



**Super Silent version**

**DESCRIPTIVE**

- Connection terminal box rental type
- Retention bund
- Primary fuel filter
- Four-pole circuit breaker
- Oil drainage pump
- Dusty atmosphere air filter
- Battery isolating switch
- 3 tracks valve
- Special rental soundproofed container

**R1400**

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

**GENERAL CHARACTERISTICS**

Frequency (Hz)	50 Hz
Voltage (V)	400/230

Standard Control Panel	APM403
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**DIMENSION/ SILENT SOUND LEVEL**

Type soundproofing	CIR20 SSi DRY
Length (mm)	6058
Width (mm)	2438
Height (mm)	2591
Dry weight (kg)	16755
Tank capacity (L)	1200
Autonomy @ 75% of load (h)	5,80
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP) #Incert_lb_2_1#	(0,70)
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP) #Incert_lb_2_2#	(0,70)
Sound power level guaranteed (Lwa) 50Hz (75% PRP)	

**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 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.

**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.



# R1400

## ENGINE CHARACTERISTICS

### GENERAL ENGINE DATAS

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
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 @ PRP 50 Hz (bar)	18,10
Governor type	Electronic

### COOLING SYSTEM

Radiator & Engine capacity (L)	300
Fan power (kW)	30
Fan air flow w/o restriction (m3/s)	25,90
Available restriction on air flow (mm H2O)	20
Type of coolant	Glycol-Ethylene

### EMISSIONS

Emission PM (mg/Nm3) 5% O2	120
Emission CO (mg/Nm3) 5% O2	590
Emission HC+NOx (g/kWh)	8,01
Emission HC (mg/Nm3) 5% O2	110

### EXHAUST

Exhaust gas temperature @ ESP 50Hz (°C)	492
Exhaust gas flow @ ESP 50Hz (L/s)	4300
Max. exhaust back pressure (mm H2O)	600

### FUEL

Consumption @ 100% load ESP (L/h)	300
Consumption @ 100% PRP load (L/h)	271
Consumption @ 75% PRP load (L/h)	207,90
Consumption @ 50% PRP load (L/h)	151
Maximum fuel pump flow (L/h)	588

### OIL

Oil system capacity including filters (L)	180
Min. oil pressure (bar)	2
Max. oil pressure (bar)	6,40
Oil consumption 100% ESP 50Hz (L/h)	1
Oil sump capacity (L)	150

### HEAT BALANCE

Heat rejection to exhaust (kW)	833
Radiated heat to ambient (kW)	86
Heat rejection to coolant HT (kW)	713

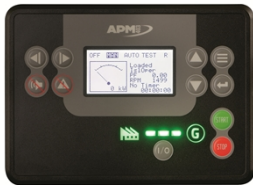
### AIR INTAKE

Max. intake restriction (mm H2O)	400
Intake air flow (L/s)	1633

Alternator ref.	KH03890T
Number of Phase	Three phase
Power factor (Cos Phi)	0,80
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 (+/- %)	0,50
Recovery time (Delta U = 20% transient) (ms)	500
Indication of protection	IP 23
Technology	Brushless

Continuous Nominal Rating 40°C (kVA)	1350
Standby Rating 27°C (kVA)	1485
Efficiencies 100% of load (%)	95,20
Air flow (m3/s)	1,80
Short circuit ratio (Kcc)	0,3440
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) (%)	17,40
Short circuit transient time constant (T'd) (ms)	180
Direct axis subtranscient reactance saturated (X''d) (%)	14,80
Subtranscient time constant (T''d) (ms)	18
Quadra axis subtranscient reactance saturated (X''q) (%)	15,50
Subtranscient time constant (T''q) (ms)	18
Zero sequence reactance unsaturated (Xo) (%)	0,70
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)	43,70
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

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