

M-C SERIES

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

M-C500

POWER RATING (0.8P.F.)	STANDBY OUTPUT: 400KW/500KVA	50HZ/1500RPM/400/230V
	RATED OUTPUT: 360KW/450KVA	

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				silent type
	L:	Length	mm	4300
Overall dimensions	W:	Width	mm	1550
	H:	Height	mm	2350

Gen Set standard collection

1. Brand new Original **CUMMINS** engine 4stroke, 1500rpm diesel engine .
2. Brand new Original **RUNDA** Alternator with Copy Stamford ,4 pole, synchronic type with self excited system, Brushless, IP23, ClassH
3. DATAKOM D300 digital 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.
6. 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. Designed and made as 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: CUMMINS QSZ13-G5 50HZ/1500RPM

4 stroke-cycle, 6 cylinders vertical in-line, Turbocharged & Charge Air Cooled

ENGINE SPECIFICATIONS & TECHNICAL DATA

Prime	kw	411/470
Bore	mm	130
Stroke	mm	163
Displacement	L	13
Compression Ratio		17:01
Emission Certification		Euro StageII/EPA Tier II
Maxi Back Pressure	kpa	13
Max intake air restriction with clean filter	kpa	3,2
Max intake air restriction with dirty filter	kpa	6,2
Oil system capacity	L	75,33
Min engine oil pressure-idle speed	kpa	82,7
Min engine oil pressure-governed speed	kpa	207-300
Max oil temperature	°C	121
Coolant capacity-engine only	L	23,1
Thermostat range	°C	82-94
Max top tank temperature	°C	102
Min operating block coolant temperature	°C	71
Min ambient temperature for unaided cold start		-15°C
Engine idle speed	rpm	700
Piston speed	m/s	8,15
Friction horsepower	kw	31
Intake air flow	$\frac{m^3}{min}$	27,8
Exhaust gas temperature	°C	485
Exhaust Gas Flow	kg/min	34,1
Torque	N.m	2617

FUEL CONSUMPTION FOR PRIME POWER

Fuel consumption load 100%	L/H	93,2
Fuel consumption load 75%	L/H	69,9
Fuel consumption load 50%	L/H	49
Fuel consumption load 25%	L/H	29,2

ENGINE STANDARD EQUIPMENT

- ◆ Turbocharged & Charge Air Cooled
- ◆ Structure steel base
- ◆ Crankcase breather
- ◆ Battery charging alternator
- ◆ Lubricating oil cooler
- ◆ Fuel filters, full flow paper element
- ◆ Fuel transfer pump, gear driven, plunger type
- ◆ ECU 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 SNZ354C 50HZ/400/230V

Standby Output: **400KW/500KVA**
Rated Output: **360KW/450KVA**

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.

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.