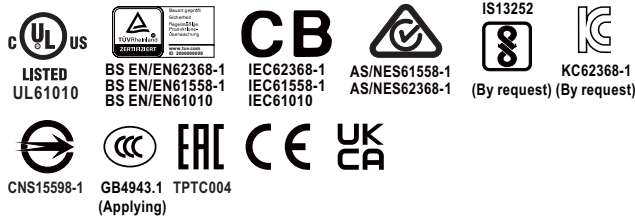




User's Manual



## ■ Applications

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

## ■ GTIN CODE

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

## ■ Features

- 85~264Vac input range
- Global certificates in multi-fields  
(ITE 62368-1, Industrial 61558-1/-2-16, 61010)
- 30mm slim width
- High efficiency up to 91% and no load power dissipation <1W
- Built-in constant current limiting circuit
- 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°C 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

## ■ Description

The XDR-120E series is a 120W AC/DC economical ultra slim industrial DIN rail power. Key features of this series include a narrow 30mm casing, optimizing system installation space, and an ultra-wide input range of 85~264Vac suitable for global use. It boasts a maximum efficiency of 91% and a low standby power consumption <1W for energy savings and carbon reduction. It has built-in constant current, fanless design, a wide operating temperature range of -40 to +70°C (up to +50°C at full load); OVCI compliance; built-in DC OK signal. With comprehensive protection functions, complete safety certifications, and a 3-years warranty, the XDR-120E series is a compact, high-performance, and highly reliable DIN rail power supply.

## ■ Model Encoding

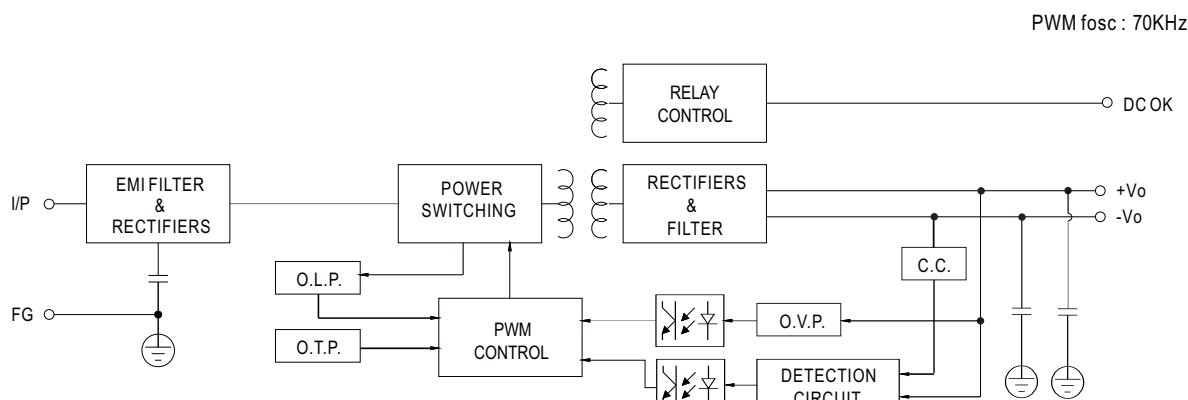
**XDR - 120E - 24**

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

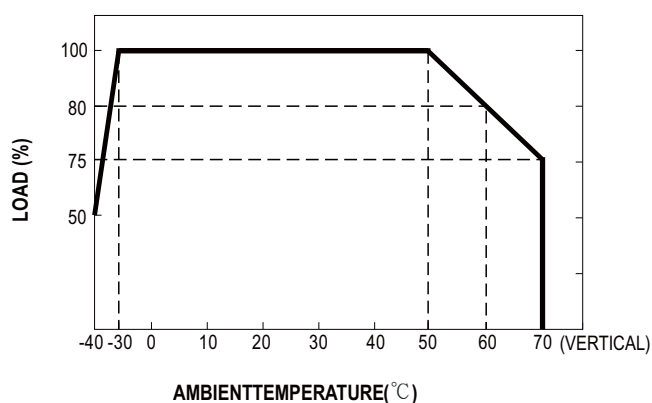
**SPECIFICATION**

| MODEL                 |                                                                                                                                                                                                                                                                                                                               | XDR-120E-12                                                                                                                                                                                                                                                                                              |                                                                                                                                                            | XDR-120E-24                 |                                        | XDR-120E-36                                                        |                   | XDR-120E-48       |          |  |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------------------|--------------------------------------------------------------------|-------------------|-------------------|----------|--|
| OUTPUT                | DC VOLTAGE                                                                                                                                                                                                                                                                                                                    | 12V                                                                                                                                                                                                                                                                                                      |                                                                                                                                                            | 24V                         |                                        | 36V                                                                |                   | 48V               |          |  |
|                       | RATED CURRENT                                                                                                                                                                                                                                                                                                                 | 10A                                                                                                                                                                                                                                                                                                      |                                                                                                                                                            | 5A                          |                                        | 3.33A                                                              |                   | 2.5A              |          |  |
|                       | CURRENT RANGE                                                                                                                                                                                                                                                                                                                 | 0 ~ 10A                                                                                                                                                                                                                                                                                                  |                                                                                                                                                            | 0 ~ 5A                      |                                        | 0 ~ 3.33A                                                          |                   | 0 ~ 2.5A          |          |  |
|                       | RATED POWER                                                                                                                                                                                                                                                                                                                   | 120W                                                                                                                                                                                                                                                                                                     |                                                                                                                                                            | 120W                        |                                        | 119.88W                                                            |                   | 120W              |          |  |
|                       | 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                                                                                                                                                                                                                                                                                                              | 1200ms, 60ms/230Vac      2500ms, 60ms/115Vac at full load                                                                                                                                                                                                                                                |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | HOLD UP TIME (Typ.)                                                                                                                                                                                                                                                                                                           | 16ms/230Vac      8ms/115Vac at full load                                                                                                                                                                                                                                                                 |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
| INPUT                 | AC VOLTAGE RANGE                                                                                                                                                                                                                                                                                                              | 85 ~ 264Vac                                                                                                                                                                                                                                                                                              |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | DC VOLTAGE RANGE                                                                                                                                                                                                                                                                                                              | 120 ~ 370Vdc                                                                                                                                                                                                                                                                                             |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | NO LOAD POWER CONSUMPTION (Typ.)                                                                                                                                                                                                                                                                                              | 0.6W @115Vac    0.9W @ 230Vac                                                                                                                                                                                                                                                                            |                                                                                                                                                            | 0.8W @115Vac    1W @ 230Vac |                                        |                                                                    |                   |                   |          |  |
|                       | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                               | 47 ~ 63Hz                                                                                                                                                                                                                                                                                                |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                             | 89%                                                                                                                                                                                                                                                                                                      |                                                                                                                                                            | 91%                         |                                        | 91%                                                                |                   | 91%               |          |  |
|                       | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                             | 2.3A/115Vac    1.3A/230Vac                                                                                                                                                                                                                                                                               |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                         | COLD START    20A/115Vac    40A/230Vac                                                                                                                                                                                                                                                                   |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                               | <1mA/ 240Vac                                                                                                                                                                                                                                                                                             |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
| PROTECTION            | OVERLOAD                                                                                                                                                                                                                                                                                                                      | 105-130% rated output power, constant current limiting without shutdown, recovers automatically after fault condition is removed                                                                                                                                                                         |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                  | 15 ~ 18V                                                                                                                                                                                                                                                                                                 |                                                                                                                                                            | 30 ~ 34V                    |                                        | 43 ~ 50V                                                           |                   | 56 ~ 65V          |          |  |
|                       |                                                                                                                                                                                                                                                                                                                               | Protection type : Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                              | Protection type : Shut down o/p voltage,recovers automatically after fault condition is removed                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
| FUNCTION              | DC OK RELAY CONTACT                                                                                                                                                                                                                                                                                                           | Relay Contact Ratings (max.):30Vdc/1A, 30Vac/0.5A resistive load                                                                                                                                                                                                                                         |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
| ENVIRONMENT           | WORKING TEMP.                                                                                                                                                                                                                                                                                                                 | Note.4                                                                                                                                                                                                                                                                                                   | -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                                                                                                                                                                                             |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
| SAFETY & EMC (Note 7) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                              | UL61010; TUV BS EN/EN62368-1, BS EN/EN61558-1/-2-16, BS EN/EN61010; CB IEC62368-1, IEC61558-1, IEC61010; RCM AS/NZS 62368-1, AS/NZS 61558-1/-2-16; BSMI CNS15598-1; CCC GB4943.1; EAC TPTC004 approved; <b>KC KC62368-1 and BIS IS13252 (Part 1):2010 certified, no stock ,contact sale for inquires</b> |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | OVER VOLTAGE CATEGORY                                                                                                                                                                                                                                                                                                         | Note.5                                                                                                                                                                                                                                                                                                   | IEC/EN 61558-1/-2-16 (OVC III, altitude up to 2000m )<br>IEC/EN/UL 61010 (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/UL 61010-2-201 (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                                                                                                       |                             |                                        |                                                                    |                   | 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                                                                                                                                                                                                                                                                                                     | 2223.1K hrs min.    Telcordia SR-332 (Bellcore) ;                                                                                                          |                             | 440.4K hrs min.    MIL-HDBK-217F (25℃) |                                                                    |                   |                   |          |  |
|                       | DIMENSION                                                                                                                                                                                                                                                                                                                     | 30*125.2*116mm (W*H*D)                                                                                                                                                                                                                                                                                   |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | PACKING                                                                                                                                                                                                                                                                                                                       | 420g; 24pcs/11.1Kg/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 μ F & 47 μ F parallel capacitor.                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | 3. Tolerance : includes set up tolerance, line regulation and load regulation.                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | 4. When the temperature is between -40 ° C and -20 ° C and the input voltage is between 85V and 90V, the temperature derating curve drops to 40% .                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | 5. 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).                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | 6. 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.                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | 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. (as available on <a href="https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf">https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf</a> ) |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       | ※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a>                                                                                                                                      |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |
|                       |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                          |                                                                                                                                                            |                             |                                        |                                                                    |                   |                   |          |  |

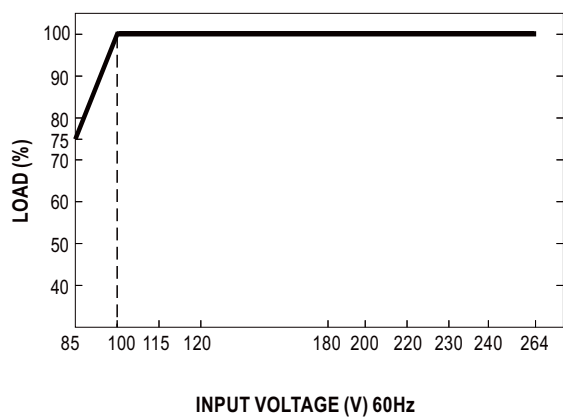
### ■ Block Diagram



### Derating Curve



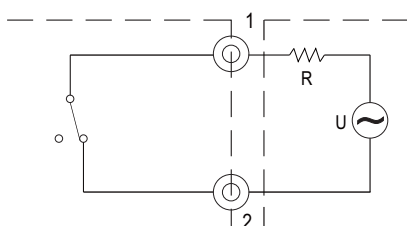
### ■ Static Characteristics



## ■ Function Manual

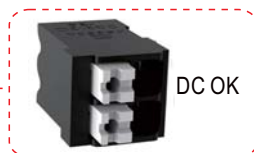
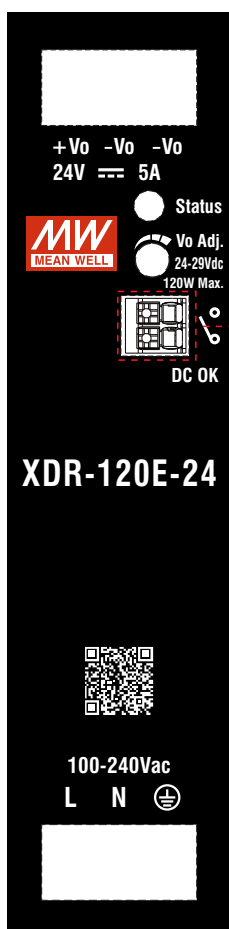
### 1.DC OK Relay Contact

|                        |                                      |
|------------------------|--------------------------------------|
| 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)

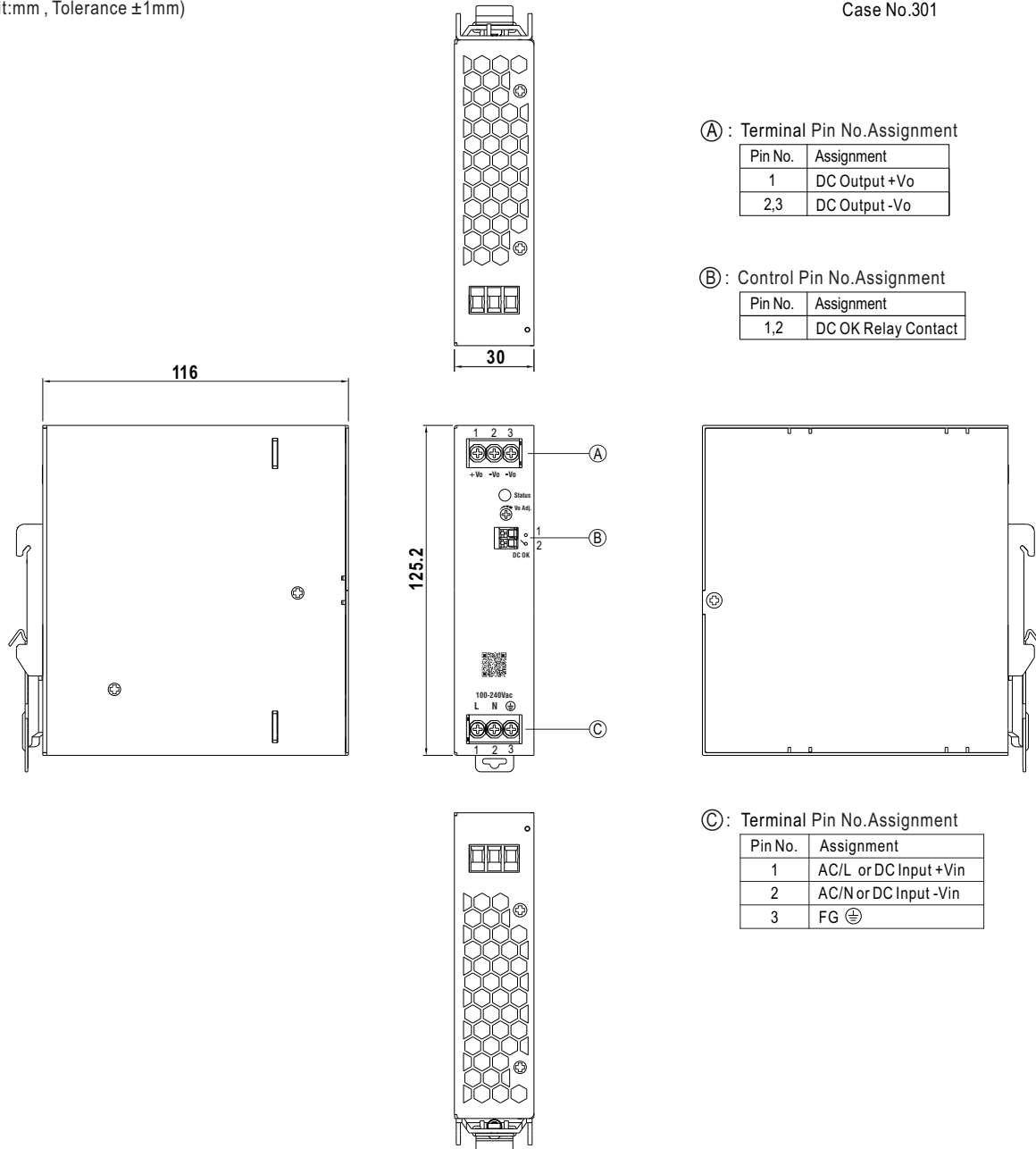
Internal circuit of DC\_OK, via relay contact



## ■ Mechanical Specification

(Unit:mm , Tolerance  $\pm 1$ mm)

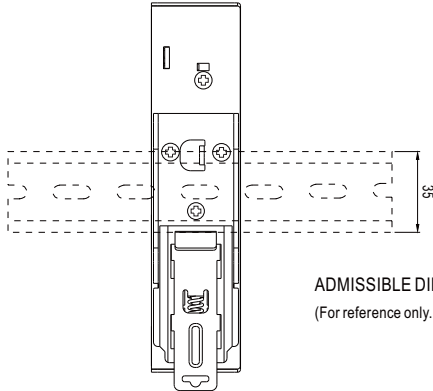
Case No.301



## ■ Recommend Wiring

|                       | AC Input T.B          | DC Output T.B         | Signal connector        |
|-----------------------|-----------------------|-----------------------|-------------------------|
| Solid Wire            | 6mm <sup>2</sup> max. | 6mm <sup>2</sup> max. | 1.5mm <sup>2</sup> max. |
| A.W.G                 | 16~10 AWG             | 16~10 AWG             | 24~16 AWG               |
| Wire Stripping Length | 7~8mm                 | 7~8mm                 | 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>