GSW22Y



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

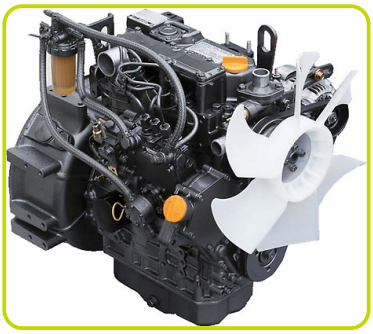
Ratings definition (ISO-8528)

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.

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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	cm³	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

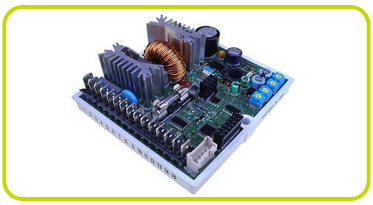
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Alternator Specifications		
Alternator		Mecc Alte
Model		ECP28-M4 C
Voltage	V	400
Frequency	Hz	50
Power factor	cos ϕ	0.8
Poles		4
Type		Brushless
Voltage tolerance	%	1
Efficiency @ 75% load	%	88,2
Class		H
IP protection		23



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 WELDED STEEL PROFILE, COMPLETE WITH:

• Anti-vibration mountings properly sized

• Welded support legs



PLASTIC FUEL TANK WITH THE FOLLOWING COMPONENT:

• Filler neck

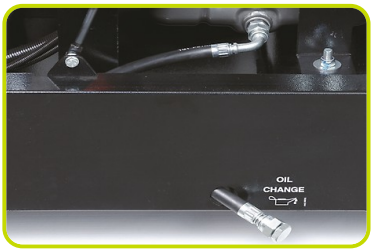
• Air breather (ventilation pipe)

• Minimum fuel level sensor



OIL DRAININ PIPE WITH CAP:

• Oil draining facilities



ENGINE COMPLETE WITH:

• Battery

• Liquids (no fuel)

CANOPY:

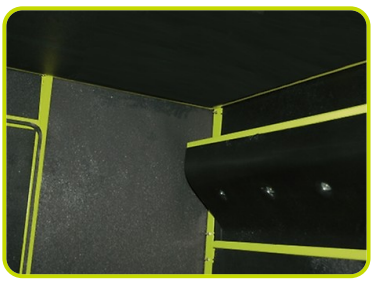
• Soundproof canopy made up of modular panels, realized with zinced steel as treatment against corrosion and aggressive conditions, properly fixed and sealed allowing a full weatherproof enclosure.
• Easy access to the genset for maintenance purposes thanks to: Wide lateral access doors fixed by stainless steel hinges and provided with plastic lockable handles and internal perforated galvanized steel-sheet; Detachable panels, with screws holes protected by rubber tap.
• Control panel protection door provided with suitable window and lockable handle.
• Lateral air inlet opening properly protected and soundproofed. Exhaust air outlet from the roof, trough wet section protected by proper grid.
• Single detachable lifting eye placed on the roof.



SOUNDPROOF:

• Noise attenuation thanks to soundproofing material

• Efficient residential silencer placed inside the canopy



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Dimensional data		
Length	(L) mm	1800
Width	(W) mm	850
Height	(H) mm	1260
Dry weight	kg	641
Fuel tank capacity	l	68
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	17.57
Running time 100% PRP	h	13.15

Noise level		
Guaranteed noise level (LWA)	dB(A)	92
Noise pressure level @ 7 m	dB(A)	63



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
MANUAL CONTROL PANEL FULL OPTION	MPF
AUTOMATIC CONTROL PANEL	ACP

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MCP - Manual control panel



Mounted on the genset and complete of: analogue instrumentation, control, protection of the generating set, protected through door with lockable handle.

INSTRUMENTATION (ANALOGUE)

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

COMMANDS

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



PROTECTION WITH ALARM

- Low fuel level
- Battery charger failure
- low oil pressure
- high engine temperature
- Earth Fault.

PROTECTIONS WITH SHUTDOWN



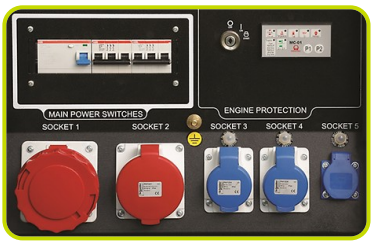
- Low fuel level
- Battery charger failure
- low oil pressure
- high engine temperature.
- Circuit breaker protection: III poles
- Emergency stop button

OTHERS



- Panel protected through door with lockable handle.

OUT PUT PANEL MCP



Power cables connection to Circuit Breaker.		
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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MPF - Manual control panel full option

Mounted on the genset and complete of: analogue instrumentation, control, protection of the generating set, protected through door with lockable handle



INSTRUMENTATION (ANALOGUE)

- Voltmeter with selector switch (3 phases)
- Frequency meter
- Ammeter with selector switch (3 phases)
- Hours-counter
- Fuel level indicator
- Oil pressure indicator
- Engine temperature indicator

COMMANDS

- Start/stop selector switch with key
- Emergency stop button



PROTECTION WITH ALARM

- Low fuel level
- Battery charger failure
- low oil pressure
- high engine temperature
- Earth Fault



PROTECTIONS WITH SHUTDOWN

- Low fuel level
- Battery charger failure
- low oil pressure
- high engine temperature
- Circuit breaker protection: III poles
- Emergency stop button

OTHERS PROTECTIONS

- Panel protected through door with lockable handle

OUT PUT PANEL MPF



ETB- External Terminal Board		ETB
Socket kit		Standard
Individual CB and Earth Fault protection		√
3P+N+T CEE 400V 32A IP67	n	1
3P+N+T CEE 400V 16A IP67	n	1
230V/16A 2P+T CEE IP67	n	1
230V 16A SCHUKO IP68	n	1

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ACP - Automatic control panel

Mounted on the genset, complete with digital control unit for monitoring, control and protection of the generating set, protected through door with lockable handle.



DIGITAL INSTRUMENTATION
- Generating set voltage (3 phases).
- Mains voltage.
- Generating set frequency.
- Generating set current (3 phases).
- Battery voltage.
- Power (kVA - kW - kVAr).
- Power factor Cos φ.
- Hours-counter.
- Engine speed r.p.m.
- Fuel level (%).
- Engine temperature (depending on model)



COMMANDS AND OTHERS
- Four operation modes: OFF - Manual starting - Automatic starting - Automatic test.
- Pushbutton for forcing Mains contactor or Genset contactor.
- Push-buttons: start/stop, fault reset, up/down/page/enter selection.
- Remote starting availability.
- DC system disconnection switch.
- Acoustic alarm.
- Automatic battery charger.
- RS232 Communication port.
- Settable PASSWORD for protection level.



PROTECTIONS WITH ALARM
- Engine protections: low fuel level, low oil pressure, high engine temperature.
- Genset protections: under/over voltage, overload, under/over frequency, starting failure, under/over battery voltage

PROTECTIONS WITH SHUTDOWN
- Engine protections: low fuel level, low oil pressure, high engine temperature,
- Genset protection: under/over voltage, overload, under/over battery voltage, battery charger failure.
- Circuit breaker protection: III poles.
- Earth Fault included in the control unit.



OTHERS PROTECTIONS
- Emergency stop button.
- Panel protected through door with lockable handle.

OUT PUT PANEL ACP

3P+N+T CEE 400V 32A	n	1
Predisposed for remote control optional:		RCG
Socket kit		Optional



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OPTIONAL FEATURES:

To be ordered with equipment (when necessary)	:

CONTROL PANEL SUPPLEMENT

RCG - Various supplements for remote controls - available for models:	ACP
TLP - Various supplements for remote signals - available for models:	ACP
ADI - Adjustable Differential Intensity - available only for models:	ACP
TIF - IV Poles Circuit Breaker instead of III - available for models:	ACP MCP
ETB - External Terminal Board - available for models:	MCP ACP



Socket kit

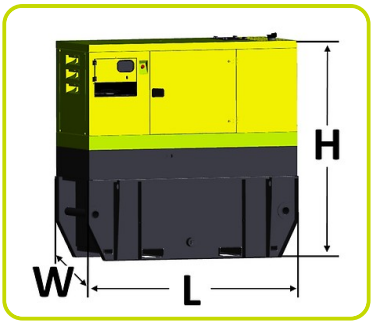
SKB socket kit B - available for models:		ACP MCP
Component version		SKB1
Individual CB and Earth Fault protection		√
3P+N+T CEE 400V 32A IP67	n	1
230V/16A 2P+T CEE IP67	n	1
230V 16A SCHUKO IP68	n	1
3P+N+T CEE 400V 16A IP67	n	1



GENSET EQUIPMENT

KPR - Premium Kit (Leak Proof Tray - Leakage detection sensor - Manual oil drain pump)	
Automatic Fuel Pump	ACP
KRT - Kit Rental which includes fuel filter with water separator, 3-way fuel valve, battery switch, earth rod, docs folder)	

Extended Fuel Tank



ENGINE SUPPLEMENTS

Coolant Pre-Heating System	PHS

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Accessories

Items available as accessory equipment	
Site trailer	•
Road Trailer	•



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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