

# VF16.5-5E

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

VF16.5-5E · 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           |
| Available Voltages (V) | 380/220 · 415/240 |

## POWER DEFINITIONS

### STANDBY POWER (ESP)

Available for supplying emergency power during a utility interruption. The stated rating follows ISO 8528-1.

### 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) |
|---------------|----------------------------|------------------------|
| 380/220 V     | 25.1 A                     | 22.8 A                 |
| 400/230 V     | 23.8 A                     | 21.7 A                 |
| 415/240 V     | 23.0 A                     | 20.9 A                 |

# ENGINE DATA

FAWDE 4DW81-23D

## GENERAL ENGINE DATA

|                           |                     |
|---------------------------|---------------------|
| Engine brand              | FAWDE               |
| Engine model              | 4DW81-23D           |
| Engine type               | 4-stroke diesel     |
| Governor type             | Electronic          |
| 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)            | 0.8                            |
| Poles                             | 4                              |
| Winding connections (standard)    | Star-series                    |
| Insulation                        | H class                        |
| Enclosure (according to IEC 34-5) | IP23                           |
| Excitation system                 | Self-excited, brushless        |
| Voltage regulator                 | AVR (Electronic)               |
| Number of bearings                | Single bearing                 |
| Coupling system                   | Flexible disc                  |
| Coating type                      | Standard (vacuum impregnation) |

# CONTROL MODULE

ComAp IntelliNano AMF 5



AUTOMATIC MAINS FAILURE

## AMF CONTROL

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

### CORE FUNCTIONS

|    |                                                                                             |    |                                                                           |
|----|---------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------|
| 01 | Automatic Mains Failure plus manual or remote start/stop                                    | 05 | Detailed event history with up to 100 records for fault analysis          |
| 02 | Configuration, commissioning and monitoring through IntelliConfig                           | 06 | USB-C for configuration/firmware update; CAN supports J1939 communication |
| 03 | 3-phase generator and mains voltage measurement, plus 3-phase generator current measurement | 07 | User setpoints, protections and dedicated emergency-stop functionality    |
| 04 | 6 binary outputs, 4 + 1 binary inputs and 3 analog inputs for flexible I/O integration      | 08 | One slot for optional Ethernet, 4G-GPS or dual-port RS232/RS485 module    |

# CONNECTIVITY

InteliNano AMF 5 · Communication options

USB-C

CAN / J1939

INTERNET

MODBUS RTU

COMMUNICATION AND MONITORING FEATURES

- 01

USB-C supports controller configuration and firmware updates, including power-over-USB-C
- 02

CAN interface supports J1939 communication with compatible engine ECUs
- 03

One plug-in slot: choose Ethernet, 4G-GPS or dual-port RS232/RS485 (HW 2.0+)
- 04

Remote monitoring support via AirGate 2.0, WebSupervisor and InteliScada
- 05

Internet access is available through the optional Ethernet or 4G-GPS module
- 06

Modbus RTU is available through the optional dual-port RS232/RS485 module
- 07

4G-GPS supports geo-fencing; User Access Management improves access control

PLUG-IN MODULES

CM3-ETHERNET · CM2-4G-GPS · CM-RS232-485

Only one module can be installed. Plug-in support requires controller HW 2.0 or higher.