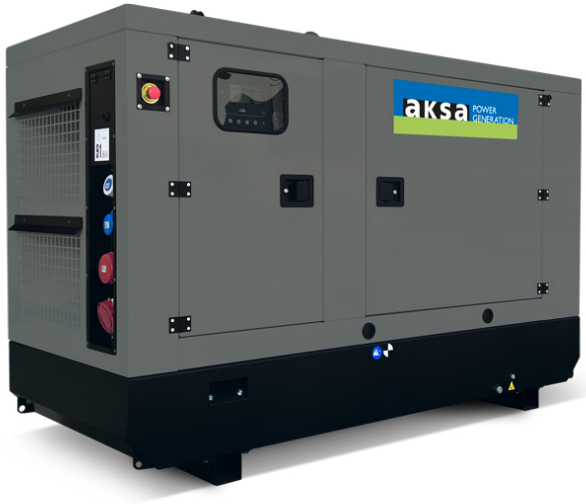
APDR40-EU5

Diesel generating set

POWER YOUR FUTURE



39 kVA / 31 kW PRP
43 kVA / 34 kW ESP

Powered by Deutz

Voltage	400/230V		
Frequency	50Hz		
Number of phases	3		
Weight with liquids without fuel	1270 kg		
Dimensions (mm)	L	W	H
	2337	1042	1643

1. General technical data

Engine	DEUTZ TD2.9L4
Alternator	STAMFORD S1L2-K
Type of execution	G2
Frequency	50Hz
Voltage	400/230V
Standard Control panel (Option A)	DSE 7320 MKII
Standard Control panel (Option B)	ComAp InteliLite 4 AMF 25
Fuel tank (l)	150
Sound level-Lp(A) (dB(A)@7m)	64
Sound level-Lp(A) (dB(A)@1m)	72
Sound power-LW(A) (dB(A))	91

Power[1] (m.p. cos φ 0,8)	**PRP (kVA / kW)**	**39 / 31**
	ESP (kVA / kW)	**43 / 34**

[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	39 / 31	43 / 34	62,1

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

APDR40-EU5 | DEUTZ TD2.9L4 | STAMFORD S1L2-K

2. Engine specifications

2.1. General technical data of the engine	**Make and model**	DEUTZ TD2.9L4	
	r.p.m.	1500	
	Maximum ESP power (kWm)	39	
	Power PRP (kWm)	35,1	
	Fuel	Diesel	
	No. of cylinders	4 cylinders	
	Cylinder capacity (c.c.)	2900	
	Compression ratio	1 : 17,8	
	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	150	
2.3. Consumption and autonomy	**Consumption (l/h)**	**Autonomy (h)**	
	PRP	**PRP**	
50%	5	30	
75%	8,2	18,3	
100%	9,5	15,8	
2.4. Cooling system	**Fan flow (m³/s)**	1,1	
	Fan power consumption (kW)	1	
	Radiator back pressure (mBar)	1,5	
	Total refrigerant capacity (l)	3,5	
2.5. Lubrication system	**Oil capacity (l)**	9	
2.6. Intake system	**Combustion air intake flow (m³/h)**	248	
2.7. Starter system	**No. of batteries**	1	
	Battery characteristics	12V 60Ah	
	Start-up voltage (V)	12V	
2.8. Exhaust system	**Exhaust gas flow (m³/h)**	559 [PRP]	559 [ESP]
	Exhaust gas temperature (ºC)	460º [PRP]	460º [ESP]
	Exhaust outside diameter (mm)	3" (Ø 76,2)	
	Max. exhaust back pressure (mBar)	30	

✓ **4 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).

✓ **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.

APDR40-EU5 | DEUTZ TD2.9L4 | STAMFORD S1L2-K

3. Alternator specifications

3.1. General technical data for the alternator

Make and model	STAMFORD S1L2-K
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)	44
Power PRP 40ºC (kVA)	40
No. of phases	3
Power factor (cos φ)	0,8

Performance η (%)			
50%	**75%**	**100%**	**110%**
90,7%	89,9%	87,8%	86,6%

✓ **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.**

APDR40-EU5 | DEUTZ TD2.9L4 | STAMFORD S1L2-K

6. Standard Control panel (Option A)

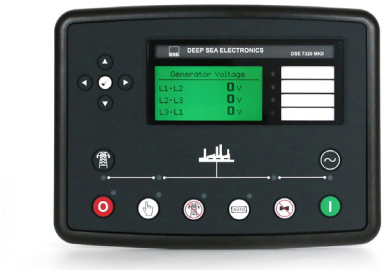
6.1.A Main elements of the control panel

- 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.A Protection switch

Model	Schneider Acti 9 50A 4P

6.3.A Control module



Model	DSE 7320 MKII

DSE 7320 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,and also DSENet® for system expansion. Possibility of Ethernet networking (plug).

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).

6. Standard Control panel (Option B)

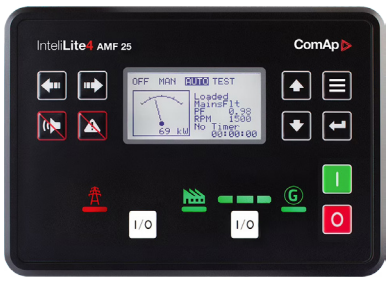
6.1.B Main elements of the control panel

- 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.B Protection switch

Model	Schneider Acti 9 50A 4P

6.3.B Control module



Model	ComAp InteliLite 4 AMF 25

The InteliLite 4 AMF 25 is an advanced single generating set controller meticulously designed for both stand-by and prime power applications. This intuitive and flexible controller is engineered for seamless installation and user-friendly operation, providing a comprehensive solution for the control and monitoring of your gen-sets, whether on-site or remotely.

Key Features

✓ **Versatile Application:** The controller is adept at handling both stand-by and prime-power applications within a single unit, offering unparalleled flexibility.

✓ **Intuitive Interface:** Equipped with backlit symbols, the InteliLite 4 AMF 25 ensures ease of use and quick interpretation of information.

✓ **Extensive I/O Options:** Featuring 8 binary outputs, 8 + 1 binary inputs, and 4 analog inputs (U/I/R), including a +5 V output reference for analog inputs, the controller offers diverse input and output configurations.

✓ **Emergency Stop Functionality:** With 2 high-current E-Stop binary outputs, the controller ensures swift and secure emergency shutdowns when required.

✓ **Connectivity:** Boasting USB Host and inbuilt RS485, the controller supports easy configuration through InteliConfig and facilitates seamless communication, both locally and remotely.

✓ **Expansion Capabilities:** The presence of 2 slots for extension plug-in modules (Modbus, Internet, SMS, inputs/outputs) and extension CAN modules enhances the controller's adaptability to diverse requirements.

✓ **Comprehensive Monitoring:** The built-in PLC logic, complemented with a PLC monitoring tool in InteliConfig, offers detailed insights into the gen-set operation.

✓ **Remote Communication:** The controller provides full remote communications support, including AirGate 2.0, WSV, Internet access via Ethernet/4G, Modbus TCP/RTU, SNMP v1/v2c, Active SMS, and emails.

7. Standard Scope of Supply

Engine

✓ DEUTZ TD2.9L4 Diesel Engine, 1500 rpm water cooled.
Engine equipped with particulate filter (DPF).
✓ Electronic governor.
✓ **Sensors and Alarms:**
  ✓ Oil pressure, temperature, and coolant level alarms.
  ✓ Oil pressure and coolant temperature readings.
✓ Crankcase ventilation.
✓ 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.
✓ Oil drain pump (from 60kVA).

Alternator

✓ 12-Wire, 4-pole brushless STAMFORD S1L2-K 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 150 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).**

Standard Control panel (Option A)

✓ **DSE 7320 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 disconnector.**

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

APDR40-EU5 | DEUTZ TD2.9L4 | STAMFORD S1L2-K

7. Standard Scope of Supply

Standard Control panel (Option B)

✓ **ComAp InteliLite 4 AMF 25 control module.**

✓ **CM-4G-GPS module.** An easy-to-use and highly efficient solution for connecting generator sets controllers online via 4G network. Enables remote monitoring and tracking of the gen-set's exact position, helping to optimise its uptime and reduce maintenance costs.
- ✓ Reliable 4G connectivity with 2G or 3G fallback.
- ✓ GPS location for geotracking and geofencing.
- ✓ Alarm notification via SMS or email.
- ✓ WebSupervisor for remote monitoring.

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

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

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.
✓ Radiator access door.
✓ Reinforced terminal block.
✓ Exhaust thermal sleeves.
✓ Spark arrestor.
✓ Document tray.

Power sockets configuration

RCD Type B, Class B (Optional)

	APDR30-EU5 ▼ CB 31	APDR40-EU5 ▼ CB 31	APDR60-EU5 ▼ CB 42
Schuko	1	1	2
16A 2P+T (230V)			
16A 3P+N+T	1	1	1
32A 3P+N+T	1	1	2
63A 3P+N+T	1	1	1
125A 3P+N+T