



BS EN/EN62109-1



TPTC004



IEC62109-1



## Features

- 250~1500Vdc 6:1 ultra-wide input range
- Withstand 1700Vdc surge input for 10 seconds
- 4KVac I/O high isolation(Reinforced isolation)
- Protections: Short circuit / Overload / Over voltage / Over temperature  
DC input under voltage / DC input reverse polarity
- Fanless design, half encapsulated, cooling by free air convection
- -40~+80°C ultra-wide operating temperature (> +55°C derating)
- Over voltage category II
- Operating altitude up to 5000 meters
- DC output voltage adjustable(12~15V, 24~29V, 30~36V, 48~58V)
- 1U low profile 41mm
- 3 years warranty

## Description

RSDH-300 series is a 250 ~ 1500Vdc ultra-high input enclosed type DC-DC converter which can supply stable working voltage for the load. Main features are as following: -40~+80° C wide range operating temperature, 4KVac high isolation voltage, operation at 5000m altitude, high efficiency, low ripple & noise, complete protections and so on.

RSDH-300 is compliant with BS EN/EN-61000-6-2 standard regarding immunity for industrial environments. It is suitable for industrial automation, surveillance, telecommunication and can be widely deployed in the applications of new energy generation such as solar power, and windmill power generation, for instances, photovoltaic power systems, high voltage inverting , DC bus centralized application, ESS, charging pile, railway and so forth.

## Model Encoding

**RSDH - 300 - 24**

Output voltage(12V/24V/32V/48V)

Rated wattage

Series name



## Applications

- Photovoltaic power generation
- Renewable Energy System
- High voltage frequency conversion
- Industrial control system
- Semiconductor fabrication equipment
- Electro-mechanical apparatus
- DC bus centralized application
- Energy storage system(ESS)
- Charging pile
- Third rail

## GTIN CODE

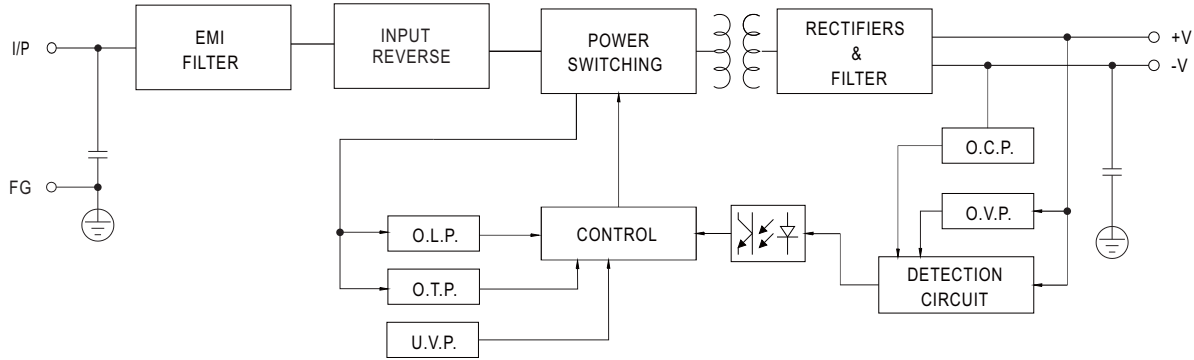
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

**SPECIFICATION**

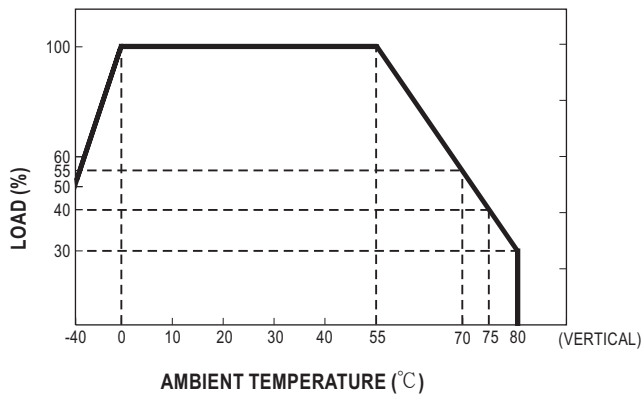
| MODEL                            |   | RSDH-300-12  | RSDH-300-24  | RSDH-300-32  | RSDH-300-48  |  |
|----------------------------------|---|--|--|--|--------------|--|
| OUTPUT                           | DC VOLTAGE                                  | 12V  | 24V  | 32V  | 48V          |  |
|                                  | RATED CURRENT                               | 20A  | 12.5A  | 9.37A  | 6.25A        |  |
|                                  | CURRENT RANGE                               | 0 ~ 20A  | 0 ~ 12.5A  | 0 ~ 9.37A  | 0 ~ 6.25A    |  |
|                                  | RATED POWER                                 | 240W   | 300W   | 300W   | 300W         |  |
|                                  | RIPPLE & NOISE (max.) <small>Note.2</small> | 120mVp-p   | 240mVp-p   | 240mVp-p   | 300mVp-p     |  |
|                                  | VOLTAGE ADJ. RANGE                          | 12 ~ 15V   | 24 ~ 29V   | 30 ~ 36V   | 48 ~ 58V     |  |
|                                  | VOLTAGE TOLERANCE <small>Note.3</small>     | ± 1.5%   | ± 1.0%   | ± 1.0%   | ± 1.0%       |  |
|                                  | LINE REGULATION                             | ± 0.5%   | ± 0.5%   | ± 0.5%   | ± 0.5%       |  |
|                                  | LOAD REGULATION                             | ± 1.5%   | ± 1.5%   | ± 1.0%   | ± 1.0%       |  |
| EXTERNAL CAPACITANCE LOAD (Max.) |   | 8000 $\mu$ F   | 5000 $\mu$ F   | 4000 $\mu$ F   | 2000 $\mu$ F |  |
| INPUT                            | VOLTAGE RANGE <small>Note.4</small>         |  | 250 ~ 1500Vdc  |  |              |  |
|                                  | EFFICIENCY (Typ.)                           | 300Vdc   | 87%  | 88%  | 88%          | 91%  |
|                                  |   | 800Vdc   | 88%  | 90%  | 90%          | 91%  |
|                                  |   | 1500Vdc  | 86%  | 86%  | 87%          | 87%  |
|                                  | INRUSH CURRENT (max.)                       |  | COLD START 500A/1500Vdc 300A/800Vdc 120A/300Vdc  |  |              |  |
| EXTERNAL INPUT FUSE              |   | 4A/1500VDC, required (Please refer to page 4 for more details)   |  |  |              |  |
| PROTECTION                       | OVERLOAD                                    |  | 105 ~ 135% rated output power  |  |              |  |
|                                  |   |  | Protection type : Hiccup mode when output voltage<55%, recovers automatically after condition is removed;<br>Constant current limiting, recovers automatically after fault condition is removed within 55% ~ 100% rated output voltage |  |              |  |
|                                  | OVER VOLTAGE                                |  | 16.5 ~ 21V   | 33 ~ 42V   | 40 ~ 48V     | 62 ~ 70V   |
|                                  |   |  | Protection type : Hiccup mode, recovers automatically after fault condition is removed   |  |              |  |
|                                  | OVER TEMPERATURE                            |  | Protection type : Hiccup mode, recovers automatically after fault condition is removed   |  |              |  |
|                                  | DC INPUT                                    | REVERSE POLARITY   | By internal Bridge Diode, no damage, recovers automatically after fault condition removed  |  |              |  |
| UNDER VOLTAGE LOCKOUT            |   | Under voltage protection range: 200 ~ 225Vdc , Under voltage release range:225 ~ 246.5Vdc  |  |  |              |  |
| ENVIRONMENT                      | WORKING TEMP.                               |  | -40 ~ +80℃ (Refer to "Derating Curve")   |  |              |  |
|                                  | WORKING HUMIDITY                            |  | 20 ~ 90% RH non-condensing   |  |              |  |
|                                  | STORAGE TEMP., HUMIDITY                     |  | -40 ~ +80℃, 10 ~ 95% RH non-condensing   |  |              |  |
|                                  | TEMP. COEFFICIENT                           |  | ± 0.03%/℃ (0 ~ 55℃ )   |  |              |  |
|                                  | VIBRATION                                   |  | Component: 10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting clip: Compliance to IEC60068-2-6   |  |              |  |
|                                  | OPERATING ALTITUDE <small>Note.5</small>    |  | 5000m  |  |              |  |
|                                  | OVER VOLTAGE CATEGORY                       |  | OVC II 2000m; According to EN62109-1   |  |              |  |
| SAFETY & EMC<br>(Note.6)         | SAFETY STANDARDS                            |  | IEC62109-1, BS EN/EN62109-1, EAC TP TC 004 approved; Design refer to UL1741(By request)  |  |              |  |
|                                  | WITHSTAND VOLTAGE                           |  | I/P-O/P:4KVAC I/P-FG:2KVAC O/P-FG:2KVAC  |  |              |  |
|                                  | ISOLATION RESISTANCE                        |  | I/P-O/P, 100M Ohms / 500VDC / 25℃ / 70% RH   |  |              |  |
|                                  | EMC EMISSION                                |  | Parameter  | Standard   |              | Test Level / Note                                  |
|                                  |   |  | Conducted  | BS EN/EN55032(CISPR32)   |              | Class A  |
|                                  |   |  | Radiated   | BS EN/EN55032(CISPR32)   |              | Class A  |
|                                  | EMC IMMUNITY                                |  | BS EN/EN55035, BS EN/EN61000-6-2   |  |              |  |
|                                  |   |  | Parameter  | Standard   |              | Test Level /Note                                   |
|                                  |   |  | ESD  | BS EN/EN61000-4-2  |              | Level 3, 8KV air; Level 2, 4KV contact, criteria A |
|                                  |   |  | Radiated Susceptibility  | BS EN/EN61000-4-3  |              | Level 3, 10V, criteria A                           |
|                                  |   |  | EFT/Burest   | BS EN/EN61000-4-4  |              | Level 3, 2KV, criteria A                           |
|                                  |   |  | Surge  | BS EN/EN61000-4-5  |              | Level 4, 2KV/Vin+ ~ Vin-, 4KV Vin~FG               |
|                                  |   |  | Conducted  | BS EN/EN61000-4-6  |              | Level 3, 10V, criteria A                           |
|                                  |   |  | Magnetic Field   | BS EN/EN61000-4-8  |              | Level 4, 30A, criteria A                           |
|                                  | OTHERS                                      | MTBF   |  | 277.9K hrs min. Telcordia SR-332 (Bellcore) ; 99.1K hrs min. MIL-HDBK-217F (25℃) |              |  |
| DIMENSION                        |   | 237*100*41mm (L*W*H)   |  |  |              |  |
| PACKING                          |   | 1.1Kg;10pcs/12.7Kg/0.8CUFT   |  |  |              |  |
| NOTE                             |   | 1. All parameters NOT specially mentioned are measured at 800Vdc input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 $\mu$ f & 47 $\mu$ f parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. Derating may be needed under low input voltage. Please check the derating curve for more details.<br>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).<br>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. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."<br>(as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> )<br>※ 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

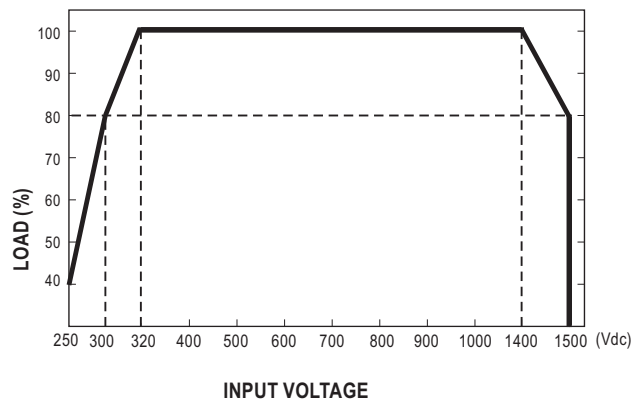
fosc : 65KHz



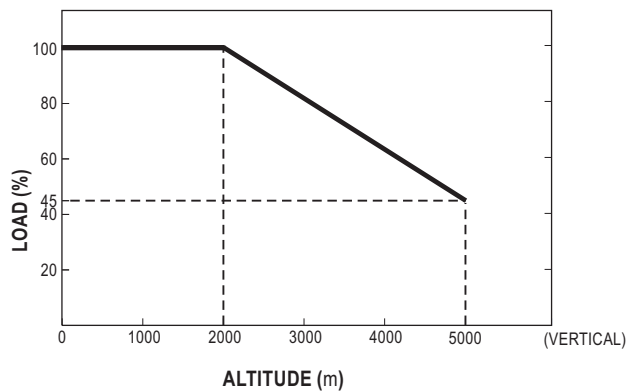
### Derating Curve



### Static Characteristics



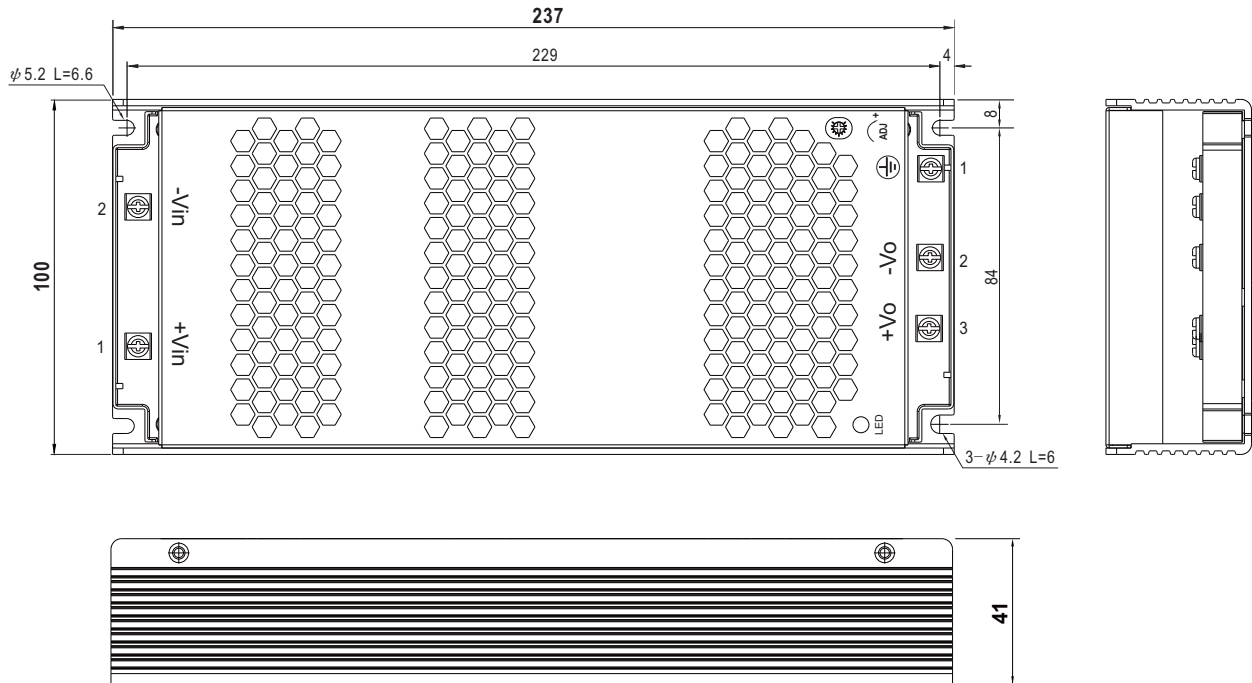
### Altitude Curve



Note: Multiply by the regular power limit factor

## Mechanical Specification

Case No.270D Unit:mm



Input Terminal Pin No. Assignment (TB1)

| Pin No. | Assignment |
|---------|------------|
| 1       | +Vin       |
| 2       | -Vin       |

Output Terminal Pin No. Assignment (TB2)

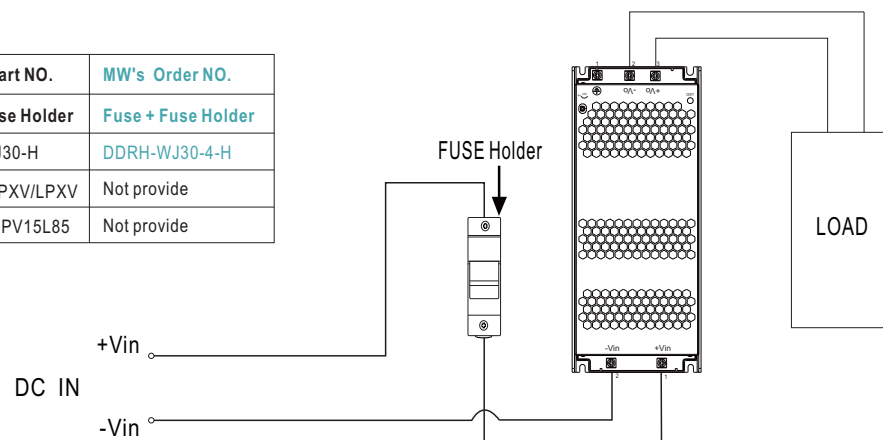
| Pin No. | Assignment |
|---------|------------|
| 1       | FG $\perp$ |
| 2       | -Vo        |
| 3       | +Vo        |

## External FUSE wiring instruction

External FUSE is required.FUSE specification : 4A/1500Vdc.

Suggested model:

| Fuse Brand | Manufacturer Part NO. |             | MW's Order NO.     |
|------------|-----------------------|-------------|--------------------|
|            | Fuse                  | Fuse Holder | Fuse + Fuse Holder |
| WalterFuse | WJ30-4                | WJ30-H      | DDRH-WJ30-4-H      |
| Littelfuse | SPXV-4A               | LFPXV/LPXV  | Not provide        |
| Bussmann   | PV-4A10F85L           | CHPV15L85   | Not provide        |



## Installation Manual

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