



IP20 Class I & II (VI)

Product Features

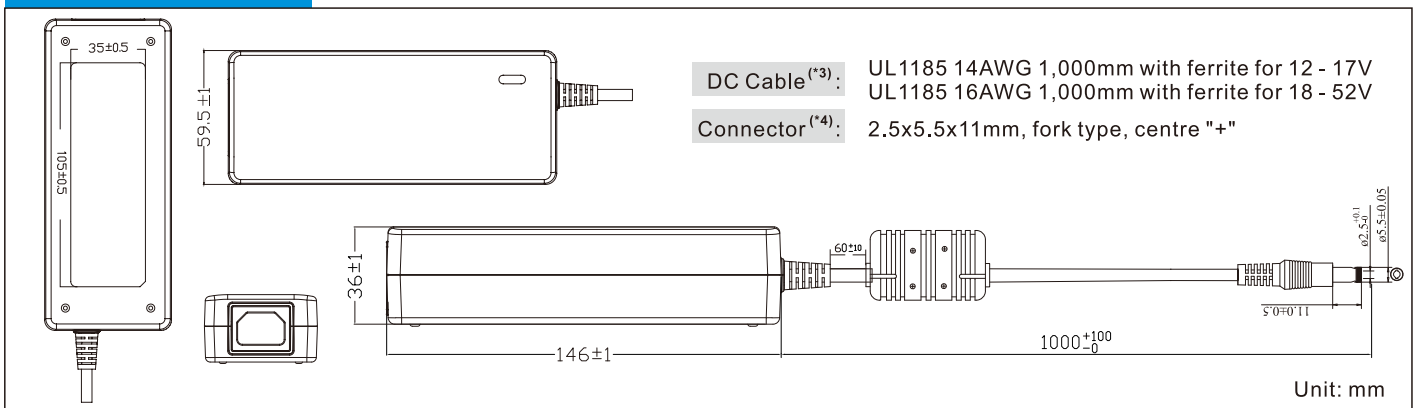
- Medical safety approvals
- 2 MOPP input to output isolation
- Low leakage current $\leq 100\mu\text{A}$
- DOE efficiency level VI
- CoC V5 Tier 2(2016)
- $\leq 0.15\text{W}$ standby power
- 12V to 52V outputs, up to 90W
- Up to 5,000m operating altitude
- 4 types of AC inlet



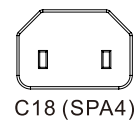
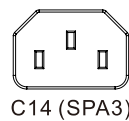
Models & Ratings

Model Number	Voltage ^(*) (V)	Current (A)	Rated Power	Ripple & Noise _{(max)(**)}	Voltage Tolerance	Line & Load Regulation	Efficiency (Average)	Start Up Delay
UES90-XXXXYYSPA1/ SPA2/ SPA3/ SPA4 UES90-XXXXYYSPA-OP	12.0	0.01-7.00	84W	150mVpk-pk	$\pm 5\%$	Line: $\pm 1\%$ Load: $\pm 5\%$	88.60%	$\leq 3\text{s}$
	15.0	0.01-5.33	84W	180mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	17.0	0.01-4.70	84W	200mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	19.0	0.01-4.74	90W	200mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	22.0	0.01-4.10	90W	200mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	24.0	0.01-3.75	90W	200mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	26.0	0.01-3.34	90W	200mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	30.0	0.01-3.00	90W	200mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	33.0	0.01-2.73	90W	200mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	36.0	0.01-2.50	90W	200mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	39.0	0.01-2.25	90W	240mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	43.0	0.01-2.10	90W	360mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	46.0	0.01-1.96	90W	480mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	48.0	0.01-1.88	90W	560mVpk-pk	$\pm 5\%$		88.60%	$\leq 3\text{s}$
	52.0	0.01-1.64	90W		$\pm 5\%$		88.60%	$\leq 3\text{s}$

Mechanical Details



AC Inlet Options



Notes

(*1, 3, 4) 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 10uF electrolytic capacitors.

(*5) Polarized C8 is available.

Input

Input Voltage Range	90-264VAC
Frequency Range	47-63Hz
Input Current	1.5A at 90VAC
Inrush Current	100A max at 240VAC cold start
Touch Leakage Current ^(max)	≤100µA at 264VAC

Environmental

Operating Temperature	0°C to 40°C
Storage Temperature	-20°C to 80°C
Operating Humidity	10% to 90% RH, non-condensing
Storage Humidity	5% to 90% RH
Operating Altitude	5,000m

General

Dimensions	146(L)x59.5(W)x36(H)mm
Weight	420g
MTBF	>50,000hrs MIL-HDBK-217 at 25°C
Isolation	4,000VAC Input to Output 1,500VAC Input to Ground (Class I version only)

Protection

Overload	130-200% rated output power, auto recovery
Over Voltage	130-150% rated output voltage input to reset
Short Circuit	Trip and restart (hiccup mode)

Safety Approvals

Safety Agency / Mark	Medical	ITE
CB	IEC60601-1	IEC60950-1 IEC62368-1
UL	ANSI/AAMI ES60601-1 CAN/CSA C22.2 NO. 60601-1	UL60950-1 UL62368-1
TüV Rheinland/Mark	EN60601-1	-
TüV Rheinland/GS	-	EN60950-1 EN62368-1
CE	-	EN62368
CCC	-	GB4943.1
FCC	-	FCC PART 15
PSE	-	J60950

EMC

Emissions	Medical
Conducted	IEC/EN 60601-1-2, CISPR 11
Radiated	IEC/EN 60601-1-2, CISPR 11
Harmonic Currents	EN61000-3-2, Class A
Voltage Flicker	EN61000-3-3
Immunity	IEC/EN 60601-1-2
ESD	EN61000-4-2 ±15kV air, ±8kV contact
Radiated Immunity	EN61000-4-3 10V/m, 3V/m 80MHz - 2.7GHz
EFT/Burst	EN61000-4-4 ±2kV on AC port, ±1kV on signal ports
Surge	EN61000-4-5 ±1KV line to line (diff mode)
Conducted Immunity	EN61000-4-6 3Vrms, 6Vrms (0.15MHz-80MHz)
Magnetic Field	EN61000-4-8 30 A/m
Dips & Interruptions	EN61000-4-11 0%, 70%, 0% of UT

Others

Dielectric Withstand Voltage	5,656VDC input to output
Insulation Resistance	10M Ohms, 500VDC input to output