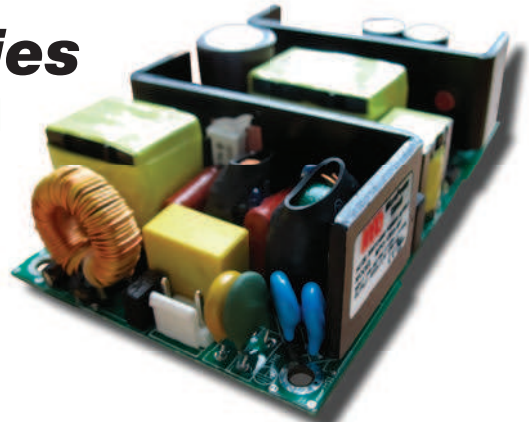


# MPO-200S Series

## Single Output, 200W Miniature, Open Frame AC/DC Power Supplies



### Key Features:

- 200W Output Power
- PFC to EN 61000-3-2,3 "D"
- Universal 90-264 AC Input
- EN 60950 Approved (UL)
- Miniature 3 x 5 In Package
- Meets EN 55022 B
- Efficiency To 92%
- >110 kHour MTBF



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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
			127	373	VDC
Input Frequency		47		63	Hz
Input Filter	Meets EN 55022 Class B; FCC Class B				
Input Current	See Model Selection Guide				
Inrush Current	Cold Start, 115 VAC			36.0	A Pk
	Cold Start, 230 VAC			100.0	
Safety Ground Leakage Current	264 VAC			3.5	mA

#### Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage/Current	See Model Selection Guide				
Output Voltage Tolerance	See Note 1		±1.0		%
Line Regulation	Vin = Min to Max		±0.5		%
Load Regulation	Iout = 10% to 100%		±1.0		%
Ripple & Noise (20 MHz)	See Note 2		±1.0		%
Hold-Up Time	See Note 3		10		mSec
Temperature Coefficient			±0.05		%/°C
Short Circuit Protection	Continuous (Autorecovery)				
Over Voltage Protection	See Note 3		130		%

#### General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input to Output	3,000			VAC
Isolation Resistance	500 VDC		1,000		MΩ
Isolation Capacitance			5,845		pF
EMC Compliance	Conducted	EN 55022; EN 61000-3-2, -3			
	Electrostatic Discharge (ESD)	IEC/EN 61000-4-2, -6, -8, -11			
	RF Field Susceptibility	IEC/EN 61000-4-3			
	Electrical Fast Transients/Bursts On Mains	IEC/EN 61000-4-4			
Switching Frequency	Fixed		90		kHz

#### Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-20	+25	+80	°C
Storage Temperature Range		-20		+85	°C
Cooling	See Derating Curve				
Humidity	RH, Non-condensing			93	%

#### Physical

Size	5.00 x 3.00 x 1.44 Inches (127.00 x 76.20 x 34.00 mm)				
Weight	14.10 Oz (0.400 kg)				

#### Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	110			kHours
Safety Standards	UL 60950, EN 60950				
Vibration	Sinusoidal 50~500 Hz, 3.0 Grms, Period of 30 min each along X, Y & Z Axis				

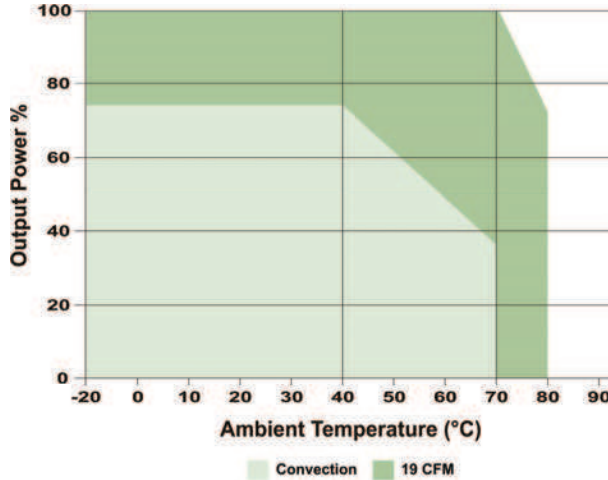
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Model Number	Input		Voltage (VDC)	Output			Output Power (Max. W)		Max Output Capacitance (µF)	Efficiency (% Typ)
	Current (A)			Current (A)			With 19 CFM	Convection		
	115 VAC	230 VAC		Maximum (With 19 CFM)	Maximum (Convection)	% Min.				
MPO-200S-12	3.0	1.5	12.0	16.67	12.50	0.00	200	150	6,000	89
MPO-200S-24	3.0	1.5	24.0	8.34	6.25	0.00	200	150	6,000	90
MPO-200S-36	3.0	1.5	36.0	5.56	4.17	0.00	200	150	4,450	91
MPO-200S-48	3.0	1.5	48.0	4.17	3.13	0.00	200	150	3,700	92

**Notes:**

1. Output voltage tolerance is measured at nominal input and 60% load.
2. Output ripple is measured at 20 MHz bandwidth using 0.1 µF and 10 µF capacitors connected in parallel as close to the power supply terminals as possible.
3. Hold-up time is typical for 115 VAC and 230 VAC inputs.
4. These units will operate at no load without damage. For most applications however, MPD recommends that a minimum load always be used. Contact the factory for more information.
5. The remote sense outputs may be used to compensate for up to a 0.5V line drop.
6. The fan drive provides 12VDC @ 300 mA.
7. Each unit includes an input fuse (250V/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.

**Derating Curve**



**Connections**

**Input Connector (CN1):**

- TKP PVH1-3N2 or equivalent (one pin removed)
- Mating Housing: JST VHR-3N or equivalent
- Mating Terminal: SVH-21T-PH1 or equivalent

Pin	Function
1	AC-Line
2	Removed
3	AC-Neutral

**Safety Ground:**

The unit should be mounted using metal standoffs. The input side mounting hole marked "FG" provides the safety earth ground for the unit. This point should be connected to the system earth ground via a metal spacer or a cable. This connection should be locked to prevent possible loosening. Connecting the output side mounting holes to earth ground improves EMI (this connection will also put the rear heatsink at ground potential).

**Output Connector (CN2):**

- TKP PVH1-08 or equivalent
- Mating Housing: JST-VHR-8N or equivalent
- Mating Terminal: SVH-21T-PH1 or equivalent

Pin	Function	Pin	Function
1	+V <sub>OUT</sub>	5	-V <sub>OUT</sub>
2	+V <sub>OUT</sub>	6	-V <sub>OUT</sub>
3	+V <sub>OUT</sub>	7	-V <sub>OUT</sub>
4	+V <sub>OUT</sub>	8	-V <sub>OUT</sub>

**Fan Drive Connector (CN3):**

- LCU P205DG-02 or equivalent
- Mating Housing: Molex 5051-02 or equivalent
- Mating Terminal: Molex 5159 or equivalent

Pin	Function
1	+Fan Out
2	-Fan Out

The fan drive provides 12VDC @ 300 mA.

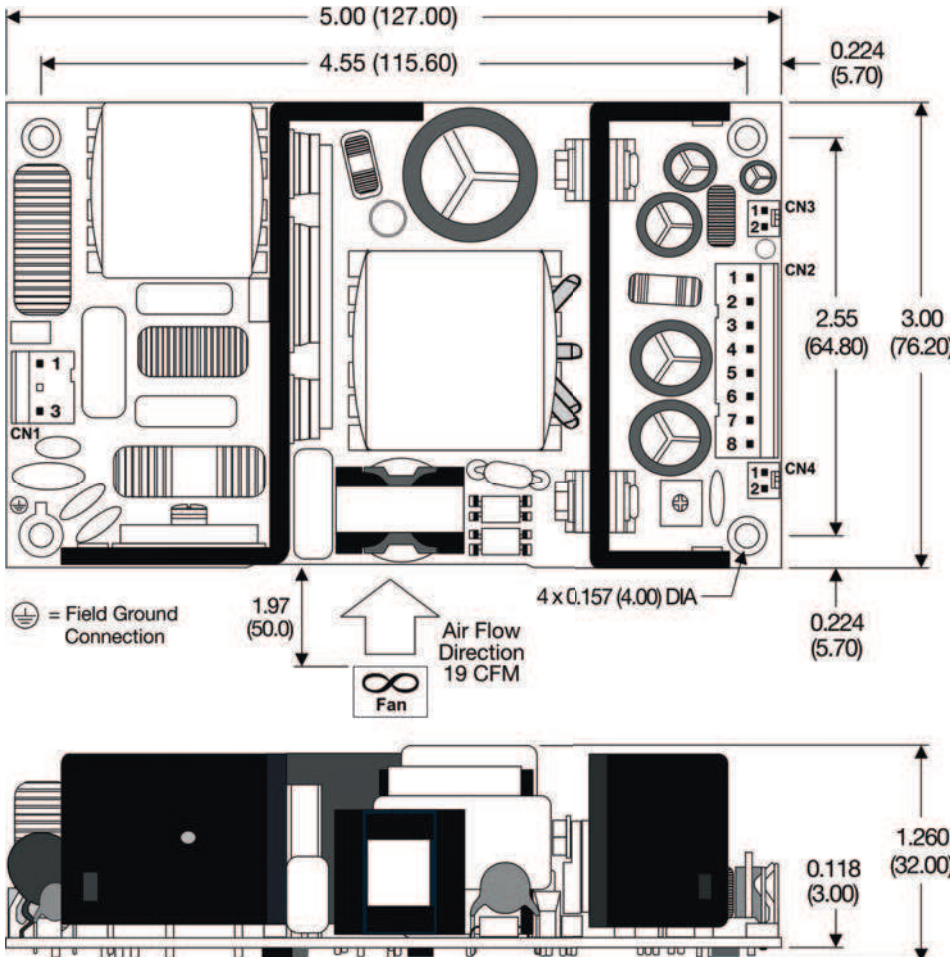
**Remote Sense Connector (CN4):**

- LCU P205DG-02 or equivalent
- Mating Housing: Molex 5051-02 or equivalent
- Mating Terminal: Molex 5159 or equivalent

Pin	Function
1	+Rs
2	-Rs

The remote sense outputs may be used to compensate for up to a 0.5V line drop.

**Mechanical Dimensions**



**Notes:**

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