Ixxat®
BY HMS NETWORKS

Functional safety solutions

Ixxat Safe T100
CIP Safety protocol software
FSoE protocol software

ARE YOU “SAFE”?

FAST AND EASY FUNCTIONAL SAFETY IMPLEMENTATION WITH IXXAT SAFE PRODUCTS AND SERVICES

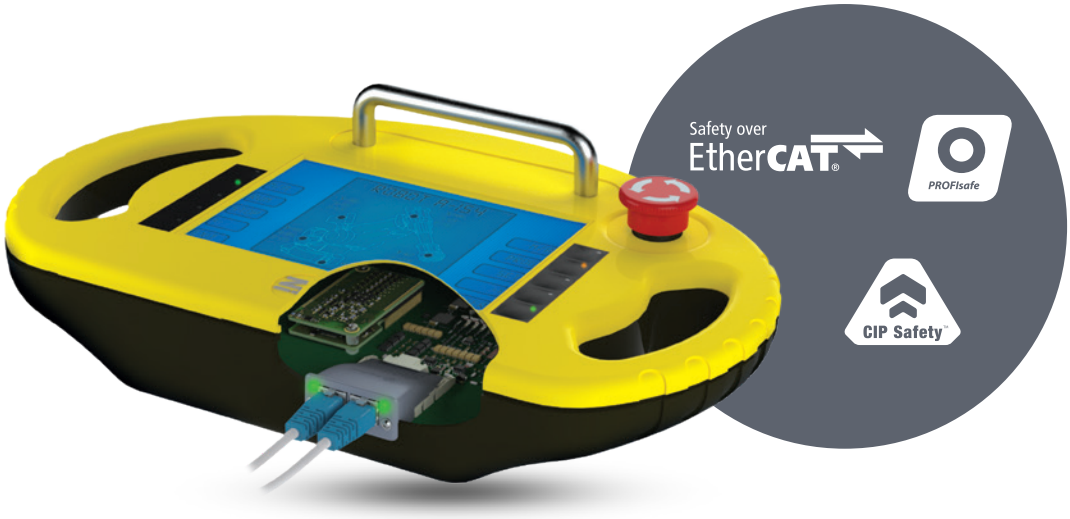
With Ixxat Safe, HMS provides one of the industry‘s most comprehensive product and service offerings for integrating safe IOs and communication solutions based on EN ISO 13849-1 and EN/IEC 62061.

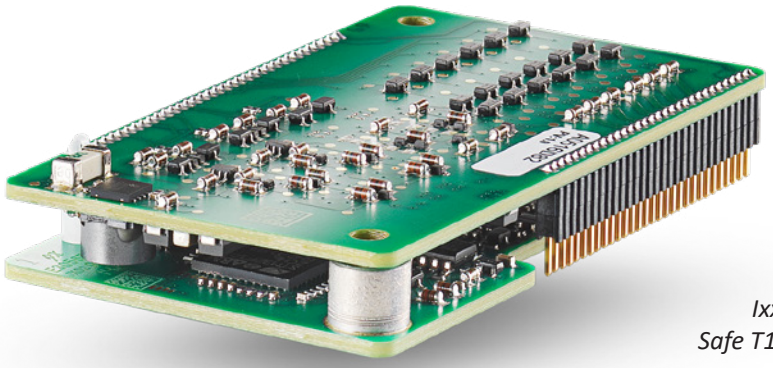
The Ixxat Safe offering addresses the increasing need for functional safety solutions within industrial automation. Spanning from standardized and pre-certified safety modules to flexible protocol software packages and associated engineering services, Ixxat Safe includes all the elements needed to get you and your equipment on the safe side.

Based upon several years of experience in functional safety according to IEC 61508, the Ixxat Safe offering has been composed to meet any specific requirement for safe communication.

All Ixxat Safe products meet the applicable standards and are pre-certified by TÜV Rheinland. This, together with the reliability of the Ixxat Safe products themselves, will accelerate the safety implementation, reduce development costs, and simplify the final certification of your product.

HMS is there to assist throughout the process – from development to certification and full scale production, ensuring a fast time to market for your safe products.





Ixxat
Safe T100

IXXAT SAFE T100

MODULE-BASED SOLUTION FOR SAFE I/O IMPLEMENTATION

The Ixxat Safe T100 safety module offers a simple way to implement safe I/O signals into industrial devices, meeting SIL 3 safety requirements as defined by IEC 61508, as well as performance level PLe/Category 4 in ISO 13849-1.

The Safe T100 module is primarily designed to be used together with Anybus CompactCom, where the safety communication uses the black channel principle through Anybus CompactCom. For PROFIsafe, CompactCom performs the tasks of a PROFINET IO device, while Safe T100 includes the PROFIsafe layer and safe control of three dual-channel inputs as well as one dual-channel output.

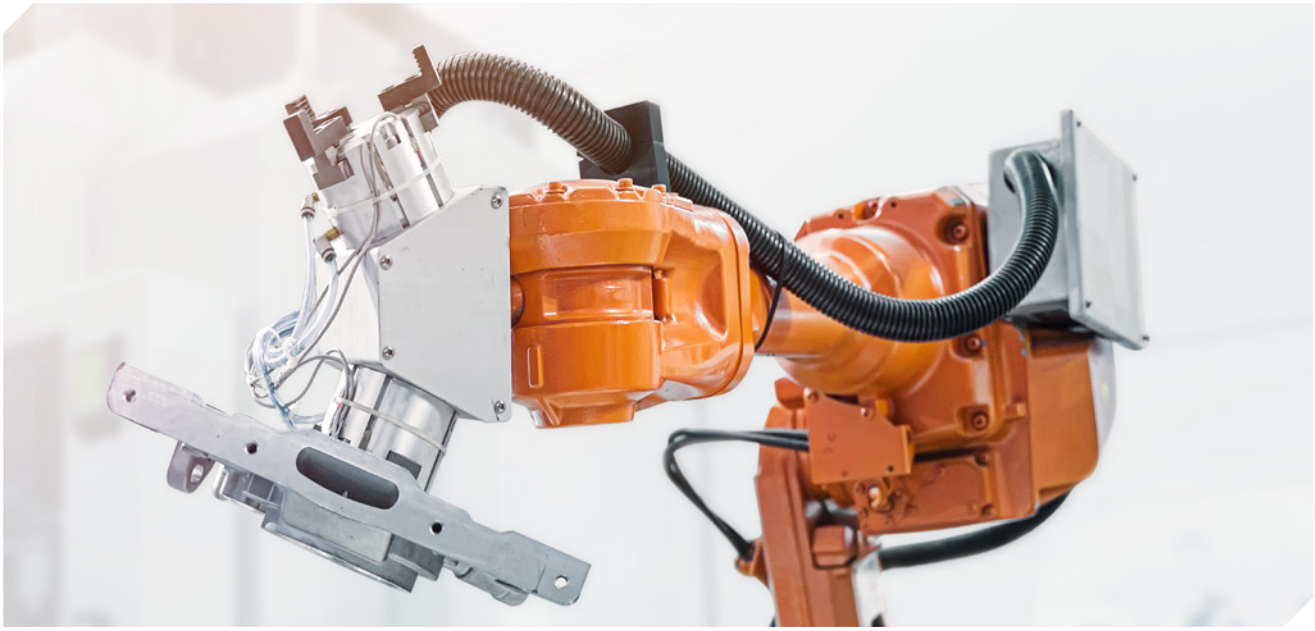
The same applies to the Ixxat Safe T100/CS and the Safe T100/FSoE, where the CompactCom module handles the non-safe communication functions and the T100 implements the safety communication layer and the safe control of the IOs.

It is also possible to connect Safe T100 to your own unsafe communication solution – giving T100 access to the transport layer in your solution.

The module's very compact dimension and flexible safety I/O routing make it perfect for integration into customer-specific device solutions.

The Safe T100 is currently available for PROFIsafe, FSoE and CIP Safety.

The Anybus CompactCom module from HMS is part of the Ixxat Safe T100 solution



DEVELOPER'S KIT

Ixxat Safe T100 comes with development kits for evaluation purposes. These consist of a base board with a PROFINET I/O, EtherCAT or EtherNet/IP Anybus CompactCom module and a host CPU, along with the suitable safety module with easy to access safety I/O signals.

The configuration of the safety I/Os is done via the fieldbus connection. For PROFIsafe, a configuration tool is available which can be integrated seamlessly into the Siemens Step7 or TIA Portal tool chain.

Functional Safety

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SIMPLE CERTIFICATION

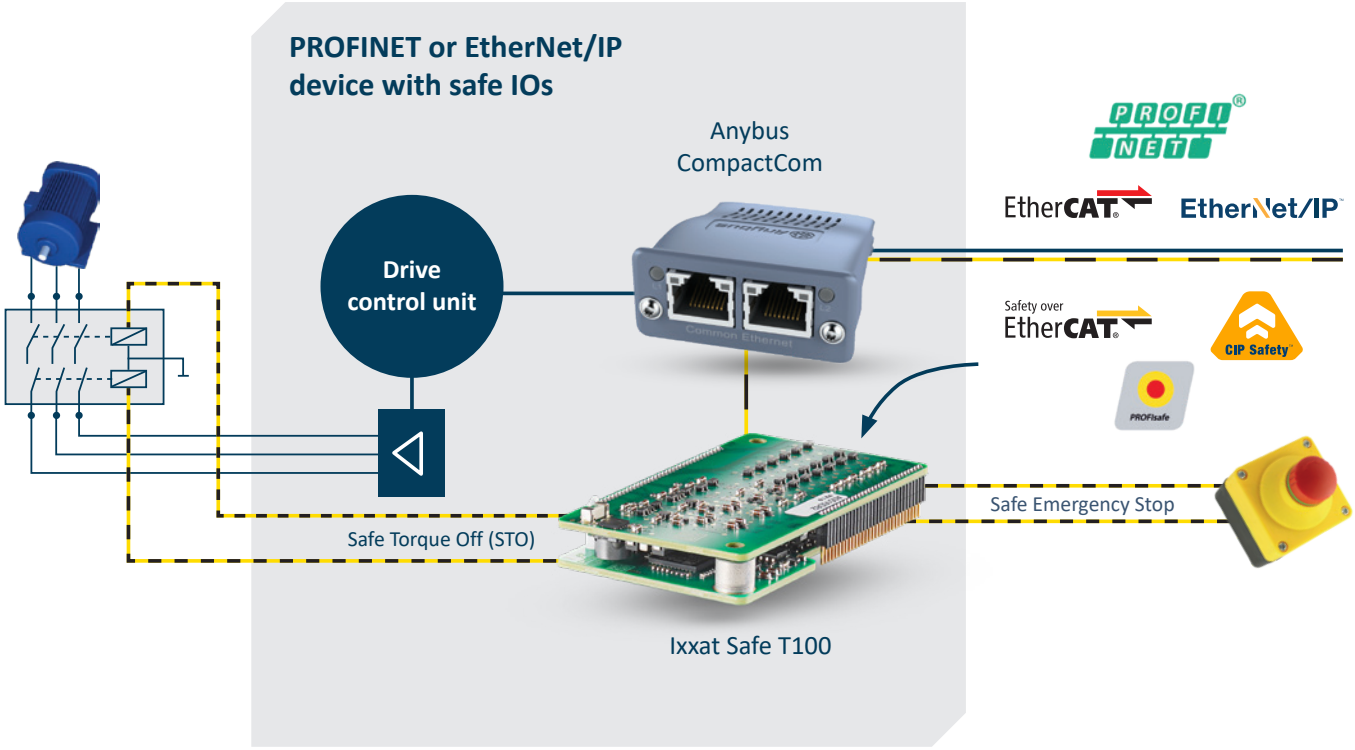
Ixxat Safe T100 comes with a comprehensive safety manual for device certification, describing all integration and verification steps required to achieve TÜV certification of SafeT100-based end products in an efficient way. Especially the clear separation of safety-relevant functions from unsafe functions of the end device is a great help in this situation.

Many companies today are looking for "integrated safety" solutions, especially from the mobile robotics (AGV/AMR) sector. The Ixxat Safe T100 module is an out-of-the-box solution for the integration of safe I/Os that you can use to significantly cut down time-to-market in comparison with developing your own solution. The T100 ensures that the customer's end device can connect to all major security controllers worldwide - with just one hardware design. Ixxat Safe is the fastest path to your own safety solution.

Matthias Oswald, Key Account Manager
HMS Industrial Networks GmbH

IXXAT SAFE T100 SAMPLE APPLICATION

For PROFIsafe, CIP Safety and FSoE with Anybus CompactCom



Technical data – Ixxat Safe T100

Product	Ixxat Safe T100/PS	Ixxat Safe T100/CS	Ixxat Safe T100/FSoE
Description	Modular solution for easy control of safe I/O signals		
Standards supported	PROFIsafe*	CIP Safety*	FSoE*
Digital inputs	3 dual channels, configurable with filter and monitoring functions		
Digital outputs	1 dual channels, configurable		
Safety Conformance Level	max. SIL 3, PLe category 4		
Power supply	24 V DC (SELV/PELV), 3.3 V DC		
Temperature range	-30 °C up to +68 °C		
Dimensions	70 x 40 x 15 mm		
Order number	1.01.0300.xxxxx	1.01.0301.xxxxx	1.01.0302.xxxxx
Order number development kits	022830-B	025800-B	on request

*according to current standard

IXXAT SAFE PROTOCOL SOFTWARE

For a flexible and scalable implementation

CIP SAFETY PROTOCOL SOFTWARE

The CIP Safety protocol software can be used to implement CIP Safety Target and CIP Safety Originator devices based on EtherNet/IP or Sercos up to SIL 3.

The integration of the CIP Safety software with the underlying EtherNet/IP or Sercos layer is simplified by the code examples provided. These form the basis for a simple exchange of safe protocol packets and control data between the safe and the non-safe communication layer

Implementing CIP Safety is made easier by an included PC example application that provides a clear overview of the application options and functionality of a Target and an Originator.

Porting and certification of CIP Safety software on customer-specific platforms is also made easy thanks to the included unit tests and the safety manual, along with the clearly separated adaptation layers.

sercos the automation bus

CIP Safety™

EtherNet/IP™

Standards:	CIP Safety Specification in the current version
Platforms supported:	PC demo, pre-tested conformance in ODVA Testlab, safety compliance tested by TÜV Rheinland
Features:	■ Operating system-independent (executable with or without an OS) ■ Use possible with multiple independent CIP Safety connections ■ Interfaces permit portability to different HW/SW platforms ■ Simplified integration/recertification on any target using the included unit test suites and Safety Manual ■ Supplied as C source code, for implementation by the customer into his secure platform
Safety Conf. Level:	Developed to IEC 61508 for applications up to SIL 3
Order no.:*	■ EtherNet/IP Target: 1.02.0501.xxxxx Originator: 1.02.0501.xxxxx ■ Sercos Target: 1.02.0500.xxxxx Originator: 1.02.0500.xxxxx

FSOE PROTOCOL SOFTWARE

(Functional Safety over EtherCAT)

The very lean implementation of the Ixxat FSoE protocol software is characterized by its efficient protocol processing, which is essential for fast and safe data communication, such as in drive technology or robotics up to SIL 3.

The FSoE software permits slave and master functionality to be run in parallel, which opens up a variety of communication options for safe applications.

The clearly delineated interfaces of the FSoE software also permits it to be used with different non-safe EtherCAT communication interfaces, such as Anybus CompactCom.

The FSoE software is best evaluated using a PC example application, and the safety manual describes all the necessary integration and test steps as well as how to configure the software in detail. Along with the unit tests, all is there for a simplified certification of safe communication using FSoE.

EtherCAT® Safety over EtherCAT®

Standards:	FSoE Specification ETG.5100 (implemented according to latest standard implemented and tested)
Platforms supported:	PC demo, conformance tested, safety compliance tested by TÜV Rheinland
Features:	■ Operating system-independent (executable with or without OS) ■ Simple connection to an unsafe EtherCAT communications module possible using abstraction layers ■ Multiple instantiability permits parallel integration of master and slaves on a single device ■ Simplified integration and recertification on any target using the included unit test suites and safety manual ■ Supplied as C source code, for implementation by the customer into his secure platform
Safety Conf. Level:	Developed to IEC 61508 for applications up to SIL 3
Order no.:*	Slave: 1.02.0502.10000 Master: 1.02.0502.10100

SERVICES

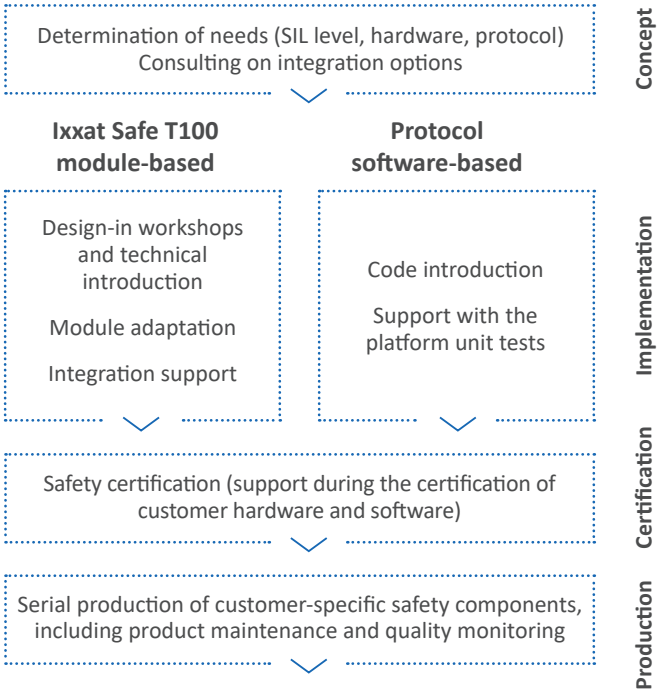
Development & consulting

The core of Ixxat Safe resides in HMS expertise when it comes to developing software and hardware compliant with IEC 61508 according to a strictly qualified development process. This knowledge is there for you to benefit from in your safety project!

We support you in the realization of safety solutions based on our software and hardware products in all phases of development:

- Concept definition and design
- Integration of Ixxat Safe T100 to your device
- Implementation of the Ixxat safety protocol software
- Certification assistance
- Manufacturing of safety modules and complete devices
- Training on technical topics for all Ixxat Safe products

Customer-specific safety engineering process:



* HMS also offers trial licenses for an easy start of your development

WORK WITH HMS.
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