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Hydrogen Technology World Expo 2026

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***Beckhoff at the Hydrogen Technology World
Expo 2026: Hall B7, Booth 7F24***

From pilot project to industrial-scale production with PC-based control

From October 20 to 22, 2026, Beckhoff will be appearing at the Hydrogen Technology World Expo in Hamburg and demonstrating how PC-based control can provide a future-proof solution to the technical and economic challenges of hydrogen projects. The spotlight is on system-integrated explosion protection, precision measurement technology, and AI-supported engineering.

Electrolyzers, fuel cell systems, compressor stations, and refueling stations are currently scaling up from pilot projects to industrial-scale production. This shifts the focus from feasibility to efficiency, availability, and operating costs – while maintaining the same explosion protection requirements. Beckhoff addresses this complex situation with a consistent, open control architecture. For plant engineers, this means fewer interfaces, less hardware diversity, and engineering solutions that can be reused across different plant sizes and project phases.

System-integrated explosion protection

One of the highlights of the exhibition appearance will be Beckhoff's comprehensive range of automation solutions for explosion-protected plant operations. The ELX series EtherCAT Terminals combine compact remote I/Os with an integrated safety barrier and allow for the direct connection of intrinsically safe field devices from zones 0/20 and 1/21. Eliminating the need for external isolation barriers reduces costs and saves space in the control cabinet. The EPX Box modules apply this principle to decentralized automation concepts with an IP67 protection rating. The CPX series offers control panels and panel PCs

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for the operator level in zone 2/22. Since the Ex portfolio is certified to ATEX, IECEx, and NEC/CEC standards, standardized machine designs can be rolled out worldwide.

Precise measurement technology

For stack monitoring of electrolyzers and fuel cells, Beckhoff introduces cascaded cell voltage measurement using the EL3008-0003 (8 x ± 3 V) and EL3008-0005 (8 x ± 5 V) EtherCAT Terminals. They are designed for high-resolution short- and long-term monitoring of single-cell voltages and support the measurement of stacked voltages up to 1,500 V CAT II. Cascaded wiring significantly reduces the number of test leads in large cell stacks. On the grid side, the EL3475 energy measurement terminal – when used in combination with the SCL6xxx low power split-core transformers – simplifies the collection of relevant consumption data. Via EtherCAT, raw and analyzed data are transmitted directly to higher-level systems – providing the basis for grid transparency and grid status assessment in accordance with Section 14a of the German Energy Industry Act (EnWG), as well as for retrofitting existing facilities.

AI assistance in engineering

TwinCAT CoAgent delivers a significant boost in engineering efficiency. The AI assistant provides language-based code suggestions for PLC, HMI, and I/O configuration. During operation, it provides support through AI-based fault diagnosis, automatically generated repair instructions, and data analysis. Operators of hydrogen facilities will see shorter project planning times, faster commissioning, and minimized downtime.

➔ <https://www.beckhoff.com/hydrogen-technology-expo-2026>

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Press picture:



Picture caption:

At the Hydrogen Technology World Expo 2026, Hall B7, Booth 7F24, Beckhoff will demonstrate how PC-based control combines explosion protection, precision measurement technology, and AI assistance on a single platform.

Press kit:

www.beckhoff.com/media/downloads/press/2026/pr322026_beckhoff.zip