GSW145V



Main Features		
Frequency	Hz	50
Voltage	V	230
Power factor	cos ϕ	0.8
Phase		3

Power Rating		
Emergency Standby Power ESP	kVA	148.00
Emergency Standby Power ESP	kW	118.40
Prime power PRP	kVA	133.09
Prime power PRP	kW	106.47

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		Volvo
Model		TAD750GE
[50Hz] Exhaust emission level		Stage IIIA
Engine cooling system		Water
Nr. of cylinder and disposition		6 in line
Displacement	cm^3	7150
Aspiration		Turbocharged intercooled
Speed governor		Electronic
Prime gross power PRP	kW	119
Maximum gross power LTP ESP	kW	132
Oil capacity	l	20
Coolant capacity	l	23.1
Fuel		Diesel
Specific fuel consumption 75% PRP	g/kWh	238
Specific fuel consumption PRP	g/kWh	219
Starting system		Electric
Starting engine capability	kW	5
Electric circuit	V	24



ENGINE EQUIPMENT

Standards

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 3046/IV, class A1 and ISO 8528-5 class G3

Engine and block

• Optimized cast iron cylinder block with optimum distribution of forces
• Keystone top compression rings for long service life
• Replaceable valve guides and valve seats

Fuel system

• Common rail
• Engine mounted fuel pre-filter with water separator
• Fine fuel filter of cartridge insert type
• Gear driven fuel feed pump

Lubrication system

• Rotary displacement oil pump driven by the crankshaft
• Deep front oil sump ,Oil filler on top, Oil dipstick, short in front
• Integrated full flow oil cooler, side-mounted

Cooling system

• Belt driven, maintenance-free coolant pump with high degree of efficiency
• Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block
• Reliable thermostat with minimum pressure drop

Intake and exhaust system

• Two-stage air filter, with cyclone

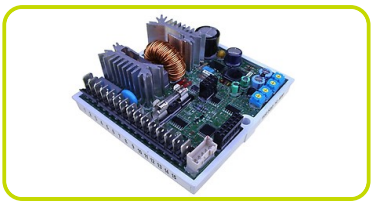
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Alternator Specifications		
Alternator		Mecc Alte
Model		ECP34-1L
Voltage	V	230
Frequency	Hz	50
Power factor	cos ϕ	0.8
Poles		4
Type		Brushless
Voltage tolerance	%	1
Efficiency @ 75% load	%	92.9
Class		H
IP protection		23



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.

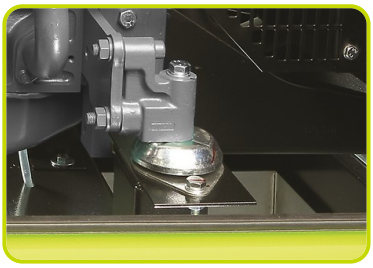
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Genset equipment

BASE FRAME MADE OF WELDED STEEL PROFILE, COMPLETE WITH:

• Anti-vibration mountings properly sized

• Welded or Screwed support legs. (according to canopy size)

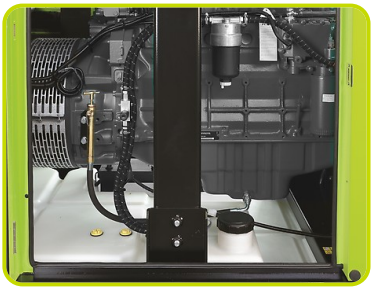


PLASTIC FUEL TANK WITH THE FOLLOWING COMPONENT:

• Filler neck

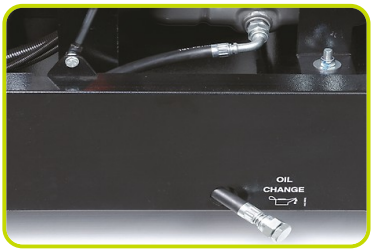
• Air breather (ventilation pipe)

• Minimum fuel level sensor



OIL DRAININ PIPE WITH CAP:

• Oil draining facilities



ENGINE COMPLETE WITH:

• Battery

• Liquids (no fuel)

CANOPY:

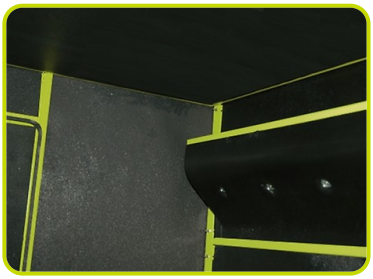
• Soundproof canopy made up of modular panels, realized with zinced steel as treatment against corrosion and aggressive conditions, properly fixed and sealed allowing a full weatherproof enclosure.
• Easy access to the genset for maintenance purposes thanks to: Wide lateral access doors fixed by stainless steel hinges and provided with plastic lockable handles; 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	3400
Width	(W) mm	1250
Height	(H) mm	1980
Dry weight	kg	2224
Fuel tank capacity	l	350
Fuel tank material		Plastic



Autonomy		
Fuel consumption @ 75% PRP	l/h	25.77
Fuel consumption @ 100% PRP	l/h	31.02
Running time 75% PRP	h	13.58
Running time 100% PRP	h	11.28

Noise level		
Guaranteed noise level (LWA)	dB(A)	97
Noise pressure level @ 7 m	dB(A)	68

Installation data		
Total air flow	m³/min	136.62
Exhaust gas flow	m³/min	26.2
Exhaust gas temperature	°C	454

Electrical Data		
Battery capacity	Ah	110
Max current	A	371.52
Circuit breaker	A	400

Control panel availability	
MANUAL CONTROL PANEL	MCP
AUTOMATIC CONTROL PANEL	ACP
MODULAR PARALLEL PANEL	MPP

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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.

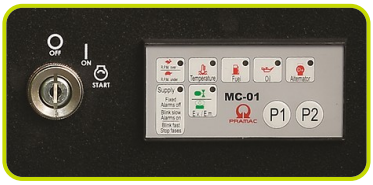


INSTRUMENTATION (ANALOGUE)

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

COMMANDS

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



PROTECTION WITH ALARM

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

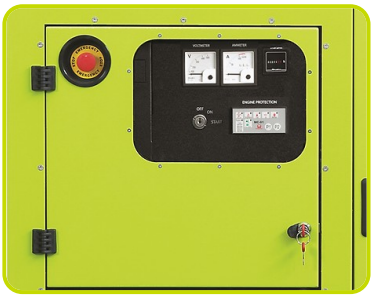
PROTECTIONS WITH SHUTDOWN

- 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 MCP

Power cables connection to Circuit Breaker.	√

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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

Plinth row for connection from ACP to LTS panel.	√
Power cables connection to Circuit Breaker.	√



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MPP - Modular parallel panel

Mounted on the genset, complete with digital control unit IG-NTC for monitoring, control, protection and load sharing for both single and multiple gen-sets operating in standby or parallel modes (up to 32 gen-sets in island).



DIGITAL INSTRUMENTATION (through IG-NTC control unit)
- Mains: voltage, Intensity, Frequency.
- Mains kW - kVAr -Power factor Cos f.
- Generating set voltage (3 phases).
- Generating set frequency.
- Generating set current (3 phases).
- Generating set Power (kVA - kW - kVAr).
- Generating set Power factor Cos f.
- Generating set kWh and kVAh.
- Battery voltage.
- Hours-counter.
- Engine speed r.p.m.
- Fuel level (%).
- Engine temperature (depending on model).
- Oil pressure (depending on model).



COMMAND AND OTHERS
- Graphical display 128x64 pixels.
- Operation modes: OFF - AMF function - Single Parallel to mains Island application - Single Parallel to Mains AMF application - Multiple parallel genset Island application.
- Pushbutton for forcing Mains Breaker/contactor or Genset Breaker/contactor.
- Push-buttons: start/stop, fault reset, up/down/page/enter selection.
- Multiple parallel and Power Management operation with digital load AVR sharing.
- Automatic synchronizing and power control (via speed goveroner or ECU)
- Baseload Import/Export and Peak shaving
- Voltage and PF control (AVR).
- Configurable digital I/O (12/12) and analogue inputs (3).
- Integrate PLC programmable functions.
- Event-based history (up to 500records).
- Selectable measurement range 120/277V and 0-1/0-5A.
- Remote starting and Blocking signal availability.
- DC system disconnection switch.
- Acoustic alarm.
- Automatic battery charger.
- 2xRS232/RS485/USB Comunication ports.
- Settable PASSWORD for protection level.



PROTECTION WITH ALARM AND SHUTDOWN
- 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
- Others: overcurrent, shortcircuit, reverse power, Earth fault



OTHERS PROTECTION:
- Circuit breaker protection: IV poles Motorized.
- Emergency stop button.
- Panel protected through door with lochetable handle

OUT PUT PANEL MPP

Multi-pin connectors (in and out) for parallel with other generators	n	2
Connecting cable with 2 connectors multipin (length 10m)	n	1
External terminal board		ETB



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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

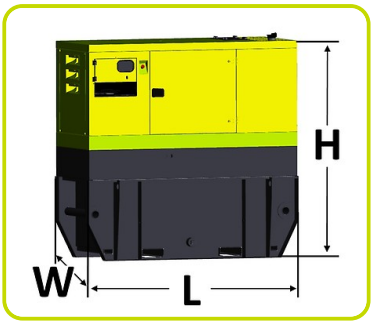


GENSET EQUIPMENT

KPR - Premium Kit (Leak Proof Tray - Leakage detection sensor - Manual oil drain pump)	
Automatic Fuel Pump	ACP MPP

Extended Fuel Tank

Fuel tank capacity	l	1750
Length (Genset)	(L) mm	3414
Width (Genset)	(W) mm	1398
Height (Genset)	(H) mm	2539



ENGINE SUPPLEMENTS

Coolant Pre-Heating System	PHS
EEG - Engine Electronic Governor	•

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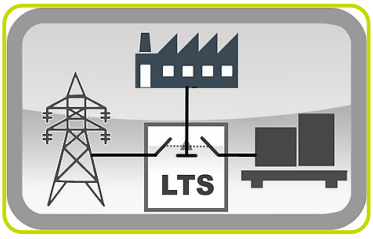
Accessories

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 (ACP) mounted on the generating set, so therefore none logic device is required on the LTS panel.



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