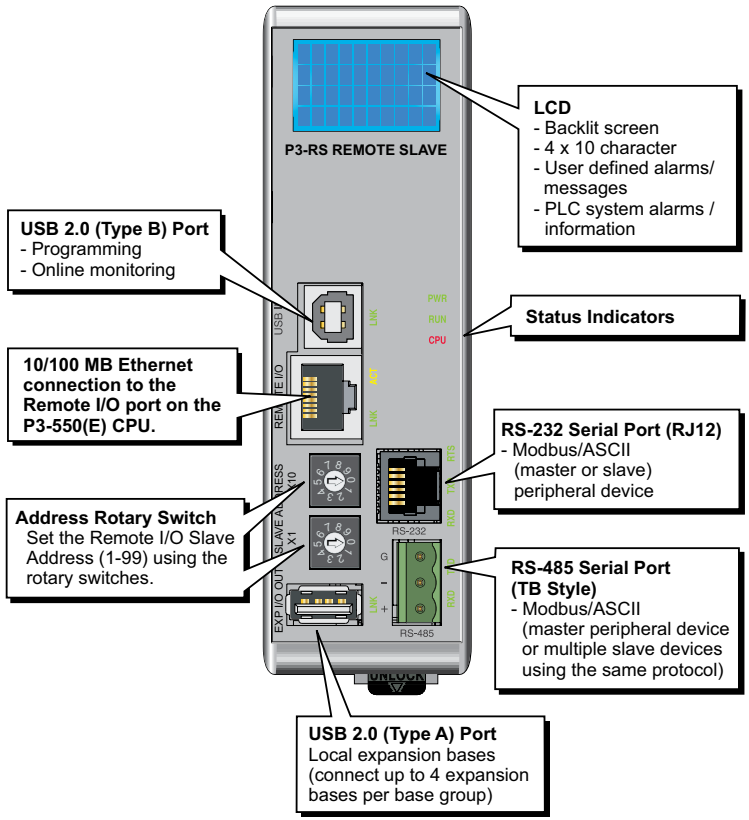
IMPORTANT!

Hot-Swapping Information

Note: This device cannot be Hot Swapped.

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

P3-RS Remote Slave Module Front Panel



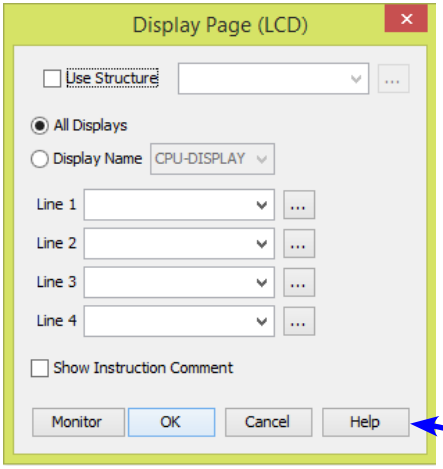
Status Indicators

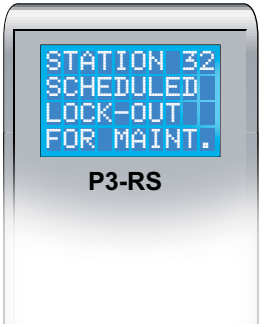
RS Status Indicators	
PWR	Green LED is backlit when power is on
RUN	Green LED is backlit when CPU has valid project file with RS configured.
CPU	Red LED is backlit during power on reset, power down, or watch-dog time-out.

LCD Message Display (P3-RS only)

The P3-RS incorporates a 4 line x 10 character LCD for system errors and information or for displaying user-defined messages.

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



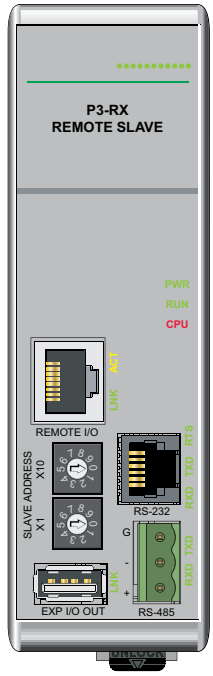


For user-defined messages, the display is configured using the ProductivitySuite Programming Software. An LCD Page instruction allows the user to program text into user-defined tags and display the messages based on the ladder execution.

See the ProductivitySuite Programming Software Help Files for complete details.

P3-RX Remote Slave Module Specifications

Remote Slave Specifications P3-RX	
Mounting Location	Controller slot
Communications - 4 Integrated Ports	**REMOTE I/O:** (10/100 Mbps Ethernet) 1 P3-550(E) **EXP I/O OUT:** (2.0, type A, proprietary) 4 P3-EX local expansion bases **RS-232:** (RJ12, 1200-115.2k Baud) ASCII, Modbus **RS-485:** (removable terminal included, 1200-115.2k Baud) ASCII, Modbus
Max. Number of Ethernet Remote I/O Bases	16
Max. Number of Expansion I/O Bases	68 (4 per CPU, 4 per remote base)
Max. Number of I/O per CPU System	59,840 (CPU Base with 4 expansion bases plus 16 remote bases with 4 expansion bases per remote, with 11 64-point I/O modules per base)



General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F)
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
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	4W
Enclosure Type	Open equipment
Module Location	Controller slot in a remote base in a Productivity3000® system.
Weight	260g (9oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

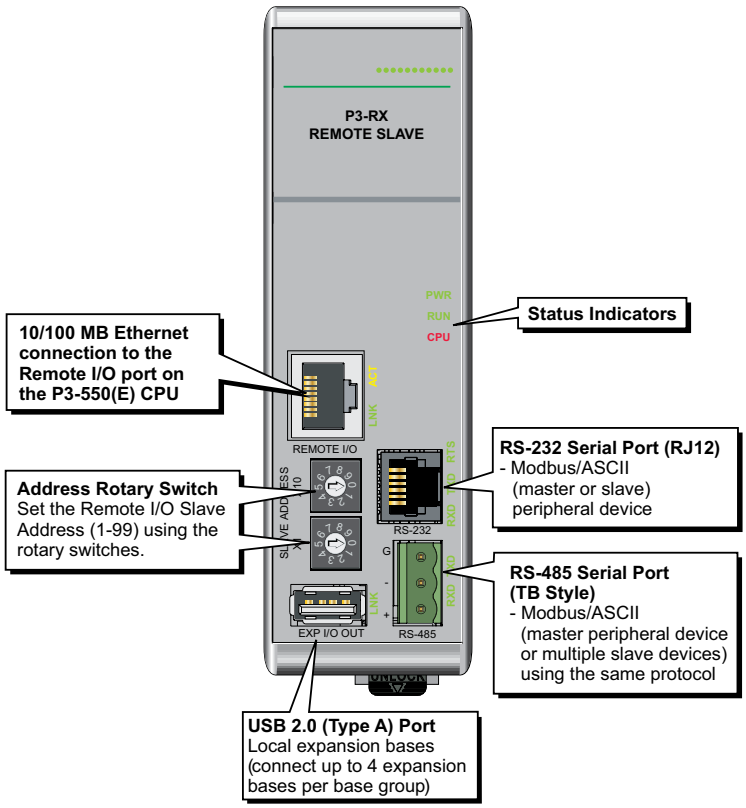
IMPORTANT!

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

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

NOTE: *When using the P3-RX, you must use Productivity3000® software version 1.0.7.XX and firmware version 1.1.13.XX or later.*

P3-RX Remote Slave Module Front Panel



Status Indicators

RS Status Indicators	
PWR	Green LED is backlit when power is on
RUN	Green LED is backlit when CPU has valid project file with RS configured.
CPU	Red LED is backlit during power on reset, power down, or watch-dog time-out.

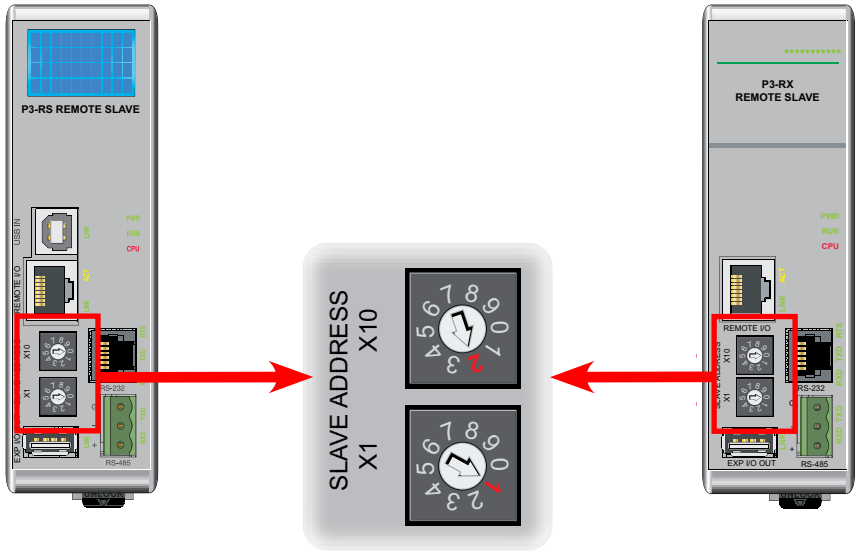
Setting the Remote Slave Address

Each Remote Slave must have a unique address between 1 and 99. The address is set using the two rotary switches located on the face of the module, X10 for setting the tens units and X1 for setting the ones unit.

For example, to set a remote slave address to 21, turn the X10 arrow until it points at number 2 and the X1 arrow until it points at number 1.

IMPORTANT NOTES:

- The factory setting of 00 is not a valid address.
- Address selection must be set prior to power-up.
- Slave addresses are only read on power-up.
- If there are duplicate slave addresses on the same network, a critical error (Error Code E2207) will occur.

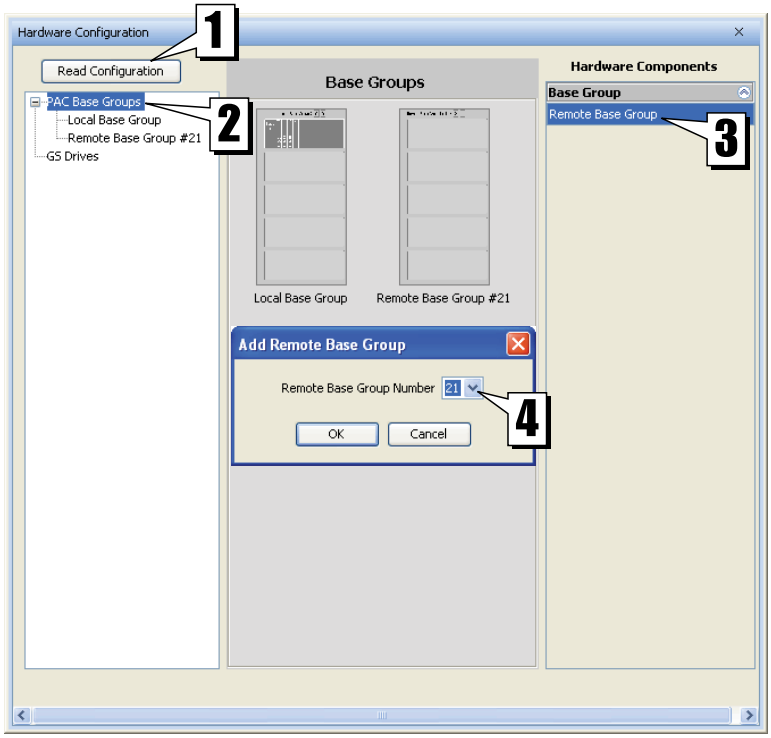


Setting the Remote Slave Address (continued)

It is also necessary to configure the remote addresses using the ProductivitySuite programming software.

For example, if connected online to a P3000 system with slaves installed, go to Hardware Configuration and select the Read Configuration (1) button. The CPU will automatically read the addresses of the remote slaves and add them to the configuration.

If setting up offline, go to Hardware Configuration, select CPU Base Groups (2), and then select Remote Base Group (3). In the Add Remote Base Group (4) window, select the same Remote Base Number as set on the rotary switches.



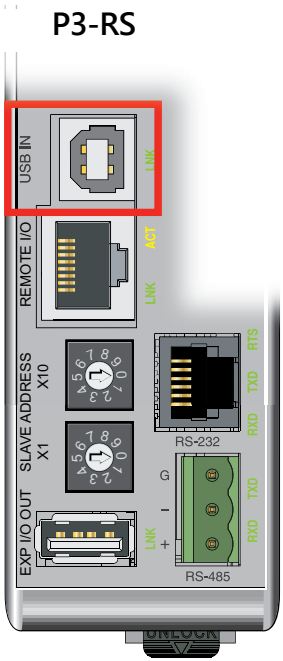
Port Specifications

The P3-RS and P3-RX Remote Slave modules have several communications ports and the following pages contain their specifications and pin-out diagrams.

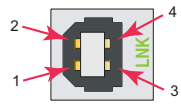
USB IN Port (P3-RS only)

Standard USB 2.0 (Type B) Slave input for remote CPU programming and online monitoring, with built-in surge protection.

P3-RS



USB IN Specifications	
Description	Standard USB 2.0 (Type B) Slave input for remote CPU 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: 3ft cable part # USB-CBL-AB3 6ft cable part # USB-CBL-AB6 10ft cable part # USB-CBL-AB10 15ft cable part # USB-CBL-AB15



Mating face of USB type B female

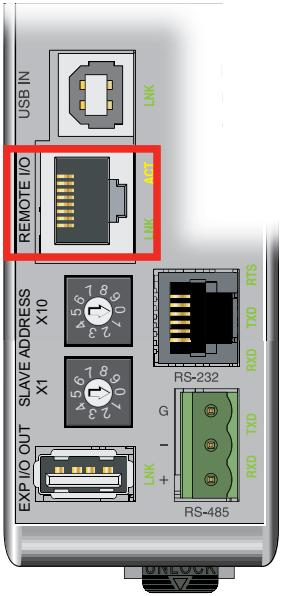
Pin #	Signal
1	+5
2	–Data
3	+Data
4	GND

NOTE: *The P3-RS module is discontinued as of 06/20. Please use P3-RX as a replacement.*

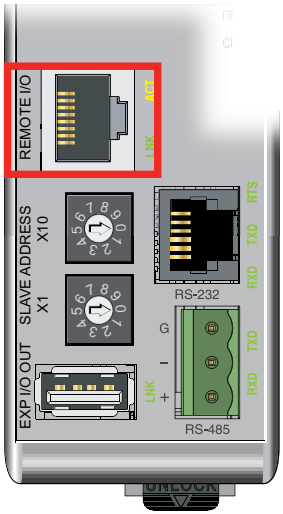
Remote I/O Port

Isolated Ethernet Port with built-in surge protection for connection to the CPU Remote I/O Master port.

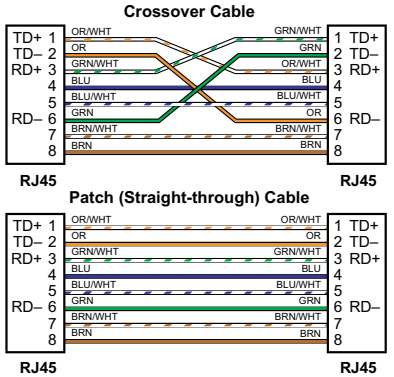
P3-RS

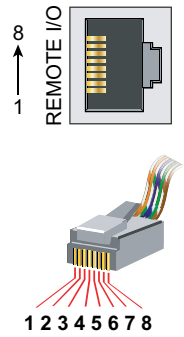


P3-RX



Remote I/O Port Specifications	
Description	Proprietary transformer isolated Ethernet Port with built-in surge protection for connection to CPU Remote I/O Master port.
Transfer Rate	10/100 Mbps
Port Status LEDs	Green LED is illuminated when network LINK is established. Yellow LED backlit 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 are available at automationdirect.com)

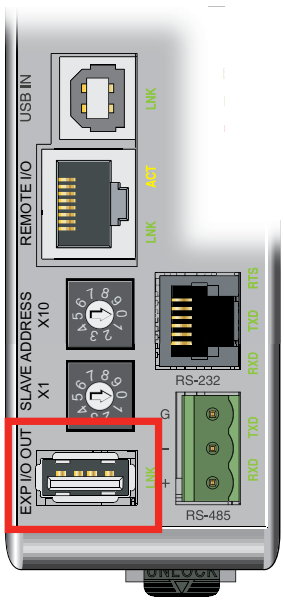




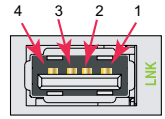
EXP I/O OUT Port

USB 2.0 (Type A) master output for connection for up to four P3-EX local expansion bases, with built-in surge protection.

P3-RS



EXP I/O OUT Specifications	
Description	Proprietary USB 2.0 (Type A) 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	USB Type A to USB Type B. The P3-EX Expansion Module includes a 6 foot USB cable, part number P3-EX-CBL6.

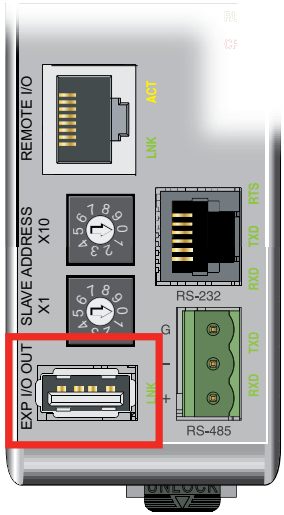


Mating face of USB type A female

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

NOTE: *The P3-RS module is discontinued as of 06/20 Please use P3-RX as a replacement.*

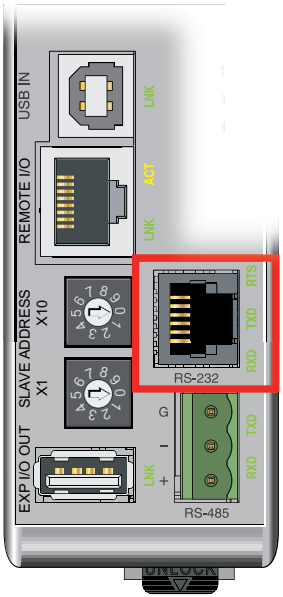
P3-RX



RS-232 Serial Port

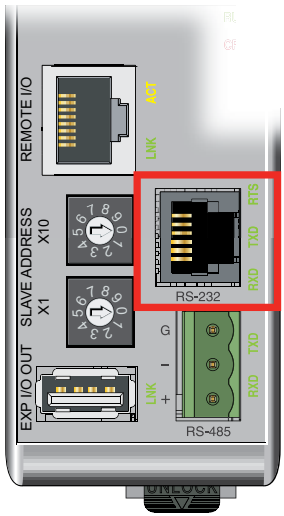
Non-isolated RS-232 DTE port connects the P3-RS/P3-RX as a Modbus or ASCII master or slave to a peripheral device.

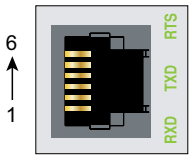
P3-RS



RS-232 Specifications	
Description	Non-isolated RS-232 DTE port connects the P3-RS/P3-RX as a Modbus or 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, ±5%. Limited by resettable fuse. Reverse polarity 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	±5V
Output Short Circuit Protection	±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

P3-RX





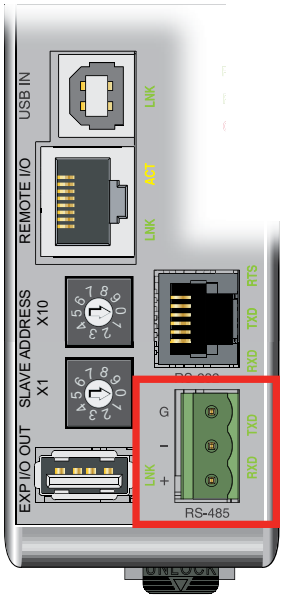
6-pin RJ12 Female Modular Connector

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 Serial Port

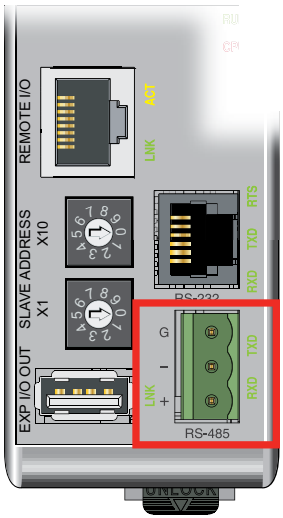
Non-isolated RS-485 port connects the P3-RS/P3-RX as a Modbus or ASCII master or slave to a peripheral device.

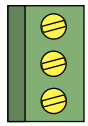
P3-RS



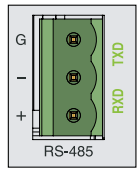
RS-485 Specifications	
Description	Non-isolated RS-485 port connects the P3-RS/P3-RX as a Modbus or ASCII master or slave to a peripheral device. Includes ESD/EFT protection and automatic echo cancellation when transmitter is active.
Data Rates	Selectable, 1200, 2400, 9600, 19200, 33600, 38400, 57600, and 115200.
TXD+/RXD+	RS-485 transceiver high
TXD-/RXD-	RS-485 transceiver low
GND	Logic ground
Input Impedance	19kΩ
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 is illuminated when active for TXD and RXD
Cable Options	L19827-100, L19827-500, L19827-1000 or Belden 9841 equivalent

P3-RX





Removable connector included.



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

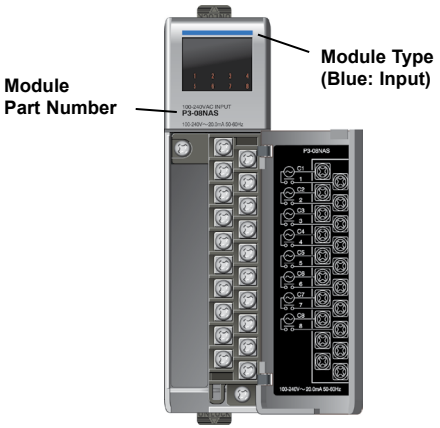
Terminal Block Specifications	
Number of Positions	3
Pitch	5 MM
Wire Range	28-12AWG Solid Conductor 30-12AWG Stranded Conductor
Screw Driver Width	1/8 inch (3.175mm) maximum
Screw Size	M2.5
Screw Torque	4.5 Lb-in

I/O Modules Overview

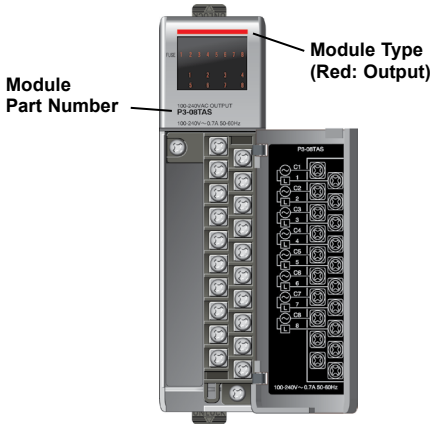
A variety of discrete and analog I/O modules are available for use in local, expansion, and remote I/O bases.

Each I/O module is identified as an "Input", "Output", or "Input/Output" module on its front panel using the color coding scheme listed below. See the following pages for discrete I/O module specifications, Chapter 3 for analog I/O module specifications and Chapter 4 for specialty module specifications.

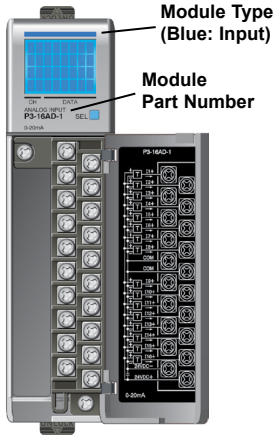
Discrete Input Modules



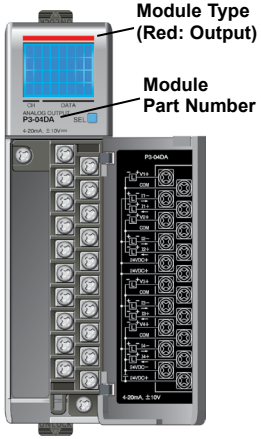
Discrete Output Modules



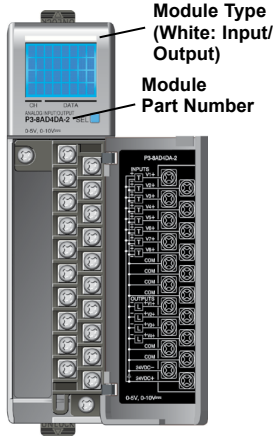
Analog Input Modules



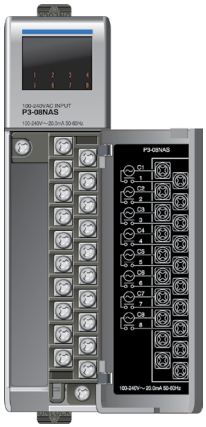
Analog Output Modules



Analog Input/Output Modules



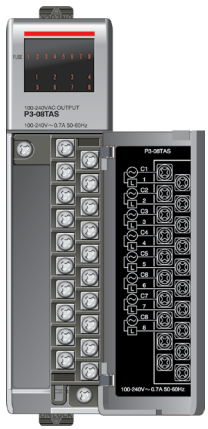
Discrete I/O Modules



Discrete Input Modules

Productivity3000 Discrete Input Modules			
Part Number	Number of Inputs	Description	See Page
P3-16SIM	16	Input Simulator Module	2-47
P3-08ND3S	8	Isolated Sinking/Sourcing DC Input	2-48
P3-16ND3	16	Sinking/Sourcing DC Input	2-51
P3-32ND3*	32	Sinking/Sourcing DC Input	2-54
P3-64ND3*	64	Sinking/Sourcing DC Input	2-56
P3-08NAS	8	Isolated AC Input	2-58
P3-16NA	16	Isolated AC Input	2-61

**ZIPLink required.*



Discrete Output Modules

Productivity3000 Discrete Output Modules			
Part Number	Number of Outputs	Description	See Page
P3-08TD1S	8	Isolated Sinking Output	2-64
P3-08TD2S	8	Isolated Sourcing Output	2-67
P3-16TD1	16	Sinking Output	2-70
P3-16TD2	16	Sourcing Output	2-73
P3-32TD1*	32	Sinking Output	2-76
P3-32TD2*	32	Sourcing Output	2-79
P3-64TD1*	64	Sinking Output	2-82
P3-64TD2*	64	Sourcing Output	2-85
P3-08TAS	8	Isolated AC Output	2-88
P3-16TA	16	AC Output	2-91
P3-08TRS	8	Isolated Relay Output	2-94
P3-16TR	16	Relay Output	2-97
P3-08TRS-1	8	Isolated Relay Output	2-100
P3-16TD3P*	16	Sinking/Sourcing Protected Output	2-103

**ZIPLink required.*

P3-16SIM Input Simulator

The P3-16SIM Input Simulator module provides 16 toggle switches to simulate input devices.

Input Specifications	
Inputs per Module	16 Internal switches
OFF to ON Response	Max. 20ms
ON to OFF Response	Max. 20ms
Status Indicators	Logic Side (16 points)

General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
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	0.25 W
Enclosure Type	Open equipment
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system.
Weight	120g (4.23 oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

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

P3-08ND3S Isolated Sinking/Sourcing Input

The P3-08ND3S DC Input Module provides eight 12-24 VDC sinking or sourcing isolated inputs.

Terminal block sold separately; terminal block cover included with module.

Input Specifications

Inputs per Module		8 (sinking / sourcing)
Operating Voltage Range (Tolerance)	CE	12–24 VDC (±10%)
	UL	12–24 VDC (±10%)
Peak Voltage		26.4 VDC
Input Current (Typical)		5mA @ 12VDC 11mA @ 24VDC
Maximum Input Current @ Temp		12.5 mA @ 60° C (26.4 VDC)
Input Impedance		2.2 kΩ @ 12–24 VDC
ON Voltage Level		> 10VDC
OFF Voltage Level		< 3VDC
Minimum ON Current		4mA
Maximum OFF Current		2mA
OFF to ON Response		Max. 2ms typical 1ms
ON to OFF Response		Max. 2ms typical 1ms
Status Indicators		Logic Side (8 points)
Terminal Type (not included)		20-position removable terminal block
Commons		8 Isolated (1 point / common)

Removable Terminal Block Specifications

Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

P3-08ND3S Isolated Sinking/Sourcing Input (continued)

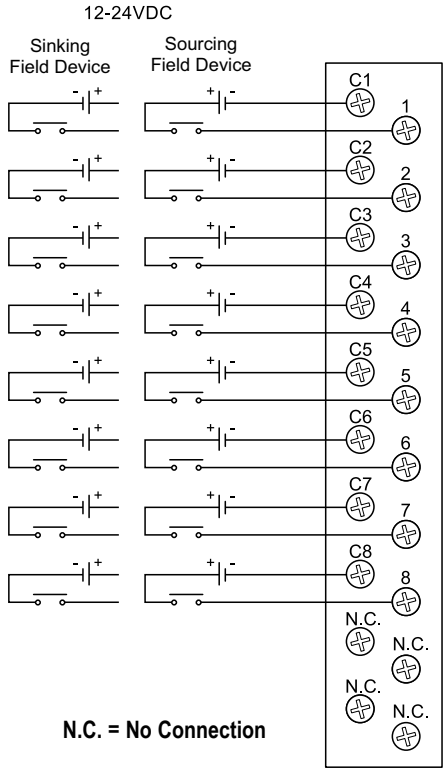
General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500 VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	2.81 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Weight	80g (2.82 oz)
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.

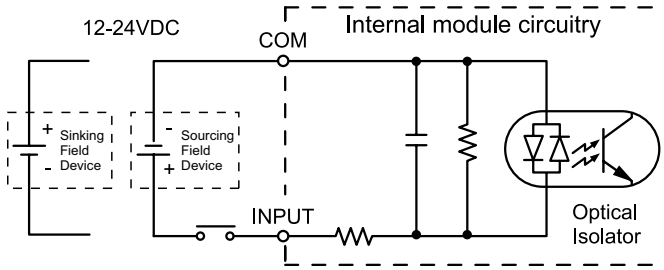
**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

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

P3-08ND3S Isolated Sinking/Sourcing Input (continued)

Wiring Diagrams





P3-16ND3 Sinking/Sourcing Input

The P3-16ND3 DC Input Module provides sixteen 12-24 VDC sinking or sourcing inputs with four isolated commons.

Terminal block sold separately; terminal block cover included with module.

Input Specifications

Inputs per Module		16 (sinking / sourcing)
Operating Voltage Range (Tolerance)	CE	12–24 VDC (±10%)
	UL	12–24 VDC (±10%)
Peak Voltage		26.4 VDC
Input Current (Typical)		5mA @ 12VDC 11mA @ 24VDC
Maximum Input Current @ Temp		12.5 mA @ 60° C (26.4 VDC)
Input Impedance		2.2 kΩ @ 12–24 VDC
ON Voltage Level		> 10VDC
OFF Voltage Level		< 3VDC
Minimum ON Current		4mA
Maximum OFF Current		2mA
OFF to ON Response		Max. 2ms Typical 1ms
ON to OFF Response		Max. 2ms Typical 1ms
Status Indicators		Logic Side (16 points)
Terminal Type (not included)		20-position removable terminal block
Commons		4 Isolated (4 points / common)

Removable Terminal Block Specifications

Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

P3-16ND3 Sinking/Sourcing Input (continued)

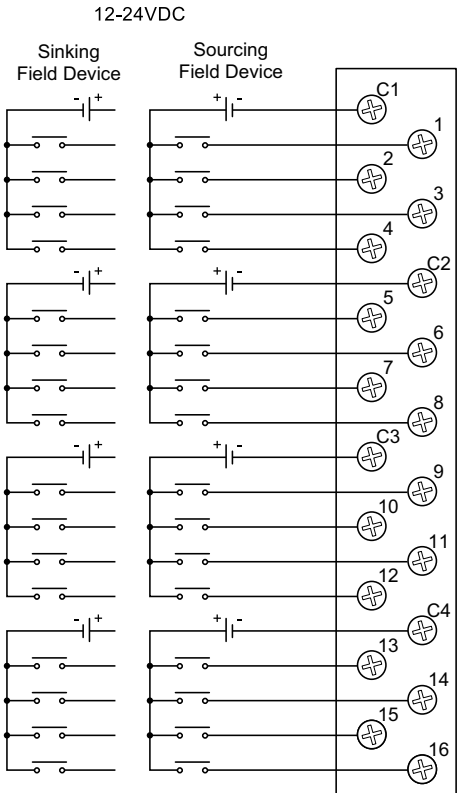
General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	5.61 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Weight	80g (2.82 oz)
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.

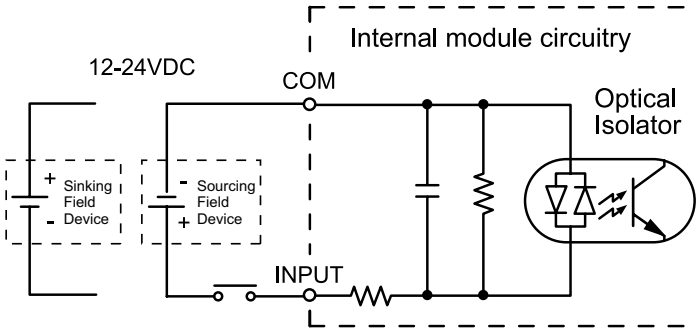
**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

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

P3-16ND3 Sinking/Sourcing Input (continued)

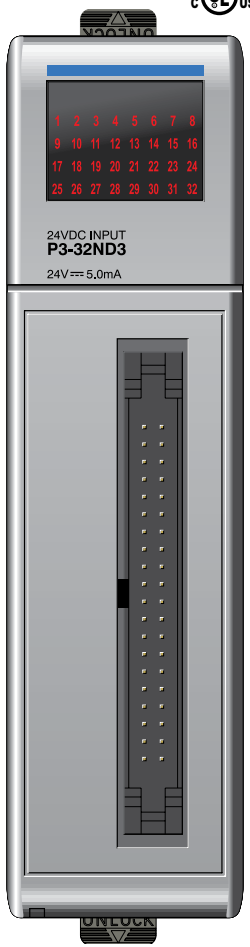
Wiring Diagrams





P3-32ND3 Sinking/Sourcing Input

The P3-32ND3 DC Input Module provides thirty-two 24VDC sinking or sourcing inputs with four isolated commons.



No terminal block sold for this module; ZIPLink required. See Chapter 5 for part numbers of ZIPLink cables and connection modules required with this module.

Input Specifications

Inputs per Module		32 (sinking / sourcing)
Operating Voltage Range (Tolerance)	CE	24VDC (±10%)
	UL	24VDC (±10%)
Peak Voltage		26.4 VDC
Input Current (Typical)		5mA @ 24VDC
Maximum Input Current @ Temp		6mA @ 60° C (26.4 VDC)
Input Impedance		4.7 kΩ @ 24VDC
ON Voltage Level		> 18VDC
OFF Voltage Level		< 8VDC
Minimum ON Current		3.5 mA
Maximum OFF Current		2mA
OFF to ON Response		Max. 2ms Typical 1ms
ON to OFF Response		Max. 2ms Typical 1ms
Status Indicators		Logic Side (32 points)
Connector Type		40-pin IDC
Commons		4 Isolated (8 points / common)

General Specifications

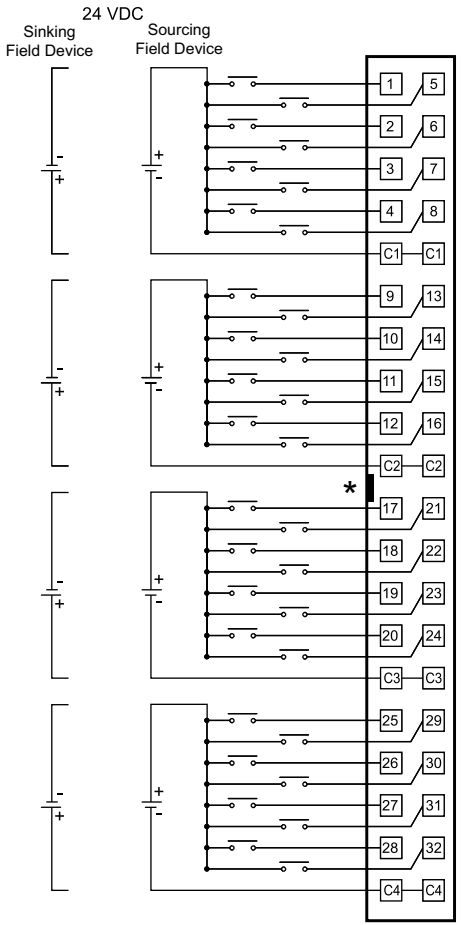
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	5.96 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Use ***ZIP***Link wiring system. See Chapter 5.
Weight	120g (4.23 oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

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

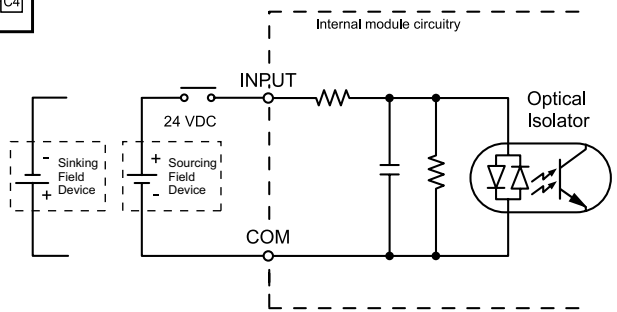
P3-32ND3 Sinking/Sourcing Input (continued)

Wiring Diagrams



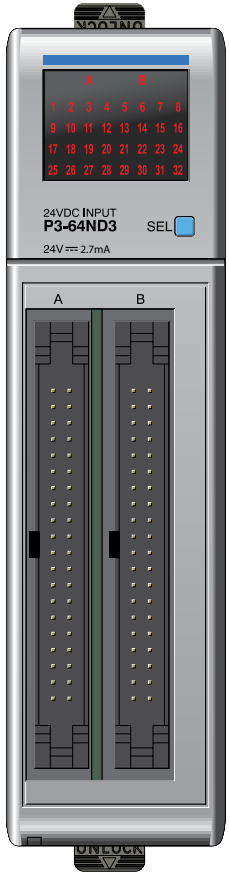
***Denotes key location of all associated ZIPLink cables.**

Connector Specifications	
Connector Type	IDC style header with latch, Omron XG4A-4034
Number of Pins	40 point
Pitch	0.1 in. (2.54 mm)



P3-64ND3 Sinking/Sourcing Input

The P3-64ND3 DC Input Module provides sixty-four 24VDC sinking or sourcing inputs with eight isolated commons.



No terminal block sold for this module; ZIPLink required. See Chapter 5 for part numbers of ZIPLink cables and connection modules required with this module.

Input Specifications

Inputs per Module		64 (sinking / sourcing)
Operating Voltage Range (Tolerance)	CE	24VDC (±10%)
	UL	24VDC (±10%)
Peak Voltage		26.4 VDC
Input Current (Typical)		2.7 mA @ 24VDC
Maximum Input Current @ Temp		3.5 mA @ 60° C (26.4 VDC)
Input Impedance		8.2 kΩ @ 24VDC
ON Voltage Level		> 18VDC
OFF Voltage Level		< 8VDC
Minimum ON Current		2mA
Maximum OFF Current		1.1 mA
OFF to ON Response		Max. 2ms Typical 1ms
ON to OFF Response		Max. 2ms Typical 1ms
Status Indicators		Logic Side (32 points x 2)
Connector Type		Two 40-pin IDC
Commons		8 Isolated (8 points / common)

General Specifications

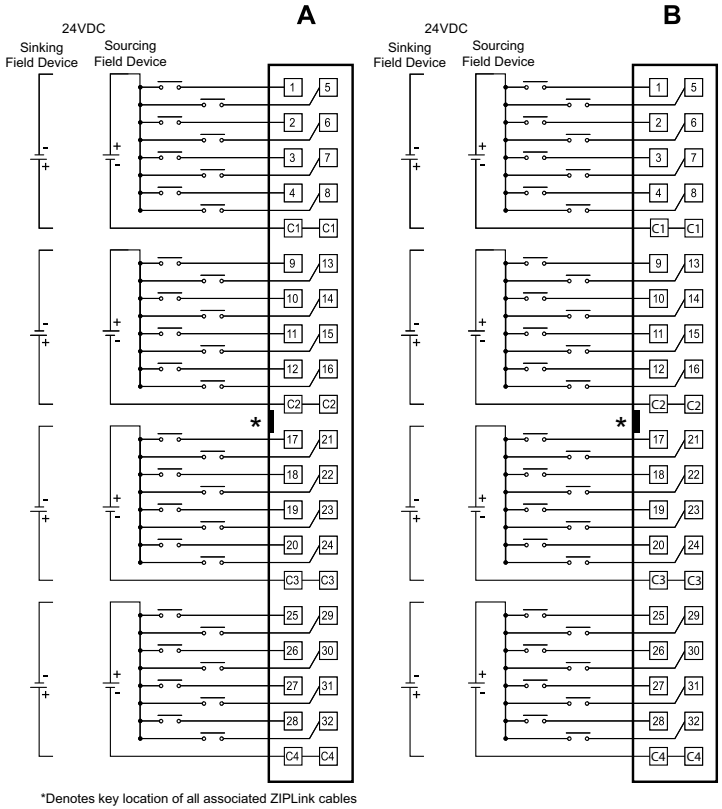
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	6.91 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Use ***ZIP***Link wiring system. See Chapter 5.
Weight	170g (6.00 oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

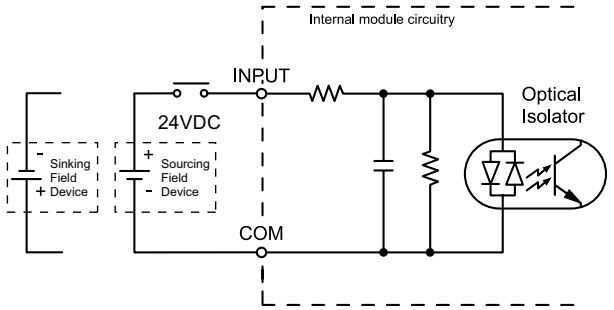
P3-64ND3 Sinking/Sourcing Input (continued)

Connector Specifications	
Connector Type	IDC style header with latch, Omron XG4A-4034
Number of Pins	40 point x 2
Pitch	0.1 in. (2.54 mm)

Wiring Diagrams

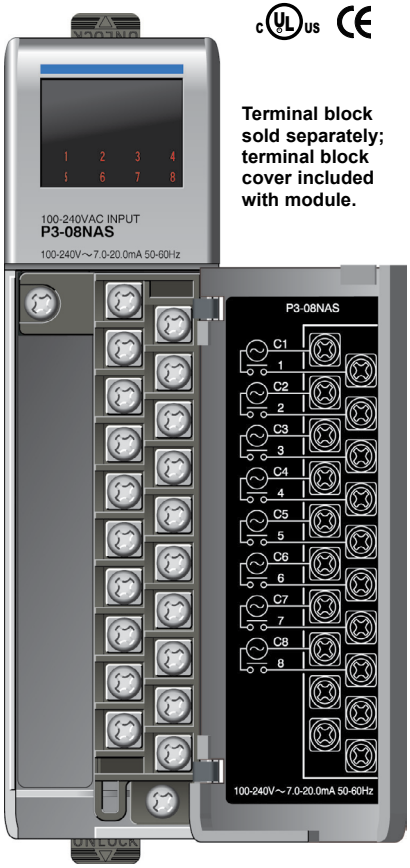


*Denotes key location of all associated ZIPLink cables



P3-08NAS AC Isolated Input

The P3-08NAS AC Isolated Input Module provides eight 100-240 VAC isolated inputs.



Terminal block sold separately; terminal block cover included with module.

Input Specifications

Inputs per Module		8
Operating Voltage Range (Tolerance)	CE	100–240 VAC (±20%)
	UL	100–240 VAC (±20%)
AC Frequency		47 - 63 Hz
Input Current (Typical)		8.5 mA @ 100VAC (50Hz) 10mA @ 100VAC (60Hz) 17mA @ 240VAC (50Hz) 20mA @ 240VAC (60Hz)
Maximum Input Current @ Temp		26mA @ 60° C (288VAC)
Input Impedance		15kΩ (50Hz), 12kΩ (60Hz)
ON Voltage Level		> 70VAC
OFF Voltage Level		< 20VAC
Minimum ON Current		5mA
Maximum OFF Current		2mA
OFF to ON Response		< 10ms
ON to OFF Response		< 25ms
Status Indicators		Logic side (8 points)
Terminal Type (not included)		20-position removable terminal block
Commons		8 Isolated (1 point / common)

Removable Terminal Block Specifications

Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

P3-08NAS AC Isolated Input (continued)

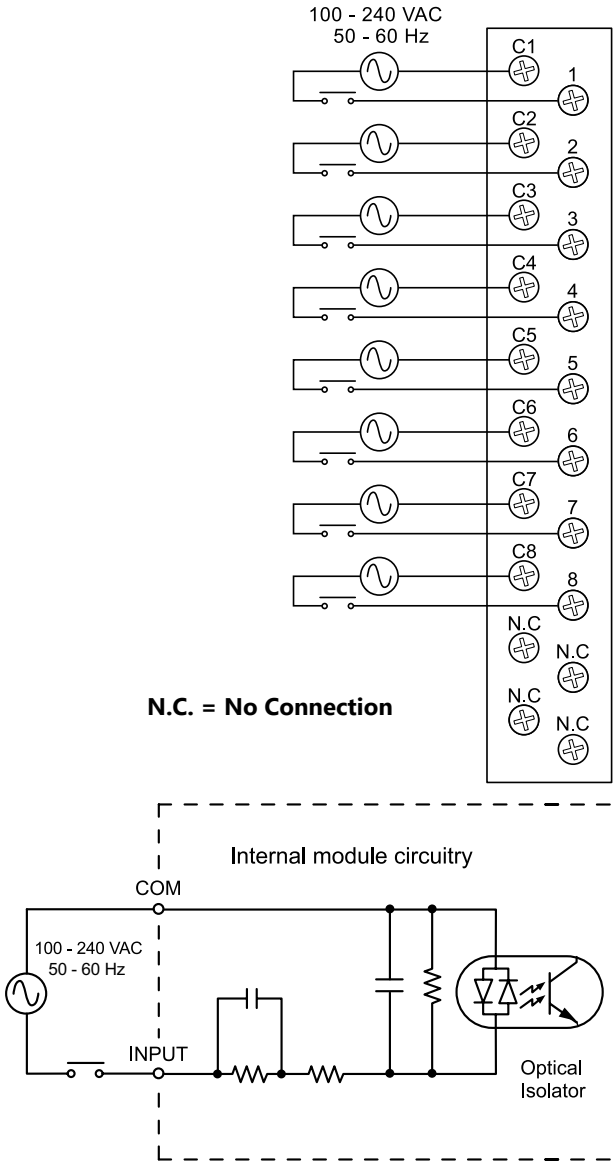
General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	4.38 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Weight	95g (3.35 oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

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

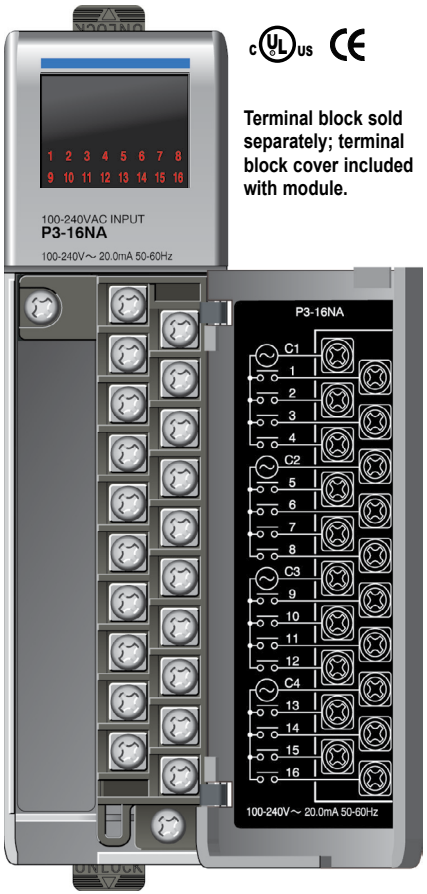
P3-08NAS AC Isolated Input (continued)

Wiring Diagrams



P3-16NA AC Input

The P3-16NA AC Input Module provides sixteen 100–240 VAC inputs with four isolated commons.



Terminal block sold separately; terminal block cover included with module.

Input Specifications

Inputs per Module		16
Operating Voltage Range (Tolerance)	CE	100–240 VAC (±20%)
	UL	100–240 VAC (±20%)
AC Frequency		47–63 Hz
Input Current (Typical)		8.5 mA @ 100VAC (50Hz) 10mA @ 100VAC (60Hz) 17mA @ 240VAC (50Hz) 20mA @ 240VAC (60Hz)
Maximum Input Current @ Temp		26mA @ 60° C (288VAC)
Input Impedance		15kΩ (50Hz), 12kΩ (60Hz)
ON Voltage Level		> 70VAC
OFF Voltage Level		< 20VAC
Minimum ON Current		5mA
Maximum OFF Current		2mA
OFF to ON Response		< 10ms
ON to OFF Response		< 25ms
Status Indicators		Logic side (16 points)
Terminal Type (not included)		20-position removable terminal block
Commons		4 Isolated (4 points / common)

Removable Terminal Block Specifications

Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

P3-16NA AC Input (continued)

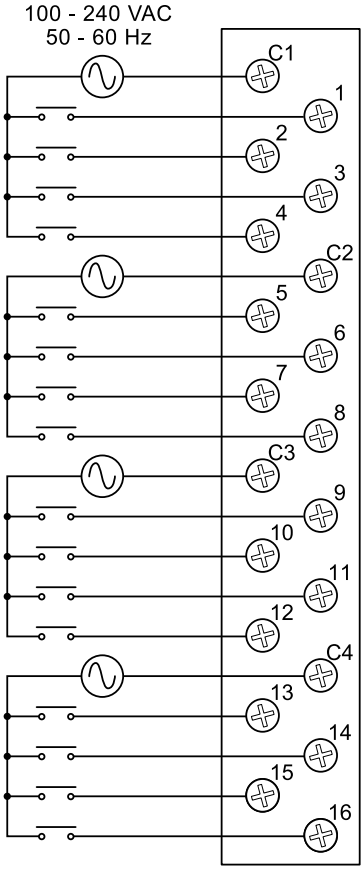
General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	8.76 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Weight	95g (3.35 oz)
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.

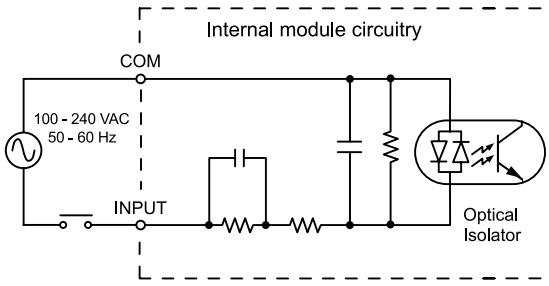
**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

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

P3-16NA AC Input (continued)

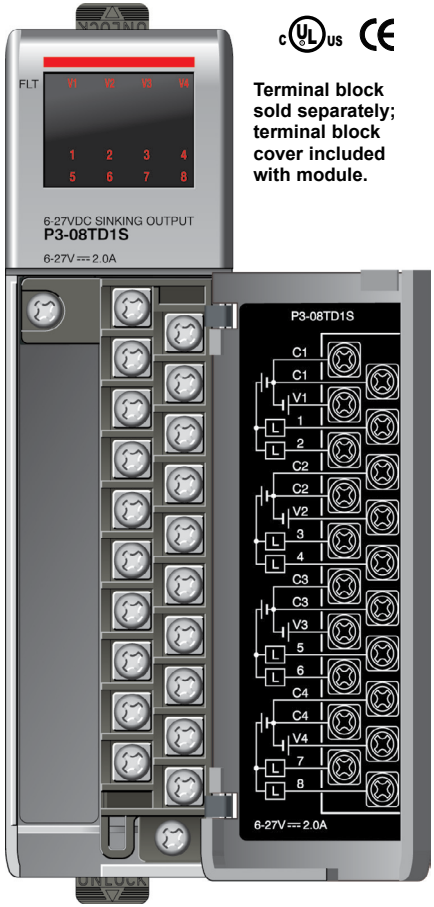
Wiring Diagrams





P3-08TD1S Sinking Output

The P3-08TD1S DC Output Module provides eight 6–27 VDC sinking outputs with four isolated commons.



Terminal block sold separately; terminal block cover included with module.

Output Specifications

Outputs per Module		8 (sinking)
Operating Voltage Range (Tolerance)	CE	6.25–24 VDC (-15% / + 20%)
	UL	6–27 VDC (-15% / + 10%)
Maximum Output Current @ Temp		2A / point, 4A / common @ 60°C
Minimum Output Current		0.4 mA
Maximum Leakage Current		0.3 mA @ 30VDC
On Voltage Drop		0.4 VDC @ 2A
Maximum Inrush Current		4A for 10ms, per point
OFF to ON Response		≤ 1ms
ON to OFF Response		≤ 1ms
Terminal Type (not included)		20-position removable terminal block
Status Indicators		Logic Side (8 points)
External 24 V Error Indicator*		Logic Side (4 points)
Commons		4 Isolated (2 points / common)
External DC Power required		24VDC ±10%, 30mA

***Note:** FLT (fault) indicates the absence of 24VDC at a V1, V2, V3, or V4 terminal.

Removable Terminal Block Specifications

Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

P3-08TD1S Sinking Output (continued)

General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500 VDC
Heat Dissipation	7.69 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Weight	110g (3.88 oz)
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.

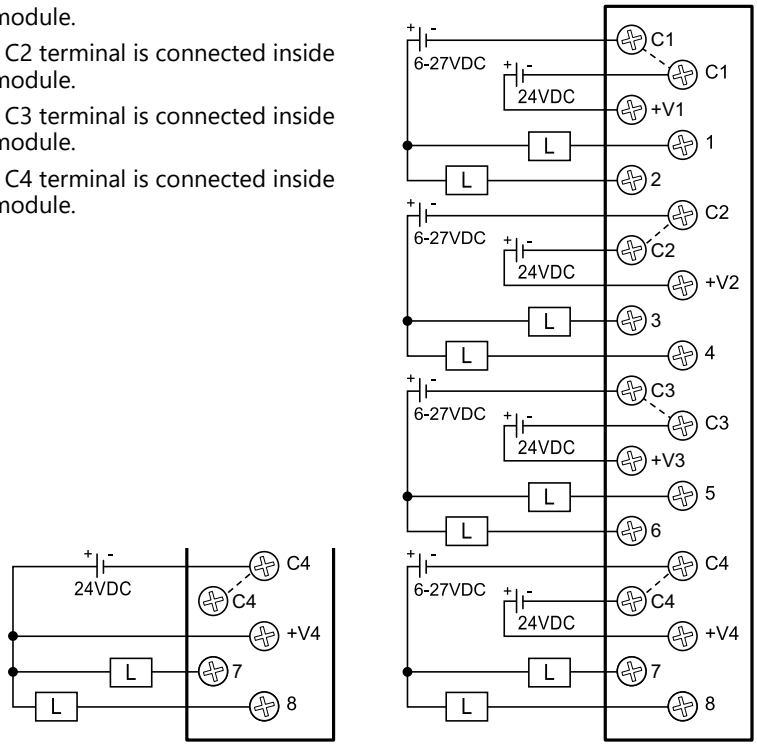
**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

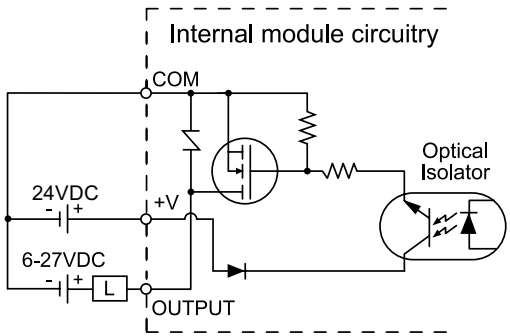
WARNING: Explosion hazard – Substitution of components may impair suitability for Class I, Division 2.

P3-08TD1S Sinking Output (continued)

Wiring Diagrams

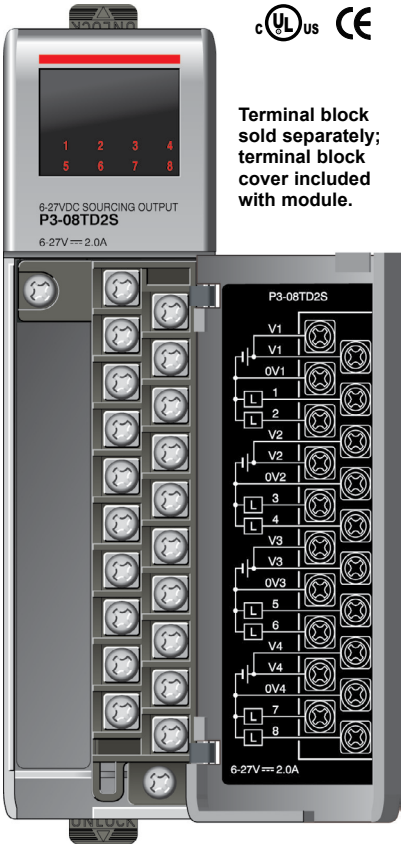
- Shown rating in figure is an operating voltage
- Each C1 terminal is connected inside the module.
- Each C2 terminal is connected inside the module.
- Each C3 terminal is connected inside the module.
- Each C4 terminal is connected inside the module.





P3-08TD2S Sourcing Output

The P3-08TD2S DC Output Module provides eight 6–27 VDC sourcing outputs with four isolated commons.



Terminal block sold separately; terminal block cover included with module.

Output Specifications

Outputs per Module		8 (sourcing)
Operating Voltage Range (Tolerance)	CE	6.25–24 VDC (-15% / + 20%)
	UL	6–27 VDC (-15% / + 10%)
Maximum Output Current @ Temp		2A / point, 4A / common @ 60°C
Minimum Output Current		0.4 mA
Maximum Leakage Current		0.3 mA @ 30VDC
On Voltage Drop		0.4 VDC @ 2A
Maximum Inrush Current		4A for 10ms
OFF to ON Response		≤ 1ms
ON to OFF Response		≤ 1.5 ms
Terminal Type (not included)		20-position removable terminal block
Status Indicators		Logic Side (8 points)
Commons		4 Isolated (2 points / common)

Removable Terminal Block Specifications

Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

P3-08TD2S Sourcing Output (continued)

General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	8.46 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Weight	110g (3.88 oz)
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.

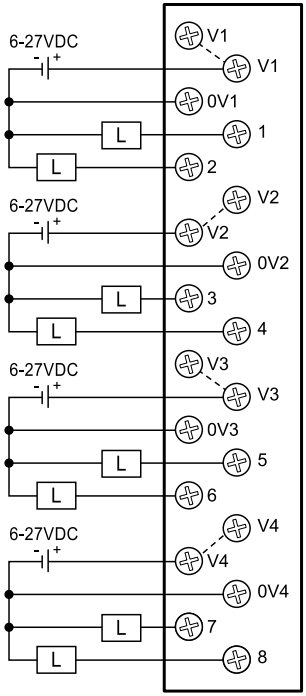
**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

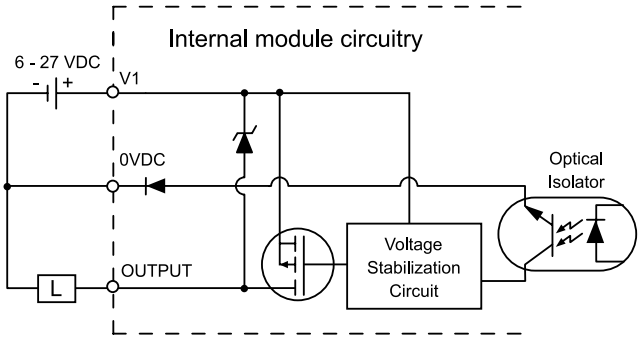
WARNING: Explosion hazard – Substitution of components may impair suitability for Class I, Division 2.

P3-08TD2S Sourcing Output (continued)

Wiring Diagrams

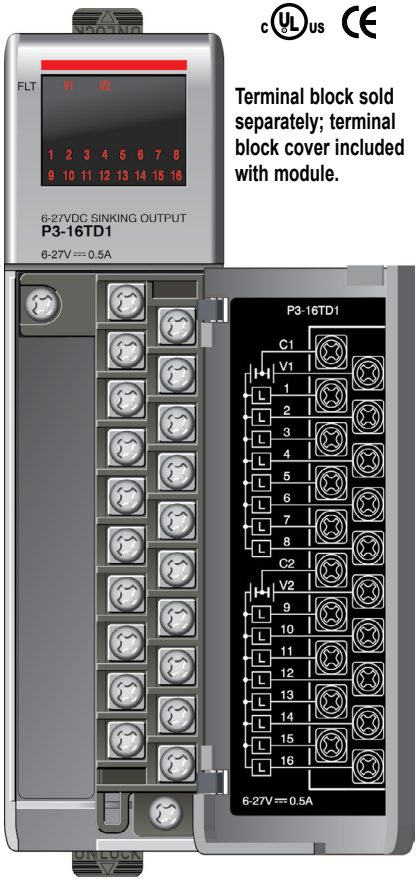
- Shown rating in figure is an operating voltage
- Each V1 terminal is connected inside the module.
- Each V2 terminal is connected inside the module.
- Each V3 terminal is connected inside the module.
- Each V4 terminal is connected inside the module.





P3-16TD1 Sinking Output

The P3-16TD1 DC Output Module provides sixteen 6-27 VDC sinking outputs with two isolated commons.



Terminal block sold separately; terminal block cover included with module.

Output Specifications

Outputs per Module		16 (sinking)
Operating Voltage Range (Tolerance)	CE	6.25–24 VDC (-15% / + 20%)
	UL	6–27 VDC (-15% / + 10%)
Maximum Output Current @ Temp		0.5 A / point, 4A / common @ 60°C
Minimum Output Current		0.4 mA
Maximum Leakage Current		0.3 mA @ 30VDC
On Voltage Drop		0.12 VDC @ 0.5 A
Maximum Inrush Current		2A for 10ms
OFF to ON Response		≤ 1ms
ON to OFF Response		≤ 1ms
Terminal Type (not included)		20-position removable terminal block
Status Indicators		Logic Side (16 points)
External 24 V Error Indicator		Logic Side (2 points)
Commons		2 Isolated (8 points / common)
External DC Power required		24VDC ± 10%, 30mA

Note: FLT (fault) indicates the absence of 24VDC at V1 or V2 terminal.

Removable Terminal Block Specifications

Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

P3-16TD1 Sinking Output (continued)

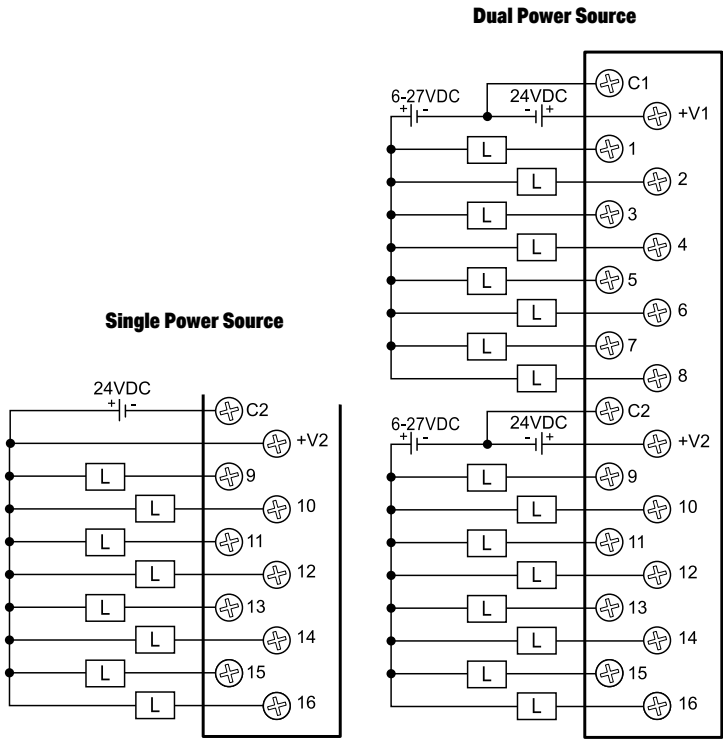
General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	2.41 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Weight	125g (4.41 oz)
Agency Approvals	UL508 and UL 1604 (Certified for Canada and USA) CE (EN61131-2*) This equipment is suitable for use in Class I, Division 2/Zone 2, Groups A, B, C, and D or non-hazardous locations only.

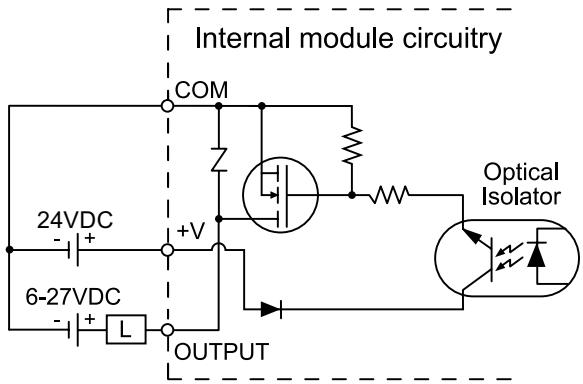
*Meets EMC and Safety requirements. See the Declaration of Conformity for details.

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

P3-16TD1 Sinking Output (continued)

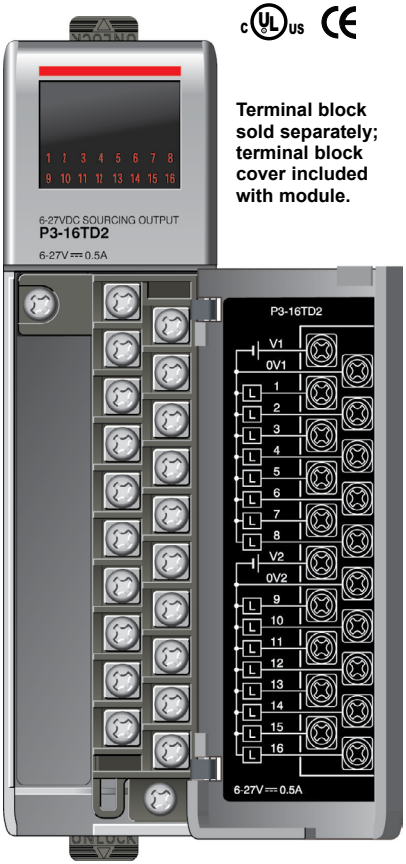
Wiring Diagrams





P3-16TD2 Sourcing Output

The P3-16TD2 DC Output Module provides sixteen 6-27 VDC sourcing outputs with two isolated commons.



Terminal block sold separately; terminal block cover included with module.

Output Specifications

Outputs per Module		16 (sourcing)
Operating Voltage Range (Tolerance)	CE	6.25–24 VDC (-15% / + 20%)
	UL	6–27 VDC (-15% / + 10%)
Maximum Output Current @ Temp		0.5 A / point, 4A / common @ 60°C
Minimum Output Current		0.4 mA
Maximum Leakage Current		0.3 mA @ 30VDC
On Voltage Drop		0.2 VDC @ 0.5A
Maximum Inrush Current		2A for 10ms
OFF to ON Response		≤ 1ms
ON to OFF Response		≤ 2ms
Terminal Type (not included)		20-position removable terminal block
Status Indicators		Logic Side (16 points)
Commons		2 Isolated (8 points / common)

Removable Terminal Block Specifications

Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

P3-16TD2 Sourcing Output (continued)

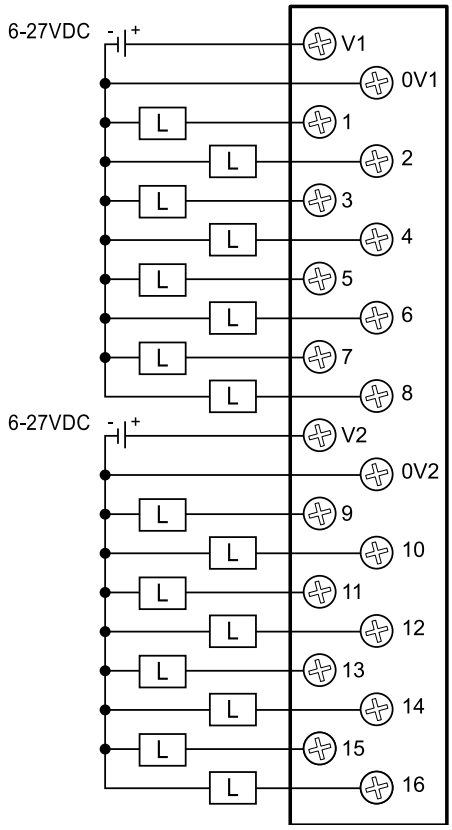
General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	5.38 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Weight	120g (4.23 oz)
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.

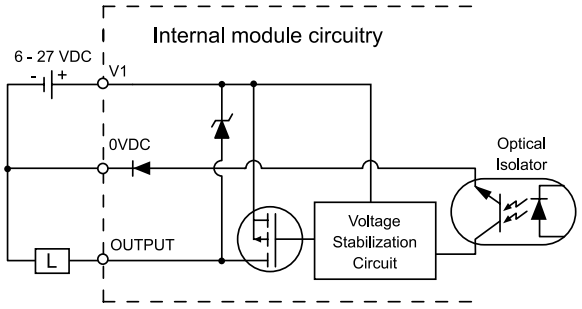
**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

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

P3-16TD2 Sourcing Output (continued)

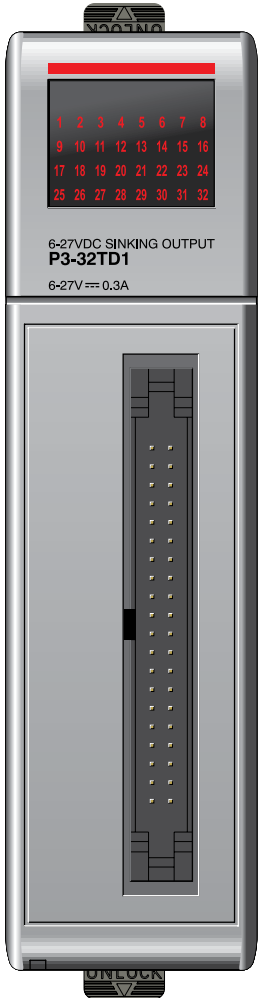
Wiring Diagrams





P3-32TD1 Sinking Output

The P3-32TD1 DC Output Module provides thirty-two 6–27 VDC sinking outputs with four isolated commons.



c UL us CE

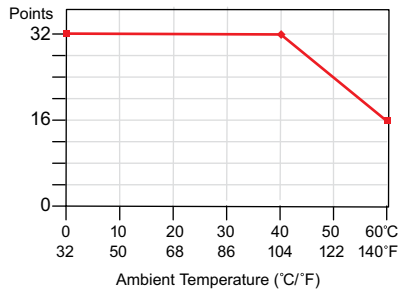
Output Specifications

Outputs per Module		32 (sinking)
Operating Voltage Range (Tolerance)	CE	6.25–24 VDC (-15% / + 20%)
	UL	6–27 VDC (-15% / +10%)
Maximum Output Current @ Temp		0.3 A / point, 2.4 A / common @ 60°C
Minimum Output Current		0.4 mA
Maximum Leakage Current		0.3 mA @ 30VDC
On Voltage Drop		0.3 VDC @ 0.3 A
Maximum Inrush Current		0.5 A for 10ms
OFF to ON Response		≤ 0.2 ms
ON to OFF Response		≤ 0.3 ms
Connector Type		40-pin IDC
Status Indicators		Logic Side (32 points)
Commons		4 Isolated (8 points / common)
External DC Power Required		24VDC ±10% @ 250mA

Connector Specifications

Connector Type	IDC style header with latch, Omron XG4A-4034
Number of Pins	40 point
Pitch	0.1 in. (2.54 mm)

Derating Chart



No terminal block sold for this module; ZIPLink required. See Chapter 5 for part numbers of ZIPLink cables and connection modules required with this module.

P3-32TD1 Sinking Output (continued)

General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	10.74 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Use ***ZIP***Link wiring system. See Chapter 5.
Weight	110g (3.88 oz)
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.

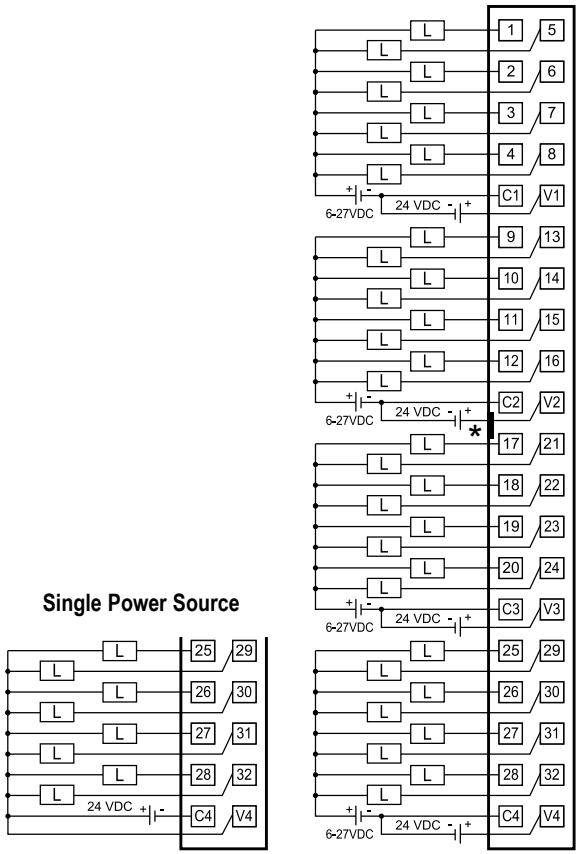
**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

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

P3-32TD1 Sinking Output (continued)

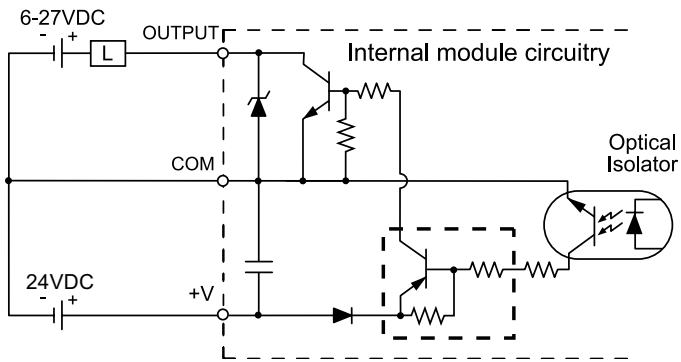
Wiring Diagrams

Dual Power Source



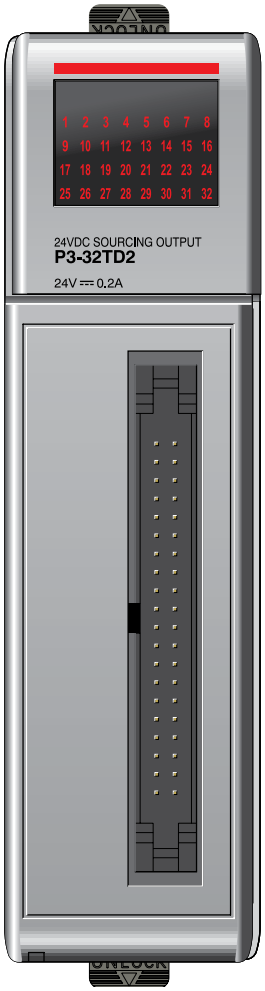
Single Power Source

*Denotes key location of all associated ZIPLink cables.



P3-32TD2 Sourcing Output

The P3-32TD2 DC Output Module provides thirty-two 24 VDC sourcing outputs with four isolated commons.



c UL us CE

Output Specifications

Outputs per Module		32 (sourcing)
Operating Voltage Range (Tolerance)	CE	24VDC (-15% / + 20%)
	UL	24VDC (-20% / + 25%)
Maximum Output Current @ Temp		0.2 A / point, 1.6 A / common @ 60°C
Minimum Output Current		0.4 mA
Maximum Leakage Current		0.3 mA @ 30VDC
On Voltage Drop		0.3 VDC @ 0.2 A
Maximum Inrush Current		0.5 A for 10ms
OFF to ON Response		≤ 0.5 ms
ON to OFF Response		≤ 0.5 ms
Connector Type		40-pin IDC
Status Indicators		Logic Side (32 points)
Commons		4 Isolated (8 points / common)

Connector Specifications

Connector Type	IDC style header with latch, Omron XG4A-4034
Number of Pins	40 point
Pitch	0.1 in. (2.54 mm)

No terminal block sold for this module; ZIPLink required. See Chapter 5 for part numbers of ZIPLink cables and connection modules required with this module.

P3-32TD2 Sourcing Output (continued)

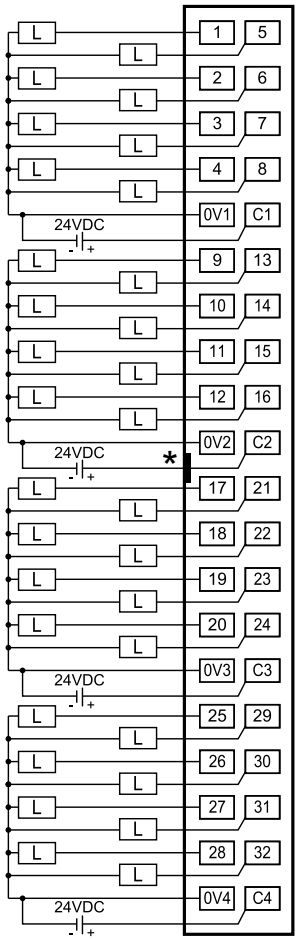
General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	6.69 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Use ***ZIP***Link wiring system. See Chapter 5.
Weight	110g (3.88 oz)
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.

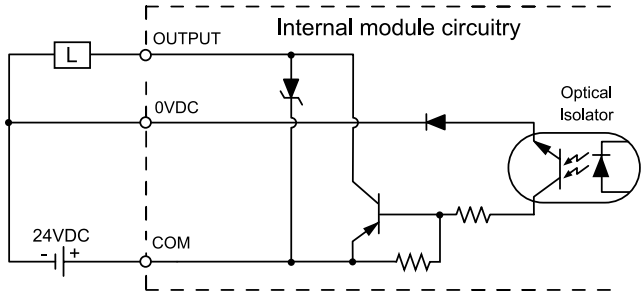
**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

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

P3-32TD2 Sourcing Output (continued)

Wiring Diagrams

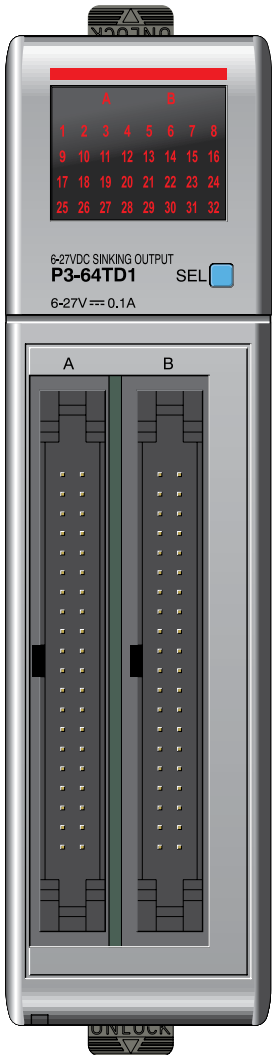




*Denotes key location of all associated ZIPLink cables.

P3-64TD1 Sinking Output

The P3-64TD1 DC Output Module provides sixty-four 6–27 VDC sinking outputs with eight isolated commons.



No terminal block sold for this module; ZIPLink required. See Chapter 5 for part numbers of ZIPLink cables and connection modules required with this module.

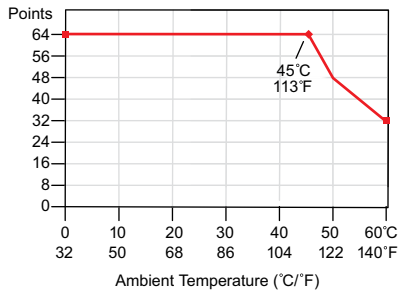
Output Specifications

Outputs per Module		64 (sinking)
Operating Voltage Range (Tolerance)	CE	6.25–24 VDC (-15% / + 20%)
	UL	6–27 VDC (-15% / +10%)
Maximum Output Current @ Temp		0.1A / point, 0.8A / common @ 60°C
Minimum Output Current		0.4 mA
Maximum Leakage Current		0.3 mA @ 30VDC
On Voltage Drop		0.3 VDC @ 0.1 A
Maximum Inrush Current		0.5 A for 10ms
OFF to ON Response		≤ 0.2 ms
ON to OFF Response		≤ 0.3 ms
Connector Type		Two 40-pin IDC
Status Indicators		Logic Side (32 points x 2)
Commons		8 Isolated (8 points / common)
External DC Power Required		24VDC ± 10% @ 210mA

Connector Specifications

Connector Type	IDC style header with latch, Omron XG4A-4034
Number of Pins	40 point
Pitch	0.1 in. (2.54 mm)

Derating Chart



P3-64TD1 Sinking Output (continued)

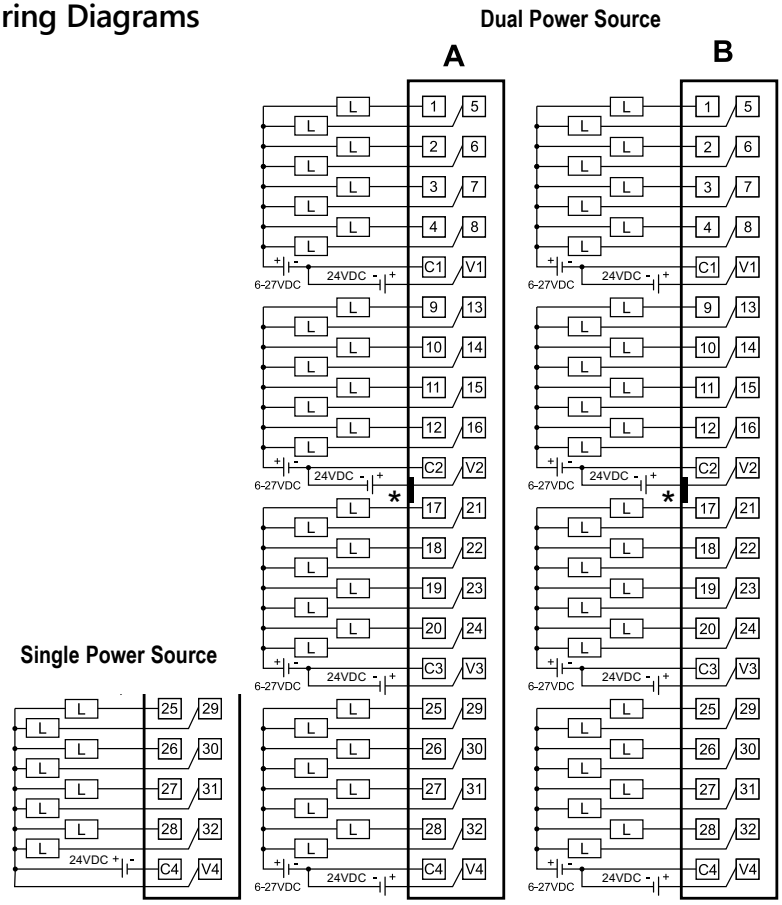
General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	11.35 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Use ***ZIP***Link wiring system. See Chapter 5.
Weight	160g (5.64 oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

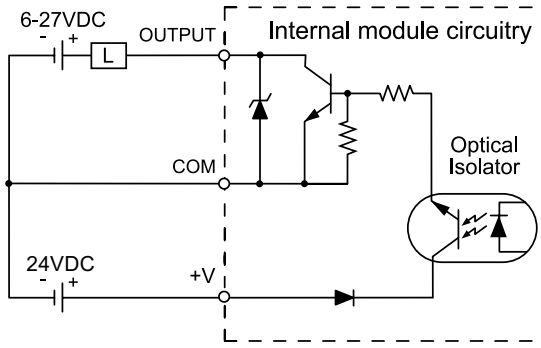
WARNING: Explosion hazard – Substitution of components may impair suitability for Class I, Division 2.

P3-64TD1 Sinking Output (continued)

Wiring Diagrams

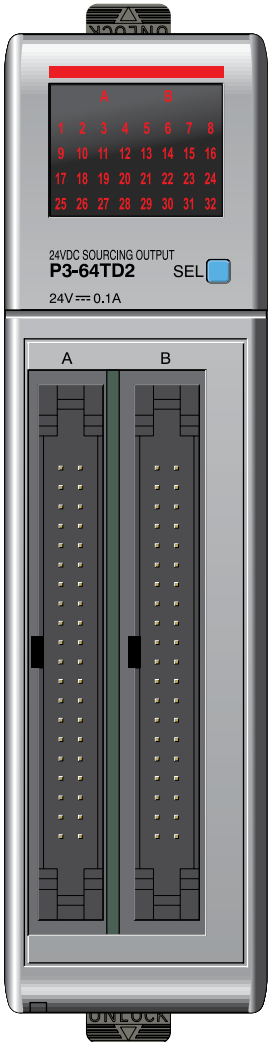


*Denotes key location of all associated ZIPLink cables



P3-64TD2 Sourcing Output

The P3-64TD2 DC Output Module provides sixty-four 24VDC sourcing outputs with eight isolated commons.



Output Specifications

Outputs per Module		64 (sourcing)
Operating Voltage Range (Tolerance)	CE	24VDC (-15% / + 20%)
	UL	24VDC (-20% / + 25%)
Maximum Output Current @ Temp		0.1 A / point, 0.8A / common @ 60° C
Minimum Output Current		0.4 mA
Maximum Leakage Current		0.3 mA @ 30VDC
On Voltage Drop		0.6 VDC @ 0.1 A
Maximum Inrush Current		0.5 A for 10ms
OFF to ON Response		≤ 0.5 ms
ON to OFF Response		≤ 0.5 ms
Connector Type		Two 40-pin IDC
Status Indicators		Logic Side (32 points x 2)
Commons		8 Isolated (8 points / common)

Connector Specifications

Connector Type	IDC style header with latch, Omron XG4A-4034
Number of Pins	40 point
Pitch	0.1 in. (2.54 mm)

No terminal block sold for this module; ZIPLink required. See Chapter 5 for part numbers of ZIPLink cables and connection modules required with this module.

P3-64TD2 Sourcing Output (continued)

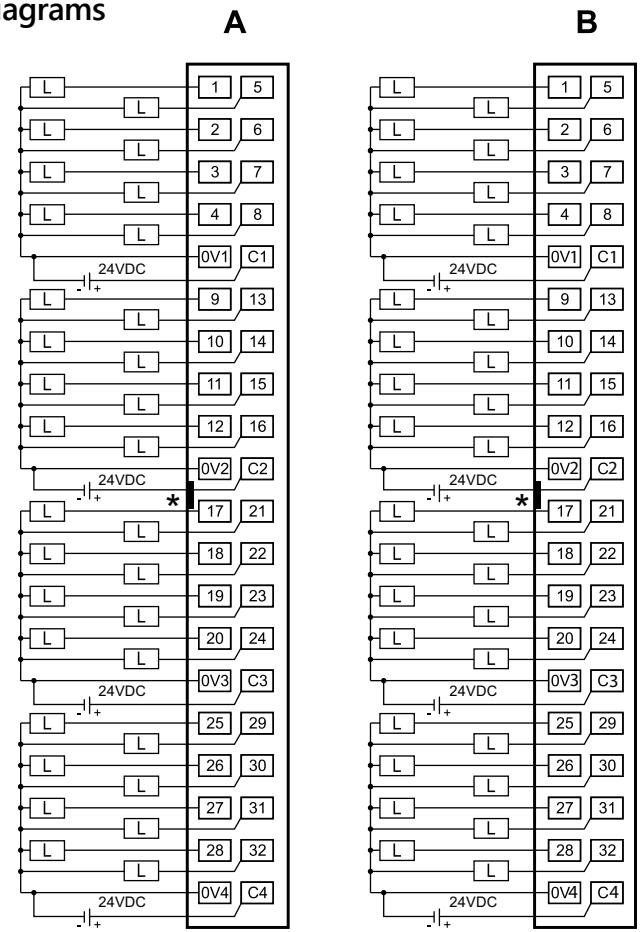
General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	11.57 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Use ***ZIP***Link wiring system. See Chapter 5.
Weight	160g (5.64 oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

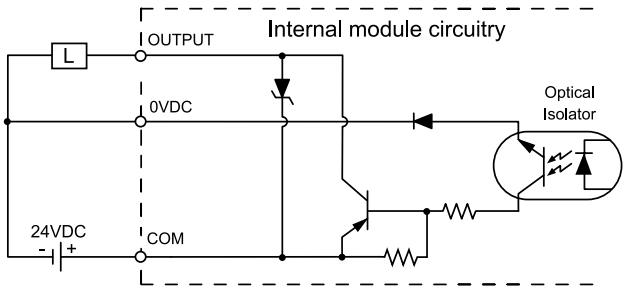
WARNING: Explosion hazard – Substitution of components may impair suitability for Class I, Division 2.

P3-64TD2 Sourcing Output (continued)

Wiring Diagrams

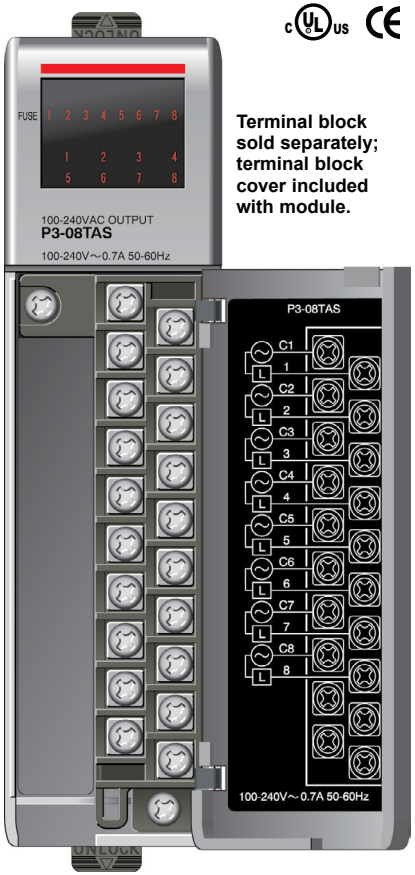


*Denotes key location of all associated ZIPLink cables



P3-08TAS Isolated AC Output

The P3-08TAS AC Output Module provides eight 100-240 VAC isolated outputs with eight fused commons.

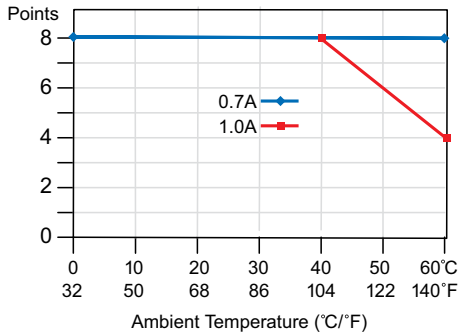


Terminal block sold separately; terminal block cover included with module.

Output Specifications		
Outputs per Module		8
Operating Voltage Range (Tolerance)	(CE)	100–240 VAC (-15% / +10%)
	(UL)	100–240 VAC (-20% / +20%)
Maximum Output Current @ Temp		1A / point @ 40°C 0.7 A / point @ 60°C
AC Frequency		47–63 Hz
Minimum Load (TYPE 2)		10mA
Maximum Leakage Current (TYPE 2)		4mA @ 264VDC
On Voltage Drop		1.5 VAC @ > 50mA 4.0 VAC @ < 50mA
Maximum Inrush Current		10A for 10ms
OFF to ON Response		1ms + 1/2 cycle
ON to OFF Response		1ms + 1/2 cycle
Status Indicators		Logic Side (8 points)
Error Status Indicator		Blown Fuse (one for each point)
Terminal Type (not included)		20-position removable terminal block
Commons		8 Isolated (1 point / common)
Fuses		3.15 A user replaceable fuse per common For replacement, order P3-FUSE-1. (Qty. 5/pkg.)

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

Derating Chart



		Current	
		1.0A	0.7A
Temp	0	8	8
	40	8	8
	60	4	8

P3-08TAS Isolated AC Output (continued)

General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	12.46 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Weight	125g (4.41 oz)
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.

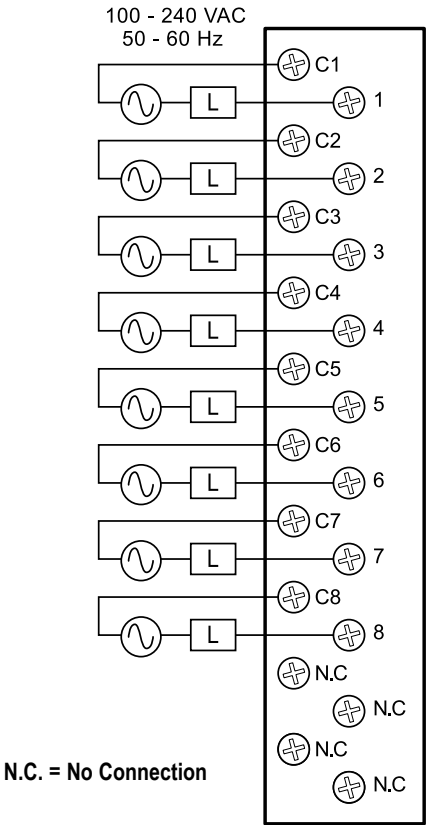
**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

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

Removable Terminal Block Specifications	
Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

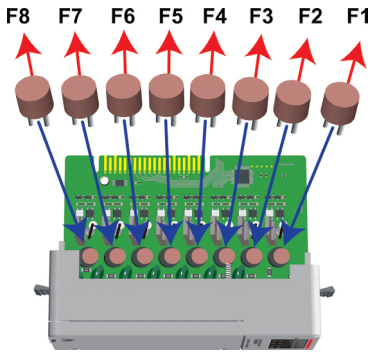
P3-08TAS Isolated AC Output (continued)

Wiring Diagrams

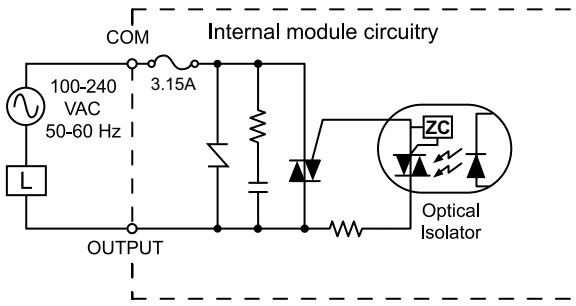


N.C. = No Connection

Replaceable Fuses

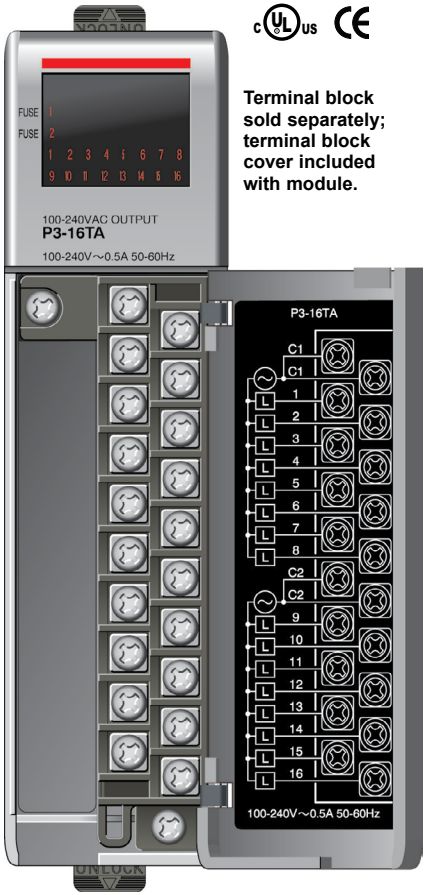


Order Part Number P3-FUSE-1 (Qty. 5 per pkg.). One spare included with module.



P3-16TA AC Output

The P3-16TA AC Output Module provides sixteen 100–240 VAC outputs with two isolated fused commons.



Terminal block sold separately; terminal block cover included with module.

Output Specifications

Outputs per Module		16
Operating Voltage Range (Tolerance)	(CE)	100–240 VAC (-15% / +10%)
	(UL)	100–240 VAC (-20% / +20%)
AC Frequency		47–63 Hz
Maximum Output Current @ Temp (Type 2)		0.5 A / point , 4A / common @ 60° C
Minimum Load (TYPE 2)		10mA
Maximum Leakage Current (TYPE 2)		4mA @ 264VDC
On Voltage Drop		1.5 VAC @ > 50mA 4.0 VAC @ < 50mA
Maximum Inrush Current		10A for 10ms
OFF to ON Response		1ms + 1/2 cycle
ON to OFF Response		1ms + 1/2 cycle
Status Indicators		Logic Side (16 points)
Error Status Indicator		Blown Fuse (one for each common)
Terminal Type (not included)		20-position removable terminal block
Commons		2 Isolated (8 points / common)
Fuses		6.3 A user replaceable fuse per common For replacement, order P3-FUSE-2. (Qty. 5/pkg.)

Removable Terminal Block Specifications

Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

P3-16TA AC Output (continued)

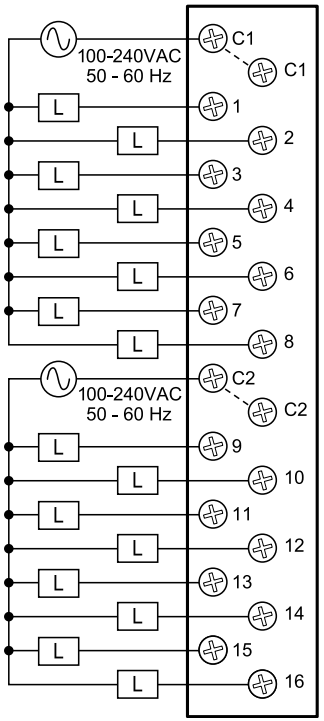
General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	12.69 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Weight	125g (4.41 oz)
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.

*Meets EMC and Safety requirements. See the Declaration of Conformity for details.

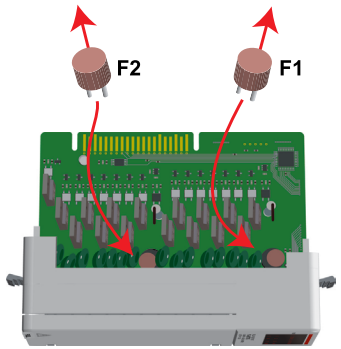
WARNING: Explosion hazard – Substitution of components may impair suitability for Class I, Division 2.

P3-16TA AC Output (continued)

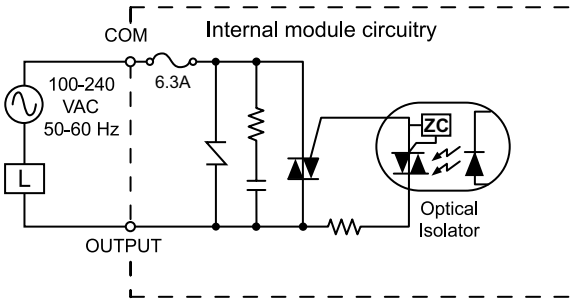
Wiring Diagrams



Replaceable Fuses

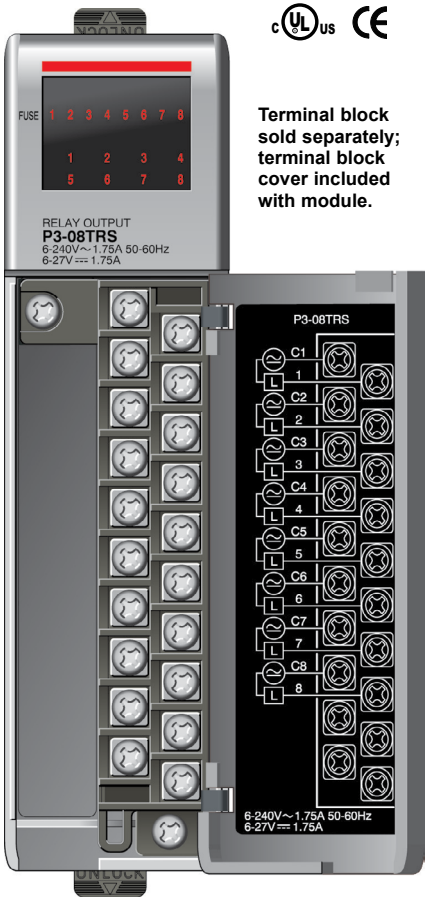


Order Part Number P3-FUSE-2 (Qty. 5 per pkg.). One spare included with module.



P3-08TRS Isolated Relay Output

The P3-08TRS Isolated Relay Output Module provides eight 1.75 amp relay outputs with eight fused commons.



Terminal block sold separately; terminal block cover included with module.

Output Specifications

Outputs per Module		8
Operating Voltage Range (Tolerance)	(CE)	6.25–24 VDC (-15% / + 20%) 6–240 VAC (-15% / + 10%)
	(UL)	6–27 VDC (-15% / + 10%) 6–240 VAC (-10% / + 10%)
Output type		Relay, form A (SPST)
AC Frequency		47–63 Hz
Maximum Output Current @ Temp		1.75 A per point @ 60°C for both AC and DC
Minimum Load Current		5mA @ 5VDC
Maximum Inrush Current		4A for 10ms
OFF to ON Response		≤ 10ms
ON to OFF Response		≤ 10ms
Status Indicators		Logic Side (8 points)
Error Status Indicator		Blown Fuse (one for each point)
Terminal Type (not included)		20-position removable terminal block
Commons		8 Isolated (1 point / common)
Fuses		3.15 A user replaceable fuse per common For replacement, order P3-FUSE-1. (Qty. 5/pkg.)

Removable Terminal Block Specifications

Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

Typical Relay Life

Voltage & Type of Load	Operations at 2A Load Current
30VDC Resistive	150K
30VDC Solenoid	75K
120VAC Resistive	210K
120VAC Solenoid	140K
240VAC Resistive	150K
240VAC Solenoid	100K

P3-08TRS Isolated Relay Output (continued)

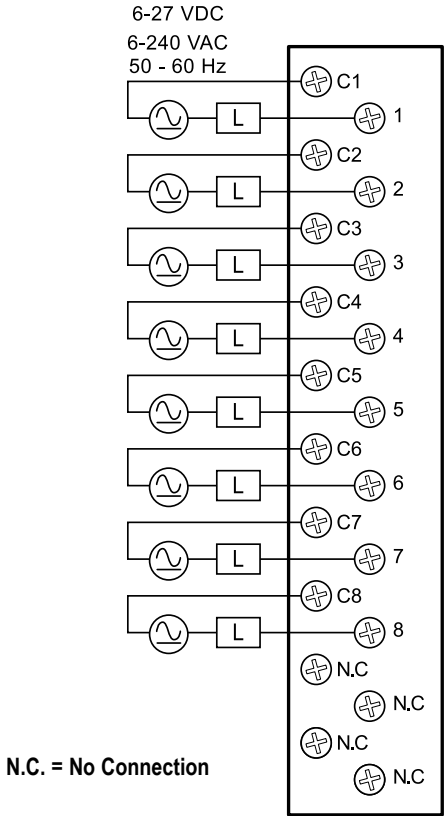
General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	3.04 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Weight	135g (4.76 oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

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

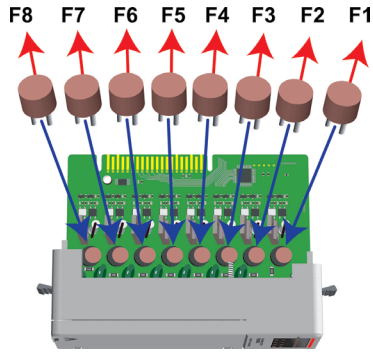
P3-08TRS Isolated Relay Output (continued)

Wiring Diagrams

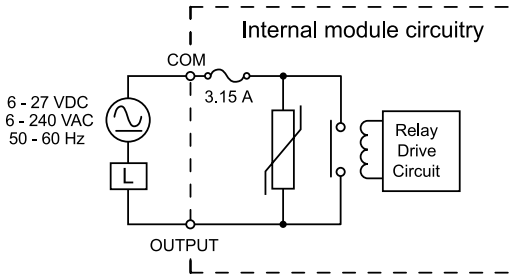


N.C. = No Connection

Replaceable Fuses

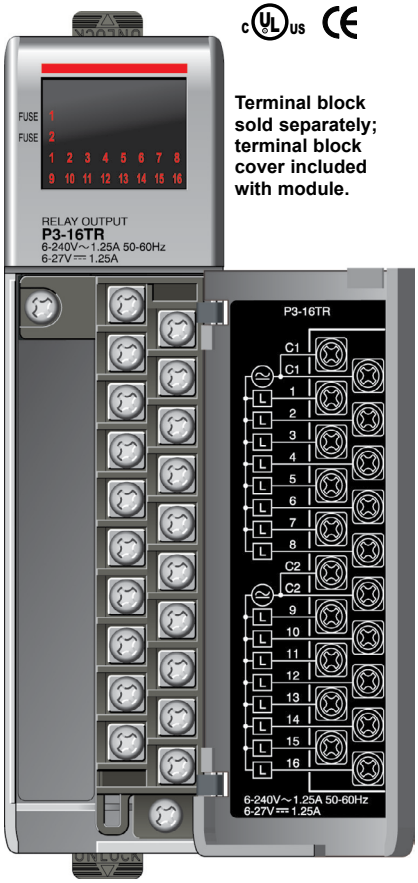


Order Part Number P3-FUSE-1 (Qty. 5 per pkg.). One spare included with module.



P3-16TR Relay Output

The P3-16TR Relay Output Module provides sixteen 1.25 amp relay outputs with two isolated fused commons.



Terminal block sold separately; terminal block cover included with module.

Output Specifications

Outputs per Module		16
Operating Voltage Range (Tolerance)	(CE)	6.25–24 VDC (-15% / + 20%) 6–240 VAC (-15% / + 10%)
	(UL)	6–27 VDC (-15% / + 10%) 6–240 VAC (-10% / + 10%)
Output type		Relay, form A (SPST)
AC Frequency		47–63 Hz
Maximum Output Current @ Temp		1.25 A / point, 6.3 A / common @ 60°C for both AC and DC
Minimum Load Current		5mA @ 5VDC
Maximum Inrush Current		4A for 10ms
OFF to ON Response		≤ 10ms
ON to OFF Response		≤ 10ms
Status Indicators		Logic Side (16 points)
Error Status Indicator		Blown Fuse (one for each common)
Terminal Type (not included)		20-position removable terminal block
Commons per module		2 Isolated (8 point / common)
Fuses		6.3 A user replaceable fuse per common For replacement, order P3-FUSE-2. (Qty. 5/pkg.)

Removable Terminal Block Specifications

Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

Typical Relay Life

Voltage & Type of Load	Operations at 1.25 A Load Current
30VDC Resistive	240K
30VDC Solenoid	110K
120VAC Resistive	320K
120VAC Solenoid	210K
240VAC Resistive	240K
240VAC Solenoid	140K

P3-16TR Relay Output (continued)

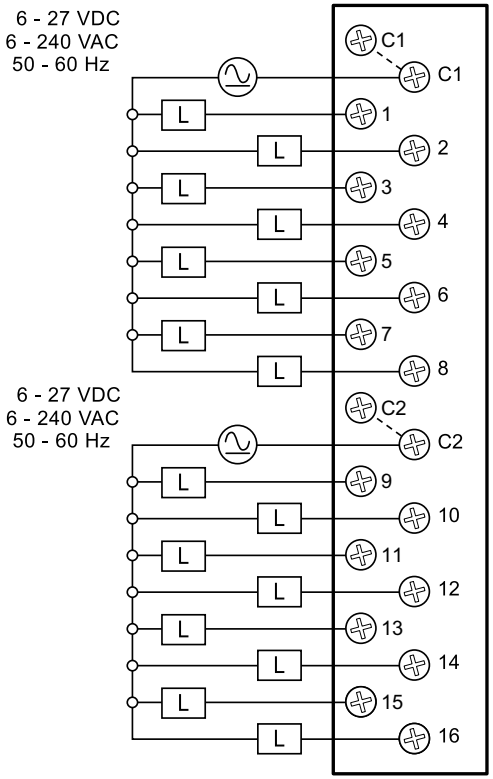
General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1500VAC applied for 1 minute
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	3.93 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Weight	160g (5.64 oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

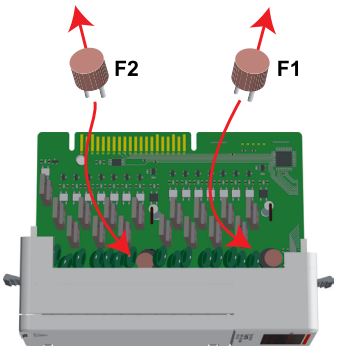
WARNING: Explosion hazard – Substitution of components may impair suitability for Class I, Division 2.

P3-16TR Relay Output (continued)

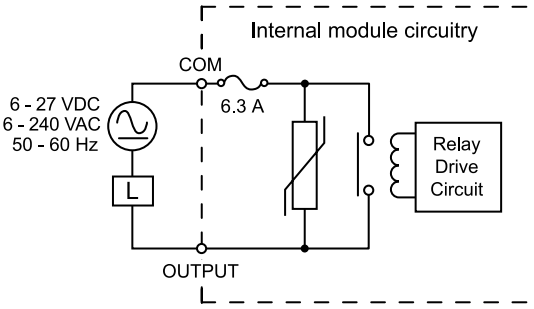
Wiring Diagrams



Replaceable Fuses

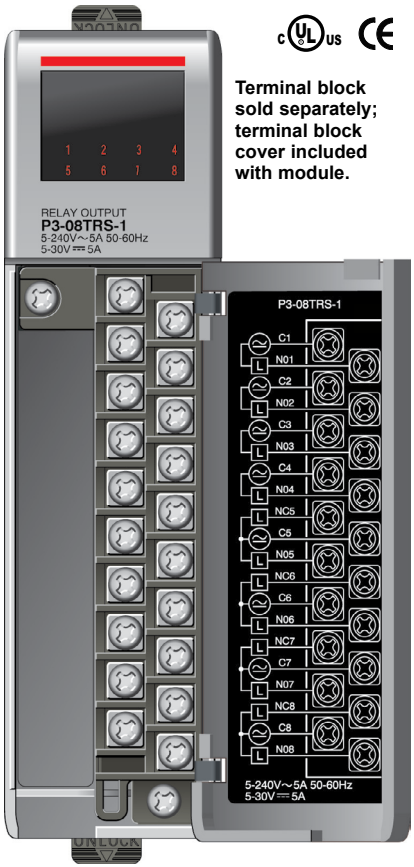


Order Part Number P3-FUSE-2 (Qty. 5 per pkg.). One spare included with module.



P3-08TRS-1 Isolated Relay Output

The P3-08TRS-1 High-Current Isolated Relay Output Module provides eight 5 amp relay outputs with eight fused commons.



Terminal block sold separately; terminal block cover included with module.

Output Specifications

Outputs per Module		8 relays (non-latching)
Commons per Module		8 (isolated)
Operating Voltage Range (Tolerance)	(CE)	6.25–24 VDC (-15% / +20%) 6–240 VAC (-15% / +10%)
	(UL)	5–30 VDC (-0% / +10%) 5–240 VAC (-0% / +10%)
Output Type		4 Form C (SPDT-NO/NC), 4 Form A (SPST-NO)
AC Frequency		47–63 Hz
On Voltage Drop		Minimal (90mV max for fuse at 10A)
Max Output Current @ Temperature (Resistive)*		6.3 A at 23°C (73.4°F), 5.0 A at 60°C (140°F) For both AC and DC
Maximum Leakage Current		Minimal (5µA for TVS diode)
Minimum Load		10mA @ 5VDC
Maximum Inrush Current		12A
External DC Required		None
OFF to ON Response		10ms
ON to OFF Response		5ms (Excluding NO bounce)
Terminal Type (not included)		20-position removable terminal block
Status Indicators		Logic side
Fuses		6.3 A user replaceable fuse per common For replacement, order P3-FUSE-2 (5/Pkg.)
Dielectric Strength (Between normally open and normally closed contacts on the same relay)		1500VAC @ 1 min logic to output and isolated output to output, 750VAC @ 1 min between contacts on same relay (Same as 1800VAC @ 1 sec and 900VAC @ 1 sec)
Transient Voltage Suppression (Bi-directional TVS diode)		482V clamp at 1.25 A peak pulse current
Mechanical Life Expectancy		>100,000 at 30 operations per minute

**Rating is for a normally-open contact. Normally-closed contacts have 1/2 the current handling capability.*

We recommend using prewired ZIPLink cables and connection modules. See Chapter 5.
Terminal block cover included. If you wish to hand-wire your module, a removable terminal block is sold separately. Order part number P3-RTB.

Removable Terminal Block Specifications

Number of Positions	20 screw terminals
Wire Range	22–14 AWG (0.324 to 2.08 sq. mm) Solid / stranded conductor 3/64 in. (1.2 mm) insulation maximum USE COPPER CONDUCTORS , 60°C or equivalent.
Screw Driver Width	1/4 inch (6.5 mm) maximum
Screw Size	M3 size
Screw Torque	Field terminals: 7–9 in./lb (0.882–1.02 N·m) Self-jacking screws: 2.7–3.6 in./lb (0.3–0.4 N·m). Do not over-tighten screws when installing terminal block.

P3-08TRS-1 Isolated Relay Output (continued)

General Specifications	
Operating Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1800VAC applied for 1s
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	3W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Removable terminal block (not included). Use ***ZIP***Link wiring system or optional terminal block. See Chapter 5.
Terminal Type (not included)	20-position removable terminal block
Weight	286g (10.08 oz)
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.

**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

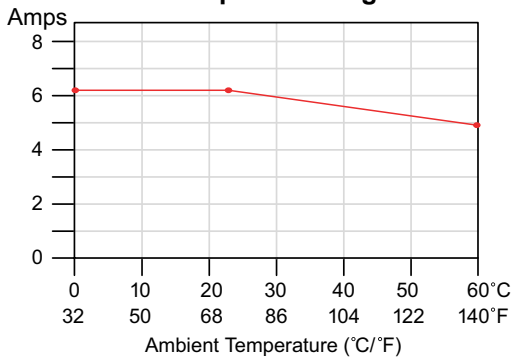
WARNING: Explosion hazard – Substitution of components may impair suitability for Class I, Division 2.

Typical Relay Life*		
Voltage & Type of Load	Operating Current	Operations
24VDC Resistive	6.3 A	600,000
24VDC Solenoid	0.2 A	1,000,000
120VAC Resistive	6.3 A	600,000
120VAC Resistive	3A	1,000,000
120VAC Solenoid	0.5 A	500,000
240VAC Resistive	6.3 A	450,000
240VAC Resistive	3A	600,000
1/4 HP Motor	1.5 x FLA (motor)	30,000

**Ratings are for normally-open contacts. Normally-closed contacts have 1/2 the current handling capability.*

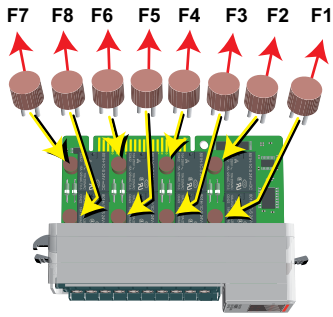
P3-08TRS-1 Isolated Relay Output (continued)

Output Derating



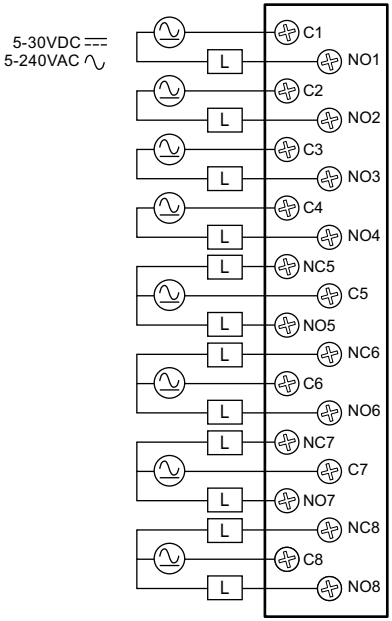
All 8 outputs on, 100% duty cycle allowed.

Replaceable Fuses

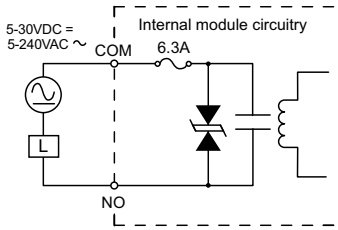


Order Part Number P3-FUSE-2 (Qty. 5 per pkg.). One spare included with module.

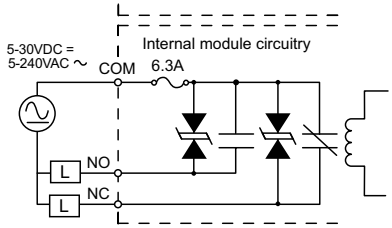
Wiring Diagrams



Outputs NO1 – NO4

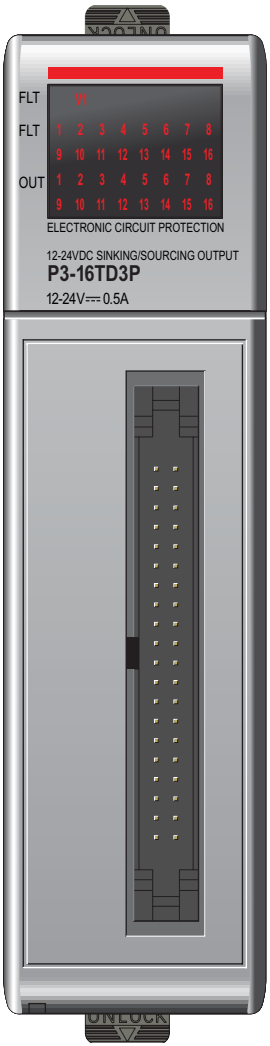


Outputs NO5 / NC5 – NO8 / NC8



P3-16TD3P Sinking/Sourcing Protected Output

The P3-16TD3P DC Output Module provides sixteen 12-24 VDC sinking or sourcing outputs with four internally connected commons.



Module also detects the following faults:

- Missing External 24 VDC
- Open Load
- Over Temperature
- Over Load Current

Connector Specifications	
Connector Type	IDC style header with latch, Omron XG4A-4034
Number of Pins	40 point
Pitch	0.1 in. (2.54 mm)

No terminal block sold for this module; ZIPLink required. See Chapter 5 for part numbers of ZIPLink cables and connection modules required with this module.

NOTE: P3-16TD3P discontinued as of 10/2022. Please consider P3-16TD1 or P3-16TD2 as a replacement.

NOTE: *The most recent Productivity Suite software and firmware versions may be required to support new modules and new features.*

P3-16TD3P Sinking/Sourcing Protected Output (continued)

Output Specifications	
Outputs per Module	16 (sinking / sourcing)
Operating Voltage Range (Tolerance)	10.2–26.4 VDC
Maximum Output Current	0.5 A continuous
On Voltage Drop	0.5 VDC
Maximum Inrush Current	Self-limited
OFF to ON Response	0.5 ms
ON to OFF Response	0.5 ms
Overcurrent Trip	1.2 A min., 2.4 A max.
Minimum Load Current to Avoid Open Load Fault Detection	113mA
Overtemperature Shutdown	Independent to each output
Minimum Load Resistance (for open load detection)	58kΩ
Status Indicators	Logic Side (16 points)
External 24V Error Indicator	Logic Side (1 points)
Fault Condition Indicator	Logic Side (16 points)
Connector Type	40-pin IDC
Commons per Module	4 (non-isolated)
Fuses	None
External DC Power Required	24VDC ±10% @ 85mA, Class 2 (must be ≥ Operating voltage)*

** Load voltage for source configuration must be less or equal to the external power voltage wired to the module. This requirement can be met by using a single power supply to provide both module's power (24V external power) and sourcing power for loads.*

General Specifications	
Surrounding Air Temperature	0°C– 60°C (32°F–140°F),
Storage Temperature	-20ºC–70ºC (-4ºF–158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1800 VAC applied for 1s
Insulation Resistance	>10MΩ @ 500VDC
Heat Dissipation	5.96 W
Enclosure Type	Open equipment
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in any local, expansion, or remote base in a Productivity3000® system..
Field Wiring	Use *ZIP*Link wiring system, see Chapter 5. Must use copper conductors rated 75 degrees C or equivalent.
Weight	112.83 g (3.98 oz)
Agency Approvals	UL508 file E157382, Canada & USA CE (EN61131-2*)

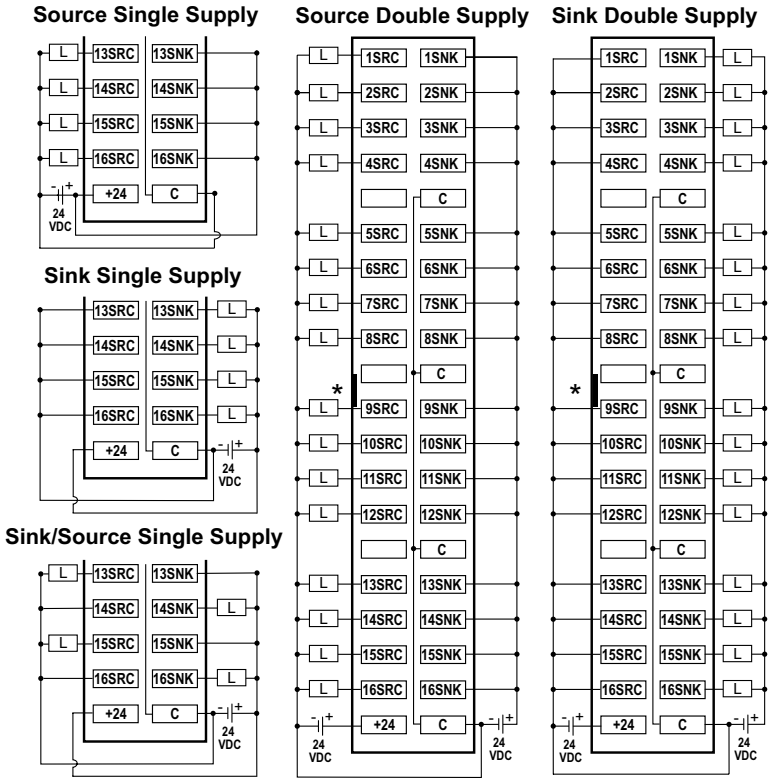
**Meets EMC and Safety requirements. See the Declaration of Conformity for details.*

P3-16TD3P Sinking/Sourcing Protected Output (continued)

LED Status		
Fault Condition	**Fault Status Indication**	Operation to Reset Fault
Missing External 24VDC	Second LED in row 1 is ON	Apply external 24VDC
Open Load (Note 1)	Corresponding LEDs (row 2 and 3) are ON	Connect the load
Over Temperature or Over Load Current		Turn the output OFF or power cycle

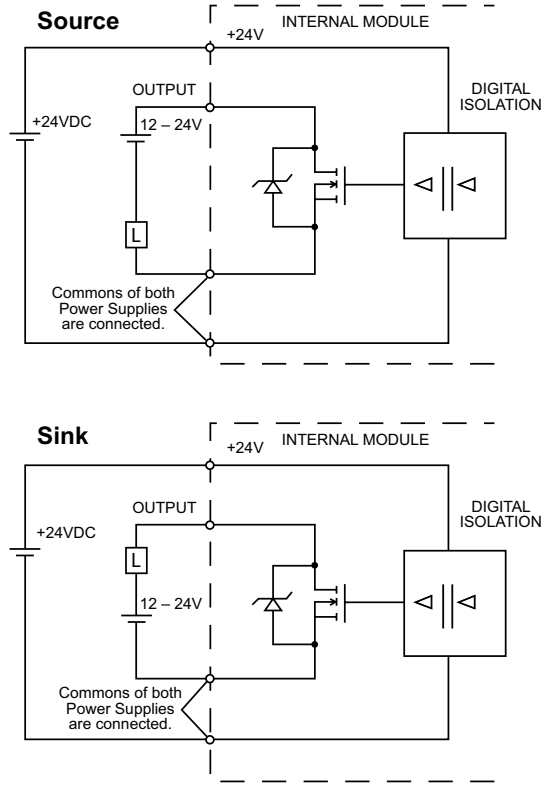
Note 1: Open Load Fault is always enabled, but is only valid when output is OFF. If Open Load Fault happens while output is ON, fault will not appear until you turn OFF output.

Wiring Diagrams



*Denotes key location of all associated ZIPLink cables.

P3-16TD3P Sinking/Sourcing Protected Output (continued)



NOTE: If two separate power supplies are used to supply module control logic and output, commons from both power supplies must be connected.