



About Us

The leading provider
of critical power
systems and servicing



Who are we?

AVK are the leading provider of critical power systems and servicing, specialising in all aspects of the design, planning, implementation and on-going maintenance.

We are the largest supplier of Data Centre and Financial sector critical power solutions in the UK, with 5 or 6 (in ECS) offices across the UK and Ireland.

For over 30 years we've been providing Generator and UPS solutions for mission critical services and systems. Since our founding in 1989, AVK have enjoyed steady and consistent growth, not only in size, but also our reputation. We are trusted by many of the UK's largest Blue-Chip companies to design, install and maintain 100% power integrity to guarantee their operations when mains power fails.

AVK has a unique capability for design, manufacture, installation and on-going maintenance of standby power systems containing UPS systems and standby generators. We provide expertise in the design, planning and implementation of power systems projects in all major market sectors ranging from Data Centres, Banking and Finance, Telecommunications, Education and Healthcare in both the private and public sectors, from standard configurations to special applications.

It is our aim to provide maximum support to our clients coupled with reliable, high quality products delivered on time and within budget, working closely with you to ensure an efficient and effective system design.



Our Services

AVK provide expertise in the design, planning and implementation of power systems projects in all major market sectors. We are experts in state-of-the-art solutions for today's demands for reliability, sustainability and efficiency.

PROJECT DESIGN + INSTALLATION

We offer full design and consultancy for your critical power system project – no matter the scale or how challenging. We can design any system containing UPS systems, standby generators, switch gear & control systems around your requirements, in the present and for the future.

- Survey and Consultancy
- Drawings and Technical Submission
- Strategy
- Turnkey Solutions
- In-Housedrawings in AutoCAD to BIM

Our project management team can facilitate a smooth and pain-free installation liaising closely with you and your representatives. We provide full onsite services from offload and position, to electrical and mechanical engineering, commissioning and handover to you or your client.

- PI Insurance
- Full Project Management
- Mechanical, Electrical and Civil engineering
- Flue, Silencer and Coupling Installation
- Fuel Delivery Systems
- On-site Test & Commissioning
- Project Handover



GENERATOR SERVICE + MAINTENANCE

AVK offers market-leading proactive critical power service and maintenance support to keep your power generation equipment operating at optimal levels. We offer a full European wide coverage for critical power systems via Nationally and Regionally based offices and engineers.

Our strength is delivering flexible service and maintenance support which is tailored to your specific needs for the lifetime of your Diesel Generator, UPS, DC and Battery equipment.

- Most experienced diesel and gas generator service engineers in the industry
- Experience via trained and certified in-house teams
- All Manuals, Software and Diagnostic Tools Held
- Full access to consumables, spares and authorised parts
- Black Building Mains Fail Testing
- Remedial Works
- Extended Life Engine Maintenance
- Bespoke Packages
- 24/7/365 Callout with 4-hour Site Response

UPS SERVICE + MAINTENANCE

AVK have over 30 years' experience delivering proactive UPS and battery service and maintenance and offer the most competitive and bespoke maintenance plans based around your requirements.

- Planned and Reactive Maintenance
- Battery Impedance & Discharge Testing
- Battery Replacements
- Loadbank Testing
- 3, 5 & 10 Year Battery Services & Lifecycle Reporting
- UPS Condition Survey
- Most experienced UPS service engineers in the industry
- All Manuals, Software and Diagnostic Tools Held
- Fans and Capacitors ordered from original Part manufacturer
- Sizeable Spares Stock for all systems to be maintained for duration of contract
- Unrivalled relationships, stockists, agents and partners across Europe to ensure fully supported solution with our own teams.
- Bespoke Packages
- 24/7/365 Callout with 4-hour Site Response



LOADBANK TESTING SERVICES

AVK offers market-leading proactive critical power service and maintenance support to keep your power generation equipment operating at optimal levels. We offer a full European wide coverage for critical power systems via Nationally and Regionally based offices and engineers.

AVK HV loadbank and LV loadbank services are an effective solution for your onsite testing requirements. Knowing that your generators, UPS and other power systems and equipment have been rigorously tested for reliable power output gives you peace of mind and enables you to focus on other aspects of your project.

- Resistive & reactive testing
- Inductive testing
- G1, G2 & G3 BS Testing Specification
- Power factor testing
- HV Load testing & monitoring
- M Load Testing
- Load Data recording & reporting
- Integrated system test
- Flue, Silencer & Coupling Installation
- Control systems testing under varying load
- Whole system performance

CONTROL UPGRADES

For mission-critical systems and facilities where 100% power is vital for 100% of the time, backup generator power system reliability is essential to continuous power delivery during times of mains power failure or outages. The most common failure with standby generators is the control system.

AVK can help you to maintain ultimate control of your power protection.

Control Upgrades allow your existing standby power system to take full advantage of the technological advances in generator controls without replacing the gensets themselves, offering a cost-effective method of upgrading your critical power systems.





DRUPS CONVERSIONS

Gain a new standby generator system but retain the majority of your DRUPS infrastructure

Diesel (or Dynamic) Rotary Uninterruptible Power Supply devices were conceived to combine the benefits of a static UPS with a diesel generator.

A DRUPS system can operate in a smaller footprint, and without the need for constant air-conditioning associated with a static UPS.

The disadvantages seen by clients are more frequent and more expensive maintenance regime, and with certain manufacturers reliability issues.

We can design, install and maintain:

- Single DRUPS Conversions
- Multi-node DRUPS Conversions
- Design of switchgear and associated controls to suit new generator application
- Mechanical design
- Vibration testing of completed generator system to ISO8258 Part 9
- Full Turnkey package solutions

COOLING SYSTEM UPGRADES

Allow your generator system to operate in today's higher temperatures

When many of the buildings in our major cities were built, the maximum design temperature for generator cooling systems was 25°C. In many recent years we have seen ambient record highs of 38°C and above.

AVK can upgrade the cooling system of your existing generator installation by fitting larger radiators, increasing the aero fan capability or by designing and installing complete new cooling systems.

We can design, install and maintain:

- Radiator replacements due to failure / leaks
 - Radiator upgrades to improve thermal performance
 - Design and installation of complete new cooling packages
 - Mechanical and electrical design
 - Heat exchanger systems
 - Full Turnkey package solutions
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ENGINE OVERHAUL + REBUILDS

Planned overhauls to maintain the health of your generator set engine, or reactive remedial work to repair damage

A standby generator engine rarely amasses the hours-run to qualify for the engine manufacturers overhaul schedule. However, even though the engine isn't running it is being constantly circulated by heated coolant via the engine heaters. Depending on the engine type, this can lead to perished seals and O-rings in the cooling circuits which dictate planned maintenance or overhauls are carried out to maintain engine health.

Being a Rolls Royce / MTU partner we can fully support your MTU engine, but we also have experience and knowledge with all the major engine manufacturers used in the UK power generation market.

CRITICAL POWER HIRE

Temporary Power Protection for your business and operational needs AVK can supply critical power hire. Whenever you need it. Wherever you want it.

We realise that for many businesses, projects and one-off events, a hired critical power backup solution provides flexible, dependable power protection at an affordable, predictable cost, in line with short or long-term business plans and budgets.

Long or short term UPS & Generator power rental from AVK.

AVK offer competitive, fully flexible power rental contracts – so you'll always have the power generation and standby systems you need, for as short or as long as required, with the minimum of financial outlay. Also, every AVK hired power system will be delivered, installed and maintained effectively at your premises or chosen delivery location throughout the entire hire period without complication, and at no extra cost – leaving your business, project or event with peace-of-mind.



ENVIRONMENTAL SERVICES

AVK provides complete response, environmental and decommissioning services across the generator industry. We offer solutions for the maintenance, OFTEC inspection and environmental management of fuel storage facilities, with dedicated expertise ranging from incident spill response to environmental risk assessments and storage tank decommissioning/replacement.

- Response to Spill incidents
- Decommissioning, Installation & Repair work
- Tank Cleaning & Boroscope Inspection
- Fuel Polishing & Testing
- OFTEC inspections
- 24/7 Fuel Delivery

HYDROTREATED VEGETABLE OIL (HVO)

Many large-scale consumers of RED diesel are already improving their Carbon footprints by switching to alternative fuels, and most engine manufacturers have now confirmed EN15940 compatibility utilising a synthetic biodiesel called HVO.

HVO fuel is a form of renewable diesel that has been produced from renewable and sustainably sourced vegetable fats and oils.

Why switch to HVO?

'Green diesels' create fewer emissions than regular fuel. Experts calculate that a 1,000 litres of HVO releases 195kg of CO₂, compared to 3600kg for the same amount of regular diesel.

In addition to lower emissions and particulates, HVO offers further advantages over RED diesel:

- Cleaner burn reduces emissions and makes it ideal for use in urban "clean air zones"
- Excellent cold temperature performance – improves cold start properties in winter
- Improved storage capability (no FAME reduces the risk of contamination of tanks)
- Extended 10-year storage lifespan with a reduced need for regular testing and maintenance

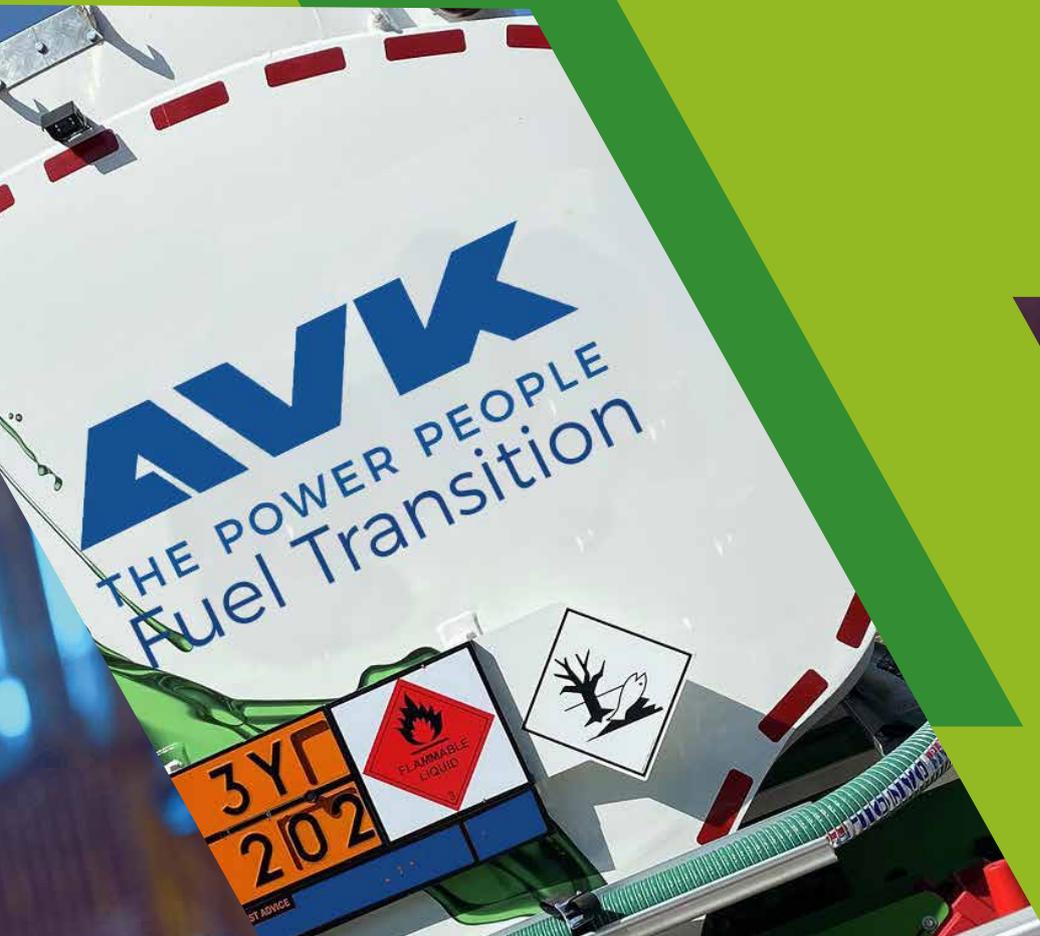


FUEL TRANSITION SERVICE

Through our extensive Generator and Fuels Support Network, AVK can offer the most comprehensive HVO Transition service across the UK and Europe – from initial site audits to Fuel Transition and Commissioning.

We have been working diligently to develop a complete end-to-end service to support all of our clients make the switch to renewable fuel supplies.

- Buy back of existing RED diesel fuel
- Cleaning of existing tanks to prepare for replenishment
- Renewing and reviewing correct grade of filters on fuel polishers
- Provision of temporary tank arrangements to ensure standby cover is available during refilling operations
- Recommissioning and testing systems on the new fuel



SUSTAINABLE ENERGY SOLUTIONS

Our years of experience and technological know-how tell us there isn't a 'one size fits all' solution or clear end structure in the design of power solution. However, we believe that these challenges along with the increasingly complex issues surrounding grid restrictions, gives the data centre market an opportunity to make a significant change in the way energy (especially standby energy) is utilised.

AVK is already helping our clients to meet their carbon reduction goals with our Fuel Transition Service converting a large number of existing sites from using traditional diesel to HVO. This gives around a 20% saving on emissions and an almost 90% reduction on their carbon footprint. For more information [click here](#).

Data centres are some of the most power-hungry pieces of modern infrastructure, and as their average size increases, the demand for energy will soon outstrip grid availability.

As owners and operators need to bridge the gap between cost efficiency, critical power availability and stringent sustainability targets, embracing innovative energy management strategies through renewable on-site generation is becoming a mission critical priority for an environmentally sustainable future.

AVK, with over 30 years' experience delivering critical power solutions and experts in the Data Centre power industry, have developed an approach to harness the power of modern distributed energy technologies combined with ground-breaking optimisation solutions.

A local, decentralised energy centre designed, built and maintained by AVK allows our data centre clients to utilise hydrogen-ready technology with significantly reduced emissions and also support the grid at times of high demand. Together, we help power your Data Centre to keep it profitable, competitive and contributing to a carbon neutral world.



PMS + EMS SYSTEMS

AVK can offer a comprehensive EMS or PMS system for data centre, industrial or commercial applications.

PMS

- A power management system is a digitized system of connected devices. Real-time power information can be displayed from meters, relays, VSD's and other intelligent devices.
- All of your facilities electrical infrastructure can be monitored – MV switchgear, LV switchgear, ATS's, generators, UPS, MCC's.
- Typically the infrastructure would be displayed in the form of a single-line distribution mimic on a large screen.
- A PMS system can monitor a electrical infrastructure health and efficiency to ensure the system is balanced and efficiency is maximised.
- Trending should identify heavily-loaded circuits that could lead to nuisance tripping
- Equipment monitoring to identify harmonic issues

EMS

- To monitor a building's energy consumption, smart meters and power relays are connected to the central EMS
- An EMS system is primarily used to monitor a building's energy consumption
- As EMS systems have evolved, they have progressed from purely being used for alarm monitoring and time clock purposes
- Parameters, trending and benchmarking can be used to alert the site team of potential problems before costly breakdowns occur, and to identify sustainability benefits due to waste energy usage.

Our Sectors

AVK provides expertise in the design, planning and implementation of power systems projects in all major market sectors.

We cover the following areas..

DATA CENTRES

As experts in the field of data center power protection, AVK understand the considerations Data Center owners and operators face from:

- Increasing pressures on processing and power density
- Sustainability and efficiency drives
- Managing risks to reputation, reliability and security
- Restrictions on location of power equipment and availability of supply

ENTERPRISE WORKPLACE / FINANCIAL

Landlords and commercial building owners come to us to deliver turnkey power protection packages for their buildings, which guarantee 100% power availability and life safety systems to their tenants and occupiers.

INDUSTRIAL MANUFACTURING

Power protection for industrial applications can require heavy duty and robust equipment. AVK's team of industrial experts ensure that your critical power equipment is mission-fit to deliver reliable, continuous power and minimise any downtime.

HEALTHCARE

Power loss in any healthcare environment doesn't simply lead to loss of revenue - it can lead to loss of life. We provide power solutions in healthcare settings across the private, public and pharmaceutical sectors to ensure consistent mission critical power as and when it's needed.

RETAIL

Loss of power in the retail environment isn't just about stopping the tills from ringing. The reputational damage and safety risks are enough to cripple most businesses.

RESIDENTIAL

In residential spaces, there are a number of restrictions to consider such, floor loading and providing suitable equipment housing; alongside strict noise, access and pollution restrictions. AVK's expertise in this sector ensures seamless delivery of your critical power equipment.

Our Solutions

As the leading provider of critical power our comprehensive product range covers all your power protection needs and more. From standard configurations to bespoke designs, our range of technology solutions provide uninterrupted power for every application.

STANDBY DIESEL GENERATORS

For mission-critical systems and facilities where 100% power is vital for 100% of the time, a backup generator power system is essential to the continuous power delivery during times of mains power failure or outages.

Where a UPS system will protect power to your critical equipment for a short period dependent on battery autonomy; a standby generator will, when longer outages occur, protect your equipment for much longer periods of time from hours to days or even weeks dependent on fuel storage.

Our standby diesel generator range provides reliable backup power to support medium to larger scale loads. We can design, install and maintain:

- Single module ratings from 5kW to 5MVA
- Containerised and plant room installations
- Stand Alone application and multi-module parallel systems
- Bespoke noise level designs – typically 75 dBA at 1m
- Fuel delivery systems
- Full Turnkey package solutions

TURNKEY GAS GENERATOR SOLUTIONS

Gas generator sets from AVK are proven for reliable operation offering an extensive range of fuels including natural gas, coal gas, propane and alternative fuels.

AVK can offer durable, low life-cycle cost gas power systems that we can also integrate with our controls, exhaust systems, fuel train, combined cooling heat and power skids and switchgear for a turnkey Gas solution. We work with multiple technology partners to offer different gas applications, including:

- Peak lopping
- CHP
- Data Centres
- Hybrid systems

UPS SYSTEMS

Highly efficient, technologically advanced UPS Systems for mission critical systems and facilities.

AVK UPS Systems provide the best power protection during shorter periods of mains power failure, becoming a critical bridge between your main power source and backup generator system.

Where a standby generator will take over and protect the load for longer durations of time, a UPS system acts as the first line of defence against loss of power; able to react instantly to power disturbances and outages and bridging the critical 'power gap' before the Generator system comes online.

AVK UPS systems are designed to provide years of low-maintenance protection, keeping your power supply constant – whether it's running critical processes or safeguarding servers, our UPS range combines the latest in technology and efficiency, resulting in the lowest operating costs in the industry.

- Single-phase UPS
- Three-phase UPS
- Modular UPS
- Static and Automatic Transfer Systems (STS & ATS)
- Industrial and Transformer-based UPS
- Centralised Power Supply for emergency systems



BATTERY STORAGE SOLUTIONS

At the forefront of Power Generation technologies, AVK have designed and utilised ABSS (AVK Battery Storage Solutions) to deliver innovative Battery Storage solutions for a range of client applications.

Critical applications using gas turbines, reciprocating gas engines, and diesel engines coupled with Energy Storage Systems offers incredible flexibility whilst being able to competitively offer Grid-Scale Storage Solutions.

- 1MW - 6MW - Flexible, modular scalability
- Close coupled to Transformers LV to 36kV.
- Externally sited Inverters and LFP Battery Racks.
- Battery Racks with individual HVAC allow operation of Free Air Cooling up to temperatures of 28°C.
- Reduce the risk of Thermal runaway by installing off Gas Detection.
- DC Cabinets
- Isolation Monitoring
- Full 4 Quadrant Inverter Technology
- 0 - 0 Power Factor Operation. Supporting Reactive Power Revenues
- Inverters sized for 0.95PF G99 applications with an adjustable 10% Voltage Grid Disturbances tolerance
- Controls include Grid Forming Mode, Grid Following, Reactive Power, Black Start, Dynamic Containment, Frequency Response, Voltage Regulation, Power Quality
- Bespoke EMS/PMS and SCADA Systems
- Hybrid with PV and Wind Generation, optimising Site Generation.
- UK based Commissioning and O&M Team



RELAYS

For over 30 years AVK have been the exclusive UK and Ireland distributor for the SEG range of protection relays. Whether under the SEG or the Woodward's brand, the quality and innovation of the protection relays have remained the same.

Our range of protection relays give comprehensive protection for power generation and energy distribution in various applications including generators, transformers, motors, cables and overhead lines as well as busbars.

Our ranges are as follows:

HighPROTEC

Our most advanced range of door mounted protection relays offer a one device solution for whatever application you need including:

All protection functions included as standard allow you to offer a better solution without any additional costs.

- Dual Current Inputs – works with 1A and 5A CTs
- Wide operating range means you don't need to specify measuring or control voltages 110/233/400AC 24-220V DC
- Wide range power supply, no need to specify aux voltage
- By offering such a comprehensive and flexible relay means less options during ordering and the quickest delivery time possible.

HighTECH

- Door mounted withdrawable relays for simple reliable protection.

WILINE

- Self-Powered Overcurrent and Earth Fault Relays
- Rugged relays that do not require an auxiliary supply
- Electro pulse output to trip breaker directly

Low Cost Relays

- Professional Line
- Basic Line

Relay Software

- SEG SmartView Relay Software
- Free to use relay setting software
- Works with all ranges of SEG Relays
- Includes disturbance recording analysis software

Site Services

We also provide full technical support for all our products including in house training and on-site commissioning.

We can offer G99 Testing as well as primary and secondary injection for applications including overcurrent and differential relays.



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A dark blue, abstract geometric pattern featuring a network of glowing nodes and connecting lines, resembling a digital or power grid. The pattern is set against a black background and is partially obscured by a large blue diagonal stripe from the top right.

www.avk-seg.com