# CM-DZ438

## DIESEL GENERATOR SET / OPEN + SILENT

OPEN SET

SILENT SET

| 438 kVA | 400 kVA | 60 Hz | 480/277 V |
|---|---|---|---|
| STANDBY POWER | PRIME POWER | FREQUENCY | VOLTAGE |

**Deutz TCD12.1 G2**

3 phase · 0.8 PF · 1800 rpm

### CONFIGURATION COMPARISON

| Configuration | Dimensions (L × W × H) | Dry weight | Fuel tank |
|---|---|---|---|
| Open set | **2700 × 1375 × 2265 mm** | **3041 kg** | **720 L** |
| Silent set | **4250 × 1650 × 2515 mm** | **4350 kg** | **650 L** |

Performance, engine, alternator and controller data are common to both configurations.

# GENERAL CHARACTERISTICS

**CM-DZ438 · 60 Hz · 3 Phase**

## RATED PERFORMANCE

| | |
|---|---|
| Standby Power (kVA) | **438** |
| Standby Power (kW) | **350.4** |
| Prime Power (kVA) | **400** |
| Prime Power (kW) | **320** |
| Power Factor (Cos Phi) | **0.8** |
| Diesel Engine | **TCD12.1 G2** |
| Frequency (Hz) | **60** |
| Rated Speed (rpm) | **1800** |
| Phase | **3** |
| Standard Voltage (V) | **480/277** |

## POWER DEFINITIONS

### STANDBY POWER (ESP)

Available for supplying emergency power during a utility interruption. The stated rating follows ISO 8528-1; overload is not permitted.

### PRIME POWER (PRP)

Available for an unlimited number of annual operating hours in variable-load applications, in accordance with ISO 8528-1.

### TERMS OF USE

Nominal power is stated at 25 °C inlet-air temperature, 100 kPa barometric pressure (100 m A.S.L.) and 30% relative humidity.

## RATED OUTPUT CURRENT BY VOLTAGE

| Rated voltage | Standby current (438 kVA) | Prime current (400 kVA) |
|---|---|---|
| 480/277 V | **526.8 A** | **481.1 A** |
| 220/127 V | **1149.5 A** | **1049.7 A** |
| 440/254 V | **574.7 A** | **524.9 A** |

# ENGINE DATA

**Deutz TCD12.1 G2**

## GENERAL ENGINE DATA

| | |
|---|---|
| Engine brand | / |
| Engine model | / |
| Engine type | 4-stroke diesel |
| Governor type | Electronic |
| Injection type | Direct |
| Aspiration type | Turbo, CAC |
| Cylinders and arrangement | 6-L |

## FUEL CONSUMPTION

| | |
|---|---|
| 100% load ESP | 90.44 L/h |
| 100% load PRP | 81.83 L/h |
| 75% load PRP | 61.13 L/h |
| 50% load PRP | 42.21 L/h |

## AIR SYSTEM

| | |
|---|---|
| Intake air flow | 442.8 L/s |
| Cooling air flow | 12027 L/s |

## GENERAL ENGINE DATA

| | |
|---|---|
| Bore × stroke | 131 × 150 mm |
| Displacement | 12.1 L |
| Cooling system | Water-cooled |
| Lube oil consumption at full load | 0.5%-1% of fuel consumption |
| Compression ratio | 17:1 |
| Air filter | Dry |

## EXHAUST SYSTEM

| | |
|---|---|
| Maximum exhaust temperature | 517 °C |
| Exhaust gas flow | 1211.9 L/s |
| Maximum allowed back pressure | 5 kPa |

## STARTING SYSTEM

| | |
|---|---|
| Starting power | 8.8 kW |
| Recommended battery | 120 Ah |
| Number of batteries | 2 |
| Auxiliary voltage | 24 VDC |

## OIL AND COOLING CAPACITIES

| | |
|---|---|
| Engine oil capacity | 30 L |
| Total coolant capacity | 20(engine ■L |

# ALTERNATOR DATA

**3-phase · Brushless · Electronic AVR**

## GENERAL ALTERNATOR DATA

| | |
|---|---|
| Number of phases | **3 Power factor (Cos Phi)** |
| Power factor (Cos Phi) | **0.8** |
| Poles | **4** |
| Winding connections (standard) | **Star-series** |
| Insulation | **H class** |
| Enclosure (IEC 34-5) | **/** |

## GENERAL ALTERNATOR DATA

| | |
|---|---|
| Excitation system | **Self-excited, brushless** |
| Voltage regulator | **AVR (Electronic)** |
| Number of bearings | **Single bearing** |
| Coupling system | **Flexible disc** |
| Coating type | **Standard (vacuum impregnation)** |

The alternator is coupled to the engine through a flexible disc on a single-bearing spigot fit. Alternator make and frame size are selected to match the set rating and the site specification, and are confirmed on the quotation.

# CONTROL MODULE

## Automatic Mains Failure (AMF) controller

### AMF CONTROL

Provides automatic mains failure control plus manual or remote start/stop, with generator and mains measurement, protection, event logging and timer functions.

### MOUNTING AND DISPLAY

Panel-mounted controller with back-lit LCD display, push-button interface and LED status indication; sealed front to IP54 for dusty or damp plant rooms.

### CORE FUNCTIONS

**01** Automatic mains failure control plus manual or remote start/stop

**02** 3-phase generator and mains voltage measurement, plus current measurement

**03** Fully configurable timers, setpoints and alarm protections

**04** Detailed event log for fault analysis

**05** Engine protection: low oil pressure, high coolant temperature, overspeed, overload

**06** AMF start, cooldown stop and mains return transfer sequences

**07** Front-panel configuration or configuration via PC software

**08** Emergency-stop functionality

The exact controller variant is selected to match the engine communication protocol (J1939 CAN or analogue) and the site specification, and is confirmed on the quotation.

# CONNECTIVITY

## Communication and monitoring options

| USB | CAN / J1939 | RS485 / MODBUS RTU | ETHERNET / 4G (option) |
|---|---|---|---|

## COMMUNICATION AND MONITORING FEATURES

**01** **USB** Local configuration and firmware updates from a laptop

**02** **CAN / J1939** Direct communication with compatible engine ECUs

**03** **RS485 / MODBUS RTU** SCADA and BMS integration on request

**04** **ETHERNET / 4G (option)** Remote monitoring via web portal or mobile app

## REMOTE MONITORING

Gensets can be monitored on site through the controller display, or remotely through an optional communication module and web-based monitoring portal. Remote start/stop, alarms and running reports are available where the site network allows.

### PLUG-IN MODULES

Ethernet, 4G-GPS or RS232/RS485 modules are ordered with the set; only one module is fitted.