Semi-Industrial UPS

PLM Series

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.

Semi-Industrial UPS PLM SERIES

Key Features

- IGBT rectifier at the core of the best-in-class reliability.
- Reduced inrush current ≤ 10xIn 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	0.99
THD	<3%
Inrush current	≤ 10 x In[4]
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	480 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)[4] 3 x 400 V (380, 415) ; 3 x 220 V (200, 208, 230)[4]
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

General Data

Title	
Operating temperature	0 to 40 °C[4]
Storage temperature	-20 to +70 °C
Relative humidity	< 95 % non condensing
Operating altitude	1000 m max without derating[4]
Cooling	Fan Forced, free cooling -Optional
MTBF	<150,000 h
External protection	IP 20[4] 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 7035[4]
Touch Panel " HMI"	Optional
Communication	- RTU RS232-Standard - RTU RS485-Optional - TCP/ IP - Optional
Dimensions	Varying according to ratings and options

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

Standards

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

* 3-ph output only
(1) at power factor 0.8 lagging
(4) other available on request
(5) derating may apply

Hannibal Power and Technology

Options

Consult us for any other requirements, subject to feasibility

Rectifier charger
. Harmonic filter
. Surge and/or lightning protections

Battery line
. 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
. Inverter with or without bypass line
. Parallel configurations

Bypass line
. Bypass isolator(s)
. Bypass transformer (H class)
. Bypass stabilizer (servo-controlled)
. Backfeed protection
. Surge and/or lightning protections

Communication
. Additional volt-free contacts
. Modbus / TCP
. IEC61850 protocol
. Monitoring software

Mechanical
. 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