



Specification	Standby Power	Prime Power
Genset Output	22KVA	20KVA
	22KW	20KW
Frequency/RPM	60Hz /1800	
Standard Voltage	220V	
Phase	Single	

General Technical Data	
Genset Model	LG22F-1P
Engine Brand/Model	FAWDE 4DW91-38D
LEEGA Alternator	LA184G18
Speed Control Type	Mechanical (Options: Electronic)
Standard Controller Model	ComAp IL4-AMF8/ Deepsea DSE6020 MKII

Generator Set Fuel Consumption (L/hr)	
110% load-Standby Power	8.5
100% load-Prime Power	7.7
75% load-Prime Power	5.8
50% load-Prime Power	3.8

Generator Set Ratings						
Voltage	Ph	Standby Rating			Prime rating	
		KVA	KW	AMPS	KVA	KW
220v	1	22	22	100.0	20	20
230v	1	22	22	95.7	20	20
240v	1	22	22	91.7	20	20

Weight And Dimensions		
	Open Type	Silent Type
Length(mm)	1600	2100
Width(mm)	730	850
Height(mm)	1250	1140
Net Weight (Kg)	560	780
Fuel Tank Capacity(L)	140	68
Running Hours -100% Load	18.2	8.8

Note: Weights and dimensions based on standard products, not used for installation.

LEEGA Company are in conformity with certification ISO 9001/ ISO14001/ISO18001 and LEEGA gensets are compliant with CE Standard. Best quality of electricity, high starting and loading capacity according to ISO8528-5
Ambient conditions of reference according to ISO 8528-1:2018 normative: 1000 mbar, 25°C, 30% relative humidity.

Prime Power (PRP):

According to ISO 8528-1:2018, Prime power is the maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer. The permissible average power output (Ppp) over 24 h of operation shall not exceed 70 % of the PRP.

Emergency Standby Power (ESP):

According to ISO 8528-1:2018, Emergency standby power is the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering, in the event of a utility power outage, or under test conditions for up to 200 h of operation per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. The permissible average power output over 24 h of operation shall not exceed 70 % of the ESP.

Continuous Power (COP):

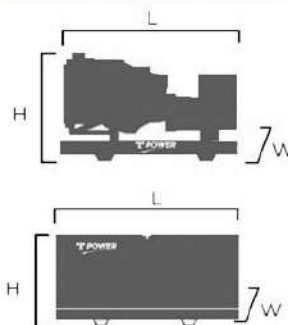
According to Standard ISO 8528-1:2018, this is the maximum power available for continuous loads for unlimited running hours a year between the maintenance times recommended by the manufacturer under the environmental conditions established by the same.

Operating Environmental Requirement

Ambient Temperature : -25°C-50°C (Heater must be included when in low temperature)

Humidity: Less than 80%

Altitude: Up to 1000meters (For higher altitude application, please consult with LEEGA Team)



Diesel Engine Specifications | 1800RPM

General Engine Spec

Manufacturer:	FAWDE
Model:	4DW91-38D
Cylinders No/arrangement:	4 / In-line
Compression Ratio:	18:1
Injection Type	Direct
Aspiration type:	Naturally Aspirated
Bore x Stroke:	90x100mm
Displacement	2.545L

FUEL SYSTEM

Fuel System:	Mechanical/ Electronic
Speed regulation rate insteadey state	5%/3%
Average effective pressure(MPa)	0.73

INDUCTION SYSTEM

Permissible max. air intake resistance (kPa)	3.7
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LUBRICATION SYSTEM

Lubricating oil capacity (with filter) (L)	8
Lubricating oil consumption(L/h)	0.05
Oil pressure sensor parameter (MPa)	0.08 MPa

Engine Design Performance

	Standby Power	Prime Power
Gross Engine Output(KW)	31	28
Fan power(KW):	1.8	
Mean piston speed(M/s):	-	
Engine Water Flow(L/min):	-	
Intake Air Flow(m³/min):	2.3	
Exhaust Gas Flow(m³/min):	6.6	
Exhaust Gas Temp(°C):	500	

COOLING SYSTEM

Water pump flow rate-lift (L/s-mH ₂ O 2708rpm	73-6.5m
Water temperature sensor parameter	97°C±2°C

ELECTRICAL SYSTEM

Alternator	750W, 14 volts
Starter motor	3.5KW, 12 volts

EXHAUST SYSTEM

Maximum Back Pressure (kPa)	6.7
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Alternator Specifications | 60Hz

General Alternator Spec

Poles	4
Insulation	Class H
Protection Rating	IP23
Exciter System	Self-excited, Brushless
AVR Regulation Range	±1%
Number Of Bearing	Single Bearing
Coupling System	Flexible Disc
Winding Pitch	2/3
Overspeed Protection	2250R.P.M

Alternator Standard Features

- (1) All models are brushless, rotating-field alternators
 - (2) Alternator meet the main international standard of IEC 60034, NEMA MG 1.32-33, BS 5000 Part 99, VDE 0530, ISO 8528/3
 - (3) The AVR voltage regulator provides superior short circuit capability
 - (4) Self-ventilated and dip proof construction
 - (5) Superior voltage waveform
- Note: See Alternator Data Sheets for application data and ratings, efficiency curves, voltage dip with motor starting curves, and short circuit decrement curves

Control System- ComAp IL4 Controller Series

Controller model please refer to the scope of supply

Model	AMF8	AMF20	AMF25
Binary Inputs	6+1	6+1	8+1
Binary Outputs	6	6	8
Analog Inputs(U/I/R)	3	3	4
5V reference output	●	●	●
Magnetic pick-up	●	●	●
CAN (ECU)	●	●	●
RS485 (on board)	x	x	●
USB Host (on board)	x	●	●
USB Device (on board)	●	●	●
Plug-in modules	1	1	2
CAN modules	2	2	5
AirGate / WSV	●	●	●
History records	150	350	350
Alternative configuration	3	3	3
Calendar/Scheduler	2	4	4
Remote display support	●	●	●
Load Shedding	2	5	5
Maintenance Timers	3	3	3
Analogue switch	x	x	4
AMF FUNCTION	●	●	●

Key Function

Control	Auto/Start/Stop Control
	Emergency Stop Pushbutton/ Alarm
	Engine Cool Down Timer
	Warm - up Timer
	Load Switching Timer
	Engine Cycle Crank
Indications	Operating Hours
	3 Phase Generator Voltage Sensing & Monitoring
	Current Protection & Monitoring
	Measurement (kW, kVA, kVAR, kWh, kVAh, pf)
	Frequency Monitoring (Hz)
	Oil Pressure/Coolant Temperature/Fuel Level Monitoring
	Battery Voltage Monitoring (DC)
	Alarm (Acknowledge)
Warning & Shutdown Alarms	Generator Over/Under Voltage & Frequency
	Crank Disconnect (Failure to Start)
	Under/Over Speed
	Over Current
	Low oil pressure
	High Water Temperature
	Low Fuel Level
	Low Water Level

Application Overview

AMF

Mains & Generator
Circuit Breaker



MRS

Generator Circuit
Breaker



Controller Overview



Operating Conditions

Operating temperature	-20 °C to +70 °C
Storage temperature	-30 °C to +80 °C
Protection degree (front panel)	IP 65
Operating humidity	95 % w/o condensation
Vibration	5-25 Hz, ± 1.6 mm 25-100 Hz, a = 4 g
Shocks	a = 500 m/s ²
Surrounding air temperature rating	70 °C
Suitable for pollution degree	2

Controller Optional Plug-in Modules

- CM RS232-485 - Dual port interface
- CM2-4G-GPS - 4G & GPS plug-in communication module
- CM3-Ethernet - Internet / Ethernet plug-in communication module
- EM-BIO8-EFCP - 8 additional binary inputs/outputs

DEEPSEA- DSE Controller Series

Controller model please refer to the scope of supply

Model	DSE4520	DSE6020	DSE7320	DSE7420
Binary Inputs	4	6	8	8
Binary Outputs	6	6	10	10
Analog Inputs(U/I/R)	3	4	6	6
Magnetic pick-up	●	●	●	●
CAN (ECU)	●	●	●	●
RS485 (on board)	x	x	●	●
USB (on board)	●	●	●	●
RS232 (on board)	x	x	●	●
Plug-in modules	x	x	●	●
CAN modules	●	x	●	●
Modbus	●	●	●	●
History records	50	50	250	250
Alternative configuration	4	2	6	6
Calendar/Scheduler	●	●	●	●
Maintenance Timers	3	3	3	3
AMF FUNCTION	●	●	●	●

Key Function

Control	Auto/Start/Stop Control
	Emergency Stop Pushbutton/ Alarm
	Engine Cool Down Timer
	Warm - up Timer
	Load Switching Timer
	Engine Cycle Crank
Indications	Operating Hours
	3 Phase Generator Voltage Sensing & Monitoring
	Current Protection & Monitoring
	Measurement (kW, kVA, kVAR, kWh, kVAh, pf)
	Frequency Monitoring (Hz)
	Oil Pressure/Coolant Temperature/Fuel Level Monitoring
	Battery Voltage Monitoring (DC)
Warning & Sutdown Alarms	Alarm (Acknowledge)
	Generator Over/Under Voltage & Frequency
	Crank Disconnect (Failure to Start)
	Under/Over Speed
	Over Current
	Low oil pressure
	High Water Temperature
	Low Fuel Level
	Low Water Level

Application Overview

AMF

Mains & Generator
Circuit Breaker



MRS

Generator Circuit
Breaker



Controller Overview



Operating Conditions

Operating temperature	-30 °C to +70 °C
Storage temperature	-40 °C to +85 °C
Protection degree (front panel)	IP 65
Operating humidity	95 % w/o condensation
Vibration	5 Hz to 8 Hz at +/-7.5 mm, 8 Hz to 500 Hz at 2 gn
Shocks	15 gn in 11 Ms

LEEGA Genset Optional Specifications

Generator Sets	
Engine	Water Jacket Pre-heater
	Oil Pre-heater
	Fuel-Water Separator
Alternator	Winding and Bearing Temperature Detector(RTD)
	Anti-condensation Heater(Space Heater)
	PMG / AREP
	Anti-damp and anti-corrosion treatment
Electrical System	ATS
	Remote Control and Monitoring
	Synchronizing System
	3/5 Pin sockets with RCBO protection
Fuel System	Bunded Double Wall Base Fuel Tank
	Extended To Larger Capacity Base Tank
	Free-stand Daily Fuel Tank
	Automatic fuel feeding system
Canopy	Fuel T-valves
	Trailer
	Rental Type Design

Optional Controller Model	
ComAp Controller For Single Genset Application	ComAp Nano MRS 3
	ComAp AMF8
	ComAp AMF20
	ComAp AMF25
ComAp Controller For Multi Genset Application	ComAp IG200
	ComAp IG-NT
	DSE4520 MKII
Deepsea Controller For Single Genset Application	DSE6020 MKII /DSE6120 MKII
	DSE7320 MKII /DSE7420MKII
	DSE8610 MKII
Deepsea Controller For Multi Genset Application	DSE8810 MKII