



SMART RANGE

1 MAIN FEATURES

T Triphasic
 Diesel fuel
 Perkins / 404A-22G1
 Grupel / 184GB23
 / 4520

Hz 50Hz
 1500 r.p.m.
 V 400V
 cos φ 0,8

Standby power (STP)	22 kVA	17 kW
Prime Power (PRP)	20 kVA	16 kW
Power Continuous (COP)	- kVA	- kW

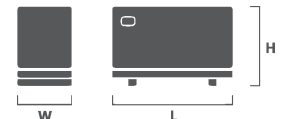
OPEN SKID

Length (L)	1250 mm
Height (H)	1110 mm
Width (W)	960 mm
Weight	482 kg
Daily tank	80 L



SOUNDPROOF

Length (L)	1600 mm
Height (H)	1110 mm
Width (W)	700 mm
Weight	657 kg
Daily tank	40 L



50Hz

Acoustic pressure level @1m	-
Acoustic pressure level @7m	-

50Hz

Acoustic pressure level @1m	66 dB(A)
Acoustic pressure level @7m	53 dB(A)

AVAILABLE VOLTAGES - 50Hz

FP (cos Ø)	Phase	Voltage	COP (kVA/kW)	PRP (kVA/kW)	STP (kVA/kW)	Circuit breaker (A)
0,8	Three-phase	440	- / -	20 / 16	22 / 17	32
0,8	Three-phase	415	- / -	20 / 16	22 / 17	32
0,8	Three-phase	400	- / -	20 / 16	22 / 17	32
0,8	Three-phase	380	- / -	19 / 16	21 / 17	32
0,8	Three-phase	240	- / -	20 / 16	22 / 17	50
0,8	Three-phase	230	- / -	20 / 16	22 / 17	50
0,8	Three-phase	220	- / -	20 / 16	22 / 17	63
0,8	Single phase	240	- / -	14 / 11	15 / 12	63
1	Single phase	240	- / -	10 / 10	11 / 11	50
0,8	Single phase	230	- / -	14 / 11	15 / 12	63
1	Single phase	230	- / -	10 / 10	11 / 11	50
0,8	Single phase	220	- / -	14 / 11	15 / 12	63
1	Single phase	220	- / -	10 / 10	11 / 11	50

2 ROOM INSTALLATION

EXHAUST SYSTEM	50 Hz		
	COP	PRP	STP
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)		30	
Output Diameter (mm)		65	

VENTILATION SYSTEMS	50 Hz		
	COP	PRP	STP
Combustion air flow (m³/min)	-	1,45	1,45
Cooling airflow (m³/min)		40,2	
Maximum load losses (Pa)		125	
RADIATION	50 Hz		
	COP	PRP	STP
Engine (kW)	-	3,3	4,4
Alternator (kW) 50	2,7	2,7	3,0

3 ENGINE SPECIFICATIONS

GENERAL SPECIFICATIONS	50 Hz
Model	404A-22G1
Emissions	Not satisfy 97/68/EC
Performance grade	G2
Operating method	Four stroke
Fuel type	Diesel fuel
Refrigeration system	Water/antifreeze Closed Circuit
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	Mechanic / optional electronic
Rotation speed	1500
Piston Speed (m/s)	5
Gross power COP (kWm)	-
Gross power PRP (kWm)	18,7
Gross power STP (kWm)	20,6
Fan power (kWm)	0,3
Net Power COP (kWm)	-
Net Power PRP (kWm)	18,4
Net Power STP (kWm)	20,3
BMEP COP (kPa)	-
BMEP PRP (kPa)	669
BMEP STP (kPa)	650



CONSUMPTION		50 Hz	
Fuel consumption	LOAD	lt/h	g/kWh
STP	100%	6,1	244
	100%	5,3	237
	75%	4	238
PRP	50%	2,9	258
	100%	-	-
	75%	-	-
COP	50%	-	-

Oil consumption < 0,1% of fuel consumption

REFERENCE CONDITIONS

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

CAPACITY

Coolant (L)	7
Oil (L)	10,6

STARTING SYSTEM

Voltage (V)	12
Power (kW)	2
Battery (Ah)	60

4 ALTERNATOR SPECIFICATIONS

GENERAL SPECIFICATIONS	
Model	184GB23
Phases No.	Triphasic
Protection	IP23
Insulation	H
Temperature Rise	H
50Hz R.F.I. telephone interference	THF<2%
60Hz R.F.I. telephone interference	TIF<50
R.F.I. Suppression	BS EN 61000-6-2 /6-4, VDE 0875G, VDE 0875N.
Coupling	Semi-Flexible
Support	Single bearing



Wave form distortion with no load	< 1,5%
Wave form distortion with balanced linear load	< 5%
Winding Leads	12
Excitation (standard / option)	Self-excited / -
AVR Model (standard / option)	SX460/ -
Voltage Regulation (standard / option)	± 1,0%/ -



SMART RANGE

RATED POWER - 50Hz

FP (cos Ø)	Phase	Voltage (V)	Power		Efficiency		
			PRP/STP (kVA)	PRP/STP (%)	Xd	X'd	X''d
0,8	Three-phase	440	23 / 25	85,6 / 85,6	1,690	0,175	0,120
0,8	Three-phase	415	23 / 25	85,3 / 85,3	1,690	0,175	0,120
0,8	Three-phase	400	23 / 25	84,9 / 84,9	1,690	0,175	0,120
0,8	Three-phase	380	23 / 25	84,3 / 84,3	1,690	0,175	0,120
0,8	Three-phase	240	23 / 25	85,3 / 85,3	1,690	0,175	0,120
0,8	Three-phase	230	23 / 25	84,9 / 84,9	1,690	0,175	0,120
0,8	Three-phase	220	23 / 25	85,6 / 85,6	1,690	0,175	0,120
0,8	Single phase	240	14 / 15	83,2 / 83,2	1,690	0,175	0,120
1	Single phase	240	13 / 14	83,2 / 83,2	1,690	0,175	0,120
0,8	Single phase	230	14 / 15	83,2 / 83,2	1,690	0,175	0,120
1	Single phase	230	13 / 14	83,2 / 83,2	1,690	0,175	0,120
0,8	Single phase	220	14 / 15	83,2 / 83,2	1,690	0,175	0,120
1	Single phase	220	13 / 14	83,2 / 83,2	1,690	0,175	0,120

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CONTROL PANEL



GENSET	DEEPSEA 4520	OPTIONAL
Voltage (Ph-Ph / Ph-N)	• / •	• / •
Current intensity	•	•
Frequency	•	•
RMS values	•	•
Generator phase sequence	-	o
Generator earth current [a]	-	o
No. of registers events	15	250
Real time clock	•	•
PIN protection	•	•
kWh, kVAr, kVAh, kVAh, cos Ø	•	•
Synchroscope (m)	-	o
Nº of available outputs [b]	2	6
Engine run hours	•	•
Indication of alarms on LCD	•	•
Total no. of LED indicators	3	12
No. of LED alarms	-	4
Sound signalling alarms	•	•
Scheduler	•	•
Fuel Level	•	•

Electrical network	DEEPSEA 4520	OPTIONAL
Voltage (Ph-Ph / Ph-N)	• / •	• / •
Current intensity [a]	-	o
Frequency	•	•
kVA, kW, cos Ø (a)	-	o
Inversion control between main-group	-	o
Protections and Alarms	DEEPSEA 4520	OPTIONAL
High / low battery voltage	A	o
Failure in Battery Charge Alternator	A	o
Failure to stop	A/S	A/S
Failure to start	A/S	A/S
Low fuel level	A/S	A/S
Overload	A/S	A/S
Earth leakage	-	o
Asymmetry between phases	-	o
Maintenance	A/S	A/S
High / Low generator frequency	A/S	A/S
Engine overspeed	A/S	A/S
Engine underspeed	A/S	A/S
Generator overvoltage	A/S	A/S
Generator undervoltage	A/S	A/S
ECU Alert (if applicable)	A/S	A/S
Low oil pressure	A/S	A/S
Low level of radiator water [f]	A/S	A/S
Engine high temperature	A/S	A/S
Fuel leakage/ theft	-	o

6 CONTROL PANEL

Engine	DEEPSEA 4520	OPTIONAL
Engine Speed	•	•
Low oil pressure protection	•	•
Oil pressure reading [c]	o	o
High temperature engine protection	•	•
Engine temperature reading [c]	o	o
Engine battery voltage	•	•
Intensity of the engine battery [d]	o	o
Fuel Consumption [e]	•	•
Low level of radiator water [f]	o	o
Engine maintenance scheduled	•	•
Communication	DEEPSEA 4520	OPTIONAL
USB female type B plug (Max. 6m) [g]	•	•
USB female type A plug (n)	-	o
RS232 port (Max. 15m) (n)	-	o
RS485 port (Max. 1,2Km) [h]	-	o
Ethernet port RJ45 [i]	o	o
GSM and/or GPS [j]	o	o
ModBus RTU protocol [h]	-	o
ModBus TCP protocol [i]	-	o
SNMP protocol [l]	o	o
CAN port (Max. 40m)	•	•
MSC port (Max. 240m) (m)	-	o
PLC functionality	-	o

Applications	DEEPSEA 4520	OPTIONAL
Automatic or manual starting	•	•
Remote start by NO dry contact	•	•
Automatic by mains failure	•	•
Alternating with timesharing	-	o
Multi-generators synchronization and load sharing (Max. 32 generators) (m)	-	o
Generator-Main in synchronism and load sharing (1 generator and 1 main) (m)	-	o
Optional expansions	DEEPSEA 4520	OPTIONAL
DSE2130 (8 inputs dig.) IG-IOM (8 in/outputs dig. + 4 inputs anal.) G-08 (8 inputs dig.)	-	o
DSE2157 I-RB8 G-06 (8 relay outputs)	-	o
DSE890 IL-NT-GPRS G-GSM (GSM and/or GPS)	•	•
DSE891 IB-LITE G-ETH (ethernet module)	•	•
DSE892 IB-LITE - (ethernet module according SNMP protocol)	•	•
DSE2548 IGL-RA15 - (expansion with 8 additional LEDs)	-	o
DSE2510 / 20 (mirror controller, maximum distance 1km)	-	o
Standards		
Working temperature	-30 -> 70°C	
Protection index (when assembled with sealing gasket)	IP65	
Degree of humidity (during 48hr)	93% / 40°C	

Legend

•	Available
o	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 the addition of the IL-NT-S-USB module
[h]	Requires the addition of the IL-NT-RS232-485 module
[i]	DeepSea: Requires the addition of the DSE891 module/ ComAp: Requires the addition of the IB-LITE module
[j]	DeepSea: Requires the addition of the DSE890 module/ ComAp: Requires the addition of the IL-NT-GPRS module
[l]	DeepSea: Requires the addition of the DSE892 module/ ComAp: Requires the addition of the IB-LITE module

Indicative weights and dimensions. Reference ambient conditions: 100kPa, 25°C, 30% relative humidity and fuel temperature below 40°C. Power in accordance with ISO 8528: Continuous power (PRP): Maximum available power to feed a variable electrical load for an unlimited period. The average of load factor in 24h of operation, shall not exceed 70% of the PRP. Admits 10% of overload during the maximum period of 1h every 12h of operation. The operation under overload shall not exceed 25h/year. Emergency Power (STP): Maximum available power to feed variable electrical load for a maximum period of 200h/year. The average of load factor in 24h of operation shall not exceed 70% of the STP. No overload. These specifications are subject to change without notice.

Distribuidor