

MPU-300F Series

Single Output 300W Power Factor Corrected AC/DC Power Supplies



Key Features:

- Small 300W Supply
- PFC to EN61000-3-2 "D"
- EN 60950 Approved (UL)
- CE Certified
- FCC Class B Emissions
- 2 - 60 V Output Voltages
- Universal AC Input
- Small 5" x 3.2" x 2" Size



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Electrical Specifications

Specifications typical @ +25°C, nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range	Universal	90		264	VAC
Input Frequency		47		63	Hz
Input Current, Full Load	90 VAC		5		A
Inrush Current, Cold Start	110 VAC			35	A
	220 VAC			70	
Leakage Current (Note 1)	240 VAC		3.5		mA
Power Factor Correction	Meets EN61000-3-2 Class D				
Input Protection	F5A/350V Fuse				

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Adjustment	By Trim Pot		±5.0		%
Output Regulation (Note 2)			±1.0		%
Hold Time	120 VAC, 80% Load	16			mSec
Ripple & Noise (20 MHz) (Note 3)	See Model Selection Guide				
Overload Protection	Foldback Circuit, Autorecovery	110		140	%
Over Voltage Protection	>130% of Rated Output Voltage. Recycle AC Input.				
Over Temperature Protection	Autorecovery		+110		°C
Temperature Coefficient			±0.04		%/°C
Transient Recovery Time (Note 4)	50% Load Change		2.5		mS
Transient Response Deviation			5		%
Overshoot/Undershoot	At Turn On/Off			±5.0	%
Turn On Delay	120 VAC			1	S
Output Short Circuit	Continuous With Autorecovery				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage (Note 5)	Input - Output	3,000			VAC
	Input - FG (Frame Ground)	1,500			
	Primary - Core	1,500			
Switching Frequency	Fixed		24		kHz

Interface Signals

Power Supply On	Green LED on the PCB
Fan Fail	An open collector output rated for 28V/5 mA sink current maximum. Goes high if a fan failure is detected
Power Good Signal	Goes TTL high 100 to 500 mS after regulation. Goes low at least 1 mS before the loss of regulation. Will sink 100 mA.
Remote On/Off	A TTL low signal inhibits the output. Hiccup mode.

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	0	+25	+50	°C
Output Derating	2.5%/°C from +50 °C to +70 °C				
Storage Temperature Range		-20		+85	°C
Cooling	See Model Selection Guide				
Operating Humidity	RH, Non-condensing			90	%

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 30°C, Gnd Benign	100			kHours
Safety Standards	UL 1950, EN 60950				
EEMI Compliance	Compliance to EN55022 (CISPR22) Class B; EN61000-3-2,3				
EMS Immunity Compliance	EN6100-4-2,3,4,5,6,8,11; EN55024; CE Marked (LVD)				
Vibration	50-500 Hz, 3G 10 min/1 Cycle. Period of 30 min each along X, Y & Z Axis				

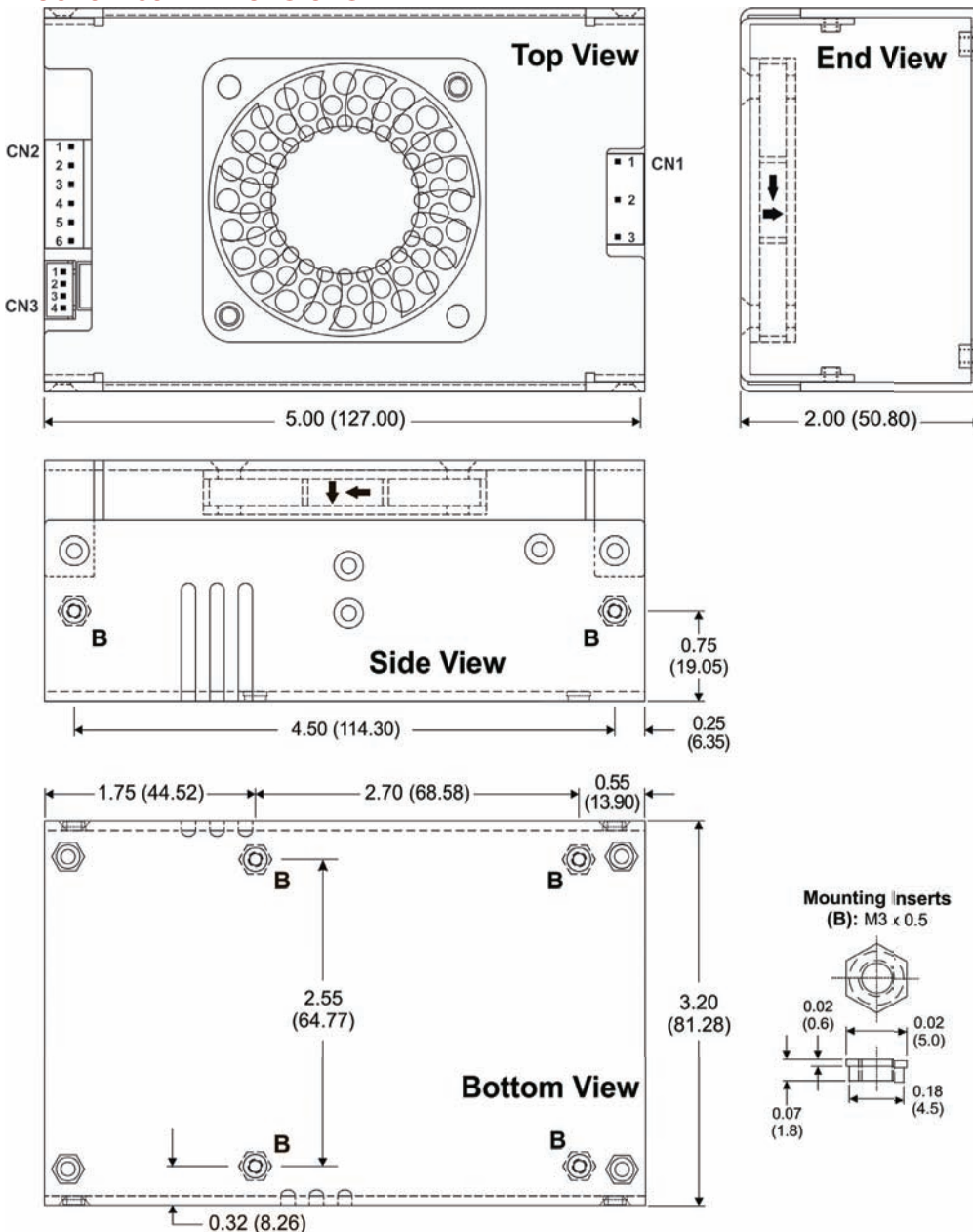
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Model Number	Output Voltage (VDC)		Output Current (Max. A)	Ripple & Noise (% p-p)	Efficiency (%)
	PreSet	Range			
MPU-300F-05(T)	5 VDC	2.0 - 5.0	42.00	±1%	75%
MPU-300F-09(T)	9 VDC	7.0 - 11.0	27.27	±1%	80%
MPU-300F-12(T)	12 VDC	12.0 - 13.8	25.00	±1%	80%
MPU-300F-15(T)	15 VDC	14.0 - 16.0	20.00	±1%	80%
MPU-300F-18(T)	18 VDC	17.0 - 22.0	16.66	±1%	80%
MPU-300F-24(T)	24 VDC	23.0 - 28.0	12.50	±1%	80%
MPU-300F-30(T)	28 VDC	29.0 - 34.0	10.71	±1%	80%
MPU-300F-36(T)	36 VDC	35.0 - 43.0	8.33	±1%	80%
MPU-300F-48(T)	48 VDC	44.0 - 52.0	6.25	±1%	80%
MPU-300F-54(T)	54 VDC	53.0 - 60.0	5.55	±1%	80%

Notes:

- Output regulation includes line & load.
- Ripple & noise is measured from 10 Hz to 20 MHz. Measurement connection to the unit is made with a 0.1 µF ceramic capacitor & a 22 µF electrolytic capacitor connected in parallel.
- Transient recovery is measured to within a 1% error band for a load step change of 50% to 100%.
- Isolation specifications are production HI-Pot tested for 3 seconds.
- The full output range (see table) is covered in the safety agency certification. Standard models are factory set to the "Preset" voltage. This may be set to other levels within the range without affecting the agency certification. For more information, contact the factory.
- Output power is given for the factory preset voltage. With the exception of the "05" & "09" models, the maximum continuous output power level is 300W. For more information, contact the factory.
- For optional terminal strip connections, a "T" is added to the end of the part number.
- Each unit includes an input fuse (350V/5A). Since this fuse is not field replaceable, it is recommended that an external fuse of the same size be used on the input of the power supply for protection.

Mechanical Dimensions



Connections

Input Connector (CN1):

- Mating Part No: Molex 035977-0500 or equivalent (two pins removed)
- Optional Terminal Block: Howder HD-601-3P 3 pins, 6.35 mm Centers

Pin	Function
1	AC-Line
2	AC-Neutral
3	Field Ground

Output Connector (CN2):

- Mating Part No: Molex 035977-0600 or equivalent
- Optional Terminal Block: Dinkle P-830N M5 Screws

Pin	Function
1	-V _{OUT}
2	-V _{OUT}
3	-V _{OUT}
4	+V _{OUT}
5	+V _{OUT}
6	+V _{OUT}

Logic Signal Connector (CN3):

- Mating Part No: JST XHP or equivalent (CHYAO SHIUNN JS-21001-4)
- Mating Pins: JST SXH-002T-PO.6 For AWG 30 to 26

Pin	Function
1	Remote On/Off
2	Fan Fail
3	Common
4	Power Good

Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.02 (±0.50)



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