

Low Profile Switching Power Supply Type SPM5BC DIN Rail Mounting



- Universal input 90~264 VAC
- Short circuit protection
- Internal input filter
- Charger for lead-acid batteries
- Battery polarity protection
- Installation on DIN Rail

Product Description

The SPM5BC battery chargers are a range of power supply units with charge lead-acid batteries optimising their performance and duration. Based on switch-mode technology, they produce an output voltage stabilized at a preset value, even when not being charged. Made in plastic low profile housing they feature Universal input 90~264VAC, integrated short circuit protection and battery polarity protection.

Ordering Key

SPM 5 BC 12 30 X

Series _____
 Number of DIN module _____
 Feature (BC=Battery Charger) _____
 Output voltage _____
 Output power _____
 Optional features _____

Approvals



Output Performances

MODEL NO.	INPUT VOLTAGE	OUTPUT POWER	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
Single Output Models						
SPM5BC 1230	90~264 VAC	34 WATTS	+13.6 VDC	2.5 A	84%	86%
SPM5BC 2430	90~264 VAC	34 WATTS	+ 27.2 VDC	1.25 A	86%	88%
SPM5BC 1260	90~264 VAC	61 WATTS	+13.6 VDC	4.5 A	84%	86%
SPM5BC 2460	90~264 VAC	68 WATTS	+ 27.2 VDC	2.5 A	86%	88%

Output Data All specifications are at nominal values, full load, 25°C unless otherwise noticed

Line regulation	± 1%	Voltage fall time (I_{0nom} , V_i nom)	150ms
Load regulation	±1%	Voltage rise time	
Minimum load	0%	V_i nom, I_o nom (full resistive load)	150ms
Turn on time (full resistive load)		Reverse voltage	
V_i nom, I_o nom	1800ms	12V Model	18VDC
Transient recovery time	2ms	24V Model	35VDC
Ripple and noise	100mVpp	DC ON indicator threshold at start up (Green LED)	
Output voltage accuracy	±1%	(V_i nom, I_o nom)	12V Model: 7-9VDC 24V Model: 13-18VDC
Temperature coefficient	±0.03°C		
Hold up time	V_i = 115VAC: 10ms V_i = 230VAC: 30ms		

Input Data All specifications are at nominal values, full load, 25°C unless otherwise noticed

Rated input voltage I_{nom}	100 - 240VAC	Inrush current	$V_i = 115VAC$ $V_i = 230VAC$	30A 60A
Voltage range	AC IN DC IN	90 - 264VAC 120 - 375VDC	Power dissipation ($V_i : 230VAC, I_o nom$)	12V Model 24V Model
Rated input current $V_i : 115/230VAC I_o nom$	30W Model 60W Model	680mA / 430mA 1230mA/780mA	Frequency range	5.5W 10.9W
Power dissipation $V_i : 230VAC, I_o nom$	30W Model 60W Model	5.5W 10.9W	Leakage current Input-Output	47- 63Hz <0.25mA

Controls and Protections All specifications are at nominal values, full load, 25°C unless otherwise noticed

Rated overload protection	105-110% @ $V_i nom$	Internal surge voltage protection IEC 61000-4-5	Varistor
Input fuse	T2A/250VAC internal ¹⁾	Power Rdy	Rdy ON: Threshold at start up 12V Model 24V Model
Output short circuit	Hiccup mode	Rdy OFF: Threshold at start up 12V Model 24V Model	10-11 VDC 17-19 VDC 7-8 VDC 13-15 VDC
Over voltage protection	VDC	Battery polarity protection	Yes
	Min. 12V Model 24V Model	Max. 18 33	

¹⁾ Fuse not replaceable by user

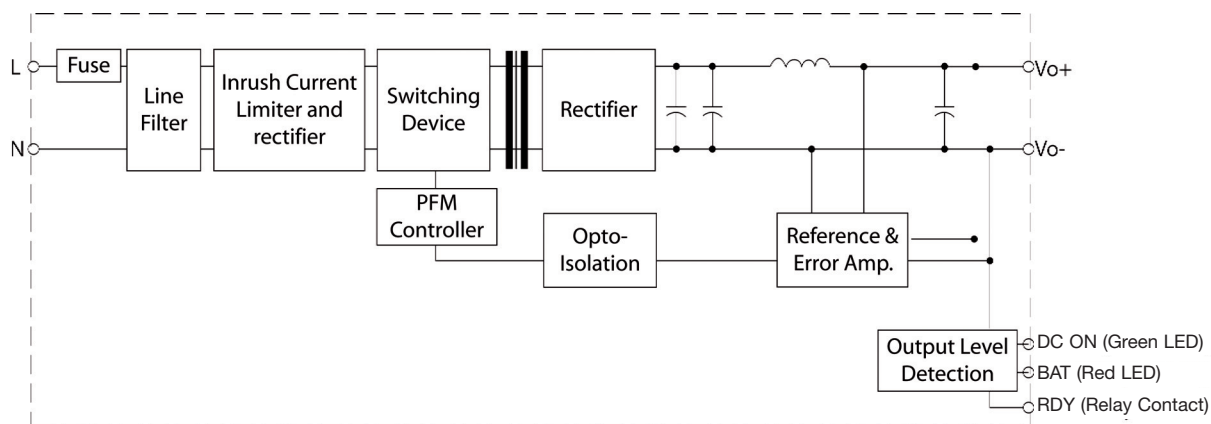
General Data All specifications are at nominal values, full load, 25°C unless otherwise noticed

Ambient temperature	-40°C to + 51°C	MTBF (Bellcore issue 6 @ 40°C, GB)	30W 12V Model 24V Model 60W 12V Model 24V Model	668000 Hours 688000 Hours 568000 Hours 588000 Hours
Derating (+51°C to +61°C)	2.5%/°C (see curve)	Case material	Plastic	
Relative humidity	20 ~ 95%RH	Altitude	4850m	
Storage temperature	-40°C to + 85°C	Dimensions LxWxD mm (inch)	91(3.58) x 90(3.54) x 57(2.24)	
Cooling	Free air convection	Weight	270g	
Insulation voltage Input-Output	3.000VAC/4242VDC min	Packing	330g	
Insulation resistance I/O	100MΩ min (@ 500VDC)			
Switching Frequency	50 Khz min 100 Khz max			

Norms and Standards

Vibration resistance	meet IEC 60068-2-6 (10-500Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)	CE	EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 55024, EN 61000-4-2 level 4, EN 61000-4-3 level 3 EN 61000-4-4 level 4 EN 61000-4-5 L-N level 3 EN 61000-4-6 level 3 EN 61000-4-8 level 4 EN 61000-4-11, ENV 50204 Level 2 EN 61204-3
Shock resistance	meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 faces, 3 times for each face)		
LVD	EN 60950-1		

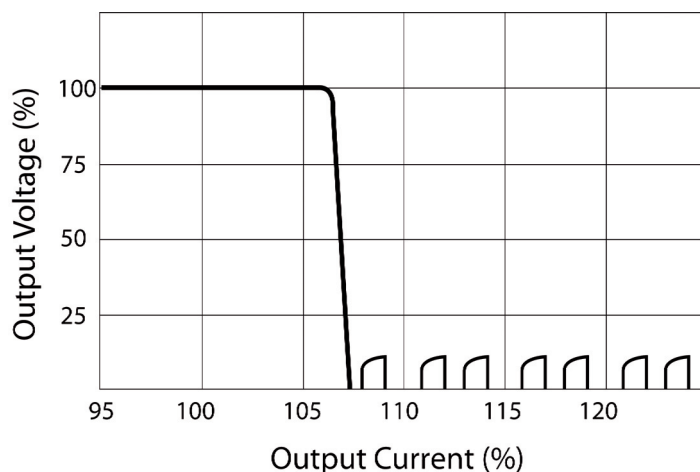
Block Diagrams



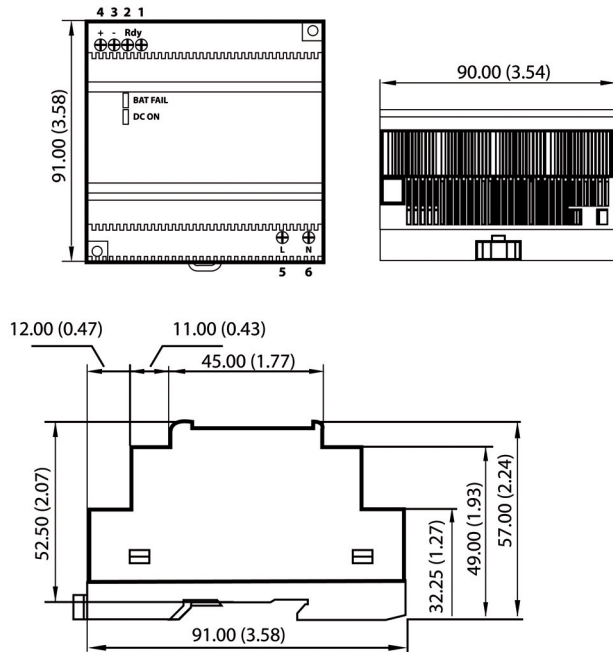
Pin Assignment and Front Controls

Pin No.	Designation	Description
1, 2	RDY	A normal open relay contact for DC ON level control
3	-	Negative output terminal
4	+	Positive output terminal
5	L	Input terminals (phase conductor, no polarity at DC input)
6	N	Input terminals (neutral conductor, no polarity at DC input)
LED	DC ON	Operation indicator LED
LED	BAT FAIL	Battery reverse indicator LED

Typ. Current Limited Curve



Mechanical Drawings mm (inches)



Installation

Ventilation and cooling	Ventilation/Cooling Normal convection. All sides 25mm free space For cooling recommended.
Connector size range	AWG24-12 (0.2~2.5mm ²) flexible/solid cable. Connector can withstand torque at maximum 0.67Nm (6 pound-inches). 7mm stripping at cable end recommends. Use copper conductors only, 60/70°.
General tolerance	0.00 [0.00] - 30.00 [1.18] 30.00[1.18] - 120.00[4.72]
Installation	Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS/35/15); unit sits safely and firmly on the rail; no tools required even to remove.