

# WellConnect™

## 20ksi Subsea Vertical Electrical Connector - V3

The Vertical Instrument Wet Mateable Electrical Connector is designed to provide continuous electrical connection between the Tubing Hanger and the X-Tree. The purpose of the Vertical Electrical Connector is to provide a long term reliable electrical connection for DHPT Applications. 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:	Subsea Vertical X-Tree
Rated Pressure:	20,000 Psi
Test Pressure:	30,000 Psi
Working Temperature Range:	-20°C to 155°C
Storage Temperature Range:	-18°C Min
Number of Mating Cycles:	100

### Mechanical Requirements

Envelope Diameter:	As per Customer Specifications
Stack up Tolerance:	± 3.5mm
Mechanical Shock:	Half sine period at 6g
Angular Misalignment:	± 0.5°
Radial Misalignment:	± 1mm

### Electrical Specification

Number of Contacts:	1
Contact Method:	Multi-contact
Working Voltage:	1000 Vdc
Test Voltage (to Earth):	2400Vdc
Ampacity:	5A

### Material Specification

Housing:	HS Cupronickel to ISO 15156-3, Inconel 718
Contact:	Gold Plated Beryllium Copper
Insulation:	PEEK HT

### Design Philosophy

Main Dielectric Filled Body:	Pressure Balanced
Seal Philosophy:	Dual Electrical and Mechanical Barriers
Electrical Insulation:	Primary Thermoplastic or Elastomer Secondary Dielectric Fluid

Independent Design Review  
Validation

### Qualification Testing

Contact Resistance Test  
Shell Continuity Test  
Insulation Resistance Test  
Proof Voltage Test  
Gas Leak (Helium) Test  
Misalignment Test  
Locking Device Test  
Wet Mating (Turbid Tank) Test  
Partial Mating (Turbid Tank) Test  
Thermal Shock Test  
Mechanical Shock Test  
Vibration Test  
Drop Test  
Pressure Test  
Pressure Cycling Test  
Pressure & Temperature Cycling Test  
Individual Seal Test

### Key Performance Features

Unique Oil Flow Design to Flush the Electrical Connection during Mating  
Protective Contact on Male/Female Halves  
HPHT Application Materials  
Energised Seals  
Metal to Metal Sealing  
Gold-plated Contacts  
Crimp Technology

