



Image for demonstration purposes

 **Generating Set**
TELECOM - Diesel

GE.PK.051/046.TLC+011

1500 rpm - Threephase - 50Hz - 400V
Automatic 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 lockable
- Special baffles for air intake and air expulsion
- Inspection doors with hermetic gasket
- Doors hinges with anti-tampering device

Exhaust

- Exhaust rain cap
- Internal residential muffler - 35dB(A)

Fuel Supply

- Oversized Tank
- 1000lt fuel tank with draining point
- Bulk tank connections
- Automatic shutdown system for low fuel level
- Fuel gauge
- Fuel refilling from outside

Handling

- Lifting hook integrated into the bearing structure
- Base frame with anti-overturning forklift pockets
- Removable tank from the generator

Base Frame

- Bunded base at 110% of fuel tank capacity
- Anti-vibrating mounting pads
- Battery compartment externally accessible for easy service

Engine

- High coolant temperature and low oil pressure shutdown system
- External oil drain points
- Engine liquids (oil and antifreeze)
- Tropicalized radiator
- Fuel filter with water separator

Alternator

- AVR Automatic Voltage Regulator
- Impregnation for marine environment
- IP23

Panel & connection

- Emergency Stop button
- Non-Automatic circuit breaker on panel board
- Tamperproof panel IP55
- Cable output from side
- IP44 wiring
- Start-up battery (pre-charged)
- Grounding point

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	45
PRP - Prime power	KW	36,0
LTP - Standby power	KVA	50
LTP - Standby power	KW	40,0
Standard Voltage	V	400/230
Current	A	65,03
Voltage for current calculation	V	400
COSFI	0,8	0,8

General electrical protection

Rated current	A	63
Type	Non-Automatic circuit breaker on panel board	
Poles	N	4P
Optional/notes	Opening coil	

Noise level +/- 3dB(A)

LWA	dB(A)	90
Sound pressure level @ 7 mt	dB(A)	65
Sound pressure level @ 1 mt	dB(A)	74

Fuel Consumption

TYPE		Diesel
Standard Fuel Tank capacity	lt	1000
Autonomy @ 75% load	h	122
Fuel consumption at 100% load	lt/h	10,7
Fuel consumption at 75% load	lt/h	8,2
Fuel consumption at 50% load	lt/h	5,7

General data

Rated capacity	Ah	1x100
Auxiliary Voltage	V	12
Exhaust gas temperature	°C	492
Exhaust gas flow	l/s	116,6
Combustion air flow	l/s	48,3
Cooling fan airflow	mc/s	0,9
Exhaust diameter	mm	80
Exhaust side		SX

Weight and Dimensions

Dimensions (L x w x h)	cm	225x110x215
Weight with liquids (excluding optionals and fuel)	Kg (+/-3%)	1430

Engine

Factory		Perkins
Model		1103A-33TG1
Emissions stage		Stage 0
Speed governor		Mechanic
Radiator	°C	50
Cooling	Tipo	liquid (water + 50% Paraflu11)
Active net power	Kwm	41,3
Nominal net power	CV	56,1
Cycle	Tipo	4 strokes
Injection	Tipo	Direct
Aspiration	Tipo	Turbo
Numbers of cylinders	N	3
Cylinders arrangement		L
Bore	mm	105
Stroke	mm	127
Total displacement	lt	3,297
Engine oil features		15W40-API CI-4/CH-4 ACEA E5-E7
Total oil capacity	lt	8,3
Total coolant capacity	lt	10,2
ISO 8528-5 class		G2

Alternator

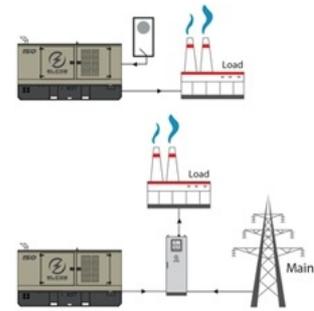
*** May vary based on stock availability. However, a primary brand will be used.**

Factory		Stamford
Model		S1L2-R1
Single-phase Range	KVA	50
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	%	89,2
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 QPE-C-SC-3F-4P-100-O2TLC



operating scheme - schema di funzionamento

QPE Automatic panel without switching on board

The QPE-C control panel represents the evolution of the panel for the control and management of the gen set. With its microprocessor logic it is able to meet any user requested features. The dual operation mode manual and automatic guarantees to every type of functionality protection, analysis and control of the generating set in order to make the management easy and efficient. Variant without transfer switch on board. ATS panel type QC as optional. The panel manages the QC panels directly or any other ATS panel.

Mechanical features

Protection degree	IP	55
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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

Control Module



Model	MC4
Operating mode	AMF - MRS

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
Partial run time
Hours to maintenance
Battery voltage
Battery charging voltage
Start-ups counter
Engine speed (2)
Engine Oil temperature (2)
Cooler temperature (2)
Engine oil level (2)
Engine coolant level (2)
Engine coolant pressure (2)
Turbo pressure (2)
Fuel Consumption (2)
Tank autonomy - hrs (5)
Fuel remaining quantity (5)
Fuel used quantity (5)

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
Generator Reactive Power kVAR
Generator accumulated power kWh
Power factor Cosfi

MAINS MEASURES

Mains voltage L1, L2, L3
Mains voltage L1-N, L2-N, L3-N
Mains frequency

COMMUNICATION PORTS

Can-bus port
RS485 port with Mod-bus RTU communication
RS232 port for display connection
USB port for parameters saving and firmware update

EQUIPMENT

Microprocessor Logic
Back-lit display
Programmable from display
16 event log
Multiple display languages
STOP button
START button
TEST button
Reset alarm button
Alarm mute button
Fuel transfer pump activation button
Glow-plug activation button

PRE-ALARMS/ ALARMS

Common Alarm
Fuel reserve (pre-alarm)
Low fuel level (alarm)
Tank overflow
Charge alternator failed (dinamo)
Low oil pressure (pre-alarm) (1)
Low oil pressure (alarm)
Oil sensor failed (alarm)
High coolant temperature (pre-alarm) (1)
High coolant temperature (alarm)
Low coolant temperature (pre-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
Reverse power
Earth fault (pre-alarm)
Earth fault (alarm)
Block from password
CAN communication Failed
Maintenance request
Emergency button pressed
Remote emergency active
Forced stop
External battery failed
Fuel theft
Genset negative phase sequence
Mains negative phase sequence
Fuel theft protection

VISUALIZATIONS ON CONTROL MODULE/DISPLAY

Pre-alarms
Alarms
Engine measures
Alternator measures
Mains measures
Date and time
Operating mode
Genset status
Mains status
Mains contactor status
Genset contactor status
Digital Input and Output status
Grounding current mA (3)
Grounding current threshold mA (3)
Delay time of differential protection (3)
Glow plugs status

CONTROL MODULE FUNCTIONS

Automatic start and stop when the Mains Fails (7)
Remote Start and Stop
Remote Start and Stop with key in OFF position
Manual Start and stop
Emergency stop button on panel board
Remote emergency stop
Remote lock
Remote test without load
Remote test on load
Scheduled start-ups
MODBUS commands (Start, Stop, Reset, Test)

CONTROL MODULE SPECIAL FUNCTIONS (on demand)

Automatic charging of an external battery
Dummy load (4)
Load shedding (4)
Redundant starter motor management
Fuel monitoring
GS battery Load test
Idle mode
Service phone number indication
Variable speed Generator
Master / Slave mode

- (1) Present with the sensor installed on engine
- (2) Present according to the engine equipment and to the ECU type (ECU - Canbus)
- (3) Present only with the residual current device mounted on genset board
- (4) Present with optional expansion modules
- (5) Present with special function activated
- (6) Only with the optional of the automatic fuel refilling system on board
- (7) Only in AMF mode

OPTIONAL

Fuel Supply



O.G-ACO-AT-CI-01

External tank connections for supply only from external tank (g without tank) GE 10/100



O.G-ACO-BT-TLC-2000

2000 Lt Oversized Fuel Tank on board for TLC replacing the 1000 lt standard tank (20/60 kVA), (Increased weight and size)



O.G-ACO-GA-01

Mechanical analogue float for internal fuel tank on board



O.G-ACO-GA-02

Electrical analogue float to monitor the external refilling point on board



O.G-ACO-ST-BG-ES1

"Easy" automatic fuel refilling system on board, controlled by QPE-C and QLE-B panels



O.G-ACO-ST-BG-STD

"Standard" automatic fuel refilling system on board, controlled by QPE-C and QLE-B panels

Alternator

O.G-ALT-AL-CHBR-02

Different brand alternator 50/100 kVA (Check dimensions)

Batteries



O.G-BAT-BAE-02

Maintenance free high efficiency starter batteries (50/100 kVA)



O.G-BAT-STB-01

Battery isolator lockable (10/100 kVA)

Canopy



O.G-COF-AP-01

Door opening alarm system (each door)



O.G-COF-DLO-C2200-15KW

Dummy Load 15kW on board for GE 50/60 kVA



O.G-COF-IL-01

Internal LED lighting with micro-switches for Gen Sets 10/250 kVA



O.G-COF-TET-C220

Pitched roof for TLC 45/60 kVA (C2200)

O.G-COF-TRT-MAR-02

High resistance canopy treatment for corrosive environments for 50/100 kVA (SS, RB Versions)



O.G-COF-VER-PAR-02

Canopy custom paint (Grey base-frame) for 50/100 kVA (SS, RB Versions)


O.G-COF-VER-TOT-02

Total canopy custom paint for 50/100 kVA (SS, RB Versions)

 **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-QPE-485.CONV-LAN

Converter 485/LAN for QPE-C, QLE-B panel


O.Q-QPE-485.CONV-USB

Converter 485/USB for QPE panel

O.Q-QPE-DIS-MS.01

MASTER/SLAVE device for QPE panel

O.Q-QPE-K-DIF

Differential protection adjustable for the MC4

O.Q-QPE-MD-QPE-C

GSM remote management modem for QPE panel


O.Q-QPE-PR-QPE-C

Remote panel for QPE-C, QLE-B - available only for variant +10/+11


O.Q-QPE-QBM-COM-AMF25

Option with QBM COMAP AMF25 controller on board instead of QPE


O.Q-QPE-QBM-DSE-7320

Option with QBM DSE7320 controller on board instead of QPE.


O.Q-QPE-RIL-16RELE

16-relay module for QPE panel


O.Q-QPE-RX8-QPE-C

Start-stop radio control with max. radius 500 mt indoors and 5 km outdoors (for QPE panel).


O.Q-QPE-SAS-02

Auto Start-Stop at load request (QPE, QLE panels)


O.Q-QPE-TG-EVO-GPS-2G

Remote management system via LAN/GSM 2G with WEB application and GPS location system


O.Q-QPE-TG-EVO-GPS-3G

Remote management system via LAN/GSM 3G with WEB application and GPS location system


O.Q-QPE-TG-QPE-C

Remote management software via LAN for QPE-C, QLE-B panel compatible with Windows XP and 7

 **Engine**

O.G-MOT-FC-3

Dust collector filter - for Gen Sets 50/60 kVA


O.G-MOT-FSA-3

Fuel/Water Separator Filter - for Gen Sets 50/60 kVA


O.G-MOT-SE-LR-01

Radiator coolant level sensor from 10 to 100 Kva


O.G-MOT-SE-PO-LR

Oil pressure level and engine temperature sensors (from 10 to 100kVA)


O.G-MOT-SRO-AU-18L

Automatic oil refilling system (50/100 kVA)

 **ATS Panels**

QC1.0090A

Separate ATS panel, 4P - 90A contactors (60 kVA 400V - 40 kVA 230V) Dim. 60 x 25 x 80 cm - 48 kg. (ex QC1.060)


QLTS.100A

Wall-mounted ATS switching panel 100A 4P (65 kVA 400V - 35 kVA 230V) Dim. 45 x 16 x 40 cm - 12 kg.

 **Exhaust**

O.G-SCA-PF-02

Spark arrester for Gen Sets 50/100 kVA

 **Test**

MS.CP-LT-01

FAT - Factory Acceptance Test for single Gen Set from 10 to 100 kVA according to our standard procedures in Elcos factory (max 2 hours - max 4 people - max 1 hour of operation)


MS.CP-SP-01

FAT - Factory Acceptance Test for single custom Gen Set from 10 to 100 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-01

FAT - Factory Acceptance Test for single Gen Set from 10 to 100 kVA according to our standard procedures in Elcos factory (max 4 hours - max 4 people - max 2 hour of operation)


MS.RF-ST-01

Noise test report for single Gen Set from 10 to 250 kVA

 **Vari**

O.G-VAR-CAT-01

Toolbox for ordinary maintenance.

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.

O.G-VAR-TPD-01

IP 55 document holder

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

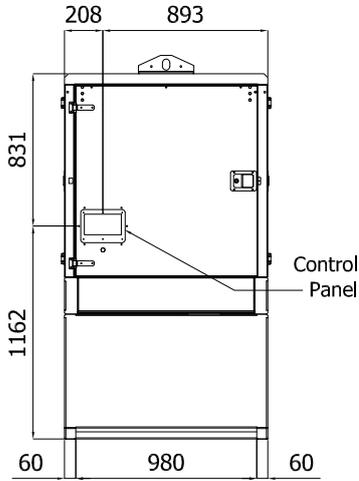
LTP

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.

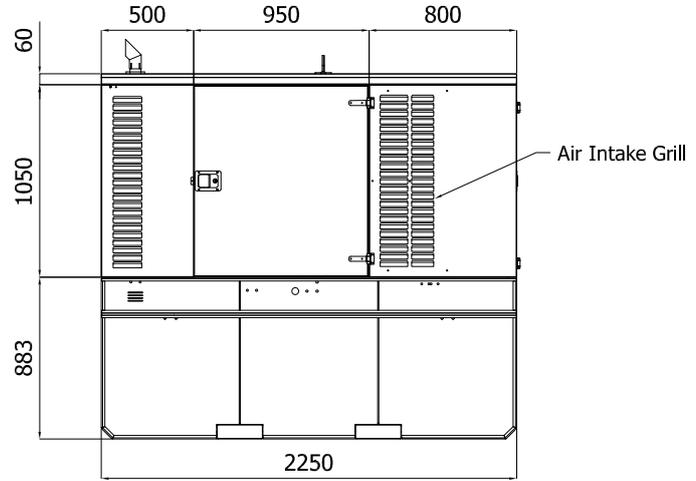
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OVERALL DIMENSIONS [mm]

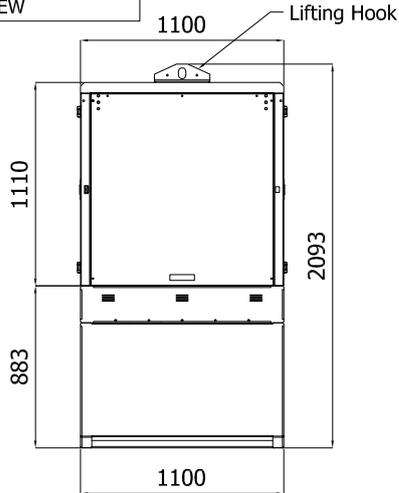
REAR VIEW



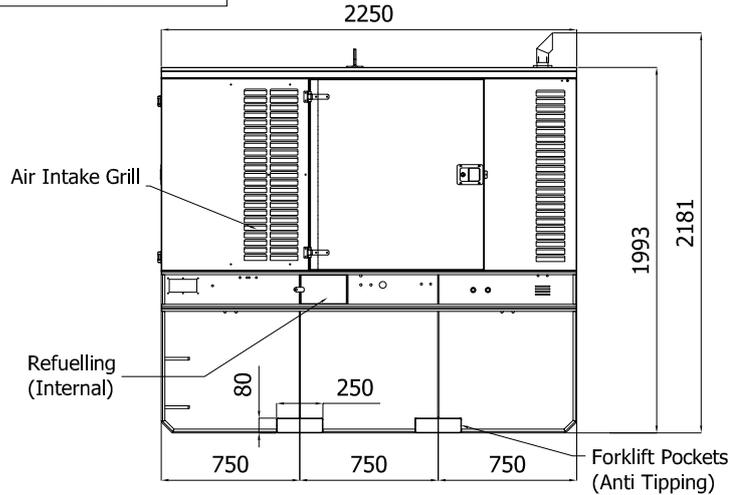
LEFT SIDE VIEW



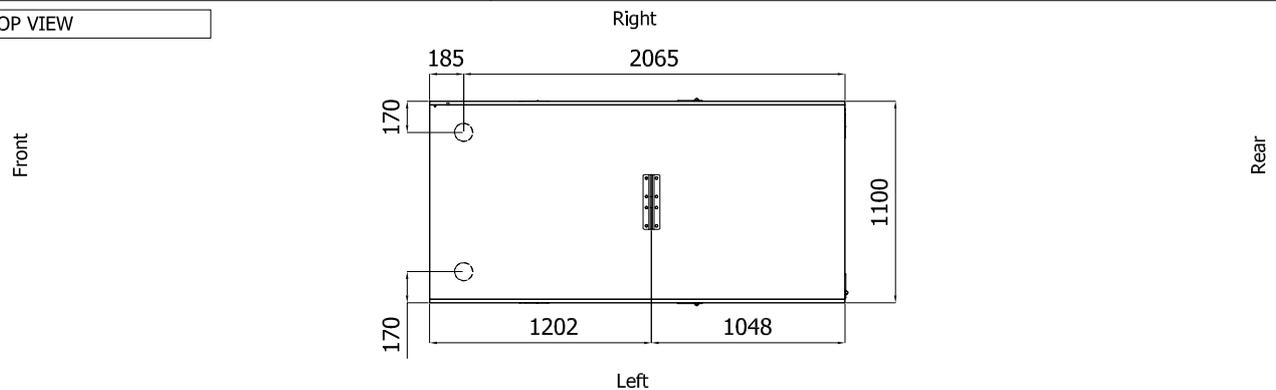
FRONT VIEW



RIGHT SIDE VIEW



TOP VIEW



IMPORTANT:

- 1) Form and dimension refer to the generating set on catalogue
- 2) Form and dimension are subject to change in order to update or improve the products
- 3) This document can not be copied or transmitted without ELCOS S.r.l. approval