

KEOR HPE 60-80

311087 – 311088 – 311089 – 311090 – 311091



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1. TECHNICAL FEATURES

1. General Features	
Power (KVA)	60 80
UPS Topology	ON LINE – Double Conversion
Nominal Apparent Output Power (kVA $\cos\phi$ 1.0)	60 80
Nominal Active Output Power (kW $\cos\phi$ 1.0)	60 80
Efficiency (AC + AC) (%)	
@25% load	Up to 93%
@50% load	Up to 94.5%
@75% load	Up to 95%
@100% load	Up to 95%
Efficiency (AC + AC) (Eco Mode)	>98%
Heat dissipation at rated load, VFI voltage (kW)	3.2 4.2
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
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 620401
Test and performance	IEC / EN 620403
Colour	RAL9005 (Black) RAL9003 (White)
Accessibility	Front and Top Access
Installation	Against the Wall
Dimensions (mm) (WxDxH)	560 x 940 x 1500
Weight kg (without battery)	225 250
Max Weight kg (with battery)	780 800
Input/output cable connection	Cables entry front bottom
Transport	Base provided for forklift handling
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	Signalisations / alarms Standard: RS232 - USB
Serial communication interface	Optional: RS485 (Mod-Bus RTU protocol)
Parallel configuration (optional)	Up to 5+1 (redundant parallel) Up to 6 (power parallel)

2. Input: rectifier and battery charger	
Power (KVA)	60 80
Input	Three-phase/3Ph+N
Nominal input voltage (Vac)	400
Input voltage range (%)	- 20 / +15
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
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
- with DCM function (max current)	30 30
AC-DC converter type	IGBT PFC
Input protection	Fuses
Nominal current absorbed from mains (at nominal load and battery charged) (A)	91 122
Maximum current absorbed from mains (at nom. load, min. mains voltage and max. recharging current) (A)	136 175
Rectifier soft-start (walk-in) (sec)	Settable from 5" to 30"
Rectifier sequential start-up (hold-off) (sec)	Settable from 1" to 300"

3. Batteries	
Power (KVA)	60 80
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 $\cos\phi = 1$) (KW)	61.9 82.5
Current drawn by the inverter (at rated load and minimum battery voltage) (A)	100 133
Battery Protection	Fuses
Battery Test	Provided as Standard

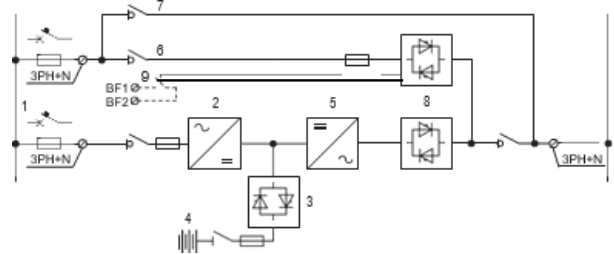
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4. Output Inverter		
Power (KVA)	60	80
Inverter Bridge	3-Level IGBT (High Frequency PWM)	
Nominal Apparent Output Power (kVA Cosφ 1.0)	60	80
Nominal Active Output Power (kW Cosφ 1.0)	60	80
Efficiency (DC ÷ AC) (%)	Up to 96 Up to 97 Up to 97 Up to 97	
@25% load	Up to 96	
@50% load	Up to 97	
@75% load	Up to 97	
@100% load	Up to 97	
Output	3 Phase / 4 Wires	
Rated Output Voltage (selectable) (Vac)	380-400-415	
Output Voltage Stability	± 1	
- Static (Balanced Load) (%)	± 2	
- Static (Unbalanced Load) (%)	± 5	
- Dynamic (Step Load 20%+ 100% +20%) (%)	± 5	
Output Volt. Recovery Time(after step load) (ms)	< 20	
- IEC EN 62040-3	VFIS111	
Phase Angle Accuracy (°)	± 1	
- Balanced Load	± 1	
- 100% Unbalanced Load	± 1	
Output Frequency (selectable) (Hz)	50 / 60	
Output Frequency Stability	± 0,001	
- Free Running Quartz Oscillator (Hz)	± 2 (others on request)	
- Inverter Sync. with Mains (Hz)	< 1	
- Slew rate (Hz/s)	< 1	
Nominal Output Current (@ 400 Vac output) (A)	87	115
Overload Capability	10 min >100%...110% 5 min >110%...125% 30 s >125%...150% 100 ms >150%	
Short Circuit Current 1 st Level (A)	201	268
Time of short circuit 1 st Level (ms)	70	
Short Circuit Current 2 nd Level (A)	133	178
Time of short circuit 2 nd Level (ms)	5	
Short Circuit Characteristic	Current limited with electronic protection Automatic stop after 5 seconds	
Output Waveform	Sinewave	
Output Harmonic Distortion (%)	< 1	
- Linear Load	< 5	
- Non Linear Load	Fully compliant	
- IEC EN 62040-3	Fully compliant	
Max Crest Factor without derating	3:1	

5. Bypass	
Automatic static by-pass	Electronic Thyristor Switch Three-phase + Neutral
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 By-Pass	- Electronically controlled - No-break assisted re-start procedure
Back-feed protection	NC contact for the control of an external device

2. BLOCK DIAGRAM



1. Separate mains input for rectifier and bypass
2. Rectifier battery-charger
3. Battery static switch
4. Internal batteries or external battery cabinet
5. Inverter
6. Emergency line (bypass)
7. Maintenance bypass line
8. Inverter (SSI) and bypass(SSB) static switch
9. Optional contact for external back-feed protection

3. OPTIONS

1. Battery cabinet
2. Serial interface RS485 (ModBus protocol RTU)
3. SNMP adapter
4. Parallel card interface kit
5. Sync card interface kit
6. Isolation transformer

4. SOFTWARE ENABLED FUNCTIONS

1. OPERATION WITH GENERATOR
2. RECTIFIERS SEQUENTIAL STAR (PARALLEL UPSs)
3. SOFTSTART RECTIFIER
4. DYNAMIC CHARGING MODE (DCM)
5. VFI / VFD (ECO) OPERATING MODE MANAGEMENT
6. FREQUENCY CONVERTER