



GENERATING SET GE 20 YSX

The images are for reference



FEATURES

- Fuel level sensor
- Basement leak detection sensor
- Battery disconnect switch
- Emergency button
- Control panel in 3 versions: MANUAL - MANUAL WITH SOCKETS - AUTOMATIC
- General four-pole thermomagnetic switch
- High sensitivity 30mA differential switch
- Brushless alternator with electronic voltage regulation "AVR" with three-phase sensing
- Alternator windings protected with marine impregnation



water cooled



diesel



three-phase power



electric



super silenced

POWER RATINGS

	THREE-PHASE	SINGLE-PHASE
* Stand-By three-phase power	20 kVA (16 kW) 400V / 28.9 A	/
* PRP three-phase power	18 kVA (14.4 kW) 400V / 26 A	/
* PRP single-phase power	/	20 kVA (16 kW) / 230V - 115V / 86.9 A - 173.9A
* COP single-phase power	7 kVA / 230V / 30.4A	18 kVA (14.4 kW) / 230V - 115V / 78.3 A - 156.5A
Frequency	50 Hz	
Cos φ	0.8	

* Output powers according to ISO 8528-1

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, NATURAL ASPIRATED

Model	YANMAR 4TNV88-BIGE
* Stand-By net power	18 kW (24,5 hp)
* PRP net power	16,4 kW (22,3 hp)
* COP net power	/
Cylinders / Displacement	4 / 2,19 lit. (2190 cm ³)
Bore / Stroke	88 / 90 (mm)
Compression ratio	20 : 1
BMEP (Brake Mean Effective Pressure : LTP - PRP)	/
Speed governor type	Electronic
FUEL CONSUMPTION	
110 % (Stand-by power)	5 lit./h
100 % to PRP	4,5 lit./h
75 % to PRP	3,4 lit./h
50 % to PRP	2,6 lit./h
COOLING SYSTEM	
Total system cap. - only engine	/ lit. - 2,7 lit.
Fan air flow	50 m ³ /min.
LUBRICATION SYSTEM	
Total oil system capacity	/
Oil capacity in sump	3,4 lit. (min) - 7,4 lit. (max)
Oil consumption at full load	/

* Output powers according to ISO 3046-1

EXHAUST SYSTEM	
Maximum exhaust gas flow	/
Max. exhaust gas temp.	520 °C
Maximum back pressure	9,8 kPa (0,1 bar)
External diameter exhaust pipe	/
ELECTRICAL SYSTEM	
Starter motor power	1,4 kW
Battery charging alternator cap.	40 A
Cold start	Glow plugs
With cold start aid	/
AIR FILTER	
Air filter	Dry
Combustion air flow	1.48 m ³ /min
HEAT REJECTED AT FULL LOAD	
To exhaust system	/
To water and oil	/
Radiated to room	/
To charge cooler	/



ALTERNATOR

SYNCHRONOUS, THREE-PHASE, SELF-EXCITED, SELF-REGULATED, BRUSHLESS		
	THREE-PHASE	SINGLE-PHASE
Continuous power	20 kVA	20 kVA
Stand-by power	23 kVA	22 kVA
Three phase voltage	380-415 Vac	220-240V / 110-120V
Frequency	50 Hz	50 Hz
Cos φ	0.8	0.8
Model A.V.R.	HVR-30 (3ph. sensing)	HVR-11
Voltage regulation acc.	± 1.0 %	± 1.0 %
Sustained short circuit current	2.5 In	2.5 In
Transient dip (100% load)	10 %	10 %
Recovery time	≤ 3 sec.	≤ 3 sec.
Efficiency at 100% load	86.1 % (400V - Cos φ 0.8)	87.1 % (230V - Cos φ 0.8)
Insulation	Class H	Class H
Connection - Terminals	Star - N°12	ZIG ZAG - N°12
Electromagnetic compatibility (R.F.I. suppr.)	EN 55011	EN 55011
Waveform distortion - THD	< 3 %	< 3 %
Telephone interference - THF	/	/

REACTANCES (20 kVA - 400V)		
REACTANCES (20 kVA - 230V ~1)		
Direct axis synchronous - Xd	242 %	243 %
Direct axis transient - X'd	19 %	19 %
Subdirect axis transient - X''d	9 %	8 %
Quadrature axis synchronous - Xq	133 %	135 %
Quadr. axis subtransient - X''q	/	/
Negative sequence - X2	/	/
Zero sequence - X0	/	/
TIME CONSTANTS		
Transient - T'd	0.007 sec	0.01 sec
Subtransient - T''d	0.005 sec	0.005 sec
Open circuit - T'do	0.103 sec	0.125 sec
Armature - Ta	/	/
Short-circuit ratio Kcc	0.57	0.58
Cooling air flow	0.1 m ³ /sec.	0.1 m ³ /sec.
Coupling Bearing	Direct SAE 4 -7 ½ - N°1	Direct SAE 4 -7 ½ - N°1

GENERAL SPECIFICATIONS

Fuel tank capacity	100 lt. / 350 lt
Running time (75% to PRP)	29,5 h / 103 h
Starter battery	12 Vdc -80Ah / 670A CCA(EN)

IP protection degree	IP 44
Acoustic pressure	63 dB(A) @ 7m
Performance class (ISO 8528)	G2



MANUAL CONTROL PANEL

- Intellilite4 AMF9 controller
- Power switch
- Siren
- Emergency stop button
- 16A 230V 2P+T CEE plug - Optional (Engine heater and battery charger power supply)
- Differential-magnetic-thermal switch
- Power terminal block
- Earth terminal (PE)

AUTOMATIC CONTROL PANEL

- Intellilite4 AMF9 controller
- Power switch
- Siren
- Emergency stop button
- Connector for TCM 35 remote control
- 16A 230V 2P+T CEE plug - Optional (Engine heater and battery charger power supply)
- Differential-magnetic-thermal switch
- Power terminal block
- Earth terminal (PE)

CONTROL PANEL WITH SOCKETS

- Intellilite4 AMF9 controller
- Power switch
- Siren
- Emergency stop button
- Connector for TCM 35 remote control
- 16A 230V 2P+T CEE plug - Optional (Engine heater and battery charger power supply)
- Differential-magnetic-thermal switch
- Output sockets: 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 IP68
- Magnetothermic switch for 400V 16A socket
- Magnetothermic switch for 230V 16A sockets
- Earth terminal (PE)

CONTROL PANEL WITH DGVU SOCKETS

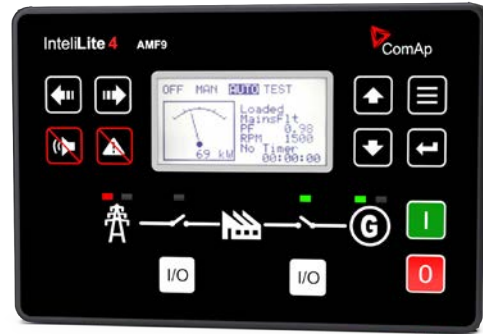
- Intellilite4 AMF9 controller
- Power switch
- Siren
- Emergency stop button
- Connector for TCM 35 remote control
- 16A 230V 2P+T CEE plug - Optional (Engine heater and battery charger power supply)
- Isolation monitor
- Circuit breakers
- Output sockets: 1x 400V 32A 3P+N+T CEE IP67
1x 400V 16A 3P+N+T CEE IP67
2 x 230V 16A 2P+T SCHUKO IP68
- Differential-magnetic-thermal switch - TypeB
- Differential circuit breaker for 230V 16A Schuko socket - TypeB
- Equipotential earth terminal (PE)

CONTROL PANEL WITH AUSTRALIA SOCKETS

- Intellilite4 AMF9 controller
- Power switch
- Siren
- Emergency stop button
- Connector for TCM 35 remote control
- 16A 230V 2P+T CEE plug - Optional (Engine heater and battery charger power supply)
- Differential-magnetic-thermal switch
- Output sockets: 1x 400V 32A 3P+N+T AUSTRALIA IP67
2x 230V 15A 2P+T AUSTRALIA IP67
- Magnetothermic switch for 230V 15A socket
- Earth terminal (PE)

DIGITAL CONTROL PANEL

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 : 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 Maintance 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 functins (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) Internet connection with Ethernet (optional) Online control and monitoring on web pages (embedded web server) (optional) GPS / 4G modem (optional) (geographical tracking via WebSupervisor) Internal PLC support
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WEIGHT - DIMENSIONS AND ACCESSORIES



DRY WEIGHT MACHINE:

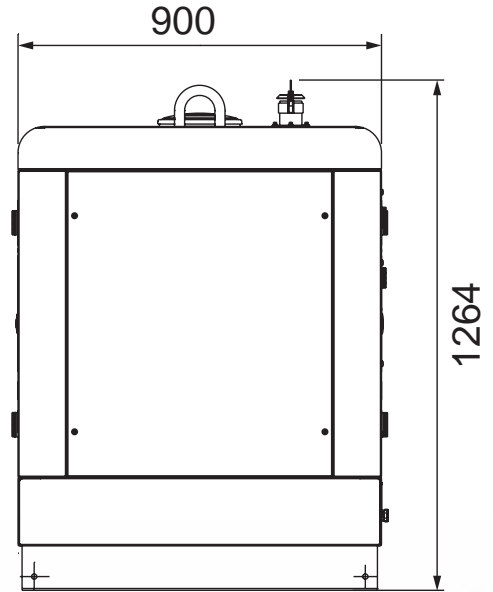
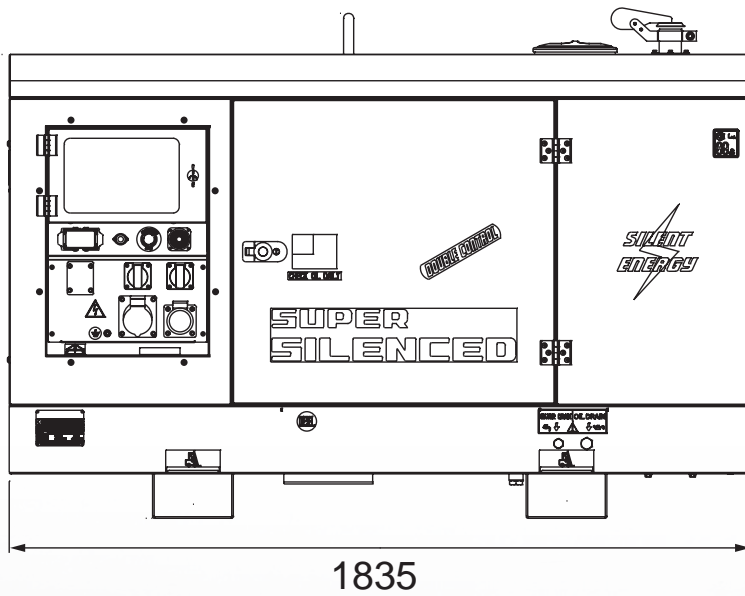
- 750 kg
- 790 kg (~single-phase)
- 890 Kg (tank version 350 lt)



DIMENSIONS DRAW

- 1835 x 900 x 1575 mm (tank version 350 lt)
- For version with **100 lt tank**, see the illustrations as shown below.

Generating set pictured may include optional accessories.





VERSIONS IN ADDITION TO THE STANDARD FEATURES

	PLUS	HEATER	WINTER	INSTRUMENT	REMOTE	3WAY	350L	TOP	OIL & GAS	ISO
Water T. + Oil P. indicator light	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GFI Electr.	✓		✓		✓	✓	✓	✓	✓	
Radio control					✓					
3-way valve						✓		✓	✓	✓
350L tank							✓	✓		
Engine water heater		✓	✓					✓		
Isometer										✓
Spark extinguisher									✓	

OPTIONS ON REQUEST

- Internet/Ethernet plug-in module with Web Server
- GPS/4G modem with antenna
- Report card for 15 alarms/statuses (configurable)
- Network/Group telecommutation panel, PAC 28 (40A) (Only with Automatic control panel) (THREE-PHASE only)
- Telecommutation panel (ATS) PAC-I 28 (40A) (Only with manual control panels) (only THREE-PHASE)
- Network/Group telecommutation panel, PAC 42 (60A) (Only with Automatic control panel) (SINGLE-PHASE only)
- TCM35 remote control (Only with manual control panels)
- Slow towing CTL20
- CTV1 road trolley
- Drag sled
- MT25 earthing

AVAILABLE VERSIONS

MANUAL WITHOUT SOCKETS		AUTOMATIC WITHOUT SOCKETS	
CE9Q3051	STANDARD	CE9Q30F1	STANDARD
CE9Q3051BR	PLUS	CE9Q30F1AB	HEATER
CE9Q3051BW	REMOTE	CE9Q30F1ABR	WINTER
CE9Q3051BHR	3WAY	CE9Q30F1ABLR	WINTER + 3WAY
CE9Q3051BLR	350L	CE9Q30F1ABHLR	TOP
CE9Q3051ABHLR	TOP		
MANUAL WITH SOCKETS			
CE9Q30G1	STANDARD	CE9Q30G1BLR	350L
CE9Q30G1B	INSTRUMENT	CE9Q30G1BCHR	OIL & GAS
CE9Q30G1BR	PLUS	CE9Q30G1ABHLR	TOP
CE9Q30G1BRW	REMOTE		
CE9Q30G1BHR	3WAY		
CE9Q30G1BHT	ISO		
MANUAL WITH SOCKETS (DGVU - NO GFI)			
CE9Q30U1BH	3WAY		
CE9Q30U1ABHL	3WAY + 350L		
MANUAL WITH SOCKETS (AUSTRALIA)			
CE9Q3041BHR	3WAY		
AUTOMATIC SINGLE PHASE			
CE9Q30CA	STANDARD	CE9Q30CAABHLR	TOP
CE9Q30CAABR	WINTER		

GENERAL INFORMATION

COMPLIANCE GENERATING SETS WITH EC DIRECTIVES AND STANDARDS

- 2006/42/EC (Machinery Directive)
- 2014/35/EU (Low Voltage Directive)
- 2014/30/EU (Electromagnetic Compatibility Directive)
- ISO 8528-13:2016 (Alternating current generator sets powered by reciprocating internal combustion engines, Part 13: Safety)
- 2000/14/EC (Noise Emissions Directive for machines used for outdoor use)
- EN 60204-1:2018 (Safety of machinery - Electrical equipment of machines, Part 1: General rules)
- EN ISO 12100:2010 (Safety of machinery - General design principles - Risk assessment and risk reduction)



ISO 9001:2008 - Cert. 0192

WARRANTY

All devices are covered by the manufacturer's warranty.

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

© MOSA - Viale Europa, 59 - 20047 Cusago (Milano) - Italy - phone +39-0290352.1 - fax +39-0290390466 E-mail: export@mosa.it Web site: www.mosa.it

