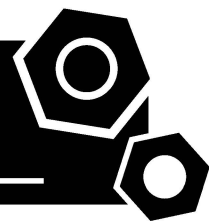


**Generator set**

**Sound-proof type**

**WCS900S**

**SPECIFICATIONS**



# SCS series WCS900S

50 Hz @ 1500rpm, 3-Phase/4-wiring

## 1 Standards & Conditions

### Design Standards

The designs and the productions are in conformity with:

- Conformance Europeenne (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 above sea Level.

### 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.

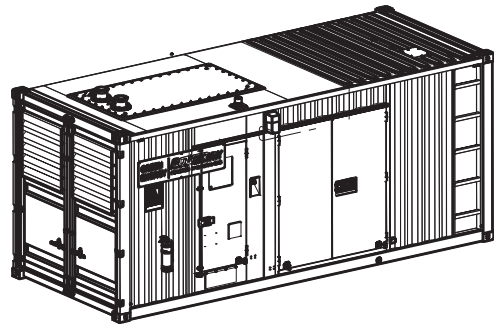
## 2 General Features

- Commins engine QSK23-G9
- Close coupled to Leroy-somer alternator LSA49.3M8
- Microprocessor control module PLC-7420
- ABB main circuit breaker: 1250A
- Rotate speed governor: Electronic fuel injection
- Excitation system: Self excited
- A.V.R model: MX321
- Key switch
- Emergency stop switch
- ATS (automatic transfer switch) receptacle

- 2x12V/150AH sealed for life maintenance free battery
- Lockable battery isolator switch
- Powder coated canopy
- 50°C radiator
- Oil pump on the engine
- Vibration isolators between the engine/alternator and base frame
- Dry type air filter
- Base fuel tank with 8 hours running
- Drain points for fuel tank
- Operation Manual / Specifications

## 3 Equipment Specification

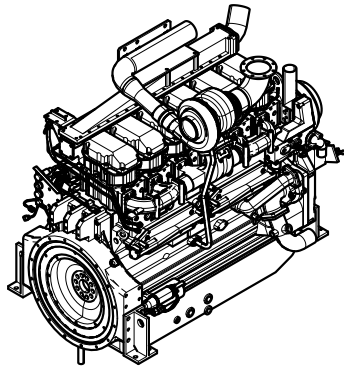
### General technical data



Model..... WCS900S  
 Structure type .....R  
 Tank capacity.....1450L  
 Dry weight.....11676kg  
 Noise level @7m .....76.2dBA  
 Dimensions L×W×H..... 6058x2438x2795mm  
 Standby Power ..... 900kVA/720kW  
 Prime Power..... 813kVA/650kW

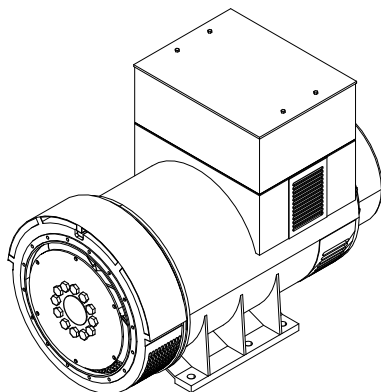
|                                |         |         |         |         |       |
|--------------------------------|---------|---------|---------|---------|-------|
| Voltage                        | 380V    | 400V    | 415V    | 440V    |       |
| Ampere                         | 1367.4A | 1299.1A | 1252.1A | 1181.0A |       |
| <b>Genset Fuel Consumption</b> |         |         |         |         |       |
| Frequency/Load                 | 25%     | 50%     | 75%     | 100%    | 110%  |
| 50Hz (L/h)                     | 50.0    | 89.0    | 126.0   | 163.0   | 186.0 |

## Diesel engine



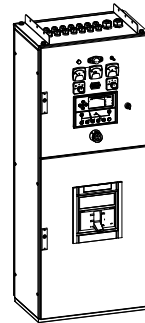
|                                 |                                    |
|---------------------------------|------------------------------------|
| Engine Manufacturer/Brand.....  | Cummins                            |
| Engine Model.....               | QSK23-G9                           |
| Dimensions L×W×H.....           | 2976×1656×1964mm                   |
| Dry Weigh (approx.).....        | 3245g                              |
| Number of Cylinders.....        | 6                                  |
| Bore.....                       | 170mm                              |
| Stroke.....                     | 170mm                              |
| Displacement.....               | 23.15L                             |
| Compression Ratio.....          | 16                                 |
| Type of injection.....          | Cummins HPI                        |
| Intake System.....              | Turbocharged and Charge Air Cooled |
| Intake Resistance.....          | ≤6.2kPa                            |
| Cooling System.....             | Water cooled                       |
| Fan.....                        | Pusher                             |
| Battery Voltage.....            | 24V                                |
| Type of Fuel.....               | No.2 or ASTM D975                  |
| Type of Oil.....                | API CD/SE or CCMCD4                |
| Oil Capacity.....               | 103L                               |
| Type of Coolant.....            | Glycol mixture                     |
| Coolant Capacity.....           | 46.5L                              |
| Back Pressure.....              | ≤10.2kPa                           |
| Standby Power.....              | 791kW                              |
| Prime Power.....                | 716kW                              |
| Fuel Consumption(100%load)..... | 163L/h                             |

## Alternator



|   |                                  |
|---|----------------------------------|
| Alternator Manufacturer/Brand.....                        | Leroy-somer                      |
| Alternator Model.....                                     | LSA49.3M8                        |
| 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.....  | 2250 rpm                         |
| Air Flow.....   | 1.614m³/s(50HZ), 1.961m³/s(60HZ) |
| Voltage Regulation.....                                   | ±0.5%                            |
| Total harmonic TGH / THCat no load < 1.5 % - on load < 5% |                                  |
| Telephone Interference.....                               | THF<2%;TIF<50                    |

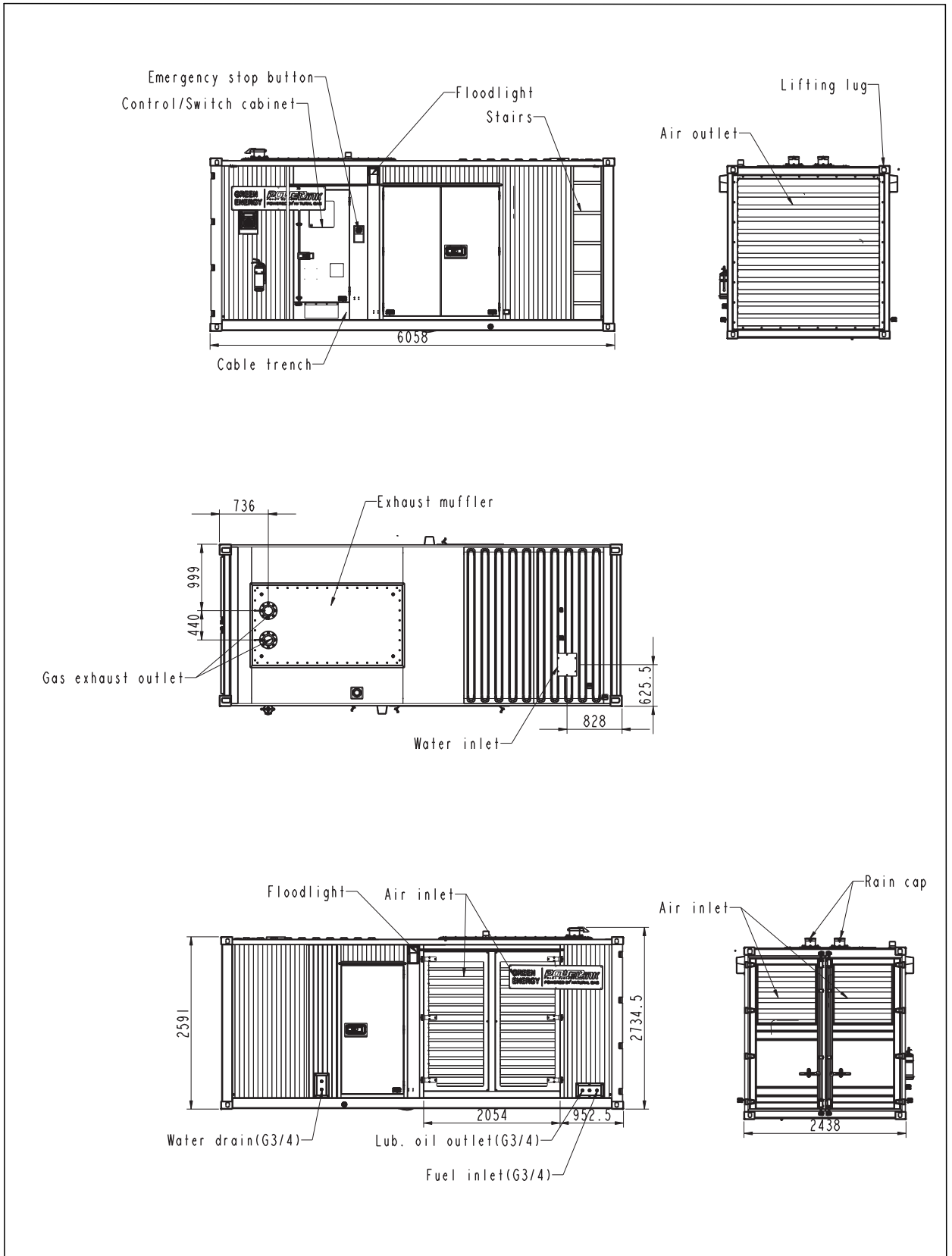
## PLC-7420 Control System



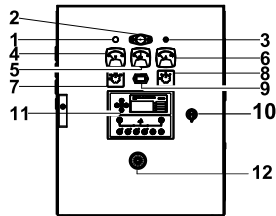
PLC-7420 is an advanced control module based on micro-processor, containing all necessary functions for protection of the genset and the breaker control. It can monitor the mains supply, and automatically start the engine when the mains is abnormal. Accurately measure various operational parameters and display all values and alarms information on the LCD. In addition, the control module can automatically shut down the engine and indicate the engine failure.

- Microprocessor control, with high stability and credibility
- Monitoring and measuring operational parameters of the mains supply and 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
- Real time clock for time and date display, overall runtime display, 250 log entries
- Overall power output display
- Integral speed/frequency detecting, telling status of start, rated operation, overspeed etc.
- Communication with PC via RS485 OR RS232 interface, using MODBUS protocol

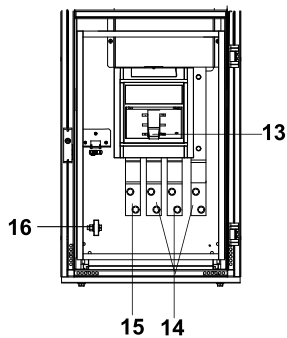
## 4 Overall Dimensions



## 5 Control system

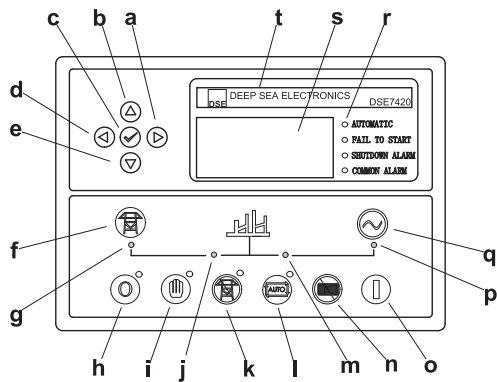


**Control cabinet**



**Field wiring cabinet**

| Ref. | Description                                    |
|------|--|
| 1    | Charge indicator                               |
| 2    | Control cabinet lamp                           |
| 3    | Control cabinet lamp switch                    |
| 4    | Voltage meter                                  |
| 5    | Frequency meter                                |
| 6    | Current meter                                  |
| 7    | Changerover switch-Voltage                     |
| 8    | Changerover switch-Current                     |
| 9    | Time counter                                   |
| 10   | Key switch                                     |
| 11   | Control module                                 |
| 12   | Emergency stop switch                          |
| 13   | Main circuit breaker                           |
| 14   | Live wire terminals                            |
| 15   | Neutral wire terminal                          |
| 16   | Mains input/<br>remote communication connector |



**Control module**

|   |  |
|---|--|
| q | Button (transfer the load to the genset, when in Manual mode only) |
| r | Alarm LED (4 alarm items)  |
| s | LCD display  |
| t | Control module name  |

|   |  |
|---|--|
| a | Button (next page)   |
| b | Button (increase value / previous item)                                  |
| c | Button (accept)  |
| d | Button (previous page)   |
| e | Button (decrease value / next item)                                      |
| f | Button (transfer the load to the mains supply, when in Manual mode only) |
| g | Mains supply available LED   |
| h | Stop / Reset button  |
| i | Manual button (Manual control mode)                                      |
| j | Mains supply on load LED   |
| k | Test button (Test mode)  |
| l | Auto button (Auto mode)  |
| m | Genset on load LED   |
| n | Mute/Lamp test button  |
| o | Start button (Manual)  |
| p | Genset available LED   |