

GENERATING SET GE 90 BSX



AVR

POWER RATINGS

* Stand-By three-phase power (LTP)	88 kVA (70.4 kW) / 400V / 127 A
* PRP three-phase power	80 kVA (64 kW) / 400V / 115.5 A
* PRP single-phase power	57 kVA (45.6 kW) / 400V / 82.3 A
Frequency	50 Hz
Cos φ	0.8

* Output powers according to ISO 8528-1

FEATURES

- Manual digital control panel
- Electronic speed governor
- Four pole circuit breaker
- Automatic voltage regulation "AVR"
- Display of fuel level, water temperature and oil pressure on the control unit
- Low level water radiator sensor
- Central lifting eye
- Bunded base with drain plug
- Oil drain pump
- Meets EC directives



water cooled



diesel



three-phase



electric starter

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.

ENGINE 1500 RPM

4 STROKE, DIRECT INJECTION, TURBOCHARGED

Model	BAUDOUIN 4M11G90/5
* Stand-By net power	79.5 kW (108 hp)
* PRP net power	72.5 kW (99 hp)
* COP net power	49.5 kW (67 hp)
Cylinders / Displacement	4 / 4500 cm ³ (4.5 lt.)
Bore / Stroke	105 / 130 (mm)
Compression ratio	18 : 1
BMEP (Brake Mean Effective Pressure : LTP - PRP)	1440 kPa
Speed governor type	Electronic
FUEL CONSUMPTION	
110 % (Stand-by power)	20.7 lt./h
100 % to PRP	18.6 lt./h
75 % to PRP	13.7 lt./h
50 % to PRP	9.4 lt./h
COOLING SYSTEM	
Total system cap. - only engine	17 lt – 5.3 lt.
Fan air flow	146 m ³ /min.
LUBRIFICATION SYSTEM	
Total oil system capacity	13 l
Oil capacity in sump	9 lt ÷ 11 lt.
Oil consumption at full load	< 0.02 l/h

EXHAUST SYSTEM	
Maximum exhaust gas flow	17 m ³ /min.
Max. exhaust gas temp.	550 °C
Maximum back pressure	6 kPa (0.06 bar)
External diameter exhaust pipe	/
ELECTRICAL SYSTEM	
Starter motor power	4 kW
Battery charging alternator cap.	80 A
Cold start	-10°C
With cold start aid	- 30 °C
AIR FILTER	
Combustion air flow	4.8 m ³ /min
HEAT REJECTED AT FULL LOAD	
To exhaust system	/
To water and oil	/
Radiated to room	/
To charge cooler	/

* Output powers according to ISO 3046-1



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ALTERNATOR

SYNCHRONOUS, THREE-PHASE, SELF-EXCITED, SELF-REGULATED, BRUSHLESS	
Continuous power	80 kVA
Stand-by power	88 kVA
Three phase voltage	380 - 440 Vac
Frequency	50 Hz
Cos ϕ	0.8
Model A.V.R.	MARK VX.(M00FA122A)
Voltage regulation acc.	$\pm 0.5 \%$
Sustained short circuit current	$\geq 3 I_n$
Transient dip (100% load)	$< 20-25 \%$
Recovery time	$< 0.3 \text{ sec}$
Efficiency at 100% load	89.5 % (400V - Cos ϕ 0.8)
Insulation	Class H
Connection - Terminals	Star - N°12
Electromagnetic compatibility (R.F.I. suppr.)	EN 55011
Waveform distorsion - THD	$< 2 \%$
Telephone interference - THF	$< 2 \%$

REACTANCES (80 kVA - 400V)	
Direct axis synchronuos - Xd	381 %
Direct axis transient - X'd	24.9 %
Subdirect axis transient - X''d	14.4 %
Quadrature axis synchronuos - Xq	160 %
Quadr. axis subtransient - X''q	15.8 %
Negative sequence - X2	15.1 %
Zero sequence - X0	7.5 %
TIME CONSTANTS	
Transient - T'd	0.09 sec
Subtransient - T''d	0.01 sec
Open circuit - T'do	0.924 sec
Armature - Ta	0.009 sec
Short-circuit ratio Kcc	0.35
Grado di Protezione IP	IP 23
Cooling air flow	0.2 m³/sec.
Coupling I Bearing	Direct SAE 3 - 11 ½ - N°1

GENERAL SPECIFICATIONS

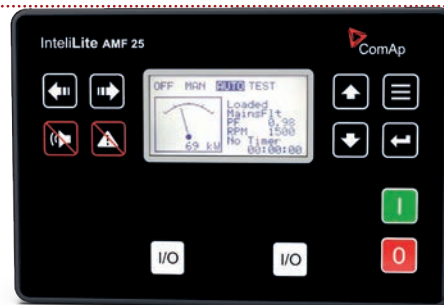
Fuel tank capacity	230 lt.
Running time (75% to PRP)	16.8 h
Starter battery	12 Vdc -100Ah / 720A CCA(EN)
IP protection degree	IP 44

* Measured acoustic power LwA (pressure LpA)	94.3 dB(A) (69.3 dB(A) @ 7m)
* Guaranteed acoustic power LwA (pressure LpA)	96 dB(A) (71 dB(A) @ 7m)
Performance class (ISO 8528)	G3

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

CONTROL PANEL

- Controller IntiLite AMF25
- Controller supply switch
- Siren
- Emergency stop button
- TCM 35 remote control plug
- Four pole circuit breaker
- PAC (ATS) plug - Automatic control panel only
- Battery charger - Automatic control panel only
- Earth terminal (PE)



AMF25 CONTROLLER CHARACTERISTICS

Operating mode	• OFF - MAN. - AUTO - TEST
Display	• Graphic back-light LCD display 128x64 pixels
LEDs	• Gen-set voltage OK • Gen-set failure • GCB ON (only for Automatic transfer unit) • Mains voltage OK (only for Automatic transfer unit) • Mains failure (only for Automatic transfer unit) • MCB ON (only for Automatic transfer unit)
Buttons	• START button • STOP button • FAULT RESET button • RESET HORN button • MODE selection button • Pulsante chiusura/apertura GCB button • Pulsante chiusura/apertura MCB button • N° 4 buttons for controller programming
Generator Measures	• Voltage : L1-L2 / L2-L3 / L3-L1 - N-L1/N-L2/N-L3 • Current : I1 - I2 - I3 • Powers : kVA - kW - kVAR (totali e per fase) • Energy : kVAh - kWh - kVARh • Cos φ (medium and per phase) • Frequency
Engine Measures	• Water temperature • Oil pressure • Fuel level • Rpm meter • Battery voltage • Maintenance • Hours meter • Starts number
Generator Protections	• Overload • Overcurrent • Short circuit • Over-Undervoltage • Over-Underfrequency • Voltage asymmetry • Unbalanced current • Phase sequence
Engine Protections	• 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 functins (Automatic control panel only)	• 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	• Historical events • 3 programmable test timers • Panel or PC programming • 3 selectable languages • Direct connection to engines with ECU 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	• RTU Modbus (optional board with RS232 & RS485 outputs is needed) • TCP/IP Modbus (optional Ethernet board with RJ45 output is needed) • SNMP Modbus (optional Ethernet board with RJ45 output is needed) • Internet (optional Ethernet board optional is needed) • GSM/GPRS (integrated Modem board optional is needed) for Gen-set remote control via SMS or internet • GPS / 4G modem (optional) (geographical tracking via WebSupervisor

CONTROL PANEL VERSION WITH OUTPUT SOCKETS

SOCKETS	1x 125A 400V 3P-N-T IP IP67 1x 63A 400V 3P-N-T IP67 1x 32A 400V 3P-N-T IP67 1x 16A 400V 3P-N-T IP67 1x 230V 2P-T IP67 1x 230V 2P-T Schuko IP54
Each socket is protect by own automatic switch. Circuit breaker for 125A and 63A sockets. GFI and circuit breaker 30mA for 32A and 16A socket.	

WEIGHT - DIMENSIONS AND ACCESSORIES

GE 90 BSX



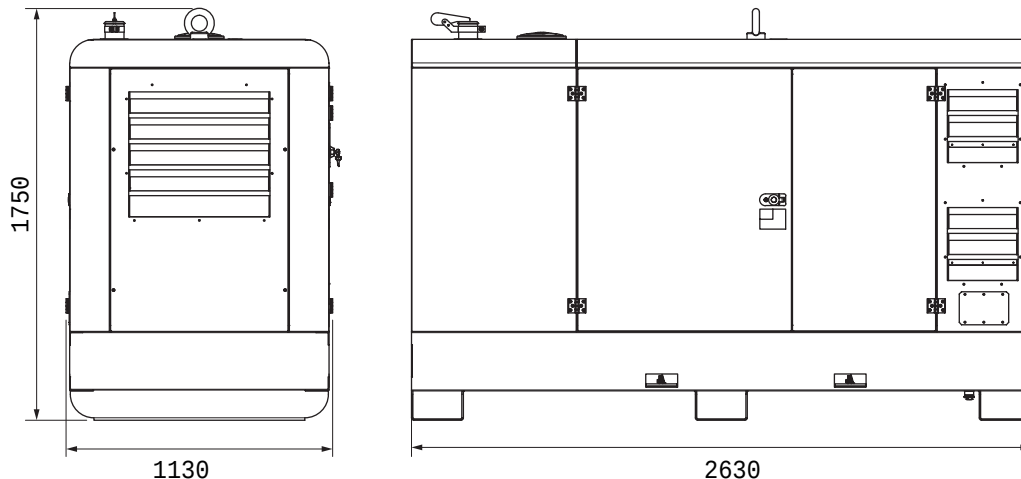
DRY WEIGHT MACHINE:

- 1700kg

Generating set pictured may include optional accessories.



DIMENSIONS DRAW



OPTIONS ON REQUEST

- Automatic transfer switch unit (ATS) PAC 111-M (160A)
- Remote control TCM35
- Earthing kit



VERSIONS ON REQUEST

- The electrical panel with Sockets CEE
- Manual digital control panel (without sockets)
- Parallel switch board



FACTORY INSTALLATION OPTIONS

- Electronic leakage relay
- Isometer
- Volt adjustable from control panel
- Tank 350l
- 3-way valve fuel system with quick connection for external fuel tank supply
- Engine water heater WH
- Spark arrestor
- Main battery switch
- Low level water sensor
- Plug-in module with double RS232 and RS485 ports
- GSM modem with antenna
- GPS / 4G modem with antenna
- Internet / Ethernet plug-in module with Web Server
- Reporting card 15 alarms / states (ref. IGL-RA15)
- Input / Output extension module (N ° 16 tot.)

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.

The company reserves the right to change this specification without notice. For further information please contact the sales department.

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