harland simon
power solutions

Control & Monitoring Infrastructure UPS - IP+ Rail

Key Benefits

Full Range 10-80 kVA

IP Protection Degree : IP31 standard

Coated Electronic Boards

High Efficiency

Full Galvanic Isolation

Very Compact Unit

London Underground Product Registration Certificate No: 1492

Socomec's IP+ Rail is the very latest in UPS technology for the mass transportation sector and has been engineered specifically to provide optimum energy efficiency for high performance critical power applications - in the most challenging operating environments.

Designed for the most demanding applications

Housed in a compact, robust, steel-framed enclosure, the system has IP31 or IP52 ingress protection as well as anti-corrosion tropicalised circuit boards and a high electromagnetic disturbance immunity level. The system is also available in a version that is LU Section 12 compliant: this uses low smoke, zero halogen components and has surfaces painted in a finishing system compliant with London Underground specifications for use in sub-surface stations. The IP+ Rail range is the first UPS system to attain a London Underground Product Registration Certificate No: 1492

Easy integration into electrical infrastructure

- Input power factor > 0.99 and input current harmonic distortion < 3% thanks to IGBT rectifier.
- Galvanic isolation on input and output.
- 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.

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.

For non-linear/unbalanced loads

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

Standard electrical features

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

Socomec's specialist engineering team has the necessary trackside training and accreditations to install and support your equipment throughout its lifecycle.

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Technical data

MASTERYS IP+ Rail 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)	Available up to 6 units for power extension or redundancy						
Efficiency	Up to 95% in VFI –SS-11 mode TÜV verified (transformer excluded)						

INPUT

Rated voltage	400 V
Voltage tolerance	± 20%(3) (up to -40% @ 50% of rated power)
Rated frequency	50/60 Hz
Frequency tolerance	± 10%
Power factor / THDI(2)	0.99 / < 3%

OUTPUT

Rated voltage	1ph+n/2ph 230(220/240 configurable)(3) 3ph + N: 400 V (380/415 V configurable)(3)
Voltage tolerance	± 1%
Rated frequency	50/60 Hz
Frequency tolerance	± 2% (configurable from 1% to 8% with generator 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
Crest factor	3:1 (complying with IEC 62040-3)
Power factor without derating	From 0.6 lagging up to 0.9 leading

BYPASS

Rated voltage	1ph + N: 230 V, 3ph + N: 400 V
Voltage tolerance	± 15% (configurable from 10% to 20% with generator set)
Rated frequency	50/60 Hz
Frequency tolerance	± 2% (configurable from 1% to 8% with generator set)

ENVIRONMENT

Operating ambient temperature	from 0 °C up to +40 °C (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

	up to 20kVA	30kVA		40kVA		60kVA	80kVA
Dimensions (3/1) WxDxH Transformer included	600x800x1400 mm			1000x835x1400 mm			-
Dimensions (3/3) WxDxH Transformer included	600x800x1400 mm					1000x835x1400 mm	
Weight (3/1)	230 kg	250 k	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 as option (according to IEC 60529) Coated electronic boards(4)						
Colours	RAL 7012						

STANDARDS

Safety	EN 62040-1 (TÜV SÜD certified), EN 60950-1, LU 1-085 (Section 12 LU) (4)
EMC	EN 62040-2 (2nd Edition) G-222 EN 50121
Performance	EN 62040-3 [VFI-SS-111]
Product declaration	CE

1) With transformer on input/bypass side. (2) For source THDV < 2 % and nominal load. (3) Three-phase 220-230-240 V from 15 to 40 kVA. (4) Section 12 version units only

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