

OceanPower™ HV Electrical Penetrator

The HV Power 3-phase Penetrator utilises technology proven in the marine environment providing long term reliability. The Penetrator brings many benefits to tidal stream and wave energy devices, providing innovation to some of the industry's major challenges.



Operational Requirements

Location within Completion: Subsea Turbine, Hub & Umbilical
 Design Life: 25 years
 Rated Depth: 1,000+ Metres
 Rated Pressure: 1,500 Psi
 Working Temperature Range: -20°C to 60°C
 Storage Temperature Range: -18°C Min

Mechanical Requirements

Option 1

Bore Sealing: Ø76.5mm = 50sqmm Cable
 Flange: Ø130mm = 50sqmm Cable

Option 2

Bore Sealing: Ø82.7mm = 70sqmm Cable
 Flange: Ø130mm = 70sqmm Cable
 Envelope Diameter: As per Customer Specification

Electrical Specification

Number of Contacts: 3
 Contact Method: Crimped Terminations
 Working Voltage: 3.6/6(7.2) kV
 Test Voltage (to Earth): 14.4 kVdc
 Ampacity: 250 A (cable limiting factor)
 Frequency Range: 47 - 52 HZ

Key Performance Features

Energised Seals
 Elastomeric Back-up Sealing
 Design suits a range of Cables
 Flange Seal Test Port

Design Philosophy and Standards

IEC: 60502-2, 60502-4, 60228

Cable and Hose

Siwo-kul 35mm² Cable
 Goodyear Gorilla Hose via Hose Fittings Connection
 Oil-filled & Pressure Balanced
 Other Cables & Hoses are available

Material Specification

Housing: SS 316 / High Strength CuproNickel
 Insulation: PEEK, EPDM

Qualification Testing

Shell Continuity
 Proof Voltage
 Insulation Resistance
 Contact Resistance
 Partial Discharge (PD)
 Pressure Test
 Thermal Short Circuit
 Temperature Cycles
 Pull Test

