



TECNOGEN

SDEC GENSETS SERIES

DATA SHEET AS28 ENGINE 4Z2.3-G21

22 KW STAND BY

20 KW PRIME



TECNO GENERACION SAC

Lima - Perú

Powered by

4Z2.7-G21

20KW at 60Hz, 220V

General feature:

- ◆ Assembled by SDEC diesel engine and Aosif alternator.
- ◆ Three filters as standard, fuel and water separator as optional.
- ◆ Radiator and fan with safety guard.
- ◆ Single bearing alternator IP 23, Insulation Class H.
- ◆ Heavy duty steel as base frame and 8hrs operation base fuel tank.
- ◆ Automatic control panel and 3 poles circuit breaker, internal cable.
- ◆ 12V or 24V battery, battery wires.
- ◆ Battery charger and float battery charger as standard supply scope.
- ◆ Optional soundproof canopy, ATS, synchronization panel, movable trailers.

Genset Main Technical Data:

Genset Model	AS28
Prime Power	20KW / 25KVA
Standby Power	22KW / 28KVA
Frequency/Speed	60Hz/1800rpm
Standard Voltage	220V
Phases	Three phases, four wires
Manufacturer	Xiamen AOSIF Engineering LTD.

(1) PRP: Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO8528-1. A 10% overload capability is available for a period of 1 hour within 12-hour period of operation. In accordance with ISO 3046-1.

(2) ESP: The Standby Power Rating is applicable for supplying emergency power in variable load applications for up to 200 hours per year in accordance with ISO8528-1. Overload is not allowed.

SDEC Engine Data:



4Z2.7-G21

◎ Power

Engine Speed rpm	Type of Operation	Engine Power	Generator Power	
		kW	kW	kVA
1500	Prime Power	22	16	20
	Standby Power	24	18	22.5
1800	Prime Power	26	20	25
	Standby Power	29	22	27.5

- The engine performance is as per GB/T2820

- Ratings are based on GB/T1147.1.

→ **Prime Power:** Power output available with varying load for unlimited time. The permissible average power output over 24 hours of operation shall not exceed 80% of the prime power rating.

→ **Standby Power:** Power output available in the duration of an emergency outage or under test conditions. Maximum operation time is 200 hours per year. The permissible average power output over 24 hours of operation shall not exceed 80% of the standby power rating.

Overload operation is not allowed

◎ SPECIFICATIONS

○ Engine Model	4Z2.7-G21
○ Engine Type	In-line, 4 strokes, water-cooled
○ Combustion type	Direct injection
○ Cylinder Type	Wet liner
○ Number of cylinders	4
○ Bore × stroke	90 × 105 mm
○ Displacement	2.7L
○ Compression ratio	18 : 1

◎ FUEL CONSUMPTION

○ Power	L/h (1500r/min)	L/h (1800r/min)
25%	1.64	1.72
50%	2.6	2.69
75%	3.6	3.79
100%	4.68	4.92
110%	5.13	5.53

AS28 Technical Data



- Firing order 1-3-4-2
- Injection timing 14-17°
- Dry weight 280 kg
- Dry weight 953×522×728mm
(L×W×H)

- Rotation Counter clockwise viewed from Flywheel
- Fly wheel housing SAE 4#
- Fly wheel SAE 7.5# (tooth number 120)

◎ MECHANISM

- Type Overhead valve
- Number of valve Intake 1, exhaust 1 per cylinder
- Valve lashes at cold Intake 0.35mm
Exhaust 0.45mm

◎ VALVE TIMING

- | | Opening | Close |
|-----------------|----------|----------|
| ○ Intake valve | 11° BTDC | 41° ABDC |
| ○ Exhaust valve | 49° BBDC | 11° ATDC |

◎ COOLING SYSTEM

- Water capacity 2.7L
(engine only)
- Lid Min. pressure 70kPa
- Water pump Centrifugal type driven by belt

◎ FUEL SYSTEM

- Injection pump KangDa
- Governor Electric type
- Feed pump Mechanical type
- Injection nozzle Multi hole type

- Opening pressure 24MPa

- Fuel filter Full flow, cartridge type
- Used fuel Diesel fuel oil

◎ LUBRICATION SYSTEM

- Lub. Method Fully forced pressure feed type
- Oil pump Gear type driven by camshaft
- Oil filter Full flow, cartridge type
- Oil pan capacity High level 10 L
Low level 8 L
- Angularity limit Front down 25°
Front up 35°
Side to side 35°
- Lub. Oil Refer to Operation Manual

◎ 柴油机数据

- Heat rejection to coolant 10.6 kcal/sec (1500r/min)
12.8 kcal/sec (1800r/min)
- Heat rejection to intercooler

AS28 Technical Data



○ Water pump Capacity	25L/min (1500r/min)	○ Air flow	2.3m ³ /min (1500r/min)
	28L/min (1800r/min)		2.8m ³ /min (1800r/min)
○ Thermostat	Wax-pellet type	○ Exhaust gas flow	8.9m ³ /min (1500r/min)
	Opening temp. 72°C		8.9m ³ /min (1800r/min)
	Full open temp. 82°C	○ Exhaust gas temp.	480 °C
○ Cooling fan	Blower type, plastic	○ Max. permissible restrictions	3 kPa initial
	420 mm diameter, 7 blades	Intake system	4 kPa final
	Power consumption 3.5 kW	Exhaust system	10 kPa max
○ The maximum temp. of coolant in prime/ Standby power	104/100°C	○ intercooler permissible restrictions	

◎ ELECTRICAL SYSTEM

○ Charging generator	12V×70A
○ Voltage regulator	Built-in type IC regulator
○ Starting motor	12V×3.8kW
○ Battery Voltage	12V
○ Battery Capacity	110~120 AH

AS28 Technical Data




ALTERNATOR Specifications:

Manufacturer	Xiamen AOSIF Engineering LTD.
Model	AA-18-4
Output power	22KW
AVR model	SX460
Number of phase	3
Power factor (Cos Phi)	0.8
Altitude	≤ 1000 m
Overspeed	2250RPM
Number of Pole	4
Exciter type	Self -excited
Insulation class	H
Voltage regulation	±1%
Protection	IP23
Totale Harmonic distortion THD (**)	no load < 1.5%
Totale Harmonic distortion THD (**)	on load < 2%
Waveform: NEMA = TIF	< 50
Bearing	single
Coupling	Direct

ALTERNATOR GENERAL DATA:

- ◆ Operate either 50Hz or 60Hz.
- ◆ Standard enclosure IP23, but IP44, IP55 for option
- ◆ Insulation class H.
- ◆ Shunt excitation systems.
- ◆ AREP or PMG system for options.
- ◆ Automatic voltage regulator
- ◆ Single bearing alternator
- ◆ Stator grease insulation covered
- ◆ Rotator and excitation high polymer
- ◆ Resist the corruption oil and acid
- ◆ Rotator balance is in accordance with BS5625 standard 12.5
- ◆ High-quality lubrication sealed long-time bearing
- ◆ Rotator silicon steel close tight

AOSIF Circuit breaker specification:

		Delixi Group
		Delixi
		Delixi 100Amp,3P
		100amp
		220V

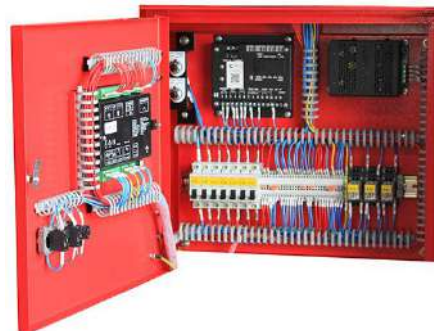
AOSIF Starting Battery specification:

		12V
		60aH
		2 pcs
		Free maintenance, sealed lead-acid type

Control system:



Auto start and AMF control panel



Deepsea 6120 is an auto mains failure controller for single generator, it can monitor and protect the generator working all the time. it has a LCD display which clearly shows the status of the engine. this controller include seven inputs and six outputs. This controller can also be programmed using the frong panel or by using DSE configuration Suite PC software.

- ◆ Volt adjuster and frequency adjuster.
- ◆ Emergency stop
- ◆ Fail to start

Features:

- ◆ Protection: Automatic start/stop, load transfer and alarming of generator;
- ◆ CAN and magnetic pick-up versions.
- ◆ PC and front panel configurable
- ◆ 4 digital inputs and 3 analogue inputs.
- ◆ 6 outputs(4 configurable on magnetic pick-up, 6 configurable on Canbus version).
- ◆ 3 phase generator and mains voltage monitoring.
- ◆ remote start on or off load.
- ◆ advanced metering capability.
- ◆ test button.
- ◆ protected solid state outputs.
- ◆ transfer between mains and generator power.
- ◆ user-friendly set-up and button layout.
- ◆ multiple engine parameters are monitored simultaneously.
- ◆ module can be configured to suit individual applications.
- ◆ IP 65 rating offers advanced resistance to water ingress when gasket is fitted.

Parameters:

This controller can provide Generator frequency, Under/over speed, Generator volts, Generator current, Engine oil pressure, Engine coolant temperature, Flexible fuel level

- ① Power switch
- ② Lamp switch
- ③ Power indicator
- ④ Operation buttons
- ⑤ LCD display

AS28 Technical Data



AOSIF Soundproof Enclosure Specification:

AOSIF silent generator is designed by professional acoustic engineers based on 12 years experience.

- ★ multi-way air intake and exhaust guarantee the power performance of the generator.
- ★ large-scale impedance combined type silencer effectively reduce noise of the generator.
- ★ internal high performance rubber damper and flexible materials reduce vibration.
- ★ Base mounted fuel tank supports the generator running for 8 hours.

- ★ Cold steel materials of the canopy.
- ★ Best powder paint.
- ★ Zinc plated and Corrosion resistance.
- ★ Elegant appearance and reliable quality.
- ★ Stainless steel locks and hinges.
- ★ Access to all weather conditions.
- ★ Fireproof, waterproof and dustproof.
- ★ High quality soundproof materials could efficiently reduce noise.
- ★ Big base fuel tank in the frame guarantee sufficient diesel supply.
- ★ 180° revolvable and disassemble door for easy maintenance.
- ★ Concave lockable access door for easy operation and indefatigable



- ★ Transparent viewing window make the control panel clear at a glance.
- ★ Emergency stop button mounted on the canopy exterior for urgency.
- ★ Cooling fluid injection hole is kept on the ceiling crust.
- ★ Pipe of lube oil and cooling fluid is mounted on the bottom of generator for easy let.
- ★ Fuel fill and battery can easy be accessed by lockable door.
- ★ Cooling fan and battery are fully guarded.
- ★ Heat insulation of exhaust smoke system inside the canopy.
- ★ Forkman slot is for choice.
- ★ Lifting ear is mounted in the base frame.

AS28 Technical Data



Supply scope

1. Standard supply scope



Exhaust siler



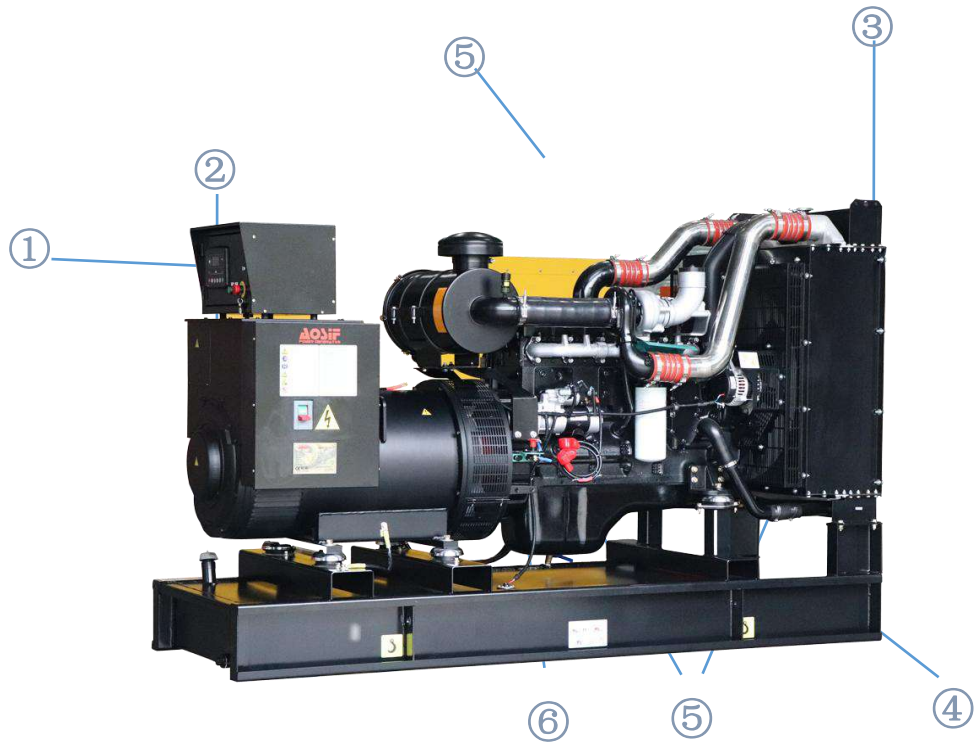
Starting batt



⑨ Float battery charger



⑩ Bellow



- ① Auto Control Panel
- ② Main Circuit Breaker
- ③ Cooling Radiator

- ④ Base Frame
- ⑤ Filter
- ⑥ Starting Motor

2. Optional supply scope:



① ATS



② fuel and water separator



③ Auto Fuel Pump



④ External daily fuel tank



⑤ ABB Breaker



⑥ Synchroni zation System



⑦ Lub oil heater



⑧ Elec.coolant Heater



⑨ Oil drain Pump



⑩ Trailer & Silent Canopy

Contact your local distributor for more information:



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