

WellPower™

Split-Phase Vertical Electrical Connector V1

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:	10,000 Psi
Test Pressure:	15,000 Psi
Working Temperature Range:	-18°C to 93°C (0°F to 200°F)
Storage Temperature Range:	-30°C to 40°C (-22°F to 104°F)
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:	150 A
Frequency Range:	30 - 85 HZ

Material Specification

Housing:	316 Stainless Steel, Inconel 625 (nipple)
Contacts:	H5 Cupro Nickel Alloy
Insulation:	Gold Plated Beryllium Copper PEEK 450G

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

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

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

