

PS SERIES 12 VDC AND 24 VDC POWER SUPPLIES

Switching power supplies at linear supply prices

AUTOMATIONDIRECT offers the most practical industrial control power supplies available. The PS Series power supplies give you consistent, reliable, switched DC power at linear power supply prices.

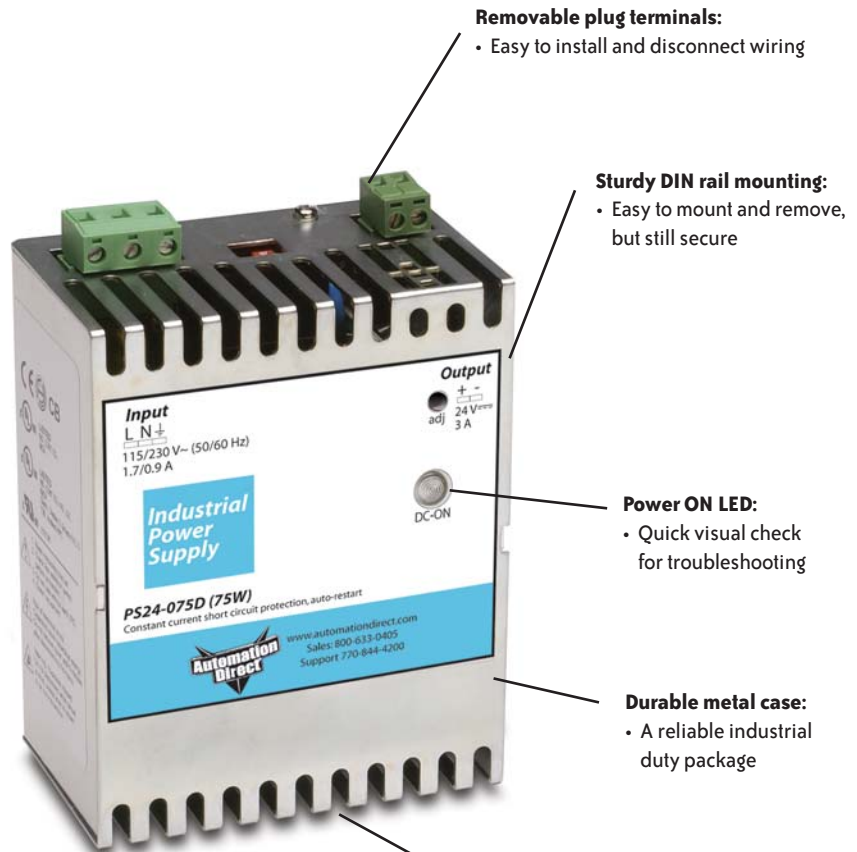
These power supplies use efficient switching technology to produce the most power in the smallest space, while generating a minimum amount of heat. The constant-current short circuit protection limits the output current as the voltage is reduced to safely protect your control components from direct shorts and device failures. Once the short is corrected, the PS Series power supplies automatically resume supplying full-voltage power. Precisely regulated output power is suitable for battery charging applications. Extra-sturdy DIN rail mounts and removable plug connections make installation a breeze.

Meeting UL/cUL 60950, 508 and 1604* (Class I, Div. 2), our PS_D power supplies meet the standards required for practically any industrial control application.

Features

- 2 - 24 A at 24 VDC, 3.5 A at 12 VDC
- Regulated switch mode type
- Easy DIN rail mounting
- Constant-current short circuit protection
- Low ripple and noise
- Selectable input voltage (115/230 VAC)
- High EMC immunity
- EMI meets EN 55011-B and FCC Part 15, Level B
- Worldwide safety approvals: UL/cUL 508, 60950 and 1604* (Class I, Div. 2) CE (see Note on following page about IEC 61000-3-2)
- Low profile case

* PS12-050D, PS24-050D and PS24-500D do not meet UL 1604 Class I Div 2.



Removable plug terminals:

- Easy to install and disconnect wiring

Sturdy DIN rail mounting:

- Easy to mount and remove, but still secure

Power ON LED:

- Quick visual check for troubleshooting

Durable metal case:

- A reliable industrial duty package

Constant current protection with auto-recovery:

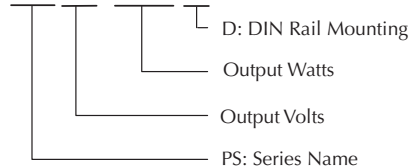
- No current spikes to damage powered devices due to miswiring or a powered device failure

Efficient switching technology:

- Smaller size and less heat generated results in less wasted space and energy

Part numbering system

PS12-050D



Note: All specifications are valid at nominal input voltage, full load and +25°C after warmup time, unless otherwise stated.

PS SERIES POWER SUPPLIES SPECIFICATIONS



PS12-050D / PS24-050D



PS12-075D / PS24-075D



PS24-150D



PS24-300D



PS24-500D



PS24-600D

Replacement terminal blocks are available. See price list.

General Specifications	
Temperature	Operating (ambient) -25°C to +70°C max Derating above 50°C 2%/C Storage (non-operating) -25°C to +85°C max Temperature drift 0.02%/C
Humidity	95% (non-condensing) relative humidity max
Switching Frequency	80 kHz typical (PWM)
Isolation	According to IEC/EN 60950, UL 60950, UL 508
Output Regulation	Input variation: ± 0.2% max Load variation: 50 W, 75 W, 150 W models: ± 1% max 300 W, 500 W, 600 W models: ± 0.3% max
Output Voltage Ripple	< 50 mV peak-peak (20 MHz bandwidth)
Output Protection	Current limit: 110% maximum output rating Voltage limit: 140% Vout nom
Vibration	1gn 20 sweeps each axis
Shock	15gn, 11mS each axis
Enclosure Rating	IP 20
Enclosure Material	Aluminum (chassis) / stainless steel (cover)
Mounting	Snap-on with self-locking spring for 35mm DIN rails
Connection	Removable screw terminals for 22-10 AWG
Agency* Approvals	UL/cUL 60950 recognized UL/cUL 508 listed UL/cUL 1604 listed (Class I, Div 2, groups A,B,C, and D hazardous locations), except PSxx-050 and PS24-500D, which are not UL/cUL1604 listed. CE (See IEC 61000-3-2 Note below)
Note: All specifications are valid at nominal input voltage, full load and +25°C after warmup time, unless otherwise stated.	

* PS12-050D, PS24-050D and PS24-500D do not meet UL 1604 (Class I, Div. 2).

Note: IEC 61000-3-2 Power Factor Correction

The IEC 61000-3-2 standard is intended to reduce the amount of disturbance a device feeds back into its power source. AutomationDirect power supplies all carry the CE mark. Normally, 61000-3-2 is met or does not apply. Only our PS24-150D and PS24-300D could potentially be used in a manner not compliant with the 61000-3-2 standard. The IEC 61000-3-2 standard is intended to reduce the amount of disturbance a device feeds back into its power source. AutomationDirect power supplies all carry the CE mark. Normally, 61000-3-2 is met or does not apply. Only our PS24-150D and PS24-300D could potentially be used in a manner not compliant with the 61000-3-2 standard.

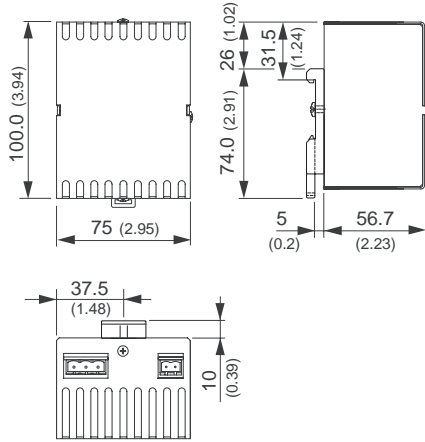
Input Specifications							
Part Number	Input Voltage Range	Input Frequency Range	Input Current (Typical)		Inrush Current (<2mS)		Efficiency (Typ.)
			115 VAC	230 VAC	115 VAC	230 VAC	
PS12-050D	93-264 VAC	47-63 Hz	1.2 A	0.7 A	<15 A	<30 A	84%
PS24-050D	93-264 VAC		1.2 A	0.7 A			87%
PS12-075D	93-132 VAC 187-264 VAC (switch selectable)		1.7 A	0.9 A	<16.5 A	<33 A	83%
PS24-075D			1.7 A	0.9 A			85%
PS24-150D			3.0 A	1.7 A	<35 A	<70 A	84%
PS24-300D			5.4 A	3.3 A			87%
PS24-500D	93-132 VAC		9.5 A	N/A	<50 A	N/A	87%
PS24-600D	93-132 VAC 187-264 VAC (switch selectable)		10.5 A	6.4 A	<70 A	<80 A	88%

Output Specifications									
Part Number	Price	Output Voltage	Output Voltage Adj. Range	Output Current (Max.)	Output Power (Max.)	Output Voltage Regulation*	Hold-Up Time		MTBF (IEC 1709 @ 25°C)
							115 VAC	230 VAC	
PS12-050D	check	12 VDC	12-14 VDC	3.5 A	50 W	1%	25 mS	30 mS	2,992,000 hours
PS24-050D	check	24 VDC	24-28 VDC	2.0 A	50 W				
PS12-075D	check	12 VDC	12-14 VDC	6.0 A	75 W	0.3%	20 mS	N/A	1,467,000 hours
PS24-075D	check	24 VDC	24-28 VDC	3.0 A	75 W				
PS24-150D	check			6.0 A	150 W				
PS24-300D	check			12.0 A	300 W				
PS24-500D	check			20.0 A	500 W				
PS24-600D	check			24.0 A	600 W		15 mS	25 mS	1,434,000 hours
*Load variation (10-90%)				Notes: Output current characteristic suitable for battery charging applications. Not recommended for redundancy or parallel operation.					



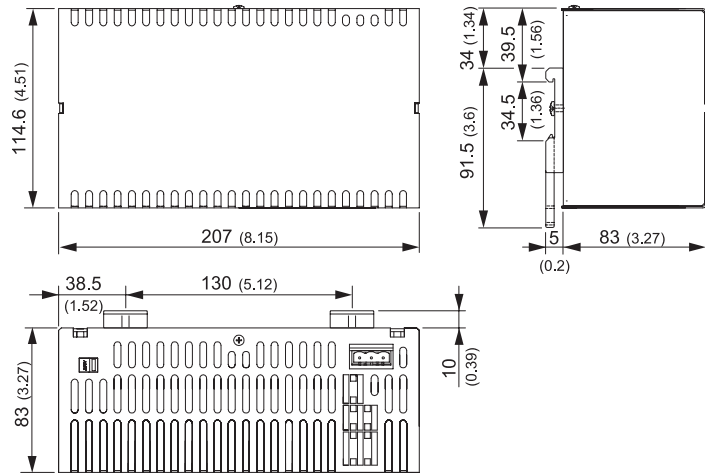
PS SERIES POWER SUPPLIES DIMENSIONS

PS12-050D, PS24-050D

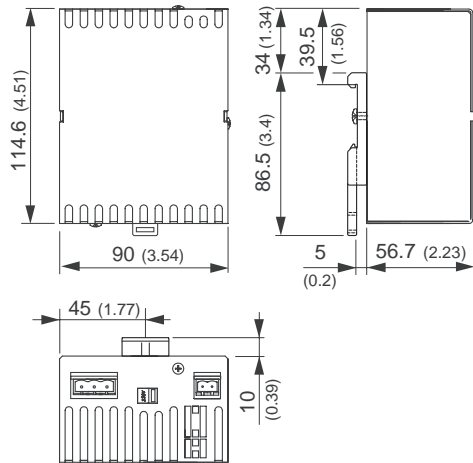


PS24-300D

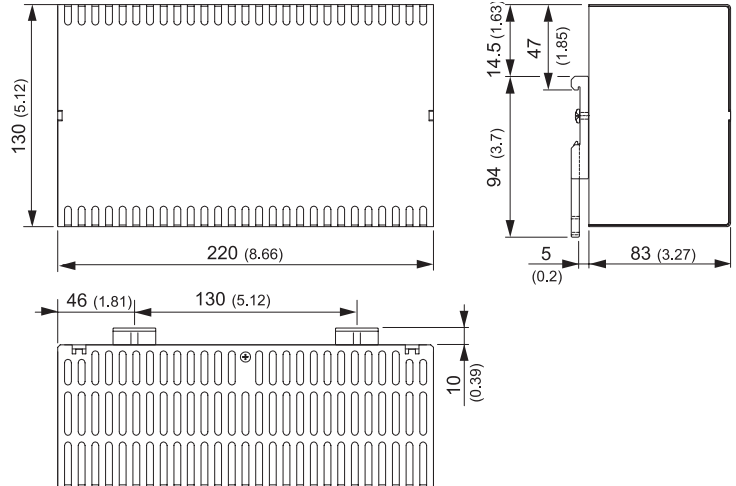
Note: All dimensions are in millimeters (inches).
Tolerances ± 0.5 mm



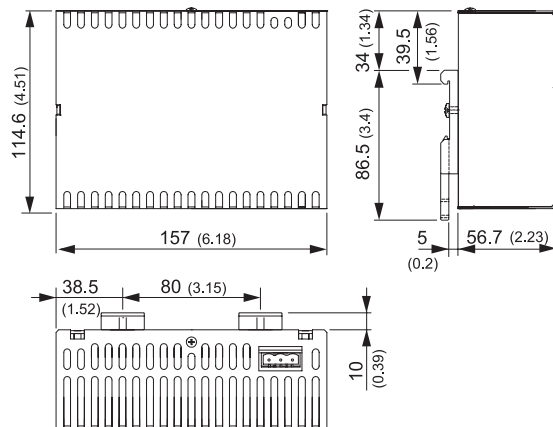
PS12-075D, PS24-075D



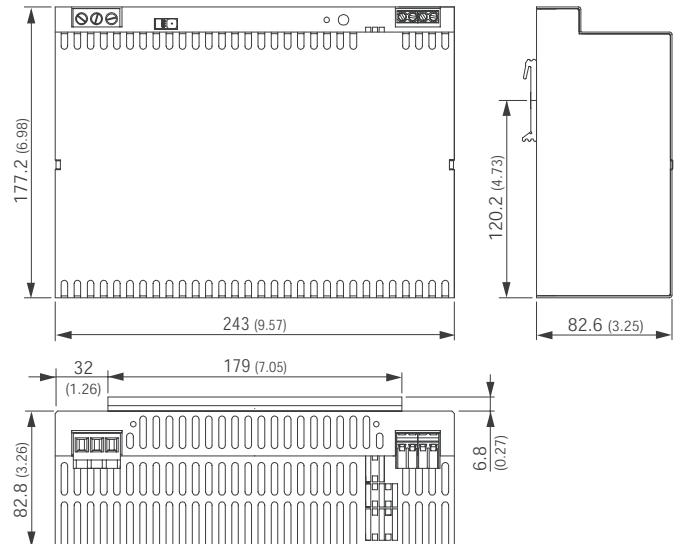
PS24-500D



PS24-150D



PS24-600D



PSP SERIES 12 AND 24 VDC POWER SUPPLIES



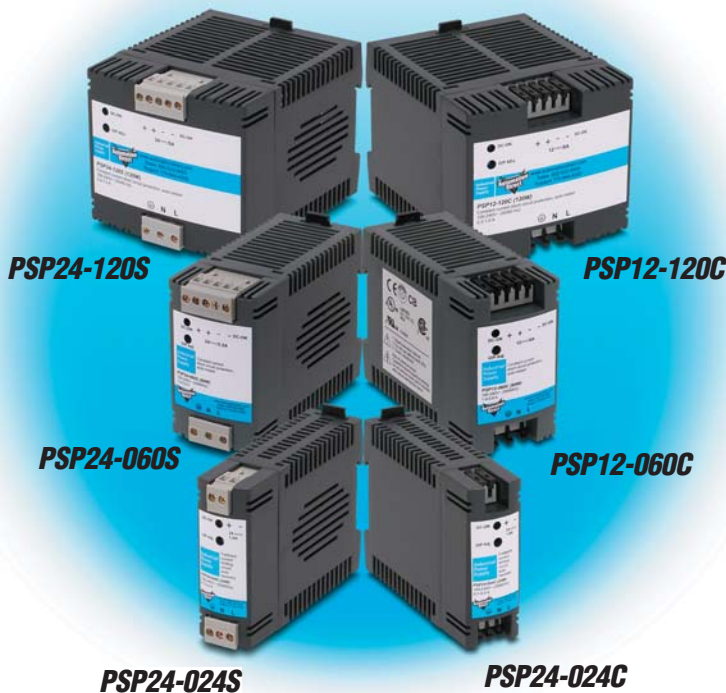
The PSP series of power supplies is a new generation of switching power supplies with an excellent price/performance ratio. They provide tightly regulated output voltage for sensitive loads in industrial environments. The slim plastic case is lightweight and compact and comes in both screw and cage clamp terminal versions. The constant-current, short circuit protection limits the output current as the voltage is reduced, to safely protect your control components from direct shorts and device failures. Once a fault is corrected, the power supply automatically resumes supplying full voltage power. (PSPxx-024x models have foldback current protection with autorecovery.)

The PSP power supplies have a "Power On" LED for easy visual indication of operation as well as a "Power Good" signal for feedback to your system controller.

With a UL 508C rating, the PSP series is the right choice for space limited applications.

Features

- Regulated switch mode type
- Ultracompact plastic case
- Finger-safe terminals
- Reliable snap-on mounting on DIN-rails
- Universal input 85-264 VAC, 50/60 Hz or 85-375 VDC
- Models with 12 or 24 VDC output
- Output voltage adjustable
- Parallel operation up to five units (not for n+1 redundancy)
- Power good signal
- Low ripple and noise
- Overload and short-circuit protection
- UL508 listed, UL/c UL1950 recognized
- Worldwide safety approvals
- 3-year product warranty



PSP SERIES POWER SUPPLIES SPECIFICATIONS



PSP24-024C



PSP24-024S



PSP12-060C



PSP24-060S



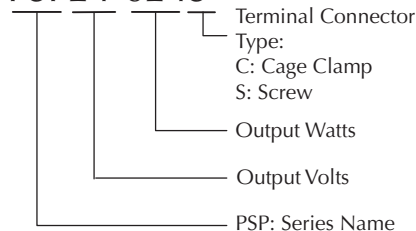
PSP12-120C



PSP24-120S

Part numbering system

PSP24-024S



Note: All specifications are valid at nominal input voltage, full load and +25°C after warmup time, unless otherwise stated.

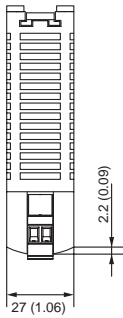
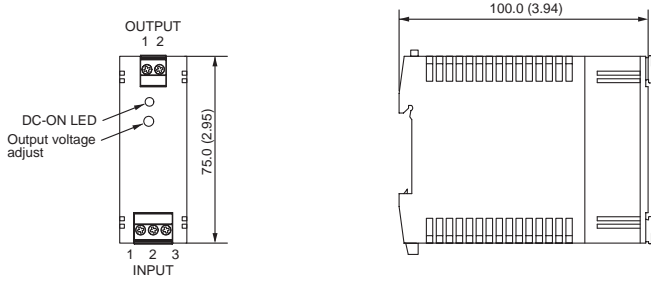
Input Specifications								
Part Number	Input Voltage Range		Input Freq. Range	Input Current (Typical)		Input Current at Full Load (Max)		Efficiency (Typ.)
				115 VAC	230 VAC	115 VAC	230 VAC	
PSP24-024S	85-264 VAC 85-375 VDC	20% derating below 93 VAC/ 130 VDC	47-63 Hz	0.35 A	0.2 A	0.7 A	0.4 A	85%
PSP24-024C								
PSP12-060S								
PSP12-060C				1.2 A	0.6 A	1.4 A	0.8 A	86%
PSP24-060S								
PSP24-060C								
PSP12-120S								
PSP12-120C								
PSP24-120S				2.0 A	1.0 A	2.4 A	1.2 A	88%
PSP24-120C								

Output Specifications								
Part Number	Price	Output Voltage	Output Volt. Adjust. Range	Output Current (Max.)	Output Power (Max.)	Hold-Up Time		MTBF (IEC 1709 @ 25°C)
						115 VAC	230 VAC	
PSP24-024S	check	24 VDC	24-28 VDC	1.0 A	24 W			2,681,000 hours
PSP24-024C	check							
PSP12-060S	check	12 VDC	12-15 VDC	4.0 A				
PSP12-060C	check				60 W			
PSP24-060S	check	24 VDC	24-28 VDC	2.5 A		15 mS	125 mS	2,947,000 hours
PSP24-060C	check							
PSP12-120S	check	12 VDC	12-15 VDC	8.0 A				
PSP12-120C	check				120 W			
PSP24-120S	check	24 VDC	24-28 VDC	5.0 A				1,620,000 hours
PSP24-120C	check							

General Specifications					
Temperature	Operating: -10°C to +70°C, Derating at 93-132 VAC or 130-187 VDC: -1.10%/C above 40°C, Derating at 187-264 VAC or 265-375 VDC: -1.67%/C above 50°C, Derating at 85-93 VAC or 85-130 VDC: 80% max. power (83% max. power for PSP24-024x), then -1.30%/C above 30°C (-1.32%/C for PSPxx-060x) Temperature Coefficient: 0.02%/C Storage: -25°C to +85°C				
Humidity	95% (non-condensing) relative humidity max.				
Output Regulation	2.5% (1% for PSP12-060x)				
Switching Frequency	55 - 180 kHz depending on load				
Isolation	According to IEC/EN 60950, UL 60950, UL 508, EN 50178, EN 60204, EN 61558-2-8				
Output Voltage Ripple	<50 mV pk-pk				
Output Protection	Current Limit at 120% typ., constant current, auto recovery (PSPxx-024x foldback, auto-recovery), Voltage Limit <40 VDC				
Power Good Signal*	<table border="1"> <tr> <th>Trigger Point</th> <th>Output Signal</th> </tr> <tr> <td>12 VDC Models: >11 V 24 VDC Models: >22 V</td> <td>11.0 V+/- 1.0 V @ 60 mA max. 22.0 V+/- 2.0 V @ 30 mA max.</td> </tr> </table>	Trigger Point	Output Signal	12 VDC Models: >11 V 24 VDC Models: >22 V	11.0 V+/- 1.0 V @ 60 mA max. 22.0 V+/- 2.0 V @ 30 mA max.
Trigger Point	Output Signal				
12 VDC Models: >11 V 24 VDC Models: >22 V	11.0 V+/- 1.0 V @ 60 mA max. 22.0 V+/- 2.0 V @ 30 mA max.				
Electromagnetic Compatibility (EMC)	EN 61000-3-2, EN 61000-6-2, EN 61000-6-3				
Enclosure Rating	IP 20				
Enclosure Material	Plastic FR2010-110C (UL 94 V-0 rated)				
Mounting	35 mm DIN rails, snap on with self-locking spring or wall mount adapter included				
Connection	S models: Plug-in Screw Terminals, C Models: Cage Clamp Terminals				
Agency Approvals	UL/cUL 508C listed, UL 60950 recognized, NEC Class 2 (24 W and 60 W output models only)				
* Note: PSP24-024x models do not have Power Good output.					

PSP SERIES POWER SUPPLIES DIMENSIONS

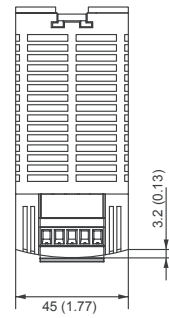
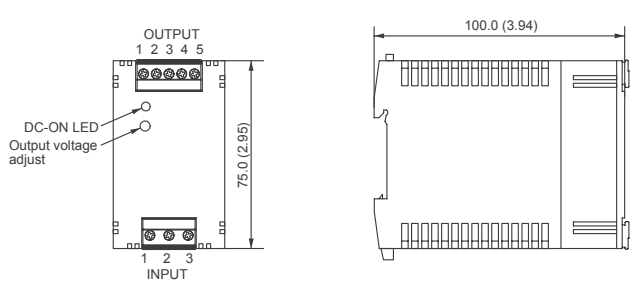
PSP24-024x



Input		Output	
1	AC Ground	1	+Vout
2	Neutral	2	-Vout
3	Live		

Weight: 140g (4.9 oz.)

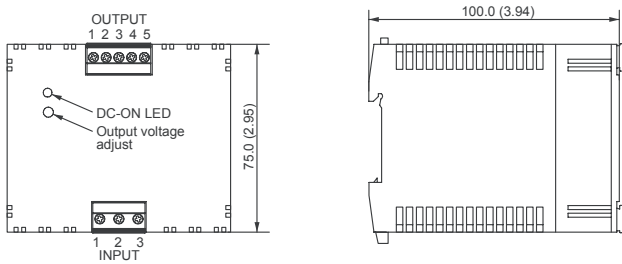
PSPxx-060x



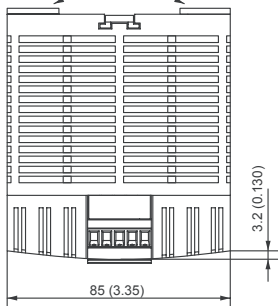
Input		Output	
1	AC Ground	1	+Vout
2	Neutral	2	+Vout
3	Live	3	-Vout
		4	-Vout
		5	Power Good

Weight: 265g (9.4 oz.)

PSPxx-120x



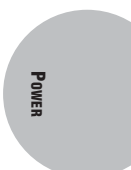
DIN rail mounting hooks 20mm (0.79) wide



Input		Output	
1	AC Ground	1	+Vout
2	Neutral	2	+Vout
3	Live	3	-Vout
		4	-Vout
		5	Power Good

Weight: 440g (15.5 oz.)

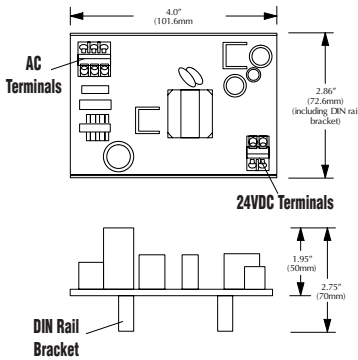
Note: All dimensions are in millimeters (inches).



POWER SUPPLIES: OPEN BOARD

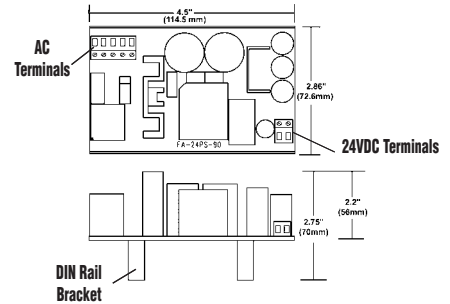
The most economical choice for 24 VDC power

FA-24PS



These power supplies are especially useful when an inexpensive external supply is required. The FA-24PS compact switching power supply accepts 85-265VAC input and provides up to 1.2A (29 Watts) output current at 24VDC. The FA-24PS-90 supplies 3.7 A (90 Watts) at 24 VDC. The FA-24PS-90 input is jumper selectable between 95-135 or 190-264 VAC.

FA-24PS-90



General Specifications		
Part Number	FA-24PS	FA-24PS-90
Input Voltage Range	85-265 VAC	95-130 VAC or 190-264 VAC, jumper selectable
Input Voltage Frequency	47 to 63 Hz	47 to 63 Hz
Input Power	40 VA	112 VA
Output Voltage	24 VDC \pm 5%	24 VDC \pm 5%
Output Current	1.2 A maximum continuous, subject to derating	3.7 A maximum continuous, subject to derating
Output Ripple	\pm 200 mV maximum	\pm 200 mV maximum
Temperature Rating	0°C to 45°C full rated; derate current 0.7% per degree above 45°C; 60°C max	0°C to 30°C full rated; derate current 1.1% per degree above 30°C; 60°C max
Transient Response	500 μ s typical recovery time to within 1% for a Load current change from 75% (.9A) to either 50% (.6A) or 100% (1.2A)	Output stays within 1% for a load current change from 75% (2.8A) to either 50% (1.8A) or 100% (3.7A)
Screw Terminals	Wire Size: 18-12 AWG Rec. Screw Torque: 4.4 in•lb or 0.5 Nm	Wire Size: 18-12 AWG Rec. Screw Torque: 4.4 in•lb or 0.5 Nm
Insulation Resistance	10 M Ω at 500 V minimum	10 M Ω at 500 V minimum
Dielectric Withstand Voltage	L or N Input to Output, 500 V min Ground Input to Output, 250 V min	L or N Input to Output, 500 V min. Ground Input to Output, 250 V min
Brown-out protection	Provides regulation down to 85 VAC at full load with no compromise in performance	Provides temporary regulation down to 95VAC. It will not run continuously at 95VAC under full load.
Input protection	The power supply has an internal fuse for the AC input line, rated at 3.15 amps	The power supply has an internal fuse for the AC input line, rated at 3.15 amps
Overload protection	Protects power supply from overload and short circuit conditions. Includes automatic recovery upon removal of the overload condition	Protects power supply from overload and short circuit conditions. Includes automatic recovery upon removal of the overload condition
Inrush current (2mS)	115 V <12.5 A / 230 VAC <13.9 A	115 VAC <79 A / 230 VAC <37 A
Overshoot protection	No overshoot on turn-on or turn-off	No overshoot on turn-on or turn-off
Agency Approvals	UL 508, CUL	UL 508, CUL

*Note: The FA-24PS is not intended to be used to power DC-powered PLCs.