

## 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 279mm 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	Unique Oil Flow Design to Flush the Electrical Connection during Mating
Insulation Resistance	Protective Contact on Male/Female Halves
Contact Resistance	HPHT Application Materials
Pressure Test	Energised Seals
Pressure & Temperature Cycling (API 6A)	Metal to Metal Sealing
Long Term & Life Test	Gold-plated Contacts
Temperature Limit	Crimp Technology
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

