HMS Connecting Devices™

Anybus®

IC - Chip

Single Chip Solution for Profibus, DeviceNet and Industrial Ethernet

- Profibus
- DeviceNet
- EtherNet/IP
- Modbus-TCP

Tiny single chip solutions containing all analog & digital components required for multiple network connectivity. Take a closer look at the Anybus-IC..!

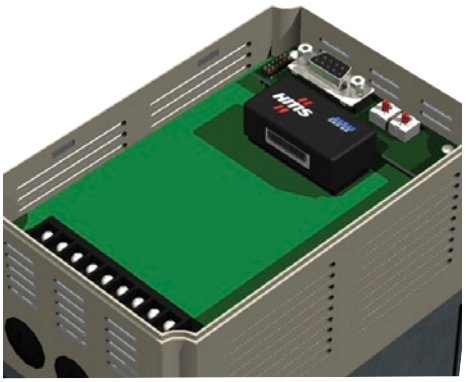
The Anybus-IC is a complete single-chip controller for industrial networks. It is optimized for lower/medium ranged field devices, where a small size and multiple network connectivity is important. The Anybus-IC is built in hybrid technology and contains all analog and all digital components necessary to implement a network interface. A powerful 16/32 bit microcontroller with Flash and RAM memory, a network protocol chip and all necessary analog components including opto-couplers, a DC/DC converter and bus drivers are integrated in a single housing of only 9 cm² in size.

Tiny, but powerful - When size restrictions are the main factor!

The Anybus-IC is not a new protocol ASIC. Instead, it is a hybrid design based on proven protocol chips from the market leaders, and thus incompatibility with the industry standard is excluded right from the start. The Anybus-IC has a 32-pin dual in-line case (42x21x15 mm L,W,H) and requires only one 5 Volt power supply. A separate Anybus-IC version is available for each network. Standardization of the mechanical, electrical and software interfaces ensures that the different Anybus-IC's are interchangeable.

The Anybus-IC contains all the digital and analog hardware as well as all necessary software to communicate with the selected network. This makes it possible for HMS to supply a proven solution that has been tested and approved for fieldbus and EMC compatibility.

Profibus, DeviceNet & Industrial Ethernet
The Anybus-IC is available as Profibus-DP Slave, DeviceNet Adapter, EtherNet/IP Adapter and Modbus-TCP Slave.
Full standardization of the mechanical, electrical and software interfaces ensure full interchangeability. In addition to the Modbus-TCP and Ethernet/IP protocol, the Ethernet versions of the Anybus-IC contain powerful embedded Internet features. The embedded dynamic webserver offers 1,4 Mbyte free disk space to download any kind of application specific web pages. Web pages can be created to display visualization and control functions in a user friendly way by utilizing Java or SSI scripts. A complete E-Mail client is on-board which can be configured to send out email alerts on specific events. The FTP based file system supports multi level access protection. On-board security features include user/admin level control as well as IP address configuration



Example of the Anybus-IC Profibus in a micro-drive. Just simply add power and network connectors for an instant Profibus connection.

Stand-alone or with a microcontroller - the Anybus-IC works with both

There ways to use the Anybus-IC with your industrial application.

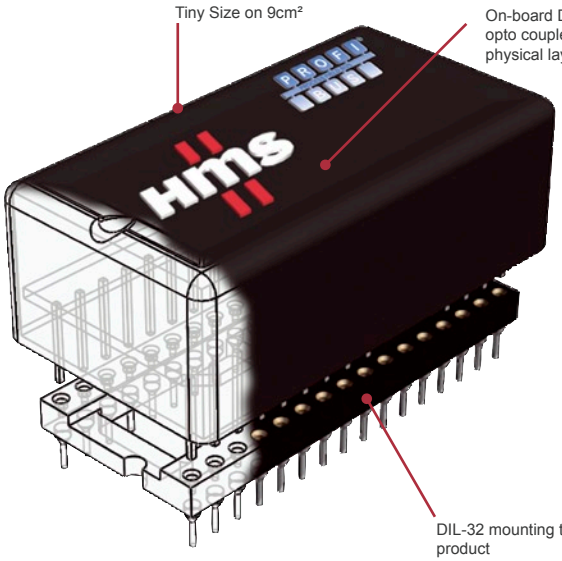
Stand Alone - operation without a host micro controller.
For use in simple processor-less devices such as valve terminals and modular I/Os, the Anybus-IC has a clocked shift register interface (SSC) which can be connected to max 16 bytes Input and 16 bytes Output data. The Anybus-IC automatically detects how many I/O signals are available during the Power-On phase. This makes it very easy to implement variable I/O configurations such as those typically used in modular I/O devices.

With an intelligent device with a micro controller.
When used in intelligent devices, which typically have their own micro controller, the Anybus-IC is connected to this processor via a serial 2-wire TTL interface (SCI).
A simple data exchange protocol (Modbus based) is used to connect the Anybus-IC and the microprocessor of the field device. The Anybus-IC handles the network protocol. Thus, the microprocessor in the manufacturer's device is not tasked unnecessarily with bus handling.
A max of 32 bytes Input and 32 bytes Output data can be sent via the SCI interface.

Via an additional serial communication port, the Anybus-IC can be optionally connected to a PC for configuration and monitoring. Via this connection, communication parameters such as baud rate, node address, identification number and I/O size can be modified.

Anybus®
IC - CHIP

Available for:
Profibus
DeviceNet
EtherNet/IP
Modbus-TCP

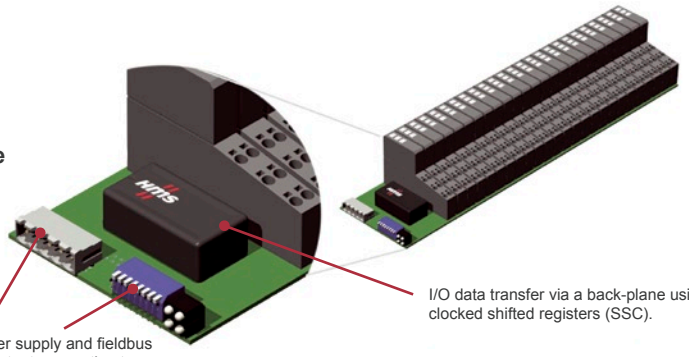


KEY FEATURES

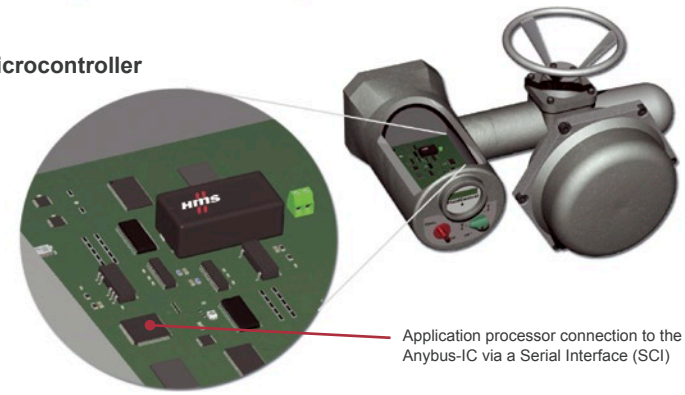
- Very small size - ideal for small to medium size industrial applications
- Works as a Stand-Alone Controller or together with another microcontroller
- Contains all analog and digital components for full network connectivity
- DC/DC converter and Opto Couplers on-board
- SCI serial interface with max 32 bytes of Input & 32 bytes Output data (Modbus RTU protocol)
- SSC Shift register interface for data exchange of max 16 bytes Input & 16 bytes Output data
- Configuration and monitoring via PC configuration port
- 32 pin DIL connector
- Flash upgradeable
- Very short time to design-in

Interface options - Anybus-IC Chip

Stand-Alone



With a Microcontroller



TECHNICAL SPECIFICATION

- Size: 42 x 21 x 15 mm (L x W x H)
  2.13 x 0.83 x 0.59" (L x W x H)
- Power Supply: +5V
- Temperature: Operating -10° to + 70°C Non-Operating -25° to + 85°C
- Humidity: 5 to 95% non-condensing
- Emission: EN 50081-2: 1993
  Immunity: EN 61000-6-2:1999
  UL&cUL Compliance: Pending
  CE-Mark: CE marked (all versions)
- Application connector: 32 pin DIL
- Tested & Verified for Fieldbus and Network conformance

Network specific supported features - Anybus-IC Chip

Profibus-DP AB6000

- Complete Profibus-DP Slave functionality according to IEC 61158
- 32 bytes input / 32 bytes output on the SCI Interface
- 16 bytes input / 16 bytes output on the SSC Interface
- Automatic baudrate detection (9600 bit/s - 12 Mbit/s)
- RS-485 optically isolated Profibus interface with on-board DC/DC converter
- Up to 237 bytes of User Parameter Data
- Up to 200 bytes of Extended Diagnostic Data

DeviceNet AB6001

- Complete DeviceNet 2.0 scanner
- 32 bytes input / 32 bytes output on the SCI Interface
- 16 bytes input / 16 bytes output on the SSC Interface
- Baud rate 125-500 kbit/s
- Optically isolated DeviceNet interface
- I/O Slave messaging: Bit strobe, Polling, Cyclic & Change of State (COS) and Explicit messaging
- Acyclic Data and Parameter Data Mapping

Ethernet - Modbus-TCP AB6002

- Ethernet Baudrate 10/100 Mbit/s
- Supports Modbus TCP V1.0
- Supports UDP/IP & TCP/IP via Transparent socket interface
- Integrated FTP server provides easy file management using standard FTP clients
- Telnet server featuring a command line interface similar to the MS-DOS™ environment.
- Web server with SSI script capability, or support for Java applets and scripts
- Email client capability with SSI script support

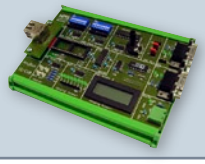
Ethernet - EtherNet/ IP AB6003

- Ethernet Baudrate 10/100 Mbit/s
- Supports EtherNet/IP adapter class with I/O server, Message client, and CIP message routing
- Supports UDP/IP & TCP/IP via Transparent socket interface
- Integrated FTP server provides easy file management using standard FTP clients
- Telnet server featuring a command line interface similar to the MS-DOS™ environment.
- Web server with SSI script capability, or support for Java applets and scripts
- Email client capability with SSI script support

Evaluation Board ABIC-EVB

With the Anybus-IC EVB it is possible to initialise the module and monitor the data exchange directly from a terminal program on a PC. The EVB is complete with all hardware to be able to set adress, baudrate and monitor the fieldbus status LEDs. It is also possible to read out (2 bytes) and set data (2 bytes) to the fieldbus master directly on the board. On the board, the SCI channel can be connected via the RS232 interface, for direct accces from a PC. Serial cabling are included in the kit for the SCI channel and the monitoring channel. Also included in the Anybus-IC EVB: Manuals for the modules and an easy startup, manual for the EVB. Example software, example schematics of carrier board

- Serial port for SCI comm. (with RS-232 line drivers)
- Serial port for the monitor interface (with RS-232 line drivers)
- Switches and LEDs for easy monitoring and setting of fieldbus data
- Baudrate and Station Number configuration via switches or monitor interface
- Possibilty to easy exchange between different Anybus-IC (fieldbuses)



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