

Semi-Industrial UPS PLM Series 10 to 500kva



The state-of-the-art, double-conversion topology and “building block” design of the Uninterruptible Power Supply (UPS), PLM series is flexible. The system ensures the continuous availability of power and safe operations for all types of critical loads.

With an expected lifetime of at least 20 years, the PLM Series is a robust, cost-effective solution.

Key Features

- IGBT rectifier at the core of the best-in-class reliability.
- Reduced inrush current $\leq 10 \times I_n$ to avoid oversizing upstream protection and 2-step strat-up.
- $< 3\%$ THDI .
- Smart access to UPS data via a large color touchscreen with 2000-event exportable log.
- Unmatched overload and short-circuit capacity at 315% for 100ms*.

Technical Data

Input	
Rectifier Bridge Topology	IGBT
Input Voltage	380/400/415 V
Voltage tolerance	+/- 15 %
Frequency	50 Hz (60 Hz)
Frequency tolerance	+/- 5 %
Efficiency	99%
Power Factor	0.9
THD	$< 3\%$
Inrush current	$\leq 10 \times I_n^{(1)}$
Float Voltage	- 2.17-2.27 V/cell VRLA - 1.4-1.42 V/cell Ni cd
Boost Voltage	- 2.25-2.4 V/cell VRLA - 1.55-1.65 V/cell Ni cd
Ripple	$< 1\%$

Battery	
Type	Lead acid or nickel cadmium, vented or recombination
Autonomy	From few minutes to several hours, on request
DC Bus Voltage	672 VDC
Battery current limitation	- 0.1 C (lead-acid battery) - 0.2 C (nickel-cadmium battery)

Output	
Inverter Bridge Topology	IGBT with output isolation Transformer
AC Voltage - Single phase - Three phase	1 x 230 V (220, 240) ; 1 x 110 V (115, 120) ⁽¹⁾ 3 x 400 V (380, 415) ; 3 x 220 V (200, 208, 230) ⁽¹⁾
AC Voltage Tolerance	1%
Frequency	50 Hz (60 Hz)
Frequency Tolerance	+/- 0.05 %
Inverter overload capability	
- 1 minute - 10 minute	150 % of nominal power 125% of nominal power
Short circuit clearance (in % of nominal current)	
- 1-ph output - 3-ph output Ph-N: - 3-ph output Ph-Ph:	250 % / 100ms - 175% / 5s 315 % / 100 ms - 220 % / 5 s 190 % / 100 ms - 135 % / 5 s
Harmonic voltage distortion	
- With 100 % linear load - With 100 % non-linear load	$< 3\%$ $< 5\%$
Power Factor	0.9
Efficiency	95%
Allowable crest factor	up to 3/1
Static Transfer Switch	SCR Type
Static Bypass transfer Time	< 4 ms

(1) other option available on request

General Data

Title	
Operating temperature	0 to 40 °C ⁽¹⁾
Storage temperature	-20 to +70 °C
Relative humidity	$< 95\%$ non condensing
Operating altitude	1000 m max without derating ⁽¹⁾
Cooling	Fan Forced, free cooling -Optional
MTBF	$< 150,000$ h
External protection	IP 20 ⁽¹⁾ according to IEC 60529
Internal protection	Protection against unintentional direct contacts, as per IEC 60950-1/62477-1
Noise (at 1m in front of the unit)	60 – 75 dB according to rating
Cabinet colour	RAL 7016 ⁽¹⁾
Touch Panel " HMI"	Optional
Communication	- RTU RS232-Standard - RTU RS485-Optional - TCP/ IP - Optional

Conformity	
Low voltage directive	2006/95/EC and 2014/35/EU
EMC directive	2004/108/EC and 2014/30/EU
CE Mark	

Standards	
IEC62040-1:2017	Uninterruptible power systems (UPS) - Part 1: Safety requirements
IEC62040-2:2016	Uninterruptible power systems (UPS) – Part 2: Electromagnetic compatibility (EMC) requirements
IEC62040-3:2011	Uninterruptible power systems (UPS) - Part 3: Method of specifying the performance and test requirements
IEC61439-1:2011	Low voltage switchgear and controlgear assemblies - Part 1: General rules
IEC60529:1989 +AMD1:1999	Degrees of protection provided by enclosures (IP Code)
IEC60076-11:2004	Power transformers – Part 11: Dry type transformers

Dimensions

Rating	Net Weight(kg)	Acoustic noise	Dimensions (mm) HxWxD
10kVA / 9kW	187	< 57 dBa	400x815x1040
15kVA / 13.5kW	198,5		
20kVA / 18kW	244		
30kVA / 27kW	270	< 62 dBa	515x855x1440
40kVA / 36kW	393		
60kVA / 54kW	457		
80kVA / 72kW	536	< 64 dBa	825x855x1770
100kVA / 90kW	539		
120kVA / 108kW	595		
160kVA / 144kW	647	< 68 dBa	1250x1055x1900
200kVA / 180kW	910,5		
250kVA / 225kW	1150		
300kVA / 270kW	1283	< 72 dBa	2250x770x2020
400kVA / 360kW	1497		
500kVA / 400kW	2402		

Options

Consult us for any other requirements, subject to feasibility

Rectifier charger	<ul style="list-style-type: none"> . Harmonic filter . Surge and/or lightning protections
Battery line	<ul style="list-style-type: none"> . Battery circuit protection box . Battery reversed polarity detection . Battery low-voltage disconnection . DC earth fault detection . Battery black start . Battery room temperature sensor . Battery cabinet / rack
System	<ul style="list-style-type: none"> . Inverter with or without bypass line . Parallel configurations
Bypass line	<ul style="list-style-type: none"> . Bypass isolator(s) . Bypass transformer (H class) . Bypass stabilizer (servo-controlled) . Backfeed protection . Surge and/or lightning protections
Communication	<ul style="list-style-type: none"> . Additional volt-free contacts . Modbus / TCP / IP . IEC61850 protocol . Monitoring software
Mechanical	<ul style="list-style-type: none"> . Specified color of panels . Special feet height (200mm or 300mm) . Special keylock . Non-magnetic gland plate (brass or aluminum) . Specified cabinet identification (tag, nameplate)

Applications

- Data center
- Telecom
- Financial services
- Security and surveillance system
- Automatic control system
- Building management
- Manufacturing process control
- Petro Chemical Industry

