

Power. Quality. Solutions.

Products & Services Guide



**Power
Capacitors**

Power. Quality. Solutions.

In this guide



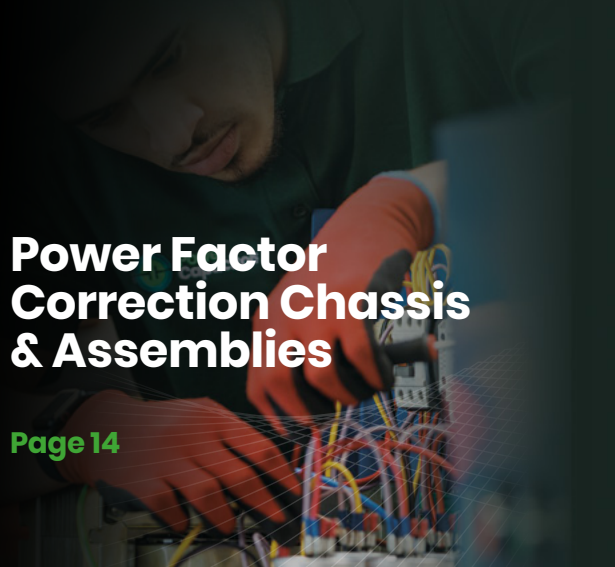
The power quality people

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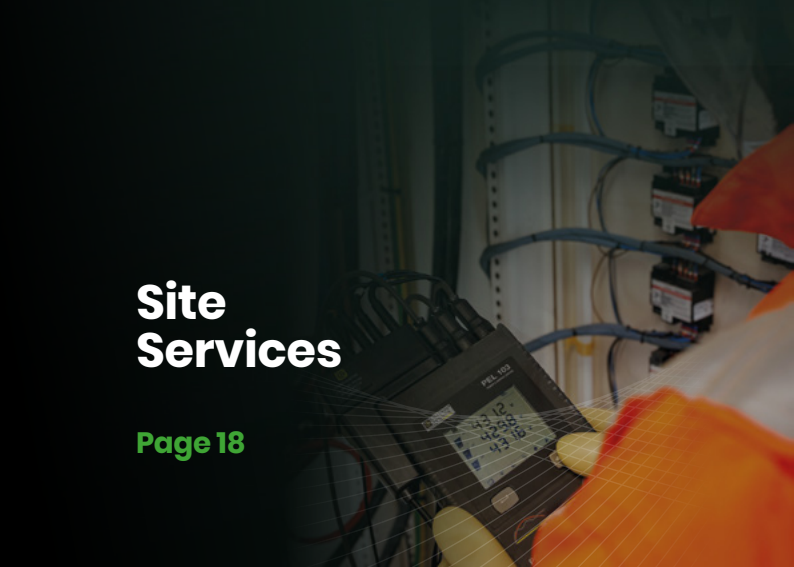
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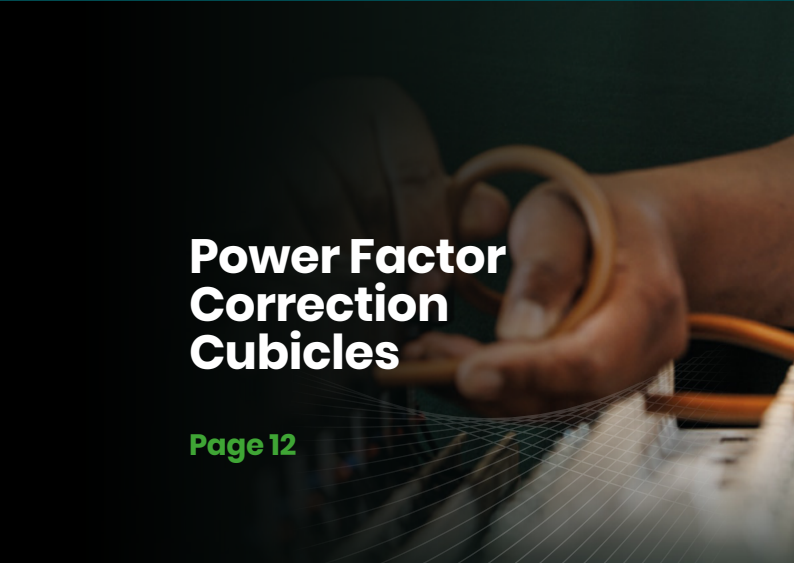
Our power quality equipment keeps your people and your business moving. The quality and reliability of your power supply is paramount. Downtime is simply not an option.

Having the right power quality system installed and properly maintained is the only option to ensure a robust, compliant electrical infrastructure.



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Power. Quality. Solutions.



The power quality people

Our people know a thing or two about power quality – from food manufacturing plants and automotive assembly lines to data centres and hospitals.

Based in the industrial heart of Britain, we design, build, install and maintain energy and money-saving power quality solutions for clients across the UK – we're proud that our mission to improve energy efficiency and reduce wasted energy started over 50 years ago!

It means we're perfectly placed to help you achieve your power quality objectives, saving energy and cost from day one. Power quality is an area of increasing importance as our customers transition to greener power sources and more energy efficient appliances.

It all starts with an electrical site survey, carried out by our own skilled engineers.





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Active Harmonic Filters

Expert-designed, quality-driven AHF power solutions.

Active Harmonic Filtering (AHF) is the power quality solution we recommend for harmonic-rich environments where the power supply is subjected to distortions caused by dynamic, nonlinear loads.

These situations demand real-time solutions to avoid voltage destabilisation, and to maintain network compliance, you need Active Harmonic Filtering.

What we offer

Our skilled power quality team can survey and analyse, then build and install a bespoke active harmonic filtering solution designed specifically to your unique application and needs.

- Inspect & analyse
- Design & build
- Quality approvals
- Supply & install
- Service & maintain

VSDs and robotics in manufacturing plants, CT scanners in hospitals, HVAC systems and elevators in shopping centres, sensitive equipment in pharmaceutical cleanrooms, LED lighting and computers in offices – all these are among the many electrical loads that create harmonic distortion. This distortion, if ignored, results in higher energy usage and costs, as well as unnecessary production downtime.

For more info

0121 708 4511

sales@powercapacitors.co.uk

AHF solutions

Our Merus® A2-series Active Harmonic Filters are designed for the toughest power quality jobs, delivering immediate benefits from the minute they are installed.

Merus® A2-Series AHF filters inject current in real time, ensuring that reactive power is fed efficiently to fast-fluctuating loads, as well as reducing the harmonic voltage distortion by targeting individual harmonic currents so voltage variations and flicker are significantly reduced. All in a neat, compact, space-efficient cubicle.

They combine a state-of-the-art controller built on modern 3-level IGBT-Inverter topology, 7" touch-screen user interface and modular technical design, resulting in a fast, reliable, and compact device that is easy to operate and complies with all standard communication protocols.



IP20

Loose modules designed for installation in your existing cabinet



IP30/31

Loose modules designed for wall mounting in your switch room



IP54

A standalone filter offering a bespoke designed solution



HPQ

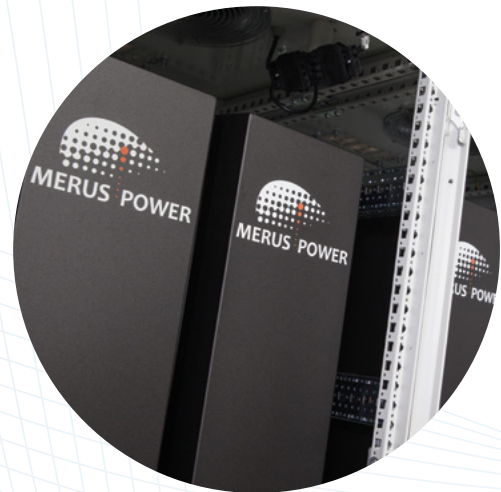
Combining AHF with traditional contactor switched PFC

Merus® A2-series filters

Merus® A2-series filters are specifically designed for dynamic reactive power compensation and harmonic filtering.

Our skilled power quality team can survey and analyse, then design, build and install a bespoke active harmonic filtering solution designed specifically to your unique application requirements.

We install only the best AHF solutions, using high quality, technically advanced A2-series components from globally renowned Finnish technology specialists Merus® Power. They have been a trusted supplier since 2014, and we are proud to be their official UK distributor.



3-level IGBT topology and design ensures:

- High performance
- Low heat losses
- Low noise

Easy to integrate:

- Integration for electrical cabinets
- Maintenance possibilities
- No external power supplies or controllers required

Capable to produce the nominal current at a typical harmonic spectrum

2 x ETHERNET + Modbus TCP

Smart features:

- Linear derating on temperature
- Automatic start and acknowledge
- Stand-by feature for power saving

Merus® A2 is a proven product:

- Robust solution with long lifespan
- No master-slave topology issues
- High redundancy

One unit for:

- 3W/4W
- 50/60Hz
- Voltage levels (200–480 and 480–690)

Preprogrammed digital input and outputs for hardwired signals

Multiple modules in parallel

- Both open & closed loop CT configurations

UL508 and CSA rated modules

Merus®-A2 filters

Technical summary

200A Merus®-A2 Filters, bottom entry in IP54 cubicle with forced ventilation



200A Merus®-A2 Filters in IP54 cubicle with control circuit

Name	Merus®-A2- Active Harmonic Filter
Ingress Protection (IP) ratings	IP20, IP30 or IP54
Current ratings	Single units 50A, 100A, 150A or 200A Multiple units combined to achieve >200A. Unlimited scalability with load shared evenly between parallel modules
Weight	IP20 50A starts from 70kg
Dimensions	IP20 50A 225x500x850 mm ² IP54 Bespoke cabinets available of all sizes and configurations
Voltage	200–480V (3 wire) 200–440V (4 wire) Higher voltages with suitable step up transformers
Connection	Top or bottom
Harmonics	Filters up to 50th harmonic typically achieving <3% THDi
Ventilation	For IP20 & IP30, 300mm free space below and above the module required for air ventilation Forced air ventilation included on IP54 cubicles
HMI / display	7" touch screen with multilingual graphical HMI

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Hybrid Power Quality

The best of both worlds – power factor correction and active harmonic filters in one.

Hybrid Power Quality (HPQ) uses multiple technologies – active and passive systems – to improve overall power quality in electrical networks. It's called 'hybrid' because it integrates the strengths of different solutions to manage various power quality issues more effectively and cost-efficiently.

Our Hybrid Power Quality (HPQ) solution is perfect for situations where you need both dynamic reactive power compensation

and harmonic mitigation to achieve a well-balanced, efficiency-optimised power supply for your business. For example, industrial plants with both heavy motors and nonlinear loads (VFDs, welders) and commercial buildings with high harmonic content, unbalanced loads and leading Power Factors.

What we offer

Our Hybrid Power Quality service covers everything from an initial survey and analysis, through to bespoke design, build, installation, and on-going maintenance.

- Inspect & analyse
- Design & build
- Quality approvals
- Supply & install
- Service & maintain

For more info

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sales@powercapacitors.co.uk

Merus® HPQ solution

For dynamic reactive power compensation

Merus® HPQ is a hybrid power quality compensator that combines two existing technologies in one compact and well-performing solution.

Merus® HPQ

The perfect cost-effective solution to replace old capacitor banks with economical and reliable high technology.

- Stepless and fast power factor correction
- Active harmonic current mitigation
- Imbalance correction

Features & benefits

Lower cost compared to an active harmonic filter-only solution

- Fewer number of active harmonic filter modules required which reduces costs

Great linear output

- Better performance than traditional PFC-system
- Load balancing possibilities
- Harmonic mitigation

Inductive side compensation

Higher lifetime of the capacitor steps

- Due to the voltage harmonics mitigation

Saves money and improves power quality

- Cost reduction is achieved by upgrading compensation devices with 21st-century technology
- Better power quality: fewer interruptions and faults
- Better and faster power factor control: reduced electricity bills and fewer problems

No unnecessary small steps to capacitor banks

- Dynamic parts ensure that smaller steps by the capacitor bank are not needed
- All-in-one solution – no separate controllers required
- Higher effective compensation compared to traditional separate compensation systems



Customer benefits

Customer benefits of Merus® HPQ solution include:

- Lower energy costs
- Maximised productive time
- Reduced maintenance costs
- Optimisation of embedded generation
- Specification compliance
- Supply reinforcement

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Power Factor Correction

Improving the power factor of your electrical system is key to improving your business.

A poor power factor wastes energy and drives up infrastructure requirements, so optimising it makes complete commercial sense.

With over 50 years in the business and with some incredibly knowledgeable and experienced long-serving members in our team, our reputation as 'the power quality people' goes before us.

What we offer:

- Inspect & analyse
- Design & build
- Quality approvals
- Install & commission
- Service & maintain
- Surveys & retrofits



Capacitors

The core of Power Factor Correction. Designed to improve electrical efficiency and reduce reactive power losses in industrial and commercial power systems.



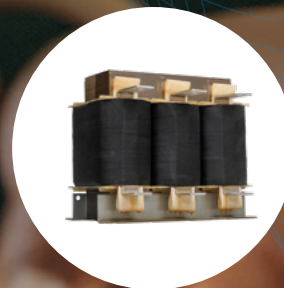
Contactors

The switching interface specifically designed to handle the large inrush currents present when switching capacitors, safely connecting and disconnecting them whilst under load.



Relays

The brains of the outfit. Continually measuring the supply and automatically switching up to 12 capacitive stages in or out to match the needs of the system.

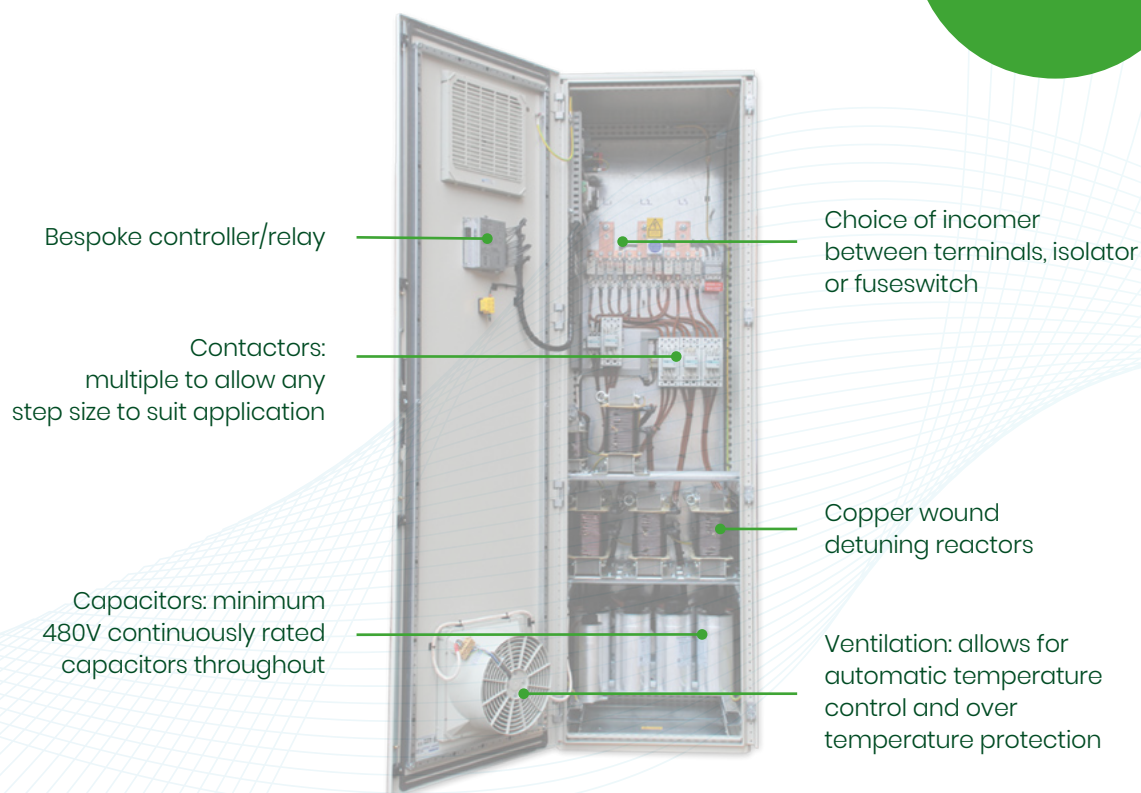


Reactors

Series inductors at each capacitor stage designed to block harmful harmonic currents, prevent resonance and to protect the capacitors, ensuring stable and reliable power factor correction in harmonic-rich networks.

PFC cubicles

For more info
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Name	PowerCab Blue Line
Type	Plain or detuned
Size	50–400 kVAr (represents just a selection of the most commonly requested sizes)
Options/extras	• Hand/off/auto switches & lamps • Countless stage configurations available – please talk to us • Separate cable entry boxes • 100mm plinth • Isolator or fuseswitch • Aluminium gland plate • Anti condensation heater

kVAr 415v 3ph 50Hz	kVAr switching steps	Plain order code	Detuned order code	Plain dimensions (H x W x D mm)	Detuned dimensions (H x W x D mm)
50	2 x 25	PB050TM	PPB050TM	1000 x 600 x 300	1200 x 800 x 300
100	2 x 50	PB100TM	PPB100TM	1000 x 600 x 300	1800 x 600 x 600
150	3 x 50	PB150TM	PPB150TM	1200 x 600 x 300	2000 x 600 x 600
200	4 x 50	PB200TM	PPB200TM	1000 x 800 x 300	2200 x 600 x 600
250	5 x 50	PB250TM	PPB250TM	2000 x 600 x 600	2200 x 800 x 600
300	6 x 50	PB300TM	PPB300TM	2000 x 600 x 600	2200 x 800 x 600
350	7 x 50	PB350TM	PPB350TM	2000 x 800 x 600	2200 x 1000 x 600
400	8 x 50	PB400TM	PPB400TM	2000 x 800 x 600	2200 x 1000 x 600

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PFC Chassis & Assemblies

Power Factor Correction (PFC) assemblies are available in all shapes and sizes to suit the needs of application or installation method.

Why choose a PFC assembly?

We design and manufacture PFC assemblies with the goal of being easy to install into any available space. Our assemblies are available in several designs, all built with the same Power Capacitors quality and attention to detail, having been refined over decades based on customer feedback and extensive testing.

The following pages show the most popular products in this category, with many requests being for bespoke designs.

The benefits

Improve overall system efficiency by reducing reactive power demand:

- Lower electricity costs by avoiding power factor penalties
- Reduce loading on transformers, cables, and switchgear
- Plain systems are cost-effective but only suitable for low-harmonic environments
- Detuned systems provide protection against harmonics and extend equipment lifespan

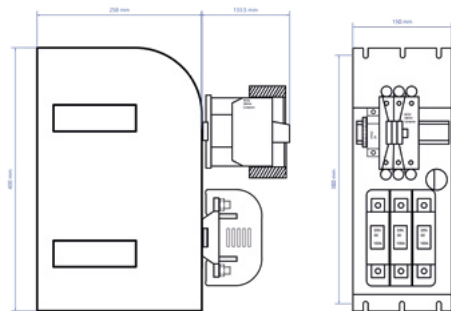
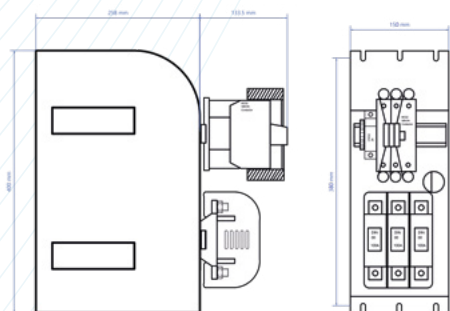
For more info

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sales@powercapacitors.co.uk

The PFC range

Available in both plain and detuned variations, these assemblies make it easy to incorporate PFC into your existing switchboard designs. We also produce bespoke designs to suit your specific requirements.



FS Assembly

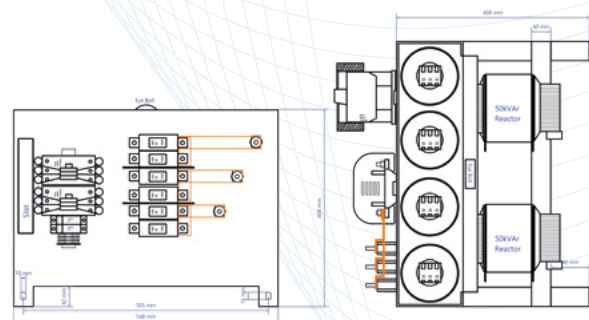
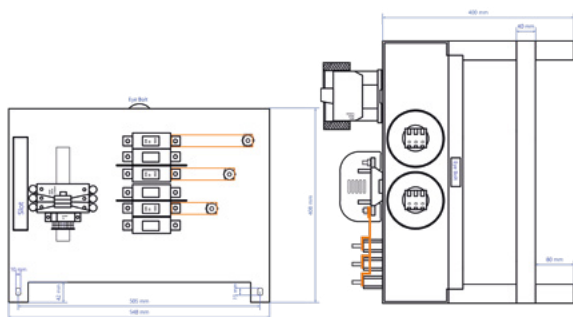
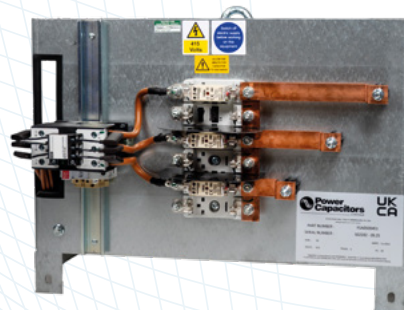
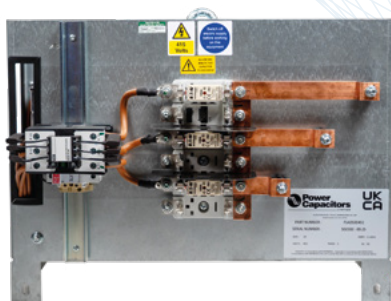
Type	Plain only
Reactive power	<= 50kVAr
Reactors	None
Includes	Capacitors, contactors & fuses (up to 2 stages)
Dimensions	H400 x W150 x D378mm

FTS Assembly

Type	Plain only
Reactive power	<= 50kVAr
Reactors	Design allows for reactors to be retrofitted
Includes	Capacitors, contactors & fuses, up to two stages
Dimensions	H400 x W150 x D378mm

Fast UK delivery

Quality manufactured in the UK and delivered within days, our industry-leading turnaround times keep your business running smoothly.



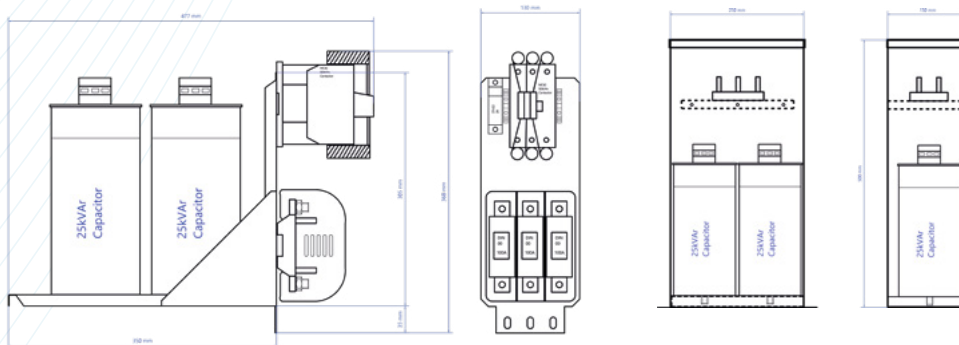
FSA Chassis

Type	Plain
Reactive power	$\leq 100\text{kVAr}$
Reactors	None
Includes	Capacitors, contactors & fuses (up to four stages)
Dimensions	H408 x W548 x D530mm

FSD Chassis

Type	De-tuned
Reactive power	$\leq 100\text{kVAr}$
Reactors	Up to 2x 50kVAr
Includes	Capacitors, contactors, fuses & reactors
Dimensions	H408 x W548 x D530mm

**Need
bespoke
chassis or
assemblies?
Just talk to us.**



NOK Assembly

Type	Plain
Reactive power	<= 50kVAR
Reactors	Plain, but can be made detunable upon request
Includes	Up to two stages
Fits in	Equivalent to ABB M01
Dimensions	H368 x W130 x D477mm

Capacitor Modules

Type	Plain
Reactive power	Up to 100kVAR
Reactors	None
Includes	Capacitors & terminals (on some model). Flying lead available
Dimensions	H335–525 x W85–500 x D85–150mm

Power. Quality. Solutions.

Site Services

We've got the largest team of Power Quality Engineers in the UK, covering the whole country from our central Midlands base.

Over 150 years

That's the combined years of experience across our team. All fully employed, highly skilled engineers, many have been with us for decades since we launched Site Services in 2001. Our team has the experience and specialist technical expertise to deliver the very best service from installation and commissioning, to servicing and repairs.

It's a bold statement, but we're pretty confident they've seen and resolved every possible scenario. Let's see what we can do for you.

Site surveys

No matter how complex or fragmented your electrical setup, our expert engineers have the knowledge to make sense of it. Equipped with state-of-the-art tools and technology, they meticulously monitor and test power quality, from harmonic distortion to transient events.

But it's not just about gathering data; it's knowing what to do with it that matters. Post survey, our skilled in-house team will carry out an in-depth analysis of the findings and create a comprehensive evaluation report and action plan, that will transform the performance and efficiency of your system.

Installations & commissioning

Once we've designed and built your system for you, you may choose to use your own engineers to install it. But don't forget, we offer a full turnkey service at Power Capacitors, including installation and commissioning by our own engineers who have been working with our systems for years. If we install and commission for you, we can be confident that everything is running as it should be, fully optimised to deliver maximum efficiency and cost savings.

Book a survey

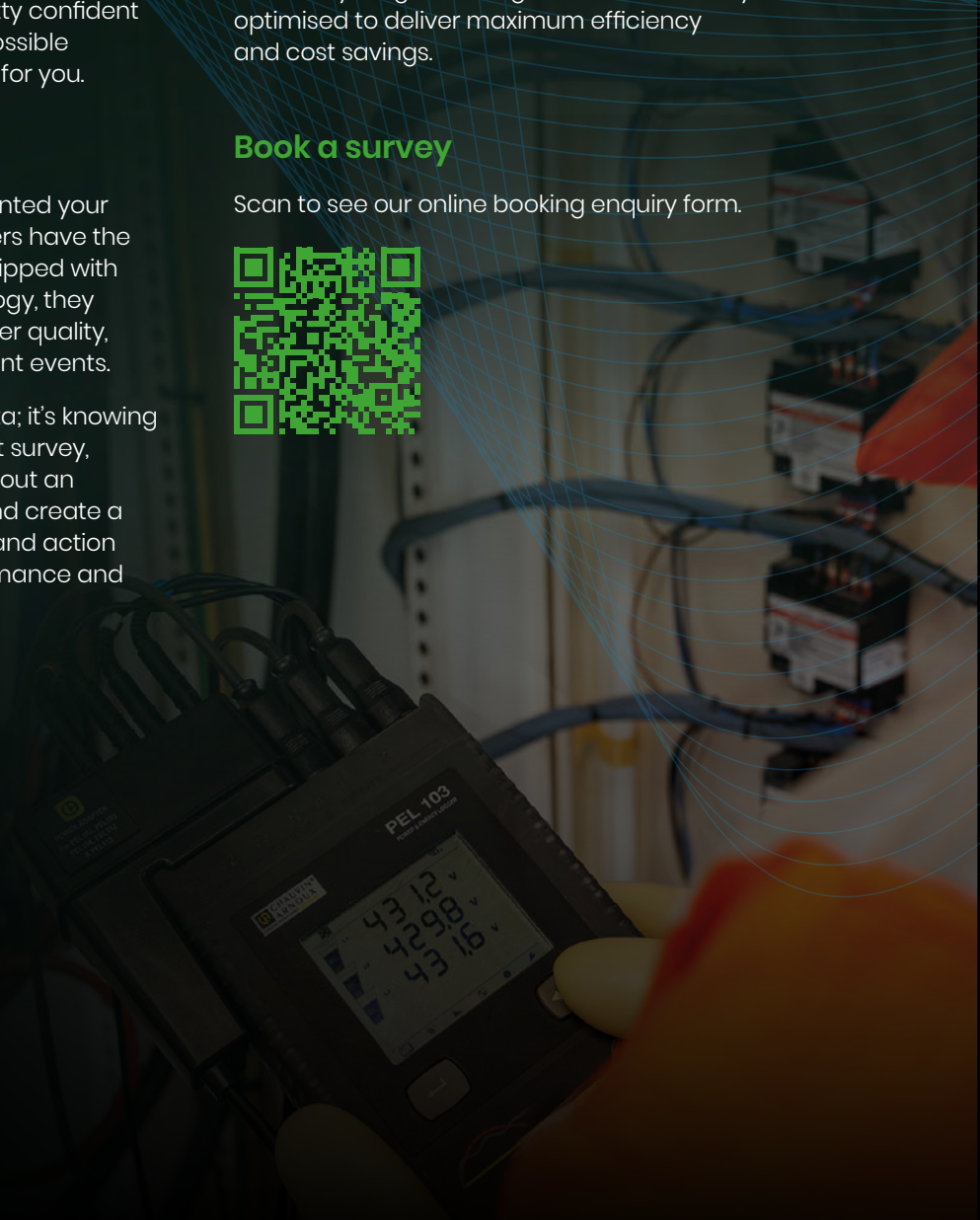
Scan to see our online booking enquiry form.



For more info

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sales@powercapacitors.co.uk





Expert servicing

The power quality solutions we design and install will work seamlessly for many years, but it's best practice to have them regularly checked.

We recommend an annual service by one of our skilled Power Quality Service Engineers to make sure your system is running as it should, preventing downtime and delivering excellent cost and energy savings for your business. Ask us about our popular 5-star annual service package.



Replace & repair

Left unchecked, power quality solutions can slowly deteriorate over time, allowing hundreds of pounds a month in reactive power charges and increased CO₂ emissions to creep back in, or worse, complete system failure.

Our Power Capacitors Engineers can make ad-hoc visits to maintain, repair or when needed, replace your equipment, but the need for this, and for emergency call-outs, can be minimised with an annual service package.



Emergency call-outs

There's much less chance of needing emergency repairs to your equipment if you are already maintaining it with regular annual services, but incidents can still happen. In these situations, our Power Capacitors Service Engineers can be on site to take action quickly, keeping downtime to a minimum.

Power. Quality. Solutions.

Power Electronics Capacitors

We're the UK's premier capacitor distributor.

Trusted supplier

The clue is in our name; power capacitors have been the lifeblood of our business since 1973. Through engineering excellence and reputation, we are widely known as the industry's go-to resource for high quality power electronics capacitors and solutions across the UK.

We're proud to have been entrusted with the UK distributorship for Electronicon – recognised as the global leader in capacitor technology, their capacitors are second to none, designed for optimal performance and durability.

Speedy service

Based in the industrial heart of the UK, we can get our high-performance capacitors to you quickly, anywhere across the country. A fast and reliable service you can trust, to deliver in more ways than one.

Our customers' power electronics needs are always evolving. Our expertise in the field means we're able to advise and recommend products and solutions that fit your application perfectly, specifically designed and optimised for you.

- Extensive stocked range
- Customised solutions
- Decades of experience
- Expert help & advice
- Fast, reliable service
- Volume pricing for large orders



For more info

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sales@powercapacitors.co.uk

For all applications

Our high-performance power electronics capacitors can be found in a wide and diverse range of industries across the UK.



High performance
voltage systems



Railways



Lighting



Aerospace solutions



Maritime
applications



Automotive



Energy efficiency
systems

Power. Quality. Solutions.

Transwave Converters

Britain's favourite phase converters since 1984.

For workshop & home

Transwave Converters offer a range of products to suit any workshop. From single-to-three phase converters and entire workshop solutions, through to inverter-driven motor control packages. Not only limited to workshops, Transwave Converters are also ideal for home hobbyists and small businesses where a single-phase supply needs to be converted to three-phase to suit specialist equipment and machinery.

We're a 100% British-owned company, designing, manufacturing and supplying converters and inverter-driven motor control packages in an ISO9001:2015 quality-assured environment, based in the industrial heart of the UK.

Ours are the only converters made in the UK in an ISO9001 quality-assured environment.

All our products are fully compliant with EMC regulations, the Low Voltage Directive and BS EN ISO 61000-3-2:2006.

Visit our
Transwave website:



For more info

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sales@powercapacitors.co.uk

Our products

Rotary and static converters in a range of sizes, plus specialist inverters.



Rotary converters

Rotary converters are designed to allow three-phase single and multi-motor applications to be powered from your single-phase supply.

Available in nine different sizes from 2kW to 22kW.

The rotary converter is designed to be an investment for the entire workshop, enabling the user to power as many machines as required up to the capacity of the converter.



Static converters

Static converters are designed to allow three-phase single motor applications to be powered from your single-phase supply.

Available in five different sizes from 2.2kW to 7.5kW.

The power regulating switch allows the user to select the optimum capacitance setting on a case-by-case basis ensuring the converter delivers the correct amount of power for each application.



Inverters

Inverters, also known as variable speed drives (VSDs) or variable frequency drives (VFDs) allow precise control of the speed of the connected motor. Transwave offer a range of single-phase input and three-phase input inverter options using the IMO SDI inverter drive.

Packages

Talk to our experienced and friendly team about our inverter packages. Complete with inverter, motor and remote control, our experts can help you select the right solution for your situation.



Proudly made in Britain

Our power quality products are designed and manufactured by our experienced, highly skilled team in Birmingham, the industrial heart of Britain.



**Power
Capacitors**

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