Image for demonstration purposes

Generating Set
Base Frame - Diesel

GE.MT.1820/1650.BF+011

1500 rpm - Trifase - 50Hz - 400V
Automatic panel without switching on board

.BF

Standard equipment

Exhaust
Exhaust manifold protection
Exhaust flexible expansion joint
Silenced muffler -15dB(A)

Fuel Supply
Fuel connections
Automatic shutdown system for low fuel level

Handling
n.4 lifting hooks integrated into the bearing structure

Base Frame
Anti-vibrating mounting pads

Engine
Engine pre-heater 230V
High coolant temperature and low oil pressure shutdown system
Oil pressure and coolant temperature gauge (only with QPE or +14 variant)
Oil change pump
Engine liquids (oil and antifreeze)
40°C radiator
Rotating parts protection
Electronic speed governor
Radiator level sensor

Alternator
AVR Automatic Voltage Regulator
AVR Pre-arranged for parallel
Bi-phase sensing AVR
Impregnation for marine environment
IP23

Panel & connection
Emergency Stop button
Magnetothermal circuit breaker on alternator board
Cable output from side
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*	**1650**
PRP - Prime power	*KW*	**1320,0**
LTP - Standby power	*KVA*	**1815**
LTP - Standby power	*KW*	**1452,0**
Standard Voltage	*V*	**400/230**
Current	*A*	**2384,39**
Voltage for current calculation	*V*	**400**
COSFI	*0,8*	**0,8**

General electrical protection

Rated current	*A*	**2500**
Type		**Magnetothermal switch on the alternator board**
Poles	*N*	**4P**

Fuel Consumption

TYPE		**Diesel**
Standard Fuel Tank capacity	*lt*	**No tank**
Fuel consumption at 100% load	*lt/h*	**312,1**
Fuel consumption at 75% load	*lt/h*	**241**
Fuel consumption at 50% load	*lt/h*	**167,6**

General data

Rated capacity	*Ah*	**4x180**
Auxiliary Voltage	*V*	**24**
Exhaust gas temperature	*°C*	**430**
Exhaust gas flow	*l/s*	**4000**
Combustion air flow	*l/s*	**1600**

Weight and Dimensions

Dimensions (L x W x H)	*cm*	**500x200x250**
Weight with liquids (excluding optionals and fuel)	*Kg (+/-3%)*	**12453**

Engine

Factory		**MTU**
Model		**12V 4000 G14F**
Emissions stage		**Stage 0**
Speed governor		**Electronic**
Radiator	*°C*	**40**
Cooling	*Tipo*	**liquid (water + 50% Paraflu11)**
Active net power	*Kwm*	**1380**
Nominal net power	*CV*	**1875**
Cycle	*Tipo*	**4 strokes**
Injection	*Tipo*	**Direct**
Aspiration	*Tipo*	**Turbo**
Numbers of cylinders	*N*	**12**
Cylinders arrangement		**V**
Bore	*mm*	**170**
Stroke	*mm*	**210**
Total displacement	*lt*	**57,17**
Engine oil features		**15W40-API CI-4/CH-4 ACEA E5-E7**
Total oil capacity	*lt*	**260**
Total coolant capacity	*lt*	**480**

The emission levels of the exhaust gas are indicated in the engine technical datasheet. Any changes due to more restrictive regulatory adjustments are excluded.

Alternator

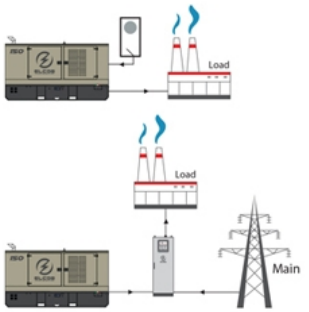
*** May vary based on stock availability. However, a primary brand will be used.**

Factory		**Stamford**
Model		**PI734D**
PRP continuous power	*KVA*	**1650**
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	*%*	**96,2**
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		**PMG**

Standard operating environmental conditions

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

Control Systems on board QPE-C-SC-3F-V1



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 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.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**

Battery charger

Model		**ELCOS - CB1**
Maximum output current	*A*	**2,5**
Output DC voltage (selectable)	*Vdc*	**12-24**
Input AC voltage (selectable)	*Vac*	**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)
Common Alarm - DC output
GS start with key in OFF position (Only in MRS mode)
GS lock
Mains contactor close/open command (2)
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
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
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-C3V-03**	External fuel tank connections with 3-way valve for supply from internal or external tank (750/3000 kVA)

Electrical on board

	**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-SCD-01**	Anti-condensation heater inside the panel
	**O.Q-QPE-SEL-50-60**	Switch selector 50Hz 400V / 60Hz 480V
	**O.Q-QPE-TG-EVO-GPS-4G**	Remote management system via LAN/GSM 4G 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-K-40C-07**	Engine liquids suitable for -40°C ambient temperature for Gen Sets 1250/1700 kVA
	**O.G-MOT-SC-AC-EL-06**	Super hot engine heater 230V with thermostat on board for Gen Sets 1250/3000 kVA
	**O.G-MOT-SE-LR-03**	Radiator coolant level sensor from 750 to 3000 kVA

ATS Panels

	**QC4.2500A**	Separate ATS panel, ABB 2500A motorized change-over (1700 kVA 400V) Dim. 80 x 80 x 190 cm - 350 kg. (ex QC4.1700)

Exhaust

	**O.G-SCA-MR-10**	nr. 2 Residential mufflers -35 dBA (1250/2000 kVA)

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.