MDR20 Series

20 W AC/DC Switching Power Supply – DIN rail

CoolPower Solutions

- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Can be installed on DIN rail TS-35/7.5 or 15
- LED indicator for power on
- Built in DC OK active signal
- No load power consumption <0.75W



Electrical specifications

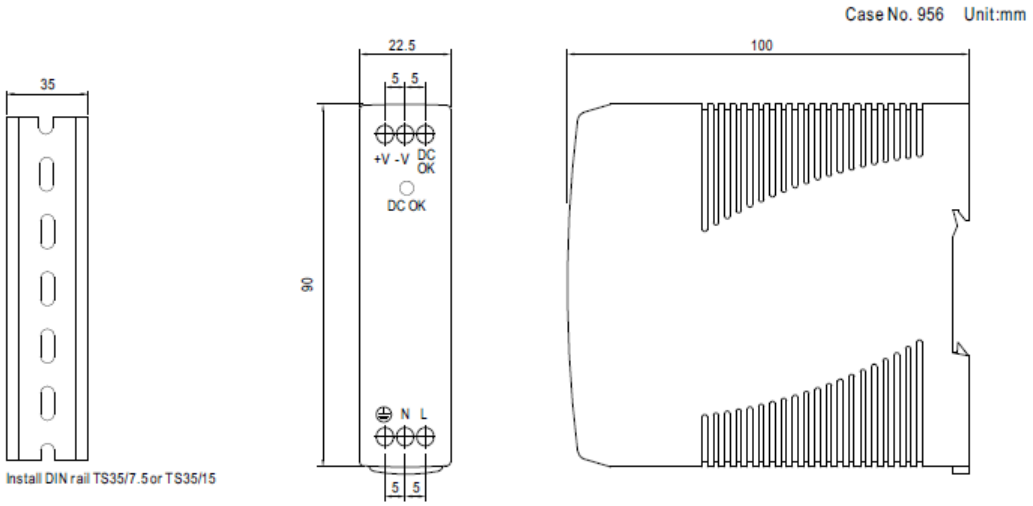
Model No.		MDR20-5	MDR20-12	MDR20-15	MDR20-24
Max Output Wattage (W)		15W	20W	20W	24W
Input	Voltage	85-264 VAC or 120-370 VDC			
	Frequency (Hz)	47-65 Hz			
	Current (Full load)	0,55 A max. (115 VAC) / 0,35 A max. (230 VAC)			
	Inrush Current (typ)	Cold start 20 A (115 VAC) / 40 A (230 VAC)			
	Leakage Current	<1 mA /240 VAC			
Output	Voltage (V.DC.)	5V	12V	15V	24V
	Voltage Adjustable Range	4,75 - 5,5V	10,8 - 13,2V	13,5 - 16,5V	21,6 - 26,4V
	Voltage Tolerance (Note 3)	±2%	±1%	±1%	±1%
	Rated Current	3 A	1,67 A	1,34 A	1 A
	Line Regulation	±1%	±1%	±1%	±1%
	Load Regulation	±1%	±1%	±1%	±1%
	Ripple % Noise (max) (Note2)	80mV$_{p-p}$	120mV$_{p-p}$	120mV$_{p-p}$	150mV$_{p-p}$
	Efficiency (typ)	76%	80%	81%	84%
	Hold-up Time	50 ms / 230 VAC			
	Setup, Rise Time (Note 5)	500 ms, 30 ms / 230 VAC			
Protection	Over Load	105% - 160% rated output power			
		Type: Constant current limiting, recovers automatically after fault condition is removed			
	Over Voltage	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V
		Protection type : Shut down o/p voltage, re-power on to recover			
Function	DC OK Active signal (max)	3.75 ~ 6V / 50mA	9 ~ 13.5V / 40mA	11.5 ~ 16.5V / 40mA	18 ~ 27V / 20mA
Environment	Operating Temperature	-20°C…+70°C (with derating)			
	Storage Temperature	-40°C…+85°C, 10 – 95% RH			
	Temperature coefficient	±0.03%/°C			
	Humidity	20 - 95% RH			
	MTBF	236 900 h @ 25°C (MIL-HDBK-217F)			
Physical	Dimension (L x W x H)	22.5 x 90.0 x 100 mm			
	Weight	190 g			
	Cooling Method	Free air convection			
Safety	Safety standards	UL508, TUV EN60950-1 approved			
	Withstand Voltage	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH			
	EMC Emission	Compliance to EN55011, EN55032 (CISPR32), EN61204-3 Class B, EN61000-3-2,-3			
	EMC Immunity	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024,EN61000-6-1,EN61204-3, light industry level, criteria A			
Note	1. All parameters NOT specially mentioned are measured at 230VAC 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 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 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. 5. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.				

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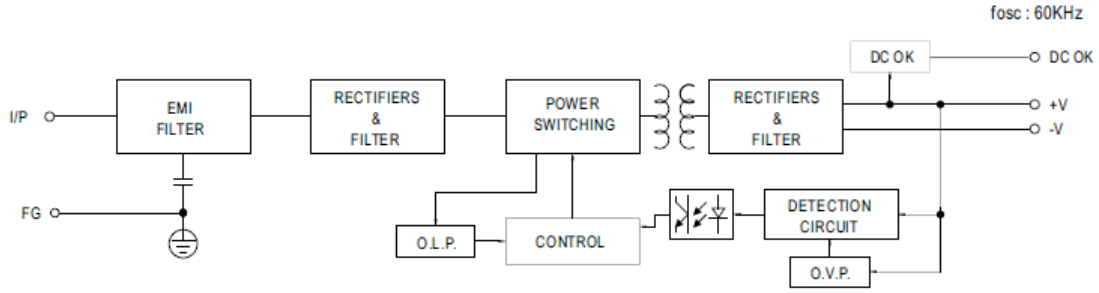
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Mechanical Specifications

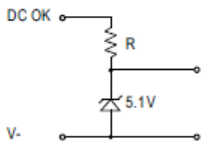


Block Diagramm



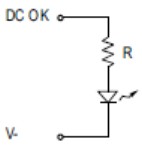
Application of DC OK Active signal

(a) 5V signal



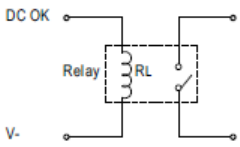
Model	R
5V	≧200Ω
12V	≧1.5KΩ
15V	≧2KΩ
24V	≧3.9KΩ

(b) LED



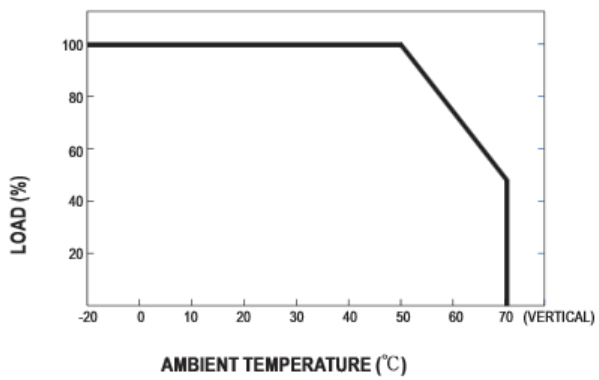
Model	R
5V	≧1KΩ
12V	≧2.4KΩ
15V	≧3KΩ
24V	≧4.7KΩ

(c) Relay

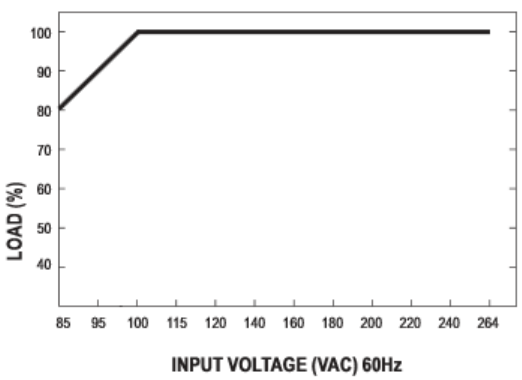


Model	RL
5V	≧120Ω
12V	≧700Ω
15V	≧700Ω
24V	≧1.2KΩ

Derating Curve



Output Derating VS Input Voltage



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