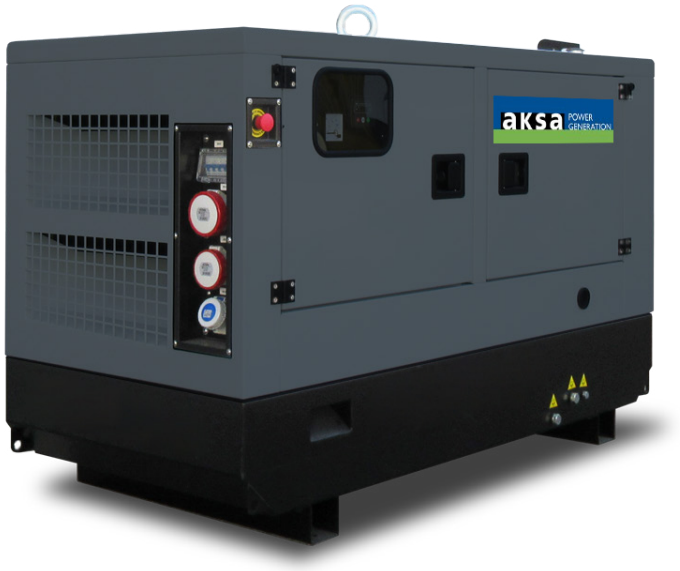
APYR20-EU5

Diesel generating set

POWER YOUR FUTURE



18 kVA / 14 kW PRP
20 kVA / 16 kW ESP

Powered by Deutz

Voltage	400/230V		
Frequency	50Hz		
Number of phases	3		
Weight with liquids without fuel	700 kg		
Dimensions (mm)	L	W	H
	1903	862	1291

1. General technical data

Engine	YANMAR 4TNV88-BIECS
Alternator	STAMFORD S0L2-G
Type of execution	G2
Frequency	50Hz
Voltage	400/230V
Control panel	DSE 3110
Fuel tank (l)	100
Sound level-Lp(A) (dB(A)@7m)	64
Sound level-Lp(A) (dB(A)@1m)	75
Sound power-LW(A) (dB(A))	89

Power[1] (m.p. cos φ 0,8)	**PRP (kVA / kW)**	**18 / 14**
	ESP (kVA / kW)	**20 / 16**

[1]PRP: Continuous power ("Prime Power"). ESP: Emergency Standby Power according to ISO8528-1.
Maximum active power tolerance (kW) ±5%

Voltage	PRP (KVA/KW)	ESP (KVA/KW)	Amperage (A)
400/230V	18 / 14	20 / 16	28,9

Directives and Regulations

ENVIRONMENTAL CONDITIONS STANDARD ISO 8528-1:2018: 25ºC, 100kPa and 30% relative humidity:

- **Prime Power (PRP):** Data on electrical power available at variable load without limit of hours per year. An overload of 10% is allowed for 1h out of 12. According to ISO 8528-1:2018.
- **Emergency Standby Power (ESP):** Data on electrical capacity available at variable load in case of emergency according to ISO 8528-1:2018.

The AKSA Generating Set has CE labelling which includes the following directives:

- **2006/42/EC.** Machine Safety Directive.
- **EN ISO 8528-13:2016. Part 13: Safety.** Alternating current generator sets powered by reciprocating internal combustion engines.
- **2014/30/EU. Electromagnetic Compatibility Directive.**
- **2000/14/EC. Noise Emissions Directive.** Sound power levels evaluated in accordance with the procedure laid down in the directive.
- **Directive 2011/65/EU** on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2).

ISO 9001 ISO 14001 ISO 45001 CE

APYR20-EU5 | YANMAR 4TNV88-BIECS | STAMFORD S0L2-G

2. Engine specifications

2.1. General technical data of the engine	**Make and model**	YANMAR 4TNV88-BIECS	
	r.p.m.	1500	
	Maximum ESP power (kWm)	18,4	
	Power PRP (kWm)	16,7	
	Fuel	Diesel	
	No. of cylinders	4 cylinders	
	Cylinder capacity (c.c.)	2190	
	Compression ratio	20	
	Cooling system	Water-cooled	
	Type of regulation	mechanical	
	Type of engine/injection/suction	Diesel/common rail/turbo-charged	
2.2. Fuel	**Type of fuel**	Diesel	
	Fuel tank capacity	100	
2.3. Consumption and autonomy	**Consumption (l/h)**	**Autonomy (h)**	
	PRP	**PRP**	
50%	N/A	N/A	
75%	N/A	N/A	
100%	5	20	
2.4. Cooling system	**Fan flow (N/A)**	N/A	
	Fan power consumption (kW)	N/A	
	Radiator back pressure (N/A)	N/A	
	Total refrigerant capacity (l)	2,7	
2.5. Lubrication system	**Oil capacity (l)**	7,4	
2.6. Intake system	**Combustion air intake flow (N/A)**	N/A	
2.7. Starter system	**No. of batteries**	1	
	Battery characteristics	12V 60Ah	
	Start-up voltage (V)	12V	
2.8. Exhaust system	**Exhaust gas flow (N/A)**	N/A [PRP]	N/A [ESP]
	Exhaust gas temperature (ºC)	N/Aº [PRP]	N/Aº [ESP]
	Exhaust outside diameter (mm)	2" (Ø 50,8)	
	Max. exhaust back pressure (N/A)	N/A	

✓ **4 cylinders 4-stroke diesel engine online** with mechanical regulation mechanical by means of a fuel pump, original from the manufacturer.

Emissions compliance
EU Stage V

✓ **Direct injection and suction system turbocharged.** Original manufacturer's particle separator filter.

✓ **Refrigeration through cooling liquid,** fully distributed in the closed circuit run by an engine driven pump, tropicalised radiator, original from the engine manufacturer.

✓ **Crankshaft-driven pump lubrication system.** The filter is a full-flow insert cartridge, front housing, original from the engine manufacturer.

✓ **Air intake system for turbo-fed combustion** with two-stage filter, original from the engine manufacturer.

✓ **Electric motor starting system, battery** (maintenance-free) **with switch, 12V Charging alternator and starter motor**. Original elements from the engine manufacturer.

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3. Alternator specifications

3.1. General technical data for the alternator

Make and model	STAMFORD S0L2-G
No. of poles	4
Insulation class	H
No. of threads	12
Mechanical protection index	IP23
Voltage Regulator (AVR)	AS540
Voltage regulation	±1%
ESP power 27ºC (kVA)	22
Power PRP 40ºC (kVA)	20
No. of phases	3
Power factor (cos φ)	0,8

Performance η (%)			
50%	**75%**	**100%**	**110%**
89,0%	87,9%	85,3%	83,7%

✓ **Brushless 4-pole alternator.** Robust mechanical structure with easy access to connections and components. Insulation class H, coil pitch 2/3 and self-excited AVR.

✓ **Protection with premium epoxy resins.** High voltage parts are impregnated under vacuum, which always means very good insulation.

Standard regulations that the alternator fulfils:

- **AS 1359 | IEC 34-1 1 | BS EN 60034-1 | VDE 0530 | BS 5000 | CAN/CSA-C22.2-100 | NEMA MG1-32**

Low wave distortion:

- **THD (100% load) = 2%**
- **THF < 2%**

Complies with: EN61000-6-3, EN61000-6-2 regarding radio interference.

4. Frame Specifications

- Unit mounted on electro-welded high-resistance steel frame, painted with epoxy-polyester powder paint. **With retention bath**.
- Connection of the assembly to the frame by means of anti-vibration dampers.
- Fuel tank located on the frame itself. The engine is equipped with a measuring gauge and fuel system.
- **Tested in a saline mist chamber according to ASTM B-117-09, resistance 500h.**

5. Soundproof canopy Specifications

- Electro-welded canopy made of high resistance galvanized steel painted with electrostatic epoxy-polyester powder paint.
- Interior soundproofing by means of a lining with soundproofing material.
- **Tested in a saline mist chamber chamber according to ASTM B-117-09, resistance 720H. IP44 mechanical protection degree.**

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6. Control panel

6.1. Main elements of the control panel

- Protection panel, distribution with automatic control module which allows you to work in manual, automatic or signal mode.
- Emergency stop button.
- **Protections:**
  - 4-pole magnetothermic protection against overloads and short circuits.
  - Protection fuses for the control set.

6.2. Protection switch

Model	Chint 32A 4P

6.3. Control module

Model	DSE 3110

DSE 3110 control module with manual operation. It can also work in signal mode. It allows monitoring a wide number of engine parameters and displaying information, status and alarm alerts. The module includes USB communication ports.

The entire module is easily configurable via PC using the specific DSE configuration software.

It has an illuminated LCD screen where the main group parameters and alerts are shown, 4 configurable outputs and 6 inputs, programmable clocks and alarms, as well as an hour meter.

There are different operating modes to choose from: MANUAL mode, or SIGNAL mode.

Other alternative configurations may be offered upon request that extend the possibilities of the work regime.

Environmental Tests that the module complies with:

| BS EN 61000-6-2 (electromagnetic compatibility) | BS EN 61000-6-4 (electromagnetic compatibility) | BS EN 60950 (electrical safety) | BS EN 61000-6-2 (Temperature) | BS EN 60068-2-6 (Vibration) | BS EN 60068- 2-30 (Humidity) | BS EN 60068--2-27 (Shock).

7. Standard Scope of Supply

Engine

✓ YANMAR 4TNV88-BIECS Diesel Engine, 1500 rpm water cooled.
✓ mechanical governor.
✓ Protection from hot and moving parts.
✓ Electric motor starting system, battery (maintenance-free) with switch, 12V Charging alternator and starter motor.
✓ High performance fuel particle separator filter. Original from manufacturer.

Alternator

✓ 12-Wire, 4-pole brushless STAMFORD S0L2-G alternator with electronic voltage regulation type AVR (AS540).
✓ Auxiliary winding in the alternator.
✓ IP23 protection level.
✓ Insulation class H.

Frame

✓ Electro-welded frame made of high-strength steel.
✓ Painted with electrostatic epoxy-polyester powder paint.
✓ Anti-vibration dampers from the engine block to the frame.
✓ Fuel tank with capacity of 100 litres with retention bath, located on the frame itself. Equipped with cleaning record to facilitate maintenance work.
✓ Measuring gauge and installation of fuel to the engine.
✓ Liquid drainage connection to the outside.
✓ **Frame tested in a salt spray chamber according to ASTM B-117-09 (500h resistance).**

Soundproofed canopy

✓ Electro-welded canopy of high-strength galvanized steel.
✓ Painted with electrostatic epoxy-polyester powder paint.
✓ Interior soundproofing by means of a rigid panel made of glass wool with an exterior textile covering.
✓ IP44 mechanical protection level.
✓ **Canopy tested in salt spray chamber according to ASTM B-117-09 (resistance 720h).**

Control panel

✓ **DSE 3110 control module.**

✓ **Maintenance-free battery and battery disconnector.**

✓ **Protections:**
  ✓ 4-pole magnetothermic protection against overloads and short circuits.
  ✓ Protection fuses for the control set.

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7. Standard Scope of Supply

Other equipment

✓ Mechanised fuel nozzle outside with key.
✓ Tropicalised Radiator for work at 50ºC. Prepared for maintenance intervals every 500 hours.
✓ Differential protection.
✓ Emergency stop button.
✓ Reinforced pole centrally-mounted.

Power sockets configuration

RCD Type B, Class B (Optional)

	APPR20-EU5 | APYR20-EU5 ▼ CB 10
Schuko	1
16A 2P+T (230V)	
16A 3P+N+T	1
32A 3P+N+T	1
63A 3P+N+T	
125A 3P+N+T