





Image for demonstration purposes

Generating Set RENTAL BUILDING - Diesel

GE.AIS5.110/100.RB+011

1500 rpm - Trifase - 50Hz - 400V **Control panel**



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 Special baffles for air intake and air expulsion Inspection doors with hermetic gasket Automatic doorstop Externally and internally washable with sprayer

Exhaust

Residential exhaust system -35dB(A) Exhaust rain cap

Fuel Supply

Single wall daily tank with 110% bunded base Plug & Play fuel connections Bulk tank connections with 3 way valve Automatic shutdown system for low fuel level Fuel gauge Mechanical fuel gauge Increased fuel hatch for washing

A Handling

Oversized lifting hook Base frame with anti-overturning forklift pockets Loadable side by side for truck transportation **Rubber Bumpers**

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 Oil change pump Engine liquids (oil and antifreeze) Tropicalized radiator Rotating parts protection Flectronic speed governor



AVR Automatic Voltage Regulator Impregnation for marine environment

Panel & connection

Emergency Stop button Non-Automatic circuit breaker on panel board RCD with adjustable current and excludible

Circuit breaker inspectable from the outside c/w cable slide and cable clamps

Tamperproof panel IP55

Male socket for battery charger and engine pre-heater (if provided) power supply

Cable output from rear

IP44 wiring

Start-up battery (pre-charged)

Plug & Play connector for Bus communication between controller (Only variant +14)

Sockets module with magnetothermal circuit breaker and Differential

Grounding point

Total power terminal box (excluded variant +12)

Documentation

CE conformity declaration User and Maintenance manual Test report Wirings diagrams IP 55 Document pocket Exploded drawing with spare parts codes

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

Speed	RPM	1500
Frequency	Hz	50
PRP - Prime power	KVA	100
LTP - Standby power	KVA	100
PRP - Prime power	KW	80,0
LTP - Standby power	KW	80
Standard Voltage	V	400/230
Current	Α	144,51
Voltage for current calculation	V	400
COSFI	0,8	0,8
General electrical protection		
Rated current	Α	160
Туре		Non-Automatic circuit breaker on panel board
Poles	N	4P
Optional/notes		Opening coil
Additional protection		Adjustable and excludable Differential protection
Protection device		Control module
Adjustments tripping set-point (Id)	mA	30 - 5000
Adjustments tripping time (t)	sec.	0 - 30
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		
ТҮРЕ		Diesel
Standard Fuel Tank capacity	lt	250
Autonomy @ 75% load	h	15
Fuel consumption at 100% load	lt/h	23,6
Fuel consumption at 75% load	lt/h	17,3

General data

Ah	1x120	
V	12	
°C	740	
l/s	311	
l/s	91,6	
mc/s	1,8	
mm	80	
	V °C I/s I/s mc/s	V 12 °C 740 I/s 311 I/s 91,6 mc/s 1,8





Weight and Dimensions

Dimensions (L x W x H)	cm	265x115x185
Weight with liquids (excluding optionals and fuel)	Kg (+/-3%)	1539

Engine

The Engine		
Factory		FPT
Model		F36ETVP03.A94
Emissions stage		Stage 5
Speed governor		Electronic
Radiator	°C	50
Cooling	Tipo	liquid (water + 50% Paraflu11)
Active net power	Kwm	91,8
Nominal net power	CV	124,7
Cycle	Tipo	4 strokes
Injection	Tipo	Direct
Aspiration	Tipo	Turbo
Numbers of cylinders	N	4
Cylinders arrangement		L
Bore	mm	102
Stroke	mm	110
Total displacement	lt	3,6
Engine oil features		15W40-API CI-4/CH-4 ACEA E5-E7
Engine oil consumption	%	<0.25
Total oil capacity	lt	9,5
Total coolant capacity	lt	10,5
ISO 8528-5 class		G2
Total Adblue - DEF capacity	1	43
Adblue - DEF consumption (% of fuel consumption)	%	4÷7

Alternator

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

Factory		Stamford
Model		UCI274C
PRP continuous power	KVA	100
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	%	90,3
Engine coupling		Elastic disk
Short circuit current		3x In (only with AVR MX321 or MX341)
Protection degree	IP	23
Cooling system		Self ventilating
Maxium overspeed	rpm	2250
Waveform distortion	%	<5
Exciter		Diode bridge





Environmental conditions

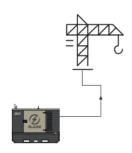
Ambient temperature	°C	40
Relative Humidity	%	60
Max altitude	mt	1000





Control Systems on board QPE-C-SC-3F-4P-160-O2RB





operating scheme - schema di funzionamento

QPE Control panel

The QPE-C control panel represents the evolution of the panel for the control and managment 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 managment easy and efficient.

Mechanical features

	Protection degree	IP	55
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Battery charger

Model		ELCOS - CB1
Maximum output current	Α	2,5
Output DC voltage (selectable)	Vdc	12-24
Input AC voltage (selectable)	Vac	220-260
Frequency	Hz	50-60

Sockets module

Protection	Туре	Differential Magnetothermal breakers
Differential Sensivity	mA	30 (only for 16A and 32A)
Sockets		N. 1 CE Schuko 16A 230V
Sockets		N. 1 CE 2P+T 16A 230V
Sockets		N. 1 CE 3P+N+T 16A 400V
Sockets		N. 1 CE 3P+N+T 32A 400V
Sockets		N. 1 CE 3P+N+T 63A 400V
Male socket		N. 1 CE 2P+T 16A 230V

Data Communication

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

Remotable functions in terminal box

Genset contactor close/open command (1)

GS lock

Mains contactor close/open command (2)



Common Alarm - DC output GS start with key in OFF position (Only in MRS mode) GS test without load Programmable output - Volt free output

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

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 quatity (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
Full 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

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

Reverse power

Fuel theft
Genset negative phase

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 only with the sensor installed on engine (optional)

⁽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		
uei Suppiy	O.G-ACO-BT-C2600-0600	600 Lt Oversized Fuel Tank on board for SS (80/100 kVA), for RB (50/100) (Increased weight and size)
	O.G-ACO-GA-01	Mechanical analogue float for internal fuel tank on board
£ 11.	O.G-ACO-GA-02	Electrical analogue float to monitor the external refilling point on board
.	O.G-ACO-RE-01	External refilling point for Gen Sets 10/250 kVA, SS, RB versions
	O.G-ACO-RE-SP-01	External refilling point with warning light for Gen Sets 10/250 kVA, SS, RB versions
	O.G-ACO-SC-AC-EL-01	Diesel heater installed in the tank 220W 230V usable for RB 10/500, SS 130/750 and all oversized tanks (for GE from 10 to 100 KVA SS replace the tank from plastic to metal using the article O.G-ACO-TK-ST)
1	O.G-ACO-SP-01	Tank leak sensor with signal reported in the QPE/QLE-B control panel
	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 panel
ternator	O.G-ALT-AL-COTE-01	Temperature control unit up to $4 \times PT100$ probes for MC4 management
	O.G-ALT-SEZ-IT-TN	Disconnector for IT/TN system installed on the alternator for Gen-sets from 10 to 500 KVA only SS and RB version (check the feasibility)
	O.G-ALT-ST-ACO-01	Anti-condensation heater 230 V (on Stamford from 80 to 2000 kVA)
	O.G-ALT-ST-AVR-MX321	Stamford MX321 automatic voltage regulator with PMG (Check dimensions)
	O.G-ALT-ST-AVR-MX341	Stamford MX341 automatic voltage regulator with PMG (Check dimensions)

1 x PT100 probe on bearing (80/3000 kVA)

nr. 3 RTD-PT100 probes on stator windings (80/3000 kVA)

O.G-ALT-ST-PT100-1CU

O.G-ALT-ST-PT100-3AV





o slive	

O.G-ALT-ST-RIGU-01

Diode Failure Detector (DFD) mounted on the alternator. Alarm contact available into the panel

Batteries



O.G-BAT-BAE-02

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

Canopy



O.G-COF-AM-01

Hinges and Doors with tamper-proof device (10/100 kVA)



O.G-COF-AP-01

Door opening alarm system (each door)



O.G-COF-DLO-C2600-25KW

Dummy Load 25kW on board for GE 80/100 kVA (Add optional O.Q-QPE-RIL-16RELE in case of MC4 control. Add optional O.Q-QBM-COM-BIO8 for Comap AMF25, IG200, IG500 control. For other controls, check with technical department.)



O.G-COF-IL-INT-01 Internal LED lighting with micro-switches for Gen Sets 10/250 kVA

Steel cable holder for SS and RB versions from 50 to 100 KVA applied to the radiator inspection panel (Weight 27 Kg)



O.G-COF-TRT-MAR-02

O.G-COF-PC-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.G-MPRB-125A5P-02

125A EC 5P IP65 socket with 4P magneto-thermal protection, available for Gen Sets 100/500 kVA RB version, variant +011 (specify if 6H or 1H)



O.G-MPRB-16A-SCHUKO

16A SCHUKO IP65 socket with magneto-thermal breaker for RB Version



O.G-MPRB-16A3P

16A EC 3P IP65 socket with magneto-thermal breaker

32A EC 3P IP65 socket with magneto-thermal breaker



O.G-MPRB-16A5P

16A EC 5P IP65 socket with magneto-thermal breaker for RB Version (specify if 6H or 1H)



O.G-MPRB-32A5P

O.G-MPRB-32A3P

32A EC 5P IP65 socket with magneto-thermal breaker (specify if 6H or 1H)



O.G-MPRB-63A5P

63A EC 5P IP65 socket with magneto-thermal breaker (specify if 6H or 1H)





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	O.G-MPRB-AR-480-A	Quick coupling connectors Syntax SPX 480A (1 row of 4cs L1-L2-L3-N) for genset power from 50 to 100 Kva, RB version +011, c/w nr.4 Male connectors type SPZ "Line drain" for H07RNF cable section max 120sqmm, rated current 260A, cable to be tightened with screw.
	O.G-MPRB-AR-AUX-4P	ILME 4 poles connector for connecting the remote signals and/or commands (indicate the functions). Available for the units form 10 up to 500KVA in RB version and +011 variant.
	O.G-MPRB-AR-REM-START	Bulgin socket for connecting the remote start/stop contact. Available for the units form 10 up to 500KVA in RB version and \pm 011 variant.
	O.G-MPRB-CMT-02	Automatic switching on board for Gen Sets 50/100 kVA RB Version +011 (no additional sockets allowed)
	O.G-MPRB-DIF-PR-01	Differential protection for modular switch for 1PH 16/32A socket (specify if 0.3A or 0.03A)
4	O.G-MPRB-DIF-PR-02	Differential protection for modular switch for 3PH 16/32A socket (specify if 0.3A or 0.03A)
	O.G-MPRB-DIF-PR-03	Differential protection for modular switch for 3PH 63A socket (specify if 0.3A or 0.03A)
4	O.G-MPRB-DIF-PR-04	Differential protection for modular switch for 3PH 125A socket (specify if 0.3A or 0.03A)
	O.G-MPRB-FIX-SCREWS	Fixing sockets on RB module with screws to replace the tear rivets. Only for GE RB version.
	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 \div 300 kohm. (2 DIN rail modules - check feasibility)
* # 0 * # 0	O.Q-QLE-K-DIF-M3	Adjustable differential protection only for MC2-PLUS controller for Gen Sets 10/500 kVA (+011 variant)
27.0	O.Q-QMC-K-DIF-R2	Adjustable differential protection only for QMC panel for Gen Sets 50/100 kVA (Variant +010 $$ / +011)
000	O.Q-QMC-RX8-QMC	Start-stop radio control with max. radius 500 mt indoors and 5 km outdoors (for QMC panel).
START (A)	O.Q-QMC-SAS-01	Auto Start-Stop at load request (QMC panel)
	O.Q-QPE-485.CONV-LAN	Converter 485/LAN for QPE-C, QLE-B panel
19	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-INT-CST-02	STATUS contact GE main switch wired to terminal board inside the QPE panel (50 / 100KVA) on board the generator (no variant +10)
	O.Q-QPE-INT-CTR-02	TRIP contact GE main switch wired to terminal board inside the QPE panel (50 / 100KVA) on board the generator (no variant ± 10)





	O.Q-QPE-K-DIF	Differential protection adjustable for the MC4
	O.Q-QPE-MD-QPE-C	GSM Modem for remote management of the genset through SMS (SIM card not included). Available only for +010/+011 versions with QPE panel.
	O.Q-QPE-POT-VOLT	Internal potentiometer for voltage regulation - available only for variant +10/+11
OBLESH # # co	O.Q-QPE-PR-QPE-C	Remote panel for QPE-C, QLE-B - available only for variant +10/+11
TOTAL STATE OF THE	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).
START A STOP	O.Q-QPE-SAS-02	Auto Start-Stop at load request (QPE, QLE panels)
	O.Q-QPE-SCD-01	Anti-condensation heater inside the panel
	O.Q-QPE-SEL-2P	2 position selector switch on board cubicle (indicate the function of the selector)
	O.Q-QPE-SEL-3P	3 position selector switch on board cubicle (indicate the function of the selector)
	O.Q-QPE-TG-E-MON-BASIC	GSM/GPS modem for remote management - available only for +010/+011 versionis (complete with antenna and SIM card)
(A)	O.Q-QPE-TG-QPE-C	Remote management software via LAN for QPE-C, QLE-B panel compatible with Windows XP up to Windows 10
C Engine		
	O.G-MOT-FC-4	Dust collector filter - for Gen Sets 80/100 kVA
	O.G-MOT-FSA-4	Fuel/Water Separator Filter - for Gen Sets 80/100 kVA
	O.G-MOT-K-40C-02	Engine liquids suitable for -40°C ambient temperature for Gen Sets 50/100 kVA
The second secon	O.G-MOT-RF-02	Electronic speed governor for Gen Sets 50/200 kVA
is tra	O.G-MOT-SC-AC-EL-01	Engine pre-heater 230V with thermostat on board for Gen Sets 10/100 kVA (BF/PRO/SS/RB)





** (3F AIS5 110)/100 ST	RB+011

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jel Etro	O.G-MOT-SC-AC-EL-02	Super hot engine heater 230V with thermostat on board for Gen Sets 10/100 kVA
>	O.G-MOT-SE-LR-01	Radiator coolant level sensor from 10 to 100 Kva
Handling		
<u> </u>	O.G-MOV-CN-4	Off-road trailer with 2 pneumatic wheels and tow bar (SS, RB Gen Sets 50/100 kVA) For ge SS combine with cod O.G-MOV-KRM-SS-02
	O.G-MOV-CO-RS-03	Spare wheel with support for On road traiver O.G-MOV-CO-RS-03
00	O.G-MOV-CO-ST-03	Roadworthy trailer (Maximal capacity 2150Kg) 80km/h for genset from 50 to 100 kVA (registration excluded). For ge SS combine with code O.G-MOV-KRM-SS-02
	O.G-MOV-KAC-01	Kit of plates for anchoring unit on trailer using belts. Available for gen sets from 10 to 100kVA only SS and RB version.
Quadro boro	lo GE	
	O.Q-QBM-COM-4G-GPS	Module cellular modem 2G/3G/4G in combination with a GPS/GLONASS receiver per INTELILITE 4 AMF25, AMF8, IG200, IG500 G2 and IG1000
	O.Q-QBM-COM-BIO8	BIO8 expansion module for Comap INTELILITE4 AMF25, AMF8, IG200, IG500 G2 and InteliGen4 200 controllers complete with user terminal block and / or relay for relaying outputs - if used (check installation feasibility in the switchboard).
	O.Q-QBM-COM-ETH	Expansion module with ethernet port installed on the INTELILITE 4 AMF25, AMF8, IG200 control board. For connection to PC MOD-BUS TCP / IP - SNMP.
Exhaust		
	O.G-SCA-CAT-04	Catalytic converter (80/100 kVA)
	O.G-SCA-FAP-K120	Particulate filter (DPF) for Gen Sets 100 kVA
	O.G-SCA-PF-02	Spark arrestor 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)

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

MS.RF-ST-01









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 1x35mm ² 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 1x35mm ² with cable lugs.

PRP

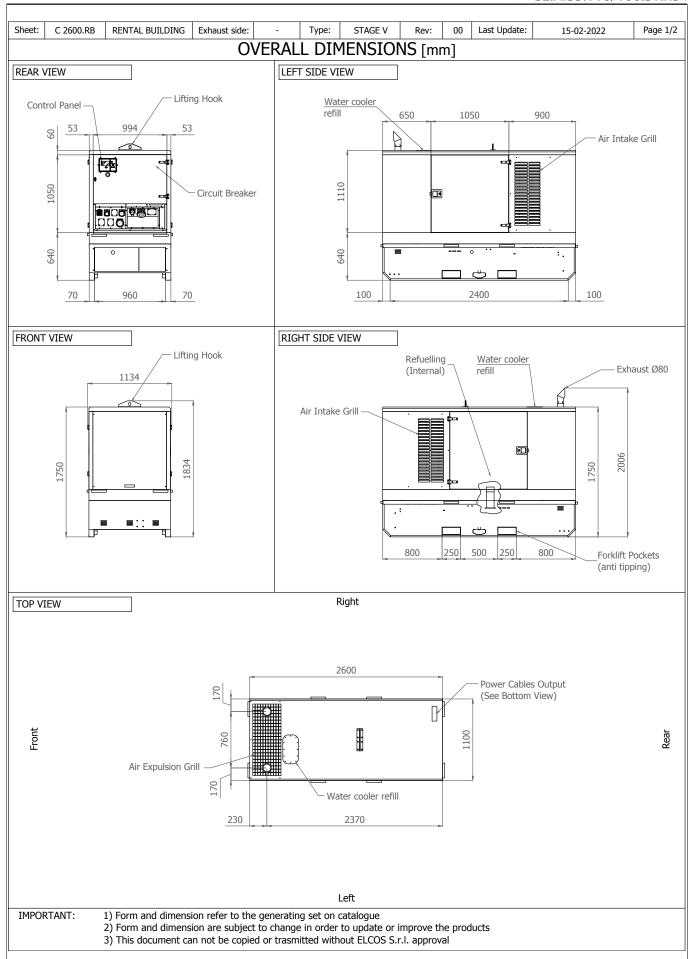
Engines of this rating provide unlimited hours of usage in a variable load application. The average load factor should not exceed 70% of the engine's prime power rating with a maximum number of 500 operational hours at 100% prime power rating. An overload capability of 10% is available, however, is limited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

LTP

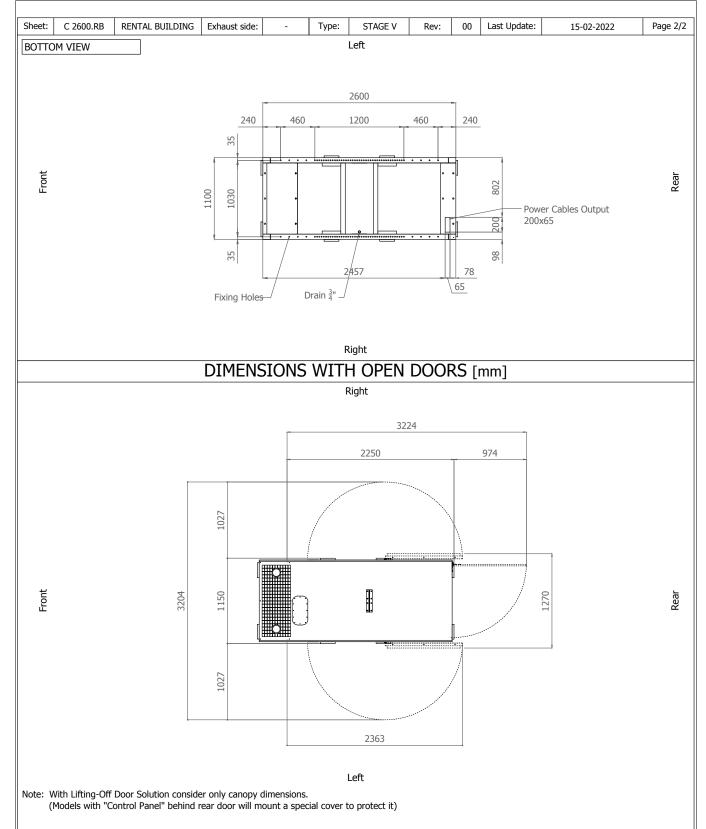
Limited-time running power is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500h of operation per year with the maintenance intervals. The overload is not allowed.











VENTILATION OF THE ROOM

The windows area in the generating set room needs to be (recommended):

Aspiration: 1.00 m2 Expulsion: 0.60 m2

ATTENTION: for a correct ventilation the expulsion air and the exaust gas needs to be conveyed in the open-air

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 trasmitted without ELCOS S.r.l. approval