

PR BX

POWERBOX **Medline 30**
OFM30 Series
30W
Single Output
AC/DC Medical Switch Mode Power Supply

Features

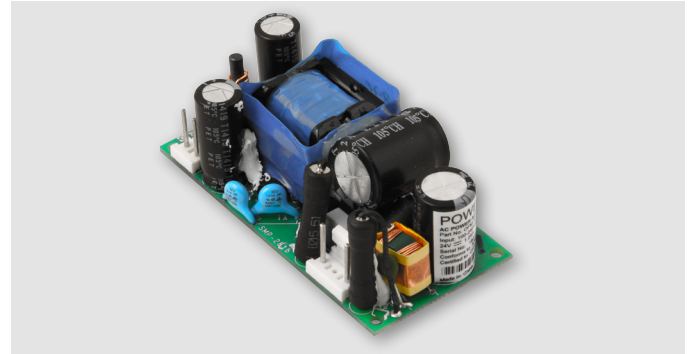
Reliable front edge fly-back design with very low component count
Peak up to 45W
Standard 1.5x3 inch footprint
Extra low leakage, less than 10 μ A
Class II double isolation and UL/IEC60601-1 medical approval
Suitable to power up medical systems up to CF class
Superior EMC performance
Intelligent over temperature protection

Input

Nominal voltage	100-240VAC.
Voltage range	90-264VAC.
Frequency	47-63Hz, sine-wave.
Input current	0.2. to 0.4A.
Leakage current	<10 μ A at nominal load and input voltage.
Inrush current	I _{peak} <35A at 265VAC.
Isolation	4000VAC, 1s input to output. 10Mohm isolation prim-sec.
Isolation class	Designed as a Class II fulfilling EMC requirements with output grounded.

Output

Voltage	12.3V (5025) 15.2V (5026) 24.1V (5028)
Power	30W at 90-240VAC input and 50°C ambient temp. Peak power capacity of max 45W. See table.
Efficiency	Up to 88% .
Hold up time	40ms at 230VAC. 20ms at 115VAC.
Start up time	>2 sec.
Line regulation	\pm 1%.
Load regulation	\pm 1%, 10-90% load change.
Voltage adjustment	Not customer adjustable.
Current adjustment	No.
Voltage tolerance	\pm 2.5% including line, load, step load, temp coefficient, see table.
Ripple and noise	Max 1% p-p, 0-20 MHz.
Transient response	Max 2.5% deviation for a 25% load change at 1A/1 μ s. Output returns to 1% regulation within 100 μ s.
Overcurrent protection	Trip point max 200%, auto recovery, hiccup mode, straight current limit characteristics.
Current limiting charact.	Constant current.
Overvoltage protection	Trip point approx. at 120%, shut down.
Max capacitive load	47.000 μ F.
Remote sense	No.
Overtemp. protection	Yes, automatic recovery and output power limiting by gracefully decline.



Environmental

Operating temperature	0°C to 50°C at 100% load. -10°C to 70°C at 50% load. -40°C start up with increased output ripple.
Storage temperature	-40°C to +75°C.
Humidity	10% to 95% non-condensing.
Altitude	Rated for use at 70kPa corresponding to 3000m with forced air 6.6CFM.
Derating	Automatically derating linearly to 50% power at 70°C controlled by internal over temperature protection.
Cooling	Convection.
Environmental compliance	RoHs, REACH and WEEE.
Operating vibration	2-200Hz, 0.27G, sweep cycle 10 time, 3 min ea. Direction X,Y,Z.
Non-operation vibration	2-200Hz, 1.0G, sweep cycle 10 time, 3 min ea. Direction X,Y,Z.
Shock	20G, 3 shocks on each axis, no damage to be sustained.
Environmental efficiency	Fulfilling Green Mode requirements from IEC60950-1, CEC Level V, EISA and ErP. Less than 0.3 Watts in zero load consumption.
CB report IEC60601-1 edition 3	Registered under Powerbox. Performed by ETL/Intertek Semko.

General

Switching frequency	100-300 kHz.
MTBF	>500.000 h at 25°C, 100% load, according to MIL-HDBK-217E.
Lifetime expectation	Min 80.000 h at 230VAC 50% load and 100% duty cycle at 35°C average ambient temperature.
Component count	Approx. 65.
Acoustic noise	Less or equal to 30dB(A) at a distance of 0.3m and in frequency range 1Hz to 20kHz.
Input connector	AMP 640 388-3.
Output connector	AMP 650 388-2.
Weight	< 80g.
Dimensions	75,5mm x 37,3mm x 25mm, 3 x 1.5 x 0.9 inch.

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Carton box	90pcs/box.
Export pallet	2880pcs/pallet.
Mounting	Holes size and distance between: 70mm x 32 mm, see drawing.
Mechanical type	Open frame.
Parallel operation	Yes without additional components. Automatic load sharing through the integrated temperature protection (approx. 80% load sharing) N+1.

Standards

Safety standards	Approved according to IEC 60601-1 ed.3 and CB's by ETL Intertek.
Safety markings	CE, ETL, (sUL pending).
EMC/EMI standards	IEC60601-1-2 ed. 3, IEC55011 B, IEC61204-3.
Harmonic current emiss.	IEC61000-3-2 class A with 0.5 Ohm equivalent mains source impedance.
Voltage fluct. and flicker	IEC61000-3-3.
ESD susceptibility	IEC61000-4-2, ±6kV contact, ±8kV air.
Radiated susceptibility	IEC61000-4-3, 3V/m.

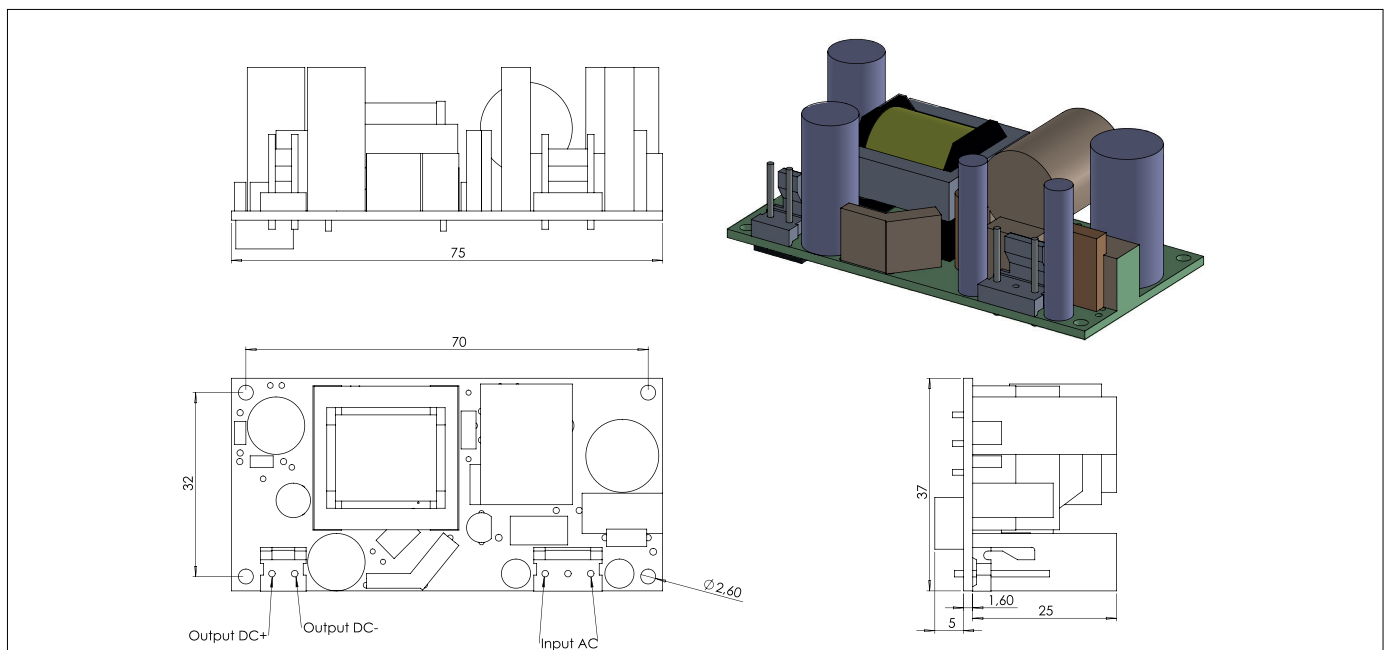
EFT/Burst	IEC61000-4-4, ±2kV on AC port, ±1kV on signal ports.
Surge	IEC61000-4-5, ±2kV common mode, ±1kV differential mode.
Conducted susceptibility	IEC61000-4-6, 3V/m.
Power freq. magnetic field	IEC61000-4-8, 3A/m.
Dips and interruptions	IEC61000-4-11, 30% 500ms, 60% 100ms, 95% 5sec. Performance criteria A,A, B. PRBX: measure at nominal input voltage. Test is performed by interrupting/dropping the AC input anytime at the sinewave AC input curve. At 100VAC input voltage then drops to/during: Test 1: 70VAC for 500ms – performance criteria A. Test 2: 40VAC for 100ms – At 30% load performance criteria A. At higher load the out voltage decreases and output ripple increases. Test 3: 5VAC for 5 seconds – Performance criteria B, output interrupted but no damage to the unit.

Model Number	Output Voltage	Voltage Tolerance	Continuous Output Current*	Continuous Output Power Convection*	Peak Output Current*	Peak Output Power*	Efficiency
OFM305025	12V	12.00-12.60V	2.5 A	30W	3.75A	45W	85.5%
OFM305026	15V	14.85-15.55V	2.0 A	30W	3A	45W	88%
OFM305028	24V	23.50-24.70V	1.25A	30W	1.875A	45W	88%

*)
a) Definition of free convection cooling and 50°C ambient: OFM30 mounted vertically with 10mm distances.
b) Continuous output power at 50°C ambient and 90-240VAC convection cooling.

c) Peak power at 100-240VAC max duration 10 sec per every 100 sec (10% duty cycle) convection cooling.

Mechanical



Specifications are subject to change without notice.