

Industrial Range

POWER (PRP / ESP):
200 / 220 kVA (160 / 176 kW)

EMISSIONS LEVEL:
EU Stage 0

FREQUENCY
50Hz

VOLTAGE
400/230V

CE CERTIFIED



DGP 220 ST



DGPS 220 ST

1. General technical data

1.1. Version, dimensions and weight

Version	Open	Soundproofed
Dimensions	4K	DK1
L (mm)	2600	3412
W (mm)	1000	1162
H (mm)	1900	1840
Weight with liquids and without fuel (kg)	1850	2300

1.2. Main technical data

Engine	PERKINS 1106A-70TAG4	
Alternator	STAMFORD UCI274H	
Fuel	Diesel	
Type of execution	G2	
Control panel	DSE 6020 MKII	
Tank (l)	430	425
Sound level-Lp(A) (dB(A)@1m) ¹	N/A (Indoor)	76
Sound level-Lp(A) (dB(A)@7m) ¹	N/A (Indoor)	68
Sound power-LW(A) (dB(A))	N/A (Indoor)	96

¹The sound levels may vary depending on the measurement conditions.

Voltage	PRP ² (KVA/KW)	ESP ² (KVA/KW)	PRP Amperage (A)	ESP Amperage (A)
400/230V	200 / 160	220 / 176	288,7	317,5

¹PRP: Continuous power ("Prime Power"). ESP: Emergency Standby Power according to ISO8528-1.

Tolerance of maximum active power (kW) ±5%

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 Generator bears the CE marking which includes the following directives:

- **2006/42/EC.** Machine Safety Directive.
- **EN ISO 8528-13:2016.** Part 13: Safety. Alternating current generators 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

400/230V · 50Hz (1500 rpm)		DGP 220 ST		DGPS 220 ST			
2.1. General technical data of the engine	<i>Version</i>	Open		Soundproofed			
	Make and model	PERKINS 1106A-70TAG4					
	Emissions	EU Stage 0					
	r.p.m.	1500					
	Maximum ESP power (kWm)	191,3					
	Power PRP (kWm)	173,9					
	Fuel	Diesel					
	No. of cylinders	6					
	Cylinder capacity (c.c.)	7010					
	Compression ratio	16:1					
	Cooling system	Water-cooled					
	Type of regulation	Mechanical					
Type of engine/injection/suction	Diesel / direct / Turbocharged						
2.2. Fuel	Type of fuel	Diesel					
	Tank capacity	430		425			
2.3. Consumption and autonomy		Open		Soundproofed			
		Consumption (l/h)		Autonomy (h)			
		PRP	ESP	PRP	ESP	PRP	ESP
	50%	23,1	-	18,6	-	18,4	-
	75%	34,7	-	12,4	-	12,2	-
	100%	45,8	49,4	9,4	8,7	9,3	8,6
2.4. Cooling system	<i>Version</i>	Open		Soundproofed			
	Fan flow (m³/min)	252		252			
	Radiator back pressure (kPa)	0,1		0,1			
	Fan power consumption (kW)	5					
	Total refrigerant capacity (l)	21					
2.5. Lubrication system	Oil capacity (l)	16,5					
	Oil consumption (%)	< 0,10					
2.6. Intake system	Combustion air intake flow (m³/min)	13,2					

400/230V - 50Hz (1500 rpm)		DGP 220 ST	DGPS 220 ST
2.7. Starter system	<i>Version</i>	Open	Soundproofed
	No. of batteries	1	
	Battery characteristics	12V 60Ah	
	Start-up voltage (V)	12V	
Common data for both versions			
2.8. Exhaust system	Exhaust gas flow (m ³ /min)	34,9 [PRP]	36,8 [ESP]
	Exhaust gas temperature (°C)	550 [PRP]	550 [ESP]
	<i>Version</i>	Open	Soundproofed
	Exhaust outside diameter (mm)	3,5" (Ø 88,9)	3,5" (Ø 88,9)
	Exhaust attenuation level (dB(A))	-10	-35
	Max. exhaust back pressure (kPa)	6	

Radiator level sensor not available for Baudouin 4M06 series engines.

3. Alternator specifications

3.1. General technical data of the alternator

<i>Version</i>	Open	Soundproofed		
Make and model	STAMFORD UCI274H			
No. of poles	4			
Insulation class	H			
No. of threads	12			
Mechanical protection index	IP23			
Voltage Regulator (AVR)	AS440			
Voltage regulation	±1%			
ESP power 27°C (kVA)	220			
Power PRP 40°C (kVA)	200			
No. of phases	3			
Power factor (cos φ)	0,8			
Performance η (%)				
	50%	75%	100%	110%
	93,9%	93,8%	93,3%	93,0%

i Standard regulations that the alternator meets:

AS 1359 | IEC 34-11 | 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.

400/230V · 50Hz (1500 rpm)

DGP 220 ST

DGPS 220 ST

4. Bench Specifications

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

5. Soundproof Canopy Specifications



The canopy is part of the scope of supply of the soundproof generator sets. Open generators do not include a canopy.

- **Electro-welded canopy made of high resistance galvanized steel** painted with electrostatic epoxy-polyester powder
- 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 salt spray chamber according to ASTM B-117-09, resistance 720H. IP44 mechanical protection degree.**

THE CANOPIES OF THE INDUSTRIAL RANGE ARE MADE OF HIGH-RESISTANCE GALVANIZED STEEL AND ARE ELECTRO-WELDED AND PAINTED WITH ELECTROSTATIC EPOXY-POLYESTER POWDER PAINT.



In addition, they are equipped with a **rigid panel** made of glass wool with an outer textile covering. We also incorporated an efficient **silencer attenuation device for the evacuation of gases to the outside**, featuring a rain cap.

*Our canopies are tested in a salt spray chamber according to standard **ASTM B-117-09** (resistance 720H. **IP44 mechanical protection** grade).*

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.
- **Push button** for **emergency stop**.
- **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 9150 12V, 3A
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Protections:

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

6.2. Circuit breaker

Model	Schneider EasyPact 400A 4P
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6.3. Control module



1. Alarm indicator	7. Manual mode
2. Transfer to the generator (manual mode)	8. Genset stop
3. Start engine (manual mode)	9. MAIN NETWORK transfer (manual mode)
4. Silence alarm	10. Navigation keyboard
5. Automatic mode	11. Main status and instrument display
6. Test mode	

Model	DSE 6020 MKII
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DSE 6020 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 USB communication ports, 4 configurable digital inputs, 3 analog inputs, 6 configurable outputs, emergency stop button, 8-35 V battery charger.

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

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

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)

400/230V - 50Hz (1500 rpm)

PERKINS 1106A-70TAG4 | STAMFORD UCI274H

6.3. Control module


Standard ✓

Option □

Model

DSE 6020 MKII

DSE 7320 MKII

Operating modes

STOP mode	✓	✓
MANUAL mode	✓	✓
TEST mode	✓	✓
AUTO mode	✓	✓

Module configuration options

PC	✓	✓
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Generator 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)	✓	✓
Grid 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	✓	✓

Caption

- ✓ Included
- Optional
- ✗ Not available
- ⓘ Consult

Readings available at control module level.

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

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.

400/230V - 50Hz (1500 rpm)

PERKINS 1106A-70TAG4 | STAMFORD UCI274H

6.3. Control module


Standard ✓

Option □

Model	DSE 6020 MKII	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	✓	✓

Caption

- ✓ Included □ Optional
- ✗ Not available ⓘ Consult

Readings available at control module level.

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

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DO YOU WANT A SUPERIOR PERFORMANCE CONTROL MODULE?

Contact us and tell us what you need.

6.3. Control module


Standard ✓

Option □

Model	DSE 6020 MKII	DSE 7320 MKII
Communications		
RS232	✗	✓
RS485	✗	✓
USB communication port	✓	✓
Modbus IP	□ DSE 855/890/891	□ DSE 855/890/891
Modbus RS 485	□ DSE 855/890/891	✓
PC Software (Mimic)	✓	✓
GSM/GRPS MODEM	□ DSE 890	□ DSE 890
Remote display < 1km	✗	□ DSE 2520
Remote monitoring	□ DSE 855/890	□ DSE 855/890
Input expansion	✗	□ DSE 2130 8 inputs
Output expansion	✗	□ DSE 2157 8 inputs
SNMP protocol	□ DSE 892	□ DSE 892
Services		
Configurable alarm history	50	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	Symbols	✓
Special applications		
GPS localisation	□ DSE 890	□ 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

Caption

- ✓ Included □ Optional
- ✗ Not available ⓘ Consult

Readings available at control module level.

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

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.



400/230V - 50Hz (1500 rpm)

PERKINS 1106A-70TAG4 | STAMFORD UCI274H

7. Detailed supply scope

Engine

PERKINS 1106A-70TAG4, EU STAGE 0, 1500 RPM, WATER-COOLED, WITH MECHANICAL REGULATION ENGINE.

- 6-cylinder inline Diesel engine, 4-stroke with Mechanical fuel regulation by means of a fuel pump, original from the manufacturer.
- direct injection and Turbocharged suction system. Original manufacturer's particle separator filter.
- Industrial exhaust gas silencer of -10 dB(A).  INCLUDED
- Efficient high-attenuation exhaust silencer of -35 dB(A).  INCLUDED
- 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 12V starter, original elements from the engine manufacturer.
- Protection from hot and moving parts.

Alternator

STAMFORD UCI274H ALTERNATOR OF 12 WIRES AND 4 POLES, BRUSHLESS AND WITH ELECTRONIC VOLTAGE REGULATION TYPE AVR (AS440).

- With IP23 protection class and H insulation class.
- Brushless 4-pole alternator. Robust mechanical structure with easy access to connections and components. H insulation class, coil pitch 2/3 and self-excited AVR. IP23 protection degree.
- Protection with premium epoxy resins. High voltage parts are impregnated under vacuum, which always means very good insulation.

Do you have any queries about the supply?

Get in touch with us.



Caption:



INCLUDED IN OPEN GENERATOR SETS



INCLUDED IN SILENT GENERATOR SETS

400/230V - 50Hz (1500 rpm)

PERKINS 1106A-70TAG4 | STAMFORD UCI274H

Bench

- Bench made of high-strength electro-welded steel.
- Painted with electrostatic epoxy-polyester powder paint.
- Anti-vibration dampers from the engine block to the bedplate.
- Fuel tank included on the bench 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.
- **Bench tested in a salt spray chamber according to ASTM B-117-09 (500h resistance).**

Soundproofed canopy (not included in open models)

- Electro-welded canopy of high resistance 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.
- **Canopy tested in salt spray chamber according to ASTM B-117-09 (resistance 720h).**

Control panel

- **DeepSea Electronics automatic control module, DSE 6020 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.
- **DSE 9150 12V, 3A DeepSea 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.
- **Protections:**
 - 4-pole magnetothermic protection against overloads and short circuits.
 - Protection fuses for the control set.

400/230V - 50Hz (1500 rpm)

PERKINS 1106A-70TAG4 | STAMFORD UCI274H

7. Detailed supply scope

Other equipment

- Mechanised fuel nozzle outside with key.
- Tropicalised Radiator for work at 50 °C*
- Prepared for maintenance intervals every 500 hours*.
- Push button for emergency stop.
- Reinforced pole centrally-mounted (Optional for models below 90kVA in open version).

8. Featured options available



Monitor and control your generating set via PC or mobile phone with the DSE 890 module

Including this module, **the device connects to the switchboard server** via ethernet or GPRS (GSM or 3G) connection. **It also includes the GPS** function (satellite tracking).

A DSE GSM antenna is required for the correct operation of the DSE890.



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.



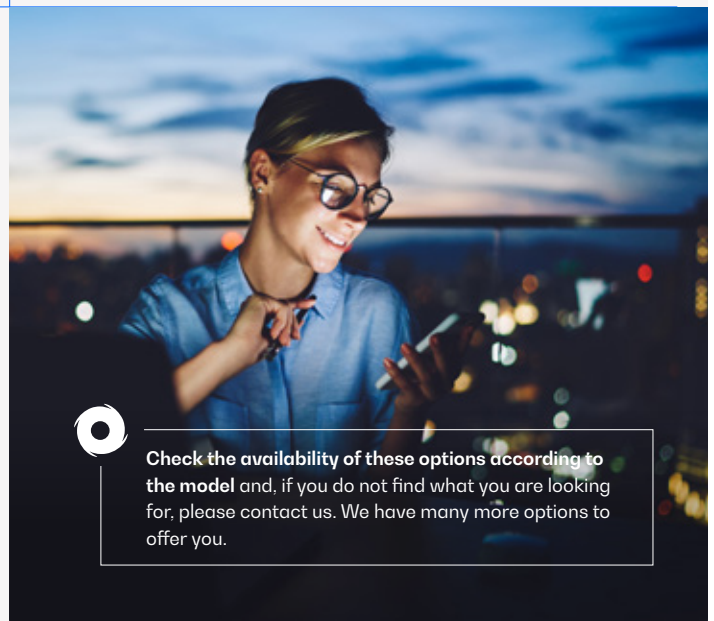
OPTION AVAILABLE IN SOUNDPROOF GENERATOR SETS



SEE OTHER SYNCHRONISATION OPTIONS AVAILABLE

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.

* Confirm the scope of supply depending on the model. Maintenance intervals may vary. Refer to the engine manufacturer's recommendations.

9. Even more options



24 hour tank


 External ROTH tanks
 DUO SYSTEM

AUTONOMY OPTIONS

Increase the autonomy of your generator up to 48 hours, including special tanks

You can choose between different integrated tanks to increase the autonomy of the unit up to 48 hours of operation. You can also incorporate automatic fuel transfer systems for supply from external tanks.

— External tanks:

- External tank 400 l (ROTH DUO SYSTEM).
- External tank 620 l (ROTH DUO SYSTEM).
- External tank 1,000 l (ROTH DUO SYSTEM).
- External tank 1,500 l (ROTH DUO SYSTEM).




Engine heating system



Fuel particle separator filter

ENGINE - ALTERNATOR OPTIONS

You can choose between different integrated tanks to increase the autonomy of the unit up to 48 hours of operation. You can also incorporate automatic fuel transfer systems for supply from external tanks.

- Electronic engine regulation/management (for models with mechanical regulation).
- Engine heating system.
- Fuel particle separator filter.
- Manual oil drainage pump.
- 6-way fuel valve kit.
- Super Silent kit (includes heavy mass alternator + high attenuation exhaust -50dB(A))
 AVAILABLE
- Alternator anti-condensation heaters.
- Superior generator impregnation systems.
- AVR MX341 + PMG \pm 1% STAMFORD.
- AVR MX321 + PMG \pm 0.5% STAMFORD.

Caption:



AVAILABLE IN OPEN GENERATOR SETS



AVAILABLE IN SILENT GENERATOR SETS



400/230V - 50Hz (1500 rpm)

PERKINS 1106A-70TAG4 | STAMFORD UCI274H



Complete stainless steel hood (304)

MECHANICAL OPTIONS

- Retention bath (see change of dimensions).
- Sensor on retention bath (requires retention bath).
- Lapas - SilentBlocks for levelling.
- Damping - anti-vibration springs.
- Complete stainless steel canopy (304).  AVAILABLE
- Galvanized bench.
- Non-standard RAL colour.  AVAILABLE



DSE 2157



DSE 334 network surveillance

COMMUNICATION OPTIONS

- DSE 7320 MKII control card extra price (for models with the DSE 6020 MKII control board in the standard scope of supply).
- DSE 2157 8 potential free output (requires DSE 7320MKII).
- DSE 2130 8 inputs (requires DSE 7320MKII).
- DSE 2548 8 LED diodes (requires DSE 7320MKII).
- 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.
- Switching with Schneider contactors. 25 to 125 A.
- Socomec motorised switches: $\geq 125A$.

Caption:



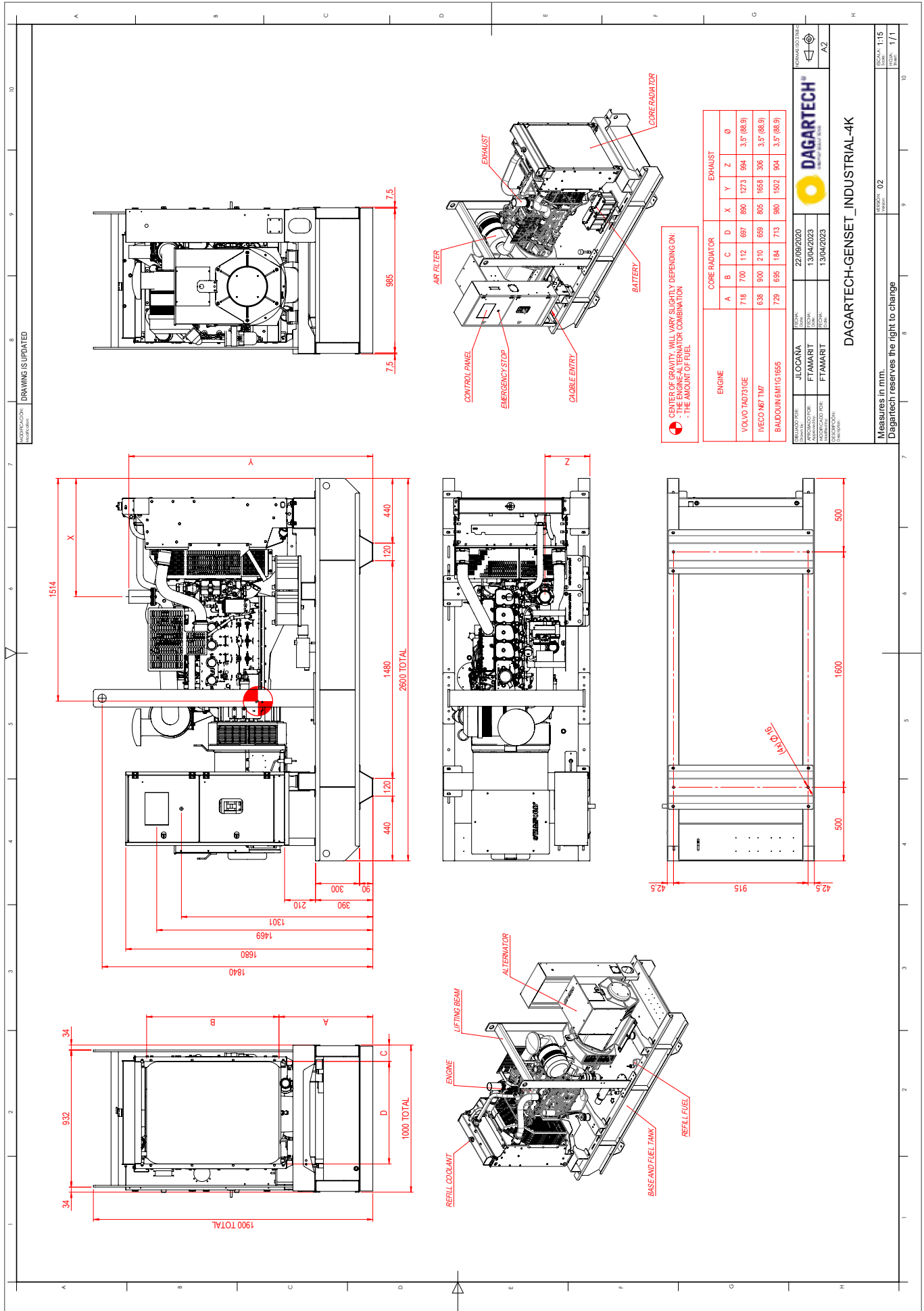
AVAILABLE IN OPEN GENERATOR SETS



AVAILABLE IN SILENT GENERATOR SETS

Installation plan DGP 220 ST - standard open model

V.1-2024. Last update: 10/05/2024. Technical plan for orientation purposes. The dimensions may vary depending on the equipment. Dagartech reserves the right to modify the data in this technical sheet without prior notice.





¿Necesitas el plano de instalación de la **versión 24 horas**?

Do you need the technical drawing for the **24-hour version**?

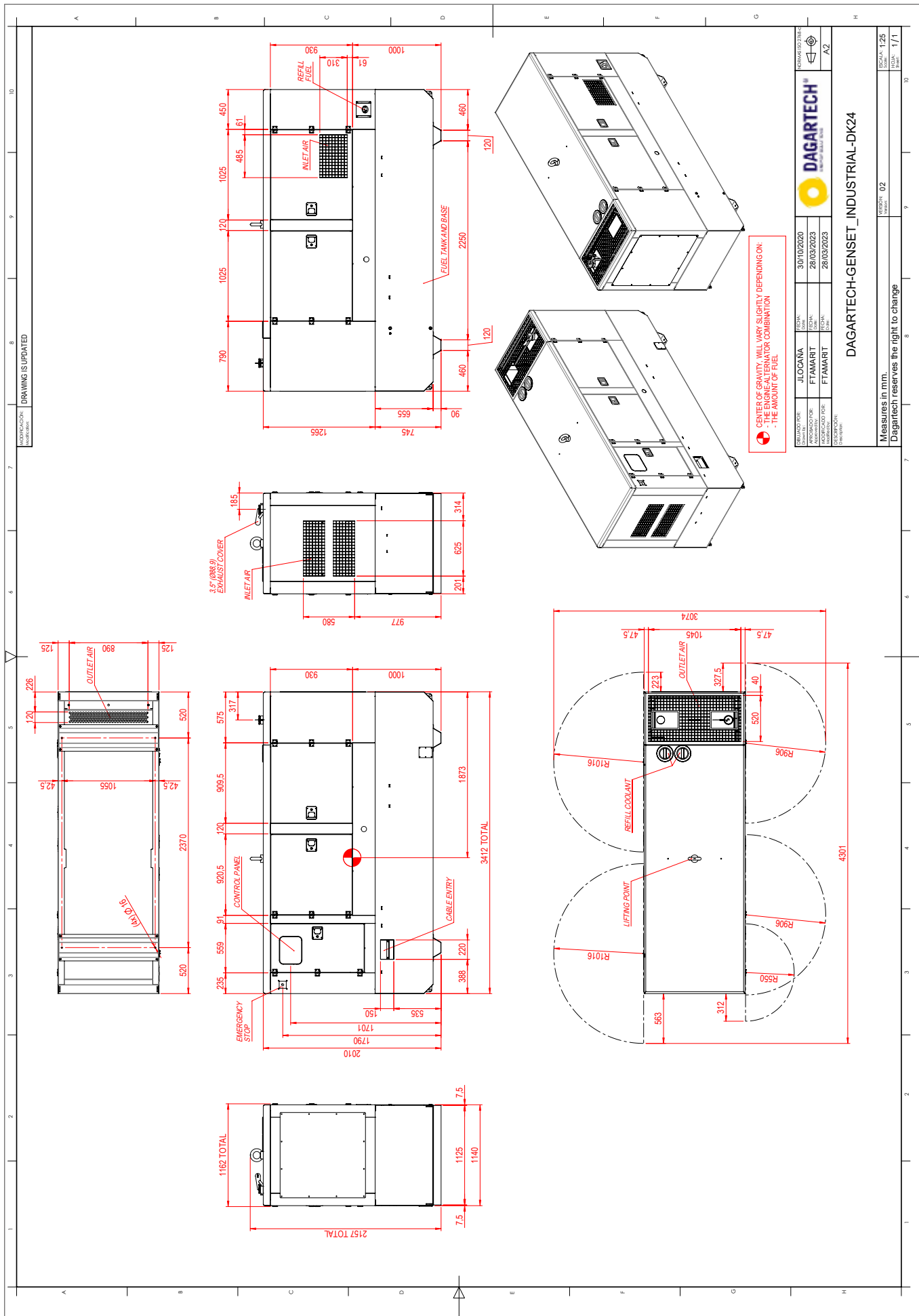
Avez-vous besoin du plan d'installation pour la **version 24 heures** ?

Necessita de plano de instalação em versão com depósito de **48 horas**?

Brauchen Sie die Installationszeichnung für die **24-Stunden-Version**?

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V:1-2024. Last update: 10/05/2024. Technical plan for orientation purposes. The dimensions may vary depending on the equipment. Dagartech reserves the right to modify the data in this technical sheet without prior notice.



CENTERS OF GRAVITY WILL VARY SLIGHTLY DEPENDING ON:
 - THE ENGINE/ALTERNATOR COMBINATION
 - THE AMOUNT OF FUEL

REVISED FOR:	JLOCAMA	FECHA:	30/10/2020
APROBADO POR:	FTAMART	FECHA:	28/03/2023
APROBADO POR:	FTAMART	FECHA:	28/03/2023
APROBADO POR:	FTAMART	FECHA:	28/03/2023
APROBADO POR:	FTAMART	FECHA:	28/03/2023
APROBADO POR:	FTAMART	FECHA:	28/03/2023

DAGARTECH-GENSET INDUSTRIAL-DK24

MEASURES IN mm.	MEASURES IN mm.
Dagartech reserves the right to change	Dagartech reserves the right to change
SCALE: 1:25	SCALE: 1:25
VERSION: 02	VERSION: 02
DATE: 10/05/2024	DATE: 10/05/2024
DRAWN: 1/1	DRAWN: 1/1



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