Anybus®

S - Slave

High performance interchangeable slave interfaces supporting all major industrial networks

- Profibus
- Profinet
- DeviceNet
- EtherNet/IP
- ControlNet
- CANopen
- CC-Link
- Modbus-TCP
- Modbus-RTU
- EtherCAT
- Interbus
- Lonworks

and more...

The world's best selling fieldbus interface range supporting 17 industrial networks. Take a closer look at the embedded Anybus-S slave family.

The Anybus-S (slave) modules are designed for integration into industrial field devices that need to communicate with PLC's or PC's via industrial networks. The modules have their own high performance microprocessor which handles the entire communication protocol independently of the host application.

Typical applications for Anybus-S are frequency inverters, HMI and visualization devices, instruments, scales, robotics and intelligent measuring devices.

Designed for industrial applications, high performance and functionality

All Anybus-S modules have a standardized application interface supporting up to 512 byte of cyclic I/O data and additional support for acyclic parameter data. This is exactly what is required by standard fieldbus protocols such as Profibus-DP or DeviceNet and provides a reserve for future technologies and additional functionality in the host device.

The application interface is fully standardized regarding its mechanics, hardware and software features and thus all Anybus-S modules are easily interchangeable. Data and parameters which are not supported by all fieldbus systems are located in the fieldbus-specific part of the application interface.

Data exchange between the Anybus-S and the field device is handled by control registers, which specify the size of the I/O area and the watchdog interval between the module and the device. In addition, the application software interface provides module related data such as the network type, vendor information, software and hardware versions and the serial number of the module.

Example of a motion controller using Anybus-S Ethernet as its communication card

Standardized hardware and software interface

The application interface between the Anybus-S module and the host device consists of an on-board 2 KB Dual Port RAM. As all Anybus-S modules have the same hardware and software interfaces, the host device does not need to differentiate between the networks. The view from the host device on to the network is always the same.

The module is connected to the host device with a 34-pin connector. The Dual Port RAM allows the module and the host device to independently address different memory areas. Access to the Dual Port RAM can be interrupt-controlled or polled from the field device. A handshake mechanism is used between the module and the application program in the device, in order to ensure safe communication and data consistency even when transmitting large continuous data areas (e.g. analog values).

The Dual Port RAM is divided into memory areas for process data In and process data Out, parameter data via mailboxes and control and handshake registers. All areas are fully standardized and independent of the specific network protocol. Accordingly, the application software in the fieldbus device does not need to be modified when changing from one fieldbus type to another. It is only necessary to exchange the Anybus module. Specific fieldbus information can be read/written to the fieldbus specific data area reserved on the module.

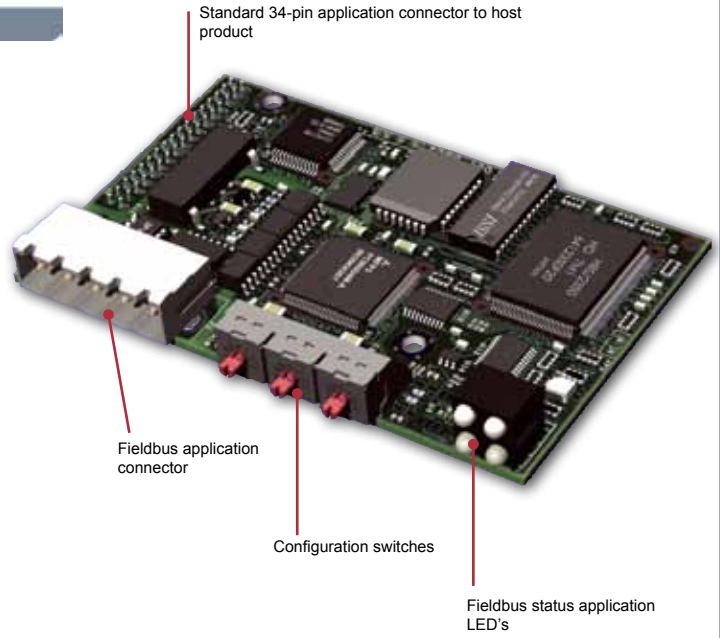
WHY USE ANYBUS-S MODULES?

- Connectivity to 17 different industrial networks with only one development
- All Anybus-S modules are fully interchangeable with each other
- Same hardware and software interface from the view of the host device
- Up to 70% savings in development costs
- Continuous technology maintenance by HMS
- Short time-to-market, typically only 1-3 months for several networks
- Proven Anybus technology - Over 1,000,000 Anybus modules sold

Anybus®
S-Slave

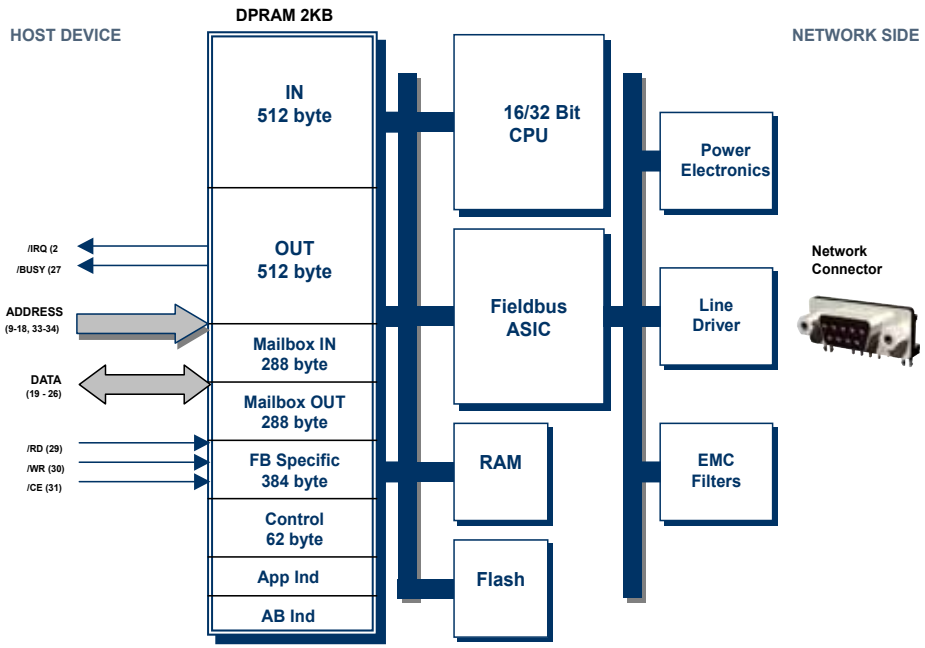
Available for:

Profibus-DP
Profibus-DPV1
DeviceNet
EtherNet/IP
EtherCAT
Profinet IO
Profinet IRT
Profinet F. Optic
Modbus-TCP
ControlNet
CANopen
CC-Link
Modbus Plus
Modbus-RTU
FIPIO
Lonworks
Interbus
Interbus F. Optic
FL-Net



Picture: Anybus-S CC-Link slave interface

Block schematic - Anybus-S slave



KEY FEATURES

- Credit card sized interfaces
- Interchangeable interfaces supporting 17 industrial networks
- 2 kbyte Dual Port RAM application interface
- Max 512 byte of cyclic Input data and 512 byte of cyclic Output data
- On-board microprocessor
- 256 byte mailbox interface extendable up to 2048 byte for parameter data
- Drivers and sample code available in C-Source code for easy implementation
- Quick and easy integration with sample code and evaluation board
- On-board power supply and isolation to meet each individual network specification
- 2-port Ethernet versions with integrated switch technology available
- Tested and verified for fieldbus conformance

TECHNICAL SPECIFICATION

- Size: 86 x 54 x 15 mm (L x W x H)
  2.13 x 3.38 x 0.59" (L x W x H)
- Power supply: +5 V 300 - 450 mA
- Operating temperature:
  0 °C to + 70 °C
  32 °F to + 158 °F
- Pre-conformity: 2004/108/ EC
  Emission: EN 61000-6-4
  Immunity: EN 61000-6-2
  UL and cUL Compliance: E 214107
- Tested and verified for network conformance
- RoHS compliance

Network specific supported features - Anybus-S slave family

Profibus-DP AB4005

- Complete Profibus-DP slave functionality
- Max 244 byte Input and 244 byte Output. Total max 416 byte In and Out
- Automatic baud rate detection (9600 bit/s - 12 Mbit/s)
- RS-485 optically isolated Profibus interface with on-board DC/DC converter
- Generic GSD file provided

Profibus-DPV1 AB4174

- Complete Profibus-DPV1 slave functionality
- Supports PA baud rate 45 kbit/s
- Supports class 1 and class 2 services
- Automatic baud rate detection (9600 bit/s up to 12 Mbit/s)
- RS-485 optically isolated interface with on-board DC/DC converter
- Generic GSD file provided

Profinet IO AB4392

- Complete Profinet IO device functionality
- Max.512 byte of Input and 512 byte Output data
- 100 Mbit/s full duplex
- RJ45 connector
- Powerful 32 bit processor for short cycle times
- Generic GSD file provided
- Dynamic web server, E-mail client and FTP

Profinet IRT AB4474

- Complete Profinet IO device with "IRT" functionality
- Max.220 byte of Input and 220 byte Output data
- 100 Mbit/s fast Ethernet with integrated 2-port real time switch and dual RJ45 connector
- Generic GSD file provided
- Dynamic web server, E-mail client and FTP

DeviceNet AB4004

- Complete DeviceNet adapter functionality
- Baud rate: 125-500 kbit/s
- Optically isolated interface
- Max 512 byte Input & 512 byte Output data
- DeviceNet supported features: I/O slave messaging, bit strobe, polling, cyclic and change of state
- Generic EDS file provided

AB4173-EtherNet/IP AB4582- 2-port

- Complete EtherNet/IP adapter functionality
- IP address settings configurable through on-board DIP switches, web page, DCP or DHCP
- Baud rate: 10/100 Mbit/s
- Transformer isolated interface
- Dynamic web server, E-mail client and FTP
- Generic EDS file provided
- 2-port version with integrated switch available. See website

AB4172- M-TCP AB4469- 2-port

- Complete Modbus/TCP server functionality
- IP address settings configurable through on-board DIP switches, web page, DCP or DHCP
- Baud rate: 10/100 Mbit/s
- Transformer isolated interface
- Dynamic web server, E-mail client and FTP
- 2-port version with integrated switch available. See website

ControlNet AB4007

- Complete ControlNet adapter functionality
- Network Access Port (NAP) RG-6 quad shielded cable
- Media redundancy
- Baud rate: 5 Mbit/s
- MacID node address setting
- Multicasts of both inputs and peer-to peer data
- Generic EDS file provided

CANopen AB4003

- Complete CANopen slave functionality
- Unscheduled data exchange support
- Selectable baud rates from 10 kbit/s to 1 Mbit/s
- MacID node address setting of up to 127 nodes
- Peer to peer messaging
- Optically isolated interface
- Generic EDS file provided

CC-Link AB4210

- Complete CC-Link slave functionality
- Total 128 I/O points (bit) and 32 words
- No of occupied stations: 1-4
- Supports "Remote Device" profile
- Baud rate: 156 kbit/s - 10 Mbit/s
- CC-Link Conformance according to BTP-05027-B specification
- Generic CSP file provided

Interbus AB4294

- Complete Interbus slave functionality
- Up to 20 byte of process I/O data PCP V.2.0 (selectable between 0,1,2,or 4 words)
- Possibility to define own PCP object with the dynamic mailbox interface
- Max amount of PCP data per message: 32 byte via default objects or 58 byte if defining own objects
- Baud rate: 500 kbit/s or 2 Mbit/s

Interbus F.Optic AB4293

- Complete Interbus slave functionality
- FSMA standard connectors conforming to IEC874-2 and DIN47258
- Based on OPC chipset with support for optical diagnostics
- Transmission media: plastic fibre, core 180 µm, clad 1000 µm: HCS (glass) fibre, core 200 µm, clad 230 µm
- Baud rate: 500 kbit/s or 2 Mbit/s

Lonworks AB4079

- Complete Lonworks slave functionality
- FT-X1 transceiver
- Configurable amount and type of network variables
- Support for self installation
- LonMark objects and profiles supported

Additional networks also supported by Anybus-S. Please visit www.anybus.com for more information.

Modbus Plus AB4080

- Complete Modbus Plus slave functionality
- Global database and peer-to-peer capabilities
- Max 256 words of Input and 256 words of Output data
- Baud rate: 1 Mbit/s
- RS-485 optically isolate interface
- Configuration of node ID and source ID via DIP switches

Modbus-RTU AB4219

- Complete Modbus RTU slave functionality
- Total 512 byte Input and 512 byte Output via DPRAM (up to 2048 byte I/O with internal memory).
- Baud rate: 1.2 kbit/s - 57.6 kbit/s
- Selectable RS232/RS485 interface via DIP switches

FL-Net AB4451

- Complete FL-Net device functionality
- Supports shielded (STP) & unshielded (UTP) cables
- FL-NET Class 1 node
- Customizable identity/profile information
- Up to 512 byte cyclical I/O in each direction
- Transformer isolated interface
- IP setting via DIP switches

Profinet F.Optic AB4571

- Profinet IO device conformance class C, with "IRT" functionality
- Max.220 byte of Input and 220 byte Output data
- 100 Mbit/s fast Ethernet with integrated 2-port switch
- 2x SC-RJ Fibre Optic onnectors
- Generic GSD file provided
- Dynamic web server, E-mail client and FTP

EtherCAT AB4455

- Complete EtherCAT node functionality
- CANopen over EtherCAT
- Real time exchange via PDO's and SDO's
- 2x RJ45 connectors
- Max. 512 byte PDO data in each direction
- Max. 2048 byte SDO data in each direction
- Generic EDS file provided

Customized versions for specific requirements possible - Contact your nearest HMS office

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 reports revenues of €33 million during 2008. HMS is a public listed company on the NASDAQ OMX Nordic exchange in Stockholm, ISIN-code: SE0002136242

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