

**M-C SERIES**

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

**M-C66**

POWER RATING (0.8P.F.)	STANDBY OUTPUT: <b>53KW/66KVA</b>	<b>50HZ/1500RPM/400V</b>
	RATED OUTPUT: <b>48KW/60KVA</b>	

**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	2450
Overall dimensions	W:	Width	mm	1000
	H:	Height	mm	1500

**Gen Set standard collection**

- 1.Brand new Original **CUMMINS** engine 4stroke, 1500rpm diesel engine .
2. Brand new Original **SZN** Alternator (Copy Stamford) ,4 pole, synchronic type with self excited system, Brushless, IP23, ClassH
3. DEEP SEA DSE6120MKII, 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.
7. DELIXI circuit breaker
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-G2 50HZ/1500RPM**

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

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

Prime/Standby power	kw	58/64
Bore	mm	102
Stroke	mm	120
Displacement	L	3,9
Emission certification		MEP STAGE I
Max intake air restriction with clean filter	kpa	4
Max intake air restriction with dirty filter	kpa	6
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	82-95
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	55
Exhaust gas temperature	°C	535
Exhaust gas flow	l/s	149

#### **FUEL CONSUMPTION FOR PRIME POWER**

Fuel consumption load 100%	L/H	15
Fuel consumption load 75%	L/H	11
Fuel consumption load 50%	L/H	8
Fuel consumption load 25%	L/H	5

#### **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
- ◆ ELEC 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
  - ◆ 12V DC electric starting motor

### **ALTERNATOR RUNDA SZN224E 50HZ/400V**

Standby Output: **53KW/66KVA**  
 Rated Output: **48KW/60KVA**

#### **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)	$\leq 5\text{S}$

### DEEP SEA DSE DSE6120MKII GENERATOR CONTROL MODULE FROM UK

#### FETURES

The DSE6120 MKIII is an Auto Mains (Utility) Failure Control Module suitable for a wide variety of single, diesel or gas, gen-set applications.

Monitoring an extensive number of engine parameters, the modules will display warnings, shutdown and engine status information on the back-lit LCD screen, illuminated LEDs and remote PC.

The DSE6120 MKIII will also monitor the mains (utility) supply. The modules include USB connection and dedicated DSENet® terminals for system expansion.

Both modules are compatible with electronic (CAN) and non-electronic (magnetic pick-up/alternator sensing) engines and offer an extensive number of flexible inputs, outputs and extensive engine protections so the system can be easily adapted to meet the most demanding industry requirements.

The extensive list of features includes enhanced event and performance monitoring, remote communications & PLC functionality.

The modules can be easily configured using the DSE Configuration Suite PC software. Selected front panel editing is also available.

## KEY FEATURES

- 4-line back-lit LCD text display
- Multiple display languages
- Five-key menu navigation
- LCD alarm indication

Customisable power-up text and screen images.

- DSENet® expansion compatibility

Data logging facility

Internal PLC editor

Protections disable feature

Fully configurable via PC using USB communications

- Front panel configuration with PIN protection

- Power save mode

3-phase generator sensing and protection

3-phase mains (utility) sensing and protection

- Automatic load transfer control

- Generator current and power monitoring (kW, kvar, kVA, pf)

- Mains (utility) current and power monitoring (kW, kvar, kVA, pf)

kW overload alarm

- Over current protection

Breaker control via fascia buttons

Fuel and start outputs configurable when using CAN

- 6 configurable DC output

4 configurable analogue/digital inputs

- Support for 0 V to 10 V & 4 mA to 20 mA sensors

- 8 configurable digital input

- CAN, MPU and alternator frequency speed sensing in one variant

- Real time clock

Manual and automatic fuel pump control

Engine pre-heat and post-heat functions

- Engine run-time scheduler

- Engine idle control for starting & stopping

## 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.

- Fuel level alarms
- 3 configurable maintenance alarm
- Compatible with a wide range of CAN engines, including Tier 4 engine support
- Uses DSE Configuration Suite PC Software for simplified configuration
- Licence-free PC software
- IP65 rating (with optional gasket) offers increased resistance to water ingress
- Configurable CAN read & transmitted information
- 1 alternative configuration.

