



DESCRIPTION :

240W AC-DC DIN RAIL Power Supply

The rated output power of TPR/SDR-240-XS series is 240W, input voltage range : 85-264VAC, output voltage : 24V, 48V, High reliability, precision, efficiency, stable output voltage ,etc., with short circuit & overload protection, Widely used in telecommunications, industrial control, signal control , instrumentation, data acquisition, New Energy, Security, and other electronic systems.

FEATURES

AC input : 85VAC-264VAC, DC input:127-375VDC	Built-in DC OK relay contact, Excellent Partial Load Efficiency	Operating temperature : -25℃~70℃
Mounting track: TS-35/7.5 or TS-35/15	Protection: short circuit, over-load, over-voltage, over-temperature	Mini width: 45mm
RoHS complaint	High reliability, efficiency, 100% full load burn-in test	Built-in current limiting circuit
Built-in active PFC, PF>0.95	Easy Fuse Tripping due to High Overload Current	150%(360W) peak load capacity
Built-in current sharing function	High efficiency up to 94%	/

SELECTION GUIDE

Part Number	Input Voltage			Output				Efficiency @25℃, (Typ) %
	(VAC)		(VDC)	Voltage (VDC)	Pre-set voltage @25℃ (V)	Rated current (A)	Rated power(W)	
	Rated	Range	Rated					
TPR/SDR-240-24S	220	85-264	120-375	24	24.00-24.24	10	240	94
TPR/SDR-240-48S	220	85-264	127-375	48	48.0-48.48	5	240	>93

All specifications typical at TA=25℃, nominal input voltage and rated output current unless otherwise specified.

OUTPUT CHARACTERISTICS

Conditions	Conditions	Parameter
Output voltage regulation	24V output voltage	24-28V
	48V output voltage	48-56V
Rated Output current	24V output voltage	10A at 24V
		9A at 28V
	48V output voltage	5A at 48V 4.5A at 56V
Rated Output power	24V output voltage	240W/24V , 252W/28V
	48V output voltage	240W/48V , 252W/56V
Ripple&Noise 0<Ta<=70℃	24V output voltage	≤240mVp-p
	48V output voltage	≤480mVp-p
Ripple&Noise -25<Ta<=0℃	24V output voltage	≤480mVp-p
	48V output voltage	≤480mVp-p
Capacitive load capacity	24V output voltage	10000uF
	48V output voltage	10000uF
Line regulation @-25~70℃		± 0.5%
Load regulation @-25~70℃		± 1.0%
Temp. coefficient @-25~70℃		± 0.03%/℃
Set-up time @25℃	≤3S@ 230Vac	
Hold-up time @25℃	≥20mS@(110/230Vac input, Full load)	
Overshoot&Undershoot	<5.0%	

INPUT CHARACTERISTICS

Conditions	Parameter
Input voltage range	85VAC~264 VAC (300VAC max. at 10s)
Input voltage range	120VDC-375VDC@24V 127VDC-375VDC@48V

INPUT CHARACTERISTICS

Frequency Range	47Hz~63Hz
Set-up voltage @-25~70℃	<85 VAC , <120VDC@24V ; <127VDC@48V
Input current @25℃	<3A/100VAC <1.5A/230VAC
Inrush current @25℃	<20A@110 Vac input <40A@230Vac input
Power factors@25℃	0.99/110VAC , 0.95/230VAC

PROTECTION

Conditions	Parameter	Notes
Over-Load (24Voutput)	≥12A, ≤15A (≥3S)	110%~150% of rated current, Constant current limiting for some time(150% of rated current, last 3S) then PS stop working for 7S, after 7S, if the load ≤rated current, PS will work normally, auto recovery
Over-Load (24Voutput)	≥15A (≤3S)	
Over-Load (48Voutput)	≥6A, ≤7.5A (≥3S)	
Over-Load (48Voutput)	≥7.5A (≤3S)	
Over-voltage (24Voutput)	29~33V	constant voltage, Auto recovery
Over-voltage (48Voutput)	58~65V	
Over-temperature	105±5℃, detect on heat sink of power transistor; shut down O/P, auto recovery after temperature goes down	
Output short circuit protection	Long-term model , auto recovery	

ENVIRONMENT CHARACTERISTICS

Conditions	Parameter
Operating amb. Temp.&Humi.	-25℃~70℃; 20%~90%RH No condensing 60℃~70℃ 6W/℃ derating
Storage Temp. & Humi.	-40℃~85℃; 5%~95%RH No condensing
Vibration	10 ~ 500Hz, 2G, 10min./1cycle, each along X,Y, Z axes IEC 60068-2-6
Pulse	20G/11mS pulse ,3 times at each X,Y,Z axes IEC 60068-2-27
Altitude	6000m

SAFETY&EMC STANDARDS @25℃

Conditions	Parameter
Safety Standards	meet UL508, UL60950, EN60950
Withstand Voltage	I/P-O/P:3.0KVvac/10mA; I/P-FG:2.5KVvac/10mA; O/P-FG:0.5KVdc/20mA O/P- DC OK :0.5KVdc/1mA Test time:1min.
Isolation resistance	I/P-O/P: 10M ohms; I/P-FG : 10M ohms; O/P-FG : 10M ohms
Grounding test	32A / 2min Grounding resistance: <0.1 ohms
Leakage Current @ 25℃	I/P-Grounding≤3.5mA; I/P-O/P ≤0.25mA (264Vac input, 63Hz)
EMC emission	Compliance to EN55022, EN55024, FCC PART 15 CLASS B
EMC immunity	Compliance to EN61000-4-2,3,4,5,6,11 heavy industry level
Harmaonic current	EN61000-3-2, CLASS A

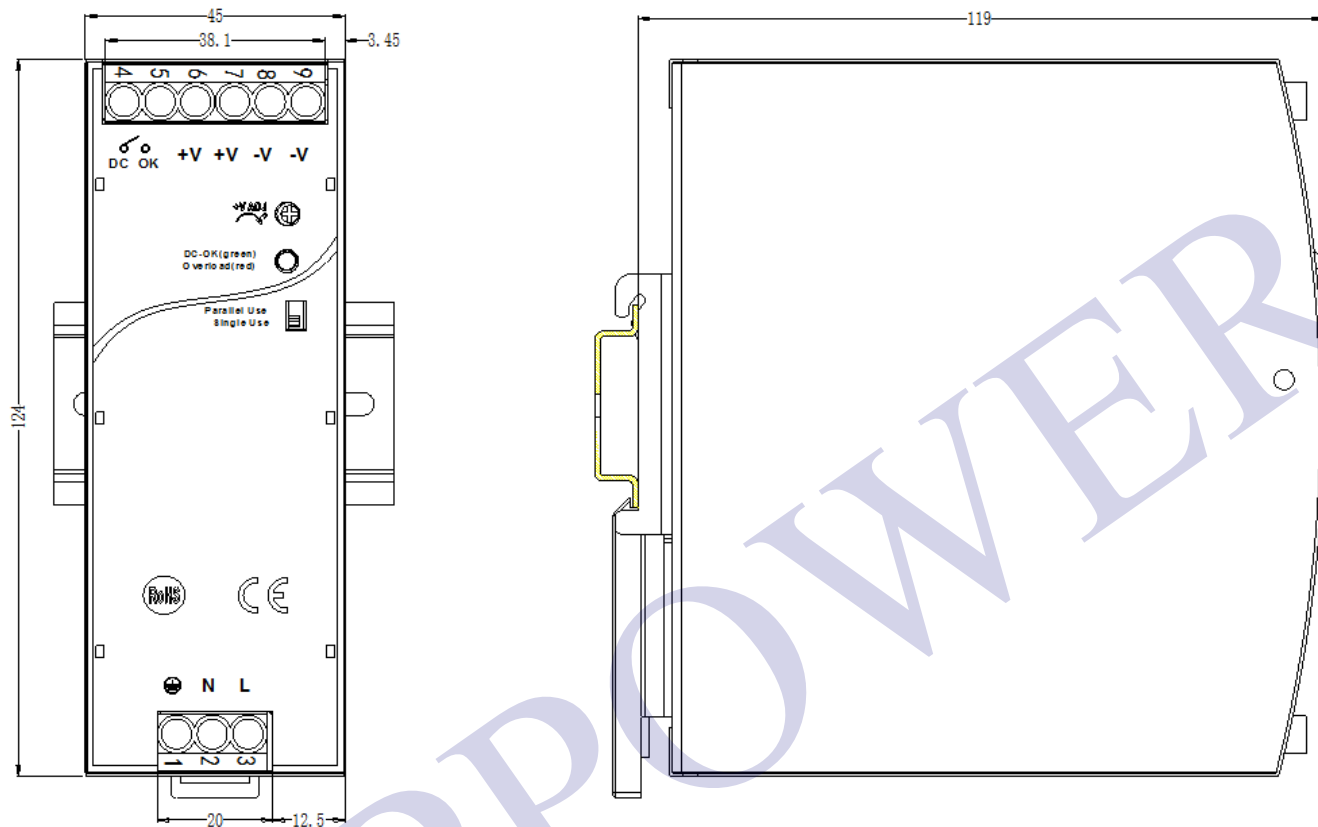
OTHERS

Conditions	Parameter
Net Weight	0.76kg Dimension (L*W*H) 45*124*119mm
Cooling method	Cooling by free air flow
Parallel function	yes
DC OK relay contact rating	Max 30V/1A or 60V/0.3A or 30Vac/0.3A Resistive load
DC OK LED	V On: when output voltage is up to 90% of rated output voltage, V Off: when output voltage is down to 80% of rated output voltage
Power boost	150% of rated current

RELIABILITY CHARACTERISTICS

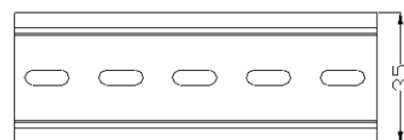
Conditions	Parameter
MTBF	300, 000Hrs AT 25°C, MIL-217 Method 2 Components Stress Method
Design electrolytic capacitor life-time	>5years AT 40°C 230VAC input 100% output

MECHANICAL DIMENSIONS



1.AC terminal blocks installation information			
Terminal No.	Function	Wire Spec	Recommended torque
1	PG	20~10AWG	5Nm
2	N		
3	L		

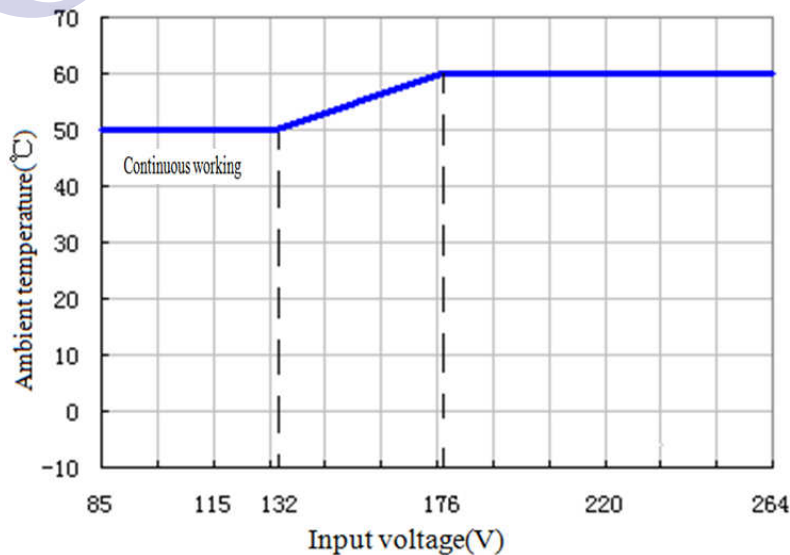
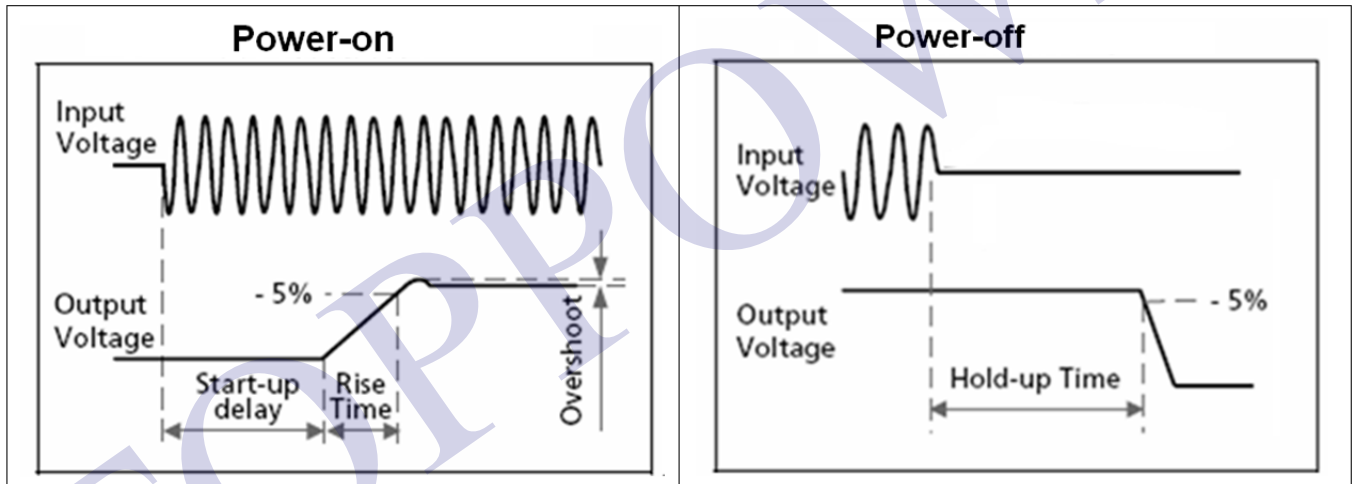
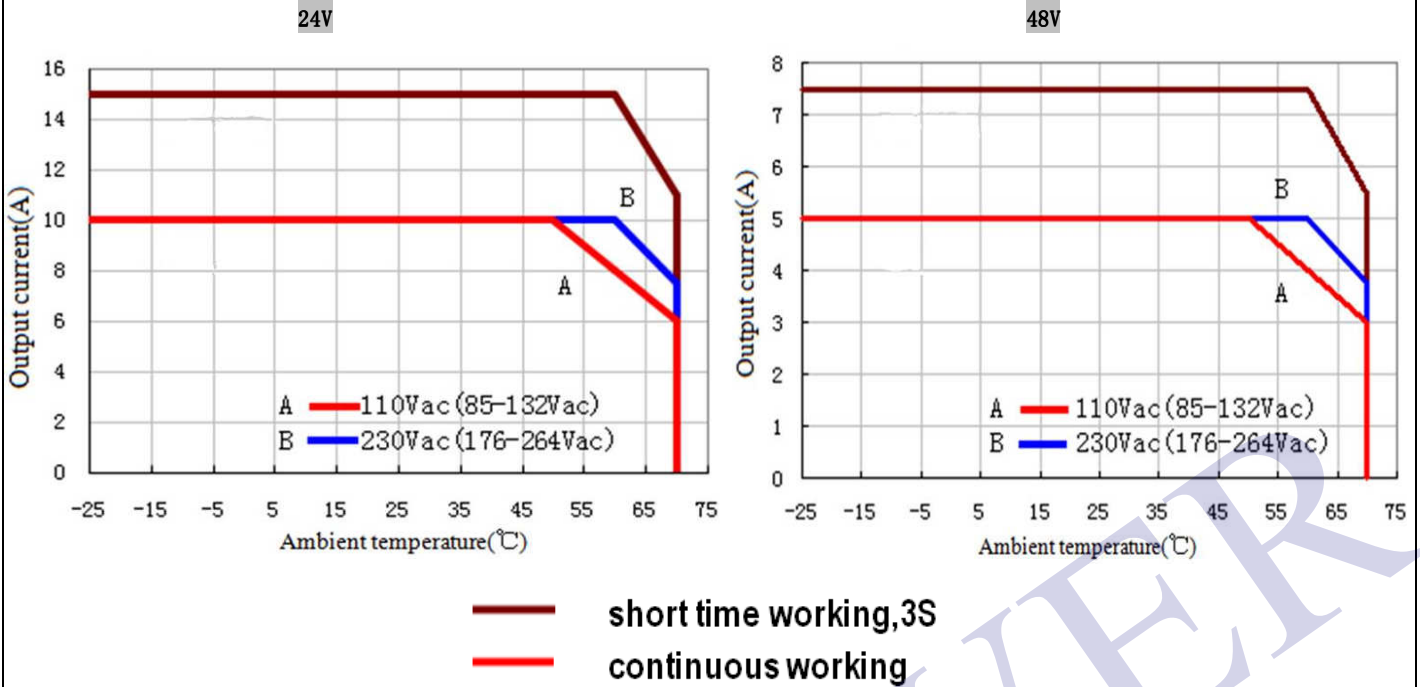
2.DC terminal blocks installation information			
Terminal No.	Function	Wire Spec	Recommended torque
4 & 5	DC OK Relay Contact	20~10AWG	5Nm
6 & 7	+V		
8 & 9	-V		



Mounting way: TS35/7.5 or TS35/15

	AC/DC Terminal
Type	Screw terminal blocks
Solid Wire	0.5-6mm ²
Strand Wire	0.5-4mm ²
Wire Spec	AWG20-10 (PG Wire>18AWG)
Max Wire Diameter	2.8mm
Recommended stripping length	7mm
Screwdriver	3.5mm Straight or Cross Screwdriver
Recommended Torque	5NM

CHARACTERISTICS CURVE



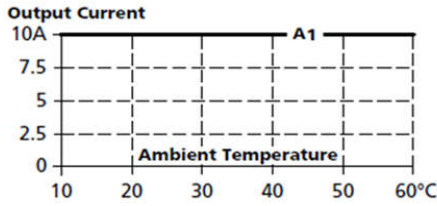
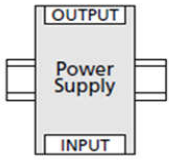
MOUNTING METHOD INSTRUCTION

A1 is recommended output current , A2 is the allowed max output current (PSU lifetime is around half of A1)

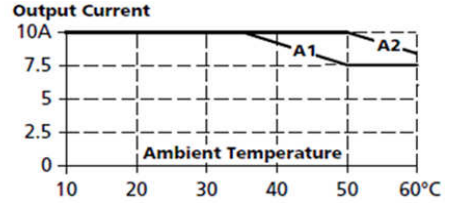
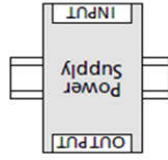
Below curves are tested under 230Vac(179~264Vac), when 110Vac input(85~175Vac), all derating points drops 10°C

24V output

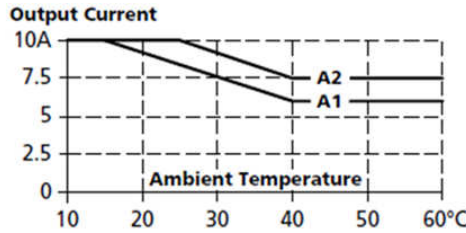
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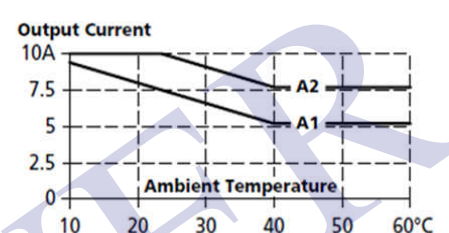
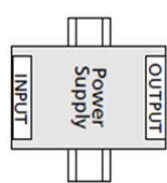
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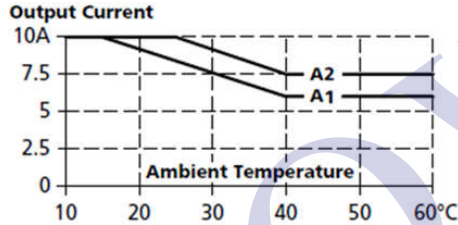
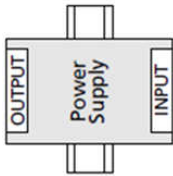
Mounting 3:



Mounting 4:

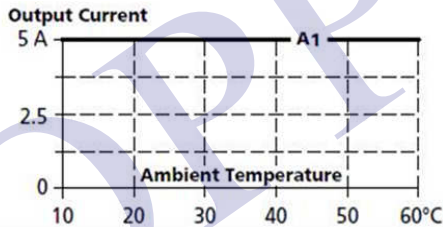
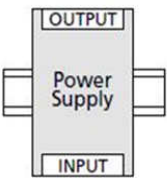


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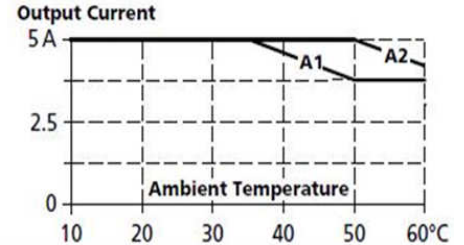
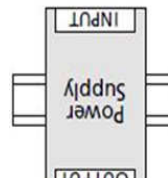


48V output

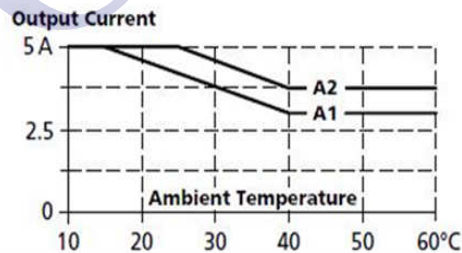
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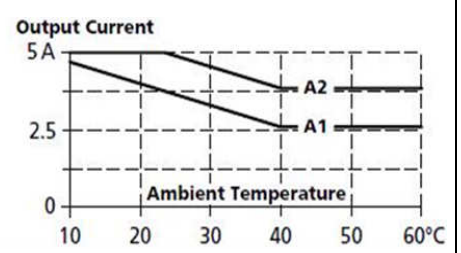
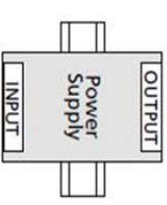
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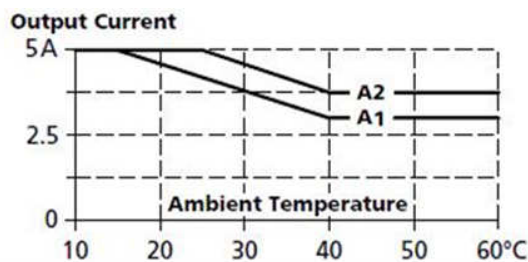
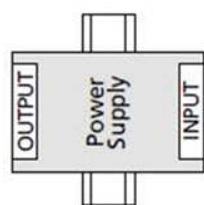
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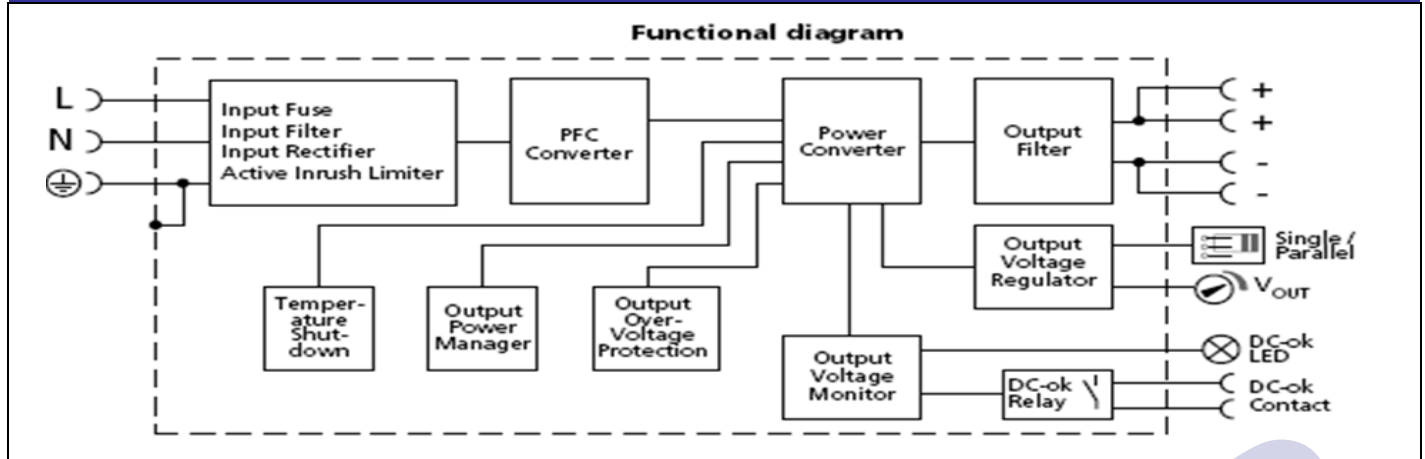
Mounting 4:



Mounting 5:



BLOCK DIAGRAM



MODEL SELECTION

