ENERSINE

ENERGY CONVERSION SAFETY

MEDICAL DOUBLE CONVERSION ON-LINE UPS

ERGON-MED SERIES

Power: 400W to 4050W

…compliant to EN60601-1 3° Ed. & EN60601-1-2 MEDICAL NORMS

Exclusive MEDICAL ups featuring ON-LINE technology for medical devices total safety and protection.

Current health-care provides rapid diagnosis and patient treatments conditions through a substantial confidence on impeccable and precise performances through sophisticated technology based equipment.
Highly developed devices such as clinical analyzers, imaging systems, patient monitoring, cardiac devices, laser surgical equipment and other sensitive electronic systems are all extremely susceptible to damages and interferences caused by power quality problems.
When that happens, correct, precise and accurate diagnosis and treatments are quite impossible.

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Enersine **ERGON-MED** line are exclusive professional ups totally dedicated to supply critical medical devices where mains interruptions can generate inconveniences during special treatments.

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A unique project and development allows ERGON-MED to be a top-quality medical ups with the following key safety features:

- **Two medical toroidal transformers** studied to grant load connected real safety possible through a double galvanic isolation, 6000V from mains and 4000V from unit output
- **Electrostatic shield** to reduce electrostatic charges coming from the mains
- Electronic section in **low voltage** design for operator's high safety
- Medical filters
- In **By-pass mode** functioning galvanic isolation is maintained in order to avoid the load direct connection with the mains.

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Dedicated battery chargers studied to keep the battery efficiency at maximum levels, allow the possibility to increase back-up times on customer requirements.

The battery pack choice is focused on high performances batteries with minimum 10 years expected life design. The efficiency is controlled through an automatic or manual battery test.

User-friendly frontal panel with a blue LCD display and LED with unit main status allows an easy control of the unit functioning.

The ERGON-MED range is available in models from 400W to 4050W in 1/1ph version.

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MAIN FEATURES

ON LINE TECHNOLOGY

The choice of an ON-LINE technology allows continuity to the load without switching times if a black-out condition may occur. It provides filtered current from mains disturbs.

MAINS ISOLATION

Double insulation toroidal transformers to provide total protection to the load.
6000V input and 4000V output galvanic insulation to allow high protection to the unit electronic section as well.

ELECTROSTATIC PROTECTION

Maximum protection against electrostatic charges coming from the mains

LOW VOLTAGE ELECTRONIC

Key feature in order to safeguard dedicated personnel during unit functioning.
No high voltages into the electronic section.

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MAIN FEATURES

MEDICAL FILTERS

Customized medical RFI filters specifically projected on the ups requirements in order to reduce input and output disturbs.

ISOLATED BY-PASS MODE FUNCTIONING

In by-pass modality 6000V of galvanic isolation is maintained in order to avoid the load direct connection with the mains.

FAST BATTERY CHARGER

Special battery chargers on board the ups are studied to keep the battery efficiency at maximum levels and to allow the possibility to increase back-up times on customer requirements.

BATTERY EFFICIENCY CONTROL

The batteries status can be easily monitored all the time is needed through a black button on the system frontal panel.
However each unit has its own cyclic automatic test for a periodical check.

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MAIN FEATURES

10 YEARS BATTERY DESIGN

Hermetic lead batteries with 99% gas recombination. 10 year expected life design.

ISOLATION CONTROLLER

Each unit can be provided with an isolation controller device on board to keep under control the system isolation when an IT regime is required.

UNIT MONITORING

LED on the frontal panel for easy functions monitoring.
Blue LCD display with V+
I output details.
Remote free contacts to remote positioning control

SPECIAL MECHANICAL TREATMENTS

TROPICALIZATION
dedicated boards treatment to protect against high humidity and strong temperatures
VIBRATION
mechanical treatment with a very special fixing paste against vibrations

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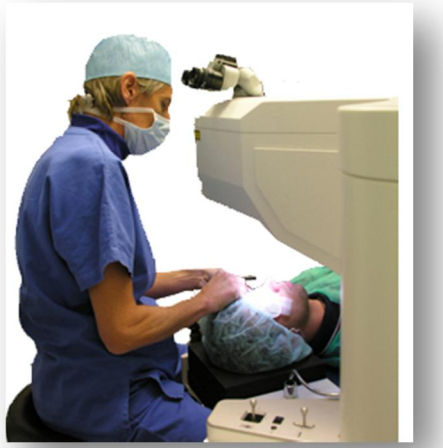
APPLICATIONS

OPERATING ROOMS

BLOOD MANAGEMENT SYSTEMS

LASER DEVICES



ROBOTIC THEATRES

BABIES INCUBATORS

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VERSIONS

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FLOOR DESIGN simple but elegant…

from 400W to 6300W power can be built inside a floor design.

Different back-up time can be managed on customer requirements.

SMALL FLOOR version

Compact version with 400W power, suitable also for portable trolleys

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VERSIONS

RACK DESIGN industrial solution

from 450W to 3000W power

Industrial versions to be integrated into rack cabinet

CUSTOMIZED TROLLEY VERSIONS

WALL-MOUNTED DESIGN always very useful

from 450W to 3000W power

Wall version to safe space on the floor and possibility to be integrated into portable trolleys

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GENERAL DATAS				
MODELS	**ERGON-MED 2**	**ERGON-MED 4**	**ERGON-MED 6**	**ERGON-MED 9**
Output current with linear load	1.9A	3.9A	5.8A	9.1A
Nominal power	450W	900W	1350W	2100W
Peak power for 5 sec.	800W	1400W	2200W	3200W
TECHNOLOGY				
On-line	On-line double conversion with PWM microprocessor			
Inverter	Low voltage			
Switching time	zero			
Inverter efficiency	> 82%			
ENVIRONMENTAL CONDITIONS				
Stocking temperature	-10°C to +60°C			
Working temperature	0°C to +40°C			
Noise at 1m. distance	27dB	32dB		
SIGNALLINGS				
Optical and acoustic	Mains on, battery mode, battery low, danger temperature, over temperature, overload, by-pass mode, insulation fault, battery test			
Remote contacts	Remote on/off, Mains failure, Battery low, GENERAL ALARM (danger temperature, stop temperature, overload/short circuit, insulation fault (if present), battery test)			
CABINET				
Tower version	243X585X482h			
Weight	30	38	49	65

INPUT DATAS				
MODELS	**ERGON-MED 2**	**ERGON-MED 4**	**ERGON-MED 6**	**ERGON-MED 9**
Voltage	230Vac single-phase +/-10%			
Frequency	50Hz +/-5% (max speed 0,5Hz sec.)			
Mains isolation	6000V of galvanic isolation through toroidal transformer with electrostatic shield between primary and secondary winding.			
Protections	Input circuit breaker 6A	Input circuit breaker 10A		Input circuit breaker 16A
Connections	Integrated schuko cable			
Limit-in	On board			

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OUTPUT DATAS				
MODELS	**ERGON-MED 2**	**ERGON-MED 4**	**ERGON-MED 6**	**ERGON-MED 9**
Voltage	230Vac single-phase			
Frequency	50Hz +/- 0,01% (mains phased)			
Load isolation	4000V of galvanic isolation through toroidal transformer			
Sine wave	Microprocessor generated pure sine wave			
Soft-start	On board			
Connections	Nr. 1 multistandard socket			
Electrical protection	30mA Earth leakage switch (insulation controller + output breaker on request)			
Electronic protection	Overload – short circuit			
Linear load distorsion	< 5%			
Non linear load distortion	< 8%			
Static voltage variation	< 1%			
Dynamic voltafe variation	+/- 3%			
BY-PASS	Static switch by-pass connected to the input toroidal transformer with galvanic isolation			

BATTERY SECTION DATAS				
MODELS	**ERGON-MED 2**	**ERGON-MED 4**	**ERGON-MED 6**	**ERGON-MED 9**
Voltage	24V	48V		
Battery type	Hermetic pure lead batteries			
Batteries capacity	2 x 12V 9Ah	4 x 12V 9Ah		8 x 12V 9Ah
Expected life time	10 years			
Battery fuses	32AT			80AT
Max recharging current	0.6A	1.2A		1.8A
Back-up time 70% load	20 minutes	20 minutes	12 minutes	15 minutes

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GENERAL DATAS			
MODELS	**ERGON-MED 12**	**ERGON-MED 15**	**ERGON-MED 18**
Peak power for 5 sec.	4000W	5500W	6000W
Nominal power	3000W	3375W	4050W
Output current with linear load	13A	14.6A	17,6A
TECHNOLOGY			
On-line	On-line double conversion with PWM microprocessor		
Inverter	Low voltage		
Switching time	zero		
Inverter efficiency	> 82%		
ENVIRONMENTAL CONDITIONS			
Stocking temperature	-10°C a +60°C		
Working temperature	0°C a +40°C		
Noise at 1m. distance	32dB	37dB	
SIGNALLINGS			
Optical and acoustic	Mains on, battery mode, battery low, danger temperature, over temperature, overload, by-pass mode, insulation fault, battery test		
Remote contacts	Remote on/off, Mains failure, Battery low, GENERAL ALARM (danger temperature, stop temperature, overload/short circuit, insulation fault (if present), battery test)		
CABINET			
Tower version	243X585X482h	355x782+52x724h	
Weight	86	74+55	84+72

INPUT DATAS			
MODELS	**ERGON-MED 12**	**ERGON-MED 15**	**ERGON-MED 18**
Voltage	230Vac single-phase +/-10%		
Frequency	50Hz +/-5% (max speed 0,5Hz sec.)		
Mains isolation	6000V of galvanic isolation through toroidal transformer with electrostatic shield between primary and secondary winding.		
Protections	Input circuit breaker 16A	Input circuit breaker 20A	Input circuit breaker 25A
Connections	Integrated Schuko cable	Terminal block	
Limit-in board	On board		

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OUTPUT DATAS			
MODELS	**ERGON-MED 12**	**ERGON-MED 15**	**ERGON-MED 18**
Voltage	230Vac single-phase		
Frequency	50Hz +/- 0,01% (mains phased)		
Load isolation	4000V of galvanic isolation through toroidal transformer		
Sine wave	Microprocessor generated pure sine wave		
Soft-start	On board		
Connections	1 Multistandard socket	Terminal block	
Electrical protection	30mA Earth leakage switch (insulation controller + output breaker on request)		
Electronic protection	Overload – short circuit		
Linear load distorsion	< 5%		
Non linear load distortion	< 8%		
Static voltage variation	< 1%		
Dynamic voltafe variation	+/- 3%		
BY-PASS	Static switch by-pass connected to the input toroidal transformer with galvanic isolation		

BATTERY SECTION DATAS			
MODELLO	**ERGON-MED 12**	**ERGON-MED 15**	**ERGON-MED 18**
Voltage	48V		
Battery type	Hermetic pure lead batteries		
Batteries capacity	8 x 12V 9Ah	4 x 12V 24Ah	4 x 12V 33Ah
Expected life time	10 years		
Battery fuses	22x58 80AT	22x58 100AT	22x58 100AT
Max recharging current	1.8A	5.5A	5.5A
Back-up time 70% load	8 minutes	12 minutes	12 minutes

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