

## Keor S 3000

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### 1. GENERAL FEATURES

Legrand UPS model Keor S 3000 is an uninterruptible power source with IGBT switching technology, high frequency PWM technology, Double Conversion On-line, Rated Power 3 kVA – 2.4 kW.

The architecture of this UPS means it can be installed in a Tower configuration. Two different models are available as internal configuration; internal battery only or input isolation transformer with internal battery. Addition to these configurations, simultaneous using of both internal and external battery is possible by DC switch protections.

Batteries are lead acid, sealed, free maintenance, valve regulated, and arranged, inside the UPS or external battery cabinet. Internal battery configuration is sized to guarantee a minimum uptime of 8 minutes and at 80% of 0,9PF load.

The rectifier of the UPS is comprised of a control and regulating circuit (PFC), which, in addition to normal rectifier functions also:

- Automatically corrects the power factor of the load to restore it to a value of >0.99 with a load applied at the output at 100% of the rated load;
- Supply the inverter without requiring energy from the batteries, even when the mains voltage is very low;
- Ensures low total harmonic distortion of the input current without the addition of filters or supplementary parts.

The bypass circuit is designed and built in compliance with the following:

- Electromechanical switch
- Command and control logic managed by a microprocessor that:
  - Automatically transfers the load directly onto the primary mains line without interrupting the power supply if any conditions of overload, over temperature, continuous voltage outside of the tolerances and inverter anomaly arise;
  - Automatically re-transfers the primary mains line load to an inverter line, without interrupting the power supply, once normal conditions of the load have been restored;
  - If the primary mains line and the inverter are not synchronised, the bypass must be disabled.

The inverter of the UPS is comprised of IGBT technology which provides:

- Ensures low total harmonic distortion at the output voltage and 0,8 power factor;
- Provides high efficiency with transformerless design;
- Supply the load with regulated voltage and frequency.

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 Keor S and furthermore, to schedule and program computer remote shutdown. Optional software or Net Interface card (SNMP) allows the multi server shutdown and UPS remote control on the LAN. Also, standard interface board comes with;

- RS232 Serial Communication Port
- Emergency Power Off (UPS OFF)
- Generator Contact (GEN ON)
- Smart Slot (for optional SNMP)

Keor S is managed by a microprocessor and is able to display, on a control panel and LCD screen, the alarms and operating modes described below:

- Line Mode,
- Backup Mode,
- ECO Mode,
- Bypass Supply,
- Battery Low,
- Battery Bad/Disconnect,
- Overload,
- Transferring with interruption
- UPS Fault normal operation

It is possible to change output voltage by 220V, 230V, 240V and frequency by 50Hz or 60Hz from front control panel of Keor S 3kVA. Addition to this, Keor S can be used as 50Hz to 60Hz (or vice versa) Frequency Converter with or without batteries as standard.

Input, Output and Battery connections are hardwired and protected by suitable MCBs.

Backfeed protection provides additional protection at the input in the event of bypass thyristors are short circuited. The internal backfeed protection provides safety when fault situation occurs in static bypass line and prevents upstream energy to the input.

Keor S 3kVA Static Uninterruptible Power Supply bears the CE marking, pursuant to Directives 73/23, 93/68, 89/336, 92/31, 93/68, and is designed and built in compliance with the following standards:

- EN 62040-1 "General and safety requirements for UPSs used in areas that are accessible to the operator"
- EN 62040-2 "Electromagnetic Compatibility requirements (EMC)"
- EN 62040-3 "Performance and test method requirements"

## 2. TECHNICAL FEATURES *(continued)*

General Features	
UPS Topology	On line double conversion
Architecture of the UPS	Stand alone, transformerless
In/Out phase Configuration	Mono phase-Mono phase
Neutral	Neutral Passing through
Switching Technology	IGBT
Backfeed Protection	Internal, standard
Output wave form on mains operation	Sinusoidal
Output wave form on battery operation	Sinusoidal
Standards	EN 62040-1, EN 62040-2, EN 62040-3

Input Features	
Nominal Voltage	230 V mono phase + neutral + PE
Voltage Range	165V-280V Ph-N full load
Frequency	45 - 65Hz
THDi	< 6% at full load
Power Factor	> 0.99

Bypass	
Nominal Voltage	230 V mono phase + neutral + PE
Voltage Range	±10% (adjustable)
Frequency	±3Hz (adjustable)
Bypass type	Static and electro-mechanic
Transfer time	Zero
Manual Bypass	Not present

Output with Mains (AC-AC)	
Nominal Voltage	220V, 230V, 240V mono phase + neutral + PE
Nominal Power	3.000 VA
Active Power	2.400 W
Voltage variation (static)	± 1%
THDv on nominal power (linear load)	< 1,5%
Frequency	50 Hz or 60 Hz (selectable)
Frequency tolerance	± 0,2% Synchronized with bypass frequency
Current Crest Factor	2,5:1 accordingly to IEC 62040-3
Overload capability: * 2min * 30sec"	120% load rate with no bypass transfer 150% load rate with no bypass transfer

Output with Mains (DC-AC)	
Nominal Voltage	220V, 230V, 240V mono phase + neutral + PE
Nominal Power	3.000 VA
Active Power	2.400 W
Voltage variation (static)	± 1%
THDv on nominal power (linear load)	< 1,5%
Frequency	50 Hz or 60 Hz (selectable)
Frequency tolerance	± 0,01% free run
Current Crest Factor	2,5:1 accordingly to IEC 62040-3
Overload capability: * 2min * 30sec"	120% load rate 150% load rate

Battery features	
Type	Lead Acid, sealed, maintenance free VRLA
Internal Battery Capacity <sup>1</sup>	12 Ah (12V)
Nominal UPS Battery Voltage	72 Volt DC
Max. number of possible internal battery	18pcs
Standard Charging Current	2,7 A
Additional Charger	Yes, Optional - External, mountable on battery cabinet
Additional Charger Capacity	4A

<sup>1</sup>When used with internal transformer, batteries must be used in separate cabinet

Environmental Specifications	
Noise level @ 1m	< 52dBA
Operating temperature range	from 0°C to +40°C
Stock temperature range	from -20°C to +50°C
Humidity range	20-95% not condensing
Protection degree	IP31

Manufacturing Specifications	
Net Weight without batteries <sup>2</sup>	30 kg
Net Weight with Int. Transformer	62 kg
Dimensions (WxHxD)	275 x 716 x 776 mm
Colour	RAL 7016
Communication Interface	1 serial port RS232, 1 USB, 1 smart slot (for optional internal SNMP), 1 EPO, 1 GENSET
Input/Output connections	1P + N + PE
Input/Output Circuit Breaker	20A / 20A

<sup>2</sup> Total weight depends on the quantity of the installed batteries according to the required autonomy

## 3. REAR PANEL DRAWING

