

APVR200-EU5

Diesel generating set

POWER
YOUR
FUTURE

200 kVA / 160 kW PRP
220 kVA / 176 kW ESP

Powered by Volvo



| | | | |
|-------------------------------------|----------|------|------|
| Voltage | 400/230V | | |
| Frequency | 50Hz | | |
| Number of phases | 3 | | |
| Weight with liquids without fuel | 3400 kg | | |
| Dimensions (mm) | L | W | H |
| | 4040 | 1656 | 2071 |

1. General technical data

| | |
|------------------------------|------------------|
| Engine | VOLVO TAD881GE |
| Alternator | STAMFORD UCI274H |
| Type of execution | G3 |
| Frequency | 50Hz |
| Voltage | 400/230V |
| Control panel | DSE 7420 MKII |
| Fuel tank (l) | 680 |
| Sound level-Lp(A) (dB(A)@7m) | 67 |
| Sound level-Lp(A) (dB(A)@1m) | 78 |
| Sound power-LW(A) (dB(A)) | 97 |

| | | |
|--|----------------|-----------|
| Power ¹ (m.p. cos φ 0,8) | PRP (kVA / kW) | 200 / 160 |
| | ESP (kVA / kW) | 220 / 176 |

¹PRP: 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 | 200 / 160 | 220 / 176 | 317,5 |

Directives and Regulations

ENVIRONMENTAL CONDITIONS STANDARD
ISO 8528-1:2018: 25°C, 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).



APVR200-EU5 | VOLVO TAD881GE | STAMFORD UCI274H

2. Engine specifications

| | | | |
|--|---|----------------------------------|------------|
| 2.1. General technical data of the engine | Make and model | VOLVO TAD881GE | |
| | r.p.m. | 1500 | |
| | Maximum ESP power (kWm) | 189 | |
| | Power PRP (kWm) | 172 | |
| | Fuel | Diesel | |
| | No. of cylinders | 6 cylinders | |
| | Cylinder capacity (c.c.) | 7700 | |
| | Compression ratio | 17,2:1 | |
| | Cooling system | Water-cooled | |
| | Type of regulation | Electronic | |
| | Type of engine/injection/suction | Diesel/common rail/turbo-charged | |
| 2.2. Fuel | Type of fuel | Diesel | |
| | Fuel tank capacity | 680 | |
| 2.3. Consumption and autonomy | Fuel consumption (l/h) | Autonomy (h) | |
| | PRP | PRP | |
| 50% | 20,4 | 33,4 | |
| 75% | 29,9 | 22,7 | |
| 100% | 39,9 | 17 | |
| 2.4. Cooling system | Fan flow (m³/s) | 4,7 | |
| | Fan power consumption (kW) | 7,2 | |
| | Radiator back pressure (Pa) | 100 | |
| | Total refrigerant capacity (l) | 55 | |
| 2.5. Lubrication system | Oil capacity (l) | 27 | |
| 2.6. Intake system | Combustion air intake flow (m³/min) | 13,4 | |
| 2.7. Starter system | No. of batteries | 2 | |
| | Battery characteristics | 12V 44Ah | |
| | Start-up voltage (V) | 24V | |
| 2.8. Exhaust system | Exhaust gas flow (m³/min) | 29,3 [PRP] | 29,3 [ESP] |
| | Exhaust gas temperature (°C) | 471° [PRP] | 471° [ESP] |
| | Exhaust outside diameter (mm) | 4" (Ø 101,6) | |
| | Max. exhaust back pressure (kPa) | 8 | |

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

Emissions compliance EU Stage V

ENGINE EQUIPPED WITH PARTICULATE FILTER (DPF) AND SCR CATALYST, WHICH TREATS THE EXHAUST GASES WITH THE DEF ADDITIVE.

70 L DEF ADDITIVE TANK

- ✓ EXTERNAL DEF FILLING NOZZLE.

| Load | DEF Consumption (l/h) | Autonomy (h) |
|-------------|-----------------------|--------------|
| | PRP | PRP |
| 50% | 20,4 | 33,4 |
| 75% | 29,9 | 22,7 |
| 100% | 39,9 | 17 |

- ✓ **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, 24V 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 UCI274H | | | | |
| | No. of poles | | 4 | | | | |
| | Insulation class | | H | | | | |
| | No. of threads | | 12 | | | | |
| | Mechanical protection index | | IP23 | | | | |
| | Voltage Regulator (AVR) | | PMG+MX341 | | | | |
| | Voltage regulation | | ±1% | | | | |
| | ESP power 27°C (kVA) | | 220 | | | | |
| | Power PRP 40°C (kVA) | | 200 | | | | |
| | No. of phases | | 3 | | | | |
| | Power factor (cos φ) | | 0,8 | | | | |
| | Performance η (%) | | | | | | |
| | 50% | | 75% | | 100% | | 110% |
| 93,9% | | 93,8% | | 93,3% | | 93,0% | |

- ✓ **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 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 Schneider EasyPact 400A 4P

6.3. Control module



Model DSE 7420 MKII

DSE 7420 MKII DEEP SEA control card with mains grid monitor. The genset will automatically start up when detecting a fault in the electric power network and it will turn off automatically as well, when the electrical supply is re-established. It can also work in manual mode and by signal. It allows you to monitor a wide range of generator parameters and display information alerts, status and alarms.

The module includes communication ports USB , RS232, RS485, Ethernet, as well as DSENet® for system expansion. The modules also feature SNMP functionality for connection to SNMP systems.

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

It has 132x64p illuminated LCD display with 4 lines of text, 5-key navigation through menus, 9 configurable outputs and 8 configurable inputs, programmable clocks and alarms, reading and displaying parameter values, including RMS values.

Different operating modes: AUTOMATIC mode, MANUAL mode, SIGNAL mode and TEST mode.

Other alternative configurations are available upon request to extend the capabilities of the operation modes.

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).

Technical plan for orientation purposes. AKSA reserves the right to modify the data in this technical sheet without prior notice.



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7. Standard Scope of Supply

Engine

- ✓ VOLVO TAD881GE Diesel Engine, 1500 rpm water cooled.
 - Engine equipped with particulate filter (DPF) and SCR catalyst, which treats the exhaust gases with the DEF additive.*
- ✓ Electronic governor.
- ✓ Visco fan.
- ✓ Crankcase ventilation.
- ✓ **Sensors and Alarms:**
 - ✓ Oil pressure, temperature, and coolant level alarms.
 - ✓ Oil pressure and coolant temperature readings.
- ✓ Protection from hot and moving parts.
- ✓ Electric motor starting system, battery (maintenance-free) with switch, 24V Charging alternator and starter motor.
- ✓ High performance fuel particle separator filter. Original from manufacturer.
- ✓ Oil drain pump.

Alternator

- ✓ 12-Wire, 4-pole brushless STAMFORD UCI274H alternator with electronic voltage regulation type AVR (PMG+MX341).
- ✓ 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 680 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 7420 MKII control module.**
- ✓ **DSE 890 MKII DSEWebNet® / IoT Gateway - 4G (GSM/Ethernet).** The DSE890 MKII 4G module is used in conjunction with compatible DSE PBXs to provide remote monitoring and communications data via DSEWebNet® or third-party MQTT brokers. The logged data is accessible via DSEWebNet® software and an internet browser or via the app. Users can monitor their equipment, clear alarm conditions, start/stop equipment, or monitor fuel levels.
- ✓ **Maintenance-free battery and battery disconnect.**
- ✓ **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.
- ✓ Mechanised DEF nozzle outside with key.
- ✓ Tropicalised Radiator for work at 50°C. Prepared for maintenance intervals every 500 hours.
- ✓ Differential protection.
- ✓ Emergency stop button.
- ✓ Reinforced pole centrally-mounted.
- ✓ Radiator access door.
- ✓ Water deflector.
- ✓ Reinforced terminal block.
- ✓ Exhaust thermal sleeves.
- ✓ Spark arrestor.
- ✓ Document tray.

Power sockets configuration

✓ RCD Type B, Class B (Optional)



| | APVR200-EU5 ▼ CB 50 | APVR250-EU5 ▼ CB 50 | APVR300-EU5 ▼ CB 50 | APVR350-EU5 ▼ CB 50 | APVR400-EU5 ▼ CB 50 |
|-----------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Schuko | 2 | 2 | 2 | 2 | 2 |
| 16A 2P+T (230V) | 1 | 1 | 1 | 1 | 1 |
| 16A 3P+N+T | | | | | |
| 32A 3P+N+T | 1 | 1 | 1 | 1 | 1 |
| 63A 3P+N+T | 1 | 1 | 1 | 1 | 1 |
| 125A 3P+N+T | 1 | 1 | 1 | 1 | 1 |

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