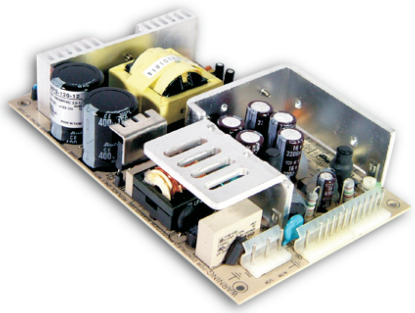
ASTRODYNE

120W 1~4 Output for Medical Type

MPS/D/T/Q-120 series



Features

- Universal AC input / Full range
- Low leakage current <180μA
- Protections:Short circuit/Over load/Over voltage
- UL2601-1 medical safety approved
- With power good and fail signal output (Optional)
- 100% full load burn-in test
- Fixed switching frequency at 45KHz
- 3 years warranty

Specification

AC INPUT VOLTAGE
90~264 VAC, 47~440Hz / 127~370VDC.

AC INPUT CURRENT (Typ.)
Maximum input current 2.9A at 115VAC, 60Hz or
1.7A at 230VAC, 60Hz with 100% output load.

INRUSH CURRENT (Typ.)
Inrush current is less than 22A at 115VAC or less than
45A at 230VAC under cold start conditions. Limiting
provided by internal thermistors.

SETUP, RISE TIME
MPS-120: 800ms, 20ms / 230VAC at full load
2000ms, 50ms / 115VAC at full load
MPD,T,Q-120:500ms, 20ms / 230VAC at full load
1200ms, 50ms / 115VAC at full load

HOLD-UP TIME (Typ.)
80ms / 230VAC at full load
16ms / 115VAC at full load

LEAKAGE CURRENT
Leakage current is less than 180μA at 264VAC

DC OUTPUT ADJ. RANGE
DC output voltage (or Ch1 of multiple output models)
can be adjusted between -5%~+10% rated output
voltage by potential meter.

OVER LOAD PROTECTION
Fully protected against short circuit and output overload.
The hiccup type protection will be activated at 110~150%
(For MPD,T,Q-120),120~160%(For MPS-120) rated load
and recovers automatically after fault condition is removed.

OVER VOLTAGE PROTECTION
Provided on output channel 1 only at 115%~135%
rated output voltage. (120%~140% for MPS-120-15/24/48).
Output will be shut down when this protection is activated.

POWER GOOD / FAIL SIGNAL (OPTIONAL)
TTL logic high for power good and TTL low for
power fail. When the output voltage reaches 90% of
rated value, a +5V TTL signal will be sent out with a
10~500ms delay; At least 1ms before the output
voltage goes below 90% of the rated value, the TTL
signal will be turned off.
* MPS-120-3.3 does not have this optional function.

TEMP. COEFFICIENT
±0.04%/℃ on all outputs at full load between 0~50℃ of ambient temperature.

VIBRATION
2G of acceleration, vibrating frequency adjust from 10Hz ~500Hz within a
10-minute cycle. 6 testing cycles (60 minutes) each along X, Y, Z axes.

SAFETY STANDARDS
Medical : UL2601-1, TUV EN60601-1 approved
Commercial : Also design refer to UL60950-1, TUV EN60950-1

WITHSTAND VOLTAGE
4000VAC between input and output
1500VAC between input and F.G.
500VAC between output and F.G.

ISOLATION RESISTANCE
>100M Ohms for I/P-O/P, I/P-FG, O/P-FG by using 500VDC test voltage.

EMI COMPLIANCE

EMI Specifications	Compliance Level
Conducted & Radiation	EN55011, Class B
	EN55022, Class B
Harmonic distortion	EN61000-3-2
Voltage flicker	EN61000-3-3

EMS COMPLIANCE

EMS Specification	Compliance Level
ESD air	EN61000-4-2, Level 3, 8KV
ESD contact	EN61000-4-2, Level 2, 4KV
RF field susceptibility	EN61000-4-3, Level 2, 3V/m
	Level 3, 10V/m
EFT(Electrical Fast Transient)/Burst	EN61000-4-4, Level 2, 1KV/5KHz
	Level 3, 2KV/5KHz
Lightning/Surge	EN61000-4-5, Level 4, 2KV/Line-Line
	4KV/Line-Earth
Conducted RF susceptibility	EN61000-4-6, Level 2, 3Vrms/m
	Level 3, 10Vrms/m
Magnetic field immunity	EN61000-4-8, Level 2, 3A/m
	Level 3, 10A/m
Voltage dip, interruption	EN61000-4-11,Compliance
Digital phone carrier immunity	ENV50204, Level 2, 3V/m, 900MHz
	Level 3, 10A/m, 900MHz

MTBF
262,100 hours min. at full load and 25℃ of ambient temperature,
calculated per MIL-HDBK-217F.

DIMENSION (L*W*H)
177.8x107.95x35.5mm or 7"x4.25"x1.4"

300 Myles Standish Blvd., Taunton, MA 02780
Ph: 1-800-823-8082 Fax: 508-823-8181

ASTRODYNE

120W 1~4 Output for Medical Type

MPS/D/T/Q-120 series

■ Output Chart

MODEL	OUTPUT VOLTAGE	RATED CURRENT	OUTPUT CURRENT				RIPPLE & NOISE (Max.) (Note 2)	VOLTAGE TOLERANCE (Note 3)	LINE REGULATION	LOAD REGULATION	EFFICIENCY
			MINIMUM LOAD	CONVECTION (max.)	WITH FAN (25CFM)	PEAK LOAD WITH 25CFM FAN (Note 4)					
MPS-120-3.3	3.3V	24A	0A	16A	24A	26A	80mVp-p	±3.0%	±1.0%	±3.0%	68%
MPS-120-5	5V	22A	0A	14.7A	22A	26A	80mVp-p	±3.0%	±1.0%	±3.0%	73%
MPS-120-12	12V	10A	0A	6.7A	10A	11A	100mVp-p	±2.0%	±1.0%	±2.0%	77%
MPS-120-15	15V	8A	0A	5.3A	8A	8.8A	100mVp-p	±2.0%	±1.0%	±2.0%	79%
MPS-120-24	24V	5A	0A	3.3A	5A	5.5A	120mVp-p	±2.0%	±1.0%	±2.0%	81%
MPS-120-48	48V	2.5A	0A	1.7A	2.5A	2.8A	120mVp-p	±2.0%	±1.0%	±2.0%	82%
MPD-120A	5V	10A	2A	7.3A	10A	12A	80mVp-p	±2.0%	±0.5%	±0.5%	75%
	12V	5A	0.5A	3.6A	5A	6A	120mVp-p	±7.0%	±2.0%	±3.5%	
MPD-120B	5V	10A	2A	7A	10A	12A	80mVp-p	±2.0%	±0.5%	±0.5%	76%
	24V	2.9A	0.3A	1.9A	2.9A	3.2A	250mVp-p	±8.0%	±2.0%	±4.0%	
MPT-120A	5V	10A	2A	7.3A	10A	12A	80mVp-p	±2.0%	±0.5%	±1.0%	72%
	12V	4.8A	0.4A	3.5A	4.8A	5.8A	120mVp-p	+8,-6%	±1.5%	±3.5%	
	-5V	0.6A	0A	0.3A	0.6A	1A	80mVp-p	±5.0%	±0.5%	±1.0%	
MPT-120B	5V	10A	2A	7.3A	10A	12A	80mVp-p	±2.0%	±0.5%	±1.0%	73%
	12V	4.4A	0.4A	3.2A	4.4A	5.3A	120mVp-p	±6.0%	±1.5%	±3.5%	
	-12V	0.6A	0A	0.4A	0.6A	1A	80mVp-p	±5.0%	±0.5%	±1.0%	
MPT-120C	5V	10A	2A	7A	10A	11A	80mVp-p	±2.0%	±0.5%	±1.0%	72%
	15V	4A	0.4A	2.6A	4A	4.4A	150mVp-p	+6,-7%	±2.0%	±3.5%	
	-15V	0.6A	0A	0.4A	0.6A	1A	80mVp-p	±5.0%	±0.5%	±1.0%	
MPT-120D	5V	10A	2A	7.3A	10A	12A	80mVp-p	±2.0%	±0.5%	±1.0%	74%
	24V	2.2A	0.4A	1.6A	2.2A	2.64A	300mVp-p	+8,-6%	±3.0%	+4,-3%	
	12V	0.6A	0A	0.4A	0.6A	1A	120mVp-p	±5.0%	±0.5%	±1.0%	
MPQ-120B	5V	10A	2A	7.3A	10A	11A	80mVp-p	±2.0%	±0.5%	±0.5%	71%
	12V	4.2A	0.5A	3.1A	4.2A	5A	120mVp-p	±6.0%	±1.5%	±3.5%	
	-5V	0.6A	0A	0.4A	0.6A	1A	80mVp-p	±5.0%	±0.5%	±1.0%	
	-12V	0.6A	0A	0.4A	0.6A	1A	80mVp-p	±5.0%	±0.5%	±1.0%	
MPQ-120C	5V	10A	2A	7.3A	10A	11A	80mVp-p	±2.0%	±0.5%	±0.5%	71%
	15V	3.2A	0.5A	2.4A	3.2A	3.8A	150mVp-p	+6,-7%	±2.0%	±3.5%	
	-5V	0.6A	0A	0.4A	0.6A	1A	80mVp-p	±5.0%	±0.5%	±1.0%	
	-15V	0.6A	0A	0.4A	0.6A	1A	80mVp-p	±5.0%	±0.5%	±1.0%	
MPQ-120D	5V	10A	2A	7A	10A	11A	80mVp-p	±2.0%	±0.5%	±0.5%	74%
	12V	1A	0.2A	0.7A	1A	1.1A	150mVp-p	+8,-6%	±2.0%	±3.5%	
	24V	2.1A	0.3A	1.4A	2.1A	2.3A	300mVp-p	±8.0%	±2.0%	±3.5%	
	-12V	0.6A	0A	0.3A	0.6A	1A	80mVp-p	±5.0%	±0.5%	±1.0%	
MPQ-120E	5V	10A	2A	7.3A	10A	11A	80mVp-p	±2.0%	±0.5%	±0.5%	73%
	12V	3A	0.5A	2.3A	3A	3.3A	120mVp-p	±6.0%	±2.0%	±3.0%	
	15V	0.6A	0A	0.4A	0.6A	1A	80mVp-p	±8.0%	±2.0%	±3.0%	
	24V	0.6A	0A	0.4A	0.6A	1A	80mVp-p	±5.0%	±0.5%	±1.0%	

300 Myles Standish Blvd., Taunton, MA 02780
Ph: 1-800-823-8082 Fax: 508-823-8181

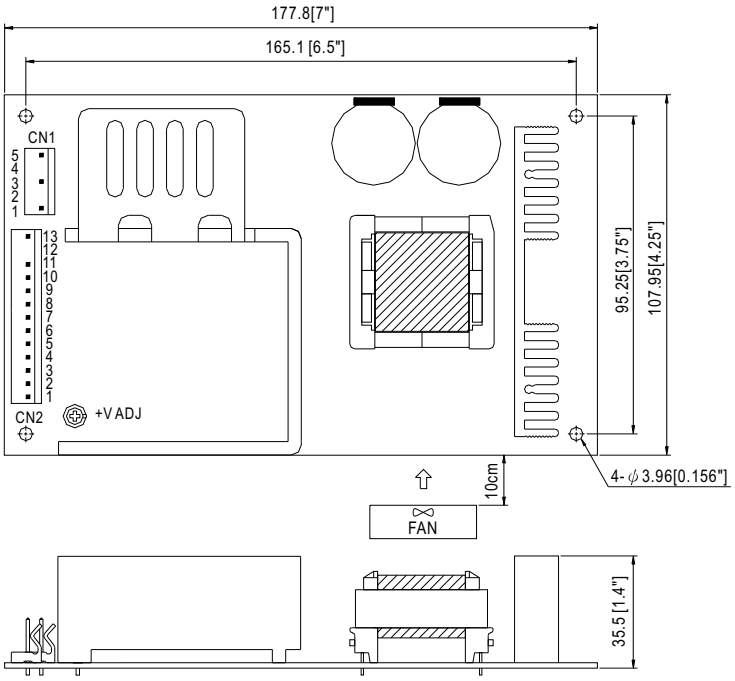
ASTRODYNE

120W 1~4 Output for Medical Type

MPS/D/T/Q-120 series

■ Mechanical Specification

Unit:mm



■ Pin Assignment

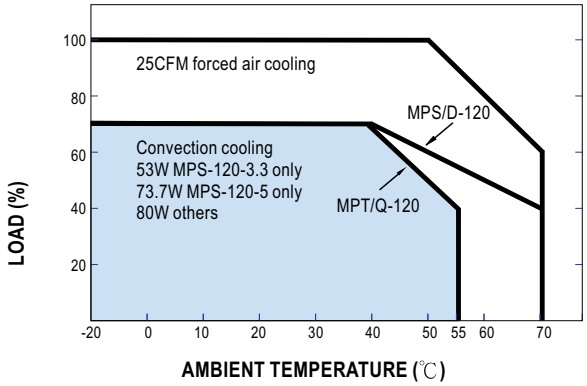
AC Intput Connector (CN1) : Molex 5273-05 or equivalent

Pin No.	MPS-120	MPD-120	MPT-120	MPQ-120	Mating Housing	Terminal
1	FG ⏚	FG ⏚	FG ⏚	FG ⏚	Molex 5195 or equivalent	Molex 5194 or equivalent
2,4	No Pin	No Pin	No Pin	No Pin		
3	AC/N	AC/N	AC/N	AC/N		
5	AC/L	AC/L	AC/L	AC/L		

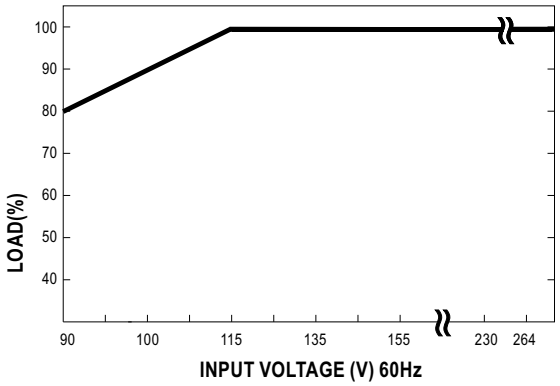
DC Output Connector (CN2) : Molex 5273-13 or equivalent

Pin No.	MPS-120	MPD-120	MPT-120	MPQ-120	Mating Housing	Terminal
1	+V	V1	V1	V1	Molex 5195 or equivalent	Molex 5194 or equivalent
2	+V	V1	V1	V1		
3	+V	V1	V1	V1		
4	-V	COM	COM	COM		
5	-V	COM	COM	COM		
6	-V	COM	COM	COM		
7	-V	COM	COM	COM		
8	+V	V2	V2	V2		
9	+V	V2	V2	V2		
10	P.F.D.	P.F.D.	P.F.D.	P.F.D.		
11	NC	NC	V3	V3		
12	No Pin	No Pin	No Pin	No Pin		
13	NC	NC	NC	V4		

■ Derating Curve



■ Static Characteristics



WWW.ASTRODYNE.COM

300 Myles Standish Blvd., Taunton, MA 02780
Ph: 1-800-823-8082 Fax: 508-823-8181