

CM-FA16.5E

DIESEL GENERATOR SET / OPEN + SILENT



OPEN SET



SILENT SET

16.5 kVA

STANDBY POWER

15 kVA

PRIME POWER

50 Hz

FREQUENCY

400/230 V

VOLTAGE

FAWDE 4DW81-23D

3 phase · 0.8 PF · 1500 rpm

CONFIGURATION COMPARISON

Configuration	Dimensions (L × W × H)	Dry weight	Fuel tank
Open set	1740 × 650 × 1195 mm	530 kg	80 L
Silent set	2000 × 900 × 1250 mm	780 kg	80 L

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

GENERAL CHARACTERISTICS

CM-FA16.5E · 50 Hz · 3 Phase

RATED PERFORMANCE

Standby Power (kVA)	16.5
Standby Power (kW)	13.2
Prime Power (kVA)	15
Prime Power (kW)	12
Power Factor (Cos Phi)	0.8
Diesel Engine	4DW81-23D
Frequency (Hz)	50
Rated Speed (rpm)	1500
Phase	3
Standard Voltage (V)	400/230

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 (16.5 kVA)	Prime current (15 kVA)
400/230 V	23.8 A	21.7 A
380/220 V	25.1 A	22.8 A
415/240 V	23.0 A	20.9 A

ENGINE DATA

FAWDE 4DW81-23D

GENERAL ENGINE DATA

Engine brand	/
Engine model	4DW81-23D
Engine type	4-stroke diesel
Governor type	Mechanical
Injection type	Direct
Aspiration type	Naturally Aspirated
Cylinders and arrangement	4-L

FUEL CONSUMPTION

100% load ESP	5.2 L/h
100% load PRP	4.6 L/h
75% load PRP	3.5 L/h
50% load PRP	2.5 L/h

AIR SYSTEM

Intake air flow	25 L/s
Cooling air flow	/

GENERAL ENGINE DATA

Bore × stroke	85 × 95 mm
Displacement	2.27 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	550 °C
Exhaust gas flow	70 L/s
Maximum allowed back pressure	6.7 kPa

STARTING SYSTEM

Starting power	3.5 kW
Recommended battery	60 Ah
Number of batteries	1
Auxiliary voltage	12 VDC

OIL AND COOLING CAPACITIES

Engine oil capacity	7.8 L
Total coolant capacity	4.85 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)	I	

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

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|---|--|
| <p>01 Automatic mains failure control plus manual or remote start/stop</p> | <p>02 3-phase generator and mains voltage measurement, plus current measurement</p> |
| <p>03 Fully configurable timers, setpoints and alarm protections</p> | <p>04 Detailed event log for fault analysis</p> |
| <p>05 Engine protection: low oil pressure, high coolant temperature, overspeed, overload</p> | <p>06 AMF start, cooldown stop and mains return transfer sequences</p> |
| <p>07 Front-panel configuration or configuration via PC software</p> | <p>08 Emergency-stop functionality</p> |

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)
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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.