

# DGYS 45 ST EU3A

## IndustrialPlus Range



### Ideal for...



 Weight with liquids without fuel: 1080 kg

 Dimensions Plat BK:  
L: 2300 mm  
W: 1042 mm  
H: 1411 mm

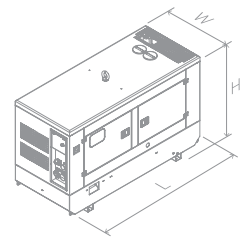


Image for orientation purposes. Dagartech reserves the right to modify the data in this technical sheet without prior notice. The weight of the equipment may vary depending on the equipment.



Diesel



EU Stage IIIA



Water-cooled



Soundproofed



CE Conformity

## 1. General technical data

General technical data	Engine	YANMAR 4TNV98T-ZGECS
	Alternator	STAMFORD S1L2-K
	Type of execution	G2
	Frequency	50Hz
	Voltage	400/230V
	Control panel	DSE 6020 MKII
	Fuel tank (l)	150
	Sound level-Lp(A) (dB(A)@7m)	63
	Sound power-LW(A) (dB(A))	91

Power <sup>1</sup> (m.p. cos φ 0,8)	PRP (kVA / kW)	40 / 32
	ESP (kVA / kW)	44 / 35

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

Voltage	PRP (KVA/KW)	ESP (KVA/KW)	Amperage (A)
400/230V	40 / 32	44 / 35	63,5

## 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 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

<b>2.1. General technical data of the engine</b>	<b>Make and model</b>	<b>YANMAR 4TNV98T-ZGECS</b>			
	r.p.m.	1500			
	Maximum ESP power (kWm)	41,9			
	Power PRP (kWm)	37,9			
	Fuel	Diesel			
	No. of cylinders	4 cylinders			
	Cylinder capacity (c.c.)	3319			
	Compression ratio	18,1			
	Cooling system	Water-cooled			
	Type of regulation	Electronic			
Type of engine/injection/suction	Diesel/direct/turbocharged				
<b>2.2. Fuel</b>	Type of fuel	Diesel			
	Fuel tank capacity	150			
<b>2.3. Consumption and autonomy</b>	<b>Consumption (l/h)</b>		<b>Autonomy (h)</b>		
		<b>PRP</b>	<b>ESP</b>	<b>PRP</b>	<b>ESP</b>
	<b>50%</b>	4,9	-	30,7	-
	<b>75%</b>	6,9	-	21,6	-
	<b>100%</b>	9,2	10,1	16,4	14,8
<b>2.4. Cooling system</b>	Fan flow (N/A)	N/A			
	Fan power consumption (kW)	N/A			
	Radiator back pressure (N/A)	N/A			
	Total refrigerant capacity (l)	8			
<b>2.5. Lubrication system</b>	Oil capacity (l)	11,2			
<b>2.6. Intake system</b>	Combustion air intake flow (m <sup>3</sup> /min)	3,24			
<b>2.7. Starter system</b>	No. of batteries	1			
	Battery characteristics	12V 60Ah			
	Start-up voltage (V)	12V			
<b>2.8. Exhaust system</b>	Exhaust gas flow (m <sup>3</sup> /min)	N/A [PRP]	0 [ESP]		
	Exhaust gas temperature (°C)	620° [PRP]	N/A° [ESP]		
	Exhaust outside diameter (mm)	2,5" (Ø 63,5)			
	Max. exhaust back pressure (N/A)	9,8			

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

**Emissions compliance EU Stage IIIA**

**Generator set exclusively for stationary use. It may not be used as a non-road mobile machine, according to the definition of EU Regulation 2016/1628 (Chapter I, Art. 3, P. 1).**

- **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** 12V, original elements from the engine manufacturer.

**Exhaust attenuation level -30dB(A)**

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

### 3. Alternator specifications

**3.1. General technical data for the alternator**

Make and model	STAMFORD S1L2-K			
No. of poles	4			
Insulation class	H			
No. of threads	12			
Mechanical protection index	IP23			
Voltage Regulator (AVR)	AS540			
Voltage regulation	±1%			
ESP power 27°C (kVA)	44			
Power PRP 40°C (kVA)	40			
No. of phases	3			
Power factor (cos φ)	0,8			
<b>Performance η (%)</b>				
	<b>50%</b>	<b>75%</b>	<b>100%</b>	<b>110%</b>
	90,7%	89,9%	87,8%	86,6%

- **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. **With retention bath.**
- 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.**

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

### 6.2. Protection switch

Model **Schneider Acti 9 63A 4P**

### 6.3. Control module



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.

### 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 6020 MKII	DSE 7320 MKII
<b>Operating modes</b>		
STOP mode	✓	✓
MANUAL mode	✓	✓
TEST mode	✓	✓
AUTO mode	✓	✓
<b>Module configuration options</b>		
PC	✓	✓
<b>Group readings</b>		
Generator voltage (F-F)	✓	✓
Generator voltage (F-N)	✓	✓
Generator current (A)	✓	✓
Generator frequency	✓	✓
Generator load F-N (kW / kVA / kVA <sub>r</sub> )	✓	✓
Total generator load (kW / kVA / kVA <sub>r</sub> )	✓	✓
Average generator power factor	✓	✓
Accumulated generator load (kW, kVAh, kWh, kVAh)	✓	✓
<b>Network readings</b>		
Network voltages (ph-N)	✓	✓
Network voltages (ph-ph)	✓	✓
Network frequency	✓	✓
Network current (A)	■	■
Network load ph-N (kW / kVA / kVA <sub>r</sub> )	■	■
Total network load (kW / kVA / kVA <sub>r</sub> )	■	■
<b>Engine readings</b>		
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.

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

## 6. Control panel

### 6.3. Control module



Model	DSE 6020 MKII	DSE 7320 MKII
<b>Engine protections</b>		
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	✓	✓
<b>Alternator protections</b>		
High frequency	✓	✓
Low frequency	✓	✓
High voltage	✓	✓
Low voltage	✓	✓
Short circuit	✗	✓
Asymmetry between phases	✗	■
Incorrect phase sequence	✗	✓
Reverse power	✗	✓
Breaker Trip 4 poles	■	■
Overpressure alarm	✓	✓
<b>Counters</b>		
Hour meter	✓	✓
Kilowatt meter	✓	✓
Starter counter	✓	✓

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## 6. Control panel

### 6.3. Control module



Model	DSE 6020 MKII	DSE 7320 MKII
<b>Communications</b>		
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
<b>Services</b>		
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	✓
<b>Special applications</b>		
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      ■ Optional  
 ✗ Not available      ⓘ Consult

Readings available at control module level.

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

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



## 7. Standard Scope of Delivery



### Engine

- **YANMAR 4TNV98T-ZGECS Diesel Engine**, 1500 rpm water cooled.
- With **Electronic regulation\***.
- **High performance filter** original from the manufacturer.
- **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 S1L2-K alternator** with electronic voltage regulation type AVR (AS540).
- With IP23 protection level.
- **Insulation class H.**
- **Reinforced terminal block** from 60kVA.



### 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 150 litres with retention bath**, 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.
- **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.
- **Differential protection.**
- **Emergency stop button.**
- **Reinforced pole** centrally-mounted. Central lifting eyebolt from 35kVA.
- **Radiator access door** (in 60 and 100kVA-C models).

\*ELECTRONIC MOTOR REGULATION FROM 45 KVA.  
\*\*CHECK THE SPECIFICATION ACCORDING TO THE MODEL.



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## 7. Standard Scope of Delivery

The RentalPlus Kit is included in the standard scope of supply of the machine. It consists of the following equipment:

### RentalPlus Kit

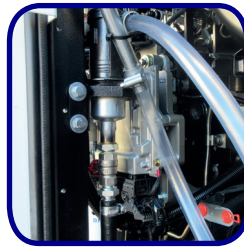


#### High performance fuel particle separator filter

- They maximize the separation of residues and particles from the fuel, thus prolonging the service intervals of the group in optimal conditions.



ORIGINAL FROM THE MANUFACTURER



#### Oil drain pump

- Makes it easy to remove engine oil for an oil change in minutes.



INCLUDED FROM 60KVA.



#### MX341 and permanent magnet on alternator

- With 2-phase sensing, driven by a permanent magnet generator (PMG), it offers protection against the effects of non-linear loads.



STARTING FROM 100KVA. LOWER MODELS INCLUDE AUXILIARY WINDING.

### Power sockets

- Different configurations depending on the model.



	CB 10 20 kVA (PRP)	CB 20 35-45 kVA (PRP)	CB 30 60 kVA (PRP)	CB 40 100-150 kVA (PRP)	CB 50 ≥200 kVA (PRP)
Schuko	1	1	1	2	2
16A 2P+T (230V)			1	1	1
16A 3P+N+T	1				
32A 3P+N+T	1	1	1	2	1
63A 3P+N+T		1	1	1	1
125A 3P+N+T					1

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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 RentalPlus range.



### If your generator set is going to change its location periodically ...

We offer you **construction trailers and approved wheels for road traffic**. And if you still need a more complete solution, we also offer you off-road wheels, with integrated suspensions and more complete equipment.



### If noise is a critical factor for you ...

For those applications in which noise is a critical factor, the SuperSilent Kit becomes a highly recommended option, which will offer you sound levels below the market average.

**It incorporates an exhaust of -50dB (A) and heavy mass in the alternator.** With this Kit, you will reduce the noise levels of the machine between 2 and 3 dB (A).

Check the noise level reduction depending on the model.



### 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.



### 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.

## 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

### 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 - 335 l		48h tank - -0 l	
	PRP	ESP	Autonomy (h)		Autonomy (h)	
<b>50%</b>	4,9	-	PRP	ESP	PRP	ESP
<b>75%</b>	6,9	-	68,5	-	N/A	-
<b>100%</b>	9,2	10,1	48,3	-	N/A	-
			36,6	33,1	N/A	N/A



+



Automation kit for network failure operation.

### ENGINE - ALTERNATOR OPTIONS

- Electronic engine regulation/management (for models with mechanical regulation)
- 50 / 60Hz selection (only models with electric motor regulation).
- Automation kit for mains failure operation (includes engine heating system + battery charger).
- 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.

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

## 9. Even more options



Complete stainless steel canopy (304)

### MECHANICAL OPTIONS

- 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 3110 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

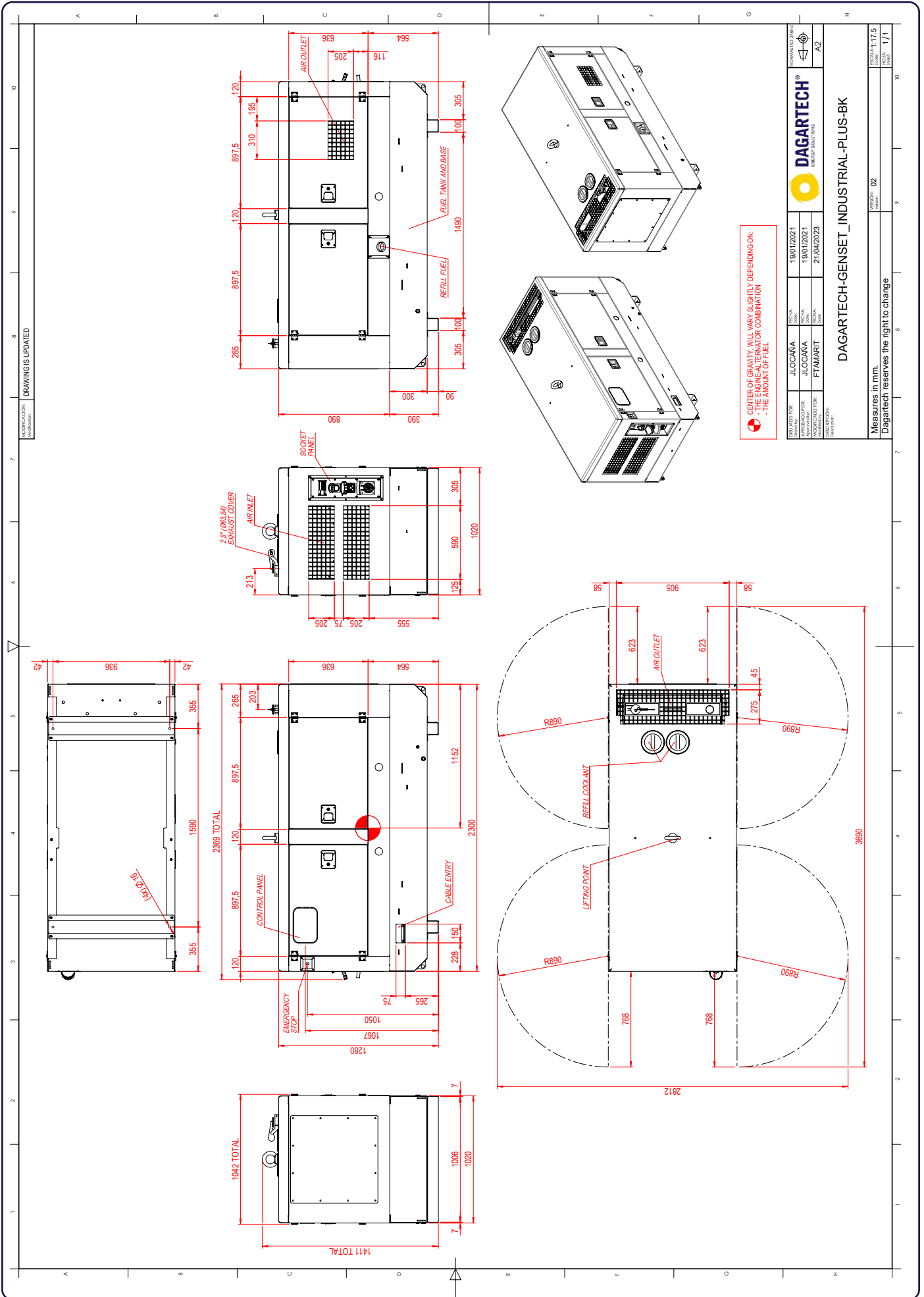
- As an option, you can include a switch cabinet attached to the generating set.
  - Switching with Schneider contactors. 25 to 125 A.
  - Socomec motorised switches:  $\geq 125A$ .

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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.



⚠ CENTER OF GRAVITY WILL VARY SLIGHTLY DEPENDING ON:  
- THE ENGINE-GENERATOR COMBINATION  
- THE AMOUNT OF FUEL

REVISED FOR:	REVISED FOR:	REVISED FOR:	REVISED FOR:
JIOCANÁ	JIOCANÁ	JIOCANÁ	JIOCANÁ
19/01/2021	19/01/2021	19/01/2021	19/01/2021
19/01/2021	19/01/2021	19/01/2021	19/01/2021
FTAMARIT	FTAMARIT	FTAMARIT	FTAMARIT
21/04/2023	21/04/2023	21/04/2023	21/04/2023
<b>DAGARTECH</b> <small>INDUSTRIAL-PLUS-BK</small>			
<b>DAGARTECH-GENSET _ INDUSTRIAL-PLUS-BK</b>			
Measures in mm.			ESCALA: 1:17.5
Dagartech reserves the right to change			INDIA: 1/1
REVISED FOR:			REVISED FOR:
JIOCANÁ			JIOCANÁ
19/01/2021			19/01/2021
19/01/2021			19/01/2021
FTAMARIT			FTAMARIT
21/04/2023			21/04/2023
21/04/2023			21/04/2023