

## KEOR MOD 25 - 250 kW

3 104 81 KEOR MOD Empty Cabinet with 10 PM slots  
 3 106 75 25kW Power Module



|    |                                      |          |
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### 1. General Specifications

The Legrand KEOR MOD, is an high efficiency 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, also parallelable with other units. The nominal power is from 25kW up to 250kW.

#### 1. Modularity

The KEOR MOD UPS has a modular architecture, it means that it's composed by identical modules (25kW Three phase power module) that, working in parallel, form the power section of the UPS. Each power module can be considered a complete three phase UPS who works in parallel with the others in order to supply the required power.

The power module can be divided in the following functional blocs:

- Rectifier/PFC
- Inverter
- Battery Charger
- Command Logic circuit
- Automatic By-pass

It's possible to reach different power and redundancy levels according to the number of installed power module.

#### 2. Scalability

The cabinet is designed to accept different number of power modules, this allows to create a huge range of configurations. It's possible to increase power directly on site easily, without changing settings nor adjustments. This operation can be lead without using any kind special equipment.

#### 3. Redundancy

You can easily set up the KEOR MOD as a N+X power redundant system. Redundancy level is defined according to how many 25kW power modules are installed inside the cabinet. We can reach redundancy thanks to the load sharing, the overall load is equally shared between the power modules and in case of failure the still-working modules will back up the faulty one.

#### 4. Architecture

The KEOR MOD UPS has three phase input and output and it's possible manage the output phases in independent way thank to the parallel architecture. The nominal power available is determinate by the sum of the power module. For this reason the UPS is able, if properly sized, to supply the load in case of failure or replacement of one or more power modules.

#### 5. Hot-Swap

The power modules of the KEOR MOD are totally independent. This architecture allows to disable a single power module managed for the replacement without switching off the others. In case of fault or upgradable configuration the service technician can operate on the UPS which continues to guarantee high quality energy and protection to the load.

#### 6. Dual Input

KEOR MOD is equipped with dual input connections, one for the rectifier and the other one for by-pass. You can configure them as common (rectifier line and bypass line connected together) or as dual (rectifier line and bypass line splitted)

#### 7. Batteries

Batteries are lead-acid, sealed, free maintenance, valve regulated and arranged inside the battery slots; the battery strings is composed by 48 blocs (for cabinet with internal batteries) and can be composed by different number of blocks (44-52) for model with external batteries. Each battery set can be configured as Common or Separated.

In option a LI-ION battery system solution can be provided for small back up times needs.

#### 8. User Interface

Keor MOD is equipped with an innovative 10" touch screen user-friendly graphic user interface; the UPS is capable of reading real-time data regarding working conditions, efficiency, consumption, load variations, as well as input / output power, current, voltage, etc.

##### 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

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- 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

The UPS allows also the following settings by display:

### Output:

- Voltage
- Frequency
- Phases configuration

### Input:

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

### BY-PASS

- Enabling
- Forced
- DIP Speed
- ECO Mode Batteries
- Start up on Battery
- Threshold value
- Auto restart
- Max Time on battery

The UPS KEOR MOD 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

### 1. General specifications

|                                |                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------|
| UPS Topology                   | Online double conversion VFI SS 111                                                  |
| Architecture of the UPS        | Modular, Scalable, Redundant based on 25kW Power Modules<br>Parallelable up to 24 PM |
| In/Out phase Configuration     | Three phase / Three Phase                                                            |
| Neutral                        | Neutral Passing through                                                              |
| Switching Technology           | 3 level IGBT                                                                         |
| Bypass Type                    | Static, electromechanical and maintenance bypass                                     |
| Output waveform on mains run   | Sinewave                                                                             |
| Output waveform on battery run | Sinewave                                                                             |
| Transfer Time                  | 0ms                                                                                  |

### 2. Input

|                 |                            |
|-----------------|----------------------------|
| Nominal Voltage | 400V 3ph+N+PE              |
| Voltage range   | -20% +15%                  |
| Frequency       | 50 Hz o 60Hz (autosensing) |
| THDin           | < 4%                       |
| Power Factor    | > 0.99                     |

### 3. Bypass

|                 |                                   |
|-----------------|-----------------------------------|
| Nominal Voltage | 400V 3ph+N+PE                     |
| Voltage Range   | 400V -20% +15% (adjustable)       |
| Frequency       | 50/60Hz from +/- 0.5Hz to +/- 7Hz |
| Manual Bypass   | Included                          |
| Transfer time   | 0ms                               |

### 4. Output with mains (AC-AC)

|                                                |                                                                                        |
|------------------------------------------------|----------------------------------------------------------------------------------------|
| Nominal Voltage                                | 380, 400, 415V 3ph+N+PE                                                                |
| Nominal Power                                  | 25 to 250KVA                                                                           |
| Active Power                                   | 25 to 250KW                                                                            |
| Efficiency (AC to AC)                          | Up to 96,8%                                                                            |
| Voltage variation (static)                     | ± 1%                                                                                   |
| THDv on nominal power (linear load)            | < 0,5%                                                                                 |
| THDv on nominal power (not linear load P.F.=1) | < 1%                                                                                   |
| Frequency                                      | 50 Hz or 60 Hz (selectable)                                                            |
| Frequency tolerance                            | ± 0,1% not synchronized with main / from +/- 1% to +/- 14% selectable with main supply |
| Current Crest Factor                           | 3 : 1 accordingly with IEC 62040-3                                                     |
| Overload Capability:                           |                                                                                        |
| 10 min                                         | 125%, without transfer to bypass                                                       |
| 60 sec                                         | 150%, without transfer to bypass                                                       |
| Short Circuit                                  | Icc = 3 In                                                                             |

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### 5. Output on batteries (DC-AC)

|                                                   |                                   |
|---------------------------------------------------|-----------------------------------|
| Nominal Voltage                                   | 400V 3ph+N+PE                     |
| Nominal Power                                     | 25 to 250KVA                      |
| Active Power                                      | 25 to 250KW                       |
| Voltage variation (static)                        | ± 1%                              |
| THDv on nominal power (0% - 100% / 100% - 0%load) | ± 1%                              |
| THDv on nominal power (linear load )              | < 0,5%                            |
| THDv on nominal power (not linear load )          | < 1%                              |
| Frequency                                         | 50 Hz or 60 Hz (autosensing)      |
| Frequency tolerance                               | ± 1%                              |
| Current Crest Factor                              | 3 :1 accordingly with IEC 62040-3 |
| Overload Capability:                              |                                   |
| 10 min                                            | 125%                              |
| 60 sec                                            | 150%                              |
| Short Circuit                                     | Icc = 3 In                        |

### 8. Environmental specs

|                     |                                          |
|---------------------|------------------------------------------|
| Noise Level @1m     | < 80dBA                                  |
| Working Temperature | from 0°C to +40°C                        |
| Stock Temperature   | from -20°C to +50°C (excluded Batteries) |
| Humidity Range      | 0-95% not condensing                     |
| Protection Degree   | IP20                                     |

### 6. Batteries

|                             |                                                         |
|-----------------------------|---------------------------------------------------------|
| Type                        | VRLA Lead Acid, maintenance free (long-life on request) |
| Unit Voltage                | 12V <sub>DC</sub>                                       |
| Nominal UPS Battery Voltage | +/- 264V to +/- 312V (44-52 blocks)                     |
| Battery charger type        | PWM hi efficiency, one in each power module             |
| Charging Cycle              | Advanced 4-stage charging                               |
| Max Charging Current        | 5 A each power module                                   |

### 7. Mechanical and Miscellaneous

|                          |                                                                                                                                              |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Net Weight w/o Batteries | 190 kg                                                                                                                                       |
| Dimensions (HxW xD)      | 600 x 970 x 1990mm (42U)                                                                                                                     |
| Colour                   | RAL 9003 gloss30<br>RAL 9017 gloss80 (front door is shared in 2 colors)                                                                      |
| Communication Interfaces | USB Host x 1<br>RS485 (user) x 1<br>RS485 (maintenance)(USB UART) x 1<br>Free Contact input x 11<br>Free Contact output x 8<br>SNMP Slot x 1 |
| Input/Output Connections | 3Ph + N + PE                                                                                                                                 |
| Power Modules            | Up to 10 modules (25KW each one)                                                                                                             |
| Internal Battery Slots   | Not Available                                                                                                                                |