

GENERATING SET GE 100 FR-5

The images are for reference



DEFINITION

Valid declared powers up to the followings environmental conditions: temperature 25°C, altitude 100 meters above sea level

LTP power: stand-by power: Maximum available power for use with variable loads for a yearly number of hours limited at 500 h. No overload is admitted.

PRP power: continue power with variable loads. Maximum power for use with variable loads for a yearly illimited nubers of hours.

COP power: continuous power with constant load. Maximum power for use with constant loads for a yearly unlimited numbers of hours.

POWER RATINGS

* Stand-By three-phase power	100 kVA (80 kW) / 400V / 144.3A
* PRP three-phase power	100 kVA (80 kW) / 400V / 144.3A
* COP power	82 kVA (65.6kW) / 400V / 118.4A
Frequency	50 Hz
Cos φ	0.8

* Output powers according to ISO 8528-1

FEATURES

- Engine compliant with STAGE 5 and EPA TIER 4B (Final)
- Electronic engine speed regulation
- Exhaust gas post-treatment consisting of DOC + DPF + SCR
- Fuel pre-filter and filter with water-in-fuel indicator
- Oversized steel base to protect the hood
- Drag slide integrated in the base
- Anti-rollover side pockets for handling with forklifts
- Central lifting hook with scratch protection plate
- Rounded edges to allow rainwater to run off
- Sealed base able to contain any leaks of liquids present in the engine, avoiding environmental pollution
- Large capacity steel tank
- Adblue tank (urea solution)
- External access for cleaning and emptying the tank
- Large access doors to allow easy maintenance (replacement of air, oil, fuel filters)
- Access door for radiator cleaning and inspection
- Door with viewing window for the control panel
- External access for filling the radiator
- External plug for water drainage
- Oil extraction pump
- 3-way valve for fuel transfer from external tank with quick filling couplings housed in a special niche (OPTIONAL)
- Low level of noise emissions
- Fuel level sensor
- Crankcase leak detection sensor
- Battery disconnect switch
- Emergency button
- Power cable connection terminal block
- Electrical distribution panel with three-phase and single-phase output sockets
- Four-pole general magnetothermic switch
- Electronic differential relay adjustable in current and tripping time as standard with the electrical distribution board
- Insulation monitor (as an alternative to the electronic differential relay)
- Primary brand brushless alternator with three-phase sensing "AVR" electronic voltage regulation
- Alternator windings protected with marine impregnation





ENGINE 1500 RPM

4 STROKE, DIRECT INJECTION, TURBOCHARGED	
Model	FPT F36ETVP03.A94
* Stand-By net power	90.6 kW (123.2 hp)
* PRP net power	90.6 kW (123.2 hp)
* COP net power	72.4 kW (99.5 hp)
Cylinders / Displacement	4 / 3.6 lit. (3600 cm ³)
Bore / Stroke	102 / 110 (mm)
Compression ratio	18.5 : 1
BMEP (Brake Mean Effective Pressure : LTP - PRP)	2610 kPa (26,1 bar)
Speed governor type	Electronic
FUEL CONSUMPTION	
110 % (Stand-by power)	23.5 lt./h
100 % to PRP	17.2 lt./h
75 % to PRP	11.5 lt./h
50 % to PRP	6.5 lt./h
ADBLUE TANK CAPACITY	
110 % (Stand-by power)	1 lt./h (4.3 % fuel)
100 % to PRP	0.78 lt./h (4.5 % fuel)
75 % to PRP	0.7 lt./h (6.1 % fuel)
50 % to PRP	0.26 lt./h (4 % fuel)
COOLING SYSTEM	
Total system cap. - only engine	12 lt - 5 lt.
Fan air flow	150 m ³ /min.

LUBRICATION SYSTEM	
Total oil system capacity	9 lit.
Oil capacity in sump	8 lt. ÷ 6 lt.
Oil consumption at full load	0.25%
EXHAUST SYSTEM	
Maximum exhaust gas flow	6.68 kg/mim.
Max. exhaust gas temp.	760 °C
Maximum back pressure	2.2 kPa (22 mbar)
External diameter exhaust pipe	/
ELECTRICAL SYSTEM	
Starter motor power	4.2 kW
Battery charging alternator cap.	120 A
Cold start	- 25 °C
With cold start aid	/
AIR FILTER	
Combustion air flow	6.36 kg/min
HEAT REJECTED AT FULL LOAD	
To exhaust system	73.5 kW
To water and oil	56 kW
Radiated to room	13 kW
To charge cooler	13.1 kW
DERATING	
Ambient temperature	2% per 5°C > 40°C
Altitude above sea level	3% per 500m > 1000m < 3000m 6% per 500m > 3000m

* Output powers according to ISO 3046-1

ALTERNATOR

SYNCHRONOUS, THREE-PHASE, SELF-EXCITED, BRUSHLESS	
Continuous power	100 kVA
Stand-by power	113 kVA
Three phase voltage	380-440 Vac
Frequency	50 Hz
Cos φ	0.8
Model A.V.R.	HVR-30 (3ph. sensing)
Voltage regulation acc.	± 1.0 %
Sustained short circuit current	2.5 In
Transient dip (100% load)	< 10 %
Recovery time	< 0.3 sec
Efficiency at 100% load	90.6 % (400V - Cosφ 0.8)
Insulation	Class H
Connection - Terminals	Star (With N) - N°12
Electromagnetic compatibility (R.F.I. suppr.)	EN 55011
Waveform distortion - THD	< 3 %
Telephone interference - THF	< 2 %

REACTANCES (100 kVA - 400V)	
Direct axis synchronous - X _d	298 %
Direct axis transient - X' _d	18 %
Subdirect axis transient - X'' _d	9 %
Quadrature axis synchronous - X _q	194 %
Quadr. axis subtransient - X'' _q	/
Negative sequence - X ₂	/
Zero sequence - X ₀	/
TIME CONSTANTS	
Transient - T' _d	0.022 sec
Subtransient - T'' _d	0.011sec
Open circuit - T' _{do}	0.277 sec
Armature - T _a	/
Short-circuit ratio K _{cc}	0.47
IP protection degree	IP 23
Cooling air flow	0.3 m ³ /sec.
Coupling Bearing	Direct SAE 3 -11 ½ - N°1

GENERAL SPECIFICATIONS

Fuel tank capacity	400 lt.
Running time (75% to PRP)	23.2 h
Starter battery	12 Vdc -100Ah / 800A CCA(EN)
IP protection degree	IP 44

* Acoustic power L _{WA} (pressure L _{pA})	91 dB(A) (66 dB(A) @ 7m)
Performance class (ISO 8528)	G3

* Acoustic power according to European Directive 2000/14/CE



CONTROL PANEL

DIGITAL CONTROL PANEL

- InteliLite4 AMF9 controller
- Power switch
- Siren
- Emergency stop button
- Forced regeneration button
- 1500-1800 rpm selector for forced regeneration
- 4-pole magnetothermal switch
- Electronic differential relay
- Power terminal block
- Earth terminal (PE)
- Output sockets: 1x 400V 125A 3P+N+T CEE IP67
 - 1x 400V 63A 3P+N+T CEE IP67
 - 1x 400V 32A 3P+N+T CEE IP67
 - 1x 400V 16A 3P+N+T CEE IP67
 - 1x 230V 16A 2P+T CEE IP67
 - 1x 230V 16A 2P+T SCHUKO
- Circuit breaker (for 125A socket)
- Differential-magnetothermal switch for 400V 63A socket
- Differential-magnetothermal switch for 400V 32A socket
- Differential-magnetothermal switch for 400V 16A socket
- 2x Differential-magnetothermal switch for 230V 16A socket



INTELLILITE4 AMF9 CONTROLLER CHARACTERISTICS	
Operating mode	<ul style="list-style-type: none"> • OFF - MAN. - AUTO - TEST
Display - Pulsanti-LEDs	<ul style="list-style-type: none"> • Backlit display, LCD 132x64 pixels • Buttons / Buttons: START - STOP - RESET ALARMS / FAULT RESET • LEDs: Generator / GCB ON status - Grid status
Generator Measures	<ul style="list-style-type: none"> • Voltage : L1-L2 / L2-L3 / L3-L1 - N-L1/N-L2/N-L3 • Current : I1 - I2 - I3 • Frequency Hz • Powers : kVA - kW - kVAR (totali e per fase) • Energy : kVAh - kWh - kVARh • Cos φ (medium and per phase)
Engine Measures	<ul style="list-style-type: none"> • Water temperature • Oil pressure • Fuel level • Rpm meter • Battery voltage • Maintenance • Hours meter • Starts number
Generator Protections	<ul style="list-style-type: none"> • Overload • Overcurrent • Short circuit • Over-Undervoltage • Over-Underfrequency • Voltage asymmetry • Unbalanced current • Phase sequence
Engine Protections	<ul style="list-style-type: none"> • Overspeed • High water temperature warning • Low oil pressure warning • Low fuel level warning • Over-Under battery voltage • Battery charge alternator failure • Start failure • Stop failure • Emergency stop • Low water level shutdown (option)

AMF functions (Automatic control panel only)	<ul style="list-style-type: none"> • Measure mains voltage : L1-L2 / L2-L3 / L3-L1 - N-L1/N-L2/N-L3 • Measure mains frequency • Three phase detection • Over-Under mains voltage • Over-Under mains frequency • Voltage asymmetry • Phase sequence • Dual mutual stand-by application
Features	<ul style="list-style-type: none"> • Event history, 150 stored events • 3 programmable test timers • Programming from panel or from PC • 3 selectable languages (other languages available) • Direct connection to engines with ECU (Stage V, Tier 4 Final) via Can Bus J1939 • External Start and Stop • Programmable inputs and outputs • Alternative configurations (50 / 60Hz) • IP 65 protection • Operating temperature: -20 ° C - + 70 ° C
Communication	<ul style="list-style-type: none"> • USB port • RS232- RS485 (optional) • Modbus RTU / TCP (optional) • GSM modem. Commands alarms, events via SMS (optional) • Internet connection with Ethernet (optional) • Online control and monitoring on web pages (embedded web server) (optional) • SNMP (optional) • GPS / 4G modem (optional) (geographical tracking via WebSupervisor) • Internal PLC support

CONTROL PANEL

CONTROL PANEL DGVU-"B"

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- Power switch
- Siren
- Emergency stop button
- Forced regeneration button
- 1500-1800 rpm selector for forced regeneration
- 4-pole magnetothermal switch
- Insulation monitor
- Power terminal block
- Equipotential earth terminal
- Output sockets: 1x 400V 125A 3P+N+T CEE IP67
1x 400V 63A 3P+N+E CEE IP67
1x 400V 32A 3P+N+T CEE IP67
1x 400V 16A 3P+N+E CEE IP67
2x 230V 16A 2P+E SCHUKO
- Circuit breaker (for 125A socket)
- Circuit breaker for 400V 63A socket
- Differential switch for 400V 63A socket - Type B
- Differential-magnetothermal switch for 400V 32A socket - Type B
- Differential-magnetothermal switch for 400V 16A socket - Type B
- 2x Circuit breaker for 230V 16A Schuko socket - Type B



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WEIGHT - DIMENSIONS AND ACCESSORIES

GE 100 FR-5

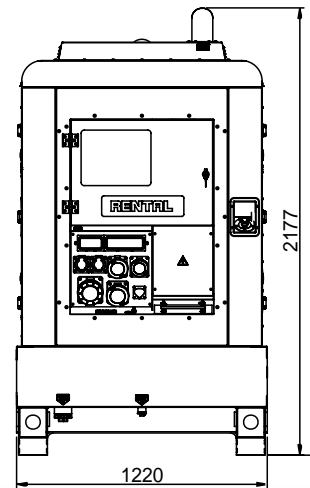
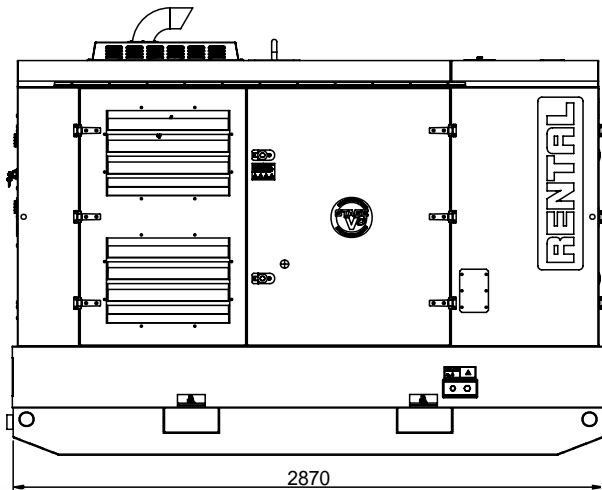


DRY WEIGHT MACHINE:
• 1950 Kg

Generating set pictured may include optional accessories.



DIMENSIONS DRAW



VERSIONS IN ADDITION TO THE STANDARD FEATURES

	HEATER	3WAY	DGUV
3-way valve		✓	
Engine water heater	✓		
Isometer			✓

ACCESSORIES ON REQUEST

- Internet / Ethernet plug-in module with Web Server
- GPS / 4G modem with antenna
- Plug-in module with double RS232 and RS485 ports
- Report card 15 alarms / states (configurable)
- Remote control panel (ATS) PAC-I 70 (100A)
- MT25 grounding

AVAILABLE VERSIONS

CN8U10G1	STANDARD
CN8U10G1A	HEATER
CN8U10G1H	3WAY
CN8U10G1AH	3WAY + HEATER
CN8U10U1	DGUV
CN8U10U1A	DGUV + HEATER
CN8U10U1H	DGUV + 3WAY
CN8U10U1AH	DGUV + 3WAY + HEATER

GENERAL INFORMATION

COMPLIANCE GENERATING SETS WITH EC DIRECTIVES AND STANDARDS

- 2006/42 / EC (Machines Directive)
- 2014/35 / EU (Low Voltage Directive)
- 2014/30 / EU (EMC Directive)
- 2000/14 / EC (Directive Acoustic Emission for machines for use outdoors)
- ISO 8528 (Reciprocating internal combustion engine driven alternating current generating sets)



ISO 9001:2008 - Cert. 0192

WARRANTY

All devices are covered by the manufacturer's warranty.

Non-contractual document. Specification subject to change without notice.

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