



## UNIVERSAL INPUT

### FEATURES

- ◆ Low safety ground leakage current
- ◆ Meet EN 55011 and FCC Class B
- ◆ Small size, light weight
- ◆ Wide input range 85 to 264 VAC
- ◆ Input surge current protection
- ◆ Overvoltage & overcurrent protection
- ◆ Open PCB construction, L-bracket or box optional
- ◆ 100% burn-in
- ◆ Recognized or certified by UL/CSA/TÜV & CE marked to LVD

### DESCRIPTION

The SM65P series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 50 to 65 watts of continuous output power. They are ideally suited for use in medical equipment not for patient contact and operate at 85 to 264 VAC input voltage without the need of voltage selection. All models meet the safety requirements of UL, CSA and IEC.

### INPUT SPECIFICATIONS

Input Voltage:	85 to 264 VAC
Input Frequency:	47 to 63Hz
Input Current:	1.60A (rms) for 115 VAC 1.00A (rms) for 230 VAC
Leakage Current:	90µA max. at 110 VAC, 60Hz 150µA max. at 230 VAC, 50Hz

# SM65P SERIES 65 WATT MEDICAL SWITCHING POWER SUPPLIES

### GENERAL SPECIFICATIONS

Switching Frequency:	32kHz $\pm$ 5kHz
Efficiency:	70% min. on single output models with $V_o \geq 12V$ , 65% minimum on all others
Hold-up Time:	10mS min. at 110 VAC
Line Regulation:	$\pm$ 0.5% max. at full load
Inrush Current:	15 amps at 115 VAC 30 amps at 230 VAC
(at 25°C cold start)	
Withstand Voltage:	4000 VAC input to output 1500 VAC input to ground 500 VAC output to ground
MTBF (25°C ambient):	400,000 hours min. full load
EMI Requirements:	In compliance with CISPR 22 (EN 55011) Class B and FCC Class B
Safety Requirements:	Meets or exceeds: <ul style="list-style-type: none"> <li>(a) UL 2601-1</li> <li>(b) CSA C22.2 No. 601.1</li> <li>(c) EN 60601-1/IEC 601-1</li> </ul>

### OUTPUT SPECIFICATIONS

Output Voltage/Current:	See Rating Chart
Total Output Power:	65 watts maximum
Ripple and Noise:	1% peak to peak max.
Overvoltage Protection:	Provided on output #1 only; set at 112-132% of its nominal output voltage
Overcurrent Protection:	All outputs protected to short circuit conditions
Temp. Coefficient:	All outputs, $\pm$ 0.04%/°C max.
Transient Response:	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500µs after a 25% step load change

### ENVIRONMENTAL SPECIFICATIONS

Operating Temperature:	0°C to +70°C
Storage Temperature:	-40°C to +85°C
Relative Humidity:	5% to 95% non-condensing
Derating:	Derate from 100% at +50°C linearly to 50% at +70°C

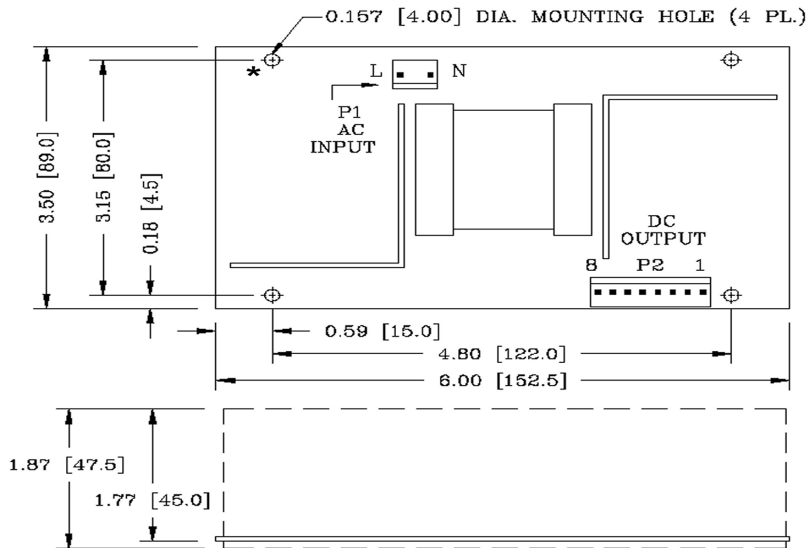


## OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output #1				Output #2				Output #3				Output #4				Max. Power
	Vnom	Imin	Imax	Tol.	Vnom	Imin	Imax	Tol.	Vnom	Imin	Imax	Tol.	Vnom	Imin	Imax	Tol.	
SM65P10	5V	0A	10A	2%	(N/A)				(N/A)				(N/A)				50W
SM65P12	12V	0A	5.5A	1%	(N/A)				(N/A)				(N/A)				65W
SM65P13	15V	0A	4.5A	1%	(N/A)				(N/A)				(N/A)				65W
SM65P14	24V	0A	3.0A	1%	(N/A)				(N/A)				(N/A)				65W
SM65P16	30V	0A	2.5A	1%	(N/A)				(N/A)				(N/A)				65W
SM65P17	36V	0A	2.2A	1%	(N/A)				(N/A)				(N/A)				65W
SM65P23	+5V	1A	6.0A	3%	+12V	0.5A	3.0A	5%	(N/A)				(N/A)				65W
SM65P24	+5V	1A	6.0A	3%	+15V	0.4A	3.0A	5%	(N/A)				(N/A)				65W
SM65P25	+5V	1A	6.0A	3%	+24V	0.3A	2.0A	5%	(N/A)				(N/A)				65W
SM65P30	+5V	1A	6.0A	3%	+12V	0.5A	3.0A	5%	-5V	0.1A	0.5A	10%	(N/A)				65W
SM65P31	+5V	1A	6.0A	3%	+12V	0.5A	3.0A	5%	-12V	0.1A	0.5A	10%	(N/A)				65W
SM65P32	+5V	1A	6.0A	3%	+15V	0.4A	3.0A	5%	-15V	0.1A	0.5A	10%	(N/A)				65W
SM65P33	+5V	1A	6.0A	3%	+15V	0.4A	3.0A	5%	-12V	0.1A	0.5A	10%	(N/A)				65W
SM65P39	+5V	1A	6.0A	3%	+24V	0.3A	2.0A	5%	-12V	0.1A	0.5A	10%	(N/A)				65W
SM65P40	+5V	1A	6.0A	3%	+12V	0.5A	3.0A	5%	-12V	0.1A	0.5A	10%	-5V	0.1A	0.5A	10%	65W

Notes: (1) All multi-output units may be operated at no load without damage; no load output voltage tolerance increases to 10%.  
 (2) Safety agency approvals are for the above listed models in PCB format. To order a model with a metallic L-bracket or box, add suffix "B" for L-bracket format or "C" for enclosed format to the model number e.g. SM65P25C.

## MECHANICAL SPECIFICATIONS



### Notes:

1. Dimensions shown in inch (mm)
2. Tolerance 0.02 (0.5) maximum
3. Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal
4. Output connector mates with Molex housing 09-50-3081 and Molex 2878 series crimp terminal
5. Weight: 400 grams (PCB format)
6. The "\*" marked mounting hole is for system grounding through a metallic stand-off to the system chassis.

## PIN CHART

PIN		1	2	3	4	5	6	7	8
MODEL									
SM65P10	SM65P12								
SM65P13	SM65P14	Output #1	Output #1	Output #1	Output #1	Return	Return	Return	Return
SM65P16	SM65P17								
SM65P23	SM65P24	Output #1	Output #1	Common Return	Common Return	Output #2	Output #2	N.C.	N.C.
SM65P25									
SM65P30	SM65P31	Output #1	Output #1	Common Return	Common Return	Output #2	Output #2	Output #3	N.C.
SM65P32	SM65P33								
SM65P39									
SM65P40		Output #1	Output #1	Common Return	Common Return	Output #2	Output #2	Output #3	Output #4

Note: All data are subject to change without notice