

PRESS INFORMATION

Spotlight On New Technology® Award of the OTC 2022 goes to Bosch Rexroth

Manuela Kessler | 03.05.2022 | Lohr am Main | PI 008/22

World´s smallest electric subsea valve actuator SVA R2 reduces carbon footprint



Hand-over of Spotlight On New Technology® Award 2022 to Bosch Rexroth for a disruptive innovation minimizing carbon emission of subsea installations. (Image source: OTC/Todd Buchanan)

The “Spotlight On New Technology® Award” from the Offshore Technology Conference (OTC 2022) recognizes the Subsea Valve Actuator SVA R2 as a disruptive innovation of Bosch Rexroth for a quantum leap in minimizing the carbon footprint of subsea oil and gas production. It can replace currently used hydraulics completely, increasing the energy efficiency, and reducing environmental risks for sensitive subsea ecosystems. The SVA R2 fits in the envelope of hydraulic cylinders in existing use, offers field-proven safety, open interfaces and low voltage supply. Qualified for up to 4,000 m water depth, the SVA R2 reduces CAPEX and OPEX in existing and new subsea installations.

The jury of the Spotlight On New Technology® Award is convinced that the electric SVA R2 will make a difference by reducing the energy consumption of subsea installations significantly. It can completely replace miles of hydraulic pipes and the hydraulic power unit aboard. The SVA R2 actuates small rotary bore valves with just 24 V DC according to Subsea Instrumentation Interface Standardization (SIIS) Level 2 electric interface. It provides 225 Nm torque with just 36 W, which complies to the subsea electric grid for sensors, and allows 4 actuators to work sharing one single power supply line of 96 W. Bosch Rexroth utilizes field-proven mechanical springs without electric batteries. With an integrated motion control and condition monitoring, SVA R2 satisfies Safety Integrity Level up to SIL 3 from IEC 61508.

Standardized interfaces for ROV (Remote Operated Vehicle) Class 2 / 4 according API 17H / ISO 13628-8 and SIIS L2, and a lightweight construction simplify handling by subsea robots. Using reliable industrial and automotive components, the SVA R2 is designed for a productive service time of 25 years.

Full scale prototypes performed function and safety tests according to API and ISO standards on a specially built test bench for subsea applications.

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To verify its application up to 4,000 m water depth, endurance tests were performed in a hyperbaric pressure chamber with far more load cycles than required for the TRL 4 qualification according API 17. The first pilot applications in subsea equipment are starting in the third quarter of 2022. Considering the potential to scale up this principle to any size and type of rotary subsea valves, this technology is an important milestone enabling the completion of the ALL-SUBSEA FACTORY, helping the offshore industry to reliably provide the energy the world needs with the minimum impact on the environment—for a low CO2 future. In addition, the SVA R2 is suitable for other applications both below and above water such as green hydrogen production, CO2 storage, and general applications in the process industry.

The Subsea Valve Actuator SVA R2 was already awarded the prestigious Hermes Award at the Hannover Messe 2021. The Spotlight On New Technology® Award is the most important award in the offshore industry worldwide and underlines the potential of this disruptive innovation to actuate subsea production and process plants more sustainably.

Caption, image above: Hand-over of Spotlight On New Technology® Award 2022 to Bosch Rexroth for a disruptive innovation minimizing carbon emission of subsea installations (from left): Brian Miller, Member of OTC's Board of Directors, Dr. Alexandre Orth, Head of Subsea Automation Systems, Bosch Rexroth AG and Dr. Michael Schmitt, Senior Vice President Technical & Engineering, Bosch Rexroth Corporation. (Image source: OTC/Todd Buchanan)

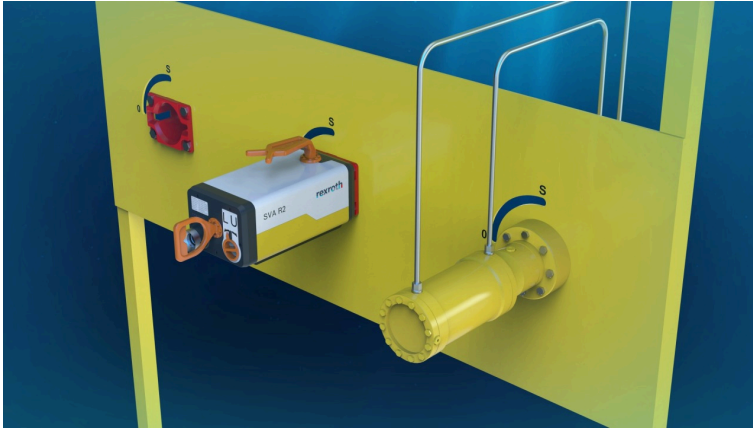


Compact, safe, efficient: The SVA R2 electric subsea valve actuator from Bosch Rexroth replaces the hydraulic cylinders that were previously required in the subsea process industry. (Image source: Bosch Rexroth AG)



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The SVA R2 offers a field-proven safety, open interfaces and low voltage supply. The set up reduces both, CAPEX and OPEX in existing and new subsea installations. (Image source: Bosch Rexroth AG)



The actuators can replace the hydraulic cylinders previously used on a 1:1 basis. It requires only one cable for the power supply and communication. Miles of hydraulic pipes along with the associated power units and controllers are no longer required. (Image source: Bosch Rexroth AG)

Basic Information Bosch Rexroth

As one of the world's leading suppliers of drive and control technologies, Bosch Rexroth ensures efficient, powerful and safe movement in machines and systems of any size. The company bundles global application experience in the market segments of Mobile Applications, Machinery Applications and Engineering, and Factory Automation. With its intelligent components, customized system solutions and services, Bosch Rexroth is creating the necessary environment for fully connected applications. Bosch Rexroth offers its customers hydraulics, electric drive and control technology, gear technology and linear motion and assembly technology, including software and interfaces to the Internet of Things. With locations in over 80 countries, more than 31,000 associates generated sales revenue of around 6.2 billion euros in 2021.

Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 402,600 associates worldwide (as of December 31, 2021). The company generated sales of 78.7 billion euros in 2021. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. With its more than 400 locations worldwide, the Bosch Group has been carbon neutral since the first quarter of 2020. The basis for the company's future growth is its innovative strength. At 128 locations across the globe, Bosch employs some 76,100 associates in research and development, of which more than 38,000 are software engineers.

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