



# Anybus<sup>®</sup>

## Communicator<sup>™</sup>

Serial RS-232/422/485 to network gateway.  
Ideal for connecting devices with serial inter-  
faces to all major industrial networks.

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

## Serial to fieldbus and industrial Ethernet gateway family with an easy 6 step network setup. Ideal for factory, building and process automation industries.

**Anybus Communicator can connect almost any product with a serial RS-232, RS-422 or RS-485 communication interface to fieldbus and industrial Ethernet networks. The Communicator performs as an intelligent converter between the serial protocol and the chosen industrial network. The translation between the serial protocol and the network is configured by using the “ABC ConfigTool”. Once you have completed your configuration for one network, you are able to reuse this configuration for all other supported industrial networks.**

### Easy translation of serial data to modern industrial networks

The Anybus Communicator always acts as a slave on the fieldbus or Ethernet network side.

#### Data mapping

All data from/to the serial sub-network is transferred over the fieldbus or Ethernet network as I/O data. During the translation process from the fieldbus or Ethernet network into the serial sub-network and vice versa, the I/O data is temporarily stored in an internal memory buffer inside the Communicator.

This is a very easy method for data exchange where the control system on the upper network (fieldbus or Ethernet) simply reads and writes data to pre-defined memory locations and the serial sub-network also uses the same local memory to read and write the data.

The internal processing of the I/O data inside the Communicator, instead of in the PLC, simplifies the integration of serial devices into modern industrial networks.

For the sub-network configuration, two different operational modes are selectable:

#### Generic Data Mode

This mode is based upon produce-consumer communication. There is no master-slave

relationship between the nodes on the sub-network and the Communicator. Any node on the sub-network, including the Communicator, can spontaneously produce or consume a message. A node does not have to reply to a message, nor does it have to wait for a query to send one.

#### Master Mode

When the Communicator acts as master on the sub-network, it uses a scan-list for communication with the slaves. The scan-list is defined with the ABC ConfigTool. Master mode is built on the request-response methodology, where the master sends requests and the slave responds.



In this example the Anybus Communicator connects the serial port of a micro drive to EtherNet/IP

### The “ABC ConfigTool” - one configuration for multiple networks

The translation between the upper network and the serial sub-network is defined via the ABC ConfigTool. This windows based software has an easy to use user interface and requires no programming. All translations are easily configured via pre-defined functions.

During configuration, the user can define which and how much data from the upper network shall be transferred to the sub-network. In addition specific start characters and/or trailing characters including checksum mechanisms can be defined and thus a complete sub-

network telegram frame is constructed. The Anybus Communicator uses a simple object based configuration instead of a complex programming language.

The ABC ConfigTool provides an efficient online help functionality and wizards for Modbus-RTU based configuration. On completion, the configuration is downloaded from the PC into the Communicator. Now the Communicator is ready to start the communication with its assigned devices on the sub-network.

The ABC ConfigTool also provides the functionality to save the configuration into a file. This makes it easy for OEM manufacturers to upload pre-defined configurations for instant usage of the Communicator by their end customers.

#### WHY USE THE COMMUNICATOR?

- Flexible translation between fieldbus or Ethernet and a serial RS-232/422/485 sub-network with no programming
- Once a configuration is completed, it can be reused for many other networks
- Easy adoption of almost any serial protocol
- Instant network connectivity for all devices with serial interface to all major industrial network without any changes
- One Communicator can connect multiple field devices to any network, providing a very cost effective connectivity solution



**Available for:**

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



**KEY FEATURES**

- RS-232/422/485 interface selection possible with ABC ConfigTool
- Max 512 byte of Input data and 512 byte of Output data
- Supports Modbus mode, generic data mode and configuration of custom protocols
- Baud rate on the serial interface selectable between 9.6 kbit/s and 57.6 kbit/s
- Multi-drop up to 31 nodes
- Line listener to analyze serial telegrams on the sub-network
- Password protection prevents unauthorized upload and download of configurations
- ConfigTool and Wizard for easy configuration and serial sub-network setup
- Multi language support, now supporting English, German, Italian, French, Swedish and Chinese

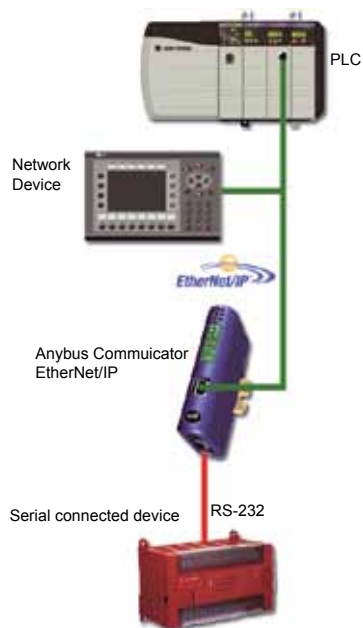
**TECHNICAL SPECIFICATION**

- Size: 120 x 75 x 27 mm (L x W x H)  
4.72 x 2.95 x 1.06" (L x W x H)
- Weight: 150g or 0.33lb
- Protection Class IP 20  
DIN-rail mounting  
PE via DIN-rail
- Galvanic isolation on sub-network
- Power Supply: 24 V ± 10 %  
Consumption: Max 280 mA on 24 V  
Typically 100 mA
- Operating temperature  
0 °C to + 55 °C  
32 °F to + 131 °F
- EMC Compliance: CE Marked  
Emission: EN 50081-2:1993  
Immunity: EN 61000-6-2:1999
- UL and cUL Compliance: E214107
- Tested and verified for fieldbus and network conformance
- RoHS compliance

**Typical uses within a factory network**

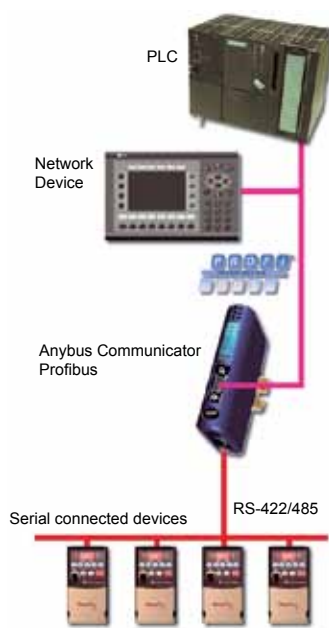
**SINGLE-DROP MODE**

Using RS-232, the Communicator is connected to one node on the serial sub-network















**MULTI-DROP MODE**

Using RS-422/485, the Communicator connects with up to 31 nodes on the serial sub-network



# Network specific supported features - Anybus Communicator

 Profibus - AB7000 <ul style="list-style-type: none"> <li>• Complete Profibus-DP slave functionality</li> <li>• Up to 244 byte Input and 244 byte of Output data</li> <li>• Automatic baud rate detection (9.6 kbit/s - 12 Mbit/s)</li> <li>• RS-485 optically isolated Profibus interface</li> <li>• GSD file provided by HMS</li> </ul>	 Profinet - AB7013 <ul style="list-style-type: none"> <li>• Complete Profinet IO device functionality</li> <li>• Up to 512 byte I/O data</li> <li>• 100 Mbit/s full duplex transmission</li> <li>• RJ45 connector</li> <li>• Powerful 32-bit processor for short cycle times</li> <li>• GSD file provided by HMS</li> <li>• IT functions: dynamic web and FTP server</li> </ul>	 DeviceNet - AB7001 <ul style="list-style-type: none"> <li>• Complete DeviceNet 2.0 adapter</li> <li>• Baud rate 125-500 kbit/s</li> <li>• Optically isolated DeviceNet interface</li> <li>• Max 512 byte Input and 512 byte Output data</li> <li>• DeviceNet supported features: I/O slave messaging, bit strobe, polling, cyclic &amp; change of state</li> </ul>	 Ethernet - AB7007 <ul style="list-style-type: none"> <li>• Complete EtherNet/IP level 2 I/O Server</li> <li>• Modbus-TCP class 0, class 1 &amp; partial class 2 functionality</li> <li>• IP address settings configurable through on-board DIP switches, web page, ARP or via ABC Config tool</li> <li>• Baud rate: 10/100 MBit/s</li> <li>• IT functions: dynamic web and FTP server</li> </ul>	 CANopen - AB7003 <ul style="list-style-type: none"> <li>• Complete CANopen slave functionality</li> <li>• Unscheduled data exchange support</li> <li>• Selectable baud rates from 10 kbit/s to 1 Mbit/s</li> <li>• MacID node address setting of up to 127 nodes</li> <li>• Peer-to-peer messaging</li> <li>• Optically isolated CAN interface</li> </ul>
 ControlNet - AB7006 <ul style="list-style-type: none"> <li>• Complete ControlNet 2.0 adapter functionality</li> <li>• Baud rate 5 Mbit/s/s</li> <li>• Max 450 byte Input and 450 byte Output data</li> <li>• Network Access Port (NAP)</li> <li>• Media redundancy</li> <li>• ControlNet supported features: peer-to-peer data</li> </ul>	 CC-Link - AB7008 <ul style="list-style-type: none"> <li>• Complete CC-Link slave functionality</li> <li>• Total 128 I/O points (bit) and 32 words</li> <li>• Number of occupied stations: 1-4</li> <li>• Supports profiles for a "Remote Device"</li> <li>• Baud rate: 156 kbit/s - 10 Mbit/s</li> <li>• CSP file provided by HMS</li> </ul>	 Modbus Plus - AB7002 <ul style="list-style-type: none"> <li>• Complete Modbus Plus slave functionality</li> <li>• Global database and peer-to-peer capabilities</li> <li>• Max 125 words of Input and 125 words of Output data</li> <li>• Baud rate: 1 Mbit/s/s</li> <li>• Configuration of node ID and source ID via DIP switches</li> </ul>	 Modbus-RTU - AB7010 <ul style="list-style-type: none"> <li>• Complete Modbus-RTU slave functionality</li> <li>• RS-232 or RS-422/485 selectable via on-board DIP switches</li> <li>• Max 512 byte Input and 512 byte of Output data</li> <li>• Optically isolated Modbus interface</li> </ul>	 Interbus - AB7012 <ul style="list-style-type: none"> <li>• Complete Interbus slave functionality</li> <li>• Up to 10 words of I/O data</li> <li>• 2 Mbit/s or 500 kbit/s</li> <li>• 2 x DSUB9 connectors</li> <li>• RS-422 transmission</li> <li>• Separate isolated Interbus interfaces</li> <li>• Supports PCP acyclic data</li> </ul>
 FIPIO - AB7011 <ul style="list-style-type: none"> <li>• Complete FIPIO slave functionality</li> <li>• Max 64 byte Input and 64 byte of Output data</li> <li>• Supports all FIPIO profiles and classes</li> <li>• RS-485 optically isolated FIPIO interface</li> </ul>	 ETHERCAT - AB7061 <ul style="list-style-type: none"> <li>• Transformer isolated Ethernet interface 100 Mbit/s full duplex</li> <li>• Double connectors RJ-45</li> <li>• Supports PDO communication CANopen PDO and SDO</li> <li>• XML file provided by HMS</li> </ul>	 Scope of supply <p>The Communicator is supplied in a single pack in low volumes. Included in the single pack:</p> <ul style="list-style-type: none"> <li>- One Anybus Communicator</li> <li>- CD with ABC ConfigTool and documentation</li> <li>- Serial configuration cable</li> <li>- D-sub connector with screw terminals for sub-network</li> <li>- Installation leaflet</li> </ul>	 Also available from HMS <p>For larger volumes, the Communicator can be delivered in bulk packs. Please contact your nearest HMS office or your local Anybus distributor. The bulk pack is supplied without accessories such as cable, connector, CD and manuals.</p>	 Also available from HMS <p>HMS has developed several versions of the Communicator with pre-defined functionality</p> <ul style="list-style-type: none"> <li>- Lonworks Communicator</li> <li>- Siemens USS Communicator</li> <li>- Modbus-TCP to RTU Gateway</li> </ul> <p>For more details please contact your nearest HMS office or visit the HMS web site at <a href="http://www.anybus.com">www.anybus.com</a></p>

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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