

Standard POINT I/O Output Modules in Safety Related Loops

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About This Publication

These release notes supplement the existing documentation supplied with your product.

The POINT I/O™ output modules listed in this release notes meet the spacing and creepage distance requirements of standard ISO 13849-2. The galvanic isolation is suitable to claim fault exclusion of a short circuit between Field Power Supply and Electronic Power supply. Therefore these output modules do not need to be considered in the SIL / PL calculation of the safety loop.

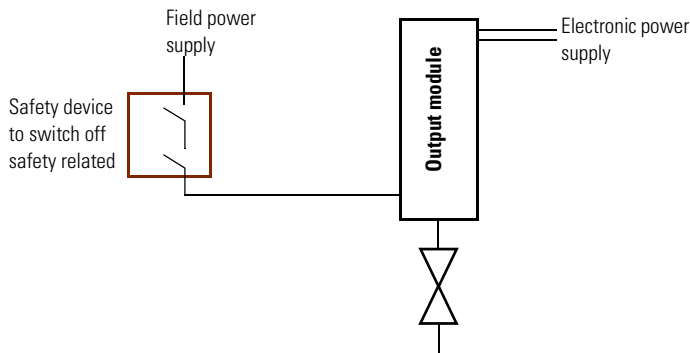
Standard Output Modules in Safety Related Loops

It is a common industry practice to safely switch off the field power supply to standard output modules in machine safety applications. With the introduction of standard ISO 13849-1:2006 and the release of the European

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machine directive (2006/42/EC), questions arise on how to qualify this approach and which Safety Level can be achieved using this configuration.

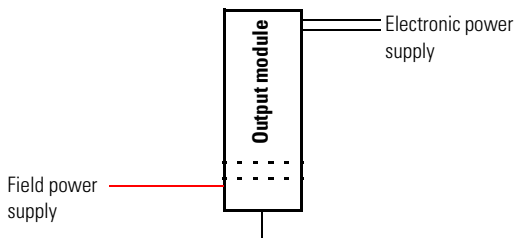
Typical Wiring Diagram



Although the outputs are in the safety loop, the control of the outputs themselves is not considered safety relevant (in this scenario the controllers are not necessarily qualified for safety related control). Instead the safety function is maintained by the safety rated product controlling the field power supply.

For output modules with galvanic isolation between field power supply and electronic power, only the isolating element (optoelectronic coupler) is part of the safety loop and therefore needs to be considered.

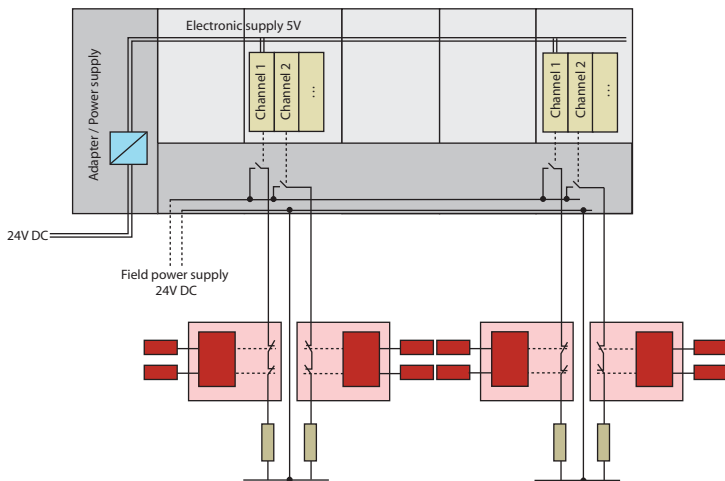
Principal Drawing



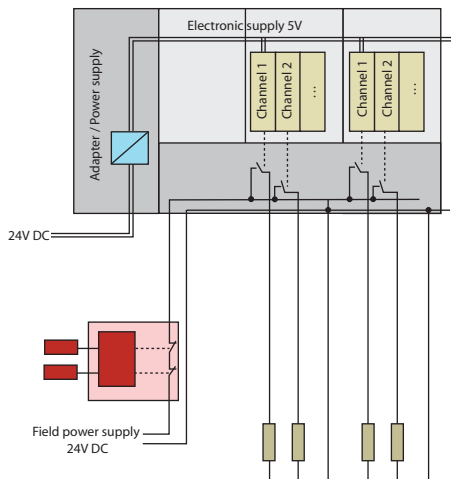
Application Examples

The following application examples illustrate the difference between safety loop wiring and galvanic isolation wiring according to standard ISO 13849-1.

Wiring Safety Loop



Wiring Standard Outputs with Galvanic Isolation



Additional Resources

You can view or download publications at <http://www.rockwellautomation.com/literature/>. To order paper copies of technical documentation, contact your local Rockwell Automation distributor or sales representative.

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