HMS

Anybus®
CompactCom

Compact communication modules designed to connect automation devices to industrial networks

- ▶ Profibus
- ▶ DeviceNet
- ▶ CANopen
- ▶ CC-Link
- ▶ CompoNet
- ▶ ControlNet
- ▶ Modbus-RTU
- ▶ Profinet
- ▶ Profinet 2-port
- ▶ EtherNet/IP
- ▶ EtherCAT
- ▶ Modbus-TCP
- ▶ Sercos III
- ▶ RS-232/485
- ▶ USB
- ▶ Bluetooth

Connecting Devices™

Designed to meet all network connectivity requirements featuring low price, small size and easy integration. Take a closer look at Anybus CompactCom!

Anybus CompactCom (Anybus-CC) is a family of certified and proven interchangeable communication interfaces designed for integration into industrial automation devices. They incorporate the complete functionality of an industrial network interface with slave/adapter functionality including the physical connection, hardware interface and protocol functionality. Anybus-CC has been designed to fit into many types of industrial automation devices. HMI's, robot controllers, drives, micro PLC's, valve manifolds, instruments, weigh scales, temperature controllers, bar-code scanners, I/O blocks, welding controllers and RFID applications are just some of today's automation devices that are using Anybus-CC technology for their network option interface.

Together, these IT functions allow, for example, that data can be monitored via the built in web server, or using event triggered Email messages. SSI technology enables web pages and Email messages to carry dynamic content such as I/O data, configuration, and settings and then visualizes it in a user friendly way. The IT functions also include a TCP/UDP/IP socket interface. This allows applications to execute any kind of vendor specific TCP/IP based protocols using the core functionality of the Anybus-CC.

Innovative design and functionality - providing optimal flexibility.

Anybus-CC modules provide instant connectivity to all leading fieldbus, industrial Ethernet protocols, serial, USB and wireless networks without the need for any hardware and software changes to your automation device. These small, flexible and inexpensive modules are the perfect fit for device manufacturers. Anybus-CC provides the most compelling alternative to extensive in-house development.

Anybus-CC is a very flexible communication solution. The modules contain the complete functionality of an industrial network interface

and provide a standardized and network independent parallel or serial application interface for the host automation device.

Supported network features

Anybus-CC incorporates the latest protocol specification of the chosen network. HMS continuously maintains the network functionality of the Anybus-CC so that your automation device always complies to the latest standards and has unlimited interoperability. All Anybus-CC modules are pre-certified for full network compliance with the chosen network.

IT functions for Ethernet versions

Most Anybus-CC Ethernet versions contain embedded IT functions such as, an embedded dynamic web server, Telnet server, FTP server and an Email client.

With its unique CompactFlash® based connection the Anybus-CC simply plugs into the host application.

Active and passive modules build a complete communication solution

The Anybus-CC family consists of two standard module types.

Active Modules

Active modules handle the complete protocol of the fieldbus or Ethernet network. All necessary software and hardware is included. The application interface of Anybus-CC can be accessed by either a parallel Dual Port Ram or a fast serial line. Both interface alternatives support the same data exchange methods, functionality and features. Active modules are available for all fieldbus and industrial Ethernet networks.

Passive Modules

Passive modules provide the physical layer network interface to the selected network. They provide a transparent pass-through for serial data coming from/to the external network and the serial host application interface. Passive modules are available for RS-232, RS485, USB and Bluetooth.

The Anybus-CC family includes fieldbus, Ethernet, serial, USB and wireless modules.
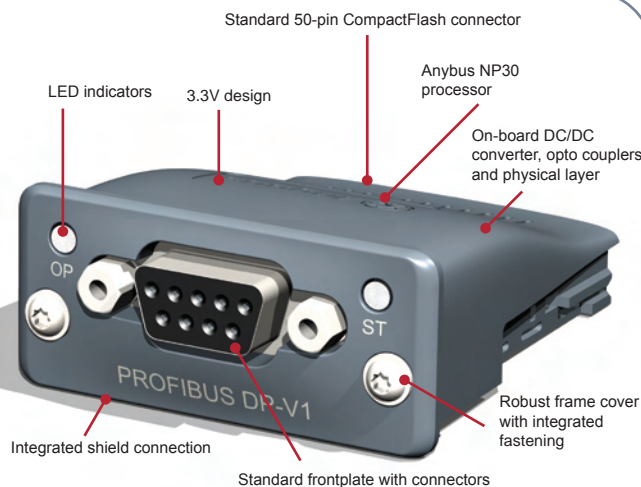
⊗ WHY USE ANYBUS-CC?

- Instant plug-in connectivity to all leading communicaton standards with only one development
- Standardized hardware and software interface for cyclic / acyclic data and diagnostic functions independent of the network
- Smooth integration into the host application software
- Low risk investment with a fast pay-off
- Short time-to-market, typically 1-3 months
- Parallel or serial application interface
- Continious technology maintenance by HMS
- Robust plastic housing and innovative fastening mechanism
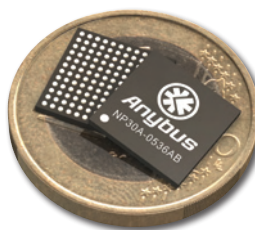- Available standard with or without housing, or with a custom hardware solution

Anybus
COMPACT-COM

Available for:
Profibus
DeviceNet
CANopen
CC-Link
CompoNet
ControlNet
Modbus-RTU
Profinet
Profinet 2-port
EtherNet/IP
EtherCAT
Modbus-TCP
Sercos III
RS-232/485
USB
Bluetooth

LED indicators
3.3V design
Standard 50-pin CompactFlash connector
Anybus NP30 processor
On-board DC/DC converter, opto couplers and physical layer
OP
ST
PROFIBUS DP-V1
Robust frame cover with integrated fastening
Integrated shield connection
Standard frontplate with connectors

Anybus NP30 network processor

Anybus NP30 is a single chip high performance RISC network processor. It has been optimized to be used in the Anybus CompactCom as well as in customized versions of the Anybus modules. NP30 consists of a RISC processor including Profibus, Ethernet, CAN and serial interfaces as well as internal RAM and Flash memories. With its 10x10 mm (0.4x0.4 in) BGA housing, the Anybus NP30 is the smallest true single chip network processor for industrial communication.

Without housing provides even more flexibility for device manufacturers!

Available for:
Profibus
DeviceNet
CANopen
CC-Link
CompoNet
ControlNet
Modbus-RTU
Profinet
Profinet 2-port
EtherNet/IP
EtherCAT
Modbus-TCP
Sercos III
RS-232/485
USB
Bluetooth

Standard 50-pin CompactFlash connector
Anybus NP30 processor
3.3V design
On-board DC/DC converter, opto couplers and physical layer
Integrated shield connection

Anybus-CC without housing

As a compliment to the Anybus-CC modules with housing, HMS also offers the complete Anybus-CC range of interchangeable modules without housing. Anybus-CC modules without housing have exactly the same functionality, but consume even less space. Modules without housing are suitable for applications where device manufacturers want to integrate the Anybus-CC module during their manufacturing process in their production facilities. The Anybus-CC is completely hidden from view behind the front cover of the automation device. Only the required network connectors will be visible.

KEY FEATURES

- Active modules provide the full functionality of the selected fieldbus/ Ethernet network
- Passive modules provide the physical layer of the selected network and only handle basic communication
- 2kB (8-bit) Dual Port Ram parallel application interface functions
- Asynchronous UART serial application interface with configurable baud rates of 19.2kbps - 625kbps
- Single 3.3V power supply with low power consumption
- Very small and compact size
- Network independent hardware and software application interface for cyclic, acyclic data & diagnostics
- On-board high performance RISC network microprocessor
- Available with or without the robust plastic housing
- 50-pin CompactFlash connector for connection to the host application interface
- Galvanic isolation between the network and the host application interface
- Starterkit available including driver software and demo application
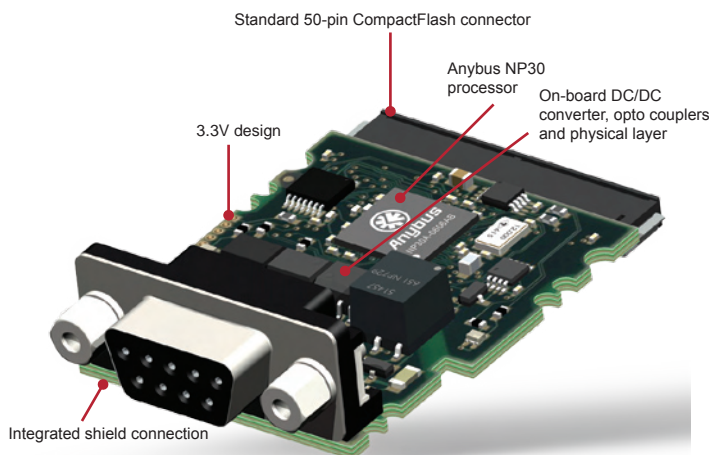- IT functions - dynamic web server, FTP server and E-mail client on most Ethernet versions

TECHNICAL SPECIFICATION

- Size: 52 x 50 x 22 mm (L x W x H) 2.04" x 1.97" x 0.86" (L x W x H)
- Size: 51 x 37 x 16 mm (L x W x H) 2.01" x 1.46" x 0.63" (L x W x H) **(modules without housing)**
- Integrated shield connection
- Power Supply: 3.3 V
- Operating temperature -40 °C to + 70 °C -40 °F to + 158 °F
- EMC, UL, cUL & RoHS compliance
- Tested and verified for fieldbus and network conformance

Typical application examples using embedded Anybus-CC communication technology

Provide your application with a flexible network interface

Anybus-CC combines both performance and flexibility in one very small package. It is small enough to be used in I/O and valve blocks and it's powerful enough for demanding drives and controller applications.

In short, it can provide your application with a flexible "option interface" giving you the choice to add fieldbuses, industrial Ethernet protocols, simple serial interfaces, USB, or even a wireless communication interface to your product.

Over 1000 different device manufacturers have embedded Anybus technology inside their devices to provide multiple network connectivity solutions for their automation products.

A library of Anybus-CC connected automation devices is availiable at:
www.anybus.com/applications/applications.shtml

PLC's

Inverters

HMI's

Micro Drives

Valve Manifolds

Barcode Scanners/RFID

I/O Blocks

Weighscales

Robot Controllers

Added value provided by HMS with an Anybus development

Focus on your core competence and let Anybus handle the communication

HMS does more than provide you with the products and solutions you need right now. We also work proactively to help you with new technologies and guide you during the development and your product life cycle.

Our customers get more than just world class products. Our goal is to become your partner that you can rely on, now and in the future. We grow long-term relationships with our customers and many view us as their communications department.

Most of our customers used to have internal resources that developed their communication solutions. After entering into a development partnership with HMS, they now use these internal resources to focus on their core products. They utilize the benefit of having HMS proven technology to get more flexibility, lower development cost and shorter time to market.

✴ What you get with Anybus-CC

- Free consultancy to select the best commmunication solution for your application
- Get up and running quickly with starter kits containing hardware, drivers and resources
- Modules that are pre-certified by the authorized testing facilities
- Continuous updates as the technologies evolve and expand
- Access to new network technologies as they come into the market
- Flexibility to install the modules at any point along the supply chain
- Free local and friendly, dedicated support contacts from HMS's global organization to assist you with your development

Customized communication modules based on Anybus-CC Modules and NP30 network processor technology

Tailor made solutions to meet the specific requirements of your automation device

Based on the proven Anybus standard communication modules, HMS offers customized network interfaces tailor-made for specific requirements such as high mechanical ratings (IP65), individual form factors or board sizes, specific connectors or power supply requirements.

Customized Anybus interfaces always use the standard Anybus software technology and have the same software interface as the standard Anybus modules. Customers benefit from short development times, low development risk, fixed development cost and moreover get the advantage of continuous software maintenance by HMS without any additional cost.

After the development is completed, HMS produces the customized interfaces at the HMS

manufacturing site and delivers the boards just-in-time in accordance with the individual requirements of the customers.
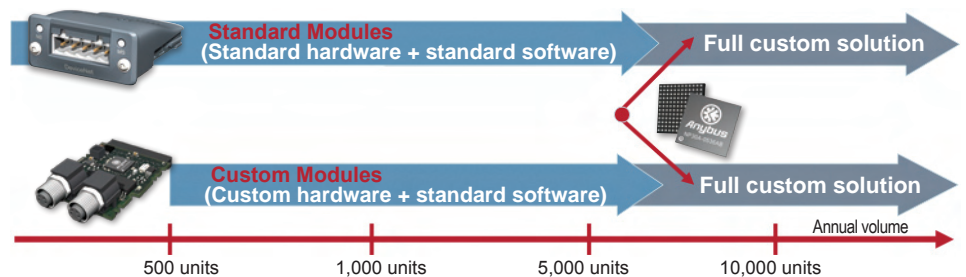
► Individual solutions based on proven Anybus NP-30 technology
► Available for all leading fieldbus and industrial Ethernet networks
► Low development risk
► Fixed development price
► Continuous software maintenance by HMS, free of charge
► Just-in-time manufacturing and supply from HMS

Custom Anybus solutions can incorporate a custom PCB design, customized functionality and different network connectors, such as M12

Finding the best solution: Standard or customized?

The Anybus technology is available as a standard communication module or as a customized solution, tailor-made for the individual requirements of an automation device. Independent of what solution is selected, our customers benefit from HMS´s 20 years of experience in industrial communication.

Standard Modules (Standard hardware + standard software) → **Full custom solution**

Custom Modules (Custom hardware + standard software) → **Full custom solution**

Annual volume

500 units   1,000 units   5,000 units   10,000 units

	STANDARD MODULE	CUSTOMIZED HARDWARE	FULL CUSTOM SOLUTION
Volume	Ideal for applications with low and medium volume	Minimum volume 500 pcs per year	Minimum volume 5,000 pcs per year
Applications	All kind of automation devices with IP20 rating	Devices with specific mechanical requirements such as IP65 rating	Devices with specific hardware or software requirements on the communication interface
One time cost	-	Small one off charge	Yes, amount depending on development efforts
Time-to-market	Very short, no development at HMS	Medium, 6-10 weeks development time at HMS	Long, depending on the complexity of the project
Flexibility	All standard modules can be used once the Anybus interface is integrated into the device.	Customization needs to be made for each supported network.	Customization needs to be made for each supported network
Maintenance	By HMS, included in the price of the module	By HMS, included in the price of the module	On demand and at the cost of the customer
Certficiation	Each module is pre-certified by HMS	On demand and at the cost of the customer	On demand and at the cost of the customer

Availabilty and network supported features - Anybus-CC

Profibus-DPV1- AB6200
Without Housing- AB6300
- Active module with serial and parallel application interface
- Complete Profibus-DP/DPV1 slave
- Up to 244 byte cyclic I/O data in each direction
- Additional acyclic parameter data
- Supports master class 1 & class 2 access
- Galvanically isolated Profibus interface with auto baud rate detection 9.6 kbit/s - 12 Mbit/s
- Generic GSD-file provided

DeviceNet - AB6201
Without Housing- AB6301
- Active module with serial and parallel application interface
- Complete DeviceNet adapter
- Up to 256 byte of I/O data in each direction
- CIP Parameter Object Support
- Galvanically isolated DeviceNet interface with auto baud rate detection 125 - 500 kbit/s
- UCMM capable
- Change-of-state / Cyclic I/O / Polled I/O, Bit-strobed I/O, Explicit messaging
- Generic EDS file provided

CANopen - AB6218
Without Housing- AB6318
- Active module with serial and parallel application interface
- Complete CANopen slave
- Up to 32 TPDO's & 32 RPDO's (Corresponds to a total of 256 byte of process data in each direction)
- Additional SDO acyclic parameter data
- Galvanically isolated CANopen interface with auto baud rate detection 10 - 1000 kbit/s
- Generic EDS file provided

Profinet IO - AB6215
Without Housing- AB6315
- Active module with serial and parallel application interface
- Profinet IO conformance class A
- Up to 256 byte of I/O data in each direction
- Transformer isolated interface 100 Mbit/s full duplex Ethernet
- TCP/IP socket interface
- FTP server, E-mail and dynamic web server with SSI support
- Generic GSD file provided

Profinet IO 2-port- AB6221
Without Housing- AB6321
- Active module with serial and parallel application interface
- Profinet IO conformance class B
- Up to 256 byte of I/O data in each direction
- Integrated 2-port switch
- Transformer isolated interface 100 Mbit/s full duplex Ethernet
- TCP/IP socket interface
- FTP server, E-mail and dynamic web server with SSI support
- Available Q2 2009

EtherNet/IP- AB6214
Without Housing- AB6314
- Active module with serial and parallel application interface
- Complete EtherNet/IP adapter
- CIP Parameter Object Support
- Explicit and implicit messaging
- Transformer isolated Ethernet interface 10/100 Mbit/s full duplex
- TCP/IP socket interface
- FTP server, E-mail and dynamic web server with SSI support
- Generic EDS-file provided

EtherCAT - AB6216
Without Housing- AB6316
- Active module with serial and parallel application interface
- Complete EtherCAT node
- Supporting CANopen PDO and SDO communication objects
- 100 Mbit/s full duplex with dual RJ-45 connectors

CC-Link - AB6211
Without Housing- AB6311
- Active module with serial and parallel application interface
- Complete CC-Link slave supporting versions 1.10 & 2.0
- Support all profiles for a "Remote Device"
- Galvanically isolated CC-Link interface with auto baud rate detection 156 kbit/s -10 Mbit/s
- Generic CSP file provided

Modbus RTU- AB6203
Without Housing- AB6303
- Active module with serial and parallel application interface
- Complete Modbus-RTU slave
- Up to 256 byte of I/O data in each direction
- Galvanically isolated Modbus-RTU interface (RS-232/485) with baud rates 1.2 - 115.2 kbit/s
- Additional Modbus-ASCII functionality

Modbus TCP- AB6213
Without Housing- AB6313
- Active module with serial and parallel application interface
- Complete Modbus TCP server
- Up to 256 byte of I/O data in each direction
- Transformer isolated interface 100 Mbit/s full duplex Ethernet
- TCP/IP socket interface
- FTP server, E-mail and dynamic web server with SSI support

RS-232 - AB6207
Without Housing- AB6307
- Passive module with serial application interface
- Physical layer converter for the RS-232 communication standard
- Supports baud rates up to 250 kbit/s
- No configuration necessary, since the module acts only on the physical layer

RS-485 - AB6208
Without Housing-AB6308
- Passive module with serial application interface
- Physical layer converter for the RS-485/422 communication standard
- Supports baud rates up to 10 Mbit/s
- No configuration necessary, since the module acts only on the physical layer
- Galvanically isolated RS-485/422 interface

USB - AB6209
Without Housing-AB6309
- Passive module with serial application interface
- Physical layer converter for USB communication standard (USB 1.1 & USB 2.0 full speed)
- Supports 1 and 2 Mbit/s USB communication speed
- The baud rate is set from the host computer side
- Software drivers available
- Galvanically isolated USB interface

Bluetooth - AB6212
Without Housing- AB6312
- Passive module with serial application interface
- Physical layer converter for Bluetooth communication standard
- Completely transparent interface
- Bluetooth class 2 SPP compatible
- Wireless range up to 30 meters

Under Development
- CompoNet - Available Q2 2009
- ControlNet - Available Q2 2009
- Sercos III - Available Q4 2009

Anybus-CC Starterkit available - Order No 018581 - see website for more information

About HMS

HMS Industrial Networks is the leading independent supplier of network technology for automation devices. HMS develops and manufactures solutions for interfacing automation devices to industrial networks.

Development and manufacturing takes place at the head office in Halmstad, Sweden. Local sales, support and training is provided by the branch offices in Chicago, Beijing, Karlsruhe, Milan, Mulhouse and Tokyo and by a global distribution network spanning 30 countries. HMS employs over 150 people and is reporting sales of over €30 million. HMS is a public listed company on the NASDAQ OMX Nordic exchange in Stockholm, ISIN-code: SE0002136242

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