

P R B X

POWERBOX **Medline 30**
EXM30 Series
30W
Single Output
AC/DC Medical Switch Mode Adaptor, Wallplug Style

Features

Extra low leakage current, less than 10µA
Exchangeable AC-plugs for universal use
Reliable front edge fly-back design with very low component count
Class II double isolation and UL/IEC60601-1 medical approval
Made by Björn Wernqvist, a famous industrial designer
Suitable to power up medical systems up to CF class
Designed for medical home care applications 60601-1-11
Designed to meet IP21
Intelligent over temperature protection

Input

Nominal input range	100-240VAC
Voltage range	90-264VAC. 85-99V with 70% output power
Frequency	47-63Hz
Input current	0.2-0.6A
Inrush current	I peak <25A at 265 VAC at cold start. The short duration inrush current limitation is handled by a 10 Ohm NTC resistor
Input connector	C8 cable connector or exchangeable input connectors for Europe, US, UK and Australia
Leakage current	<10µA
Isolation class	Class II. Double isolation, type CF applied part
Withstand voltage	4 kVAC from input to output See user guide for details
Zero load power consumption	0.3 Watt approx

Output

Power	Up to 30W, see table
Voltage	12.0 VDC (5008) 15.0 VDC (5009) 24.0 VDC (5011)
Voltage tolerance	±5% including line, load, step load, temp coefficient, cable voltage drop, see table
Ripple and noise	Typ. 1% p-p max (20MHz BW)
Efficiency	Up to 88% @ 230VAC full load
Hold up time	8ms at 110VAC input 60Hz and 80% load
Start up time	<2s max.
Line regulation	±1% max full load
Load regulation	+100mV, -450mV for slow load change (4ms). At step load with instant change (1ms) from 0% load to 100% load: +100mV, -600mV. Tested at cable DC connector.
Overvoltage protection	Trip point approx. at 150%, shut down
Max capacitive load	47.000µF
Overcurrent protection	Trip point max 200%, auto recovery, straight current limit characteristics
Current limiting charact.	Constant current
Overtemp. protection	Yes, automatic recovery and output power limiting

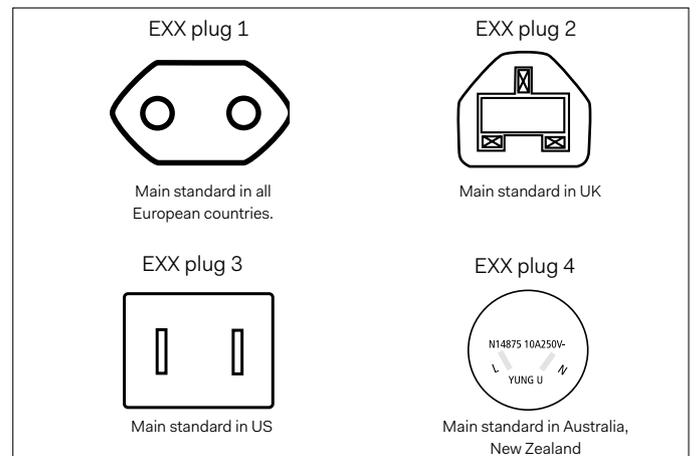


Transient response	4ms max. 1ms typical within +0mV to -300mV regulation
Temperature coefficient	Typ 0.04%/°C of Vout
Output cable	Output cable 1.8m, flexible. 1 wire cable, diameter 4mm. Internal wires AWG18 versions, cable in white colour
Output connector	Barrel plug. 2.5/5.5/9.2mm, centre plus, white colour
Recommended	Cliff type FC 68149, 5.5/2.5mm or matching DC connector FC681446 or equivalents

Environmental

Operating temperature	0°C to +40°C @ 100% load
Storage temperature	-40°C to +75°C
Humidity	5% to 95% non-condensing
Altitude	9850 ft or 3000 m above sea level with max rated output power
Environmental efficiency	Fulfilling Green Mode requirements, CEC Level V, EISA and ErP. Less than 0.3W in zero load consumption.
Home care environment	IEC60601-1-11.
Environmental compliance	RoHS, REACH and WEEE.

AC Plugs



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General

Switching frequency	80-150kHz
Acoustic noise	Less or equal to 30dB(A) at a distance of 0.3m and in frequency range 1Hz to 20kHz.
Dimensions	97 x 60 x 40 mm excluding AC plugs
Weight	Adapter including 4 exchangeable AC plugs 380g Adapter with one (UK) AC plug mounted 250g
Case	UL 94 V-0. Polycarbonate. White colour.
Mechanical type	External adaptor. To be used either as a) Wallplug with exchangeable AC plugs b) Desktop with C8 connection
Input connector/ AC plugs	IEC C8/Exchangeable AC plugs same as EXM80. a) North America, ungrounded b) Europe, ungrounded c) United Kingdom, ungrounded d) Australia & New Zealand, ungrounded
MTBF	>500.000 h at 25 C, 100% load, according to MIL-HDBK-217E
Lifetime prediction	60.000 h at 70% load and 100% duty cycle at 25°C ambient temperature
Power good	"On" indicates with blue LED
Cleaning	Use dry towel. Do not soak in water
Warranty	2 years
Mechanical prot. class	IP21 used with EXM80 original AC plugs
User guide	Packed with each unit

Standards

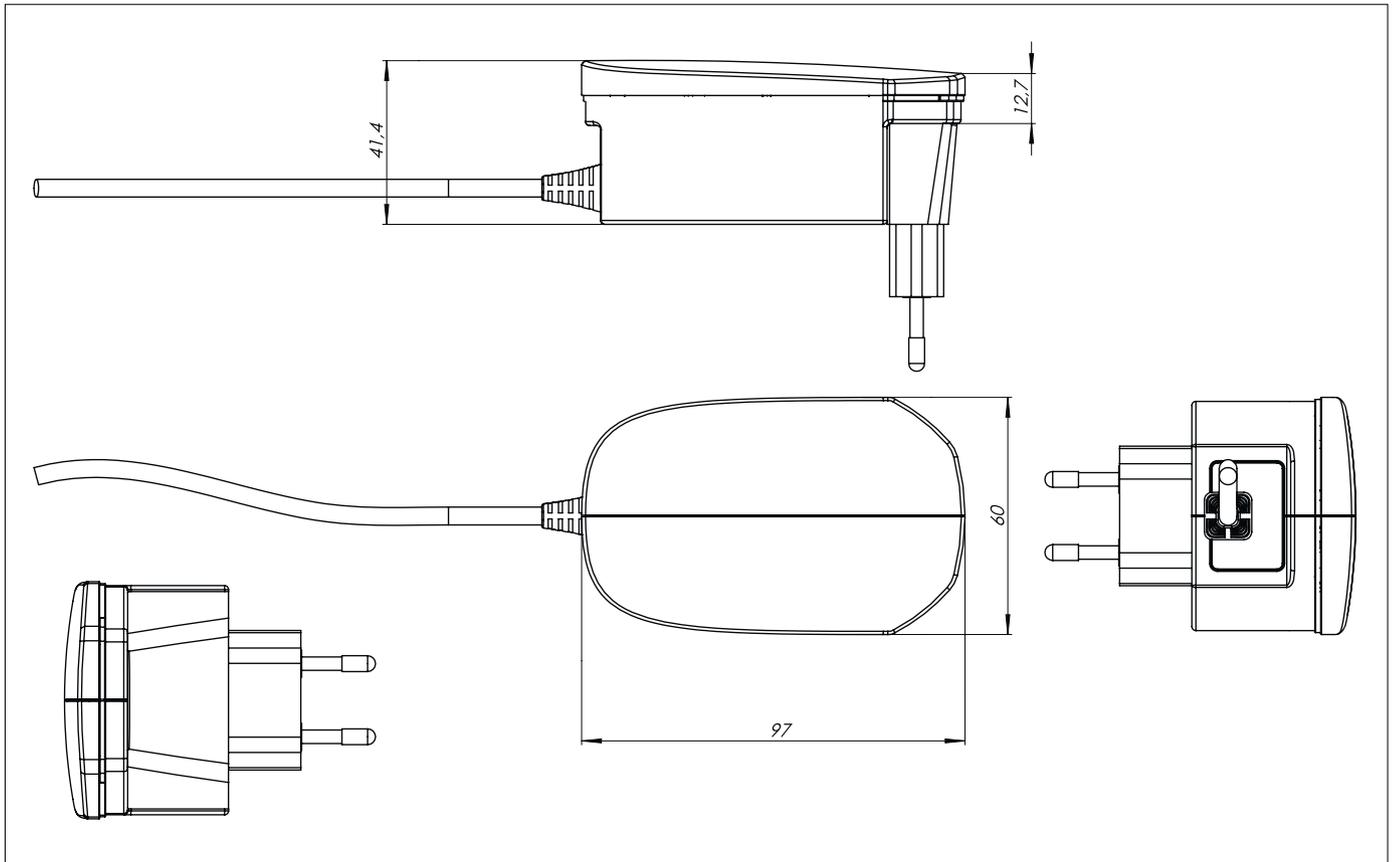
Safety standards	Approved according to IEC60601-1 Edition 3.1 including deviations for Europe, US & Canada by Intertek Semko
Safety markings	S, ETL & CE
EMC standards	IEC60601-1-2, IEC61204-3, EN55011 class B
Harmonic current	IEC61000-3-2
Voltage flicker	IEC61000-3-3
ESD susceptibility	IEC61000-4-2, ±15kV air and ±8kV contact
Radiated susceptibility	IEC61000-4-3, 3V/m. Proximity test, 9V/m and 28V/m
EFT/Burst	IEC61000-4-4, ±2kV on AC port, ±1kV on signal ports
Surge	IEC61000-4-5, ±2kV common mode, ±1kV differential mode
Conducted susceptibility	IEC61000-4-6, 10V/m
Voltage dips & interruptions	IEC61000-4-11 Dips: 100% drop, 0.5 periods 100% dip, 1 period 30% dip, 25/30 periods: Interruptions: 100% drop, 5 seconds
Environmental for home care use	IEC60601-1-11 Shock per IEC 60068-2-27 Vibration per IEC 60068-2-64

Model Number	Output Voltage	Voltage Tolerance	Continuous Output Current*	Continuous Output Power*	Peak Output Current*	Peak Output Power*	Efficiency
EXM305008	12V	11.40-12.60V	2.45A	30W	3.68A	45W	88%
EXM305009	15V	14.25-14.75V	1.98A	30W	2.96A	45W	88%
EXM305011	24V	22.80-25.20V	1.24A	30W	1.85A	45W	88%

*)
 1. At 40C ambient and 100-240VAC.
 2. Peak power of 45W max duration 10 sec per every 100 sec. (10% duty cycle).
 3. Typical voltage at zeroload 12.2 VDC (5008) 15.2 VDC (5009) 24.2 VDC (5011).

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Mechanical



Specifications are subject to change without notice.