

Keor S 10000

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1. GENERAL FEATURES

Legrand UPS model Keor S 10 is an uninterruptible power source with IGBT switching technology, high frequency PWM technology, Double Conversion On-line, with the possibility to have N+X on site modular redundancy up to total 4 units, Rated Power 10 kVA – 9 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 or input isolation transformer. 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 75% 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 0,9 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 10kVA. 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.

Keor S 10kVA has internal both static bypass and mechanical (maintenance) bypass as standard.

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 10kVA 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, On-Site Paralleling |
| 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 | 195V-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 | Built-in |

| Output with Mains (AC-AC) | |
|---|---|
| Nominal Voltage | 220V, 230V, 240V mono phase + neutral + PE |
| Nominal Power | 10.000 VA |
| Active Power | 9.000 W |
| Voltage variation (static) | ± 1% |
| THDv on nominal power (linear load) | < 3% |
| 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 | 10.000 VA |
| Active Power | 9.000 W |
| Voltage variation (static) | ± 1% |
| THDv on nominal power (linear load) | < 2% |
| 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 ¹ | 12 Ah (12V) |
| Nominal UPS Battery Voltage | 240 Volt DC |
| Max. number of possible internal battery | 20pcs |
| Standard Charging Current | 1,6 A |
| Additional Charger | Yes, Optional - External, mountable on battery cabinet |
| Additional Charger Capacity | 2,5A |

¹When 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 ² | 60 kg |
| Net Weight with Int. Transformer | 126 kg |
| Dimensions (WxHxD) | 275 x 716 x 776 mm |
| Colour | RAL 7016 |
| Communication Interface | 1 serial port RS232, 1 smart slot (for optional internal SNMP), 1 EPO, 1 GENSET |
| Input/Output connections | 1P + N + PE |
| Input/Output Circuit Breaker | 63A / 50A |

²Total weight depends on the quantity of the installed batteries according to the required autonomy

3. REAR PANEL DRAWING

