WellPower v1 Split-Phase Vertical Electrical Connector

The ESP connector system consists of three single phase wet-mate power connectors spaced around the production bore. The female connector halves are in the upper section, while the male connector halves are fixed within the lower section. The connector system provides a long term reliable connection in a subsea downhole environment.

Operational Requirements
Design Life: Permanently Installed Connector 10 years
Rated Pressure: 5,000 Psi
Test Pressure: 7,500 Psi
Design Pressure: 9,000 Psi
Working Temperature Range: 0ºC to 150ºC (300ºF)
Storage Temperature Range: -22ºF to 104ºF
Number of Cycles: 100

Mechanical Requirements
Diameter: 1.250”
Length: <12.000“
Stack up Tolerance: ± 0.25”

Electrical Specification
Rated Voltage: 2.89 / 5.0 kVAC (Uo/U)
Breakdown Voltage > 8Uo (23.1 kV)
Ampacity: 80 - 125 A
Frequency Range: 30 - 85 HZ

Key Performance Features
Unique Dielectric Oil Flow System
Protective Contact on Male/Female Halves
HPHT Application Materials
Energised Seals
Metal to Metal Sealing
Gold-plated Contacts
Crimp Technology

Material Specification
Housing: 316 Stainless Steel, Inconel 625 (nipple)
HS Cupro Nickel Alloy
Contacts: Gold Plated Beryllium Copper
Insulation: PEEK 450G

Qualification Testing
Standard Electrical Integrity Tests
Dry Mated Test
Mains Water Mate / Demate Cycle Test
Seawater Mate / Demate Cycle Test
Turbid Tank Test
Helium Leak Test
Cold Water Mate / Demate Cycle Test
Simulated Environment Mate / Demate Cycle Test
Simulated Environment Material Compatibility Test
Rapid Mate / Demate Cycle Test
Temperature Rise (current)
High Voltage

Design Philosophy
Main dielectric filled body: Pressure balanced
Sealing: Dual electrical and mechanical barriers
Electrical insulation Primary: Thermoplastic or Elastomer
Lower Connector Pressure Barrier

Cable
Various Cable Options