

# 20KVA Cummins Diesel Generator Set Datasheet



**Model: KH-16GF**  
**Engine: CUMMINS**  
**Alternator: STAMFORD**  
**Control Panel: UK DEEPSEA**  
**Prime Power: 20KVA/16KW**  
**Standby Power: 22KVA/17.6KW**



**PRP** ●Prime power is available for an unlimited number of annual hours in variable load application, in accordance with GB/T2820-97; A 10% overload capability is available for a period of 1 hour within a 12-hour of operation.

**ESP** ●The standby power rating is applicable for supplying emergency power for the duration of a utility power interruption. No overload, utility parallel or negotiated outage operation capability is available at this rating.

## 1. Standard Specification

Genset model	Voltage	Frequency	Phase	Power Factor	Protection Class	Insulation Grade
KH-16GF	240/415V	50HZ	3	0.8(lagging)	IP23	H

## 2. Engine and genset output rating

Engine model	Engine Speed (RPM)	Prime (KW/HP)	Standby (KW/HP)	Genset Model	Prime (KVA/KW)	Standby (KVA/KW)
4B3.9-G2	1500	27/36	24/32	KH-16GF	20/16	22/17.6

## 3. Scope of standard supply

- Engine: CUMMINS brand new
- Alternator: STAMFORD brand new
- Controller: Automatic controller DSE7320MKII with AMF function
- Breaker: Manual circuit breaker 3-pole, China CHNT
- Radiator: Cummins Brand new 50°C
- Vibration: Vibration damper between engine/alternator and base frame
- Base: Heavy duty steel channel base frame
- Silencer: Heavy duty industrial type silencer with flexible bellow, elbow
- Battery: High capacity sealed free maintenance battery C/W battery cables
- Manuals: Standard tools, operator's manual of engine, alternator, controller, breaker

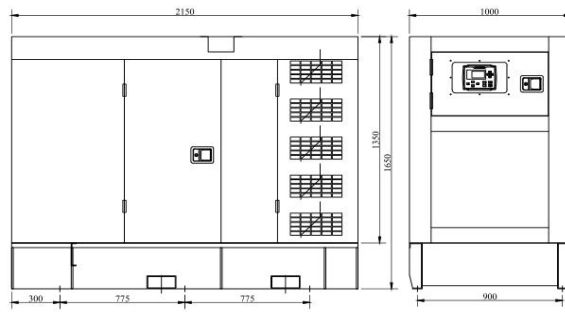
## 4. Optionals

●Soundproof Cabinet	●Oil/ Water/Fuel Heating system	●Anticondensation heater
●Heater Preservation Cabinet	●Automatic Transfer Switch (ATS)	●Daily Fuel Tank
●Rainproof Cabinet	●Remote Control System	●Output Cable
●Standard Container cabinet(20GP/20HC/40HC)	●Synchronization System	●Maintenance Spare Parts
●Trailer (10-500KVA)	●Breaker brand (ABB, Simens, Schneider)	●Plywood Case Packing

## 4. DIMENSIONS(L\*W\*H) And Weight

PROCESS FLOW: Drawing → Cutting → Bending → Welding → Spraying → Assembling → Testing

Open Type	800	Silent Type	1050KG
	1600*750*1200mm		2150*1000*1650mm



## 5.Silent cabinet Features

- Nice shape and rational structure.
- Perfect sealing: Rainproof, anti-snow, dust-proof and could work under the rugged environment
- Excellent security: The totally-enclosed box is made of 2 mm high quality cold-rolled steel plates.
- Adequate ventilation: The temperature won't easily get high, which could guarantee the running power of gen-set.
- Superb sound insulating: Protected gen-sets also have the function to lower the noise. Anti-drumming treatment could effectively lower the sectional noise during the running of the gen-sets.
- The inner box uses high frequency, medium frequency and low frequency type of PUR anti-flaming and sound-absorbing cotton, which could reduce the noise produced by the genset.
- The door uses the EPDM type sealing strips to seal.
- Mufflers adopt high efficient appliances, which could reduce the noise of the smoker vent.
- Good operability : The designers adhere to the principle of individual-oriented ideas. In addition, they give full consideration to the convenience and safety of the operation.
- Crane: In order to make the field-transport convenient, the box will install four lifting appliances.




## 5.Warranty

Warranty is according to our standard conditions:12 months or 1,000 running hours, subject to the earlier one (artificial damage to be an exception).

## 6.Criterion

- European Safety Standard: CE Certificate
- ISO9001:2015 Quality Control System
- CUMMINS OEM CERTIFICATE**
- STAMFORD OEM CERTIFICATE**

## 7. CUMMINS Diesel Engine

Engine Brand	Cummins	
Engine Manufacturer	Cummins(China) Power Technology Co.,Ltd	
Engine Model	<b>4B3.9-G2</b>	
Engine Rated Power	<b>24KW @1500RPM</b>	
Cylinder Arrangement	4 in line	
Cycle	Four stroke	
Aspiration	Naturally Aspirated	
Fuel System	Cummins PT	
Bore×Stroke (mm×mm)	102×120	
Displacement(L)	3.9	
Compression Ratio	17.3:1	
Speed Governor	Electronic	
Cooling System	Forced Water Cooling Cycle	

Starter Motor	DC24V electrical starting	
<b>Exhaust System</b>		
Exhaust Gas Flow (l/s)	68	
Exhaust Temperature(°C)		
●Standby Power	410	
●Prime Power	380	
Max Back Pressure(kPa)	10	
<b>Air Intake System</b>		
Max Intake Restriction(kPa)		
●Dirty Element	6	
●Clean Element	4	
Air Flow(l/s)	33	
<b>Fuel System</b>		
Type Injection System	BYC A Direct Injection	
110%(Standby Power) Load(L/H)	7.5	
100%(Prime Power) Load(L/H)	6.7	
75%(Prime Power) Load(L/H)	5.2	
50%(Prime Power) Load(L/H)	4	
25%(Prime Power) Load(L/H)	2.7	
<b>Oil System</b>		
Maximum Oil Temperature(°C)	121	
Oil Pressure at Rated RPM	207-345	
Minimum Required Lube System Capacity (L)	10.9	
<b>Cooling System</b>		
Coolant Capacity - Engine Only(L)	7.2	
Thermostat range(°C)	82-95	
Max Water Temperature Standby/Prime(°C)	104/100	
<b>8. Specification of STAMFPRD alternator</b>		
Alternator Brand	Stamford	
Engine Manufacturer	Cummins GeneratorTechnologies (China) Co., Ltd	
Alternator Model	S0L2-G1	<b>STAMFORD®</b>
Alternator Rated Power	20KVA/16KW	
Rated Voltage	415V	
Rated frequency	50HZ	
Connecting Type	3 Phase and 4 Wires	
Number of Bearing	1	
Protection Grade	IP23	
Altitude	≤1000m	
Exciter Type	Brushless ,Self-exciting, AVR automatic voltage regulating,100% Copper winding wire	
Insulation Class	H	
Telephone Influence Factor (TIF)	≤50	
THF	≤2%	
Voltage Regulation, Steady State	≤±1%	
Transient State Voltage	≤-15%~+20%	
<b>9. Specification of control System (Deepsea DSE7320MKII Module)</b>		

DSE7320 controller is an advanced control module based on micro-processor, It is an Auto Mains (Utility) Failure Control Module (AMF), have been designed to start and stop generating sets that include electronic And non-electronic engines. Include the additional capability of being able to monitor a mains (utility) supply. when main is not available, It can automatically start the engine and close generating sets breaker automatically, Accurately measure various operational parameters and display all values and alarms information on the LCD. In additional, it can automatically open breaker, and shutdown the engine after the main supply recovers.

### Main Features

- AMF and ATS and communication and expansion function.
- Designed to work with electronic or non-electronic or gas engine simultaneously. (support many kinds of engines ECU).
- Manual, Automatic, Test and remote control mode selectable.
- Monitoring and measuring operational parameters of the mains supply and genset.
- Indicating operation status, fault conditions, all parameters and alarms.
- Multiple protections and multiple parameters display.
- Includes 12 inputs and eight outputs. 8 inputs are configurable and 4 outputs are configurable.
- 4 analog inputs for kinds of optional sensors that can be used for measuring oil pressure, coolant temperature, fuel level and so on; parameters can be configured by user.
- Can be programmed using the front panel or by using the PC software.
- Support twelve languages. The language was edited by customer.
- Graded protection: pre-alarm, shutdown and electrical trip, flexible setting.
- The module can be pre-set for four operating modes and protecting parameters.
- The firmware can be updated automatically, so customer can have the latest version.

### Key Features

4-Line back-lit LCD text display

- Multiple Display Languages
- Five key menu navigation
- LCD alarm indication
- Heated display option available
- Customisable power-up text and images
- DSENet expansion compatibility
- Data logging facility • Internal PLC editor
- Protections disable feature • Fully configurable via PC using USB, RS232 & RS485 communication
- Front panel configuration with PIN protection
- Power save mode
- 3 phase generator sensing and protection
- 3 phase mains (utility) sensing and protection (DSE7320 MKII only)
  - Automatic load transfer control (DSE7320 MKII only)
  - Generator current and power monitoring (kW, kvar, kVA, pf)
  - Mains current and power monitoring (kW, kvar, kVA, pf) (DSE7320 MKII only)
  - kW and kvar overload and reverse power alarms
  - Over current protection
  - Unbalanced load protection
  - Independent earth fault protection • Breaker control via fascia buttons
  - Fuel and start outputs configurable when using CAN
  - 6 configurable DC outputs
  - 2 configurable volt-free relay outputs
  - 6 configurable analogue/digital inputs
  - Support for 0 V to 10 V & 4 mA to 20 mA sensors
  - 8 configurable digital inputs
  - Configurable 5 stage dummy load and load shedding outputs



• CAN, MPU and alternator frequency speed sensing in one variant
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• Manual and automatic fuel pump control
• Engine pre-heat and post-heat functions
• Engine run-time scheduler
• Engine idle control for starting & stopping
• Fuel usage monitor and low fuel level alarms
• Simultaneous use of RS232 and RS485 communication ports
• True dual mutual standby using RS232 or RS485 for accurate engine hours balancing.
• MODBUS RTU support with configurable MODBUS pages.
• Advanced SMS messaging (additional external modem required)
• Start & stop capability via SMS messaging
• 3 configurable maintenance alarms
• Compatible with a wide range of CAN engines, including tier 4 engine support
• Uses DSE Configuration Suite PC Software for simplified configuration
• Licence-free PC software
• IP65 rating (with supplied gasket) offers increased resistance to water ingress
• Modules can be integrated into building management systems (BMS) using MODBUS RTU
<b>Key Benefits</b>
• Automatically transfers between mains (utility) and generator (DSE7320 MKII only) for convenience.
• Hours counter provides accurate information for monitoring and maintenance periods
• User-friendly set-up and button layout for ease of use
• Multiple parameters are monitored & displayed simultaneously for full visibility
• The module can be configured to suit a wide range of applications for user flexibility
• PLC editor allows user configurable functions to meet user specific application requirements.