

GBW22Y



Main Features

Frequency	Hz	50
Voltage	V	400
Power factor	cos ϕ	0.8
Phase		3

Power Rating

Emergency Standby Power ESP	kVA	19.25
Emergency Standby Power ESP	kW	15.40
Prime power PRP	kVA	18.27
Prime power PRP	kW	14.62

Ratings definition (ISO-8528)

ESP - Emergency Standby Power:

It is the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 h of operation per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. The permissible average power output over 24 h of operation shall not exceed 70 % of the ESP.

PRP - Prime Power:

It is defined as being the maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer. The permissible average power output over 24 h of operation shall not exceed 70 % of the prime power.

Engine specifications

Engine Brand	Yanmar	
Model	4TNV88-BIPGE	
[50Hz] Exhaust emission level	Stage V	
Engine cooling system	Water	
Nr. of cylinder and disposition	4 in line	
Displacement	cm ³	2190
Aspiration	Natural	
Speed governor	Mechanical	
Prime gross power PRP	kW	17.3
Maximum gross power LTP ESP	kW	18.2
Oil capacity	l	7.4
Coolant capacity	l	2.7
Fuel	Diesel	
Specific fuel consumption 75% PRP	g/kWh	251
Specific fuel consumption PRP	g/kWh	251
Starting system	Electric	
Starting engine capability	kW	1.4
Electric circuit	V	12

Engine Equipment

Standards

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS 5514/1

Fuel system

- Direct injection system
- Fuel filter paper element
- Fuel pump Bosch in-Line

Lube oil system

- Forced feed system
- Trochoid pump
- Paper element lube oil filter

Induction system

- Mounted air filter

Cooling system

- Thermostatically-controlled system with gear-driven circulation pump and belt-driven pusher fan
- Mounted radiator and piping



Alternator Specifications

Alternator	Mecc Alte	
Model	ECP28-M4 C	
Voltage	V	400
Frequency	Hz	50
Power factor	$\cos \phi$	0.8
Poles	4	
Type	Brushless	
Voltage tolerance	%	1
Efficiency @ 75% load	%	88,2
Class	H	
IP protection	23	

Mechanical structure

Robust mechanical structure which permits easy access to the connections and components during routine maintenance check-ups.

Voltage regulator

Voltage regulation with DSR. The digital DSR controls the range of voltage, avoiding any possible trouble that can be made by unskilled personnel. The voltage accuracy is $\pm 1\%$ in static condition with any power factor and with speed variation between 5% and +30% with reference to the rated speed.

Windings / Excitation system

Generator stator is wound to 2/3 pitch. This eliminates triplen (3rd, 9th, 15th ...) harmonics on the voltage waveform and is found to be the optimum design for trouble-free supply of non-linear loads. The 2/3 pitch design avoids excessive neutral currents sometimes seen with higher winding pitches. MAUX (Standard): The MAUX MeccAlte Auxiliary Winding is a separate winding within the main stators that feeds the regulator. This winding enables to take an overload of 300% forced current (short circuit maintenance) for 20 seconds. This is ideal for motor starting requirements.

Insulation / Impregnation

Insulation is of class H standard. Impregnation is made with premium tropicalised epoxy resins by dipping and dripping. High voltage parts are impregnated by vacuum, so the insulation level is always very good. In the high-power models, the stator windings undergo a second insulation process. Grey protection is applied on the main and exciter stator to give enhanced protection.

Reference standards

Alternator manufactured according to , and complies with , the most common specification such as CEI 2-3, IEC 34-1, EN 60034-1, VDE 0530, BS 4999-5000, CAN/CSA-C22.2 No14-95-No100-95.



Genset equipment

BASE FRAME MADE OF WELDER STEEL PROFILE, COMPLETE WITH:

- Anti-vibration mountings properly sized
- Visual fuel level indicator
- Integrated support legs.



PLASTIC FUEL TANK, COMPLETE WITH:

- Filler neck
- Air breather (ventilation pipe)
- External fuel refilling



OIL DRAININ PIPE WITH CAP:

- Oil draining facilities



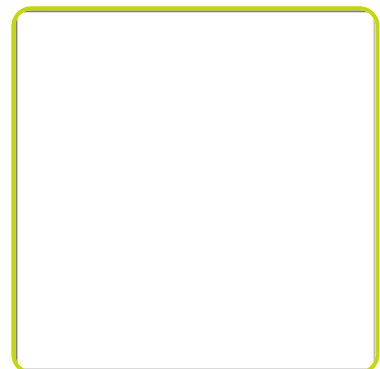
CANOPY:

- Single piece hinged soundproof canopy equipped with pneumatic arms and handles to lift up the canopy allowing easy access to the genset for maintenance purposes.
- Simple handling operations with central lifting eye



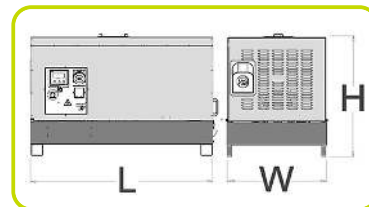
SOUNDPROOF:

- Noise attenuation thanks to soundproofing material (polyurethane foam) and efficient residential silencer placed inside the canopy.



Dimensional data

Length	(L) mm	1645
Width	(W) mm	870
Height	(H) mm	1072
Dry weight	kg	510
Fuel tank capacity	l	51
Fuel tank material	Plastic	



Autonomy

Fuel consumption @ 75% PRP	l/h	3.87
Fuel consumption @ 100% PRP	l/h	5.17
Running time 75% PRP	h	13.18
Running time 100% PRP	h	9.86

Noise level

Guaranteed noise level (LWA)	dB(A)	93
Noise pressure level @ 7 m	dB(A)	64



Installation data

Total air flow	m³/min	58.08
Exhaust gas flow	m³/min	3.6
Exhaust gas temperature	°C	470

Electrical Data

Max current	A	27.79
Circuit breaker	A	32

Control panel availability

MANUAL CONTROL PANEL	MCP
AUTOMATIC CONTROL PANEL	ACP

MCP - Manual control panel

Manual control panel, mounted on the genset and complete of: instrumentation, control, protection and sockets

INSTRUMENTATION (ANALOGUE)

- Voltmeter (1 phase)
- Ammeter (1 phase)
- Hours-counter

COMMANDS AND OTHERS

- Start/stop selector switch with key (Glow plugs preheating function also included).
- Emergency stop button

PROTECTION WITH ALARM

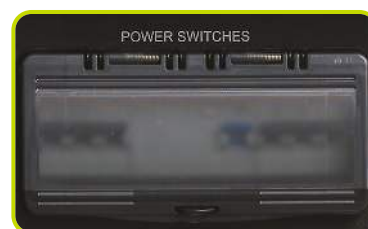
- Battery charger failure
- Low oil pressure
- High engine temperature
- Earth Fault

PROTECTIONS WITH SHUTDOWN

- Battery charger failure
- Low oil pressure
- High engine temperature
- Circuit breaker protection: III poles

OTHERS

- Cover protection power switch



OUT PUT PANEL MCP

Socket kit	Standard	
Thermal protections		
3P+N+T CEE 400V 32A	n	1
3P+N+T CEE 400V 16A	n	1
2P+T CEE 230V 16A	n	2
230V 16A SCHUKO	n	1



ACP - Automatic control panel

Automatic control panel mounted on the genset, complete with digital control unit for monitoring, control and protection of the generating set.

INSTRUMENTATION DIGITAL

- Mains voltage.
- Generating set voltage (3 phases).
- Generating set frequency.
- Generator set current.
- Battery voltage
- Hours-counter.



COMMANDS AND OTHERS

- Operation modes: OFF - Manual Starting - Automatic Starting.
- Push-buttons: start/stop, fault reset, up/down/page/enter selection.
- Emergency stop button.
- Remote starting availability.
- Automatic battery charger.
- USB port.



PROTECTIONS WITH ALARM

- Engine protections: low oil pressure, high engine temperature
- Genset protections: under/over voltage, overload, under/over frequency, starting failure, under/over battery voltage, battery charger failure

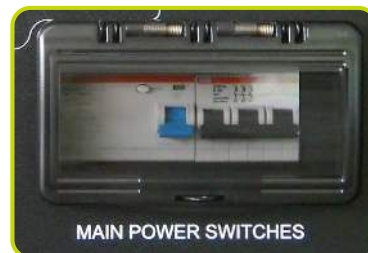
PROTECTIONS WITH SHUTDOWN

- Engine protections: low oil pressure, high engine temperature
- Genset protection: under/over voltage, overload, under/over battery voltage
- Circuit breaker protection: III poles
- Differential protection



OTHERS

- Cover protection Power switch



OUT PUT PANEL ACP

Plinth row for connection from ACP to LTS panel.		√
3P+N+T CEE 400V 32A	n	1



Supplements:

To be ordered with equipment (when necessary) :

ENGINE SUPPLEMENTS

Coolant Pre-Heating System ACP

Accessories

Items available as accessory equipment

Site trailer

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Road Trailer

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LTS - Load Transfer Switch [Accessories for ACP Automatic Control Panel]

The Load Transfer Switch (LTS) panel operates the power supply changeover between the generator and the Mains in backup applications, guarantying the feeding to the load within a short period of time.

It consists of a standalone cabinet which can be installed separate from the generating set. The logic control of the power supply changeover is operated by means of the Automatic Control panel mounted on the generating set, so therefore none logic device is required on the LTS panel.

