

- 450 Watts Output Power
- Single Output
- Universal 90-264VAC Input
- 12VDC to 48VDC Output
- 4242VDC Input to Output Isolation
- Active Power Factor Correction
- 5 Volt Standby Power
- **Optional Current Share (CS) Capability



| *Model Number | Output V | Output I | Line Reg (nom/max) | Load Reg (nom/max) | Ripple & Noise | Efficiency (min/nom) |
|-----------------------|----------|------------|--------------------|--------------------|----------------|----------------------|
| SINGLE OUTPUT | | | | | | |
| PMK450S-12 U,E,D(-CS) | 12 VDC | 37.5 Amps | 0.3% / 1.0% | 0.3% / 1% | 120mV pk-pk | 77% / 85% |
| PMK450S-24 U,E,D(-CS) | 24 VDC | 18.75 Amps | 0.2% / 0.5% | 0.2% / 0.5% | 240mV pk-pk | 78% / 86% |
| PMK450S-36 U,E,D(-CS) | 36 VDC | 12.5 Amps | 0.1% / 0.5% | 0.1% / 0.5% | 360mV pk-pk | 79% / 86% |
| PMK450S-48 U,E,D(-CS) | 48 VDC | 9.375 Amps | 0.1% / 0.5% | 0.1% / 0.5% | 480mV pk-pk | 81% / 88% |

*Available in a U-Channel Package (i.e. PMK450S-12U), an Enclosed Package (i.e. PMK450S-12E) or an Enclosed Package with a DIN Rail Clip (i.e. PMK450S-12D)

** The PMK450S Series power supplies are available with current-sharing (CS) option for N+1 paralleling and redundant power applications. To receive this option with your product simply add "-CS" to the end of the Model Number. For example PMK450S-12U-CS. Please see the application note at the end of this specification for instructions on how to utilize.

450 Watt Enclosed and U-Channel Power Supplies with PFC

PMK450 series

INPUT SPECIFICATIONS

| | |
|-----------------------------------|--|
| Input Voltage Range | 90-264VAC (100-240VAC Nom.) |
| Frequency Range | 47-63Hz (50-60 Hz Nom.) |
| Inrush Current, typ: (cold start) | 30A at FL, 115VAC 60A at FL, 230VAC |
| Input Current (90Vin/264Vin) | 7A / 2.5A max |
| Power Factor (Nom I/P, FL) | 0.95 min |
| Leakage current | Less than 3.5mA @ 240VAC, 50Hz |

OUTPUT SPECIFICATIONS

| | |
|----------------------------------|--|
| Voltage and Current | See Selection Chart |
| 5 Volt Standby (+5Vsb) | 0~2.0A (See Page 9) |
| Preset Accuracy | 1% |
| Line Regulation (LL-HL) | See Selection Chart |
| Load Regulation (20%-FL) | See Selection Chart |
| DC Output Power | 450W, Max (See Derating Curve) |
| Ripple/Noise | See Selection Chart 20MHz bandwidth with parallel 0.1uF ceramic capacitor 47uF electrolytic capacitor |
| Hold Up Time, typ. | 16mS at nominal input voltage range |
| Turn On Delay Time | < 4S |
| Rise Time | < 25mS @ 110 Vin |
| Short Curcuit Protection | Auto-recovery* |
| Over Voltage Protection | 130% (max) Auto-recovery* |
| Over Current Protection | 150% (max) Auto-recovery* |
| Efficiency (without Oring Diode) | See Selection Chart |

PHYSICAL SPECIFICATIONS

| | |
|-----------------------------------|-----------------------------------|
| Size (PMK450S-xxU) | |
| Millimeters / Inches | 203.2x 127x 38 / 8"x 5"x 1.5" |
| Size (PMK450S-xxE, D) | |
| Millimeters / Inches | 224.9x 127x 40 / 8.85"x 5"x 1.57" |
| Weight U-Bracket (PMK450S-xxU) | 33.97 oz (963g) |
| Enclosed (PMK450S-xxE) | 37.32 oz (1058g) |
| Enclosed w. DIN Clip (PMK450-xxD) | 38 oz (1077g) |

* These are stress ratings. Exposure of the devices to any of these conditions may adversely affect long term reliability. Proper operation under conditions other than the standard operating conditions is neither warranted nor implied.

ENVIRONMENTAL SPECIFICATIONS

| | | |
|---------------------|--|--|
| Oper. Temperature | 0°C to 70°C (See Derate Curve) | |
| Storage Temperature | -40°C to 85°C | |
| Oper. Humidity | 10 - 90% for nominal input range Non-condensing | |
| Storage Humidity | 5 - 95% | |
| MTBF @ 25°C | 100K Hrs min. MIL-HDBK-217F | |
| Vibration* | 4G'S pk, 50~500Hz, 3 AXES. 30 Min | |
| Drop Test* | 70 cm no damage | |
| EMS | Harmonics | 61000-3-2 Class D |
| | Fluctuations | 61000-3-3 |
| ESD | Contact 6KV Air 8KV | 61000-4-2 |
| | RS | FR: 80MHz-2.5GHz Field Strength: 3V / M |
| EFT | 2KV on AC power line | 61000-4-4 |
| | Surge | 1KV (L-N) & 2KV (L-PE, N-PE) 61000-4-5 |
| CS | 3V (EMF) | 61000-4-6 |
| | DIPS | 95% 250Cy , 70% 25 Cy |
| | | 40% 5Cy , 5% 0.5Cy |
| EMI | CISPR/EN55011 Class B | |

GENERAL SPECIFICATIONS

| | | |
|---------------------------------|--|---|
| Safety | UL/cUL: | UL60950-1 2nd ed./ C22.2 60950-1 2nd ed. |
| | UL-EU: | EN60950-1 2nd ed. |
| | CE: | EN60601-1-2 |
| | CB: | IEC60950-1 2nd ed. |
| Over-Shoot and under shoot | Less than 10% of nominal output | |
| Remote sense | 0.5V drop. max at terminals | |
| Hi-pot test (60S max) | 4242VDC I/P - O/P | |
| | 2121 VDC I/P - GND 707VDC O/P - GND | |
| Insulation Resistance (I/P-O/P) | 500VDC, 1S, ≥ 20MΩ | |

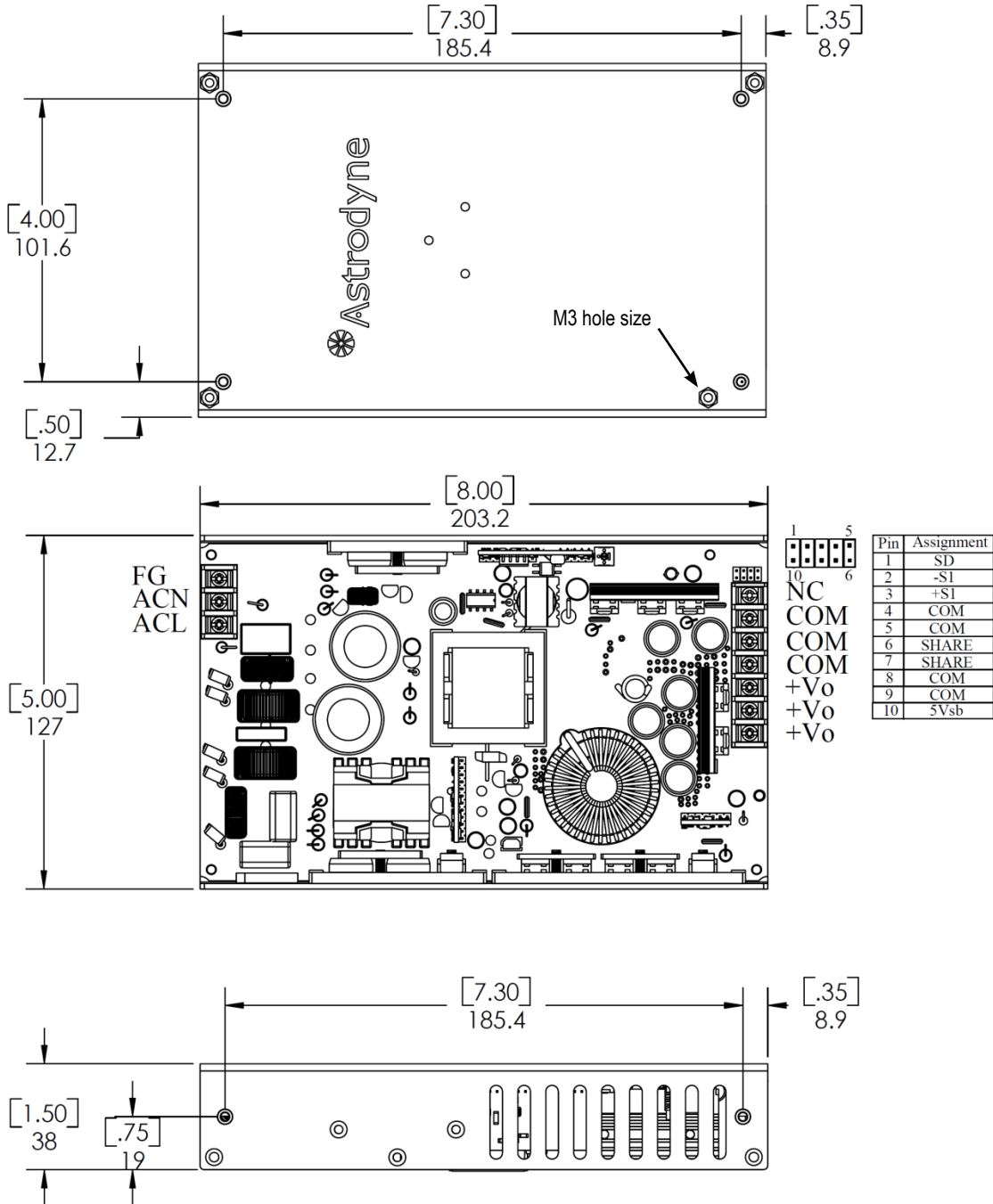
REMOTE SHUTDOWN

1. Open Collector, Logic "1"=On, "0"=Off. No termination with S/D pin to maintain constant "On" operation.

All specifications are typical at nominal input, full load, and 25°C unless otherwise noted

MECHANICAL DIMENSIONS

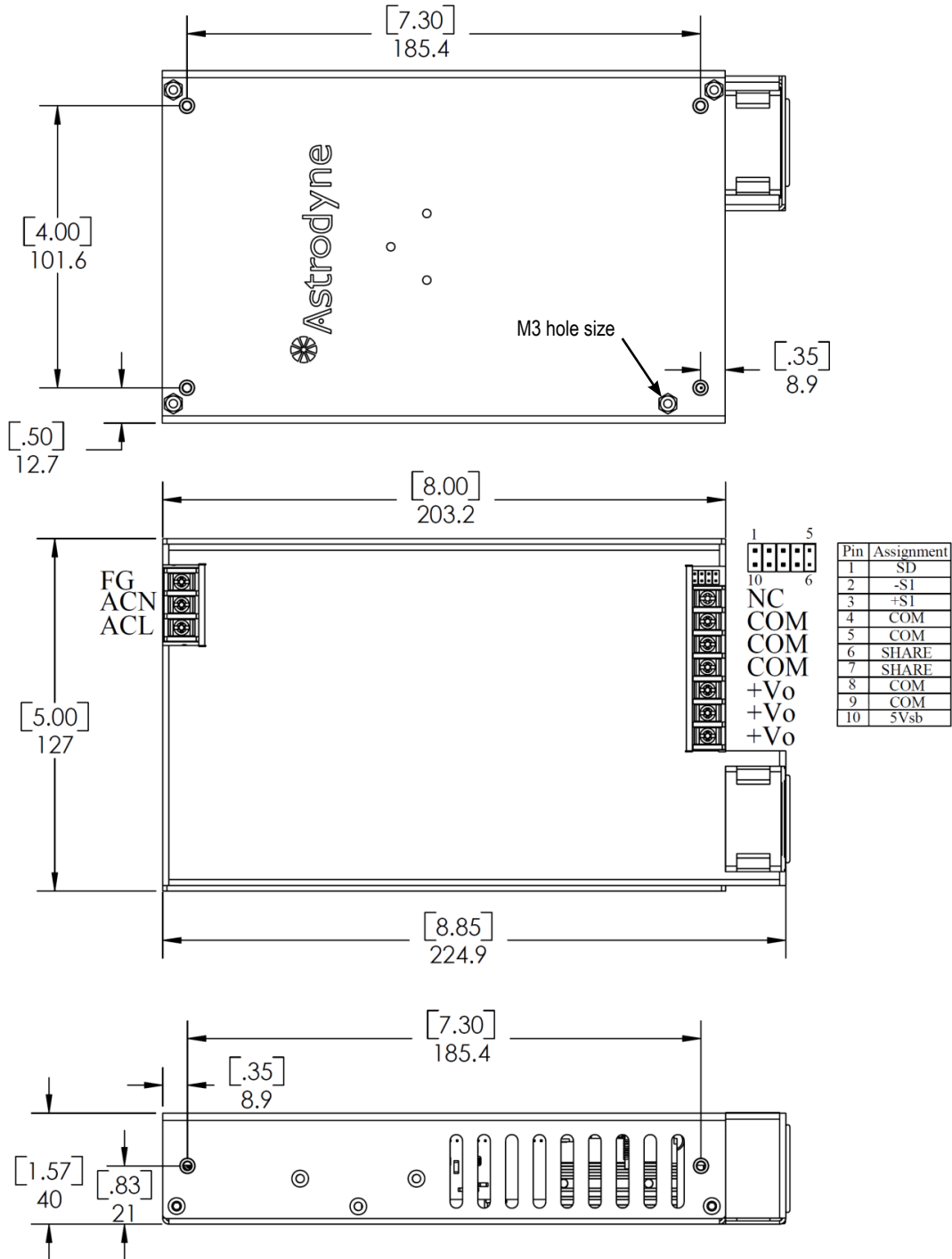
U-Bracket (PMK450S-xxU)



Input connector : 3P / 8.25 mm pitch terminal block
Output connector : 7P / 8.25 mm pitch terminal block

Unit : mm

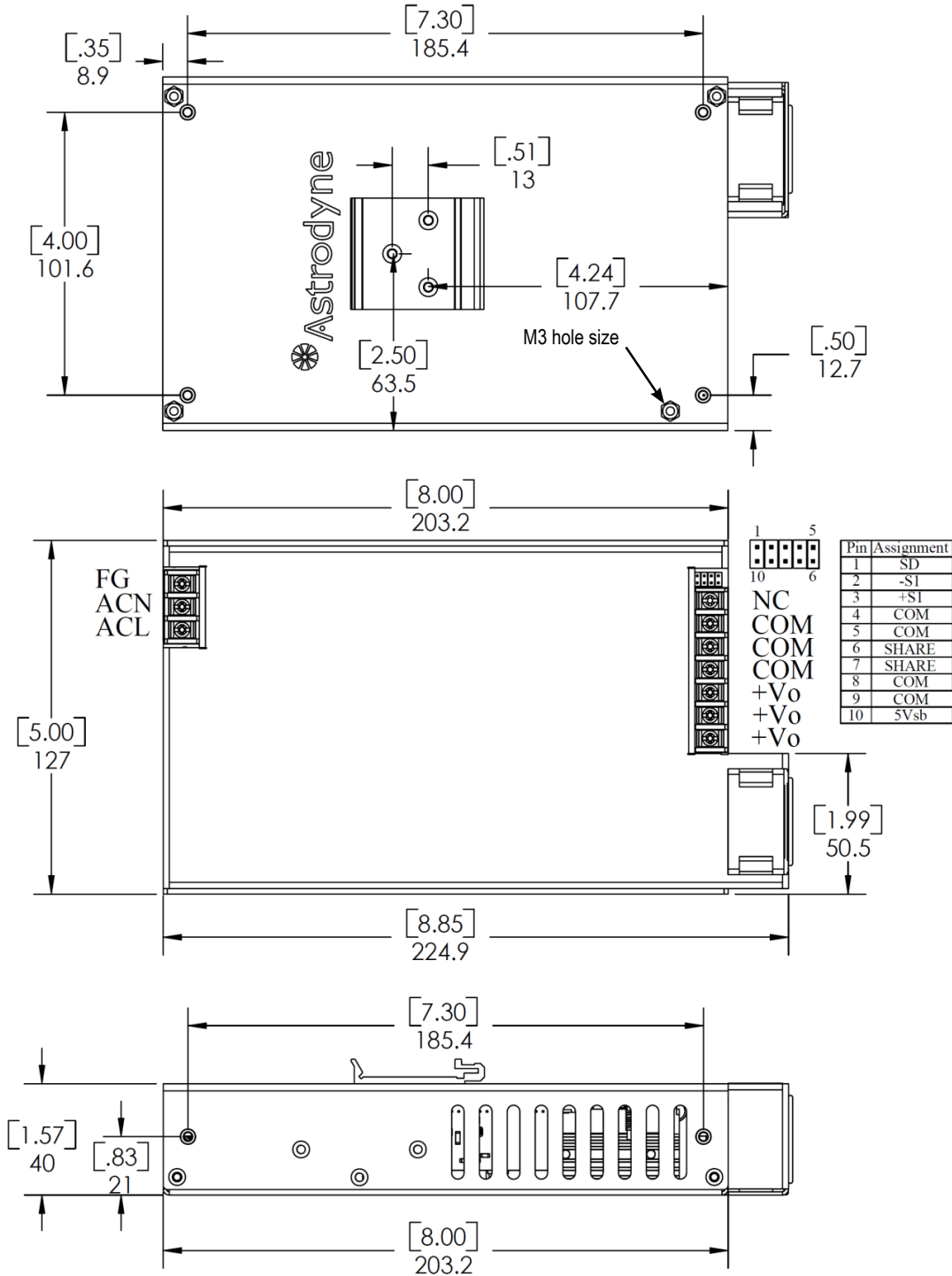
Enclosed with Fan (PMK450S-xxE) :



Input connector : 3P / 8.25 mm pitch terminal block
Output connector : 7P / 8.25 mm pitch terminal block

Unit : mm

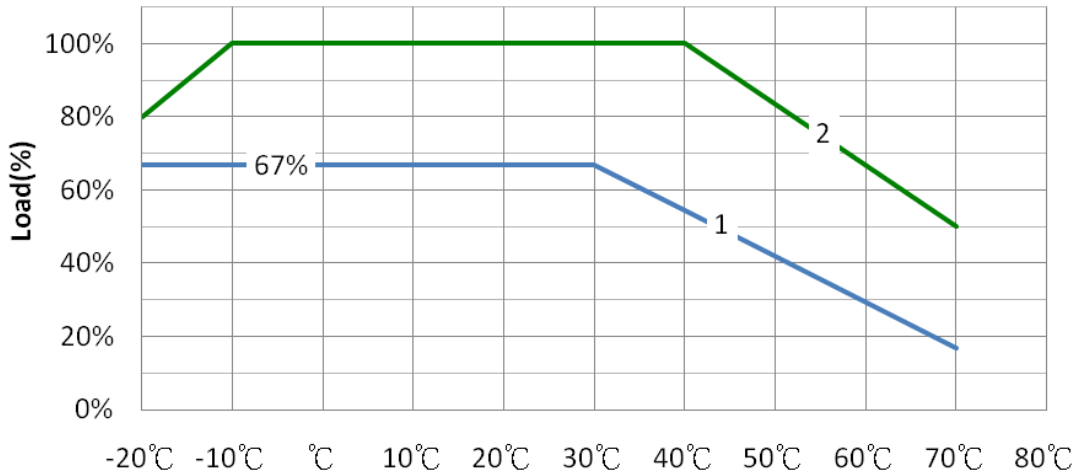
Din-rail with Fan (PMK450S-xxD) :



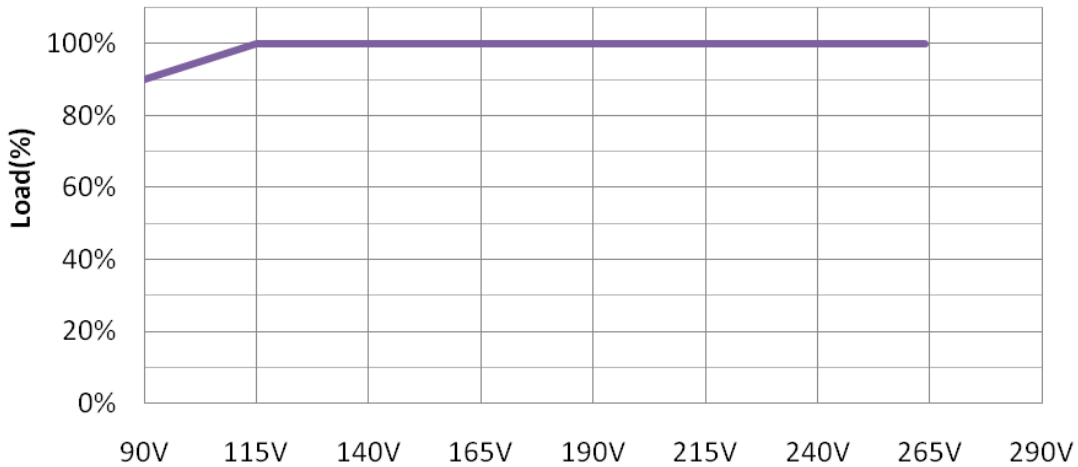
Input connector : 3P / 8.25 mm pitch terminal block
Output connector : 7P / 8.25 mm pitch terminal block

U-Bracket (PMK450S-xxU) :

Ambient Temperature Derating Curve



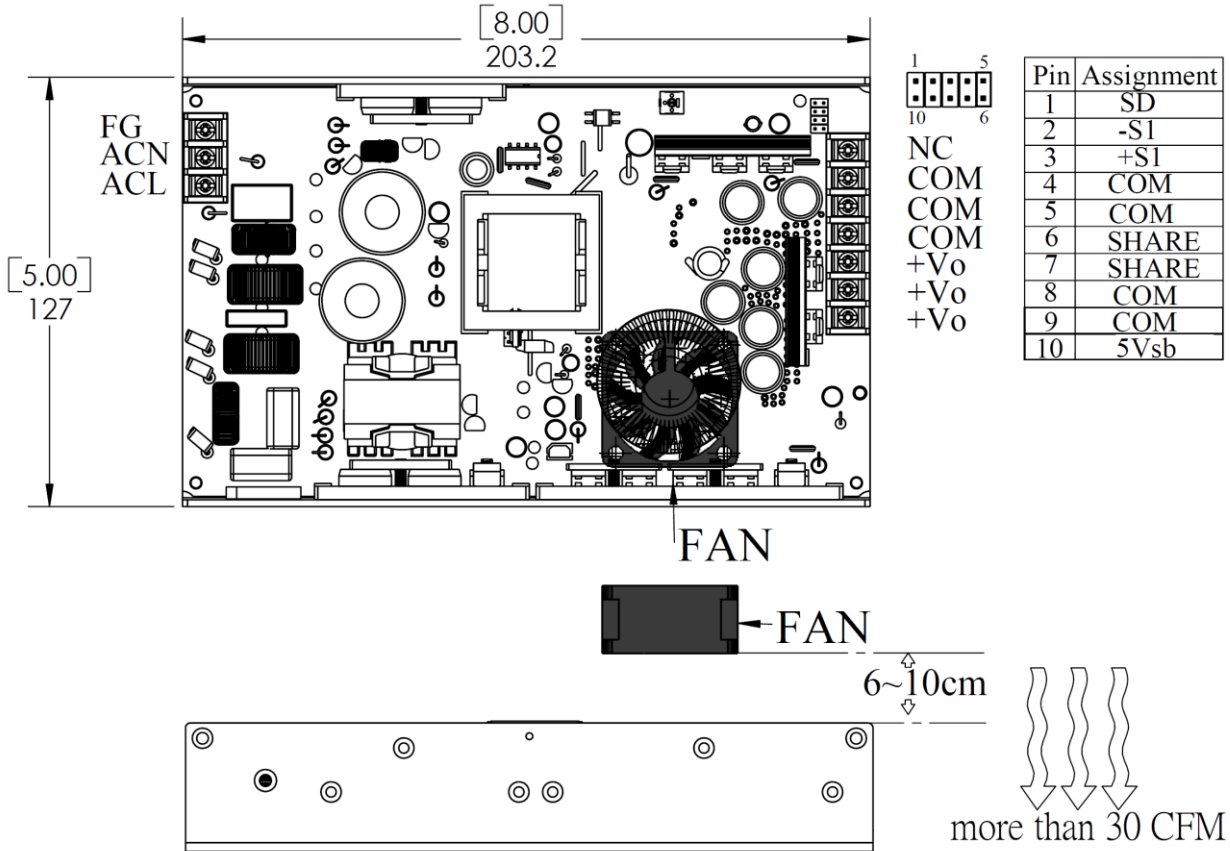
1. Convection air
2. Forced air cooling (30CFM air flow is required)



Static Characteristics: Input voltage vs. Output Loading

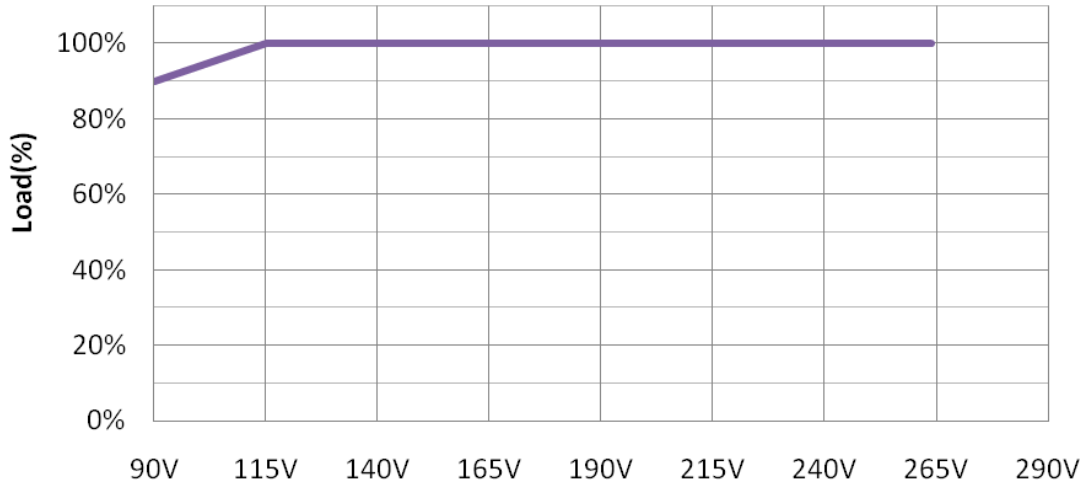
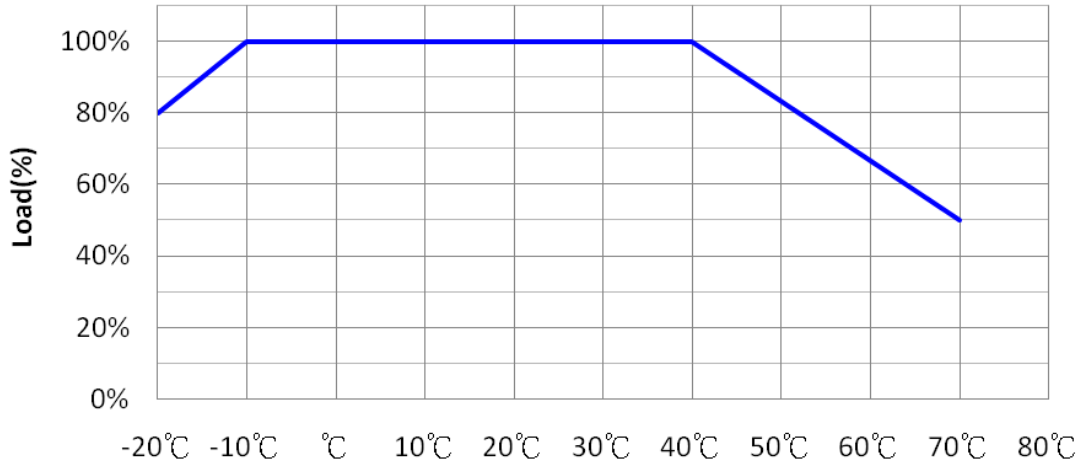
Diagram of external fan placement

U-Bracket (PMK450S-xxU) :



Enclosed & Din-rail (PMK450S-xxE/D) :

Ambient Temperature Derating Curve



Static Characteristics (Input voltage vs. Output Loading)

+5Vsb Standby Power:

| SPECIFICATION | PMK450S-xx | | |
|------------------------|------------|-----|------|
| | 5Vsb | | |
| | Min | Nom | Max |
| DC OUTPUT VOLTAGE (V) | 4.85 | 5 | 5.15 |
| PRESET ACCURACY (%) | | 1 | |
| OUTPUT CURRENT (A) | 0 | 1.0 | 2.0 |
| O/P NOISE (P-P, mV) *1 | | | 75 |
| REGULATION (%) *2 | | | 1 |
| LOAD REGULATION (%) *3 | | 1.0 | 2.0 |

+5Vsb is a standby output voltage that is always active whenever AC power is present. +5Vsb supplies 1.0A current in normal operation and is capable of withstanding maximum 10W (2 Amps) peak power for 10 seconds. +5Vsb provides a power source for circuits that must remain operational when DC main output is in sleep/off state. +5Vsb over current protection is built internal to its controller. 5Vsb OCP trip point is set to be within 2.5A - 5A. 5Vsb OVP is clamp.

Parallel Operation Instructions *

- 1.) Follow wiring diagram below
- 2.) No external oring diodes needed, oring diodes are built in with current share option
- 3.) Minimum load of 10% required
- 4.) Keep wires as short as possible to avoid noise pickup

*Notes: Applications for increased power not to exceed 800 Watts
Parallel operation of PMK450 not recommended for Medical Applications due to increased leakage current

