

**M-K SERIES**

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

**M-K200**

POWER RATING (0.8P.F.)	STANDBY OUTPUT: <b>160KW/200KVA</b>	50HZ/1500RPM/
	RATED OUTPUT: <b>145KW/181KVA</b>	400V/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 ratings are based on SAE J1349 standard conditions and also apply at ISO3046/1, DIN6271 & BS5514 Standard conditions.

Fuel rates:Based 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 set 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	3800	
Overall dimensions	W:	Width	mm	1100
	H:	Height	mm	1600

**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 10hours 100% load running, intergrated fuel tank

14. Silent type generator, designed as most firm and strong material enclosure, polyester powder covers the enclosure that keeps the generator neither fading nor change more than 10years, anti-corrosion.

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

## **DIESEL ENGINE: KOFO 6RT80-176DE 50HZ/1500RPM**

4 stroke-cycle, 6 cylinders vertical in-line, Turbo&inter-cooled

### **ENGINE SPECIFICATIONS & TECHNICAL DATA**

Prime power	kw	176
Bore diameter×stroke	mm	110×140
Displacement	L	7,98
Compression ratio		17:01
Calibration speed (r/min)	r/min	1500
Highest no-load speed	r/min	1575
Lowest no-load speed	r/min	≤650
Fuel consumption rate	g/kW.h	≤210
Crankshaft rotating direction(ace to output end)		Anticlockwis
Cooling method		Forced water cooling
Lubricating method		Pressure splash composite
Starting method		Electric start
Net mass	kg	720
Exhaust temperature after turbing	℃	≤600
Intake pipe diameter	mm	60
Oil sump capacity	L	18
Max oil temperature	℃	105
Oil consumption rate	g/kW.h	≤2.04
Water tank capacity	L	10
Cooling water capacity in diesel engir	L	18
Overall dimension	L×W×H	1550×1006×1180mm

### **FUEL CONSUMPTION**

Fuel consumption load 100%	L/H	45,5
Fuel consumption load 75%	L/H	36
Fuel consumption load 50%	L/H	25,4

### **ENGINE STANDARD EQUIPMENT**

- |   |   |
|---|---|
| ◆ Turbo&inter-cooled aspiration                 | ◆ ELEC 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℃ ambient radiator                            |
| ◆ Fuel filters, full flow paper element         | ◆ Blower fan, fan drive                           |
| ◆ Fuel transfer pump, gear driven, plunger type | ◆ 24V DC electric starting motor                  |

## **ALTERNATOR SZN274G 50HZ/1500 rpm/400V/3phase**

Standby Output: **160KW/2000KVA**  
 Rated Output: **145KW/181KVA**

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

### GENERATING SET DATA

Voltage Regulation	$\geq \pm 5\%$
Voltage Regulation, Stead State	$\leq \pm 1\%$
Sudden Voltage Warp (100% Sudden Reduce)	$\leq +25\%$
Sudden Voltage Warp (Sudden Increase)	$\leq -20\%$
Voltage Stable Time (100% Sudden Reduce)	$\leq 6\text{S}$
Voltage Stable Time (Sudden Increase)	$\leq 6\text{S}$
Frequency Regulation, Stead State	$\leq 5\%$
Frequency Waving	$\leq 1\%$
Sudden Frequency Warp (100% Sudden Reduce)	$\leq +12\%$
Sudden Frequency Warp (Sudden Increase)	$\leq -10\%$
Frequency Recovery Time(100% Sudden Reduce)	$\leq 5\text{S}$
Frequency Recovery Time (Sudden Increase)	$\leq 5\text{S}$

### 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.