

# MHD Modular



## Online double-conversion 4-24kVA

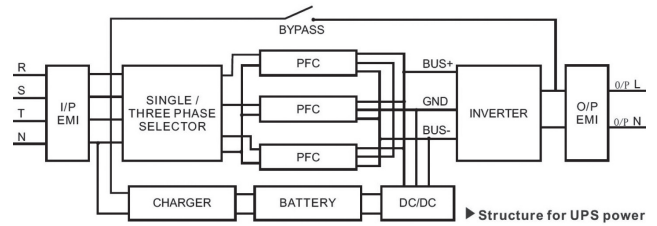
MHD Modular is a scalable single phase or three-phase double-conversion UPS and can be configured to a capacity of 4kVA, 8kVA, 12kVA, 16kVA, 20kVA, 24kVA with maximum 6 modules. It can be configured to parallel redundancy which provides the maximum reliability. And delivers power output per modules from 4kVA to 24 kVA.

The MHD Modular is scalable in the capacity between 4-24kVA as well as scalable in autonomy time with additional external battery cabinets, or it can be configured for a N+X parallel redundancy as well..

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. Maintenance personnel can easily change the defective module during normal operation without disturbing the reliability.

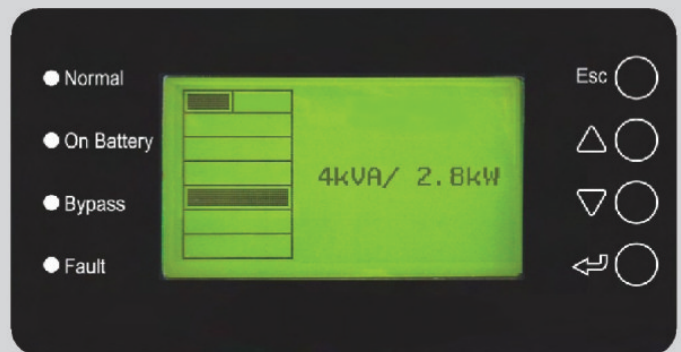
- UPS-classification VFI-SS-111 (IEC 62040-3)
- Online double-conversion
- Modular design
- Scalable capacity in 4kVA steps up to 24kVA
- 1- or 3-phase input
- Hot swappable modules
- Sinewave output
- Digital signalprocessor
- Clearly arranged LCD display
- Modular battery extension
- Optionally incl.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

The 4kVA-modules of EFFEKTA® MHD Modular provide advanced UPS technology with high operating efficiency. The System absolutely prevents power failures, power sags, surges, brownouts, line noise, spikes, frequency variations switching transients and harmonic distortion.

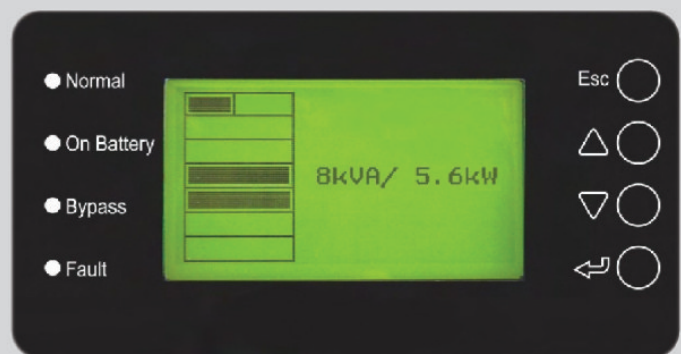


With its fast DSP-controller (Digital Signal Processing) it offers a highend sinewave-quality and high performance in controlling input & output.

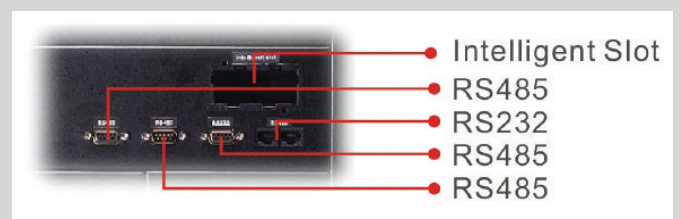
The display of MHD Modular shows all important UPS informations in a userfriendly way. The backlight improves the readability. All important messages concerning the configuration and diagnosis as well as controls and management of the UPS can be seen at a glance.



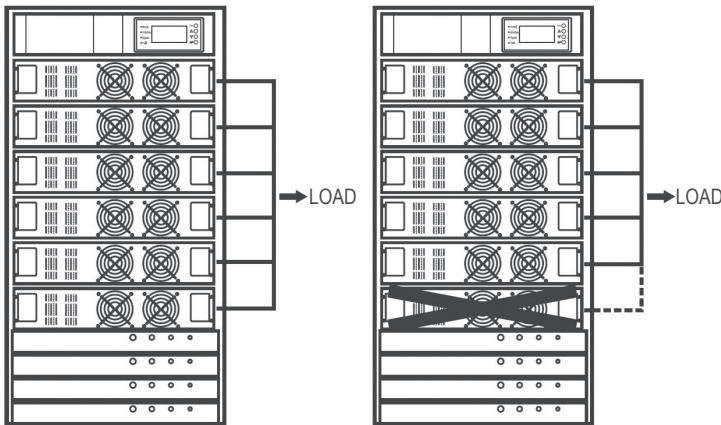
You can watch all data like input and output voltage, frequency, connection data, position and and actual state of the modules. The facility of inspection is provided by additional LEDs for informations about most impoertant state of operation like „normal“, „on battery“, „bypass“ and „fault“.



Also the MHD Modular provides communication ports for remote monitoring via EDP. Standard are a RS232 and RS485 port at ther rear of the UPS. Additionally the intelligent slot provides more options for EDP or other monitoring functions for your UPS management. Amongst others SNMP-/WEB adapters or relais cards could be used.



# MHD Modular

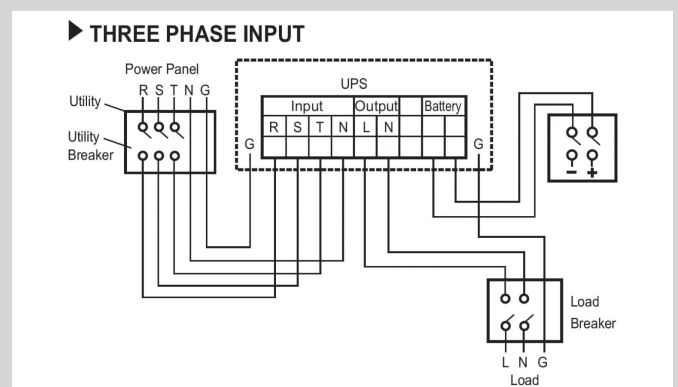
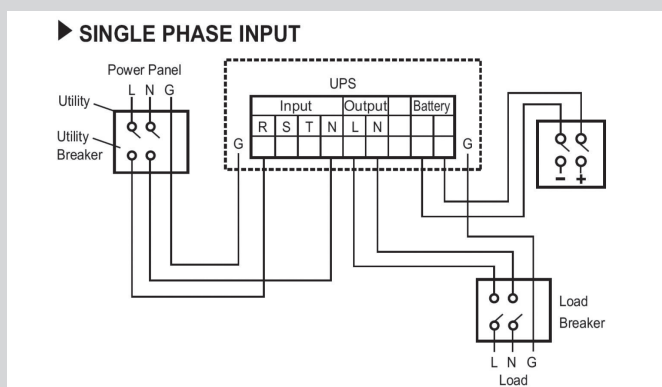
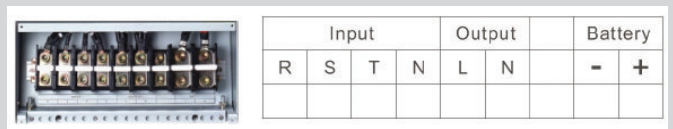


The MHD Modular is a scalable online double-conversion UPS and with up to 6 modules it can be configured to 4kVA, 8kVA, 12kVA, 16kVA, 20kVA and 24kVA.

One of the most important advantages of the modular and redundant design is the improved safety and reliability. If the MHD Modular is configured to N+X parallel-redundancy, the load is instantaneously redistributed among the remaining modules. Because each module is a separately operating device, there is no central control system that could be damaged, so this also increases the safety.

The MHD Modular has got hardwired outputs with one phase and can be used with one or three phase inputs alternatively. In case of operating with three phases, each of them is monitored by the UPS.

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.



# Specifications

Number of modules-capacity	1 Module	2 Modules	3 Modules	4 Modules	5 Modules	6 Modules
4kVA	N	N+1 (4kVA)	N+2 (8kVA)	N+3 (12kVA)	N+4 (16kVA)	N+5 (20kVA)
8kVA		N	N+1 (4kVA)	N+2 (8kVA)	N+3 (12kVA)	N+4 (16kVA)
12kVA			N	N+1 (4kVA)	N+2 (8kVA)	N+3 (12kVA)
16kVA				N	N+1 (4kVA)	N+2 (8kVA)
20kVA					N	N+1 (4kVA)
24kVA						N

Model		MHD Modular		
Capacity		4-24kVA		
Input	Singel / three phase		Single phase	
	Wiring		1Φ2W + G	
	Voltage	70% load	160~300VAC	
		50-70% load	140~300VAC	
		50% load	118~300VAC	
	Input frequency		50/60 (1±8%) Hz	
	Power factor		0,98	
Bypass		80~264VAC	140~457VAC	
Output	Phase		Single phase	
	Wiring		1Φ2W + G	
	Voltage		230 (±2%) VAC	
	Power factor		0,7	
	Output frequency		Same as input frequency	
	Overload		50/60 (1±0,5%) Hz (backup mode)	
			110-130%, after 30 seconds transfer to bypass >130%, after 2 seconds transfer to bypass	
Capacity / module		4kVA		
Output capacity		4kVA x number of modules		
External batteries		120VDC (10 batteries in each cabinet)		
Connect to generator		Yes		
Communication / interface		RS232, RS485, intelligent slot		
Weight	Module	15kg		
	Cabinet	75kg		
Dimensions of modules HxWxD in mm		88x430x530		
Dimensions of cabinet HxWxD in mm		965x442x700		

## Battery capacity / autonomy time

Capacity VA	Capacity W	No. of modules	Autonomy minutes	Battery configuration
4000	2800	1	44	10 x BTL12-33
4000	2800	1	80	10 x BTL12-45
4000	2800	1	112	10 x BTL12-65
4000	2800	1	120	10 x BTL12-80
8000	5600	2	15	10 x BTL12-33
8000	5600	2	28	10 x BTL12-45
8000	5600	2	43	10 x BTL12-65
8000	5600	2	57	10 x BTL12-80

Capacity VA	Capacity W	No. of modules	Autonomy minutes	Battery configuration
12000	8400	3	14	10 x BTL12-45
12000	8400	3	25	10 x BTL12-65
12000	8400	3	31	10 x BTL12-80
16000	11200	4	10	10 x BTL12-45
16000	11200	4	15	10 x BTL12-65
16000	11200	4	23	10 x BTL12-80
20000	14000	5	15	10 x BTL12-80
20000	14000	5	30	20 x BTL12-65
24000	16800	6	11	10 x BTL12-80
24000	16800	6	25	20 x BTL12-65