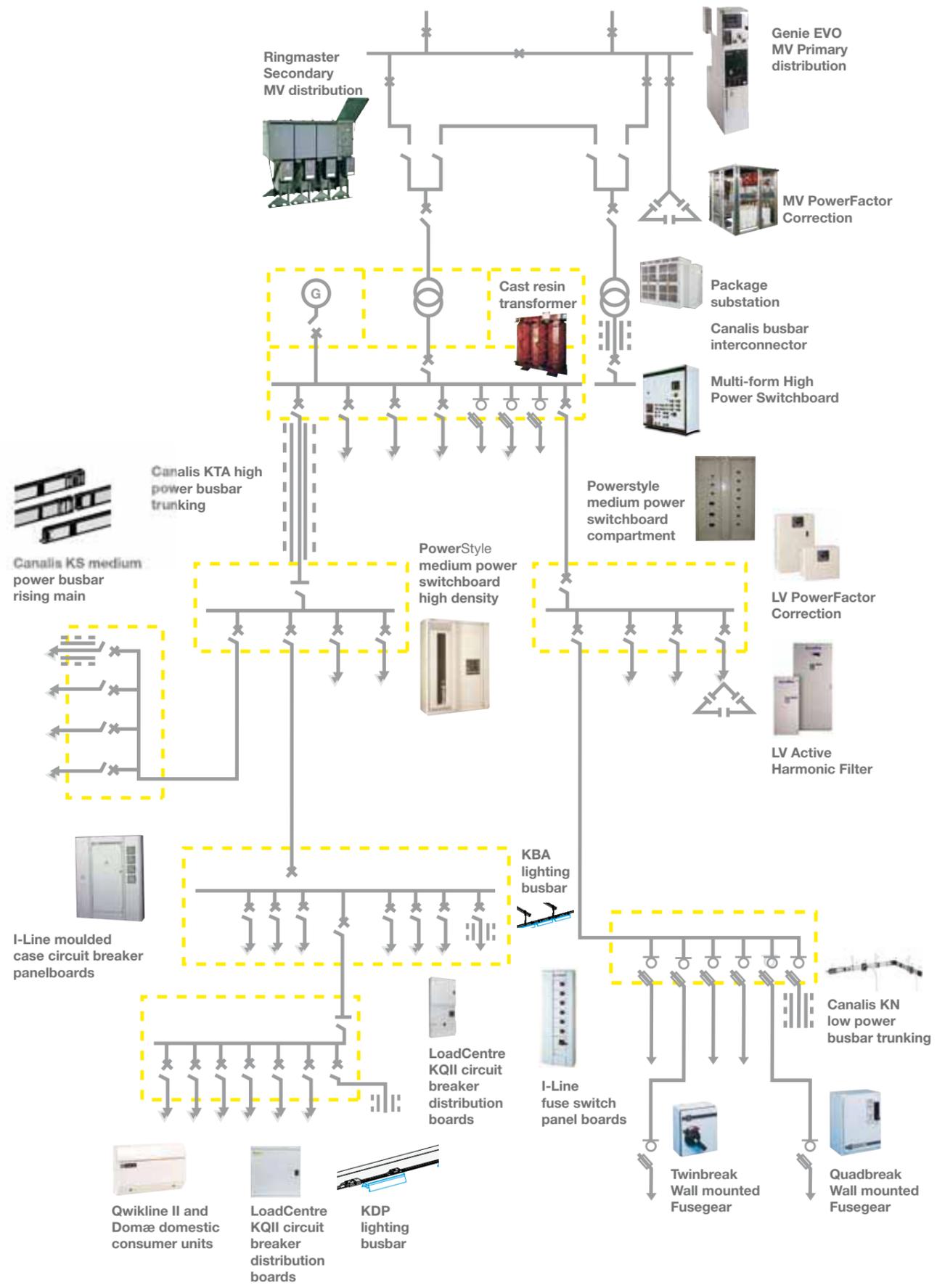


# Low Voltage Equipment Overview





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# Introduction



## Low Voltage Equipment (LVE) from Square D, a brand of Schneider Electric

With over 50 years of experience, Square D provides a comprehensive range of ready to install products supported by a level of service designed to ensure that installations are made as easy as possible. We are committed to providing innovative, functional and reliable products that are tailored to your needs.



At the centre of the Square D solution is the unique and world-renowned plug on technology which is simple to install and upgrade.

Located in Telford in the heart of Shropshire, the Schneider Electric LVE facility is a modern 3000m<sup>2</sup> factory utilising skilled personnel and market leading products. From design and build to installation and maintenance, Square D and Schneider Electric provide the complete electrical solution from package substations to Low Voltage distribution boards within commercial and industrial applications.

All our product ranges are supported by routine and type tested documentation, comprehensive catalogues and operation and maintenance information. In addition to this we operate to ISO9001, ISO14001 and Investors in People.



### We provide:

- Fully assembled and tested custom built distribution switchgear
- Busbar trunking, Power Factor Correction and active filtering
- Integrated metering and communications solutions
- Project management, site supervision, testing and commissioning
- Training to European and British standards

Square D – quality is at the heart of our business





# Indoor Package Substations



Package substations provide cost effective, safe and more efficient Medium Voltage (MV) and Low Voltage (LV) distribution solutions. Combining MV transformers and LV distribution in a close coupled assembly that is fully coordinated, designed to individual needs, assembled and tested at the factory.



## Multiform Package Substation Switchboards

- Fully certified and manufactured to BSEN 60439-1
- Ratings to 7200A
- Fault level ratings to 150kA 1 second
- Form 4 type 6

## Benefits

- A Guaranteed type tested assembly
- Cost saving through reduced on-site cabling and installation time
- Guaranteed protection coordination
- Space saving configuration to suit civil works
- Dry type cast resin transformer technology
- MV protection and switching technology



## Powerstyle Package Substation Switchboards

- Fully certified and manufactured to BSEN 60439-1
- Ratings to 3200A
- Fault level ratings to 85kA 1 second
- Form 4 type 6 compartmented
- Form 3 type 2 high density



## Medium Voltage Switchgear and connections

MV switchgear connections, direct to the transformer or via an external cable box attached to the transformer enclosure. The MV switchgear device can be mounted on any side.

Specifications:

- Fully certified MV switchgear
- Extendable MV switchgear configuration
- 200A and 630A MV switches and circuit breakers
- Applications up to 21kA at 13.8kV

## Cast Resin Transformers

Fire resistant cast resin power transformers providing longer life and high levels of safety combined with excellent environmental protection properties. Flexibility is maximised through side or rear mounting.

Specifications:

- Rating 500kVA to 3000kVA indoor mounted
- Up to 24kV primary voltage 400V secondary voltage
- Standards IEC 76-1 to 76-5, IEC 726 (1982)
- K Rated transformers available
- Transformer enclosures IP21 as standard
- Transformer enclosure MV/LV interlocking to provide isolation before access
- Forced cooling options





# Multiform High Power Low Voltage Switchboards



The multiform switchboard is the ultimate power solution. Ideally suited to large projects and industrial processes, it is flexible enough to deliver in any environment. With the ability to be adapted for change, they maximise safety and serviceability. Typical applications include; airports, finance, automotive, offices and healthcare. Safe, secure, energy efficient, adaptable, flexible, highly serviceable and easy to install, extend and maintain.

## Features

- Fully certified and manufactured to BSEN60439-1
- Ratings to 7200A (horizontal busbar)
- Fault level ratings to 150kA 1 sec (horizontal busbar)
- Form 4 type 6 compartmented construction
- Incoming device up to 6300A, breaking capacity Ics 100% Icu
- 3 pole and 4 pole configurations
- Plug-in, disconnectable and withdrawable trays
- Circuit breaker, fuse and motor protection
- Up to IP54
- Outgoing circuit breakers up to 4000A
- Outgoing fuses up to 800A
- Motor control up to 250kW
- Epoxy/polyester powder coating finish, grey/blue
- Front or rear access

## Options

- Surge protection
- Auto change-over schemes
- Powerlogic metering and monitoring to Part L of the Building regulations
- Power Factor correction and active filtration
- G59 Interfacing
- Mechanical interlocking



## Benefits

- Multiform has the functionality using withdrawable trays to achieve the highest level of supply availability.
- Plug in and disconnectable trays also add flexibility to match individual application needs.
- Busbars are shrouded to IP2X to help prevent accidental contact with live parts.
- Cable connections can be configured to form 4 type 6 using front or rear access cable boxes.
- Circuit breakers, fuses and motor control can be configured in the same column, maximising stacking density and reducing the switchboard footprint. Power Factor Correction may also be incorporated to help more efficient energy usage.
- In order to provide maximum safety, multiform incorporates an innovative set of test points on the incoming side of the switchboard incomer. This facilitates 'proving dead', earth fault loop impedance and short circuit potential testing. In accordance with the latest health and safety requirements.
- With preventative maintenance, Multiform also hits the mark. Thermal imaging can be undertaken on the incoming and horizontal busbar arrangements.
- Meeting Part L of the building regulations for any load is made simple by incorporating Powerlogic metering or incorporating metering as part of the protective device. Power Factor, kVA, Current voltage, Frequency power, and harmonics can all be captured for a complete energy monitoring solution.
- Multiform incorporates world renowned devices from Schneider Electric ensuring the best protection coordination for your installation.

# Powerstyle Medium Power Low Voltage Switchboards

The Powerstyle switchboard using its ergonomic steelwork design brings innovation to the Square D switchboard range. Powerstyle is ideally suited to commercial applications such as leisure, offices, education and hospitals. Its offer can also meet the needs of more industrial applications such as pharmaceutical. Incorporating the unique Square D plug on technology as well as compartmented solutions, Powerstyle meets the need for simple installation, extendability and ease of maintenance, with high stacking density reducing the overall switchboard footprint.

## Features

- Fully certified and manufactured to BSEN 60439-1
- Ratings to 3200A (horizontal busbar)
- Fault ratings to 85kA 1 sec (horizontal busbar)
- Form 3 type 2 high density and form 4 type 6 compartmented construction
- Incoming device up to 3200A, breaking capacity Ics 100% Icu
- 3 Pole and 4 Pole configurations
- Top or bottom mounted horizontal busbars
- Fixed and plug on configuration
- Circuit Breaker, fuse and motor protection
- Up to IP55
- Outgoing circuit breakers up to 2000A
- Outgoing fuse up to 800A
- Outgoing motor control up to 75kW
- Epoxy powder coating finish, RAL 7032
- Front or rear access

## Options

- Surge protection
- Auto changeover schemes
- Powerlogic metering and monitoring to Part L of the building regulations
- Power Factor correction
- G59 interfacing
- Mechanical interlocking
- Thermal imaging



## Benefits

- As well as its many features, the aesthetics of the Powerstyle switchboard mean it can be located anywhere in an installation.
- Powerstyle utilises compartmented construction, form 4 type 6 3 pole devices and neutral links.
- Alternatively high-density construction, form 3 type 2 with the unique Square D plug on device concept.
- Cable connections are simplified, using the circuit breaker with terminal shields, form 3 type 2 or cable boxes form 4 type 6.
- Circuit breakers, fuses and motor control can be configured in the same column, maximising stacking density and reducing the switchboard footprint. Power Factor Correction may also be incorporated to facilitate more efficient energy usage.



- In order to maximise safety, Powerstyle incorporates an innovative set of test points on the incoming side. This facilitates 'proving dead', earth fault loop impedance and short circuit potential testing.
- Meeting Part L of the building regulations for any load is made simple by utilising Powerlogic metering.
- Powerstyle incorporates the market leading devices from Schneider Electric ensuring the best protection, co-ordination and flexibility for your installation.



# Standard Plus Assemblies

Standard Plus is a service that provides both fully assembled and customised distribution boards. The core part of this offer is the market leading I-Line panelboard and KQ distribution boards from Square D. Suitable for installation in all types of sub-distribution and final distribution applications, Standard Plus assemblies can be designed and customised to meet your specific requirements.

## Assembled standard product (ASP)

- KQ single phase distribution boards (up to 125A)
- KQ Loadcentre 3 phase distribution boards (125A and 250A)
- I-Line moulded case circuit breaker panelboards (up to 2000A)
- I-Line Fuse-switch panelboards
- Multiple distribution board assemblies
- Multiple panel board assemblies
- Combined distribution and panelboard assemblies
- Metering to meet Part L of the building regulations
- Complete with incoming and outgoing devices, wiring as appropriate and labelling.

## Engineered standard product (ESP)

Larger and more complex installations may require standard products other equipment within one composite assembly.

These assemblies could include:

- Control and command equipment, contactors and timeclocks
- Distribution boards with contactor control or undervoltage release
- Power Factor Correction equipment
- BMS interface facilities
- Auto source change-over systems
- Protective functions including earth fault relays and surge protection



## Benefits

- Manufactured to BSEN 60439-1 and delivered direct to site, Standard Plus is fully tested ensuring a safe, reliable and optimised solution. Installation time is reduced and less skilled labour is required due to the fact that the product is delivered ready to install.
- I-Line panelboards are simple to install achieving Form 3b type 2 when used with terminal shields on the outgoing devices.
- In order to maximise safety, I-Line panelboard and KQ distribution boards incorporate an innovative set of 'test points' on the incoming side of the device. This facilitates 'proving dead', earth fault loop impedance and short circuit prospective testing.
- The flexibility of Standard Plus from Square D gives you an advantage in design, specification, installation and financial return. With current ratings from 125A to 2000A, the range co-ordinates fully with Multiform and Powerstyle switchboards so you have the benefits of the complete solution.
- Assembled standard products can be delivered in 3 weeks with engineered standard products delivered in 4 weeks.



# Canalis Busbar Trunking

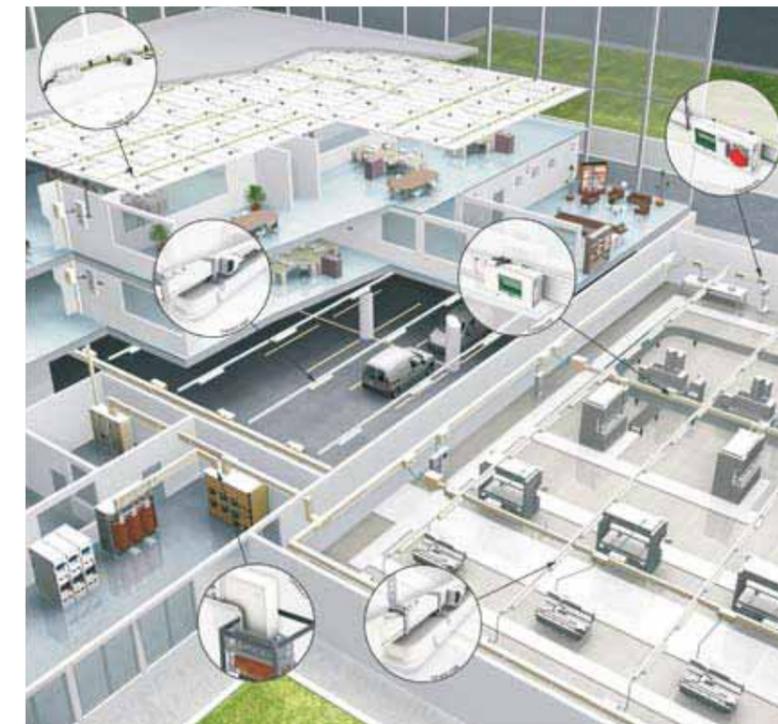


The ultimate solution for power and lighting distribution. Fast and easy to install, Canalis is a cost effective alternative to traditional cable systems. Canalis is simply plugged together, eliminating the need for drilling, cutting and forming reducing. This technology also reduces installation time, cost and the requirement for skilled labour.

Canalis is a highly reliable and safe distribution system which requires no additional tray or trunking. With tap off points at regular intervals, power is accessible with the flexibility to adapt to the change of use of an installation over its lifetime. Configured from straight lengths, corner pieces and flexible couplings, Canalis is flexible enough to meet any site layout.

## Features

- KDP Flexible lighting busbar – 20A modular wiring system
- KBA 25A and 40A lighting busbar 2,4 pole
- KBB 25A and 40A lighting busbar 2,4,6,8 pole
- KNA 40A, 63A, 100A low power busbar
- KSA 100A, 160A, 250A, 400A, 630A, 800A medium power busbar
- KSR 250A, 400A, 630A, 800A rising main power busbar
- KV 160A, 250A, 315A, 400A, 630A, 800A medium power transportation busbar
- KTA, KTC 1000A, 1250, 1600A, 2500A, 3200A, 4000A, 5000A high power busbar



## Benefits

- Sandwich construction
- All metal construction giving better fire resistance
- IP55 (sprinkler proof construction)
- Fuse tap offs up to 1250A
- Aluminium and copper busbar technology
- 200% neutral high power busbar (on request)
- Low smoke, low halogen construction
- J type fuse tap offs
- Taps offs incorporating metering
- Tap offs incorporating protection with full system co-ordination
- Angled bends requiring reduced space compared to traditional cabling solutions



# Powerlogic Metering and Monitoring



# Power Quality

In today's commercial and industrial installations, more and more emphasis is being placed on the operation and use of their electrical systems. With power supply security, optimisation of energy costs and asset management all major considerations, the Powerlogic offer is the perfect answer.

Powerlogic can be incorporated into all products from Square D Low Voltage Equipment and tailored to your individual needs. This meets the Building regulations Part L for energy metering and monitoring.

### Powerlogic PM700 Series

The range includes the following functions

- I, V, kW, kVA, kVAr, Thd, KVArh, KWh
- Pulsed output and ethernet communications
- Digital inputs and outputs
- Alarms



### Benefits

- Device monitoring and status indication
- Power consumption kW, kVA, kVAr, PF, V, I
- Harmonic distortion, current and voltage
- Event capture
- BMS and communication links
- Flexibility is possible with access via Ethernet networking based on open TCP/IP protocol allowing upgrades at any time as well as incorporating additional devices.



With the requirement for greater energy efficiency and high levels of power security, power quality solutions from Rectiphase are available for a variety of applications.

Power Factor Correction (PFC) can help your installation improve energy efficiency, reduce CO2 emissions, costs, system losses and your carbon footprint as well as extending the available supply.

### Features

- Standard PFC, systems less than 15% harmonic content
- Detuned PFC, systems more than 15% less than 50% harmonic content
- 12.5 kVAr to 1200kVAr @ 400V AC 50 Hz
- 240V AC to 36kV
- Fixed PFC or automatic controlled
- Up to IP54
- Direct, switch disconnect or circuit breaker connected
- Free standing or integrated into Multiform or Powerstyle switchboards
- With harmonics a potential problem, Rectiphase can undertake on-site harmonic surveys and computer based network analysis to provide a custom engineered solution tailored to your network. This enables harmonic levels to be brought within G5/4 compliance.

### A range of filtering solutions are available with the following features:

- Fixed passive L/C shunt filters 240V AC/36kV
- Automatic passive L/C shunt filters 240V AC/36kV
- Sinewave 4 wire up to IP54 415V 50Hz active filters, 20A to 120 (plus multiples)
- Accusine 3 wire up to IP54 415V 50Hz active filters, 50A to 300A (plus multiples)
- Hybrid active/passive L/C filters 240V AC/36kV
- Real time reactive power compensation 240V AC/690V AC.

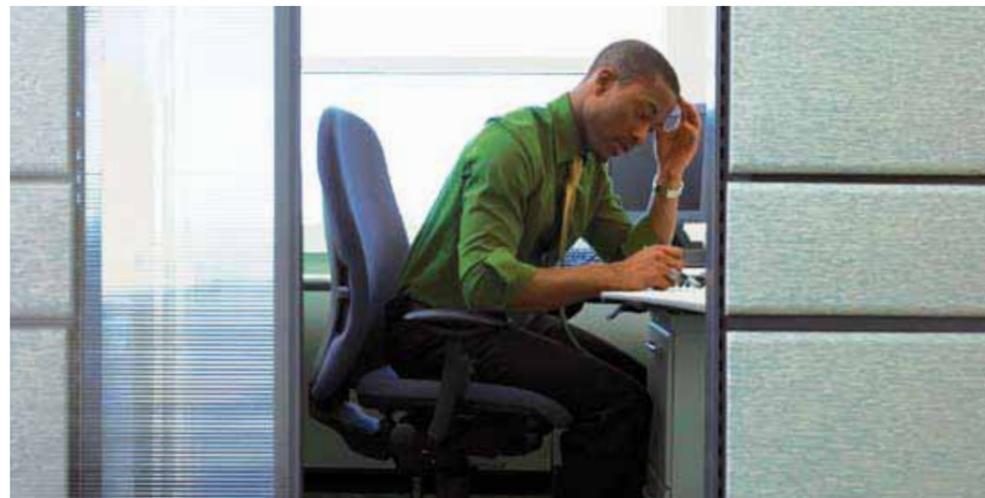
To complete the Power Quality offer, off loading, positioning, installation and commissioning services are all available to ensure complete peace of mind.



# Services and Projects

Schneider Electric Services and Projects is the perfect complement to Square D Low Voltage Equipment. Helping you derive the maximum benefit from your electrical installation, Services and Projects boasts unrivalled expertise in electrical distribution and automation systems and the knowledge that comes from being at the core of a major equipment manufacturer.

Our services aim to add value to each project phase, but the choice of services you use is entirely yours. You may want a full set of services that together provide a package of support covering the entire life cycle of your project, or you can select a combination of services to complement your resource or knowledge.



## The Services and Projects offer covers:

### Consultancy

Through our specialist power and energy consultancy teams we'll work with you to improve network reliability and reduce your energy usage. We deliver individually tailored solutions, achieving the most efficient solution from the outset and avoiding unnecessary delays and unplanned costs. Additionally, our team can work alongside your own design teams or appointed contractors, filling skills gaps and offering our specialist knowledge. And, because our team is based around the UK we can be deployed at short notice.

### Design

The design phase selects the most suitable equipment and provides detailed drawings and technical specifications.

### Implementation

These services provide high quality installation and commissioning, preceded by thorough preparation, minimising the risk of unplanned delays and extra costs as well as maintaining optimum site safety.

### Operation

These services ensure that your installations running costs are reduced through higher energy operational efficiency and are cost-effectively maintained with minimum downtime.

### Modernisation

Faulty or ageing equipment can be upgraded to extend an installation's life through retrofits, refurbishment or repairs.

### Training

A wide range of training courses are available including safe systems of work, product standards and legislation. Training can be delivered via our highly experienced trainers at the dedicated Schneider Electric Training Centre, at any of our offices or at your own site.



Nationwide support on one number -  
call the Customer Information Centre on

**0870 608 8 608**

Fax 0870 608 8 606

### Schneider Electric's local support

Schneider Electric is committed to supporting its customers at every stage of a project. Our 180 sales engineers, the largest dedicated sales force in the UK electrical industry, operate from 4 customer support centres.

Our sales engineers are skilled at assessing individual requirements and combined with the expert support of our product specialists, will develop the most effective and economical answer taking relevant regulations and standards fully into account.

To access the expertise of the Schneider Electric group, please call 0870 608 8 608. Each customer support centre includes facilities for demonstrations and training, and presentation rooms fully equipped with audio visual and video, providing excellent meeting facilities.

#### Merlin Gerin

**Merlin Gerin** is a world leader in the manufacture and supply of high, medium and low voltage products for the distribution, protection, control and management of electrical systems and is focused on the needs of both the commercial and industrial sectors. The newly launched VDI Network Solutions offer provides flexible, configurable ethernet systems for all communication needs.

#### Square D

**Square D** is a total quality organisation and its business is to put electricity to work productively and effectively, protecting people, buildings and equipment. Its low voltage electrical distribution equipment, systems and services are used extensively in residential and commercial applications.

#### Telemecanique

**Telemecanique** is a UK market leader and world expert in automation and control. It provides complete solutions, with its range of components, Modicon range of high technology programmable controllers (PLCs), multiple fieldbus and ethernet communication networks, HMI, motion control systems, variable speed drives and communications software. In addition, it offers power distribution through prefabricated busbar trunking.

### Local customer support centres

Scotland  
Schneider Electric Ltd  
Unit 18  
Claremont Centre  
112a Cornwall Street South  
Kinning Park  
Glasgow G41 1AA

South West  
Schneider Electric Ltd  
PO Box 41  
Langley Road  
Chippenham  
Wiltshire SN15 1JJ

North West  
Schneider Electric Ltd  
First Floor  
Market House  
Church Street  
Wilmslow  
Cheshire SK9 1AY

### Product showrooms

#### Industrial systems and solutions showroom

Schneider Electric Ltd, University of Warwick Science Park, Sir William Lyons Road, Coventry CV4 7EZ

#### Building systems and solutions showroom

Schneider Electric Ltd, Stafford Park 5, Telford, Shropshire TF3 3BL

#### Energy and Infrastructure systems and solutions showroom

Schneider Electric Ltd, 123 Jack Lane, Hunslet, Leeds LS10 1BS

