

ABB Offshore Systems Ltd

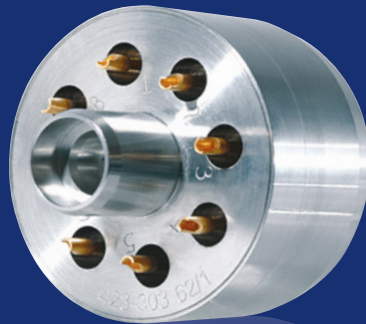
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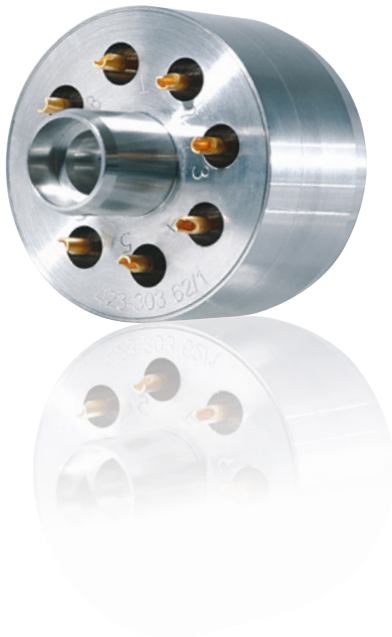
Connector for sub-sea drilling operation

ABB Offshore Systems Ltd is an ABB Oil, Gas & Petrochemical Company. The company needed a special connector that would act as a secondary containment barrier in an offshore bore hole while also enabling the passage of electrical signals through the penetrator.

Martec expertise:

- custom design
- harsh/hostile environment
- match existing interface
- advanced production and sealing
- non-destructive testing
- pressure testing





MANUFACTURING CHALLENGES

Sub-sea connectors already present an engineering challenge for manufacturers. ABB's brief was especially demanding as it involved welding precision glass to metal seals into a high strength housing while maintaining hermeticity. The positional tolerances, especially the outside diameter of the penetrator, were therefore especially critical due to the required interference fit into the housing.

DESIGNED

Our in-house design team tested a variety of design iterations with finite element analysis, incorporating thermal shock to give us a better understanding of the effects of the subsequent assembly process so we could anticipate and investigate potential problems.

Once we had agreed on the final design the unit was manufactured and tested. Members of the ABB team were on hand during all of the key qualification stages to see how the part would stand up to the simulated environmental conditions.

TESTED

- Mechanical shock & vibration
- Extended high pressure test
- Leak test
- Electrical test
- Dimensional checks

DELIVERED

Size	The unit had a typical diameter of 52mm with an overall length of 58mm
Pin count	8 contacts
Encapsulant	Glass and Stycast 3050 (low viscosity)
Plating	Mil-G-45204C

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