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

CE

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%
Load regulation		±1%
Minimum load		0%
Turn on time (full resistive load) **Vi nom, Io nom**		1800ms
Transient recovery time		2ms
Ripple and noise		100mVpp
Output voltage accuracy		±1%
Temperature coefficient		±0.03°C
Hold up time	**Vi= 115VAC**	10ms
	Vi= 230VAC	30ms

Voltage fall time (I_0**nom, Vi nom**)		150ms
Voltage rise time **Vi nom, Io nom** (full resistive load)		150ms
Reverse voltage	**12V Model**	18VDC
	24V Model	35VDC
DC ON indicator threshold at start up (Green LED) (Vi nom, Io nom)	**12V Model**	7-9VDC
	24V Model	13-18VDC

Input Data

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

Rated input voltage Inom	100 - 240VAC
Voltage range	
AC IN	90 - 264VAC
DC IN	120 - 375VDC
Rated input current Vi: 115/230VAC Io nom	
30W Model	680mA / 430mA
60W Model	1230mA/780mA
Power dissipation Vi: 230VAC, Io nom	
30W Model	5.5W
60W Model	10.9W

Inrush current	
Vi= 115VAC	30A
Vi= 230VAC	60A
Power dissipation	
(Vi : 230VAC, Io nom) **12V Model**	5.5W
24V Model	10.9W
Frequency range	47- 63Hz
Leakage current	
Input-Output	<0.25mA

Controls and Protections

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

Rated overload protection	105-110% @ Vi nom
Input fuse	T2A/250VAC internal[1)]
Output short circuit	Hiccup mode
Over voltage protection	**VDC**
	Min. / **Max.**
12V Model	15 / 18
24V Model	30 / 33

[1)] Fuse not replaceable by user

Internal surge voltage protection IEC 61000-4-5	Varistor
Power Rdy	
Rdy ON: Threshold at start up **12V Model**	10-11 VDC
24V Model	17-19 VDC
Rdy OFF: Threshold at start up **12V Model**	7-8 VDC
24V Model	13-15 VDC
Battery polarity protection	Yes

General Data

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

Ambient temperature	-40°C to + 51°C
Derating (+51°C to +61°C)	2.5%/°C (see curve)
Relative humidity	20 ~ 95%RH
Storage temperature	-40°C to + 85°C
Cooling	Free air convection
Insulation voltage Input-Output	3.000VAC/4242VDC min
Insulation resistance I/O	100MΩ min (@ 500VDC)
Switching Frequency	50 Khz min 100 Khz max

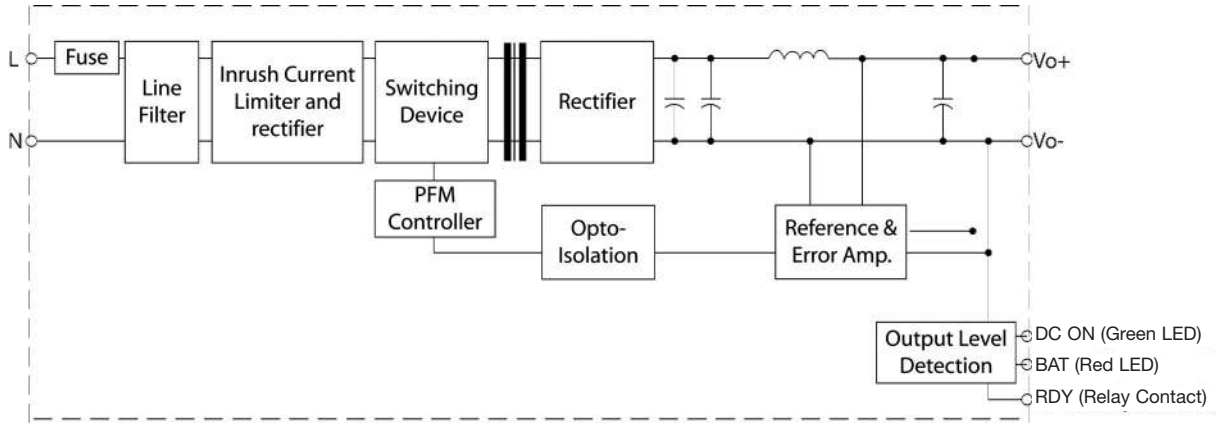
MTBF (Bellcore issue 6 @ 40°C, GB)	
30W 12V Model	668000 Hours
24V Model	688000 Hours
60W 12V Model	568000 Hours
24V Model	588000 Hours
Case material	Plastic
Altitude	4850m
Dimensions LxWxD mm (inch)	91(3.58) x 90(3.54) x 57(2.24)
Weight	270g
Packing	330g

Norms and Standards

Vibration resistance	meet IEC 60068-2-6 (10-500Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)
Shock resistance	meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 faces, 3 times for each face)
LVD	EN 60950-1

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

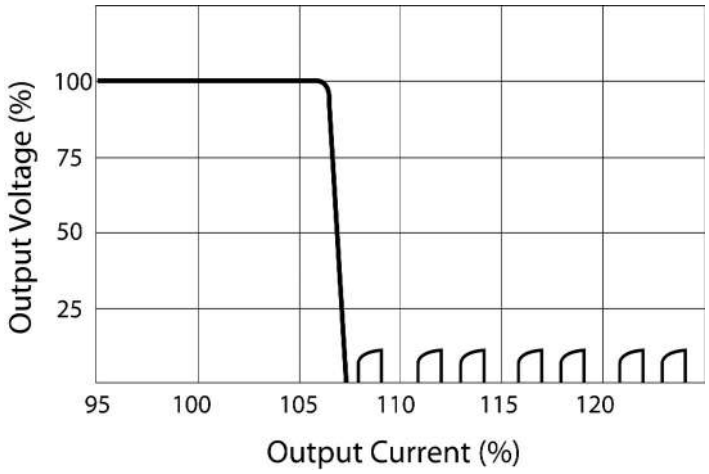
Block Diagrams



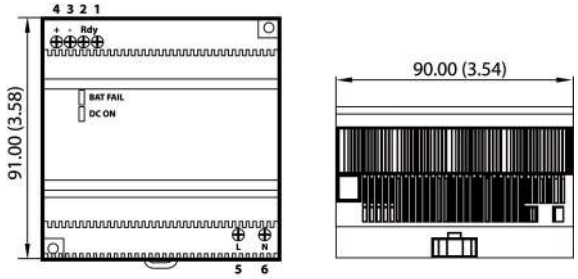
Pin Assignement and Front Controls

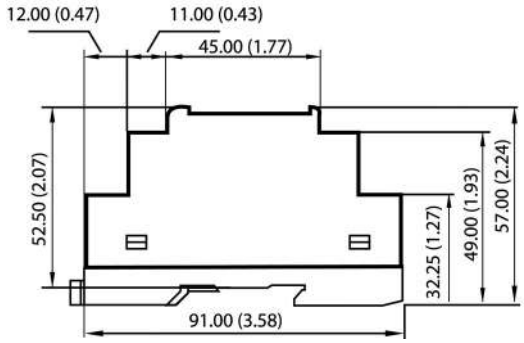
Pin No.	Designation	Description
1, 2	RDY	A normal open relay contact for DC ON level control
3	-	Negative output terminal
4	+	Positive output terminal
5	L	Input terminals (phase conductor, no polarity at DC input)
6	N	Input terminals (neutral conductor, no polarity at DC input)
LED	DC ON	Operation indicator 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 recommeded.
Connector size range	AWG24-12 (0.2~2.5mm²) 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 tollereance	
0.00 [0.00] - 30.00 [1.18]	±0.30[0.01]
30.00[1.18] - 120.00[4.72]	±0.50[0.02]
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.