ARCHIMOD HE 120 kVA

1. GENERAL SPECIFICATIONS

The Legrand ARCHIMOD HE, model 120, is an UPS on line double conversion with PWM Hi-Frequency technology. It has passing trough neutral and Modular Architecture with the possibility to have N+X redundancy. The nominal power is 120 kVA – 120 kW. Batteries are lead acid, sealed, free maintenance, valve regulated, and arranged, inside the UPS or external battery cabinet, in dedicated Drawers, in order to guarantee compact dimensions reducing weights and DC voltage level.

1.1 Modularity

The UPS ARCHIMOD HE 120 has modular architecture, it is composed by identical modules which work in parallel. Modules are:
- Power Modules 6,7 kVA;
- Battery Drawers of seven batteries (9Ah), in dedicated cabinet.
These modules are installed inside the UPS and have identical functions. Power Modules are composed by the following circuits:
- Rectifier/PFC
- Inverter
- Battery Charger
- Command Logic circuit
- Automatic By-pass

Battery drawers contain 7 batteries, and are easy to be move and replace.

1.2 Scalability

The modularity of ARCHIMOD UPS allows to execute Power and Autonomy upgrade. Thanks to the intelligent Plug N’ Play connection, no HW and SW settings are needed to increase or decrease the power or the autonomy.

1.3 Redundancy

The modularity of the UPS allows the N+X redundant configurations. The Redundancy is achieved using more modules than needed, modules will run in "load sharing".

1.4 Architecture

The UPS Archimod HE 120 is three–phase input and output, the architecture is distributed parallel architecture in each phase (there are more modules in the same phase).
In case of redundant configuration, whenever one module fails, the other modules in the same phase will guarantee the energy supply and protection to the load. The available power in each phase will be always the sum of the power of the modules installed in that phase.

1.5 Hot-plug

The UPS ARCHIMOD HE 120 The power modules are independently controlled by 3 Command Tunnel. Each Command Tunnel controls six power modules. It is possible to turn off only one command tunnel and install or replace modules inside of it, when the other tunnel is still running.

This allows the service on a part of the UPS without turn off the complete system, losing only the power of the tunnel in maintenance. In case of redundancy or scalability, the load is protected by the UPS also during the replace or upgrade of power modules.

1.6 By-pass

In each Power Module there is a static By-pass system which, in case of overload or other anomaly, automatically transfer the load to the mains. The UPS has embedded the manual bypass for service and maintenance and it is possible to connect a dedicated bypass input line.

A dedicated software of remote monitoring and management, installed on a PC connected to the UPS, allows to check and set all working parameters of ARCHIMOD HE (the same functions available on the UPS control panel) and, furthermore, to schedule and program computer remote shutdown. Optional software (UPS SuperviSor) or Net Interface card (CS141SK) allow the multi server shutdown and UPS remote control on the LAN.

ARCHIMOD HE is controlled by a main microprocessor which works together with microprocessors in each power modules; By display is possible to check all measurements, working parameters and status of the system. Here follow the measurements and working parameters available on the display:

**Input**

- Current:
  - RMS value
  - Peak value
  - Crest Factor
- Voltage:
  - Ph-N RMS value
  - Ph-Ph RMS value
  - Bypass Line Voltage
- Power:
  - Nominal (VA)
  - Active (W)
  - Power Factor
  - Frequency

**Output**

- Current:
  - RMS value
  - Peak value
  - Crest Factor
- Voltage:
  - Ph-N RMS value
  - Ph-Ph RMS value
- Power:
  - Nominal (VA)
  - Active (W)
  - Power Factor
  - Frequency

**Batteries**

- Voltage
- Capacity
- Current
- History data
- Residual Capacity
- Charging status

**Misc.**

- Internal Temperature
- Fan Speed
- HV DC BUS Voltage

**DATA LOG.**

- By-pass intervention
- Overheats
- Overloads
- Battery interventions
- Total discharge
- Events (info, warning, critical)
- Alarms

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1. GENERAL SPECIFICATIONS (continue)

The UPS allows also the following settings by display:

Output
- **BY-PASS**
  - Enabling
  - Forced
  - DIP Speed
  - ECO Mode

Input
- Enable freq. synchronizing (PLL)
- Extended synchronizing range (Extended PLL)

**Batteries**
- Start up on Battery
- Threshold value
- Auto restart
- Max Time on battery

The UPS ARCHIMOD HE has the CE Mark accordingly with the EU Directives 2006/95, 2004/108 and it comply with following standards:
- EN 62040-1 "General rules for electric safety"
- EN 62040-2 "Electromagnetic compatibility and immunity (EMC)"
- EN 62040-3 "Performances and testing rules"

2. TECHNICAL SPECIFICATIONS

### General Specifications
- **UPS Topology**: On line double conversion VFI SS 111
- **Architecture of the UPS**: Modular, scalable, redundant based on 6.7kVA Power Modules
- **In/Out phase Configuration**: Three phase-Three phase Neutral
- **Output wave form on mains run**: Sinusoidal
- **Output wave form on battery run**: Sinusoidal
- **Bypass type**: Static, electro-mechanic and maintenance bypass
- **Transfer time**: Zero

### Input
- **Nominal Voltage**: 380, 400, 415 3ph+N+PE
- **Voltage range**: -20% +15%
- **Frequency**: 45-65Hz (autosensing)
- **THDi**: < 3%
- **Power Factor**: > 0.99

### Output with mains (AC-AC)
- **Nominal voltage**: 380, 400, 415 3ph+N+PE
- **Nominal power**: 120,000 VA
- **Active power**: 120,000 W
- **Efficiency (VFI)**: 96%
- **Voltage variation (static)**: ± 1%
- **Voltage variation (dynamic 0-100%): 100-0%**: ± 1%
- **THDi on nominal power (linear load)**: < 0.5%
- **THDi on nominal power (not linear load PF=1)**: < 1%
- **Frequency**: 50 Hz ± 60 Hz (autosensing or selectable)
- **Frequency tolerance**: ± 1% free run
- **Current Crest Factor**: 3:1 accordingly with IEC 62040-3
- **Overload capability**: + 10 min + 60 sec
  - 115% load rate with no bypass intervention
  - 135% load rate with no bypass intervention

### Output in battery Run (DC-AC)
- **Nominal voltage**: 390, 400, 415 3ph+N+PE
- **Nominal power**: 120,000 VA
- **Active power**: 120,000 W
- **Voltage variation (static)**: ± 1%
- **Voltage variation (dynamic 0-100%; 100-0%)**: ± 1%
- **THDi on nominal power (linear load)**: < 0.5%
- **THDi on nominal power (not linear load PF=1)**: < 1%
- **Frequency**: 50 Hz ± 60 Hz (autosensing or selectable)
- **Frequency tolerance**: ± 1% free run
- **Current Crest Factor**: 3:1 accordingly with IEC 62040-3
- **Overload capability**: + 10 min + 60 sec
  - 115% load rate with no bypass intervention
  - 135% load rate with no bypass intervention

### Battery
- **Type**: Lead Acid, sealed, free maintenance VRLA
- **Unit Capacity**: 9 Ah (12V)
- **Nominal UPS Battery Voltage**: 252 Volt DC
- **Battery charger type**: PWM hi efficiency, one in each power module
- **Charging Cycle**: Smart Change technology
- **Max Charging Current**: 2.5 A each power module

### Environmental specs
- **Noise level @ 1m**: 60 dBA
- **Working temperature range**: from 0°C to +40°C
- **Stock temperature range**: from -20°C to +50°C (excluded batteries)
- **Humidity range**: 0-95% not condensing
- **Protection degree**: IP21

### Mechanical an Miscellaneous
- **Net Weight without batteries**: 364 kg
- **Dimensions (WxHxD)**: 1 x (570 x 2080 x 912) (mm) (only inverter)
- **Colour**: RAL 7016
- **Technology rectifier/booster/inverter**: MOSFET/IGBT
- **Communication Interface**: 2 serial port RS232, 1 logic level port, 5 Dry contacts port, 1 slot for SNMP optional interfaces
- **Input/Output connections**: 3Ph+N+PE
- **Number of Command Tunnels**: 3
- **Number of installable Power Modules**: 18 of 6700 VA
- **Standards**: EN 62040-1, EN 62040-2, EN 62040-3

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1. The weigh depends by the number of the installed batteries accordingly with the required autonomy.
2. The battery cabinet dimension can change depending battery set accordingly with the required autonomy.