



Medical 450 Watt Enclosed & U-Channel Power Supplies with PFC **PMMK450 series**



- 450 Watts Output Power
- Single Outputs
- Universal 90-264VAC Input
- 5VDC to 48VDC Output
- 5656VDC Input to Output Isolation
- Active Power Factor Correction
- 5 Volt Standby Power
- *Optional Current Share Capability



<u>*Model Number</u>	<u>Output V</u>	<u>Output I</u>	<u>Line Reg(nom/max)</u>	<u>Load Reg(nom/max)</u>	<u>Ripple & Noise</u>	<u>Efficiency(min/nom)</u>
SINGLE OUTPUT						
PMMK450S-5 U,E,D	5VDC	60 Amps	0.4% / ±1.0%	0.5% / 3%	50mV pk-pk	76% / 80%
PMMK450S-12 U,E,D	12 VDC	37.5 Amps	0.3% / ±1.0%	0.3% / 1%	120mV pk-pk	77% / 85%
PMMK450S-24 U,E,D	24 VDC	18.75 Amps	0.2% / ±0.5%	0.2% / 0.5%	240mV pk-pk	78% / 86%
PMMK450S-36 U,E,D	36 VDC	12.5 Amps	0.1% / ±0.5%	0.1% / 0.5%	360mV pk-pk	79% / 86%
PMMK450S-48 U,E,D	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. PMMK450S-5U), an Enclosed Package (i.e. PMMK450S-5E) or an Enclosed Package with a DIN Rail Clip (i.e. PMMK450S-5D)

** The PMMK450S Series power supplies are available with current-sharing for N+1 paralleling and redundant power applications. Please consult our Sales department for application note, availability and price.

Astrodyne products are not authorized or warranted for use as critical components in life support systems, equipment used in hazardous environments, nuclear controls systems, or other mission-critical applications.



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INPUT SPECIFICATIONS

Input Voltage Range	90-264VAC
Frequency Range	50 - 60 Hz
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 (IEC61000-3-2 Class D Harmonics)
Leakage current	Less than 0.3mA @ 240VAC, 50Hz
Remote Shutdown (Note 1)	

OUTPUT SPECIFICATIONS

Voltage and Current	See Selection Chart
5 Volt Standby (+5Vsb)	0.5~1A (See Page 8)
Preset Accuracy	1%
Line Regulation (LL-HL)	See Selection Chart
Load Regulation (20%-FL)	See Selection Chart
DC Output Power	450W, Max
Ripple/Noise	See Selection Chart 20MHz bandwidth with parallel 0.1uF ceramic capacitor 47uF electrolytic capacitor
Hold Up Time	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*

PHYSICAL SPECIFICATIONS

Size (PMMK450S-xx-U)	
Millimeters / Inches	203.2x 127x 38 / 8"x 5"x 1.5"
Size (PMMK450S-xx-E, D)	
Millimeters / Inches	224.9x 127x 40 / 8.85"x 5"x 1.57"
Weight	
U-Bracket (PMMK450S-xx-U)	33.91 oz (963g)
Enclosed (PMMK450S-xx-E)	37.25 oz (1058g)
Enclosed w. DIN Clip (PMMK450-xx-D)	37.92 oz (1077g)

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

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	
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 61000-4-3
	EFT	2KV on AC power line 61000-4-4
	Surge	1KV (L-L) & 2KV (L-PE) 61000-4-5
	CS	3V (EMF) 61000-4-6
	DIPS	95% 250Cy, 70% 25 Cy 40% 5Cy, 5% 0.5Cy 61000-4-11
EMI	CISPR/EN55022 Class B	

GENERAL SPECIFICATIONS

Safety	UL/C-UL:	UL60601-1 (Class 1, L-N-FG)
	TUV :	EN60601-1
	CE:	EN60601-1 EN60601-1-2 : 2001
	CB:	IEC 60601-1
Over-Shoot and under shoot	Less than 10% of nominal output	
Remote sense	0.5V drop. max at terminals	
Hi-pot test (60S max)	5656VDC I/P - O/P 2121 VDC I/P - GND 707VDC O/P - GND	
Insulation Resistance (I/P-O/P)	500VDC, 1S, ≥ 20MΩ	
EMI	CISPR EN55022 class B	
Efficiency (without Oring Diode)	See Selection Chart	

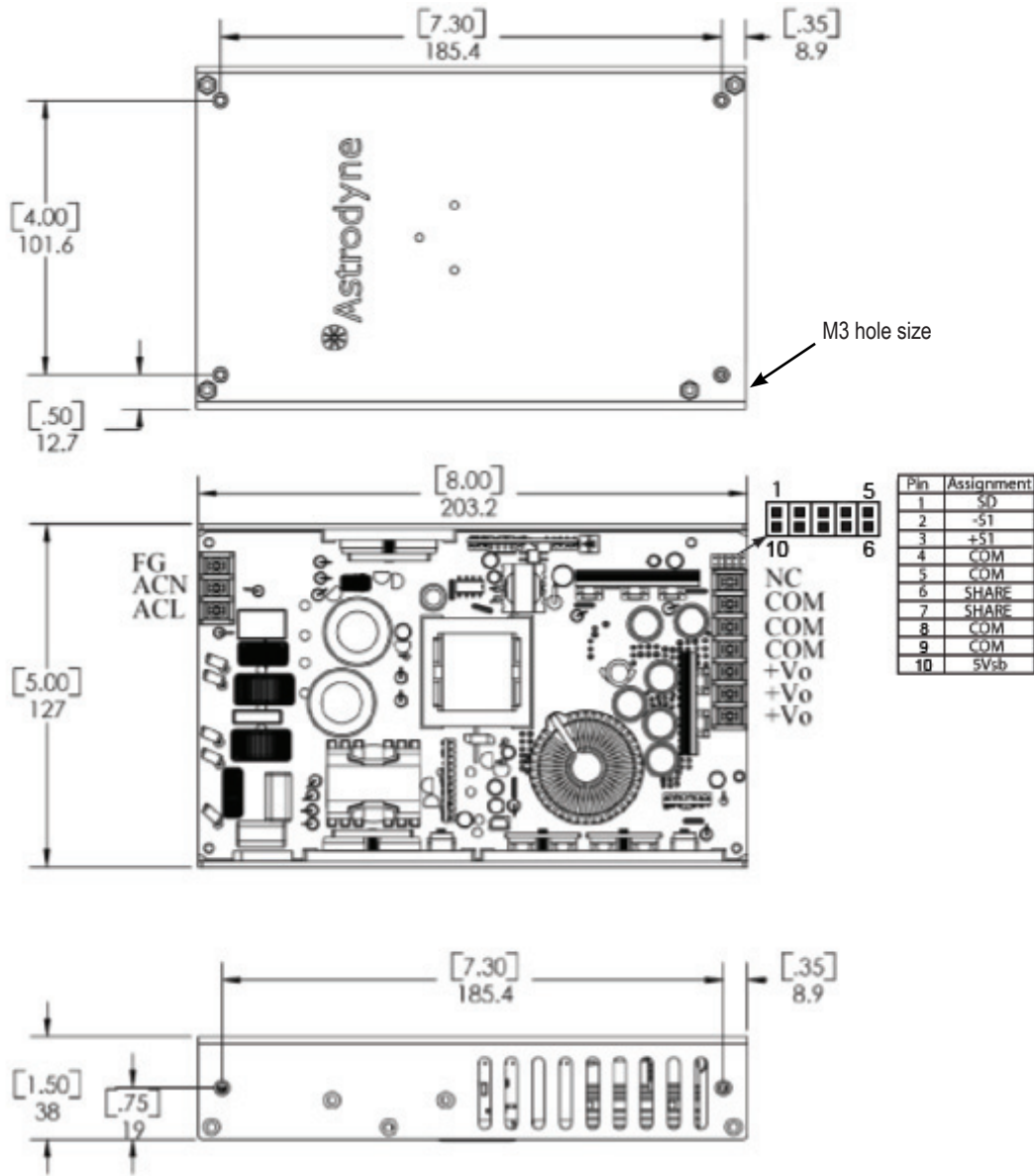
REMOTE SHUTDOWN

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

* 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.

MECHANICAL DIMENSIONS

- U-Bracket (PMMK450S-xx-U)

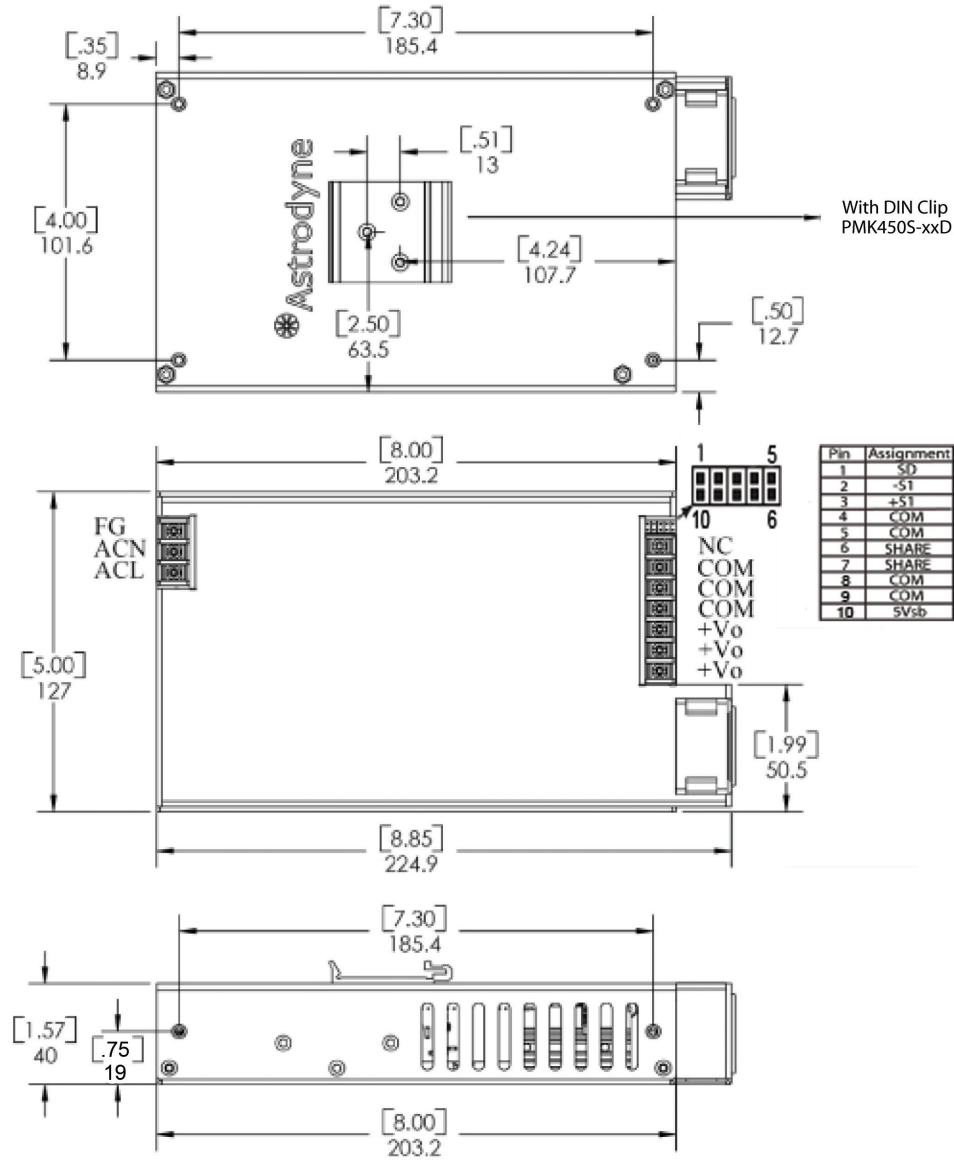


Input connector : 3P / 8.25 mm pitch terminal block
 Output connector : 7P / 8.25 mm pitch terminal block
 Unit : mm



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• Din-rail with Fan (PMMK450S-xx-ED)



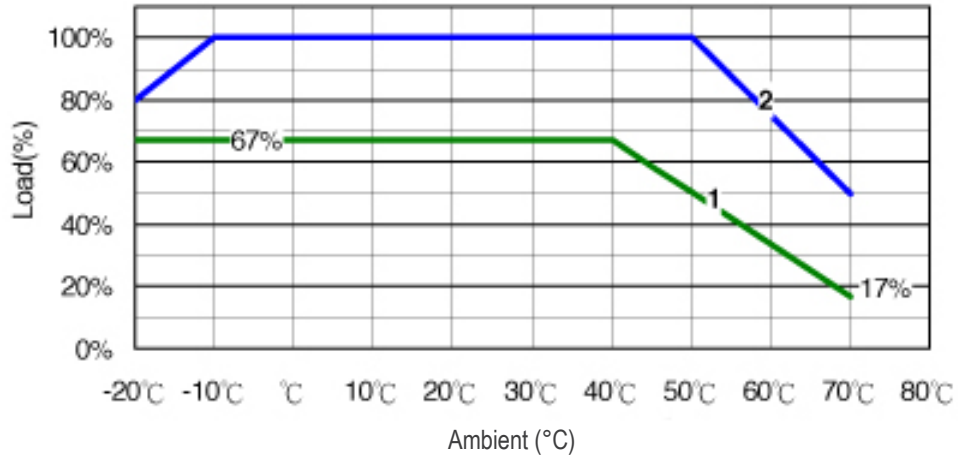
Input connector : 3P / 8.25 mm pitch terminal block
 Output connector : 7P / 8.25 mm pitch terminal block
 Unit : mm



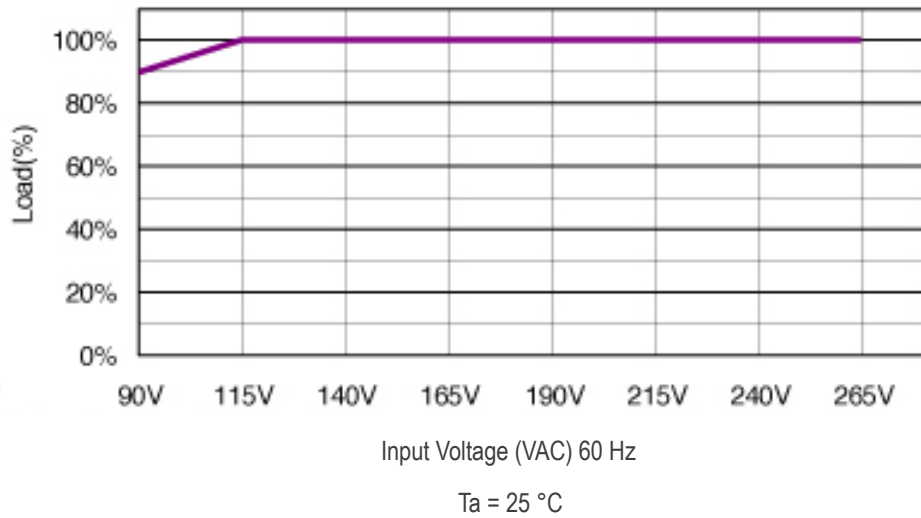
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Derating Curve

• U-Bracket (PMMK450S-xx-U/UD)



1. Convection
2. Forced air cooling 30CFM

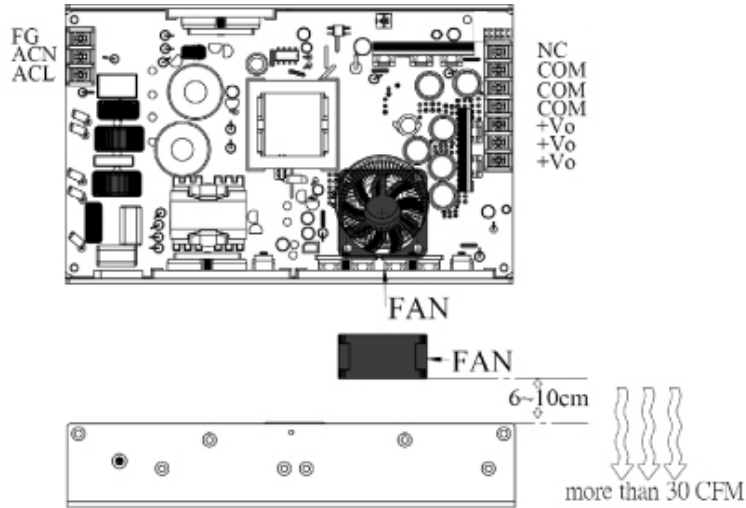




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The Diagram of Fan Position

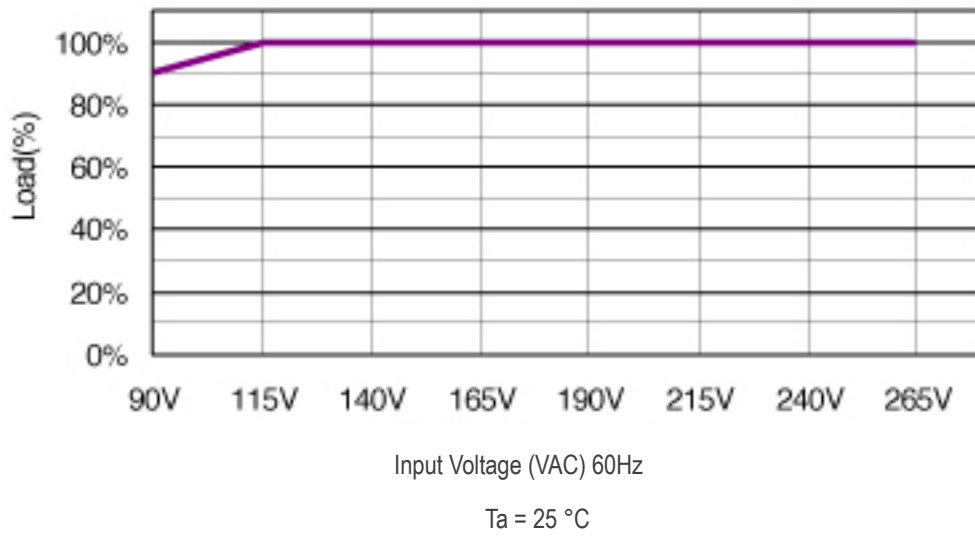
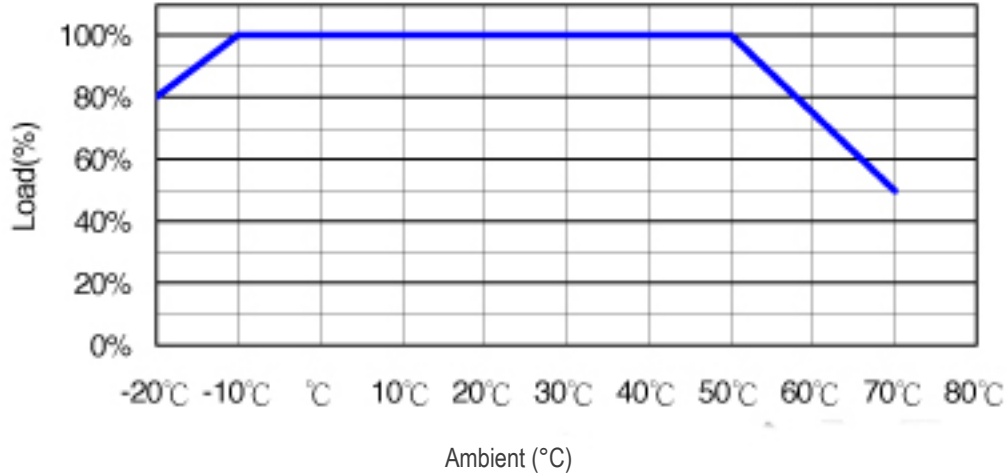
- U-Bracket (PMMK450S-xx-U/UD)





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- Enclosed & Din-rail (PMMK450S-xx-E/ED)



Ta = 25 °C



Medical 450 Watt Enclosed & U-Channel Power Supplies with PFC **PMMK450** series

+5 Volt Stand By (+5Vsb)

SPECIFICATION	PMK450S-xx	5Vsb		
		Min	Nom	Max
DC OUTPUT VOLTAGE (V)		4.85	5	5.15
PRESET ACCURACY (%)			1	
OUTPUT CURRENT (A)		0	1.5	2.0
O/P NOISE (P-P, mV) *1				75
REGULATION (%) *2				1
LOAD REGULATION (%) *3				1.5

The +5Vsb can supply 1.5A current in normal operation with the capability of 10 watts (2Amps) peak power for 10 seconds. The +5Vsb is a standby output voltage that is always active whenever AC power is present. It provides a power source for circuits that must remain operational when the 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