PRAMAC

ENERGY GENERATION

GBW15P

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

Power Rating		
Standby power LTP	kVA	14.10
Standby power LTP	kW	11.28
Prime power PRP	kVA	12.72
Prime power PRP	kW	10.18

Ratings definition (According to standard ISO8528 1:2005)

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.

LTP - Limited-Time running Power:
It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 h of operation per year (whose no more than 300 for continuative use) with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. No overload capability is available.

Engine specifications		
Engine manufacturer		Perkins
Model		403D-15G
[50Hz] Exhaust emission level		Unregulated
Engine cooling system		Water
Nr. of cylinder and disposition		3 in line
Displacement	cm^3	1496
Aspiration		Natural
Speed governor		Mechanical
Prime gross power PRP	kW	12.2
Maximum gross power LTP	kW	13.5
Oil capacity	l	6
Coolant capacity	l	6
Fuel		Diesel
Specific fuel consumption @ 75% PRP	g/kWh	252
Specific fuel consumption @ PRP	g/kWh	248
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

Alternator Specifications		
Brand		Linz
Model		E1S13MD
Voltage	V	400
Frequency	Hz	50
Power factor	cos ϕ	0.8
Type		Brushes
Poles		4
Voltage regulation system		Compound
Voltage tolerance	%	4
Efficiency @ 75% load	%	85.4
Class		H
IP protection		21

The E1S/4 series includes three-phase 4 poles alternators with brushes and compound regulation.

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

Voltage accuracy:
± 4% from no load to full load, cosϕ = 0.8 at constant rotation speed.

Output voltage wave form:
The low harmonic content (<5%) allows supplying any type of load, including distorting loads.

Short circuit current:
In case of short circuit the permanent current exceeds rated current by three times, ensuring the correct operation of protections.

Overload:
10% overload for one hour every 6 hours is normally accepted. Short overloads can be very high (three times the rated current).

Asynchronous motors starting:
1 HP per KVA of the generator can be started.

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

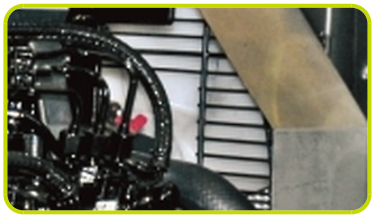
• Air breather

• 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

Dimensional data		
Length	(L) mm	1600
Width	(W) mm	870
Height	(H) mm	950
Dry weight	Kg	390
Fuel tank capacity	l	51

Autonomy		
Fuel consumption @ 75% PRP	l/h	2.74
Fuel consumption @ 100% PRP	l/h	3.60
Running time @ 75% PRP	h	18.61
Running time @ 100% PRP	h	14.17

Installation data		
Total air flow	m³/min	42.50
Exhaust gas flow @ PRP	m³/min	2.7
Exhaust gas temperature @ LTP	°C	445

Data Current		
Battery capacity	Ah	70
MAX current	A	20.35
Circuit breaker	A	20

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

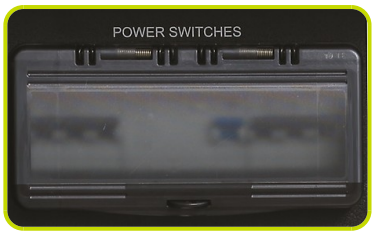
PROTECTION WITH ALARM

- 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



- 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

ACP - Automatic control panel

Automatic control panel mounted on the genset, complete with digital control unit AC03 for monitoring, control and protection of the generating set.

INSTRUMENTATION DIGITAL (AC-03)

- Mains voltage.
- Generating set voltage (3 phases).
- Generating set frequency
- Generator set current (1 phase).
- Battery voltage
- Hours-counter.

COMMANDS AND OTHERS

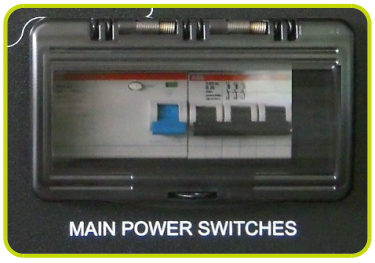
- Four operation modes: OFF - Manual starting - Automatic starting - Automatic test
- Pushbutton for forcing Mains contactor or Genset contactor
- Push-buttons: start/stop, fault reset, up/down/page/enter selection
- Emergency stop button.
- Remote starting availability.
- DC system disconnection switch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

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

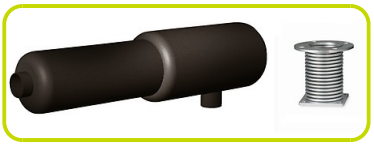
Plinth row for connection from ACP to LTS panel.		
3P+N+T CEE 400V 32A	n	1

Supplements:	
Only Available when order	:

ENGINE SUPPLEMENTS

PHS - Coolant Pre-Heating System - available for models:	ACP

Accessories
Items available as accessory equipment
FEC - Flexible Exhaust Compensator Bellow and flanges
RES - Residential silencer

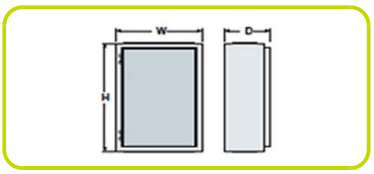


LTS - LOAD TRANSFER SWITCH - Accessories ACP

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.

NOMINAL CURRENT & DIMENSIONS PANEL LTS (standard*)

Nominal Current	A	20
Width	(W) mm	400
Height	(H) mm	400
Depth	(D) mm	240
Weight	Kg	13
* = Available electrical power more		



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