MOTOR CONTROL AND AUTOMATION PRODUCTS
Your partner for control and automation products and systems

Softstart UK is all about being best in class for motor control and automation. Best technology; best equipment; best expertise.

All products are manufactured to ISO 9001 and are rigorously assessed against Softstart’s own criteria for quality, reliability and applicability. This includes compliance with many standards and directives, such as RoHS (Restriction of Hazardous Substances) and WEEE (Waste Electrical and Electronic Equipment).

As well as supplying a comprehensive range of products from global companies such as Delta, Hitachi, ASEM, Power Electronics and MTE-Deltron, Softstart also has in-house panel building capabilities and manufactures complete motor control systems and medium voltage soft starters at its factories here in the UK.

With expertise going back to the dawn of modern automation technologies, design and technical support is comprehensive, from application evaluation and concept design through to detail design, system build, installation and commissioning. This is supported with maintenance programmes, training and other services.

Softstart UK has been serving British industry and British exporters for over a decade and is the preferred choice in a great range of industries from water, steel, mining and tunnelling, marine and offshore, petrochem and waste management to packaging, food and confectionary, automotive and aerospace.
Softstart UK has extensive expertise in the area of soft starting and stopping, and has a wide portfolio of products to meet industry requirements, covering both off-the-shelf low voltage and custom designed medium voltage systems. Providing a vastly more cost effective solution than a variable speed drive in simple start-stop applications, soft starters save energy by stopping intermittent duty motors when they are not needed, rather than leaving them idling between duty cycles.

Keeping motors ticking over has traditionally helped to reduce the wear and tear on the mechanical and electromechanical elements of a drive system at start up. But soft starters bring you the best of both worlds: reduced energy usage and the ability to bring the motor up to speed far more smoothly than direct-on-line starting.

Softstart UK offers the world’s largest low voltage soft starter range, from 4kW to 1.8MW, plus a bespoke line of medium voltage digital soft starters from 2,300 to 15,000V and to 20MW

**LOW VOLTAGE SOFT STARTERS**

Softstart UK offers a wide range of soft starters and DC injection brakes, in both analogue and digital formats, with or without built-in bypass functionality. All of the products are characterised by ease of operation and a highly compact design.

Our miniature soft starters cover AC motors from 4-30kW, 230-600V AC. In addition to the simple analogue designs, heavy-duty digital soft starters are available with advanced start-stop functionality. Transformer soft starters are also available for every type of transformer.

The products meet the needs of the most demanding operating environments, including Ex-rated versions for use with explosion proof motors. In addition, OEM IP00 versions are available for integration into user panels.

**Solbrake**
This DC injection brake provides fast, smooth and frictionless stopping of a three-phase induction motor by injecting controlled DC current to the motor windings.

**Solstart**
The Solstart is a miniature soft starter covering the 8-58A range, with a built-in bypass. It is designed for use with light duty motors, on small conveyors, in machine tools and other applications requiring effective start-stop performance in a compact package.

**iStart**
iStart is an electronic single phase AC motor soft-starter available in powers from 4-400kW.

**RVS-DX**
The RVS-DX is a compact digital soft starter with built-in bypass, meeting the needs of applications from 8-1100A, 220-660V. The third generation microprocessor design delivers superior starting and stopping characteristics. The RVS-DX provides a comprehensive motor protection package.

**RVS-DN**
The RVS-DN provides a complete range of digital soft starters from 8-3000A, 220-1100V. These heavy-duty, fully featured soft starters incorporate superior start-stop characteristics to provide solutions for the most demanding applications. This comprehensive motor protection package guarantees long term reliability, whilst the robust design ensures excellent performance even in harsh conditions. The RVS-DN incorporates a pump control program and slow-speed with electronic reversing.
MV DS MEDIUM VOLTAGE SOFT STARTER

Designed, developed and custom manufactured by Softstart UK, MV DS digital soft starters provide controlled starting and stopping of large, medium voltage motors up to 11kV. Softstart UK builds each cabinet to order, with a host of options enabling it to be customised to meet a customer’s precise requirements.

Large, medium voltage motors generate huge torques and draw enormous currents when started direct-on-line. Auto-transformer starting is expensive, bulky, and rarely provides a completely satisfactory solution. The MV DS addresses these technology failings.

Controlled starting by precise digital voltage control offers the smoothest starting torque solution, maintaining the line current below current limit levels. This not only protects the whole drive installation, but also protects the driven machinery from excessive torque surges that can cause substantial damage and expensive plant downtime.

For precise and simplified control and monitoring, the MV DS is digitally controlled via a powerful industrial PC, mounted on the cabinet door. The full colour 6.5in, 8.4in or 12.1in display enables the engineer to commission the starter quickly and simply, and thereafter see exactly what is happening with the plant. Ethernet and Modbus control facilitates full remote monitoring and control in a variety of languages.

The MV DS has been designed around the standard European style MCC, and so has a short lead time from order to delivery of a fully assembled system of typically less than eight weeks.

MV DS Medium voltage soft starter

The MV DS is a heavy-duty, fully-rated design, allowing a start capacity of up to 400% FLC for 30 seconds at a rated temperature of 50°C without derating. Designed for arduous environments, a comprehensive motor protection package is included and a motor insulation test facility is offered as an option.

Variations in the supply voltage are catered for by a 45-65Hz tracking capability and the construction is designed for corrosive environments. Tacho feedback enables uneven torque loads, such as those encountered on crushers and long conveyors, to be smoothly controlled, protecting the plant.

The MV DS has optional PLC control and touch screen IPC for programming, diagnostics, system monitoring and data event recording. The graphical interface allows the operator to see statistical data such as the last start time, current, power and more. Having a PLC makes the system flexible and expandable, allowing multiple options to be used to suit the specific application. The IPC is multi-lingual, and supports English, Arabic, Farsi and Russian characters.

A high degree of customisation tailors the MV DS to specific requirements. Slip-ring motors can be accommodated by incorporating a rotor shorting resistor package. Bi-directional motor control is available, and power factor correction is offered, along with 110V or 230V control. Cable entry can be accommodated from the bottom, the top or the rear, and internal and external cable boxes can be incorporated into the design as required.
VARIABLE SPEED DRIVES

With end user industries demanding machines that are ever more sophisticated, drives users are consistently calling for more dynamic performance, higher peak torques, and products that offer more flexible integration and are easier to use. Softstart UK offers variable speed drives from Hitachi, Delta and Power Electronics, meeting the performance requirements across the spectrum of industrial applications.

With a raft of different control algorithms delivering superior characteristics in any operating mode, these drives push the boundaries of control capability in both open loop and closed loop operation, with the best closed loop systems even offering near servo performance for demanding machinery control applications.

DELTA VARIABLE SPEED DRIVES
Drives, motion and control specialist Delta Electronics has formed a strategic partnership with Softstart UK which combines the market leading products of Delta Electronics with the unrivalled reach and experience of Softstart’s dedicated team of specialist automation engineers.

Delta’s automation capability is quality-driven, providing customers with cost-effective and reliable products. Delta’s innovation in development has delivered one of the broadest and most capable ranges of drives, motion and control products, along with associated technologies including switching power supplies, power management products, components, visual displays, networking products and complete industrial automation solutions.

Softstart UK has unrivalled experience in a wide range of industries, with a proven track record in all the multiple needs of the most demanding applications. This new partnership with Delta Electronics extends the Softstart portfolio, bringing the benefits of these products to a raft of new markets.

Delta Electronics is probably the world’s biggest manufacturer of variable speed drives by volume, with innovative new designs emerging constantly to keep the products at the cutting edge of technology.

A cost-effective, classical field oriented drive, the C2000 sets the bar high in features and benefits, including built-in PLC functionality, self diagnostics, long life design, CANopen and Modbus communications. Standard models cover the power range from 0.75kW to 90kW at 230V AC, and 0.75kW to 355kW at 460V AC.

The CP2000 extends the benefits of the C2000 with a sensorless vector control algorithm, making it ideal for applications such as HVAC, constant pressure pumps, building automation, conveyors and materials handling.

For more demanding applications, such as food packaging, textiles and wood working machines, the C200 fills the gap to ensure high precision operation consistently over time. It is available in a wide range of different models to suit the needs of different industries, and has a built-in PLC.

The active front end of the AFE2000 replaces traditional brake resistors to provide massive energy savings, particularly in applications involving high speed, high inertia loads.

The VFD-E/EL is a micro type multi-function drive that is packed with features and performance. It is suitable for side by side DIN rail mounting and covers powers up to 22kW.
The Hitachi variable speed drives family offers a variety of new and enhanced functions, delivering unprecedented performance, simplicity, reliability and flexibility. A high degree of commonality between models, plus user-friendly configuration software, makes the drives easy to install, program and maintain.

With products that address applications all the way from fans and pumps to highly dynamic tasks such as packaging, printing, textiles, machine tools, lifts, cranes, centrifuges and extruders, Hitachi variable speed drives deliver class-leading performance in some of the industry’s most compact and cost-effective packages.

Hitachi variable speed drives offer a raft of innovative features, such as patented power switching technology to reduce dVdT, high speed RISC processors for superior dynamic response, high starting torques, and a range of fieldbus interfaces for easy integration into a variety of networks.

The drives are also eco-friendly, reducing the power consumed by motors driving centrifugal pumps, fans and other rotating equipment. Hitachi AC variable speed drives control the speed of a motor and optimise the amount of energy used by the machinery, resulting in reduced carbon emissions.

**Hitachi SJ700**
Available in powers from 0.75kW to 400kW, the SJ700 represents a dramatic step change in inverter technology, being the first off-the-shelf unit with integral easy sequence programmable functionality.

**Hitachi SJ700B**
Featuring an improved sensorless vector algorithm, the SJ700B develops 150% torque at 0.5Hz up to 75kW and 120% torque at 0.5Hz up to 160kW, suiting it to a wide range of applications. The new EZSQ (easy sequence) built in programming function provides the functionality of a PLC built into the inverter. The drive features an automatic energy saving function for fans and pumps.

**Hitachi SJ200**
Using newly developed intelligent sensorless vector control, the SJ200 is designed for high starting torques and change in load applications. It also includes a new trip avoidance function to improve drive system reliability. Single and three phase versions are available in powers from 0.2kW to 2.2kW.

**Hitachi NE-S1**
The Hitachi NE-S1 is an economical and simple inverter covering powers from 0.2kW to 4kW. Ideal for OEMs and systems integrators, it offers an ultra-compact design and out-of-the-box integration.

**Hitachi WJ200**
The WJ200 provides enhanced high starting torque and dramatically improved speed load thanks to advanced sensorless vector control with new simplified autotuning procedure. It also includes a dynamic braking transistor.
For the most demanding motion applications, Softstart UK offers the Delta ASDA series AC servo drives and the the Hitachi AD series of AC servo drives, complete with matched ranges of motors. Both feature next generation DSPs for high speed performance of the control circuit loop, with stable rotation even at low speed. These high quality servo drives provide precision motion control for the most demanding automation applications.

DELTA SERVO DRIVES
The ultimate precision in motion control is always generated from a servo drive solution. Delta offers several ranges of servos and can thus meet every need of industry, from filling and bottling equipment to feeding machine tools, wire cutting machines, consumer packaging, printing and textiles.

These advanced integrated servo systems build on Delta’s strength in industrial and electronic technology, delivering outstanding performance. Standard features include gain tuning, smooth motor operation and software analysis with monitor function.

In-built motion control functionality eliminates the need for an external controller in many cases. Built-in electronic cam functionality is ideal for flying shears, rotary cutoff and synchronised motion applications. Further, built-in automatic low frequency vibration suppression meets the needs of applications such as crane control.

Features such as high speed response, innovative editing software and an oscilloscope-like PC monitoring function all help to maximise system performance. The range also includes closely matched servo motors for ultimate control.

ASDA-A2 Series
Delta’s ASDA-A2 Series is the ultimate servo system, with excellent motion control functionality built in and a range of features such as electronic cam. A new position control mode provides a variety of control modes to enhance system performance. A CANopen interface simplifies system integration. Full closed-loop control, auto notch filter, vibration suppression and gantry control functions all help to perform complex motions that require high precision and smooth operation. A 20-bit encoder comes as standard.

ASDA-A+ Series
The ASDA-A+ Series is a new type of integrated servo system with advanced functions for general purpose applications. It meets the needs of applications where high responsiveness and stiffness are needed to reject high torque disturbances.

ASDA-AB Series
The ASDA-AB Series servo system meets the needs of general purpose servo applications in low and medium power ranges. It offers a wide range of control functions and offers a Modbus interface for direct communications with PLCs and HMIs, and to establish the architecture of the communication control system.

ASDA-B2 Series
Delta’s ASDA-B2 Series is a general purpose servo system for low and medium power applications. It is designed to simplify servo system integration.

ASDA-B Series
Delta’s ASDA-B Series is a digital servo system with standard functions. It provides built-in position/speed/torque modes and supports pulse command input and analogue control.

ASDA-A Series
Delta’s ASDA-A Series is an advanced servo system with pulse and analogue signal control, as well as internal point-to-point position control.
HITACHI SERVO DRIVES

Hitachi servo drives meet various requirements in demanding applications, thanks to the fully featured performance realised by Hitachi’s Advanced Motor Technology. With autotuning control, gains can be automatically tuned to the optimum values according to each application. In connection with Hitachi motion controllers, it is possible to control up to four axes, and all servo motors are available with a holding brake.

The drives deliver high precision positioning in just 0.84ms, while the 32-bit LSI processor with DSP ensures stable rotation even at low speed.

The complementary programming software simplifies the programming task and significantly reduces commissioning times. The servo drive has a standard integrated programming function for up to 512 program steps and 100 positions. This means that, for many standalone applications, a separate motion controller is not required.

The servo drive range is complemented by Hitachi’s patented servo motor technology, ensuring precision control, high speed response and reduced vibration characteristics.

Hitachi AD Series servos

Designed for plug and play operation, these drives offer a rated output from 100-7,000W, and a rated torque from 0.32-33.4Nm. They can be provided with interfaces for various network protocols, including Ethernet, DeviceNet, Modbus and SERCOS.

The AD Series servo drives meet the various requirements of demanding applications, thanks to fully-featured performance realised by Hitachi’s Advanced Motor Technology. This patented technology reduces motor cogging by over 60% in comparison with previous generations, making the AD Series suitable for applications such as high precision process machinery or smart conveyor systems where vibration could represent a significant problem. In addition, the AD Series servo drives incorporate a 32-bit system LSI with DSP, which assures high speed response and high precision. The matching ADMA Series servo motors are equipped with 17-bit serial encoders. The drive is able to identify the motor automatically, so no additional adjustment from the amplifier is necessary.

Using autotuning, control gains can be automatically tuned to the optimum values for each individual application.

The AHF programming software allows simple programming and reduces commissioning times, even for novice users. The ADAX4 servo amplifier has a standard integrated programming function for a maximum of 512 program steps and 100 positions.

The AHF configuration software runs under the Windows operating system, and provides an intuitive environment for setting parameters, as well as a convenient environment for monitoring position, speed, torque and other variables on a personal computer.
Where features such as performance, reliability, flexibility and a compact form factor are vital, Softstart UK offers the Delta and Hitachi ranges of PLCs, covering everything from simple web controllers to fully featured modular designs.

These highly regarded programmable controllers deliver performance that belies their modest size, with high levels of expansion flexibility, increased program capacity, an extensive set of application commands, impressive in-built I/O and comprehensive communications possibilities that include Profibus, DeviceNet, Modbus and Ethernet.

**DELTA PLCs**

Delta has developed a wide and flexible range of PLCs, each of which can be customised to bespoke applications such as motion control, product counting, colour recognition and temperature monitoring.

The range covers everything from compact brick-style PLCs for simple sequence control right up to advanced modular designs for advanced machine control applications. Models also include innovative slimline units that save on space without compromising on performance. These advanced, next generation PLCs set new benchmark standards, offering high speed, stable and highly reliable control across the spread of industrial automation tasks.

The PLCs can accommodate both left side and right side expansion modules, with left side modules taking advantage of a faster communications bus to offer the increased performance needed for the most demanding applications. Expansion modules and cards are available providing analogue I/O, temperature measurement, motion control, communications and more.

The range also includes advanced motion controllers that meet the needs of applications such as flying shears, rotary cutting and electronic cams.

**PROGRAMMABLE CONTROLLERS**

AH500 Series PLC

The new generation AH500 Series PLC provides automation solutions for high level applications. The combination of a modular hardware structure, advanced functions and the highly integrated software provides a system solution for process control applications.

In addition to various function blocks, excellent price/performance and an abundant selection of extension modules, the AH500 Series PLC also provides exceptional system expandability, greatly reducing the system cost for a broad range of applications.

DVP Series PLCs

Highly cost-effective yet with the highest levels of performance and functionality, DVP Series PLCs offer high speed, stable and reliable control across a whole spread of industrial applications.

The range includes the DVP-E series which set new benchmark standards for nano controllers. For more demanding applications, the DVP-S series micro controllers offer increased program capacity and data register size, along with high execution speeds, impressive in-built functionality and flexible expandability.

DVP Series motion controllers

The DVP range also includes a number of high performance motion controllers, meeting the needs of everything from general purpose motion to the most sophisticated applications. These include models for standalone motion control and also for networked motion control. Both can take advantage of left side and right side DVP series expansion modules

For ease of programming, Softstart UK provides the PM Soft programming software for G-Code editing, motion trajectory simulation, positioning route instruction and electronic cam setup.
**HITACHI PLCs**

At the lowest end of the range, the Hitachi web controller is a miniature PLC with built-in web server and SMTP capabilities. Up to 16 web pages can be stored within the unit, enabling remote users to monitor, report and interact with their connected equipment from anywhere in the world.

Being a PLC at heart, it is programmable using standard Windows ladder editor software, and provides enough I/O for simple control applications. The built-in RS232 port means the web controller can also act as a simple interface between existing PLC installations and the world wide web.

Where more fully featured PLC capabilities are required, the Hitachi Micro-EH series controllers provide maximum power at minimum size. Various expansion modules deliver increased flexibility to fine-tune the PLC to the required level of automation.

At the top of the range, the EH-150 series of modular PLCs are used the world over in applications where performance, expandability, reliability and communications flexibility are key. With 32-bit RISC processors and a comprehensive range of I/O modules, the EH-150 can be readily tailored to match the needs of even the most demanding application.
TOUCH SCREENS AND HMI

Visual representation has long been proven to be the best way to understand a process or system. Softstart UK offers a wide range of HMIs allowing this to be achieved on the shop floor or other industrial environment. Whether touch screen or push button, programming and resetting of the host machinery can be achieved locally using an HMI which if networked to the overall control system can provide a window into the complete production environment.

DELTA HMIs AND TEXT PANELS
Delta DOP series HMIs provide various touch screens with numerous screen sizes and colours, providing fast and convenient control functions for industrial automation machines.

Moreover, programming the whole DOP series is done using Delta’s Windows-based and user-friendly Screen Editor software. By using this software, the user can quickly edit images and graphs and set suitable communication protocols through Macro commands.

Delta’s text panels provide a range of monochrome text and graphical panels in different sizes and with different combinations of numerical and user defined function keys where people and machines work together. The text panels meet the needs of applications that require flexible machine interaction but without the cost or additional functionality of a full HMI.

Delta’s text panels are renowned for their simple operation and control functionality. The whole series supports various communication protocols. It has the advantages of light weight, cost-effective price and good flexibility in use, which can help the user to quickly control the system and improve working efficiency.

DOP-B series HMIs
Delta DOP-B series HMIs combine excellent control and visualisation capability with an innovative widescreen design. The HMIs are available in screen sizes from 4.7in to 10in, with features including built-in Ethernet communications, the ability to display over 65,000 colours, three sets of COM ports, a USB port, support for audio output and support for SD card program loading and backup.

Sealed to IP65 for use in challenging plant floor environments, the DOP-B series HMIs offer fast and convenient control of manufacturing automation, replacing traditional control panels which need extensive wiring. They are available in both blue scale and colour display versions, with standard and windscreen versions, and with resolutions up to 1024x600 pixels.

Different configurations provide touch screen only or a combination of push button and touch screen control.

TP series text panels
For applications that need basic operator input and feedback functionality without the added cost and complexity of a full HMI, the TP series provides a range of text panels with numerical keypads and function keys. The text panels are available in formats from two lines of text up to eight lines of text, up to 12 system keys and up to 24 user defined function keys.

All models feature an STN LCD backlight monochrome display, in sizes from 2.8in up to 4.1in, and with resolutions from 160x32 pixels up to 192x64 pixels. Communications options include RS232, RS422 and RS485. All models feature a built-in memory card slot for backing up and copying programs, and a built-in real-time clock.
Power supplies are available with nominal output voltages of 24V and 12V DC, and they operate over wide temperature ranges from -20°C to +75°C.

Delta ensures the power supplies are ruggedly built to withstand shock and vibration to IEC 60068-2, yet are ultra compact. The power supplies provide overvoltage, overload and thermal protection. The wide input voltages range from 85-264V AC (single phase) and 320-575V AC (three phase). The multiple output terminals allow fast wiring.

### DIN rail power supplies

DVO and CiQ series power supplies offer a nominal output voltage of 12V or 24V, a wide temperature range from -20°C to +75°C and a minimum holdup time of 20ms. A total of eleven models are available in powers from 24W to 480W in 24V versions, and a further four models in powers from 15W to 100W in 12V versions.

The state-of-the-art design is made to withstand harsh industrial environments. The rugged, ultra-compact case material is shock and vibration resistant according to IEC 60068-2. Both black plastic and aluminium case versions are available according to applications requirements.

### The power supply provides overvoltage, overload and thermal protection.

The wide input voltage ranges from 85 to 264VAC (1 phase) and 320 to 575VAC (3 phase), and the multiple terminals enable fast wiring and easy installation.

Features include advanced overload protection, overvoltage protection, short circuit protection and thermal protection. Two power supplies can be connected in parallel to provide redundancy. On 24V supplies, the output can be adjusted between 22V and 28V.

### Panel mounting power supplies

The tablet power supply is currently the most widely adopted device in the power distribution panel market. Delta’s PMC series industrial power supply offers users DC24V (35W, 50W and 100W) models with enhanced safety, efficiency and the best power quality.

PMC 24V single phase power supplies are available in 6 models, including dual output models, while PMC 12V models are available in three versions. All feature full aluminium casing for lightweight and corrosion resistant handling, universal AC input, and high efficiency. Features include overload protection, overvoltage protection and thermal protection.

The power supplies have an MTBF of greater than 700,000 hours and an expected lifetime in excess of ten years. The power supplies are RoHS compliant.
LINE/LOAD REACTORS

AC line/load reactors from Softstart UK will help keep your equipment running longer by absorbing many of the power line disturbances which otherwise damage or shut down an inverter, variable speed controller, or other sensitive equipment. They are the modern technology solution to inverter and drive application problems.

AC reactors are harmonic compensated and IGBT protected to assure optimum performance in the presence of harmonics. They are very effective at reducing harmonics produced by inverters and drives, and in most cases will help you to meet IEEE 519. Use our harmonic compensated reactors on either the input or output of an adjustable speed drive/inverter. There is no need to derate ‘harmonic compensated’ reactors for harmonics.

Softstart UK offers a comprehensive range of AC reactors manufactured by MTE. These reactors offer numerous user benefits. They protect motors from long lead effects, reduce output voltage dVdT, virtually eliminate nuisance tripping and extend semiconductor life for increased system reliability.

MTE AC line and load reactors are designed to reduce harmonic distortion, reduce surge currents, reduce motor temperatures, reduce audible noise and improve true power factor.

These AC reactors are available with impedance ratings of 3% and 5%. A 3% impedance reactor is typically sufficient to absorb power line spikes and motor current surges. They will prevent nuisance tripping of drives or circuit breakers in most applications. A 5% impedance reactor is best for reducing harmonic currents and frequencies. They should be used when you need to comply with IEEE 519, to reduce motor operating temperature, or to reduce motor noise.

MTE line/load reactors are available in a variety of enclosures with different IP ratings to meet the needs of different applications.

MTE RL/RLW AC reactors
Standard MTE reactors may be applied up to 690V AC with compatible impedance ratings. Harmonic compensation makes them suitable for use on either the drive input or drive output. They are designed to carry full rated fundamental current and will also handle current and frequencies associated with harmonics up to 50% over the fundamental.

This robust design allows MTE reactors to be used on the output of variable frequency drives including IGBT types with switching frequencies up to 20kHz. A premium dielectric system is designed to protect the reactor’s coils from the potentially high peak voltages and fast dVdT which may be experienced when used for motor protection with long leads between inverter and motor.

MTE three phase reactors may be applied to single phase drives to provide transient protection as well. Epoxy impregnation minimises audible noise in the reactor and enhances structural and moisture integrity for improved performance.

The high saturation current of MTE reactors maximises their surge current protection capability. MTE reactors absorb many of the powerline disturbances which cause nuisance trips on voltage source units.

Terminals are standard and save installation cost by minimising panel space. Finger-proof (IP20) terminals are provided up to 45A. Solid copper box lugs are provided from 45A up to 160A. Copper tab type B14 or B1 flag terminals are used for applications above 160A.
Softstart UK has expanded its product portfolio to include a highly cost-effective range of medium voltage transformers. Designed for use in demanding industrial applications, the range includes oil filled transformers and cast resin transformers.

Typical applications are found in the industrial, power distribution, railway, marine, solar energy or photovoltaic, and wind energy markets.

**Cast resin transformers**

EMG cast resin transformers are designed and manufactured according to CEI 14-32 and IEC 60076-11, CENELEC HD 464 and CENELEC HD528th. On request, additional standards can be applied. The core of the transformer is made of cold rolled grain oriented steel sheet with low loss. The surface is insulated to reduce eddy current losses. A special technology makes it possible to minimise the losses and Gräusche Vibration.

The Ns windings are made of aluminium or copper tape (the default UNI 4507). They are insulated by coating with a special resin film. The impregnation of the windings is carried out under vacuum in order to prevent moisture absorption. Thus, these transformers can be used in the most challenging environmental conditions. The winding is made of brass, aluminium or copper strip, surrounded by an insulation material of thermal class F, and aligned in a special form. After heat treatment it is potted with epoxy resin under vacuum. Protection under time- and temperature-controlled polymerisation and relaxation gives a compact unit, with an appropriate thickness of the resin. This technology creates Ns windings which are protected against fire, moisture and condensation.

**Oil transformers**

EMG oil transformers are designed and manufactured according to CEI 14-32 and IEC 60076-11, CENELEC HD 464 and CENELEC HD528th. On request, additional standards can be applied. The core of these transformers is created from grain-oriented magnetic steel for low losses. The joints between the columns and yokes are constructed at an angle of 45°. The windings are made of electrolytic copper. Upon request, they can also be made with aluminium windings.

The tanks are made of welded steel plate, with reinforcement to prevent oil leakage. The tanks are tested for leaks with liquid (UV light inspection). After sandblasting, the tanks are internally coated with a special protective oil paint, and externally with a specific anti-rust paint and RAL 7031 enamel.

Special terminal blocks on the Ns side allow change in the ratio when the transformer is disconnected. EMG transformers are usually filled with dielectric oil or with dielectric silicone oil.
Panel building means much more than simply putting components in a box. Value is added through the expertise of the systems engineers and designers who keep up to date with all the latest developments in electrical and control technology, and are skilled at applying these to various industries.

Softstart UK combines an unparalleled understanding of the demands of modern industry, with an unrivalled capability in automation systems design and installation. This helps to raise productivity, reduce costs and ensure reliability.

We don’t simply fulfill orders: we form two-way partnerships with our customers so that we fully appreciate the subtleties and nuances of their particular industry, and develop solutions that increase the functional performance of the machinery or system.

Today’s panels are increasingly sophisticated, often combining many functions in a single cabinet. There is also the need for data communication between panels and to and from supervisory control systems. This predicates a need for panel builders who are multi skilled and able to work across many disciplines efficiently and accurately.

Softstart UK is adept at meeting the panel requirements of the broadest spread of industries including:

- Manufacturing
- Utilities
- Oil and gas
- Minerals
- Refining
- Aerospace
- Processing
- Staging and theatre

**ATEX SYSTEM DESIGN**

For use in offshore, marine, mining and other hazardous area applications, Softstart UK offers a full ATEX system design service, delivering certified explosion proof control panels.

Standard products include the MVDS-EX – the world’s first medium voltage soft starter certified for use with explosion-proof motors. In addition, Softstart UK can custom build complete panels, taking control components such as soft starters, inverters and PLCs, and enclosing them in an ExD housing.

These bespoke systems meet the requirements of challenging installation areas where, for example, space may be severely limited.
DRIVE CABINET HIRE SERVICE

SoftStart UK has built a fleet of variable speed drive control cabinets that it is making available for hire, to address a growing need across many sectors of industry. In particular, this new service meets increasing demand for prompt solutions to immediate situations.

The drive cabinet hire service is ideal for companies who need to add capacity very quickly to meet seasonal increases in customer demand or to cope with unexpected events. The service also helps in breakdown scenarios, where critical plant must be brought back online as soon as possible.

Then there is scheduled maintenance of a hardworking plant, where hiring in a variable speed drive unit will enable production to be maintained while control panels are out of service. They can also be used for evaluation purposes, perhaps to assess the energy savings or productivity improvements achieved by introducing variable speed capabilities to a system.

Further there are many possibilities with conveying and materials handling, air conditioning, ventilation and air handling, and non-emergency aspects of the water industry.

SoftStart has built cabinets to cover powers from 22kW to 220kW, covering the vast majority of potential applications. Requirements for larger units can also be accommodated. All the cabinets are built to IP56 environmental standard, with techniques in place to upgrade this if required. They are configured to be ready to run – users just wheel them to the location, plug them in and switch them on.
Softstart UK offers comprehensive training options to meet customer requirements. From on-site assistance to formal classroom training at our own facilities, the quality and standard of the courses and associated learning materials is first class.

Training covers installation and programming of variable speed drives, programming and commissioning of PLCs, the installation and use of soft starters, and the programming and use of panel PC and HMI products. Softstart UK also offers a dedicated training course that explores the fundamentals of variable speed drive technology.

**ON-SITE TRAINING**
Softstart UK supports its customers on site at times convenient to the user. Assistance during commissioning is extended to operator training and even assistance for design or controls engineers needing to understand how best to employ products in their machine or system designs.

On-site training is always practical and is formulated to get customers up and running fast and effectively – leaving staff with all the knowledge they need to program and run their products. The training is usually performed using the actual drives, PLCs, machines and programs the trainees will encounter in their daily routines, and as such is always relevant and useful.

**OFF-SITE TRAINING**
Off-site training is usually carried out at Softstart UK’s own facilities, but can be at the customer’s site if training rooms are available. The courses are more wide reaching than traditional on-site training and may include a certain amount of theoretical training as well as the practical aspects of the technology.

Most courses are semi-bespoke, so that exactly the training required by the customer or individual is catered for. Courses are supported by professional notes which have been designed to be easy to read, simple to understand and act both as a reinforcement for the course attended and as a quick reference source for the future.

Training is carried out by experienced and practising engineers form Softstart UK’s technical support team, so trainees are assured of up to date information from a true ‘hands on’ perspective.
Softstart UK is committed to offering the highest levels of service and technical support. We provide technical support by telephone and on-site, where necessary. We go to extraordinary lengths in support of the customer, including late night and weekend site visits when downtime is critical. We know that in many control applications, downtime simply is not an option.

Technical support is complemented by a full repair service, delivering repaired products back to the customer at a significantly reduced cost compared with replacement.

**TECHNICAL SUPPORT**

Users can call Softstart UK and get a fast response to their queries. Whether it is relatively simple procedural guidance that is needed, or a complicated programming or application headache, customers can be assured that they will get an answer quickly.

Where new applications are encountered, Softstart UK emulates the technical requirements of the application in our test laboratory to ensure correct product specification and configuration before shipment to the customer. If necessary, testing is also carried out at the customer’s site before commissioning the actual products to be used.

**REPAIRS AND MAINTENANCE**

Softstart UK also provides a full maintenance and repair service which delivers products back to the customer as good as new and with a full warranty covering the work completed.

Knowing that control products are usually needed in a hurry, our turnaround times on service and repairs are as short as possible. In some instances, replacement products can be loaned to customers to overcome short term problems.