



# GENERATING SET GE 165 FXC

The images are for reference



## FEATURES

- Automatic voltage regulation "AVR"
- Large doors for better and easy maintenance (air, oil, fuel filters replacement)
- Control panel with digital control unit available with automatic or manual version
- Bunded base suitable to contain any liquids leakage from engine avoiding environmental pollution
- Single point lifting eye
- Meets EC directives for noise and safety



water cooled



diesel



three-phase power



electric starter

## POWER RATINGS

|                                    |                                    |
|------------------------------------|------------------------------------|
| * Stand-By three-phase power (LTP) | 165 kVA (132 kW) / 400V / 238,2A   |
| * PRP three-phase power            | 150 kVA (120 kW) / 400V / 216,5 A  |
| * PRP single-phase power           | 122 kVA (97.6 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) N67 TE1F (Stage 3A)    |
| * Stand-By net power                             | 145 kW (197.2 hp)                  |
| * PRP net power                                  | 131.5 kW (178.8 hp)                |
| * COP net power                                  | 105 kW (143 hp)                    |
| Cylinders / Displacement                         | 6/ 6700 cm <sup>3</sup> (6.7 lit.) |
| Bore / Stroke                                    | 104 / 132 (mm)                     |
| Compression ratio                                | 17.5 : 1                           |
| BMEP (Brake Mean Effective Pressure : LTP - PRP) | 1791 kPa - 1629 kPa                |
| Speed governor type                              | Electronic                         |
| <b>FUEL CONSUMPTION</b>                          |                                    |
| 110 % (Stand-by power)                           | 205 g/kWh - 36.5 lit./h            |
| 100 % to PRP                                     | 210 g/kWh - 34 lit./h              |
| 75 % to PRP                                      | 216 g/kWh - 26.5 lit./h            |
| 50 % to PRP                                      | 235 g/kWh - 20 lit./h              |
| <b>COOLING SYSTEM</b>                            |                                    |
| Total system cap. - only engine                  | 25.5 lit. - 10.5 lit.              |
| Fan air flow                                     | 228 m <sup>3</sup> /min.           |
| <b>LUBRIFICATION SYSTEM</b>                      |                                    |
| Total oil system capacity                        | 17 lit.                            |
| Oil capacity in sump                             | 8 lit. (min) - 12 lit. (max)       |
| Oil consumption at full load                     | < 0.05 lit./h                      |

\* Output powers according to ISO 3046-1

## EXHAUST SYSTEM

|                                   |                          |
|-----------------------------------|--------------------------|
| Maximum exhaust gas flow          | 13 kg/mim.               |
| Max. exhaust gas temp.            | 600 °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               | 10.5 m <sup>3</sup> /min |
| <b>HEAT REJECTED AT FULL LOAD</b> |                          |
| To exhaust system                 | 614 kcal/kWh             |
| To water and oil                  | 350 kcal/kWh             |
| Radiated to room                  | 160 kcal/kWh             |
| To charge cooler                  | 125 kcal/kWh             |



## ALTERNATOR

| SYNCHRONOUS, THREE-PHASE, SELF-EXCITED, SELF-REGULATED, BRUSHLESS |                                 |
|---|---------------------------------|
| Continuous power  | 150 kVA                         |
| Stand-by power  | 165 kVA                         |
| Three phase voltage   | 380 - 440 Vac                   |
| Frequency   | 50 Hz                           |
| Cos $\varphi$   | 0.8                             |
| Model A.V.R.  | MARK VX.(M00FA122A)             |
| Voltage regulation acc.   | $\pm 0.5\%$                     |
| Sustained short circuit current                                   | 3 In                            |
| Transient dip (100% load)   | < 20-25 %                       |
| Recovery time   | < 0,3 sec                       |
| Efficiency at 100% load   | 93 % (400V - Cos $\varphi$ 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 (150 kVA - 400V)      |                          |
|----------------------------------|--------------------------|
| Direct axis synchronuos - Xd     | 330 %                    |
| Direct axis transient - X'd      | 26.2 %                   |
| Subdirect axis transient - X''d  | 9.3 %                    |
| Quadrature axis synchronuos - Xq | 183 %                    |
| Quadr. axis subtransient - X''q  | 12 %                     |
| Negative sequence - X2           | 10.6 %                   |
| Zero sequence - X0               | 2 %                      |
| TIME CONSTANTS                   |                          |
| Transient - T'd                  | 0.084 sec                |
| Subtransient - T''d              | 0.009sec                 |
| Open circuit - T'do              | 1.06 sec                 |
| Armature - Ta                    | 0.011 sec                |
| Short-circuit ratio Kcc          | 0.46                     |
| Grado di Protezione IP           | IP 23                    |
| Cooling air flow                 | 0.2 m <sup>3</sup> /sec. |
| Coupling   Bearing               | Direct SAE 3 -11 ½ - N°1 |

## GENERAL SPECIFICATIONS

|                           |                              |
|---------------------------|------------------------------|
| Fuel tank capacity        | 230 lt.                      |
| Running time (75% to PRP) | 9 h                          |
| Starter battery           | 12 Vdc -100Ah / 800A CCA(EN) |
| IP protection degree      | IP 44                        |

|  |                              |
|--|------------------------------|
| * Measured acoustic power LwA (pressure LpA)   | 94.6 dB(A) (69.6 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                   | <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>• Historical events</li> <li>• 3 programmable test timers</li> <li>• Panel or PC programming</li> <li>• 3 selectable languages</li> <li>• Direct connection to engines with ECU via Can Bus J1939</li> <li>• External start and stop</li> <li>• Programmable inputs and outputs</li> <li>• Alternative configurations (50 / 60Hz)</li> <li>• IP 65 protection</li> <li>• Operating 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> <li>• GPS / 4G modem (optional) (geographical tracking via WebSupervisor)</li> </ul> |

| CONTROL PANEL VERSION WITH OUTPUT SOCKETS  |   |
|--|---|
| <b>SOCKETS</b><br>Each socket is protect by own automatic switch.<br>Circuit breaker for 125A and 63A sockets.<br>GFI and circuit breaker 30mA for 32A and 16A socket. | 1x 125A 400V 3P-N-T IP IP67<br>1x 63A 400V 3P-N-T IP67<br>1x 32A 400V 3P-N-T IP67<br>1x 16A 400V 3P-N-T IP67<br>1x 230V 2P-T IP67<br>1x 230V 2P-T Schuko IP54 |



# WEIGHT - DIMENSIONS AND ACCESSORIES

GE 165 FXC



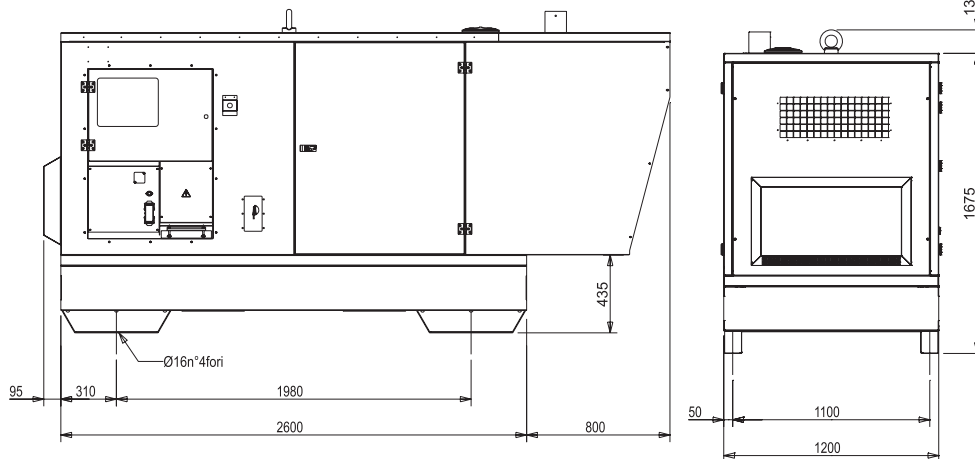
## DRY WEIGHT MACHINE:

- 2160 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



## 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)
- Parallel switch board



## FACTORY INSTALLATION OPTIONS

- Electronic leakage relay
- Isometer
- PMG - permanent magnet alternator excitation
- Volt adjustable from control panel
- Radio control
- Fuel tank 120 lt.
- Fuel tank 350 lt.
- Fuel tank 840 lt.
- Spark arrestor
- Automatic fuel transfer system
- Engine water heater WH
- 3-way valve fuel system with quick connection for external fuel tank supply
- Engine water heater WH
- Main battery switch
- Plug-in module with double RS232 and RS485 port
- GSM modem with antenna
- GPS / 4G modem with antenna
- Internet / Ethernet plug-in module with Web Server
- Input / Output extension module (No. 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.

© 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

