

# DRT-960 Series

## Low Cost, Three-Phase 960W, DIN Rail Mount AC/DC Power Supplies



**New Industrial Supplies!!**

### Electrical Specifications

Specifications typical @ +25°C, 400 VAC input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

### Key Features:

- 960W Output Power
- DIN Rail Mountable
- Three-Phase, 4-Wire Input
- UL 508 Approved
- UL 60950 & EN 60950 App.
- 24 VDC & 48 VDC Outputs
- Cond./Rad. EMI Class B
- >122 kHz MTBF
- **LOW COST!**



**RoHS Compliant**

### MicroPower Direct

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### Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range		340		555	VAC
		480		780	VDC
Input Frequency Range		47		63	Hz
Inrush Current	Cold Start		50		A
Leakage Current	530 VAC			3.5	mA

### Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy	Note 1		±1.0		%
Voltage Adjustment Range	24 VDC Output	24		28	VDC
	48 VDC Output	48		55	
Line Regulation			±0.5		%
Load Regulation	I <sub>out</sub> = 10% to 100%		±0.5		%
Set Up Time	At Full Load, 400 VAC Input		200		mSec
	At Full Load, 500 VAC Input		200		
Rise Time	At Full Load		60		mSec
Hold Time	At Full Load, 400 VAC Input		14		mSec
	At Full Load, 500 VAC Input		30		
Ripple & Noise (Note 2)				80	mV Pk-Pk
Output Power Protection	Note 3	105		150	%
Over Voltage Protection (Note 4)	24 VDC Output	30		36	VDC
	48 VDC Output	59		66	
Over Temperature Protection	TSW1 Note 5	105	110	115	°C
	TSW2 Note 5	80	85	90	
Temperature Coefficient	0°C to 50°C		±0.03		%/°C

### General

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

### Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-20	+25	+60	°C
Storage Temperature Range		-40		+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				

### Physical

Case Size	10.87 x 4.94 x 3.94 Inches (125.5 x 125.5 x 100.0 mm)
Case Material	Aluminum
Connection	Screw Terminal
Weight	117.7 Oz (3.3 kg)

### Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	122.5			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				

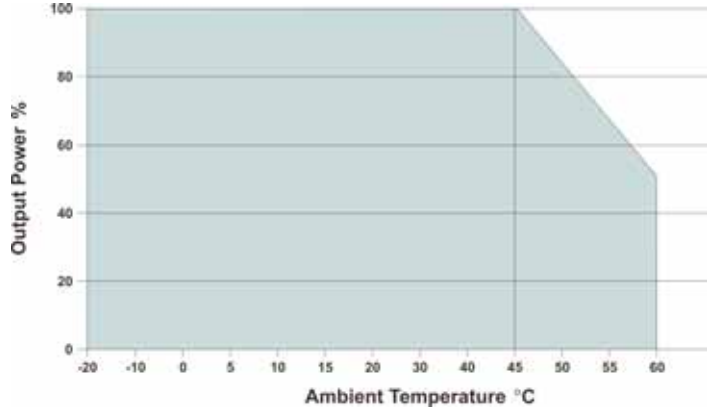
## Model Selection Guide

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	400 VAC					
DRT-960-24	960	340 - 555	2.0	1.6	24	40	0 ~ 40	91	6.3
DRT-960-48	960	340 - 555	2.0	1.6	48	20	0 ~ 20	92	6.3

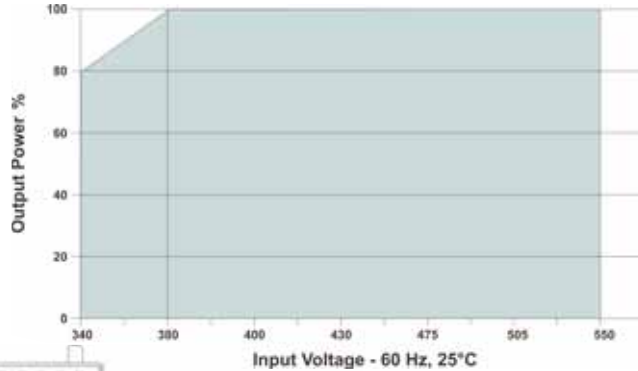
### Notes:

- Output voltage tolerance includes set-up tolerance, line regulation and load regulation.
- 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  $\mu$ F & 4.7  $\mu$ 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. For TSW1, the thermal detector is mounted on the heat sink of the power semiconductor. For TSW2, the thermal detector is mounted on the heat sink of the power Diode.
- 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 **DRT-960** 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.

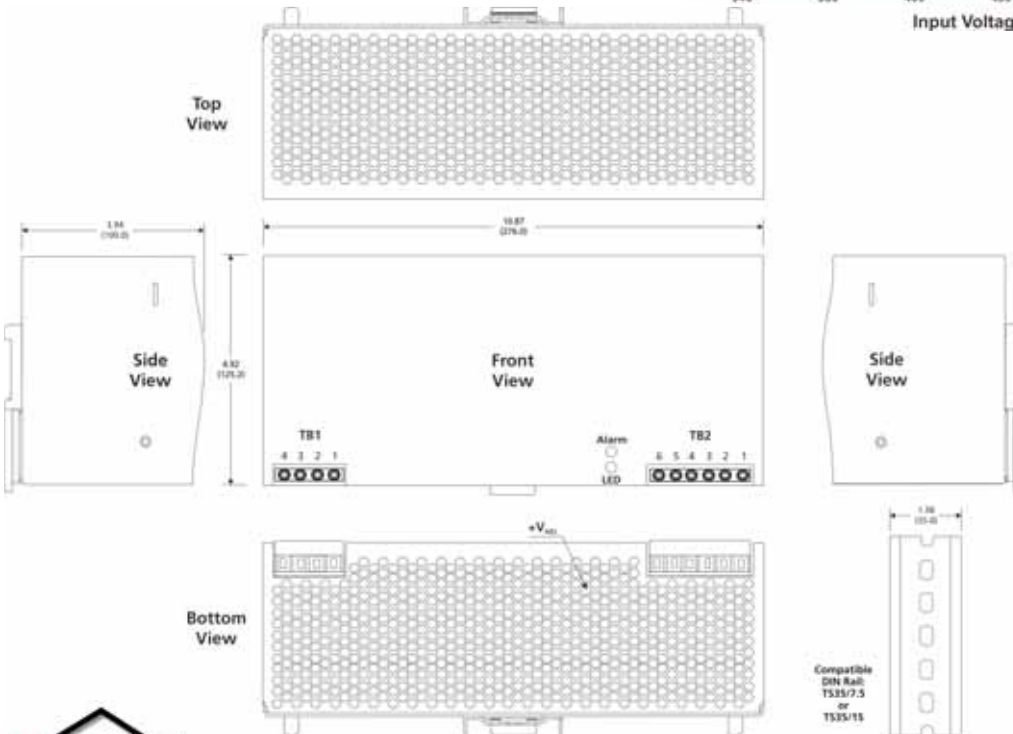
## Derating Curve - Output Power vs Ambient Temperature



## Static Characteristics



## Mechanical Dimensions



### Terminal Connections - TB1

Pin	Function
1	AC/Lve 1
2	AC/Lve 2
3	AC/Live 3
4	Frame Ground (FG)

### 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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