

# Modular UPS system

## MHD Modular

MHD Modular is a scalable single phase or three-phase double-conversion UPS and can be configured to a capacity of 4-24kVA with maximum 6 modules. It can be configured to parallel redundancy which provides the maximum reliability. And delivers power output per modules from 4kVA to 24 kVA.

Each UPS system includes maximum six UPS modules that each module is operating independently. If any one UPS module fails, the load is instantaneously redistributed among the remaining modules and the defective UPS module is automatically taken off-line from the system.



### ■ Details



Retrofit expansion of the system is possible

Additional modules can be installed to the MHD Modular during normal operation without much time and effort. This hot swappable method provides subsequent extension of the UPS system without any disturbance of normal operation of the users, so this system provides saving of costs.

Also the possibility to change defective modules during normal operation without any disturbance of the users leads to more saving of costs.

### Options for extended communication and maximum availability:

- SNMP/web or relay card for monitoring in network environments
- Additional battery modules to provide an uninterruptible power supply for up to several hours
- External manual bypass for planned UPS maintenance work or replacement of the UPS unit without shutting it down
- Extended warranty arrangements
- Customer-oriented individual service and maintenance contracts

## ■ Characteristics

- UPS-classification VFI-SS-111 (IEC 62040-3)
- Online double conversion
- Modular design
- Scalable capacity in 4kVA steps up to 24kVA
- 1 or 3 phase input
- Hot swappable modules
- Sinewave output
- Digital signalprocessor
- Clearly arranged LCD display
- Modular battery extension
- Optionally incl. BACS battery management
- Compact design
- Little weight
- RS232, RS485 and expansion slots
- 24 months' warranty

## ■ Specifications

MHD Modular		4-24 kVA
Power	Power in kVA	4-24
	Power in kW	2,8-16,8
	Power per module	4 kVA / 2,8 kW
Autonomy time	MHD Modular UPS system	Can be configured to suit size and number of modules
Technology	Online double conversion	n+x technology scalable / VFI-SS-111 in accordance with IEC 62040-3
Phase	Input / Output	1-phase / 1-phase or 3-phase / 1-phase
Input	Nominal voltage	230 VAC (1/N/PE) or 400 / 230 VAC (3/N/PE)
	Input voltage range	160 - 300 VAC (1-phase) or 277 - 520 VAC (3-phase)
	Input frequency range	50/60 Hz ± 4%
Output	Output voltage	220/230/240 VAC (adjustable)
	Voltage Regulation	± 2%
	Power factor	0,7
	Frequency Range	50 Hz / 60 Hz ± 0,2 Hz
	Transfer time	none
	Overload Capability (Line Mode)	< 125%: 30 sec. / < 130%: 2 sec.
	Voltage form	sine wave
Efficiency	AC-AC	88%
Battery	Type	Maintenance free lead-acid battery
	Life time	10 years
	Charging current (max)	3,5 A per module
	Recharging time	depending on the number of modules and battery capacity
Communication	Interface	RS232, RS485
	Communication cards	Optional relay contacts or SNMP card
	Slot for communication cards	1
Dimensions / Weight	Display	LC-Display
	Dimensions UPS (H x W x D in mm)	965 x 442 x 700
	Weight UPS (without modules and accumulators)	75 kg
	Weight UPS module 4 kVA	15 kg
	Dimensions battery cabinet with standard configuration (H x W x D in mm)	965 x 442 x 700
Terminals	Protection	IP 20 (optionally higher protection class possible)
	Input	Fixed connection on terminals
	Output	Fixed connection on terminals
Environmental conditions	Temperature	0°C – 40°C, 20°C recommended
	Humidity	0-90 % RH @ 0- 40°C (non condensing)
	Acoustic Noise	< 62 dB (A)
Safety / Enclosure	Safety	EN 62040-1
	EMC	EN 62040-2, class C3
	Certifications	CE