

# Functional safe inputs and outputs

**Axiomatic has developed a 4â€‘on/off valve controller. The J1939-connectable device features also seven digital inputs and three LED outputs.**

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The AX022950 comes in an IP67â€‘rated packaging (Photo: Axiomatic)

The functional safe I/O device is intended for mobile machinery. The 12â€‘V<sub>DC</sub> or 24â€‘V<sub>DC</sub> powered module has four 4â€‘A outputs for on/off hydraulic valves. Additionally, it provides seven digital inputs for generic or proximity switches. The product has been designed to fulfill SILâ€‘2 (IEC 61805) or PLâ€‘d (ISO 13849) requirements.

The CANâ€‘based J1939 interface complies with J1939â€‘76 (safety extension), but is not yet certified by safety authorities. CANopen support is available on request. The product is based on an SILâ€‘3 approved microâ€‘controller by Texas Instruments. Hardware and software components provide diagnostic coverage for all inputs and outputs as well as the logic functions. Each input and output channel can be configured to send diagnostic messages to the J1939 network, if the I/O goes out of range. Diagnostic data is stored in a nonâ€‘volatile logging memory. With the Electronic Assistant service tool, the user can configure the setpoints for the function blocks. This configuration is done via CAN.

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