

DIN Rail Power Supplies

IDEC PS5R-S Slim Line Series



Reliable power
for your automation

Beijer
ELECTRONICS

Switching power supplies from IDEC

- Ease of use, convenience and reliability

A reliable power supply is an important part of an automation system. IDEC PSR5-S Series power supplies are designed for industrial applications and for fulfilling all requirements to insure a reliable and stable power supply for PLCs, HMI panels, sensors, actuators and other electronics used in the industry. The design is in all details carefully made to have an easy and optimum mounting in standard electrical panels, both saving time and insuring a good final solution.

- 85-264 V AC and 100-350V DC Input
- 5, 12 or 24 V DC Output
- 10 - 240 Watt
- Only 22.5 mm on a DIN rail (15W)

Designed with the user in mind

DC Low Indicator

(15W, 120W & 240W only)

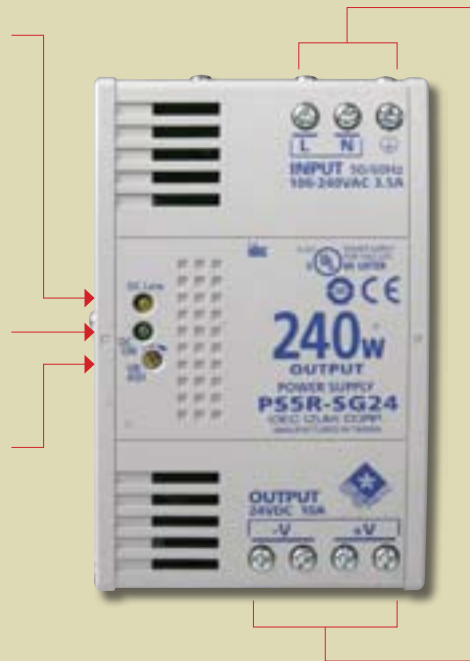
The indicator turns on when the output voltage drops below 80 % of the rated value. This assists in troubleshooting power supply problems.

DC ON Indicator

The indicator turns on when the unit is powered up. This is a convenient way to know when the power supply is receiving power.

Output Voltage Adjustment

The output voltage can be easily adjusted within +/- 10 % of the rated voltage.



Universal Inputs

The power inputs have a range of 85-264V AC to 100-350V DC, and automatically adjust to the correct input power. This makes IDEC power supplies suitable for use anywhere in the world. Power factor correction has also been included to minimize harmonic distortion, resulting in a longer operating life and increased reliability. The power supplies come with spring-up, fingersafe screw terminals.

Output Channel

With very low output ripples of less than 1 % peak to peak, the power supplies are some of the best in the industry. The output comes with overload protection that prevents damage of the power supply and the spring-up, fingersafe screw terminals add a level of safety and ease for the user. The 240W power supply also has the convenience of two output terminals.



Top View



Fingersafe, Spring-up Screw Terminals

Don't worry about losing screws or getting an inadvertent shock from a terminal. The terminals are captive spring-up screws, which makes using them as easy as pushing a screw down and tightening it. They are shock- and vibration resistant, and work with ring lugs, fork connectors or stripped wire connections. The terminals are rated IP20 (when tightened) meaning they are recessed to keep fingers and objects from touching the input contacts.

Ventilation Grill

Provides cooling for the power supply and prevents small objects from falling into the power supply circuitry.

DIN Rail Mount

IDEC power supplies can quickly snap onto a DIN rail with built-in DIN rail clips, which require no additional brackets, or directly mountable on a panel which means installation is a snap. The PS5R Standard and Slim Series power supplies are spring-up terminal types that allow easy installation of ring lugs.

Overload Protection

All IDEC power supplies are designed with overcurrent and overvoltage protection to eliminate power supply or equipment damage. With overcurrent protection, the output voltage automatically drops due to excessive current. When the load returns to a normal level, normal output voltage is restored. With overvoltage protection, the power shuts down when an overvoltage occurs. Only a manual reset can turn the power back on.

Long Life Expectancy

IDEC power supplies are very reliable, with a life expectancy of 70,000 hrs (minimum) or longer, depending on usage.

- Lightweight and compact in size
- Wide power range: 10W-240W
- Universal input: 10W to 90W: 85-264VAC/100-370V DC, 120W and 240W: 85-264VAC/100-350V DC
- Power Factor Correction for 60W to 240W (EN61000-3-2)
- Meets SEMI F47 Sag Immunity (120W & 240W only)
- Approved for Class 1, Div. 2 Hazardous Locations
- Overcurrent protection, auto-reset
- Overvoltage protection, shut down
- Spring-up Screw Terminal type, IP20
- DIN Rail or panel surface mount
- Indicators for: Overload and Low voltage



Wattage	10W	15W	30W	60W	90W	120W	240W		
Type No.	PS5R-SB05	PS5R-SB12	PS5R-SB24	PS5R-SC12	PS5R-SC24	PS5R-SD24	PS5R-SE24	PS5R-SF24	PS5R-SG24
Rated Voltage	5V DC	12V DC	24V DC	12V DC	24V DC	24V DC	24V DC	24V DC	24V DC
Rated Current	2A	1.2A	0.65A	2.5A	1.3A	2.5A	3.75A	5A	10A
Dimensions (H x W x D)	90.0 x 22.5 x 95.0 mm			95.0 x 36.0 x 108.0 mm			115.0 x 46.0 x 121.0 mm	115.0 x 50.0 x 129.0 mm	125.0 x 80.0 x 149.5 mm

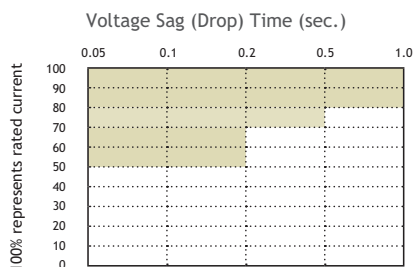


Approvals

CE Marked, TÜV, c-UL, UL508, UL1310 (PS5R-SB, -SC, -SD), UL1604, EN 50178:1997, LVD: EN60950:2000, EMC: Directive EN61204-3:2000 (EMI: Class B, EMS: Industrial)

SEMI F47 approved

SEMI F47 defines requirements for semiconductor processing and automated test equipment. The equipment must tolerate voltage sags on the AC power line without interrupting operations.



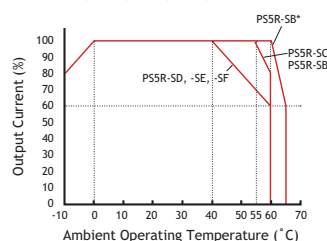
Voltage Sliding Scale

The graph shows how the equipment must tolerate sags to 50% for 200ms, sags to 70% for up to 0.5 seconds, and sags to 80% for up to 1 second.

Derating

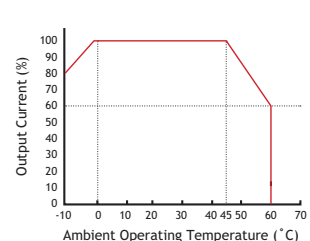
All IDEC Slim Line power supplies are listed to UL508, which allows operation at 100% capacity inside a panel. This eliminates the need to use oversize power supplies.

PS5R-SB, -SC, -SD, -SE, -SF Models



Output Derating PS5R-SB, -SC, -SD, -SE, -SF

PS5R-SG Model



Output Derating PS5R-SG

The charts above show that the PS5R-S 10W and 15W (at 60° C), 30W/60W/90W (at 55° C), 120W (at 40° C), and 240W (at 45° C) meet the ambient temperature required by UL508 and EN60950 standards to operate at an output current of 100%.

NOTE! Insure convection. Do not block the opening of the switching power supply. Keep at least 20 mm clearance around the switching power supply.

Technical Specifications											
Part Numbers	5VDC output		PS5R-SB05	-	-	-	-	-	-	-	
	12VDC output		-	PS5R-SB12	-	PS5R-SC12	-	-	-	-	
	24VDC output		-	-	PS5R-SB24	PS5R-SC24	PS5R-SD24	PS5R-SE24	PS5R-SF24	PS5R-SC24	
Output Capacity			10W	15W	30W	60W	90W	120W	240W		
Input	Input Voltage (single phase, 2-wire)		100 to 240V AC (Voltage range: 85 to 264V AC/100 to 370V DC compatible) (Duty ratio ≤ 80 % at 100-105V DC)			85 to 264 VAC, 100 to 370 VDC			85 to 264V AC, 100 to 350V DC		
	Input Current (typical)	100VAC	0.45A maximum			0.9A	1.7A	2.3A	1.8A	3.5A	
		200VAC	0.3A maximum			0.6A	1.0A	1.4A	1.0A	1.7A	
	Internal Fuse Rating		-			3.15A	3.15A	4A	4A	6.3A	
	Inrush Current (cold start)		50A maximum (Ta = 25 °C, 200V AC cold start)								
	Leakage Current (at no load)		0.75mA maximum						1mA maximum		
Typical Efficiency		5 VDC: 69 % 12VDC: 75 % 24VDC: 79 %			12VDC: 78 % 24VDC: 80 %	83 %	82 %	84 %			
Output	Output Current Ratings	5 VDC	2.0A			-	-	-	-	-	
		12VDC	1.2A			2.5A	-	-	-	-	
		24VDC	0.65A			1.3A	2.5A	3.75A	5A	10A	
	Voltage Adjustment		±10 % (Voltage adjustment on front)								
	Output Holding Time		20ms minimum (at rated input and output)								
	Starting Time		200 ms maximum (at the rated I/O)			-	-	-	650ms maximum	500ms maximum	
	Rise Time		100ms maximum (at rated input and output)						200ms maximum		
	Line Regulation		0.4 % maximum								
	Load Regulation		1.5 % maximum							0.8 % max	
	Temperature Regulation		0.05 %/°C maximum (0 to +65°C)			0.05 % °C maximum					
	Ripple Voltage		2 % peak to peak maximum (including noise)						1 % peak to peak maximum (including noise)		
	Overcurrent Protection		105 % or more, auto reset					103 to 110 % auto reset	105 to 130 %, auto reset		
Overvoltage Protection		Output off at 120 % (minimum), manual reset									
Parallel Operation		No									
Dielectric Strength		Input /output terminals: 3,000V AC, 1 minute. Input/ground terminals: 2,000V AC, 1 minute. Output/ground terminals: 500V AC, 1 minute									
Insulation Resistance		Input/output terminals or Input/ground terminals: 100MΩ minimum (500V DC megger)			Input & Output Terminals: 100 MΩ Min						
Operating Temperature		-10 to +65°C (no freezing) (See the Output Derating Curve)			-10 to 60°C (See the Output Derating Curve)						
Storage Temperature		-25 to +75°C (no freezing)									
Operating Humidity		20 to 90 % relative humidity (no condensation, no freezing)									
Vibration Resistance		Frequency 10 to 55 Hz, amplitude 0.375 mm, 2 hours each in 3 axes									
Shock Resistance		300 m/s ² (30G), 3 shocks each in 6 axes									
Approvals		EMC: EN61204-3 (EMI: Class B, EMS: Industrial) LVD: EN60950-1, EN50178:1997, UL 1604, UL 508, UL1310 (PS5R -SB, -SC, -SD), c-UL (CSA 22.2 No. 14) -									
Harmonic Directive (EN61000-3-2)		N/A					EN61000-3-2 A14 class A SEMI F47				
Weight (approx.)		160g	250g	285g	440g	630g	1000g				
Terminal Screw		M3.5 slotted-Phillips head screw (screw terminal type)									
IP protection		IP20 fingersafe									
Dimensions H x W x D (mm)		90 x 22.5 x 95 mm (excluding projections)			95 x 36 x 108			115 x 46 x 121	115 x 50 x 129	125 x 80 x 149.5	