



PROFIsafe F-Host

PROFIsafe® is a vendor-neutral functional safety fieldbus which enables safe communication between safe in- and output modules and the Safety-CPU SLC284.

PROFIsafe® allows the user to integrate a large spectrum of third-party PROFIsafe® sensors and actuators into their safety solution along with safety I/O modules provided by Bachmann. This enables a wide range of additional possible solutions for functional safety tasks.

Possible Sensors are:

- Single or multiturn absolute encoders
- Light grids
- Laser scanner
- Drives
- Vibration sensors
- Inclination sensors

The Bachmann PROFIsafe F-Host allows to connect up to 32 PROFIsafe® F-devices with the SLC284.

| Part type designation | Part number |
|-----------------------|-------------|
| PROFIsafe F-Host RT | 00036423-63 |

PROFIsafe® technology

PROFIsafe® does not require a separate network connection but runs as a safety layer on an existing PROFINET® network. This allows the user to choose any bus topology supported by PROFINET® (line, tree, star etc.). Modern software technology permits to integrate a functional safe F-Host Gateway on the proven Bachmann standard CPUs and to realize safety applications up to safety level SIL 3, Performance Level PL3/Cat. 4. The Bachmann F-Host therefore is a pure software solution in connection with the SLC284 and to integrate PROFIsafe F-Devices into a safety solution, no additional hardware is required.

Configuration

The configuration of PROFIsafe® connections is made without programming efforts and with the help of the intuitive PROFINET® configurator by Bachmann. External configuration tools for F-Devices are being integrated into the engineering workflow flow of the SolutionCenter via the Tool Calling Interface up to conformance class 3.

Programming

The programming of safety applications incorporating PROFIsafe® sensors and actors is supported by the proven Bachmann Safety Developer and works the same way as with safe sensors and actors provided by Bachmann.

Operation

An integrated iPar-Server facilitates the upload of configuration data from the F-Device onto the Bachmann CPU. In case the F-Device is replaced in the field the spare device can be configured using the data hosted by the iPar-Server.



PROFIsafe F-Host - Performance data

| General | |
|--|--|
| Protocols | PROFIsafe® 2.4 and 2.6.1 |
| Conformance class DIN EN 61784-3-3 | Factory Automation |
| Profinet | Version 2.35 |
| Profibus | No |
| Features | Automatic re-integration (optional), deactivation of devices, channel-wise passivation, RIOforFA (RemoteIOforFactoryAutomation) |
| Interface | |
| Ethernet | All available Ethernet ports on the CPU as well as the ports on the EM213 module can be used. No dedicated hardware is required. |
| Number of F-Devices | At most 32 |
| Variables per F-Device | At most 256 |
| Safety | |
| Safety Integrity Level | SIL 3 |
| Performance Level | PL e / category 4 |
| Modular Machine | Yes |
| Configuration | |
| Tool Calling Interface (TCI) | Conformance classes 1, 2 and 3 |
| iPar server | Yes |
| Diagnostics | |
| Diagnosis data available in the PROFIsafe® monitor | Yes |
| System requirements | |
| Delivery form | PROFIsafe® service ps202.m |
| Driver | PROFINET® driver pn202.m version as of V2.04R |
| SLC firmware | Slc284.h86 minimum version V1.08R |
| Safety driver | Safety.m minimum version V1.26R |
| SolutionCenter | Minimum version V2.50 |
| Hardware | |
| M200 Processor modules | MC206, MC212, MC220, MH230, in addition the SLC284 |
| Safety-related parameters | |
| Maximum performance level acc. to EN ISO 13849 1 | PL e with category 4 |
| Maximum safety integrity level acc. to EN 62061 | SIL 3 |
| DC | > 99.99 % |
| SFF | > 99.99 % |
| β | 1 % |
| PFD (operating time = 20 years) | $5.84 \cdot 10^{-7}$ |
| PFH (operating time = 20 years) | $6.67 \cdot 10^{-12}$ |
| Certificates | |
| EN 61508:2010 | Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 1 to 7 |
| EN 62061:2005 + A2:2015 | Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems |
| EN ISO 13849-1:2015 | Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design |

Certificates

| | |
|-----------------|--|
| EN 61511-1:2005 | Functional safety - Safety instrumented systems for the process industry – Part 1: Framework, definitions, system, hardware and application programming requirements |
| EN 61131-2:2008 | Programmable logic controllers - Part 2: Equipment requirements and tests |
| EN 61131-6:2013 | Programmable logic controllers – Part 6: Functional safety approvals / Certificates standard ColdClimate |

Conformity

| | |
|--------------------|--------------------------------|
| F-Host certificate | Yes, certificate number Z20283 |
|--------------------|--------------------------------|

Order data

| Part type designation | Part number | Description |
|-----------------------|-------------|--|
| PROFIsafe F-Host | 00036423-63 | License for the operation of a PROFIsafe F-Host on a controller CPU of following types: MC206, MC212, MC220, MH230. Enables functional secure communication of I/O variables between the SLC284 and up to 32 PROFIsafe I/O F-Devices provided by third-party manufacturer. Supported protocol versions 2.4 and 2.6.1, DIN EN 61784-3-3 conformance class „Factory Automation“, up to SIL 3 or PL e |