



■ Features

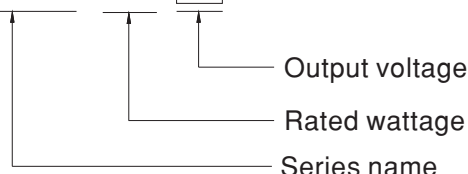
- 150~ 1500Vdc 10:1 ultra - wide input range
- 57mm slim width
- 4KVac I/O high isolation(Reinforced isolation)
- Protections: Short circuit / Overload / Over voltage / Over temperature
DC input under voltage / DC input reverse polarity
- Cooling by free air convection
- Can be installed on DIN rail 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%)
- 3 years warranty

■ Description

DDRH-60 series is a 150 ~ 1500Vdc 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 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 and so forth.

■ Model Encoding

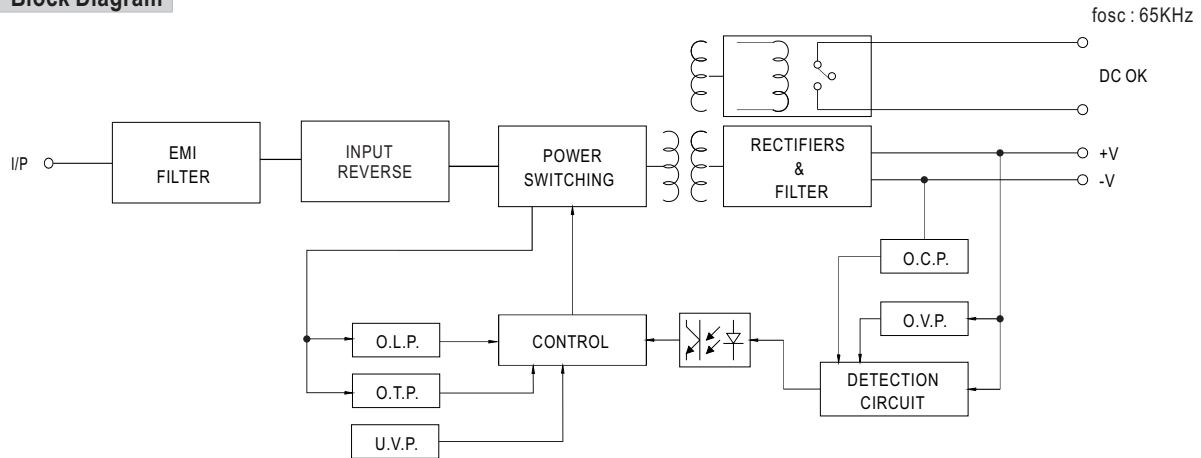
DDRH - 60 - 24



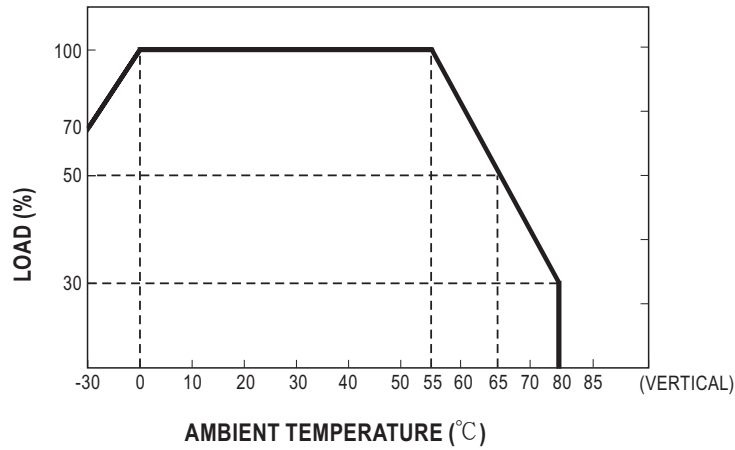
SPECIFICATION

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 μ F		4000 μ F		2500 μ F		1000 μ F		
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				
	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°C (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH non-condensing							
	TEMP. COEFFICIENT	± 0.03%/°C (0 ~ 55°C)							
	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	IEC62109-1(LVD) , EAC TP TC 004 approved; Design refer to UL1741(By request)							
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC O/P-DC OK:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, 100M Ohms / 500VDC / 25°C / 70% RH							
	EMC EMISSION	Parameter	Standard					Test Level / Note	
		Conducted	EN55032(CISPR32)					Class A	
		Radiated	EN55032(CISPR32)					Class A	
		Voltage Flicker	EN61000-3-3					-----	
	EMC IMMUNITY	EN55035, EN61000-6-2							
		Parameter	Standard					Test Level /Note	
		ESD	EN61000-4-2					Level 3, 8KV air; Level 2, 4KV contact, criteria A	
		Radiated Susceptibility	EN61000-4-3					Level 3, 10V, criteria A	
		EFT/Burest	EN61000-4-4					Level 3, 2KV, criteria A	
		Surge	EN61000-4-5					Level 4, 2KV/Vin+ ~ Vin-, criteria A	
Conducted		EN61000-4-6					Level 3, 10V, criteria A		
Magnetic Field		EN61000-4-8					Level 4, 30A, criteria A		
Voltage Dips and interruptions	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°C); 503K hrs min. Telcordia TR/SR-332 (Bellcore) (25°C)							
	DIMENSION	57*93.5*105mm (W*H*D)							
	PACKING	0.8Kg; 16pcs/12.8Kg/0.82CUFT							
NOTE	<ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 600Vdc input, rated load and 25°C of ambient temperature. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μf & 47 μf parallel capacitor. Tolerance : includes set up tolerance, line regulation and load regulation. Derating may be needed under low input voltage. Please check the derating curve for more details. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft). 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. 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." 								

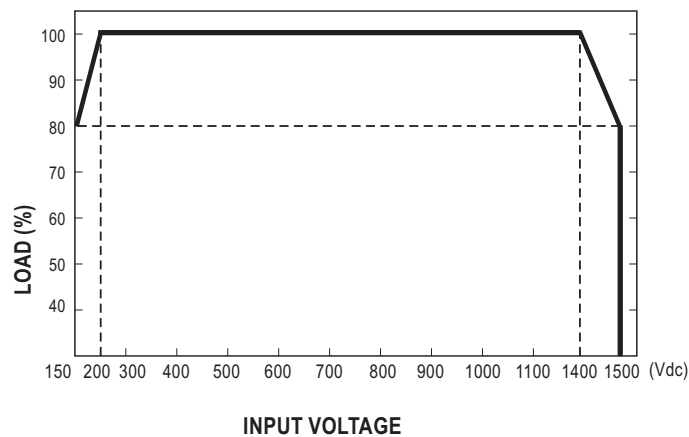
■ **Block Diagram**



■ **Derating Curve**



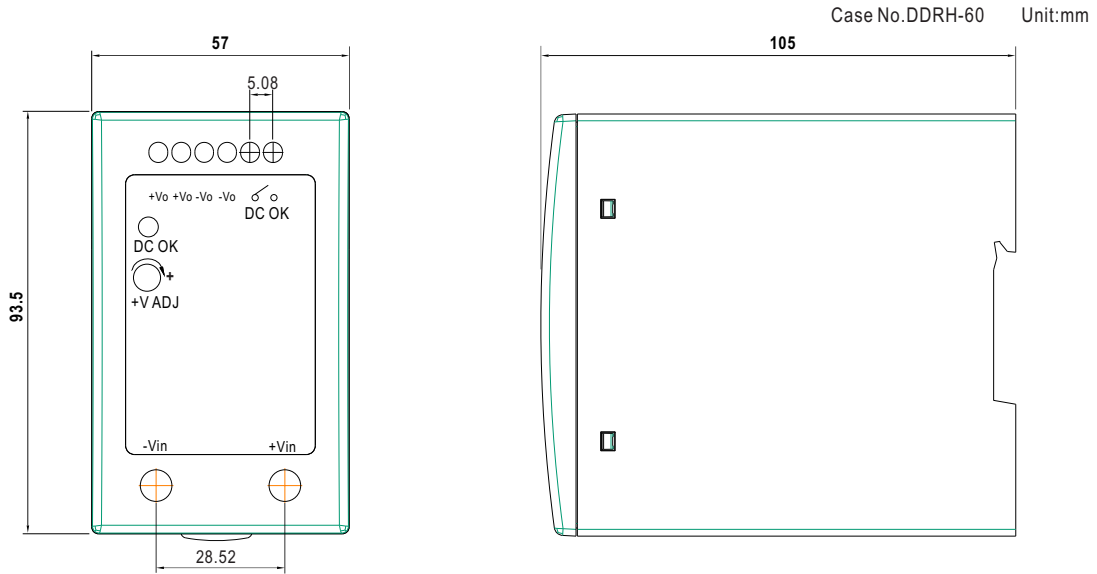
■ **Static Characteristics**



■ **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

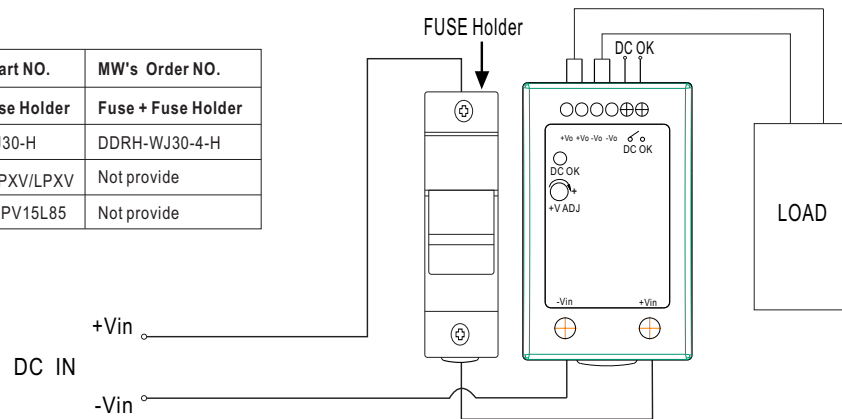


■ External FUSE wiring instruction

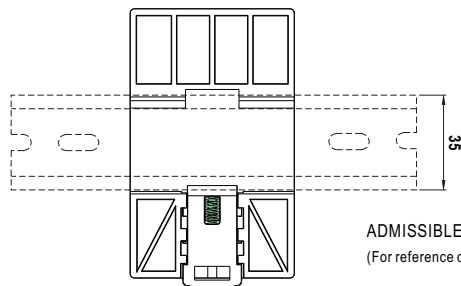
External FUSE is required. FUSE specification : 4A/1500Vdc.

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 Instruction



Back View

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