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

Specifications are subject to change without notice. Pictures are just an example. For special features and/or customization, please ask to our sales network. 29/02/2012

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

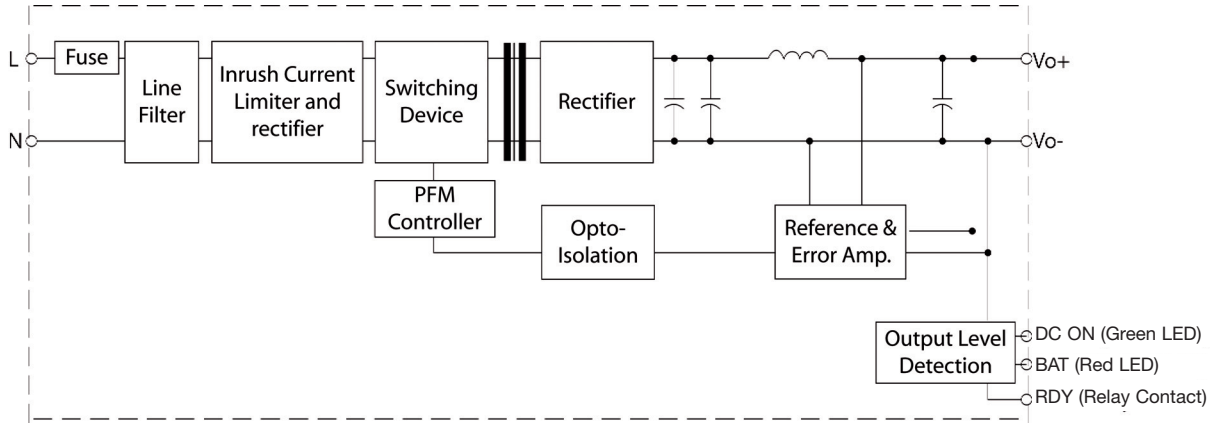
MTBF (Bellcore issue 6 @ 40°C, GB)	
30W 12V Model	668000 Hours
24V Model	688000 Hours
60W 12V Model	568000 Hours
24V Model	588000 Hours
Case material	Plastic
Altitude	4850m
Dimensions LxWxD mm (inch)	91(3.58) x 90(3.54) x 57(2.24)
Weight	270g
Packing	330g

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

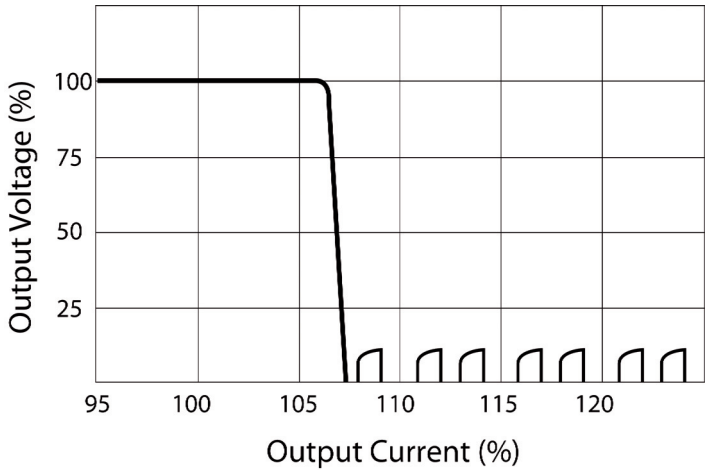
Block Diagrams



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



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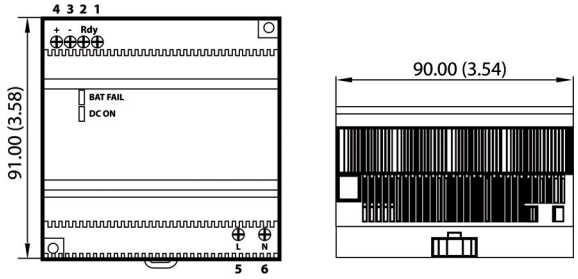
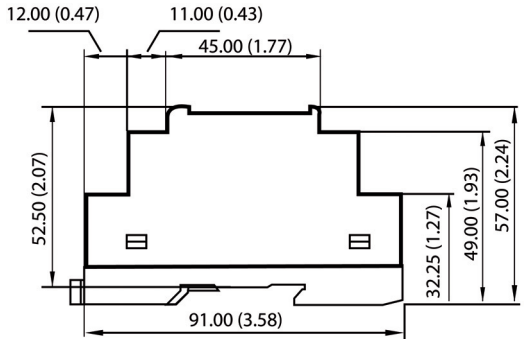
Mechanical Drawings mm (inches)





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.

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