



E-Star Power Development Co., Ltd. (E-STAR)

1F., No.40, Juren Ln., Sec. 2, Sanmin Rd., Banciao Dist., New Taipei City 22069, Taiwan (R.O.C.)

Phone : 886-2-2957 5580 Fax : 886-2-2957 7473

30W Din Rail power supply < HDR-30



■ Features

- Ultra slim design with 35mm(2SU) 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
- Over voltage category III
- LED indicator for power on
- 3 years warranty

■ Applications

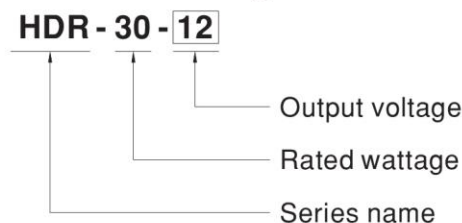
- Household control system
- Building automation
- Industrial control system
- Factory automation
- Electro-mechanical apparatus

■ Description

HDR-30 is one economical ultra slim 30W DIN rail power supply series, adapt to be installed on TS-35/7.5 or TS-35/15 mounting rails. The body is designed 35mm(2SU) 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 EN61000-3-2, the norm the European Union regulates for harmonic current.

HDR-30 is designed with plastic housing that it can effectively prevent user from electric hazards. With working efficiency up to 90%, 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, EN61558-2-16) make HDR-30 a very competitive power supply solution for household and industrial applications.

■ Model Encoding





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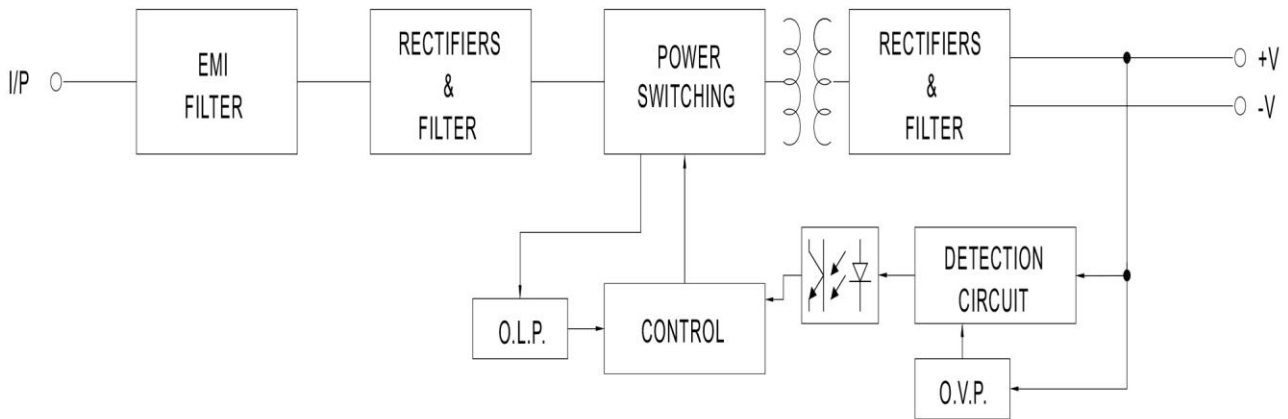
SPECIFICATION

MODEL		HDR-30-5	HDR-30-12	HDR-30-15	HDR-30-24	HDR-30-48	
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	48V	
	RATED CURRENT	3A	2A	2A	1.5A	0.75A	
	CURRENT RANGE	0 ~ 3A	0 ~ 2A	0 ~ 2A	0 ~ 1.5A	0 ~ 0.75A	
	RATED POWER	15W	24W	30W	36W	36W	
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	240mVp-p	
	VOLTAGE ADJ. RANGE	4.5 ~ 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.)	82%	88%	89%	89%	90%	
	AC CURRENT (Typ.)	0.88A/115VAC 0.48A/230VAC					
	INRUSH CURRENT (Typ.)	COLD START 25A/115VAC 45A/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 ~ 7.5V	15 ~ 18V	18.8 ~ 22.5V	30 ~ 36V	57.6 ~ 67.2V	
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 EN61558-2-16, IEC62368-1, EAC TP TC 004, BSMI CNS14336-1 approved; Design refer to TUV 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	EN55032(CISPR32), CNS13438			Class B	
		Radiated	EN55032(CISPR32), CNS13438			Class B	
		Harmonic Current	EN61000-3-2			Class A	
	Voltage Flicker	EN61000-3-3			-----		
	EMC IMMUNITY	EN55024, EN55035, EN61000-6-2, EN61204-3					
		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, criteria A		
EFT/Burest		EN61000-4-4			Level 3, criteria A		
Surge		EN61000-4-5			Level 4, 2KV/L-N, criteria A		
Conducted		EN61000-4-6			Level 3, criteria A		
Magnetic Field		EN61000-4-8			Level 4, criteria A		
Voltage Dips and interruptions	EN61000-4-11			>95% dip 0. 5 periods, 30% dip 25 periods, >95% interruptions 250 periods			
OTHERS	MTBF	968.1K hrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	35*90*54.5mm (W*H*D)					
	PACKING	0.12Kg;96pcs/12.5Kg/1.1CUFT					
NOTE	<ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC 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 0.1μf & 47μf parallel capacitor. Tolerance : includes set up tolerance, line regulation and load regulation. The power supply is considered as an independent unit, but the final equipment still need to re-confirm that the whole system complies with the EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." 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). 						

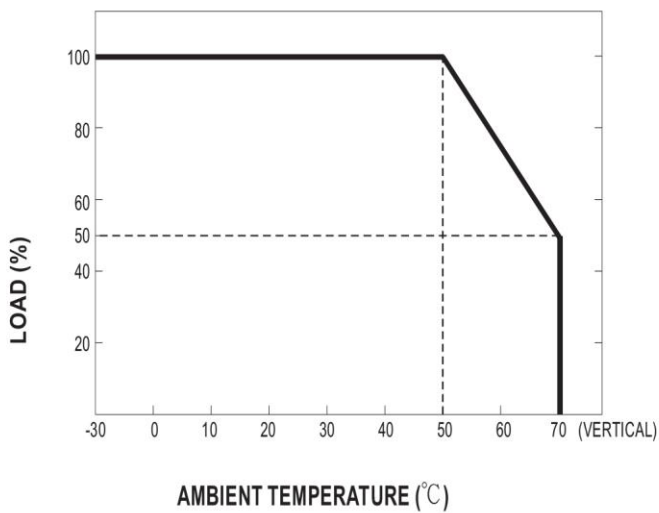


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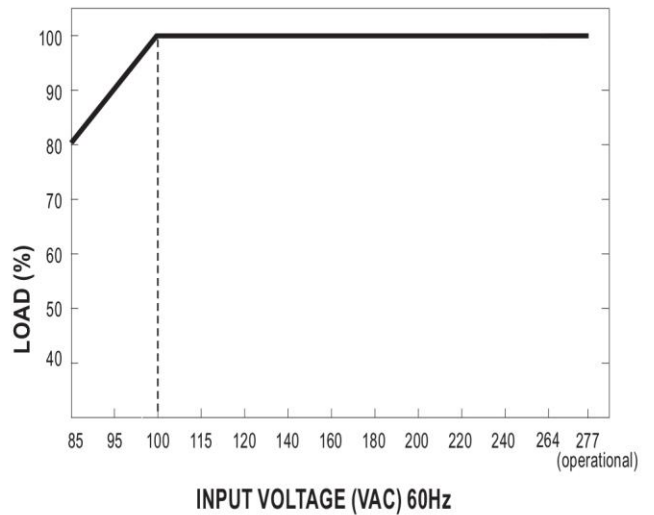
■ Block Diagram



■ Derating Curve



■ Output Derating VS Input Voltage

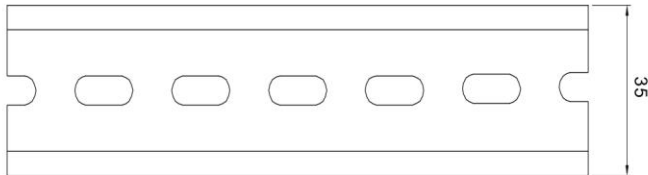
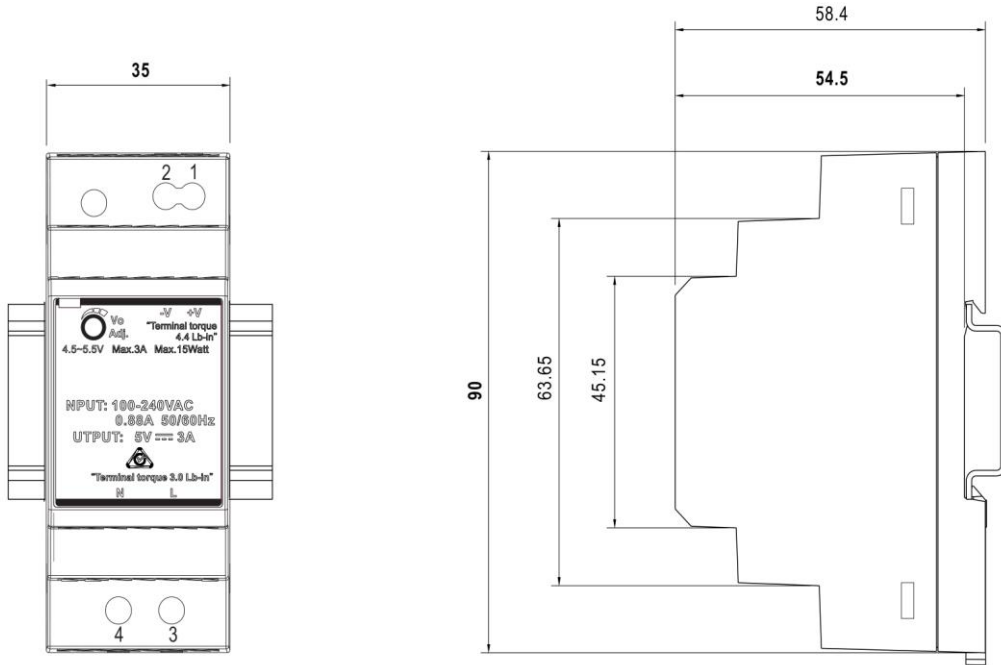




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■ Mechanical Specification

(Unit: mm , tolerance $\pm 0.5\text{mm}$)



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

Terminal Pin No. Assignment

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