

## WellConnect™ Subsea Electrical Concentric Connector

The Concentric Instrument Wet Mateable Electrical Connector is designed to provide continuous electrical connection between the Tubing Hanger and the X-Tree and power DHPT. The connector is designed to fit a non-orientated Tree and provide electrical connection in all feasible orientation arrangements. The system also uses a THRT Connection to allow system checks prior to the X-Tree landing.



### Operational Requirements

Design Life: 10 years  
 Location within completion : Vertical X-Tree TH, THRT  
 Rated Pressure: 6,500 Psi  
 Test Pressure: 9,750 Psi  
 Working temperature range: 0°F to 250°F (-18°C to 121°C)  
 Storage temperature range: -40°F to 158°F (-40°C to 70°C)  
 Deployment Water Depth: 0-6,000ft (0-1,803m)

### Mechanical Requirements

Sealing Elastomeric and M-M  
 Non orientated design  
 Interface Tolerant of debris during normal mating  
 Maximum Radial Misalignment: +/- 0.04" (1.0mm)  
 Maximum Axial Misalignment: +/- 0.19" (4.9mm)  
 Maximum Mating Speed: 0.3m/sec

### Electrical Specification

Maximum Working Voltage: 100Vdc  
 Test Voltage: 500Vdc  
 Maximum Working Current: 100 mA  
 Maximim contact resistance: <30 mohms with 2.0A load"

### Material Specification

Housing: 316 Stainless Steel, SAF 2205, High Strength CuproNickel  
 Contact: Gold Plated Copper Alloy, Nickel  
 Insulation: PEEK 450G or Equivalent  
 Chemical/Corrosion Considerations to application environments

### Design Philosophy

Seal Philosophy: Elastomeric Wet Mate Seals  
 Electrical Insulation: Thermosplastic or Elastomer

### Cable

Tree Connector: 1/8" Hydraulic Tube  
 TH Connector: 1/4" or 1/8" Permanent Downhole Cable

### Key Performance Features

TH Pressure Barrier API 17D PSL4  
 No Hydraulic Return utilises Spring Mechanism  
 Crimp Contacts

### Qualification Testing

Standard Electrical Integrity Test  
 Dry Unmated Test  
 Hydrostatic Withstand Low Pressure Test  
 Hydrostatic Withstand High Pressure Test  
 Individual Seal Hydrostatic Pressure Test  
 Air Mate/Demate Cycle Test  
 Wet Mate/Demate Cycle Test  
 Turbid Tank Mate/De-mate Cycle Test  
 Thermal Cycle test Vibration Test

