CM-FA22E

DIESEL GENERATOR SET / OPEN + SILENT

OPEN SET

SILENT SET

22 kVA	20 kVA	60 Hz	480/277 V
STANDBY POWER	PRIME POWER	FREQUENCY	VOLTAGE

FAWDE 4DW81-28D

3 phase · 0.8 PF · 1800 rpm

CONFIGURATION COMPARISON

Configuration	Dimensions (L × W × H)	Dry weight	Fuel tank
Open set	**1740 × 650 × 1195 mm**	**550 kg**	**95 L**
Silent set	**2000 × 900 × 1250 mm**	**780 kg**	**90 L**

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

GENERAL CHARACTERISTICS

CM-FA22E · 60 Hz · 3 Phase

RATED PERFORMANCE

Standby Power (kVA)	**22**
Standby Power (kW)	**18**
Prime Power (kVA)	**20**
Prime Power (kW)	**16**
Power Factor (Cos Phi)	**0.8**
Diesel Engine	**4DW81-28D**
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 (22 kVA)	Prime current (20 kVA)
480/277 V	**26.5 A**	**24.1 A**
220/127 V	**57.7 A**	**52.5 A**
440/254 V	**28.9 A**	**26.2 A**

ENGINE DATA

FAWDE 4DW81-28D

GENERAL ENGINE DATA

Engine brand	/
Engine model	4DW81-28D
Engine type	4-stroke diesel
Governor type	Mechanical
Injection type	Direct
Aspiration type	Natural
Cylinders and arrangement	4-L

FUEL CONSUMPTION

100% load ESP	6.2 L/h
100% load PRP	5.6 L/h
75% load PRP	4.2 L/h
50% load PRP	3.0 L/h

AIR SYSTEM

Intake air flow	30 L/s
Cooling air flow	/

GENERAL ENGINE DATA

Bore × stroke	85 × 95 mm
Displacement	2.16 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	500 °C
Exhaust gas flow	75 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	8 L
Total coolant capacity	14 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.