

Keor HPE 60-80-100-125-160 kVA

Three phase UPS system

Cat.No : 311087 – 311088 – 311089 – 311090 – 311091
311127 – 311128 – 311129



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1. TECHNICAL DATA

1.1 General characteristics

Nominal power [kVA]	60	80	100	125	160
UPS Topology	ON LINE- Double Conversion				
Nominal Apparent Output Power (kVA Cosφ 1.0)	60	80	100	125	160
Nominal Active Output Power (kW Cosφ 1.0)	60	80	100	125	160
Efficiency (AC ÷ AC) (%)					
@25% load	93,0	93,0	93,5	93,5	93,5
@50% load	94,5	94,5	95,0	95,0	95,0
@75% load	95,0	95,0	95,2	95,2	95,2
@100% load	95,0	95,0	95,1	95,1	95,1
Efficiency (AC ÷ AC) (Eco Mode)	≥ 98,0				
Heat dissipation at rated load, VFI voltage (kW)	3,2	4,2	5,15	6,45	8,25
UPS Ambient Temperature (°C)	0 ÷ 40				
BATTERY ambient temperature (°C)	0 ÷ +25				
UPS storage temperature (°C)	-10 ÷ +70				
BATTERY storage temperature (°C)	-10÷60				
Relative humidity % (not condensing)	< 95%				
Altitude m	<1000 (Above Sea level)				
Power derating for altitude > 1000 m	According to "IEC62040-3", 0,5% every 100m				
Ventilation	Forced				
Requested cooling air volume (m3/h)	1100	1000	1200	1300	1300
Audible noise level (according to IEC EN 62040-3)	< 60dB				
Number of cells for standard Lead acid battery	360 ÷ 372				
Protection Degree	IP20				
Electromagnetic Compatibility EMI	According to "IEC EN 62040-2" (CE marking)				
Safety	IEC EN 62040-1				
Test and performance	IEC EN 62040-3				
Colour	RAL9005 (Black) RAL9003 (White)				
Accessibility	Front Access Top Access Side access (with batteries)		Front Access Top Access Side Access DX		

Installation	Against the Wall				
Dimensions (mm) (WxDxH)	560 x 940 x 1500				
Weight kg (without battery)	225	250	280	290	315
Input/output cable connection	Cables input from bottom				
Handling	Base provided for fork-lift				
Storage and transport conditions	According to "IEC EN 62040-3"				
Reference standards	EN 62040-1 - EN62040-2 - EN62040-3 ISO 9001:2008 - ISO 14001				
Front panel	Liquid Cristal Display Touch-screen (optional)				
Voltage-free contact interface	Optional for signalisations / alarms				
Serial communication interface	Standard: RS232 - USB Optional: RS485 (ModBus RTU protocol)				
Parallel configuration (optional)	Up to 5+1 (redundant) Up to 6 (power parallel)				

1.2 Input : rectifier and battery charger

Power [kVA]	60	80	100	125	160
Input	3-phase /4-wire				
Nominal input voltage (Vac)	400				
Input voltage range (%)	-20/+20				
Input frequency (Hz)	50 - 60				
Input frequency range (%)	±10				
Input power factor	>0,99				
Input current THD at nominal voltage and THDV <0,5% (%)					
@25% load	< 5				
@50% load	< 4				
@75% load	< 3				
@100% load	< 3				
DC output voltage accuracy (%)	±1				
DC output voltage ripple (%)	<1 (rms)				
Battery recharging characteristic	Intermittent charging with prevailing state of complete rest and control of the battery status IU (DIN 41773)				
Maximum recharging current (A)					
- at nominal load	15	15	20		
- with DCM function (max current)	30	50	50		
AC-DC converter type	IGBT-based PFC				
Input protection	Fuses				

Nominal current absorbed from mains (at nominal load and battery charged) (A)	91	122	152	190	243
Maximum current absorbed from mains (at nom. load, min. mains voltage and max. recharging current) (A)	136	175	212	267	334
Rectifier soft-start (walk-in) (sec)	Settable from 5" to 30"				
Rectifier sequential start-up (hold-off) (sec)	Settable from 1" to 300"				

■ 1.3 Output Inverter

Power [kVA]	60	80	100	125	160
Inverter Bridge	IGBT (High Frequency PWM)				
Nominal Apparent Output Power (kVA Cosφ 1.0)	60	80	100	125	160
Nominal Active Output Power (kW Cosφ 1.0)	60	80	100	125	160
Efficiency (DC ÷ AC) (%)					
@25% load	96,0				
@50% load	97,0				
@75% load	97,0				
@100% load	97,0				
Output	3-Phase / 4-Wires				
Rated Output Voltage (selectable) (Vac)	380-400-415				
Output Voltage Stability					
- Static (Balanced Load) (%)	± 1				
- Static (Unbalanced Load) (%)	± 2				
- Dynamic (Step Load 20%÷100% ÷20%) (%)	± 5				
- Output Volt. Recovery Time(after step load) (ms)	< 20				
- IEC EN 62040-3	VFI-SS-111				
Phase Angle Accuracy (°)					
- Balanced Load	± 1				
- 100% Unbalanced Load	± 1				
Output Frequency (selectable) (Hz)	50 / 60				
Output Frequency Stability					
- Free Running Quartz Oscillator (Hz)	± 0,001				
- Inverter Sync. with Mains (Hz)	± 2 (others on request)				
- Slew rate (Hz/s)	<1				
Nominal Output Current (@ 400 Vac output) (A)	87	115	144	180	213
Overload Capability					
100%...110%	10 min				
110%...125%	5 min				
125%...150%	30 s				
150%	100 ms				
Short Circuit Current 1st Level (A)	201	268	348	435	558
Time of short circuit 1st Level (ms)	70				
Short Circuit Current 2nd Level (A)	133	178	232	286	257
Time of short circuit 2nd Level (ms)	5				
Short Circuit Characteristic	Current limited with electronic protection Automatic stop after 5 seconds				
Output Waveform	Sinewave				
Output Harmonic Distortion (%)					
- Linear Load	< 1				
- Non Linear Load	< 5				
- IEC EN 62040-3	Fully compliant				

Max Crest Factor without derating	3 : 1
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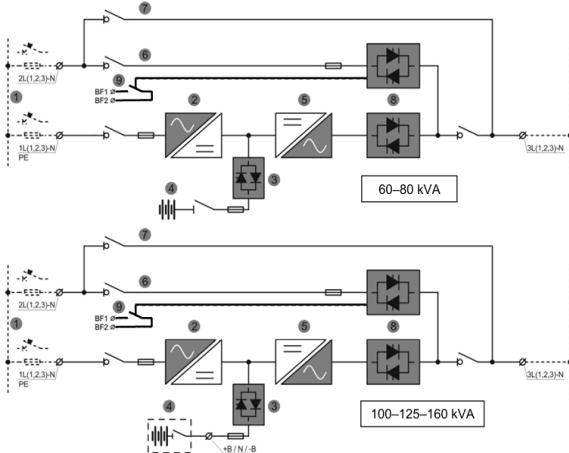
■ 1.4 Battery

Power [kVA]	60	80	100	125	160
Type (standard) other on request	Sealed lead acid (VRLA - maintenance free)				
Number of Cells	360 - 372				
Floating Voltage at 25°C	812 for 360 cells, 840 for 372 cells				
Minimum Discharge Voltage Vdc	620 for 360 cells, 632 for 372 cells				
Power drawn by the inverter (at rated load cosφ = 1) (KW)	61,9	82,5	103,1	128,9	164,9
Current drawn by the inverter (at rated load and minimum battery voltage) (A)	100	133	166	208	266
Battery Protection	Fuses				
Battery Test	Provided as Standard				

■ 1.5 Bypass

Automatic static by-pass	Electronic Thyristor Switch
Nominal input voltage (Vac)	380 – 400 - 415
Input voltage range (%)	±10
Input frequency (Hz)	50 - 60
Input frequency range (%)	±10
Transfer mode	Without break
Transfer: inverter - automatic bypass	In case of: - Short-circuit - Battery discharged - Inverter test - Inverter failure
Transfer: automatic bypass - inverter	- Automatic - Block on bypass after 6 transfers within 2 minutes, reset by front panel
Overload Capability (%)	150 Continuously 1000 For 1 Cycle
Manual Bypass	- Electronically controlled - No-break assisted re-start procedure
Back-feed protection	NC contact for the control of an external device

■ 1.6 Block Diagram



1. Separate mains input for rectifier and bypass
2. Rectifier battery-charger
3. Battery static switch
4. Internal battery for 60-80 kVA (optional external cabinet) - External for 100÷160 kVA
5. Inverter
6. Emergency line (bypass)
7. Maintenance bypass line
8. Inverter (SSI) and bypass(SSB) static switch
9. Contact for external back-feed protection

■ 1.7 Software enabled functions

1. DIESEL MODE OPERATION
2. RECTIFIER WALK-IN TIME
3. RECTIFIER DELAY ON STARTUP (HOLD-OFF TIME)
4. DYNAMIC CHARGING MODE (DCM)
5. VFI / VFD (ECO) OPERATING MODE MANAGEMENT
6. FREQUENCY CONVERTER
7. BATTERY TEMPERATURE VOLTAGE COMPENSATION
8. REMOTE STATUS/ALARMS CARD

■ 1.8 Options

1. SERIAL INTERFACE RS-485 (ModBus protocol RTU)
2. SNMP ADAPTER
3. PARALLEL CARD INTERFACE KIT
4. LOAD-SYNC CARD INTERFACE KIT
5. ISOLATION TRANSFORMER
6. WALL MOUNTED FUSED SWITCH BOX
7. SPECIAL PAINT
8. COMMON BATTERY
9. LITHIUM BATTERY (PLEASE CONTACT THE MANUFACTURER FOR AVAILABILITY AND LEAD TIME)
10. BACKFEED PROTECTION

2. STANDARDS AND REGULATIONS

The UPS Keor HPE has the CE Mark accordingly with the EU Directives 2006/95/2004/108 and it complies 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



3. OTHER INFORMATION



Installation and maintenance manual: mounting informations and maintenance guide available on e-catalogue

For further technical information, please contact Legrand technical support.

Unless otherwise indicated, data reported in this document refers exclusively to test conditions according to product standards. For different conditions of use of the product, inside electrical equipment or in any different installation context, refer to the regulatory requirements of the equipment, local regulations and design specifications of the system.