

1 Standards & Conditions

Design Standards

The designs and the productions are in conformity with:

- Conformance Européenne (CE)
- ISO8528-5:2005
- GB/T2820.5-2009

Environmental Operating Conditions

- Installation place: Outdoors or indoors (well ventilated).
- Ambient temperature: -25°C to 50°C. The coolant heater is needed when the temperature is below 5°C
- Humidity: Less than 80%.
- Altitude: Below one thousand (1000) meters.

Factory Inspection

- Inspection items.
- Protection devices working test.
- Starting ability in normal temperature.
- 50% rated power load moment capability.
- Voltage deviation and speed variation: 0%, 25%, 50%, 75%, 100%, 110% Load.

Painting Process

- Painting process specifications and colors are based on the manufacturer's standard.
- The customer could also choose the color which the manufacturer offers.

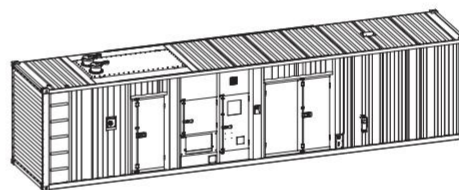
2 General Features

- Perkins engine 4016-61TRG1
- Close coupled to Leroy Somer alternator LSA52.2XL70
- Microprocessor control module PLC-500
- HV Switchgear Panel: ABB 630A
- PT Cabinet
- DC Power Cabinet
- Rotate speed governor: Electrical governor
- Excitation System: AREP
- A.V.R. Model: R448
- Key switch
- Emergency stop switch

- 4x12V/150AH sealed for life maintenance free battery
- Lockable battery isolator switch
- Powder coated canopy
- 50°C radiator
- Fire extinguisher
- Heat exchanger
- Coolant heater
- Oil pump on the engine
- Steel base frame with forklots
- Vibration isolators between the engine/alternator and base frame
- Dry type air filter
- Fuel tank for 6 hours running
- Drain points for fuel tank
- Fuel inlet pump and it's control box for the fuel tank
- Added fuel-water separator for fuel tank
- Operation Manual / Specifications

3 Equipment Specification

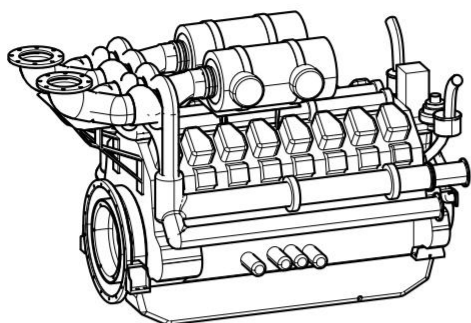
General technical data



Model.....	HV1850S
Structure type	C
Fuel tank.....	2400L
Dry weight.....	24600kg
Noise level @7m	83dAB
Dimensions L×W×H.....	12192x2438x3153mm
Standby Power	2035kVA/1628kW
Prime Power.....	1850kVA/1480kW
Voltage/Ampere	6300V/170A

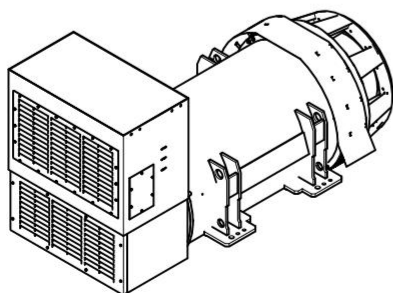
Genset Fuel Consumption					
Frequency/Load	25%	50%	75%	100%	110%
50Hz (L/h)	110	198	300	381	414

Diesel Engine



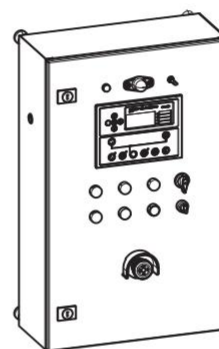
Engine Manufacturer/Brand.....	Perkins
Engine Model.....	4016-61TRG1
Dimensions L×W×H.....	3302×1723×2128mm
Dry Weigh (approx.)	5570kg
Number of Cylinders.....	16
Bore.....	160mm
Stroke	190mm
Displacement.....	61.12L
Compression Ratio.....	13
Type of Injection	Direct injection
Intake System.....	Turbocharged
Intake Resistance.....	≤3.7kPa
Cooling System	Water cooled
Fan	Pusher
Battery Voltage	24V
Type of Fuel.....	BS2869 1998 Class A1, A2
Type of Oil	API CG4 15W/40
Oil Capacity	213L
Type of Coolant	Glycol mixture
Coolant capacity.....	95L
Back Pressure	≤6.6kPa
Standby Power	1774kW
Prime Power	1648kW

HV Alternator



Alternator Manufacturer/Brand	Leroy Somer
Alternator Model	LSA52.2XL70
Exciter.....	Brushless
Cooling Fan	Cast alloy aluminum
Windings.....	100% copper
Insulation Class	H
Winding Pitch.....	2/3
Terminals	6
Drip Proof	IP23
Altitude.....	≤1000m
Overspeed	2250rpm
Air Flow.....	2.5m³/s
Voltage Regulation	±0.5%
Total harmonic TGH / THC	< 3.5%
Telephone Interference.....	FHT<2%;TIF<50

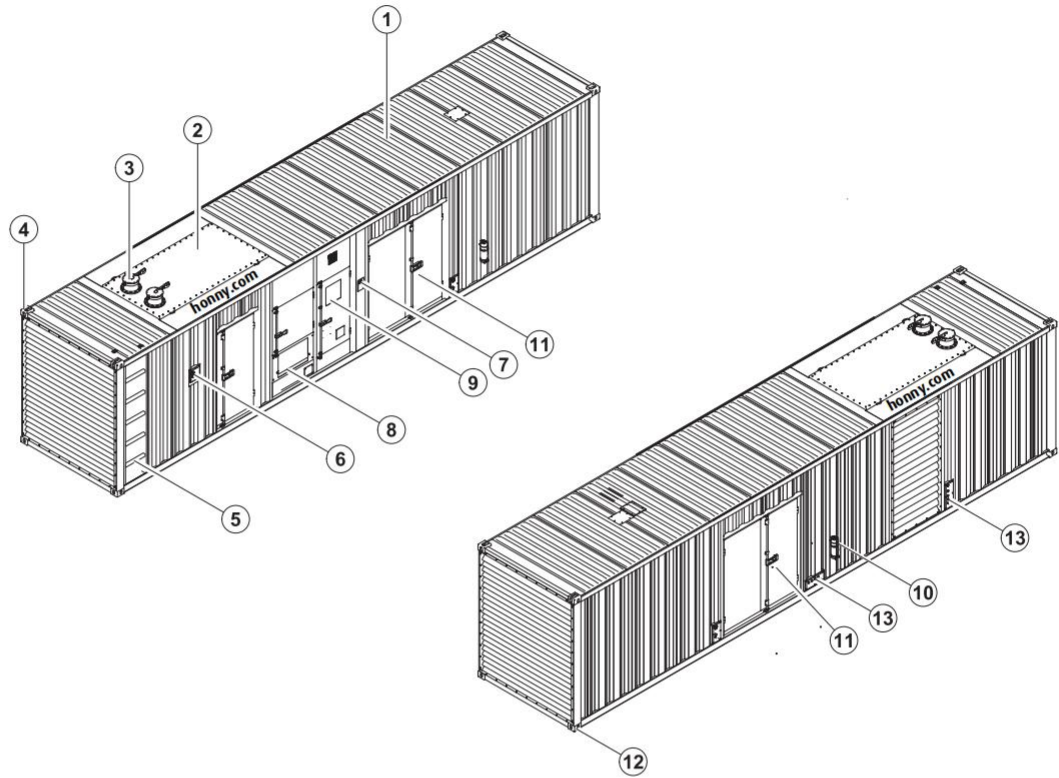
PLC-500 Control System



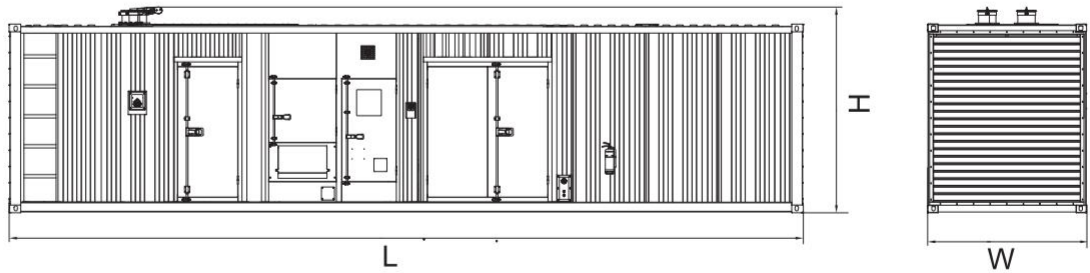
PLC-500 is a microprocessor based control unit containing all necessary functions for protection of the genset and the breaker control. Furthermore, it contains all necessary three-phase measuring circuits and presents all values and alarms on the LCD display. The module has the function of load sharing which enables the module to share the active load (kW) equally when operating in parallel with other gensets. The load sharing is performed so each genset takes a portion of the load that is calculated in percent according to the nominal power.

- Microprocessor control, with high stability and credibility
- Monitoring and measuring operational parameters of the genset
- Indicating operation status, fault conditions, all parameters and alarms
- Multiple protections; multiple parameters display, like pressure, temp. etc.
- Manual, automatic and remote work mode selectable
- RS232 & RS485 can be used at the same time
- Real time clock for time and date display, overall runtime display, 250 log entries

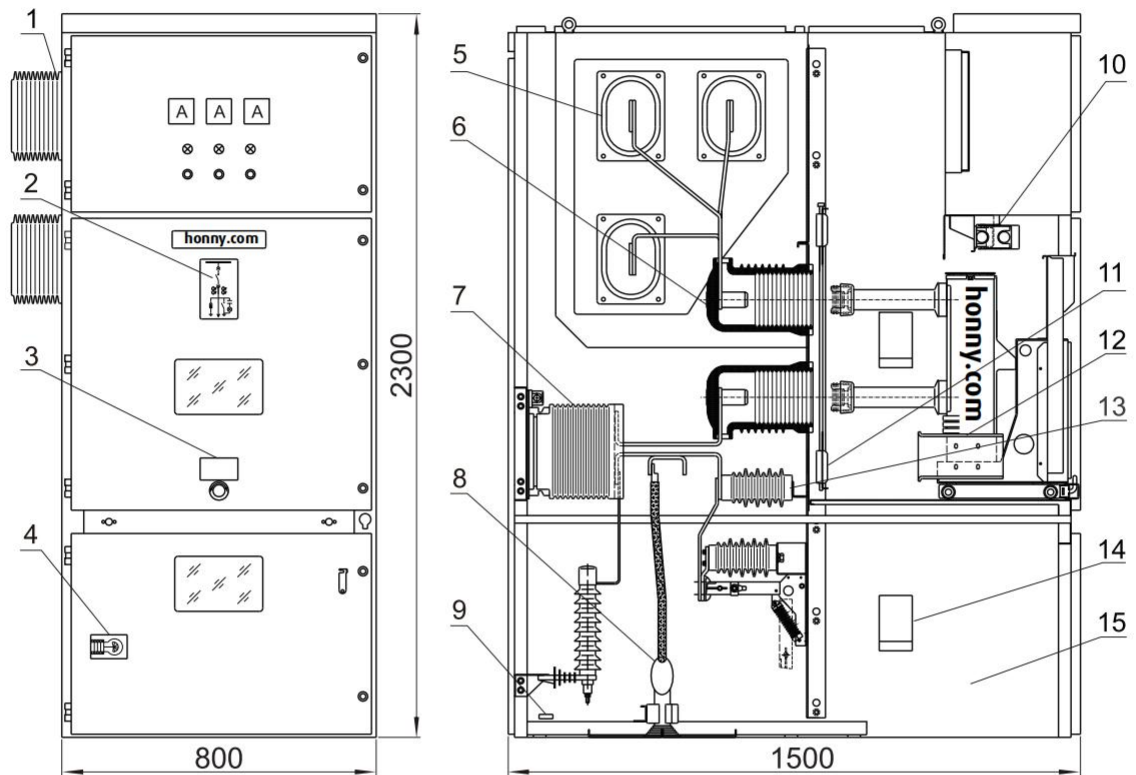
4 Overall Dimensions



- | | |
|-------------------------|---|
| ⑦ Emergency stop switch | ⑬ External fuel inlet/return hose fitting
Coolant/Oil drain hose fitting |
| ⑥ Fuel inlet | ⑫ Fixing lug |
| ⑤ Ladder | ⑪ Access door |
| ④ Lifting lug | ⑩ Fire extinguisher |
| ③ Exhaust gas outlet | ⑨ Control cabinet |
| ② Muffler | ⑧ Cable trench |
| ① Canopy | |



5 Switchgear Panel



1. Passing bushing 2. Primary diagram 3. Nameplate 4. Lighting lamp 5. Main bus
 6. Contact box 7. CT 8. Incoming cable 9. Earthing bus bar 10. Secondary interlocking device
 11. Valve mechanism 12. CB trolley 13. Insulator 14. Heater 15. Frame