

M-C SERIES

DIESEL GENERATOR SET POWERED BY **CUMMINS** ENGINE AND **SZN** ALTERNATOR

M-C88

POWER RATING (0.8P.F.)	STANDBY OUTPUT: 70KW/88KVA	50HZ/1500RPM/380V
	RATED OUTPUT: 64KW/80KVA	

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 put 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				silent type
	L:	Length	mm	2450
Overall dimensions	W:	Width	mm	1050
	H:	Height	mm	1500

Gen Set standard collection

- 1.Brand new Original **CUMMINS** engine 4stroke, 1500rpm diesel engine .
2. Brand new SZV Alternator with Copy Stamford ,4 pole, synchronic type with self excited system, Brushless, IP23, ClassH
3. DATAKOM D300 digital control module
4. LED light installed inside of the gensets
5. Vibration isolators between the engine/ alternator and base frame
6. High quality DC electronic battery charger.
7. DELIXI circuit breaker with 4 pole
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. Industrial silencer, its covered by heat-resist material
13. The generator set with 8hours 100% load running, external fuel tank

14. Silent type generator, outdoor powder-polyester powder covers the enclosure that keeps the generator neither fading nor change for years, anti-corrosion, the power is **200microns thickness**.

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

DIESEL ENGINE: CUMMINS 4BTA3.9-G11 50HZ/1500RPM

4 stroke-cycle, 4 cylinders vertical in-line, After-cooled, turbo-charged

ENGINE SPECIFICATIONS & TECHNICAL DATA

Prime/Standby power	kw	70/80
Bore	mm	102
Stroke	mm	120
Displacement	L	3,9
Compression Ratio		17.3:1
Maxi Back Pressure	kpa	10
Max intake air restriction with clean filter	kpa	3,7
Max intake air restriction with dirty filter	kpa	6,4
Oil capacity with oil pan	L	9.5-8.5 high to low
Oil system capacity	L	10,9
Min engine oil pressure-idle speed	kpa	207
Min engine oil pressure-governed speed	kpa	345
Max oil temperature	°C	121
Coolant capacity-engine only	L	8,3
Thermostat range	°C	83-95
Max top tank temperature	°C	104/100
Type injection system for fuel		BYC PB direction injection
Engine idle speed	rpm	950-1050
Piston speed	m/s	6
Friction horsepower	kw	8,2
Intake air flow	l/s	64
Exhaust gas temperature	°C	526
Exhaust gas flow	l/s	125

FUEL CONSUMPTION FOR PRIME POWER

Fuel consumption load 100%	L/H	17,6
Fuel consumption load 75%	L/H	13,2
Fuel consumption load 50%	L/H	9,1
Fuel consumption load 25%	L/H	5,3

ENGINE STANDARD EQUIPMENT

- ◆ Turbo-charged
- ◆ Structure steel base
- ◆ Crankcase breather
- ◆ Battery charging alternator
- ◆ Lubricating oil cooler
- ◆ Fuel filters, full flow paper element
- ◆ Fuel transfer pump, gear driven, plunger type
- ◆ MECH type governor
- ◆ Lubricating oil filter, full flow paper element
- ◆ Lubricating oil pump, gear driven
- ◆ Exhaust dry manifold
- ◆ 50°C ambient radiator
- ◆ Blower fan, fan drive
- ◆ 24V DC electric starting motor

ALTERNATOR SZN224G 50HZ/380V

Standby Output: **70KW/88KVA**

Rated Output: **64KW/80KVA**

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

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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.

For standby using models are warranted in accordance with our warranty terms for a period of 500 hours from date of commissioning or 24 months from date of despatch whichever date occurs the sooner.