



R33C3

| | |
|-------------------|------------|
| Engine ref. | S4S-Z361SD |
| Alternator ref. | KH00461T |
| Canopy | M3127 |
| Performance class | G2 |

GENERAL CHARACTERISTICS

| | |
|------------------------|---------|
| Frequency (Hz) | 50 Hz |
| Voltage (V) | 400/230 |
| Standard Control Panel | APM303 |
| Optional control panel | APM403 |

| Voltage | ESP | | PRP | | Standby Amps |
|---------|------|-----|-----|-----|--------------|
| | kWe | kVA | kWe | kVA | |
| 400/230 | 26,4 | 33 | 24 | 30 | 48 |

DESCRIPTIVE

- Stage 3a engine
- Four-pole circuit breaker
- Connection terminal box rental type
- Containment fuel tank and large autonomy
- Forks and frame protection pads
- Residual Current Device and earthing rod
- Inlet air preheating
- Battery isolating switch
- Oil drainage pump
- Heavy duty air filter with interchangeable cartridge
- Primary fuel filter
- Heat hand protections (EC standards)
- Access door to the radiator

SMALL AUTONOMY DIMENSIONS

| | |
|-------------------|------|
| Length (mm) | 2200 |
| Width (mm) | 1000 |
| Height (mm) | 1528 |
| Dry weight (kg) | 1089 |
| Tank capacity (L) | 220 |

SOUND LEVELS

| | |
|--|-----------|
| Acoustic pressure level @1m in dB(A) 50Hz (75% PRP) (Associated uncertainty) | 72 (0,66) |
| Acoustic pressure level @7m in dB(A) 50Hz (75% PRP) (Associated uncertainty) | 60 |
| Sound power level guaranteed (Lwa) 50Hz (75% PRP) | 90 |

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 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.



R33C3

ENGINE CHARACTERISTICS

GENERAL ENGINE DATAS

| | |
|--|------------|
| Engine brand | MITSUBISHI |
| Engine ref. | S4S-Z361SD |
| Air inlet system | Athmo |
| Cylinders configuration | L |
| Number of cylinders | 4 |
| Displacement (l) | 3,33 |
| Charge Air coolant | |
| Bore (mm) x Stroke (mm) | 94 x 120 |
| Compression ratio | 22 : 1 |
| Speed (RPM) | 1500 |
| Pistons speed (m/s) | 6 |
| Maximum stand-by power at rated RPM (kW) | 31,30 |
| Frequency regulation, steady state (%) +/- | 2.5% |
| BMEP @ PRP 50 Hz (bar) | 6,80 |
| Governor type | Mechanical |

COOLING SYSTEM

| | |
|---|-----------------|
| Radiator & Engine capacity (l) | 8,50 |
| Fan power 50Hz (kW) | 0,80 |
| Fan air flow w/o restriction (m ³ /s) | |
| Available restriction on air flow (mm H ₂ O) | |
| Type of coolant | Glycol-Ethylene |

EMISSIONS

| | |
|-------------------------------------|------|
| Emission PM (g/kW.h) | 0,60 |
| Emission CO (g/kW.h) | 5,50 |
| Emission HC+NO _x (g/kWh) | 0 |
| Emission HC (g/kW.h) | |

EXHAUST

| | |
|--|-----|
| Exhaust gas temperature @ ESP 50Hz (°C) | |
| Exhaust gas flow @ ESP 50Hz (l/s) | |
| Max. exhaust back pressure (mm H ₂ O) | 680 |

FUEL

| | |
|-----------------------------------|---|
| Consumption @ 100% load ESP (l/h) | 0 |
| Consumption @ 100% PRP load (l/h) | 0 |
| Consumption @ 75% PRP load (l/h) | 0 |
| Consumption @ 50% PRP load (l/h) | 0 |
| Maximum fuel pump flow (l/h) | |

OIL

| | |
|---|------|
| Oil system capacity including filters (l) | 10 |
| Min. oil pressure (bar) | 1 |
| Max. oil pressure (bar) | 3,90 |
| Oil consumption 100% ESP 50Hz (l/h) | 0,08 |
| Oil sump capacity (l) | 9 |

HEAT BALANCE

| | |
|-----------------------------------|--|
| Heat rejection to exhaust (kW) | |
| Radiated heat to ambient (kW) | |
| Heat rejection to coolant HT (kW) | |

AIR INTAKE

| | |
|---|-----|
| Max. intake restriction (mm H ₂ O) | 200 |
| Intake air flow (l/s) | |

| | | | |
|---|----------------|--|---------|
| Alternator ref. | KH00461T | Continuous Nominal Rating 40°C (kVA) | 32 |
| Number of Phase | Three phase | Standby Rating 27°C (kVA) | 35,20 |
| Power factor (Cos Phi) | 0,80 | Efficiencies 100% of load (%) | 88,20 |
| Altitude (m) | 0 à 1000 | Air flow (m3/s) | 0,10 |
| Overspeed (rpm) | 2250 | Short circuit ratio (Kcc) | 0,4780 |
| Number of pole | 4 | Direct axis synchro reactance unsaturated (Xd) (%) | 261 |
| Capacity for maintaining short circuit at 3 In for 10 s | Yes | Quadra axis synchro reactance unsaturated (Xq) (%) | 133 |
| Insulation class | H | Open circuit time constant (T'do) (ms) | 803 |
| T° class (H/125°), continuous 40°C | H / 125°K | Direct axis transient reactance saturated (X'd) (%) | 16,20 |
| T° class (H/163°C), standby 27°C | H / 163°K | Short circuit transient time constant (T'd) (ms) | 50 |
| AVR Regulation | Yes | Direct axis subtranscient reactance saturated (X''d) (%) | 8,10 |
| Total Harmonic Distortion in no-load DHT (%) | <2 | Subtranscient time constant (T''d) (ms) | 5 |
| Total Harmonic Distortion, on linear load DHT (%) | <4 | Quadra axis subtranscient reactance saturated (X''q) (%) | 11,50 |
| Wave form : NEMA=TIF | <50 | Subtranscient time constant (T''q) (ms) | 5 |
| Wave form : CEI=FHT | <2 | Zero sequence reactance unsaturated (Xo) (%) | 0,60 |
| Number of bearing | Single Bearing | Negative sequence reactance saturated (X2) (%) | 9,82 |
| Coupling | Direct | Armature time constant (Ta) (ms) | 8 |
| Voltage regulation at established rating (+/- %) | 0,50 | No load excitation current (io) (A) | 0,79 |
| Recovery time (Delta U = 20% transient) (ms) | 500 | Full load excitation current (ic) (A) | 2,76 |
| Indication of protection | IP 23 | Full load excitation voltage (uc) (V) | 19,50 |
| Technology | Brushless | Engine start (Delta U = 20% perm. or 30% trans.) (kVA) | 76,63 |
| | | Transient dip (4/4 load) - PF : 0,8 AR (%) | 13 |
| | | No load losses (W) | 761,54 |
| | | Heat rejection (W) | 3413,78 |
| | | Unbalanced load acceptance ratio (%) | 100 |

APM303, comprehensive and simple



The APM303 is a versatile unit which can be operated in manual or automatic mode. It offers the following features:

Measurements:
 phase-to-neutral and phase-to-phase voltages, fuel level
 (In option : active power currents, effective power, power factors, Kw/h energy meter, oil pressure and coolant temperature levels)

Supervision:
 Modbus RTU communication on RS485

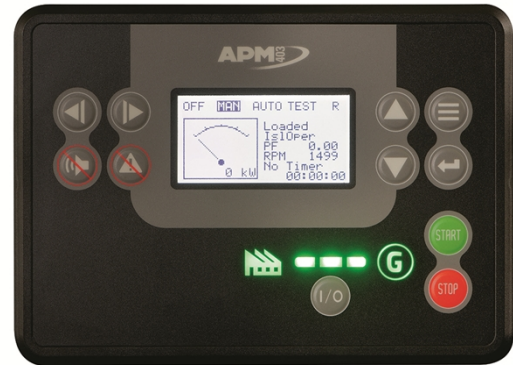
Reports:
 (In option : 2 configurable reports)

Safety features:
 Overspeed, oil pressure, coolant temperatures, minimum and maximum voltage, minimum and maximum frequency (Maximum active power P<66kVA)

Traceability:
 Stack of 12 stored events

For further information, please refer to the data sheet for the APM303.

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