SILENTSTAR 33 T YN

33 kVA
STAGE 5

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 for controls and maintenance

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

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

Handling
Lifting hook integrated into the bearing structure
Base frame with anti-overturning forklift pockets
forkliftable on the short side

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
Rotating parts protection
Electronic speed governor

Alternator
AVR Automatic Voltage Regulator
Impregnation for marine environment
IP23

Panel & connection
Emergency Stop button
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

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Primary Data

General Information

Speed	RPM	1500
Frequency	Hz	50
PRP	kVA	33
PRP - Prime power ($\cos\varphi = 0.8$)	kW	26.4
LTP - Standby power	kVA	37
LTP - Standby power ($\cos\varphi = 0.8$)	kW	29.6
Standard Voltage	V	400 / 230
Current ($\cos\varphi = 0.8$)	A	47.69
Voltage for current calculation	V	400
$\cos\varphi$		0.8

General Electrical Protection

Circuit-breaker rated current	A	50
Type		Magnetothermal switch on panel board
Circuit-breaker poles	N	4P

LWA

LwA	dB(A)	88

Noise Level (+/- 3dB(A))

Sound pressure level @ 7 m	dB(A)	63
Sound pressure level @ 1 m	dB(A)	72

Fuel Consumption

Type		Diesel
Standard Fuel Tank capacity	L	110
Autonomy @ 75% load	h	—
Fuel consumption at 100% load	L / h	9.6
Fuel consumption at 75% load	L / h	—
Fuel consumption at 50% load	L / h	—

General Data

Rated capacity	Ah	1x100
Auxiliary Voltage	V	12
Exhaust gas temperature	°C	550
Exhaust diameter	mm	60

Weight and Dimensions

Dimensions (L x w x h)	cm	190 x 90 x 150
Weight with liquids (excluding optionals and fuel)	kg (± 3 %)	931

PRP

Net prime power 100%, permissible average load equal to or below < 80 % no time limitation, plus 10 % overload permissible for 1 running hour each 12 h.

LTP (Limited Time Running Power)

ISO-8528-1 states that a LTP-rated generator set must provide power for up to 500 hours per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturers.

Engine

Factory		YANMAR
Model		4TNV98C-IYE
Emissions stage		Stage 5
Speed governor		Electronic
Radiator	° C	50
Cooling	Type	Liquid
Active net power	kW	31.6
Nominal net power	HP	43
Injection	Type	Direct
Aspiration	Type	Natural
Numbers of cylinders	N	4
Cylinders arrangement		L
Bore	mm	98
Stroke	mm	110
Total displacement	L	3.319
Engine oil features		15W40-API CI-4/CH-4 ACEA E5-E7
Total oil capacity	L	10.5
Total coolant capacity	L	11

Cycle

Cycle	Type	4 Strokes

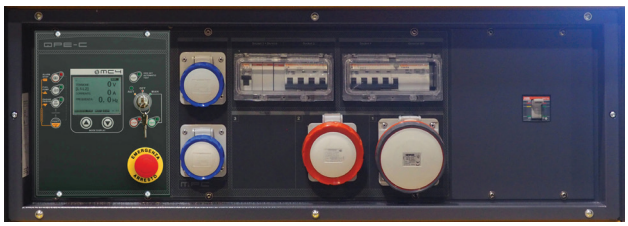
Alternator

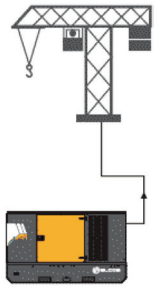
May vary based on stock availability. However, a primary brand will be used.		
Factory		STAMFORD
Model		S1L2-J1
Single-phase Range	kVA	35
Voltage Regulator (voltage accuracy)	± %	1
Poles	N°	4
Phases		3+N
Standard windings connection		Star Series
Stator/rotor impregnation		H (Outdoor Temp 40°C)
Efficiency	%	88
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	m	1000

Control Systems on Board QPE-C-MAN-3F-4P-63-01 version (+12)





QPE Manual panel with sockets module

The manual control panel type QME-C-MAN provides a reliable and simple solution for the control of the generating set.Thanks to the MC4 control module, the QME-C-MAN control panel can allow the manual start and stop of the gen set and it can monitor the different parameters during its operation. The MC4 module allows you to connect some optional devices for a complete remote management of the gen set.

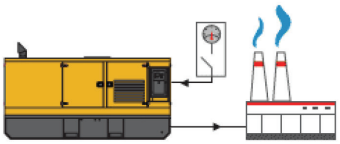
Mechanical features

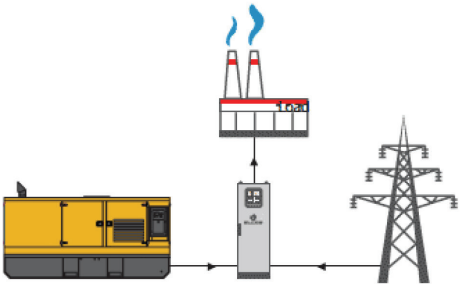
Protection degree	*IP*	**55**

Sockets module

10-15 kVA	n°1 CE 2P+T -16A 230V / n°1 CE 2P+T -16A 230V / n°1 CE 3P+N+T 16A 400V
20 kVA	n°1 CE 2P+T -16A 230V / n°1 CE 2P+T -16A 230V / n°1 CE 3P+N+T 32A 400V
30-100 kVA	n°1 CE 2P+T -16A 230V / n°1 CE 2P+T -16A 230V / n°1 CE 3P+N+T 32A 400V / n°1 CE 3P+N+T 63A 400V

Control Systems on board QPE (+11)





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 automatlc 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

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

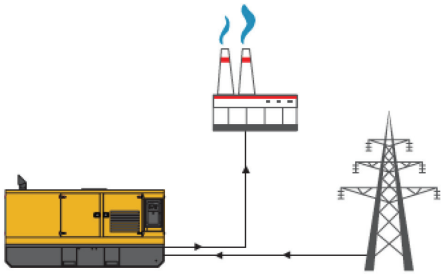
Data Communication

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

Control Systems on board QPE+ATS version (+10)

QPE+ATS Automatic panel with 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 automatlc 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. This group is equipped with a 4-pole source changeover with electrical and mechanical interlocking.



Control Module - Version QPE (+1 (+12; +11; +10)

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

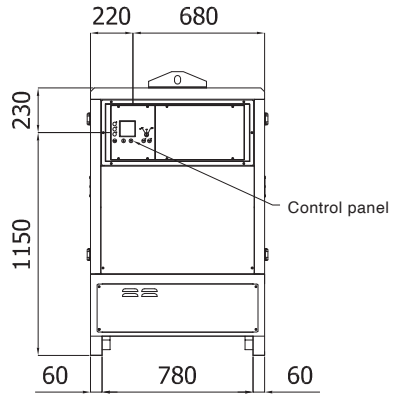
CONTROL MODULE FUNCTIONS
Automatic start and stop when the Mains Fails (7)
Remote Start and Stop
Remote Start and Stop with key in OFF position
Manual Start and stop
Emergency stop button on panel board
Remote emergency stop
Remote lock
Remote test without load
Remote test on load
Scheduled start-ups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

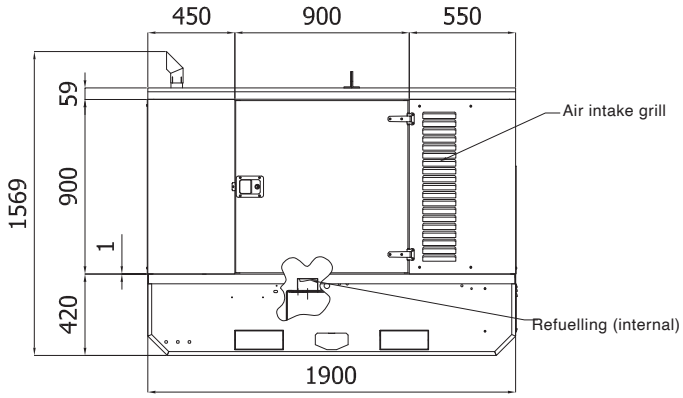
(1) Present with the sensor installed on engine
(2) Present according to the engine equipment and to the ECU type (ECU - Canbus)
(3) Present only with the residual current device mounted on genset board
(4) Present with optional expansion modules
(5) Present with special function activated
(6) Only with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

OVERALL DIMENSIONS (mm)

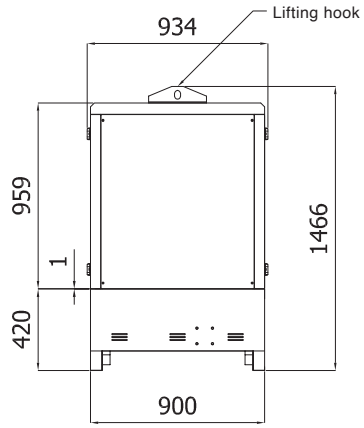
REAR VIEW



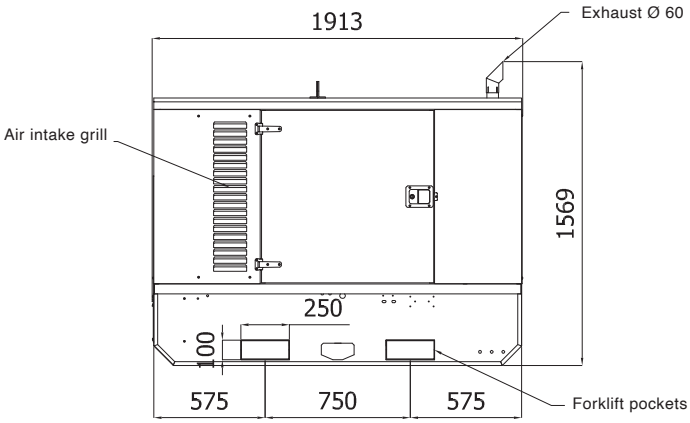
LEFT SIDE VIEW



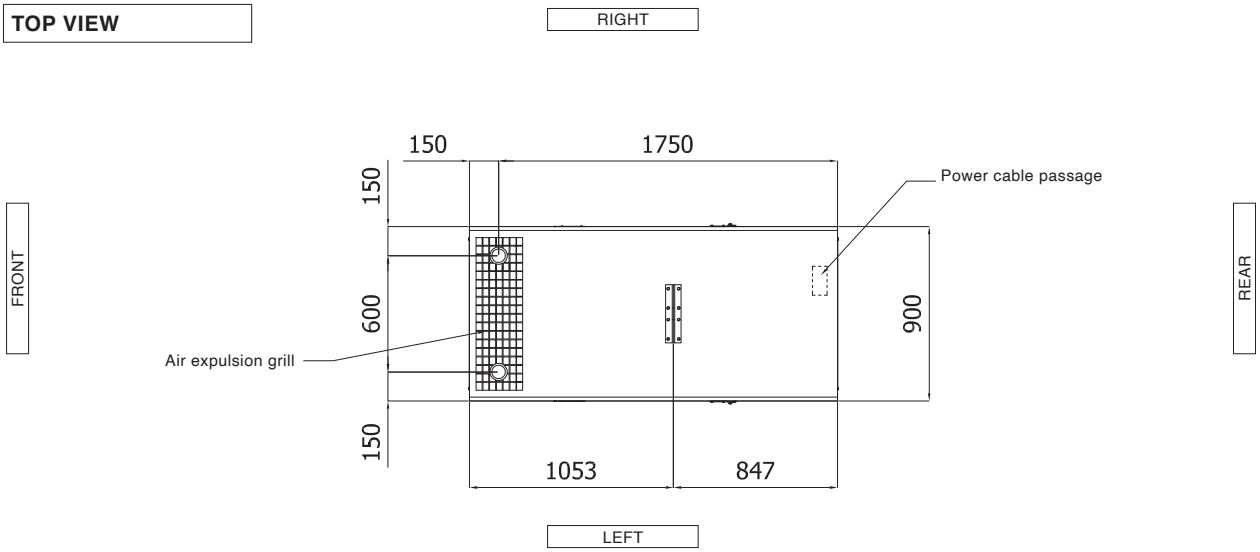
FRONT VIEW



RIGHT SIDE VIEW

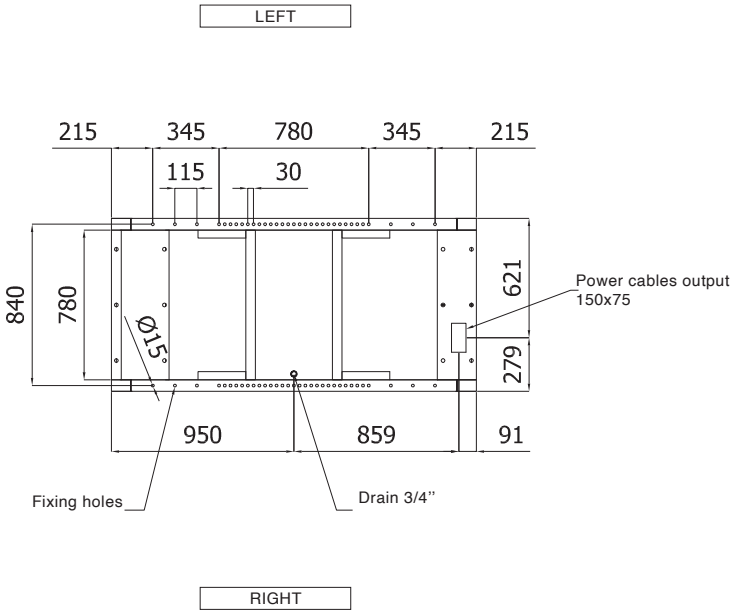


TOP VIEW

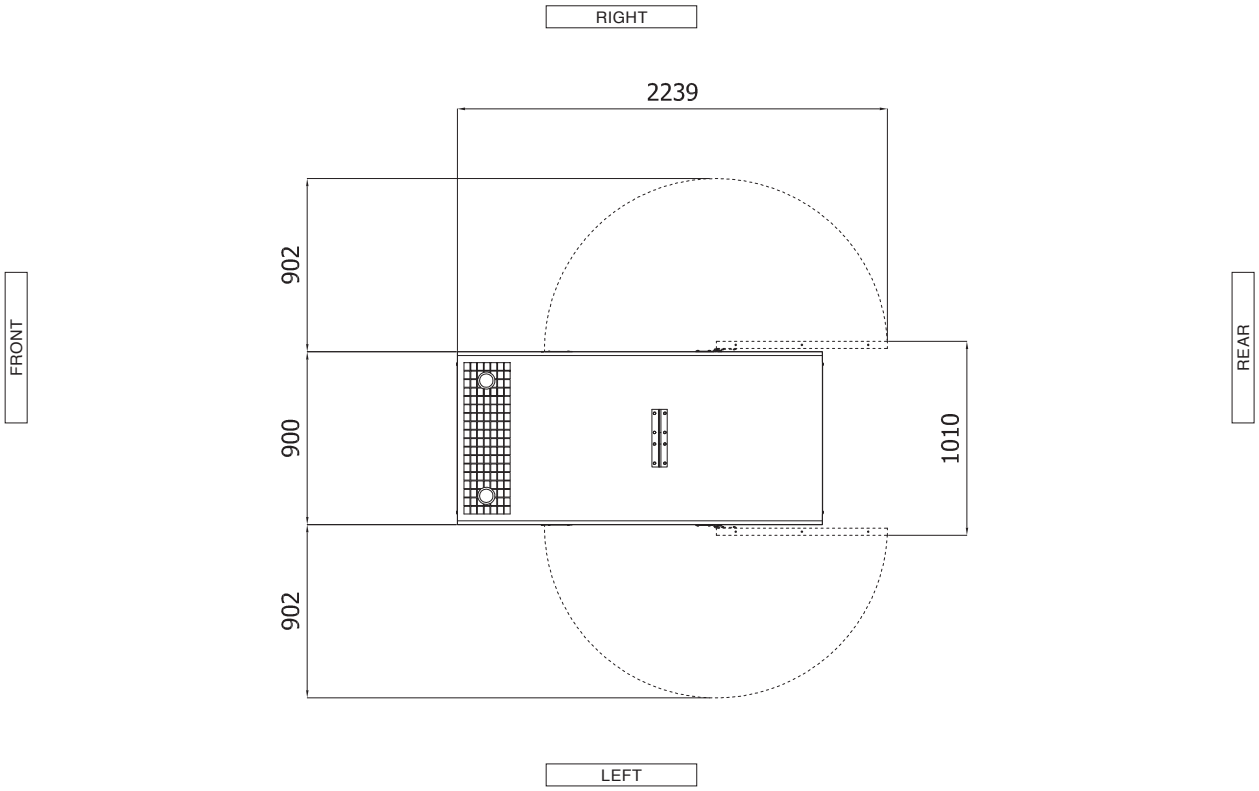


1) Forms and dimensions refer to the generating set on catalog.
2) Forms and dimensions are subject to change in order to update or improve the products.

BOTTOM VIEW



DIMENSIONS WITH OPEN DOORS (mm)



VENTILATION OF THE ROOM

The windows area in the generating set room needs to be (recommended):
- Aspiration: 0.26 m²
- Expulsion: 0.21 m²

ATTENTION: for a correct ventillation, the expulsion air and the exaust gas needs to be conveyed in the open air.

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