TPR/NDR-U240-XS Series



DESCRIPTION: **240W AC-DC DIN RAIL Power Supply**

The rated output power of TPR/NDR-U240-XS series is 2400W,input voltage range: 90-264VAC, output voltage : 24V, 48V,High reliability, precision,effificency , ultra-small size, 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 : 90VAC-264VAC,DC input:127-370VDC	High reliability,effificency,100% full load burn-in test	Operating temperature: -20℃~70℃
Mounting track: TS-35/7.5 or TS-35/15	Protection:short circuit,over-load,over-voltage,over-temperature	Mini width: 70mm
RoHS complaint	Altitude up to 6000m	Built-in current limiting circuit
High efficiency up to 88%	/	/

SELECTION GUIDE

Part Number	Input Volatge			Output				Efficiency @25℃, (Typ) %
	(VAC)		(VDC)	Voltage (VDC)	Pre-set voltage @25℃(V)	Rated current (A)	Rated power(W)	
	Rated	Range	Rated					
TPR/NDR-U240-24S	220	85-264	127-370	24	24.00-24.2	10	240	87
TPR/NDR-U240-48S	220	85-264	127-370	48	48.0-48.2	5	240	88

All specifications typical at TA=25°C, 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&Noise0＜Ta≤70℃	24V output voltage	≤120mVp-p
	48V output voltage	≤240mVp-p
Ripple&Noise-20＜Ta≤0℃	24V output voltage	≤240mVp-p
	48V output voltage	≤480mVp-p
Capacitive load capacity	24V output voltage	3500uF
	48V output voltage	1000uF
Line regulation @-25~70℃	±0.5%	
Load regulation @-25~70℃	±1.0%	
Temp. coefficient @-25~70℃	±0.03%/℃	
Set-up time @25℃	≤2S@ 230Vac	
Hold-up time @25℃	≥20mS@(110/230Vac input, Full load)	
Overshoot&Undershoot	<5.0%	

INPUT CHARACTERISTICS

Conditions	Parameter
Rated Input voltage range	100VAC~240 VAC
Input voltage range	90VAC~264 VAC
Input voltage range	127VDC-370VDC
Frequency Range	47Hz~63Hz

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INPUT CHARACTERISTICS

Set-up voltage @-25~70℃	<90 VAC , <127VDC
Input current @25℃ 24V	＜2.5A/230VAC ；＜1.1A/300VDC
Input current @25℃ 48V	<3.5A Max(90VAC~264VAC)； <2.5A Max/230VAC； ＜1.1A/300VDC
Inrush current @25℃	＜20A@110 Vac input ＜60A@230Vac Cold start
Power factors@25℃	0.98/110VAC，0.94/230VAC
Power factors@25℃	0.98/110VAC，0.96/230VAC

PROTECTION

Conditions	Parameter	Notes
Over-Load （24Voutput）	10.3A~13A	Constant current
Over-Load （48Voutput）	5.5A~6.5A	
Over-voltage（24Voutput）	28~35V	Shut down, auto recovery
Over-voltage（48Voutput）	58~63V	
Over-temperature	100±5℃, detect on heat sink of power transistor; shut down O/P, auto recovery after fault condition removed.	
Output short circuit protection	Long-term model , auto recovery	

ENVIRONMENT CHARACTERISTICS

Conditions	Parameter
Operating amb. Temp.&Humi.	-20℃~70℃； 20%~90%RH No condensing 230Vac 50℃~70℃ 4.8W/℃ 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	GB4943/EN60950
Withstand Voltage	I/P-O/P:3.0KVac/10mA; I/P-FG:1.5KVac/10mA; O/P-FG:0.5KVdc/20mA O/P- DC OK :0.5KVdc/1mA Test time:1min.
Isolation resistance	1I/P-O/P: 100M ohms; I/P-FG : 100M ohms; O/P-FG : 100M ohms
Grounding test	32A / 1min@24V 32A / 2min@48V 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 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	0.94kg	Dimension (L*W*H)	70*124*127mm
Cooling method	Cooling by free air flow		
Series/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		

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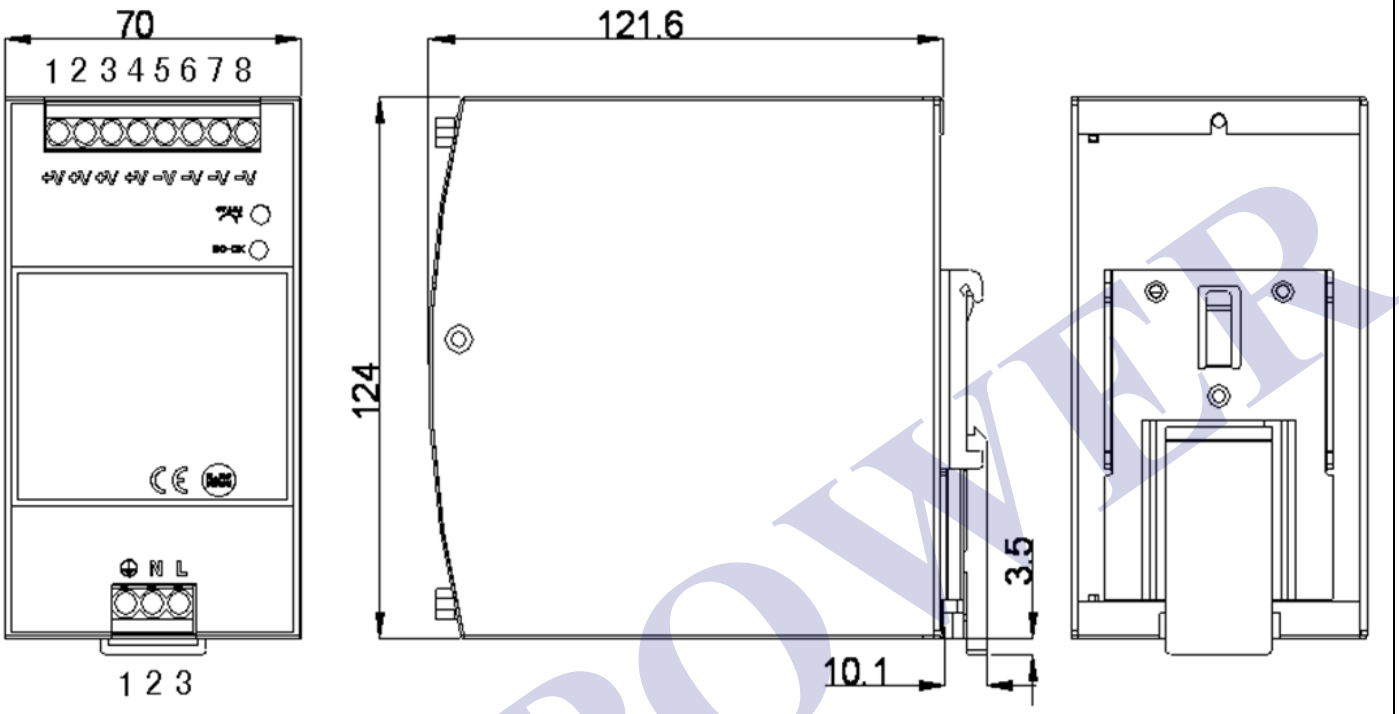
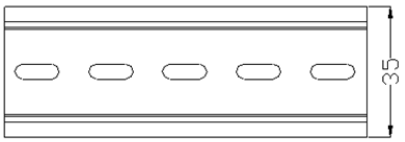
RELIABIILITY CHARACTERISTICS

Conditions	Parameter
MTBF	300，000Hrs AT 25℃, MIL-217 Method 2 Components Stress Method
Design electrolytic capacitor life-time	>3years AT 50℃ 230VAC input 100% output

MECHANICAL DIMENSIONS

Unit: mm





Mounting way: TS35/7.5 or TS35/15

1.AC Screw terminal information		
No.	Function	Terminal block specs
1	PE	6.35mm, 3PIN screw connector
2	N	
3	L	

2.DC Screw terminal information		
No.	Function	Terminal block specs
1~4	V+	6.35mm, 6PIN screw connector
5~8	V-	

	AC/DC Terminal blocks
Type	Screw terminal blocks
Solid Wire	0.5-6mm²
Strand Wire	0.5-4mm²
Wire Spec	AWG20-10
Max Wire Diameter	2.8mm
Recommended stripping length	7mm
Screwdriver	3.5mm Straight or Cross Screwdriver
Recommended Torque	1NM

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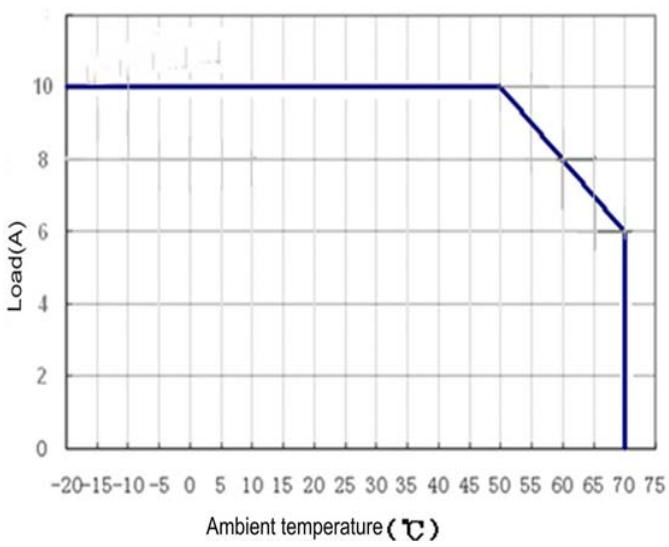
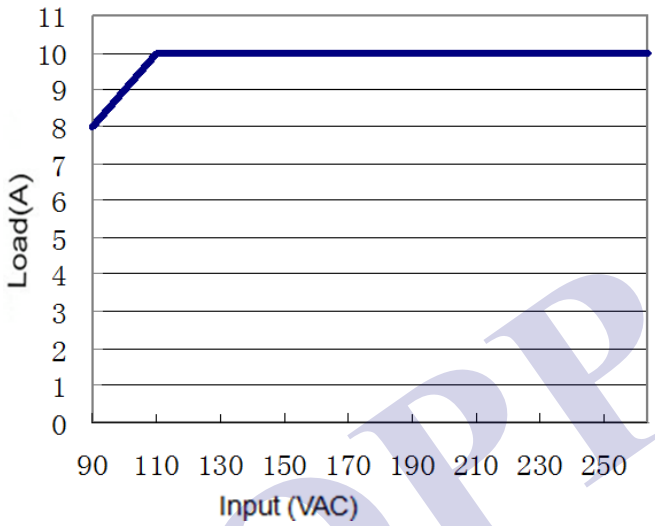
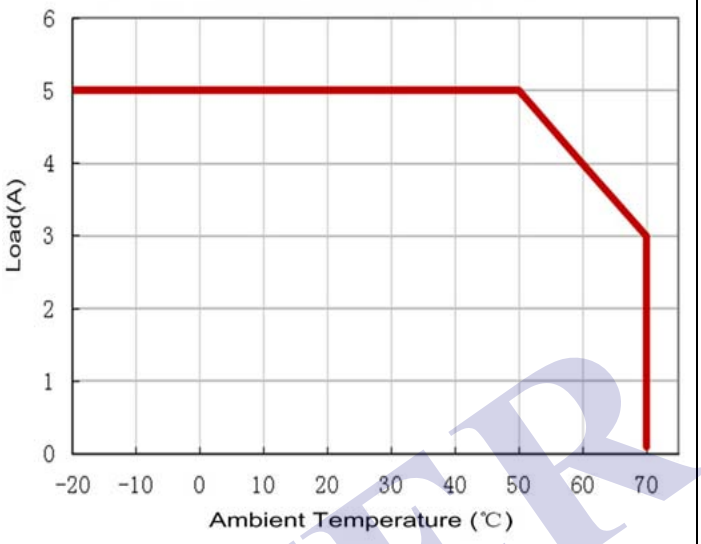
CHARACTERISTICS CURVE

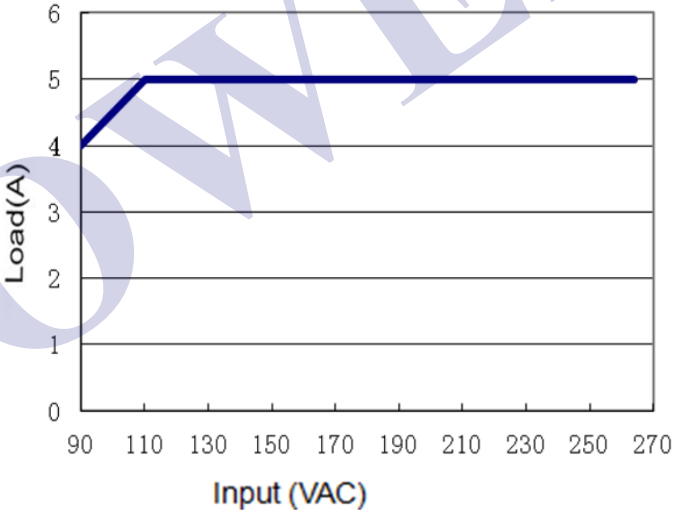
24V

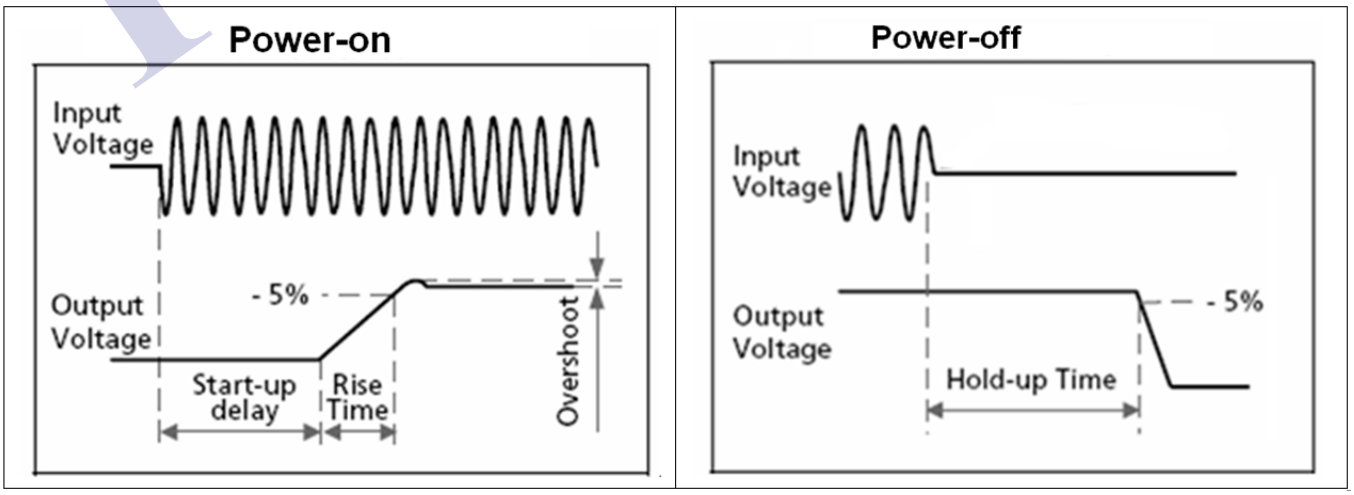




48V







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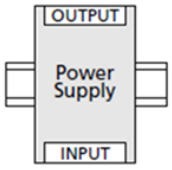
MOUNTING METHOD INSTRUCTION

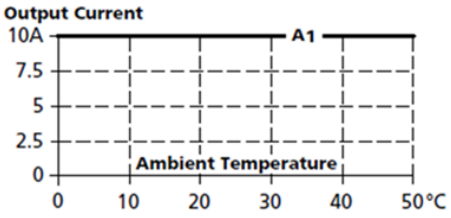
A1 is recommended output current , A2 is the allowed max output current (PSU lifetime is around half of A1)

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

24V output

Mounting 1:





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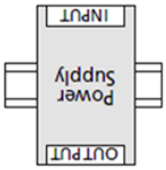

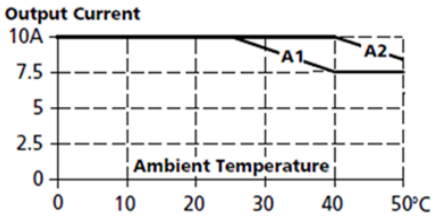

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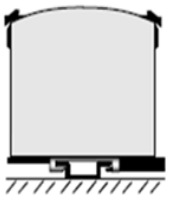

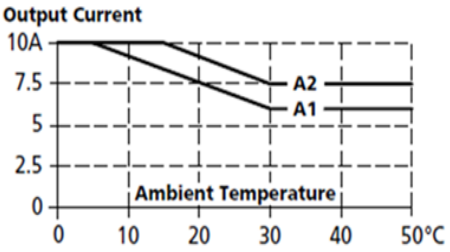

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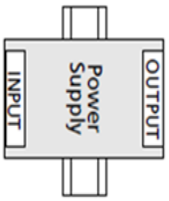

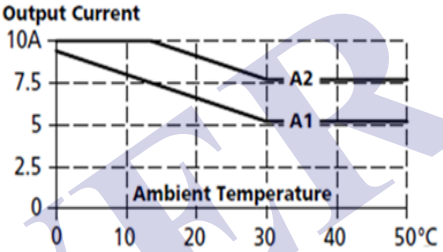

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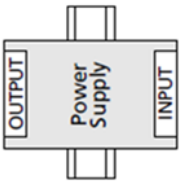
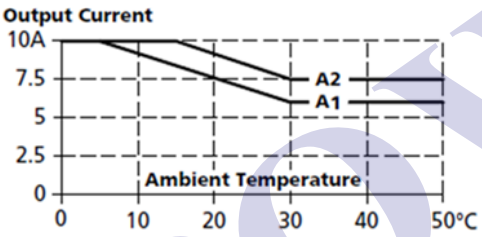
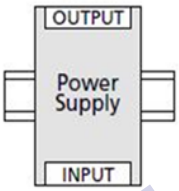
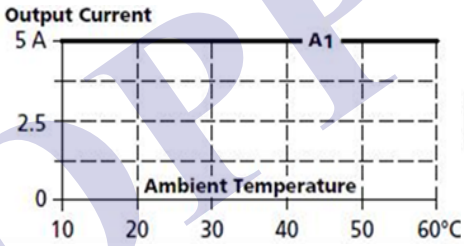




48V output

Mounting 1:





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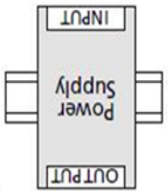

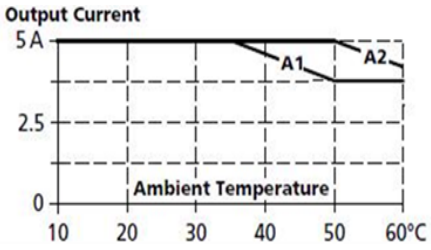

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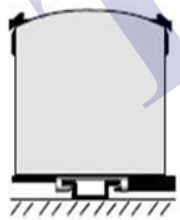

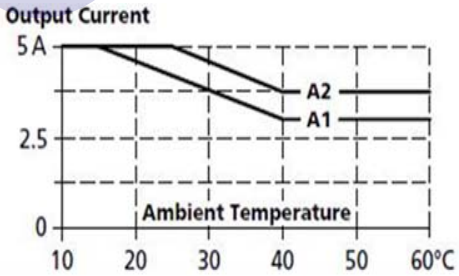

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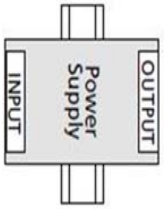

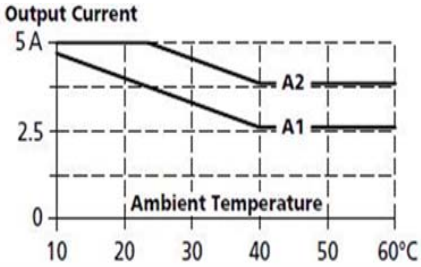

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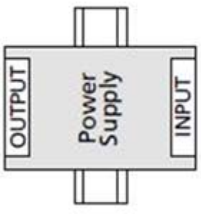

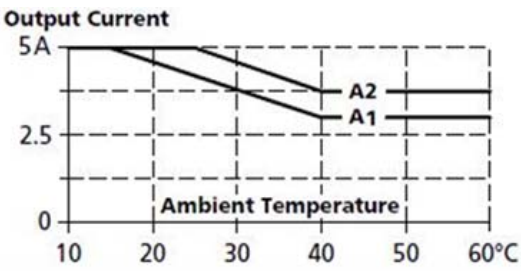

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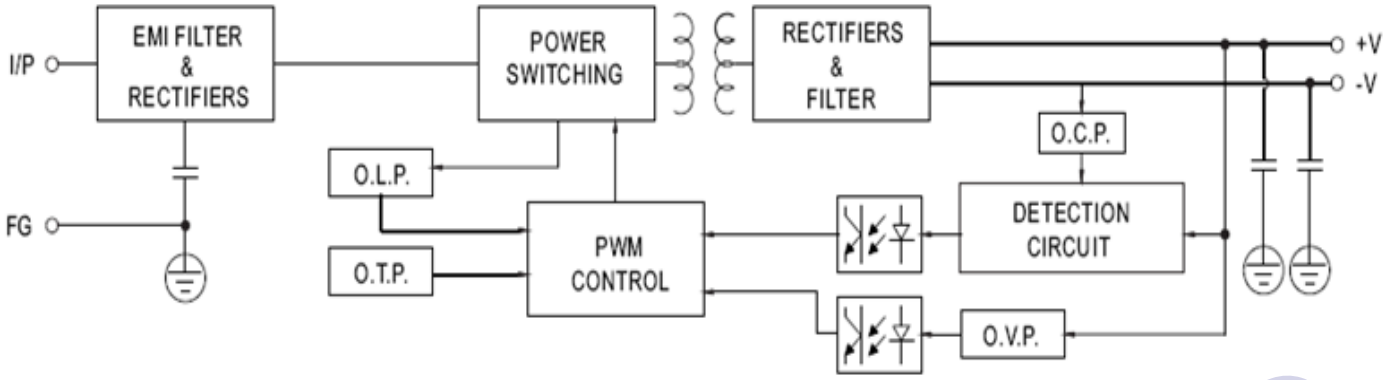
BLOCK DIAGRAM



MODEL SELECTION

TP R / NDR – U240 – X S

- S: Single ouput; D: Dual output
- Output voltage
- Delimiter
- Rated output Power
- Delimiter
- DIN RAIL Series
- Delimiter
- Type
- Brand TOPPOWER

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