


960 Watt, 48 Volt, Three Phase Input
Single Output, DIN RAIL Power Supply

UNIT CODE	DESCRIPTION
TDR 960-48	960 Watt, 48 Volt, Three Phase, Single Output, DIN RAIL Power Supply

SPECIFICATIONS		
AC Input	Output	Approvals
Three-Phase (340~550VAC Input Range)	+48VDC @ 0~20A	

Features at a Glance:

Three-Phase AC 340 ~ 550V wide range input
High efficiency 91% and low power dissipation
Protections: Short circuit / Over load /
Over voltage / Over temperature

LED indication for power on
Quiet - Cooling by natural (free air) convection
Operational Temperature range: -20 ~ +70°C
Installed on DIN rail TS35 / 7.5 or 15
100% full load burn-in test

Safety standards: UL508, UL60950-1
TUV EN60950-1 approved

EMC: EN61000-6-2 (EN50082-2) industrial
Immunity (See following pages
for full EMC details)

Certificates: UL / CUL / TUV / CB / CE
MTBF hours: 91.1K hrs. *MIL-HDBK-217F (25°C)*

Case: 930A

Weight: 5.51Lbs. (2.5 Kgs)

Dimensions: 8.93" W x 4.9" H x 3.93" D
227 x 125.2 x 100mm (W*H*D)

3 year warranty

Similar Compact version: [C-WDR 960W-48V](#)



TDR 960 fulfills requirements for high output, economical, 3-phase industrial DIN rail power units that are efficient (91%) and quiet.

Can be operated at the full load of 960W at up ambient temperatures up +45°C (or up to +60°C with some power derating). Other standard features include optional parallel function (1 + 1) wide operational temperature range, and protections for short-circuit, overload, over voltage, and over temperature.

Suitable applications include general telecom, factory automation, electro-mechanical, IT, security, data communications and control panel applications, and any installations with fan-less or low noise requirements.

Pricing	1 ~ 9	\$ 449.00
	10+	\$ 419.50
	25+	\$ 392.00

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■ Features :

- Three-Phase AC 340 ~ 550V wide range input
- High efficiency 91% and low dissipation
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Optional parallel function(1+1)
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- UL 508(industrial control equipment)approved
- EN61000-6-2(EN50082-2) industrial immunity level
- 100% full load burn-in test
- 3 years warranty

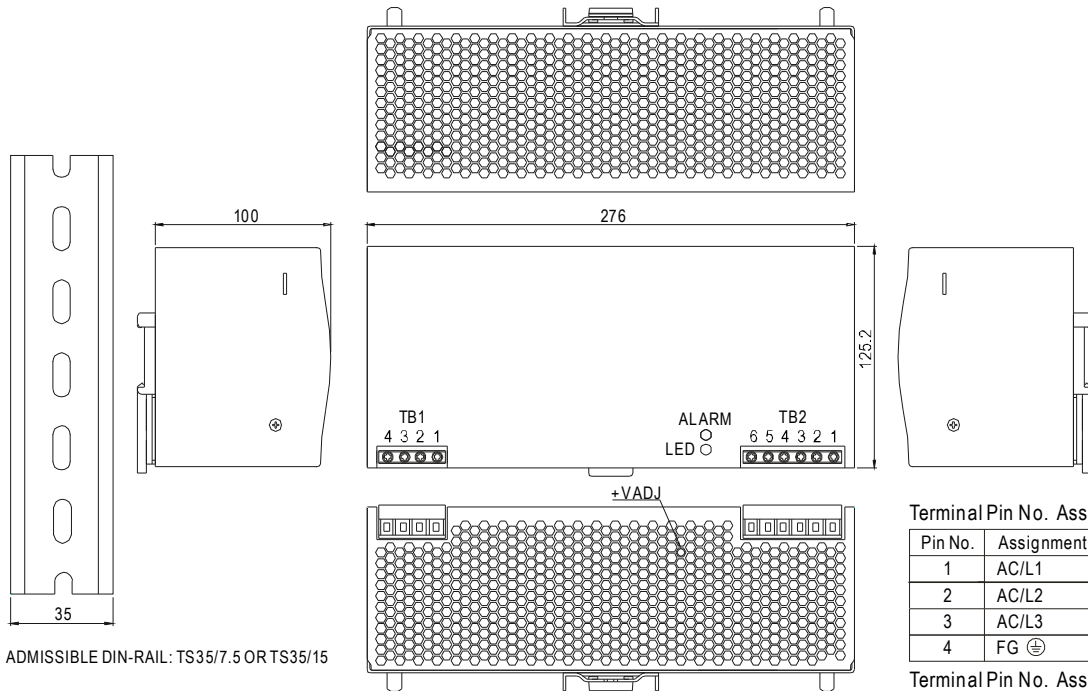


SPECIFICATION

MODEL	DRT-960-24	DRT-960-48	
OUTPUT	DC VOLTAGE	24V	48V
	RATED CURRENT	40A	20A
	CURRENT RANGE	0 ~ 40A	0 ~ 20A
	RATED POWER	960W	960W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	80mVp-p
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%
	SETUP, RISE TIME	200ms, 60ms/400VAC	200ms, 60ms/500VAC at full load
HOLD UP TIME (Typ.)	14ms/400VAC	30ms/500VAC at full load	
INPUT	VOLTAGE RANGE	Three-Phase 340 ~ 550 VAC (Dual phase operation possible in connecting L1,L3,FG Note.5)	
	FREQUENCY RANGE	47 ~ 63Hz	
	EFFICIENCY (Typ.)	91%	92%
	AC CURRENT (Typ.)	2A/400VAC	1.6A/500VAC
	INRUSH CURRENT (max.)	COLD START 50A	
	LEAKAGE CURRENT	<3.5mA / 530VAC	
PROTECTION	OVERLOAD	105 ~ 125% rated output power Protection type : Constant current limiting, unit will shut down o/p voltage after 3 sec. , re-power on to recover	
	OVER VOLTAGE	30 ~ 36V	59 ~ 66V
	OVER TEMPERATURE	110°C ±5°C (TSW1) detect on heatsink of power transistor 85°C ±5°C (TSW2) detect on heatsink of power diode Protection type : Shut down o/p voltage, recovers automatically after temperature goes down	
ENVIRONMENT	WORKING TEMP.	-20 ~ +60°C (Refer to "Derating Curve")	
	WORKING HUMIDITY	20 ~ 90% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)	
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6	
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, UL60950-1, TUV EN60950-1 approved	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH	
	EMC EMISSION	Compliance to EN55011 (CISPR11), EN55022 (CISPR22), EN61204-3 Class B, EN61000-3-2,-3	
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61204-3, EN61000-6-2 (EN50082-2), heavy industry level, criteria A	
OTHERS	MTBF	122.5K hrs min. MIL-HDBK-217F (25°C)	
	DIMENSION	276*125.2*100mm (W*H*D)	
	PACKING	3.3Kg; 4pcs/14.2Kg/1.14CUFT	
NOTE	<ol style="list-style-type: none"> 1. All parameters NOT specially mentioned are measured at 400VAC input, rated load and 25°C of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 5. Dual phase operation(connecting L1,L3,FG)is allowed under certain derating to output load. Please refer to the derating curves for details. 		

Mechanical Specification

Case No.934 Unit:mm



ADMISSIBLE DIN-RAIL: TS35/7.5 OR TS35/15

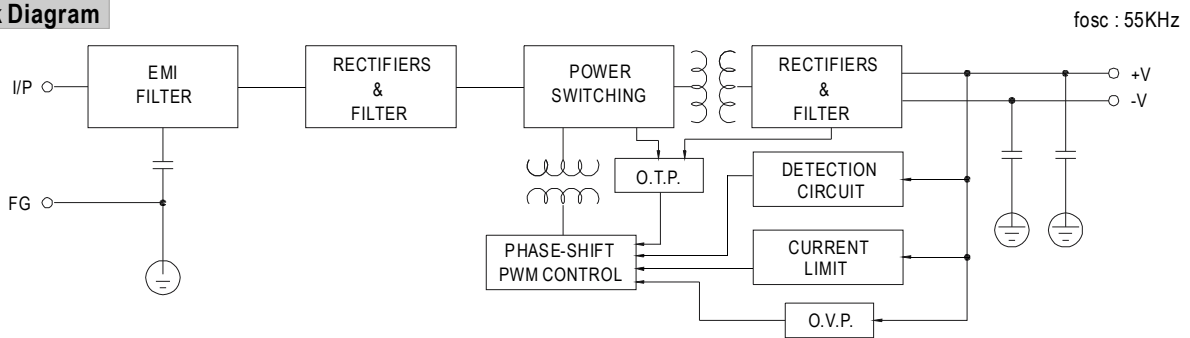
Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	AC/L1
2	AC/L2
3	AC/L3
4	FG \oplus

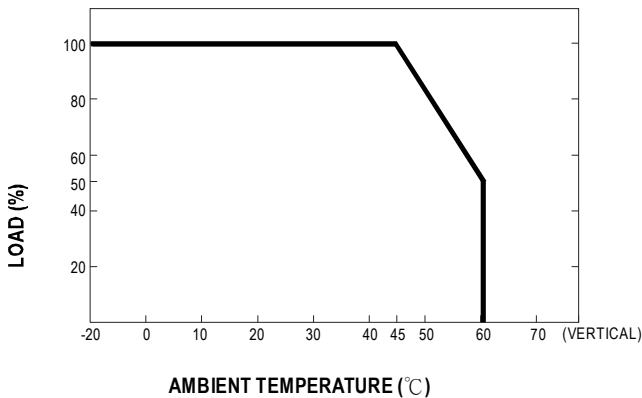
Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2,3	DC OUTPUT +V
4,5,6	DC OUTPUT -V

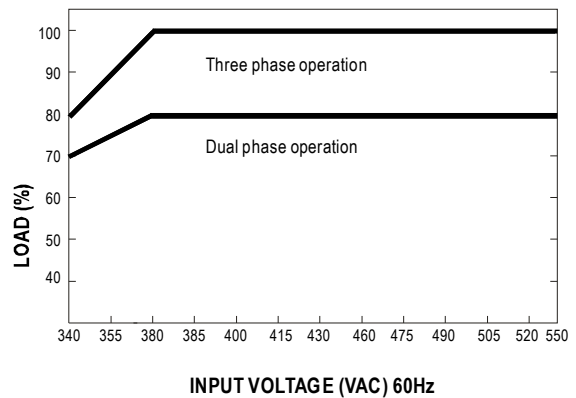
Block Diagram



Derating Curve

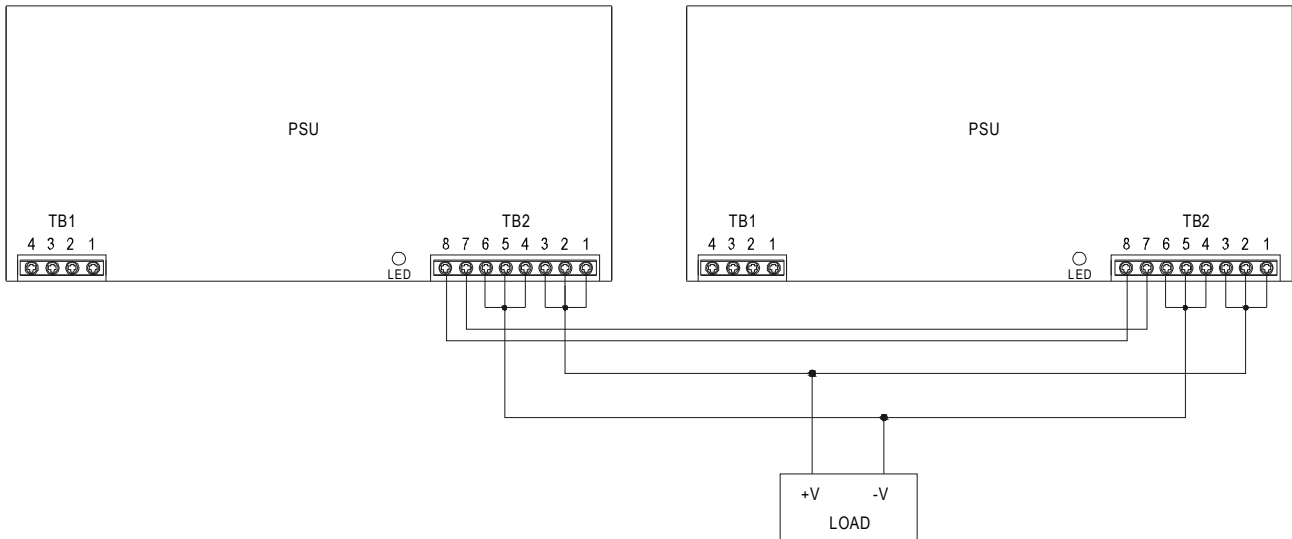


Static Characteristics



Parallel Function (1+1)-Optional (Special order required)

When in parallel operation, the minimum output load should be greater than 3% of total output load.
 (Min. load >3% rated current per unit x number of unit)



TB1 Terminal Pin No. Assignment

Pin No.	Assignment
1	AC/L1
2	AC/L2
3	AC/L3
4	FG

TB2 Terminal Pin No. Assignment

Pin No.	Assignment
1,2,3	DC OUTPUT +V
4,5,6	DC OUTPUT -V
7	GND
8	P(Current Share)

Note: Under parallel operation, if the load current is too small, only one PSU(master) would provide the power and hence the LED indicator of other PSUs may not light up.