

# MDR-120S

## Compact, 120W DIN Rail Mount AC/DC Power Supply



### Key Features:

- 120W Output Power
- EN 60950 Approved
- Compact, DIN Rail Case
- Active PFC
- 85-264 VAC Input
- TS-35/7.5 or TS-35/15 Rails
- Meets EN 55022 B
- High Efficiency
- Remote ON/OFF Control



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### Electrical Specifications

Specifications typical @ +25°C, 230 VAC input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Input Voltage Range		85		264	VAC	
		120		370	VDC	
Input Frequency		47		63	Hz	
Inrush Current, See Note 1	115 VAC		35		A Pk	
	230 VAC		70			
Power Factor Correction	115 VAC		0.98			
	230 VAC		0.96			
Input Under Voltage Shutdown	Start Up	76		83	VAC	
	Shut Down	67		75		
Start Up Time				1.5	S	
Output						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Output Voltage Accuracy				±1.0	%	
Output Voltage Adjust				±5.0	%	
Line Regulation	V <sub>IN</sub> = Min to Max			±0.5	%	
Load Regulation	I <sub>OUT</sub> = 10% to 100%			±1.0	%	
Ripple & Noise (20 MHz)				100	mV P-P	
Hold-Up Time	115/230 VAC		25.0		mS	
Temperature Coefficient			±0.03		%/°C	
Over Temperature Protection	Auto-Recovery		95		°C	
Over Voltage Protection	See Note 2		30		VDC	
Short Circuit Protection, See Note 3	Continuous (Auto-Recovery)					
Overload Protection, See Note 4	Auto-Recovery	110		150	%I <sub>OUT</sub>	
General						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Isolation Voltage, 60S	Input to Output	3,000			VAC	
	Input to $\perp$	1,500				
	Output to $\perp$	500				
Switching Frequency			100		kHz	
EMI Characteristics, See Note 5						
Parameter	Standard	Criteria	Level			
Radiated Emissions	EN 55024		Class B			
Conducted Emissions	EN 55022		Class B			
ESD	EN 61000-4-2	B	±8 kV Air			
			±6 kV Contact			
RS	EN 61000-4-3	A	10V/m			
EFT	EN 61000-4-4	B	±4 kV			
Surge	EN 61000-4-5	B	±2 kV/ ±4 kV			
CS	EN 61000-4-6	A	10 Vrms			
PFM	EN 61000-4-8	A	10A/m			
Voltage Dips, Interruptions	EN 61000-4-11	B	0% - 70%			
Environmental						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Operating Temperature Range	Ambient	-25	+25	+70	°C	
Storage Temperature Range		-25		+85	°C	
Cooling	Free Air Convection (See Derating Curve on Page 2)					
Humidity	RH, Non-condensing			95	%	
Physical						
Case Size	See Mechanical Diagram (Page 2)					
Case Material	Heat Resistant Plastic (UL94-V0) and Metal					
Weight	18.9 Oz (560g)					
Reliability Specifications						
Parameter	Conditions	Min.	Typ.	Max.	Units	
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	300			kHours	
Safety Standards	EN 60950					
Safety Class	Class I					

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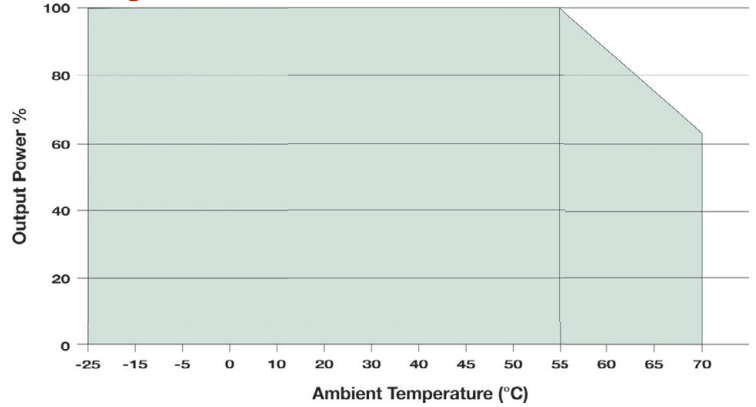
Model Number	Input Current (A Max)		Voltage (VDC)	Output Current (A)		Efficiency (% Typ)	Capacitive Load ( $\mu$ F Max)	Standby Power Consumption (W Max)
	115 VAC	230 VAC		Max.	Min.			
MDR-120S-24	1.5	0.75	24.0	5.0	0.0	92	4,700	0.75

Other outputs may be available  
Contact the factory for details at:  
sales@micropowerdirect.com

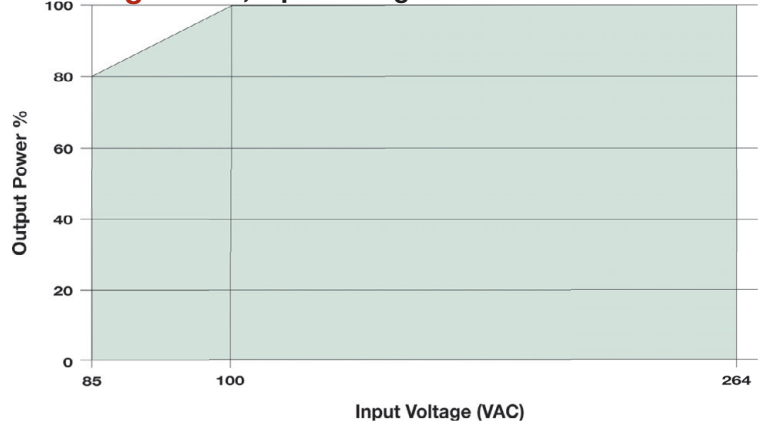
**Notes:**

1. Inrush current is given for a cold start at 25°C.
2. Over voltage protection is provided by a zener diode clamp.
3. Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
4. Output overload protection is provided by a fold back current limiting circuit with auto-recovery. A long-term overload could damage the unit.
5. EMI characteristics are specified without external components.
6. Operation at no-load will not damage these units. However, they may not meet all specifications.
7. Applying a voltage level of 4.5 to 12.5 VDC across the control terminals (see mechanical diagram) will turn the unit off. When the control inputs are left open, the unit will operate normally.
8. The **MDR-120S** is designed for mounting on a standard 35 mm DIN rail (TS35).
9. It is recommended that an external slow blow fuse also be used on the input for protection. Contact the factory for more information.

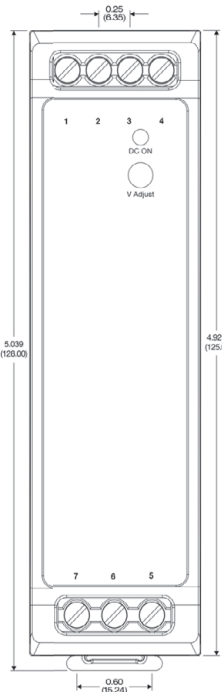
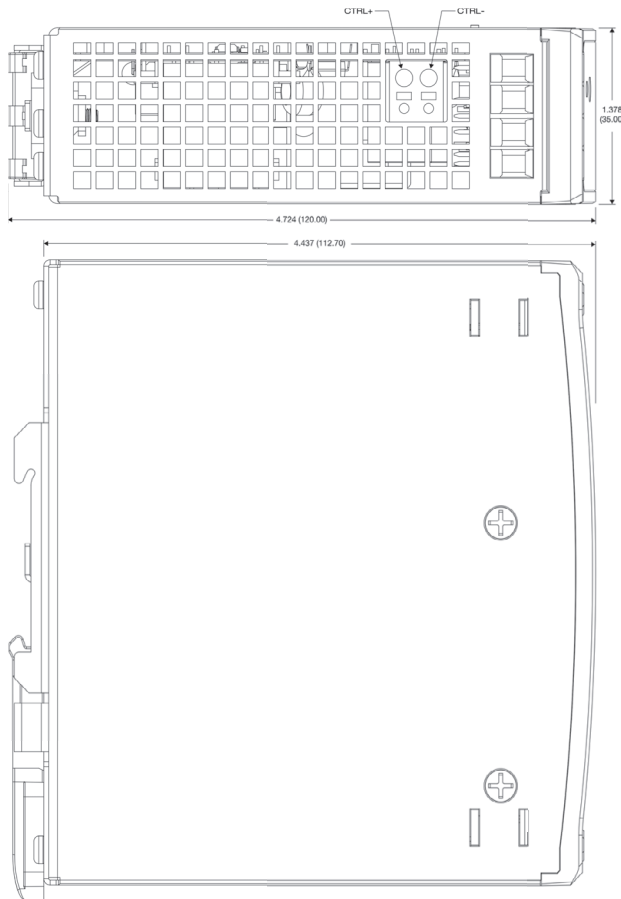
**Derating Curve, Temperature**



**Derating Curve, Input Voltage**



**Mechanical Dimensions**



**Wire Connections**

Pin	Function
1	+VOUT
2	+VOUT
3	-VOUT
4	-VOUT
5	AC-Neutral
6	AC-Line
7	⏏

**Notes:**

- All dimensions are typical in inches (mm)
- Wire Range is: 26 - 10 AWG, Strip length is 0.32 (8.0)
- Tolerance x.xx =  $\pm 0.04$  ( $\pm 1.0$ )



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