240W Slim Three Phase Industrial DIN Rail with PFC Function TDR-240 series

User's Manual

AS/NZS61558-1/-2-16 UL61010 BS EN/EN61558 BIS IS13252(Part1) (only for 24V) TPTC004

Automate Industrial Security Network Telecom

Features

- Three-Phase 340 ~ 550VAC wide range input (Dual phase operation possible)
- 63mm slim width
- Built-in passive PFC function compliance to BS EN/EN61000-3-2
- High efficiency 92% and low power dissipation
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Full power between -30~+60℃
- Built-in constant current limiting circuit
- Can be installed on DIN rail TS-35/7.5 or 15
- UL61010(industrial control equipment)approved
- BS EN/EN61000-6-2(BS EN/EN50082-2) industrial immunity level
- DC OK relay contact
- 3 years warranty

Applications

- Industrial control system
- Semiconductor fabrication equipment
- Factory automation
- Electro-mechanical apparatus

GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

TDR-240 is one economical slim 240W Din rail power supply series, adapt to be installed on TS-35/7.5 or TS-35/15 mounting rails. The body is designed 63mm in width, which allows space saving inside the cabinets. The entire series adopts the full range AC input from 3ψ 340VAC to 550VAC (Dual Phase operation possible) and conforms to BS EN/EN61000-3-2, the norm the European Union regulates for harmonic current. TDR-240 is designed with metal housing that enhances the unit's power dissipation. With working efficiency up to 92 %, the entire series can operate at the ambient temperature between -30℃ and 70℃ under air convection. It is equipped with constant current mode for over-load protection, fitting various inductive or capacitive applications. The complete protection functions and relevant certificates for industrial control apparatus (UL61010-1, UL61010-2-201, BS EN/EN61558-1, BS EN/EN61558-2-16, EAC TP TC 004 approved, and etc.) make TDR-240 a very competitive power supply solution for industrial applications.

Model Encoding

TDR - 240 - 24

- 24 — Output voltage
- 240 — Rated wattage
- TDR — Series name

SPECIFICATION

MODEL		TDR-240-24	TDR-240-48
OUTPUT	DC VOLTAGE	24V	48V
	RATED CURRENT	10A	5A
	CURRENT RANGE	0 ~ 10A	0 ~ 5A
	RATED POWER	240W	240W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
	SETUP, RISE TIME	2000ms, 60ms/400VAC 1500ms, 60ms/500VAC at full load	
	HOLD UP TIME (Typ.)	20ms / 400VAC 40ms / 500VAC at full load	
INPUT	VOLTAGE RANGE Note.4	Three-Phase 340 ~ 550VAC (Dual phase operation possible in connecting L1,L3,FG or L2,L3,FG) or 480 ~ 780VDC	
	FREQUENCY RANGE	47 ~ 63Hz	
	POWER FACTOR (Typ.)	PF≧0.53/400VAC PF≧0.52/500VAC at full load	
	EFFICIENCY (Typ.)	92%	92%
	AC CURRENT (Typ.)	0.69A/400VAC 0.6A/500VAC	
	INRUSH CURRENT (Typ.)	COLD START 50A	
	LEAKAGE CURRENT	<2mA / 530VAC	
PROTECTION	OVERLOAD	105 ~ 130% rated output power	
		Protection type : Constant current limiting, unit will hiccup after 3 sec.	
	OVER VOLTAGE	30 ~ 36V	56 ~ 65V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed.	
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down	
FUNCTION	DC OK REALY CONTACT RATINGS (max.)	60VDC/0.3A, 30VDC/1A, 30VAC/0.5A resistive load	
ENVIRONMENT	WORKING TEMP. Note.5	-30 ~ +70℃ (Refer to "Derating Curve")	
	WORKING HUMIDITY	20 ~ 95% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing	
	TEMP. COEFFICIENT	±0.05%/℃ (0 ~ 60℃)	
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6	
	OPERATING ALTITUDE Note.6	5000 meters	
	OVER VOLTAGE CATEGORY	Ⅲ; According to EN61558, EN50178, EN60664-1, EN62477-1, EN60204-1; altitude up to 2000 meters	
SAFETY & EMC (Note 7)	SAFETY STANDARDS	UL61010-1, UL61010-2-201, BS EN/EN61558-1, BS EN/EN61558-2-16, BIS IS13252(Part1)(only for 24V), EAC TP TC 004 approved, design refer to AS/NZS61558-1/-2-16	
	WITHSTAND VOLTAGE	I/P-O/P:4.87KVAC I/P-FG:2.4KVAC O/P-FG:0.5KVAC O/P-DC OK:0.5KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25℃/ 70% RH	
	EMC EMISSION	**Parameter**	**Standard** / **Test Level / Note**
		Conducted	BS EN/EN55032(CISPR32)/BS EN/EN61204-3 / Class B
		Radiated	BS EN/EN55032(CISPR32)/BS EN/EN61204-3 / Class B
		Harmonic Current	BS EN/EN61000-3-2 / Class A
		Voltage Flicker	BS EN/EN61000-3-3 / -----
	EMC IMMUNITY	BS EN/EN55035 , BS EN/EN61204-3	
		Parameter	**Standard** / **Test Level / Note**
		ESD	BS EN/EN61000-4-2 / Level 4, 15KV air ; Level 4, 8KV contact
		Radiated Field	BS EN/EN61000-4-3 / Level 3
		EFT / Burst	BS EN/EN61000-4-4 / Level 3
		Surge	BS EN/EN61000-4-5 / Level 4, 2KV / Line-Line, Level 4, 4KV/ Line-Earth
		Conducted	BS EN/EN61000-4-6 / Level 3
		Magnetic Field	BS EN/EN61000-4-8 / Level 4
		Voltage Dips and Interruptions	BS EN/EN61000-4-11 / ＞95% dip 0.5 periods, 30% dip 25 periods＞ 95% interruptions 250 periods
OTHERS	MTBF	1534.9K hrs min. Telcordia SR-332(Bellcore); 215.6K hrs min. MIL-HDBK-217F (25℃)	
	DIMENSION	63*125.2*113.5mm (W*H*D)	
	PACKING	1Kg ; 12pcs/13Kg/1.22CUFT	

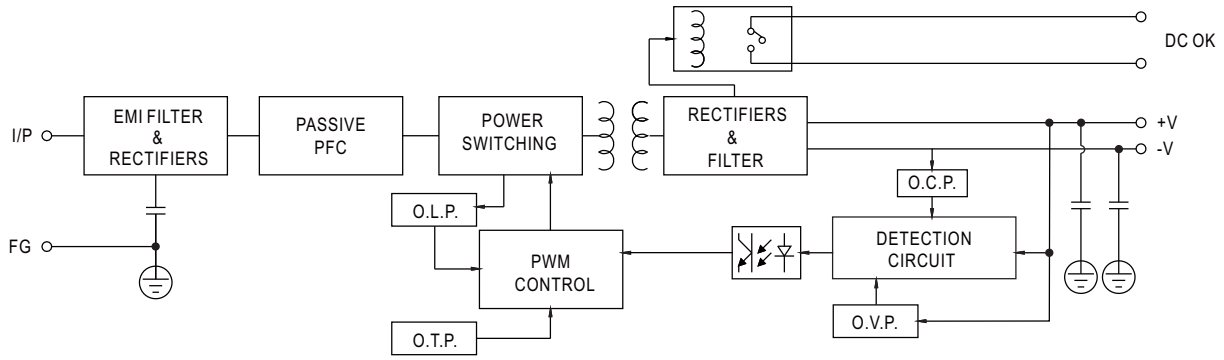
NOTE

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. Dual phase operation is allowed under certain derating to output load.
   Please refer to derating curves for details.
5. Installation clearances : 40mm on top, 20mm on the bottom, 5mm on the left and right side are recommended when loaded permanently with full power.
   In case the adjacent device is a heat source, 15mm clearance is recommended.
6. The ambient temperature derating of 3.5℃/1000m is needed for operating altitude higher than 2000m(6500ft).
7. 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. For guidance on how to perform these EMC tests, please refer to “EMI testing of component power supplies.”
   (as available on http://www.meanwell.com)

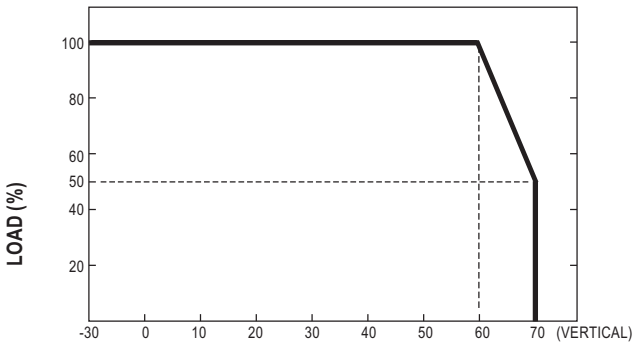
※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

■ BLOCK DIAGRAM

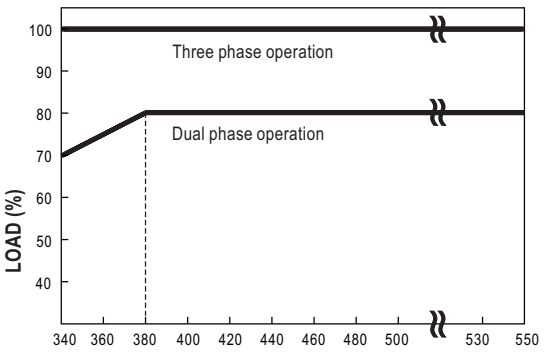
PWM fosc : 60KHz



■ DERATING CURVE



■ OUTPUT DERATING VS INPUT VOLTAGE



Note : When the dual phase input voltage is between 340~380Vac and ambient temperature is between -10℃~-30℃, the power supply may experience hiccup at cold start. The power supply will start up normally after 5~10 seconds.

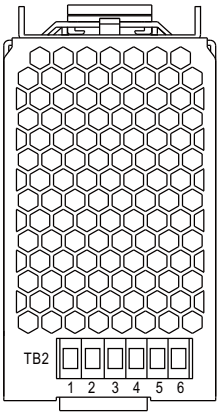
■ DC OK RELAY CONTACT

Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30VDC/1A, 30VAC/0.5A resistive load.

Terminal Pin No. Assignment (TB2)

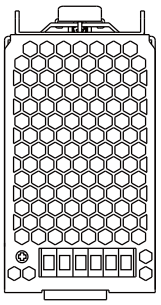
Pin No.	Assignment
5,6	DC OK Relay Contact

※ Please contact MEAN WELL for more details.

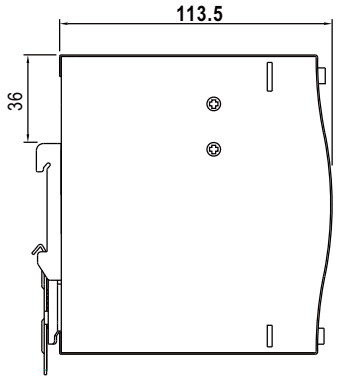


■ MECHANICAL SPECIFICATION

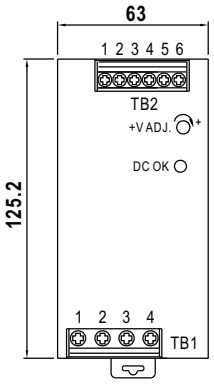
Case No. 979D Unit:mm



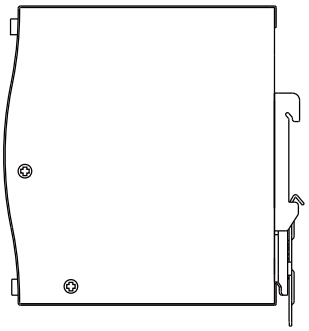
Top View



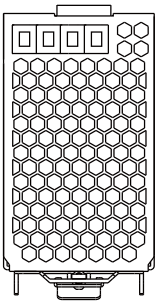
Side View



Front View



Side View



Bottom View

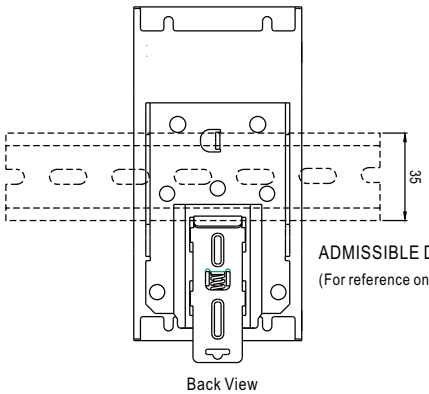
Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	AC/L1
2	AC/L2 or DC -
3	AC/L3 or DC +
4	FG ⏚

Terminal Pin No. Assignment (TB2)

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

■ Installation Instruction



ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15
(For reference only. Not included with unit.)

Back View

This series fits DIN-RAIL TS35/7.5 or TS35/15.
For installation details, please refer to the Instruction manual.

■ Installation Manual

Please refer to : http://www.meanwell.com/manual.html