

DGPSW 20 ST

Industrial Range



Ideal for...



INDUSTRY



HOSPITAL



INFRASTRUCTURES

 Weight with liquids without fuel: 800 kg

 Dimensions Plat AK1:
L: 1875 mm
W: 862 mm
H: 1215 mm

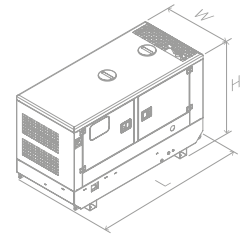


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Diesel



EU Stage 0



Water cooled



Soundproofed



CE Conformity

1. General technical data

General technical data	Engine	PERKINS 404A-22G
	Alternator	STAMFORD S0L2-G
	Type of execution	G2
	Frequency	60Hz
	Voltage	208/120V
	Control panel	DSE 6020 MKII
	Fuel tank (l)	80
	Sound level-Lp(A) (dB(A)@7m)	67
	Sound power-LW(A) (dB(A))	95

Power ¹ (m.p. cos φ 0,8)	208/120V	220/127V	480/277V
	PRP (kVA /kW)	22 / 18	23 / 19
ESP (kVA /kW)	24 / 20	25 / 20	176 / 141

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

Voltage >	208/120V	220/127V	480/277V
Amperaje (A)	67	66	31

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	PERKINS 404A-22G			
	r.p.m.	1800			
	Maximum ESP power (kWm)	23,9			
	Power PRP (kWm)	21,6			
	Fuel	Diesel			
	No. of cylinders	4 cylinders			
	Cylinder capacity (c.c.)	2216			
	Compression ratio	23,3:1			
	Cooling system	Water cooled			
	Type of regulation	mechanical			
Type of engine/injection/suction	Diesel/indirect/natural				
2.2. Fuel	Type of fuel	Diesel			
	Fuel tank capacity	80			
2.3. Consumption and autonomy	Consumption (l/h)		Autonomy (h)		
		PRP	ESP	PRP	ESP
	50%	3,5	-	22,9	-
	75%	4,8	-	16,7	-
	100%	6,2	6,9	12,9	11,6
2.4. Cooling system	Fan flow (m ³ /min)	29,4			
	Fan power consumption (kW)	0,4			
	Radiator back pressure (TBA)	9,3			
	Total refrigerant capacity (l)	kPa			
2.5. Lubrication system	Oil capacity (l)	10,6			
2.6. Intake system	Combustion air intake flow (m ³ /min)	2,49			
2.7. Starter system	No. of batteries	1			
	Battery characteristics	12V 60Ah			
	Start-up voltage (V)	12V			
2.8. Exhaust system	Exhaust gas flow (m ³ /min)	4,34 [PRP]	4,76 [ESP]		
	Exhaust gas temperature (°C)	440° [PRP]	510° [ESP]		
	Exhaust outside diameter (mm)	2" - Ø50mm			
	Max. exhaust back pressure (kPa)	10,2			

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



Emissions compliance
EU Stage 0

- **Direct injection and suction system natural.** 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** 12V, original elements from the engine manufacturer.

Exhaust attenuation level
-30dB(A)

3. Alternator specifications

3.1. General technical data for the alternator

Make and model	208/120V	220/127V	480/277V
	STAMFORD S0L2-G	STAMFORD S0L2-G	STAMFORD S0L2-G
No. of poles	4	4	4
Insulation class	H	H	H
No. of threads	12	12	12
Mechanical protection index	IP23	IP23	IP23
Voltage Regulator (AVR)	AS540	AS540	AS540
Voltage regulation	±1%	±1%	±1%
ESP power 27°C (kVA)	23,2	24,6	26,4
Power PRP 40°C (kVA)	21,1	22,4	24
No. of phases	3	3	3
Power factor (cos φ)	0,8	0,8	0,8
Performance η (%)			
50%	89,3%	89,3%	89,2%
75%	88,7%	88,7%	88,6%
100%	86,5%	86,5%	86,5%
110%	85,3%	85,2%	85,2%

- **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.**



Do you need an open or soundproofed generator?

The choice between an open or soundproofed unit will depend mainly on the location where it is to be installed and the permissible noise conditions at the site. So, if the equipment is going to be outdoors, or if noise pollution rates are a critical factor in your project, the obvious decision will be to opt for a soundproofed group.

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



Not sure if you need a soundproofed generator set for your installation?

Get in contact with us and we will advise you.

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 9150 12V, 3A

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



6.2. Protection switch

208/120V	Schneider EasyPact 80A 4P
220/127V	Schneider EasyPact 80A 4P
480/277V	Schneider Acti 9 32A 4P

6.3. Módulo de control



Model DSE 6020 MKII

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

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.

Ensayos ambientales que cumple el módulo:

| 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 (Vibration) | BS EN 60068-2-30 (Humidity) | BS EN 60068--

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6. Control panel

6.3. Control module



Model	DSE 6020 MKII	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	✓	✓

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
- ✗ Not available
- Optional
- ⓘ Consult

Readings available at control module level.

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

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6. Control panel

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	✓	✓

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- ✓ Includes
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- Optional
- ⓘ Consult

Readings available at control module level.

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

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6. Control panel

6.3. Control module



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

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
- ✗ Not available
- Optional
- ⓘ Consult

Readings available at control module level.

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

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7. Standard Scope of Delivery



Engine

- **PERKINS 404A-22G Diesel Engine**, 1800 rpm water cooled.
- With **mechanical regulation**.
- **Protection from hot and moving parts**.
- Electric motor starting system, **battery (maintenance-free) with switch** and load alternator driven by **starter motor of 12V**.
- **Efficient high-attenuation exhaust silencer of -30d(BA)** for the evacuation of gases to the outside with protective cover.



Alternator

- **12-Wire, 4-pole brushless STAMFORD S0L2-G alternator** with electronic voltage regulation type AVR (AS540).
- With IP23 protection level.
- **Insulation class H**.



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 80 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 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.
- DeepSea Electronics battery charger **DSE 9150 12V, 3A**. 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.



*CHECK THE SPECIFICATION ACCORDING TO THE MODEL.

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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 Industrial range.



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**.



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



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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 Industrial range that we make available to you to turn your unit into a unique machine.



24 hour tank



ROTH DUO SYSTEM outside tanks

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.

% load	Consumption (l/h)		Capacity (l): 24h tank - N/A l		48h tank - N/A l	
	PRP	ESP	Autonomy (h)		Autonomy (h)	
50%	3,5	-	PRP	ESP	PRP	ESP
75%	4,8	-	N/A	-	N/A	-
100%	6,2	6,9	N/A	N/A	N/A	N/A

• 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

- 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))
- Alternator anti-condensation resistors.
- Alternator superior impregnation systems.
- AVR MX341 + PMG ± 1% STAMFORD.
- AVR MX321 + PMG ± 0.5% STAMFORD.

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9. Even more options



Complete stainless steel canopy (304)

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.



DSE 2157



DSE 334 network surveillance

COMMUNICATION OPTIONS

- Supplement to the DSE 7320 MKII control board (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).
- GSM modem (RS232) (requires DSE 7320MKII).
- DSE 855.
- DSE 890 webnet.
- DSE 7420 module.
- DSE 334 network surveillance.



Socomec motorised switchboard

POWER OPTIONS

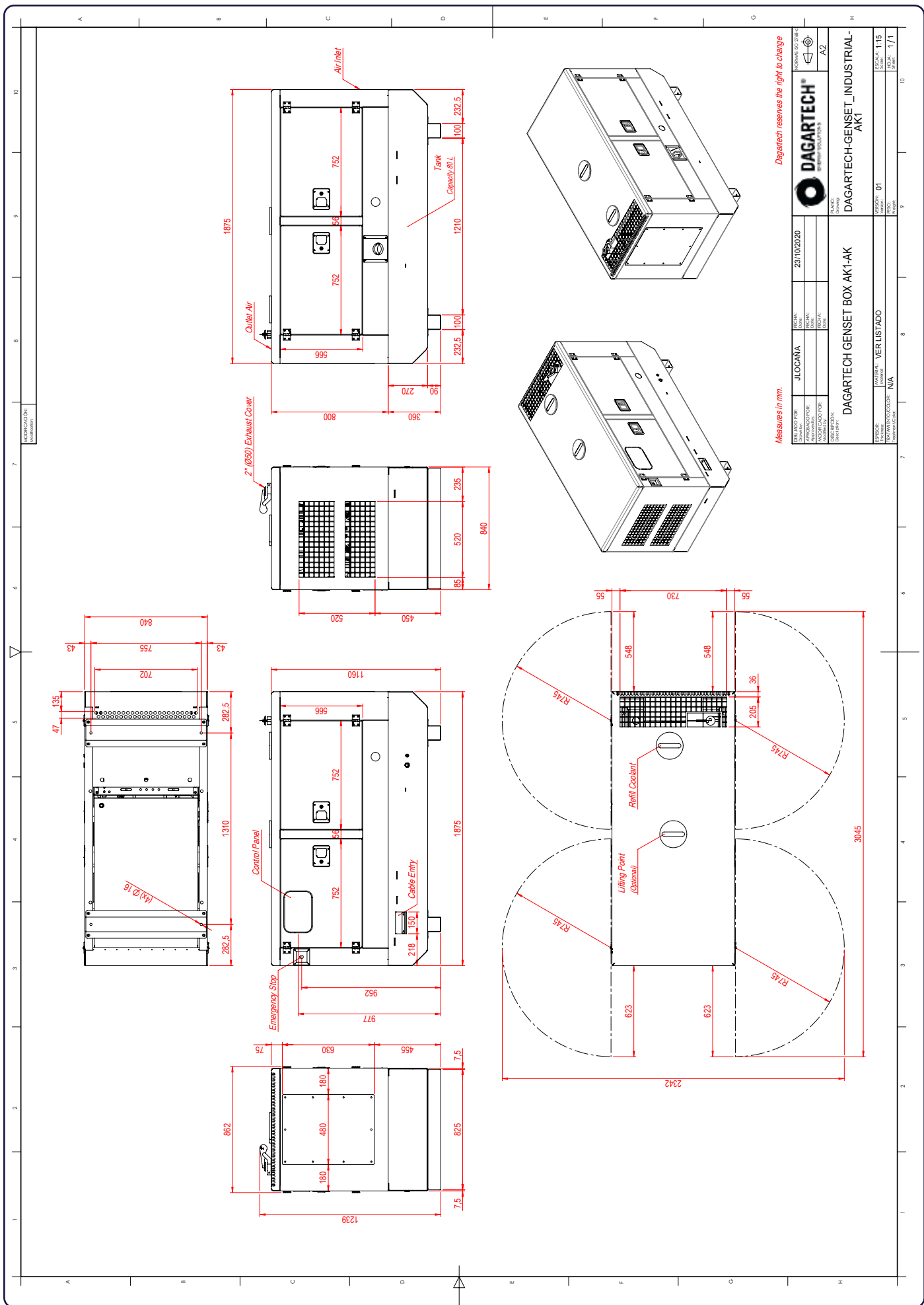
- Differential protection.
- As an option, you can include a switch cabinet attached to the generating set.
 - Switching with Schneider contactors. 25 to 125 A.
 - Socomec motorised switches: $\geq 125A$.

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CHECK THE AVAILABILITY OF THESE OPTIONS DEPENDING ON THE MODEL

Technical plan for orientation purposes. Dagartech reserves the right to modify the data in this technical sheet without prior notice.



Measures in mm. *Dagartech reserves the right to change*

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

Esríbenos
info@dagartech.com

Llámanos
+34 976 141 655

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

Write to us at
info@dagartech.com

Call us at
+34 976 141 655

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

Écrivez-nous
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Necessita de plano
de instalação em versão
com depósito de 24 horas?

Escreva-nos
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