

### UNIVERSAL INPUT

#### FEATURES

- ◆ Low safety ground leakage current
- ◆ 3.00" x 5.00" x 1.18" compact size
- ◆ 1.2" in height for low profile version
- ◆ 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 SM40P series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 40 watts of continuous output power. They operate at 85 to 264 VAC input voltage without the need of voltage selection. They are ideally suited for use in medical equipment, safety systems and monitoring equipment, not for patient contact. 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:   | 1.20A (rms) for 115 VAC<br>0.70A (rms) for 230 VAC        |
| Leakage Current: | 90µA max. at 110 VAC, 60Hz<br>150µA max. at 230 VAC, 50Hz |

# SM40P SERIES 40 WATT MEDICAL SWITCHING POWER SUPPLY LOW PROFILE

#### GENERAL SPECIFICATIONS

|                      |   |
|----------------------|---|
| Switching Frequency: | 36kHz $\pm$ 5kHz  |
| Efficiency:          | 70% min. on single output models<br>with $V_o \geq 15V$ , 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<br>30 amps at 230 VAC  |
| Withstand Voltage:   | 4000 VAC input to output<br>1500 VAC input to ground<br>500 VAC output to ground          |
| MTBF (25°C ambient): | 600,000 hours min. full load  |
| EMI Requirements:    | In compliance with CISPR 22 (EN 55011) Class B and FCC Class B                            |
| Safety Requirements: | Meets or exceeds:<br>(a) UL 2601-1<br>(b) CSA C22.2 No. 601.1<br>(c) EN 60601-1/IEC 601-1 |

#### OUTPUT SPECIFICATIONS

|                         |  |
|-------------------------|--|
| Output Voltage/Current: | See Rating Chart   |
| Total Output Power:     | 40 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 |

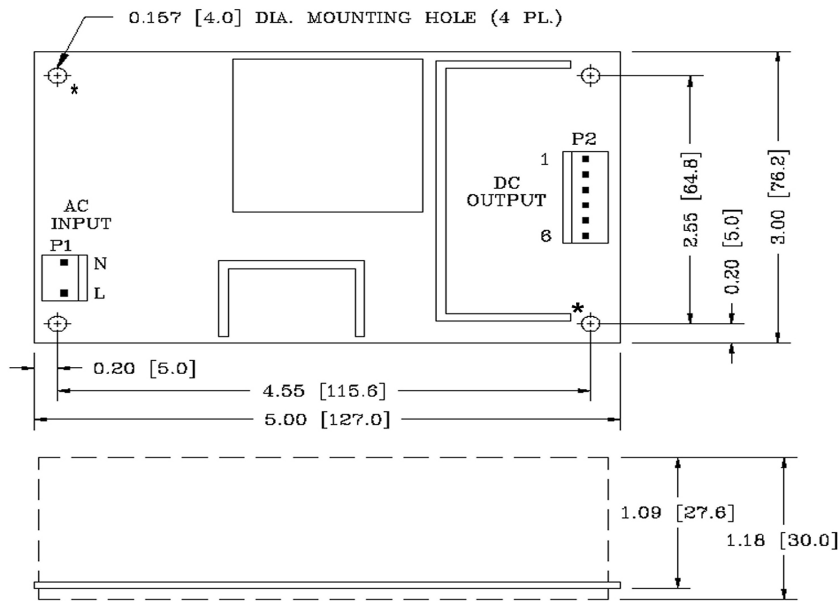


## OUTPUT VOLTAGE/CURRENT RATING CHART

| Model    | Output #1 |      |      |      | Output #2 |      |      |      | Output #3 |       |      |      | Max. Power |
|----------|-----------|------|------|------|-----------|------|------|------|-----------|-------|------|------|------------|
|          | Vnom      | Imin | Imax | Tol. | Vnom      | Imin | Imax | Tol. | Vnom      | Imin  | Imax | Tol. |            |
| SM40P10L | 5V        | 0A   | 8.0A | 2%   | (N/A)     |      |      |      | (N/A)     |       |      |      | 40W        |
| SM40P12L | 12V       | 0A   | 3.5A | 1%   | (N/A)     |      |      |      | (N/A)     |       |      |      | 40W        |
| SM40P13L | 15V       | 0A   | 3.0A | 1%   | (N/A)     |      |      |      | (N/A)     |       |      |      | 40W        |
| SM40P14L | 24V       | 0A   | 2.0A | 1%   | (N/A)     |      |      |      | (N/A)     |       |      |      | 40W        |
| SM40P18L | 48V       | 0A   | 0.9A | 1%   | (N/A)     |      |      |      | (N/A)     |       |      |      | 40W        |
| SM40P23L | +5V       | 0.5A | 3.0A | 3%   | +12V      | 0.2A | 2A   | 5%   | (N/A)     |       |      |      | 40W        |
| SM40P24L | +5V       | 0.5A | 3.0A | 3%   | +15V      | 0.2A | 2A   | 5%   | (N/A)     |       |      |      | 40W        |
| SM40P25L | +5V       | 0.5A | 3.0A | 3%   | +24V      | 0.1A | 1A   | 5%   | (N/A)     |       |      |      | 40W        |
| SM40P30L | +5V       | 0.5A | 3.0A | 3%   | +12V      | 0.2A | 2A   | 5%   | -5V       | 0.05A | 0.3A | 10%  | 40W        |
| SM40P31L | +5V       | 0.5A | 3.0A | 3%   | +12V      | 0.2A | 2A   | 5%   | -12V      | 0.05A | 0.3A | 10%  | 40W        |
| SM40P32L | +5V       | 0.5A | 3.0A | 3%   | +15V      | 0.2A | 2A   | 5%   | -15V      | 0.05A | 0.3A | 10%  | 40W        |
| SM40P33L | +5V       | 0.5A | 3.0A | 3%   | +15V      | 0.2A | 2A   | 5%   | -12V      | 0.05A | 0.3A | 10%  | 40W        |
| SM40P39L | +5V       | 0.5A | 3.0A | 3%   | +24V      | 0.1A | 1A   | 5%   | -12V      | 0.05A | 0.3A | 10%  | 40W        |

- 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., SM40P14LC.

## MECHANICAL SPECIFICATIONS



### Notes:

- Dimensions shown in inch (mm)
- Tolerance 0.02 (0.5) maximum
- Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal
- Output connector mates with Molex housing 09-50-3061 and Molex 2878 series crimp terminal
- Weight: 230 grams (PCB format)
- It is strongly recommended to connect two "\*" marked mounting holes to system chassis through metallic stand-offs. This helps reduce output noise greatly.

## PIN CHART

| MODEL  | PIN | 1         | 2         | 3         | 4             | 5             | 6         |
|--|-----|-----------|-----------|-----------|---------------|---------------|-----------|
| SM40P10L<br>SM40P12L<br>SM40P13L<br>SM40P14L<br>SM40P18L |     | Output #1 | Output #1 | Output #1 | Return        | Return        | Return    |
| SM40P23L<br>SM40P24L<br>SM40P25L                         |     | Output #2 | Output #1 | Output #1 | Common Return | Common Return | N.C.      |
| SM40P30L<br>SM40P31L<br>SM40P32L<br>SM40P33L<br>SM40P39L |     | Output #2 | Output #1 | Output #1 | Common Return | Common Return | Output #3 |

Note: All data are subject to change without notice