POLLOCK INDUSTRIES

Technical Data Sheet

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 ~ +70ºC

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

Pollock Industries, Inc., PO Box 1003, White River, VT 05001
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960W Three Phase Industrial DIN RAIL Power Supply DRT-960 series

■ 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 ~ 550VAC (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
		Protection type : Shut down o/p voltage, re-power on to recover	
	OVER TEMPERATURE	110℃±5℃ (TSW1) detect on heatsink of power transistor	85℃±5℃ (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℃ (Refer to "Derating Curve")	
	WORKING HUMIDITY	20 ~ 90% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)	
	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℃/ 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℃)	
	DIMENSION	276*125.2*100mm (W*H*D)	
	PACKING	3.3Kg; 4pcs/14.2Kg/1.14CUFT	
NOTE	1. All parameters NOT specially mentioned are measured at 400VAC input, rated load and 25℃ 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.		

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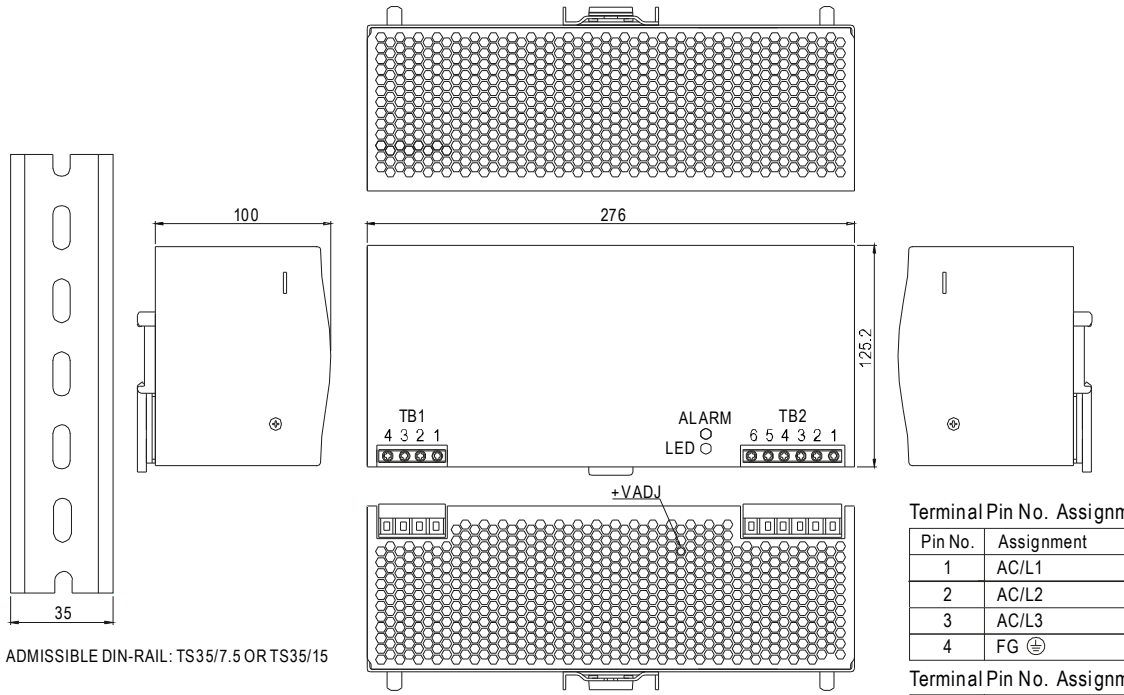
■ Mechanical Specification

Case No.934 Unit:mm



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

Terminal Pin No. Assignment (TB1)

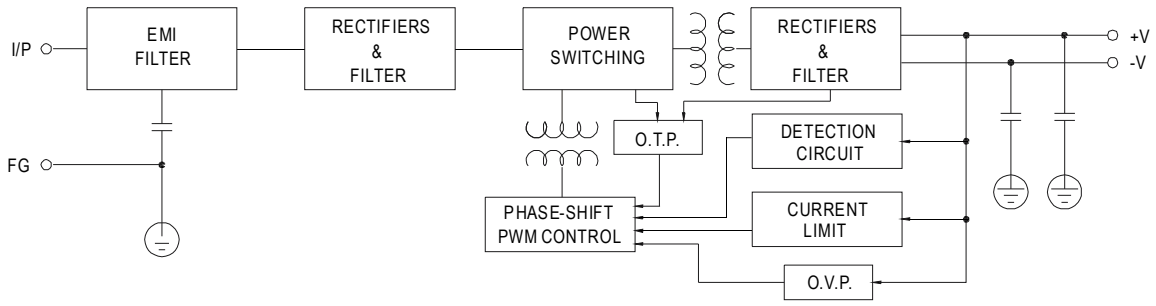
Pin No.	Assignment
1	AC/L1
2	AC/L2
3	AC/L3
4	FG ⏚

Terminal Pin No. Assignment (TB2)

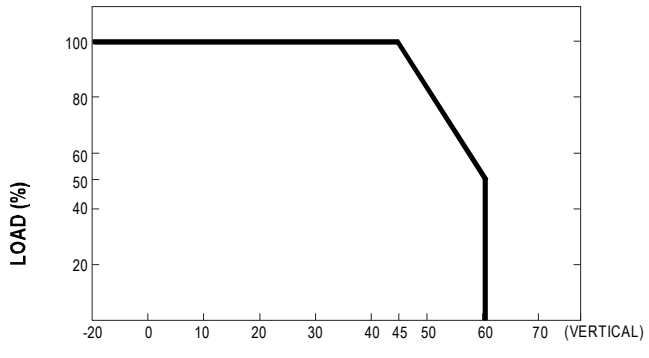
Pin No.	Assignment
1,2,3	DC OUTPUT +V
4,5,6	DC OUTPUT -V

■ Block Diagram

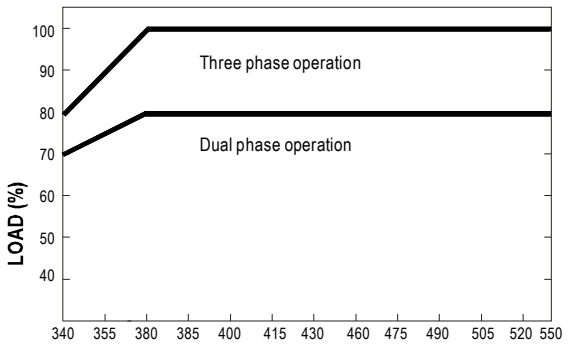
fosc : 55KHz



■ Derating Curve



■ Static Characteristics



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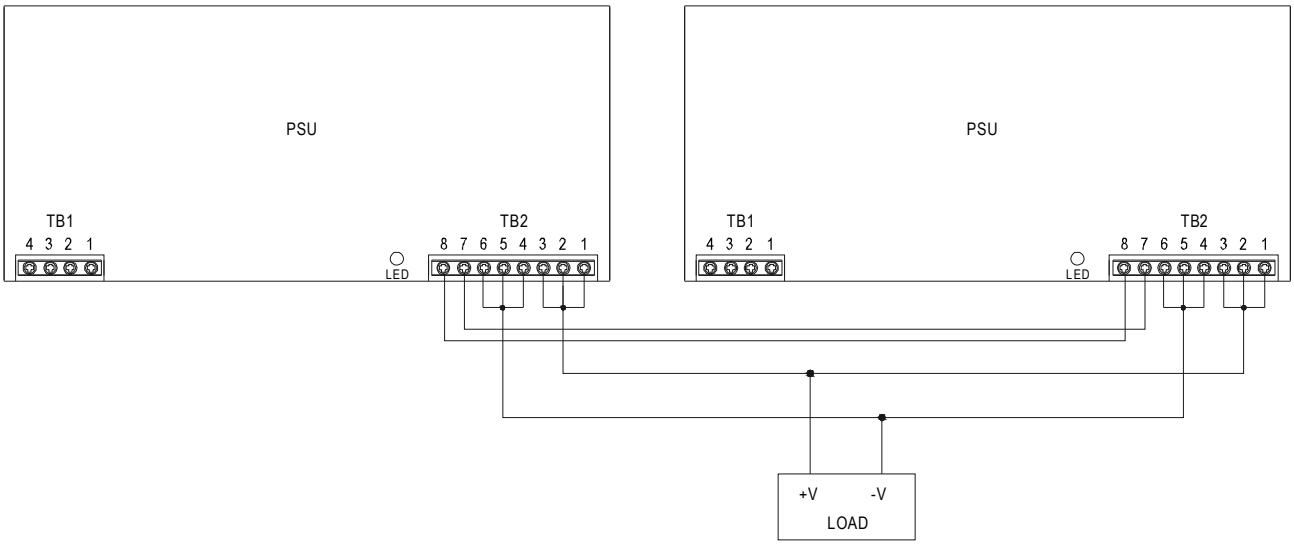
■ Parallel Function (1+1)-Optional (Special order required)

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.