



# MASTERYS IP+

Robust, highly reliable protection for harsh environments  
from 10 to 80 kVA

Single-phase and  
three-phase UPS



## The solution for

- > Industrial processes
- > Services
- > Medical

## Certifications



The MASTERYS IP+ series is certified by TÜV SÜD with regard to product safety (EN 62040-1).

## Advantages



### Designed for the most demanding applications

- Designed to protect industrial processes.
- A compact solution with isolation transformer and integrated batteries.
- Robust enclosure (2 mm thick heavy steel structure).
- Floor anchoring (to prevent tilting).
- Standard IP31 protection degree.
- Dust and water splash resistant enclosure (IP52) with easy replaceable dust filters (option).
- Operation at temperature up to 50 °C.
- Wide input voltage tolerance from -40 % up to +20 % of nominal voltage.
- Double EMC immunity compared to UPS international standard IEC 62040-2.
- Double overvoltage protection.

### Process continuity

- Frontal access for input/output cabling, spares replacement and preventative maintenance.
- Scalable power and high availability (using redundancy), with the facility to parallel up to 6 units.

### Easy integration into industrial networks

- Input power factor > 0.99 and input current harmonic distortion < 3% thanks to IGBT rectifier.
- Compatible with Open Vented Lead Acid, Valve Regulated Lead Acid (VRLA) and Nickel Cadmium batteries.
- User-friendly multilingual interface with graphic display.
- Flexible communication boards for every industrial communication need: dry contacts, MODBUS, PROFIBUS, etc.
- Fully compatible with generator sets.
- K-rated galvanic isolation transformer embedded.
- Adaptation to typical industrial voltages (input and output).

## For industrial loads

- 100 % non-linear loads.
- 100 % unbalanced loads.
- 100 % "6-pulse" loads (motor speed drivers, welding equipment, power supplies...).
- Motors, lamps, capacitive loads.

## Standard electrical features

- Dual input mains.
- Internal maintenance bypass.
- Backfeed protection: detection circuit.
- EBS (Expert Battery System) for battery management.

## UPS and batteries

UPS	IN/OUT kVA	Back-up time (minutes) <sup>(1)</sup>	Back-up time (minutes) <sup>(1)</sup>							
			2.5	5	7.5	10	12.5	15	17.5	20
IP+ 110	3/1	10	[Bar chart showing back-up times for 10kVA]							
IP+ 310	3/3	10	[Bar chart showing back-up times for 310kVA]							
IP+ 115	3/1	15	[Bar chart showing back-up times for 15kVA]							
IP+ 315	3/3	15	[Bar chart showing back-up times for 315kVA]							
IP+ 120	3/1	20	[Bar chart showing back-up times for 20kVA]							
IP+ 320	3/3	20	[Bar chart showing back-up times for 320kVA]							
IP+ 130	3/1	30	[Bar chart showing back-up times for 30kVA]							
IP+ 330	3/3	30	[Bar chart showing back-up times for 330kVA]							
IP+ 140	3/1	40	External battery cabinet							
IP+ 340	3/3	40	External battery cabinet							
IP+ 160	3/1	60	External battery cabinet							
IP+ 360	3/3	60	External battery cabinet							
IP+ 380	3/3	80	External battery cabinet							

(1) Max BUT @ 70% load

## Energy storage option: ultracapacitor

Ultracapacitor could be a suitable battery replacement in special situations where a long back-up time is not required. This solution is targeted specifically to ride-through frequent voltage dips and short power outages, or simply bridge the startup of a generator, or where ambient temperatures could compromise battery lifetime. This would result in a highly reliable energy storage system that would require no maintenance.

### Advantages

- Extremely long lifetime: 15 years with virtually unlimited cycling.
- High-reliability – No maintenance.
- Wide temperature range up to 45 °C.
- Ultra rapid charging.
- Battery-free, lead-free and environment-friendly.

## Technical data

MASTERYS IP+ 10-80							
Sn [kVA]	10	15	20	30	40	60	80
Pn [kW] - 3/1	9	13.5	18	27	32	48	-
Pn [kW] - 3/3	9	13.5	18	27	36	48	64
Parallel configuration <sup>(1)</sup>	up to 6 units						
<b>INPUT</b>							
Rated voltage	400 V						
Voltage tolerance	± 20% <sup>(2)</sup> (up to -40% @ 50% of rated power)						
Rated frequency	50/60 Hz						
Frequency tolerance	± 10%						
Power factor / THDI <sup>(3)</sup>	0.99 / < 3%						
<b>OUTPUT</b>							
Rated voltage	1ph + N: 230 V (can be configured 220/240 V) 3ph + N: 400 V (380/415 V configurable)						
Voltage tolerance	± 1%						
Rated frequency	50/60 Hz						
Frequency tolerance	± 2% (configurable from 1% to 8% with generating set)						
Total output voltage distortion - linear load	< 1%						
Total output voltage distortion - non-linear load	< 5%						
Overload	125% for 10 minutes, 150% for 1 minute <sup>(2)</sup>						
Crest factor	3:1 (complying with IEC 62040-3)						
<b>BYPASS</b>							
Rated voltage	1ph + N: 230 V, 3ph + N: 400 V						
Voltage tolerance	± 15% (configurable from 10% to 20% with generating set)						
Rated frequency	50/60 Hz						
Frequency tolerance	± 2% (configurable from 1% to 8% with generating set)						
<b>ENVIRONMENT</b>							
Operating ambient temperature	from 0 °C up to +50 °C <sup>(2)</sup> (from 15 °C to 25 °C for maximum battery life)						
Relative humidity	0% - 95% without condensation						
Maximum altitude	1000 m without derating (max. 3000 m)						
Acoustic level at 1 m (ISO 3746)	< 52 dBA	< 55 dBA	< 55 dBA	< 55 dBA	< 55 dBA	< 65 dBA	< 65 dBA
<b>UPS CABINET</b>							
Dimensions (3/1) W x D x H	600 x 800 x 1400 mm			1000 x 835 x 1400 mm			-
Dimensions (3/3) W x D x H	600 x 800 x 1400 mm			1000 x 835 x 1400 mm			-
Weight (3/1)	230 kg	250 kg	270 kg	330 kg	490 kg	540 kg	-
Weight (3/3)	230 kg	250 kg	270 kg	320 kg	370 kg	500 kg	550 kg
Degree of protection	IP31 and IP52 (according to IEC 60529)						
Colours	RAL 7012						
<b>STANDARDS</b>							
Safety	IEC/EN 62040-1 (TÜV SÜD certified), EN 60950-1, AS 62040.1.1, AS 62040.1.2						
EMC	IEC/EN 62040-2 (2nd Edition), AS 62040.2						
Performance	VFI-SS-111 - IEC/EN 62040-3, AS 62040.3						
Product declaration	CE, RCM (E2376)						

(1) With transformer on input/bypass side. - (2) Conditions apply.  
(3) At source THDV < 2% and nominal load.

## Electrical options

- Long-life batteries.
- External battery cabinet (degree of protection up to IP32).
- External temperature sensor.
- Additional battery chargers.
- Additional transformer.
- Parallel kit.
- Cold start.
- ACS synchronization system.
- Neutral creation kit for mains without neutral.
- Tropicalization and anti-corrosion protection for electrical boards.

## Standard communication features

- Multilanguage graphic display.
- Dry contact interface.
- MODBUS RTU.
- Embedded LAN interface (web pages, email).
- 2 slots for communication options.

## Communication options

- PROFIBUS.
- MODBUS TCP.
- NET VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems.

## Remote monitoring service

- LINK-UPS, remote monitoring service that connects your UPS to your Critical Power specialist 24/7.