

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

