



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, efficiency, 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, efficiency, 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℃, 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	≤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

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	1/I/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
Harmonic current	EN61000-3-2, CLASS A

OTHERS

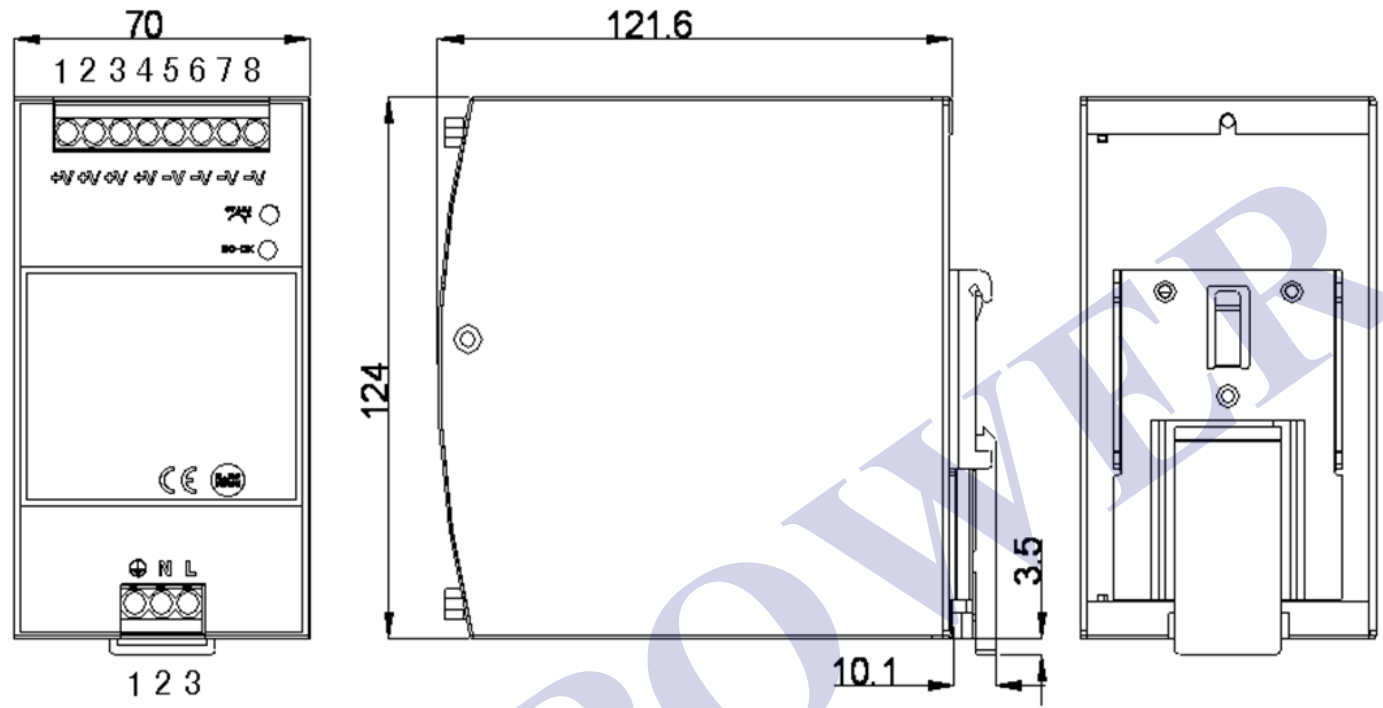
Conditions	Parameter		
Net Weight	0.94kg	Dimension (L*W*H)	70*124*127mm
Cooling method	Cooling by free air flow		
Series/Parallel function	yes		
DC OK relay contact rating	Max 30V/1A or 60V/0.3A or 30Vac/0.3A Resistive load		
DC OK LED	V On: when output voltage is up to 90% of rated output voltage, V Off: when output voltage is down to 80% of rated output voltage		
Power boost	150% of rated current		

RELIABILITY 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

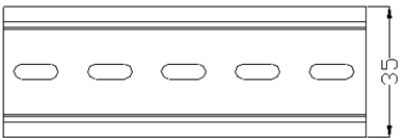
Unit: mm



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

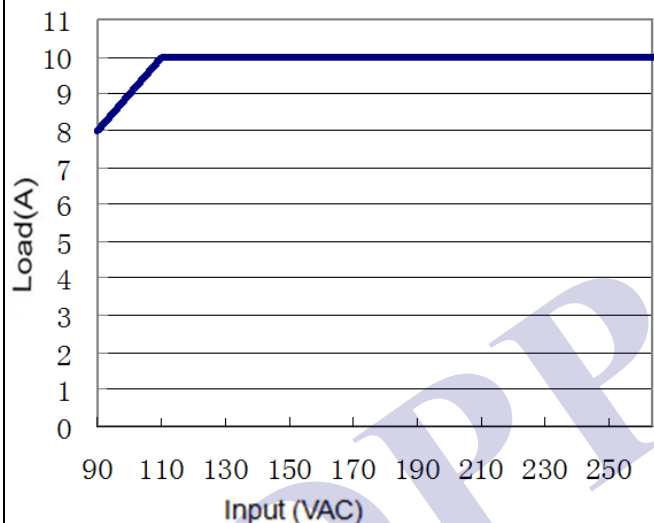
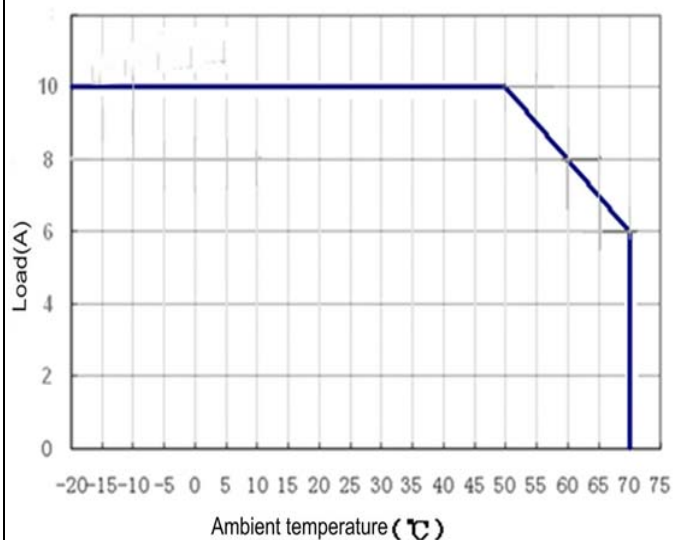
2.DC Screw terminal information		
No.	Function	Terminal block specs
1~4	V+	6.35mm, 6PIN screw connector
5~8	V-	

	AC/DC Terminal blocks
Type	Screw terminal blocks
Solid Wire	0.5-6mm ²
Strand Wire	0.5-4mm ²
Wire Spec	AWG20-10
Max Wire Diameter	2.8mm
Recommended stripping length	7mm
Screwdriver	3.5mm Straight or Cross Screwdriver
Recommended Torque	1NM

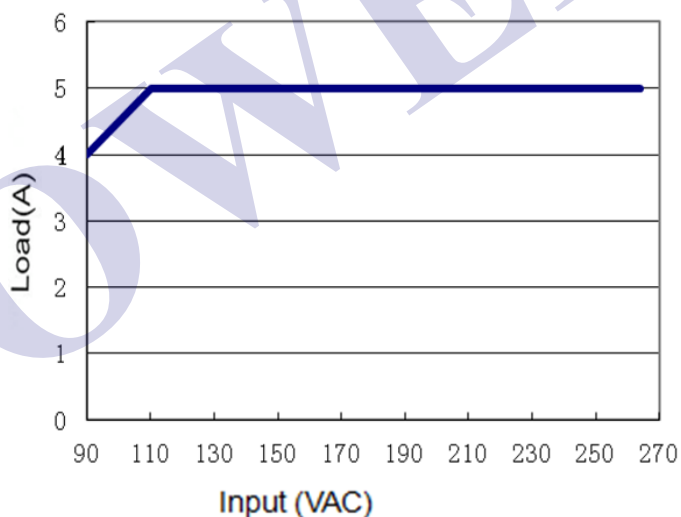
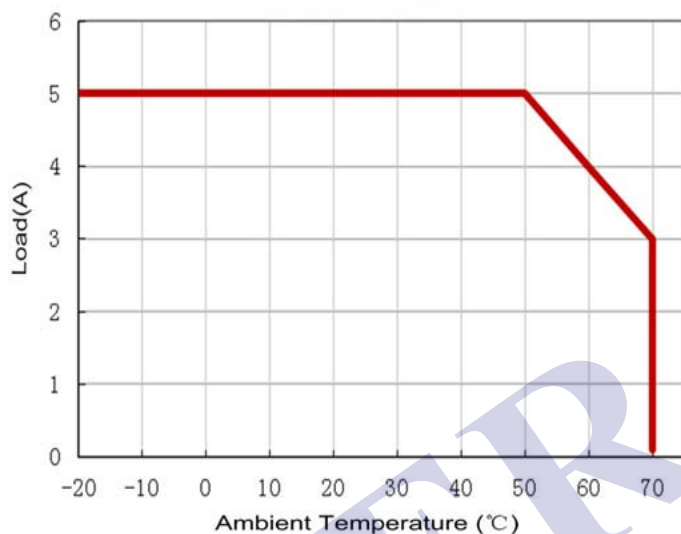


Mounting way: TS35/7.5 or TS35/15

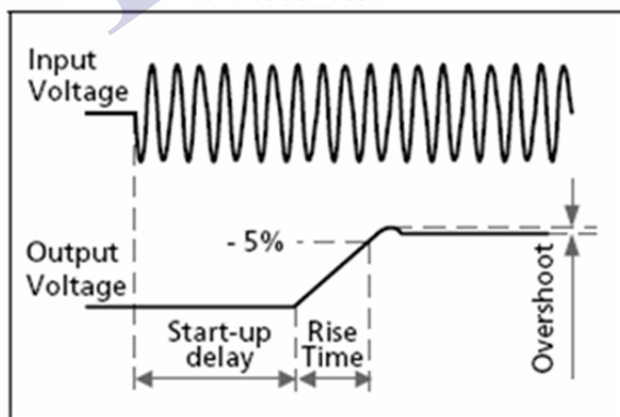
24V



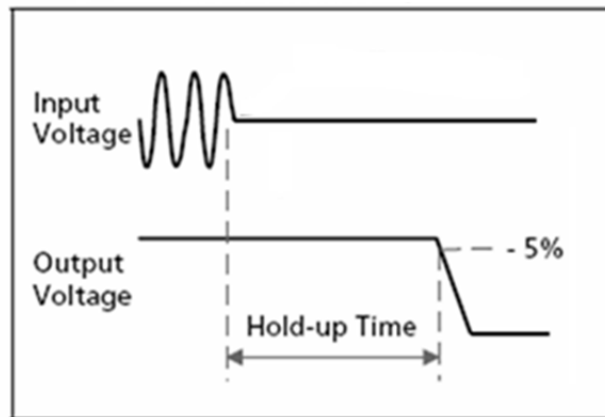
48V



Power-on



Power-off



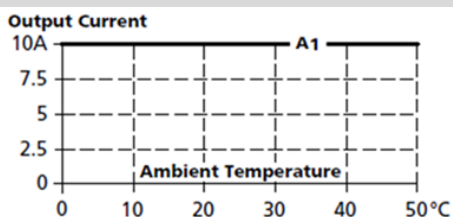
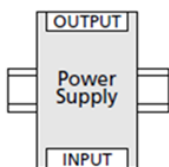
MOUNTING METHOD INSTRUCTION

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

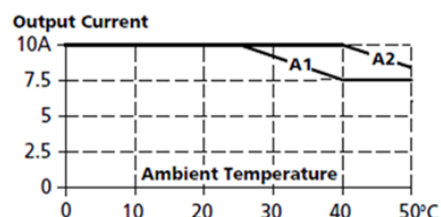
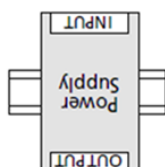
Below curves are tested under 230Vac(179~264Vac), when 110Vac input(85~175Vac), all derating points drops 10°C

24V output

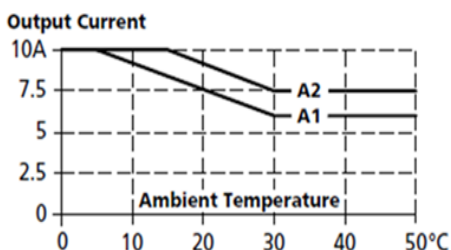
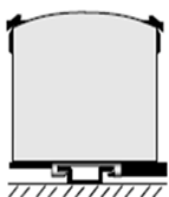
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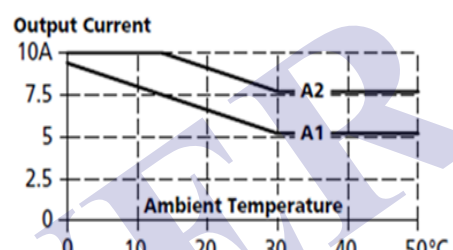
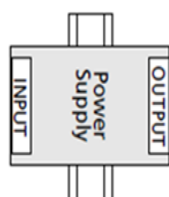
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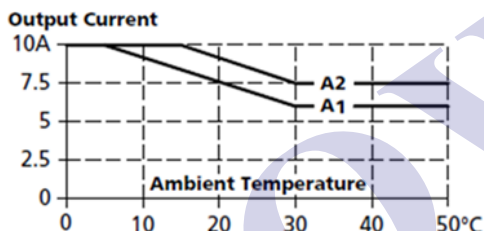
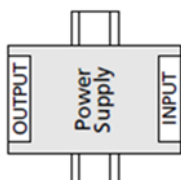
Mounting 3:



Mounting 4:

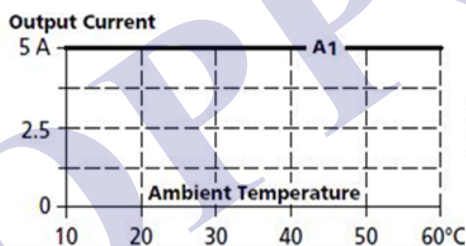
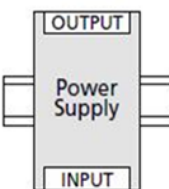


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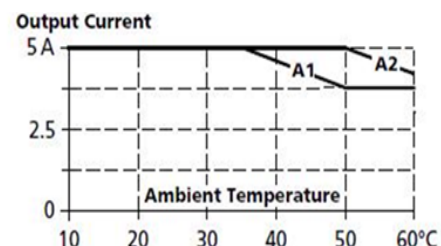
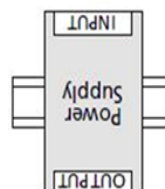


48V output

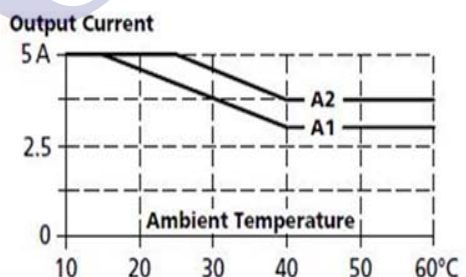
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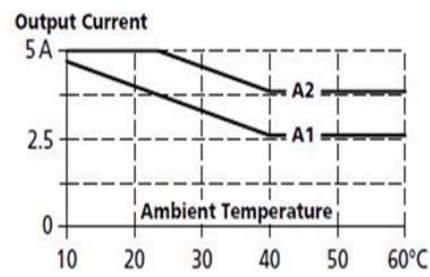
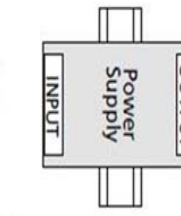
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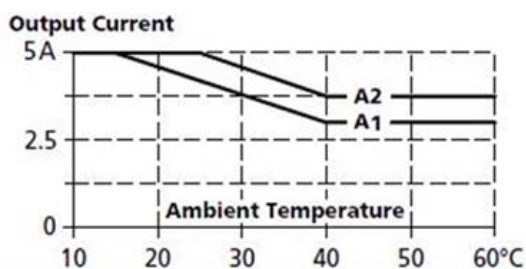
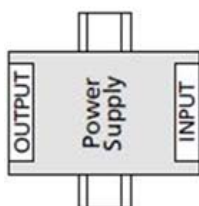
Mounting 3:



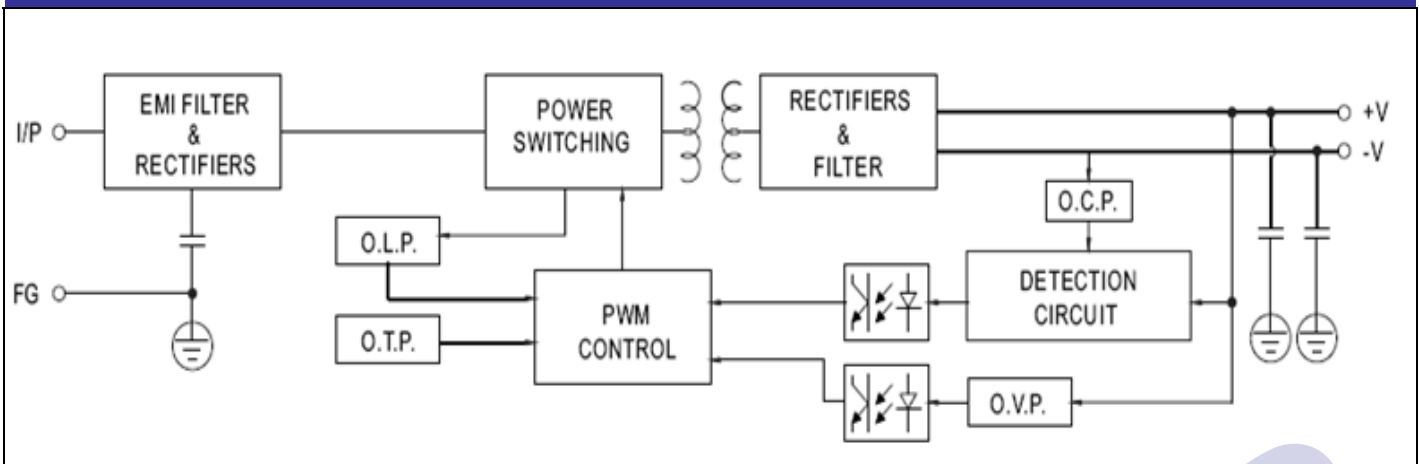
Mounting 4:



Mounting 5:



BLOCK DIAGRAM



MODEL SELECTION

