

Switching Power Supplies

PS5R-V Series



STANDARDS COMPLIANCE

Applicable Standards	Mark	File No. or Organization
UL508 UL1310 ¹ ANSI/ISA 12.12.01 CSA C22.2 No.107.1 CSA C22.2 No.213 CSA C22.2 No.223 ¹		UL/c-UL Listed File No. E467154, E177168
EN60950-1 EN50178 EN61204-3 EN50581		TÜV SÜD ²
SEMI F47		EU Low Voltage Directive, EMC Directive RoHS Directive
	—	EPRI

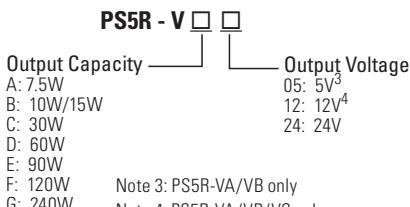
Note 1: PS5R-VA/VB/VC/VD/VE only

Note 2: EN60950-1, EN50178 only

PART NUMBERS

Output Capacity	Part Number	Input Voltage	Output Voltage	Output Current
7.5W	PS5R-VA05	100 to 240V AC (Voltage range: 85 to 264V AC / 100 to 370V DC)	5V	1.5A
	PS5R-VA12		12V	0.6A
	PS5R-VA24		24V	0.3A
10W	PS5R-VB05		5V	2.0A
	PS5R-VB12		12V	1.3A
15W	PS5R-VB24		24V	0.65A
	PS5R-VC12		12V	2.5A
30W	PS5R-VC24		24V	1.3A
	60W	100 to 240V AC (Voltage range: 85 to 264V AC / 100 to 370V DC)	24V	2.5A
90W	PS5R-VD24		24V	3.75A
	PS5R-VE24		24V	5.0A
120W	PS5R-VF24		24V	10.0A
	PS5R-VG24		24V	10.0A

Part Number Structure



Note 3: PS5R-VA/VB only
 Note 4: PS5R-VA/VB/VC only
 Use only for interpreting part numbers.

PRODUCT DESCRIPTION

DIN-rail mount switching power supplies with global approvals for both industrial and hazardous locations

KEY FEATURES

- Compact size preserves panel space
- Slim size (width):
22.5mm (10W/15W/30W)
36mm (60W/90W)
46mm (120W)
60mm (240W)
- Universal Voltage Input:
85-264V AC/100-370V DC
- Wide operating temperature range
- Spring-up terminals accept ring & fork terminals
- Approved for use in Class I Division 2 hazardous locations
- Can be installed in 6 directions
- 10W ~ 90W meet NEC Class 2 output ratings
- Overcurrent protection with auto-reset
- Meets SEMI F47 Sag Immunity (208V AC input)
- RoHS compliant
- Five-year factory warranty



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SPECIFICATIONS

Model	5V DC output	PS5R-VA05	PS5R-VB05	-	-	-	-	-			
	12V DC output	PS5R-VA12	PS5R-VB12	PS5R-VC12	-	-	-	-			
	24V DC output	PS5R-VA24	PS5R-VB24	PS5R-VC24	PS5R-VD24	PS5R-VE24	PS5R-VF24	PS5R-VG24			
Output Capacity	7.5W	15W (5V Model is 10W)	30W	60W	90W	120W	240W				
Rated Input Voltage (Single-phase two-wire) ¹			100 to 240V AC (Voltage range: 85 to 264V AC/100 to 370V DC) (Load ≤ 80% at 100-105V DC)								
Input Frequency			50/60 Hz								
Input Current (Typ.)	100V AC 230V AC	5V: 0.20A 12V, 24V: 0.18A 5V: 0.12A 12V, 24V: 0.10A	5V: 0.25A 12V, 24V: 0.35A 5V: 0.14A 12V, 24V: 0.19A	0.7A 0.3A	1.3A 0.8A	1.1A 0.6A	1.4A 0.7A	2.7A 1.2A			
Inrush Current (Typ.) (Ta=25°C, cold start)	100V AC 230V AC	15A 36A		45A	18A		41A	14A 30A			
Leakage Current	120V AC 230V AC				0.5mA max. 1.0mA max.						
Efficiency (Typ.) (at rated output) ²	100V AC 230V AC	5V: 74%, 12V: 79%, 24V: 80% 5V: 73%, 12V: 77%, 24V: 76%	5V: 77%, 12V: 82%, 24V: 84% 5V: 73%, 12V: 80%, 24V: 81%	12V: 83%, 24V: 85% 12V: 85%, 24V: 87%	86% 86%	88% 89%		89% 90%			
Power Factor (Typ.)	100V AC 230V AC	— —	— —	— —	— —	0.99 0.92	0.92 0.96	0.96			
Rated Voltage/Current	5V/1.5A, 12V/0.6A, 24V/0.3A	5V/2.0A ³ , 12V/1.3A, 24V/0.65A	12V/2.5A, 24V/1.3A	24V/2.5A	24V/3.75A	24V/5A	24V/10A				
Adjustable Voltage Range			±10%		±5%		±10%				
Output Holding Time (Typ.) (at rated output)	100V AC 230V AC	45ms 285ms	5V: 53ms 12V: 34ms, 24V: 36ms 5V: 330ms 12V: 215ms 24V: 230ms	12V: 13ms, 24V: 15ms 12V: 110ms 24V: 110ms	13ms 105ms	20ms 30ms	33ms	30ms 40ms			
Start Time (at rated input and output)		500ms max.	500ms max.	600ms max.	800ms max.	700ms max.	800ms max.				
Rise Time (at rated input and output)	5V, 12V: 200ms max 24V: 250ms max	5V, 12V: 200ms max. 24V: 250ms max.			200ms max.						
Output Input Fluctuation				0.4% max.							
Load Fluctuation		5V: 2.5% max. 12V, 24V: 1.0% max.			1.0% max.						
Temperature Change	0.04%/°C max. (-10 to +65°C)	0.05%/°C max. (-10 to +65°C)	12V: 0.05%/°C max. (-10 to +50°C) 24V: 0.05%/°C max. (-10 to +55°C)	0.05%/°C max. (-10 to +55°C)	0.05%/°C max. (-10 to +50°C)	0.05%/°C max. (-25 to +55°C)	0.05%/°C max. (-25 to +50°C)	0.05%/°C max. (-25 to +50°C)			
Regulation Ripple (including noise)	5V: 8% p-p max. (-25 to -10°C) 12V: 6% p-p max. (-25 to -10°C) 24V: 4% p-p max. (-25 to -10°C)	5V: 8% p-p max. (-25 to -10°C) 12V: 6% p-p max. (-25 to -10°C) 24V: 4% p-p max. (-25 to -10°C)	12V: 6% p-p max. (-25 to -10°C) 24V: 4% p-p max. (-25 to -10°C)			4% p-p max. (-25 to -10°C)					
	5V: 5% p-p max. (-10 to +0°C) 12V: 2.5% p-p max. (-10 to +0°C) 24V: 1.5% p-p max. (-10 to +0°C)	5V: 5% p-p max. (-10 to +0°C) 12V: 2.5% p-p max. (-10 to +0°C) 24V: 1.5% p-p max. (-10 to +0°C)	12V: 2.5% p-p max. (-10 to +0°C) 24V: 1.5% p-p max. (-10 to +0°C)			1.5% p-p max. (-10 to +0°C)					
	5V: 2.5% p-p max. (0 to +65°C) 12V: 1.5% p-p max. (0 to +65°C) 24V: 1% p-p max. (0 to +65°C)	5V: 2.5% p-p max. (0 to +65°C) 12V: 1.5% p-p max. (0 to +65°C) 24V: 1% p-p max. (0 to +65°C)	12V: 1.5% p-p max. (0 to +50°C) 24V: 1% p-p max. (0 to +55°C)	1% p-p max. (0 to +55°C)	1% p-p max. (0 to +50°C)	1% p-p max. (0 to +55°C)	1% p-p max. (0 to +50°C)				
Overshoot Protection		105% min. (auto reset)			101% min. (auto reset)		105% min. (auto reset)				
Operation Indicator			LED (green)								
Dielectric Strength	Between input and output terminals		3,000V AC, 1 minute								
	Between input and ground terminals		2,000V AC, 1 minute								
	Between output and ground terminals		500V AC, 1 minute								
Insulation Resistance		Between input and output terminals: 100MΩ min. (500V DC megger)	Between input and ground terminals: 100MΩ min. (500V DC megger)								
Operating Temperature ⁴ (No freezing)		-25 to +75°C		-25 to +70°C		-25 to +65°C					
Operating Humidity (no condensation)			20 to 90% RH								
Storage Temperature (No freezing)			-25 to +75°C								
Storage Humidity (no condensation)			20 to 90% RH								
Vibration Resistance		10 to 55Hz, amplitude 0.375mm, 2 hours each in 3 axes (when used with BNL6 end clips)		10 to 55Hz, amplitude 0.33mm, 2 hours each in 3 axes (when used with BNL6 end clips)	10 to 55Hz, amplitude 0.375mm, 2 hours each in 3 axes (when used with BNL8 end clips)	10 to 55Hz, amplitude 0.21mm, 2 hours each in 3 axes (when used with BNL6 end clips)	10 to 55 Hz, amplitude 0.375mm, 2 hours each in 3 axes (when used with part no. BNL6 mounting clips)				
Shock Resistance		300 m/s ² (30G), 3 times each in 6 directions									
Expected Life ⁵		8 years minimum (at the rated input, 50% load, operating temperature +40°C, standard mounting direction)									
EMC	EMI	EN61204-3 (Class B)									
	EMS	EN61204-3 (industrial)									
Safety Standards		UL508 (Listing), UL1310 Class 2, ANSI/ISA-12.12.01 CSA C22.2 No. 107.1, 213, 223 EN60950-1, EN50178				UL508 (Listing) ANSI/ISA-12.12.01 CSA C22.2 No. 107.1, 213 EN60950-1, EN50178					
Other Standard		SEMI F47 (at 208V AC input only)									
Degree of Protection		IP20 (EN60529)									
Dimensions (mm)	75H × 45W × 70D	90H × 22.5W × 95D		95H × 36W × 108D		115H × 46W × 121D	125H × 60W × 125D				
Weight (approx.)	130g	140g	150g	260g	310g	470g	960g				
Terminal Screw		M3.5									

*At normal temperature and humidity unless otherwise specified.

Note 1: DC input voltage is not subject to safety standards. When using on DC input, connect a fuse to the input terminal for DC input protection.

Note 2: Under stable state.

Note 3: PS5R-VB05 (5V DC/2.0A) is 10W (Up to 3.0A at Ta = 0 to 40°C. Not subject to safety standards above 2.0A.)

Note 4: See the output derating curves.

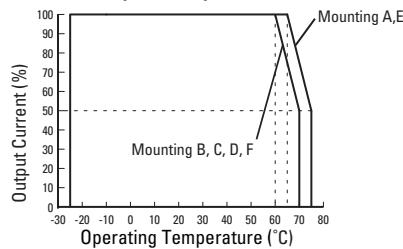
Note 5: Calculation of the expected life is based on the actual life of the aluminum electrolytic capacitor. The expected life depends on operating conditions.

CHARACTERISTICS

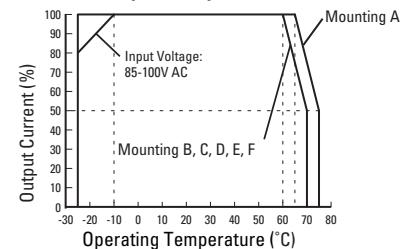
Operating Temperature vs. Output Current (Derating Curves)

Conditions: Natural air cooling (Operating temperature is the temperature around the switching power supply.)

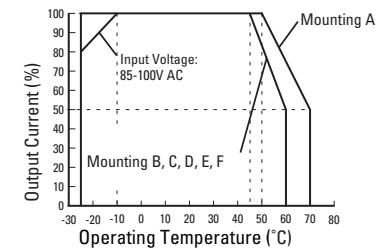
PS5R-VA05, -VA12, -VA24



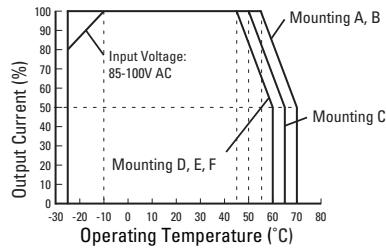
PS5R-VB05, -VB12, -VB24



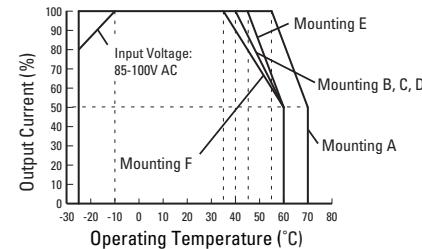
PS5R-VC12



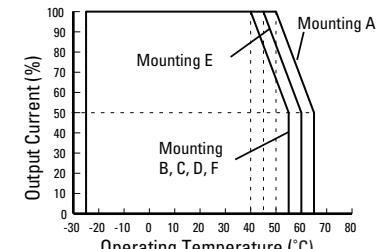
PS5R-VC24



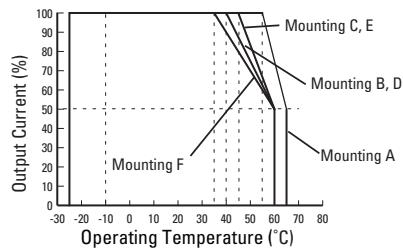
PS5R-VD24



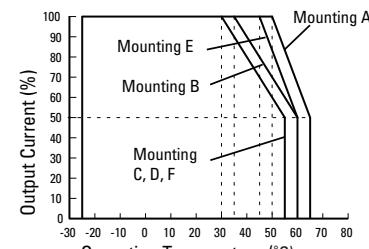
PS5R-VE24



PS5R-VF24

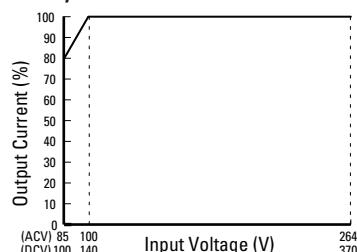


PS5R-VG24

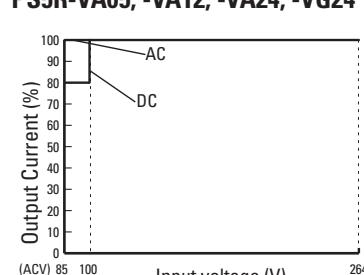


Input Voltage vs. Output Current (Derating Curves) Ta=25°C

PS5R-VB05, -VB12, -VB24, -VC12, -VC24, -VD24, -VE24, -VF24

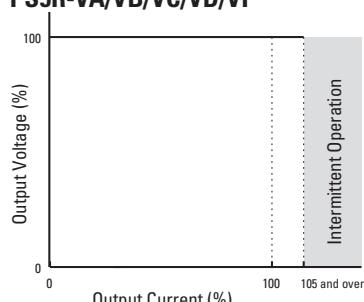


PS5R-VA05, -VA12, -VA24, -VG24

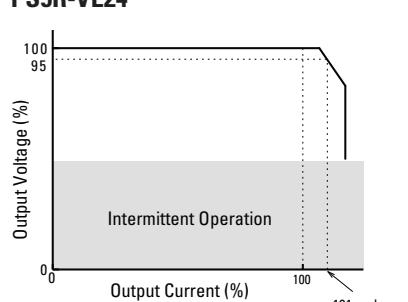


Overcurrent Protection Characteristics

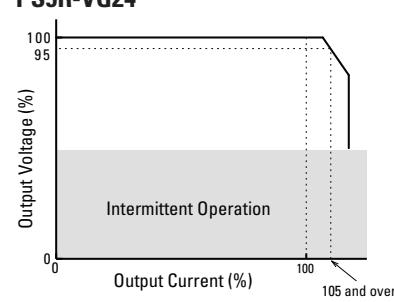
PS5R-VA/VB/VC/VD/VF



PS5R-VE24



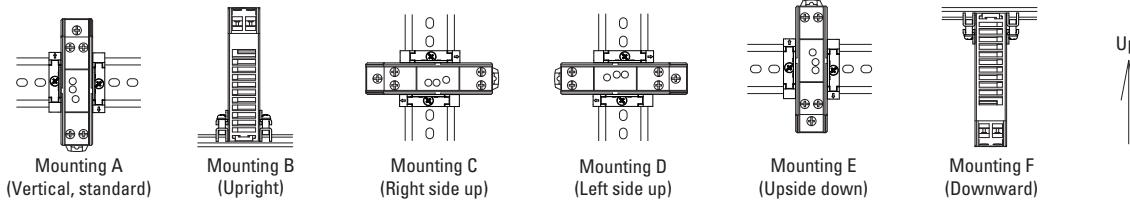
PS5R-VG24



Operating Temperature Approved by Safety Standards

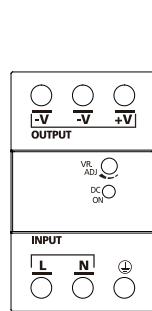
Part Number	UL508, CSA C22.2 No.107.1, ANSI/ISA12.12.01, EN60950-1, EN50178					
	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
PS5R-VA05, -VA12, -VA24	65	60	60	60	65	60
PS5R-VB05, -VB12, -VB24	65	60	60	60	60	60
PS5R-VC12	50	45	45	45	45	45
PS5R-VC24	55	55	50	45	45	45
PS5R-VD24	55	40	40	40	45	35
PS5R-VE24	50	40	40	40	45	40
PS5R-VF24	55	40	45	40	45	35
PS5R-VG24	50	35	30	30	45	30

MOUNTING STYLE

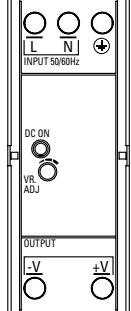


Front Panel

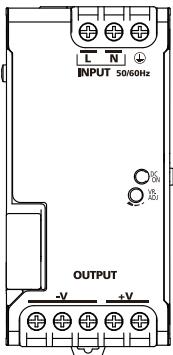
PS5R-VA



PS5R-VB/VC



PS5R-VD/VE/VF



PS5R-VG

Marking	Name	Description
L, N	AC Input Terminal	Voltage range: 85 to 264V AC/100 to 370V DC
\ominus	Ground Terminal	Be sure to connect this terminal to a proper ground.
+V, -V	DC Output Terminals	+V: Positive output terminal -V: Negative output terminal
VR.ADJ	Output Voltage Adjustment	Allows adjustment within $\pm 10\%$. (VE = $\pm 5\%$) Turning clockwise increases the output voltage. Turning counterclockwise decreases the output voltage.
DC ON	Operation Indicator (green)	Illuminates when the output voltage is on.

ACCESSORIES

Panel Mounting Bracket²

Applicable Switching Power Supply	Part Number	Remarks
PS5R-VB	PS9Z-5R1B	—
PS5R-VC	PS9Z-5R2B	For side mounting
PS5R-VD	PS9Z-5R1C	—
PS5R-VE	PS9Z-5R1E	—
PS5R-VF	PS9Z-6R1F	—
PS5R-VG	PS9Z-6R2F	For side mounting

Note 2: Used when installing on a panel directly, PS5R-VA model does not require panel mounting bracket.

DIN Rail (35mm-wide)

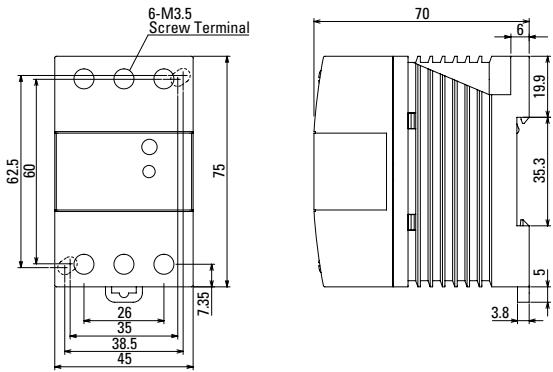
Length	Part Number	Material
1000mm	BNDN1000	Aluminum

End Clip

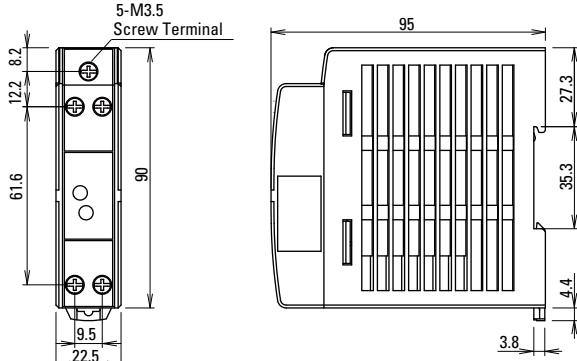
Part Number
BNL6
BNL8

DIMENSIONS (MM)

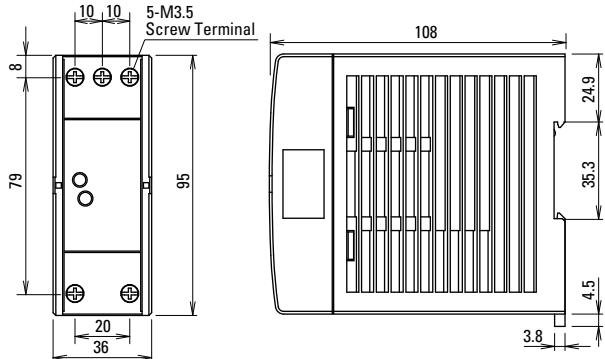
PS5R-VA



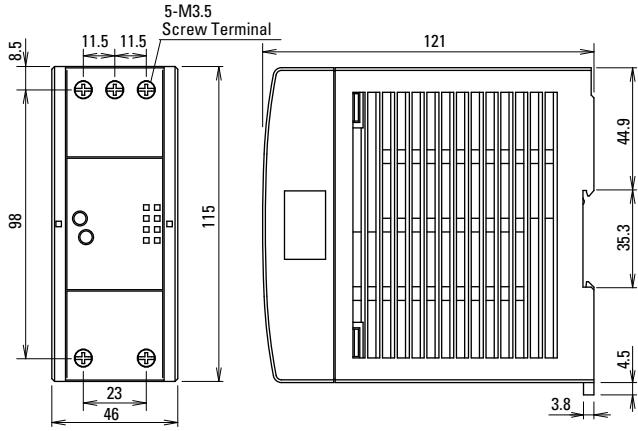
PS5R-VB/VC



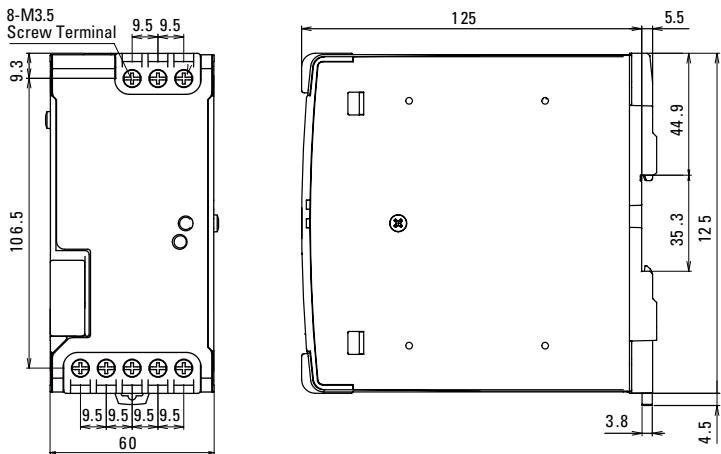
PS5R-VD/VE



PS5R-VF



PS5R-VG



MTBF*

PS5R-VA: 1,150,000H minimum

PS5R-VB: 900,000H minimum

PS5R-VC: 650,000H minimum

PS5R-VD: 450,000H minimum

PS5R-VE: 380,000H minimum

PS5R-VF: 350,000H minimum

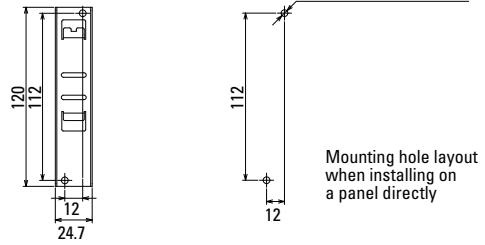
PS5R-VG: 290,000H minimum

MIL-HDBK-217FN2
(GB, 30°C)

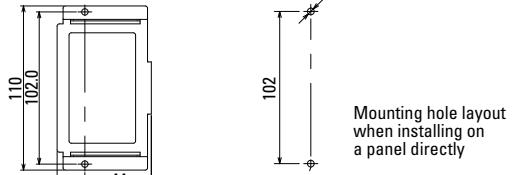
*MTBF stands for Mean Time Between Failure, which is calculated according to statistical device failures, and indicates reliability of a device. It is the statistical representation of the likelihood of the unit to fail and does not necessarily represent the expected life of a product.

Panel Mounting Bracket

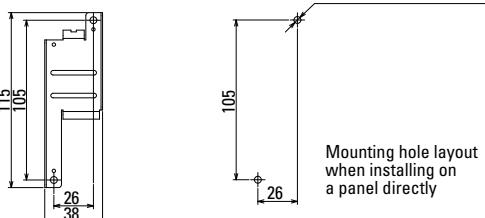
PS9Z-5R1B



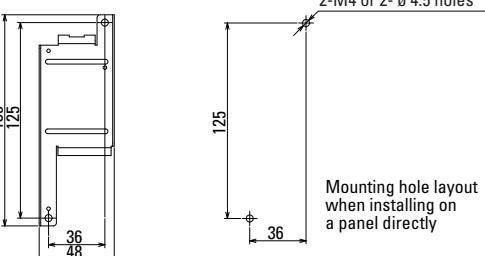
PS9Z-5R2B Side-mount



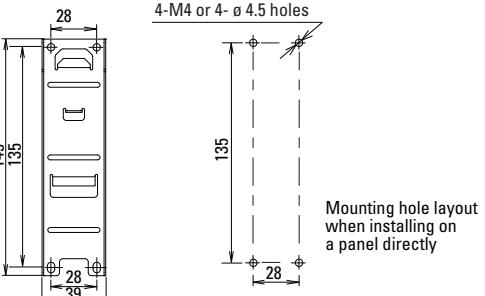
PS9Z-5R1C



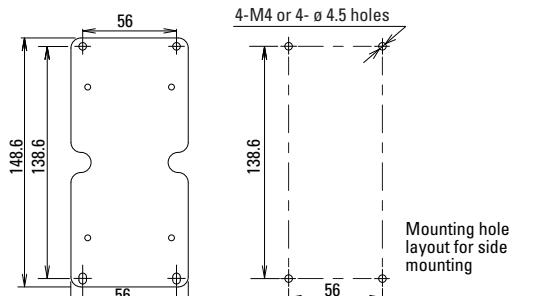
PS9Z-5R1E



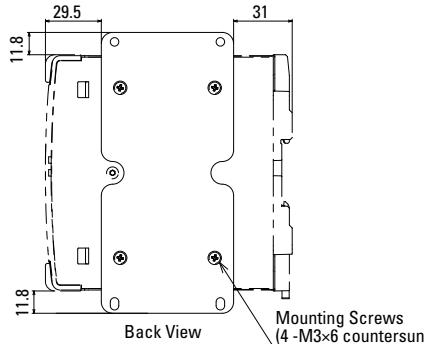
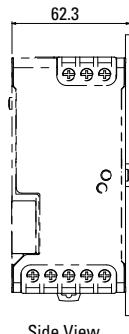
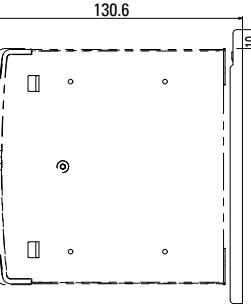
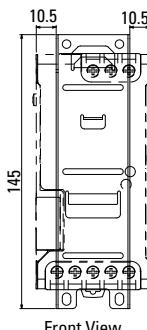
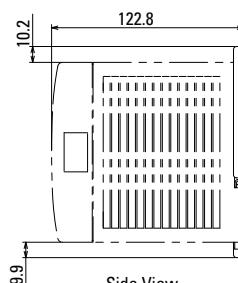
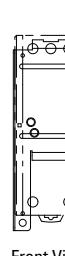
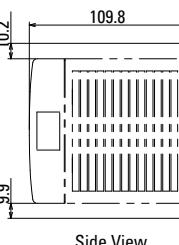
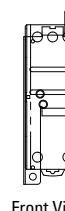
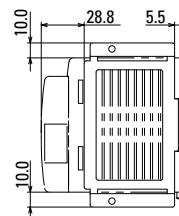
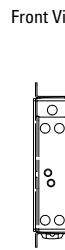
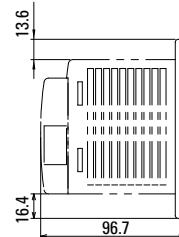
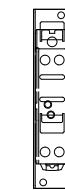
PS9Z-6R1F



PS9Z-6R2F Side-mount



When installed on switching power supply



SAFETY PRECAUTIONS

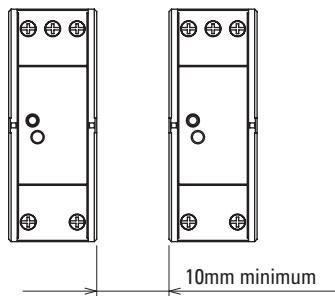
The PS5R-V should be placed in a proper enclosure. It is designed to be used with general electrical equipment and industrial electric devices

- Do not use switching power supplies with electric equipment whose malfunction or inadvertent operation may damage the human body or life directly.
- Make sure that the input voltage and output current do not exceed the ratings. If the input voltage and output current exceed the ratings, electric shock, fire, or malfunction may occur.
- Do not touch the terminals of the switching power supply while input voltage is applied, otherwise electric shock may occur.
- Provide the final product with protection against malfunction or damage that may be caused by malfunction of the switching power supply.
- Operating temperatures should not exceed the ratings. Be sure to note the derating characteristics. If the operating temperature exceeds the ratings, electric shock, fire, or malfunction may occur.
- Blown fuses indicate that the internal circuits are damaged. Contact IDEC for repair. Do not just replace the fuse and reoperate, otherwise electric shock, fire, or malfunction may occur.
- Do not use the switching power supplies to charge rechargeable batteries.
- Do not overload or short-circuit the switching power supply for a long period of time, otherwise the internal elements may be damaged.
- Do not disassemble, repair, or modify the power supplies, otherwise the high voltage internal part may cause electric shock, fire, or malfunction.
- The fuse inside the PS5R-V switching power supply is for AC input. Use an external fuse for DC input.

OPERATING INSTRUCTIONS

Notes for installation

- Do not close the top or bottom openings of the PS5R-V to allow for heat radiation by convection.
- When mounting multiple PS5R-V switching power supplies side by side, maintain a minimum of 10 mm clearance. Observe the derating curves in consideration of the ambient temperature.

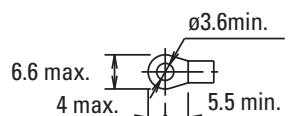


- When the derating voltage may exceed the recommended value, provide forced air-cooling.
- Make sure to wire the ground terminal correctly.
- For wiring, use wires of heat resistance of 60°C or higher (PS5R-VB: 80°C or higher). Use copper wire of the following sizes, according to the rated current.

Terminal	Wire Size (allowable current)	Wire Type
Input	AWG 18 to 14	Copper Solid/Stranded
Output	AWG18 to 14 (AWG18: 7A, AWG16: 10A, AWG14: 15A)	

Cross-Sectional area AWG18: 0.82mm², AWG16: 1.31mm², AWG14: 2.0mm²

Applicable crimp terminal (reference)



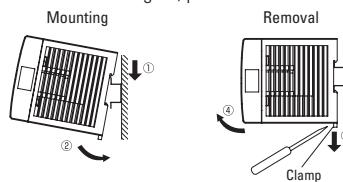
- Recommended tightening torque of the input and output terminals is 1.0 to 1.3Nm (0.8N·m for UL).

Mounting on DIN Rails

1. Use a 35mm-wide DIN rail.
2. Place the PS5R-V on the DIN rail as shown with input terminal side up (①), and press the PS5R-V towards the DIN rail (②). Make sure that the PS5R-V is installed firmly.
3. Use BNL6 end clips to ensure power supplies do not slide off the end of the DIN rail. Use of BNL8 end clips is recommended when excessive vibration or shock is anticipated.

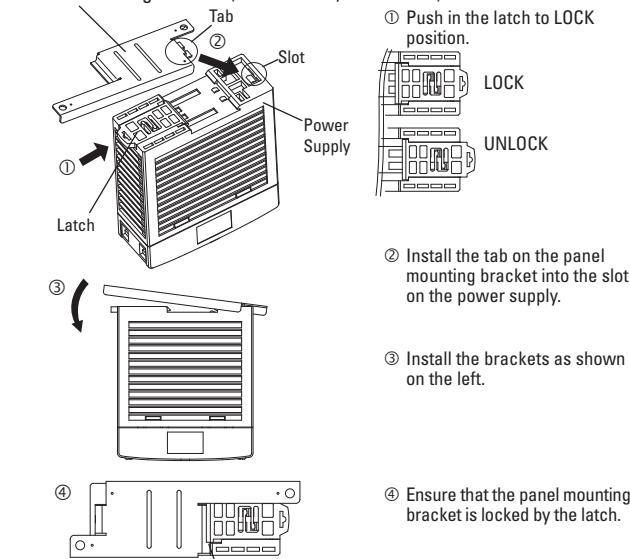
Removal

- Insert a flat screwdriver into the slot in the clamp, and pull out until it clicks (①). The lock mechanism is released and the PS5R-V can be removed (②). When mounting the PS5R-V again, push in the latch first.

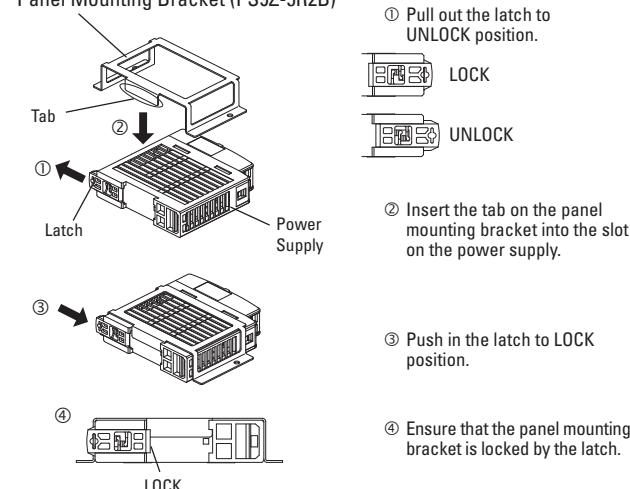


Installing a Panel Mounting Bracket

Panel Mounting Bracket (PS9Z-5R1□, PS9Z-6R1F)

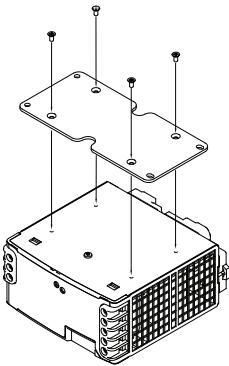


Panel Mounting Bracket (PS9Z-5R2B)



Installing PS9Z-6R2F Side-mount Panel Mounting Bracket

Install the bracket on the switching power supply using four M3 × 6 countersunk screws supplied with the bracket. Recommended tightening torque is 0.5 to 0.6N.m (should be in the center positions)



Adjustment of Output Voltage

The output voltage can be adjusted within $\pm 10\%$ (VE: $\pm 5\%$) of the rated output voltage by using the VR.ADJ control on the front. Turning the VR.ADJ clockwise increases the output voltage. Turning the VR.ADJ counterclockwise decreases the output voltage.

Overcurrent Protection

The output voltage drops automatically when an overcurrent flows due to an overload or short circuit. Normal voltage is automatically restored when the load returns to normal conditions.

Insulation/Dielectric Test

When performing an insulation/dielectric test, short-circuit the input (between L and N) and output (between +V and -V). Do not apply or interrupt the voltage quickly, otherwise surge voltages may be generated and the PS5R-V may be damaged.

Notes for Operation

- Output interruption may indicate blown fuses. Contact IDEC.
- The PS5R-V switching power supply contains an internal fuse for AC input. When using DC input, install an external fuse. To avoid blown fuses, select a fuse in consideration of the rated current of the internal fuse.

Rated Current of Internal Fuses

Part Number	Internal Fuse Rated Current
PS5R-VB/VC	2A
PS5R-VD/VE/VF	4A
PS5R-VG	6.3A

- Avoid overload and short-circuit for a long period of time, otherwise the internal elements may be damaged.

WARRANTY

IDEC warranties the PS5R-V switching power supply for a period of five years from the date of shipment.

Scope

IDEC agrees to repair or replace the PS5R-V switching power supply if the product has been operated under the following conditions. The maximum value of output capacity is within the range shown in "Operating Temperature vs. Output Current on page 3.

1. Average operating temperature (ambient temperature of switching power supply) is 40°C maximum.
2. The load is 80% maximum.
3. Input voltage is the rated input voltage.
4. Standard mounting style

- DC input operation is not subject to safety standards.

Rust and Scratches on Metal parts

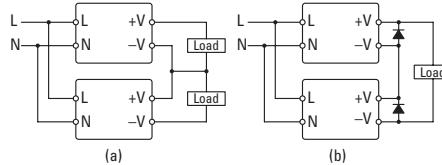
Bonded metal parts are used for the PS5R-V. Rust on the edge and scratches on the surfaces may be developed depending on the storage condition, but the performance of the PS5R-V is not affected.

Noise

Small acoustic noise inside the PS5R-V may be heard depending on the input voltage and load, but the performance of the PS5R-V is not affected.

Series Operation

Series operation is allowed. Connect Schottky barrier diodes D as shown below. Select a Schottky diode in consideration of the rated current. The diode's reverse voltage must be higher than the PS5R-V's output voltage.

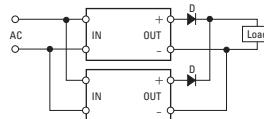


Parallel Operation

Parallel operation is not possible to increase the output capacity, because the internal elements and load may be damaged.

Backup Operation

Backup operation is a connection method of two switching power supplies in parallel for emergency. Normally one switching power supply has a sufficient output. If one switching power supply fails, another one operates to continue the output. Make sure that the sum of power consumption by load and diode is not greater than the rated wattage (rated voltage × rated current) of one switching power supply.



Select a diode in consideration of:

Diode's current must be more than double the PS5R-V's output current. Take heat dissipation into consideration.

IDEC shall not be liable for other damages including consequential, contingent or incidental damages. Warranty does not apply if the PS5R-V switching power supply was subject to:

1. Inappropriate handling, or operation beyond specifications.
2. Modification or repair by other than IDEC.
3. Failure caused by other than the PS5R-V switching power supply.
4. Failure caused by natural disasters.



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Request a Quote

PS6R Series Switching Power Supplies

Expandable and space-saving switching power supplies. High efficiency reduces operation costs.

- 93% efficiency
- Plug-in output modules for additional output voltages
- Plug-in branch terminal module for additional terminals
- Power Range: 120W, 240W, 480W
- Input voltage: 100 to 240V AC
(voltage range: 85 to 264V AC/110 to 350V DC)
- Up to 70°C (158°F) operating temperature
- DC low LED indicator and output contact
- The terminals are captive spring-up screws. Ring or fork terminals can be used.
- Finger-safe construction prevents electric shocks.
- Panel mount bracket and side-mount panel mounting bracket. Can be attached to a DIN rail or directly to a panel surface.
- RoHS compliant
- UL listed for Class 1, Division 2 Hazardous Locations
- Meets SEMI F47 Sag Immunity
- ABS Certified for maritime use



Part Numbers

PS6R

Output Capacity*	Part No.	Input Voltage	Output Voltage	Output Current
120W	PS6R-F24			5A
240W	PS6R-G24	100 to 240V AC	21.6 to 26.4V	10A
480W	PS6R-J24			20A

*Output voltage × output current = output capacity



120W shown with Branch Terminal module attached.

Accessories

Item	Part No.	Note
Output Voltage Expansion Module <small>Note 1</small>	PS9Z-6RM1	Output: +5V, 2A, 10W
	PS9Z-6RM2	Output: +12V, 1A, 12W
	PS9Z-6RM3	Output: +5V, 1A/-5V, 1A, 10W
	PS9Z-6RM4	Output: +15V, 0.4A/-15V, 0.4A, 12W
	PS9Z-6RM5	Output: +5V, 1A/+12V, 0.5A, 11W
	PS9Z-6RM6	Output: +12V, 0.5A/-12V, 0.5A, 12W
Branch Terminal Module <small>Note 2</small>		
	PS9Z-6RS1	Additional screw terminals for wiring: 2 + terminals / 2 - terminals
Panel Mounting Bracket	PS9Z-6R1F	
Side-mount Panel Mounting Bracket	PS9Z-6R2F	Supplied with M3 × 6 countersunk mounting screws
DIN Rail	BNDN1000	1,000mm
DIN Rail End Clip	BNL6	

1. When using an output voltage expansion module, reduce 1A from the output current of PS6R.
2. When using a branch terminal module, the total voltage/current of PS6R and the branch terminal module should not exceed the rated current/voltage of PS6R.

Specifications

PS6R

Part No.		PS6R-F24	PS6R-G24	PS6R-J24
Input	Input Voltage	100 to 240V AC (Voltage range: 85 to 264V AC/110 to 350V DC) (Load ≤ 80% at 85 to 100V AC, 110 to 140V DC) ^{Note 1}		
	Frequency	50/60Hz		
	Input Current	100V AC	1.4A typ	2.7A typ
		230V AC	0.7A typ	1.2A typ
	Inrush Current	100V AC	9A max. (Ta=25°C, 100V AC cold start)	
		230V AC	20A max. (Ta=25°C, 230V AC cold start)	
	Leakage Current	120V AC	0.5mA max.	
		230V AC	1mA max.	
Output	Efficiency (Typical)	100V AC	90%	90%
		230V AC	90%	91%
	Power Factor (Typical)	100V AC	0.99	0.99
		230V AC	0.96	0.97
	Rated Voltage/Current	24V/5A		24V/20A
	Adjustable Voltage Range	±10%		
	Output Holding Time	20ms min. (at rated input and output)		
	Start Time	800ms max. (at rated input and output)		
Supplementary Functions	Rise Time	200ms max. (at rated input and output)		
	Regulation	Total Fluctuation	±5% max.	
		Input Fluctuation	0.4% max.	
		Load Fluctuation	0.6% max.	
		Temperature Change	0.05%/oC max. (-10 to +60°C)	
	Ripple (including noise)	1% p-p max. (0 to +60°C)		
Dielectric Strength	Overcurrent Protection	105 to 120% (auto reset) (output current when voltage drops by 5%)		
	Oversupply Protection	Output off at 120% ^{Note 2}		
	Operation Indicator	LED (green)		
Dielectric Strength	Voltage Low Indication	LED (amber)		
	Between input and output terminals	3000V AC, 1 minute		
	Between input and ground terminals	2000V AC, 1 minute		
Dielectric Strength	Between output and ground terminals	500V AC, 1 minute		
	Insulation Resistance	100MΩ min. 500V DC megger (between input and output terminals/between input and ground terminals) (at room temperature and normal humidity)		
	Operating Temperature	-10 to +70°C (no freezing) ^{Note 3}		
Environmental	Operating Humidity	20 to 90% RH (no condensation)		
	Storage Temperature	-25 to +75°C (no freezing)		
	Storage Humidity	20 to 90% RH (no condensation)		
Mechanical	Vibration Resistance	10 to 55 Hz, amplitude 0.375 mm (0.187mm using PS9Z-6R1F) 2 hours each in 3 axes, 6 directions		
	Shock Resistance	300 m/s ² (150 m/s ² when using a PS9Z-6R1F panel mounting bracket)		
	EMC	EN61204-3 (Class B) EN61204-3 (industrial)		
Degree of Protection	Degree of Protection	IP20 (IEC 60529)		
	Weight (approx.)	630g	960g	1400g
	Terminal Screw	M3.5 (See last page for wire sizes)		

1. DC input voltage is not subjected to safety standards.

3. See the output derating curves.

2. One minute after the output has been turned off, turn on the input again.

Easily Expandable



Output Voltage Expansion Module

In addition to the standard 24V output, additional 5, 12, and 15V outputs can be added.



Branch Terminal Module

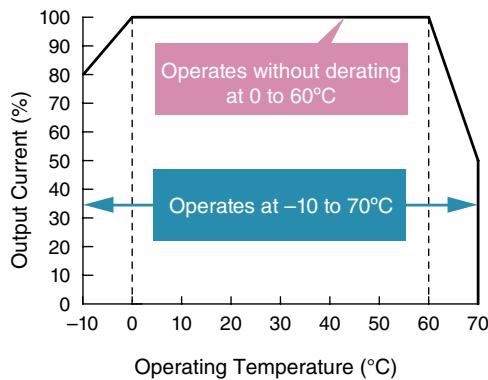
Two terminals can be added.
No wiring is required, reducing installation space.

Accessories (For use with PS6R)

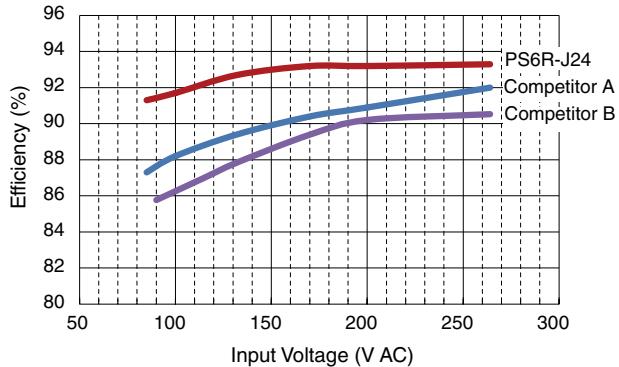
Part No.		Output Voltage Expansion Module						Branch Terminal Module PS9Z-6RS1				
		PS9Z-6RM1	PS9Z-6RM2	PS9Z-6RM3	PS9Z-6RM4	PS9Z-6RM5	PS9Z-6RM6					
Input Voltage		24V DC										
Output Capacity		10W max.	12W max.	10W max.	12W max.	11W max.	12W max.	—				
Output	Rated Voltage/Current	5V/2A	12V/1A	±5V 2A	±15V 0.4A	5V/1A, 12V/0.5A	±12V 0.5A	24V/10A max. ^{Note 1}				
	Adjustable Voltage Range	Not available						—				
	Voltage Accuracy	±5% max.						—				
	Start Time	200 ms max. (at rated input and output)						—				
	Input Fluctuation	0.5% max.						—				
	Load Fluctuation	1.0% max.						—				
	Temperature Change	0.05%/max. (-10 to +60°C)						—				
Regulation		100mV max.	150mV max.	100mV max., 150mV max.								
Supplementary Functions	Overcurrent Protection	105% (auto reset)						—				
	Oversupply Protection	Output off at 120%										
Operating Temperature		-10 to +70°C (no freezing) ^{Note 2}										
Operating Humidity		20 to 90%RH (no condensation)										
Storage Temperature		-25 to +75°C (no freezing)										
Storage Humidity		20 to 90% RH (no condensation)										
Vibration Resistance		10 to 55 Hz, amplitude 0.375 mm, 2 hours each in 3 axes, 6 directions (in combination with PS6R-J24)										
Shock Resistance		300 m/s ² (150 m/s ² when using a PS9Z-6R1F panel mounting bracket), 3 shocks each in 6 axes (in combination with PS6R-J24)										
EMC	EMI	EN61204-3 (Class B) (in combination with PS6R-□24)						—				
	EMS	EN61204-3 (industrial) (in combination with PS6R-□24)										
Safety Standards		UL508 (Listing), CSA C22.2 No.107.1, IEC/EN60950-1, EN50178 (in combination with PS6R-□24)										
Degree of Protection		IP20 (IEC 60529)										
Weight (approx.)		90g						30g				
Terminal Screw		M3.5 (See last page for wire sizes.)										

1. Ensure that the current does not exceed the rated current of the PS6R.
 2. See the output derating curves.

Wide Operating Temperature Range



Energy-saving 93% Efficiency (480W)



Easy Maintenance - LED Indicator

Status	Normal	Overload or Input Voltage Low*	Output short-circuit	Output OFF
DC ON (green LED)				
DC Low (amber LED)				

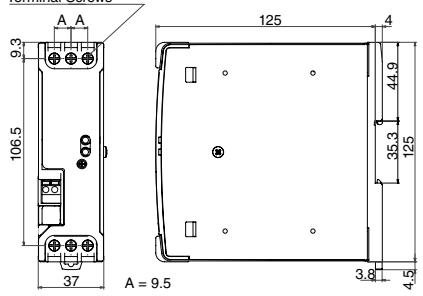
*The LEDs turn on when the input voltage drops.

Dimensions (mm)

PS6R-F24

6 - M3.5

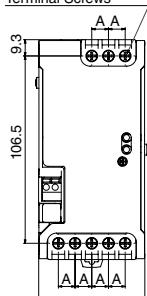
Terminal Screws



PS6R-G24

8 - M3.5

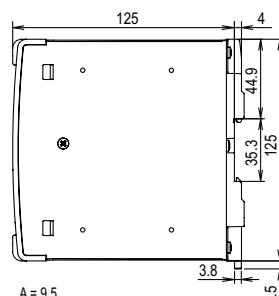
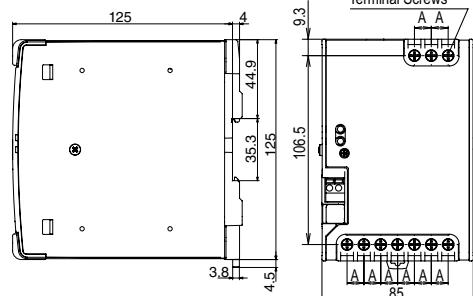
Terminal Screws



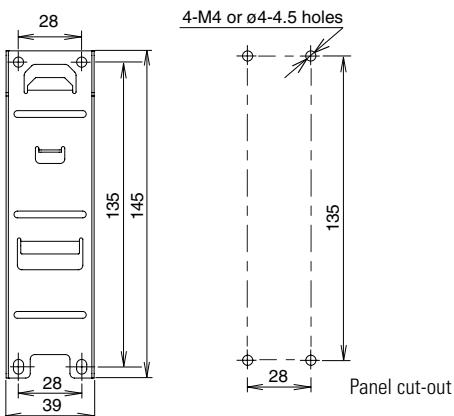
PS6R-J24

10-M3.5

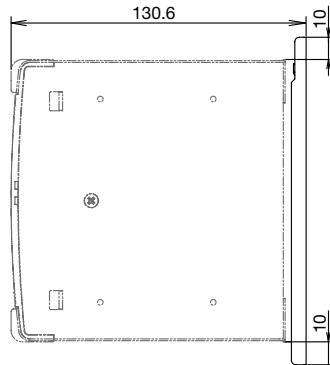
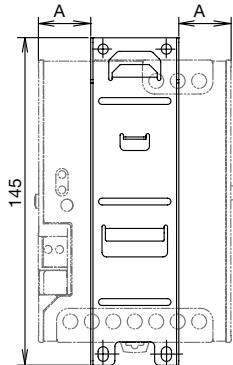
Terminal Screws



PS9Z-6R1F Panel Mounting Bracket



When a PS9Z-6R1F is installed on PS6R

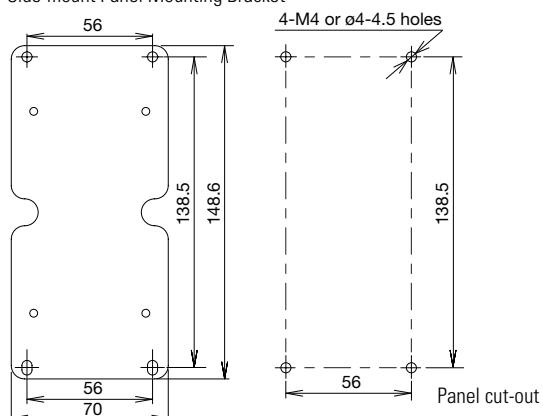


(Front view)

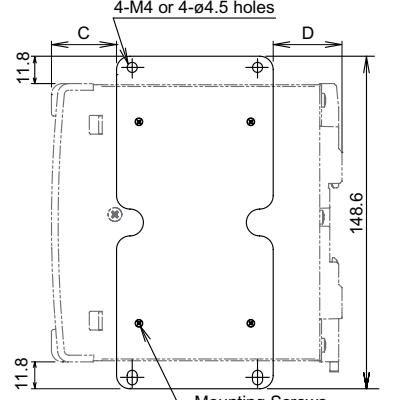
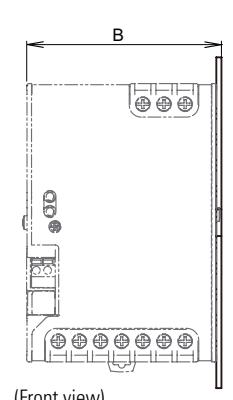
(Side view)

PS9Z-6R2F

Side-mount Panel Mounting Bracket



When a PS9Z-6R2F is installed on PS6R

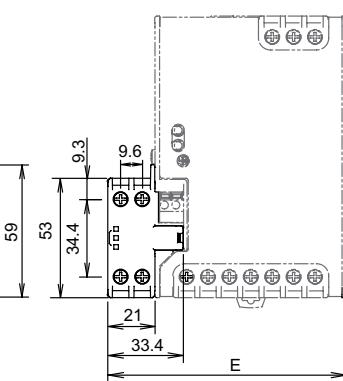
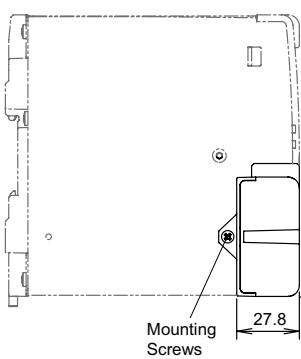
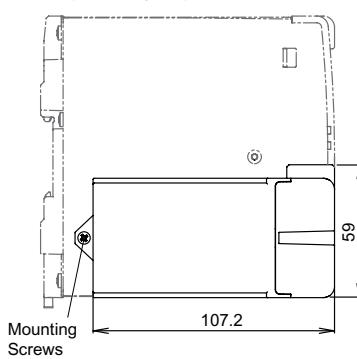


(Front view)

(Side view)

When using a PS9Z-6RM*

Output Voltage Expansion Module

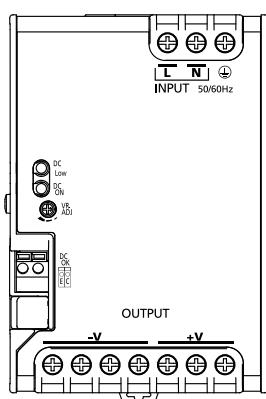


Dimension Table

	A	B	C	D	E
PS6R-F24	—	39.3	29.5	29.5	58
PS6R-G24	10.5	62.3	29.5	31	81
PS6R-J24	23	87.3	29.5	31	106

Parts Description

PS6R-J24



PS6R-6RM1/M2/M3

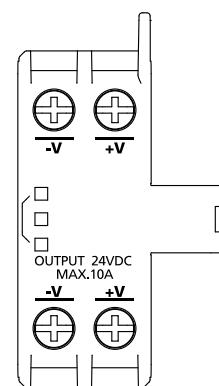
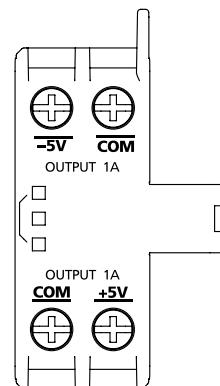
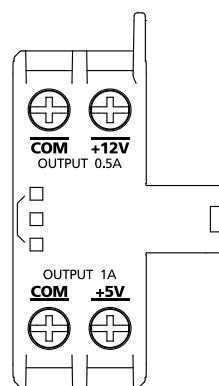
Output Voltage Expansion Module

PS9Z-6RM3/M4/M6

Output Voltage Expansion Module

PS6R-6RS1

Branch Terminal Module



(PS6R-6RM5 shown)

PS6R-□24/PS9Z-6RS1

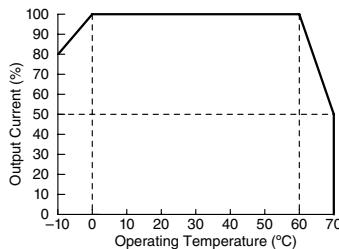
Marking	Name	Description
L, N	Input Terminal	Voltage range: 85 to 264V AC/110 to 350V DC
⏚	Ground Terminal	Be sure to connect this terminal to a proper ground.
+V, -V	DC Output Terminals	+V: Positive output terminal -V: Negative output terminal
VR.ADJ	Output Voltage Adjustment	Allows adjustment within ±10%. Turning clockwise increases the output voltage.
DC ON	Operation Indicator (green)	Lights on when the output voltage is on.
DC LOW	Output Low Indicator (Amber)	Lights on when the output voltage drops approximately 80% of the rated value.
DC OK	DC OK Output	Lights on when the output voltage is more than 80% of the rated value. NPN transistor output (50V DC max., 50 mA max.)

PS9Z-6RM□

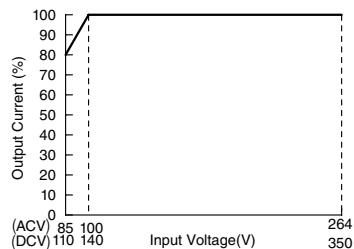
Marking	Name	Description
+5V, +12V, +15V	DC Output Terminal	+5V side, +12V side, +15V side
-5V, -12V, -15V	DC Output Terminal	-5V side, -12V side, -15V side
COM	DC Output Terminal	0V side (wired internally to -V of PR6R-J24)

Characteristics

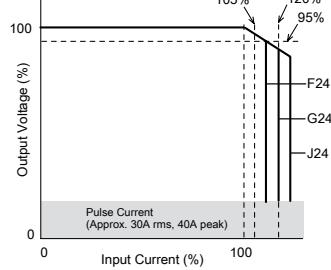
Operating Temperature vs.
Output Current (Derating Curves)



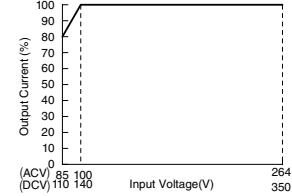
Output Current vs. Input Voltage
(Derating Curves) (Ta=25°C)



Overcurrent Protection Characteristics
PS6R-□24



Overcurrent Protection
Characteristics PS9Z-6RM*



Operating Temperature approved by Safety Standards

Part No.	UL508, CSA C22.2 No. 107.1	EN60950-1, EN50178
PS6R-F24	60°C	60°C
PS6R-G24	60°C	60°C
PS6R-J24	55°C	60°C
PS9Z-6RM□	55°C	60°C

Operating Instructions

The PS6R should be placed in a proper enclosure. It is designed to be used with general electrical equipment and industrial electric devices.

Operation Notes

1. Output interruption may indicate blown fuses. Contact IDEC.
2. The PS6R contains an internal fuse for AC input. When using DC input, install an external fuse or DC input. To avoid blown fuses, select a fuse in consideration of the rated current of the internal fuse.

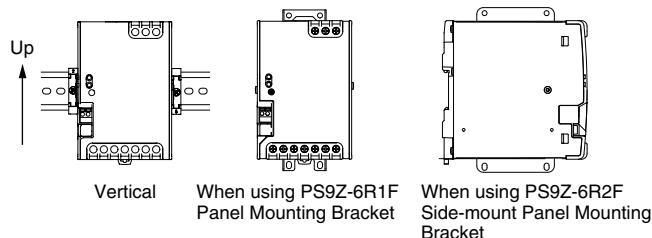
Rated Current of Internal Fuses

Part No.	Internal Fuse Rated Current
PS6R-F24	4A
PS6R-G24	6.3A
PS6R-J24	10A

- Avoid overload and short-circuit for a long period of time, otherwise internal elements may be damaged.
- DC input operation is not subjected to safety standards.

Installation Notes

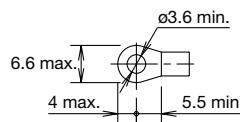
- The PS6R can be installed in the direction shown below only.



- Do not close the top and bottom openings of the PS6R to allow for heat radiation by convection.
- Maintain a minimum of 20mm clearance around the PS6R, except for the top and bottom openings.
- When derating of the output does not work, provide forced air-cooling.
- Make sure to wire the ground terminal correctly.
- For wiring, use wires with heat resistance of 60°C or higher. Use copper wire of the following sizes. Wires of the following sizes must be used to comply with UL508, CSA C22.2 No. 107.1.

Model	Terminal	Wire Size/No. of Wire	Wire Type	Torque, in-lbs (N·m)
PS6R-F24 PS6R-G24	Input	18-14 AWG, 1-wire	Copper Solid/Stranded	7.0 (0.8)
	Output	18-14 AWG, 1-wire, (18 AWG - 7A, 16 AWG - 10A, 14 AWG - 15A)		
	DC OK Output	22-14 AWG, 1-wire (stripped wire length: 6 to 7mm)		
PS6R-J24	Input	18-14 AWG, 1-wire	Copper Solid/Stranded	—
	Output	18-14 AWG, 2-wire Use the same size wire for each terminal (18 AWG - 7A, 16 AWG - 10A, 14 AWG - 15A)		
		12 AWG, 1-wire Use with UL-listed ring/fork crimp terminal.		
PS9Z-6R□	DC OK Output	22-14 AWG, 1-wire (stripped wire length: 6 to 7mm)	Copper Solid/Stranded	—
PS9Z-6R□	Output	18-14 AWG, 1-wire (18 AWG - 7A, 16 AWG - 10A, 14 AWG - 15A)	Copper Solid/Stranded	7.0 (0.8)

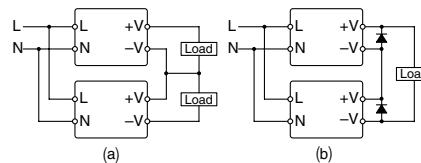
Applicable Crimp Terminal (reference)



- Recommended tightening torque of the input and output terminals is 0.8N·m.
- The output voltage can be adjusted within ±10% of the rated output voltage by using the V.ADJ control. Note that overvoltage protection may work when increasing the output voltage.
- When large shocks or heavy vibrations on the PS6R are expected, the use of DIN rail or PS9Z-6R2F side-mount panel mounting bracket is recommended.

Series Operation

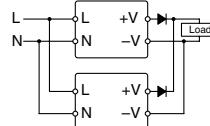
The following series operation is allowed. Connect Schottky barrier diodes as shown below. Output voltage expansion modules cannot be connected in series.



Select a Schottky diode in consideration of the rated current. The diode's reverse voltage must be higher than the PS6R's output voltage.

Parallel Operation

Parallel operation is possible to increase the output capacity. Output voltage expansion modules cannot be connected in series.



When increasing the capacity, observe the following.

1. Maintain the operating temperature below 40°C.
2. Output cannot be connected directly in parallel operation. Connect a diode to the output of each PS6R.
3. Output terminal voltage of both power supplies must be the same. Also, maintain the voltage difference between the power supplies below 30mV.
4. Use load lines of the same diameter and length.
5. Set the output voltage higher for the amount of diode forward voltage drop.
6. Turn on the inputs at the same time.
7. Select a diode in consideration of:
Diode's reverse voltage must be higher than the PS6R's output voltage.
Diode's current must be three times the PS6R's output current. Provide a heat sink for heat dissipation.



Power Supplies

Electronics



Power supplies from Weidmüller have long since proved their worth in supplying electrical modules. They can therefore be used safely in harsh industrial environments, in small businesses and in living areas, and have been granted international approvals. Weidmüller provides power supplies and additional components for industrial applications:

- Switched-mode power supply units
- DC/DC converters
- UPS control modules
- Electronic fuses

TECO



sales@tecotechnology.com
tecotechnology.com

Request a Quote

Power Supplies

Weidmüller offers a full range of power supplies for process control and manufacturing automation applications.

INSTA-POWER

A permanent power supply for buildings and machines

The single-phase INSTA-POWER switched mode power supplies are characterized by a large power spectrum, a compact design and a good price-performance ratio. They are suitable for temperature ranges from -25° C (77° F) to +70° C (158° F), have international approvals and a wide range voltage input.



PRO INSTA 16W 24V 0.7A



PRO INSTA 60W 12V 5A



PRO INSTA 90W 24V 3.8A

Type	Input AC	Input DC	Rated Voltage DC	Adjustable Output	Width x Height x Depth (mm)	Order Number
PRO INSTA 30W 5V 6A	85...264 V AC	95...370 V DC	5 V DC / 6 A	4 - 7 V DC	72 x 90 x 60	2580210000
PRO INSTA 30W 12V 2.6A	85...264 V AC	95...370 V DC	12 V DC / 2.6 A	9 - 16 VDC	54 x 90 x 60	2580220000
PRO INSTA 60W 12V 5A	85...264 V AC	95...370 V DC	12 V DC / 5 A	9 - 16 V DC	72 x 90 x 60	2580240000
PRO INSTA 16W 24V 0.7A	85...264 V AC	95...370 V DC	24 V DC / 0.7 A	22 - 28 V DC	22,5 x 90 x 60	2580180000
PRO INSTA 30W 24V 1.3A	85...264 V AC	95...370 V DC	24 V DC / 1.3 A	22 - 28 V DC	72 x 90 x 60	2580190000
PRO INSTA 60W 24V 2.5A	85...264 V AC	95...370 V DC	24 V DC / 2.5 A	22 - 28 V DC	72 x 90 x 60	2580230000
PRO INSTA 90W 24V 3.8A	85...264 V AC	95...370 V DC	24 V DC / 4 A	22 - 28 V DC	90 x 90 x 60	2580250000
PRO INSTA 96W 24V 4A	85...264 V AC	95...370 V DC	24 V DC / 3.8 A	22 - 28 V DC	90 x 90 x 60	2580260000
PRO INSTA 96W 48V 2A	85...264 V AC	95...370 V DC	48 V DC / 2 A	35 - 56 V DC	90 x 90 x 60	2580270000

Approvals

	according UL508 and CSA 22
	Class 1 Div. 2 Class 2 Power (except PRO INSTA 96W 24V 4A and PRO INSTA 96W 48V 2A)

PROeco "the economical solution"

Best performance on a small budget

PROeco switched-mode power supply units are defined by their compact design, high degree of efficiency and ease of service. This is due to over temperature protection, short-circuit and overload protection. They can be used universally in almost all applications. Used with our diode modules, capacity modules and UPS offerings, the PROeco provides utmost flexibility, extensive safety and redundancy options.

- Fast status diagnostics: tricolor LED indication
- High efficiency: up to 93%
- Wide operating range: -25°C (-13°F) to +70°C (158°F)
- Reliable: MTBF > 500,000 hours
- Alarm ability: includes integrated status output relay
- Main application: Serial machinery and standard panels



Type	Input				Output			Dimensions	
	1-Phase	2/3-Phase	Input Voltage AC	Input Voltage DC	Output Nominal Voltage / Current (DC)	Adjustable Output	Parallel Running	Width X Height X Depth (mm)	Order Number
PRO ECO 72W 24V 3A	●		85 - 264 V	80 - 370 V	24 V/ 3 A	22...28 V DC	●	34 x 125 x 100	1469470000
PRO ECO 120W 24V 5A	●		85 - 264 V	80 - 370 V	24 V/ 5 A	22...28 V DC	●	40 x 125 x 100	1469480000
PRO ECO 240W 24V 10A	●		85 - 264 V	80 - 370 V	24 V/ 10 A	22...28 V DC	●	60 x 125 x 100	1469490000
PRO ECO 480W 24V 20A	●		85 - 264 V	80 - 370 V	24 V/ 20 A	22...28 V DC	●	100 x 125 x 120	1469510000
PRO ECO 960W 24V 40A	●		85 - 264 V	80 - 370 V	24 V/ 40 A	22...28 V DC	●	160 x 125 x 120	1469520000
PRO EC03 120W 24V 5A	●	3x 340 - 575 V	450...500V		24 V/ 5 A	22...28 V DC	●	40 x 125 x 100	1469530000
PRO EC03 240W 24V 10A	●	3x 340 - 575 V	450...500V		24 V/ 10 A	22...28 V DC	●	60 x 125 x 100	1469540000
PRO EC03 480W 24V 20A	●	3x 340 - 575 V	450...500V		24 V/ 20 A	22...28 V DC	●	100 x 125 x 120	1469550000
PRO EC03 960W 24V 40A	●	3x 340 - 575 V	450...500V		24 V/ 40 A	22...28 V DC	●	160 x 125 x 120	1469560000
PRO ECO 72W 12V 6A	●		85 - 264 V	80 - 370 V	12 V/ 6 A	10...16 V DC	●	34 x 125 x 100	1469570000
PRO ECO 120W 12V 10A	●		85 - 264 V	80 - 370 V	12 V/ 10 A	10...16 V DC	●	40 x 125 x 100	1469580000
PRO ECO 240W 48V 5A	●		85 - 264 V	80 - 370 V	48 V/ 5 A	42...56 V DC	●	60 x 125 x 100	1469590000
PRO ECO 480W 48V 10A	●		85 - 264 V	80 - 370 V	48 V/ 10 A	42...56 V DC	●	100 x 125 x 120	1469610000

PROmax Power Supplies

For Your Toughest Demands!

PROmax power supplies are high performance switched mode supplies designed for the demanding needs of process heavy applications. They feature start up at temperatures as low as -40°C, Hazardous Area approvals (UL, Class 1 Division 2) and a 300% power boost, making them an ideal choice for harsh environment applications that require maximum power.

- Small housing: 32 mm – 140 mm widths
- MTBF: >500,000 hours
- Wide temperature range: -25° C (77° F) to +70° C (158° F), startup at -40° C (-40° F)
- External monitoring with relay contact
- Capable of parallel and series output connections
- Bi-color LED for easy status indication
- Shock and vibration resistant
- Powerful output surge capability up to 300%



Type	Input		Output			Dimensions			Order Number
	1-Phase	2/3-Phase	Input Voltage AC	Input Voltage DC	Output Nominal Voltage / Current (DC)	Adjustable Output	Parallel Running	Width X Height X Depth (mm)	
PRO MAX 72W 24V 3A	•		85 - 277 V	80 - 370 V	24 V/ 3 A	22,5 - 29,5 V	•	32 x 130 x 125	1478100000
PRO MAX 120W 24V 5A	•		85 - 277 V	80 - 370 V	24 V/ 5 A	22,5 - 29,5 V	•	40 x 130 x 125	1478110000
PRO MAX 180W 24V 7,5A	•		85 - 277 V	80 - 370 V	24 V/ 7,5 A	22,5 - 29,5 V	•	50 x 130 x 125	1478120000
PRO MAX 240W 24V 10A	•		85 - 277 V	80 - 370 V	24 V/ 10 A	22,5 - 29,5 V	•	60 x 130 x 125	1478130000
PRO MAX 480W 24V 20A	•		85 - 277 V	80 - 370 V	24 V/ 20 A	22,5 - 29,5 V	•	90 x 130 x 150	1478140000
PRO MAX 960W 24V 40A	•		85 - 277 V	80 - 370 V	24 V/ 40 A	22,5 - 29,5 V	•	140 x 130 x 150	1478150000
PRO MAX3 120W 24V 5A	•	3 x 320 - 575 V	450...500V	24 V/ 5 A	22,5 - 29,5 V	•	40 x 130 x 125	1478170000	
PRO MAX3 240W 24V 10A	•	3 x 320 - 575 V	450...500V	24V / 10A	22,5 - 29,5 V	•	60 x 130 x 125	1478180000	
PRO MAX3 480W 24V 20A	•	3 x 320 - 575 V	450...500V	24 V/ 20 A	22,5 - 29,5 V	•	90 x 130 x 150	1478190000	
PRO MAX3 960W 24V 40A	•	3 x 320 - 575 V	450...500V	24 V/ 40 A	22,5 - 29,5 V	•	140 x 130 x 150	1478200000	
PRO MAX 70W 5V 14A	•	85 - 277 V	80 - 370 V	5 V/ 14 A	4,5 - 7 V	•	32 x 130 x 125	1478210000	
PRO MAX 72W 12V 6A	•	85 - 277 V	80 - 370 V	12 V/ 6 A	10 - 15 V	•	32 x 130 x 125	1478220000	
PRO MAX 120W 12V 10A	•	85 - 277 V	80 - 370 V	12 V/ 10 A	10 - 15 V	•	40 x 130 x 125	1478230000	
PRO MAX 240W 48V 5A	•	85 - 277 V	80 - 370 V	48 V/ 5 A	30 - 56 V	•	60 x 130 x 125	1478240000	
PRO MAX 480W 48V 10A	•	85 - 277 V	80 - 370 V	48 V/ 10 A	30 - 56 V	•	90 x 130 x 150	1478250000	
PRO MAX 960W 48V 20A	•	85 - 277 V	80 - 370 V	48 V/ 20 A	30 - 56 V	•	140 x 130 x 150	1478270000	

PROtop "the innovative one"

Reliable power supply for highest demands

If reliable availability and energy efficiency are required even under adverse conditions or in hard-to-reach locations, then our PROtop family is the right choice.

The pre-destined solution. The powerful DCL technology gives the switched mode power supply units an outstanding Dynamic range - ideal for reliable pulse triggering of miniature and standard circuit breakers or as additional energy for powerful motor starts.

- Safe tripping of miniature circuit breakers due to peak current reserve of up to 600% for 15ms
- Efficiencies of up to 95.4% lead to low heat losses and extremely space saving housings
- New data interface makes the PROtop power supplies fit for digitization
- Start-up temperatures as low as -40 °C (for EX/C1D2 version)
- Output ORing MOSFET incorporated: Allows redundancy without diode module



Approvals



Type	Input			Output			Dimensions			Order Number
	1-Phase	2/3 -Phase	Input Voltage AC	Input Voltage DC	Output Nominal Voltage / Current (DC)	Adjustable Output	Parallel Running	Width X Height X Depth (mm)		
PRO TOP1 72W 24V 3A	•		85 - 277 V	80 - 410 V	24 V/ 3 A	22,5 - 29 V DC	•	35 x 120 x 125		2466850000
PRO TOP1 120W 24V 5A	•		85 - 277 V	80 - 410 V	24 V/ 5 A	22,5 - 29 V DC	•	35 x 130 x 125		2466870000
PRO TOP1 240W 24V 10A	•		85 - 277 V	80 - 410 V	24 V/ 10 A	22,5 - 29 V DC	•	39 x 130 x 125		2466880000
PRO TOP1 480W 24V 20A	•		85 - 277 V	80 - 410 V	24 V/ 20 A	22,5 - 29 V DC	•	68 x 130 x 125		2466890000
PRO TOP1 960W 24V 40A	•		85 - 277 V	80 - 410 V	24 V/ 40 A	22,5 - 29 V DC	•	124 x 130 x 125		2466900000
PRO TOP3 120W 24V 5A	•	3 x 320 - 575 V	450...500V		24 V/ 5 A	22,5 - 29 V DC	•	38 x 130 x 125		2467060000
PRO TOP3 240W 24V 10A	•	3 x 320 - 575 V	450...500V		24 V/ 10 A	22,5 - 29 V DC	•	49 x 130 x 125		2467080000
PRO TOP3 480W 24V 20A	•	3 x 320 - 575 V	450...500V		24 V/ 20 A	22,5 - 29 V DC	•	68 x 130 x 125		2467100000
PRO TOP3 960W 24V 40A	•	3 x 320 - 575 V	450...500V		24 V/ 40 A	22,5 - 29 V DC	•	90 x 130 x 175		2467120000
PRO TOP1 120W 12V 10A	•	85 - 277 V	80 - 410 V		12 V/ 10 A	11...15 V DC	•	35 x 130 x 125		2466910000
PRO TOP1 480W 48V 10A	•	85 - 277 V	80 - 410 V		48 V/ 10 A	45...56 V DC	•	68 x 130 x 125		2467030000
PRO TOP1 960W 48V 20A	•	85 - 277 V	80 - 410 V		48 V/ 20 A	45...56 V DC	•	124 x 130 x 125		2466920000
PRO TOP3 480W 48V 10A	•	3 x 320 - 575 V	450...500V		48 V/ 10 A	45...56 V DC	•	68 x 130 x 125		2467150000
PRO TOP3 960W 48V 20A	•	3 x 320 - 575 V	450...500V		48 V/ 20 A	45...56 V DC	•	90 x 130 x 175		2467170000
PRO TOP1 72W 24V 3A CO	•	85 - 277 V	80 - 410 V		24 V/ 3 A	22,5 - 29 V DC	•	35 x 120 x 125		2466970000
PRO TOP1 120W 24V 5A EX	•	85 - 277 V	80 - 410 V		24 V/ 5 A	22,5 - 29 V DC	•	35 x 130 x 125		2466980000
PRO TOP1 240W 24V 10A EX	•	85 - 277 V	80 - 410 V		24 V/ 10 A	22,5 - 29 V DC	•	39 x 130 x 125		2466990000
PRO TOP1 480W 24V 20A EX	•	85 - 277 V	80 - 410 V		24 V/ 20 A	22,5 - 29 V DC	•	68 x 130 x 125		2467000000
PRO TOP1 960W 24V 40A EX	•	85 - 277 V	80 - 410 V		24 V/ 40 A	22,5 - 29 V DC	•	124 x 130 x 125		2467010000

Extension: Redundancy, Capacitor, Communication Modules

Reliably protect sensitive system components

Use our diode and redundancy modules to connect two power supplies and compensate for a device failing. In addition, our capacity module offers power reserves, guaranteeing purposeful and quick triggering of a circuit breaker, for example.

Use our pluggable communication modules for full data transparency and remote control.

Products to increase capabilities of your Power Supply in redundant applications, high output current demand and in communication with controller:

- Capacity module:
Offers energy reserves, for example to trigger a miniature circuit breaker quickly and efficiently (e.g.: PROeco or PROmax)
- Redundancy modules with Diodes or MOSFET:
Allows reliable redundant operation for power supplies without MOSFET incorporated (e.g.: PROeco or PROmax)
- Communication modules:
Connected with PROtop allow access to parameters like Voltage, current, temperature, overvoltages in input, overload in output and operational mode.



PRO COM CAN OPEN



PRO COM IO-LINK



Approvals



PRO DM 20



PRO RM 20



CP M CAP

Dimensions			
Type	Reference	Width x Height x Depth (mm)	Part Number
CP M CAP	Capacity module	34 x 130 x 150	1222240000
PRO DM 10	Redundancy module 24 V DC 2 x 10 A	32 x 125 x 125	2486070000
PRO DM 20	Redundancy module 24 V DC 2 x 20 A	32 x 125 x 125	2486080000
PRO RM 10	Redundancy module 24 V DC 2 x 10 A / active load sharing	30 x 130 x 125	2486090000
PRO RM 20	Redundancy module 24 V DC 2 x 20 A / active load sharing	38 x 130 x 125	2486100000
PRO RM 40	Redundancy module 24 V DC 2 x 40 A / active load sharing	52 x 130 x 125	2486110000
PRO COM IO-LINK	Communication module IO-LINK	35 x 74 x 34	2587360000
PRO COM CAN OPEN	Communication module CAN-OPEN	35 x 74 x 34	2467320000

DC/DC Converters

The compact DC/DC converter provides systems with optimal failure protection for maximum availability.



- 12 VDC and 24 VDC input versions
- Space saving designs starting at 43 mm width
- Approvals include UL508 and CSA Class 1, Div. 2 approvals
- Robust and durable metal housings
- Wide operating temperature range: -25°C (-13°F) to +70°C (158°F)

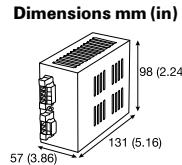


Options with Power boost up to 600% for 16ms and 24V output:

Description	Input Voltage Range	Output Voltage Range	Output Current	Power	Order Number
PRO DCDC 120W 24V 5A	14 - 32 VDC	24 VDC +/- 1%	5A	120W	2001800000
PRO DCDC 240W 24V 10A	14 - 32 VDC	24 VDC +/- 1%	10A	240W	2001810000
PRO DCDC 480W 24V 20A	14 - 32 VDC	24 VDC +/- 1%	20A	480W	2001820000

Approvals

1 | UL508, CSA Class 1 Div 2 Zone 2



DC-DC Converter

Options with other voltages

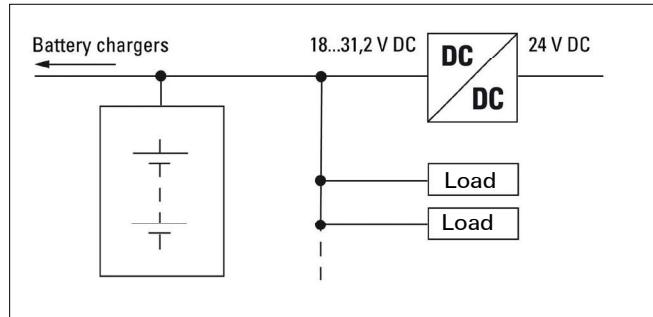
Description	Input Voltage Range	Output Voltage Range	Output Current	Power	Order Number
CP-DCDC 12VDC IN/24VDC, 2A OUT	10.2 - 16 VDC	22 - 24 VDC	2 A	50W	9919371224 ¹
CP-DCDC 12VDC IN/15VDC, 3A OUT	10.2 - 16 VDC	15 VDC	3 A	50W	9919371215 ¹
CP-DCDC 12VDC IN/12VDC, 3A OUT	10.2 - 16 VDC	12 VDC	3 A	50W	9919371212 ¹
CP-DCDC 12VDC IN/ 5VDC, 8A OUT	10.2 - 16 VDC	5 VDC	8 A	50W	9919371205 ¹
CP-DCDC 24VDC IN/24VDC, 2A OUT	18 - 30 VDC	22 - 24 VDC	2 A	50W	9919372424 ¹
CP-DCDC 24VDC IN/15VDC, 3A OUT	18 - 30 VDC	15 VDC	3 A	50W	9919372415 ¹
CP-DCDC 24VDC IN/12VDC, 3A OUT	18 - 30 VDC	12 VDC	3 A	50W	9919372412 ¹
CP-DCDC 24VDC IN/ 5VDC, 8A OUT	18 - 30 VDC	5 VDC	8 A	50W	9919372405 ¹

Applications

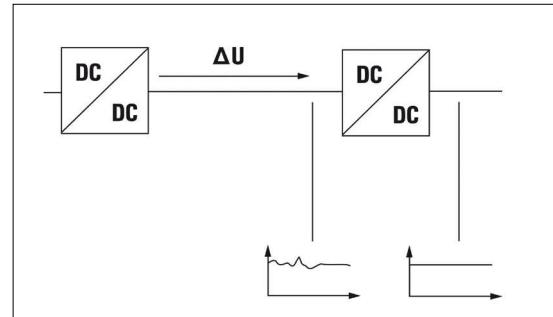
Stable 24 VDC supply

The DC/DC converter compensates for voltage fluctuations, which may result from unregulated power supplies or voltage drops due to long distances or noise.

Floating Earth Systems



Class III DC/DC converters are well suited for use in floating-earth systems, such as applications that use emergency-power batteries in parallel operations.



Uninterruptible Power Supplies (UPS) Buffer and Backup Battery Unit (BBU)

Secure Energy in Automation

Extend system uptime by providing DC power in the event of an AC power failure. These BBU's and UPS's provide the best security and protection in the event of an AC power interruption including: charging, monitoring, status indication, alarming, all with back-up battery power.

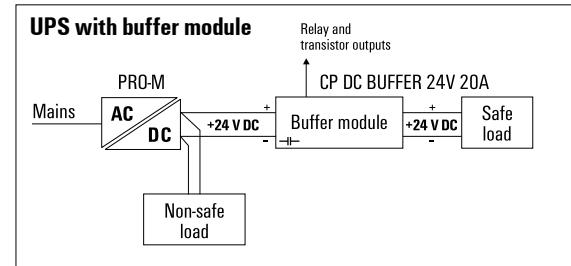
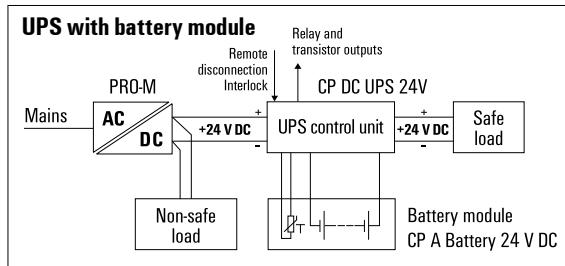
UPS with battery charging temperature dependent

- Long battery life – temperature compensated charging for maximum battery life
- Protection from short, transient and/or long power failures
- Level indicator for status and error analysis
- Wide power options – modular design allow for load distribution
- Buffer modules: UPS based on incorporated capacitor.
- Manage short time interruptions without battery



Description	Input		Output			Order Number
	DC (V)	DC (V)	Adjustable Range (V)	Rated Current (A)	Power Rating (W)	
CP DC BUFFER 24 V 20 A*	22.5...30	24	24	20	240	1251220000
CP DC UPS 24 V 20A/10 A	20...30	24	+/- 0.3V	20/10	480/240	1370050010
CP DC UPS 24 V 40 A	20...30	24	+/- 0.3V	40.00	960.00	1370040010
CP A BATTERY 24 V DC 1,3 Ah		24		5 A/6 min	1.3 Ah	1406930000
CP A BATTERY 24 V DC 3,4 Ah		24		10 A/11.3 min	3.4 Ah	1251070000
CP A BATTERY 24 V DC 7,2 Ah		24		20 A/11.5 min	7.2 Ah	1251080000
CP A BATTERY 24 V DC 12 Ah		24		20 A/22.7 min	12 Ah	1251090000
CP A BATTERY 24 V DC 17 Ah		24		20 A/34.2 min	17 Ah	1251110000

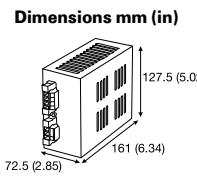
* CP DC Buffer rated at 250 ms at 20 A, 6 seconds at 1 A



Battery Back Up Units for 12VDC or Class1 Div2 Applications

- Increase system uptime by providing DC power in the event of an AC power failure
- Extensive monitoring is provided via LEDs and output connections
- DC backup system that actively manages DC battery banks

Description	Input	Order Number
BBU 12 VDC	12 VDC	9916280012
BBU 24 VDC	24 VDC	9916280024



24 VDC Battery Back-Up Unit

