

**M-K SERIES**

DIESEL GENERATOR SET POWERED BY **KOFO** ENGINE WITH **SZN** ALTERNATOR

**M-K25**

POWER RATING (0.8P.F.)	STANDBY OUTPUT: <b>20KW/25KVA</b>	50HZ/1500RPM/400/230V
	RATED OUTPUT: <b>18KW/23KVA</b>	/3phase

**CONDITIONS & DEFINITIONS**

**Stand-by:Code: S**

Applicable for supplying emergency power at varying load in the event of normal utility power interruption. Fuel stop power in accordance with ISO15550, ISO3046/1, JISB8002, DIN6271 and BS5514.

**Prime:Code:CP**

Applicable for supplying power with varying load instead of the utility for an unlimited time. Prime power in accordance with ISO 8528.

**Conditions:**

Engine rating are based on SAE J1349 standard conditions are also apply at ISO3046/1, DIN6271 & BS5514 Standard conditions.

Fuel rates:Base on ASTM D975, BS2869 and on fuel oil of 35°API (16°C or 60°F) gravity having a LHV of 42,780 Kj/Kg (18,390 Btu/lb.) when used at 29°C(85°F) and weighing 838.9 g/liter (7.001lbs./U.S. gal.).

**Factory Test**

Each generating sets must be got through 1 hour load test for running 0%, 50%, 75%, 100% and 110% load before dispatch, All protective devices, control functions are simulated and its system checked, proved and then passed for dispatch. A test certificate can be provided upon request.

**DIMENSIONS**

Standard Generator Set	Soundproof type			
	L:	Length	mm	2150
Overall dimensions	W:	Width	mm	900
	H:	Height	mm	1150

**Gen Set standard collection**

- 1.Brand new KOFO engine, 4stroke, 1500rpm diesel engine
- 2.Brand new SZN Alternator, 4 pole, synchronic type with self excited system, Brushless, IP23, ClassH
3. DATAKOM D300, digital module controller
4. LED lights installed inside of the genset
5. Vibration isolators between the engine/ alternator and base frame
6. High quality DC electronic battery charger.
- 7.DELIXI circuit breaker with 4pole
8. One of the top brands good quality Battery, battery tray and cable.
- 9.Rubber absorber for engine, radiator,alternator and control panel.
10. Adopting the high pressure fuel inlet pipe, flexible oil pipes and oil draining valve
11. Strong and big radiator ,good in anti-vibration and cooling the genset.
12. Strong and big Industrial silencer, its covered by heat-resist material
13. The generator set with 8hours 100% load running, intergrated fuel tank

14. Silent type generator, designed as containerized type with most firm and strong material enclosure, polyester powder covers the enclosure that keeps the generator neither fading nor change for years, anti-corrosion.

15. English operation/maintenance manuals, test report and wiring diagram

## DIESEL ENGINE: KOFO 4YT23-20D 50HZ/1500RPM

4 stroke-cycle, 4 cylinders vertical in-line, Natural aspiration

### ENGINE SPECIFICATIONS & TECHNICAL DATA

Prime power	KW	20
Bore	mm	88
Stroke	mm	95
Displacement	L	2,31
Compress ratio		18:1
Highest no-load speed	r/min	≤1575
Lowest no-load speed	r/min	≤650
Fuel consumption rate	g/kW.h	≤225
Exhaust temperature after	°C	≤600
Intake pipe diameter	mm	51
Oil sump capacity	L	10
Max oil temperature	°C	100
Oil consumption rate	g/kW.h	≤2.72
Coolant capacity-engine only	L	10
Water tank capacity (L)	L	5,5
Aspiration Type		Natural
Net mass	kg	210
Overall dimension	mm	870×560×855

### FUEL CONSUMPTION

Fuel consumption load 100%	g/Kw.h	≤225
Fuel consumption load 100%	L/H	5,2

### ENGINE STANDARD EQUIPMENT

◆ Natural aspiration	◆ MECH type governor
◆ Structure steel base	◆ Lubricating oil filter, full flow paper element
◆ Crankcase breather	◆ Lubricating oil pump, gear driven
◆ Battery charging alternator	◆ Exhaust dry manifold
◆ Lubricating oil cooler	◆ 50°C ambient radiator
◆ Fuel filters, full flow paper element	◆ Blower fan, fan drive
◆ Fuel transfer pump, gear driven, plunger type	◆ 12V DC electric starting motor

## ALTERNATOR: SZN184E 50HZ/400/230V/3PHASE

Standby Output:	<b>20KW/25KVA</b>
Rated Output:	<b>18KW/23KVA</b>

### Standards

Meet the requirements of BS EN 60034 and the relevant section of other international standards such as BS5000, VDE0530, NEMA MG1-32, IEC34, CSA C22.2-100, AS1359. Other standards and certifications can be considered on request.

### Technical data

Insulation System	H
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Protection Grade	IP23
Rated Power Factor	0,8
Voltage Regulation	± 1.0 %
Stator Winding	Double Layer Concentric
Winding Pitch	Two Thirds
Winding Leads	12
Connecting Type	3 Phase and 4 Wires, "Y" type connecting
Altitude	≤1000m
Exciter Type	Brushless, self-exciting
Telephone Influence Factor (TIF)	<50
THF	<2%
Voltage Regulation, Steady State	≤±1%
Alternator Efficiencies	92,30%

## GENERATING SET DATA

Voltage Regulation	≥±5%
Voltage Regulation, Stead State	≤±1%
Sudden Voltage Warp (100% Sudden Reduce)	≤+25%
Sudden Voltage Warp (Sudden Increase)	≤-20%
Voltage Stable Time (100% Sudden Reduce)	≤6S
Voltage Stable Time (Sudden Increase)	≤6S
Frequency Regulation, Stead State	≤5%
Frequency Waving	≤1%
Sudden Frequency Warp (100% Sudden Reduce)	≤+12%
Sudden Frequency Warp (Sudden Increase)	≤-10%
Frequency Recovery Time(100% Sudden Reduce)	≤5S
Frequency Recovery Time (Sudden Increase)	≤5S

## DATAKOM DKG 309/300 GENERATOR CONTROL MODULE FROM Turkey

### Type & Design

DATAKOM DKG 309/300 is a comprehensive AMF unit for single genset standby or dual genset mutual standby operations indicating the operational status and fault conditions; automatically shutting down the engine and indicating the engine failure by means of LCD display.

### Controls & Monitoring

- ◆ Mode selection & start engine button with interlock key switch system
- ◆ Menu navigation button
- ◆ LCD display for: AC amperage-each phase and earth current, AC voltage-each phase and neutral, Frequency Hz, Operation hours run, Lub, Oil pressure, Cooling water temperature, Generator load kW/Kva, Generator Load kW/Kva
- ◆ Emergency stop pushbutton
- ◆ AMF function

### Safety Shutdown Protection and LED indicators

High engine temperature, Low oil pressure, Fail to start, Generator over speed / Frequency, Generator under speed / Frequency  
Generator high voltage, Generator low voltage, Oil pressure sender circuit, Loss of Speed signal, Emergency stop

### Mounting

Fabricated cubicle mounted on individual bracket with anti-vibration isolator

### Electrical Design

In accordance with BS EN 60950 low voltage directive, BS EN 61006-2 and 61006-4 EMC directive. The optional interface can provide real time diagnostic facilities.



### Control module DKG 309/300

- ◆ Start/stop engine optional
- ◆ Remote start
- ◆ Low oil pressure (shutdown)
- ◆ High water temp. (shutdown)
- ◆ Charge failure (shutdown)
- ◆ Over speed (shutdown)
- ◆ Over voltage (shutdown)
  
- ◆ Over frequency (shutdown)
- ◆ Low water level (shutdown)

### GENSET'S WARRANTY

For prime using models are warranted in accordance with our warranty terms for a period of 1000 hours from date of commissioning or 12 months from date of despatch whichever date occurs the sooner.