

PRESS INFORMATION

Bosch Rexroth and PetrolValves electrify Subsea Safety Isolation Valves (SSIV)

Manuela Kessler | 06.05.2024 | Lohr am Main / Germany | PI 016/24

Memorandum of Understanding to accelerate the electrification of subsea process valves with high Safety Integrity Level requirements



Bosch Rexroth AG and PetrolValves S.p.A. have signed a Memorandum of Understanding to collaborate on the electrification of subsea process valves with high Safety Integrity Level requirements. (Image source: Bosch Rexroth AG, photographer: Axel Heiter)

Bosch Rexroth AG and PetrolValves S.p.A. have signed a Memorandum of Understanding to collaborate on the electrification of subsea process valves with high Safety Integrity Level requirements, such as Subsea Safety Isolation Valves (SSIV). Both companies are already working on a solution that connects PetrolValves subsea valves with the Rexroth actuator eSEA Drive. Operation and control are carried out via simple 24 V DC electric power supply. The new development will reduce the investment and operating costs of subsea systems for the storage of captured carbon (CCS/CCUS) and for the safe transport of green hydrogen (H₂) produced offshore using renewable energy.

The biggest challenge in the use of offshore systems for the capture and storage of CO₂ and the use of green hydrogen (H₂) is to reduce the total cost of ownership. A significant lever for cost reduction is electrification, for example through the eSEA actuators developed by Bosch Rexroth, which cover all safety-relevant movements at water depths of up to 4,000 meters. They are a particularly economical alternative to the hydraulically driven actuators that have been normally used. Until now, especially, large subsea process valves with high Safety Integrity Level (SIL) requirements could not benefit from electrification due to the lack of a suitable and affordable drive solution.

PRESS INFORMATION

Bosch Rexroth and PetroValves, the leading supplier of Subsea Safety Isolation Valves (SSIV), are collaborating on the electrification of large subsea process valves and have signed a Memorandum of Understanding to this effect. The agreement covers the development and qualification of new valve variants, such as a 10- or 12-inch ball valves, as well as the promotion of these solutions to the market. “Together, we will offer to the operators the opportunity to introduce innovative all-electric technologies that will reduce the acquisition and operating costs of their plants, minimizing the energy consumption and protecting the environment,” said Miguel Vallcorba Piera, Chief Commercial Officer of PetroValves.

Both companies have already implemented this solution using an eSEA Drive from Bosch Rexroth to electrify a subsea 5” gate valve, and a full-scale prototype is currently in the final phase of qualification tests to reach Technology Readiness Level (TRL) 4 by mid-2024.

“Our solution eliminates the entire hydraulic system for valve actuation: central hydraulic power units above water and kilometers of hydraulic pipes. This simplifies the design and speeds up the engineering and commissioning of offshore systems, thus improving the overall response time from the control system and the safety level,” says Dr. Alexandre Orth, Head of Subsea Automation Systems, Bosch Rexroth AG. In addition, machine-learning based condition monitoring adds further operational and safety benefits.

PetroValves and Bosch Rexroth will present their joint development at OTC 2024, the Offshore Technology Conference, in Houston, Texas, at the NRG Center on May 6, in the All-Electric Subsea and Wells session (09:30 to 12:00).

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 and Industrial Applications as well as Factory Automation. With its intelligent components, customized system solutions, engineering 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, around 33,800 associates generated sales revenue of 7.6 billion euros in 2023.

Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 429,000 associates worldwide (as of December 31, 2023). The company generated sales of 91.6 billion euros in 2023. Its operations are divided into four business sectors: Mobility, Industrial Technology, Consumer Goods, and Energy and Building Technology. With its business activities, the company aims to use technology to help shape universal trends such as automation, electrification, digitalization, connectivity, and an orientation to sustainability. In this context, Bosch’s broad diversification across regions and industries strengthens its innovativeness and robustness. Bosch uses its proven expertise in sensor technology, software, and services to offer customers cross-domain solutions from a single source. It also applies its expertise in connectivity and artificial intelligence in order to develop and manufacture user-friendly, sustainable products. With technology that is “Invented for life,” Bosch wants to help improve quality of life and conserve natural resources. The Bosch Group comprises Robert Bosch GmbH and its roughly 470 subsidiary and regional companies in over 60 countries. Including sales

PRESS INFORMATION

and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. Bosch's innovative strength is key to the company's further development. At 136 locations across the globe, Bosch employs some 90,000 associates in research and development, of which nearly 48,000 are software engineers.

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