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:** 25 years
- **Location within completion:** Vertical X-Tree TH, THRT
- **Rated Pressure:** 5,000 Psi
- **Test Pressure:** 7,150 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**
- **Working Voltage:** 500Vdc
- **Test Voltage:** 1,000Vdc
- **Maximum Working Current:** 5A

**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