15W High Reliable 150~1500Vdc Ultra Wide Input DC-DC Converter DDRH-15 series

DDRH-15-xxP

DDRH-15-xxST

DDRH-15-xxDR

TPTC004

PV | Renewable Energy | Automate | Industrial | Security | Network | Telecom

Features

- 150~1500Vdc 10:1 ultra-wide input range
- 4KVac I/O high isolation(Reinforced isolation)
- Protections: Short circuit / Overload / Over voltage / DC input under voltage / DC input reverse Polarity
- Fanless design, fully encapsulated, cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15 (DR-Type)
- -40~+80℃ ultra-wide operating temperature (> +50℃ derating)
- Operating altitude up to 5000 meters
- 3 years warranty

Applications

- Photovoltaic power generation
- Renewable Energy System
- High voltage freqency 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

DDRH-15 series is a 150 ~ 1500Vdc high reliable ultra-high input DC-DC converter which can supply stable working voltage for the load. Main features are as following: compact size, -40~+80℃ wide range operating temperature, 4KVac high isolation voltage, operation at 5000m altitude, low ripple & noise, complete protections and so on. Futhermore, this series also has DIN Rail type, it is suitable to be mounted on TS-35/7.5 or TS-35/15 rails. DDRH-15 is designed to meet UL1741 and IEC62109-1 standard. 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

DDRH - 15 - 12 P

- P : PCB mounting type
- ST: Screw terminal type
- DR: DIN rail type

Output voltage (5V/12V/15V/24V)

Rated wattage

Series name

MODEL SELECTION TABLE

ORDER NO.	INPUT			OUTPUT		EFFICIENCY (Typ.)	CAPACITOR LOAD (MAX.)
	INPUT VOLTAGE (RANGE)	INPUT CURRENT		OUTPUT VOLTAGE	OUTPUT CURRENT		
		NO LOAD	FULL LOAD				
DDRH-15-05☐	Nominal 800Vdc (150~1500Vdc)	0.2mA	25mA	5V	2A	78%	2000μF
DDRH-15-12☐		0.2mA	30mA	12V	1.25A	79%	1250μF
DDRH-15-15☐		0.2mA	30mA	15V	1A	87%	1000μF
DDRH-15-24☐		0.2mA	30mA	24V	0.625A	88%	625μF

☐ = P, ST, DR

SPECIFICATION

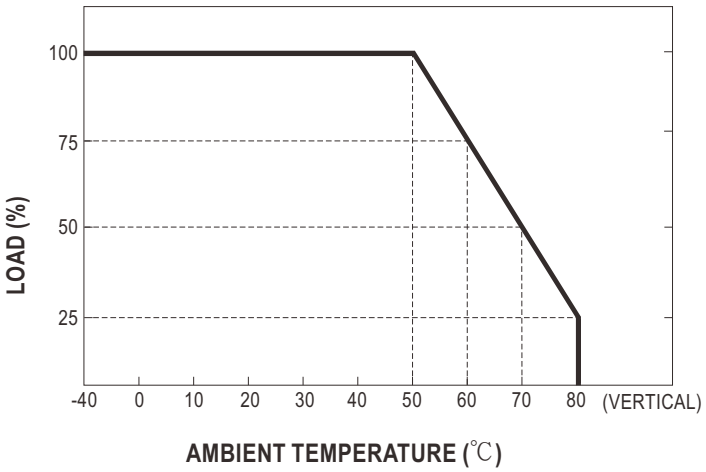
INPUT	**VOLTAGE RANGE**	150 ~ 1500Vdc		
	FILTER	Internal capacitor		
	EXTERNAL INPUT FUSE	4A/1500Vdc, required (Please refer to page 6 for more details)		
	INRUSH CURRENT (Typ.)	Cold start 150A max. @ Vin=800Vdc		
OUTPUT	**VOLTAGE ACCURACY**	±2.0%		
	RATED POWER	5Vo: 10W 12Vo ~ 24Vo: 15W		
	RIPPLE & NOISE Note.2	5 ~ 15Vo: 100mVp-p 24Vo: 150mVp-p		
	LINE REGULATION	±1%		
	LOAD REGULATION	±1% (10% Load to Full Load)		
	SWITCHING FREQUENCY (Typ.)	25 ~ 75.6KHz		
	HOLD UP TIME	16ms min. @Vin=800Vdc		
	SETUP TIME	1s max. @150~1500Vdc		
PROTECTION	**SHORT CIRCUIT**	Protection type : Hiccup mode, continuous, automatic recovery		
	OVERLOAD	110 ~ 300% rated output power		
		Protection type : Hiccup mode, recovers automatically after fault condition is removed		
	OVER VOLTAGE	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		
	DC INPUT **UNDER VOLTAGE LOCKOUT**	Start-up voltage	147Vdc	
		Shutdown voltage	137Vdc	
ENVIRONMENT	**WORKING TEMP.**	-40 ~ +80℃ (Refer to "Derating Curve")		
	WORKING HUMIDITY	20% ~ 90% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing		
	TEMP. COEFFICIENT	±0.02% / ℃ (0 ~ 50℃)		
	VIBRATION	Component: 10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting clip: Compliance to IEC60068-2-6		
	OPERATING ALTITUDE Note.3	5000 meters		
	OVER VOLTAGE CATEGORY	II ; According to EN62109-1; altitude up to 5000 meters		
SAFETY & EMC (Note.4)	**SAFETY STANDARDS**	UL1741, CSA C22.2 No.107.1-16, IEC62109-1(LVD), EAC TP TC 004 approved		
	WITHSTAND VOLTAGE	I/P-O/P:4KVac		
	ISOLATION RESISTANCE	I/P-O/P, 100M Ohms / 500VDC / 25℃/ 70% RH		
	EMC EMISSION	**Parameter**	**Standard**	**Test Level / Note**
		Conducted	BS EN/EN55032	Class A (with external components)
		Radiated	BS EN/EN55032	Class A (with external components)
	EMC IMMUNITY	BS EN/EN55035		
		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/Bursts	BS EN/EN61000-4-4	Level 2, 0.5KV, criteria A
		Surge	BS EN/EN61000-4-5	Level 4, 2KV/Vin+ ~ Vin-, criteria A
		Conducted	BS EN/EN61000-4-6	Level 3, 10V, criteria A
OTHERS	**MTBF**	388Khrs MIL-HDBK-217F(25℃)		
	DIMENSION (L*W*H)	**P Type: 76.2*50.8*25mm, ST Type: 122.3*57.3*32mm, DR Type: 122.3*57.3*43.5mm**		
	CASE MATERIAL	Non-conductive black plastic (UL 94V-0 rated)		
	POTTING MATERIAL	UL 94V-0		
	PIN MATERIAL	Base: copper, Plating: Matte Tin		
	PACKING	P Type : 170g ; 6pcs/Tray, 18pcs/per carton ST Type : 210g ; 6pcs/Tray, 18pcs/per carton DR Type : 215g ; 6pcs/Tray, 18pcs/per carton		

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 0.1μf & 47μf parallel capacitor.
3. 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).
4. 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 http://www.meanwell.com)

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

■ Derating Curve

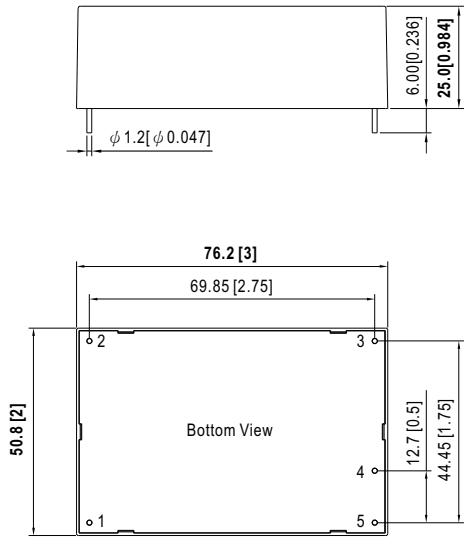


■ Mechanical Specification

- All dimensions in mm(inch)
- Tolerance: x.x±0.7mm (x.x±0.0275")
  x.xx±0.5mm(x.xx±0.02")
  x.xxx±0.5mm(x.xxx±0.02")

Pin size is: ϕ1.2±0.1mm(ϕ0.047±0.004 inch)

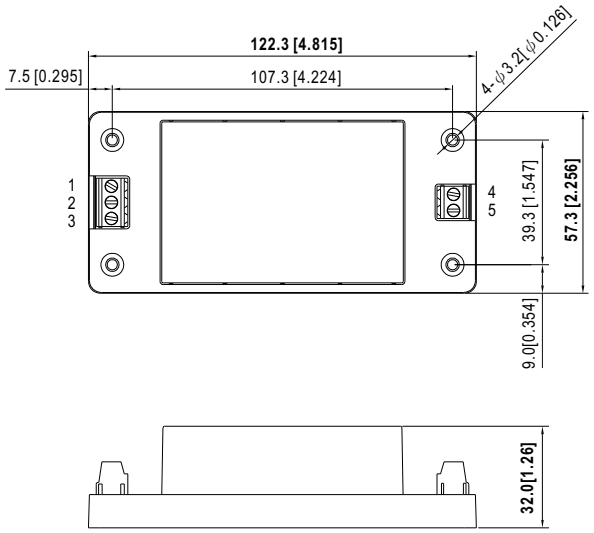
DDRH-15-xxP (PCB Mounting Type)



■ Plug Assignment

Pin-Out	
Pin No.	Output
1	-Vin
2	+Vin
3	NC
4	-Vout
5	+Vout

DDRH-15-xxST (Screw Terminal Type)

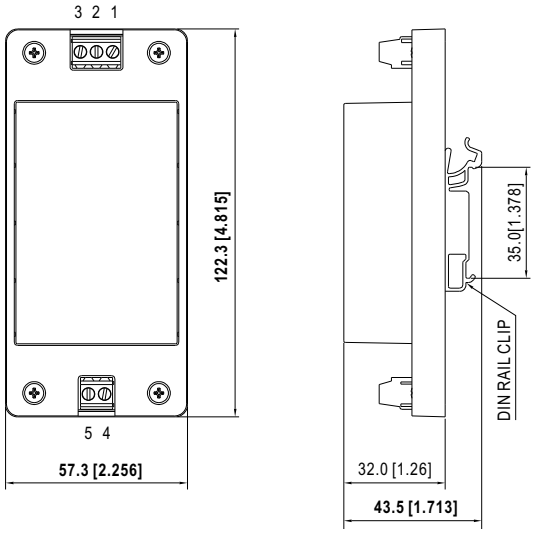


■ Terminal Pin No. Assignment

Pin-Out		
Pin No.	Output	Mating wire
1	-Vin	12~24AWG
2	NC	
3	+Vin	
4	+Vout	
5	-Vout	

Note: Recommed torque setting for terminal is 5kgf-cm(4.4 Lb-in)

DDRH-15-xxDR (DIN Rail Type)

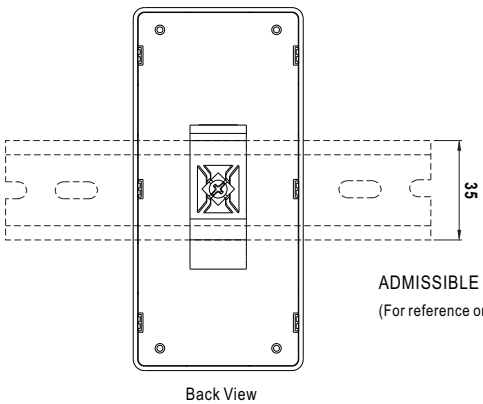


■ Terminal Pin No. Assignment

Pin-Out		
Pin No.	Output	Mating wire
1	-Vin	12~24AWG
2	NC	
3	+Vin	
4	+Vout	
5	-Vout	

Note: Recommed torque setting for terminal is 5kgf-cm(4.4 Lb-in)

■ Installation Instruction(DDRH-15-xxDR only)

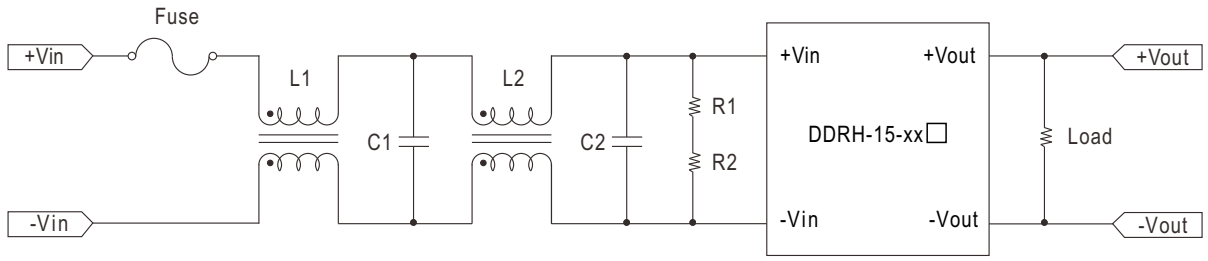


Back View

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

■ EMC Suggestion Circuit

※EMI test standard: BS EN/EN55032 Class A conducted and radiated emission are as below:



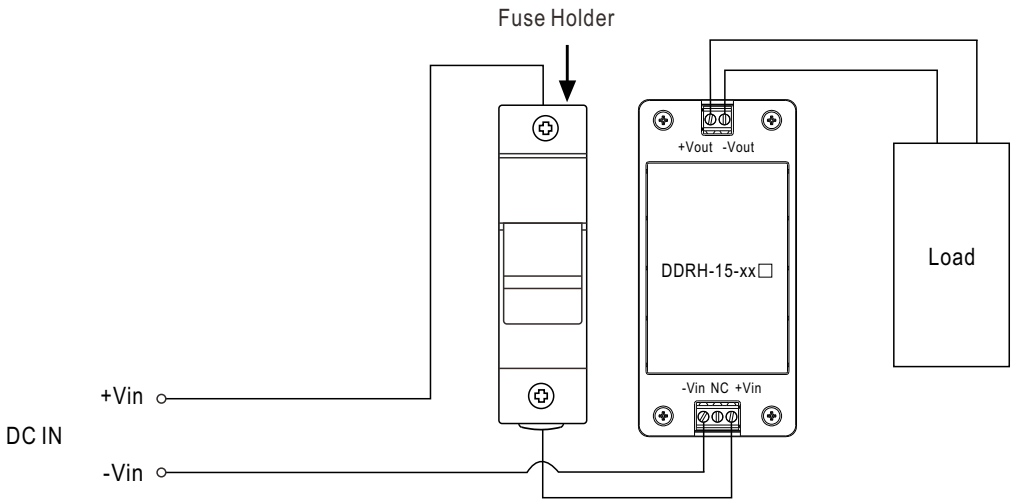
Model No.	BS EN/EN55032 Class A			
	Fuse	L1,L2	C1,C2	R1,R2
DDRH-15-xxP	4A/1500Vdc	Common choke 25mH SQ1212	0.33μF/1500Vdc	1/2W 3M, ≧800V
DDRH-15-xxST				
DDRH-15-xxDR				

■ External Fuse Wiring Instruction

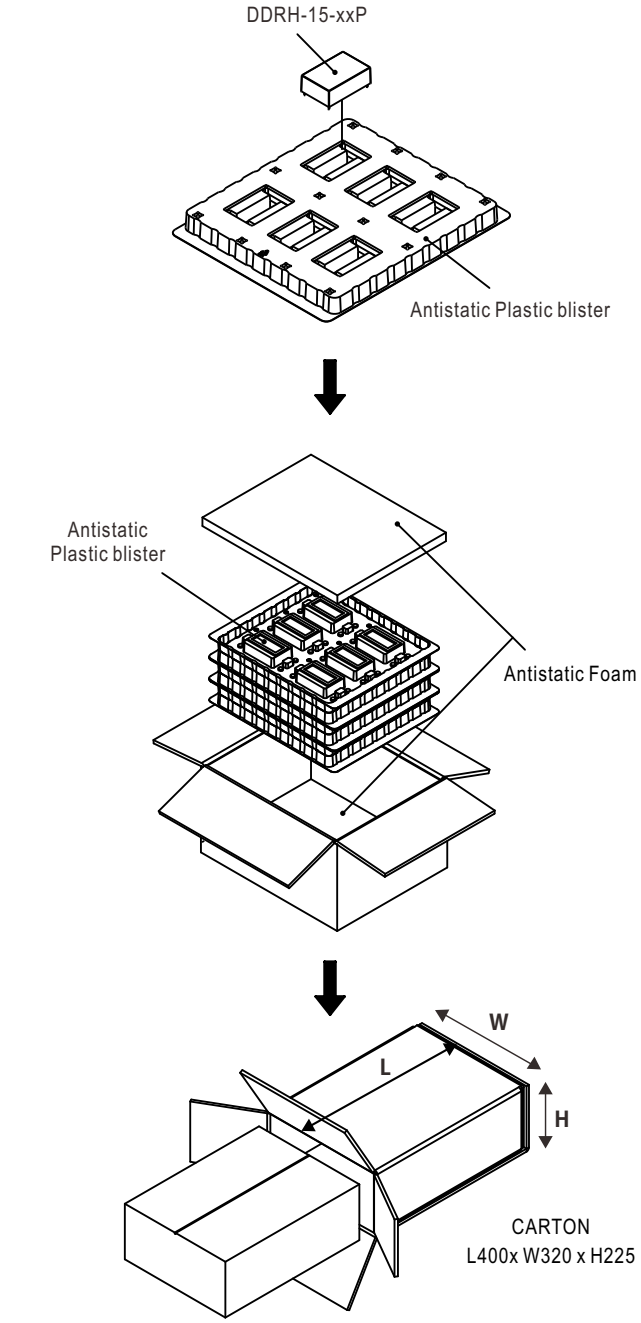
External FUSE is required.FUSE specification:4A/1500Vdc.

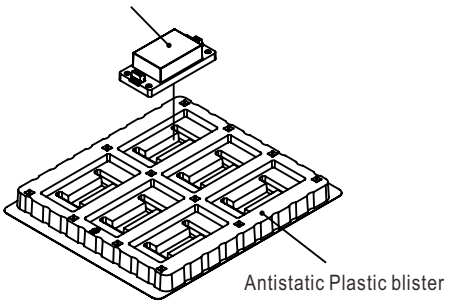
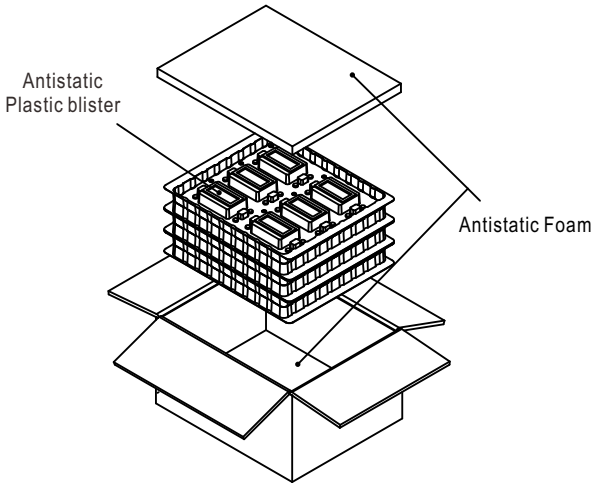
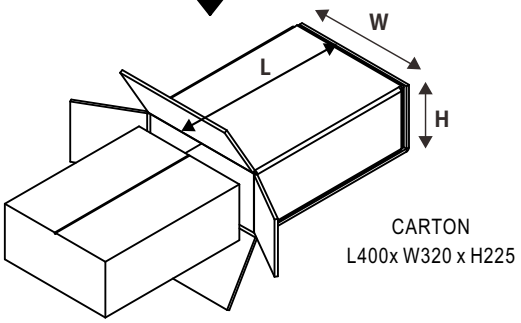
Suggested model:

Fuse Brand	Manufacturer Part NO.		MW's Order NO.
	Fuse	Fuse Holder	Fuse + Fuse Holder
WalterFuse	WJ30-4	WJ30-H	WJ30-4_WJ30-H



■ Packing

Standard Packing	DDRH-15-xxP			
	MPQ Per Tray(PCS)	One Tray G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm 	6	1.2Kg	18	4.6Kg

Standard Packing	DDRH-15-xxST			
	MPQ Per Tray(PCS)	One Tray G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm DDRH-15-xxST/DDRH-15-xxDR    CARTON L400x W320 x H225	6	1.43Kg	18	5.3Kg
	DDRH-15-xxDR			
	MPQ Per Tray(PCS)	One Tray G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
	6	1.46Kg	18	5.4Kg

■ Installation Manual

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