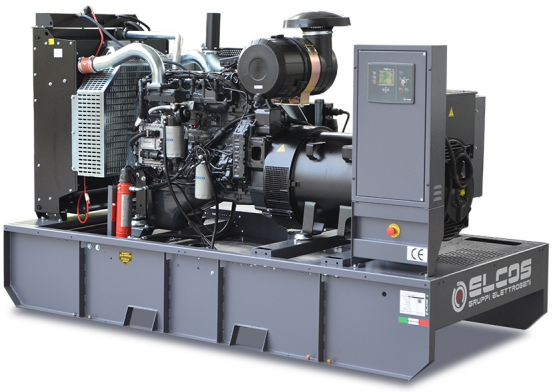


Image for demonstration purposes

**Generating Set**
**Base Frame - diesel**

# GE.DW.170/150.BF+011

**1500 rpm - Threephase - 50Hz - 400V**
**Automatic Panel with AMF without ATS**

.BF

## Standard equipment

### Exhaust
Exhaust manifold protection
Silenced muffler -15dB(A)

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

### Handling
Base frame with anti-overturning forklift pockets

### Base Frame
Bunded base at 110% of fuel tank capacity
Anti-vibrating mounting pads

### Engine
High coolant temperature and low oil pressure shutdown system
Oil pressure and coolant temperature gauge (only with qpe or +14 variant)
External oil drain points
Engine liquids (oil and antifreeze)
Rotating parts protection
Electronic speed governor

### Alternator
Avr automatic voltage regulator
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* | **150** |
| Prp - prime power | *KW* | **120,0** |
| Ltp - standby power | *KVA* | **170** |
| Ltp - standby power | *KW* | **136,0** |
| Standard voltage | *V* | **400/230** |
| Current | *A* | **216,8** |
| Cosfi | *0,8* | **0,8** |

## General electrical protection

| | | |
|---|---|---|
| Circuit-breaker rated current | *A* | **250** |
| Type | | **Magnetothermal switch on the alternator board** |
| Circuit-breaker poles | *N* | **4P** |

## Fuel Consumption

| | | |
|---|---|---|
| Type | | **diesel** |
| Standard fuel tank capacity | *lt* | **250** |
| Autonomy @ 75% load | *h* | **10** |
| Fuel consumption at 100% load | *lt/h* | **33,7** |
| Fuel consumption at 75% load | *lt/h* | **25,5** |
| Fuel consumption at 50% load | *lt/h* | **17,4** |

## General data

| | | |
|---|---|---|
| Rated capacity | *Ah* | **2x120** |
| Auxiliary voltage | *V* | **24** |
| Exhaust gas temperature | *°C* | **537** |
| Exhaust gas flow | *l/s* | **503** |
| Combustion air flow | *l/s* | **224** |
| Cooling fan airflow | *mc/s* | **3,16** |
| Exhaust diameter | *mm* | **80** |

## Weight and Dimensions

| | | |
|---|---|---|
| Dimensions (l x w x h) | *cm* | **240x110x165** |
| Weight with liquids (excluding optionals and fuel) | *Kg (+/-3%)* | **1715** |

## Engine

| | | |
|---|---|---|
| Factory | | **Doosan** |
| Model | | **DP086TA** |
| Emissions stage | | **Stage 2** |
| Speed governor | | **Electronic** |
| Radiator | *°C* | **43** |
| Cooling | *Tipo* | **liquid (water + 50% Paraflu11)** |
| Active net power | *Kwm* | **132** |
| Nominal net power | *CV* | **179,3** |
| Cycle | *Tipo* | **4 strokes** |
| Injection | *Tipo* | **Direct** |
| Aspiration | *Tipo* | **Turbo** |
| Numbers of cylinders | *N* | **6** |
| Cylinders arrangement | | **L** |
| Bore | *mm* | **111** |
| Stroke | *mm* | **139** |
| Total displacement | *lt* | **8,066** |
| Engine oil features | | **15W40-API CI-4/CH-4 ACEA E5-E7** |
| Total oil capacity | *lt* | **15,5** |
| Total coolant capacity | *lt* | **44** |
| Iso 8528-5 class | | **G3** |

## Alternator

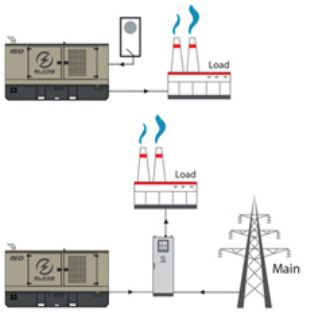
*** May vary based on stock availability. However, a primary brand will be used.**

| | | |
|---|---|---|
| Factory | | **Stamford** |
| Model | | **UCI274F** |
| Prime power prp 3ph+n | *KVA* | **160** |
| 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 | *%* | **92,3** |
| 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 QPE-C-VSC-BF




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
Common alarm - dc output
Gs start with key in off position (only in mrs mode)
Management of the automatic fuel refilling system
Gs lock
Mains contactor close/open command
Gs test without load
Programmable output - volt free output

## Control Module

| | |
|---|---|
| Brand | **ELCOS** |
| 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

# OPTIONAL

**Canopy Soundproofing**
Air inlet/outlet sound attenuator for room
Soundproof container of various sizes

**Exhaust**
Exhaust flexible expansion joint
External residential muffler
Exhaust flexible pipe
(fap) anti-particulate filter
Exhaust catalyst (cat)

**Fuel Supply**
Bulk tank connections with 3 way valve
Bulk tank connections
Automatic fuel refilling system on board

**Engine**
Engine pre-heater 230vsuper hot
Oil change pump
Engine liquids + 50°c, - 40°c (oil and antifreeze)
Tropicalized radiator
Battery disconnector
Automatic refilling oil system
1000 working hours spare parts kit
Cyclone air filter
Redundant start-up battery kit

**Alternator**
Avr pre-arranged for parallel
Stator windings thermistors - pt100 - in the alternator box (not managed)
Bearing thermistor - pt100 - in the alternator box (not managed)
Anti-condensation heater
Double bearing
Three-phase sensing avr
Bi-phase sensing avr

**Panel & connection**
Rcd with adjustable current and excludible
Automatic transfer switch (qc)
Utf energy meter with arcudi terminal
Tamperproof panel ip55

**MC4 optional**
Telemonitoring with software
Remote panel
Rs485/usb converter
Rs485/lan converter
16 relais card (volt free output)
Gms modem - sms remote management
Radiocontrol
Gsm remote control system with web application without sim card
Gps tracking system

## 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

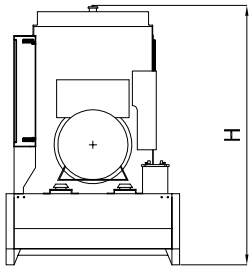
## LTP

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.

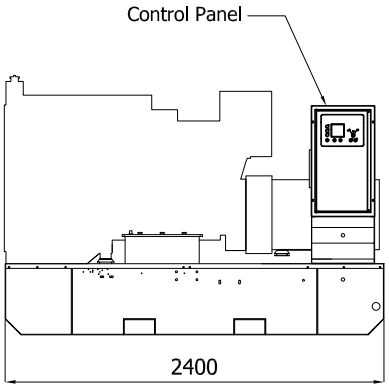
| Sheet: | GE.105.130.PROV.BF | OPEN FRAME | Exhaust side: | | Type: | STANDARD | Rev: | 01 | Last Update: | Feb 02, 2014 | Page 1/2 |
|---|---|---|---|---|---|---|---|---|---|---|---|

# OVERALL DIMENSIONS [mm]

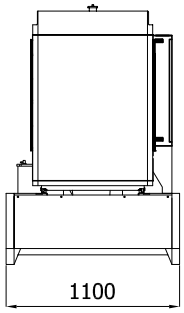
## REAR VIEW



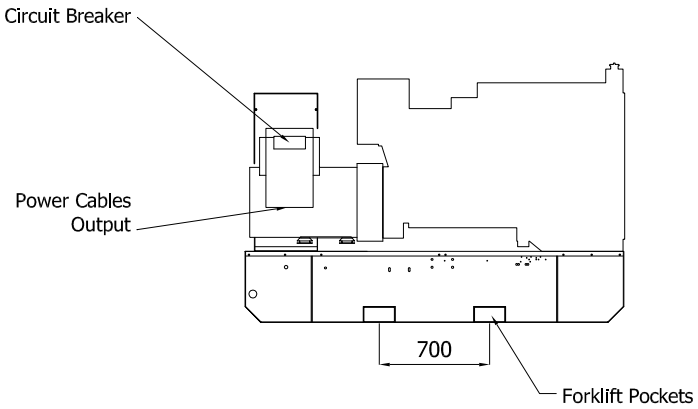

## LEFT SIDE VIEW



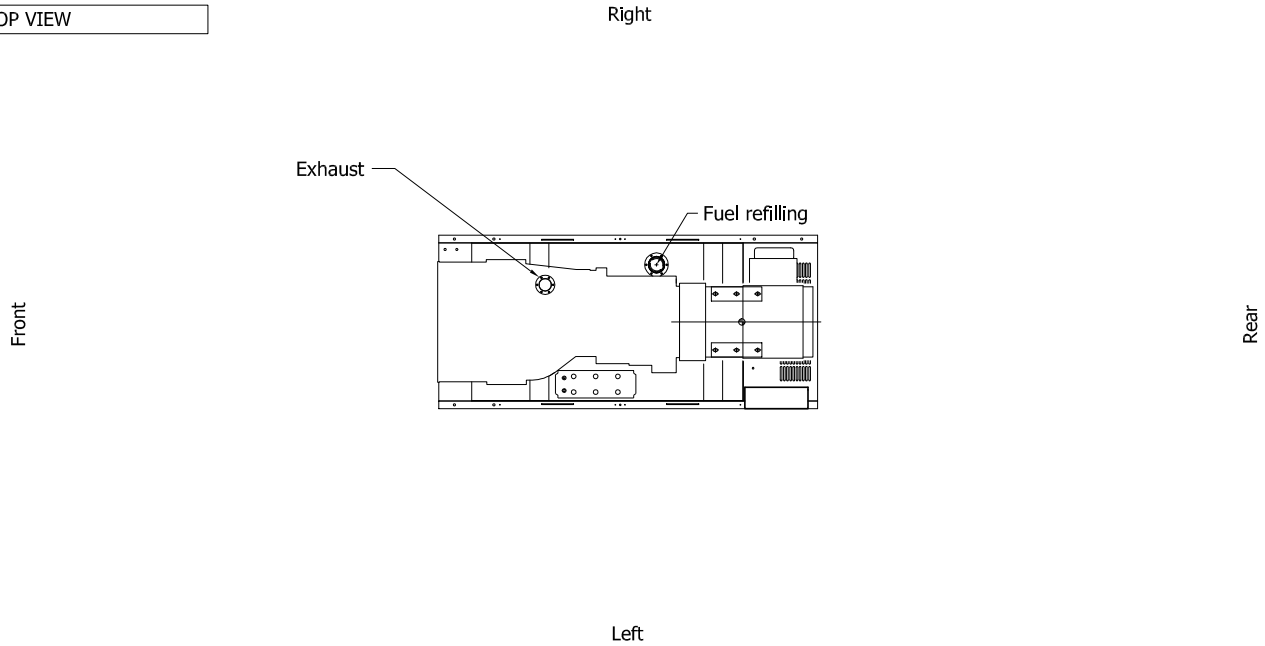

## FRONT VIEW




## 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 trasmitted without ELCOS S.r.l. approval

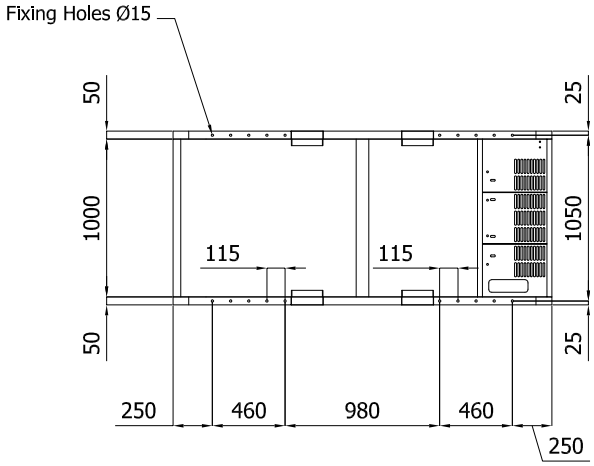
| Sheet: | GE.105.130.PROV.BF | OPEN FRAME | Exhaust side: | | Type: | STANDARD | Rev: | 01 | Last Update: | Feb 02, 2014 | Page 2/2 |
|---|---|---|---|---|---|---|---|---|---|---|---|

BOTTOM VIEW

Left

Front

Rear




Right

## DIMENSIONS WITH OPEN DOORS [mm]

Right

Front

Rear

Left

## VENTILATION OF THE ROOM

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

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