TPC/PDF-1200-XS Series



DESCRIPTION: **1200W wide input AC/DC switching power supply**

The rated output power of TPC/PDF-1200-XS series is1200W, input voltage range: 90-264VAC, output voltage:24V,36V,48V,High reliability, precision,effificency , ultra-small size, no external heat sink required, stable output voltage and etc, with over current protection,short circuit,overloadprotection, Widely used in telecommunications, industrial control, instrument, data acquisition, signal control , New Energy, Security,and other electronic systems.

FEATURES

AC input : 90VAC-264VAC	short circuit, overload,over-voltage protection	Operating temperature: -25℃~50℃
RoHS complaint	High reliability,effificency,100% full load burn-in test	Built-in active PFC function, PF>0.96
Build in DC OK signal	Using ZVS technology to reduce power dissipation	Built in AC inrush current limiting circuit(<20A)
1 U low profile,41mm	Built in Fan speed control/Built in Remote Sense Function	PCB soldering side with conformal coating

SELECTION GUIDE

Part Number	Input		Output					
	Volatge (VAC)		Voltage (VDC)	Pre-set voltage @25℃(V)	Rated current (A)	Current range(A)	Rated power(W)	Efficiency @25℃, (Typ) %
	Rated	Range						
TPC/PDF-1200-24S	220	90-264	24	24.00-24.10	25/50	0-50	1200	89
TPC/PDF-1200-36S	220	90-264	36	35.75-36.25	15/34	0-34	1200	89
TPC/PDF-1200-48S	220	90-264	48	48.00-48.10	25	0-25	1200	⩾90

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

OUTPUT CHARACTERISTICS

Conditions	Conditions	Parameter
Ripple and noise,Ta is ambient , 0＜Ta⩽50℃	24V 36V output voltage	⩽150mVp-p
Ripple and noise,Ta is ambient , 0＜Ta⩽50℃	48V output voltage	⩽200mVp-p
Ripple and noise,Ta is ambient , -25＜Ta⩽0℃	24V 36V output voltage	⩽150mVp-p
Ripple and noise,Ta is ambient , -25＜Ta⩽0℃	48V output voltage	⩽400mVp-p
Dynamic load characterstics, -25＜Ta⩽50℃	24V output voltage	5A-25A:Vp-p<1200mV 25A-50A: Vp-p<1200mV 5A-50A: Vp-p<1200mV (2mS)
	36V output voltage	8.5A-17A:Vp-p<1200 mV 17A-25.5A: Vp-p<1200 mV
	48V output voltage	△V: ⩽ 5%Vo
Output adjustment range @25℃	24V output voltage	21~27V
	36V output voltage	32~37V
	48V output voltage	45~53V
Rated output current	24V output voltage	50A at 176~246VAC input, 25A at 90~176VAC input
	36V output voltage	34A at 176~246VAC input, 15A at 90~176VAC input
	48V output voltage	25A
Voltage regulation accuracy @-20~50℃	±2% at 48V	
Voltage regulation accuracy @-25~50℃	±1% at 24V 36V	
Line regulation @-25~50℃	±0.5%	
Load regulation @-25~50℃	±1%	
Temp. coefficient @-25~50℃	±0.03%/℃	
Set-up time @25℃	⩽2.0S@115Vac input	⩽1.0S@(230Vac input, Full load)
Hold-up time @25℃	⩾10mS@115Vac input	⩾20mS@(230Vac input, Full load)
Overshoot&Undershoot	<5.0%	

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INPUT CHARACTERISTICS

Conditions	Parameter
Input voltage range	90Vac~264Vac
Rated input voltage range	100Vac~240Vac (24V 36V) 200Vac~240Vac (48V)
Frequency Range	47Hz~63Hz
Set-up voltage @-20~65℃	90Vac（refer to the derating curve）
Input current @25℃	＜10 A
Inrush current @25℃	＜10A@230Vac input 24V output ＜20A@230Vac input 36V output ＜30A@264Vac input 48V output
Power Factor(Typical)	PF≥0.96/230VAC PF≥0.98/115VAC Full Load
Leakage Current	Input—output: ≤0.25mA Input—PG: ≤3.5mA

PROTECTION @-20～65℃

Conditions	Parameter	Notes
Over-Load	24V 36V 48V	105%~125% of rated current, constant current, auto recovery
Over-power	24V 36V 48V	105%~125% of rated power, constant current, auto recovery
Over-voltage	24V 36V 48V	110%~130% of rated output voltage, constant voltage
Over-temperature	24V 36V 48V	115℃+5℃(detect on Mosfet temperature);shut down,auto recovery after the temperature goes down to 75℃
Output short circuit protection	Long-term model , constant current,auto recovery	

ENVIRONMENT CHARACTERISTICS

Conditions	Parameter
Operating amb. Temp.&Humi.	-25℃~50℃; 20%~90%RH No condensing （refer to the derating curve）
Storage Temp. & Humi.	-40℃~85℃; 10%~95%RH No condensing
Vibration	10 ~ 500Hz, 2G，10min./1cycle, period for60min. each along X,Y, Z axes
Pulse	20G/11mS pulse ,3 times at each X,Y,Z axes
Altitude	5000m (48V) 3000m (24V 36V)

SAFETY&EMC STANDARDS @25℃

Conditions	Parameter
Safety Standards	GB4943/EN60950 (for reference)
Withstand Voltage	I/P-O/P:3.0KVac/10mA; I/P-FG:1.5KVac/10mA; O/P-FG:0.5KVdc/10mA test time:1min.
Isolation resistance	I/P-O/P: 10M ohms; I/P-FG : 10M ohms; O/P-FG : 10M ohms
Grounding test	24V/36V: Test condition：40A / 1min.Grounding resistance：＜0.1 ohms. 48V: Test condition：32A / 2min.Grounding resistance：＜0.1 ohms.
DC OK signal	4~6V
EMC emission	Compliance to EN55022, CLASS B FCC PART15B
EMC immunity	Compliance to EN61000-4-2,3,4,5,6,8,11 heavy industry Leve
Harmonic Current	Compliance to EN61000-3-2,Class D

OTHERS

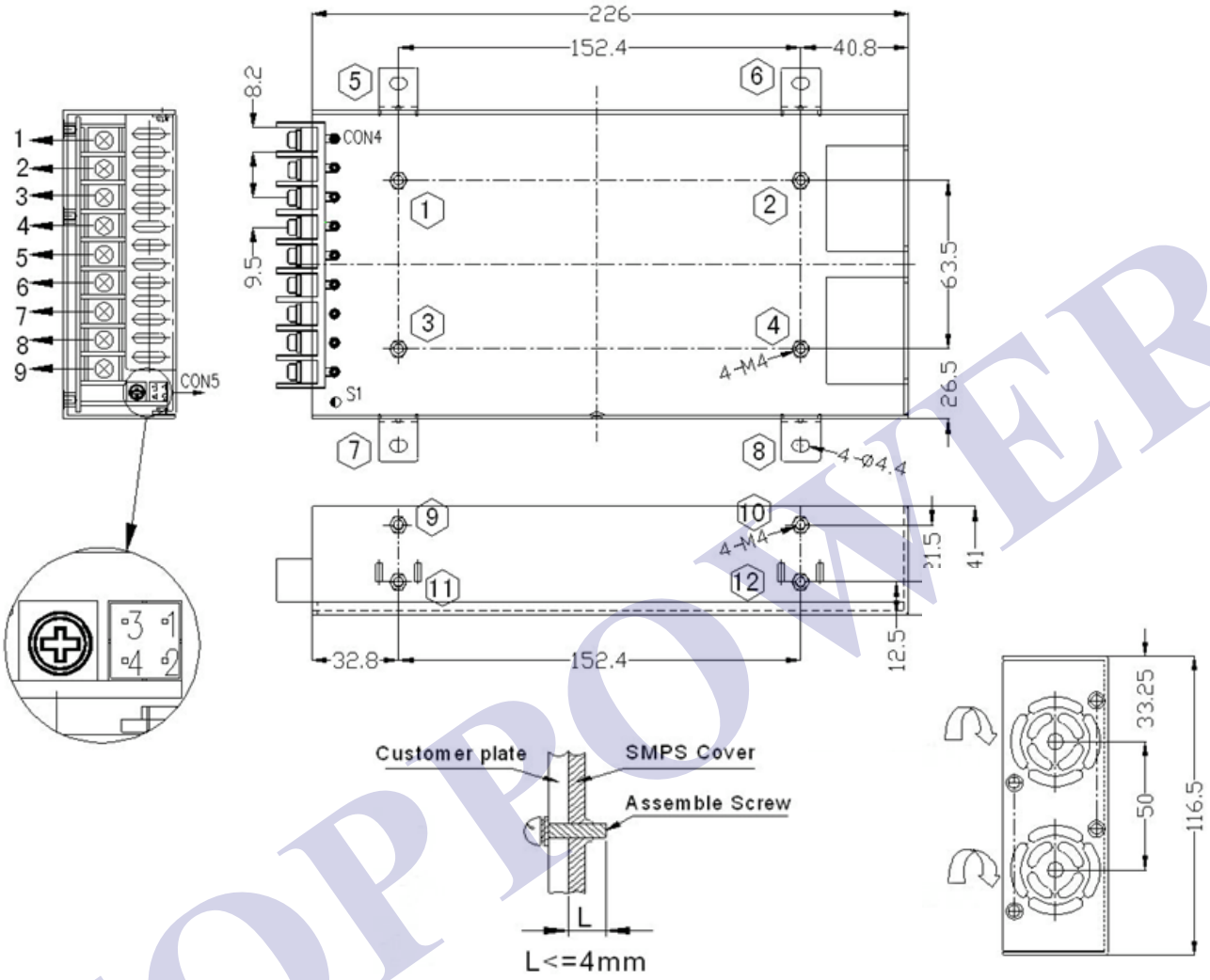
Conditions	Parameter
Cooling method	Cooling by free air flow
Dimension (L*W*H)	226*116.5*41mm
Net Weight	1.22kg

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RELIABIILITY CHARACTERISTICS

Conditions	Parameter
MTBF	200，000Hrs AT 25℃, MIL-217 Method 2 Components Stress Method

MECHANICAL DIMENSIONS



1.AC terminal blocks installation information				
	Terminal No.	Function	Wire Spec	Recommended torque
CON4	1	L	22~12AWG	12Kgf.cm(max)
	2	N		
	3	⏚		

2.DC terminal blocks installation information			
Terminal No.	Function	Wire Spec	Recommended torque
4 / 5/6	+V	22~12AWG	12Kgf.cm(max)
7/8/9	-V		

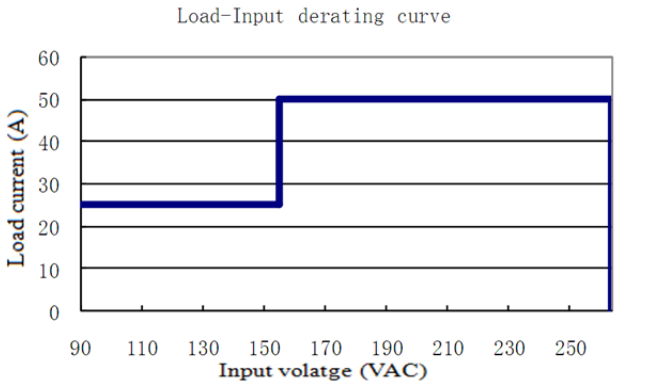
3.Signal terminal blocks installation information

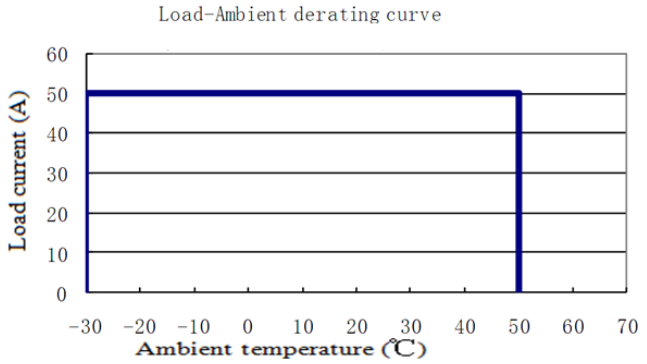
	Terminal No.	Function	Terminal Standard
CON5	1	+S	A2006WR-2X2PIN
	2	-S	
	3	DC OK	
	4	GND	

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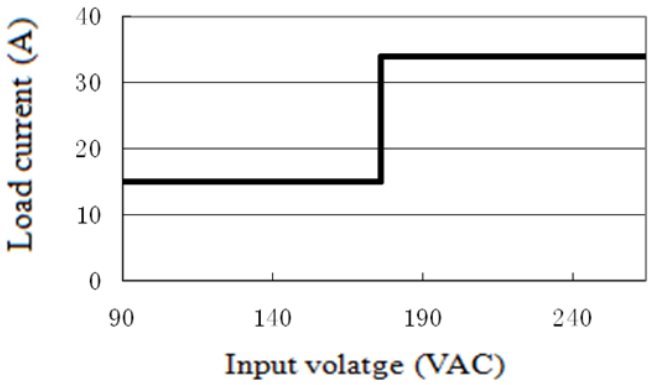
DERATING CURVE

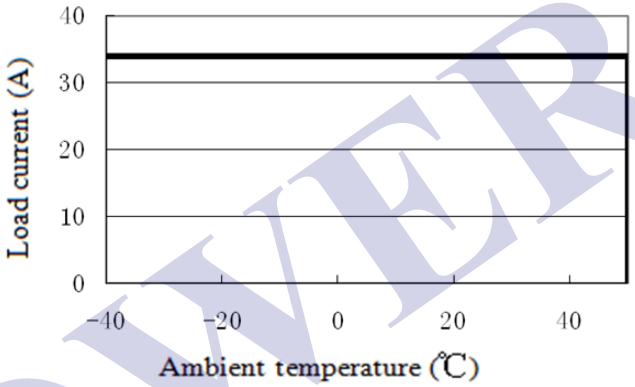
24V



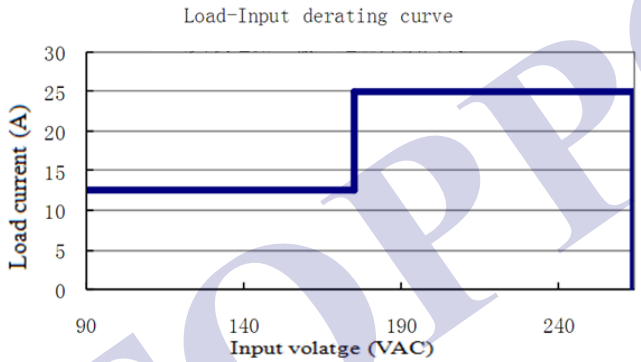


36V

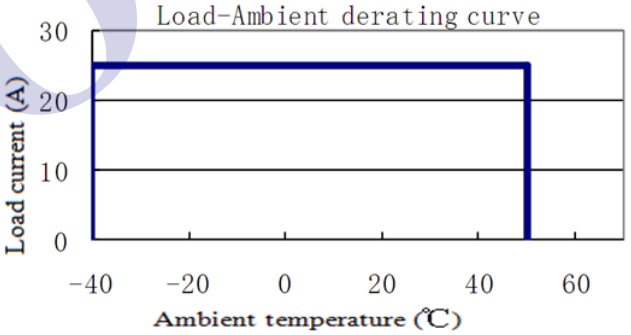




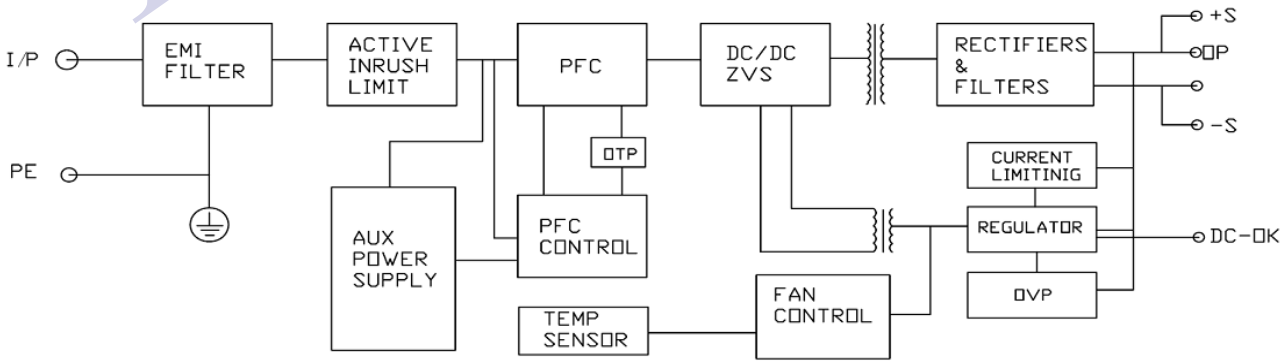
48V



48V



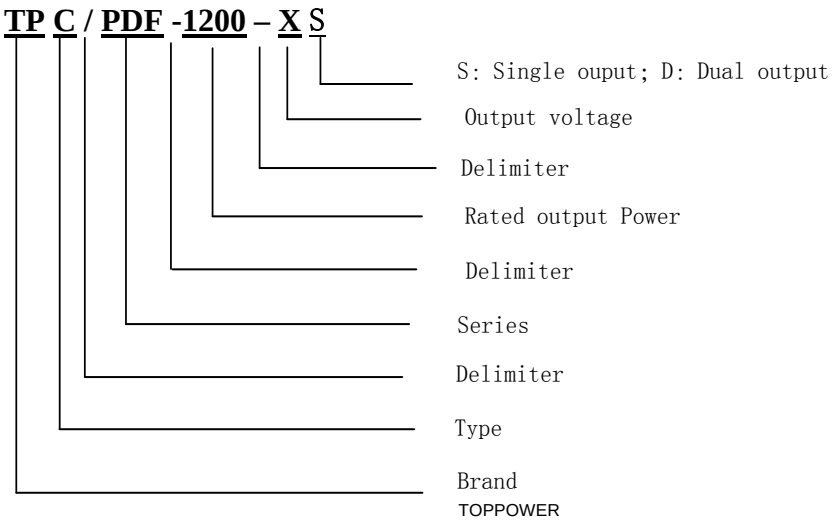
BLOCK DIAGRAM



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MODEL SELECTION



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