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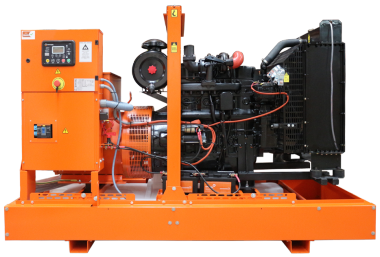


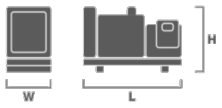
INDUSTRIAL RANGE — GENSET 220 KVA PERKINS / GRUPEL

1. MAIN FEATURES

Three-phase	Oil
Perkins / 1106A-70TAG4	Grupel / 274GB200
Grupel / G545	50 Hz
1500 r.p.m.	400 V
0.8	320 A

Standby Power(ESP)	220 kVA	176 kW
Prime Power (PRP)	200 kVA	160 kW
Continuous Power(COP)	-	-

OPEN SKID	
Length (L)	2520 mm
Height (H)	1800 mm
Width (W)	1185 mm
Weight	1597 kg
Daily tank	400 L
Acoustic pressure level @ 1m	- dB(A)
Acoustic pressure level @ 7m	- dB(A)



2. ROOM INSTALLATION

EXHAUST SYSTEM	50 Hz		
	COP	PRP	ESP
Exhaust gas temperature (°C)	-	550	550
Exhaust gas flow (m³/min)	-	34.9	36.8
Evacuated heat (kW)	-	148.1	158
Maximum back pressure (kPa)		6	
Exhaust silencer attenuation (dB)		18-25	
Output diameter (mm)		-	

VENTILATION SYSTEMS	50 Hz		
	COP	PRP	ESP
Combustion air flow (m³/min)	-	12.6	13.2
Cooling airflow (m³/min)		222	
Maximum load losses (Pa)		125	
Alternator cooling air flow (m³/min)		31.44	

RADIATION	50 Hz		
	COP	PRP	ESP
Engine (kW)	-	12.8	13.2
Alternator (kW)	10.72	10.72	11.79

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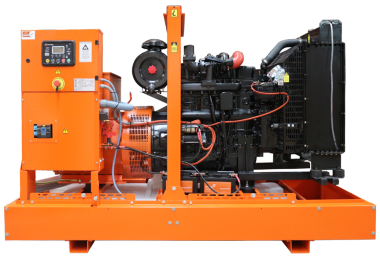

3. ENGINE SPECIFICATIONS

GENERAL SPECIFICATIONS	50Hz
Model	1106A-70TAG4
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	Turbocharged
Injection system	Direct
No. and Cylinder arrangement	6 In-line
Displacement (L)	7.01
Cylinder bore (mm)	105
Cylinder stroke (mm)	135
Compression ratio	16:1
Regulation	Electronic
Rotation speed (r.p.m.)	1500
Piston speed (m/s)	6.8
Gross power COP (kWm)	-
Gross power PRP (kWm)	178.9
Gross power ESP (kWm)	196.3
Fan Power (kWm)	- / 5 / 5
Net Power COP (kWm)	-
Net Power PRP (kWm)	173.9
Net Power ESP (kWm)	191.3
BMEP COP (kPa)	-
BMEP PRP (kPa)	2041.8
BMEP ESP (kPa)	2240.3

CONSUMPTION	50 Hz	
Fuel consumption	l/h	g/kWh
ESP	49.4	209
PRP	45.8	213
COP	-	-
75%	34.7	215
50%	23.1	215
Oil consumption	< 0.1% of fuel consumption	

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

CAPACITY (°C)	
Coolant (L)	21
Oil (L)	18

STARTING SYSTEM	
Voltage (V)	12
Power (kW)	4.2
Battery (Ah)	140

4. ALTERNATOR SPECIFICATIONS

GENERAL SPECIFICATIONS	
Model	274GB200
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 / PMG
AVR Model (standard/optional)	SX460 / MX341
Voltage Regulation (standard/optional)	± 1 % / ± 0,5 %
Icc (standard/optional)	- / 3In:10s

			Power	Efficiency			
PF (cos Ø)	Phase	Voltage (V)	PRP/ESP (kVA)	PRP/ESP (%)	Xd	X'd	X"d
0.8	Three-phase	400	200 / 220	93.3 / 93.3	1.91	0.16	0.11

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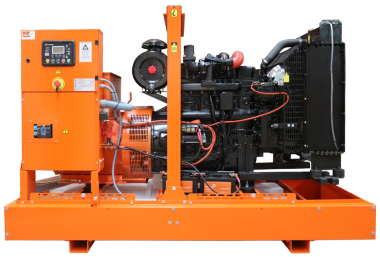

5. CONTROL PANEL

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

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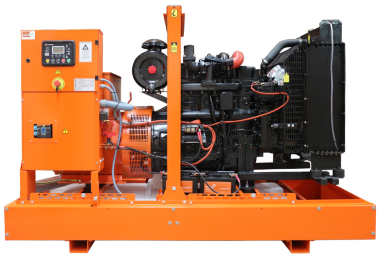

6. CONTROL PANEL

ENGINE	Grupel G545
Engine speed	●
Low oil pressure protection	●
Oil pressure reading [c]	○
High temperature engine protection	●
Engine temperature reading [c]	○
Engine battery voltage	●
Intensity of the engine battery [d]	○
Fuel Consumption [e]	●
Low level of radiator water [f]	○
Engine maintenance scheduled	●

COMMUNICATION	Grupel G545
USB female type B (max. 6m)	●
USB female type A [g]	○
RS232 port (max. 15m)	-
RS485 port (max. 1,2Km)	●
Ethernet port RJ45 [g]	○
GSM + location via MLAT [h]	○
ModBus RTU protocol	●
ModBus TCP protocol [g]	○
SNMP protocol [g]	○
CAN port (max. 40m)	●
MSC port (max. 240m) [i]	○
PLC functionality	●

APPLICATIONS	Grupel G545
Automatic or manual starting	●
Remote start by NO dry contact	●
Automatic by mains failure	●
Alternating with timesharing	●
Multi-generators synchronization and load sharing (max. 48 generators) [i]	○
Generator-Main in synchronism and load sharing (1 generator and 1 main) [i]	○

OPTIONAL EXPANSIONS	Grupel G545
G-08 (8 dig. inputs)	○
G-06 (8 relay outputs)	○
G-GSM (GSM and/or GPS by MLAT)	○
G-ETH (ethernet module)	○
G-ETH (ethernet module according SNMP protocol)	○
G545 (mirror controller, maximum distance 1km)	○
G175 (convert QTC into QTA)	○
G545 (convert QTC into QTA)	○

STANDARDS	
Working temperature	-30 ≤°C ≤ 70
Protection index (when assembled with sealing gasket)	IP65 - Quando montado com junta de vedação
Degree of humidity (during 48hr)	93%, 40°C durante 48h

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 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.

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