



# GENERATING SET GE 140 FSX

The images are for reference



## FEATURES

- Bunded base suitable to contain any liquids leakage from engine avoiding environmental pollution
- Oil drain pump
- Fuel pre-filter with water separator
- Large doors for better and easy maintenance (air, oil, fuel filters replacement)
- Single point lifting eye and forklift pockets
- Control panel with digital control unit available with automatic or manual version
- Suitable for a wide range of uses in general construction
- Supersilenced
- Meets EC directives for noise and safety



water cooled



diesel



three-phase power



electric

## POWER RATINGS

* Stand-By three-phase power (LTP)	140 kVA (112 kW) / 400V / 202.1A
* PRP three-phase power	125 kVA (100 kW) / 400V / 180.4A
* PRP single-phase power	99 kVA (79.2 kW) / 400V / 176.3 A
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 (IVECO) N45TM3
* Stand-By net power	118.2 kW (160 hp)
* PRP net power	107.2 kW (146 hp)
* COP net power	85.7 kW (117 hp)
Cylinders / Displacement	4 / 4500 cm <sup>3</sup> (4.5 lt.)
Bore / Stroke	104 / 132 (mm)
Compression ratio	17.5 : 1
BMEP (Brake Mean Effective Pressure : LTP - PRP)	2130 kPa - 1937 kPa
Speed governor type	Mechanical
<b>FUEL CONSUMPTION</b>	
110 % (Stand-by power)	30.4 lt./h - 211.5 g/kWh
100 % to PRP	27.6 lt./h - 211 g/kWh
75 % to PRP	20 lt./h - 206 g/kWh
50 % to PRP	14.4 lt./h - 220 g/kWh
<b>COOLING SYSTEM</b>	
Total system cap. - only engine	10 lt - 8.5 lt.
Fan air flow	132 m <sup>3</sup> /min.
<b>LUBRIFICATION SYSTEM</b>	
Total oil system capacity	12,8 l
Oil capacity in sump	8.5 lt. ÷ 5.5 lt.
Oil consumption at full load	< 0.023 l/h

\* Output powers according to ISO 3046-1

<b>EXHAUST SYSTEM</b>	
Maximum exhaust gas flow	9 kg/mim.
Max. exhaust gas temp.	540 °C
Maximum back pressure	5 kPa (0.05 bar)
External diameter exhaust pipe	/
<b>ELECTRICAL SYSTEM</b>	
Starter motor power	3 kW
Battery charging alternator cap.	90 A
Cold start	- 10 °C
With cold start aid	- 25°C
<b>AIR FILTER</b>	
Combustion air flow	7.1 m <sup>3</sup> /min
<b>HEAT REJECTED AT FULL LOAD</b>	
To exhaust system	590 kcal/kWh
To water and oil	334 kcal/kWh
Radiated to room	215 kcal/kWh
To charge cooler	118 kcal/kWh



## ALTERNATOR

### SYNCHRONOUS, THREE-PHASE, SELF-EXCITED, SELF-REGULATED, BRUSHLESS

Continuous power	132 kVA
Stand-by power	145 kVA
Three phase voltage	380 - 415 Vac
Frequency	50 Hz
Cos φ	0.8
Model A.V.R.	MARK V
Voltage regulation acc.	± 0.5 %
Sustained short circuit current	3 In
Transient dip (100% load)	< 20 %
Recovery time	< 0.3 sec
Efficiency at 100% load	92.2 % (400V - Cos φ 0.8)
Insulation	Class H
Connection - Terminals	Star - N°12
Electromagnetic compatibility ( R.F.I. suppr.)	EN 55011
Waveform distortion - THD	< 2 %
Telephone interference - THF	< 2 %

### REACTANCES (132 kVA - 400V)

Direct axis synchronous - Xd	265 %
Direct axis transient - X'd	19.3 %
Subdirect axis transient - X''d	9.5 %
Quadrature axis synchronous - Xq	145 %
Quadr. axis subtransient - X''q	10.6 %
Negative sequence - X2	10.1 %
Zero sequence - X0	2.2 %
<b>TIME CONSTANTS</b>	
Transient - T'd	0.087 sec
Subtransient - T''d	0.006 sec
Open circuit - T'do	1.08 sec
Armature - Ta	0.007 sec
Short-circuit ratio Kcc	0.42
Grado di Protezione IP	IP 23
Cooling air flow	0.31 m³/sec.
Coupling   Bearing	Direct SAE 3 - 11 ½ - N°1

## GENERAL SPECIFICATIONS

Fuel tank capacity	230 lt.
Running time (75% to PRP)	11.5 h
Starter battery	12 Vdc -100Ah
IP protection degree	IP 44

* Measured acoustic power LwA (pressure LpA)	94 dB(A) (69 dB(A) @ 7m)
* Guaranteed acoustic power LwA (pressure LpA)	95 dB(A) (70 dB(A) @ 7m)
Performance class (ISO 8528)	G2

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



## CONTROL PANEL

- Controller AMF 25
- 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	<ul style="list-style-type: none"> <li>• OFF - MAN. - AUTO - TEST</li> </ul>
Display	<ul style="list-style-type: none"> <li>• Graphic back-light LCD display 128x64 pixels</li> </ul>
LEDs	<ul style="list-style-type: none"> <li>• Gen-set voltage OK</li> <li>• Gen-set failure</li> <li>• GCB ON (only for Automatic transfer unit)</li> <li>• Mains voltage OK (only for Automatic transfer unit)</li> <li>• Mains failure (only for Automatic transfer unit)</li> <li>• MCB ON (only for Automatic transfer unit)</li> </ul>
Buttons	<ul style="list-style-type: none"> <li>• START button</li> <li>• STOP button</li> <li>• FAULT RESET button</li> <li>• RESET HORN button</li> <li>• MODE selection button</li> <li>• Pulsante chiusura/apertura GCB button</li> <li>• Pulsante chiusura/apertura MCB button</li> <li>• N° 4 buttons for controller programming</li> </ul>
Generator Measures	<ul style="list-style-type: none"> <li>• Voltage : L1-L2 / L2-L3 / L3-L1 - N-L1/N-L2/N-L3</li> <li>• Current : I1 - I2 - I3</li> <li>• Powers : kVA - kW - kVAR (totali e per fase)</li> <li>• Energy : kVAh - kWh - kVARh</li> <li>• Cos φ (medium and per phase)</li> <li>• Frequency</li> </ul>
Engine Measures	<ul style="list-style-type: none"> <li>• Water temperature</li> <li>• Oil pressure</li> <li>• Fuel level</li> <li>• Rpm meter</li> <li>• Battery voltage</li> <li>• Maintenance</li> <li>• Hours meter</li> <li>• Starts number</li> </ul>
Generator Protections	<ul style="list-style-type: none"> <li>• Overload</li> <li>• Overcurrent</li> <li>• Short circuit</li> <li>• Over-Undervoltage</li> <li>• Over-Underfrequency</li> <li>• Voltage asymmetry</li> <li>• Unbalanced current</li> <li>• Phase sequence</li> </ul>
Engine Protections	<ul style="list-style-type: none"> <li>• Overspeed</li> <li>• High water temperature warning</li> <li>• Low oil pressure warning</li> <li>• Low fuel level warning</li> <li>• Over-Under battery voltage</li> <li>• Battery charge alternator failure</li> <li>• Start failure</li> <li>• Stop failure</li> <li>• Emergency stop</li> <li>• Low water level shutdown (option)</li> </ul>

AMF functions (Automatic control panel only)	<ul style="list-style-type: none"> <li>• Measure mains voltage : L1-L2 / L2-L3 / L3-L1 - N-L1/N-L2/N-L3</li> <li>• Measure mains frequency</li> <li>• Three phase detection</li> <li>• Over-Under mains voltage</li> <li>• Over-Under mains frequency</li> <li>• Voltage asymmetry</li> <li>• Phase sequence</li> <li>• Dual mutual stand-by application</li> </ul>
Features	<ul style="list-style-type: none"> <li>• Event log and alarms</li> <li>• 2 tests run scheduler (Automatic test or scheduled starts)</li> <li>• Engine idle management (Idle)</li> <li>• Remote Start and Stop</li> <li>• Pre-heating</li> <li>• 2 selectable languages (other languages available)</li> <li>• Setpoints adjustable via controller buttons or PC</li> <li>• Direct connection to engines with ECU via Can bus J1939</li> <li>• Configurable inputs and outputs (only via PC)</li> <li>• IP65 protection</li> <li>• Operation temperature: -20°C / +70°C</li> </ul>
Communication	<ul style="list-style-type: none"> <li>• RTU Modbus (optional board with RS232 &amp; RS485 outputs is needed)</li> <li>• TCP/IP Modbus (optional Ethernet board with RJ45 output is needed)</li> <li>• SNMP Modbus (optional Ethernet board with RJ45 output is needed)</li> <li>• Internet (optional Ethernet board optional is needed)</li> <li>• GSM/GPRS (integrated Modem board optional is needed) for Gen-set remote control via SMS or internet</li> </ul>

CONTROL PANEL VERSION WITH OUTPUT SOCKETS	
<b>SOCKETS</b> 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.	1x 400V 125A 3P+T CEE 1x 400V 63A 3P+T CEE 1x 400V 32A 3P+T CEE 1x 400V 16A 3P+T CEE 1x 230V 16A 2P+T CEE 1x 230V 16A 2P+T SCHUKO

# WEIGHT - DIMENSIONS AND ACCESSORIES

GE 140 FSX



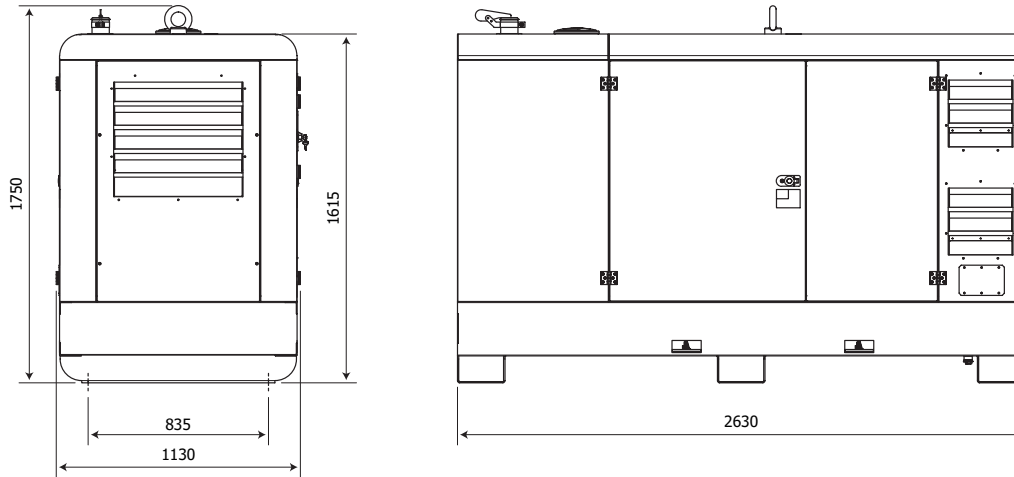
## DRY WEIGHT MACHINE:

- 1700 kg

Generating set pictured may include optional accessories.



## DIMENSIONS DRAW



## OPTIONS ON REQUEST

- Automatic transfer switch unit (ATS) PAC 170-M (250A)
- Remote control TCM35
- Earthing kit
- Container feet kit



## VERSIONS ON REQUEST

- Version with manual control panel 6 output sockets EC and SCHUKO (see Control board with output sockets section)
- Manual digital control panel (without sockets)



## FACTORY INSTALLATION OPTIONS

- Engine water heater WH
- Spark arrestor
- Tank 350l
- 3-way valve fuel system with quick connection for external fuel tank supply
- Main battery switch
- Low level water sensor
- PMG - permanent magnet alternator excitation
- Electronic leakage relay
- Isometer
- Volt adjustable from control panel
- Plug-in board with RS232 & RS485 output for RTU Modbus protocol
- Ethernet plug-in board with RJ45 output for TCP/IP Modbus protocol - SNMP Modbus - Internet
- Plug-in board with integrated GSM/GPRS Modem for Gen-set remote control via SMS or Internet

## 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.

© MOSA - Viale Europa, 59 - 20090 Cusago (Milano) - Italy - phone +39-0290352.1 - fax + 39-0290390466 E-mail: info@mosa.it Web site: www.mosa.it

