

# DR-120 Series



**New Industrial Supplies!!**

## Low Cost, Industrial 120W, DIN Rail Mount AC/DC Power Supplies

### Electrical Specifications

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

### Key Features:

- 120W Output Power
- DIN Rail Mountable
- Selectable AC Input
- UL 508 Approved
- Safety Approved
- 12, 24 & 48 VDC Outputs
- Cond./Rad. EMI Class B
- >136 kH MTBF
- **LOW COST!**



**RoHS Compliant**

### MicroPower Direct

232 Tosca Drive  
Stoughton, MA 02072  
USA

T: (781) 344-8226  
F: (781) 344-8481  
E: sales@micropowerelect.com  
W: www.micropowerelect.com



Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range	AC Input Selected by Switch On Front Panel	88		132	VAC
		176		264	
		248		370	VDC
Input Frequency Range		47		63	Hz
Inrush Current	230 VAC, Cold Start		40		A
	115 VAC, Cold Start		20		
Leakage Current	240 VAC			3.5	mA

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Tolerance	Note 1		±1.0		%
Voltage Adjustment Range	12 VDC Output	12		14	VDC
	24 VDC Output	24		28	
	48 VDC Output	48		53	
Line Regulation			±0.5		%
Load Regulation	I <sub>out</sub> = 10% to 100%		±1.0		%
Set Up Time	At Full Load		500		mSec
Rise Time	At Full Load		70		mSec
Hold Time	230 VAC, Full Load		36		mSec
	115 VAC, Full Load		32		
Ripple & Noise (Note 2)	12 VDC Output			80	mV Pk-Pk
	24 VDC Output			80	
	48 VDC Output			100	
Output Power Protection	Note 3	105		150	%
Over Voltage Protection (Note 4)	12 VDC Output	15		16.5	VDC
	24 VDC Output	29		33	
	48 VDC Output	58		65	
Over Temperature Protection (Note 5)	12 VDC Output	80	85	90	°C
	24 & 48 VDC Output	85	90	95	
Temperature Coefficient	0°C to 50°C		±0.03		%/°C
Switching Frequency	Fixed		55		kHz

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input - Output	3,000			VAC
	Input - FG (Frame Ground)	1,500			
	Output - FG (Frame Ground)	500			
Isolation Resistance (Note 6)	500 VDC	100			MΩ

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-10	+25	+60	°C
Storage Temperature Range		-20		+85	°C
Operating Humidity	RH, Non-condensing	20		90	%
Storage Humidity	RH, Non-condensing	10		95	%
Vibration	10 ~ 500 Hz; 2G 10 min./1 Cycle; X, Y, Z axis each 1 hour				

Parameter	Conditions	Min.	Typ.	Max.	Units
Case Size		2.60 x 4.93 x 3.94 Inches (65.5 x 125.5 x 100.0 mm)			
Case Material		Aluminum			
Connection		Screw Terminal			
Weight		28 Oz (0.79 kg)			

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	136.8			kHours
Safety Standards		UL 508, UL 60950, EN 60950-1			
Safety Approvals		UL, cUL, TUV			
EMI Compliance		Compliance to EN55011, EN55022 (CISPR22) Class B			
Harmonic Current Compliance		Compliance to EN6100-3-2,-3			
EMS Immunity Compliance	EN6100-4-2,3,4,5,6,8,11; ENV50204;EN6100-6-2(EN50082-2) Heavy Ind. Level, criteria A				

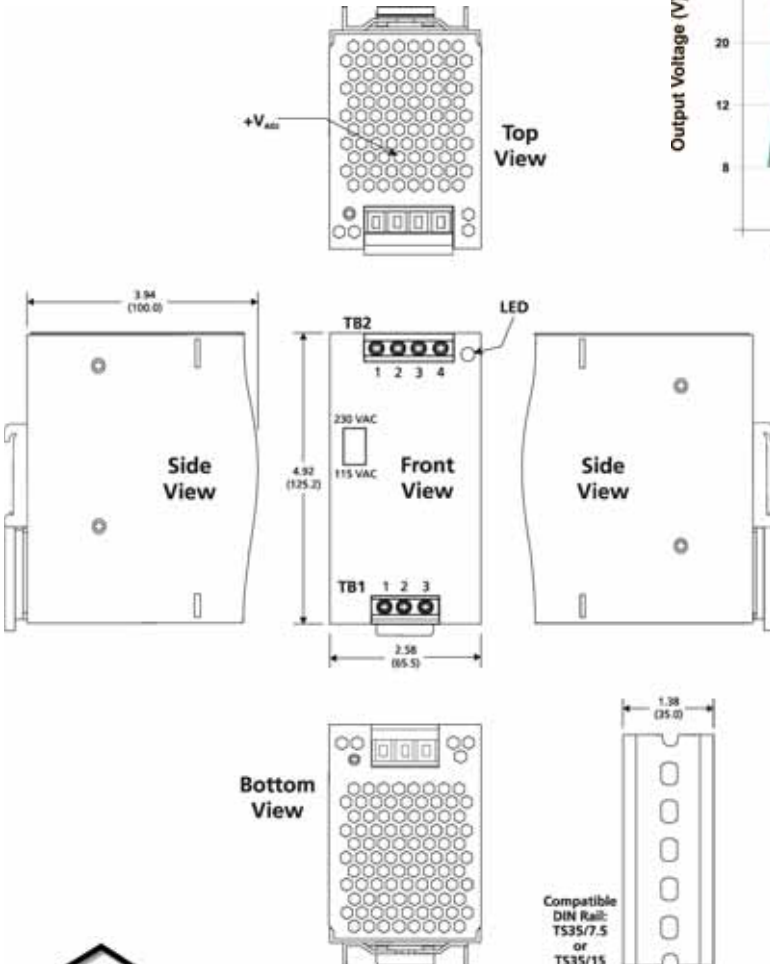
## Model Selection Guide

Model Number	Rated Power (W)	Input			Output			Efficiency (% Typ)	Fuse Rating Slow-Blow (A)	
		Voltage (VAC)		Current (A)		Voltage (VDC)	Current (A) Max			Current (A) Range
		Range		115 VAC	230 VAC					
DR-120-12	120	88 - 132 / 176 - 264		2.6	1.6	12	10.0	0 ~ 10.0	80	5.0
DR-120-24	120	88 - 132 / 176 - 264		2.6	1.6	24	5.0	0 ~ 5.0	84	5.0
DR-120-48	120	88 - 132 / 176 - 264		2.6	1.6	48	2.5	0 ~ 2.5	85	5.0

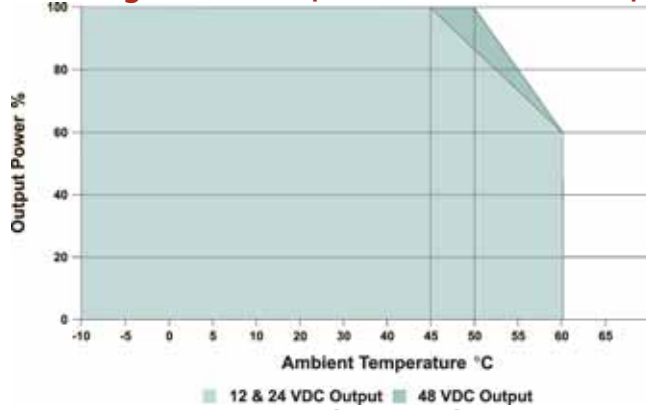
### Notes:

- Output voltage tolerance includes set-up tolerance, line regulation and load regulation. For the 12V output model, tolerance is  $\pm 2.0\%$ .
- Ripple & noise is measured using equipment with 20 Mhz of bandwidth. Connection to the unit under test is made with a 12 inch length of "twisted pair" wires terminated with a set of 1.0  $\mu\text{F}$  & 4.7  $\mu\text{F}$  capacitors connected in parallel.
- Overload protection is foldback current limiting. The unit recovers automatically when the fault is removed.
- Over voltage protection is a clamp type. The power to the unit must be manually reset to recover.
- Over temperature protection shuts down the output. The unit recovers automatically when the temperature goes down. The thermal detector is mounted on the heat sink of the power semiconductor.
- Isolation resistance is given for Input/Output; Input/FG and Output/FG.
- To mount the unit to the DIN rail, tilt the unit rearwards from the top, fitting the mount over the top of the rail. Press back on the bottom front of the unit until it locks in place on the rail. To remove the unit from the rail, pull the removal clip at the bottom rear of the unit downward with a screw driver. With the clip down, lift up on the unit from the bottom front until it clears the rail. Before installation or removal all wiring should be disconnected and the main power to the system shut off.
- When wiring the supply, all lines should be as thick and short as possible. AWG 14 wire is recommended for the DR-120 series.
- The units should be mounted so they are vertically orientated. Air flow (if it is provided) would optimally flow from the bottom to the top of the unit.
- It is recommended that a fuse be used on the input of a power supply for protection. See the table above for the correct rating.

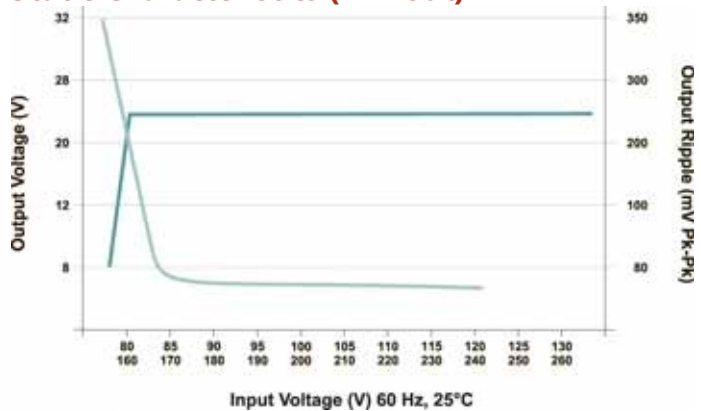
## Mechanical Dimensions



## Derating Curve - Output Power vs Ambient Temperature



## Static Characteristics (24 Vout)



## Terminal Connections - TB1

Pin	Function
1	Frame Ground (FG)
2	AC/Neutral (DC+)
3	AC/Live (DC-)

## Terminal Connections - TB2

Pin	Function
1,2	DC Output (+V)
3,4	DC Output (-V)

### Mechanical Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx =  $\pm 0.01$  ( $\pm 0.25$ )



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