









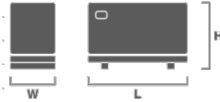
## SMART RANGE

## GENSET 22 KVA PERKINS / GRUPEL

### 1. MAIN FEATURES

<b>T</b> Three-phase	 Diesel	
 Perkins / 404A-22G1	 Grupel / 184GB23	
 Grupel / G545	<b>Hz</b> 50 Hz	
 1500 r.p.m.	<b>V</b> 400 V	
<b>cos φ</b> 0.8	 32 A	
Standby Power(ESP)	22 kVA	17 kW
Prime Power (PRP)	20 kVA	16 kW
Continuous Power(COP)	-	-

#### SOUNDPROOF

Length (L)	1620 mm	
Height (H)	1120 mm	
Width (W)	725 mm	
Weight	664 kg	
Daily tank	45 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)	-	445	505
Exhaust gas flow (m³/min)	-	3.64	3.94
Evacuated heat (kW)	-	14	16.6
Maximum back pressure (kPa)	10.2		
Exhaust silencer attenuation (dB)	18-25		
Output diameter (mm)	65		

VENTILATION SYSTEMS	50 Hz		
	COP	PRP	ESP
Combustion air flow (m³/min)	-	1.45	1.45
Cooling airflow (m³/min)	40.2		
Maximum load losses (Pa)	125		
Alternator cooling air flow (m³/min)	5.76		

RADIATION	50 Hz		
	COP	PRP	ESP
Engine (kW)	-	3.3	4.4
Alternator (kW)	2.72	2.72	3.02



### 3. ENGINE SPECIFICATIONS

GENERAL SPECIFICATIONS	50Hz
Model	404A-22G1
Emissions (UE/USEPA)	Not applicable / Not applicable
Performance grade	G2
Operating method	4 stroke
Fuel type	Diesel
Refrigeration system	Closed water circuit / antifreeze
Aspiration system	Natural
Injection system	Indirect
No. and Cylinder arrangement	4 In-line
Displacement (L)	2.216
Cylinder bore (mm)	84
Cylinder stroke (mm)	100
Compression ratio	23,3:1
Regulation	Mechanical / Electronic (optional)
Rotation speed (r.p.m.)	1500
Piston speed (m/s)	5
Gross power COP (kWm)	-
Gross power PRP (kWm)	18.7
Gross power ESP (kWm)	20.6
Fan Power (kWm)	- / 0 / 0
Net Power COP (kWm)	-
Net Power PRP (kWm)	18.4
Net Power ESP (kWm)	20.3
BMEP COP (kPa)	-
BMEP PRP (kPa)	669
BMEP ESP (kPa)	650



CONSUMPTION	50 Hz	
Fuel consumption	l/h	g/kWh
ESP	6.1	244
PRP	5.3	237
COP	-	-
75%	4	238
50%	2.9	258
Oil consumption	< 0.1% of fuel consumption	

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

CAPACITY (°C)	
Coolant (L)	7
Oil (L)	10.6

STARTING SYSTEM	
Voltage (V)	12
Power (kW)	2
Battery (Ah)	62

### 4. ALTERNATOR SPECIFICATIONS

GENERAL SPECIFICATIONS	
Model	184GB23
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	22.5 / 25	84.9 / 84.9	1.69	0.175	0.12



## 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