

Compressor Penetrators

6/10(12)kV - 500A

August 2021



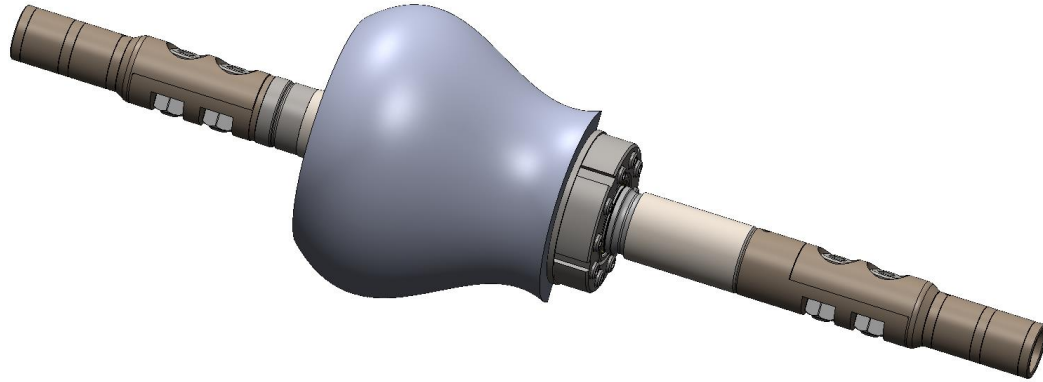
SCM

Systèmes et Connectique du Mans

- SCM has field developed and qualified hermetic solutions for topside compressors used for upstream, mid-stream and downstream. Can be qualified as Explosion Proof as a component.
- Penetrators are part of an explosion proof enclosure (out of SCM scope) and allows VPI applied onto the penetrator concurrently to the compressor motor winding, increasing the electrical insulation robustness and reducing need for maintenance.
- Use of Brazed Ceramic Insulation extends operational temperature range by eliminating the use of elastomer seals. It can be used for both clean and sour gas applications.



Product characteristics



Electrical Characteristics

- Number of Contacts: **1**
- Rated Voltage $U_0/U(U_{max})$: **6/10(12)kV**
- Maximum Rated Current: **500A**
- Rated Power Frequency: **200Hz**
- Insulation Resistance at 5kV DC: **>10GΩ**
- Contact Resistance: **<0,1mΩ per contact**

Other Informations

- Cable qualified: **185mm² 6/10(12)kV**
- Internal module media: **Natural Gas**
- Insulation between cable and penetrator: **VPI**

Mechanical Characteristics

- Rated Internal Pressure: **250bar (*)**
- Body Material: **316L (NACE MR0175)**
- Insulation Material: **Ceramic**

(*): higher pressure possible, please contact us

Environmental Characteristics

- Rated Temperature: **-20°C to +95°C**
- Storage Temperature: **-25°C to +70°C**
- Design Life: **20 years**

Penetrator compatible with certification as a component.

Ex junction box part of compressor manufacturer responsibility necessary.

Qualification Information

Qualification Information

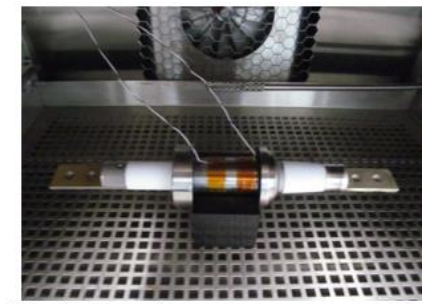
Specification			Qualification Tests
§ TR2313	§ NF EN 60137	§ IEC 61442	
-	-	-	Visual and Dimensional Inspection Weight measure
3.2	-	-	Helium leak test
3.3	-	-	Contact resistance test (CR test)
3.9	-	-	Insulation resistance test (IR DC)
3.4	-	-	Partial discharge test
3.6	-	-	High voltage test (HVAC Test)
4.7.2	-	11	Thermal short circuit tests
4.9	-	-	Pressure cycling test
4.5	-	-	Temperature rise test in air (assembly)
4.5	-	9	Thermal cycles test
4.10.2	-	-	Thermal shock test
4.10.3	-	-	Drop test
-	8.3	-	Impulse voltage test
4.10.4	-	-	Vibration test
-	8.9	-	Bending test
4.15	-	-	Dismantling and examination



Picture 7: Helium leak test set-up.



Picture 14: Thermal shock set up with location temperature sensor.



Picture 13: PD and High voltage test set-up.



Picture 15: Pressure cycling set-up with clamp of megger connected.

Experience for Compressors

Experience for Compressors

- SCM supplied the Penetrators for the 1st High Power Subsea Compression part of Åsgard project.
- But SCM is also providing LV connectors used for Active Magnetic Bearings (AMB) thanks to its hermetic glass to metal range (9316).

AMB connectors characteristics

- Dry mateable
- Number of contacts: 8 to 19
- Rated Voltage: up to 400V
- Rated current: 5 to 30A
- Rated pressure: 200/285 bar (depending on connector side)
- Max rated temperature: 130°C



THANK YOU

Your main point of contact :

Josselin LEGEAY

Business Development Manager

jlegeay@scmlemans.com