Ixxat®
BY HMS NETWORKS

CAN and CAN FD solutions

All you need for CAN

CANopen CANopen FD DeviceNet SAE J1939

- PC interfaces
- Repeaters, bridges and gateways
- Analysis tools
- PLC expansions and more...

HMS Connecting Devices™

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All you need for CAN

You can rely on

- Long-term availability
- 100 % product testing
- Fast delivery from stock
- High quality standard
- Competent & fast support

HMS Technology Center Ravensburg – Development center for HMS products with focus on the Ixxat brand.

Pioneering CAN technology

For more than 30 years, HMS has been a leading and reliable provider of solutions for industrial communication under the brands Ixxat, Anybus and Ewon.

With the availability of the first CAN chip in 1988, engineers from HMS implemented CAN-based system solutions and developed analysis tools, interfaces, infrastructure components and CAN-based higher protocols. Under the Ixxat brand, cutting-edge system concepts and system solutions have been implemented in numerous customer-specific development projects for renowned national and international companies.

As a founding member of CAN-in-Automation, HMS is involved in all important committees of CiA and play a leading role in the continuous development of the CANopen standard.

Reliability and Quality

For many years, quality has been the foundation of our work and an incentive for continual development.
To ensure the high quality of our products and services, we have a quality management system according to ISO 9001 since 1996.

As a reliable partner, we design our products for long-term availability and provide continuous product support over the entire product life cycle.

Partnerships and innovation for the future

With innovative, powerful and cost effective products as well as with high quality standards for our services and products, we want to establish long term partnerships with our customers. Therefore, we continually invest a considerable amount of our resources into research and development of new technologies and products.

Ixxat solutions by HMS Networks – for a variety of applications and industries...

Machine control

- Easy connection of PCs to CAN-based Networks for control applications
- CANopen and CAN extension for SIMATIC® PLCs

Connect devices to CAN and Industrial Ethernet

- Protocol converters for connecting serial or CAN-based devices to various fieldbus and industrial Ethernet networks
- Interconnect CAN with CAN FD
- Protocol software, the highly flexible way for implementing CANopen or SAE J1939

Network infrastructure

- Cost savings through easier wiring and implementation of star/tree structures
- Coupling of different network standards and devices, including wireless
- Easy and risk-free transition to CAN-FD using bridges and gateways
- Increase of the system reliability and protection against overvoltage

OEM solutions

If you have specific requirements and need a customized solution, we are at your side with consulting and development services – in all phases of your project. From the first specification to production and maintenance.

Your “look and feel”?

We adapt our standard products to meet your requirements. From simple brand labeling up to hardware and software customization.

SAE J1939

DeviceNet

CAN FD

CANopen

CAN

As a longtime CAN expert, we are a reliable partner when it comes to CAN technology as well as CAN and CAN FD products.

Alexander Hess,
Managing Director of the
HMS Technology Center
Ravensburg

PC Interfaces

for CAN, CAN FD, CANopen and SAE J1939

Highlights

- Common driver interface for easy exchange of the PC interface type without any changes to your application
- Supports all standard PC interfaces
- Powerful driver packages
- High data throughput combined with low latency
- High quality standards
- Free drivers for a variety of operating systems

Ixxat PC/CAN interfaces enable applications to access CAN networks with a unique variety of different PC interface standards. Just select the interface that suits your application, performance requirements or required cost.

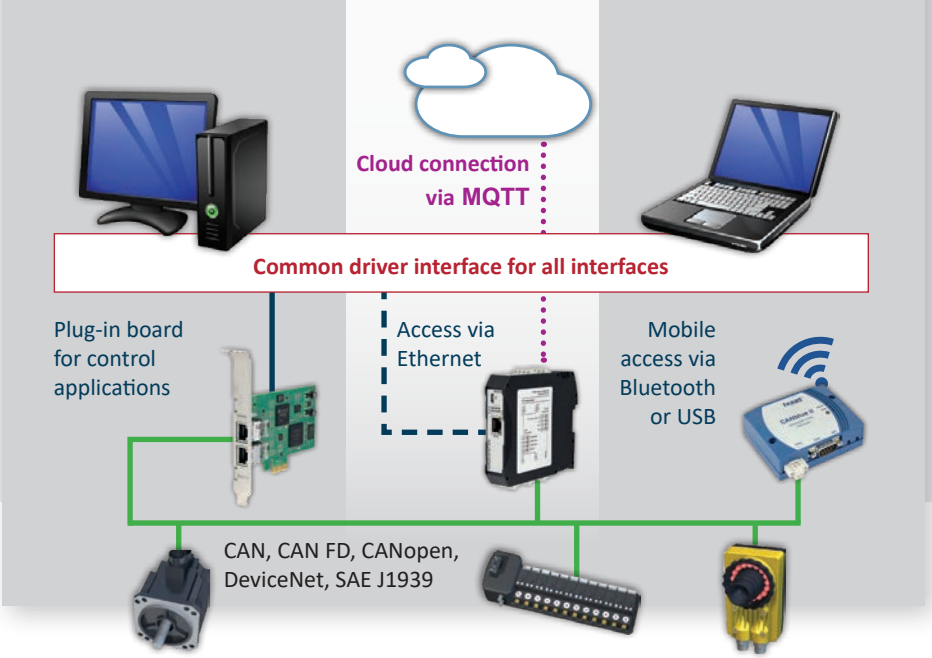
Versions and interfaces

Ixxat CAN interfaces are modularly designed and can be equipped with up to four CAN high-speed channels. They can also be used within automotive applications with CAN low-speed and LIN channels. For fast networks, the CAN interfaces are also available with up to four CAN FD channels. The PC interfaces are available in low-cost passive or active versions with powerful on-board controllers. Active PC interfaces can be used in applications with high demands on data pre-processing, such as high-precision time stamping or active filtering of messages on the interface.

In addition to custom applications, the CAN interfaces are also basis for the Ixxat analysis tools, as well as configuration software from a wide variety of equipment manufacturers.

Product	CAN-IB200 /PCIe	CAN-IB600 /PCIe	CAN-IB640 /PCIe	CAN-IB120 /PCIe Mini	CAN-IB520 /PCIe Mini	CAN-IB 410/PMC	CAN-IB 810/PMC
PC interface	PCI express		PCIe	PCIe Mini Card		PMC	
Microcontroller	32 Bit		32 Bit	-	-	32 Bit	
Fieldbus interfaces	1-4 x CAN 1-4 x LIN option	1-2 x CAN / CAN FD	4 x CAN/CAN FD 4 x LIN	2 x CAN	1 x CAN / CAN FD	1-4 x CAN 1-2 x LIN optional	2 x CAN / CAN FD 1-2 x LIN optional
CAN bus interface	ISO 11898-2; opt. switchable to ISO 11898-3	ISO 11898-2	ISO 11898-2	ISO 11898-2		ISO 11898-2; optional switchable to ISO 11898-3	
CAN connection	Sub D9 plug (CiA 303-1)		Sub D9 plug (CiA 303-1)	Cable with open ends		Sub D9 plug according to CiA 303-1	
Galv. isolation	optional	1 kV, 1 sec.	1 kV, 1 sec.	optional	1 kV, 1 sec.	1 kV, 1 sec.	

Sample:
PC/CAN Interfaces
for control and
analysis



Driver packages with common application interface

All the different PC/CAN interfaces can be operated with the hardware-independent drivers for Windows (VCI) and real-time operating systems (ECI) by using a uniform programming interface.

Switching between PC/CAN interfaces is very easy and can be done without changes to the application. Thanks to this, users can benefit from future technologies very quickly.

Linux, SocketCAN, INtime, RTX and VxWorks

For use of CAN interfaces with Linux and in real-time environments, HMS provides the universal "Embedded Communication Interface" driver (ECI) free of charge. The application interface is designed as a "ANSI-C" interface and contains all necessary functions. In addition, a SocketCAN driver enables the use with standard Linux CAN tools.

CANopen & SAE J1939 APIs

For use of CAN interfaces under CANopen and J1939, HMS offers driver APIs that provide all protocol-specific functions.

Windows

The "Virtual Communication Interface" (VCI) is designed as a system server and allows simultaneous access by several applications to one or more CAN controllers of one or more PC interfaces. Moving all important functions to the kernel optimizes the real-time capability of the VCI driver substantially. For simple testing purposes and start-up the free canAnalyser Mini is included.

VCI application interface:
- C API ■ C++ API ■ .NET API
- JAVA API ■ LabView API
- 3rd-party software

	CAN@net NT 200/420	CANblue II	CAN-IB630 /PCIe 104	simplyCAN	USB-to-CAN V2 compact	USB-to-CAN V2 professional	USB-to-CAN FD compact	USB-to-CAN V2 embedded
	Ethernet	Bluetooth (V2.1)	PCIe 104	USB	USB	USB	USB	USB
	32 Bit	32 Bit	32 Bit	32 Bit	32 Bit	32 Bit	32 Bit	32 Bit
	up to 4 x CAN and 2 x CAN FD	1 x CAN	2 x CAN / CAN FD	1 x CAN	1 x CAN	2 x CAN 1 x LIN (Automotive)	1 x CAN / CAN FD	1 x CAN
	ISO 11898-2	ISO 11898-2	ISO 11898-2	ISO 11898-2	ISO 11898-2	2 x ISO 11898-2 1 x ISO 11898-3 (Automotive)	ISO 11898-2	ISO 11898-2
	Screw terminals	Sub D9 plug (CiA 303-1)	Angled socket board 2x5	Sub-D9	Sub-D9 or RJ45 plug	2 x RJ45 with RJ45/ Sub-D9 adapter	Sub-D9	Sub-D9
	1 kV, 1 sec.	1 kV, 1 sec.	1 kV, 1 sec.	1 kV, 1 sec.	optional	optional	1 kV, 1 sec.	1 kV, 1 sec.

CAN Infrastructure

Repeaters, Bridges and Gateways for CAN and CAN FD

Highlights

- Cost savings thanks to simple wiring
- Increased system reliability
- Line protection by galvanic isolation
- The first CAN repeater for CAN FD

CAN Repeaters

CAN repeaters are used to establish a physical coupling of two or more segments of a CAN bus system. They can be used to implement tree or star topologies as well as for long drop lines. Systems connected by repeaters are independent electrical segments that can be optimally terminated in terms of signals. In addition, network segments can be electrically decoupled using a galvanically isolated repeater.

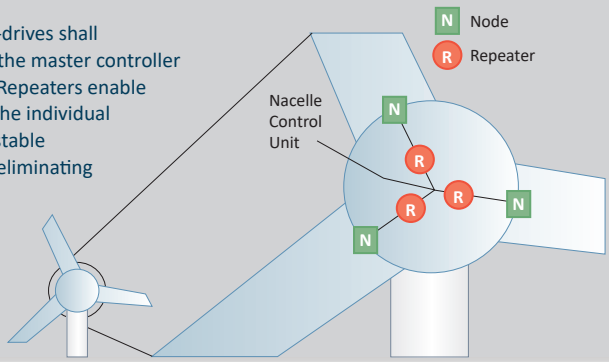
Ixxat CAN repeaters are specially designed for use in an industrial environment, meeting the highest demands in terms of robustness, temperature range and safety. Users can benefit from significantly improved system reliability along with cost-savings thanks to simpler wiring.

According to the transceiver output capacities, the division of a CAN system into several subsystems,

Product	CAN-CR100	CAN-CR110/FO	CAN-CR120/HV	CAN-CR200	CAN-CR210/FO
Description	Repeater for CAN and CAN FD	FO Repeater for CAN and CAN FD	Repeater for CAN and CAN FD with 4 kV galvanic iso.	Stackable Repeater for CAN	Stackable FO Repeater for CAN
CAN bus interface	2 x ISO 11898-2	1 x ISO 11898-2	2 x ISO 11898-2	2 x ISO 11898-2; DIN rail bus	1 x ISO 11898-2; DIN rail bus
CAN connectors	Screw-terminals	Screw-terminals	Screw-terminals	SUB D9	SUB D9
CAN bus termination	optional	optional	optional	Switchable via soldering jumpers	Switchable via soldering jumpers
Galvanic isolation	CAN1 / CAN2 1 kV, 1 sec.	CAN1 - PWR 1 kV CAN2: Fiber Optic	CAN 1 / CAN2 / PWR 4 kV, 1 sec.	CAN1 / CAN2 1 kV, 1 sec.	CAN1 - PWR 1 kV CAN2: Fiber Optic
FO interface	-	ST (fiber optic 50/125 µm duplex)	-	-	F-SMA or ST (fiber optic 50/125 µm duplex)
Baudrate	All baudrates supported				

Application example:
Wind turbine

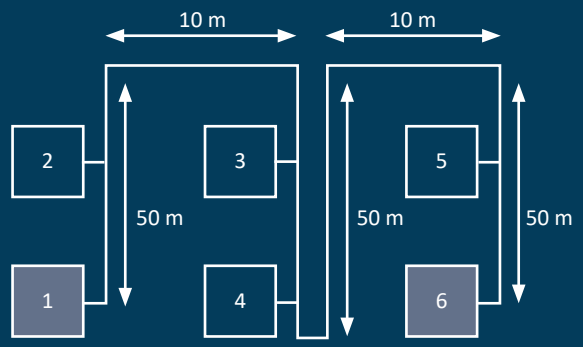
Three pitch control-drives shall communicate with the master controller via CAN. Ixxat CAN Repeaters enable star connection of the individual blades and enable stable communication by eliminating EMI effects and rebuild signals for transmission via sliprings.



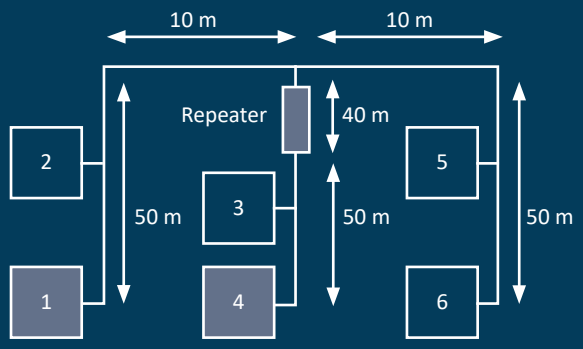
connected via CAN repeaters, increases the maximum number of bus nodes. Using repeaters does not influence the real-time behavior of a system because in terms of transmission behavior it corresponds to a network that consists only of lines.

	CAN-CR220	CAN-CR300
	Repeater for CAN with 4 kV galvanic iso.	Repeater for CAN and CAN FD
	2 x ISO 11898-2	4 x ISO 11898-2
	SUB D9	Screw-terminals
	Switchable via soldering jumpers	optional
	CAN1 / CAN2 / PWR 4 kV, 1 sec.	CAN 1 / 2 / 3 / 4 1 kV, 1 sec.
	-	-

Optimized network stucture using CAN repeaters



Conventional bus structure
The distance between the two nodes furthest apart (1 & 6) is 220 meters



Extended structure with drop line
The distance between the two nodes furthest apart (1 & 4 or 4 & 6) is 150 meters

www.ixxat.com/repeater

Highlights

- Cost savings thanks to simplified wiring
- Allows larger system expansion
- Filter and conversion functionality
- Increased system reliability
- Line protection by galvanic isolation
- Bridging of large distances and easy system access using Bluetooth, Ethernet and more

CAN Bridges and Gateways

The use of bridges and gateways opens up a large number of configuration possibilities. For example, CAN systems can be implemented over a larger area, devices without CAN interfaces can be connected to CAN systems or CAN systems can be coupled using different technologies, such as Bluetooth or Ethernet.

CAN bridges can link CAN networks of different bit rates or protocols with each other as well as CAN and CAN FD devices and systems. Bridges are based on the store-(modify)-forward

Product	CANbridge NT 200/420	CAN@net NT 100	CAN@net NT 200/420	CANblue II
Description	Configurable CAN / CAN-FD bridge	CAN to Ethernet Gateway and Bridge	CAN-/CAN-FD to Ethernet Gateway and Bridge	CAN/Bluetooth Gateway, Bridge and PC Interface
Application field	Extension of the network dimension, segmentation and linking of CAN and CAN FD	Bridging of large distances and easy system access using Ethernet	Expansion of networks via bridge and Ethernet as well as connection to Ethernet systems and devices	Enables wireless CAN connections, e.g. as replacement for abrasive rings
Functionality	- Action Rules - Message filtering - Identifier conversion - Baudrate conversion - Mapping/Multiplexing	- Action Rules & MQTT - Message filtering - Identifier conversion - Baudrate conversion - Mapping/Multiplexing	- Action Rules & MQTT - Message filtering - Identifier conversion - Baudrate conversion - Mapping/Multiplexing	- Message filtering
Fieldbus interfaces	up to 4 x CAN or 2 x CAN / 2 x CAN-FD	1 x CAN	up to 4 x CAN or 2 x CAN / 2 x CAN-FD	1 x CAN
CAN bus interf.	4 x ISO 11898-2	ISO 11898-2	4 x ISO 11898-2	ISO 11898-2
CAN connection	Screw terminals	Sub D9 plug (CiA 303-1)	Screw terminals	Sub D9 plug (CiA 303-1)
Further interfaces	USB for the device configuration	10/100 MBit/s, Twisted-Pair, RJ45; USB for configuration	10/100 MBit/s, Twisted-Pair, RJ45; USB for configuration	Bluetooth specification V2.1, Class 1 / +17 dBm
Galvanic iso.	yes	yes	yes	yes

principle where CAN messages are received by a sub-network and then transmitted to the other sub-network. Translation and filter rules can also be used, allowing a protocol adaptation to be carried out between the sub-networks. This includes segmentation of a CAN FD message into several CAN messages and vice versa. Higher layer protocols, such as CANopen and J1939, are also transmitted transparently.

CAN bridges are good for creating hierarchical networks by transferring only the information to the connected sub-networks via bridges which are relevant to the sub-network. The bridge function can also be executed with the aid of other transmission systems. For example, the CAN-Ethernet-CAN bridge is set-up by two CAN-Ethernet gateways which enable connection to remote CAN networks.

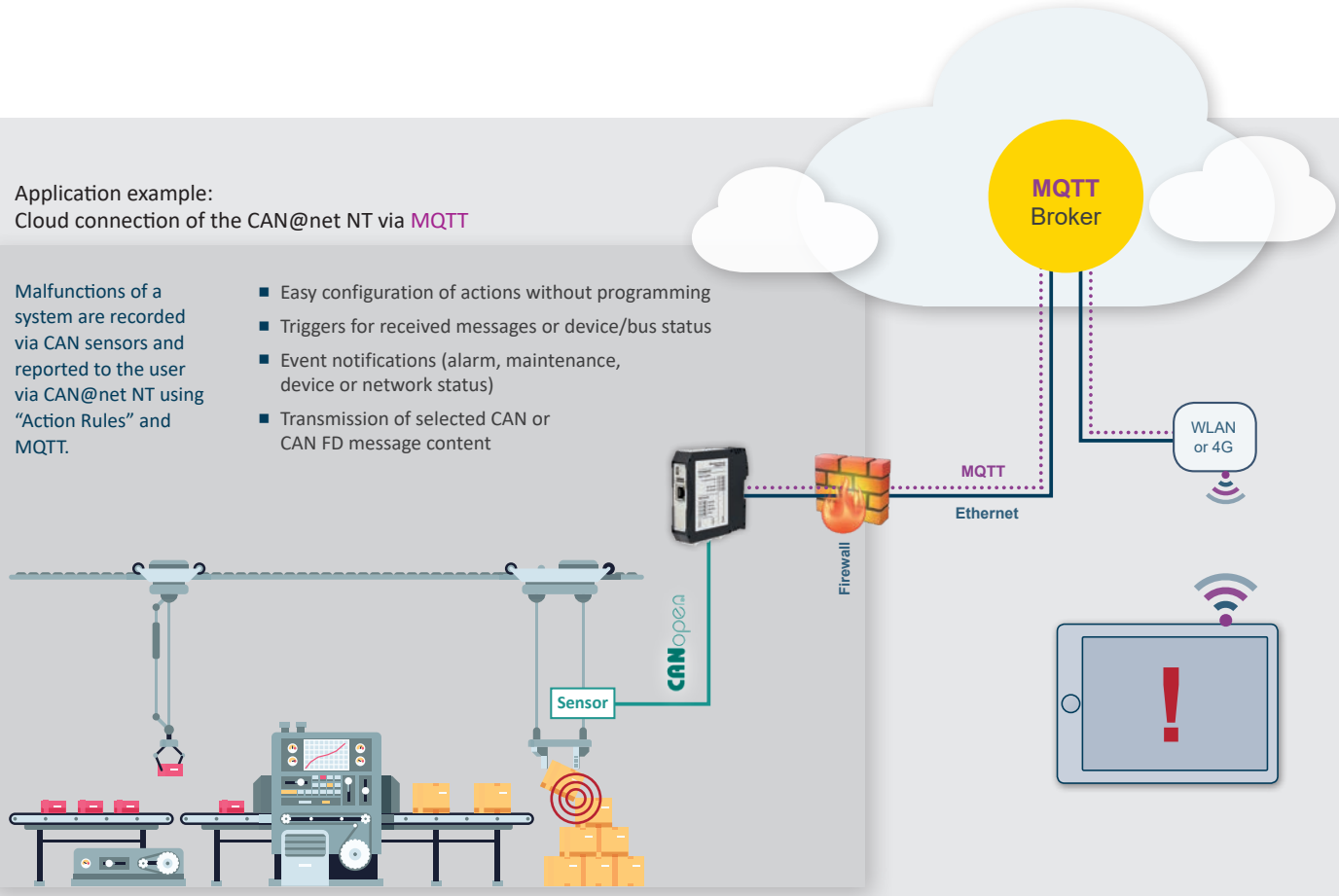
With the CAN@net NT 420 this bridge can be extended to a mesh with four devices connecting up to 16 CAN / CAN FD networks.

As an extension to the CAN bridges, CAN gateways allow access to CAN networks via other communication systems. In each case, the protocols of the connected bus systems are mapped to the other communication model.

Application example:
Cloud connection of the CAN@net NT via MQTT

Malfunctions of a system are recorded via CAN sensors and reported to the user via CAN@net NT using “Action Rules” and MQTT.

- Easy configuration of actions without programming
- Triggers for received messages or device/bus status
- Event notifications (alarm, maintenance, device or network status)
- Transmission of selected CAN or CAN FD message content



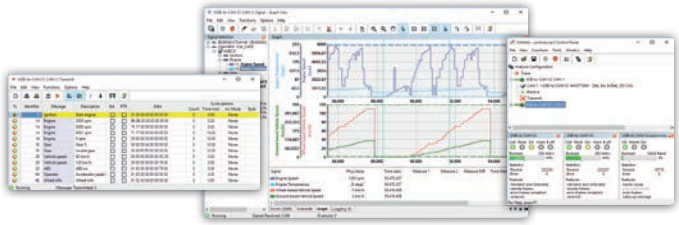
CAN Analyzing & Diagnostic

canAnalyser and Modules

The canAnalyser is a powerful tool for development, testing and maintenance of CAN systems. The software is based on a modular concept and employs special features that offer exceptional openness and extensibility.

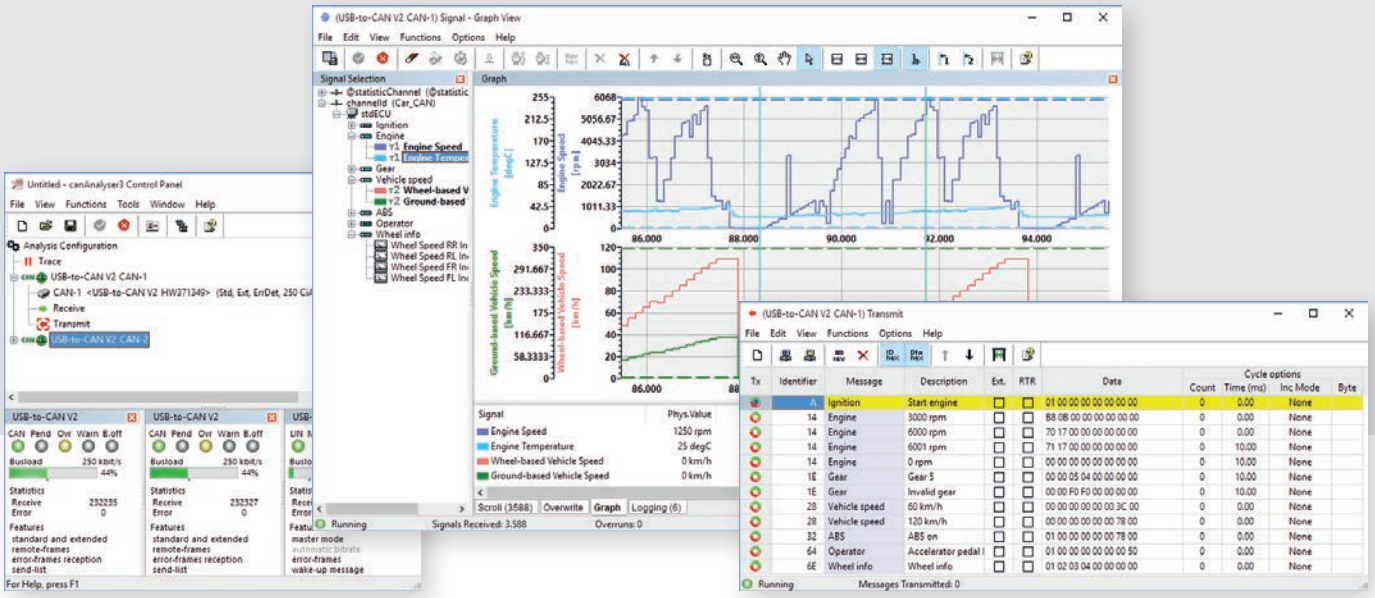
The canAnalyser offers functions covering many areas of application, such as transmission of individual messages and signals, transmission of sequences, reception and interpretation of messages and signals and display of statistical data.

The signals are managed within a database and can be loaded using special import filters. Import filters are available for the CANdb, FIBEX, DIM and LDF format. CANdb and DIM databases can be created by using the included editor



Product	canAnalyser 3 Mini*	canAnalyser 3 Lite	canAnalyser 3 Standard
Description	PC based analyzing tool for CAN and LIN systems		
Included functions/ modules	Reception and Transmission module for CAN, CAN-FD and LIN messages	Reception, Transmission, Trace, Replay, Sequencer module for CAN, CAN-FD and LIN messages Signal reception module CANdb, FIBEX, DIM, LDF import	In addition to the lite version: Signal/Graphic and Transmit Module for Signals
Features	Online monitoring of bus traffic Transmission of singleshot, cyclic messages (max. 5) Recording of messages (CSV)	Online monitoring of bus traffic Transmission of singleshot, cyclic messages and sequences Creation of command controlled message sequences Recording of messages with configurable trigger conditions Graphical presentation of message content on the time line Detection/presentation of the bus load Open programming interface Scripting host	In addition to the lite version: Multi-line and multi-board operation Multiple module instances
Operating sys.	Windows 7 (32/64 bit) / Windows 8 (32/64 bit) / Windows 10 (32/64 bit)		

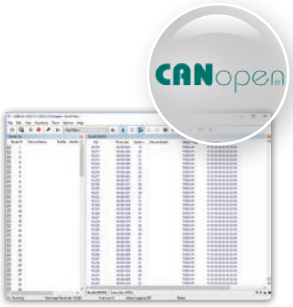
* For simple testing purposes and start-up the free canAnalyser Mini is installed with the VCI.



tool. Statistical values like bus load or error frames can be evaluated together with the signals from a database. Script-based statistics functions also permit quick, easy adaptation to your specific application needs.

Additional functions for the canAnalyser Lite/Standard are provided by optional modules, such as protocol specific display of messages in CANopen, DeviceNet or J1939 based systems. Customer-specific functions can be easily integrated via an open .NET programming interface in the form of individual modules.

The canAnalyser is based on the VCI driver and can be used with all Ixxat PC CAN interfaces.



Product	CANopen Module	DeviceNet Module	SAE J1939 Module
Description	CANopen extension for canAnalyser /-lite	DeviceNet extension for canAnalyser /-lite	SAE J1939 extension for canAnalyser /-lite
Included functions/ modules	Message interpretation/display according to CANopen standard & CAN FD USDO interpretation	Message interpretation/display according to DeviceNet standard	Message interpretation/display according to SAE J1939 standard
Features	Scroll or overwrite message display EDS, DCF, XDD file import Export to CSV and clipboard Change highlighting and receive statistics Filtering by node number and message type Interpretation of all relevant protocols and PDO content File recording	Scroll mode message display Configuration of explicit and fragmented connections Evaluation and monitoring of the fragmentation protocol with message wise or fragment presentation Filtering by Message Group or ID, MAC ID and message type File recording	Scroll or overwrite message display Interpretation of application, diagnosis and connection manag. messages Change highlighting and reception counter Filtering by Parameter Group Number destination and source address File recording

Data logger for CAN

Cost-effective logging solution for CAN and CAN FD networks.

The CAN data logger is based on the powerful FRC platform and can be easily configured with the free version of the ACT tool. The basic version has 4 CAN channels and allows recording to SD card or USB. Alternatively, the device is available with WLAN for configuration and download.

Product	CAN Data Logger
Features	Simultaneous recording of up to 8 CAN channels (4 x CAN FD)
	Recording with a uniform time base
	Easy configuration via drag & drop of messages/signals or complete buses
	Graphical trigger configuration with pre and post trigger (ring buffer)
	Recording on SD card, USB stick or USB hard disk (CSV, MDF4 or binary)
	Visualization via Web-socket with HTML5 capable devices (tablet/PC) using USB, LAN or WLAN
	Easy upgrade from data logger to gateway
	More powerful versions with 8 CAN channels, FlexRay, analog/digital IO are also available

Diagnostic tool

By using Ixxat CANcheck, CAN systems can be analyzed and evaluated upon installation and during operation.

Based on the analysis results, errors can be quickly and easily eliminated. An existing system can be optimized to achieve higher reliability. In addition, newly created systems can be tested thoroughly.

Product	CANcheck
Description	Hand-held installation tester for CAN systems for commissioning, troubleshooting and maintenance
Features	Test of wiring, terminators, cable length, impedance
	Signal level and bus load
	Determination of transmitted IDs and display of reception frequency
	Display of error frames per time unit
	Automatic baudrate detection
	CANopen mode: Message display according to the node number
	Storage of results and USB transmission
Display	LCD display with backlight
CAN interface	1 x CAN (ISO 11898-2)
Additional interfaces	USB 2.0 for PC based control and message download; BNC trigger output for the oscilloscope
Protocols	CAN, CANopen
Power supply	4 x 1.5 V AA battery or USB
Operation	Via keyboard or terminal program

PLC Extensions

CANopen® interface for SIMATIC® industrial automation systems

Highlights

- Easy integration of CAN or CAN-open-based devices with Siemens equipment
- Enables interaction between PROFIBUS/PROFINET controllers and CAN/CANopen fieldbus devices
- Supports implementation of any custom CAN based fieldbus protocol thanks to the CAN 2.0A mode
- Fully integrated into the hardware catalog of TIA Portal
- PLC function blocks available for easy integration in to TIA Portal

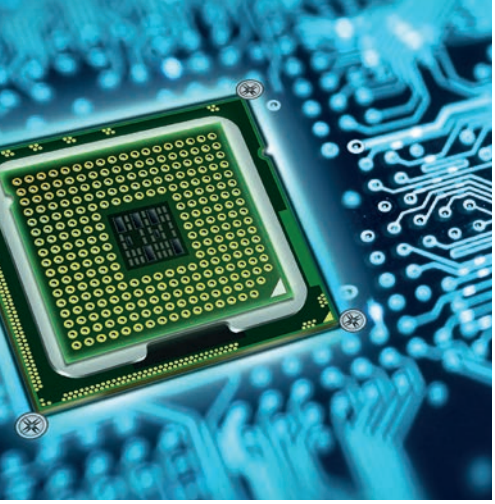
The CM CANopen module for the SIMATIC S7-1200® basic controller includes HMS CAN-open master technology in a compact format fully integrated with the SIMATIC hardware form factor.
The module enables SIMATIC automation solutions to be connected to CAN or CANopen based equipment making more expensive and space demanding PROFIBUS or PROFINET to CANopen gateways unnecessary.

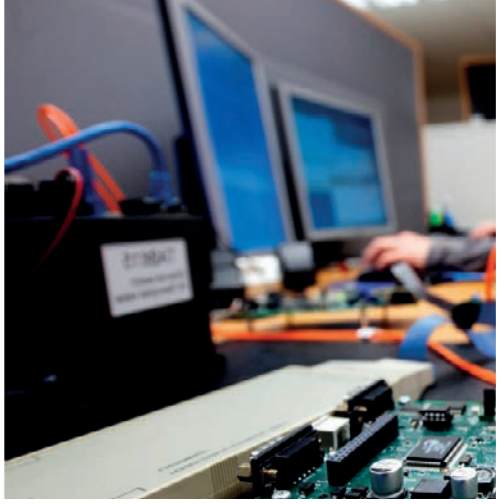
The module is supported by an optimized and highly intuitive CANopen configuration tool that enables users to quickly generate all required configuration data for the CANopen network.
Thanks to the support for operation in transparent CAN 2.0A mode, system integrators have the possibility to implement any custom CAN based fieldbus protocol.

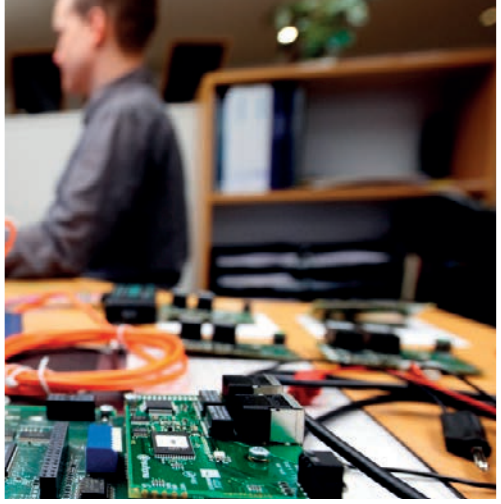
The CANopen modules by HMS enable system integrators to easily and inexpensively integrate CANopen field devices with SIMATIC industrial automation equipment.

Product	CM CANopen for SIMATIC S7-1200
Supported CANopen Features	
Implemented CiA specifications	CiA 301 version 4.2 CiA 302 version 4.1, parts 1-4
Process Data Objects (PDO)	64 RPDO, 64 TPDO
TPDO transmission types and protocols	Acyclic synchronous, cyclic synchronous, event-driven PDO write protocol
Service Data Objects (SDO)	SDO func., normal (segmented) & expedited upload & download protocols
Device monitoring	Heartbeat producer/consumer
CAN bit rate	20 kbit/s – 1 Mbit/s
CANopen Master Specific Features	
Network Management (NMT)	Master func. with NMT node control and NMT error control Support for NMT startup process (CiA 302)
Node guarding (NMT error control)	Master and slave
Service Data Objects (SDO)	Client and server
CANopen Slave Specific Features	
Network Man. (NMT) state machine	yes
Node guarding (NMT error control)	Slave
Synchronization	Consumer
Service Data Objects (SDO)	Server
Automatic bit rate detection	no

www.ixxat.com/plc-extension







APIs and Protocol Software

for quick and easy implementation into your PC-based applications and automation devices

Highlights

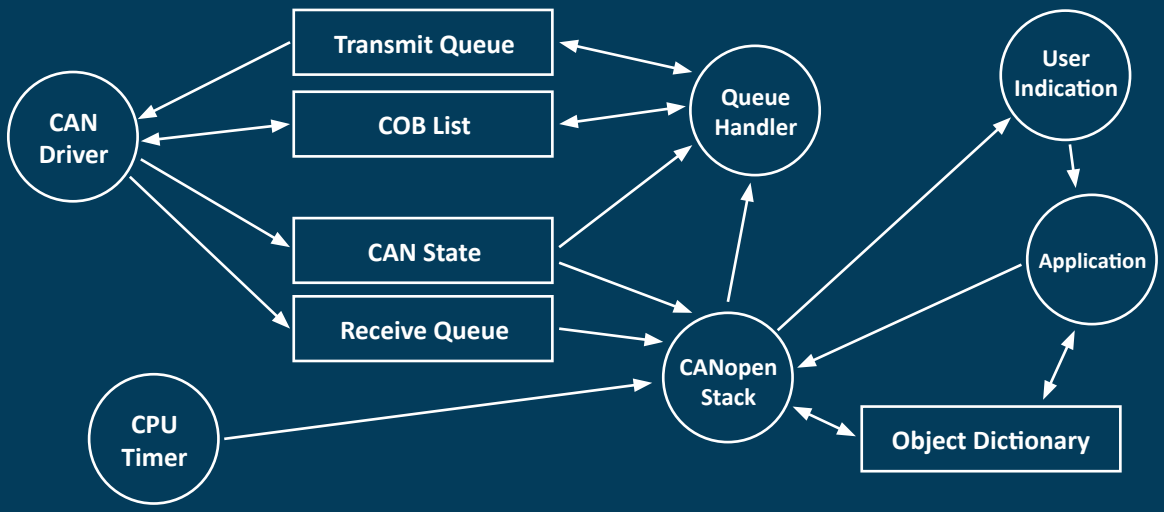
- Simple connection of the application program via Microsoft Windows DLL or Linux shared library
- Supports all PC-interface standards
- Reliable operation in thousands of applications worldwide

Windows/Linux APIs

HMS offers APIs for CANopen and SAE J1939 enabling development of PC-based applications. Based on these APIs, control, service and test programs can be quickly and easily realized. To access the fieldbus system Ixxat PC CAN interfaces can be used.

Product	CANopen Master API	SAE J1939 API
Description	For development of simple PC-based control and test programs	For development of J1939 service and test applications
Standards	CiA 301, CiA 305	
Included functions	Transmission/reception of PDOs (synchronous and asynchronous) Client (Master/Slave) and server SDO with support for normal, expedited and block transfer mode NMT Node Control, NMT Error Control (Heartbeat, Node Guarding) SYNC, EMERGENCY and TIMESTAMP objects For C, C# (incl. .NET core), vb.net, Delphi and LabView Multi-channel support Available for Windows and Linux	Supports all features of the protocol software Automatic conversion of received messages into signals and vice versa Use of the J1939 designer data base for signal interpretation Supports multiple CAN channels and therefore also J1939 networks Available for Windows and Linux

Schematic structure of the CANopen protocol software



Protocol software

Besides APIs for PC-based applications HMS also provides protocol software packages for embedded devices.
The software packages are offered for a large number of microcontroller platforms and compilers, but can also be easily adapted to specific target systems.

Available protocols:
- CANopen – Slave/Master/Manager
- CANopen FD
- SAE J1939

HMS provides a comprehensive service offer for your development project on request:

- Technical support by our experienced team.
- Detailed code introduction for your developers.
- Software adaptation, implementation and testing, as well as development of custom hardware.

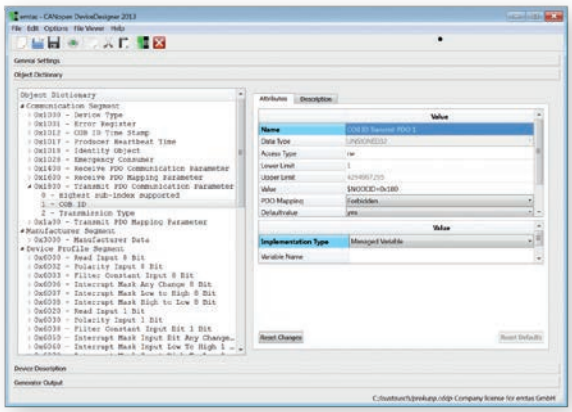
Detailed information about the Ixxat protocol software packages can be found on the Ixxat webpage.

Tools

In addition to providing protocol software packages and APIs, configuration and analysis tools are also offered to support your development project:

- CANopen DeviceExplorer
- CANopen DeviceDesigner
- SAE J1939 DeviceDesigner
- canAnalyser with CANopen, CANopen FD, DeviceNet and SAE J1939 Module

CANopen Device Designer



www.ixxat.com/protocols

Network to Network Gateways

Anybus X-gateways interconnect industrial networks and PLC systems – more than 200 network combinations available!

Highlights

- Over 200 different network combinations
- Master/Slave and Slave/Slave variants available
- Fast I/O data exchange with an average transfer time of 10-15 ms
- Robust housing for stand-alone operation
- Simple configuration using the Anybus Configuration Manager – no programming required!

Anybus X-gateways allow an easy transfer of I/O data between all major industrial networks. This means that CAN based networks can be connected to any fieldbus or Industrial Ethernet networks.

Anybus X-gateway

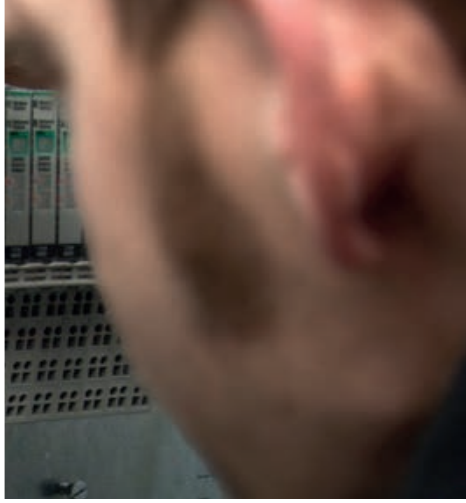
Anybus X-gateways enable transfer of cyclic I/O data between CAN-based networks – such as CANopen, DeviceNet or SAE J1939 – and any other network. It is also possible to transmit acyclic parameter data for certain networks.

The gateways are compatible and tested with all leading manufacturers of PLCs, e.g. Siemens, Allen Bradley, Schneider Electric, Misubishi, ABB, Omron, Hitachi, Beckhoff, Phoenix Contact, Bosch Rexroth and more.

Easy installation – no programming required!

All X-gateways are delivered with a configuration tool, so no programming skills are required for commissioning. With the "Anybus Configuration Manager X-gateway" you can set the I/O data sizes on each network side

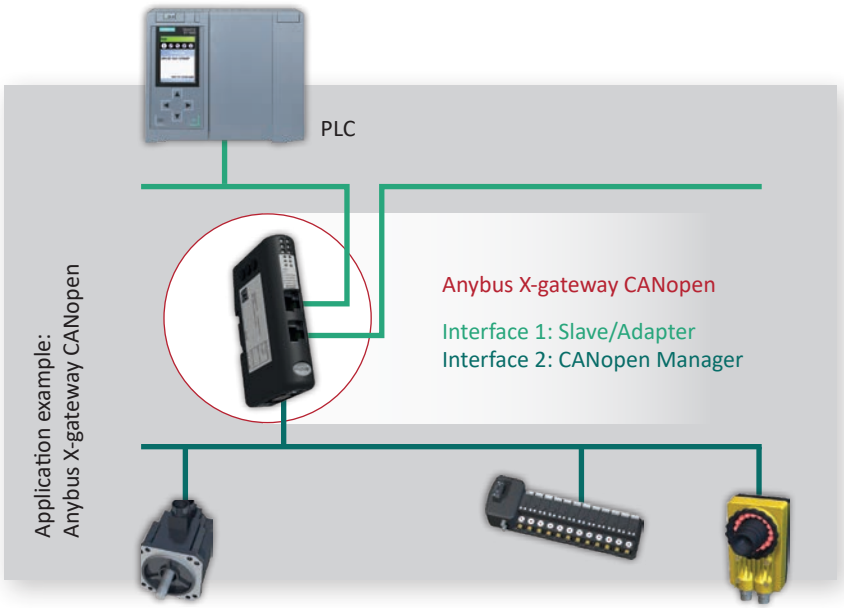
Product	Anybus X-gateway	Anybus X-gateway CANopen
Description	Gateways for coupling any fieldbus and Industrial Ethernet network	Gateways for coupling of CANopen networks with other networks
Supported protocols	Master/Slave and Slave/Slave combinations for: - CANopen - DeviceNet - SAE J1939 - ControlNet - EtherCAT - EtherNet/IP - Modbus RTU - Modbus-TCP - PROFIBUS - PROFINET IRT - PROFINET IRT FO	CANopen Master to: - CANopen Slave - Profibus Slave - DeviceNet Slave - Modbus RTU Slave - ControlNet Slave - PROFINET IRT Device - EtherNet/IP Adapter - EtherCAT Slave - Modbus-TCP Slave



and easily define the data mapping and separate cyclic I/O data from parameter data. For Master/Slave versions, the configuration of the Master side is carried out with an appropriate master configuration program.

Designed for harsh industrial environments

The X-gateways are designed for use in harsh industrial environments. Mounted on DIN rail, they feature IP20 protection and require a 24 V DC power supply. X-gateways are intelligent stand-alone devices, which are operated without fans and are designed for industrial operating temperatures. No moving parts are used inside the gateways.



Anybus X-gateway CANopen

The X-gateway CANopen family enables coupling of CANopen networks with all major fieldbus and Ethernet networks.
These gateways work as a CANopen Manager/Master and transparently transmit I/O data between CANopen and the connected fieldbus or Industrial Ethernet network.

Configuration

The easy-to-use Windows based configuration tool “Anybus Configuration Manager CANopen” is part of the delivery scope. In addition, the gateway can be configured via its CANopen master interface with any standard CANopen configuration tool.

Protocol Converter

Anybus Communicator connects your automation devices with fieldbuses and Industrial Ethernet

Highlights

- No hardware or software changes are required for the connected automation device
- Available for all major fieldbuses and Industrial Ethernet networks
- Compatible with all leading PLCs
- Simple configuration using the Anybus Configuration Manager – no programming required!

Anybus Communicator connects devices with serial or CAN based interfaces to CANopen, DeviceNet or any other fieldbus and industrial Ethernet network.

Anybus Communicator with serial interface

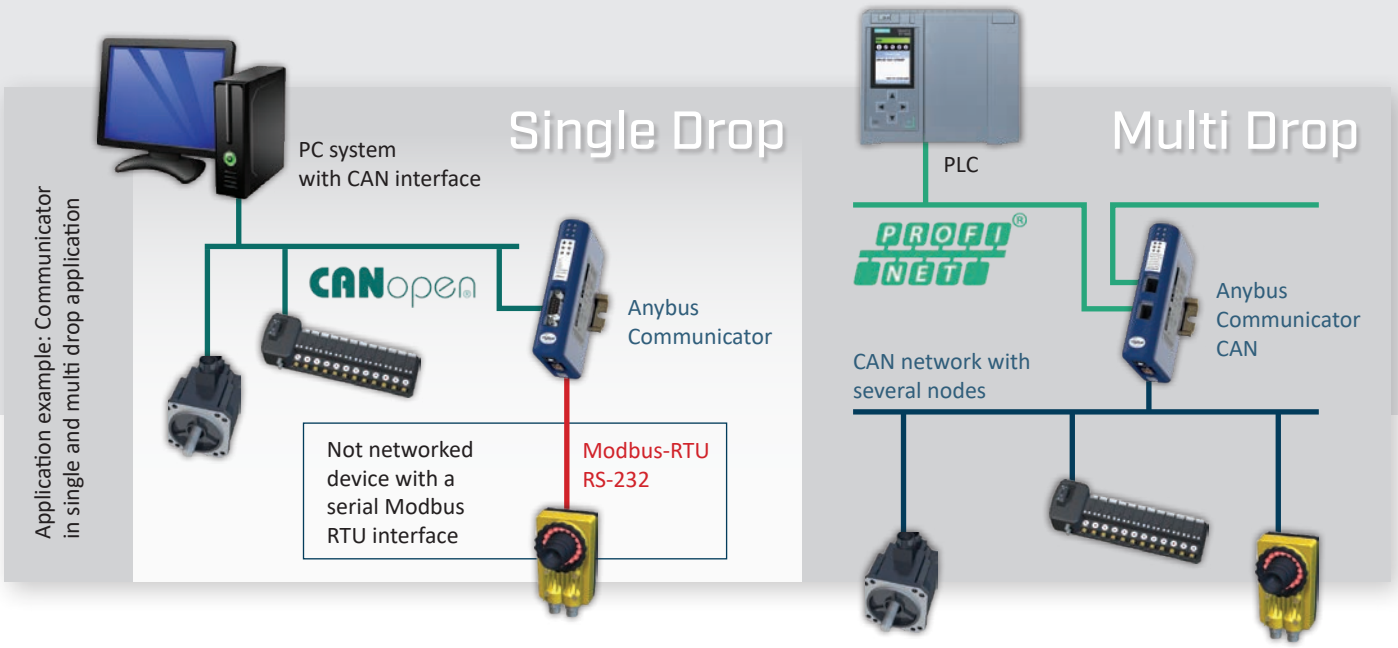
The serial version of Anybus Communicator supports device connection via RS-232, RS-422, RS-485 and Modbus RTU, enabling it to act as an external interface to industrial networks for a large number of serial devices – e.g. for drives, sensors, HMIs, barcode readers and RFID readers.

The Communicator is able to convert almost any standard or custom (proprietary) protocol. All protocol adaptations are done through configuration, no hardware or software changes are required for connected devices.

Compatible with all leading PLCs

Anybus Communicator is compatible and tested with PLC's from all leading manufacturers, e.g. Siemens, Allen Bradley, Schneider Electric, Mitsubishi, ABB, Omron, Hitachi, Beckhoff, Phoenix Contact and Bosch Rexroth.

Product	Anybus Communicator	Anybus Communicator CAN
Description	Protocol converter for connection of devices with a serial interface to industrial networks	Protocol converter for connection of devices with CAN interface to industrial networks
Supported protocols	- CANopen - DeviceNet - CC-Link - ControlNet - FIPIO - Interbus - Modbus-Plus - Modbus-RTU - PROFIBUS-DP - CC-Link IE Field - EtherCAT - EtherNet/IP - EtherNet/IP 2-port - Modbus-TCP - Modbus-TCP 2-port - PROFINET IRT	- CANopen - CC-Link - ControlNet - DeviceNet - Modbus-RTU - PROFIBUS - EtherCAT - EtherNet/IP - Modbus-TCP - PROFINET IRT



Easy installation – no programming required!

The configuration of the communicator is made with the free and easy-to-use Windows-based configuration software “Anybus Configuration Manager“. With the Anybus Configuration Manager almost every serial protocol can be configured, for example Master/Slave protocols such as Modbus or Consumer/Producer protocols such as CAN.

Reusable configuration save time and money

Communicator configurations can be saved and restored at any time. So if you, for example, have to switch from PROFIBUS to PROFINET, you can easily load an existing device configuration file done for e.g. PROFIBUS into a PROFINET Communicator.

Anybus Communicator CAN

The Anybus Communicator CAN operates on the same principle as the Anybus Communicator, the only difference is that the connection to your device is made by using CAN.

It also acts as a protocol converter and converts data between the coupled CAN device and the connected industrial network.

Supports CAN 2.0A and CAN 2.0B

The Anybus Communicator CAN is suitable for all devices that support CAN 2.0A or CAN 2.0B. The protocol converter converts almost any CAN-based Produce/Consume and Request/Response protocol.

Configuration

The CAN frames and their conversion to the respective fieldbus or Ethernet network can be configured by using the Anybus Configuration Manager, which is included in the scope of delivery.

CAN Accessories

Termination resistors, plugs, cables and antennas

As accessories for the CAN products, HMS offers termination resistors of various designs, plugs, cables for the connection of nodes, adapter cables as well as antennas for the Ixxat CANblue II. A complete overview can be found on the Ixxat webpage.

Product	CAN Termination	CAN Termination with 2 resistors
Plug/Sockets	Sub-D9 socket/plug	Sub-D9 socket/plug
Termination	120 Ohm, between pin 2 and 7	120 Ohm, between pin 2 and 7 120 Ohm, between pin 1 and 4
Further information	Pin connection 1-to-1	Pin connection 1-to-1

Product	CAN Cable	Y CAN Cable	Y CAN Cable	CAN Adapter Cable
Plug/Sockets	Sub-D9 (1x socket / 1x plug)	Sub-D9 socket to Sub-D9 socket/plug	Sub-D9 socket to Sub-D9 socket/plug	RJ45 plug to Sub-D9 plug
Dimensions	2.0 m	22 cm	2 m	20 cm
Further information	- Pin connection 1-to-1 - Shield	- Pin connection 1-to-1 - Shield	- Pin connection 1-to-1 - Shield	Set with two cables

Product	Antenna	Magnetic foot antenna	Screwable antenna foot
Use case	For Ixxat CANblue II	For Ixxat CANblue II	For Ixxat CANblue II
Plug/Sockets	RPSMA plug	RPSMA plug	RPSMA plug
Size / Cable lenght	- / 10 cm	1.5 m / -	2.0 m / -

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