



■ Features

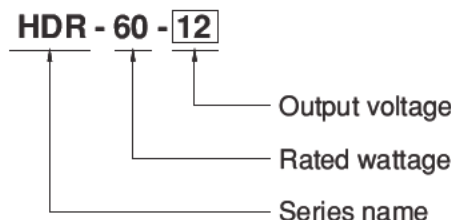
- Ultra slim design with 52.5mm(3SU) width
- Universal input 85~264VAC(277VAC operational)
- No load power consumption<0.3W
- Isolation class II
- Pass LPS (Limited power source)
- DC output voltage adjustable
- Protections : Short circuit / Overload / Over voltage
- Cooling by free air convection (working temperature:-30~+70°C)
- DIN rail TS-35/7.5 or 15 mountable
- LED indicator for power on

■ Description

HDR-60 is one economical ultra slim 60W DIN rail power supply series, adapt to be installed on TS-35/7.5 or TS-35/15 mounting rails. The body is designed 52.5mm(3SU) in width, which allows space saving inside the cabinets. The entire series adopts the full range AC input from 85VAC to 264VAC (277VAC operational) and conforms to BS EN/EN61000-3-2, the norm the European Union regulates for harmonic current.

HDR-60 is designed with plastic housing that it can effectively prevent user from electric hazards. With working efficiency up to 91%, the entire series can operate at the ambient temperature between -30°C and 70°C under air convection. The complete protection functions and relevant certificates for home automations and industrial control apparatus (IEC62368-1,UL508,UL62368-1,BS EN/EN61558-2-16) make HDR-60 a very competitive power supply solution for household and industrial applications.

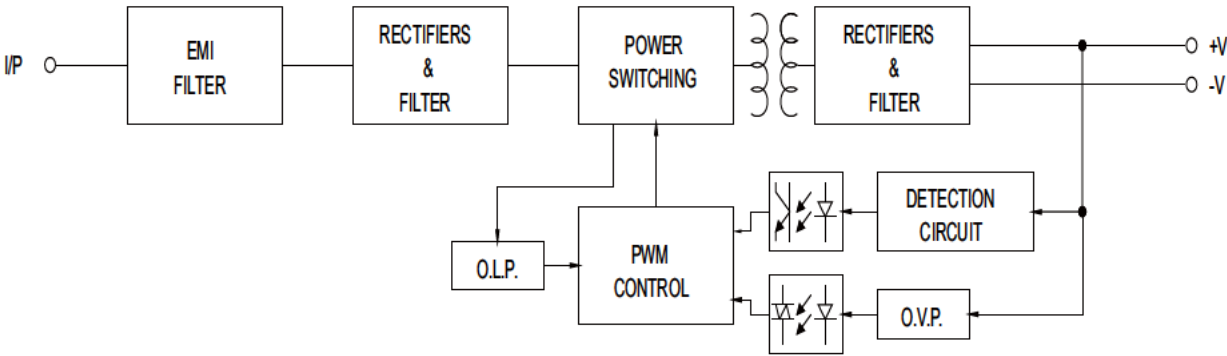
■ Model Encoding



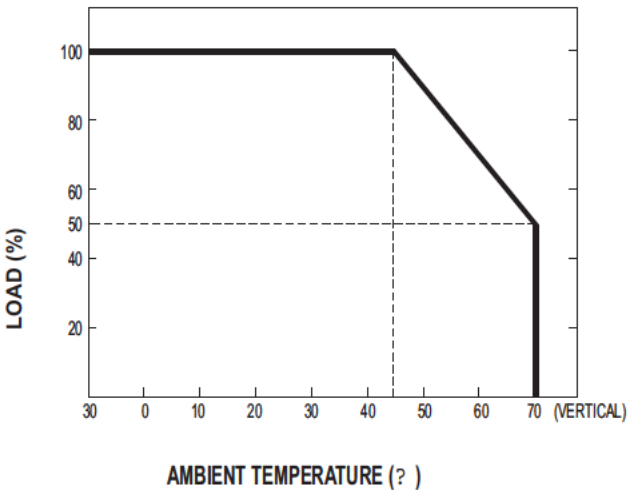
SPECIFICATION

MODEL		HDR-60-5	HDR-60-12	HDR-60-15	HDR-60-24	HDR-60-48	
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	48V	
	RATED CURRENT	6.5A	4.5A	4A	2.5A	1.25A	
	CURRENT RANGE	0 ~ 6.5A	0 ~ 4.5A	0 ~ 4A	0 ~ 2.5A	0 ~ 1.25A	
	RATED POWER	32.5W	54W	60W	60W	60W	
	RIPPLE & NOISE (max.) Note.2	80mVp p	120mVp p	120mVp p	150mVp p	240mVp p	
	VOLTAGE ADJ. RANGE	5.0 ~ 5.5V	10.8 ~ 13.8V	13.5 ~ 18V	21.6 ~ 29V	43.2 ~ 55.2V	
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	
	SETUP, RISE TIME	500ms, 50ms/230VAC 500ms, 50ms/115VAC at full load					
	HOLD UP TIME (Typ.)	30ms/230VAC 12ms/115VAC at full load					
INPUT	VOLTAGE RANGE	85 ~ 264VAC (277VAC operational) 120 ~ 370VDC (390VDC operational)					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	85%	88%	89%	90%	91%	
	AC CURRENT (Typ.)	1.2A/115VAC 0.8A/230VAC					
	INRUSH CURRENT (Typ.)	COLD START 30A/115VAC 60A/230VAC					
PROTECTION	OVERLOAD	105 ~ 160% rated output power Hiccup mode when output voltage <50%, recovers automatically after fault condition is removed Constant current limiting within 50% ~ 100% rated output voltage, recovers automatically after fault condition is removed					
	OVER VOLTAGE	5.75 ~ 6.75V	14.2 ~ 16.2V	18.8 ~ 22.5V	30 ~ 36V	56.5 ~ 64.8V	
		Protection type : Shut down o/p voltage, re power on to recover					
ENVIRONMENT	WORKING TEMP.	30 ~ +70°C (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non condensing					
	STORAGE TEMP., HUMIDITY	40 ~ +85°C, 10 ~ 95% RH non condensing					
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C) RH non condensing					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068 2 6					
	OPERATING ALTITUDE	2000 meters					
	OVER VOLTAGE CATEGORY	III ; According to EN61558, EN50178, EN60664 1, EN62477 1; altitude up to 2000 meters					
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL62368 1, UL508, TUV BS EN/EN61558 2 16, BS EN/EN61558 1, IEC62368 1, EAC TP TC 004, BSMI CNS14336 1, IS13252(Part1)/IEC60950 1 approved; Design refer to BS EN/EN62368 1					
	WITHSTAND VOLTAGE	I/P O/P:4KVAC					
	ISOLATION RESISTANCE	I/P O/P:100M Ohms / 500VDC / 25°C / 70% RH					
	EMC EMISSION	Parameter	Standard			Test Level / Note	
		Conducted	BS EN/EN55032(CISPR32), CNS13438			Class B	
		Radiated	BS EN/EN55032(CISPR32), CNS13438			Class B	
		Harmonic Current	BS EN/EN61000-3-2			Class A	
		Voltage Flicker	BS EN/EN61000-3-3			-----	
	EMC IMMUNITY	BS EN/EN55035, BS EN/EN61000-6-2, BS EN/EN61204-3					
		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, criteria A		
EFT/Burest		BS EN/EN61000-4-4			Level 3, criteria A		
Surge		BS EN/EN61000-4-5			Level 4, 2KV/L-N, criteria A		
Conducted		BS EN/EN61000-4-6			Level 3, criteria A		
Magnetic Field		BS EN/EN61000-4-8			Level 4, 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	3524.8K hrs min. Telcordia SR-332 (Bellcore) ; 927.6K hrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	52.5*90*54.5mm (W*H*D)					
	PACKING	190g;60pcs/13Kg/0.91CUFT					
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf & 47µf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>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."</p> <p>5. 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).</p>						

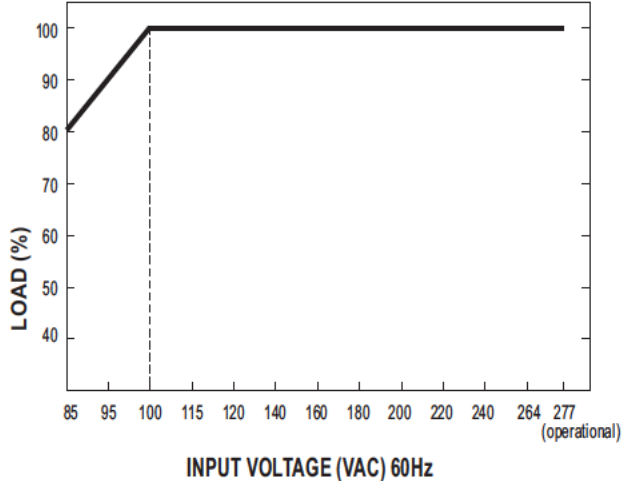
■ Block Diagram



■ Derating Curve

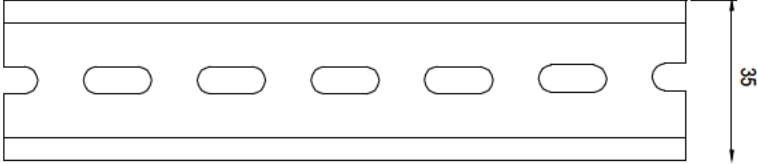
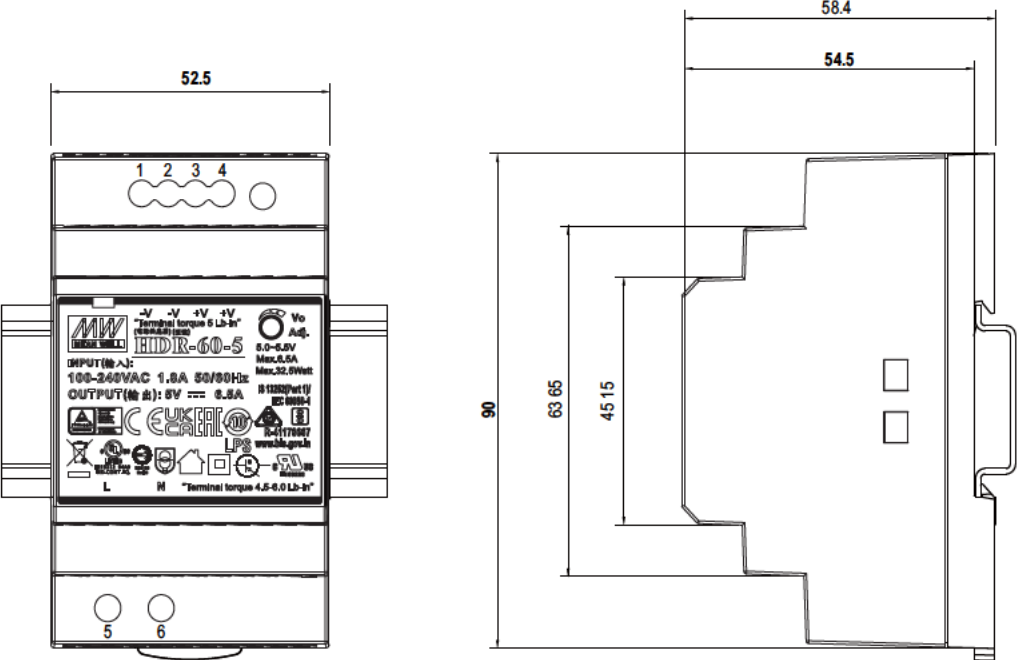


■ Output Derating VS Input Voltage



Mechanical Specification

(Unit: mm , tolerance ± 0.5mm)



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

Terminal Pin No. Assignment

Pin No	Assignment	Pin No.	Assignment
1,2	-V	5	AC/L
3,4	+V	6	AC/N

Ihr Systempartner

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