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




User's Manual
Click Me

LISTED UL61010 | BS EN/EN62368-1 BS EN/EN61558-1 BS EN/EN61010-1 | IEC62368-1 IEC61558-1 IEC61010-1 | (Note.7) | IS 13252 (By request Note.8) | 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



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# 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<br>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 | | | |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

# 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&7&8 | | | | |
| **SAFETY STANDARDS** | CB IEC 62368-1, IEC 61558-1/2-16, IEC 61010-1/-2-201<br>TUV BS EN/EN 62368-1, BS EN /EN 61558-1/-2-16, BS EN/EN 61010-1/-2-201<br>UL UL/CUL 61010-1/-2-201<br>CCC GB4943.1<br>BSMI CNS15598-1<br>EAC TPTC004 approved<br>KC/BIS KC 62368-1 and BIS IS 13252 (Part 1) certified, No stock ,contact sales by request | | | |
| **OVER VOLTAGE CATEGORY** Note.4 | IEC/EN 61558-1/-2-16 (OVC Ⅲ, altitude up to 2000m )<br>IEC/EN/UL 61010-1/-2-201 (OVC Ⅱ, altitude up to 5000m )<br>IEC/EN 62368-1 (OVC Ⅱ, altitude up to 5000m ) | | | |
| **SAFETY EXTRA-LOW VOLTAGE(SELV)** | IEC/EN 61558-2-16 (SELV )<br>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 / KS C 9832 | Class B | |
| | Radiated | BS EN/EN55032 (CISPR32) / BS EN/EN61204-3 / CNS15936 / KS C 9832 | 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), KS C 9835 | | | |
| | **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**

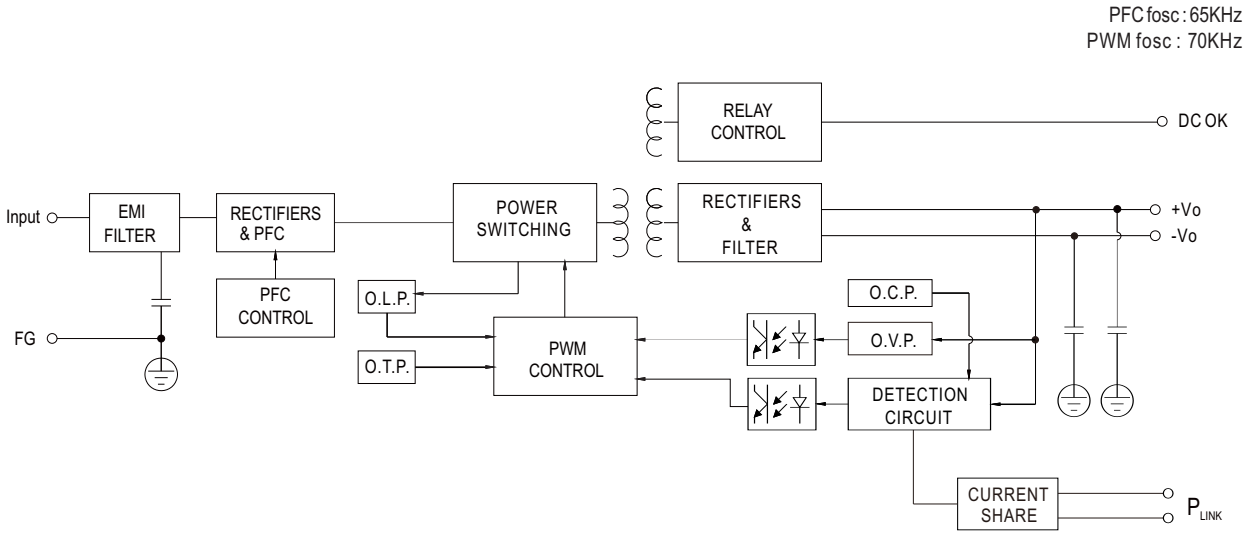
1. All parameters NOT specially mentioned are measured at 230Vac input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μF & 47 μF parallel capacitor.
3. Tolerance : includes set up tolerance, line 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 )
7. The Regulatory Compliance Mark (RCM) is applied on a voluntary basis. The equipment meets the relevant IEC or AS/NZS standards, or AS/NZS 3820 where applicable. The use of the RCM mark complies with AS/NZS 4417.1.
8. Some factory or model may not have the BIS logo, please contact your MEAN WELL sales for more information.

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

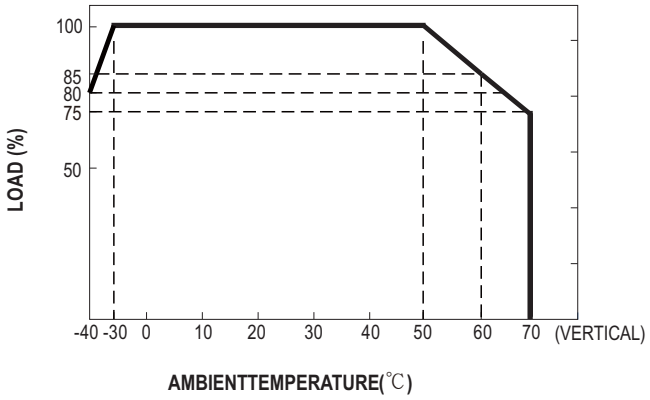


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

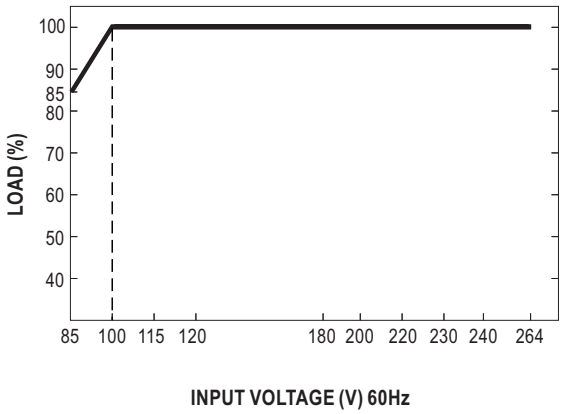
## ■ Block Diagram




## ■ Derating Curve




## ■ Static Characteristics





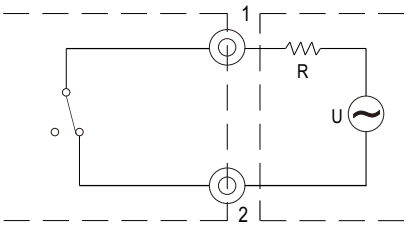

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

## ■ Function Manual

| Pin No. | Function | Description |
|---|---|---|
| 1,2 | DC OK Relay Contact | Contact Close: PSU turns ON/DC_OK<br>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)

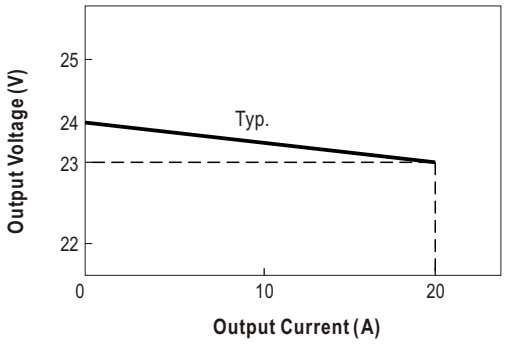
Internal circuit of DC_OK, via relay contact

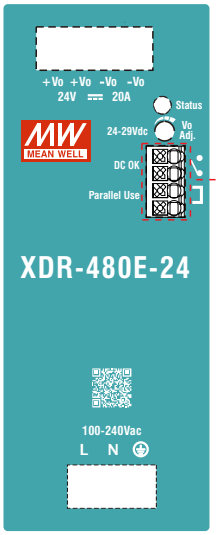
### 2.Parallel Use

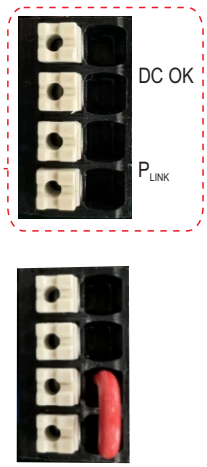
XDR-480E has the built-in droop mode current sharing function and can be connected in parallel, up to 4 units, to provide higher output power as exhibited below :

(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.8%).

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



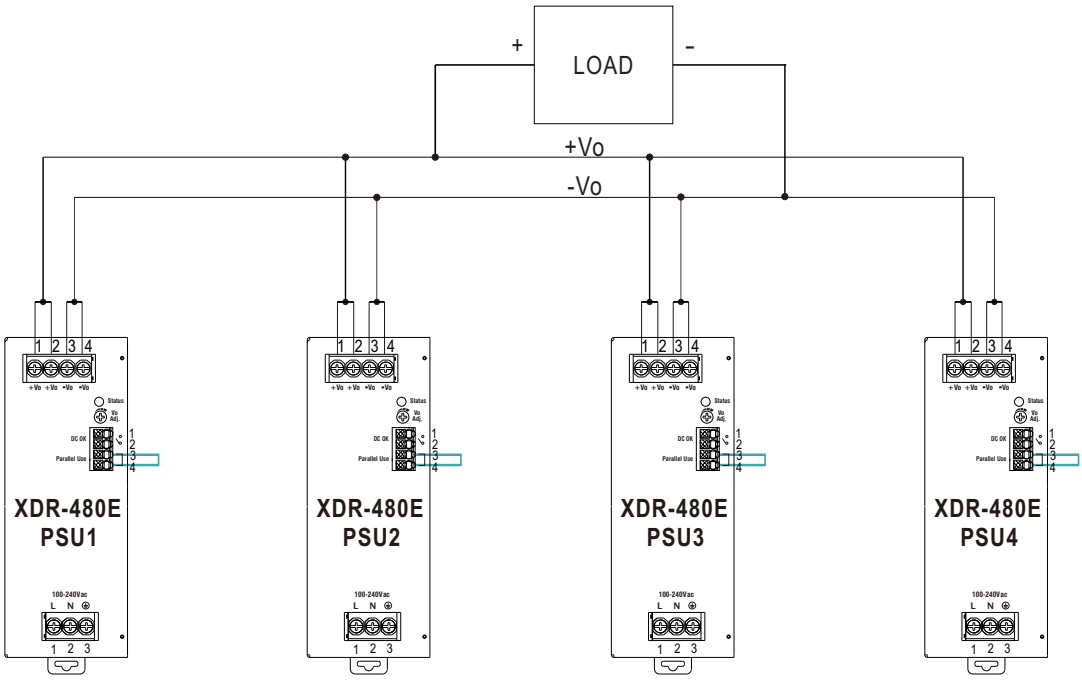




Enable : $P_{LINK}$ should be short



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000




※ Please contact MEAN WELL for more details.

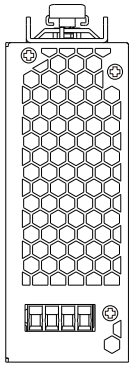


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

## ■ Mechanical Specification

(Unit:mm , Tolerance ±1mm)

Case No.303

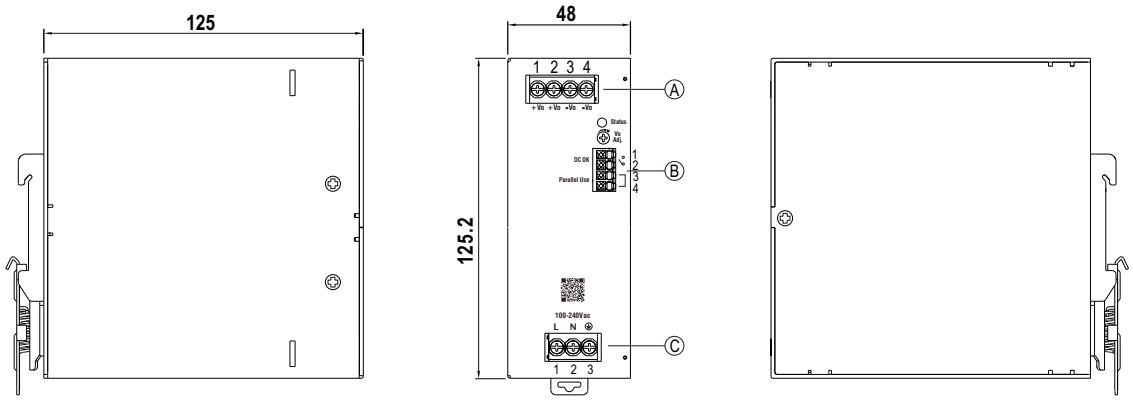


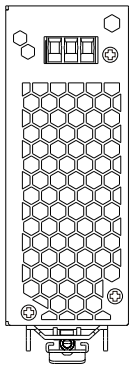
Ⓐ : Terminal Pin No.Assignment

| 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 ⏚ |

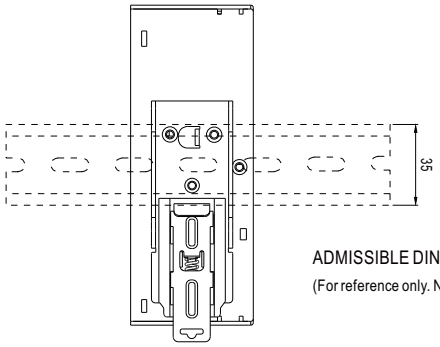
## ■ Recommend Wiring

| | | 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 | / |



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

## ■ 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



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000