

GENERATING SET GE 65 FSX



FEATURES

- Motor compliant with stage 3A
- Automatic voltage regulation "AVR" with three-phase sensing
- The rounded edges of the canopy designed for rainwater drainage away
- Bunded base suitable to contain any liquids leakage from engine avoiding environmental pollution
- External caps for oil and water drain
- Large doors for better and easy maintenance (air, oil, fuel filters replacement)
- Central lifting eye
- Forklift pockets
- Control panel with digital control unit available with automatic or manual version
- Complies with regulation 2016/1628/EU FOR STATIONARY USE ONLY



water cooled



diesel



three-phase power



electric



super silenced

POWER RATINGS

* Stand-By three-phase power (LTP)	66 kVA (52.8 kW) / 400V / 95.3 A
* PRP three-phase power	60 kVA (48 kW) / 400V / 86.7 A
* PRP single-phase power	22 kVA / 230V / 95.6 A
* COP single-phase power	/
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, TURBOCHARGED

Model	FPT N45SM1F
* Stand-By net power	60 kW (81.6 hp)
* PRP net power	54.5 kW (74.1 hp)
* COP net power	43.2 kW (58.7 hp)
Cylinders / Displacement	4/ 4500 cm ³ (4.5 lt.)
Bore / Stroke	104 / 132 (mm)
Compression ratio	17.5 : 1
BMEP (Brake Mean Effective Pressure : LTP - PRP)	1102 kPa - 1000 kPa
Speed governor type	Mechanical
FUEL CONSUMPTION	
110 % (Stand-by power)	18 lt./h
100 % to PRP	16.7 lt./h
75 % to PRP	12.3 lt./h
50 % to PRP	9.5 lt./h
COOLING SYSTEM	
Total system cap. - only engine	10 lt - 8.5 lt.
Fan air flow	132 m ³ /min.
LUBRIFICATION SYSTEM	
Total oil system capacity	12.8 l
Oil capacity in sump	8.5 lt ÷ 5.5 lt.
Oil consumption at full load	< 0.017 l/h

EXHAUST SYSTEM

Maximum exhaust gas flow	5.66 kg/min
Max. exhaust gas temp.	492 °C
Maximum back pressure	5 kPa (0.05 bar)
External diameter exhaust pipe	/
ELECTRICAL SYSTEM	
Starter motor power	3 kW
Battery charging alternator cap.	90 A
Cold start	-10°C
With cold start aid	- 25 °C
AIR FILTER	
Combustion air flow	4,8 m ³ /min.
HEAT REJECTED AT FULL LOAD	
To exhaust system	493 kcal/kWh
To water and oil	552 kcal/kWh
Radiated to room	553 kcal/kWh
To charge cooler	/

ALTERNATOR

SYNCHRONOUS, THREE-PHASE, SELF-EXCITED, SELF-REGULATED, BRUSHLESS	
Continuous power	60 kVA
Stand-by power	65 kVA
Three phase voltage	380-415 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	3 I _n
Transient dip (100% load)	10 %
Recovery time	≤ 3 sec.
Efficiency at 100% load	89.4 % (400V - Cos φ 0.8)
Insulation	Class H
Connection - Terminals	Star - N°12
Electromagnetic compatibility (R.F.I. suppr.)	EN 55011
Waveform distorsion - THD	< 3 %
Telephone interference - THF	< 2 %

REACTANCES (60 kVA - 400V)	
Direct axis synchronous - X _d	260 %
Direct axis transient - X' _d	21 %
Subdirect axis transient - X'' _d	7 %
Quadrature axis synchronous - X _q	148 %
Quadr. axis subtransient - X'' _q	/
Negative sequence - X ₂	/
Zero sequence - X ₀	/
TIME CONSTANTS	
Transient - T' _d	0.015 sec
Subtransient - T'' _d	0.009 sec
Open circuit - T' _{do}	0.195 sec
Armature - T _a	/
Short-circuit ratio K _{cc}	0.63
Grado di Protezione IP	0.20 m ³ /sec.
Cooling air flow	0.31 m ³ /sec.
Coupling Bearing	Direct SAE 3 - 11 ½ - N°1

GENERAL SPECIFICATIONS

Fuel tank capacity	100 lt
Running time (75% to PRP)	8 h
Starter battery	12 Vdc -80Ah / 670A CCA(EN)

IP protection degree	IP 44
Acoustic pressure	65 dB(A) @ 7m
Performance class (ISO 8528)	G2

CONTROL PANEL

- IntelliNano Plus controller
- Power switch
- Horn
- Emergency stop button
- TCM 35 remote control connector
- Switch magnetermic
- Power terminal block
- Earth terminal (PE)



INTELINANO PLUS CONTROLLER CHARACTERISTICS	
Operating mode	<ul style="list-style-type: none"> • MAN.- AUTO
Display	<ul style="list-style-type: none"> • Graphic back-light LCD display 128x64 pixels
LEDs	<ul style="list-style-type: none"> • Engine operation • AUTO operating mode • Alarm
Buttons	<ul style="list-style-type: none"> • START button • STOP button • AUTO button • N° 2 buttons for controller programming
Generator Measures	<ul style="list-style-type: none"> • Voltage : L1-L2 • Current : I1 • Powers : kVA • Frequency
Engine Measures	<ul style="list-style-type: none"> • Water temperature (optional) • Oil pressure (optional) • Fuel level • Rpm meter • Battery voltage • Maintenance • Hours meter

Generator Protections	<ul style="list-style-type: none"> • Short circuit • Over-Udvoltage • Over-Uderfrequency • Phase sequence (Automatic control panel only)
Engine Protections	<ul style="list-style-type: none"> • Overspeed • High water temperature warning • Low oil pressure warning • Low fuel level warning • Over-Uder battery voltage • Battery charge alternator failure • Start failure • Stop failure • Emergency stop
Features	<ul style="list-style-type: none"> • Event log and alarms (10 events) • Operator interface with icons, no text • Remote Start and Stop • Pre-heating • Fully programmable from the panel or from PC • Direct connection to engines with ECU via Can bus J1939 • Manual operation (MRS) with remote start • IP65 protection • Operation temperature: -20°C / +70°C
Communication	<ul style="list-style-type: none"> • Setup USB port • CAN BUS interface (J1939 only)

MANUAL CONTROL PANEL WITH SOCKETS

- IntelliLite Controller 9
- Power switch
- Horn
- Emergency stop button
- TCM 35 remote control connector
- Switch magnetergic
- Power terminal block
- Output sockets:
 - 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
- Magnetothermic switch for 400V 63A socket
- Differential-magnetothermic switch for 400V 32A socket
- Differential-magnetothermic switch for 400V 16A socket
- 2 Differential-magnetothermic switches for 230V 16A sockets
- Earth terminal (PE)



AMF25 CONTROLLER CHARACTERISTICS	
Operating mode	• OFF - MAN. - AUTO - TEST
Display	• Graphic back-light LCD display 128x64 pixels
LEDs	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Voltage : L1-L2 / L2-L3 / L3-L1 - N-L1/N-L2/N-L3 • Current : I1 - I2 - I3 • Powers : kVA - kW - kVAR (total e per fase) • Energy : kVAh - kWh - kVARh • Cos φ (medium and per phase) • Frequency
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-Under voltage • Over-Under frequency • 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 log and alarms • tests run scheduler (Automatic test or scheduled starts) • Engine idle management (Idle) • Remote Start and Stop • Pre-heating • 5 selectable languages (other languages available) • Setpoints adjustable via controller buttons or PC • Direct connection to engines with ECU via Can bus J1939 • Configurable inputs and outputs (only via PC) • IP65 protection • Operation temperature: -20°C / +70°C
connectivity (OPTIONAL)	<ul style="list-style-type: none"> • GSM / GPRS modem • 4G GSM and GPS modem (locator) • Ethernet module (MODBUS TCP and SNMP protocols - RJ45 output) • RS232 and RS485 communication module

AUTOMATIC CONTROL PANEL WITH SOCKETS

- IntelliLite Controller 9
- Power switch
- Horn
- Emergency stop button
- TCM 35 remote control connector
- PAC (ATS) connection terminal block
- Charger
- Switch magnetomic
- Power terminal block
- Earth terminal (PE)



AMF25 CONTROLLER CHARACTERISTICS	
Operating mode	<ul style="list-style-type: none"> • OFF - MAN. - AUTO - TEST
Display	<ul style="list-style-type: none"> • Graphic back-light LCD display 128x64 pixels
LEDs	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 (medium and per phase) • Frequency
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-Udervoltage • Over-Uderfrequency • 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-Uder battery voltage • Battery charge alternator failure • Start failure • Stop failure • Emergency stop • Low water level shutdown (option)
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connectivity (OPTIONAL)	<ul style="list-style-type: none"> • GSM / GPRS modem • 4G GSM and GPS modem (locator) • Ethernet module (MODBUS TCP and SNMP protocols - RJ45 output) • RS232 and RS485 communication module

WEIGHT - DIMENSIONS AND ACCESSORIES



DRY WEIGHT MACHINE:

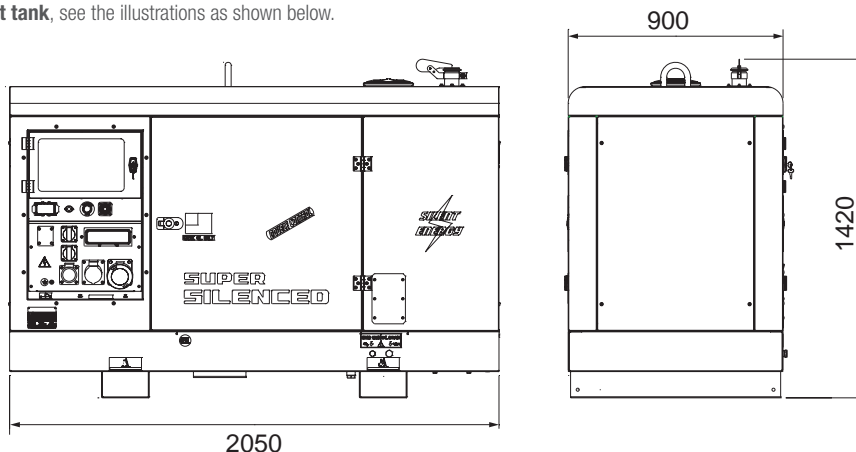
- 1210 kg
- 1400 kg (350 lt)

Generating set pictured may include optional accessories.



DIMENSIONS DRAW

- 2165 x 900 x 1730 (tank version 350 lt)
- For version with **100 lt tank**, see the illustrations as shown below.



ACCESSORI A RICHIESTA

- Automatic transfer switch unit PAC 70 (100A)
- Remote control TCM35
- Road trailer CTV1
- Earthing kit
- Galvanized skid base frame



VERSIONS ON REQUEST

- Manual control panel with CEE and SCHUKO sockets
- Automatic panel (without sockets)



FACTORY INSTALLATION OPTIONS

- Gauges - water temperature and oil pressure
- Electronic leakage relay
- Electronic leakage relay type "B"
- Isometre
- Radio control
- Main battery switch
- Engine heater
- Spark arrestor
- 3-way valve fuel system with quick connection for external fuel tank supply
- 350 litre internal tank
- Low water level alarm sensor
- Electronic engine speed regulator
- * RS232 and RS485 communication module
- * 4G GSM and GPS modem (locator) with antenna
- * GSM / GPRS modem with antenna
- * Ethernet module (MODBUS TCP and SNMP protocols - RJ45 output)
- * Form for reporting 15 alarms or states

* Only with IntelliLite 9

GENERAL INFORMATION

COMPLIANCE GENERATING SETS WITH EC DIRECTIVES AND STANDARDS

- 2006/42 / EC (Machinery Directive)
- 2014/35 / UE (Low Voltage Directive)
- 2014/30 / UE (Electromagnetic Compatibility Directive)
- ISO 8528 (Reciprocating internal combustion engine driven alternating current generating sets)



ISO 9001:2015 - 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: info@mosa.it Web site: www.mosa.it

