

actonex

SAFETY INTEGRATED SYSTEM



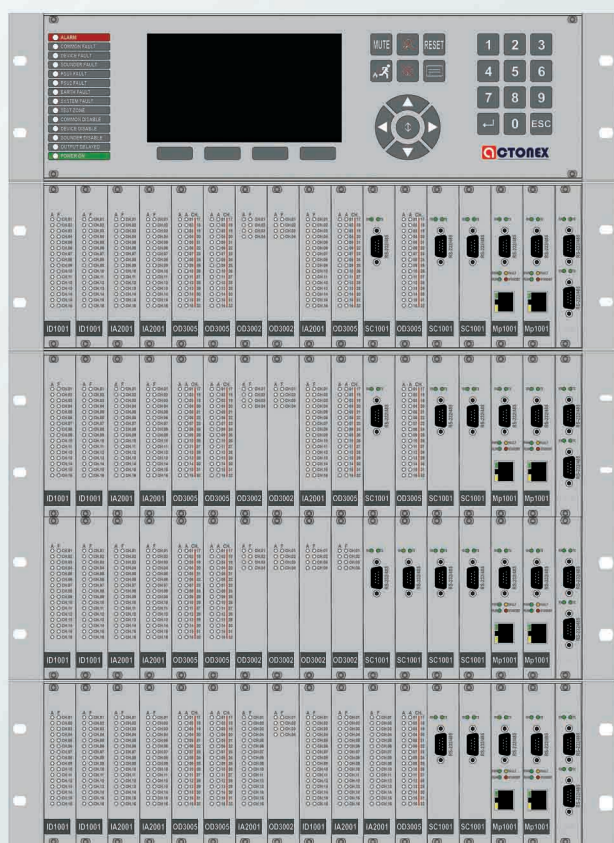
www.actonex.com

ACTONEX is the designer and manufacturer of automated safety solutions. Everything we do, think, and create is designed to help you achieve safety. The result of this philosophy: solutions that provide maximum safety and uninterrupted plant operations. ACTONEX solutions increase your efficiency through:

- Avoiding over- and under-dimensioning
- Maximum plant uptime
- Reduced investment and lifecycle costs
- Future-proof, lifetime flexibility
- Superior ease of use

Full integration with DCS & ESD operating and monitoring functions

The advantages of a ACTONEX solution, can be combined with all leading distributed control systems (DCS) & emergency shutdown (ESD) via industrial protocol.



Technical Specification:

- Easily PC-configurable
- Can be managed through a supervisory program
- Can be networked with other panels
- 19" rack modular construction
- 16 card slots per rack, up to 4 racks for One main CPU
- Front plug-in/out cards
- Redundant CPU ability
- Two CPU's, in hot back-up to one another
- Cyclical testing, with automatic simulation of I/O cards
- Automatic monitoring of card and CPU fault
- Automatic and safe disabling of malfunctioning cards
- Hot swap of cards and CPU's
- High immunity to electromagnetic disturbances.

REFERENCE STANDARDS

- According to EN 54-2 and EN 54-4 and EN 54-13 (fire detection)
- According to IEC61508 (functional safety) – (high reliability and availability systems).

Major solutions

High-availability solutions with ACTONEX guarantee safe and uninterrupted operation for every safety-critical process in your facility. Emergency shutdown systems (ESD), Fire & Gas systems or high-integrity pressure protection systems (HIPPS) are but a few typical applications.

Additionally, ACTONEX is the core element of the new complete solutions developed for the process industry.

Self- diagnostic

Automatically updated If the system diagnoses an internal fault, the module involved can be replaced quickly during operation. Only a few moves are required. If a processor module is swapped, the new module is automatically brought up to date with the currently operative modules. The parameter setting and the user program are imported from the functional processor module and then loaded.

"Self- diagnostic" has other benefits for the user:

- Your inventory of spare parts will be smaller
- You do not have to search for correct software versions
- When replacing a processor module, you do not have to connect a computer.
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Proof test

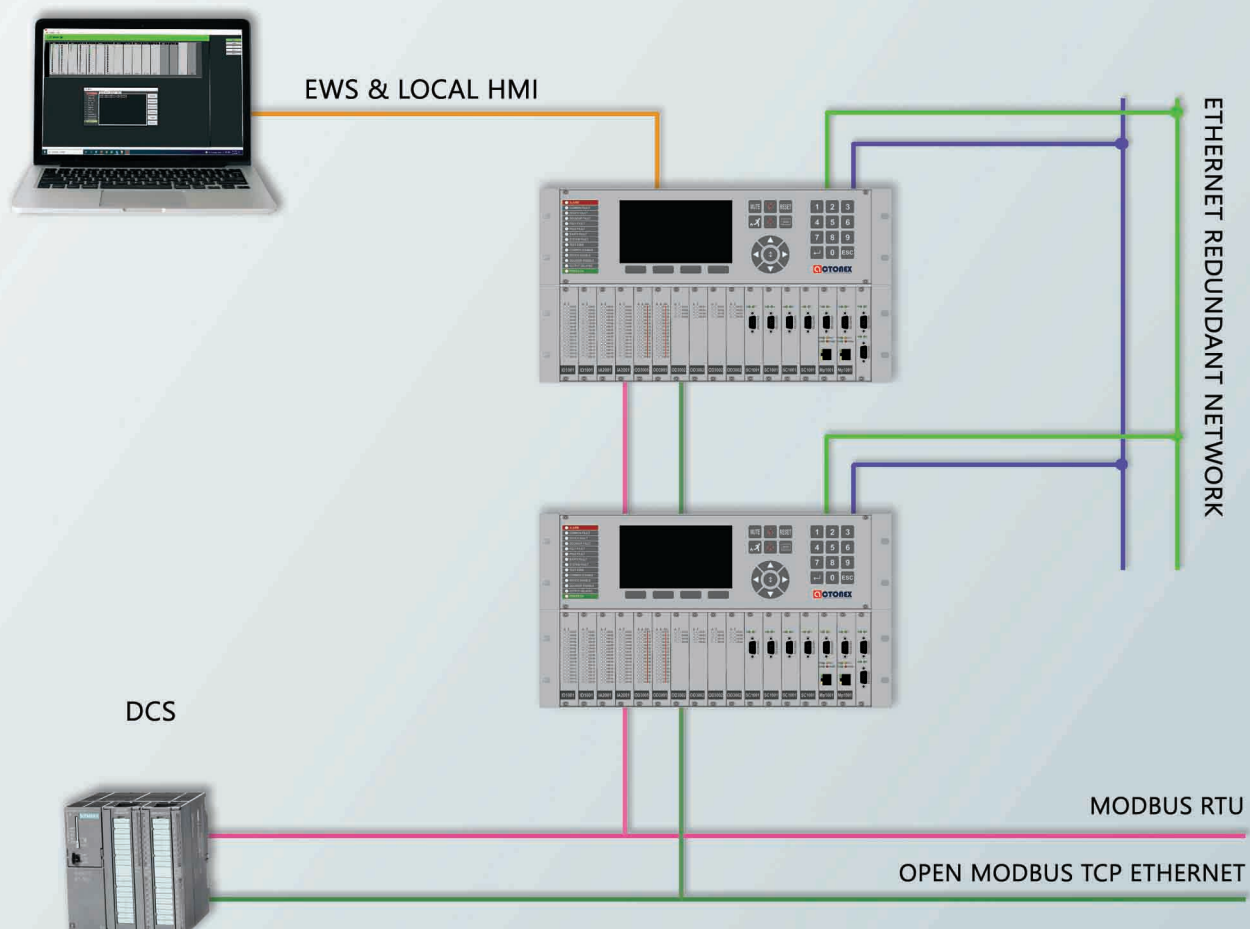
According to IEC 61508 and IEC 61511, every safety system must be subjected to a proof test at regular intervals. A proof test is designed to reveal any faults, so the system can be restored and fulfil its intended function.

The proof test interval for ACTONEX semiconductor modules is 1 years. In the relay modules, the current and number of switching cycles are measured to test the status of the relay. This means that, depending on the load of the relay, the relay module can continue to be operated after the proof test and does not have to be replaced.

ACTONEX controller can be subjected to a proof test by testing the entire safety circuit. In practice, a shorter testing interval (6-12 months) is required for the field unit's inputs and outputs than for the ACTONEX controller.

Transparent, fast diagnosis

Detailed information via LEDs tests its own functionality regularly, using self-diagnosis. This diagnostic information can be observed on the modules themselves via colored LEDs that show the full range of operating statuses. You can see at a glance whether redundant parts are available, whether the system bus is working properly, whether an internal fault has been recognized in the system and whether a fault exists in the field. Because more than 90 % of all faults originate on the field side, it is important to detect faults such as short circuits and wiring breakages quickly. ACTONEX indicates the faulty channel, saving you the time it would take to find the fault. Internal diagnostic, the fully integrated engineering tool, can be used to obtain more detailed information via its online diagnostic features, which display operating statuses over time. You can connect a computer running software at any point in the network, further speeding up the search for faults.



Nonstop safety for the process industry

ACTONEX solutions are used in the most various applications.

For instance:

- | | |
|---|---------------------------------|
| - Steam crackers | - Tank farms and gas containers |
| - Polyethylene, polypropylene and PVC production plants | - Loading stations |
| - Fertilizer plants | - Refineries |
| - Onshore/offshore facilities, platforms and FPSO | - Combustion and power plants |
| - Pipelines | - Turbines and compressors |
| | - Batch operations |
| | - Others |

The system components

Faster, more powerful, more efficient

ACTONEX defines a completely new performance category. Its power is based on high-performance system components and intelligent system architectures, including:

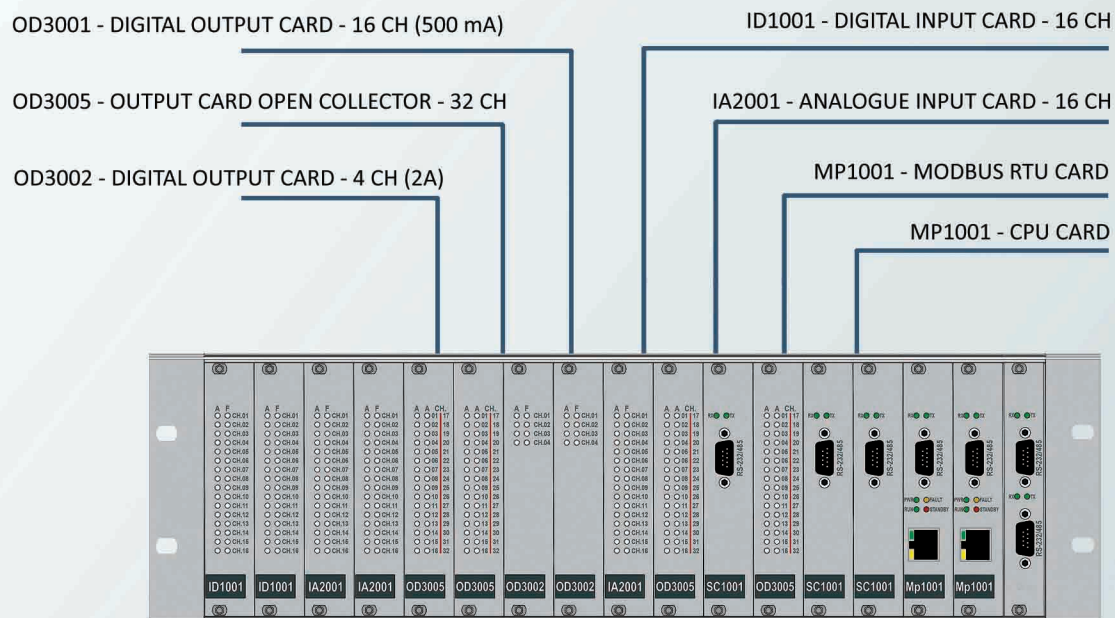
- High-performance RISK processors for fast calculations
- Processing of all field signals in the I/O modules, which means that analog values are processed at the same time as digital values.
- Implementation of a system bus with a 200 MBit/s transmission speed.

All this produces impressive performance specifications:

- Up to 896 I/Os per cabinet
- Per system with 200 I/O modules on maximum with 14 racks
- For example, the cycle time for 896 I/Os (half analog, half digital I/Os) is just 400 ms.



The following picture provide an overview of the modules currently available. They should offer you a comparative guideline for the first planning steps.



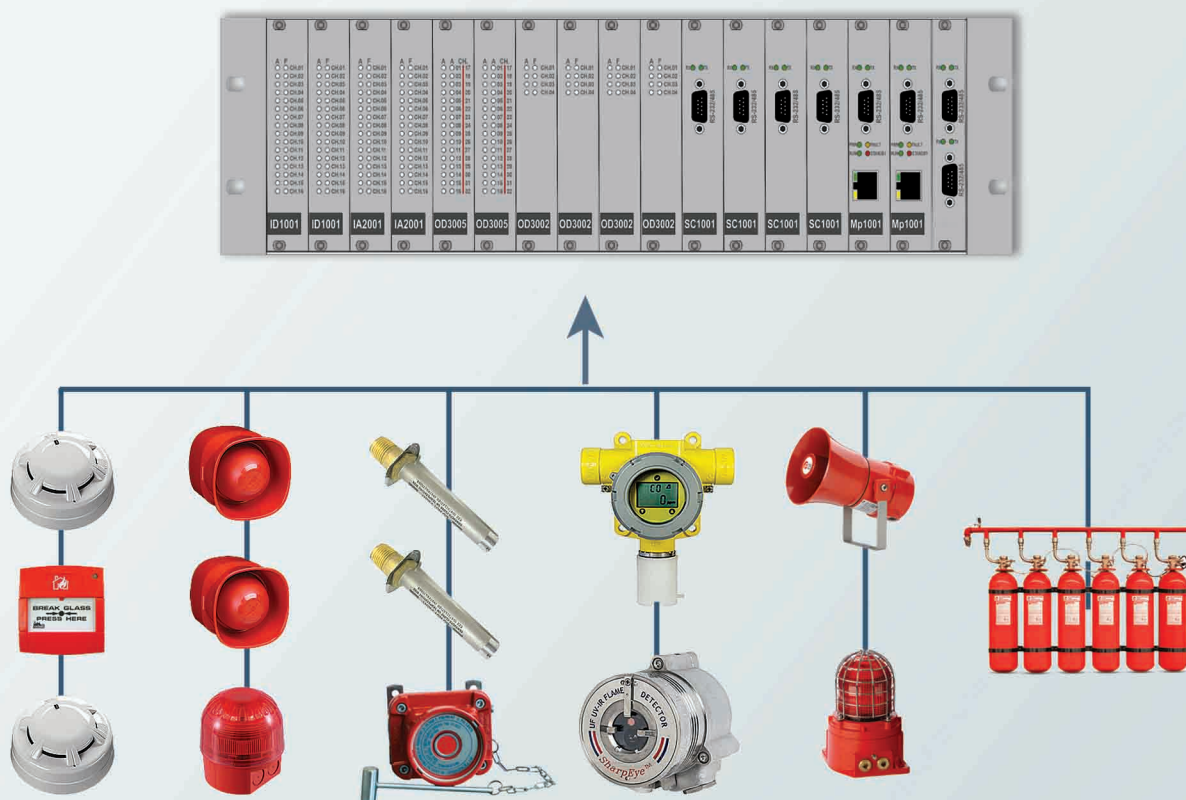
Up to 256 Monitored INPUT / OUTPUT Channel in1 Rack

The system bus module organizes the communication of all modules. The ring communication structure has the advantage that the individual modules cannot interact. The system bus module can be installed individually or redundantly. The “UP” and “DOWN” Ethernet ports are only used for networking.

Specification, diminution & weight

Supply voltage	24Vdc (18~30Vdc)
Input current	Up to 6A for full rack
Housing material	Aluminum
Operation temperature	0 °C to +60 °C
Storage temperature	from –40 °C to +85 °C
Humidity	max. 95% relative humidity, non-condensing
Type of protection	IP20
Altitude	< 1800 m
Dimensions	482 x 135 x 200 (H x W x D) in mm
Weight approx.	Full rack kg

ACTONEX controls multiple systems into one ..!





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