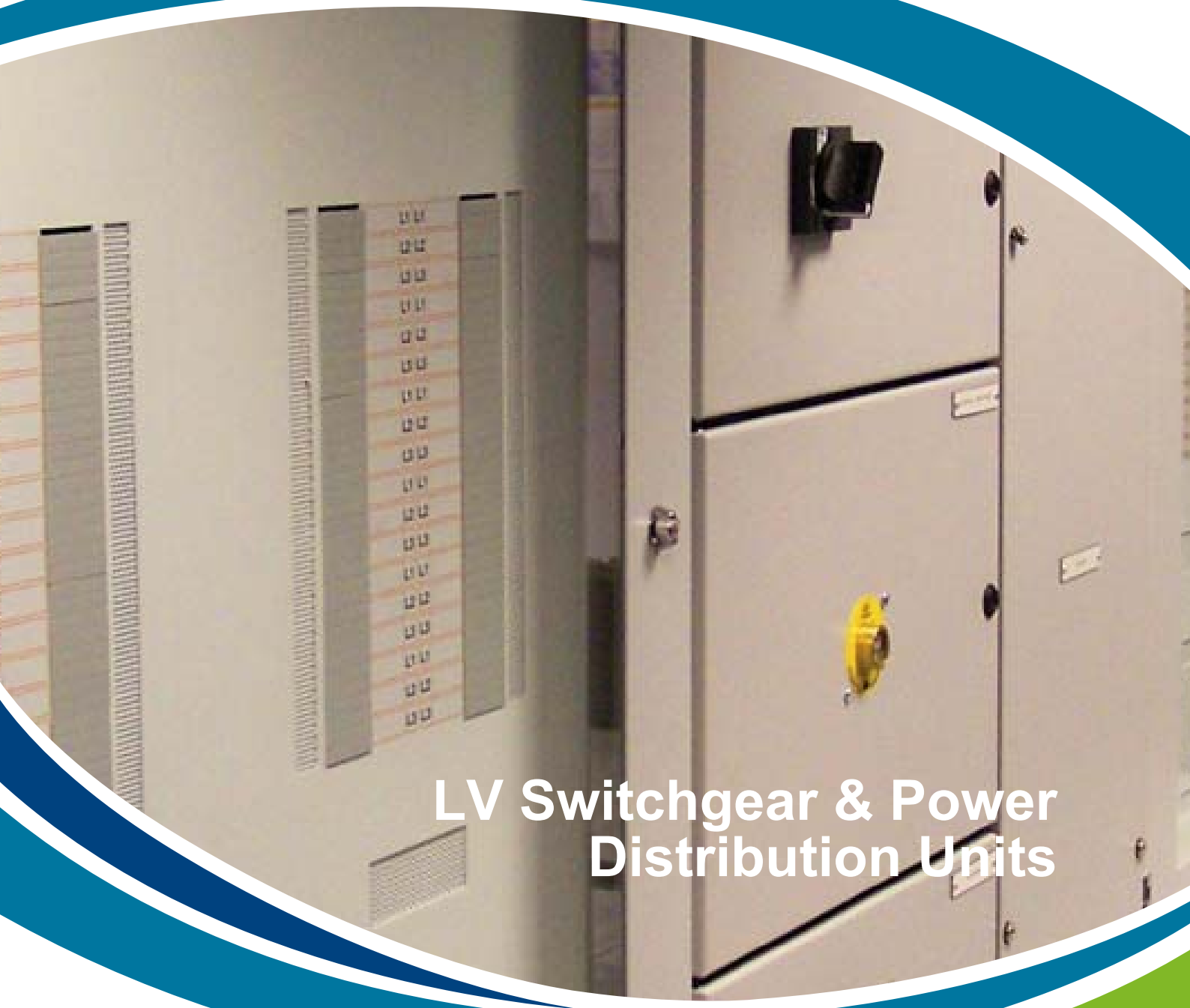
Workspace
Technology Limited



LV Switchgear & Power Distribution Units

www.workspace-technology.com

Data Centre Solutions Expertly Engineered

Switchgear & Power Distribution Units

High Performance Reliable Power Distribution

Next generation mission critical power systems must be adaptable to change in order to improve both availability and cost effectiveness. Workspace Technology employs a combination of standardisation, pre-engineering and modularisation to design and install resilient power distribution systems for the data centre.

Switchgear & Power Distribution Units

Workspace Technology's data centre experts design and install LV panel board and associated power distribution to match the availability and performance of the most demanding environments.

Our services include the design, build and installation of;

- **LV Distribution Panel Boards**
- **Automatic Transfer & Bypass Switch Panels**
- **Standard and Intelligent Perimeter PDUs**
- **Energy Metering Solutions**

Build Quality

The quality of build and product is fundmental to the underlying reliability of any data centre solution. This is why Workspace Technology only specifies components from industry leading manufacturers, including Merlin Gerin by Schneider Electric for our panel board equipment.

Typically, we design housings based on the Cubic Modular System. The systems' flexibility supports a range of cable configurations and room environments. Typically, boards are designed with Ingress Protection IP31, with Natural Ventilated Segregation Form 4 Type 2.

LV Panels

Workspace Technology designs solutions to meet availability, system reliability and concurrent maintainability of equipment, depending on your Data Centre's "Tier" level design performance criteria. As a minimum, we aim to design Tier II solutions with recommendations for Tier III where businesses require enhanced levels of fault tolerance.

Details	Tier I	Tier II	Tier III	Tier IV
Number of paths	Only 1	Only 1	1 Active 1 Passive	2 Active
Redundancy	N	N+1	N+1	S+S (2 N+1)
Compartmentalisation	No	No	No	Yes
Concurrently Maintainable	No	No	Yes	Yes
Fault Tolerance to Worst Case	None	None	None	Yes

Uptime Institute Data Centre Tier Classification Summary Table

LV Panel Board Features

- Fully welded and modular sheet steel construction cubicles
- Fully and partially type tested ASTA Certified busbar systems up to 6300A
- Front and rear access designs, suitable for top or bottom entry cables
- Standard paint finish RAL 7032 Light Grey, with all other RAL and BS colours available on request
- Ingress protection of IP31 as standard with ratings available up to IP54
- Circuit Breakers & Switch disconnections including ACB's, MCCB's fuse switches and MCB or fuse boards in fixed, withdrawable and plug-in formats
- Integrated metering typically based on Schneider PM750 systems
- Equipment can incorporate a wide range of intelligent system controls and automation with conventional relay logic control or PLC systems
- Provisions for thermographic surveys.

ATS Panel Systems

Workspace Technology offers a range of Automatic Transfer Switching systems, designed for fully automated initiation and switchover of power to the standby generator equipment.

Workspace Technology offers solutions which provide;

- Discrete or modular changeover systems, with fully integrated internal security and mechanical and electrical interlocking.
- Our innovative installations combine the benefits of switching technology and fast operation with unique control flexibility.
- Integrated "Manual Security" function operated via a standard Allen key.
- A complete range of standard accessories is available; bridging bars, voltage sensing kits, auxiliary contacts and terminal shrouds.

Bypass Panels

To support servicing of UPS systems without the need to power down critical services, bypass panels are installed. Typical designs will support a range of UPS topologies with full interlock capability.

Depending on the UPS architecture, panels form part of the main LV board, or are standalone units paired with distributed modular UPS systems.

Power Distribution Units (PDUs)

PDUs are purpose made Power Distribution Units designed specifically to support critical loads within data centres, or server and communication room environments. PDUs are designed to facilitate the safe and quick installation of additional power deployments to support the dynamic changes which inevitably occur due to I.T refreshes.

By engaging Workspace Technology, you benefit from industry leading expertise. We offer a range of innovative PDU technology which is ideal for data centre environments. Excellent build quality is inherent in all our PDUs. The deployment of PDUs throughout your data centre delivers real operational and commercial benefits.

Standard Power Distribution Unit

Floor standing PDUs are manufactured to support both raised and non-raised floor environments. All units are built to Form 4 Type 2 standard to allow for safe additions and changes to the field wiring.

Our standard presentation is through the deployment of Merlin Gerin Isobar Multi 9 pan assembly technology. The Isobar has a unique busbar disconnection system for unused busbar tee-offs and a switched neutral feature into the Isobar chassis. The Isobar assemblies are pre-wired to the field distribution connection point providing users with one of the safest systems on the market. PDU sizes range from 36 to 108 MCB's within a single housing.

All pan assembly breaker fields are presented behind a clear screen with access doors. PDUs can be built for both perimeter and 'end of aisle' configurations.

All of our PDUs are built with Schneider Electric PM750 meter technology for both local and remote viewing of power, current and voltage utilisation. These are essential when determining data centre Power Usage Effectiveness (PUE) calculations.

Our PDUs also include mesh covers allowing for thermal imaging as well as an emergency shut down facility.

A number of options are available to tailor Standard PDUs to suit client demands:-

- Isolation transformer to reduce harmonics
- Active Harmonic Filters (AHFs)
- Electronic Surge Protection (ESP)
- Pre-wired Commando plug and sockets
- Modular wiring options for outgoing circuits

Intelligent ePDUs

Increased server power consumption has made the management of rack critical power supplies and their energy consumption an essential objective for the data centre manager, as detailed PM750 meters are installed within our Standard PDUs.

Workspace Technology also offers intelligent 'energy' Power Distribution Units (ePDU) which provide power monitoring on all out-going circuits. Workspace Technology's ePDU systems incorporate advanced technology, configured to provide final circuit current power and energy monitoring down to the individual equipment rack level. Alarms, status diagnostics and essential measurements, are also integrated to ensure effective critical power management.

The ePDU delivers continuous control of critical power systems. Also, with the 'at a glance' PDU diagnostic, you can establish the nature and cause of problems before they arise.

Intelligent ePDUs features;

- Accurate 'critical power' measurements, in-line with Green Grid Level 3 PUE calculation recommendations
- Centralised integration of events and alarm logs
- 'Critical' and 'Non-critical' volt-free alarms with on-board logs for connection to the data centre monitoring system
- Managed effectively with final circuit energy (kWh), real power (kW), current (A), apparent power (kVA) and power factor monitoring
- Optional local 7.4" colour touchscreen display to view all values and alarms on graphical status mimics
- Improved security with external door status and activity log.

Infrared Thermal Monitoring

Bad connections are the most common cause of electrical failures. These cannot be detected via metering or load measurements. However the thermal increase can be detected using thermally sensitive devices.

As an alternative to periodic thermal imaging surveys, Workspace Technology offers Predictive Maintenance through the installation of Continuous Thermal Monitoring. This is achieved through the installation of small non-contact infrared sensors placed inside switchgear enclosures, which continuously monitor key components to protect installations 24/7.

Workspace Technology can also design our panel installation to include continuous thermal monitoring solutions. These will detect problems within critical equipment before they arise, to prevent catastrophic failures and enable a controlled and scheduled fix to take place.

Example Cable Sensors

- Fully automated
- Non-contact solution
- High levels of safety with no need to open panels
- Monitors mission critical assets continuously
- Identify single points of failure

Metering

As part of Workspace Technology's strategy to help clients understand and measure power usage, PowerLogic® PM750* meters are installed as a standard design practice within our panel board systems. The PM750 digital meters provide flexible metering deployment within custom panels, switchboards, switchgear, gensets, motor control centres and UPS systems and are essential to the deployment of a complete EcoMeasure solution.

PM750 Meters

The PM750 meter supports direct connection up to 480V AC and seamlessly integrates with Schneider Electrics' PowerLogic energy management system. The PowerLogic PM750 meter combines quality, versatility and functionality in a cost-effective, ultra compact unit.

Complete with power, demand, energy, power factor and frequency measurements, the PM750 meter is available in a variety of configurations and has IEC 62053-21 Class-1 and IEC 62053022 Class 0.5S certification for basic sub-billing or cost allocation. The meter produces high accuracy measurements that can be used for bill verification, monitoring back-up power for critical systems and energy management solutions.

Characteristics:-

- Requires only 50mm behind mounting surface
- Large back lit display with integrated bar charts
- Intuitive use
- Power and current demand, THD and min/max reading in basic version
- Energy class 1 as defined by IEC 61036

Workspace Technology is an expert at the deployment of Data Centre energy measurement technology.

PM7560 Meters

In addition to the PM750 meters, the Schneider ION7560 meter can be installed to provide full power quality analysis.

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Interested in finding out more?

Our friendly team are on hand to take your call on **0121 354 4894**
or send us an email at **sales@workspace-technology.com**