









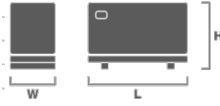
SMART RANGE

GENSET 20 KVA GRUPEL / GRUPEL

1. MAIN FEATURES

T Three-phase	 Oil	
 Grupel / 4GA22D50	 Grupel / 164GB18	
 Grupel / G545	Hz 50 Hz	
 1500 r.p.m.	V 400 V	
cos φ 0.8	 32 A	
Standby Power(ESP)	20 kVA	16 kW
Prime Power (PRP)	18 kVA	14 kW
Continuous Power(COP)	-	-

SOUNDPROOF

Length (L)	1970 mm	
Height (H)	1120 mm	
Width (W)	825 mm	
Weight	678 kg	
Daily tank	55 L	
Acoustic pressure level @ 1m	66 ± 3 dB(A)	
Acoustic pressure level @ 7m	53 ± 3 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)	2.58	2.58	2.86



3. ENGINE SPECIFICATIONS

GENERAL SPECIFICATIONS	50Hz
Model	4GA22D50
Emissions (UE/USEPA)	Not applicable / Not applicable
Performance grade	G2
Operating method	4 stroke
Fuel type	Oil
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)	0
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.	Three-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	Three-phase	400	18 / 20	82.1 / 82.1	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 registers 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	●
Engine run hours	●
Total no. of LED indicators	15
No. of LED alarms	4
Sound signalling alarms	-
Scheduler	●
Fuel level	●

ELECTRICAL NETWORK	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 starting	●
Low oil pressure protection	●	Remote start by NO 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-Main in synchronism and load sharing (1 generator and 1 main) [i]	○
Intensity of the engine battery [d]	○		
Fuel Consumption [e]	●		
Low level of radiator water [f]	○		
Engine maintenance scheduled	●		
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 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)	●		
MSC port (max. 240m) [i]	○		
PLC functionality	●		
Legenda		STANDARDS	
● Available		Working temperature	-30 ≤ °C ≤ 70
○ Optional		Protection index (when assembled with sealing gasket)	IP65 - Quando montado com junta de vedação
- Not available		Degree of humidity (during 48hr)	93%, 40°C durante 48h
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 guiding weights. 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 Industrial do Soza, Parcela A, Lt. 5 - 3840-342 - Vagos - Portugal
T: +351 234 790 070 F: (+351) 234 920 670 - geral@grupel.eu - www.grupel.eu