480W AC/DC Economical Ultra Slim Industrial DIN Rail Power XDR-480E series

User's Manual

LISTED UL61010 | BS EN/EN62368-1 BS EN/EN61558-1 BS EN/EN61010-1 | IEC62368-1 IEC61558-1 IEC61010-1 | AS/NZS61558-1 AS/NZS62368-1 | IS13252 (By request) | KC62368-1 (By request)

CNS15598-1 | GB4943.1 | TPTC004

Automate | Industrial | Security | Network | Telecom

Features

- 85~264Vac input with PFC
- Global certificates in multi-fields (ITE 62368-1,Industrial 61558-1/-2-16,61010)
- 48mm slim width
- High efficiency up to 96% and no load power dissipation<1.2W
- Built-in constant current limiting circuit
- Current sharing up to 1920W (3+1) for parallel use
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Fanless design, cooling by free air convection
- Over voltage category III (OVC III)
- -40~+70°C wide range operation temperature (>+50℃ derating)
- Operating altitude up to 5000 meters
- Built-in DC OK relay contact
- Can be installed on DIN rail TS-35/7.5 or 15
- 3 years warranty

Applications

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

GTIN CODE

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

Description

The XDR-480E series is a 480W AC/DC economical ultra slim industrial DIN rail power. Key features of this series include a narrow 48mm casing, optimizing system installation space, and an ultra-wide input range of 85~264Vac suitable for global use. It boasts a maximum efficiency of 96% and a low standby power consumption <1.2W for energy savings and carbon reduction. It has built-in constant current, fanless design, a wide operating temperature range of -40 to +70℃ (up to +50℃ at full load); OVCIII compliance; parallel function capability up to 1920W; built-in DC OK signal. With comprehensive protection functions, complete safety certifications, and a 3-years warranty, the XDR-480E series is a compact, high-performance, and highly reliable DIN rail power supply.

Model Encoding

XDR - 480E - 24

- 24 — Output voltage(12V/24V/36V/48V)
- E — Economical version
- 480 — Output wattage
- XDR — Series name

480W AC/DC Economical Ultra Slim Industrial DIN Rail Power XDR-480E series

SPECIFICATION	XDR-480E-12	XDR-480E-24	XDR-480E-36	XDR-480E-48
OUTPUT				
DC VOLTAGE	12V	24V	36V	48V
RATED CURRENT	30A	20A	13.3A	10A
CURRENT RANGE	0 ~ 30A	0 ~ 20A	0 ~ 13.3A	0 ~ 10A
RATED POWER	360W	480W	478.8W	480W
RIPPLE & NOISE (max.) Note.2	100mVp-p	120mVp-p	150mVp-p	150mVp-p
VOLTAGE ADJ. RANGE	12 ~ 15V	24 ~ 29V	36 ~ 42V	48 ~ 55V
VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%
LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
SETUP, RISE TIME	1500ms, 150ms/230Vac 3000ms, 150ms/115Vac at full load			
HOLD UP TIME (Typ.)	15ms/230Vac 15ms/115Vac at full load			
INPUT				
AC VOLTAGE RANGE	85 ~ 264Vac			
DC VOLTAGE RANGE	120 ~ 370Vdc			
NO LOAD POWER CONSUMPTION (Typ.)	1W @115Vac & 230Vac		1.2W @115Vac & 230Vac	
FREQUENCY RANGE	47 ~ 63Hz			
POWDR FACTOR (Typ.)	PF>0.95/230Vac PF>0.98/115Vac at full load			
EFFICIENCY (Typ.)	94%	95.5%	95.5%	96%
AC CURRENT (Typ.)	6A/115Vac 3A/230Vac			
INRUSH CURRENT (Typ.)	COLD START 15A/115Vac 30A/230Vac			
LEAKAGE CURRENT	<1mA / 240Vac			
PROTECTION				
OVERLOAD	105~130% rated output power			
	Hiccup mode when output voltage <30%, recovers automatically after fault condition is removed Constant current limiting without shutdown within 30%~100% rated output voltage, recovers automatically after fault condition is removed			
OVER VOLTAGE	Max. 18V	Max. 35V	Max. 50V	Max. 63V
	Protection type : Hiccup mode, recovers automatically after fault condition is removed.			
OVER TEMPERATURE	Protection type : Shut down o/p voltage,recovers automatically after temperature goes down			
FUNCTION				
PARALLEL (Droop Mode)	Up to 1920W Max (3+1) units;Please refer to Function Manual for more details			
DC OK RELAY CONTACT	Relay Contact Ratings (max.):30Vdc/1A, 30Vac/0.5A resistive load			
ENVIRONMENT				
WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")			
WORKING HUMIDITY	20 ~ 95% RH non-condensing			
STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing			
TEMP. COEFFICIENT	±0.03% /℃ (0 ~ 50℃)			
VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6			

480W AC/DC Economical Ultra Slim Industrial DIN Rail Power XDR-480E series

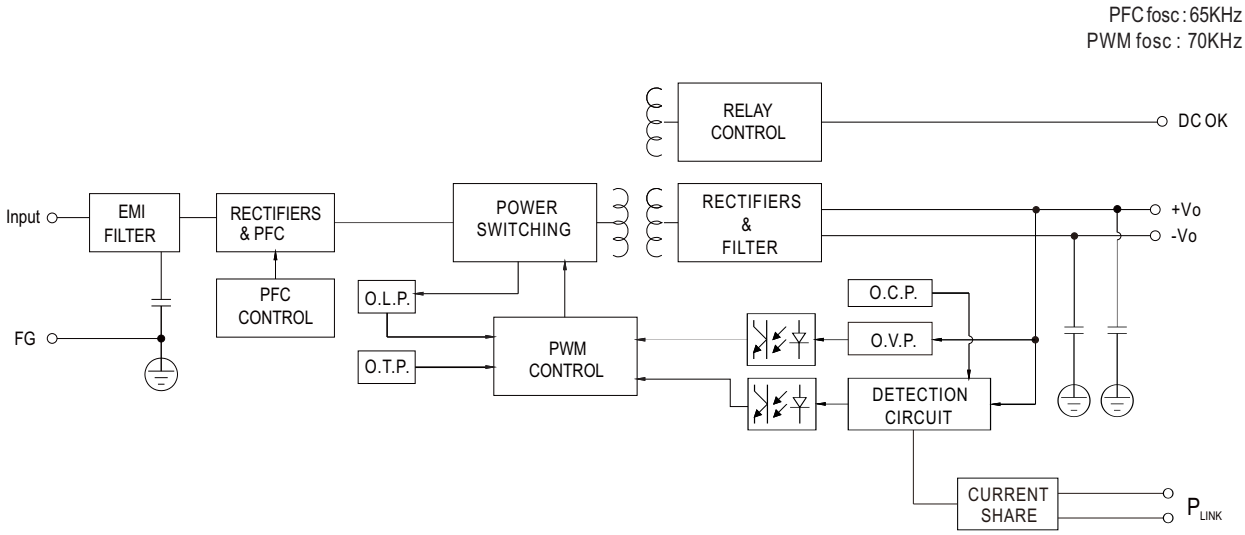
SPECIFICATION	XDR-480E-12	XDR-480E-24	XDR-480E-36	XDR-480E-48
SAFETY & EMC Note.6				
SAFETY STANDARDS	UL/CUL 61010-1/-2-201; TUV BS EN/EN 62368-1, BS EN IEC/EN IEC 61558-1/-2-16, BS EN/EN 61010-1/-2-201; CB IEC 62368-1, IEC 61558-1/2-16, IEC 61010-1/-2-201; RCM AS/NZS 62368-1, AS/NZS 61558-1/-2-16; BSMI CNS15598-1; CCC GB4943.1; EAC TPTC004 approved; KC KC62368-1 and BIS IS13252 (Part 1):2010 certified, no stock ,contact sale for inquires			
OVER VOLTAGE CATEGORY Note.4	IEC/EN 61558-1/-2-16 (OVC Ⅲ, altitude up to 2000m) IEC/EN/UL 61010 (OVC Ⅱ, altitude up to 5000m) IEC/EN 62368-1 (OVC Ⅱ, altitude up to 5000m)			
SAFETY EXTRA-LOW VOLTAGE(SELV)	IEC/EN 61558-2-16 (SELV) IEC/EN/UL 61010-2-201 (SELV) IEC/EN 62368-1 (SELV / ES1)			
WITHSTAND VOLTAGE	I/P-O/P: 4KVac I/P-FG: 2KVac O/P-FG: 1.5KVac 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 / CNS15936	Class B	
	Radiated	BS EN/EN55032 (CISPR32) / BS EN/EN61204-3 / CNS15936	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, BS EN/EN61000-6-2(BS EN/EN50082-2)			
	Parameter	**Standard**	**Test Level / Note**	
	ESD	BS EN/EN61000-4-2	Level 3, 8KV air ; Level 2, 4KV contact; criteria A	
	Radiated	BS EN/EN61000-4-3	Level 3, 10V/m ; criteria A	
	EFT / Burst	BS EN/EN61000-4-4	Level 3, 2KV ; criteria A	
	Surge	BS EN/EN61000-4-5	Level 4, 2KV/Line-Line ;Level 4, 4KV/Line-Line-Chassis ;criteria A	
	Conducted	BS EN/EN61000-4-6	Level 3, 10V ; criteria A	
	Magnetic Field	BS EN/EN61000-4-8	Level 4, 30A/m ; criteria A	
OTHERS				
MTBF	1482.0K hrs min. Telcordia SR-332 (Bellcore) ; 258.3K hrs min. MIL-HDBK-217F (25℃)			
DIMENSION	48*125.2*125mm (W*H*D)			
PACKING	890g; 12pcs/13Kg/1.16CUFT			

NOTE

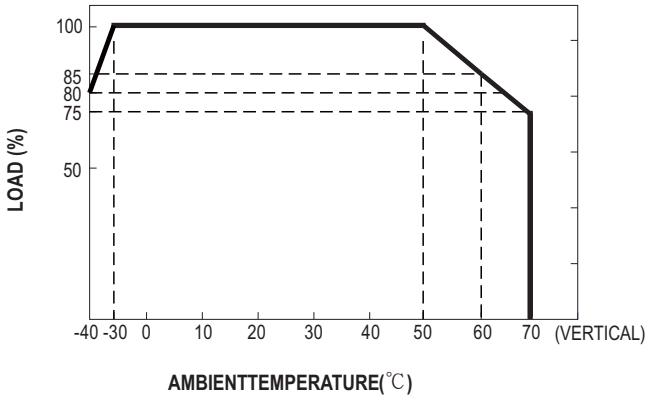
1. All parameters NOT specially mentioned are measured at 230Vac input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μF & 47 μF parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).
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 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. (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)

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

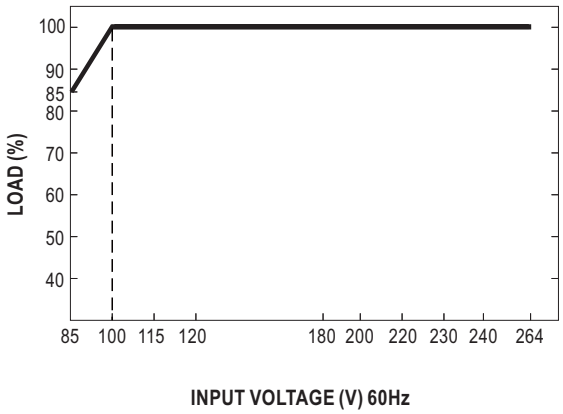
■ Block Diagram



■ Derating Curve



■ Static Characteristics

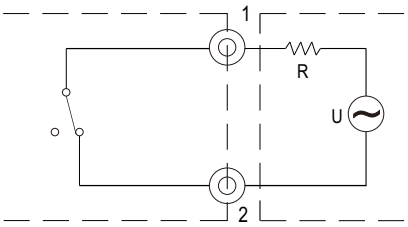


■ Function Manual

Pin No.	Function	Description
1,2	DC OK Relay Contact	Contact Close: PSU turns ON/DC_OK Contact Open: PSU turns OFF/DC_fail
3,4	Paraller Use Link(P_{LINK})	P_{LINK} should be short to enable droop parallel use.(Default disable)

1.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.



External voltage source (U) and resistor (R)
(The max. Sink is 30Vdc/1A ,30Vac/0.5A)

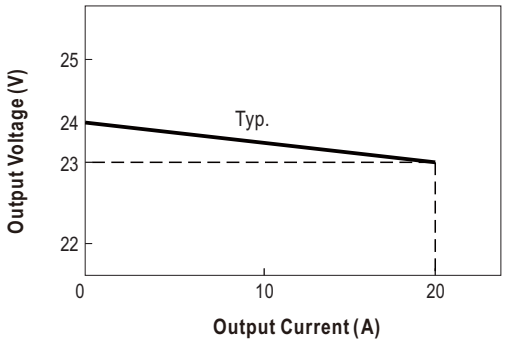
Internal circuit of DC_OK, via relay contact

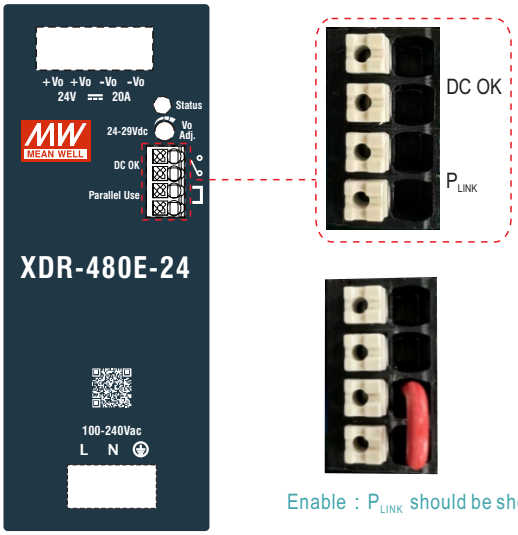
2.Parallel Use

XDR-480E has the built-in droop mode current sharing function and can be connected in parallel, up to 4 units, to provide higher output power as exhibited below :

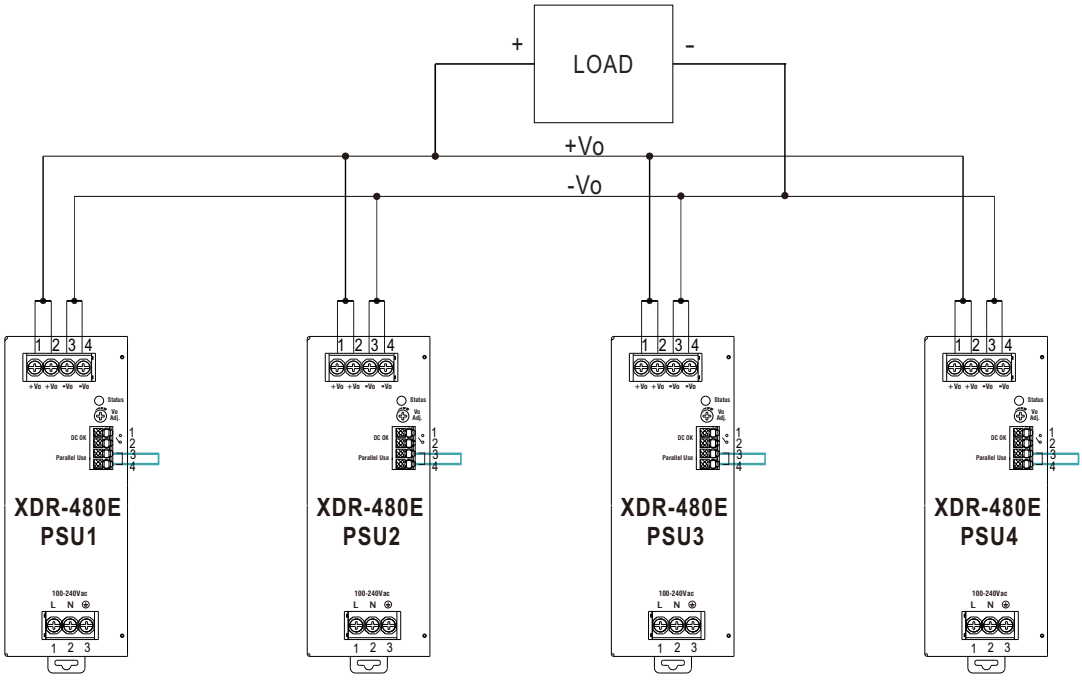
(1) Difference of output voltages among parallel units should be less than 0.1V.
(2) The total output current must not exceed the value determined by the following equation (Output current at parallel operation)=(The rated current per unit) x (Number of unit) x 0.9.
(3) In parallel operation 4 units is the maximum, please consult the manufacture for other applications.
(4) The power supplies should be paralleled using short and large diameter wiring and then connected to the load.
(5) When in parallel operation, the minimum output load should be greater than 7% of total output load. (Min. load >7% rated current per unit x number of unit)
(6) In parallel connection, maybe only one unit (master) operate if the total output load is less than 7% of rated load condition.
The other PSUs (slaves) may go into standby mode and their output LEDs & relays will not turn on.
(7) P_{LINK} lines should be shorted locally.
(8) In parallel operation,after overload or short circuit fault occurs, re-power on to recover.
(9) The "Parallel Use" mode regulates the output voltage in such a manner that the rated load is approx. 4% lower than the no-load voltage (12V:approx.7%).

For example XDR-480E-24:
No load output voltage=24V
Normal load output current=20A
0~100% load output voltage=24V~23V





Enable : P_{LINK} should be short

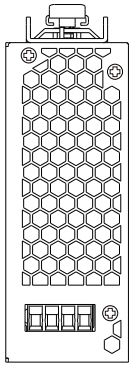


※ Please contact MEAN WELL for more details.

■ Mechanical Specification

(Unit:mm , Tolerance ±1mm)

Case No.303

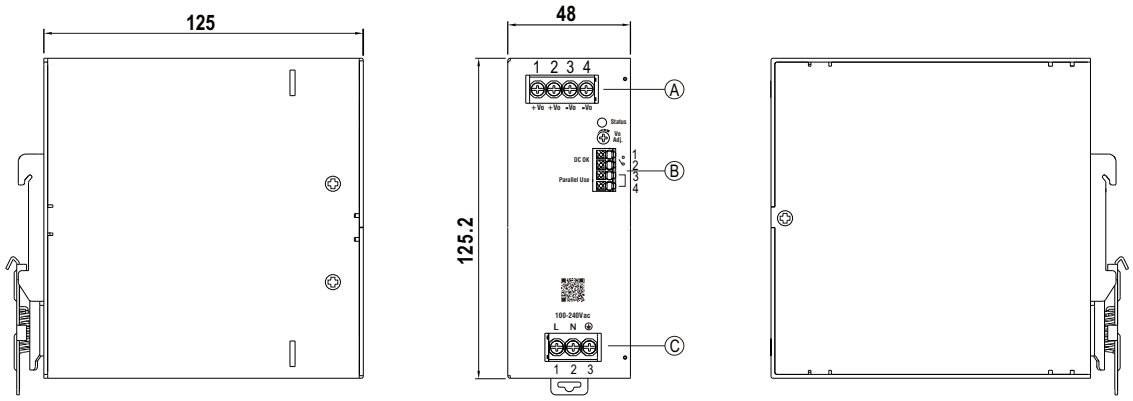


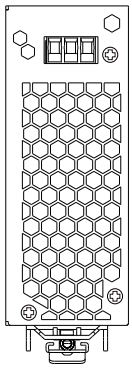
Ⓐ : Terminal Pin No.Assignment

Pin No.	Assignment
1,2	DC Output +Vo
3,4	DC Output -Vo

Ⓑ : Control Pin No.Assignment

Pin No.	Assignment
1,2	DC OK Relay Contact
3,4	Parallel Use Link(Current Sharing)





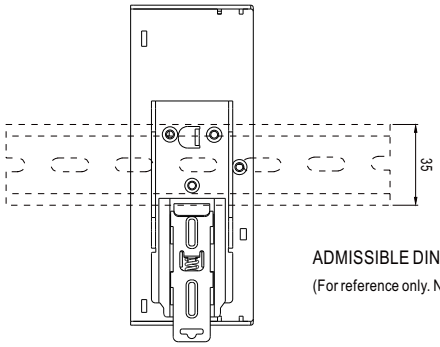
Ⓒ : Terminal Pin No.Assignment

Pin No.	Assignment
1	AC/L or DC Input +Vin
2	AC/N or DC Input -Vin
3	FG ⏚

■ Recommend Wiring

		AC Input T.B	DC Output T.B	Signal connector
Solid Wire		6mm² max.	6mm² max.	1.5mm² max.
A.W.G	XDR-480E-12	18~10 AWG	12~10 AWG	24~16 AWG
	XDR-480E-24/36/48		16~10 AWG	
Wire Stripping Length		10~11mm	10~11mm	8~9mm
Screw Terminal Torque		5 Lb-In	5 Lb-In	/

■ Installation Instruction



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

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