

Keor MOD RI

RACK INDEPENDENT
THREE-PHASE MODULAR UPS
up to 50 kVA N+1



THE GLOBAL SPECIALIST
IN ELECTRICAL AND DIGITAL INFRASTRUCTURES



SUSTAINABILITY

Corporate Social Responsibility

Green management and sustainable supply chain: these concepts are part of Legrand's Corporate Social Responsibility, which is the company's commitment to drawing up a strategy and implementing it with practical actions aimed at socially responsible behaviour towards everything around it, such as people, things and environment.

CSR involves the management of human resources, the organization and division of labour and the management of natural resources. CSR aims to assess the impact that the company's actions and decisions have internally, but also externally, on the stakeholders and the environment.

BUSINESS ECOSYSTEM

or how Legrand interacts ethically with the whole ecosystem of its activities.

PEOPLE

or how Legrand engages with all of its employees and stakeholders.

ENVIRONMENT

or how Legrand intends to limit the Group's environmental impact.



Circular economy

We are committed to creating a system that involves all stakeholders to share values, objectives and actions in order to control and reduce the environmental impact of all our economic and production processes, reduce waste and environmental impact and transform what would once have been defined as «waste» into new resources. Controlling these aspects has an impact on the entire life cycle of the product, starting from the design of new concepts and new specifications for the materials the UPS is made of; this is possible through responsible design and procurement processes (so-called «green procurement»), with a strong focus on research and the use of innovative materials from the circular economy and alternative raw materials. When a product ends its life, all these materials can become high value-added resources that can be used in other production cycles.



Digitalization

New information technologies allow us to reduce the use of several paper documents in favor of the digital format: in this way the information is always and everywhere accessible from a PC or smartphone and at the same time we can avoid the felling of many trees.

Digitization also becomes an important driver of the circular economy, since it allows the use of tools for performance data analysis and preventive diagnostics, both useful for optimizing the life cycle and durability of the product.



Efficiency

Our R&D team is constantly working on the development of increasingly efficient UPSs that allow high and incremental performance with minimum energy dissipation; with regard to CO₂ emissions, we are implementing processes and products that represent an improvement in the percentage of carbon footprint compared to the past.

But efficiency is not only synonymous with high performance.

For us, efficiency also means ecodesign: this implies that the UPS is designed to be easily repaired, maintained and it's easy to separate its components.

This means increasing the durability of our UPSs and the possibility of reusing and recycling them at the end of their life.



EPD/PEP

For each product family we draw up an EPD (Environmental Product Declaration) or PEP (Profil Environnemental Produit) in line with ISO 14025: it is a declaration that is a sort of environmental photograph of the product.

The EPD is drawn up according to the concept of Life Cycle Assessment: it examines the environmental impact of a product throughout its life cycle, from the development of product specifications to the choice of materials to be used and the end-of-life destination of the product itself.

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INNOVATIVE RACK UPS GENERATION

Legrand presents the new **Keor MOD RI**, the latest addition to the UPS family. Design for rack application with simple and no risk integration for 19" rack cabinet.

IDEAL FOR EDGE DATA CENTER



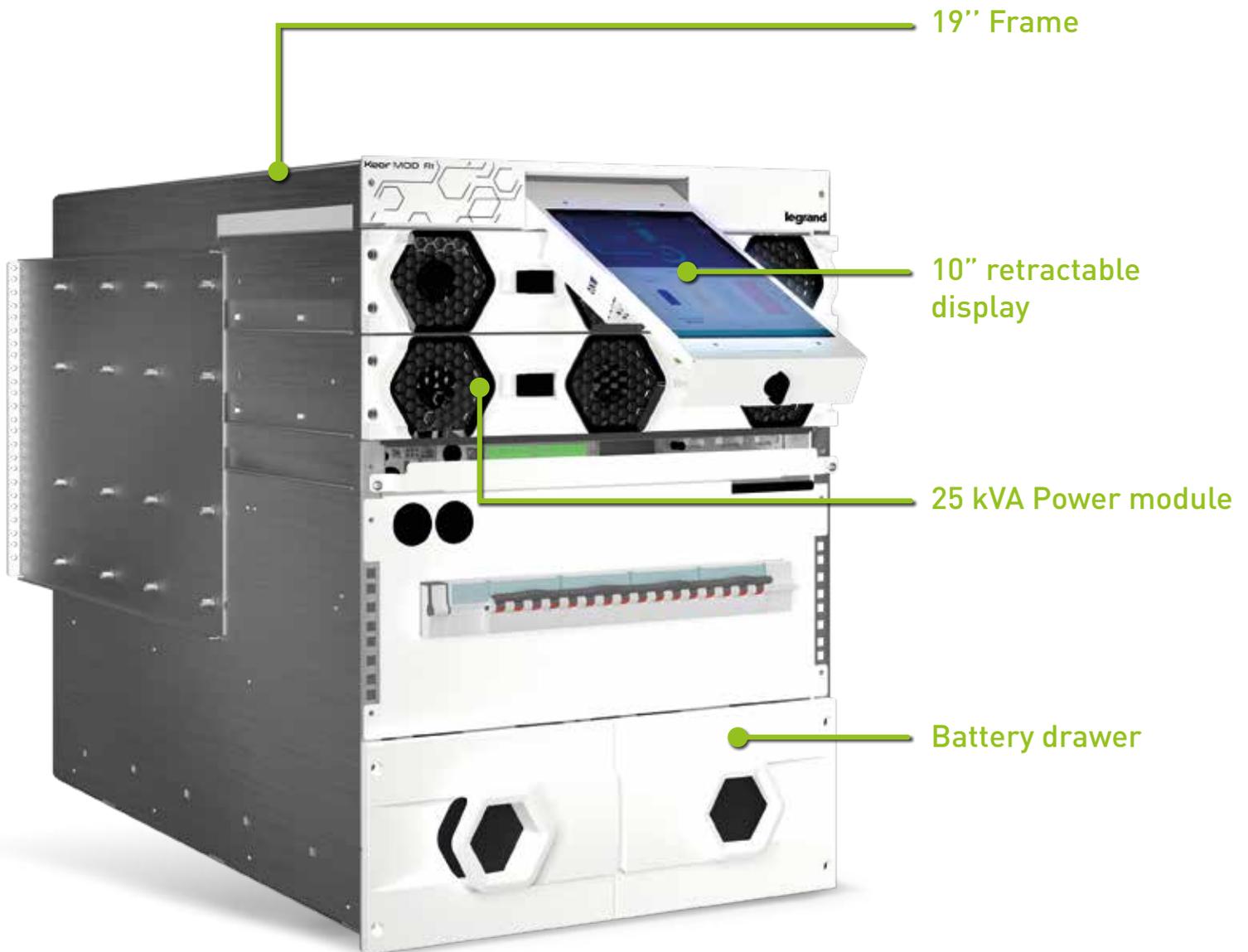
Keor MOD RI is the ideal solution for all critical computer applications such as EDGE DATA CENTRE; its compact foot print and the possibility to install it in most of 19" rack cabinet, also in existing installation, allows to save additional space in the technical room.

The range includes two frame configurations:

- up to 2 power modules with internal batteries (25 kVA N+1)
- up to 3 power modules with internal batteries (50 kVA N+1).

Keor MOD RI

DESIGN AND TECHNOLOGY





25 kVA power module in just 2 units

Extensive research and use of latest generation components is behind the development of this three-phase power module with top performance levels in its category, minimising footprints and weights.

With a capacity of 25 kVA and a footprint of just 2 rack units, the **Keor MOD RI** power module ensures maximum performance in exceptionally small spaces.

The **Keor MOD RI** power module is equipped with "System On Chip" type control technology which, unlike the conventional version (DSP based), contains a dual Core ARM A9 processor, a high performance FPGA and a set of advanced devices within one single component.

This technological choice provides an impressive range of advantages in terms of processing power, speed and versatility.

The power module houses the following components: input PFC, three-level inverter, integrated and independent control logic, battery charger, static and electromechanical by-pass.

Structured Energy Flow

Keor MOD RI uses the new Structured Energy Flow system, effectively eliminating all the connection cables inside the power module.

The connections between the various power sections are achieved by the structure that physically connects them. This results in an exceptionally high level of reliability.

Keor MOD RI

EXCLUSIVE FEATURES



Easy rack integration

Designed to be compatible with 19" rack cabinets with different depths (1000, 1200 mm) and also for existing installations.



High level of flexibility

Thanks to the hot swap functions and the total independence of each power module, all maintenance phases and power expansion are extremely swift and simple.

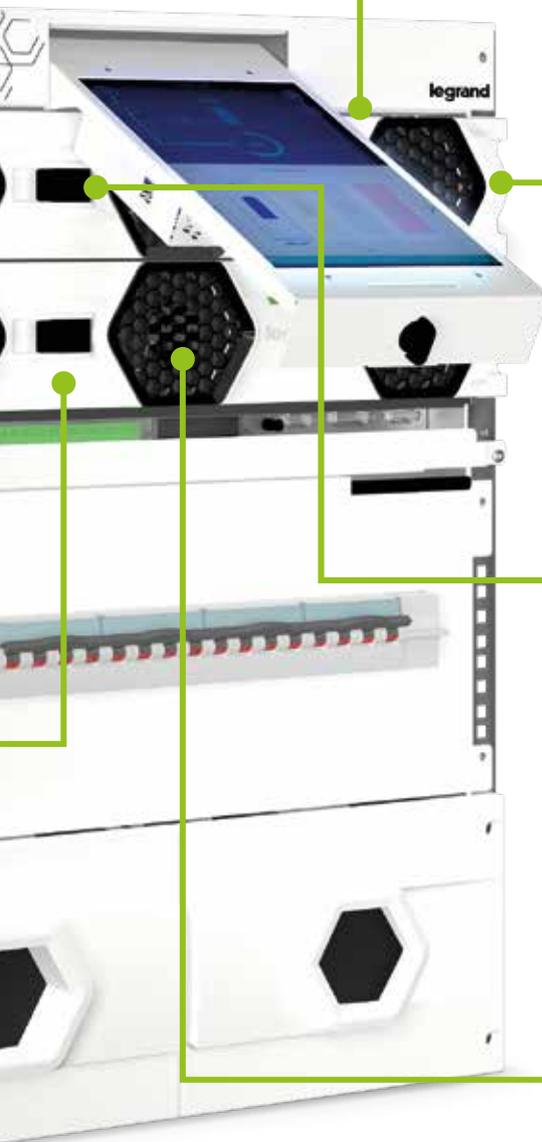


Low TCO

It offers energy efficiency, scalable flexible and highest availability thanks to the modular technology and easy serviceability



TCO: Total Cost of Ownership



Instant communication

Distinctive element of all the Legrand UPS, **Keor MOD RI** also integrates a Led Status Bar (Multicoloured status bar) with traffic light type coding for the immediate display of the actual operating status.



Maximum manovrability

The power module, is extremely compact and integrates two ergonomic handles to facilitate extraction and insertion of the module. Its light weight means it can also be handled by a single person.



Electrical and mechanical safety

A simple and practical "SWITCH" on the front provides the connection and the disconnection both mechanical and electrical, which prevents any incorrect or involuntary removals.



Controlled noise level

The control of the cooling fans is performed independently based on the load and the temperature of the single power stage, hence decreasing energy consumptions and the noise level of the system.



Keor MOD RI

INTERNAL BATTERIES

Safe extraction and Ease handling



Power module and battery drawer can be easily extracted using the handle on the front. Preventing accidental falling and allowing operators to work in total safety and speed thanks to the reduced weight of each section. The replacement of individual sections requires very little time and guarantees swift maintenance operations.

Light and dividable

The batteries inside the drawer are divided into 6 blocks; this reduces weight (<12 kg each) and avoids direct contacts with dangerous voltages during maintenance phases.



COMPLETE ON BOARD COMMUNICATION

FRONT Communication MODULE

The communication module is positioned on the front, is easily accessible and boasts a wide selection of communication interfaces.

- "Cold Start" push-button
- system communication ports
- RS485 port
- RS485 port for external accessories
- logical gate
- communication interface slot
- USB host port
- 11 floating contact inputs
- 8 floating contact outputs



EXCLUSIVE TOUCH SCREEN DISPLAY



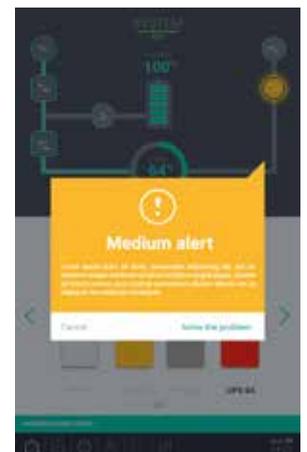
Unique user experience

The display is housed in a retractable tray, innovative solution which allows easy navigation and keeps a compact design without taking up additional space.



10 inches touch screen display

It provides a simplified control panel packed with information, alerts and settings and is also equipped with interactive icons to make navigation and selection of the functions to be controlled quick and simple.



Keor MOD RI

UPS Modular three-phase double conversion VFI



3 111 34

3 111 35

General features:

- Compatible with most 19" rack cabinets with depths of 1000, 1200 mm
- Just two frame configurations (up to 25 kVA N+1 and up to 50 kVA N+1)
- Internal Backup time
- 10" touch screen display in a retractable tray
- Reduced battery charging times
- Double conversion efficiency up to 96.8% (power module efficiency)
- Efficiency in ECO mode up to 99%.
- Output power factor = 1
- Modular redundancy in N+1 configuration
- Controlled noise level
- Multicoloured status bar LED
- Hot-swappable modules and battery drawers
- Decentralised by-pass.
- Intelligence distributed between modules

Item	UPS - empty power frame				
	Power (kVA)	Installable power module	Installable battery drawers	Distribution	Weight (kg)
3 111 34	25	2	2 battery drawers	3-3	67
3 111 35	50	3	4 battery drawers	3-3	72

Accessories

3 106 75	25 kVA power module
3 111 40	Empty battery blocks kit for two drawers
3 111 36	Kit of 2 EMPTY battery drawers (to be used with 3 111 40)
3 111 37	Kit of 6 battery blocks with 9 Ah batteries
3 111 38	Kit of 6 battery blocks with 11 Ah batteries
3 111 39	Kit of 6 battery blocks with 9 Ah Long Life batteries
3 102 59	Sync kit for UPS (cable length 26 m)*
3 104 82	Battery temperature probe

Example Keor MOD RI configuration

Keor MOD RI 25 kVA N+1

Designed to install up to 2 power modules in redundant configuration



Keor MOD RI 50 kVA N+1

Designed to install up to 3 power modules in redundant configuration



* to create 2 synchronous but independent power lines (typical in Tier III, IV systems and STS)

Keor MOD RI

UPS Modular three-phase double conversion VFI

Characteristics

General specifications	Keor MOD RI 25	Keor MOD RI 50
Nominal power (kVA)	25	50
Active power (kW)	25	50
Module power (kVA)	25	
Classification	On-Line double conversion VFI-SS-111	
Installable power modules	2 (1 slot for redundancy)	3 (1 slot for redundancy)
Installable battery drawers	2	4
System	Modular, expandable and redundant UPS system	

Input specifications

Input voltage	400V (3P+N+PE)
Input frequency	50/60 Hz (+14% - 6%)
Input voltage range	400V +15%/-20%
THD input current	< 4% (at full load)
Compatibility with power supply units	Yes
Input power factor	> 0.99

Output Specifications

Output voltage	380, 400, 415V (3P+N+PE)
Efficiency (power module)	Up to 96.8%
System efficiency	Up to 96.5%
Efficiency in Eco mode	99%
Nominal output frequency	50/60 Hz selectable by the user
Crest factor	3:1
Waveform	Sinusoidal
Output voltage tolerance	±1%
THD output voltage	< 3.3%
Overload capacity	10 minutes at 125%, 60 seconds at 150%
Bypass	Automatic bypass (static and electromechanical) and manual maintenance bypass

Batteries

Battery module	Plug & play
Battery series type/voltage	VRLA - AGM 12 V, 9 Ah - 11 Ah
Autonomy	Configurable
Battery charger	Smart charge technology. 3-stage advanced cycle

Communication and management

Display	10-inch touch screen in a retractable tray
Communication ports	2 x RS485 ports (one for external accessories), 10 input floating contacts, 8 output floating contacts, 1 interface slot, USB host port
Back feed protection	NC/NO auxiliary contact
Emergency Power Off (EPO)	Yes
Cold start push-button	Yes
Remote management	Available

Mechanical characteristics

Height (mm)	663 (15U)	930 (21U)
Width (mm)	447	447
Depth (mm)	874	874
Net weight (kg)	67	72

Ambient Conditions

Operating temperature/humidity	0 - 40°C / 0 - 95% non condensing
Protection rating	IP20
Maximum audible noise at 1 m from the unit (dBA)	50-65

Estimated content of circular economy derived materials

43%

Recyclability rate calculated using the method described in technical report IEC/TR 62635*

74%

Conformity

Certifications	EN 62040-1, EN 62040-2, EN 62040-3, EN 62040-4
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Services

Installation	Modular architecture for 19" rack cabinet with "plug & play" power modules and batteries
Maintenance	Availability of optional services provided by the manufacturer
Ease of management	Advanced diagnostic functions via the touch screen display

* For products in the PEP certificate other than the Product in Reference, the environmental impacts of the production, distribution, installation and end-of-life phases are directly proportional to the mass of the accumulators; the impacts of the usage phase are directly proportional to the power dissipated.

CUSTOMER CARE SERVICES



Reliable

We are physically present in over 70 countries, which means we are able to intervene and provide support in over 150 countries worldwide. A team of qualified technicians is at your service to provide support and guarantee the correct functioning of your UPS; this aims to ensure high quality power and availability of energy even at the most critical loads.



Excellence

Legrand's competitive advantage lies in its capacity to provide high added value UPS and services for end users and business partners alike. Legrand's vision sees the creation of value as finding low energy consumption solutions, but also integration of solutions in the process of global development. With a catalogue of over 200,000 articles, the Group supplies all the products necessary for the realisation of electrical and digital systems, in particular integrated systems, aimed at finding solutions to meet everyone's needs.



Tailor-made

Legrand provides a complete range of specific solutions and services to meet customer requirements:

- Pre-sale technical support during the design phase
- Final factory inspection and testing
- Supervision during installation, final testing and commissioning.
- On-site acceptance tests
- Training for operators
- On-site audits
- Extended warranties
- Annual maintenance contract
- Swift intervention in case of emergency calls



◇ SUPPORT ◇ TRAINING ◇ MAINTENANCE



Support

Site inspection, installation supervision

We conduct a complete inspection of the environment in which the UPS will be installed to ensure its safety and failure free operation. Our technicians provide recommendations for the technical office or the electrical installer, and supervise the installation of the UPS before commissioning.

On-site tests, commissioning

Our technicians conduct thorough on-site tests and complete configuration of the UPS before commissioning. They also perform final inspection and testing operations according to your needs. The UPS commissioning operations are performed by our qualified engineers, to guarantee maximum functionality and the elimination of any problems after start-up.



Training

We provide on-site training to guarantee safe use and efficient operation of your UPS. Maintenance courses are also held at our training centre with equipment available for practical sessions.



Maintenance

Preventive maintenance

Electronic equipment and electrical systems, like UPS devices, contain components and parts with a limited service life that must be periodically replaced according to the manufacturer's specifications; these replacement times are influenced by many factors, such as the ambient temperature, the nature of the load etc. To guarantee optimal performance and to protect your critical applications, as far as possible, from potential downtimes, it is essential to perform regular preventive maintenance and replace worn parts whenever necessary.

Our servicing contracts include cleaning, IR thermography, measuring, functional testing, event logs and power quality analysis, battery life checks, hardware and software updates and technical reports. A preventive maintenance plan is one of the most convenient ways to preserve your investment and ensure the continuity of your business operations.



Corrective maintenance, emergency intervention

Thanks to the use of state-of-the-art equipment, custom made servicing software and regular training courses, our technicians are able to minimise analysis times and guarantee a short MTTR (Mean Time To Repair).

The malfunctioning parts will be replaced, and corrective actions, adjustments and updates will be performed to swiftly return the UPS to its normal operational status.



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