



#### DESCRIPTIVE

- Mechanic governor
- Mechanically welded chassis with antivibration suspension
- Main line circuit breaker
- Radiator for core temperature of 48/50°C max with mechanical fan
- Protective grille for fan and rotating parts (CE option)
- 9 dB(A) silencer supplied separately
- Charger DC starting battery with electrolyte
- 12 V charge alternator and starter
- Delivered with oil and coolant -30°C
- Manual for use and installation

#### POWER DEFINITION

PRP : Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO 8528-1. ESP : The standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO 8528-1. Overload is not allowed.

#### TERMS OF USE

According to the standard, the nominal power assigned by the genset is given for 25°C Air Inlet Temperature, of a barometric pressure of 100 kPa (100 m A.S.L), and 30 % relative humidity. For particular conditions in your installation, refer to the derating table.

#### ASSOCIATED UNCERTAINTY

For the generating sets used indoor, where the acoustic pressure levels depends on the installation conditions, it is not possible to specify the ambient noise level in the exploitation and maintenance instructions . You will also find in our exploitation and maintenance instructions a warning concerning the air noise dangers and the need to implement appropriated preventive measures.

## K12M

|                   |          |
|-------------------|----------|
| Engine ref.       | KDW1603  |
| Alternator ref.   | KH00404T |
| Performance class | G2       |

### GENERAL CHARACTERISTICS

|                        |                  |
|------------------------|------------------|
| Frequency (Hz)         | 50 Hz            |
| Voltage (V)            | 230 single phase |
| Standard Control Panel | APM303           |
| Optional control panel | APM403           |
| Optional Control Panel | M80              |
| Optional control panel | Terminal block   |

### POWER

| Voltage  | ESP  |      | PRP  |      | Standby Amps |
|----------|------|------|------|------|--------------|
|          | kWe  | kVA  | kWe  | kVA  |              |
| 240 MONO | 11,8 | 11,8 | 10,7 | 10,7 | 49           |
| 230 MONO | 11,8 | 11,8 | 10,7 | 10,7 | 51           |
| 220 MONO | 11,8 | 11,8 | 10,7 | 10,7 | 54           |

### DIMENSIONS COMPACT VERSION

|                   |      |
|-------------------|------|
| Length (mm)       | 1410 |
| Width (mm)        | 720  |
| Height (mm)       | 1020 |
| Dry weight (kg)   | 440  |
| Tank capacity (L) | 50   |

### DIMENSIONS SOUNDPROOFED VERSION

|   |      |
|---|------|
| Type soundproofing                                  | M126 |
| Length (mm)   | 1750 |
| Width (mm)  | 775  |
| Height (mm)   | 1230 |
| Dry weight (kg)                                     | 610  |
| Tank capacity (L)                                   | 50   |
| Acoustic pressure level @1m in dB(A) 50Hz (75% PRP) | 74   |
| Sound power level guaranteed (Lwa) 50Hz (75% PRP)   | 91   |
| Acoustic pressure level @7m in dB(A) 50Hz (75% PRP) | 61   |



## K12M

### ENGINE CHARACTERISTICS

#### GENERAL ENGINE DATA

|  |            |
|--|------------|
| Engine brand                               | KOHLER KDI |
| Engine ref.                                | KDW1603    |
| Air inlet system                           | Athmo      |
| Cylinders configuration                    | L          |
| Number of cylinders                        | 3          |
| Displacement (L)                           | 1,65       |
| Charge Air coolant                         |            |
| Bore (mm) x Stroke (mm)                    | 88 x 90,40 |
| Compression ratio                          | 22 : 1     |
| Speed (RPM)                                | 1500       |
| Pistons speed (m/s)                        | 4,52       |
| Maximum stand-by power at rated RPM (kW)   | 15,50      |
| Frequency regulation, steady state (%) +/- | 2.5%       |
| BMEP @ PRP 50 Hz (bar)                     | 6,80       |
| Governor type                              | Mechanical |

#### COOLING SYSTEM

|  |                 |
|--|-----------------|
| Radiator & Engine capacity (L)             | 5,80            |
| Fan power (kW)                             | 0,90            |
| Fan air flow w/o restriction (m3/s)        | 0,85            |
| Available restriction on air flow (mm H2O) | 15              |
| Type of coolant                            | Glycol-Ethylene |

#### EMISSIONS

|                         |   |
|-------------------------|---|
| Emission PM (g/kW.h)    |   |
| Emission CO (g/kW.h)    |   |
| Emission HC+NOx (g/kWh) | 0 |
| Emission HC (g/kW.h)    |   |

#### EXHAUST

|   |     |
|---|-----|
| Exhaust gas temperature @ ESP 50Hz (°C) | 460 |
| Exhaust gas flow @ ESP 50Hz (L/s)       | 46  |
| Max. exhaust back pressure (mm H2O)     | 500 |

#### FUEL

|                                   |      |
|-----------------------------------|------|
| Consumption @ 100% load ESP (L/h) | 5,30 |
| Consumption @ 100% PRP load (L/h) | 4,90 |
| Consumption @ 75% PRP load (L/h)  | 3,70 |
| Consumption @ 50% PRP load (L/h)  | 2,70 |
| Maximum fuel pump flow (L/h)      | 65   |

#### OIL

|   |      |
|---|------|
| Oil system capacity including filters (L) | 4,40 |
| Min. oil pressure (bar)                   | 1,50 |
| Max. oil pressure (bar)                   | 10   |
| Oil consumption 100% ESP 50Hz (L/h)       | 0    |
| Oil sump capacity (L)                     | 3,80 |

#### HEAT BALANCE

|                                   |    |
|-----------------------------------|----|
| Heat rejection to exhaust (kW)    | 10 |
| Radiated heat to ambient (kW)     | 3  |
| Heat rejection to coolant HT (kW) | 16 |

#### AIR INTAKE

|                                  |     |
|----------------------------------|-----|
| Max. intake restriction (mm H2O) | 200 |
| Intake air flow (L/s)            | 19  |

### GENERAL DATA

|   |                |
|---|----------------|
| Alternator ref.   | KH00404T       |
| Number of Phase   | Single phase   |
| Power factor (Cos Phi)                                  | 1              |
| Altitude (m)  | 0 à 1000       |
| Overspeed (rpm)   | 2250           |
| Number of pole  | 4              |
| Capacity for maintaining short circuit at 3 In for 10 s | Yes            |
| Insulation class  | H              |
| T° class (H/125°), continuous 40°C                      | H / 125°K      |
| T° class (H/163°C), standby 27°C                        | H / 163°K      |
| Total Harmonic Distortion in no-load DHT (%)            | 3,6            |
| AVR Regulation  | Yes            |
| Total Harmonic Distortion, on linear load DHT (%)       | 2,0            |
| Wave form : NEMA=TIF                                    | <45            |
| Wave form : CEI=FHT                                     | <2             |
| Number of bearing                                       | Single Bearing |
| Coupling  | Direct         |
| Voltage regulation at established rating (+/- %)        | 1              |
| Recovery time (Delta U = 20% transient) (ms)            | 200            |
| Indication of protection                                | IP 23          |
| Technology  | Brushless      |

### OTHER DATA

|   |        |
|---|--------|
| Continuous Nominal Rating 40°C (kVA)                    | 13,50  |
| Standby Rating 27°C (kVA)                               | 14,50  |
| Efficiencies 100% of load (%)                           | 81,40  |
| Air flow (m3/s)   | 0,0880 |
| Short circuit ratio (Kcc)                               | 0,94   |
| Direct axis synchro reactance unsaturated (Xd) (%)      | 124,50 |
| Quadra axis synchro reactance unsaturated (Xq) (%)      | 54     |
| Open circuit time constant (T'do) (ms)                  | 850    |
| Direct axis transient reactance saturated (X'd) (%)     | 19,70  |
| Short circuit transient time constant (T'd) (ms)        | 44     |
| Direct axis subtransient reactance saturated (X''d) (%) | 11,30  |
| Subtransient time constant (T''d) (ms)                  | 14     |
| Quadra axis subtransient reactance saturated (X''q) (%) | 25,90  |
| Subtransient time constant (T''q) (ms)                  | 10     |
| Zero sequence reactance unsaturated (Xo) (%)            | 2,30   |
| Negative sequence reactance saturated (X2) (%)          | 17     |
| Armature time constant (Ta) (ms)                        | 12     |
| No load excitation current (io) (A)                     | 0,50   |
| Full load excitation current (ic) (A)                   | 2,20   |
| Full load excitation voltage (uc) (V)                   | 23,10  |
| Engine start (Delta U = 20% perm. or 30% trans.) (kVA)  | 43,20  |
| Transient dip (4/4 load) - PF : 0,8 AR (%)              | 12,60  |
| No load losses (W)                                      | 550    |
| Heat rejection (W)                                      | 3085   |
| Unbalanced load acceptance ratio (%)                    | 100    |

## DIMENSIONS

### Dimensions soundproofed version

|   |      |
|---|------|
| Type soundproofing                                  | M126 |
| Length (mm)   | 1750 |
| Width (mm)  | 775  |
| Height (mm)   | 1230 |
| Dry weight (kg)                                     | 610  |
| Tank capacity (L)                                   | 50   |
| Acoustic pressure level @1m in dB(A) 50Hz (75% PRP) | 74   |
| Sound power level guaranteed (Lwa) 50Hz (75% PRP)   | 91   |
| Acoustic pressure level @7m in dB(A) 50Hz (75% PRP) | 61   |

### Dimensions DW soundproofed version

|                    |         |
|--------------------|---------|
| Type soundproofing | M126 DW |
| Length (mm)        | 1797    |
| Width (mm)         | 775     |
| Height (mm)        | 1391    |

### Dimensions DW compact version

|   |      |
|---|------|
| Type soundproofing                                  |      |
| Length (mm)   | 1797 |
| Width (mm)  | 775  |
| Height (mm)   | 1181 |
| Dry weight (kg)                                     | 590  |
| Tank capacity (L)                                   | 93   |
| Acoustic pressure level @1m in dB(A) 50Hz (75% PRP) |      |
| Sound power level guaranteed (Lwa) 50Hz (75% PRP)   |      |
| Acoustic pressure level @7m in dB(A) 50Hz (75% PRP) |      |

|   |     |
|---|-----|
| Dry weight (kg)                                     | 760 |
| Tank capacity (L)                                   | 93  |
| Acoustic pressure level @1m in dB(A) 50Hz (75% PRP) | 74  |
| Sound power level guaranteed (Lwa) 50Hz (75% PRP)   | 91  |
| Acoustic pressure level @7m in dB(A) 50Hz (75% PRP) | 61  |

APM303, comprehensive and simple



The APM303 is a versatile unit which can be operated in manual or automatic mode. It offers the following features:

**Measurements:**  
 phase-to-neutral and phase-to-phase voltages, fuel level  
 (In option : active power currents, effective power, power factors, Kw/h energy meter, oil pressure and coolant temperature levels)

**Supervision:**  
 Modbus RTU communication on RS485

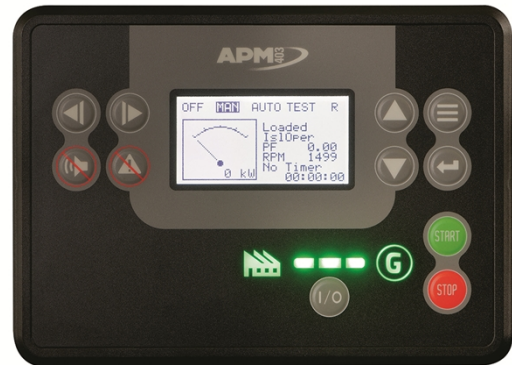
**Reports:**  
 (In option : 2 configurable reports)

**Safety features:**  
 Overspeed, oil pressure, coolant temperatures, minimum and maximum voltage, minimum and maximum frequency (Maximum active power P<66kVA)

**Traceability:**  
 Stack of 12 stored events

For further information, please refer to the data sheet for the APM303.

APM403, basic generating set and power plant control



The APM403 is a versatile control unit which allows operation in manual or automatic mode

**Measurements :** voltage and current  
 kW/kWh/kVA power meters

**Standard specifications:** Voltmeter, Frequency meter.

**Optional :** Battery ammeter.  
 J1939 CAN ECU engine control

**Alarms and faults:** Oil pressure, Coolant temperature, Overspeed, Start-up failure, alternator min/max, Emergency stop button.

**Engine parameters:** Fuel level, hour counter, battery voltage.

**Optional (standard at 24V):** Oil pressure, water temperature.  
 Event log/ Management of the last 300 genset events.

**Mains and genset protection**  
 Clock management  
 USB connections, USB Host and PC,  
 Communications : RS485 INTERFACE  
 ModBUS protocol /SNMP  
 Optional : Ethernet, GPRS, remote control, 3G, 4G,  
 Websupervisor, SMS, E-mails

## M80, transfer of information

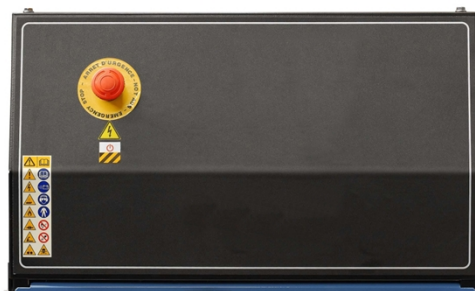


The M80 is a dual-function control unit. It can be used as a basic terminal block for connecting a control box and as an instrument panel with a direct read facility, with displays giving a global view of your generating set's basic parameters.

Offers the following functions:

Engine parameters: tachometer, working hours counter, coolant temperature indicator, oil pressure indicator, emergency stop button, customer connection terminal block, CE.

## Basic terminal block



The control unit can be used as a basic terminal block for connecting a control box.

Offers the following functions:

emergency stop button, customer connection terminal block, CE.