GBW22P



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

Power Rating		
Emergency Standby Power ESP	kVA	22.00
Emergency Standby Power ESP	kW	17.60
Prime power PRP	kVA	20.01
Prime power PRP	kW	16.01

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.

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Engine specifications		
Engine Brand		Perkins
Model		404A-22G1
[50Hz] Exhaust emission level		Non Emission Certified
Engine cooling system		Water
Nr. of cylinder and disposition		4 in line
Displacement	cm³	2216
Aspiration		Natural
Speed governor		Mechanical
Prime gross power PRP	kW	18.7
Maximum gross power LTP ESP	kW	20.6
Oil capacity	l	10.6
Coolant capacity	l	7
Fuel		Diesel
Specific fuel consumption 75% PRP	g/kWh	238
Specific fuel consumption PRP	g/kWh	237
Starting system		Electric
Starting engine capability	kW	2
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

Rotary type pump

Lube oil system

Wet steel sump with filler and dipstick

Filter

- Fuel filter
- Air filter
- Oil filter

Cooling system

- Mounted radiator
- Thermostatically-controlled system with belt driven coolant pump and pusher fan

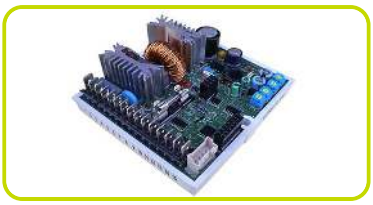
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Alternator Specifications		
Alternator		Mecc Alte
Model		ECP28-M4 C
Voltage	V	400
Frequency	Hz	50
Power factor	cos ϕ	0.8
Poles		4
Type		Brushless
Voltage tolerance	%	1
Efficiency @ 75% load	%	88,2
Class		H
IP protection		23



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 ±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.

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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:



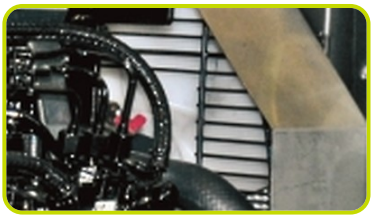
- Filler neck
- Air breather
- Fuel refilling

OIL DRAININ PIPE WITH CAP:



- Oil draining facilities

PROTECTIONS:



- Moving and rotating parts protections against accidental contacts

ENGINE COMPLETE WITH:

- Battery
- Liquids (no fuel)

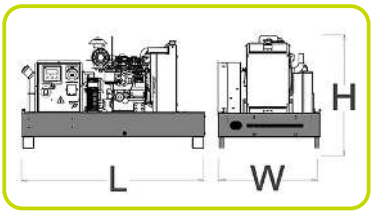
EXHAUST (Standard):



- Industrial silencer

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Dimensional data		
Length	(L) mm	1600
Width	(W) mm	870
Height	(H) mm	950
Dry weight	kg	455
Fuel tank capacity	l	51
Fuel tank material		Plastic



Autonomy		
Fuel consumption @ 75% PRP	l/h	3.95
Fuel consumption @ 100% PRP	l/h	5.28
Running time 75% PRP	h	12.91
Running time 100% PRP	h	9.66

Installation data		
Exhaust gas flow	m^3/min	3.64
Exhaust gas temperature	°C	445

Electrical Data		
Max current	A	31.76
Circuit breaker	A	32

Control panel availability	
MANUAL CONTROL PANEL	MCP
AUTOMATIC CONTROL PANEL	ACP

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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

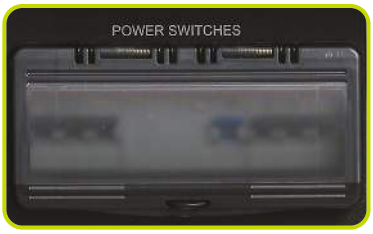


- Battery charger failure
- Low oil pressure
- High engine temperature
- Earth Fault

PROTECTIONS WITH SHUTDOWN

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

OTHERS



- Cower 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



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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

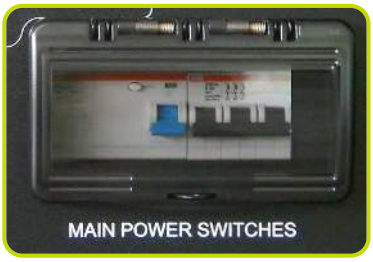
- Engine protections: low oil pressure, high engine temperature
- Genset protections: under/over voltage, overload, under/over frequency, starting failure, under/over battery voltage, battery charger failure

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



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Supplements:

To be ordered with equipment (when necessary)	:

ENGINE SUPPLEMENTS

Coolant Pre-Heating System	ACP

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Accessories

Items available as accessory equipment
Flexible Exhaust Compensator Bellow and flanges
Residential silencer



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.



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