

# Power Supplies

## P3-01AC \$250.00

There are two power supplies available; both provide isolated 24VDC, 5VDC, and 3.3 VDC to the Productivity3000 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.



AC Input Power Supply

**WARNING!:** EXPLOSION HAZARD –  
SUBSTITUTION OF COMPONENTS MAY IMPAIR  
SUITABILITY FOR CLASS I, DIVISION 2.

## IMPORTANT!



### Hot-Swapping Information

**Note:** This device cannot be Hot Swapped.

### P3-01AC User Specifications

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

### P3-01AC General Specifications

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

### Terminal Block Specifications

<b>Number of Positions</b>	4 Screw Terminals
<b>Pitch</b>	0.3 inch (7.62 mm)
<b>Wire Range</b>	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
<b>Screw Driver Width</b>	1/4 inch (6.5mm) maximum
<b>Screw Size</b>	M3 size
<b>Screw Torque</b>	7–9 inch-pounds (0.882 - 1.02 N·m)

# Power Supplies

## P3-01DC \$261.00

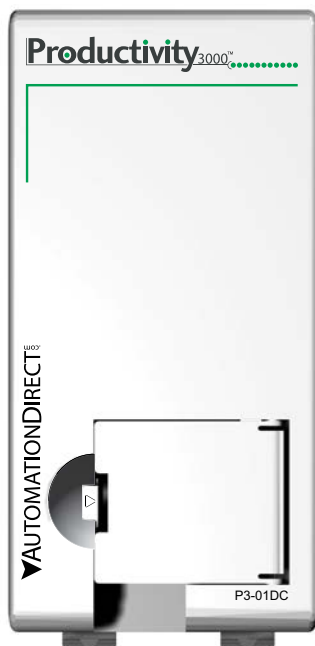
There are two power supplies available; both provide isolated 24VDC, 5VDC, and 3.3 VDC to the Productivity3000 bases.

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.



DC Input Power Supply

**WARNING!:** EXPLOSION HAZARD –  
SUBSTITUTION OF COMPONENTS MAY IMPAIR  
SUITABILITY FOR CLASS I, DIVISION 2.

### IMPORTANT!



#### Hot-Swapping Information

**Note:** This device cannot be Hot Swapped.

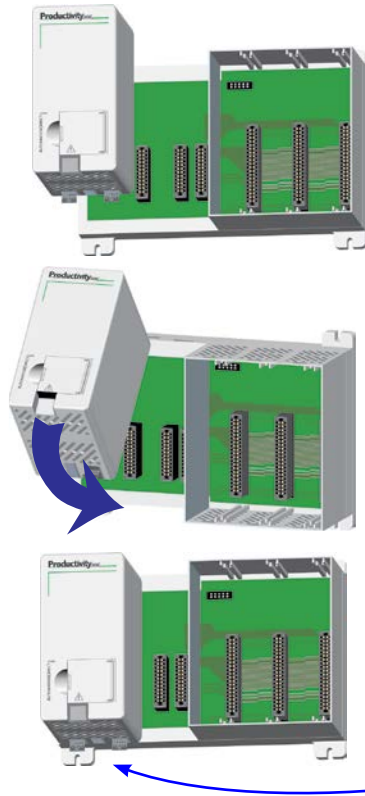
P3-01DC User Specifications		
<b>Input Voltage Range (Tolerance)</b>	24 to 48 VDC (-15% / +20% at 55°C) 24 to 48 VDC (-10% / +20% at 60°C)	
<b>Maximum Input Ripple</b>	< ±5%	
<b>Maximum Input Power</b>	67W	
<b>Cold Start Inrush Current</b>	10.5 A, 210µS @ 24VDC	
<b>Maximum Inrush Current (Hot Start)</b>	10.5A, 210µS @ 24VDC	
<b>Input Fuse Protection (Internal)</b>	Micro fuse 250V, 4A, Slow blow Non-replaceable	
<b>Input Reverse Polarity Protection</b>	Yes	
<b>Output</b>	F1 Rev. or lower: 24VDC @ 1.4A (±10%) 5VDC @ 2.1A (± 5%) 3.3 VDC @ 6.1A (± 5%)	F2 Rev. or higher: 24VDC @ 1A (±10%) 5VDC @ 2.0A (± 5%) 3.3 VDC @ 6.09A (± 5%)
<b>Maximum Output Power</b>	57W Combined	
<b>Heat Dissipation</b>	14W	
<b>Isolated User 24VDC Output</b>	None	
<b>Output Protection for Over Current, Over Voltage and Over Temperature</b>	Self resetting for all three voltage outputs to base	
<b>Under Input Voltage Lock-out</b>	< 19.8 VDC	
<b>Over Input Voltage Lock-out</b>	None	
<b>Input Transient Protection</b>	Varistor, plus input choke and filter	
<b>Operating Design Life</b>	10 years at full load at 40°C ambient and 5 years at 60°C ambient	

P3-01DC General Specifications	
<b>Operating Temperature</b>	0°C–60°C (32°F–140°F)
<b>Storage Temperature</b>	-20°C–70°C (-4°F–158°F)
<b>Humidity</b>	5 to 95% (non-condensing)
<b>Environmental Air</b>	No corrosive gases permitted
<b>Vibration</b>	IEC60068-2-6 (Test Fc)
<b>Shock</b>	IEC60068-2-27 (Test Ea)
<b>Enclosure Type</b>	Open equipment
<b>Voltage Withstand (dielectric)</b>	750VDC applied for 2s
<b>Insulation Resistance</b>	>10MΩ @ 500VDC
<b>Module Location</b>	Power supply slot in any local, expansion, or remote base in a Productivity3000® System.
<b>Weight</b>	558g (19.7 oz)
<b>Agency Approvals</b>	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.

Terminal Block Specifications	
<b>Number of Positions</b>	4 Screw Terminals
<b>Pitch</b>	0.3 inch (7.62 mm)
<b>Wire Range</b>	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
<b>Screw Driver Width</b>	1/4 inch (6.5 mm) maximum
<b>Screw Size</b>	M3 size
<b>Screw Torque</b>	7–9 inch-pounds (0.882 - 1.02 N·m)

# Power Supplies

## Power Supply Installation



### Step One:

Locate the left most socket in the base.

### Step Two:

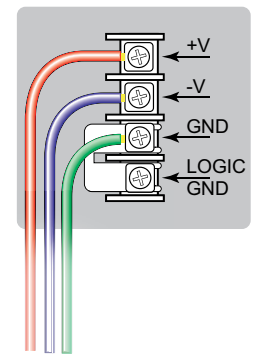
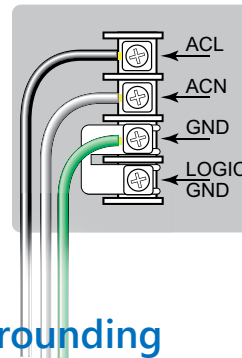
Insert the Power Supply at a 45° angle into the notch located at the top of the base and rotate down until seated in socket.

### Step Three:

Snap the two retaining tabs into the locked position.

**WARNING!:** EXPLOSION HAZARD – DO NOT CONNECT OR DISCONNECT CONNECTORS OR OPERATE SWITCHES WHILE CIRCUIT IS LIVE UNLESS THE AREA IS KNOWN TO BE NON-HAZARDOUS. DO NOT HOT SWAP.

## 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.