

DGCS 1000 ST

High Power Range



Ideal for...



MINING



DPCs



INFRASTRUCTURES



Weight with liquids
without fuel: 10770
kg



Dimensions
Plat IK1-STD:
L: 7238 mm
W: 2212 mm
H: 2732 mm

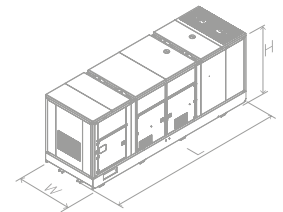


Image for orientation purposes. Dagartech reserves the right to modify the data in this technical sheet without prior notice. The weight of the equipment may vary depending on the equipment.



Diesel



EU Stage 0



Water-cooled



Soundproofed



CE Conformity

1. General technical data

General technical data	Engine	CUMMINS KTA38-G14
	Alternator	STAMFORD HCI634H
	Type of execution	G2
	Frequency	50Hz
	Voltage	400/230V
	Control panel	DSE 7320 MKII
	Fuel tank (l)	495
	Sound level-Lp(A) (dB(A)@7m)	76
Power ¹ (m.p. cos φ 0,8)	PRP (kVA / kW)	940 / 752
	ESP (kVA / kW)	1010 / 808

¹PRP: Continuous power ("Prime Power"). ESP: Emergency Standby Power according to ISO8528-1.
Maximum active power tolerance (kW) ±5%

Voltage	PRP (KVA/KW)	ESP (KVA/KW)	Amperage (A)
400/230V	940 / 752	1010 / 808	1460

Directives and Regulations

ENVIRONMENTAL CONDITIONS STANDARD ISO 8528-1:2018: 25°C, 100kPa and 30% relative humidity:

- **Prime Power (PRP):** Data on electrical power available at variable load without limit of hours per year. An overload of 10% is allowed for 1h out of 12. According to ISO 8528-1:2018.
- **Emergency Standby Power (ESP):** Data on electrical capacity available at variable load in case of emergency according to ISO 8528-1:2018.

The DAGARTECH Generating Set has EC labelling which includes the following directives:

- **2006/42/EC. Machine Safety Directive.**
- **EN ISO 8528-13:2016. Part 13: Safety.** Alternating current generator sets powered by reciprocating internal combustion engines.
- **2014/30/EU. Electromagnetic Compatibility Directive.**
- **2000/14/EC. Noise Emissions Directive.** Sound power levels evaluated in accordance with the procedure laid down in the directive.
- **Directive 2011/65/EU** on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2).

2. Engine specifications

2.1. General technical data of the engine	Make and model		CUMMINS KTA38-G14	
	r.p.m.		1500	
	Maximum ESP power (kWm)		935	
	Power PRP (kWm)		855	
	Fuel		Diesel	
	No. of cylinders		12 cylinders	
	Cylinder capacity (c.c.)		37800	
	Compression ratio		13,9:1	
	Cooling system		Water-cooled	
	Type of regulation		electronic	
Type of engine/injection/suction		Diesel/direct/turbocharged		
2.2. Fuel	Type of fuel		Diesel	
	Fuel tank capacity		495	
2.3. Consumption and autonomy	Consumption (l/h)		Autonomy (h)	
	PRP	ESP	PRP	ESP
	50%	113	-	4,4
	75%	161	-	3,1
	100%	209	228	2,4
2.4. Cooling system	Fan flow (m³/s)		13,97	
	Fan power consumption (kW)		24	
	Radiator back pressure (mm H ₂ O)		13	
	Total refrigerant capacity (l)		210	
2.5. Lubrication system	Oil capacity (l)		135	
2.6. Intake system	Combustion air intake flow (l/s)		1213	
2.7. Starter system	No. of batteries		4	
	Battery characteristics		12V 44Ah	
	Start-up voltage (V)		24V	
2.8. Exhaust system	Exhaust gas flow (l/s)		3051 [PRP]	3306 [ESP]
	Exhaust gas temperature (°C)		499° [PRP]	513° [ESP]
	Exhaust outside diameter (mm)		6" - Ø152,4mm	
	Max. exhaust back pressure (mm Hg)		76	

- **12 cylinders 4-stroke diesel engine online** with mechanical regulation electronic by means of a fuel pump, original from the manufacturer.



Emissions compliance
EU Stage 0

- **Direct injection and suction system turbocharged.** Original manufacturer's particle separator filter.

- **Refrigeration through cooling liquid,** fully distributed in the closed circuit run by an engine driven pump, tropicalised radiator, original from the engine manufacturer.

- **Crankshaft-driven pump lubrication system.** The filter is a full-flow insert cartridge, front housing, original from the engine manufacturer.

- **Air intake system for turbo-fed combustion** with two-stage filter, original from the engine manufacturer.

- **Electric motor starting system, battery** (no maintenance) **with disconnecter and load alternator driven by the starter** 24V, original elements from the engine manufacturer.

Exhaust attenuation level
-35dB(A)

3. Alternator specifications

3.1. General technical data for the alternator

Make and model	STAMFORD HCI634H		
No. of poles	4		
Insulation class	H		
No. of threads	12		
Mechanical protection index	IP23		
Voltage Regulator (AVR)	MX321+PMG		
Voltage regulation	±0,5%		
ESP power 27°C (kVA)	1010		
Power PRP 40°C (kVA)	940		
No. of phases	3		
Power factor (cos φ)	0,8		
Performance η (%)			
50%	75%	100%	110%
95,6%	95,7%	95,0%	94,8%

- **Brushless 4-pole alternator.** Robust mechanical structure with easy access to connections and components. Insulation class H, coil pitch 2/3 and self-excited AVR.
- **Protection with premium epoxy resins.** High voltage parts are impregnated under vacuum, which always means very good insulation.

Standard regulations that the alternator fulfils:

AS 1359 | IEC 34-1 1 | BS EN 60034-1 | VDE 0530 | BS 5000 | CAN/CSA-C22.2-100 | NEMA MG1-32.

Low wave distortion:

- **THD (100% load) = 2%**
- **THF < 2%**

Complies with: EN61000-6-3, EN61000-6-2 regarding radio interference.

4. Frame Specifications

- Unit mounted on **electro-welded high-resistance steel frame**, painted with epoxy-polyester powder paint.
- Connection of the assembly to the frame by means of **anti-vibration dampers**.
- **Fuel tank located on the frame itself.** The engine is equipped with a measuring gauge and fuel system.
- **Tested in a saline mist chamber according to ASTM B-117-09, resistance 500h.**



5. Soundproof canopy Specifications

- Electro-welded **canopy made of high resistance galvanized steel** painted with electrostatic epoxy-polyester powder paint.
- **Interior soundproofing** by means of a lining with soundproofing material.
- **Efficient attenuation silencer -35dB(A)** for the evacuation of gases to the outside with protective cover.
- **Tested in a saline mist chamber according to ASTM B-117-09, resistance 720H. IP44 mechanical protection degree.**



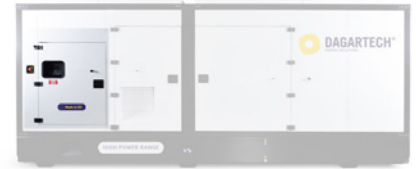
6. Control panel

6.1. Main elements of the control panel

- Protection panel, distribution with **automatic control module** which allows you to work in manual, automatic or signal mode.
- **Emergency stop button.**
- **Deep Sea Electronics battery charger**, designed to be permanently connected to the battery and maintain 100% of the charge. The charger switches to float mode when charging is complete:

Model DSE 9255 24V, 5A

- **Protections:**
 - **4-pole magnetothermic protection** against overloads and short circuits.
 - **Protection fuses** for the control set.



6.2. Protection switch

Model Schneider ComPact 1600A 4P

6.3. Control module



Model DSE 7320 MKII

- 1 • 4 configurable indicator LEDs
- 2 • Generator on load
- 3 • Transfer to the generator (manual mode)
- 4 • **Start engine (manual mode)**
- 5 • Silence alarm
- 6 • Automatic mode
- 7 • Test mode
- 8 • Manual mode
- 9 • **Genset stop**
- 10 • Main network transfer (manual mode)
- 11 • Network in load
- 12 • Navigation keyboard
- 13 • Main status and instrument display

DSE 7320 MKII DEEP SEA control card with mains grid monitor. The genset will automatically start up when detecting a fault in the electric power network and it will turn off automatically as well, when the electrical supply is re-established. It can also work in manual mode and by signal. It allows you to monitor a wide range of generator parameters and display information alerts, status and alarms.

The module includes communication ports USB , RS232, RS485, and also DSENet® for system expansion. Possibility of Ethernet networking (plug).

The entire module is easily configurable via PC using the DSE specific software configuration.

It has 132x64p illuminated LCD display with 4 lines of text, 5-key navigation through menus, 9 configurable outputs and 8 configurable inputs, programmable clocks and alarms, reading and displaying parameter values, including RMS values.

Different operating modes: AUTOMATIC mode, MANUAL mode, SIGNAL mode and TEST mode.

Other alternative configurations are available upon request to extend the capabilities of the operation modes.

Environmental Tests that the module complies with:

BS EN 61000-6-2 (electromagnetic compatibility)
 | BS EN 61000-6-4 (electromagnetic compatibility)
 | BS EN 60950 (electrical safety) | BS EN 61000-6-2 (temperature) | BS EN 60068-2-6 (vibrations)
 | BS EN 60068-2-27 (shock)

6. Control panel

6.3. Control module



Model	DSE 7320 MKII
Operating modes	
STOP mode	✓
MANUAL mode	✓
TEST mode	✓
AUTO mode	✓
Module configuration options	
PC	✓
Group readings	
Generator voltage (F-F)	✓
Generator voltage (F-N)	✓
Generator current (A)	✓
Generator frequency	✓
Generator load F-N (kW / kVA / kVAr)	✓
Total generator load (kW / kVA / kVAr)	✓
Average generator power factor	✓
Accumulated generator load (kW, kVAh, kWh, kVAh)	✓
Network readings	
Network voltages (ph-N)	✓
Network voltages (ph-ph)	✓
Network frequency	✓
Network current (A)	■
Network load ph-N (kW / kVA / kVAr)	■
Total network load (kW / kVA / kVAr)	■
Engine readings	
Coolant temperature	✓
Oil pressure	✓
Engine fuel level	✓
Engine battery volts	✓
Engine speed	✓
Engine run time	✓



Ask us for further readings in generating sets equipped with electronically managed engines and DSE 7320MKII control module.



Do you want a superior performance control module?

Contact us and tell us what you need.



- ✓ Includes
- ✗ Not available
- Optional
- ① Consult

Readings available at control module level.

Confirm the availability of these readings for this generator and engine.

6. Control panel

6.3. Control module



Model	DSE 7320 MKII
Engine protections	
High water temperature	✓
Low oil pressure	✓
Low water level	✓
Fuel reserve by sensor	✓
Second fuel tank control	✓
Shutdown failure	✓
Battery voltage failure	✓
Battery charge alternator failure	✓
Overspeed	✓
Underfrequency	✓
Failure to start	✓
Emergency stop	✓
Maintenance notice	✓
Maintenance Alert	✓
Alternator protections	
High frequency	✓
Low frequency	✓
High voltage	✓
Low voltage	✓
Short circuit	✓
Asymmetry between phases	■
Incorrect phase sequence	✓
Reverse power	✓
Breaker Trip 4 poles	■
Overpressure alarm	✓
Counters	
Hour meter	✓
Kilowatt meter	✓
Starter counter	✓



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Readings available at control module level.

Confirm the availability of these readings for this generator and engine.

6. Control panel

6.3. Control module



Model	DSE 7320 MKII
Communications	
RS232	✓
RS485	✓
USB communication port	✓
Modbus IP	■ DSE 855/890/891
Modbus RS 485	✓
PC Software (Mimic)	✓
GSM/GRPS MODEM	■ DSE 890
Remote display < 1km	■ DSE 2520
Remote monitoring	■ DSE 855/890
Input expansion	■ DSE 2130 8 inputs
Output expansion	■ DSE 2157 8 inputs
SNMP protocol	■ DSE 892
Services	
Configurable alarm history	250
External start	✓
Start-up inhibition	■
Network Failure Start	✓
Activation of group counter	✓
Activation of grid and group counter	✓
Control of fuel transfer	✓
Motor temperature control	✓
Forced group operation	✓
Free programmable alarms	✓
Group start function in test mode	✓
Free programmable outputs	✓
Multilingual	✓
Special applications	
GPS localisation	■ DSE 890
Calendar scheduler	✓
DSE configuration suite via PC	✓
Front panel module configuration with PIN	✓
Alternative work	✓
Programmable PLC	✓
Power save mode	✓
Alternative configurations	✓
Dummy load control / load shedding	✓ 5 Stage dummy load

Do you want a superior performance control module?

Contact us and tell us what you need.

Ask us for further readings in generating sets equipped with electronically managed engines and DSE 7320MKII control module.

✓ Includes

■ Optional

✗ Not available

① Consult

Readings available at control module level.

CONFIRM THE AVAILABILITY OF THESE READINGS FOR THIS GENERATOR AND ENGINE.

7. Standard Scope of Delivery



Engine

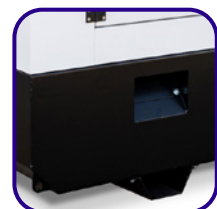
- **CUMMINS KTA38-G14 Diesel Engine**, 1500 rpm water cooled.
- With **electronic regulation**.
- **Protection from hot and moving parts**.
- Electric motor starting system, **battery (maintenance-free) with switch** and load alternator driven by **starter motor of 24V**.
- **Efficient high-attenuation exhaust silencer of -35d(BA)** for the evacuation of gases to the outside with protective cover.



Alternator

- **12-Wire, 4-pole brushless STAMFORD HCI634H alternator** with electronic voltage regulation type AVR (MX321+PMG).
- With IP23 protection level.
- **Insulation class H**.

Models equipped with a MeccAlte alternator include a MAUX auxiliary winding (300% overload allowed)



Frame

- **Electro-welded frame** made of **high-strength steel**.
- Painted with electrostatic epoxy-polyester powder paint.
- **Anti-vibration dampers** from the engine block to the frame.
- **Fuel tank with capacity of 495 litres**, located on the frame itself. Equipped with **cleaning record** to facilitate maintenance work.
- **With measuring gauge** and installation of fuel to the engine.
- **Liquid drainage connection** to the outside.
- **Bedplate tested in a salt spray chamber according to ASTM B-117-09 (500h resistance)**.



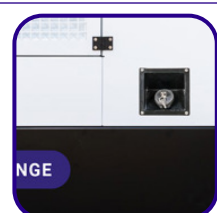
Soundproofed canopy

- **Electro-welded canopy** of high-strength **galvanized steel**.
- Painted with electrostatic epoxy-polyester powder paint.
- **Interior soundproofing** by means of a **rigid panel made of glass wool with an exterior textile covering**.
- With IP44 mechanical protection level.
- **Cab tested in salt spray chamber according to ASTM B-117-09 (resistance 720h)**.



Control panel

- **DeepSea Electronics automatic control module DSE 7320 MKII** which allows you to work in manual, automatic or signal mode.
 - It offers multiple event logging and is fully configurable through DeepSea Electronics' free-access specific configuration software.
 - Three-phase network and group detection with measurement for configurations upon network failure.
- DeepSea Electronics battery charger **DSE 9255 24V, 5A**. Designed to be permanently connected to the battery and maintain 100% of the charge. The charger switches to float mode when charging is complete.
- **Protections:**
 - 4-pole magnetothermic protection against overloads and short circuits.
 - Protection fuses for the control set.



Other equipment

- **Mechanised fuel nozzle outside with key**.
- **Tropicalised Radiator** for work at 50°C*
- Prepared for maintenance intervals every 500 hours.
- **Emergency stop button**.
- **Reinforced pole** centrally-mounted.
- **Exhaust compensators**.



*CHECK THE SPECIFICATION ACCORDING TO THE MODEL.

8. Featured options available

Do you need to include some options in the standard equipment of this genset to make it the perfect generator for you? We show you below some of the most demanded options in generator sets of the High Power range.



If your generator set must work as a supply source connected to the electrical network...

You will need a remotely-operated motorized transfer switch. This way, both energy sources will alternate their operation without you having to do anything.



If your generating set is going to be installed outdoors or subjected to high humidity conditions...

We recommend that you choose to manufacture it in **stainless steel** or **add special treatments** such as **C5-M painting**.



Do you need to scale up the power of your installation by synchronising several generating sets?

You can include island units and network sync with the Synchro Kit DSE 8610MKII (includes 4P motorisation + harting connectors + 10 meters of connecting cable between sets + ground contactor + PMG).



Check the availability of these options according to the model and, if you do not find what you are looking for, please contact us. We have many more options to offer you.

See other options for
available timing



9. Even more options

If you're looking for other features to complete your machine, don't worry.

Below we detail many of the options from the High Power range that we make available to you to turn your unit into a unique machine.



Engine heating system



Stamford supplement



Complete stainless steel canopy (304)

ENGINE - ALTERNATOR OPTIONS

- Engine heating system
- Fuel particle separator filter.
- Manual oil drainage pump.

Capacity (l): N/A

% load	Consumption (l/h)		Run time (h)	
	PRP	ESP	PRP	ESP
50%	113	-	N/A	-
75%	161	-	N/A	-
100%	209	228	N/A	N/A

- Stamford alternator supplement (for models equipped with a MeccAlte alternator).

MECHANICAL OPTIONS

- Retention tray (see change of dimensions).
- Liquid leakage probe (requires retention tray).
- SilentBlocks for levelling.
- Damping - anti-vibration springs.
- Complete stainless steel canopy (304).
- Galvanized frame.
- Non-standard RAL colour.

9. Even more options



DSE 2157



DSE 334 network surveillance

COMMUNICATION OPTIONS

- DSE 2157 8 potential free output.
- DSE 2130 8 inputs.
- DSE 2548 8 LED diodes.
- DSE 855.
- DSE 890 webnet.
- DSE 7420 module.
- DSE 334 network surveillance.



Socomec
motorised switchboard

POWER OPTIONS

- Differential protection.
- As an option, you can include a switch cabinet attached to the generating set.
 - Socomec motorised switches: $\geq 125A$.

