



300W High Reliable 250~1500Vdc Ultra Wide Input DC-DC Converter

RSDH-300 series



User's Manual



BS EN/EN62109-1

TPTC004

IEC62109-1

UL1741



■ 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

■ 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>

■ 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

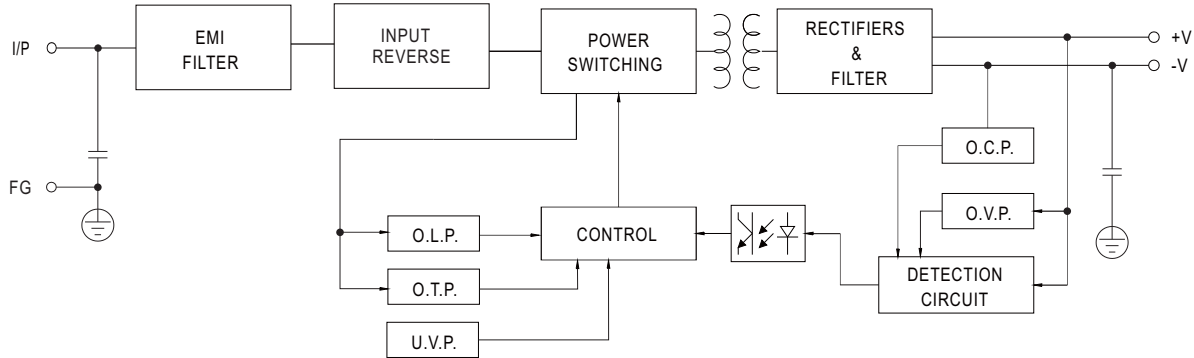
Series name

SPECIFICATION

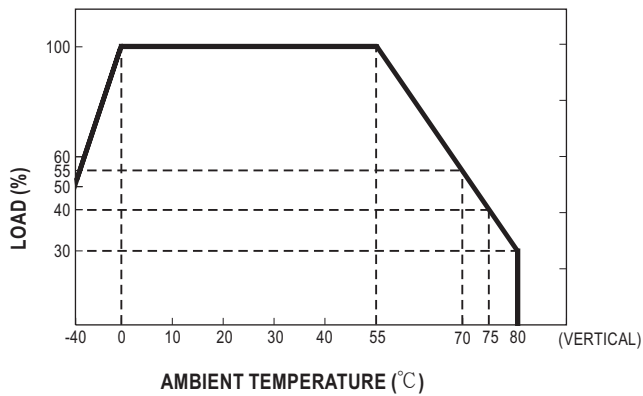
MODEL		RSDH-300-12		RSDH-300-24		RSDH-300-32		RSDH-300-48		
OUTPUT	DC VOLTAGE		12V		24V		32V		48V	
	RATED CURRENT		20A		12.5A		9.37A		6.25A	
	CURRENT RANGE		0 ~ 20A		0 ~ 12.5A		0 ~ 9.37A		0 ~ 6.25A	
	RATED POWER		240W		300W		300W		300W	
	RIPPLE & NOISE (max.) Note.2		120mVp-p		240mVp-p		240mVp-p		300mVp-p	
	VOLTAGE ADJ. RANGE		12 ~ 15V		24 ~ 29V		30 ~ 36V		48 ~ 58V	
	VOLTAGE TOLERANCE Note.3		± 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 μ F		5000 μ F		4000 μ F		2000 μ F		
INPUT	VOLTAGE RANGE Note.4		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; 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 Note.5		5000m							
	OVER VOLTAGE CATEGORY		OVC II 2000m; According to EN62109-1							
SAFETY & EMC (Note.6)	SAFETY STANDARDS		IEC62109-1, BS EN/EN62109-1, EAC TP TC 004, UL1741, CSA C22.2 No. 107.1-16 approved							
	WITHSTAND VOLTAGE		I/P-O/P:4KVAC I/P-FG:3.75KVAC 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. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 f & #7 f parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Derating may be needed under low input voltage. Please check the derating curve for more details. 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. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf) ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx								

Block Diagram

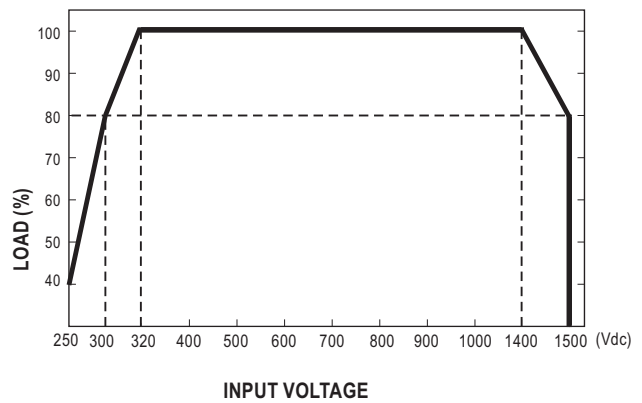
fosc : 65KHz



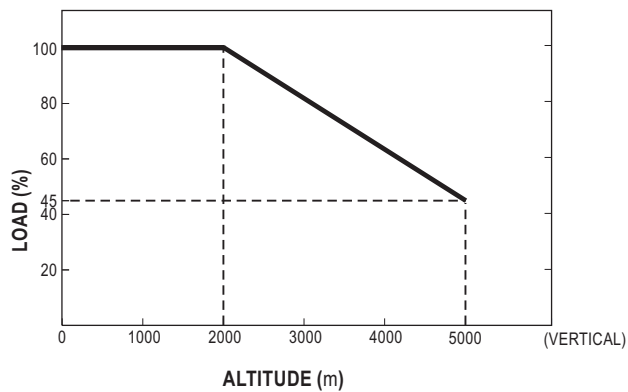
Derating Curve



Static Characteristics



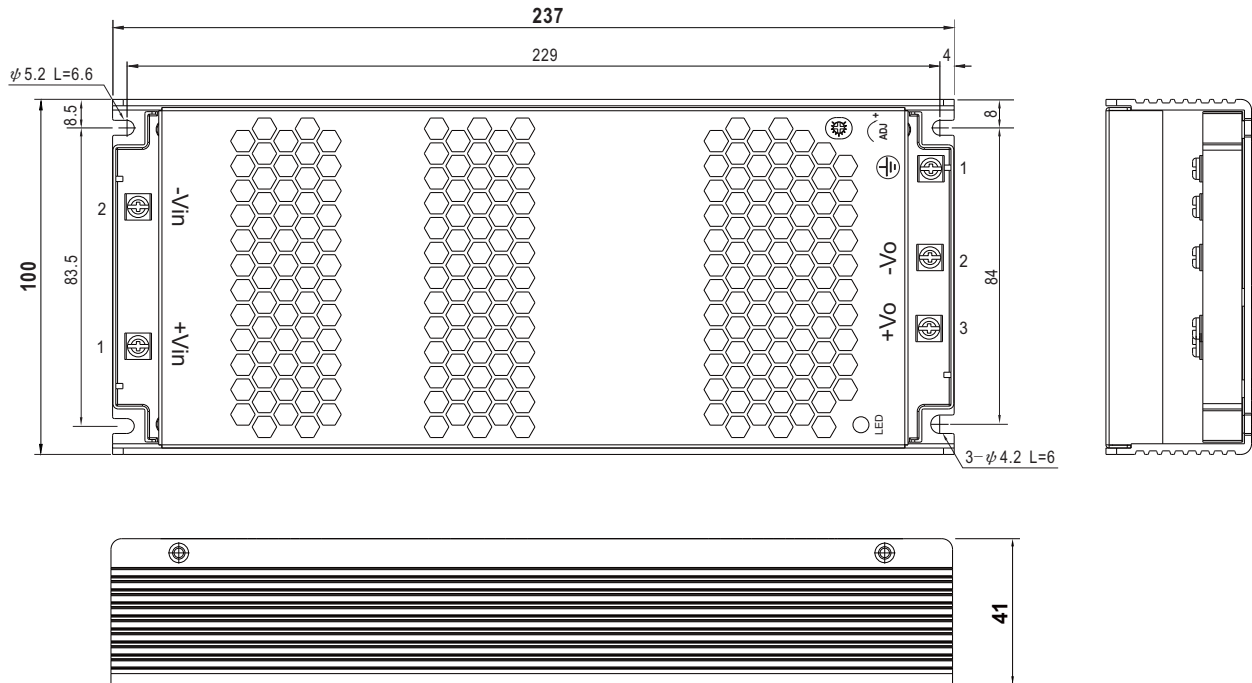
Altitude Curve



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)

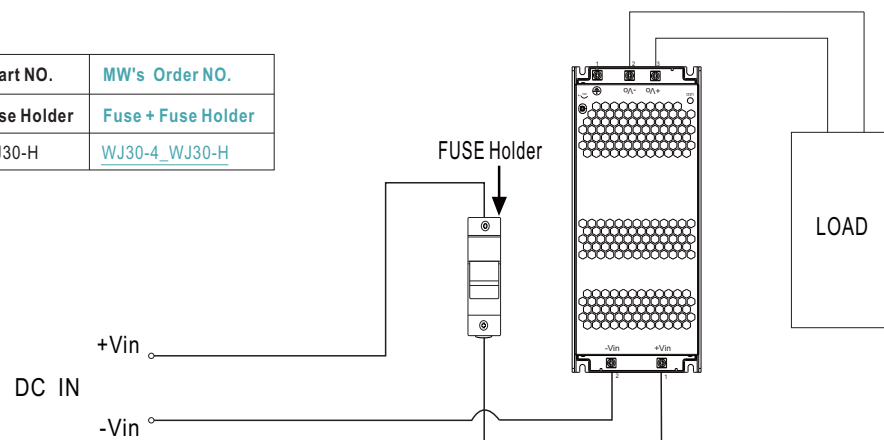
Pin No.	Assignment
1	FG $\perp$
2	-Vo
3	+Vo

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	WJ30-4_WJ30-H



Installation Manual

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