

Universal 250 Watt - UES250-XXXXYYSPAZ-OP

CLASS I & II

Product Features

- Medical & I.T.E. safety approvals
- 2 MOPP input to output isolation
- Leakage current: $\leq 100\mu\text{A}$
- Efficiency up to 94%
- $\leq 0.5\text{W}$ standby power
- Up to 5,000m operating altitude

**150W CONVECTION
COOLED**

**250W FAN
COOLED**

Models & Ratings

Model Number	Voltage (V) ^(*1)	Current at convection (A)	Rated Power (W)	Ripple & Noise _(max) ^(*2)	Voltage Tolerance	Line & Load Regulation	Efficiency (Average)	Start Up Delay
UES250-XXXXYYSPAZ-OP ^(*3)	12.0	12.50	150.00	150mVpk-pk	±5%	Line: ±1% Load: ±5%	92.0%	≤3s
	15.0	10.00	150.00	150mVpk-pk	±5%		92.0%	≤3s
	18.0	8.33	149.94	150mVpk-pk	±5%		92.0%	≤3s
	19.0	7.89	149.91	200mVpk-pk	±5%		93.0%	≤3s
	24.0	6.25	150.00	200mVpk-pk	±5%		93.0%	≤3s
	36.0	4.16	149.76	300mVpk-pk	±5%		93.0%	≤3s
	48.0	3.12	149.76	300mVpk-pk	±5%		94.0%	≤3s
	54.0	2.77	149.58	300mVpk-pk	±5%		94.0%	≤3s
Model Number	Voltage (V)	Current at 25 CFM (A)	Rated Power (W)	Ripple & Noise _(max)	Voltage Tolerance	Line & Load Regulation	Efficiency (Average)	Start Up Delay
UES250-XXXXYYSPAZ-OPF ^(*4)	12.0	20.83	249.96	150mVpk-pk	±5%	Line: ±1% Load: ±5%	92.0%	≤3s
	15.0	16.66	249.90	150mVpk-pk	±5%		92.0%	≤3s
	18.0	13.88	249.84	150mVpk-pk	±5%		92.0%	≤3s
	19.0	13.15	249.85	200mVpk-pk	±5%		93.0%	≤3s
	24.0	10.41	249.84	200mVpk-pk	±5%		93.0%	≤3s
	36.0	6.94	249.84	300mVpk-pk	±5%		93.0%	≤3s
	48.0	5.20	249.60	300mVpk-pk	±5%		94.0%	≤3s
	54.0	4.62	249.48	300mVpk-pk	±5%		94.0%	≤3s
Standby Power	5.0	0.15	0.75	120mVpk-pk				
FAN	12.0	0.25	3.0					

Notes

(*1) Other options are available, please contact our sales representative for details.

(*2) Measured at output connector with 20MHz bandwidth and 0.1uF ceramic in parallel with 47uF electrolytic capacitors.

(*3) "Z" represents "1" or "2": "1" refers to the CLASS II standard, used for 2PIN input; "2" refers to the CLASS I standard, used for 3PIN input.

(*4) "-OPF" represents Enclosed type with fan

Input

Input Voltage Range	80-264VAC(80-115VAC refer to derating curve)
Frequency Range	47-63Hz
Input Current	3.52 max
Inrush Current	80A max at 240VAC cold start
Touch Leakage Current ^(max)	≤100μA at 264VAC

Environmental

Operating Temperature	-30°C to 70°C(30°C to 70°C refer to derating curve)	Dimensions	101.6(L)x50.8(W)x35.3(H)mm 4x2"
Storage Temperature	-40°C to 80°C	Power supply power density	0.806W/cm ³
Operating Humidity	5% to 90% RH, non-condensing	Weight	280g
Storage Humidity	5% to 95% RH	MTBF	>1000,000hrs Telcordia_SR-332 at 25°C
Operating Altitude	5,000m		

General

Protection

Overload	120-160% rated output power, auto recovery
Over Voltage	110-130% rated output voltage input to reset
Short Circuit	Trip and restart (hiccup mode)

Safety Approvals

Safety Agency / Mark	Medical(meet)	ITE(meet)
CB	IEC60601-1	IEC62368-1
TUV-Mark	EN60601-1	-
NRTL	ANSI/AAMI ES60601-1 CAN/CSA-C22.2 NO. 60601-1	UL62368-1

EMC

Emission	Medical	ITE
Conduction (*1)	IEC/EN60601-1-2,CISPR 11	En55032, CISPR 32
Radiation (*2)	IEC/EN60601-1-2,CISPR 11	EN55032, CISPR 32
Harmonic Currents	EN61000-3-2, Class B	EN61000-3-2, Class B
Voltage Flicker	EN61000-3-3	EN61000-3-3
Immunity	IEC/EN60601-1-2	EN55035, CISPR 35
ESD	IEC61000-4-2 ±15KV air, ±8KV contact	
Radiated Immunity	IEC61000-4-3 10V/m ,3V/m 80MHz - 2.7GMHz	
EFT/Burst	IEC61000-4-4 ±2KV on AC port, ±1KV on signal ports	
Surge	IEC61000-4-5 ±2KV line - line ,±4KV line - earth	
Conducted Immunity	IEC61000-4-6 3Vrms, 6Vrms (0.15MHz-80MHz)	
Magnetic Field	IEC61000-4-8 30 A/m	
Dips & Interruptions	IEC61000-4-11 0%, 70%, 0% of UT	

NOTE:

The power supply is considered a component which will be installed into a final equipment. All EMC tests are executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives.

Others

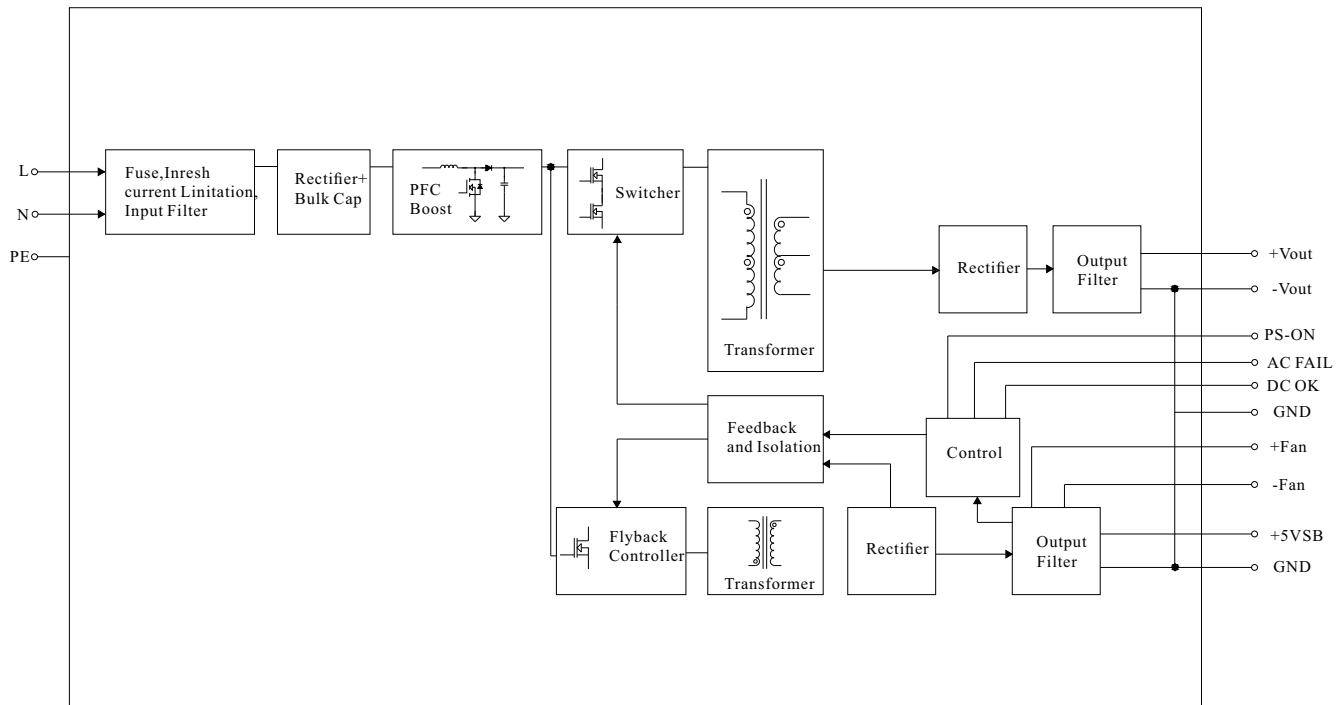
Dielectric Withstand Voltage	4000VAC input to output
Insulation Resistance	100M Ohms, 500VDC input to output

Notes

(*1) Class I meets Class B,Class II meets Class A.

(*2) Class I meets Class A,Class II meets Class A.

Block Diagram



PS-ON INPUT SIGNAL:

Power ON: PS-ON = "Hi" or " $> 2 \sim 5V$ "; Power OFF: PS-ON = "Low" or " $< 0 \sim 0.5V$ ".

POWER GOOD / POWER FAIL:

500ms $>$ PG $>$ 10ms; The TTL signal goes high with 10ms to 500ms delay after power set up;
The TTL signal goes low at least 1ms before Vo below 90% of rated value.

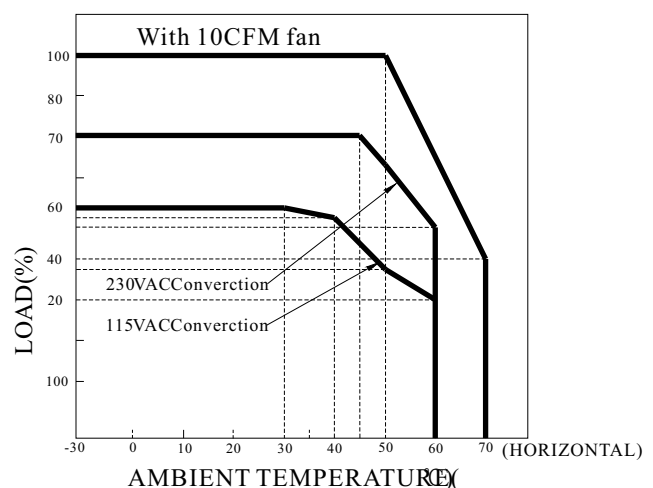
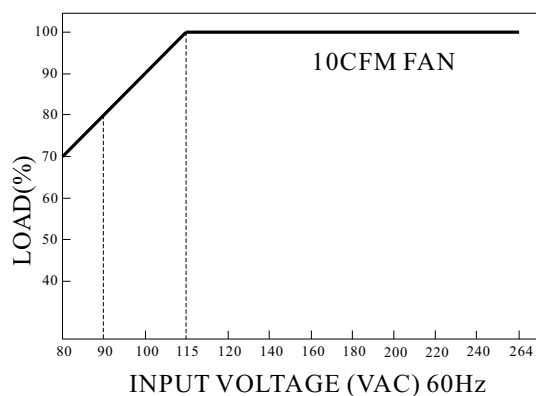
12V FAN SUPPLY:

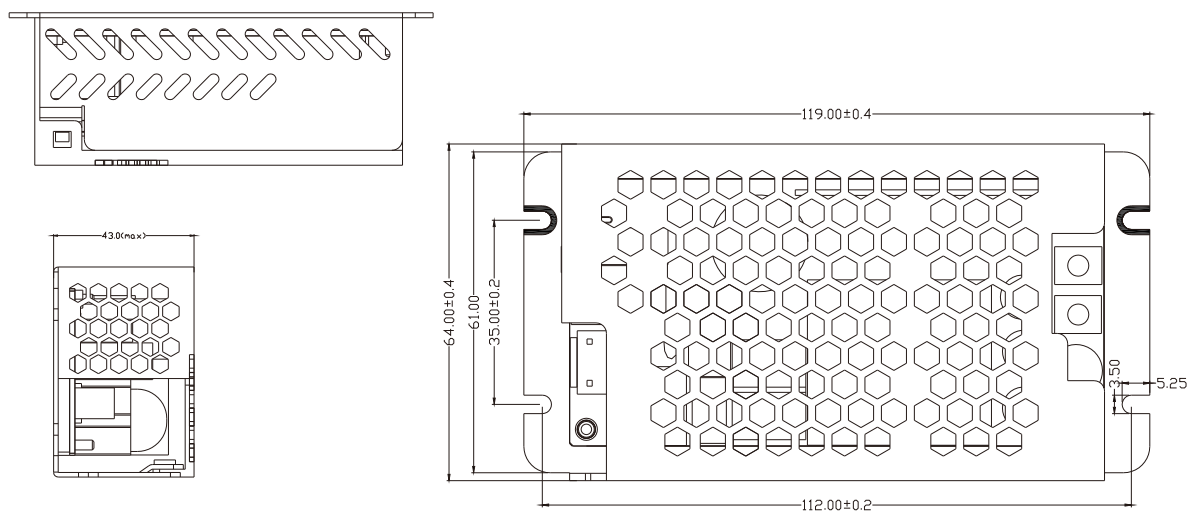
12V@0.25A for driving fan;
Tolerance -15% ~+10% at main output 20% rated current (10CFM).

5V STANDBY:

5Vsb : 5V@0.15A;
Tolerance $\pm 2\%$, ripple : 120mVp-p(max.).

Derating Curve



Mechanical Details
● UES150-XXXYYYSPA-Z-OP(PCB Type) Unit: mm

● UES250-XXXYYYSPA-Z-OPF(Enclosed type with fan)

AC Input Connector(J1) :
JST B3P-VH or equivalent

Pin No.	1	2	3
Assignment	AC/N	No Pin	AC/L

DC Output Connector(Vo+, Vo-):

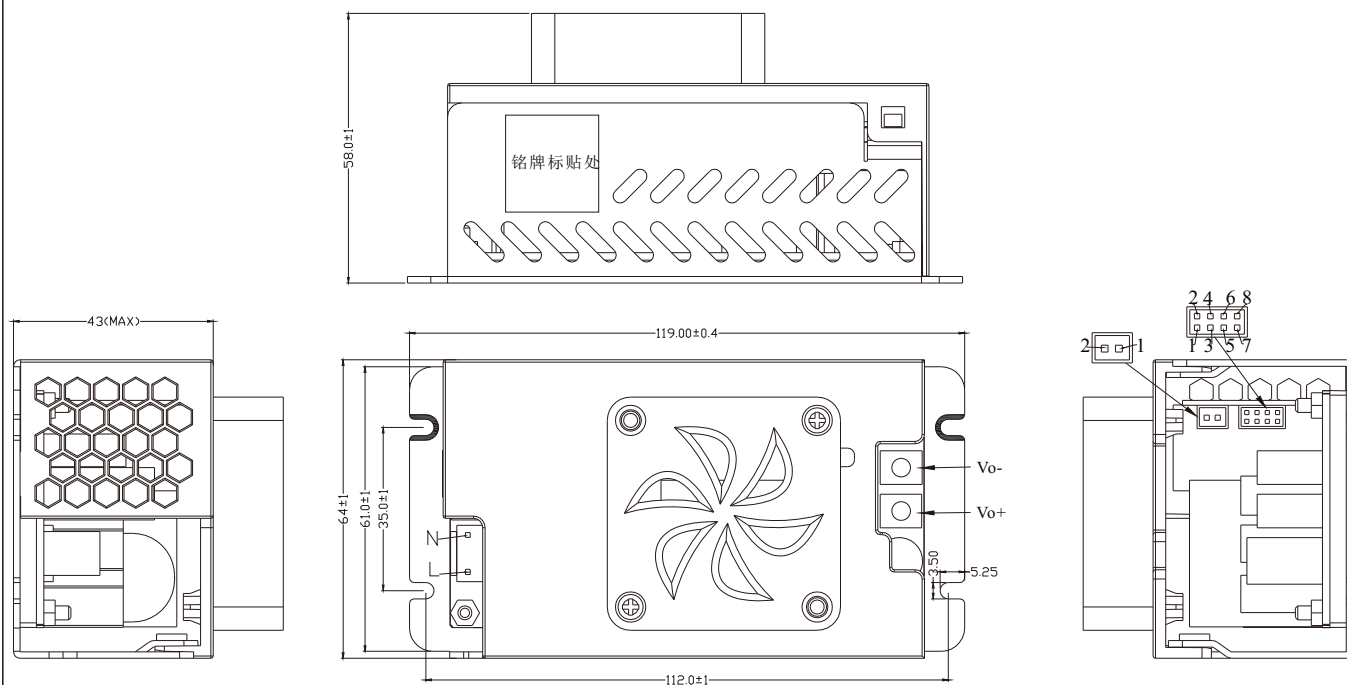
Pin No.	Vo+	Vo-
Assignment	V+	V-

Function Connector(CCN3):
TKP DH2I-2X2 or equivalent

Pin No.	1	2	3	4	5	6	7	8
Assignment	+5Vsb2	SGND	AC-FALL+	Power-OK+	SGND	SGND	SGND	ON/OFF+

FAN Connector(CCN1) :
TKP 8812-2 or equivalent

Pin No.	1	2
Assignment	FAN+	FAN-



Unit: mm