

# CM-FA33E

DIESEL GENERATOR SET / OPEN + SILENT



OPEN SET



SILENT SET

**33** kVA

STANDBY POWER

**30** kVA

PRIME POWER

**60** Hz

FREQUENCY

**480/277** V

VOLTAGE

**FAWDE 4DW91-38D**

3 phase · 0.8 PF · 1800 rpm

## CONFIGURATION COMPARISON

| Configuration | Dimensions (L × W × H) | Dry weight | Fuel tank |
|---------------|------------------------|------------|-----------|
| Open set      | 1740 × 650 × 1195 mm   | 610 kg     | 95 L      |
| Silent set    | 2000 × 900 × 1250 mm   | 786 kg     | 90 L      |

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

# GENERAL CHARACTERISTICS

CM-FA33E · 60 Hz · 3 Phase

## RATED PERFORMANCE

|                        |                  |
|------------------------|------------------|
| Standby Power (kVA)    | <b>33</b>        |
| Standby Power (kW)     | <b>26</b>        |
| Prime Power (kVA)      | <b>30</b>        |
| Prime Power (kW)       | <b>24</b>        |
| Power Factor (Cos Phi) | <b>0.8</b>       |
| Diesel Engine          | <b>4DW91-38D</b> |
| Frequency (Hz)         | <b>60</b>        |
| Rated Speed (rpm)      | <b>1800</b>      |
| Phase                  | <b>3</b>         |
| Standard Voltage (V)   | <b>480/277</b>   |

## 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 (33 kVA) | Prime current (30 kVA) |
|---------------|--------------------------|------------------------|
| 480/277 V     | <b>39.7 A</b>            | <b>36.1 A</b>          |
| 220/127 V     | <b>86.6 A</b>            | <b>78.7 A</b>          |
| 440/254 V     | <b>43.3 A</b>            | <b>39.4 A</b>          |

# ENGINE DATA

## FAWDE 4DW91-38D

### GENERAL ENGINE DATA

|                           |                 |
|---------------------------|-----------------|
| Engine brand              | /               |
| Engine model              | 4DW91-38D       |
| Engine type               | 4-stroke diesel |
| Governor type             | Mechanical      |
| Injection type            | Direct          |
| Aspiration type           | Natural         |
| Cylinders and arrangement | 4-L             |

### FUEL CONSUMPTION

|               |         |
|---------------|---------|
| 100% load ESP | 8.7 L/h |
| 100% load PRP | 7.8 L/h |
| 75% load PRP  | 5.9 L/h |
| 50% load PRP  | 4.3 L/h |

### AIR SYSTEM

|                  |        |
|------------------|--------|
| Intake air flow  | 33 L/s |
| Cooling air flow | /      |

### GENERAL ENGINE DATA

|                                   |                             |
|-----------------------------------|-----------------------------|
| Bore × stroke                     | 90 × 100 mm                 |
| Displacement                      | 2.54 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              | 87 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               | <b>3</b>           | <b>Power factor (Cos Phi)</b> |
| Power factor (Cos Phi)         | <b>0.8</b>         |                               |
| Poles                          | <b>4</b>           |                               |
| Winding connections (standard) | <b>Star-series</b> |                               |
| Insulation                     | <b>H class</b>     |                               |
| Enclosure (IEC 34-5)           | <b>I</b>           |                               |

## GENERAL ALTERNATOR DATA

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

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

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