



#### DESCRIPTIVE

- Electronic governor
- Mechanically welded chassis with antivibration suspension
- Radiator for core temperature of 48/50°C max with mechanical fan
- Protective grille for fan and rotating parts (CE option)
- Exhaust compensators with flanges
- 24 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.

\*DCC : Data Center Continuous Power ratings apply to Data Center installations where a reliable utility power is available and comply with Uptime institute Tier III and IV requirements.

#### 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.

## T1400

Engine ref.	S12R-PTA
Alternator ref.	KH03890T
Performance class	G3

#### GENERAL CHARACTERISTICS

Frequency (Hz)	50 Hz
Voltage (V)	400/230
Standard Control Panel	NA
Optional control panel	M80
Optional Control Panel	APM403
Optional control panel	APM802

#### POWER

Voltage	ESP		PRP		DCC (*)		Standby Amps
	kW <sub>e</sub>	kVA	kW <sub>e</sub>	kVA	kW <sub>e</sub>	kVA	
415/240	1122	1403	1020	1275	1020	1275	1952
400/230	1122	1403	1020	1275	1020	1275	2025
380/220	1104	1380	1004	1255	1004	1255	2097

#### DIMENSIONS COMPACT VERSION

Length (mm)	4327
Width (mm)	2000
Height (mm)	2365
Dry weight (kg)	10076
Tank capacity (L)	

#### DIMENSIONS SOUNDPROOFED VERSION

Type soundproofing	
Length (mm)	4327
Width (mm)	2000
Height (mm)	2365
Dry weight (kg)	10076
Tank capacity (L)	

Acoustic pressure level @1m in dB(A)

Sound power level guaranteed (L<sub>wa</sub>)

Acoustic pressure level @7m in dB(A)

# T1400

## ENGINE CHARACTERISTICS

### GENERAL ENGINE DATA

Engine brand	MITSUBISHI
Engine ref.	S12R-PTA
Air inlet system	Turbo
Cylinders configuration	V
Number of cylinders	12
Displacement (L)	49,03
Charge Air coolant	Air/Water DC
Bore (mm) x Stroke (mm)	170 x 180
Compression ratio	14 : 1
Speed (RPM)	1500
Pistons speed (m/s)	9
Maximum stand-by power at rated RPM (kW)	1220
Frequency regulation, steady state (%) +/-	0.25%
BMEP at Max Power (bar)	18,1
Governor type	Electronic

### COOLING SYSTEM

Radiator & Engine capacity (L)	300
Fan power (kW)	30
Fan air flow w/o restriction (m <sup>3</sup> /s)	25,9
Available restriction on air flow (mm H <sub>2</sub> O)	20
Type of coolant	Glycol-Ethylene

### EMISSIONS

Emission PM (mg/Nm <sup>3</sup> ) 5% O <sub>2</sub>	120
Emission CO (mg/Nm <sup>3</sup> ) 5% O <sub>2</sub>	590
Emission HC+NO <sub>x</sub> (g/kWh)	15,23
Emission HC (mg/Nm <sup>3</sup> ) 5% O <sub>2</sub>	110

### EXHAUST

Exhaust gas temperature @ ESP 50Hz (°C)	492
Exhaust gas flow @ ESP 50 Hz (L/s)	3916
Max. exhaust back pressure (mm H <sub>2</sub> O)	600

### FUEL

Consumption @ 110% load (L/h)	300
Consumption @ 100% load (L/h)	271
Consumption @ 75% load (L/h)	208
Consumption @ 50% load (L/h)	151
Maximum fuel pump flow (L/h)	588

### OIL

Oil system capacity including filters (L)	180
Min. oil pressure (bar)	2,5
Max. oil pressure (bar)	5,8
Oil consumption 100% ESP (L/h)	1
Oil sump capacity (L)	150

### HEAT BALANCE

Heat rejection to exhaust (kW)	758
Radiated heat to ambient (kW)	78
Heat rejection to coolant HT (kW)	649

### AIR INTAKE

Max. intake restriction (mm H <sub>2</sub> O)	400
Intake air flow (L/s)	1483

### GENERAL DATA

Alternator ref.	KH03890T
Number of Phase	Three phase
Power factor (Cos Phi)	0,8
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
AVR Regulation	Yes
Total Harmonic Distortion in no-load DHT (%)	<3.5
Total Harmonic Distortion, on linear load DHT (%)	<3.5
Wave form : NEMA=TIF	<50
Wave form : CEI=FHT	<2
Number of bearing	Single Bearing
Coupling	Direct
Voltage regulation at established rating (+/- %)	0,5
Recovery time (Delta U = 20% transient) (ms)	500
Indication of protection	IP 23
Technology	Brushless

### OTHER DATA

Continuous Nominal Rating 40°C (kVA)	1350
Standby Rating 27°C (kVA)	1485
Efficiencies 100% of load (%)	95,2
Air flow (m3/s)	1,8
Short circuit ratio (Kcc)	0,344
Direct axis synchro reactance unsaturated (Xd) (%)	364
Quadra axis synchro reactance unsaturated (Xq) (%)	185
Open circuit time constant (T'do) (ms)	3750
Direct axis transient reactance saturated (X'd) (%)	17,4
Short circuit transient time constant (T'd) (ms)	180
Direct axis subtransient reactance saturated (X''d) (%)	14,8
Subtransient time constant (T''d) (ms)	18
Quadra axis subtransient reactance saturated (X''q) (%)	15,5
Subtransient time constant (T''q) (ms)	18
Zero sequence reactance unsaturated (Xo) (%)	0,7
Negative sequence reactance saturated (X2) (%)	15,21
Armature time constant (Ta) (ms)	27
No load excitation current (io) (A)	0,85
Full load excitation current (ic) (A)	3,48
Full load excitation voltage (uc) (V)	43,7
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	2757,92
Transient dip (4/4 load) - PF : 0,8 AR (%)	12
No load losses (W)	15281,16
Heat rejection (W)	53529,88
Unbalanced load acceptance ratio (%)	50

## DIMENSIONS

### Contener dimensions ISO20 version

Type soundproofing	ISO20 Si
Length (mm)	6058
Width (mm)	2438
Height (mm)	2896
Dry weight (kg)	14932
Tank capacity (L)	500
Acoustic pressure level @1m in dB(A)	89
Sound power level guaranteed (Lwa)	110
Acoustic pressure level @7m in dB(A)	80

### Contener dimensions CIR20 super soundproofed version

Type soundproofing	CIR20 SSi
Length (mm)	6058
Width (mm)	2438
Height (mm)	2896
Dry weight (kg)	16250
Tank capacity (L)	500
Acoustic pressure level @1m in dB(A)	85
Sound power level guaranteed (Lwa)	106
Acoustic pressure level @7m in dB(A)	76

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.

M80, transfer of information

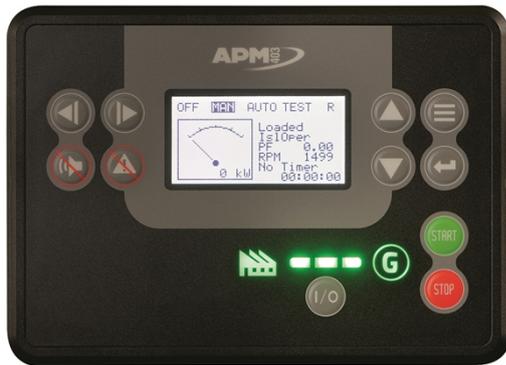


The M80 is a dual-function control unit. It can be used as a basic terminal block for connecting a control box and as an instrument panel with a direct read facility, with displays giving a global view of your generating set's basic parameters.

Offers the following functions:

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

## 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

## APM802 dedicated to power plant management



The new APM802 command/control system is specifically designed for operating and monitoring power plants for markets including hospitals, data centres, banks, the oil and gas sector, industries, IPP, rental and mining.  
This unit is available as standard on all generating sets from 275 Kva designed for coupling. It is optional on the rest of our range.

The Human Machine Interface, designed in collaboration with a company specialising in interface design, facilitates operations with a large 100% touch screen. The pre-configured system for power plant applications features a brand new customisation function which complies with the international standard IEC 61131-3. New communication functions (PLC and regulation), improve the high level of equipment availability in the installation.

Advantages:  
Dedicated to power plant management.  
Specially researched ergonomics.  
High level of equipment availability.  
Modularity and long service life guaranteed.  
Making it easy to extend the installation

For more information, please refer to the sales documentation.