

### Ratings Range

400/230 V - 50 Hz

|                |            |     |
|----------------|------------|-----|
| <b>Standby</b> | <b>kW</b>  | 640 |
|                | <b>kVA</b> | 800 |
| <b>Prime</b>   | <b>kW</b>  | 582 |
|                | <b>kVA</b> | 727 |



## Benefits and features

### Rehko premium quality

- Rehko provides **one source responsibility** for the generating set and accessories
- The generator set, its components and a wide range of options have been **fully developed, prototype tested, factory built,** and production tested.
- Generators sets are designed in accordance with ISO8528-5, performance class G3.
- Generators sets accept the rated load in one step outside the ISO8528-5 operating limit values
- Approved for use with HVO (Hydrotreated Vegetable Oil) according to EN15940.

### Rehko premium performances

#### Engines

- Low fuel consumption thanks to a high technology common rail injection engine
- A smaller footprint thanks to a high power density
- Low temperature starting capability
- Long maintenance interval

#### Alternator

- Provide industry leading motor starting capability
- Excitation system to permit sustained overcurrent > 300% In, during 10 sec
- Built with a class H insulation and IP23

#### Cooling

- A compact and complete solution using a mechanically driven radiator fan
- High temperature and altitude product capacity available

#### Control panel

- The Rehko wide controller range provide the reliability and performances you expect from your equipment. You can program, manage and diagnose it easily and in an efficient way

### Rehko worldwide support

- A standard three-year or 1000-hour limited warranty for standby applications.
- A standard two-year or 8700-hour limited warranty for prime power applications.
- A worldwide product support

## Generator sets ratings

|         | Hz | Standby rating |     |      | Prime rating |     |
|---------|----|----------------|-----|------|--------------|-----|
|         |    | kWe            | kVA | Amps | kWe          | kVA |
| 400/230 | 50 | 640            | 800 | 1155 | 582          | 727 |
| 380/220 | 50 | 640            | 800 | 1216 | 582          | 727 |
| 200/115 | 50 | 640            | 800 | 2309 | 582          | 727 |
| 240 TRI | 50 | 640            | 800 | 1925 | 582          | 727 |
| 230 TRI | 50 | 640            | 800 | 2008 | 582          | 727 |
| 220/127 | 50 | 640            | 800 | 2100 | 582          | 727 |
| 415/240 | 50 | 640            | 800 | 1113 | 582          | 727 |

## General Specifications

|  |   |
|--|---|
| Manufacturer   | Rehko   |
| Engine ref.  | KD18L06-5CFS  |
| Alternator choices   | KH03546T<br>KH02970T  |
| Performance class  | G3  |
| One step load acceptance (out of ISO criteria)                                     | 100%  |
| Voltage (V)  | 400/230<br>380/220<br>200/115<br>240 TRI<br>230 TRI<br>220/127<br>415/240 |
| Controllers  | M80-D APM403 APM802   |
| Consumption @ 100% load ESP (L/h)*   | 155   |
| Consumption @ 100% load PRP (L/h)*   |   |
| Emission level   | Fuel consumption optimization   |
| Data Center / Mission Critical Rating  | Same as the Standby Rating below  |
| Type of Cooling  | Radiator  |
| Factory installed enclosures   | M240<br>M240-DW   |
| ** Volumetric Fuel consumption is up to 4% higher when using HVO than Diesel Fuel" |   |

## Conscious Care™ Qualified

Reduce operating costs, fuel consumption, and greenhouse gas emissions with Conscious Care™ maintenance program.

### Engine Specifications

|  |               |
|--|---------------|
| Engine brand                               | KD Series     |
| Engine ref.                                | KD18L06-5CFS* |
| Air inlet system                           | Turbo         |
| Cylinder configuration                     | 6 - L         |
| Displacement (l)                           | 17,96         |
| Bore (mm) x Stroke (mm)                    | 148 x 174     |
| Compression ratio                          | 16.5 : 1      |
| Speed 50Hz (RPM)                           | 1500          |
| Maximum stand-by power at rated RPM (kW)   | 710           |
| Governor type                              | Electronic    |
| Frequency regulation, no-load to full-load | Isochronous   |
| Frequency regulation, steady state (%)     | +/- 0.25%     |

### Lubrication System

|                                  |             |
|----------------------------------|-------------|
| Oil Filter Quantity and type**** | Spin On / 2 |
| Charge Air coolant               | Air/Air     |

\*\*\*\*Rehlko recommends the use of genuine oil and filters.

### Fuel System

|                                       |                 |
|---------------------------------------|-----------------|
| Maximum fuel pump flow (l/h)          | 256             |
| Max head on fuel return line (m fuel) | 3,5             |
| Fuel Filter Quantity and type         | 1               |
| Fuel                                  | Diesel Fuel/HVO |

\* Engine reference may be partially modified depending on genset application, options selected by the customer and lead time required.

### Consumption with cooling system

| At % load of Engine power rating | g/kWh | L/h** |
|----------------------------------|-------|-------|
| 100%                             | 189   | 157,9 |
| 75%                              | 185   | 115,9 |
| 50%                              | 188   | 78,5  |
| 25%                              | 203   | 42,4  |

\*\*Assumed volumetric fuel consumption with diesel fuel having an LHV of 42.7kJ/kg and weighting 0.85kg/L.

### Cooling system

|                                 |         |
|---------------------------------|---------|
| Ambient temperature design (°C) | 40      |
| Radiator & Engine capacity (l)  | 84      |
| Fan power 50Hz (kW)             | 21      |
| Type of coolant                 | Gencool |
| Radiated heat to ambient (kW)   | 36      |

|  |      |
|--|------|
| Coolant capacity HT, engine only (l)           | 39,5 |
| Outlet coolant temperature (°C)                | 105  |
| Max coolant temperature, Shutdown (°C)         | 105  |
| Max. pressure at inlet of HT water pump (mbar) | 1500 |
| Thermostat begin of opening HT (°C)            | 82   |
| Thermostat end of opening HT (°C)              | 92   |

| <b>Exhaust system</b>              |      |
|------------------------------------|------|
| Heat rejection to exhaust (kW)     | 493  |
| Exhaust gas temperature @ ESP (°C) | 521  |
| Exhaust gas flow @ ESP (l/s)       | 1931 |
| <b>Electrical system</b>           |      |
| Battery voltages (V)               | 24   |
| <b>Air Intake system</b>           |      |
| Combustion air flow (l/s)          | 684  |
| Radiated heat to ambient (kW)      | 36   |

| <b>Alternator Specifications</b>                 |           |
|--|-----------|
| Number of pole                                   | 4         |
| Technology                                       | Brushless |
| AVR Regulation                                   | Yes       |
| Insulation class                                 | H         |
| Indication of protection                         | IP23      |
| Number of bearing                                | 1         |
| Number of wires                                  | 12        |
| Coupling   | Direct    |
| Overspeed (rpm)                                  | 2250      |
| Voltage regulation at established rating (+/- %) | 0,5       |
| Unbalanced load acceptance ratio (%)             | 8         |

### Alternator standard features

- All models are brushless, rotating-field alternators
- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting
- The AVR voltage regulator provides superior short circuit capability
- Self-ventilated and dip proof construction
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds
- Superior voltage waveform

*Note: See Alternator Data Sheets for alternator application data and ratings, efficiency curves, voltage dip with motor starting curves, and short circuit decrement curves.*



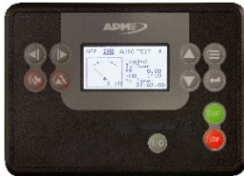
### M80-D controller

The M80-D can be used as a basic terminal block for connecting a control unit and as an instrument panel with a highly intuitive LCD screen giving an overview of your generating set's basic parameters:

- Oil gauge
- Coolant temperature
- Oil temperature
- Engine speed
- Battery voltage
- Charge air temperature
- Fuel consumption, etc.

The engine main functions can be controlled and events are recorded to facilitate diagnostics:

- Starting
- Speed adjustment
- Stopping
- Droop, etc.



### APM403 controller

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



### APM802 controller

#### Advanced power plant management control

Dedicated to power plant management APM802 provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility

- Graphic display with touchscreen
- User language selectable
- Specially researched ergonomics
- High level of equipment availability
- USB and Ethernet ports

## Codes and Standards

Engine-generators set is designed and manufactured in facilities certified to standards ISO9001:2015 & ISO14001:2015. The generator sets and its components are prototype-tested, factory built and production tested and are in compliance with the relevant standards:

- Machinery Directive 2006/42/EC of May 17th 2006
- EMC Directive 2014/30/UE
- Safety objectives set out in the Low Voltage Directive 2014/35/UE
- EN ISO 8528-13, EN 60034-1, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 55011, EN 1679-1 et EN 60204-1

## Power ratings definition according to ISO8528-1 (2018-02 edition) and ISO-3046-1

**Emergency Standby Power (ESP):** The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Average load factor per 24 hours of operation is <85%.

**Prime Power (PRP):** At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour within 12 hour of operation. Average load factor per 24 hours of operation is <75%.

**Data Center Mission Critical (DCP):** Data Center Mission Critical power is defined as being the maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours. Depending on the sites to supply and the availability of reliable utility, the generating set manufacturer is responsible to define what power level is able to supply to fulfil that requirement including hardware or software or maintenance plan adaptation.

## Warranty informations

Standard warranty period:

- for Products in "back-up" service
  - 30 months from the date the Product leaves the plant, extended to 42 months for KD series
  - 24 months from the Product's commissioning date, extended to 36 months for KD series
  - 1,000 running hours

The warranty expires when one of the above conditions is met.

- for Products in "continuous" service (continuous supply of electricity, either in the absence of any normal electricity grid or to complement the grid),
  - 18 months from the date the Product leaves the plant, extended to 30 months for KD series
  - 12 months from the Product's commissioning date, extended to 24 months for KD series
  - 2,500 running hours, extended to 8700 running hours for KD series

The warranty expires when one of the above conditions is met.

For more details regarding conditions of application and scope of the warranty please refer to our General "terms & conditions of sales".

## Standard scope of supply

All our KD Series gensets are fitted with:

- Industrial water cooled DIESEL engine
- Radiator with coolant
- Electric starter & charge alternator 24 V D.C
- Electronic governor
- Standard air filter
- Single bearing alternator IP 23 T° rise/ insulation to class H/H
- Welded steel base frame with 80% vibration attenuation mounts
- Flexible fuel lines & lub oil drain pump
- Fuel water separator filter
- Exhaust outlet with flexible and flanges
- M80-D control panel
- User's manual (1 copy)
- Packing under plastic film
- Delivered with oil

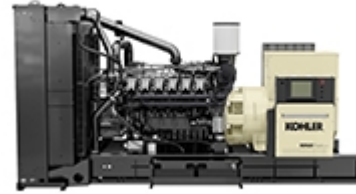
- Modbus protocol
- Making it easy to extend the installation
- -Complies with the international standard IEC 61131-3
- Delivered with antifreeze liquid

### Dimensions and Weights

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#### Compact version

|                                     |                    |
|-------------------------------------|--------------------|
| Overall Size, max., L x W x H, (mm) | 3620 x 1900 x 2220 |
| Dry weight (kg)                     | 5170               |
| Tank capacity (L)                   | 600                |




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#### M240 - Dimensions soundproofed version

|   |                    |
|---|--------------------|
| Overall Size, max., L x W x H, (mm)                 | 5320 x 1900 x 2658 |
| Tank capacity (L)                                   | 600                |
| Dry weight (kg)                                     | 6880               |
| Sound power level guaranteed (Lwa) 50Hz (75% PRP)   | 109                |
| Acoustic pressure level @1m in dB(A) 50Hz (75% PRP) | 88                 |
| Associated uncertainty                              | 0,7                |
| Acoustic pressure level @7m in dB(A) 50Hz (75% PRP) | 78                 |




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#### M240 - Dimensions DW soundproofed version

|   |                    |
|---|--------------------|
| Overall Size, max., L x W x H, (mm)                 | 5367 x 1960 x 2933 |
| Tank capacity (L)                                   | 2175               |
| Dry weight (kg)                                     | 7850               |
| Sound power level guaranteed (Lwa) 50Hz (75% PRP)   | 109                |
| Acoustic pressure level @1m in dB(A) 50Hz (75% PRP) | 88                 |
| Associated uncertainty                              | 0,7                |
| Acoustic pressure level @7m in dB(A) 50Hz (75% PRP) | 78                 |



\* dimensions and weight without options

Reference Conditions: 25°C Air Inlet Temperature, 40°C Fuel Inlet Temperature, 100 kPa Barometric Pressure; 10.7 g/kg of dry air Humidity. Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back pressure set to maximum allowable limit; Fuel density at 0.85 kg/L. Data was taken from a single engine test according to the test methods, fuel specification and reference conditions stated above and is subjected to instrumentation and engine-to-engine variability. Test conducted with alternate test methods, instrumentation, fuel or reference conditions can yield different results. Data and specifications subject to change without notice.