



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) ⁽¹⁾	Back-up time (minutes) ⁽¹⁾							
			2.5	5	7.5	10	12.5	15	17.5	20
IP+ 110	3/1	10	[Bar chart showing back-up times for IP+ 110]							
IP+ 310	3/3	10	[Bar chart showing back-up times for IP+ 310]							
IP+ 115	3/1	15	[Bar chart showing back-up times for IP+ 115]							
IP+ 315	3/3	15	[Bar chart showing back-up times for IP+ 315]							
IP+ 120	3/1	20	[Bar chart showing back-up times for IP+ 120]							
IP+ 320	3/3	20	[Bar chart showing back-up times for IP+ 320]							
IP+ 130	3/1	30	[Bar chart showing back-up times for IP+ 130]							
IP+ 330	3/3	30	[Bar chart showing back-up times for IP+ 330]							
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 ⁽¹⁾	up to 6 units						
INPUT							
Rated voltage	400 V						
Voltage tolerance	± 20% ⁽²⁾ (up to -40% @ 50% of rated power)						
Rated frequency	50/60 Hz						
Frequency tolerance	± 10%						
Power factor / THDI ³⁾	0.99 / < 3%						
OUTPUT							
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 ⁽²⁾						
Crest factor	3:1 (complying with IEC 62040-3)						
BYPASS							
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)						
ENVIRONMENT							
Operating ambient temperature	from 0 °C up to +50 °C ⁽²⁾ (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			< 65 dBA	
UPS CABINET							
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 (according to IEC 60529)	IP31 and IP52				IP31		
Colours	RAL 7012						
STANDARDS							
Safety	IEC/EN 62040-1, AS 62040.1.1, AS 62040.1.2						
EMC	IEC/EN 62040-2, AS 62040.2						
Performance	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.