

# WellConnect™

## 1" Subsea Vertical Electrical Connector - V2

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. The design is a smaller bore design with lower receptacle 27.9mm in diameter.

### Operational Requirements

Design Life:	25 years
Location within Completion:	Subsea Vertical X-Tree
Rated Pressure:	15,000 Psi
Test Pressure:	22,500 Psi
Working Temperature Range:	-20°C to 165°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:	500 Vdc
Test Voltage (to Earth):	1000Vdc
Ampacity:	5A

### Material Specification

Housing:	HS Cupronickel/Superduplex to ISO 15156-3
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

Proof Voltage  
Insulation Resistance  
Contact Resistance  
Pressure Test  
Pressure & Temperature Cycling (API 6A)  
Long Term & Life Test  
Temperature Limit  
Vibration Test  
Shock (Drop) Test  
Gas Seal (Helium) Test  
Misalignment Test  
Individual Seal Test  
Low Temperature 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

