

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:	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

Working Voltage:	100Vdc
Test Voltage:	500Vdc
Maximum Working Current:	100mA
Maximum 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:	Thermoplastic or Elastomer

Cable

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

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	

Key Performance Features

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

