



EN

Uninterruptible Power Supply  
TRIMOD®

UPS

## **TRIMOD® , excellence in UPS technology.**

TRIMOD®, is a Meta System's unique UPS with power range from 8 to 60 kVA that can adapt immediately to the changing needs of the load it protects offering more power, longer autonomy and the utmost reliability. Thanks to its revolutionary conception, TRIMOD® is the first UPS able to offer today's three forefront technologies in one single system - modularity, scalability and redundancy – that make it the best choice for the protection of business continuity while assuring reduced investment and management costs.

TRIMOD® is a totally modular UPS whose basic module can be programmed individually so as to obtain the required input/output configuration. This means that three-phase or single-phase voltage values can be handled on the input and output to get the standard three/three, three/single, single/three and single/single combinations as needed. This is not all: the UPS can provide single-phase and three-phase lines at the same time, or two or more single-phase lines of even different power ratings on the output (on request).

Thanks to its great flexibility it is possible to customise TRIMOD® according to the current needs, avoiding to oversize the investment in UPS and the resulting power consumption. The step-by-step modular architecture allows to buy only the necessary power and to upgrade subsequently, upon real need, even after years. TRIMOD® offers the highest levels of reliability thanks to the redundancy of its modules. Redundancy for each configuration can be both complete and partial, i.e. it is possible to obtain it both at total output and single output lines levels. All basic modules have a microcontroller that supervises the main functions of the individual power unit, monitors the module to ensure that it functions correctly and warns in case of fault. The concept of modularity is also applied to the batteries, which are supplied in individual removable drawers. Other key features include: THDi = 3% - Power Factor > 0,99 - High Efficiency - Highly Reliable – Easy to install - Several customized services.

**MODULAR**  
**REDUNDANT**  
**SCALABLE**  
**ADAPTABLE**

**UPS**  
MetaSystem



DESIGNED, ENGINEERED  
AND MANUFACTURED  
IN ITALY

**META**  
SYSTEM

energy & savings

**TRIMOD** Energy and Savings in your hands

# TRIMOD®



The 8/10 kVA TRIMOD® is made up of three 2.7/3.4 kVA power modules and can accommodate up to 12 battery drawers. Extra battery cabinets can be connected for long backup times.



The 16/20 kVA TRIMOD® is made up of six 2.7/3.4 kVA power modules and can accommodate up to 8 battery drawers. Extra battery cabinets can be connected for long backup times.



The 30 kVA TRIMOD® up of one power cabinet, which houses nine 3.4 kVA power modules, and one battery cabinet. Additional battery cabinets can be connected for long backup times.

## Redundant/Modular Architecture

Redundant-modular architecture is the best solution for critical applications and company's business continuity.

### ADVANTAGES:

- Modular expandability
- Redundant modules
- Easy maintenance
- Small Footprint

## Efficiency

The TRIMOD® UPS pay particular attention to both the energy absorbed from the mains and the power supplied to the load. High Efficiency (Online Mode: up to 95%; Eco Mode up to 99%), Input PF >0.99, THDi 3%.

### ADVANTAGES:

- Increased efficiency means reduced power losses and heat emission to the surrounding environment.
- Reduced heat emission means limited cost for ventilation and air conditioning systems in the installation site.
- High input PF means no cost of a further power factor correction and no increase of electricity costs.
- No need to oversize Genset (if any) connected at the input of the UPS.

## Scalability

The majority of the UPS available on the market are not modular and cannot be expanded. This means that the system must be oversized since the very beginning to allow future upgrades of the load. On the contrary, the TRIMOD® modular system is scalable.

### ADVANTAGES:

- Investments are optimized. TRIMOD® adapts itself to the real needs of the load without precluding future upgrades.
- No energy losses caused by unnecessary oversizing.
- The efficiency of the systems is increased thanks to the correct power sizing.

## Reliability

Normally, at least two UPS set in parallel are needed to obtain a level of redundancy with a traditional UPS, thus doubling the power size, the footprint and the electricity consumptions.

TRIMOD® modular architecture provides redundant configurations in a single cabinet.

### ADVANTAGES:

- The UPS with modular redundant architecture can be configured as a power redundant N+X system.
- Clear indications on the display and the modular architecture speeds up repairs and maintenance: the faulty module can be just replaced without downtimes.

# TRIMOD®



The 45 kVA TRIMOD® is made up of one power cabinet, which houses nine 5 kVA power modules, and one battery cabinet. Additional battery cabinets can be connected for long backup times.



The 60 kVA TRIMOD® is made up of one power cabinet, which houses twelve 5 kVA power modules, and one battery cabinet. Additional battery cabinets can be connected for long backup times.

## Power Module



The basic module, available in three power sizes, i.e. 2.7 kVA, 3.4 kVA and 5.0 kVA includes: *Control and monitoring board, Rectifier/PFC, Inverter, Booster, Battery Charger and Automatic by-pass.* The power unit has been designed with a Plug & Play concept that makes power expansions and maintenance operations extremely simple. Each module is connected in parallel with other identical modules up to the requested power. Power modules are independent from each other and can keep on working even if one of them should get faulty. A quick identification of the working status is made available thanks to a traffic-light coding led in the front side of the module.

## Battery "Drawer"



Battery modules are designed for an easy installation into the dedicated cabinet, thanks to a Plug & Play connection. The limited weight of the battery drawers makes easy the transport, the maintenance and the replacement. A drawer consists of five 12V batteries - 7.2 Ah or 9 Ah – connected in series. To guarantee the highest safety degree, especially during maintenance, each drawer's voltage is properly divided into two sections (24V and 36V), and the series string is fully connected when the drawers have been all introduced into their housing. This ensures compliance with CEI-EN 60950, the standard for electrical safety. Runtime can be increased by adding, in parallel, further four battery drawers.

## Digital Display and Alarm Visualizing



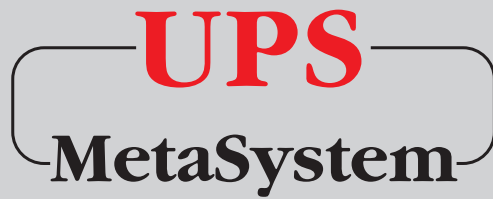
TRIMOD® is controlled by a microprocessor and is equipped with a backlit LCD. The front panel includes a display and an operating status indicator. Four simple buttons situated near the display allow the user to: *display the operating data, set up the operating parameters, analyze the status of each power module, select the language in which messages are displayed, execute a functional test.*

# TECHNICAL SPECIFICATIONS

MODELS	TRIMOD 8	TRIMOD 10	TRIMOD 16	TRIMOD 20
<b>General Specifications</b>				
Nominal Power	8 kVA	10 kVA	16 kVA	20 kVA
Active Power	6,4 KW	8 KW	12,8 KW	16 KW
Technology	Online, Double Conversion (VFI)			
Input/Output Configuration	<b>3/3, 3/1, 1/3, 1/1</b> (user selectable during installation)			
UPS Architecture	Modular, Scalable, Redundant N+X with 2700 and 3400 VA power modules, housed in only one cabinet			
<b>Input</b>				
Input Voltage	230 V (Single-phase) / 400 V (Three-phase+ N)			
Input Voltage Range	230 V +15% -20% / 400 V +15% -20%			
Input Current THD	3%			
Input Power Factor	>0,99			
Input Frequency	50 Hz / 60 Hz (Autosensing)			
<b>Output</b>				
Output Voltage	230 V +/- 1% / 400 V +/- 1%			
Output Frequency	50 Hz / 60 Hz			
Wave Form	Sinusoidal			
Crest Factor	3,5:1			
<b>Efficiency</b>				
on mains (AC/AC online)	up to 95%			
on mains (AC/AC ECO Mode)	up to 99%			
Overload Capacity	125% for 2 min. - 150% for 30 secs.			
<b>Batteries</b>				
Runtime	Scalable internally or with external battery cabinet			
<b>Special Features</b>				
Bypass	Static and electromechanical on each module, independent of each other			
	General automatic			
	Manual (maintenance)			
Signals and Alarms	Wide backlit 4-line, 20 characters, alphanumeric display with real-time monitoring of UPS status, multicolour status indicator, acoustic warning			
Communication Ports	N. 2 RS232 ports, N. 1 Logic level port, N. 4 Dry contacts ports (relay contacts, NC/NO selectable), N.1 Slot for SNMP adapter connection			
Software	UPS Communicator (free-of-charge download from our website <a href="http://www.metasystem.it">www.metasystem.it</a> )			
Protection	Electronic protection against overloads, short circuits and excessive battery discharge. Operation blocked at end of runtime. Inrush limitation when switching on. EPO contact (emergency power off)			
Input/Output Connectivity	Terminal board on Omega bar			
Isolation Transformer	Optional			
<b>Mechanical Specifications</b>				
Installed Power Modules	3 x 2,7 kVA	3 x 3,4 kVA	6 x 2,7 kVA	6 x 3,4 kVA
Installed Battery Drawers	Subject to selected runtime			
Net Weight (without battery)	110 Kg	110 Kg	130 Kg	130 Kg
Dimensions (W x H x D)	414 x 1345 x 628 mm			
<b>Environmental Specification</b>				
Working Temperature	0° - 40° C			
Relative Humidity	20% - 80% non condensing			
Acoustic Noise @ 1 m	42 - 46 dBA			
<b>Standards</b>				
Standards	EN 62040-1-1, EN 62040-2, EN 62040-3			

# TECHNICAL SPECIFICATIONS

MODELS	TRIMOD 30	TRIMOD 45	TRIMOD 60
<b>General Specifications</b>			
Nominal Power	30 kVA	45 kVA	60 kVA
Active Power	24 KW	36 KW	48 KW
Technology	Online, Double Conversion (VFI)		
Input/Output Configuration	<b>3/3</b>		
UPS Architecture	Modular, Scalable, Redundant N+X with 3400 and 5000 VA power modules, housed in only one cabinet		
<b>Input</b>			
Input Voltage	400 V (Three-phase+ N)		
Input Voltage Range	400 V +15% -20%		
Input Current THD	3%		
Input Power Factor	>0,99		
Input Frequency	50 Hz / 60 Hz (Autosensing)		
<b>Output</b>			
Output Voltage	400 V +/-1%		
Output Frequency	50 Hz / 60 Hz		
Wave Form	Sinusoidal		
Crest Factor	3,5:1		
<b>Efficiency</b>			
on mains (AC/AC online)	up to 95%		
on mains (AC/AC ECO Mode)	up to 99%		
Overload Capacity	125% for 2 min. - 150% for 30 secs.		
<b>Batteries</b>			
Runtime	Scalable internally or with external battery cabinet		
<b>Special Features</b>			
Bypass	Static and electromechanical on each module, independent of each other		
	General automatic		
	Manual (maintenance)		
Signals and Alarms	Wide backlit 4-line, 20 characters, alphanumeric display with real-time monitoring of UPS status, multicolour status indicator, scoustic warning		
Communication Ports	N. 2 RS232 ports, N. 1 Logic level port, N. 4 Dry contacts ports (relay contacts, NC/NO selectable), N.1 Slot for SNMP adapter connection		
Software	UPS Communicator (free-of-charge download from our website <a href="http://www.metasystem.it">www.metasystem.it</a> )		
Protection	Electronic protection against overloads, short circuits and excessive battery discharge. Operation blocked at end of runtime. Inrush limitation when switching on. EPO contact (emergency power off)		
Input/Output Connectivity	Terminal board on Omega bar		
Isolation Transformer	Optional		
<b>Mechanical Specifications</b>			
Installed Power Modules	9 x 3,4 kVA	9 x 5 kVA	12 x 5 kVA
Installed Battery Drawers	Subject to selected runtime		
Net Weight (without battery)	154 - 70 Kg	165 - 75 Kg	194 - 75 Kg
Dimensions (W x H x D)	2x 414 x 1345 x 628 mm	2 x 414 x 1645 x 628 mm	
<b>Environmental Specification</b>			
Working Temperature	0° - 40° C		
Relative Humidity	20% - 80% non condensing		
Acoustic Noise @ 1 m	42 - 46 dBA		
<b>Standards</b>			
Standards	EN 62040-1-1, EN 62040-2, EN 62040-3		



Data and technical specifications may be changed without notice.



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