

Safety

Integrated safety technology for the most demanding requirements.





Integrated Safety Technology

— Safety

Safety – for man as well as machine – plays a role that is becoming ever more important: Machines and plants are becoming increasingly complex and the requirements imposed on functional safety are continuously increasing.

Bachmann electronic delivers a safety package integrated throughout the M1 automation system and designed to meet the highest safety requirements. It consists of

- Safety processor module SLC284
- Safety digital input/output modules SDI and SDO
- Safety counter module SCT202
- Analog input module SAI205
- and the PROFIsafe F host

Engineering takes place in the Safety Developer, which is seamlessly integrated into the Bachmann SolutionCenter. And best of all: in addition to safety, efficiency also improves as the intelligent safety technology helps to significantly reduce engineering costs. Targeted diagnostic options and the fastest possible intervention also increase the availability of the machine or plant, as well as reducing downtime.

With the addition of ColdClimate versions of the safety modules, Bachmann is setting new standards when it comes to robustness in functional safety. The Bachmann safety solution is approved in accordance with the latest safety standards (PL e, SIL3, Cat 4).

ALL-IN-ONE SOLUTION

- *Seamless and reliable solutions from a single source – safety competency in hardware and software as well as in project-orientated and individual consulting.*

MAXIMUM FLEXIBILITY

- *The freely configurable safety concept enables distributed operation of safety modules in the network.*

FULL COMPATIBILITY

- *Full integration of the hardware and software safety solutions into the existing automation system.*

PROFISAFE F-HOST

- *Offers the possibility to connect 3rd party PROFIsafe actuators and sensors.*

Machine Safety

 *Redefined*

Whether you require a simple emergency-stop function at the control desk of your machine or distributed safety technology with optical sensors, redundant cabling and the activation of emergency-stop categories in state-of-the-art servos: The programmable safety module SLC284, the safety-orientated digital and analog I/O modules, and the PROFIsafe F-Host from Bachmann electronic offer a safety solution which can be fully integrated in the Bachmann automation system and can be expanded to individual requirements, in compliance with the latest safety standards (PL e, SIL3, Cat 4).

The safety modules are integrated dual-channel modules, enabling input and output channels to be connected redundantly in pairs. The modules can also be operated remotely in the network without configuration. The configuration and programming of the safety functions are integrated in the all-in-one engineering tool SolutionCenter, thus enabling standard PLC tasks to be linked seamlessly with the requirements of functional safety.

Simply safe

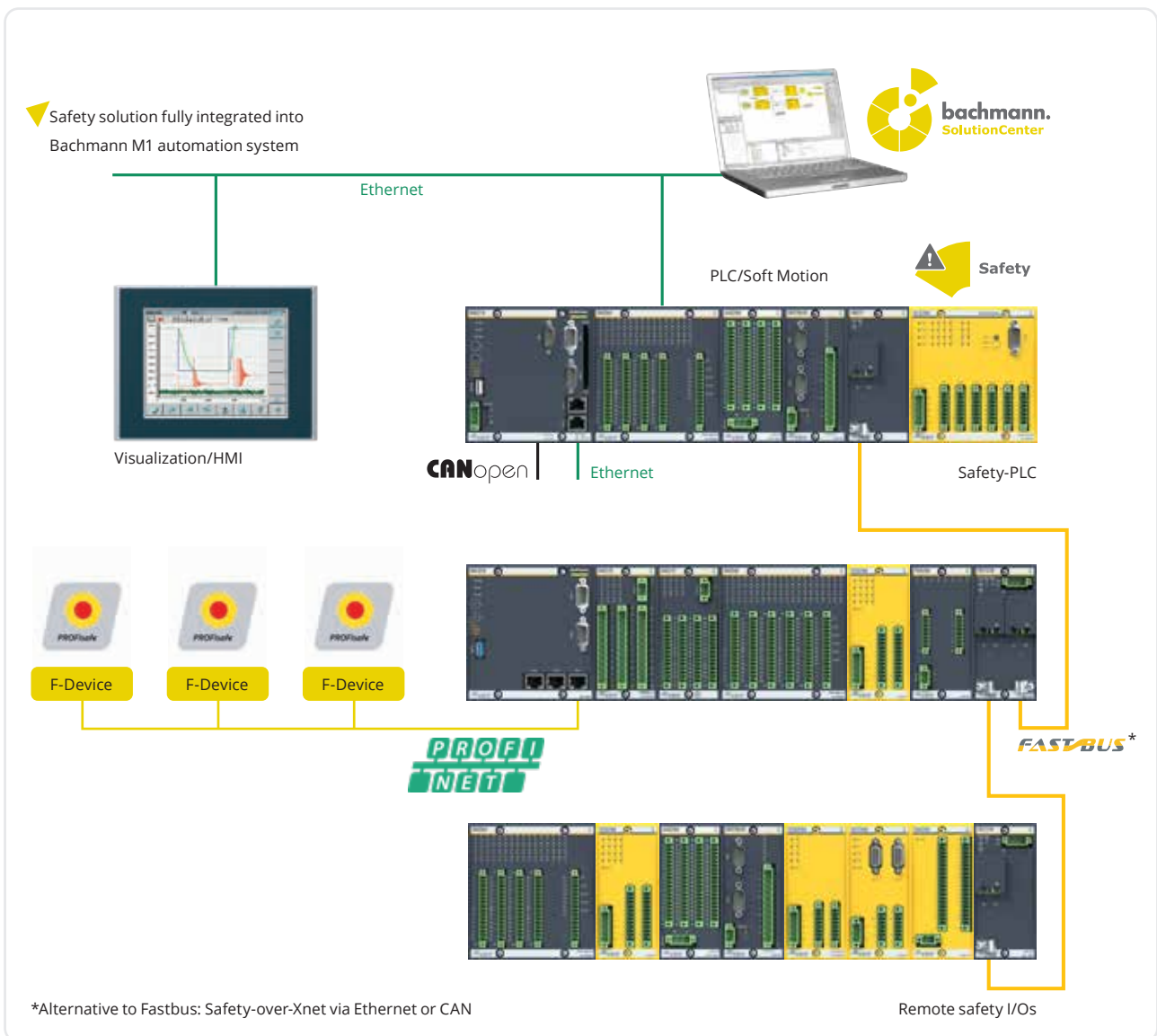
Regardless of the automation field in which you wish to evolve, our innovative automation solutions provide you with a host of possibilities. Controllers with integrated safety as well as operating devices and drives are all perfectly matched and allow open communication.

Users are in the focus

Fast reaction times, intuitive operation and extensive diagnostics options are therefore key priorities in Bachmann safety solutions. The user obtains an optimum level of safety: Established standards such as ISO 13849, IEC 62061, EN 61511, IEC 61508, PLCopen Safety and IEC 61131 are used and proprietary solutions are consistently avoided.

Integrated safety solution

Intelligent safety solutions in control technology allow the reduction of engineering costs and keep wiring requirements down to a minimum. Using the SolutionCenter considerably increases efficiency during start up and operation. Selective diagnostics and fast intervention options increase the reliability and reduce downtimes of the machine.



Safety standards and regulations

- ISO 13849
- IEC 62061
- EN 61511
- IEC 61508



The Solution

Safety Modules, Safety Developer, Safety Control



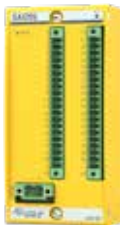
SLC284: SAFETY PROCESSOR MODULE

- Programmable safety module / controller
- 16 digital inputs / 8 digital outputs – can be used redundantly in pairs (PL e, SIL3, Cat 4)
- Programmable using the functional block diagram language according to IEC 61131-3
- Programming, configuration & monitoring with SolutionCenter
- Access protection via configurable user schemes with access and function restrictions
- Adjustable cycle time – up to 5 ms



SDI208: SAFETY DIGITAL INPUT MODULE

- Digital input module with two electrically isolated input groups
- 16 digital input channels – can be used redundantly in pairs (PL e, SIL3, Cat 4)
- Each channel can be tested as required with a test pulse
- Cross-circuit detection
- Autonomous safety – not susceptible to network failures



SAI205: SAFETY ANALOG INPUT MODULE

- Safe analog input module for a wide range of signals
- 2 inputs 4-20mA (4 physical channels)
- 2 inputs for temperature acquisition with PT100 (4 physical channels)
- 1 input for signal acquisition from strain gauges (2 physical channels)
- Sampling of all channels with 1ms
- Approved up to SIL2 / Pld / Cat 3



SDO204: SAFETY DIGITAL OUTPUT MODULE

- Digital output module with two electrically isolated output groups
- 8 digital output channels – can be used redundantly in pairs (PL e, SIL3, Cat 4)
- Autonomous safety – not susceptible to network failures
- Output voltage range + 18 ... 34 V DC
- 2 A per channel



SCT202: SAFETY COUNTER MODULE

- Safety module for measuring speed, rotation angles and positions
- 2 input channels each for incremental encoders and counters as well as 2 digital inputs and outputs (PL d, SIL2, Cat 3)
- Instantaneous safety reaction within 1 ms
- Wide range of homing options
- Speed measurement for highly dynamic control systems

The proven safety modules from Bachmann electronic for implementing the Machine Directive 2006/42/EC, set a clear standard in holistic and integrated automation solutions. The system solutions presented not only offer optimum safety, but guarantee continuity and investment protection. The extended operating temperature range (-30 ... +60 °C) guarantees safe operation, even under harshest environmental conditions.

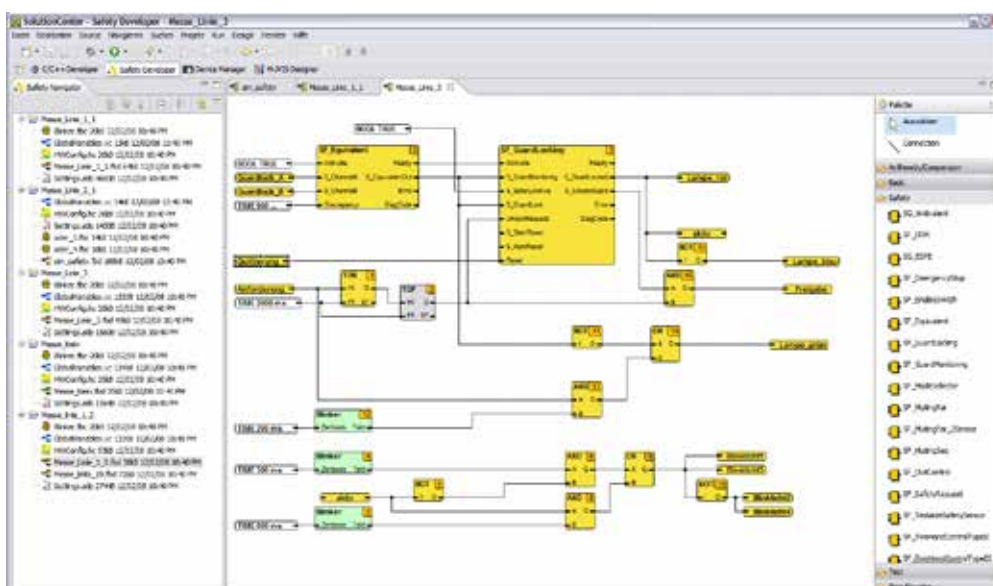
PROFISAFE F-HOST

The Bachmann PROFIsafe F-Host grants access to the world of PROFIsafe-capable sensors and actuators from third-party manufacturers for solving tasks in the field of functional safety. As a pure software solution, the PROFIsafe gateway runs on the Bachmann standard CPU, connecting PROFIsafe with the Bachmann SLC284.

- Protocol versions 2.4 and 2.6.1
- Certified up to SIL 3 / PLe / Cat.4
- Engineering – Tool Calling Interface Class 3

SAFETY DEVELOPER

- Integrated in the all-in-one engineering tool SolutionCenter
- Safety programming in the Safety Editor:
 - Function block diagram (FBD)
 - Library of PLCopen Safety function blocks
 - User-specific function blocks
 - Standard function blocks
- Automatic protocol reports
- Support for designing modular/linked machines
- Support for series production of machines and facilities
- Engineering support for maintenance and repair
- Configuration, monitoring, diagnostics support
- Debugging, version managed project data



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