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	Pi type		
	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)

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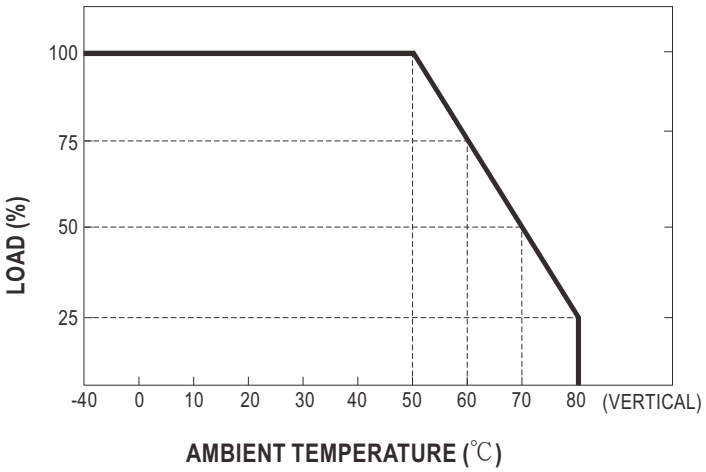
■ Derating Curve

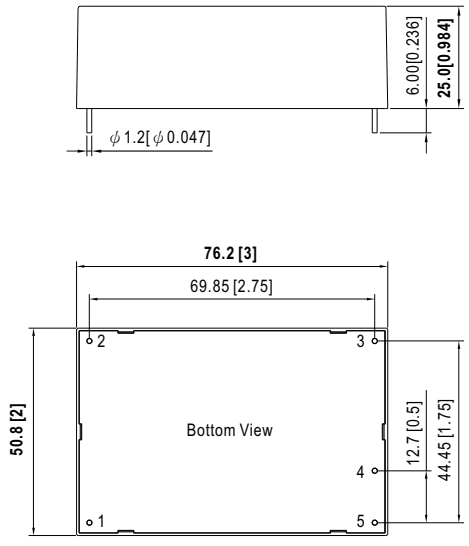


■ Mechanical Specification

- 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)

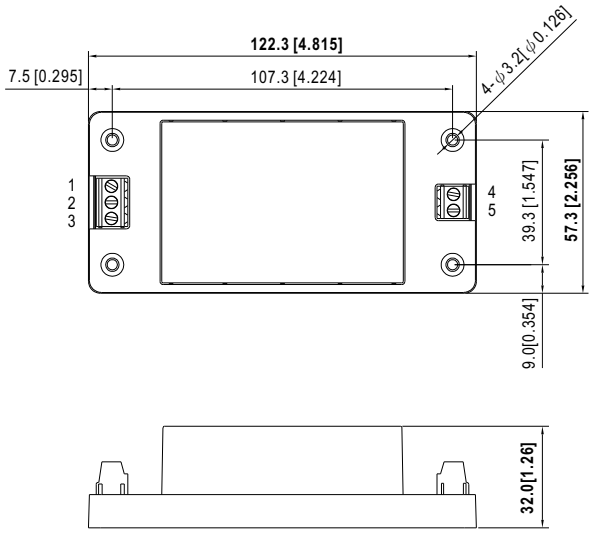
DDRH-15-xxP (PCB Mounting Type)



■ Plug Assignment

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

DDRH-15-xxST (Screw Terminal Type)

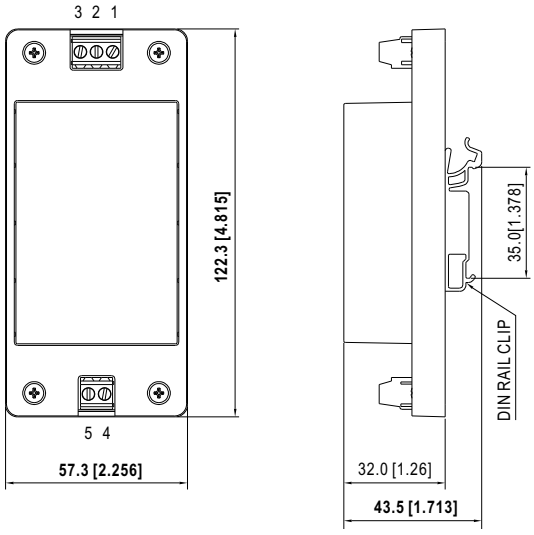


■ Terminal Pin No. Assignment

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)

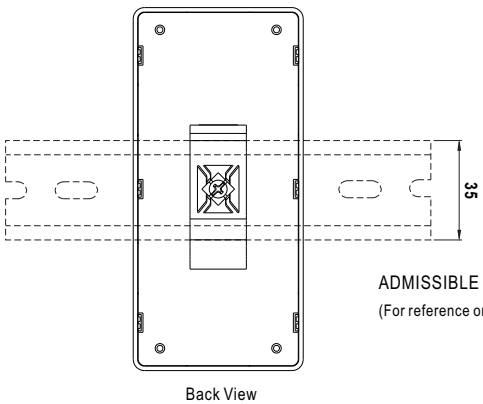


■ Terminal Pin No. Assignment

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)

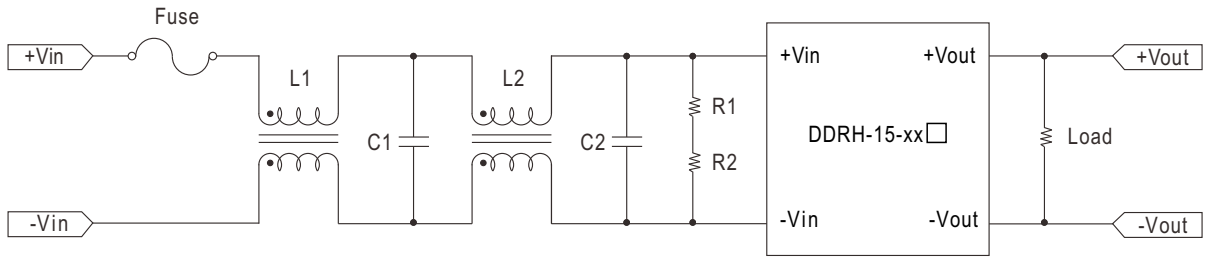


Back View

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:



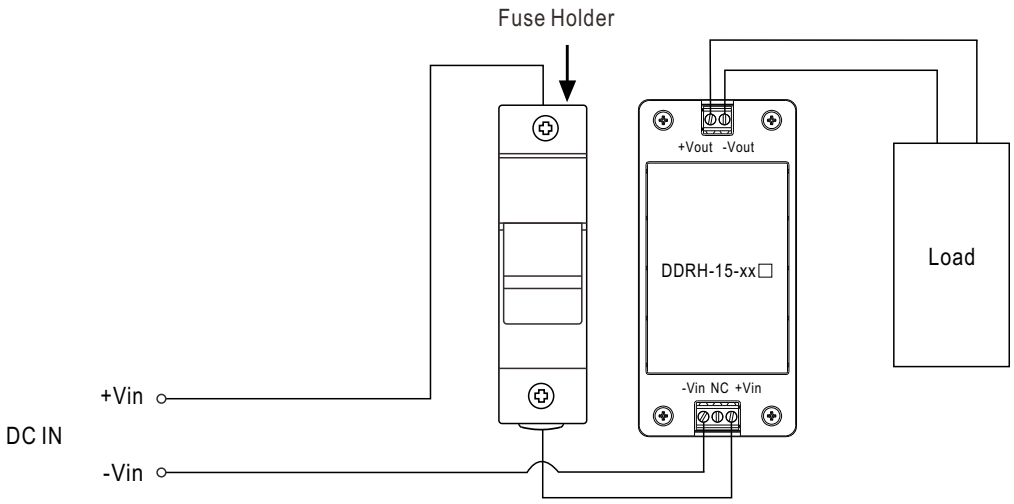
Model No.	BS EN/EN55032 Class A			
	Fuse	L1,L2	C1,C2	R1,R2
DDRH-15-xxP	4A/1500Vdc	Common choke 25mH SQ1212	0.33μF/1500Vdc	1/2W 3M, ≧800V
DDRH-15-xxST				
DDRH-15-xxDR				

■ External Fuse Wiring Instruction

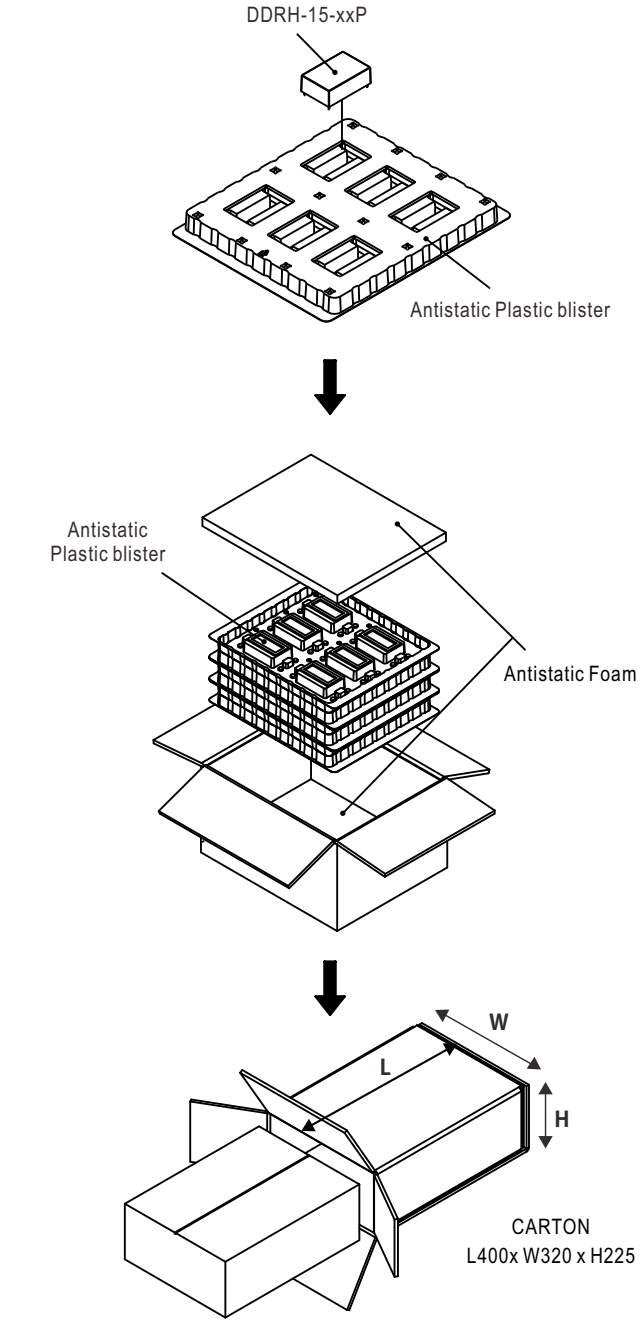
External FUSE is required.FUSE specification:4A/1500Vdc.

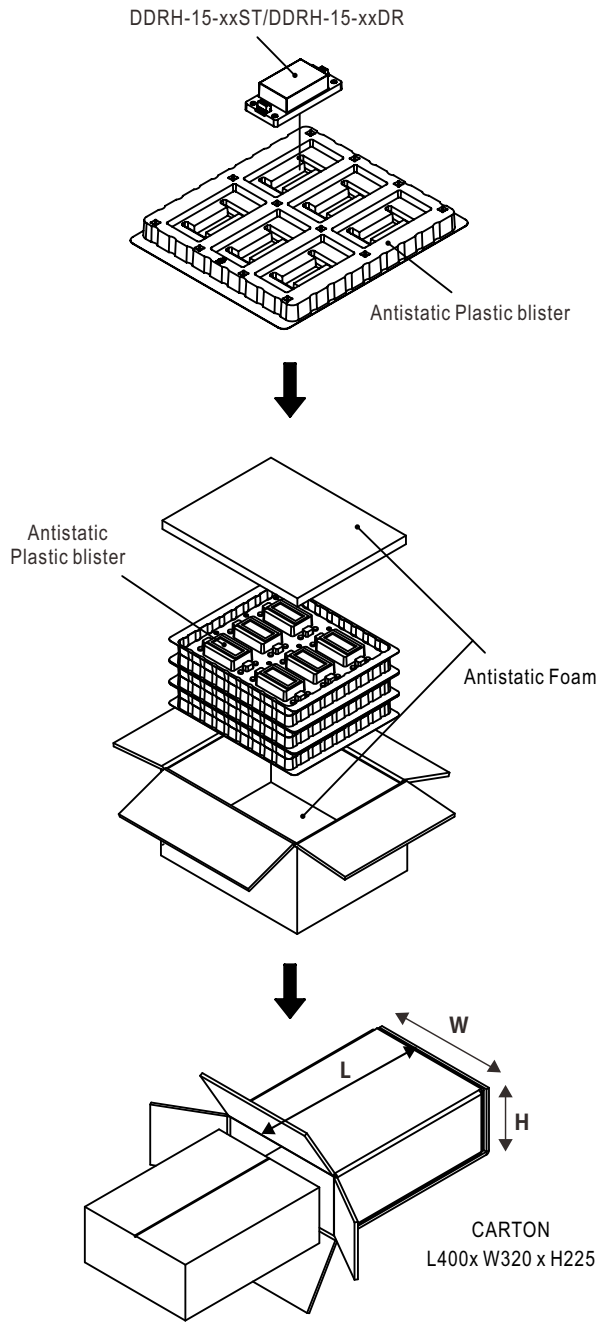
Suggested model:

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

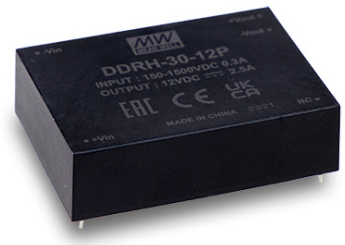
Standard Packing	DDRH-15-xxP			
	MPQ Per Tray(PCS)	One Tray G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm 	6	1.2Kg	18	4.6Kg

Standard Packing	DDRH-15-xxST			
	MPQ Per Tray(PCS)	One Tray G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm  	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

30W High Reliable 150~1500Vdc Ultra Wide Input DC-DC Converter DDRH-30 series



DDRH-30-xxP

DDRH-30-xxST

DDRH-30-xxDR

TPTC004

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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-30 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-30 is designed to meet UL1741and 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 - 30 - 12 P

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

Output voltage (12V/15V/24/48V)

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-30-12☐	Nominal 800Vdc (150~1500Vdc)	0.2mA	50mA	12V	2.5A	85%	2500μF
DDRH-30-15☐		0.2mA	50mA	15V	2A	88%	2000μF
DDRH-30-24☐		0.2mA	50mA	24V	1.25A	91%	1250μF
DDRH-30-48☐		0.2mA	50mA	48V	0.625A	91%	625μF

☐ = P, ST, DR

SPECIFICATION

INPUT	VOLTAGE RANGE	150 ~ 1500Vdc		
	FILTER	Pi type		
	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	30W		
	RIPPLE & NOISE Note.2	12 ~ 24Vo: 100mVp-p 48Vo: 150mVp-p		
	LINE REGULATION	±1%		
	LOAD REGULATION	±1% (10% Load to Full Load)		
	SWITCHING FREQUENCY (Typ.)	28 ~ 75.6KHz		
	HOLD UP TIME	16ms min. @Vin=800Vdc		
	SETUP TIME	2s 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	144Vdc	
		Shutdown voltage	132Vdc	
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% / ℃ (-40℃ ~ 50℃) Typ.		
	VIBRATION	Meets: MIL.STD-810F Table 514.5C-VIII, 15-2000Hz, X,Y,Z axis, 1hr (each axis), total 3hrs		
	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/Burest	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	318Khrs MIL-HDBK-217F(25℃)		
	DIMENSION (L*W*H)	**P Type: 89*63.5*25mm, ST Type: 135*70*32mm, DR Type: 135*70*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 : 240g ; 6pcs/Tray, 18pcs/per carton ST Type : 305g ; 6pcs/Tray, 18pcs/per carton DR Type : 310g ; 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)

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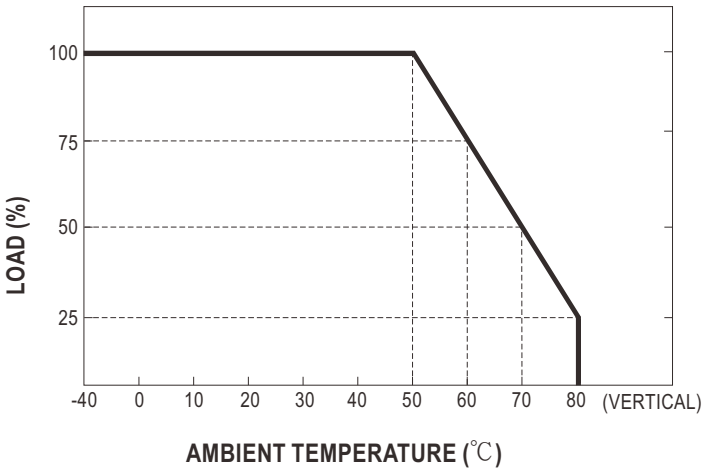
■ Derating Curve

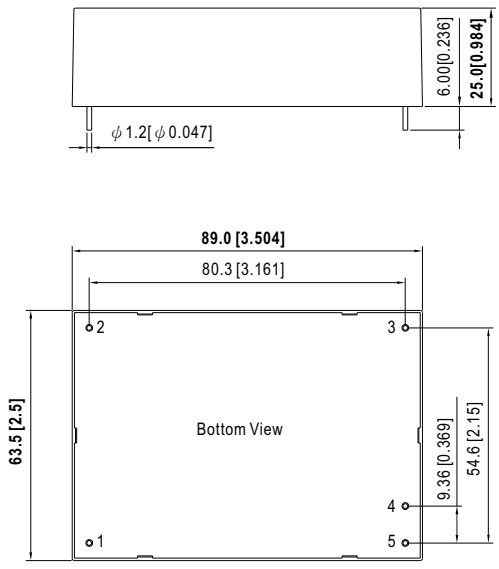


■ Mechanical Specification

- 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)

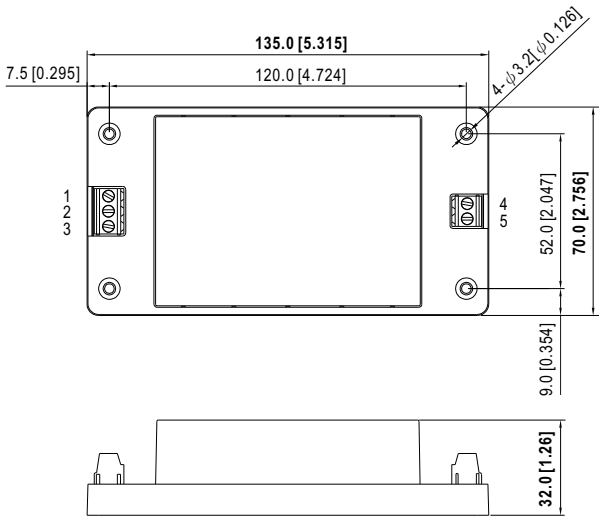
DDRH-30-xxP (PCB Mounting Type)



■ Plug Assignment

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

DDRH-30-xxST (Screw Terminal Type)

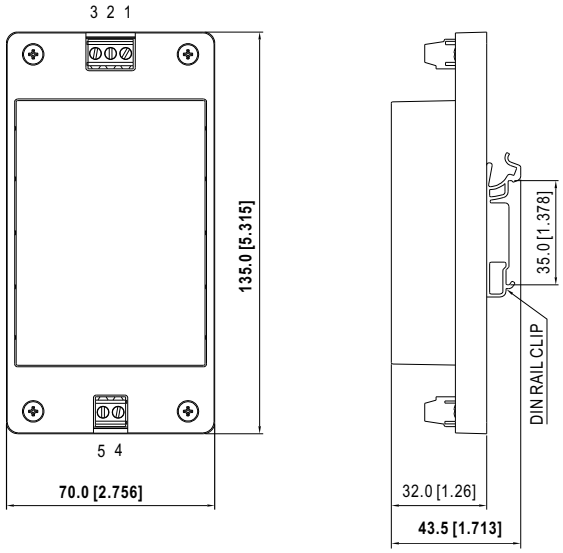


■ Terminal Pin No. Assignment

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-30-xxDR (DIN Rail Type)

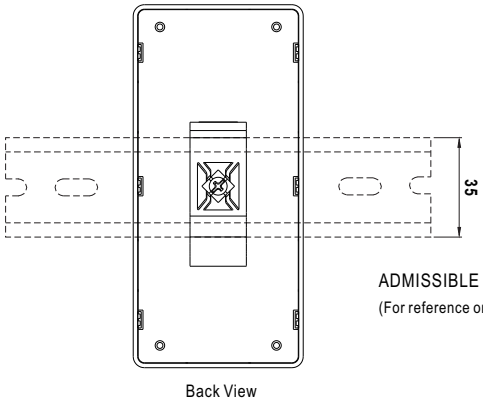


■ Terminal Pin No. Assignment

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-30-xxDR only)

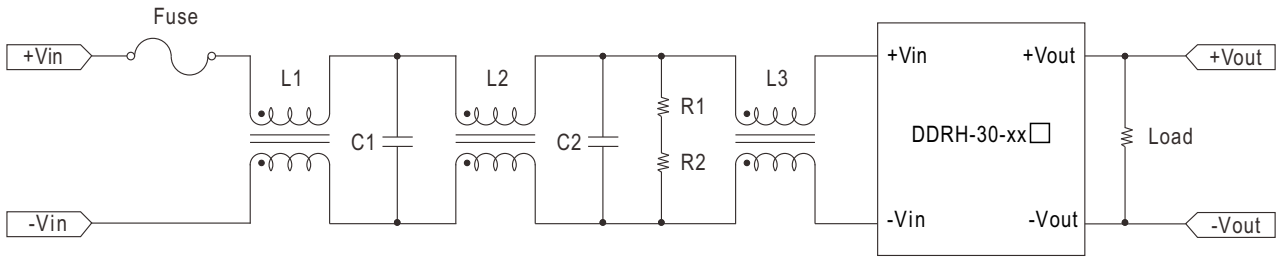


Back View

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:



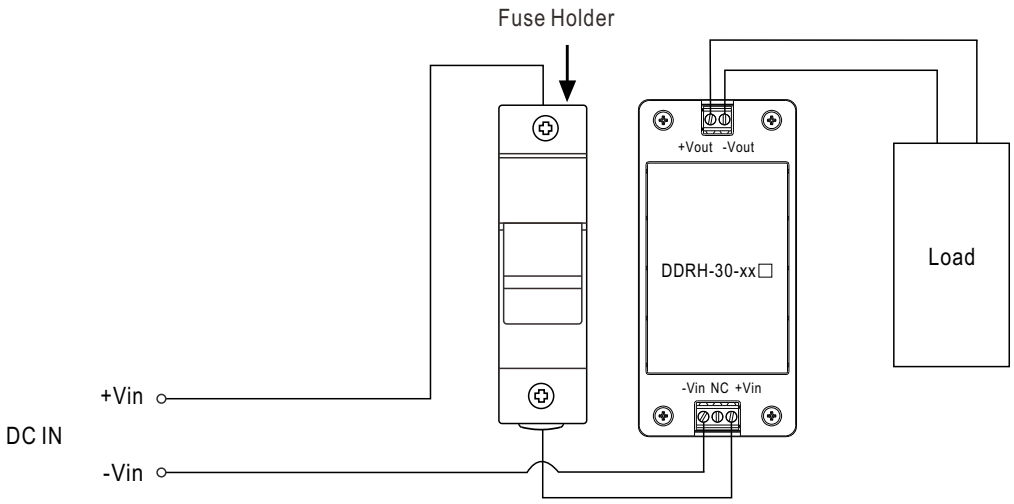
Model No.	BS EN/EN55032 Class A			
	Fuse	L1,L2,L3	C1,C2	R1,R2
DDRH-30-xxP	4A/1500Vdc	Common choke 20mH SQ1515	0.33μF/1500Vdc	1/2W 3M, ≧800V
DDRH-30-xxST				
DDRH-30-xxDR				

■ External Fuse Wiring Instruction

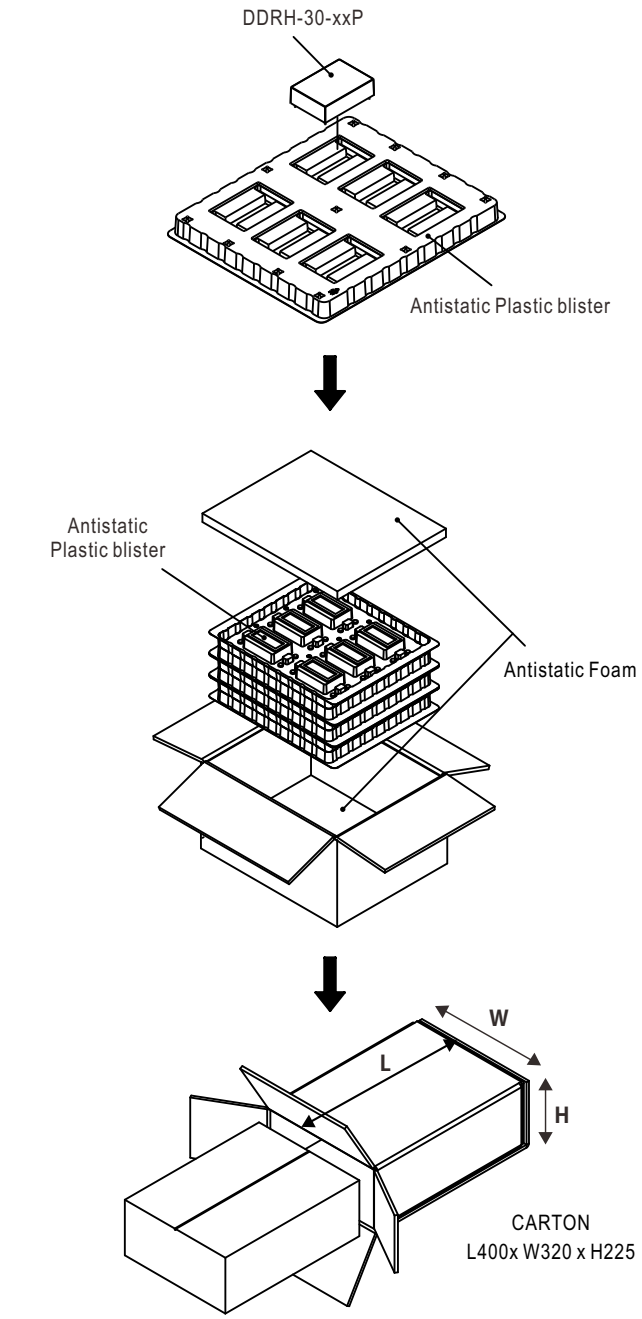
External FUSE is required.FUSE specification:4A/1500Vdc.

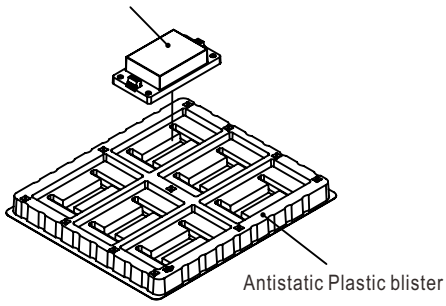
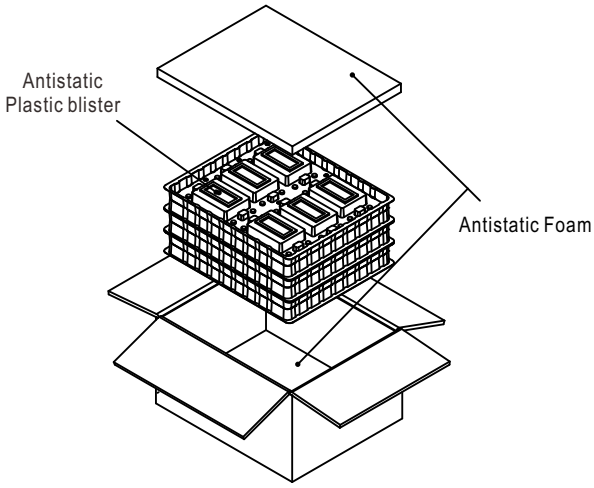
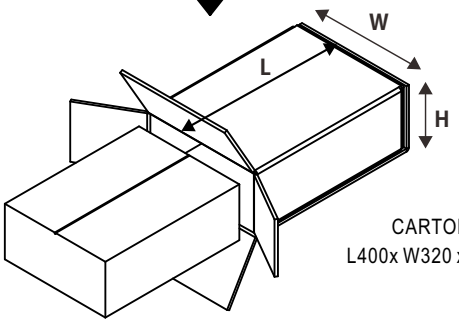
Suggested model:

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-30-xxP			
	MPQ Per Tray(PCS)	One Tray G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm 	6	1.66Kg	18	6Kg

Standard Packing	DDRH-30-xxST			
	MPQ Per Tray(PCS)	One Tray G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm DDRH-30-xxST/DDRH-30-xxDR    CARTON L400x W320 x H225	6	2Kg	18	7Kg
	DDRH-30-xxDR			
	MPQ Per Tray(PCS)	One Tray G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
	6	2.03Kg	18	7.1Kg

■ Installation Manual

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

45W High Reliable 150~1500Vdc Ultra Wide Input DC-DC Converter DDRH-45 series

DDRH-45-xxP

DDRH-45-xxST

DDRH-45-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-45 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-45 is designed to meet UL1741and 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 - 45 - 12 P

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

Output voltage (12V/15V/24/48V)

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-45-12☐	Nominal 800Vdc (150~1500Vdc)	0.2mA	75mA	12V	3.75A	85%	3750μF
DDRH-45-15☐		0.2mA	75mA	15V	3A	85%	3000μF
DDRH-45-24☐		0.2mA	75mA	24V	1.87A	86%	1870μF
DDRH-45-48☐		0.2mA	75mA	48V	0.938A	86%	938μF

☐ = P, ST, DR

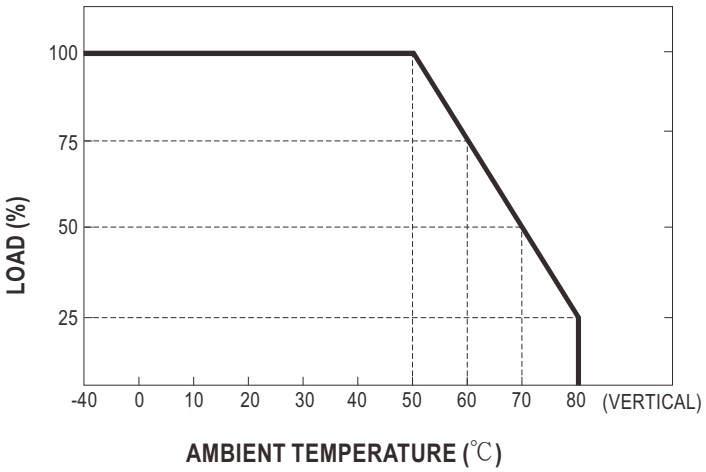
SPECIFICATION					
INPUT	VOLTAGE RANGE		150 ~ 1500Vdc		
	FILTER		Pi type		
	EXTERNAL INPUT FUSE		4A/1500Vdc, required (Please refer to page 6 for more details)		
	INRUSH CURRENT (Typ.)		Cold start 150A max. @ Vin=800Vdc		
OUTPUT	VOLTAGE ACCURACY		±2.0%		
	RATED POWER		45W		
	RIPPLE & NOISE Note.2		12 ~ 24Vo: 100mVp-p 48Vo: 150mVp-p		
	LINE REGULATION		±1%		
	LOAD REGULATION		±1% (10% Load to Full Load)		
	SWITCHING FREQUENCY (Typ.)		28 ~ 75.6KHz		
	HOLD UP TIME		20ms min. @Vin=800Vdc		
	SETUP TIME		2s 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		
		UNDER VOLTAGE LOCKOUT	Start-up voltage	132Vdc	
			Shutdown voltage	121Vdc	
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% / ℃ (-40℃ ~ 50℃) Typ.		
	VIBRATION		Meets: MIL.STD-810F Table 514.5C-VIII, 15-2000Hz, X,Y,Z axis, 1hr (each axis), total 3hrs		
	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		316Khrs MIL-HDBK-217F(25℃)		
	DIMENSION (L*W*H)		**P Type: 89*63.5*25mm, ST Type: 135*70*32mm, DR Type: 135*70*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 : 240g ; 6pcs/Tray, 18pcs/per carton ST Type : 305g ; 6pcs/Tray, 18pcs/per carton DR Type : 310g ; 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

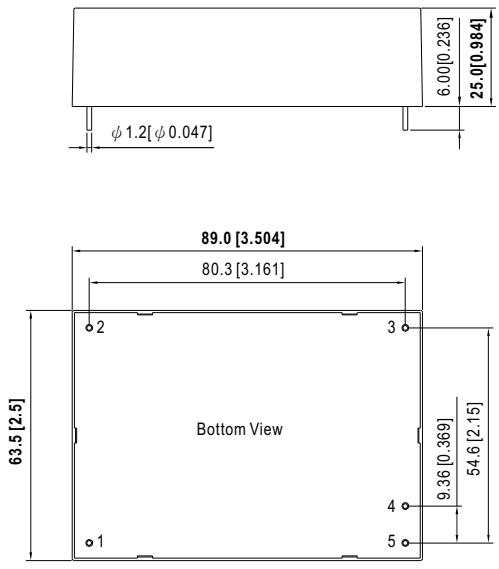


■ Mechanical Specification

- 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)

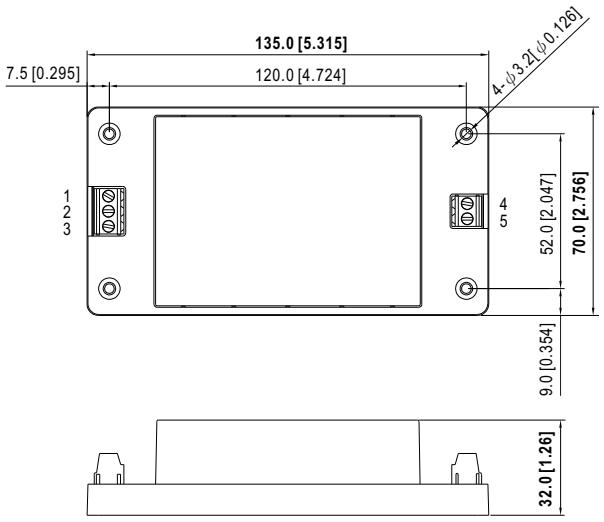
DDRH-45-xxP (PCB Mounting Type)



■ Plug Assignment

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

DDRH-45-xxST (Screw Terminal Type)

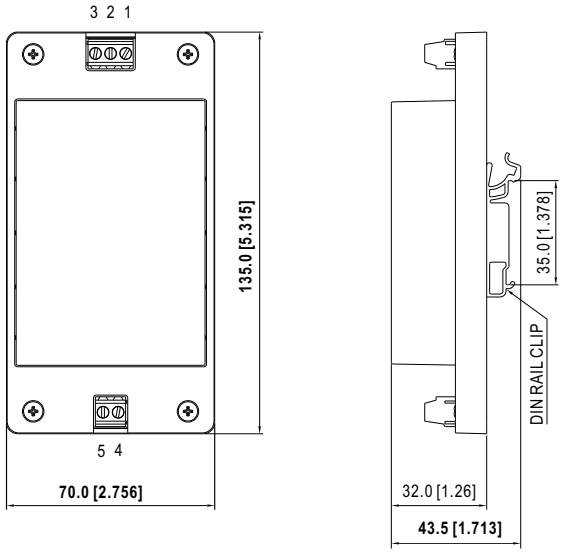


■ Terminal Pin No. Assignment

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-45-xxDR (DIN Rail Type)

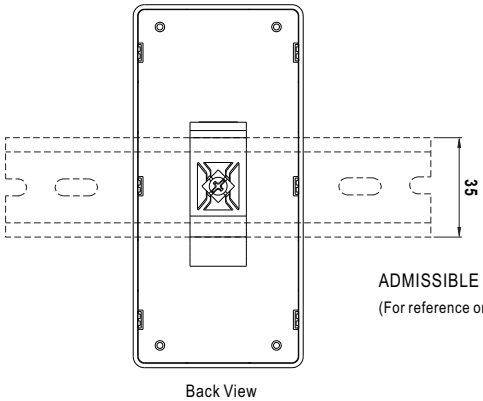


■ Terminal Pin No. Assignment

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-45-xxDR only)

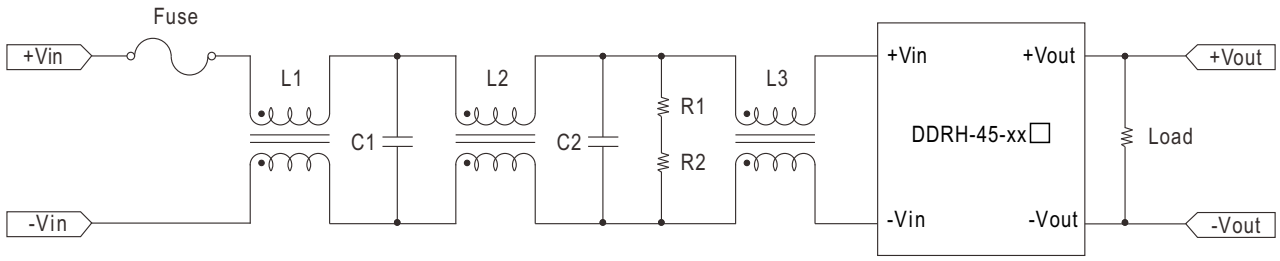


Back View

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:



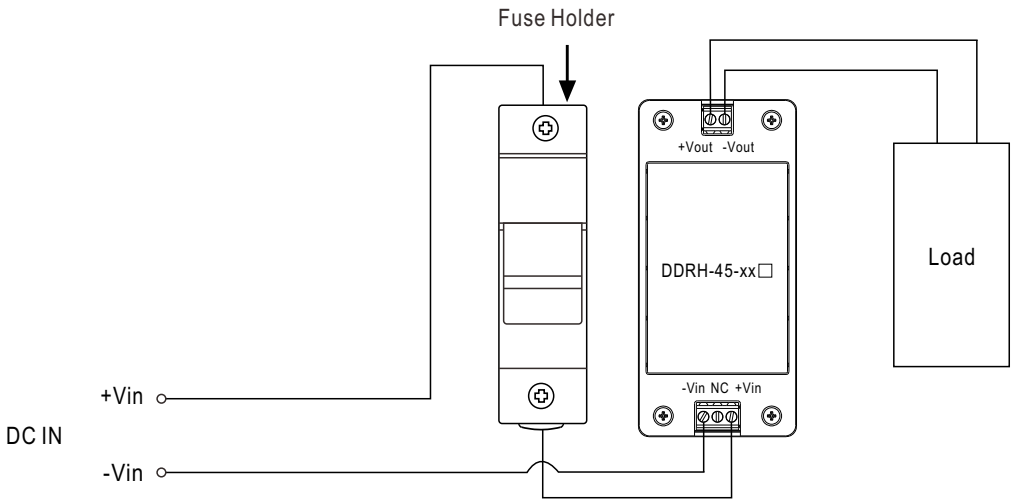
Model No.	BS EN/EN55032 Class A			
	Fuse	L1,L2,L3	C1,C2	R1,R2
DDRH-45-xxP	4A/1500Vdc	Common choke 20mH SQ1515	0.33μF/1500Vdc	1/2W 3M, ≧800V
DDRH-45-xxST				
DDRH-45-xxDR				

■ External Fuse Wiring Instruction

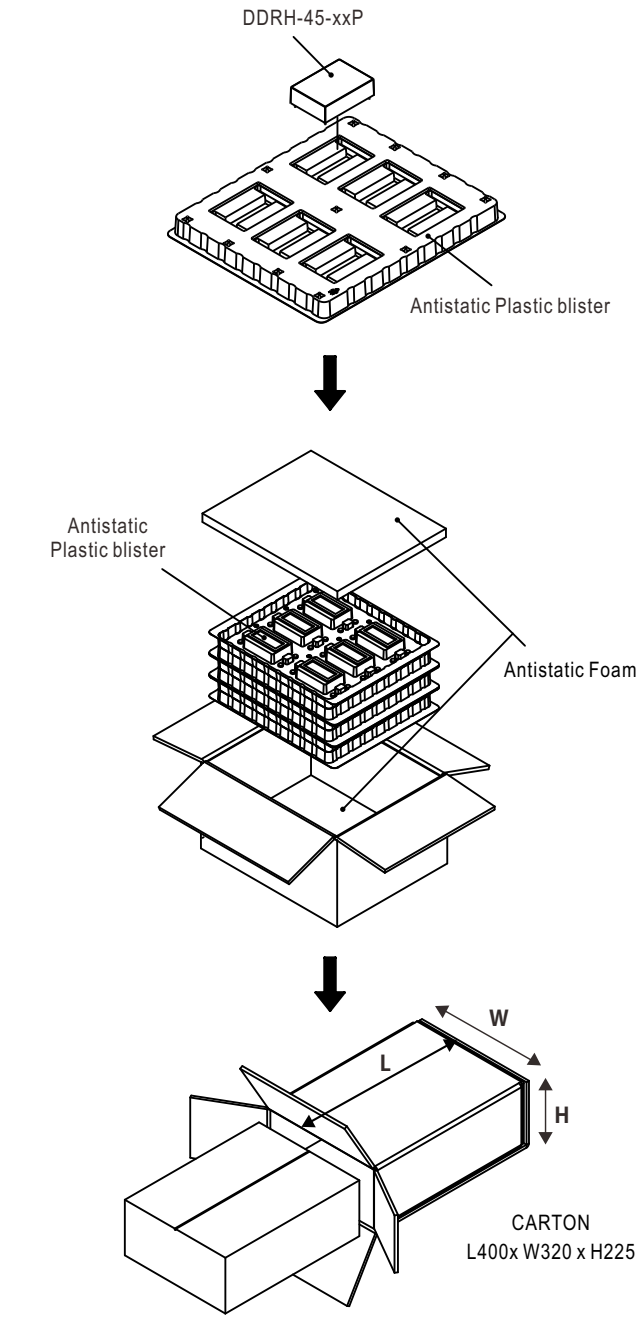
External FUSE is required.FUSE specification:4A/1500Vdc.

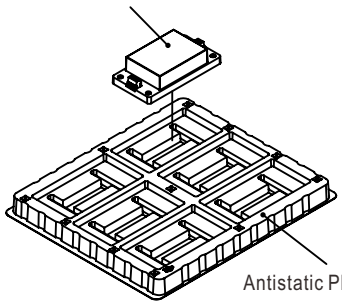
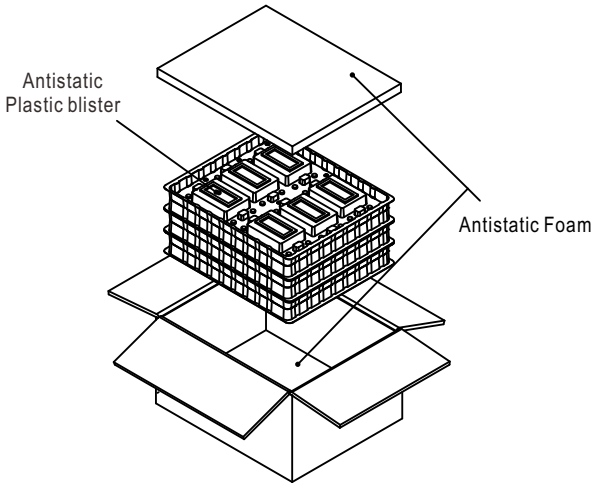
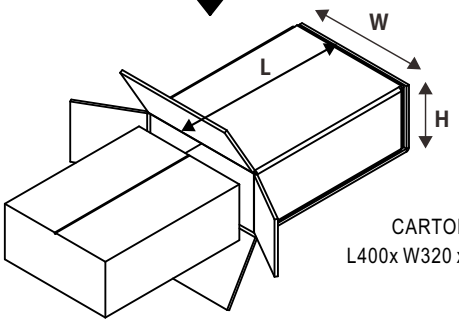
Suggested model:

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-45-xxP			
	MPQ Per Tray(PCS)	One Tray G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm 	6	1.66Kg	18	6Kg

Standard Packing	DDRH-45-xxST			
	MPQ Per Tray(PCS)	One Tray G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm DDRH-45-xxST/DDRH-45-xxDR    CARTON L400x W320 x H225	6	2Kg	18	7Kg
	DDRH-45-xxDR			
	MPQ Per Tray(PCS)	One Tray G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
	6	2.03Kg	18	7.1Kg

■ Installation Manual

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

60W High Reliable 150~1500Vdc Ultra Wide Input DIN Rail Type DC-DC Converter **DDRH-60 series**

User's Manual

UL1741 TPTC004

PV Automate Industrial Security Network Telecom

Features

- 150~ 1500Vdc 10:1 ultra - wide input range
- 57mm slim width
- 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, cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- -30~+80°C ultra-wide operating temperature (> +55°C derating)
- Over voltage category II
- Operating altitude up to 5000 meters
- DC OK relay contact
- DC output voltage adjustable(+20%)
- Full encapsulated
- 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-60 series is a 150 ~ 1500Vdc high reliable ultra-high input DIN rail type DC-DC converter which can supply stable working voltage for the load. It is suitable to be mounted on TS-35/7.5 or TS-35/15 rails. Main features are as following: easy to install DIN rail type, narrow width(57mm) in slim design, -30~+80° C wide range operating temperature, 4KVAC high isolation voltage, operation at 5000m altitude, high efficiency, low ripple & noise, complete protections and so on.

DDRH-60 is compliant with UL1741 and BS EN/EN61000-6-2 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 and so forth.

Model Encoding

DDRH - 60 - 24

- 24 — Output voltage(5V/12V/24V/48V)
- 60 — Rated wattage
- DDRH — Series name

SPECIFICATION

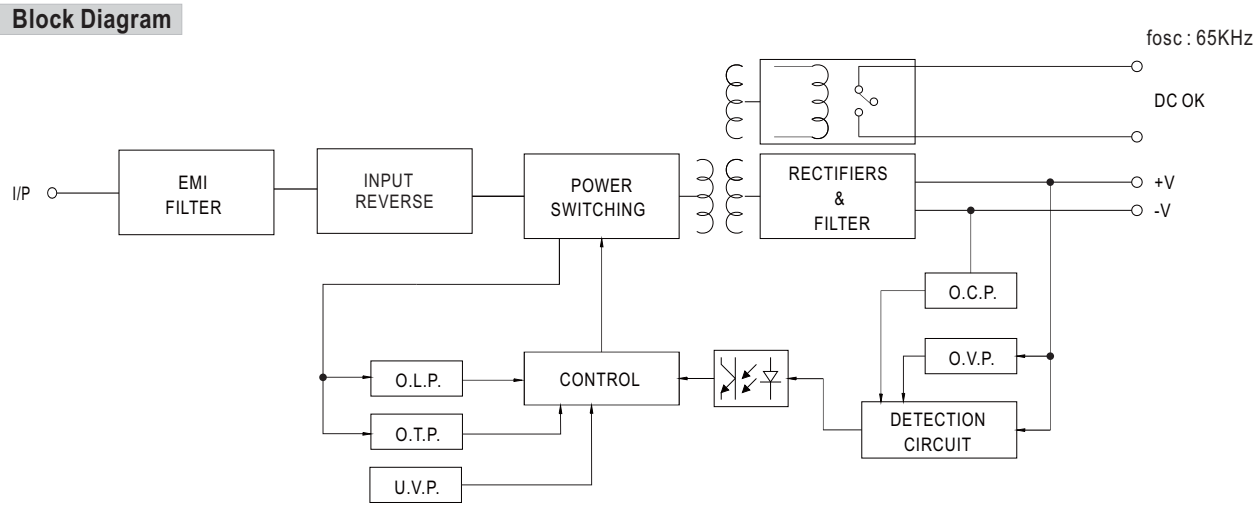
MODEL			DDRH-60-5	DDRH-60-12	DDRH-60-24	DDRH-60-48
OUTPUT	DC VOLTAGE		5V	12V	24V	48V
	RATED CURRENT		10A	5A	2.5A	1.25A
	CURRENT RANGE		0 ~ 10A	0 ~ 5A	0 ~ 2.5A	0 ~ 1.25A
	RATED POWER		50W	60W	60W	60W
	RIPPLE & NOISE (max.) Note.2		100mVp-p	120mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE		5 ~ 6V	12 ~ 15V	24 ~ 29V	48 ~ 54V
	VOLTAGE TOLERANCE Note.3		±1.5%	±1.5%	±1.0%	±1.0%
	LINE REGULATION		±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION		±1.5%	±0.5%	±0.5%	±0.5%
	EXTERNAL CAPACITANCE LOAD (Max.)		6000 μF	4000 μF	2500 μF	1000 μF
INPUT	VOLTAGE RANGE Note.4		150 ~ 1500Vdc			
	EFFICIENCY (Typ.)	200Vdc	80%	83%	86%	87%
		800Vdc	81%	85%	87%	88%
		1500Vdc	76%	81%	84%	83%
	INRUSH CURRENT (max.)		COLD START 120A /1500Vdc 80A/800Vdc 30A/150Vdc			
PROTECTION	OVERLOAD		105 ~ 135% rated output power			
			Protection type : Hiccup up 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		6.6 ~ 8.4V	16.5 ~ 21V	30 ~ 38V	55 ~ 60V
			Protection type : Hiccup up mode, recovers automatically after fault condition is removed			
	OVER TEMPERATURE		Protection type : Hiccup up 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:120 ~ 130Vdc , Under voltage release range:130 ~ 146.5Vdc			
FUNCTION	DC OK SIGNAL		Relay contact rating(max.) : 30V / 1A resistive			
ENVIRONMENT	WORKING TEMP.		-30 ~ +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		5000 meters /OVC II			
	OVER VOLTAGE CATEGORY		II ; According to EN62109-1; altitude up to 5000 meters			
SAFETY & EMC (Note.7)	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 O/P-DC OK:0.5KVAC			
	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	
			Voltage Flicker	BS EN/EN61000-3-3	-------	
	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-, criteria A	
			Conducted	BS EN/EN61000-4-6	Level 3, 10V, criteria A	
			Magnetic Field	BS EN/EN61000-4-8	Level 4, 30A, criteria A	
			Voltage Dips and interruptions	BS EN/EN61000-4-11	>95% dip 0. 5 periods, 30% dip 25 periods, >95% interruptions 250 periods	
OTHERS	MTBF		454.5K hrs min. MIL-HDBK-217F (25℃); 1439.7K hrs min. Telcordia TR/SR-332 (Bellcore) (25℃)			
	DIMENSION		57*93.5*105mm (W*H*D)			
	PACKING		0.8Kg; 16pcs/12.8Kg/0.84CUFT			

NOTE

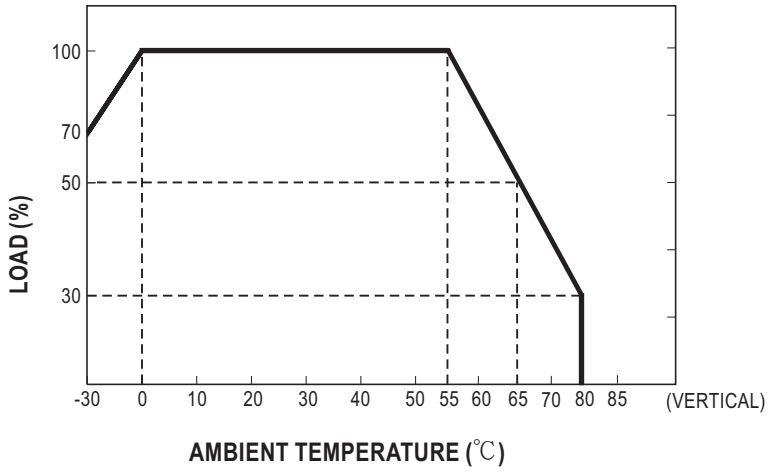
1. All parameters NOT specially mentioned are measured at 600Vdc input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μF & 47μF parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation 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. 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. 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

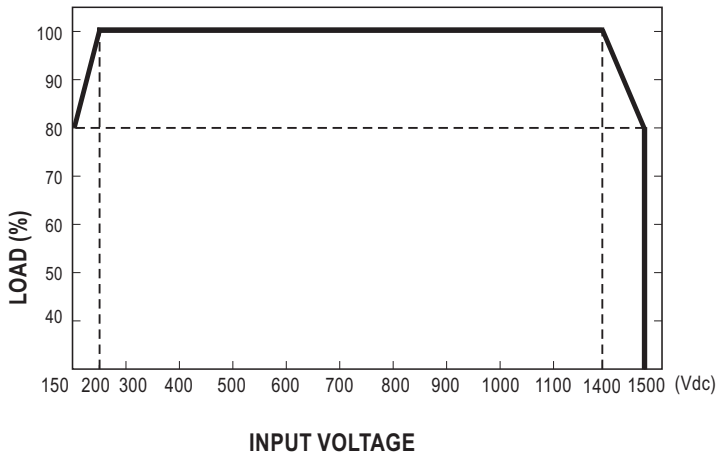
■ Block Diagram



■ Derating Curve



■ Static Characteristics



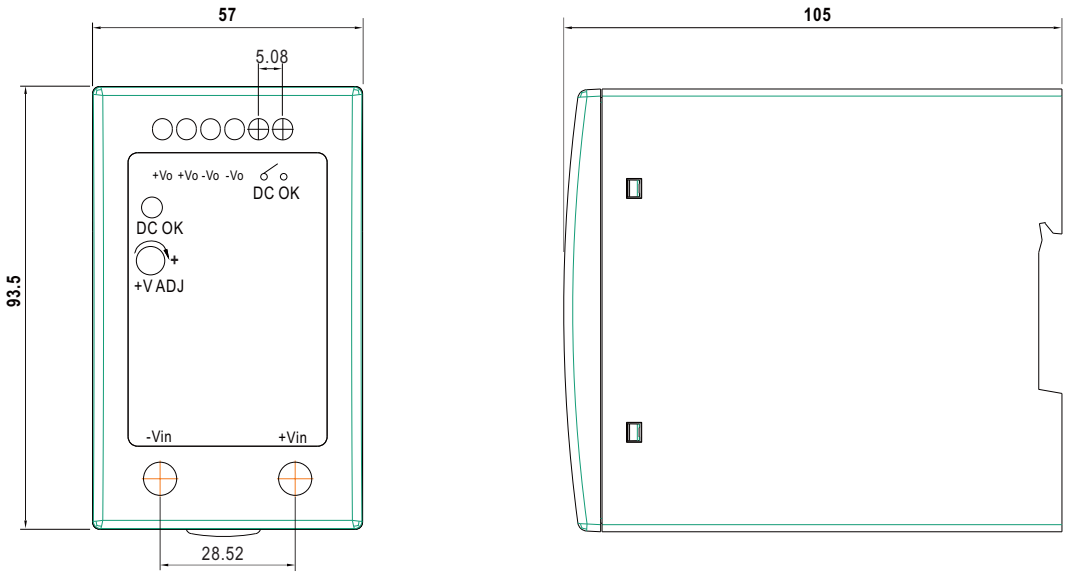
■ DC OK Relay Contact

Contact Close	PSU turns ON / DC OK.
Contact Open	PSU turns OFF / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

■ Mechanical Specification

(Unit: mm , tolerance ± 1mm)

Case No.DDRH-60

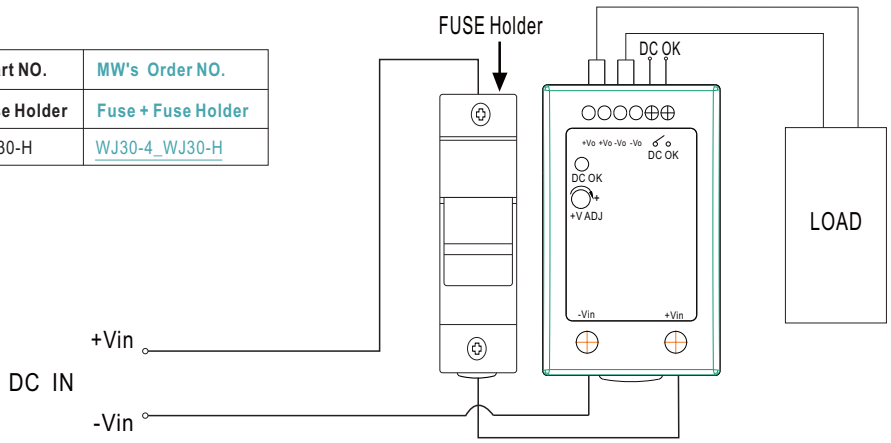


■ External FUSE wiring instruction

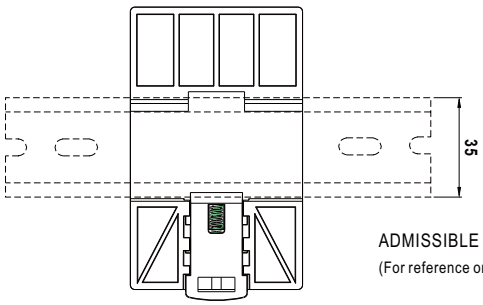
External FUSE is required.FUSE specification : 4A/1500Vdc.

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 Instruction



ADMISSIBLE DIN-RAIL:TS35/7.5 or TS35/15

(For reference only. Not included with unit.)

Back View

■ Installation Manual

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

120W High Reliable 250~1500Vdc Ultra Wide Input DIN Rail Type DC-DC Converter **DDRH-120 series**

User's Manual

UL1741 BS EN/EN62109-1 TPTC004 IEC62109-1

PV Renewable Energy Automate Industrial Security Network Telecom

Features

- 250~ 1500Vdc 6:1 ultra-wide input range
- Withstand 1700Vdc surge input for 10 seconds
- 63mm slim width
- 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, cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- -40~+80°C ultra-wide operating temperature (> +50°C derating)
- Over voltage category II
- Operating altitude up to 5000 meters
- DC OK relay contact
- DC output voltage adjustable(12~15V, 24~29V, 30~36V, 48~58V)
- Conformal coating
- 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-120 series is a 250 ~ 1500Vdc high reliable ultra-high input DIN rail type DC-DC converter which can supply stable working voltage for the load. It is suitable to be mounted on TS-35/7.5 or 15 rails. Main features are as following: easy to install DIN rail type, narrow width(63mm) in slim design, -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.

DDRH-120 is compliant with UL1741 and BS EN/EN61000-6-2 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

DDRH - 120 - 24

- 24 — Output voltage(12V/24V/32V/48V)
- 120 — Rated wattage
- DDRH — Series name

SPECIFICATION

MODEL			DDRH-120-12	DDRH-120-24	DDRH-120-32	DDRH-120-48
OUTPUT	DC VOLTAGE		12V	24V	32V	48V
	RATED CURRENT		8.4A	5A	3.75A	2.5A
	CURRENT RANGE		0 ~ 8.4A	0 ~ 5A	0 ~ 3.75A	0 ~ 2.5A
	RATED POWER		100.8W	120W	120W	120W
	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.)		4000 μF	2500 μF	2000 μF	1000 μF
INPUT	VOLTAGE RANGE Note.4		250 ~ 1500Vdc			
	EFFICIENCY (Typ.)	300Vdc	88%	89%	90%	91%
		800Vdc	87%	90%	91%	91%
		1500Vdc	84%	86%	87%	87%
	INRUSH CURRENT (max.)		COLD START 300A /1500Vdc 200A/800Vdc 70A/250Vdc			
	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 ~ 230Vdc , Under voltage release range:230 ~ 245Vdc			
FUNCTION	DC OK SIGNAL		Relay contact rating(max.) : 30V / 1A resistive			
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 ~ 50℃)			
	VIBRATION		Component: 10 ~ 500Hz, 2G 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.7)	SAFETY STANDARDS		UL1741, CSA C22.2 No.107.1-16 , IEC62109-1, BS EN/EN62109-1, EAC TP TC 004 approved			
	WITHSTAND VOLTAGE		I/P-O/P:4KVAC I/P-FG :3.75KVAC O/P-FG :2KVAC O/P-DC OK:0.5KVAC			
	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, criteria A	
			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		257.2 Khrs min. MIL-HDBK-217F (25℃); 1596.3 Khrs min. Telcordia TR/SR-332 (Bellcore) (25℃)			
	DIMENSION		63*125.2*115mm (W*H*D)			
	PACKING		0.845Kg; 12pcs/12.6Kg/1.02CUFT			

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. 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. 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. 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)

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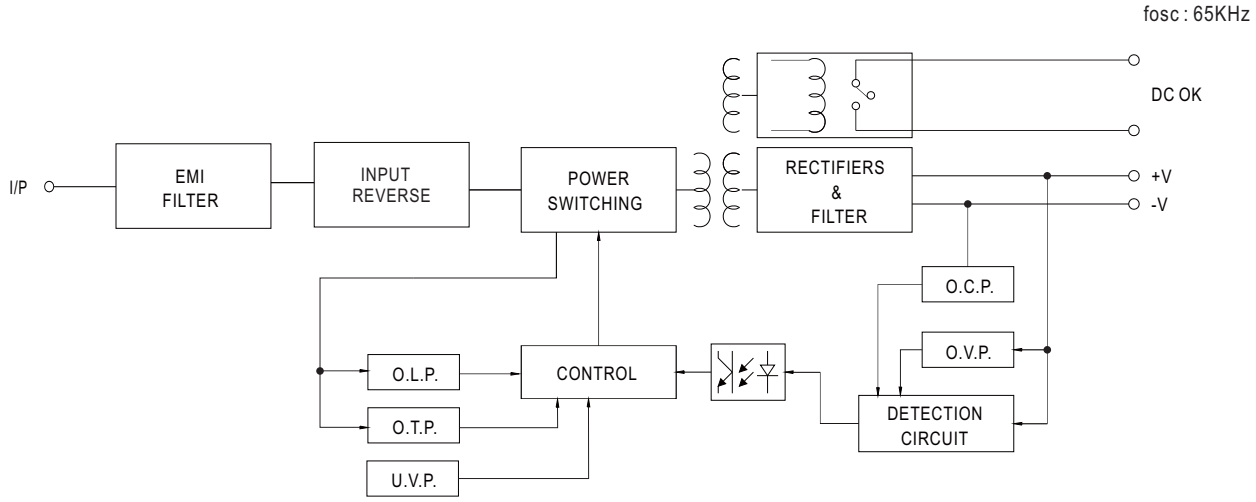
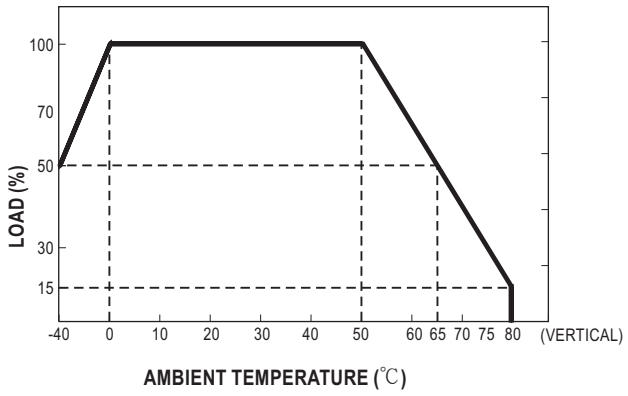
■ Block Diagram

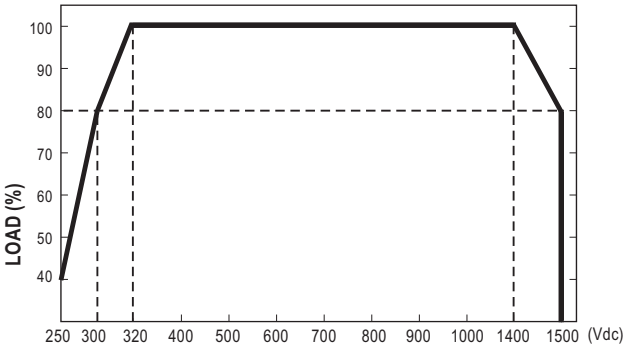


■ Derating Curve



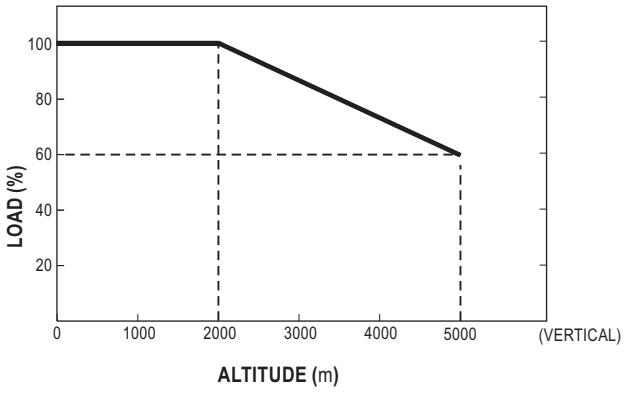
AMBIENT TEMPERATURE (℃)

■ Static Characteristics



INPUT VOLTAGE

■ Altitude Curve



ALTITUDE (m)

Note: Multiply by the regular power limit factor

■ DC OK Relay Contact

Contact Close	PSU turns ON / DC OK.
Contact Open	PSU turns OFF / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

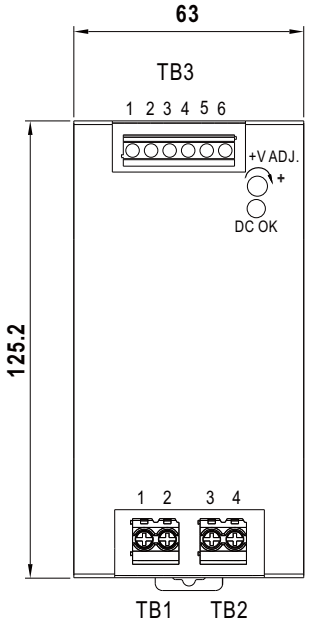
■ Mechanical Specification

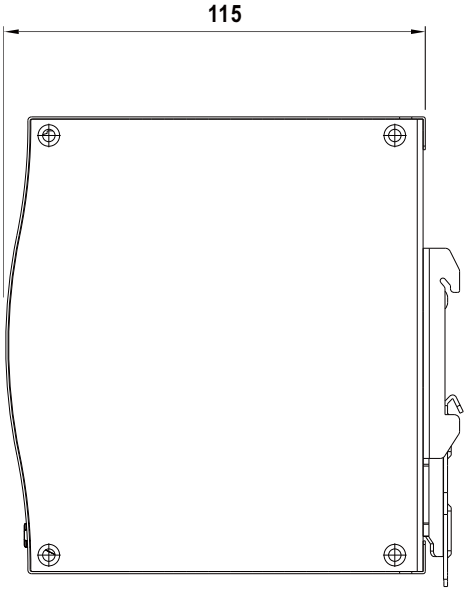
(Unit: mm , tolerance ± 1mm)

Case No. 979

Terminal Pin No. Assignment (TB3)

Pin No.	Assignment
1,2	DC OK Relay Contact
3,4	-Vo
5,6	+Vo





Terminal Pin No. Assignment (TB1,TB2)

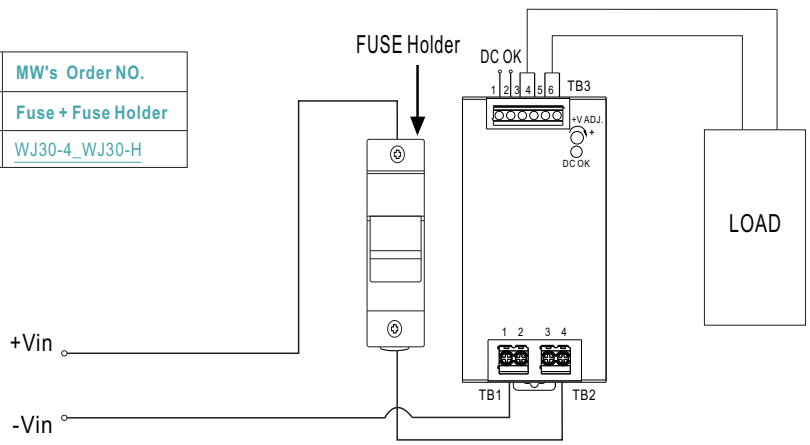
Pin No.	Assignment
1,2	-Vin
3,4	+Vin

■ External FUSE wiring instruction

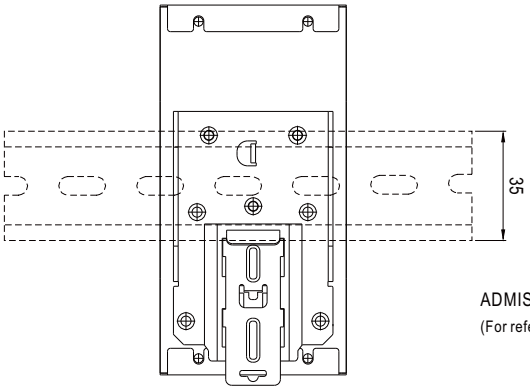
External FUSE is required.FUSE specification : 4A/1500Vdc.

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 Instruction



This series fits DIN rail TS35/7.5 or TS35/15.
For installation details, please refer to the Instruction manual.

ADMISSIBLE DIN rail:TS35/7.5 OR TS35/15
(For reference only. Not included with unit.)

■ Installation Manual

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

240W High Reliable 250~1500Vdc Ultra Wide Input DIN Rail Type DC-DC Converter **DDRH-240 series**

User's Manual

UL1741 BS EN/EN62109-1 TPTC004 IEC62109-1

PV Renewable Energy Automate Industrial Security Network Telecom

Features

- 250~ 1500Vdc 6:1 ultra-wide input range
- Withstand 1700Vdc surge input for 10 seconds
- 85.5mm slim width
- 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, cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- -40~+80°C ultra-wide operating temperature (> +50°C derating)
- Current sharing up to 960W(3+1)
- Over voltage category II
- Operating altitude up to 5000 meters
- DC OK relay contact
- DC output voltage adjustable(12~15V, 24~29V, 30~36V, 48~58V)
- Conformal coating
- 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-240 series is a 250 ~ 1500Vdc high reliable ultra-high input DIN rail type DC-DC converter which can supply stable working voltage for the load. It is suitable to be mounted on TS-35/7.5 or 15 rails. Main features are as following: easy to install DIN rail type, narrow width(85.5mm) in slim design, -40~+80°C wide range operating temperature, 4KVac high isolation voltage, current sharing up to 960W(3+1), operation at 5000m altitude, high efficiency, low ripple & noise, complete protections and so on.

DDRH-240 is compliant with UL1741 and BS EN/EN61000-6-2 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, photovoltaic power systems, high voltage inverting , DC bus centralized application, ESS, charging pile, railway and so forth.

Model Encoding

DDRH - 240 - 24

- 24 — Output voltage(12V/24V/32V/48V)
- 240 — Rated wattage
- DDRH — Series name

SPECIFICATION

MODEL			DDRH-240-12	DDRH-240-24	DDRH-240-32	DDRH-240-48
OUTPUT	DC VOLTAGE		12V	24V	32V	48V
	RATED CURRENT		16.7A	10A	7.5A	5A
	CURRENT RANGE		0 ~ 16.7A	0 ~ 10A	0 ~ 7.5A	0 ~ 5A
	RATED POWER		200.4W	240W	240W	240W
	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		±1.0%	±0.5%	±0.5%	±0.5%
	EXTERNAL CAPACITANCE LOAD (Max.)		8000 μF	5000 μF	4000 μF	2000 μF
INPUT	VOLTAGE RANGE Note.4		250 ~ 1500Vdc			
	EFFICIENCY (Typ.)	300Vdc	85%	87%	87%	87%
		800Vdc	88%	90%	90%	90%
		1500Vdc	85%	86%	86%	86%
	INRUSH CURRENT (max.)		COLD START 500A /1500Vdc 300A/800Vdc 120A/300Vdc			
	EXTERNAL INPUT FUSE		4A/1500VDC, required(Please refer to page 5 for more details)			
	INTERNAL INPUT FUSE		2A/1500VDC (optional)			
PROTECTION	OVERLOAD		105 ~ 135% rated output power			
			Protection type : Hiccup mode when output voltage<35%, recovers automatically after condition is removed; Constant current limiting, recovers automatically after fault condition is removed within 35% ~ 100% rated output voltage			
	OVER VOLTAGE		16.5 ~ 21V	32 ~ 42V	40 ~ 48V	62 ~ 70V
			Protection type : Shut down o/p voltage, re-power on to recover			
	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 ~ 230Vdc , Under voltage release range:230 ~ 245Vdc			
FUNCTION	DC OK SIGNAL		Relay contact rating(max.) : 30V / 1A resistive			
	CURRENT SHARING		Up to 960W(3+1 units).Please refer to the Function Manual			
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 ~ 50℃)			
	VIBRATION		Component: 10 ~ 500Hz, 2G 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.7)	SAFETY STANDARDS		UL1741, CSA C22.2 No.107.1-16 , IEC62109-1, BS EN/EN62109-1, EAC TP TC 004 approved			
	WITHSTAND VOLTAGE		I/P-O/P:4KVAC I/P-FG:3.75KVAC O/P-FG:2KVAC O/P-DC OK:0.5KVAC			
	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 , criteria A	
			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		214.2Khrs min. MIL-HDBK-217F (25℃); 1391.8Khrs min. Telcordia TR/SR-332 (Bellcore) (25℃)			
	DIMENSION		85.5*125.2*129.2mm (W*H*D)			
	PACKING		0.96Kg; 8pcs/10.3Kg/1.02CUFT			

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. 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. 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. 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)

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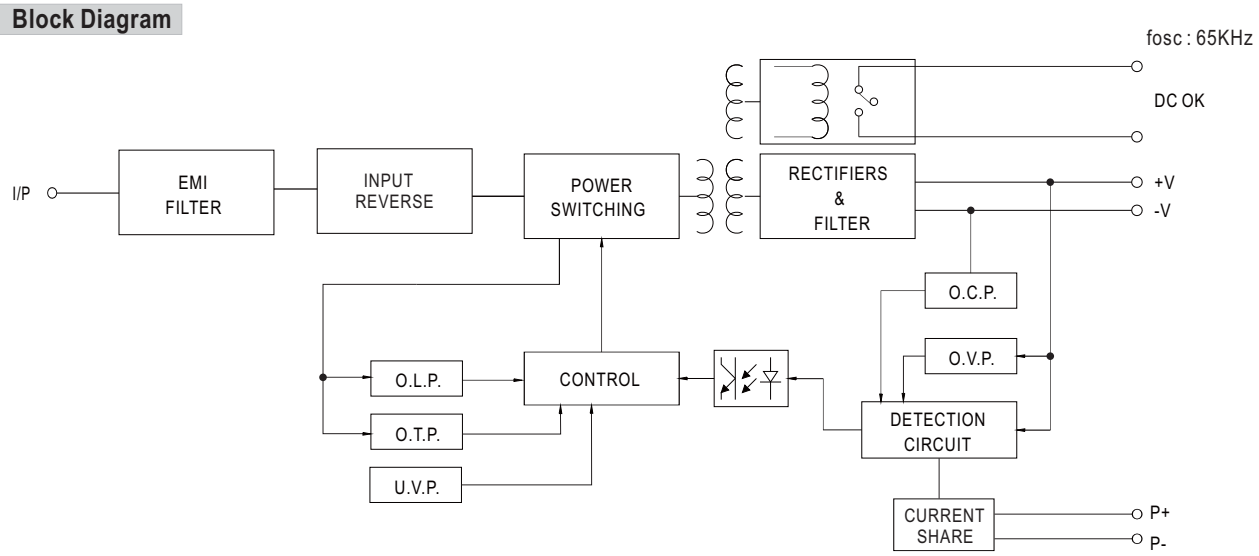
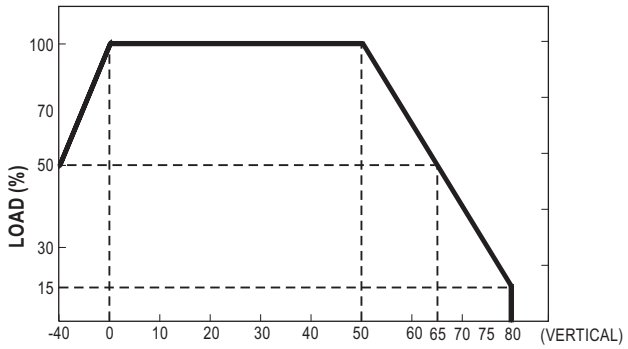
■ Block Diagram

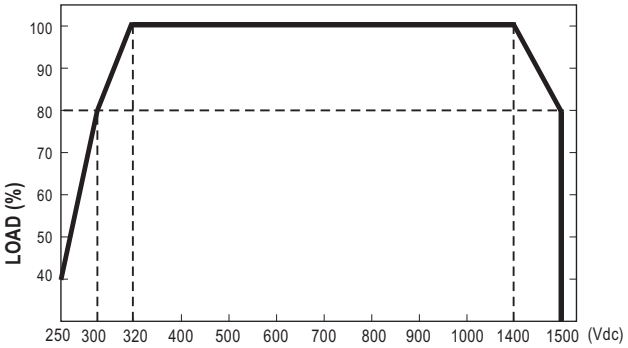


■ Derating Curve



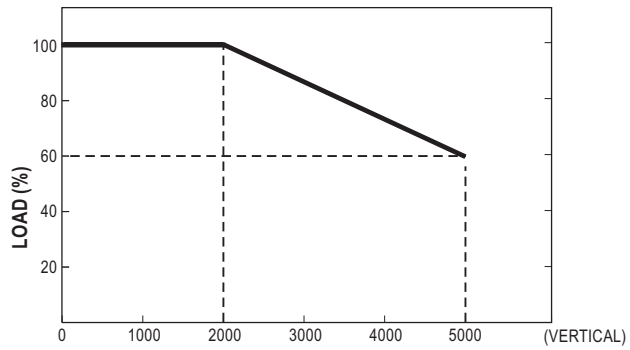
AMBIENT TEMPERATURE (℃)

■ Static Characteristics



INPUT VOLTAGE

■ Altitude Curve



ALTITUDE (m)

Note: Multiply by the regular power limit factor

■ DC OK Relay Contact

Contact Close	PSU turns ON / DC OK.
Contact Open	PSU turns OFF / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

■ Function Manual

1. Current sharing

(1) Parallel operation is available by connecting the units shown as below (P+,P- are connected mutually in parallel) .

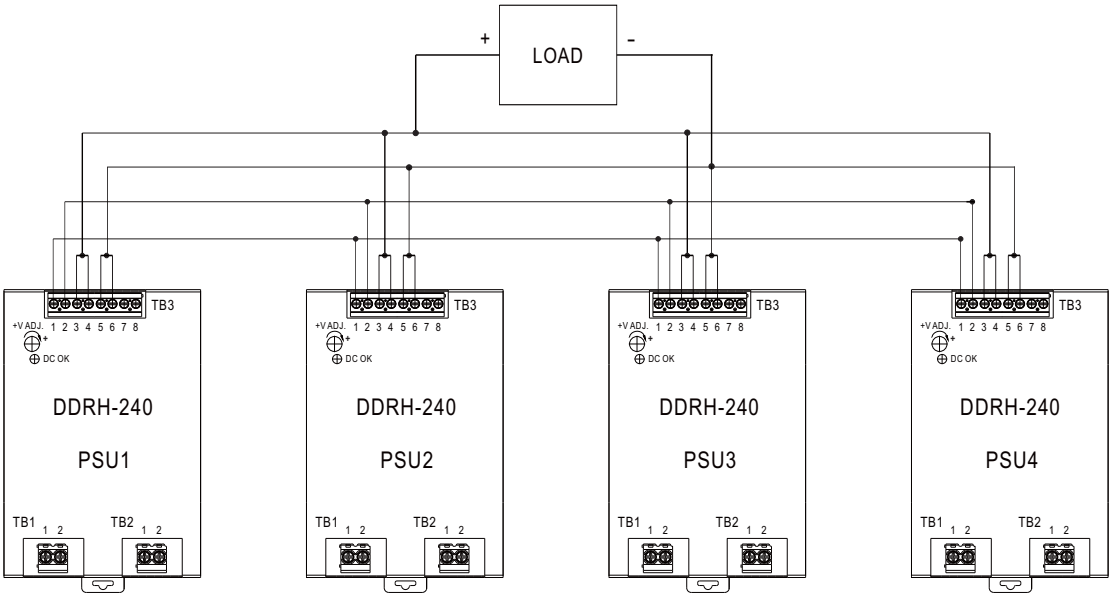
(2) The voltage difference among each output should be minimized that less than 0.2V is required.

(3) The total output current must not exceed the value determined by the following equation (Output current at parallel operation) =(The rated current per unit) x (Number of unit) x 0.9.

(4) In parallel operation 4 units is the maximum, please consult the manufacture for other applications.

(5) When in parallel operation, the minimum output load should be greater than 3% of total output load.
(Min. load > 3% rated current per unit x number of unit)

(6) In parallel operation,after overload or short circuit fault occurs, re-power on to recover.



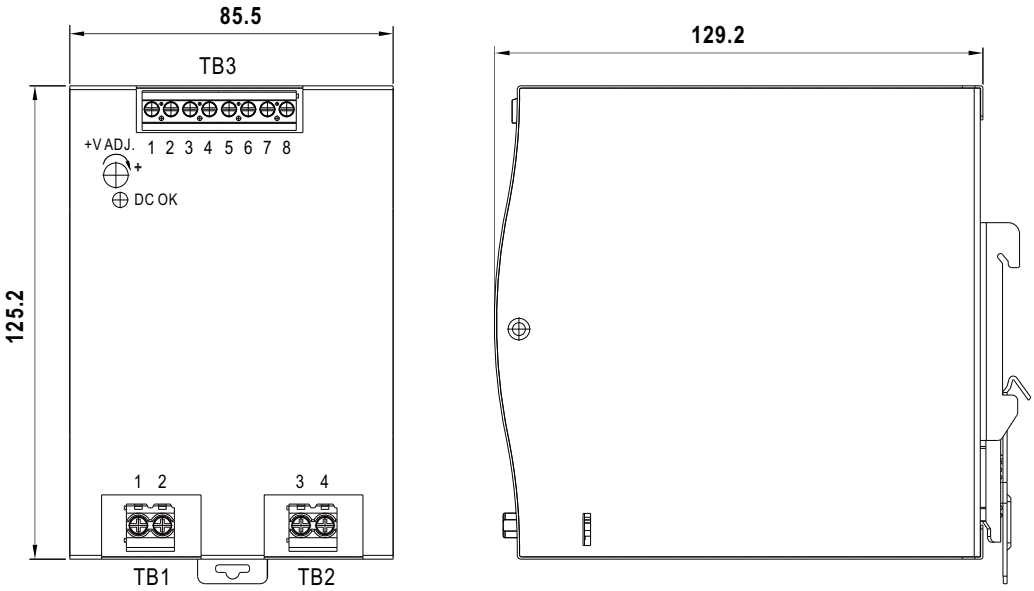
■ Mechanical Specification

(Unit: mm , tolerance ± 1mm)

Case No.984H

Terminal Pin No. Assignment (TB3)

Pin No.	Assignment
1	P+(Current sharing)
2	P-(Current sharing)
3,4	+Vo
5,6	-Vo
7,8	DC OK Relay Contact



Terminal Pin No. Assignment (TB1,TB2)

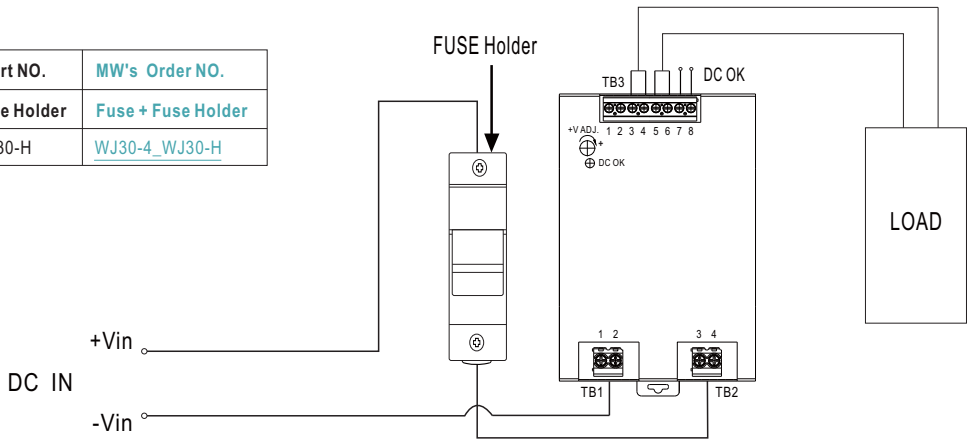
Pin No.	Assignment
1,2	-Vin
3,4	+Vin

■ External FUSE wiring instruction

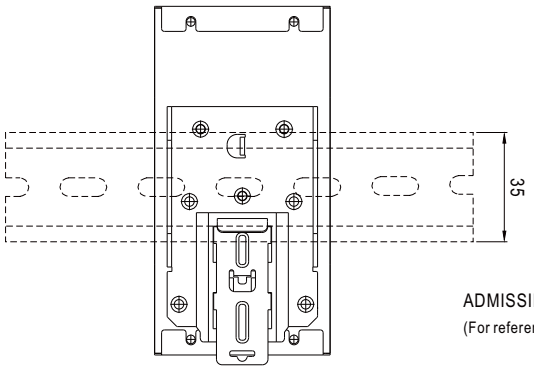
External FUSE is required.FUSE specification : 4A/1500Vdc.

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 Instruction



This series fits DIN rail TS35/7.5 or TS35/15.
For installation details, please refer to the Instruction manual.

ADMISSIBLE DIN rail:TS35/7.5 OR TS35/15
(For reference only. Not included with unit.)

■ Installation Manual

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