Service Division

Service • Support • Maintenance • Retrofits
Terasaki’s preventative maintenance service is designed to ensure integrity of electrical supplies. We will tailor a program based on the structure of YOUR electrical system. We can provide the following services for switchgear on industrial and commercial sites:

- Retrofit
- Discrimination Analysis
- Fault Diagnosis
- Ductor Testing
- Switchboard Service and Maintenance
- Preventative Maintenance
- LV Arc Hazard Reduction Solutions
- Spares Management and Supply
- Circuit Breaker Maintenance and Repair
GLOBAL SERVICE NETWORK
The Direct Response Service Division are a partner in Terasaki’s Global Service Network. Wherever your vessel happens to be - they’re never far away. Our engineers have offshore certification and medium voltage qualifications and can attend vessels to certify the operation of Terasaki equipment including:

TERASAKI’S MARINE AND OFFSHORE SERVICES INCLUDE:
- Ship surveys
- Planned maintenance
- Electrical Officer (ETO) Training
- 5 year docking inspection
- Thermal imaging
- Electrical repairs
- Emergency repairs
- Retrofitting circuit breakers
Retrofitting refers to the addition of new technology to older systems. Retrofit ACBs can replace ageing, unsafe switches and circuit breakers.

**TOP FIVE REASONS TO USE RETROFIT**

1. **IMPROVE SAFETY AND FUNCTIONALITY**
   Modern circuit breakers offer safer interlocks, remote switching and circuit monitoring.

2. **REDUCED RENEWAL COSTS**
   Static components in a switchboard (the steelwork and busbar system) can be retained. Only the functional, moving parts (the circuit breakers) are replaced. Retrofitting is typically 80% cheaper than switchboard replacement with minimum downtime.

3. **GUARANTEED SPARES AVAILABILITY**
   Terasaki guarantee spare parts availability for at least 10 years after the withdrawal from sale of a circuit breaker.

4. **MODERNISE THE PROTECTION SYSTEM**
   Old protection relays can be removed and replaced with modern microprocessor protection which is integral to the ACB. It is then easier to interface the ACB with automatic plc controls.

5. **REDUCE ARC FLASH HAZARD**
   Modern ACBs clear short-circuits much faster than older types. This means that the incident arc energy is correspondingly lower.

**THE PERFECT FIT**

Mounting brackets are designed and manufactured from site measurements to ensure a perfect mechanical interface. Where possible our designs pick up original switchboard fitting locations, thereby avoiding cutting and drilling on site.

**RELIABLE CONNECTION**

Copperwork interfaces are designed using short-circuit evaluation software. Electrical connection busbars and supports can be tested to IEC 61439 (busbar withstand test).

**FULL FUNCTIONALITY**

Withdrawable functionality and safety interlocks of original devices can be retained and improved. Fixed pattern devices can even be replaced with withdrawing devices.
**TERASAKI’S TEMPOWER 2 RETROFIT ACB**

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We design retrofit ACBs on request. If you are interested in a brand which is not shown above we would be happy to examine it. New designs are continually added to our portfolio. Check the latest list by clicking the “application notes” download at [http://www.terasaki.co.uk/services/1414_retrofit.htm](http://www.terasaki.co.uk/services/1414_retrofit.htm)

We also produce retrofit MCCBs and replace fuse switches with MCCBs.
TERASAKI’S TEMPOWER 2 RETROFIT ACB

UNELEC CN-CS2

SCHNEIDER MASTERPACT

ELLISON GEA
TERASAKI’S RETROFIT SERVICES

We prefer to conduct a site survey for every retrofit project - even if the breaker to be replaced is already on our design database. This ensures that the installation is as quick as possible, with minimum disruption to the client’s supply.

Mechanical and electrical interfaces are modelled using state-of-the-art 3-D CAD.

We can arrange for busbar interface connections to the switchboard to be independently short-circuit tested. This provides reassurance to the client that the fault capability of the retrofitted circuit breakers and connections will equal or exceed that of the original system.

Manufacture, assembly and routine testing is carried out at Terasaki’s facility in Glasgow, Scotland. The factory and processes are certified to the ISO 9001 quality management standard.

Our engineers are renowned for fast and efficient working. Some of our retrofit designs can be installed without a shutdown. Where this is not possible, our team will ensure that disruption is minimised.

CLIENTS

INDUSTRIAL
EdF AND MAGNOX NUCLEAR
POWER PLANTS
STANDARD LIFE
RIO TINTO
RBS
TELEVISION DE CATALUNIA
CONOCO PHILLIPS
BANK OF CANADA
CREDIT SUISSE

MARINE
BP SHIPPING
CONVERTEAM
CALMAC
WIGHTLINK
FML SHIP MANAGEMENT
TIDEWATER MARINE
SHELL

TESTED TO CURRENT STANDARD
ASTA tested to IEC 61439 for short-circuit withstand (low) Compliance with BS6423

LOW VOLTAGE ARC HAZARD REDUCTION
1. Remote switching using umbilical cord controller
2. Faster opening time reduces incident arc energy. TemPower 2 ACB can be set to open a short-circuit in less than 30 milliseconds (typically at least twice as fast as the device it will replace).
3. Remote Racking Lifter, Loader

MODERN PROTECTION
The AGR protection relay can replace the functions of several devices in an existing switchboard to provide:
• restricted earth fault protection
• overcurrent protection
• data communication to BMS or SCADA
• plc control

VERIFIED DESIGNS
Third Party Technical Report

APPROVED
Direct Response Service Division are members of Terasaki’s Global Service Network (GSN). The GSN provides fast and efficient service for your Terasaki equipment regardless of its location. Providers are based in Asia, Europe, the Middle-East, Australia and South America. Contact us for details of your nearest Global Service Network provider.

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