Industrial Diesel Generator Set – T2200
50 Hz

RATINGS 400 V - 50 Hz		
Standby	kVA	2255,00
	kWe	1804,00
Data Center / Mission Critical	kVA	2255,00
	kWe	1804,00
Prime	kVA	2050,00

Benefits & features

KOHLER premium quality

- KOHLER 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

KOHLER 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 KOHLER wide controller range provides the reliability and performances you expect from your equipment. You can program, manage and diagnose it

GENERAL SPECIFICATIONS	
Engine brand	MITSUBISHI
Alternator commercial brand	KOHLER
Voltage (V)	400/230
Standard Control Panel	Terminal block
Optional control panel	M80
Optional Control Panel	APM403
Optional control panel	APM802
Consumption @ 100% load ESP (L/h) *	472
Consumption @ 100% load PRP (L/h) *	429
Type of Cooling	Radiator
Performance class	G3

GENERATOR SETS RATINGS

	Standby			Data Center / Mission Critical		Prime	
Voltage	kWe	kVA	Amps	kWe	kVA	kWe	kVA
415/240	1804,00	2255,00	3137	1804,00	2255,00	1640,00	2050,00
400/230	1804,00	2255,00	3255	1804,00	2255,00	1640,00	2050,00
380/220	1804,00	2255,00	3426	1804,00	2255,00	1640,00	2050,00

DIMENSIONS COMPACT VERSION	
Length (mm)	5971
Width (mm)	2200

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.

easily and in an efficient way

KOHLER 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

Height (mm)	2481
Tank capacity (L)	0,00
Dry weight (kg)	14346,00
DIMENSIONS SOUNDPROOFED VERSION	
Type soundproofing	NOT AVAILABLE
Length (mm)	12192
Width (mm)	2438
Height (mm)	2896
Tank capacity (L)	500,00
Dry weight (kg)	23590,00
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	93
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	85

* Volumetric Fuel consumption is up to 4% higher when using HVO than Diesel Fuel

KOHLER

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Engine

General

Engine brand	MITSUBISHI
Engine ref.	S16R-PTAA2 *
Air inlet system	Turbo
Cylinder configuration	V
Number of cylinders	16
Displacement (l)	65,37
Bore (mm) * Stroke (mm)	170,00 * 180,0
Compression ratio	13.5 : 1
Speed 50Hz (RPM)	1500
Maximum stand-by power at rated RPM (kW)	1939,0
Charge Air coolant	Water/Air + Air/Air
Frequency regulation, steady state (%)	+/- 0.25%
Injection Type	Direct
Governor type	Electronic
Air cleaner type, models	Dry

Fuel system

Maximum fuel pump flow (l/h)	588,0
Max head on fuel return line (m fuel)	2,0

Consumption with cooling system

Specific consumption @ ESP Max Power (g/kW.h)	207,0
Specific consumption @ PRP Max Power (g/kW.h)	207,0
Specific consumption @ 75% of PRP Power (g/kW.h)	208,0
Specific consumption @ 50% of PRP Power (g/kW.h)	219,0

Emissions

Emission PM 50Hz (g/kW.h)	0,3300
Emission CO 50Hz (g/kW.h)	1,500
Emission NOx 50Hz (g/kW.h)	7,700
Emission HC 50Hz (g/kW.h)	0,290

Lubrication System

Oil system capacity including filters (l)	230,00
Min. oil pressure (bar)	2,0
Max. oil pressure (bar)	6,5
Oil sump capacity (l)	200,00
Oil consumption 100% ESP 50Hz (l/h)	1,820

Air Intake system

Max. intake restriction (mm H2O)	400
Combustion air flow (l/s)	2850,00

Exhaust system

	PRP	ESP
Exhaust gas flow (L/s)		7550,0
Exhaust gas temperature @ ESP (°C)	524	
Heat rejection to exhaust (kW)	1443	
Max. exhaust back pressure (mm H2O)	600	

Cooling system and charge air cooler

Radiator & Engine capacity (l)	401,00
Fan power 50Hz (kW)	43,50
Fan air flow w/o restriction (m3/s)	35,00
Available restriction on air flow (mm H2O)	20,00
Type of coolant	Glycol-Ethylene
Radiated heat to ambiant (kW)	139,0
Heat rejection to coolant HT (kW)	699
HT circuit flow rate (l/min)	1650
Coolant capacity HT, engine only (l)	179,0
Outlet coolant temperature (°C)	95
Max coolant temperature, Shutdown (°C)	98,0
Max. pressure at inlet of HT water pump (mbar)	981
Thermostat begin of opening HT (°C)	71
Thermostat end of opening HT (°C)	85
CAC Heat Rejection (kW)	650,0

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

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Alternator Specifications	
Alternator commercial brand	KOHLER
Kohler Alternator description	KH04973T
Number of pole	4
Number of bearing	Single Bearing
Technology	Brushless
Indication of protection	IP23
Insulation class	H
Number of wires	06
AVR Regulation	Yes
Coupling	Direct
Capacity for maintaining short circuit at 3 In for 10 s	Yes

Application data	
Overspeed (rpm)	2250
Power factor (Cos Phi)	0,8
Voltage regulation at established rating (+/- %)	0,50
Wave form : NEMA=TIF	<50
Wave form : CEI=FHT	<2
Total Harmonic Distortion in no-load DHT (%)	<3.5
Total Harmonic Distortion, on linear load DHT (%)	<3.5
Recovery time (Delta U = 20% transcient) (ms)	1500

Performance datas	
Continuous Nominal Rating 40°C (kVA)	2050,0
Unbalanced load acceptance ratio (%)	8

Peak motor starting (kVA) based on x% voltage dip power factor at 0.3

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.

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Industrial Diesel Generator Set – T2200
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Dimensions compact version

Length (mm) * Width (mm) * Height (mm)	5971 * 2200 * 2481
Dry weight (kg)	14346,00
Tank capacity (L)	0,00

Container dimensions ISO40 version

Length (mm) * Width (mm) * Height (mm)	12192 * 2438 * 2896
Dry weight (kg)	23590,00
Tank capacity (L)	500,00
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	93
Sound power level guaranteed (Lwa) 50Hz (75% PRP)	116
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	85

* 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.
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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

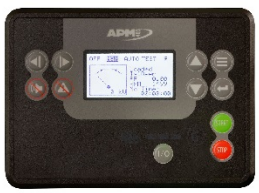
M80

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

BASIC GENERATING SET AND POWER PLANT CONTROL

APM403



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

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- 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

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

KOHLER

Industrial Diesel Generator Set – T2200
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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

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 Directive2014/30/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

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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.

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TERMS OF USE

According to the standard, the nominal power assigned by the genset is given for 25°C Air Intlet 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.

WARRANTY INFORMATIONS

Standard Warranty Period:

- for Products in "back-up" service
    - 30 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),
    - 18 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".