



Image for demonstration purposes

 **Generating Set**
PROFESSIONAL - Diesel

GE.AI.385/350.PRO+011

1500 rpm - Threephase - 50Hz - 400V
Multifunction panel without switching on board



Standard equipment

Canopy Soundproofing

Removable soundproof canopy
Painting canopy (RAL) in galvanized sheet steel
Soundproofing with class 1 polyester material
Handles with key lock and automatic closing
Inspection doors for controls and maintenance
Inspection doors with hermetic gasket

Exhaust

Exhaust rain cap
Insulated exhaust pipes
Internal residential muffler

Fuel Supply

Single wall daily tank with bunded base
Automatic shutdown system for low fuel level
Fuel gauge

Handling

n.4 lifting hooks integrated into the bearing structure
Loadable side by side for truck transportation

Base Frame

Anti-vibrating mounting pads
Anti pollution Bunded base

Engine

Oil pressure and coolant temperature gauge (only with QPE or +14 variant)
Tropicalized radiator
Electronic speed governor

Alternator

AVR Automatic Voltage Regulator
AVR Pre-arranged for parallel
Impregnation for marine environment
IP23

Panel & connection

Emergency Stop button
Magnetothermal circuit breaker on alternator board
Tamperproof panel IP55
Cable output from the bottom
IP44 wiring
Start-up battery (pre-charged)
Grounding point

Documentation

CE conformity declaration
User and Maintenance manual
Wirings diagrams

Normatives

All Generating sets are compliant to CE Marking
2014/30/UE Electromagnetic compatibility
2000/14/CE Noise Emission for outdoor use
Factory-designed systems built according to ISO 9001:2015
CEI EN 60204-1:2018 - Electrical equipment of machines

Primary data

General Information

| | | |
|---------------------------------|-----|---------|
| Speed | RPM | 1500 |
| Frequency | Hz | 50 |
| PRP | KVA | 350 |
| PRP - Prime power | KW | 280,0 |
| LTP - Standby power | KVA | 385 |
| LTP - Standby power | KW | 308,0 |
| Standard Voltage | V | 400/230 |
| Current | A | 505,78 |
| Voltage for current calculation | V | 400 |
| COSFI | 0,8 | 0,8 |

General electrical protection

| | | |
|-------------------------------|---|-----|
| Circuit-breaker rated current | A | 630 |
| Type | Magnetothermal switch on the alternator board | |
| Circuit-breaker poles | N | 4P |

Noise level +/- 3dB(A)

| | | |
|-----------------------------|-------|----|
| LWA | dB(A) | 96 |
| Sound pressure level @ 7 mt | dB(A) | 71 |
| Sound pressure level @ 1 mt | dB(A) | 80 |

Fuel Consumption

| TYPE | | Diesel |
|-------------------------------|------|--------|
| Standard Fuel Tank capacity | lt | 560 |
| Autonomy @ 75% load | h | 10 |
| Fuel consumption at 100% load | lt/h | 70 |
| Fuel consumption at 75% load | lt/h | 56 |
| Fuel consumption at 50% load | lt/h | 38,8 |

General data

| | | |
|-------------------------|------|-------|
| Rated capacity | Ah | 2x180 |
| Auxiliary Voltage | V | 24 |
| Exhaust gas temperature | °C | 479 |
| Exhaust gas flow | l/s | 391,3 |
| Combustion air flow | l/s | 415 |
| Cooling fan airflow | mc/s | 6,8 |
| Exhaust diameter | mm | 140 |

Weight and Dimensions

| | | |
|--|------------|-------------|
| Dimensions (L x w x h) | cm | 395x154x220 |
| Weight with liquids (excluding optionals and fuel) | Kg (+/-3%) | 3951 |

⚙️ Engine

| | | |
|------------------------|------|---------------------------------------|
| Factory | | FPT |
| Model | | C13TE2A |
| Emissions stage | | Stage 2 |
| Speed governor | | Electronic |
| Radiator | °C | 50 |
| Cooling | Tipo | liquid (water + 50% Paraflu11) |
| Active net power | Kwm | 300 |
| Nominal net power | CV | 407,6 |
| Cycle | Tipo | 4 strokes |
| Injection | Tipo | Direct |
| Aspiration | Tipo | Turbo |
| Numbers of cylinders | N | 6 |
| Cylinders arrangement | | L |
| Bore | mm | 135 |
| Stroke | mm | 150 |
| Total displacement | lt | 12,876 |
| Engine oil features | | 15W40-API CI-4/CH-4 ACEA E5-E7 |
| Total oil capacity | lt | 35 |
| Total coolant capacity | lt | 67 |

⚙️ Alternator

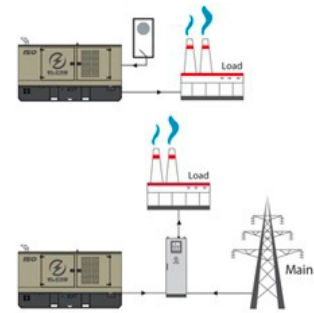
*** May vary based on stock availability. However, a primary brand will be used.**

| | | |
|--------------------------------------|-------|------------------------------|
| Factory | | Stamford |
| Model | | S4L1D-E |
| Single-phase Range | KVA | 360 |
| Voltage Regulator (voltage accuracy) | +/- % | 1 |
| Poles | N° | 4 |
| Phases | N° | 3+N |
| Standard windings connection | | Star Series |
| Stator/rotor impregnation | | H (Outdoor Temp 40°C) |
| Efficiency | % | 93,3 |
| Engine coupling | | Elastic disk |
| Short circuit current | | >= 300% (3In) |
| Protection degree | IP | 23 |
| Cooling system | | Self ventilating |
| Maxium overspeed | rpm | 2250 |
| Waveform distortion | % | <5 |
| Exciter | | Diode bridge |

⚙️ Standard operating environmental conditions

| | | |
|---------------------|----|-------------|
| Ambient temperature | °C | 25 |
| Relative Humidity | % | 30 |
| Max altitude | mt | 1000 |

Control Systems on board QLE-B-SC-3F-V1



operating scheme - schema di funzionamento

QLE Multifunction panel without switching on board

The QLE command and control panel offers outstanding protection, monitoring and control for small and middle size generator sets. Elcos's control module MC2 Plus offers advanced features to meet the most demanding on-site application. Elcos's control module MC2 Plus is designed to offer an easy user interface. Variant without transfer switch. The panel directly manages the QLTS and QC panels. The output line is protected from overload and short-circuit by a magnetothermic breaker mounted on alternator board.

Mechanical features

| | | |
|-------------------|----|----|
| Protection degree | IP | 55 |
|-------------------|----|----|

Battery charger

| | | |
|--------------------------------|-----------------|-------------|
| Model | | ELCOS - CB1 |
| Maximum output current | A | 2,5 |
| Output DC voltage (selectable) | V _{dc} | 12-24 |
| Input AC voltage (selectable) | V _{ac} | 220-260 |
| Frequency | Hz | 50-60 |

Data Communication

| | | |
|------------------------|--|-----------------|
| Data connection port | | RS-485 |
| Communication protocol | | Mod-bus RTU-8N1 |

Remotable functions in terminal box

| | |
|--|---|
| GS start | Genset contactor close/open command (1) |
| Mains contactor close/open command (2) | Remote horn - DC output |
| Programmable output - Volt free output | |

(1) Ready to load function (ARS mode without QC or QLTS panel)(1) Genset contactor open and close command (AMF mode with QC or QLTS panel)(2) Mains contactor open and close command (AMF mode with QC or QLTS panel)

Control Module



| | |
|----------------|------------------|
| Model | MC2 Plus |
| Operating mode | AMF - ARS |

Specifics

Applications

Emergency to the Mains
Stand-alone
Construction site/Rental
Self-production

ENGINE MEASURES

Fuel tank level %
Engine oil pressure BAR (1)
Engine Coolant temperature °C (1)
Total run time
Battery voltage
Start-ups counter
Engine speed

ALTERNATOR MEASURES

Generator Voltage L1, L2, L3
Generator Voltage L1-N, L2-N, L3-N
Generator frequency
Generator current L1, L2, L3
Generator Apparent Power kVA
Generator Active Power kW

COMMUNICATION PORTS

Can-bus port
RS485 port with Mod-bus RTU communication
USB port for parameters saving and firmware update

EQUIPMENT

Microprocessor Logic
Back-lit display
Programmable from display
16 event log
Icons management
STOP button
START button
TEST button
Reset alarm button
Alarm mute button

PRE-ALARMS/ ALARMS

Common Alarm
Fuel reserve (pre-alarm)
Low fuel level (alarm)
Charge alternator failed (dinamo)
Low oil pressure (alarm)
Oil sensor failed (alarm)
High coolant temperature (alarm)
Low water level (1)
Water in fuel (1)
Battery undervoltage
Battery overvoltage
GS failure to start
GS failure to stop
Can-bus Failure
No Can-bus communication
Genset overload L1, L2, L3 phases
Genset short circuit
Genset overvoltage
Genset undervoltage
Genset high frequency
Genset low frequency
overspeed
Earth fault (alarm)
Maintenance request
Emergency button pressed
Remote emergency active
Genset negative phase sequence

VISUALIZATIONS ON CONTROL

MODULE/DISPLAY

Pre-alarms
Alarms
Engine measures
Alternator measures
Operating mode
Genset status
Genset contactor status
Glow plugs status

CONTROL MODULE FUNCTIONS

Remote Start and Stop
Manual Start and stop
Emergency stop button on panel board
Remote emergency stop
Remote test on load
Scheduled start-ups
MODBUS commands (Start, Stop, Reset, Test)

Elcos MC2 control module is designed for diesel generating sets. It offers outstanding protection, monitoring and control for small and middle size generator sets.

AAABBB

OPTIONAL

Fuel Supply

**O.G-ACO-AT-CI-02**

External tank connections for supply only from external tank (g without tank) GE 130/700

Batteries

**O.G-BAT-BAE-03**

Maintenance free high efficiency starter batteries (130/250 kVA)

**O.G-BAT-STB-02**

Battery isolator lockable(130/700 kVA)

Canopy

**O.G-COF-PV-02**

Lift off doors kit for SS versione (130/400 kVA) and PRO version (130/500 kVA)

Electrical on board

O.Q-QBM-BMIN-230V-02

Additional price for 230V minimum voltage coil on MCCB both on the control panel and on the alternator (check feasibility)

O.Q-QBM-CPI-BEN-01

Permanent insulation controller for IT networks up to 230V / 400V. BENDER IR423-D4-1. Adjustable threshold 10 ÷ 300 kohm. (2 DIN rail modules - check feasibility)

O.Q-QLE-K-DIF-M3

Adjustable differential protection only for MC2-PLUS controller for Gen Sets 10/500 kVA (+011 variant)

**O.Q-QLE-QBM-COM-AMF25**

Additional price for QBM COMAP AMF25 panel replacing the standard QLE-A.

**O.Q-QLE-QBM-DSE-7320**

Additional price for QBM DSE7320 panel replacing the standard QLE-A.

**O.Q-QLE-QPE-MC4**

Additional price for QPE-C panel with MC4 replacing the standard QLE-A.

O.Q-QPE-INT-CST-CTR-03

STATUS and TRIP contact of main breaker wired to terminal board inside the QPE panel (275 / 1000KVA) on board (not for variant +010).

Engine

**O.G-MOT-K-40C-03**

Engine liquids suitable for -40°C ambient temperature for Gen Sets 130/250 kVA

**O.G-MOT-PO-02**

Oil change pump for Gen Sets 130/700 kVA

**O.G-MOT-SC-AC-EL-01**

Engine pre-heater 230V with thermostat on board for Gen Sets 10/100 kVA + 130/500 PRO version



O.G-MOT-SC-AC-EL-03

Super hot engine heater 230V with thermostat on board for Gen Sets 130/250 kVA

Handling



O.G-MOV-GC-S2700

Lifting hook (150/250 kVA) PRO Version

ATS Panels



QLTS.630A

Wall switching Panel 630 A 4-Poles (430kva 400V) - 80x128x60cm 45 kg

Test



MS.CP-LT-02

FAT - Factory Acceptance Test for single Gen Set from 130 to 400 kVA according to our standard procedures in Elcos factory (max 2 hours - max 4 people - max 1 hour of operation)



MS.CP-SP-02

FAT - Factory Acceptance Test for single custom Gen Set from 130 to 400 kVA max 4 operating hours or parallel system up to 4 units for 1 operating hour, in Elcos factory (max 4 hours - max 4 people)



MS.CP-ST-02

FAT - Factory Acceptance Test for single Gen Set from 130 to 400 kVA according to our standard procedures in Elcos factory (max 4 hours - max 4 people - max 2 hour of operation)

Vari

O.G-VAR-PUN-TER-01

Round earth spike, diam. 20 mm, height 1.5mt, galvanized, complete with clamp and 3m yellow/green cable model FS17 1x35mm² with cable lugs.

O.G-VAR-PUN-TER-02

Cross-shaped earth spike, height 1.5mt, galvanized, complete with clamp and 3m yellow/green cable model FS17 1x35mm² with cable lugs.

PRP

Engines of this rating provide unlimited hours of usage in a variable load application. The average load factor should not exceed 70% of the engine's prime power rating with a maximum number of 500 operational hours at 100% prime power rating. An overload capability of 10% is available, however, is limited to a period of 1 in every 12 hours

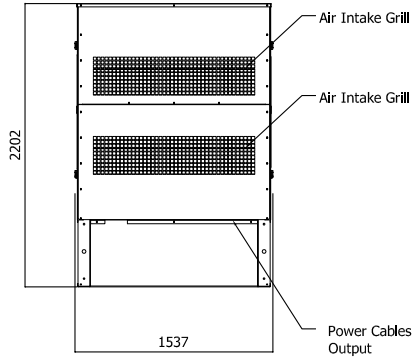
LTP

Limited-time running power is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500h of operation per year with the maintenance intervals. The overload is not allowed.

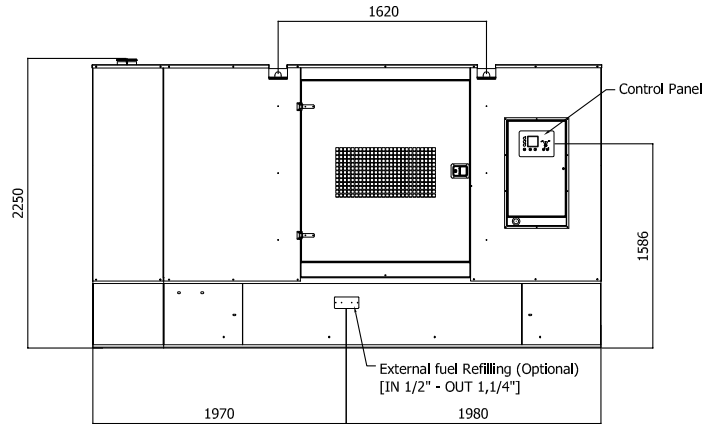
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| Sheet: | PRO3950 | PRO | Exhaust side: | - | Type: | STANDARD | Rev: | 00 | Last Update: | 15-05-2020 | Page 1/2 |
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OVERALL DIMENSIONS [mm]

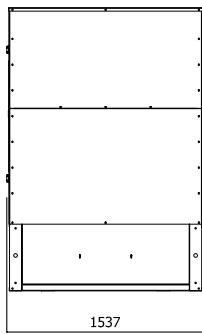
REAR VIEW



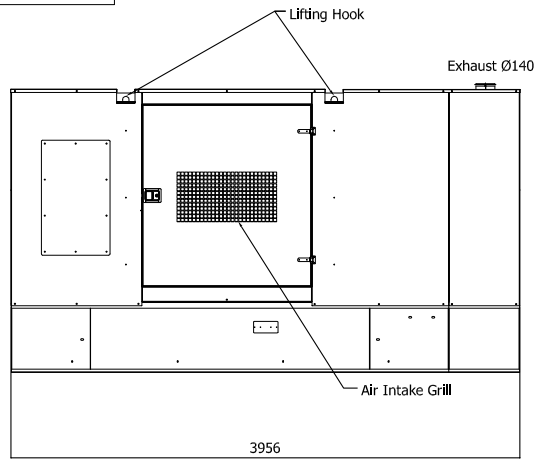
LEFT SIDE VIEW



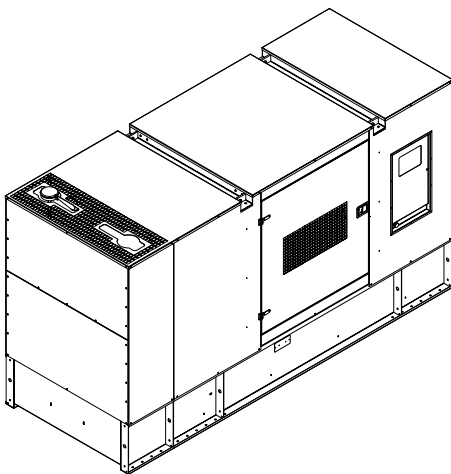
FRONT VIEW



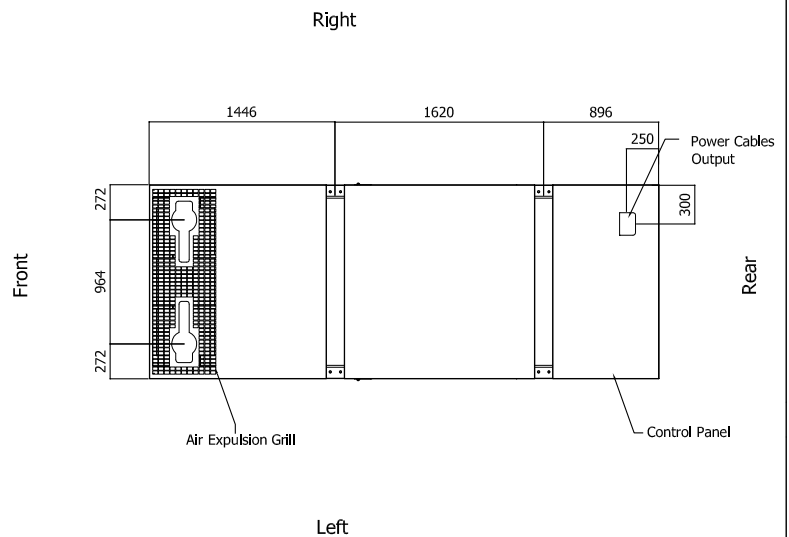
RIGHT SIDE VIEW



3D VIEW



TOP VIEW

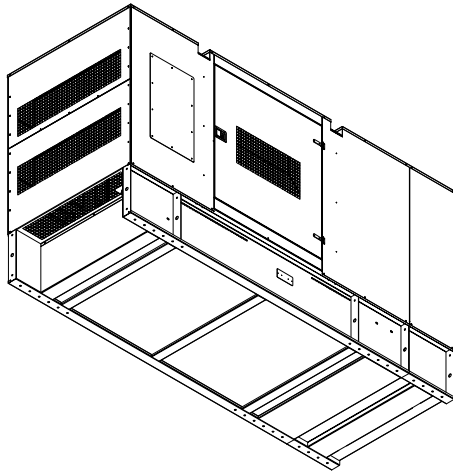


IMPORTANT:

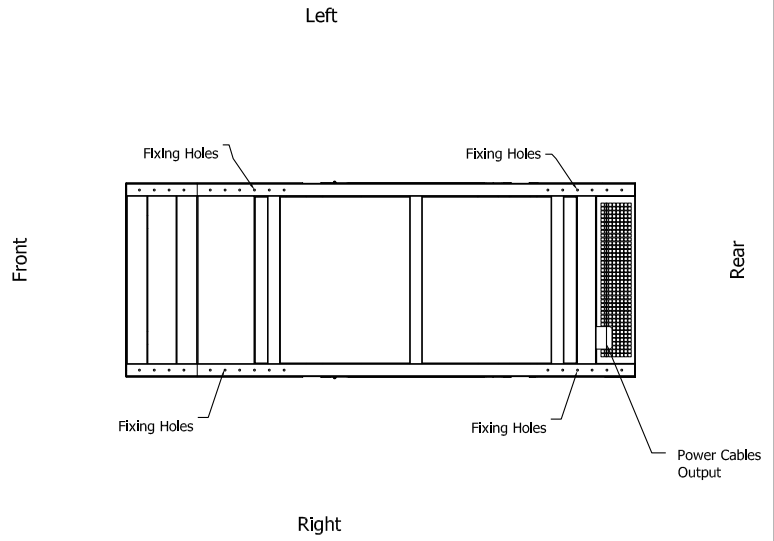
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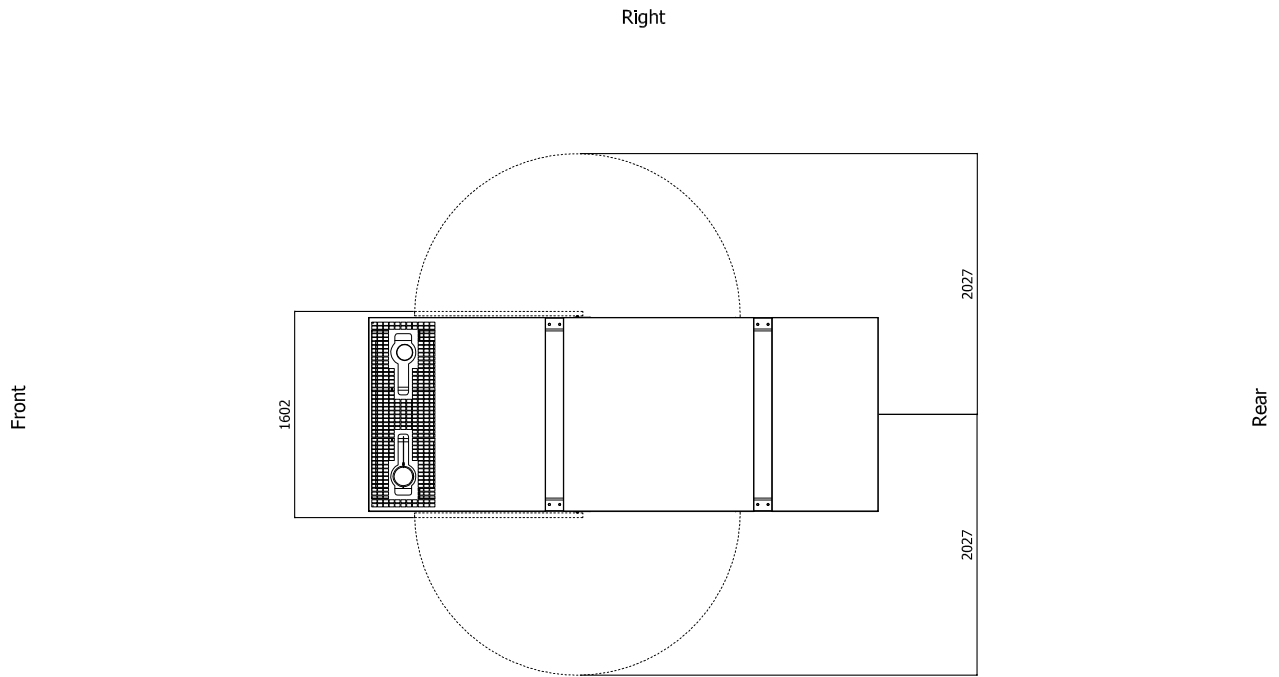
3D BOTTOM VIEW



BOTTOM VIEW



DIMENSIONS WITH OPEN DOORS [mm]



Note: With Lifting-Off Door Solution consider only canopy dimensions.
(Models with "Control Panel" behind rear door will mount a special cover to protect it)

VENTILATION OF THE ROOM

The windows area in the generating set room needs to be (recommended):
Aspiration: 0.90 m2
Expulsion: 0.60 m2
ATTENTION: for a correct ventilation the expulsion air and the exhaust gas needs to be conveyed in the open-air

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