POWER CSL

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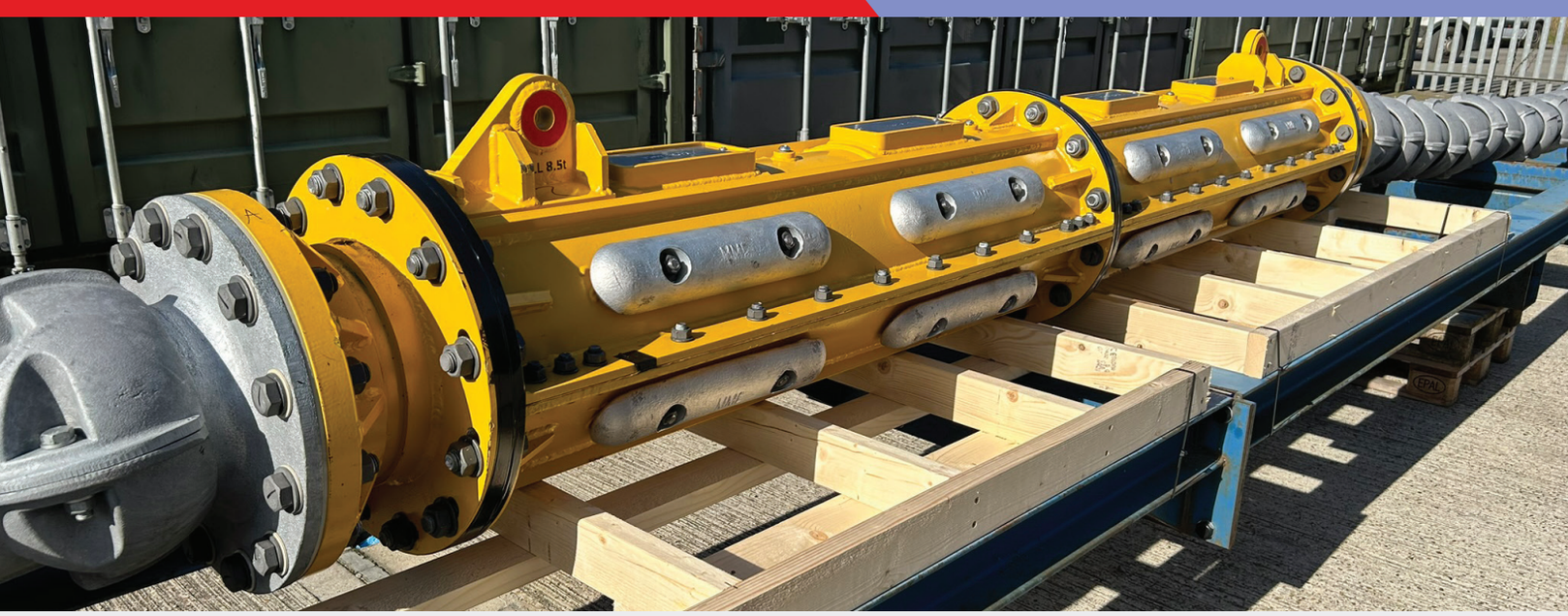
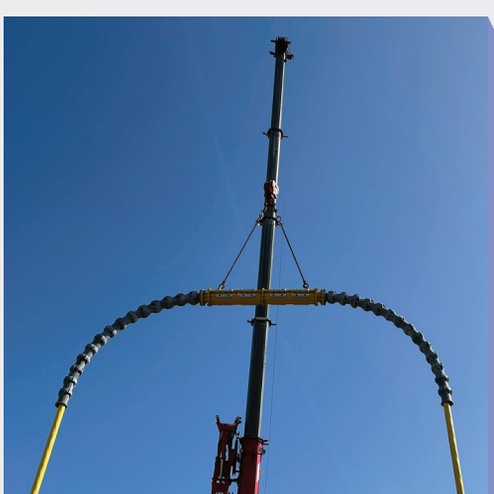
Product & Service Datasheet

Offshore Wind Farm High Voltage Subsea Array Cable Repair Joint (to 72.5kV)



For the offshore repair of high voltage OWF subsea array cables damaged during installation or operation Power CSL offers its robust and reliable repair joint product.



Applications

- Repair of offshore windfarm high voltage array cables (to 72.5kV)
- Repair of island link high voltage cables (to 72.5kV)

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The joint which has been designed for rapid installation utilises cold-shrink insulation reinstatement technology and has been subject to rigorous testing to IEC specifications and CIGRE 490 and TB623 recommendations (mechanical / electrical / hyperbaric).

The design is modular in nature allowing jointing of cables from different manufacturers and of different designs and sizes. This creates a highly flexible repair solution (eg)

- During both the OWF construction and operation phases the operator can use one size of spare cable, typically of the largest conductor size, for repair of all cable sizes on the project.
- Spare cable from one OWF can be used for repair of cables on another OWF, allowing 'pooling' of spare cable between an operator's fleet of projects.
- A centralised pool of standard repair joints can be held by the operator to cover all of their OWF assets. This avoids the need to hold and maintain a large number of repair joints each specific to the original cable manufacturer, and typically cable size specific. This O+M pool can be built up gradually as repair joints sourced as a contingency for each OWF's installation can be moved into the centralised strategic stock if not required during the construction phase.

Power CSL has optimised all elements of the repair joint assembly operation and the product is therefore rapid to install, with assembly time in the order of 36 hours, thereby reducing weather window waiting time and repair vessel time on station.

The main elements of the repair joint are standardised and conversion kits are supplied to accommodate the required range of cable sizes and designs to be covered. The joint utilises high tensile strength compression conductor connections. The insulation system is comprised of a one piece cold-shrink silicone rubber moulding with internal stress control features. All joint bodies are electrically tested (HV & PD) as a standard routine QC measure. The combination of joint body 100% electrical test, single-piece construction, and cold-shrink down application removes the potential for installer error that may arise from multi-component moulding or tape based insulation reinstatement systems.

Metallic core screen connections across phase joints are configurable to accommodate all common cable designs. The joint includes stainless steel optical fibre splice enclosure(s) which are highly configurable to accommodate the different optical cable designs found within array cables. All repair joint internal components are housed within a resin filled, corrosion resistant, overall casing. The product utilises high tensile strength armour terminations and can be supplied with bend stiffeners as standard, or with vertebrae bend restrictors as an option.

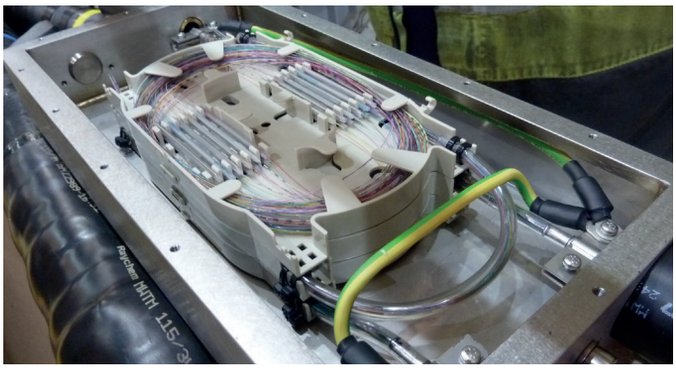
Power CSL also offers an enhanced mechanical strength option for its array cable repair joint range. The internal components of the repair joint are the same as for the standard product, however the steel case is reinforced to provide a high bending moment capacity. This Series 2 design is also supplied with a bespoke high strength bend restrictor.

Power CSL offers product familiarisation courses for its HV array cable repair joint to suitably experienced technicians. This approach facilitates a wider pool of available offshore personnel.

Key features of the Power CSL subsea OWF high voltage array cable repair joint

- Voltage up to 72.5kV
- Type tested to relevant IEC standards and CIGRE recommendations
- 240mm^2 to 1000mm^2 conductor size range in copper or aluminium (conductor sizes <240mm^2 may be possible subject to review of cable design)
- Range taking 240mm^2 to 800mm^2 & 800mm^2 to 1000mm^2 (subject to review of cable design)
- Accommodates XLPE or EPR based cable insulation systems - employs proven one piece cold-shrink joint body technology
- Accommodates all metallic screen options (eg) copper wire screen & copper tape screen with or without aluminium laminate layer, welded aluminium tube, extruded lead screen
- Suitable for wet, semi-dry or dry cable designs
- Accommodates all optical fibre design types including appropriate electrical bonding / earthing connections
- Highly effective seals and filling resin protect against radial or longitudinal ingress of water (to 100m water depth)
- Joint casing is coated to Norsok standard and incorporates cathodic protection
- Bend stiffener and bend restrictor options
- Rapid install – typically 36 hours
- Joint kit provided with assembly frame
- No special tools required

The HV OWF array cable repair joint forms part of the wider range of subsea cable accessories available from Power CSL. This includes repair joints for inter-island connections and oil and gas composite subsea cable types, MV array cable repair joints, HV & EHV repair joints for OWF export cables, and bespoke accessories to fulfil special project requirements.



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