



Liquefied gas solidly glassed

Gastech: SCHOTT presents glass-to-metal sealed terminal header assemblies for LNG pumps

Landshut (Germany) / Amsterdam (The Netherlands), March 10, 2011 – Pumps that transport Liquefied Natural Gas (LNG) require the highest security. When submerged in the valuable energy carrier, they must be sealed absolutely hermetically. The gas pressure and a temperature of minus 162 degrees Celsius place incredibly high demands on their electrical terminal header assemblies. At Gastech, SCHOTT will be presenting its unique glass-to-metal compression sealing technology. It is the safest solution for manufacturing power, control and instrumentation feedthroughs for LNG applications.

Natural gas has become the world's third most important energy carrier. Today, 30 percent of all gas is shipped in specially constructed seagoing vessels. In order to be able to load as much of it as possible, the gas is cooled down to minus 162 degrees Celsius. This process reduces its volume 600 fold. The Liquefied Natural Gas (LNG) is then pumped into the tanks on board the ship or into on-shore storage tanks or vaporizers that retransform it into gas.

Modern tankers can carry up to 264,000 cubic meters of LNG inside their tanks. In order to unload the gas, each of the tank's claddings contains three or four powerful electric pumps. Since they are completely immersed in liquefied gas, the pumps are protected against this harsh environment by a chassis. Terminal header assemblies serve as the hermetic feedthroughs for the three-phase electrical power, as well as the control and instrumentation conductors.

“Our glass-to-metal sealing technology has been setting the safety standard for power penetrations for almost three decades,” says Ulrich Dirr, Director of Sales for the Energy Safety Division of SCHOTT Electronic Packaging in Landshut. “We pursue the same goal with our plug-in control and

**SCHOTT AG
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SCHOTT AG
Hattenbergstrasse 10
55122 Mainz
Germany
Phone +49 (0)6131/66-2411
E-mail info.cpr@schott.com
Internet www.schott.com



instrumentation penetrations. In fact, we are the only supplier that offers a solution that has been certified according to the European ATEX directive and the international IECEx standard,” he adds.

SCHOTT subjects each feedthrough for LNG applications to one and a half times the maximum required design pressure and then examines it for hermeticity using helium mass spectrometers. Testing for electric strength and insulation guarantees reliable performance. While power penetrations are designed for voltages of up to 11,000 volts and current ratings of up to 1,000 amperes, the control and instrumentation (C&I) penetrations are designed for voltages of up to 28 volts and current ratings of up to 4 amperes.

While power penetrations can be delivered with individual dimensions, SCHOTT’s standard C&I penetrations are currently available with 10 pins for a 2 inch feedthrough or 16 pins for a 2.5 inch penetration. The unique design allows for the pins to be distributed across a wider distance. This helps to avoid cross-talk and interferences and ensures required clearance and creepage distances for explosion-proof components. After all, undisturbed transmission of motor speed counting and vibration detection signals are crucial to ensuring a long service life of the pumps.

As a business unit of the international technology group SCHOTT, Electronic Packaging (EP) is the leading manufacturer of housings and other components for the reliable, long-term protection for sensitive electronics. The core technologies are glass-to-metal and ceramic-to-metal sealing, thermal sensing components as well as a variety of cutting edge specialty glass competences. SCHOTT EP draws on more than 125 years of experience in the development, production and reliable supply of specialized solutions for its customers worldwide. With 1,500 employees at four production locations and several competence centers around the world, local customer support and co-developments for individual packaging solutions are at the heart of the business, serving the world’s leading manufacturers in the automotive, data- and telecommunication, sensors and semiconductors, consumer electronics, dental care, home appliances, laser as well as security and tracking industries.

SCHOTT is an international technology group that has been developing and producing specialty materials, components, and

SCHOTT AG

Hattenbergstrasse 10
55122 Mainz
Germany

Phone +49 (0)6131/66-2411

E-mail info.cpr@schott.com

Internet www.schott.com



systems for over 125 years. The company's core markets are the household appliance industry, solar power, pharmaceuticals, electronics, optics, the automotive industry and architecture. SCHOTT seeks to contribute to its customers' success and become a part of everyone's life with its high-quality products and intelligent solutions. SCHOTT Group maintains close proximity to its customers with manufacturing and sales companies in all major markets. Its workforce of around 17,500 employees generated worldwide sales of approximately 2.9 billion euros for the 2009/2010 fiscal year. The company's technological and economic expertise is closely linked with its social and ecological responsibility. At the same time, SCHOTT strongly supports the principles of sustainability. SCHOTT AG is owned by the Carl Zeiss Foundation.

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Download link to a ZIP file that contains the photograph in printable quality: <http://www.schott-pictures.net/presskit/99922.liquefied-gas-solidly-glassed>



Photo caption no. 210589: SCHOTT's glass-to-metal sealed terminal header assemblies seal off the electricity supply of pumps and control and instrumentation equipment on LNG tankers. Source: SCHOTT



Photo caption no.: 210936: Ulrich Dirr, Director of Sales, and Dr. Oliver Fritz, Technology Manager, for SCHOTT's Energy Safety

SCHOTT AG

Hattenbergstrasse 10

55122 Mainz

Germany

Phone +49 (0)6131/66-2411

E-mail info.cpr@schott.com

Internet www.schott.com



Division, examine a hermetic power feedthrough for LNG applications. Source: SCHOTT

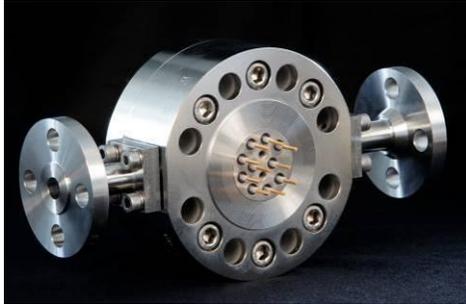


Photo caption no. 15905. The diameter of the 10 pin feedthrough scales 2 inches in diameter. Standard terminal header assemblies are also available with 2.5 inch diameter and 16 pins. Source: SCHOTT

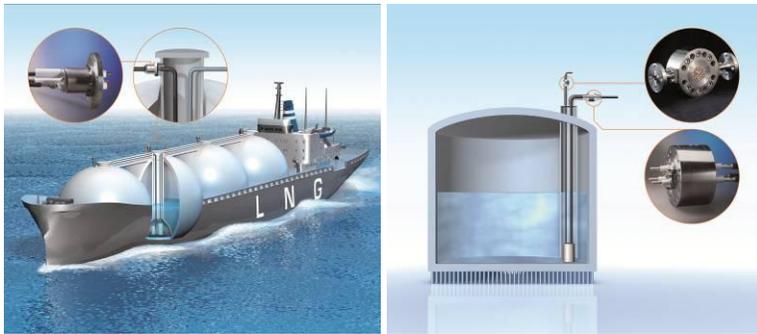


Photo caption no 99287 and 99288: In order to unload the liquefied gas, the storage tanks on board a LNG tanker (left) or on shore (right) contain powerful electric pumps. Since they are completely immersed in liquefied gas, the pumps are protected against this harsh environment by a chassis. SCHOTT's terminal header assemblies serve as the hermetic feedthroughs for the three-phase electrical power, as well as the control and instrumentation conductors. Source: SCHOTT

More press photographs can be downloaded from <http://www.schott-pictures.net>

Sales contact:

SCHOTT Electronic Packaging GmbH
Thomas Göttlinger
Key Account Manager, Energy Safety Division
Phone +49 871 826 125
Fax +49 871 826 360
E-mail thomas.goettlinger@schott.com
Internet www.schott.com/epackaging

SCHOTT AG
Hattenbergstrasse 10
55122 Mainz
Germany
Phone +49 (0)6131/66-2411
E-mail info.cpr@schott.com
Internet www.schott.com



Press contact:

SCHOTT AG
Christine Fuhr
PR Manager
Phone +49 (0) 6131 / 66-4550
Fax +49 (0) 6131 / 66-4041
E-mail christine.fuhr@schott.com
Internet www.schott.com

Agency contact:

oha communication
Oliver Hahr
PR Consultant
Phone +49 (0) 711 / 5088 6582-1
Fax +49 (0) 711 / 5088 6582-9
E-mail oliver.hahr@oha-communication.com
Internet www.oha-communication.com

SCHOTT AG
Hattenbergstrasse 10
55122 Mainz
Germany
Phone +49 (0)6131/66-2411
E-mail info.cpr@schott.com
Internet www.schott.com