



IEC 61508

EN/IEC 62061

EN ISO 13849-1



IXXAT[®]

Safe

Functional safety solutions
for industrial devices

Standardized safety modules · Protocol software · Services

IXXAT Safe is one of the industry's most comprehensive product and service offerings for integrating safe communication solutions based on EN ISO 13849-1 and EN/IEC 62061

Are you safe?

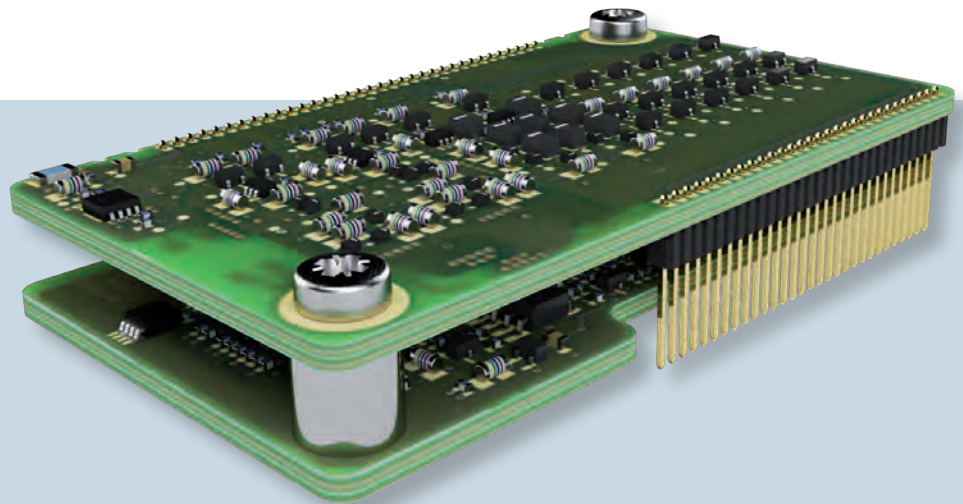
The IXXAT Safe offering from HMS Industrial Networks addresses the increasing need for functional safety solutions within industrial automation.

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

The IXXAT Safe T100 safety module offers a simple way to implement safe I/O signals into industrial devices, meeting SIL3 safety requirements as defined by IEC 61508 as well as performance level PLe/Cat-egory 4 in IEC 13849-1.

Safe T100 is primarily designed to be used together with Anybus CompactCom, where the safety communication uses the black channel principle through Anybus CompactCom. For PROFI-safe, CompactCom performs the tasks of a PROFINET IO device, while

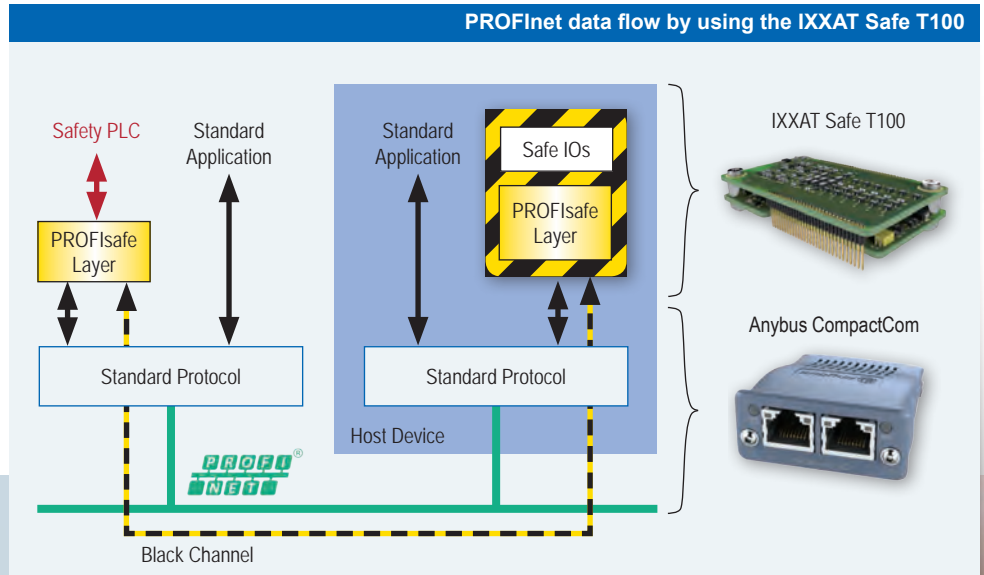
Safe T100 includes the PROFI-safe layer and safe control of three dual-channel inputs as well as one dual-channel output.

It is also possible to connect Safe T100 to your own unsafe communication solution – giving T100 access to the black channel 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 PROFI-safe and support for further safety protocols (CIP Safety and FSoE) will follow shortly.



*Anybus CompactCom
Module from HMS*



Functional Safety Type Approved

www.tuv.com
ID 0600000000

Simple certification

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.

Developer's Kit

The Safe T100 comes with a development kit for evaluation purposes. It consists of a base board with a PROFINET I/O Anybus CompactCom module and a host CPU, along with a Safe T100 for PROFIsafe with Safety I/O available signal access.

The configuration of the Safety I/Os is done over PROFINET/PROFIsafe and is supported by an included configuration tool which can be integrated seamlessly into the Siemens Step7 or TIA Portal tool chain.

Product	IXXAT Safe T100/PS
Description	Modular solution for easy control of safe I/O signals
Standards supported	PROFIsafe (other variants are planned for CIP Safety and FSoE)
Digital inputs	3 dual channels, configurable with filter and monitoring functions
Digital outputs	1 dual channels, configurable
Safety Conformance Level	SIL 3, PL e category 4
Power supply	24 V DC (SELV/PELV), 3.3 V DC
Temperature range	-40 °C up to +85 °C
Dimensions	70 x 40 x 15 mm
Order number	1.01.0300.00001

Technical data – IXXAT Safe T100



IEC 61508

IXXAT Safe protocol software

IXXAT Safe offers pre-certified protocol software packages for all important safety standards on corresponding reference platforms. Designed in a modular way, the packages can be adapted perfectly to the target application/platform in terms of functional scope, resources and interfaces.



CIP Safety protocol software

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

The software is equipped with the necessary interfaces to adapt to the EtherNet/IP or Sercos protocol software packages. All adaptation modules are available for the use of CIP Safety Software on Sercos as a non-safe communication protocol.

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.



FSoE protocol software (Functional Safety over EtherCAT)

Supporting safe Master and Slave applications up to SIL-3, the FSoE protocol software provides very efficient protocol processing.

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 package in detail. Along with the unit tests, all is there for a simplified certification of safe communication using FSoE.



Product	CIP Safety	FSoE
Description	Software package for the development of a CIP Safety Target and Originator	Software package for the development of a FSoE Slave / Master
Standards	CIP Safety Specification Edition 2.8	FSoE Specification ETG.5100 S (R) V1.2.0
Platforms supported	PC demo, precertified by TÜV and CIP Safety conformance tested on PXA255	PC demo, TÜV precertified, conformance tested
Functions/ Features	<p>Operating system-independent (executable with or without an operating system)</p> <p>Supports CIP Safety on Sercos and EtherNet/IP</p> <p>Use possible with multiple CIP Safety instances</p> <p>Interfaces permit portability to different software/hardware platforms</p> <p>Simplified integration and recertification on any target platform using the included unit test suites and Safety Manual</p>	<p>Operating system-independent (executable with or without an operating system)</p> <p>Simple connection to an unsafe EtherCAT communications module possible using abstraction layers</p> <p>Multiple instantiability permits the parallel integration of master and slaves on a single device</p> <p>Simplified integration and recertification on any target platform using the included unit test suites and Safety Manual</p>
Safety Conformance Level	Developed to IEC 61508 for applications up to SIL-3	Developed to IEC 61508 for applications up to SIL-3
Order number	<p>EtherNet/IP Target: 1.02.0501.20000</p> <p>Sercos Target: 1.02.0500.20000</p> <p>Originator: 1.02.0500.20100</p>	<p>Slave: 1.02.0502.10000</p> <p>Master: 1.02.0502.10100</p>

Many companies today are on the lookout for "Integrated Safety" solutions, especially within the AIDA Group. 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. HMS can provide you with a precertified module, together with a comprehensive set of implementation and certification guidelines. This greatly simplifies the certification of the end product and eliminates the need for you to spend time building up safety know-how in-house and maintain it.

IXXAT Safe is the fastest path to your own safety solution.

Matthias Oswald, Key Account Manager
HMS Industrial Networks GmbH





IEC
61508

SIL3



Development and consulting services

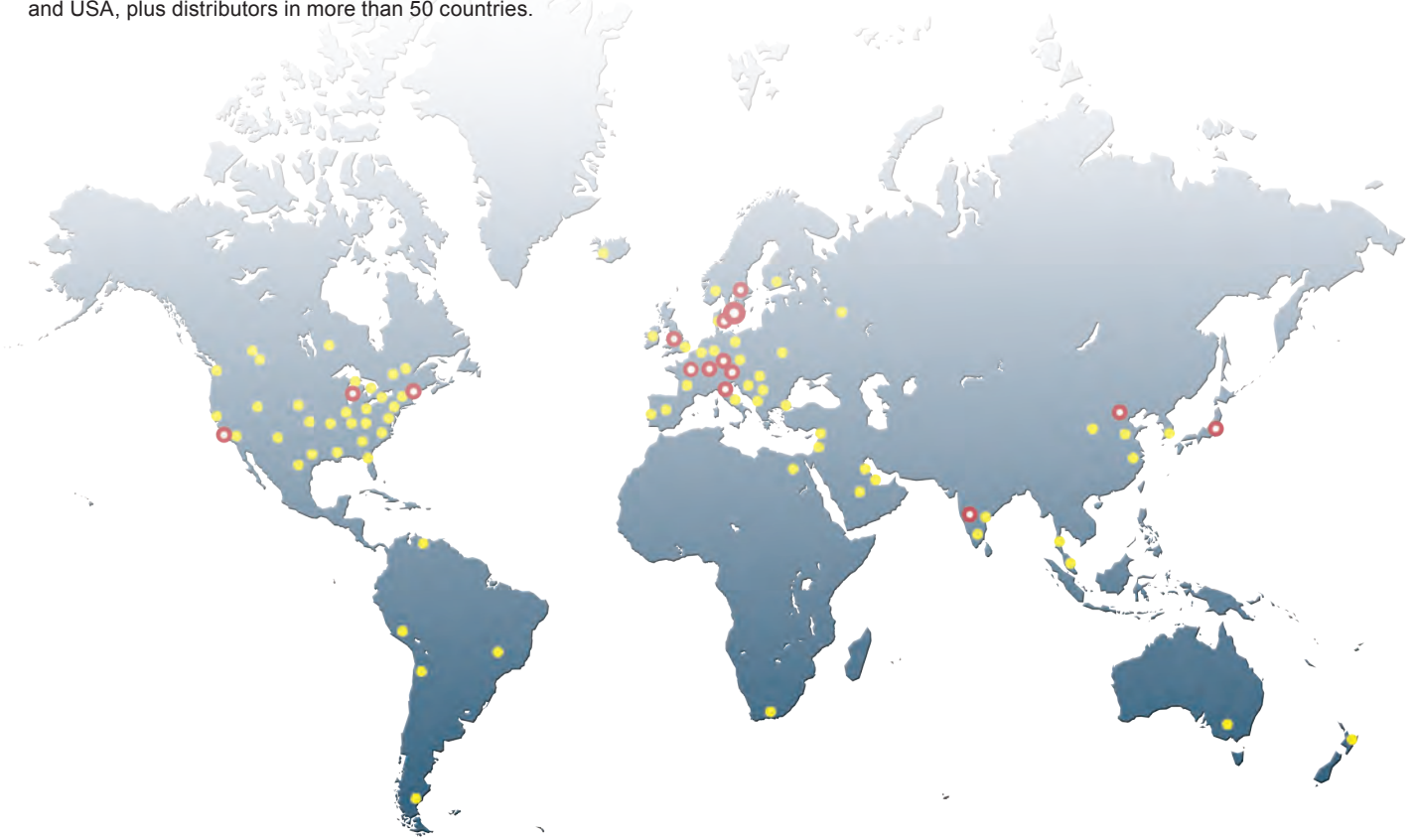
The core of IXXAT Safe resides in HMS expertise when it comes to developing software and hardware compliant with IEC 61508 according to a strictly qualified development process. This knowledge is there for you to benefit from in your safety project!

HMS is there to assist with services during all stages of your functional safety project covering for example:

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

HMS Industrial Networks

HMS develops and manufactures products under the brands Anybus®, IXXAT® and Netbiter®. These products enable industrial devices to connect to different industrial networks and also be monitored and controlled remotely. Development and manufacturing take place at the headquarters in Halmstad, Sweden and in Weingarten, Germany. Local sales and support are handled by branch offices in China, Denmark, France, Germany, Italy, India, Japan, UK and USA, plus distributors in more than 50 countries.



Twincomm
de Olieslager 44
5506 EV Veldhoven
the Netherlands

T +31-(0)40-2301.924

F +31-(0)40-2301.923

E welcome@twincomm.nl

www.twincomm.nl