









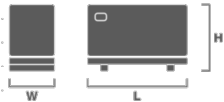
SMART RANGE

GENSET kVA GRUPEL / GRUPEL

1. MAIN FEATURES

| | | | |
|---|-------------------|---|------------------|
| T | Single-phase |  | Diesel |
|  | Grupel / 4GA22D50 |  | Grupel / 164GB18 |
|  | Grupel / G545 | Hz | 50 Hz |
|  | 1500 r.p.m. | V | 230 V |
| cos φ | 0.8 |  | 50 A |
| Standby Power(ESP) | | 12 kVA | 9 kW |
| Prime Power (PRP) | | 11 kVA | 8 kW |
| Continuous Power(COP) | | - | - |

SOUNDPROOF

| | | |
|------------------------------|---------|---|
| Length (L) | 1970 mm |  |
| Height (H) | 1120 mm | |
| Width (W) | 825 mm | |
| Weight | 705 kg | |
| Fuel tank daily capacity | 55 L | |
| Acoustic pressure level @ 1m | | 79 ± 2 dB(A) |
| Acoustic pressure level @ 7m | | 71 ± 2 dB(A) |

2. ROOM INSTALLATION

| EXHAUST SYSTEM | 50 Hz | | |
|-----------------------------------|-------|-------|------|
| | COP | PRP | ESP |
| Exhaust gas temperature (°C) | - | 550 | 550 |
| Exhaust gas flow (m³/min) | - | 3.5 | 3.8 |
| Evacuated heat (kW) | - | - | 4.08 |
| Maximum back pressure (kPa) | | 5 | |
| Exhaust silencer attenuation (dB) | | 18-25 | |
| Output diameter (mm) | | 65 | |

| VENTILATION SYSTEMS | 50 Hz | | |
|--------------------------------------|-------|------|-----|
| | COP | PRP | ESP |
| Combustion air flow (m³/min) | - | 1.7 | 1.9 |
| Cooling airflow (m³/min) | | 53 | |
| Maximum load losses (Pa) | | - | |
| Alternator cooling air flow (m³/min) | | 4.32 | |

| RADIATION | 50 Hz | | |
|-----------------|-------|------|------|
| | COP | PRP | ESP |
| Engine (kW) | - | - | - |
| Alternator (kW) | 1.54 | 1.54 | 1.68 |



3. ENGINE SPECIFICATIONS

| GENERAL SPECIFICATIONS | | 50Hz |
|------------------------------|--|-----------------------------------|
| Model | | 4GA22D50 |
| Emissions (UE/USEPA) | | Not applicable / Not applicable |
| Performance grade | | G3*, ISO 8528:5 2018 |
| Operating method | | 4 stroke |
| Fuel type | | Diesel |
| Refrigeration system | | Closed water circuit / antifreeze |
| Aspiration system | | Natural |
| Injection system | | Direct |
| No. and Cylinder arrangement | | 4 In-line |
| Displacement (L) | | 2.156 |
| Cylinder bore (mm) | | 85 |
| Cylinder stroke (mm) | | 95 |
| Compression ratio | | 18:1 |
| Regulation | | Electronic |
| Rotation speed (r.p.m.) | | 1500 |
| Piston speed (m/s) | | 4.8 |
| Gross power COP (kWm) | | - |
| Gross power PRP (kWm) | | 18.5 |
| Gross power ESP (kWm) | | 20.25 |
| Fan Power (kWm) | | - / 1 / 1 |
| Net Power COP (kWm) | | - |
| Net Power PRP (kWm) | | 17.5 |
| Net Power ESP (kWm) | | 19.25 |
| BMEP COP (kPa) | | - |
| BMEP PRP (kPa) | | 686 |
| BMEP ESP (kPa) | | 751 |



| CONSUMPTION | | | 50 Hz |
|------------------|----------------------------|--|-------|
| Fuel consumption | l/h | | g/kWh |
| ESP | 5.8 | | 240 |
| PRP | 5.3 | | 240 |
| COP | - | | - |
| 75% | 3.9 | | 235 |
| 50% | 2.8 | | 255 |
| Oil consumption | < 0.1% of fuel consumption | | |

| REFERENCE CONDITIONS | |
|----------------------------|-----|
| Temperature (°C) | 25 |
| Atmospheric pressure (kPa) | 100 |

| CAPACITY (°C) | |
|---------------|------|
| Coolant (L) | 10.6 |
| Oil (L) | 6.5 |

| STARTING SYSTEM | |
|-----------------|----|
| Voltage (V) | 12 |
| Power (kW) | 3 |
| Battery (Ah) | 62 |

4. ALTERNATOR SPECIFICATIONS

| GENERAL SPECIFICATIONS | |
|-------------------------------|---|
| Model | 164GB18 |
| Phases No. | Single-phase |
| Protection | IP23 |
| Insulation | H |
| Temperature rise | H |
| R.F.I. telephone interference | THF < 2% |
| R.F.I. Suppression | BS EN 61000-6-2 /6-4,VDE 0875G, VDE 0875N |
| Coupling | Flexible disks |
| Support | Single bearing |



| | |
|--|------------------|
| Wave form distortion with no load | < 1,5% |
| Wave form distortion with balanced linear load | < 5% |
| Winding Leads | 12 |
| Excitation (standard/optional) | Autoexcitado / - |
| AVR Model (standard/optional) | SX460 / - |
| Voltage Regulation (standard/optional) | ± 1 % / - |
| Icc (standard/optional) | - / - |

| PF (cos Ø) | Phase | Voltage (V) | Power PRP/ESP (kVA) | Efficiency PRP/ESP (%) | Xd | X'd | X''d |
|------------|--------------|-------------|---------------------|------------------------|-------|-------|-------|
| 0.8 | Single-phase | 230 | 10.5 / 11.5 | 81.7 / 81.7 | 1.711 | 0.174 | 0.109 |



5. CONTROL PANEL



| GENSET | Grupel G545 |
|-------------------------------|-------------|
| Voltage (F-F / F-N) | ● / ● |
| Current intensity | ● |
| Frequency | ● |
| RMS Values | ● |
| Generator phase sequence | ● |
| Generator earth current [a] | ○ |
| No. of registered events | 400 |
| Real time clock | ● |
| PIN Protection | ● |
| kWh, kVAR, kVAh, kVARh, cos Ø | ● |
| Synchroscope [i] | ○ |
| No. of available outputs [b] | 4 |
| Indication of alarms on LCD | ● |
| Hours of engine operation | ● |
| Total no. of LED indicators | 15 |
| No. of LED alarms | 4 |
| Sound signalling alarms | - |
| Schedule | ● |
| Fuel level | ● |

| ELECTRICAL GRID | Grupel G545 |
|--------------------------------------|-------------|
| Voltage (F-F / F-N) | ● / ● |
| Current [a] | ○ |
| Frequency | ● |
| kVA,kW, cos Ø [a] | ○ |
| Inversion control between main-group | ● |

| PROTECTIONS AND ALARMS | Grupel G545 |
|--------------------------------------|-------------|
| High / low battery voltage | A |
| Failure in battery charge alternator | A |
| Failure to stop | A/S |
| Failure to start | A/S |
| Low fuel level | A/S |
| Overload | A/S |
| Earth leakage | A/S |
| Asymmetry between phases | A/S |
| Maintenance | A/S |
| High / Low generator frequency | A/S |
| Engine overspeed | A/S |
| Engine underspeed | A/S |
| Generator overvoltage | A/S |
| Generator undervoltage | A/S |
| ECU Alert (if applicable) | A/S |
| Low oil pressure | A/S |
| Low level of radiator water [f] | A/S |
| Engine high temperature | A/S |
| Fuel leakage/ theft | A |



6. CONTROL PANEL

| ENGINE | Grupel G545 | APPLICATIONS | Grupel G545 |
|---|-------------|---|---------------|
| Engine speed | ● | Automatic or manual start-up | ● |
| Low oil pressure protection | ● | Remote start by dry contact | ● |
| Oil pressure reading [c] | ○ | Automatic by mains failure | ● |
| High temperature engine protection | ● | Alternating with timesharing | - |
| Engine temperature reading [c] | ○ | Multi-generators synchronization and load sharing (max. 48 generators) [i] | ○ |
| Engine battery voltage | ● | Generator-Mains in synchronism and load sharing (1 generator and 1 mains) [i] | ○ |
| Intensity of the engine battery [d] | ○ | | |
| Fuel Consumption [e] | ● | | |
| Low level of radiator water [f] | ○ | | |
| Scheduled engine maintenance | ● | | |
| COMMUNICATION | Grupel G545 | OPTIONAL EXPANSIONS | Grupel G545 |
| USB female type B (max. 6m) | ● | G-08 (8 dig. inputs) | ○ |
| USB female type A [g] | ○ | G-06 (8 relay outputs) | ○ |
| RS232 port (max. 15m) | - | G-GSM (GSM and/or GPS by MLAT) | ○ |
| RS485 port (max. 1,2Km) | ● | G-ETH (ethernet module) | ○ |
| Ethernet port RJ45 [g] | ○ | G-ETH (ethernet module according to SNMP protocol) | ○ |
| GSM + location via MLAT [h] | ○ | G545 (mirror controller, maximum distance 1km) | ○ |
| ModBus RTU protocol | ● | G175 (convert QTC into QTA) | ○ |
| ModBus TCP protocol [g] | ○ | G545 (convert QTC into QTA) | ○ |
| SNMP protocol [g] | ○ | | |
| CAN port (max. 40m) | ● | STANDARDS | |
| MSC port (max. 240m) [i] | ○ | Working temperature | -30 ≤ °C ≤ 70 |
| PLC functionality | ● | Protection degree (front panel) | IP65 |
| | | Degree of humidity (during 48hr) | 93%, 40°C |
| Legenda | | | |
| ● Available | | | |
| ○ Optional | | | |
| - Not available | | | |
| A Warning Alarm | | | |
| S Stop alarm | | | |
| [a] Need additional CT | | | |
| [b] No. of outputs available for standard configuration. The outputs do not include relays and additional terminal connections. | | | |
| [c] If the information is not provided by the engine-ECU, you need an additional sensor | | | |
| [d] Needs additional ammeter | | | |
| [e] If information provided by the engine ECU | | | |
| [f] Required additional sensor | | | |
| [g] Requires G-ETH | | | |
| [h] Requires G-GSM | | | |
| [i] Requires G-Sync | | | |

Dimensions and weights guidelines. Environmental reference conditions: 100kPa, 25 °C, 30% relative humidity and fuel temperature below 40 °C. Power ratings according to ISO 8528-1:2018.

Emergency power (ESP): Maximum power available to supply variable loads for a maximum period of 200h/year. The average load factor in 24h of operation must not exceed 70% of the ESP regime. It does not allow overload.

Prime power (PRP): Maximum power available to supply variable loads for an unlimited number of hours. The average load factor in 24 hours of operation must not exceed 70% of the PRP rating. Allows an overload of 10% for a maximum period of 1 hour every 12 hours of operation. Overloading may not exceed 25 hours/year.

Continuous power (COP): Maximum power available to supply constant loads for an unlimited number of hours per year, between the maintenance intervals and environmental conditions advertised by the manufacturer.

These specifications are subject to change without notice.

DISTRIBUTOR



Parque Empresarial de Soza, Parcela A, Lote 5 - 3840-342 - Vagos - Portugal
T: +351 234 790 070 F: (+351) 234 920 670 - geral@grupel.eu - www.grupel.eu