



## Ratings Range

400/230 V - 50 Hz

Standby	kW	1000
	kVA	1250
Prime	kW	909
	kVA	1136



## 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
- The generator sets are designed in accordance to ISO8528
- Approved for use with HVO (Hydrotreated Vegetable Oil) according to EN15940

### Rehko premium performances

#### Engines

- High reliability enhanced through a simple design for optimal functional performances
- High performances turbochargers providing high engine performances under all loads
- Easy operation and maintenance: accessories requiring daily maintenance are conveniently located on the same side of the engine

#### 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 mechanical or an electrical radiator fan (depending of genset type)
- High temperature and altitude product capacity available

#### Control panel

- The Rehko wide controller range provides 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 two-year or 1000-hours limited warranty for standby applications.
- A standard one-year or 2500 hours limited warranty for prime power applications.
- A worldwide product support

## Generator sets ratings

Voltage (V)	Cooling	Version	Standby rating			Prime rating	
			kWe	kVA	Amps	kWe	kVA
400/230 - 50 Hz	Radiator	Open	1000	1250	1804	909	1136
380/220 - 50 Hz	Radiator	Open	1000	1250	1899	909	1136
415/240 - 50 Hz	Radiator	Open	912	1140	1586	829	1036
415/240 - 50 Hz	Radiator	M428	1000	1250	1739	909	1136
400/230 - 50 Hz	Radiator	M428	1000	1250	1804	909	1136
380/220 - 50 Hz	Radiator	M428	912	1140	1732	829	1036

## General Specifications

Manufacturer	Rehko
Engine ref.	S12R-PTA
Alternator choices	KH04070T KH04830T
Performance class	G3
Controllers	Terminal block M80 APM403 APM802
Consumption @ 100% load ESP (L/h)*	252
Consumption @ 100% load PRP (L/h)*	228
Emission level	Fuel consumption optimization
Max. Data Center Continuous (DCC) Rating	1250 kVA 1000 kWe
Type of Cooling	Radiator
Factory installed enclosures	M428 M428-SSI
** Volumetric Fuel consumption is up to 4% higher when using HVO than Diesel Fuel"	

## Engine Specifications

Engine brand	Mitsubishi
Engine ref.	S12R-PTA*
Air inlet system	Turbo
Cylinder configuration	12 - V
Displacement (l)	49,03
Bore (mm) x Stroke (mm)	170 x 180
Compression ratio	14 : 1
Speed 50Hz (RPM)	1500
Maximum stand-by power at rated RPM (kW)	1220
Governor type	Electronic
Frequency regulation, steady state (%)	+/- 0.25%

## Lubrication System

Oil Filter Quantity and type****	
Charge Air coolant	Water/Air

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

## Fuel System

Maximum fuel pump flow (l/h)	588
Max head on fuel return line (m fuel)	2
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

Specific consumption @ ESP Max Power (g/kW.h)	199
Specific consumption @ PRP Max Power (g/kW.h)	198
Specific consumption @ 75% of PRP Power (g/kW.h)	201
Specific consumption @ 50% of PRP Power (g/kW.h)	213

## Cooling system

Radiator & Engine capacity (l)	300
Fan power 50Hz (kW)	30
Fan air flow w/o restriction (m3/s)	25,9
Available restriction on air flow (mm H2O)	20
Type of coolant	Glycol-Ethylene
Radiated heat to ambient (kW)	86
Heat rejection to coolant HT (kW)	713
HT circuit flow rate (l/min)	1650
Coolant capacity HT, engine only (l)	125
Outlet coolant temperature (°C)	95
Max coolant temperature, Shutdown (°C)	98
Max. pressure at inlet of HT water pump (mbar)	981
Thermostat begin of opening HT (°C)	71
Thermostat end of opening HT (°C)	85

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## Exhaust system

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Heat rejection to exhaust (kW)	833
Exhaust gas temperature @ ESP (°C)	492
Exhaust gas flow @ ESP (l/s)	4300

## Electrical system

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Battery voltage (V)	24
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## Air Intake system

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Combustion air flow (l/s)	1633
Radiated heat to ambient (kW)	86

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## Alternator Specifications

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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.*



### Basic terminal block

It is used as a basic terminal block for connecting a control unit. Offers the following functions:

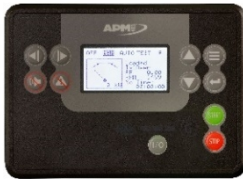
- emergency stop button
- customer connection terminal block
- CE certified



### M80 controller

The M80 is a dual-function control panel. It can be used as a basic terminal block for connecting a control unit 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 certified



### 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

## 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 <80%.

**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 <80%.

**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
  - 36 months from the date the Product leaves the plant
  - 24 months from the Product's commissioning date
  - 1,000 running hours

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

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

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 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 vibration attenuation mounts
- Flexible fuel lines & lub oil drain pump
- Exhaust outlet with flexible and flanges
- M80 control panel
- User's manual (1 copy)
- Packing under plastic film
- Delivered with oil
- Delivered with antifreeze liquid

## Dimensions and Weights

### Compact version – Radiator

Overall Size, max., L x W x H, (mm)	4310 x 2000 x 2289
Dry weight (kg)	10230
Tank capacity (L)	500



### M428 - Dimensions soundproofed version – Radiator

Overall Size, max., L x W x H, (mm)	6800 x 2160 x 2550
Tank capacity (L)	1035
Dry weight (kg)	12430
Sound power level guaranteed (Lwa) 50Hz (75% PRP)	110
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	89
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	80



### M428 SSi - Dimensions super soundproofed version – Radiator

Overall Size, max., L x W x H, (mm)	6800 x 2160 x 2550
Tank capacity (L)	1035
Dry weight (kg)	12570
Sound power level guaranteed (Lwa) 50Hz (75% PRP)	107
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	86
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	77

\* 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.