



## Who are we?

UEP Switchgear is a South-East England based switchboard-systems company and technology centre.

The company has been in operation since the 1980's originally as 'Underwoods Engineered Products Limited'. Today, we are re-branded as UEP Switchgear Limited and operate from our main production facility in Suffolk.

## Why are you important to us?

Of course, our customers are important to us, without you we wouldn't have a business.

But it's more than that. It's the building of relationships and trust that are as important as simply making a profit. The cooperation and collaboration that comes with establishing good 'inter-company' relationships, will improve efficiency and reduce stress for all of us. .



## Being part of your success

We all want to thrive and grow, and we will work with you in the hope that we can contribute in some small way to your success.

We are invested in providing the optimum solution for all our clients. This means taking the time to talk through your ideas with you and coming up with a solution that fits technically, economically and ethically. Our success so far is based on that philosophy and will be the case into the future.

## How do we see the future?

No one has a crystal ball. Our industry has seen boom and bust over the years and has been notoriously unpredictable.

But now with new technologies, we see a future where switchgear automation will be the norm and with high levels of communication and monitoring, the electrical environment will be a safer and greener place for people to live and work. At UEP Switchgear, we are embracing those technologies and integrating them into our products.



## Performance

UEP Switchgear is committed to achieving the highest levels of performance, both in our engineering and switchboard production, and in the quality of our products

Selection of the highest quality, most proven reliable components and devices for integration into our systems is key, and whilst equipment costs are important to all of us, you can be assured that we will not 'cut-corners' at the expense of quality and performance.

## Power when and where you need it

Where there is a requirement for power 24/7, 365 days of the year, such as in a hospital, a broadcast studio or an around the clock production plant, the need for ultra-high resilience becomes critical.

Our automated power switching systems are based on a robust, solid state, switching technology developed by our 'Weirgrove' brand and with the integration of automatic load shedding, the dependability and efficiency of your building's electrical network will always remain intact.

## Resilience & reliability

LV switchgear and high-end automated power management systems are our core business. Our switchboards offer tailor-made solutions for commercial, industrial, and service applications.

Countless power critical environments have benefitted from our dependable switching and monitoring systems. More recently our focus has been on the development of electric vehicle charging primary power distribution. Complementing our core switchgear business, we will undertake switchboard installation, servicing, and maintenance. For more complex systems we will perform on-site testing and commissioning.

**Our Switchboards** We are an industry leading builder of modular LV switchboards in custom-built configurations in forms of separation up to Form 4 Type 7, in accordance with BS EN 61439.



## General Switchboard Data

Verified to BSEN 614392 1 & 2	<i>Applied standards</i>
Up to 690V	<i>Rated voltage</i>
Up to 6300A	<i>Current rating</i>
Up to 100kA for 1 second	<i>Fault rating</i>
50Hz	<i>Rated frequency</i>
TN-C-S	<i>Earthing System</i>
Bare (Cu).	<i>Busbar coating</i>
Air insulated.	<i>Busbar insulation</i>
RAL7035 light grey	<i>External paint colour</i>
Form 3b Type 2, Form 4a Type 2, Form 4b Types 5, 6 and 7.	<i>Forms of separation</i>
Compartmented	<i>Construction</i>
IP31 to IP54	<i>IP rating</i>
Indoor	<i>Environment</i>
-5°C/+40°C	<i>Ambient air temperature limits</i>
35°C	<i>Ambient air temp daily average</i>
50%	<i>Relative humidity</i>

## Standard Features

Standard designs are certified up to 6300A 100kA for 1 sec.

Standard colour RAL 7035.

Top or bottom cable and/or bus-duct entries.

Front or rear access for cabling.

Devices from all the main manufacturers including Schneider, Socomec and Terasaki.

Comprehensive range of metering from Rayleigh, Carlo Gavazzi, Schneider, Socomec and more.

All device types including ACB's, MCCB's, MCB and Fuse Switches, fixed, plug-in or withdrawable.





## EV Power Solutions

UEP Switchgear Ltd can help design, manufacture and commission bespoke LV Switchgear for your EV charging infrastructure.



Our tailor-made specialist EV Switchgear which is cost effective, provides key features to help save installation time on site, reduce downtime when carrying out upgrades and has additional safety measures over the traditional distribution systems:

Features include:

- Form 4 Separation to BS EN IEC 61439 -1 & 2.
- Current ratings from 63A up to 6300A Ingress Protection ratings up to IP65.
- Life safety Integrated RCD additional protection. 30mA – 300mA.
- Integrated Cellular communications 3/4/5G capable modem.
- Integrated CAT5e/6 connection (ideal for EV ultra-Cables or similar to BS 7655-1.3).
- Integrated Unmanaged industrial Ethernet Switch (linking all your smart EV chargers to the cloud).
- Safe access to protective devices by door Interlocked Rotary Handles and specialist tools.
- Energy Monitoring to form Part L compliance (optional RS485/Modbus features if required).
- MID compliant billing metering available option to MID 2014/32/EU.
- Type 1 & 2 surge protection devices optional.
- PME fault protection device optional.

Manufactured in the UK with ISO 9001 accreditation to BS EN IEC 61439-1 & 2.





Form 4 Switchboard in production



Small MCCB compartments with metering - Form 4 Type 2



Compact Form 4 Type 6 with cable box integrated into switch compartment



Form 4 Type 6 cable boxes on a front access switchboard



Rear access Form 4 Type 6 boxes



Group Mounted Form 4 Type 6 switchboard with automatic load shedding



Power connectors used for connection of a temporary generator or load bank



Appliance outlets integrated into a switchboard



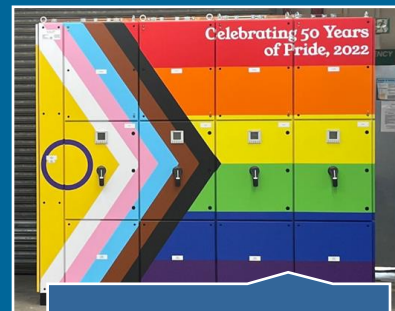
Internal copper connections onto busbar flange.



Vertically oriented MCCB compartments



Detuned Power Factor Correction



switchboard vinyl wrapped in LGBTQ+ flag colours





REB CT chamber



Life Safety Feeds



Red Life Safety Switchboard



Switchboards in test bay awaiting test



Switchboard being installed



Input and output plugs & sockets integrated into a switchboard



Power Management controls with MMI



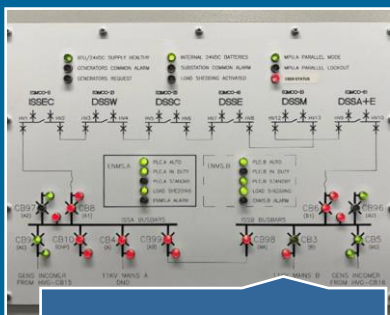
Werigrove Power Management control and simulation



Power Management with integrated Deep Sea controller



Power management override panel



Typical Werigrove power management simulator mimic



Werigrove MMI display

## There's a lot to our switchboards

**Switchboard Construction** - The non-welded frame construction is made from just 3 basic parts. Uprights, cross-members and corners. Internally the framework utilises a 25mm grid pattern offering almost limitless positioning. Manufactured from 2mm electrogalvanized powder coated steel profile in RAL 7035 Grey. Arrangements are completely flexible allowing Front/Rear Access with top and/or bottom cable entry.

Framework is made from folded mild steel and with monobloc corners, the assembly is extremely rigid.



**Modular construction gives great flexibility.**

When setting out a switchboard layout. Compartments can be of any size within a 200mm grid and, of portrait or landscape orientation. Furthermore, your switchboard can be any height or depth using the 200mm grid.

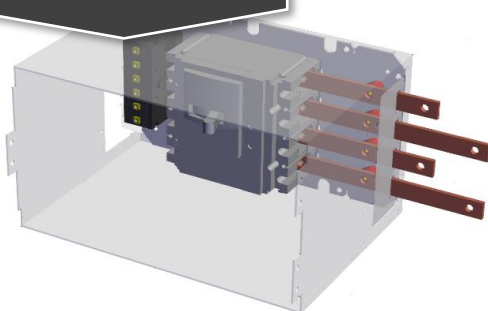


All our standard switchboards are fitted with a 100mm heavy duty, painted steel plinth.

Any width or depth to match the cubicle section and removable panels front, back and sides to aid movement of the switchgear.

MCCB Fixed or plug-in or fuseswitches, TP&N or 4 pole are housed within fully segregated compartments.

Our standard fixed type compartment interiors are modular in depth or mounting plates are adjustable in 25mm increments.



All forms of separation covered.

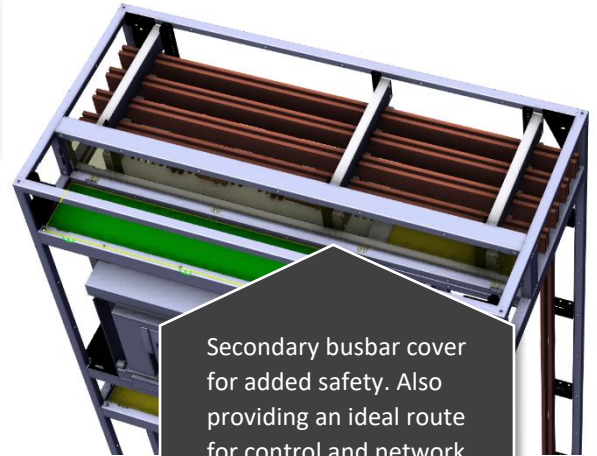
The most commonly requested are Form 3b Type 2, Form 4a Type 2, and 4b Types 5, 6 and 7.



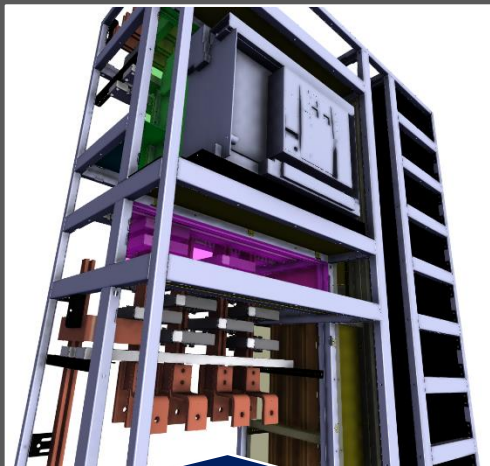


Busbar holders are manufactured from specially formulated plastics and can be mounted in any position inside the framework.

The busbar system uses standard 10mm copper busbar laminations with clamped connections at the joins.



Secondary busbar cover for added safety. Also providing an ideal route for control and network cabling.



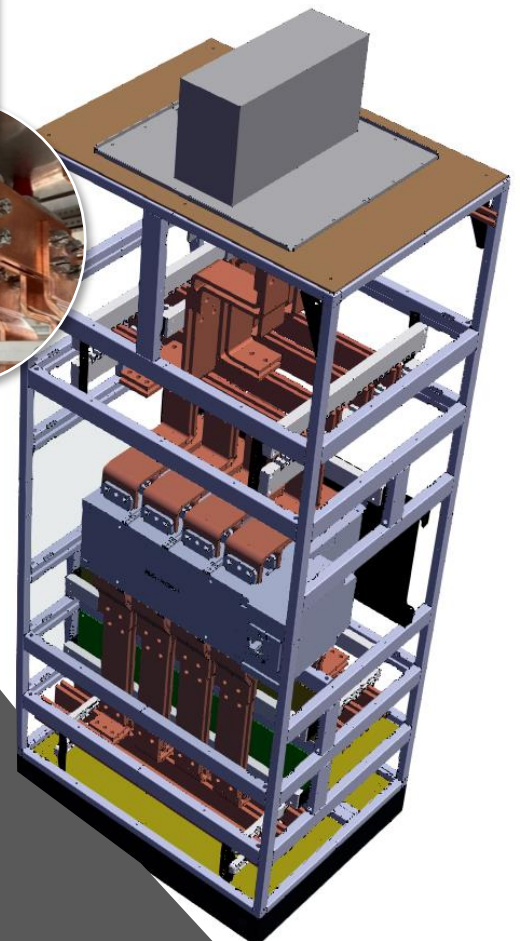
Busbar flange interface – supply us with your flanged end and we'll fit it in our factory, so you'll get no nasty surprises on site.



ACB Sections containing fixed pattern or withdrawable breakers configured for either top or bottom cable entry. We'll tailor the cable connections to suit your cable size, quantity and lug type.



Incorporate the regional network operator's CT chamber into your switchboard. We'll build this to the electricity provider's specified arrangement and will incorporate CT supports, neutral-earth link, voltage reference fuses, test terminal block and seals. We can also include the CT's where requested.



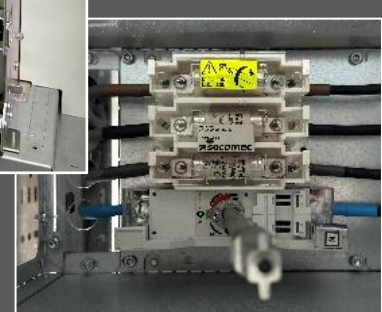


### Devices.

Our modular switchboards are configured to accept all devices that are listed within the extensive portfolio of tested and verified products. This includes ACB's, fixed or drawout, MCCB's, fixed, plug-in or drawout, fuseswitches and isolators.

All of the above from these manufacturers....

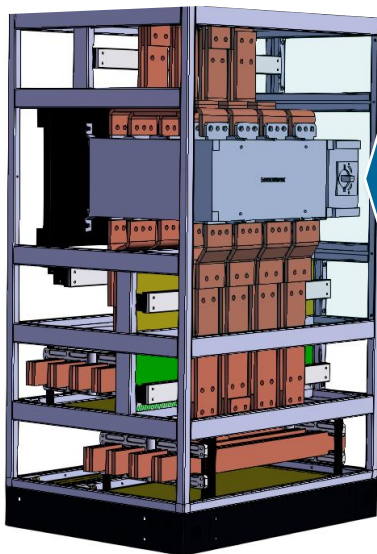
- Schneider.
- Socomec
- Terasaki.
- ABB.
- Siemens.



### Changeover Systems

Integrated change over devices are provided for either manual or automatic control and are used in 'main/standby' supply applications. Change over systems can be all contained within a single device, like the one shown here or with a pair of individual, 'interlocked' switches, such as ACB's or MCCB's.

We're also able to do  
G99/G59-3.7 Short-Term or  
Long-Term Paralleling' Option  
[Mains/Generators].



### Automatic Power Factor Correction

Power Factor Correction (PFC) lowers the current drawn by an electrical system. It does this by producing the reactive power (KVar) locally, thereby reducing the current drawn from the mains.

Ultimately, this means that less power is used so you save money and lower your carbon footprint. Detuned reactors are used as power factor correction chokes. They create more defined network conditions by avoiding undefined resonance increases through attuning the series oscillator circuit to a non-critical frequency. Detuned reactors feature low inductance tolerance.

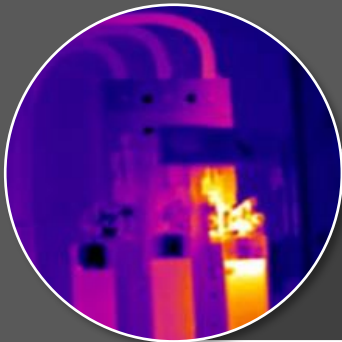




## Lightning and Surge Protection

Surge Protection Devices (SPD's) are now required under BS EN 62305.

They form the internal lightning protection system by preventing lightning currents from entering a building via incoming services and reduces the risk of damage to electrical and electronic equipment and critical systems from transient electronic surges. .



## Thermal Imaging

Thermal imaging is a process of periodically viewing heat, generated from an electrical switchboard.

The more power a device draws from a switchboard, or if there is a malfunctioning component in a switchboard, the more heat that is generated and will therefore be detected through a thermal imaging device.



## Continuous Thermal Monitoring

Using wireless heat sensors attached directly to the busbars and communicating with a monitoring system and ultimately to the client's BMS or data acquisition system.

Using wireless heat sensors attached directly to the busbars and communicating with a monitoring system and ultimately to the client's BMS or data acquisition system. The clear advantage of this system is that the switchboard is monitored 24/7/365. Safety benefits are that there is no need for your people to be at the switchboard whilst it's being monitored, and temperature trends can be viewed, and warning alarms can be set to identify anomalies early.



## O-Pen Fault Protection

Open PEN is when the combined Protective Earth (PE) and Neutral (N) conductor to an electrical installation goes open circuit but the Live remains connected.

Used generally in EV charging applications, this protection prevents serious consequences in the event of such a failure. .





## Hybrid Switchboards

We understand that switchboard needs are not always straightforward. Apart from the inevitable space restrictions, we are often pushing the boundaries of traditional switchboard design. Our team of talented individuals is experienced in finding creative solutions for awkward projects and will work with you to help you achieve your solution.



## Feeder Pillars

Where an outdoor solution is needed, our kiosks and feeder pillars are built to withstand most weather conditions for an extended period of time, and can include ventilation, anti-condensation heating and internal lighting dependent upon the application.



## Temporary Power Solutions

Inlet plugs integrated into a switchboard provide a fast method of connecting a temporary power source such as a mobile generator. Likewise, outlet plugs are used to feed load banks or other types of mobile equipment.

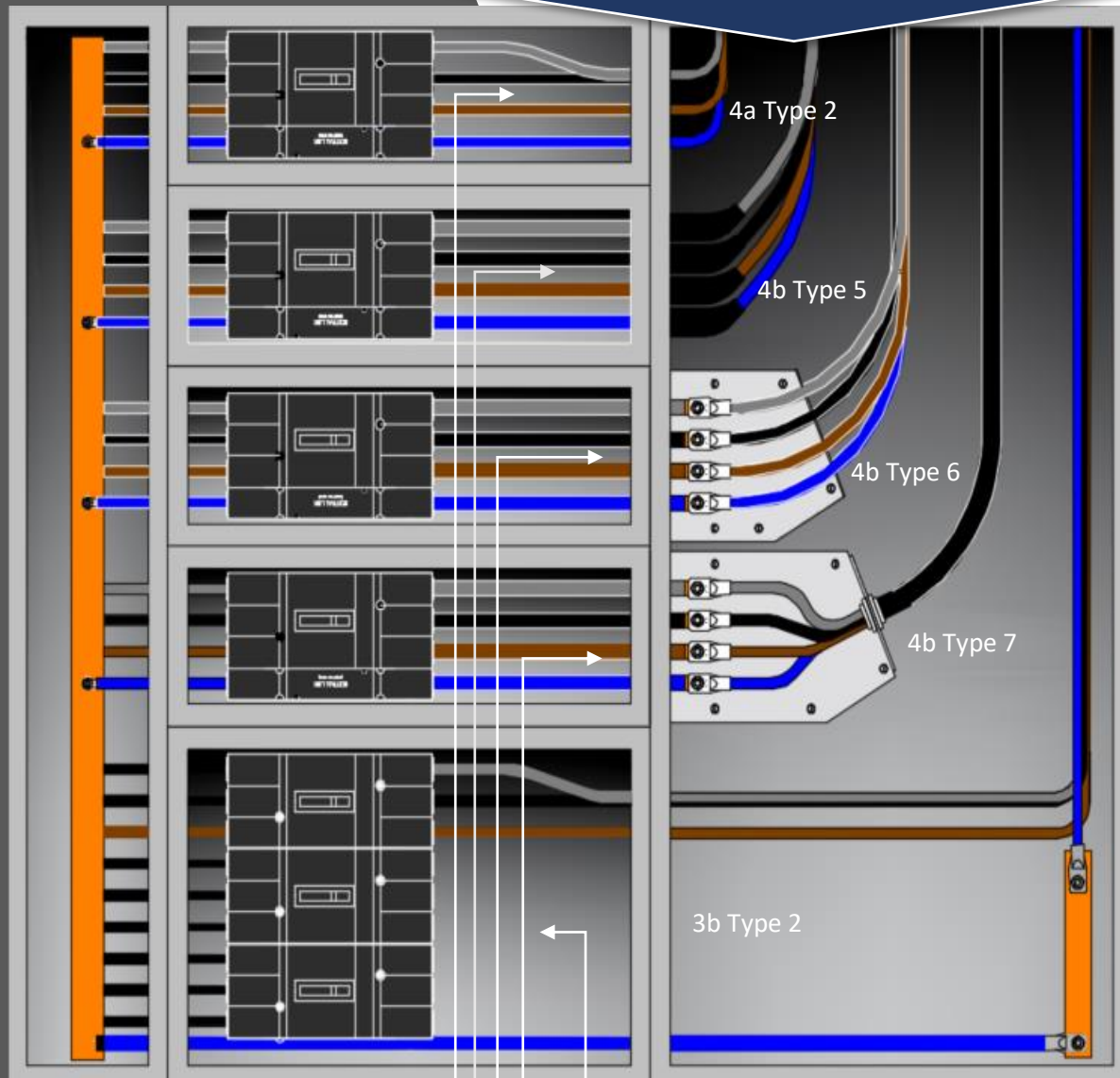


## Custom Graphics

We can include custom graphics on your switchboard in the form of schematic lines or more complex design using heat applied PVC adhesive wrapping.

## Forms of Separation

The forms of separation most commonly used by us are Form 3b Type 2, Form 4a Type 2, Form 4b Types 5, 6 and 7. This is how they are applied in our switchboards



**Form 4a Type 2** – Outgoing cables are terminated directly on to the device.

**Form 4b Type 5** – Outgoing cable connections are terminated in the cable way using rubber boots.

**Form 4b Type 6** – Outgoing cable connections are enclosed in a rigid cable box in the switchboard cable way.

**Form 4b Type 7** – Outgoing cables are glanded directly onto a rigid cable box. Entry into the cabinet is via bushes.

**Form 3b Type 2** – Devices are group mounted. Outgoing phase cables are connected directly onto the device. Outgoing neutral cables are connected to a common neutral bar in the cable way.