TRIMOD MCS

MODULAR CPS

For centralised power
and safety systems





THE **GLOBAL SPECIALIST**
IN BUILDING ELECTRIC AND DIGITAL INFRASTRUCTURES

legrand®

SUSTAINABILITY

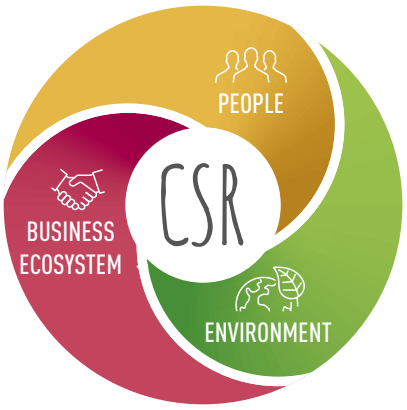
Corporate Social Responsibility

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 CO_2 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 range 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.

TRIMOD MCS

CENTRALISED EMERGENCY STATION

The MCS series is designed according to EN 50171 standards and represents the ideal solution for installation in buildings subject to fire safety standards and, specifically, to power emergency lighting systems.

CPS TRIMOD MCS can also be used to power emergency systems such as automatic fire extinguishing systems, emergency detection and alarm systems, smoke exhaust and carbon dioxide detection devices and specific safety systems in sensitive areas.



EN 50171 Standard Compliance

TRIMOD MCS is the ideal solution for centralised safety power systems and meets reference standard CEI EN 50171.

Protection against battery inversion

This guarantees maximum operator safety both during installation and maintenance avoiding incorrect battery connections.

120% continuous overload

TRIMOD MCS is designed and dimensioned to support continuous overloads (without time limits) up to 120% of rated reference machine power CEI EN 50171.



Dual Input Function

TRIMOD MCS, provides cabinets with power up to 80 kW and DUAL INPUT function. All configurations can be powered by two AC sources independently: distribution can be reset upon installation and easily obtained using the input distribution.

High versatility

TRIMOD MCS can be set with SA output (Always Powered) and with SE output (Emergency Only) on the display without having to add elements to the system.

TRIMOD MCS

EXPANDABLE
SCALABLE
MODULAR
VERSATILE

The concept of modularity, made up of independent single phase modules that distinguish the entire TRIMOD MCS range, optimises power availability, increases system flexibility and reduces overall overhead costs (TCO).

The highly standardised structure, made up of modules with reduced dimensions and weights, makes transport and installation easy.

All components are self-settable and are included in a Plug&Play connection system to facilitate all diagnostic, maintenance and future expansion phases.

Due to its versatility and system programming ease, TRIMOD MCS also can:
- power three independent single phase lines, assigning a different priority in terms of autonomy to each;
- provide four different input/output configurations in a single cabinet: 3/3, 1/1, 3/1, 1/3;
- increase average battery working life thanks to the Smart Charging System.



Compact and lightweight single phase power module (only 8.5 kg)

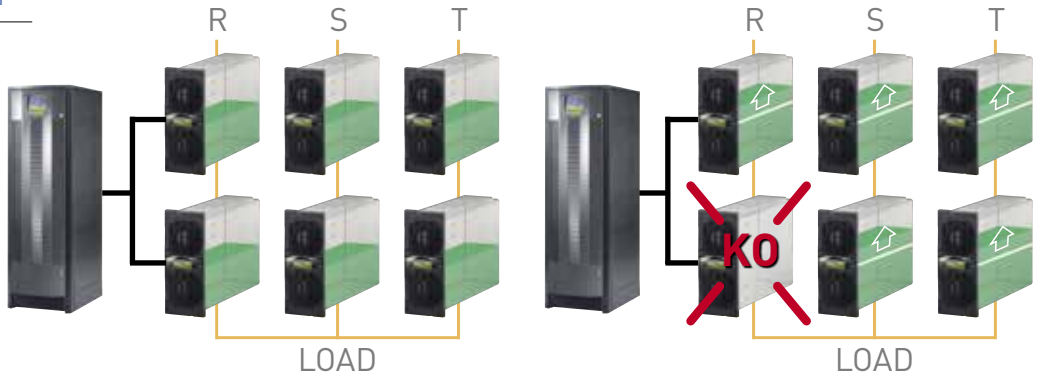


Manageable and easy to install battery module (only 13 kg)



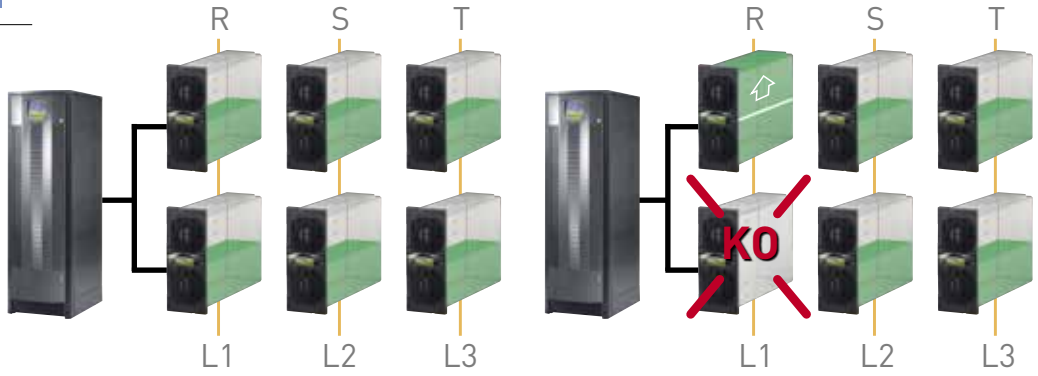
Redundancy on single phase load

In a system with three phase power and single phase load there is no power loss in the event of a single module fault since power is distributed by the other operating modules.



Redundancy on phases

Redundancy can be set on the single phases in a system with three independent outputs. In the event one power module fails, the same phase modules make up for the failed module.







High redundancy levels

Thanks to the CPS TRIMOD MCS construction technology the various redundancy levels can be set to always guarantee maximum service continuity.

TRIMOD MCS

CPS Modular three-phase double conversion VFI

EN STANDARD 50171



3 109 90



3 110 02



3 108 71



3 108 75

Characteristics:
- Modular single-phase and three-phase CPS
- Power from 3 to 80 kVA
- Conforms to EN-50171 Standards
- On-Line double conversion VFI-SS-111
- High efficiency up to 96%
- Output factor 1
- Adaptable, redundant and scalable solutions (IN/OUT 3-1 phase configuration)
- Quick and simple maintenance
- Low environmental impact
- Diagnostics, monitoring, historical data and parameters that can be set on the screen
- Reduced foot print and dimensions
- Taller cabinet to extend backup time and standard configurations
- Pre-configured solutions with 1h backup time
- Dual input function (Bypass line input)
- Hot Swap system
- Continuous operations at up to 120% of the load
- Protection against battery pole inversion
- Output configurable from the display as PERMANENT or NON PERMANENT
- Menu available in 7 languages
- Frequency converter in 40-70Hz out 50/60Hz (selectable)
- Operations with genset
- Three independent phase outputs
- Eco Mode
- Bypass speed regulation
- Event log complete with date and time
- Global and historic data of each power module

Item	Trimod MCS			
	Model	Autonomy according to EN50171	No. and Type Cabinet	IN-OUT factory settings
3 109 90	3	1h	1A	1-1
3 109 91	5	1h	1A	1-1
3 109 92	7	1h	1B	1-1
3 109 93 + 3 106 18	10	1h	1B	3-3
3 109 94 + 3 106 19	15	1h	1B	3-3
3 109 95 + 3 104 78	20	1h	1A	3-3
3 109 96 + 2 x 3 104 70	30	1h	1A	3-3
3 109 97 + 2 x 3 104 78	40	1h	1A	3-3
3 109 98 + 3 x 3 104 78	60	1h	1A	3-3
3 109 99 + 4 x 3 104 78	80	1h	1B	3-3

Cabinet A h=1370, Cabinet B h=1650

NOTE: the stated backup times are estimated and may vary according to the load characteristics, operating conditions and environment.

For the choice of communication accessories, see the dedicated section of this catalogue.

Item	Accessories
3 108 69	Output module 3.4 kVA
3 108 71	Output module 5 kVA
3 108 73	Output module 6.7 kVA
3 108 66	Kit of 3 power module covers
	Battery accessories
3 111 14	Kit 4 drawers battery 9 Ah long life
	Additional empty battery cabinet
3 110 07	16-drawer modular battery cabinet
3 106 16	20-drawer modular battery cabinet
	Additional battery cabinet with batteries Long Life
3 106 18	Modular battery cabinet with 3KB for CPS 10 KVA
3 106 19	Modular battery cabinet with 5 KB for CPS 15 KVA
3 104 70	Battery cabinet for CPS type A
3 104 78	Battery cabinet for CPS type B

TRIMOD MCS (Empty CPS Cabinets)

	N° of installable power modules	N° of installable battery drawers	No. of phases	Type Cabinet	Weight (kg)
3 110 00	up to 3 to 3.4 kVA	12	1-1 / 3-3 / 3-1 / 1-3	A	86
3 110 01	up to 3 to 6.7 kVA	12	1-1 / 3-3 / 3-1 / 1-3	A	89
3 110 02	up to 3 to 6.7 kVA	16	1-1 / 3-3 / 3-1 / 1-3	B	103
3 110 03	up to 6 to 5 kVA	-	1-1 / 3-3 / 3-1 / 1-3	A	85
3 110 04	up to 6 to 6.7 kVA	-	3-3	A	82
3 110 05	up to 9 to 6.7 kVA	-	3-3	A	91
3 110 06	up to 12 to 6.7 kVA	-	3-3	B	120

TRIMOD MCS

CPS Modular three-phase double conversion VFI

Characteristics

General Characteristics	3 109 90	3 109 91	3 109 92	3 109 93+ 3 106 18	3 109 94+ 3 106 19	3 109 95+ 3 104 78	3 109 96+ 2x 3 104 70	3 109 97+ 2x 3 104 78	3 109 98+ 3x 3 104 78	3 109 99+ 4x 3 104 78
Nominal power (kVA)	3	5	6.7	10	15	20	30	40	60	80
Active power (kW)	3	5	6.7	10	15	20	30	40	60	80
Active power according to EN50171 (kW)	2.88	4.16	5.58	8	12.5	16.7	25	33.3	50	66.7
Technology	On-Line Double Conversion VFI-SS-111									
System	Modular, expandable and redundant UPS system									
Input specifications										
Input voltage	220,230,240 1F+N+PE			380, 400, 415 3F+N+PE * (o 220, 230, 240 1F)			380, 400, 415 3F+N+PE			
Input frequency	45-65 Hz (43,0 ÷ 68,4 Hz)									
Input voltage range	230V +15%/-20%			400V +15%/-20% - 230V +15%/-20%			400V +15%/-20%			
THD Input current	< 3% (at full load)									
Compatibility with power supply units	Yes									
Input power factor	> 0.99									
Output Specifications										
Output voltage	220,230,240 1F+N+PE			380, 400, 415 3F+N+PE * (o 220, 230, 240 1F)			380, 400, 415 3F+N+PE			
Efficiency	Up to 96%									
Efficiency in Eco Mode	99%									
Nominal output frequency	50/60 Hz selectable by the user ±2 % (standard), ±14 % (extended)									
Peak factor	3:1									
Waveform	Sinusoidal									
Output voltage tolerance	±1%									
THD output voltage	< 1%									
Overload capacity	120% continuous, 10 minutes at 135%, 60 seconds at 150%									
Bypass	Automatic bypass (static and electromechanical) and manual maintenance bypass									
Batteries										
Battery module	Plug & Play									
Type	Long Life									
Back-up time	1h (settable as needed)									
Battery charger	80% autonomy in 12h - Smart Charge technology. 3-stage advanced cycle									
Communication and management										
Screen and signalling	4 20-character rows, 4 menu navigation buttons, multi-colour LED status indicator, alarms and acoustic signals									
Communication Ports	2 RS232 serial ports, 1 logic level port, 5 floating contact ports, 1 interface slot									
Back feed protection	NC/NO auxiliary contact									
Emergency Power Off (EPO)	Yes									
Remote management	Available									
Mechanical characteristics										
Dimensions HxWxD (mm)	1370 x 414 x 628		1650 x 414 x 628	1370 x 414 x 628	1650 x 414 x 628	1370 x 414 x 628				1650 x 414 x 628
Net weight kg	202.5	265.5	327.5	273.5	344.5	115	136	134	158.5	222
Battery cabinet dimensions HxWxD (mm)	-	-	-	1370x 414x 628	1650x 414x 628	600x 800x1635				
Battery cabinet net weight (kg)	-	-	-	257	375	790	710	790		
Installable battery drawers	8	12	16	-	-	-	-	-	-	-
Ambient Conditions										
Operating temperature/humidity	0 - 40°C / 0 - 95% non condensing									
Protection rating	IP20									
Noise at 1 m from the unit (dBA)	58-62									
Conformity										
Certifications	EN 62040-1, EN 62040-2, EN 62040-3, EN 50171									
Services										
Installation	User executable, modular architecture 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									

* Standard configurations with 3-3 distribution (multi IN/OUT settings available upon request)

CUSTOMER SERVICES



Reliable

Directly present in more than 70 countries and servicing its products in more than 150 countries worldwide, a team of qualified engineers is available to support your UPS system to ensure power quality and availability to the most critical loads.

Excellent

Legrand's competitive edge lies in its ability to provide high value-added UPS systems and services for both end users and business partners.
For Legrand, creating value means coming up with solutions for lower energy consumption, but also integrating product design into the overall development process. With around 200 000 catalogue items, the Group also provides all products required for electrical and digital building installations, particularly as integrated systems, finding solutions to fit everyone's needs.

Tailor-made

Legrand offers a complete range of specific solutions and services to meet customer requirements:
- Technical pre-sales support at the project design stage
- Factory acceptance test
- Supervision of installation, testing and commissioning, site acceptance test
- Operator training
- Site audit
- Warranty extension
- Annual maintenance contract
- Fast intervention on emergency call

SUPPORT



SITE INSPECTION, INSTALLATION SUPERVISION.
We perform a comprehensive check of the UPS environment to ensure safety and fault-free operation.
Our technical experts give manufacturer's recommendations to the site engineer or electrical contractors, and supervise the UPS installation before load power-up.

SITE TEST, COMMISSIONING.
Our Service Engineers conduct rigorous site tests and full setting-up of the UPS system before going live. They also perform site acceptance tests according to your requirements.
Commissioning operations for all UPS are carried out by qualified engineers to guarantee seamless start-up.
After the final handing over of the UPS system, a Test and Commissioning report is delivered to you.

TRAINING



We offer on-site training to ensure your equipment's safe and efficient operation.
Troubleshooting courses are also available in our plants for intensive hands-on practice on UPS training equipment.

MAINTENANCE



PREVENTIVE MAINTENANCE
Electronic equipment and power systems, such as UPS, contain life-limited components and parts that must be replaced according to the manufacturer's specifications.
To ensure optimal performance and to protect your critical application from potential downtime, it is crucial to perform preventive maintenance operations on a regular basis and replace parts when needed. Our Service Contracts include cleaning, IR thermography, measurements, functional tests, event log and power quality analysis, battery health check, hardware and software upgrades, and technical reports.
A Preventive Maintenance Plan is one of the most cost-effective actions that can preserve your initial investment and ensure your business continuity.

CORRECTIVE MAINTENANCE, EMERGENCY CALL
In the event of an Emergency Call, our worldwide service network, with engineers and spare-parts stocks strategically located as close as possible to your site, guarantees a fast intervention time with 24/7/365 assistance.
After connecting his laptop to your UPS, very powerful diagnostic software helps our engineer to identify the fault, thus ensuring short MTTR (Mean Time To Repair).
Corrective actions are performed such as part replacement, adjustments and upgrades to return the UPS system back to normal operation.



FOLLOW US ALSO ON

@ www.ups.legrand.com

World Headquarters and International Department
87045 Limoges Cedex - France
☎ : + 33 (0) 5 55 06 87 87
Fax : + 33 (0) 5 55 06 74 55

AD-EXLGUPS-TM22B/GB - 06/2022