

# WellPower™

## 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:	-18°C to 150°C (0°F to 302°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:	80 - 125 A
Frequency Range:	30 - 85 HZ

### Material Specification

Housing:	316 Stainless Steel, Inconel 625 (nipple)
Contacts:	HS 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

