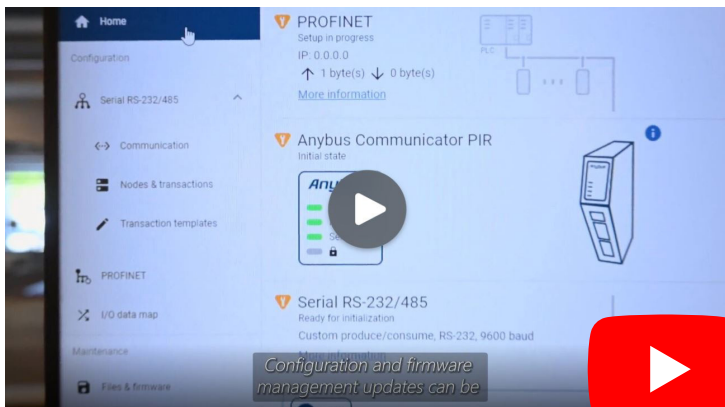# Simple industrial connectivity
using Anybus Communicator

HMS

Connect to anything anyway

Learn how Anybus gateways make industrial connectivity easy

Anybus has won Control Design's reader's choice awards for "Network protocol converters" over the past four years.

Watch the video on YouTube: LINK

Industrial gateways

Industrial gateways, also known as protocol gateways, protocol converters, or protocol translators are the easiest way to solve industrial connectivity issues. By acting as translators, they enable devices, machines, systems, or networks using different industrial protocols to exchange information.

Quality matters

Anybus by HMS Networks, is the global market leader in industrial network communication, with millions of products installed worldwide. HMS have been making Anybus gateways since 2000 and has earned a reputation for quality and longevity, as demonstrated by winning Control Design's "Network protocol converter bridge adapter" for the last four years.

Unrivaled portfolio

HMS' range of Anybus industrial gateways is the largest on the market. With more than 300 unique gateways, Anybus gateways can solve any industrial connectivity issue, regardless of the required protocols or systems.

Good friends and anticipating tomorrow's needs

We work closely with all the major network standards organizations, such as CLPA, PI, and ODVA, to ensure that our gateways are always compliant. Additionally, we constantly monitor developing trends to ensure that our gateways remain the best on the market.

Benefits of industrial gateways
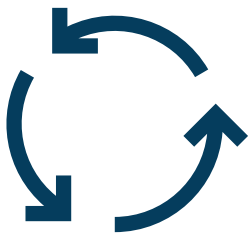
Legacy integration

You can connect older equipment (legacy devices) to modern networks without costly replacements. The gateway enables communication between the past and the present, preserving your investment.

Choose the best equipment

When investing in new equipment, focus solely on selecting the best equipment for your application. Don't worry if it doesn't use the same protocol as the control system - you can easily use a gateway to convert the protocol.
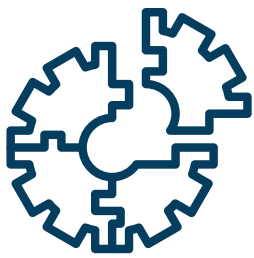
Together we're stronger

Remove islands of automation by connecting isolated devices to fieldbus or Ethernet networks. No one gets left behind!

User-Friendly configuration

Web-based setup tools simplify configuration. No complex programming required. Save configurations for future use, streamlining installation.

Gateway use cases

Anybus' gateways convert almost any industrial protocol enabling you to establish industrial connectivity quickly and easily. With more than 400 unique gateways, we can solve any industrial connectivity issue, regardless of the required protocols or systems. These are the two most commonuse cases:

Connect control systems running different protocols

EtherNet/IP   PROFINET

Connect PLCs running on different industrial networks. There's an Anybus gateway to transfer data over any combination of major industrial networks. No special cables, software, or training is required.
The gateway performs an intelligent protocol translation that allows devices and control systems to communicate seamlessly.

Connect any device to any control system

EtherNet/IP   PROFIBUS

Enable communication between Serial, CAN, ASi, CANopen, DeviceNet, EtherCAT, EtherNet/IP, Modbus TCP, or PROFIBUS devices and a control system (PLC). Anybus' comprehensive range of gateways can connect your device to almost any industrial fieldbus or Ethernet-based control system.
The gateway performs an intelligent protocol translation that allows devices and control systems to communicate seamlessly.

Ease-of-use matters

Learn why a easy-to-use product is a valuable time-saving ally for engineers, simplifying processes and enhancing efficiency

A product's ease of use has always been crucial, directly influencing user satisfaction and market adoption. However, its importance has recently increased in automation as the number of devices is growing, resulting in a higher workload for an already busy automation engineer.

Let's outline some of the challenges facing automation engineers:

1. Automation Engineers need to learn how to use a wide variety of machines and devices, including control systems, sensors, actuators, gateways, and various industrial protocols, each with its own features and configuration methods. Furthermore, technological advancements continually introduce new products or functionality adding to the complexity.

2. Compounding this complexity are vendor-specific platforms, where different vendors utilize proprietary platforms and software, requiring engineers to adapt to varying interfaces and workflows.

3. The lack of comprehensive training and support materials exacerbates the challenge, as engineers are often without sufficient resources such as manuals, step-by-step guides, and training videos.

4. The emergence of a new generation of engineers adds another layer to the complexity. Younger engineers are often not familiar with legacy protocols and are accustomed to intuitive, modern graphical configuration interfaces.

In this dynamic landscape, ease of use becomes paramount. Which is why making the Anybus Communicator easy to use was the core principle behind its development.
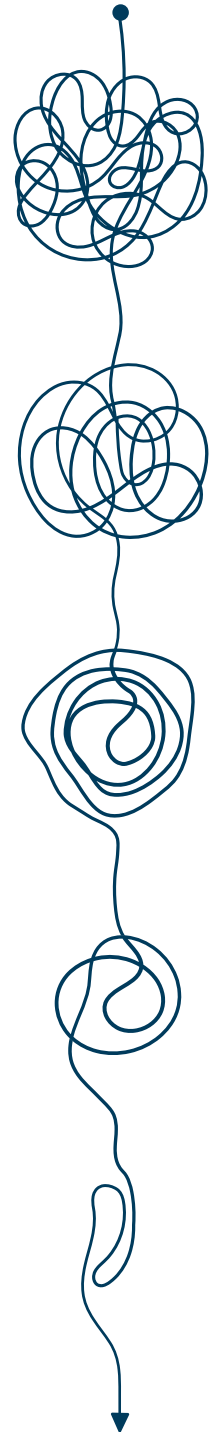
What makes Anybus Communicator easy to use?

Hardware

The hardware has been optimized with front facing ports and a slim form factor. The front-facing ports make it easy to connect cables, and the slim form factor saves space on the DIN rail.

The inclusion of a dedicated Ethernet configuration port simplifies the connection process, eliminating the need for specialized cables. Key information, including the web configuration IP address, is conveniently printed on the casing for quick reference.

Slim form factor to save space on the DIN rail

Key information such as power and port specifications printed on the side of the product

Cable tie slot for securitng cables

LED lights provides at-a-glance status of the gateway and network connection

Dedicated configuration port. Simply plug in a regular Ethernet cable, open a web browser and enter the IP address to start configure the device.

Forward facing ports at a slanted angle for easy access

Software

The software is designed to be intuitive and requires no programming skills from the engineer. Getting started is a straightforward process - simply connect a standard Ethernet cable to the dedicated configuration port, open a browser, and enter the IP address provided on the device.

Users are greeted with a modern graphical user interface designed for quick configuration through intuitive drag-and-drop functionality and clearly defined input boxes.

You can browse the user interface to get a look and feel of the configuration interface online. It's even possible to prepare configuration files without any product connected to your computer. Sign up here:
www.anybus.com/products/gateway-index/anybus-product-emulator

Configuration

The user interface is divided into tabs which makes it easy to access the different settings.

- The Configuration tab contains all port settings.
- The Maintenance tab allows firmware updates, file downloads, and configuration import/export.
- The Diagnostic tab provides event logs and visual data exchange representation.
- The Support tab offers quick assistance, product information, and a QR code for self-support.
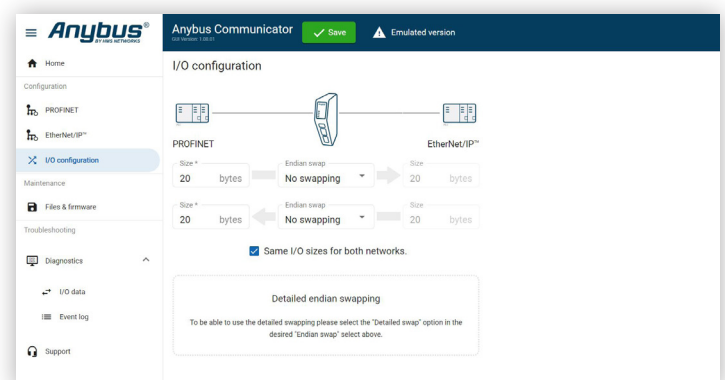
A seamless learning journey

Let's look into how the next-generation Anybus Communicator makes learning a breeze for users. Whether you're a seasoned professional or a newcomer, these features ensure a smooth onboarding experience:
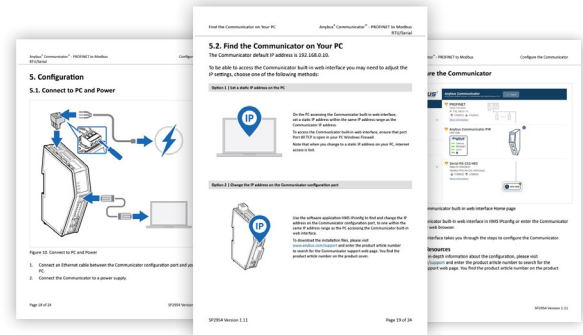

1. Consistent user interface across all motdels

The Anybus Communicator boasts a uniform user interface across all models. No more juggling different interfaces—just a seamless experience regardless of the use case or protocols you're working with. Whether it's connecting serial devices to control systems or interconnecting control systems, or working with PROFINET, PROFI-BUS, CC-Link, or any other protocol, the interface remains familiar and intuitive.

Test the Communicator UI: LINK

2. Step-by-Step startup guide and user manuals

Getting started with the Anybus Communicator is as easy as following a recipe. The step-by-step startup guide walks you through the initial setup. From installing the gateway on the DIN rail to configuring settings, each step is clearly explained. In addition, we provide comprehensive user manuals for troubleshooting, advanced configurations, and understanding every nook and cranny of the Communicator.

Browse support documents example: LINK
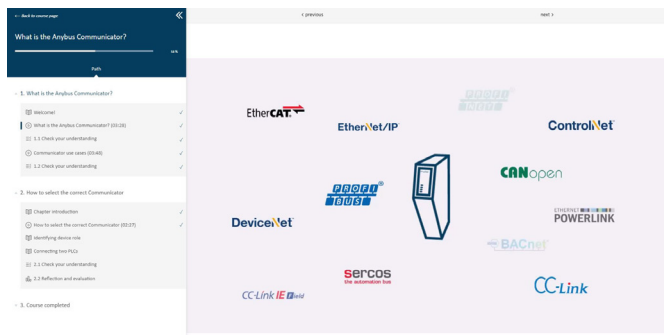
3. Free eLearning courses

To get a quick overview of the Anybus Communicator, check out our free eLearning courses! They serve as a friendly tour guide, highlighting key features, use cases, and how to select the right Communicator for your application. Whether you're sipping coffee or waiting for a train, the free eLearning courses fit seamlessly into your schedule.

Visit the HMS Academy: LINK
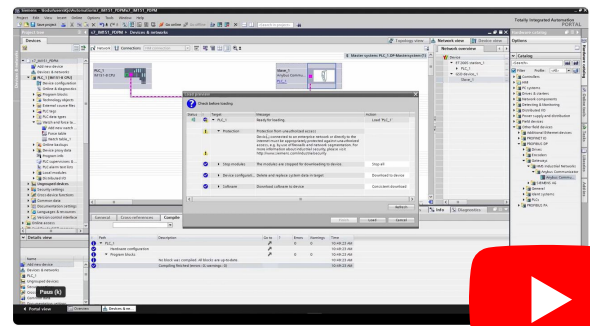
4. How-to-videos

Sometimes, it's best with a real example, performed by a real engineer. That's where the range of how-to videos comes in. These bite-sized clips demonstrate specific tasks, configurations, and troubleshooting steps. Whether you're adjusting parameters, diagnosing issues, or exploring advanced features, these videos provide visual clarity. Plus, they're perfect for sharing with colleagues or refreshing your memory on the go.

Visit the Anybus video Archive: LINK

*The Anybus Communicator combines intuitive design, comprehensive documentation, and visual aids to ensure that learning is a breeze. So, whether you're connecting legacy devices, bridging networks, or venturing into new protocols, the Anybus Communicator has your back.
Happy learning, and may your industrial networks thrive!*

Effortless troubleshooting

In the world of industrial communication, the next generation Anybus Communicator stands out not only for its functionality, robustness, and ease of use but also for its remarkable troubleshooting capabilities. Whether it's within the Anybus Communicator itself or in the connected networks, identifying issues is a simple process.
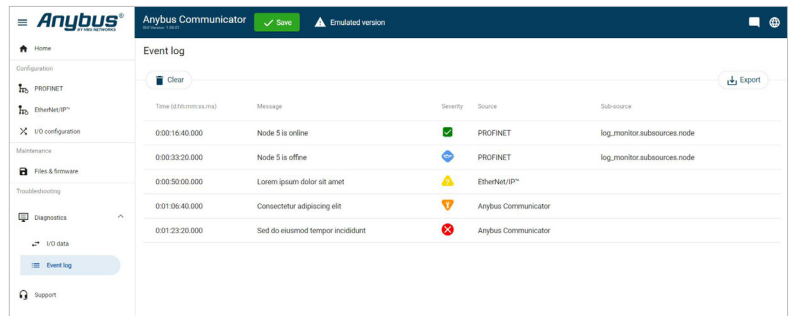
Diagnostics features

The Anybus Communicator's main troubleshooting strength lies in the diagnostics tab in the user interface. Here's what you can do:

- On the serial or CAN to control system gateways you can monitor how the data flows between the nodes and the gateway.

- For all gateways, you can track the I/O data and monitor the data flow between both sides of the network, including any endian conversions

- The event log is a powerful tool that records key information about events, including time of the event, message, severity, source, and sub-source (if relevant). Additionally, the log can be exported for further in-depth analysis.

The data flows and event log not only help troubleshoot errors within the Anybus Communicator but also aid in identifying and resolving errors in the connected networks.
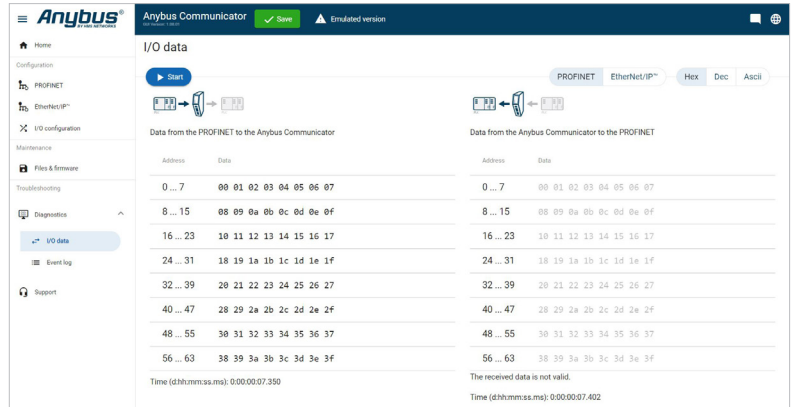
The Anybus Communicator makes it easy to monitor I/O data being sent between both sides of the network.

The event log provides an easy-to-understand list of issues, including the source.

Browse the support community articles: LINK

Global technical support

When it comes to technical assistance, our global support team has you covered. Here's why you can rely on us:

- Comprehensive product knowledge:
- Local support in 18 countries and distributors in over 40 countries
- Access a wealth of knowledge through our database of articles. These gems are written by engineers who've tackled the same tasks you're facing. Expect practical tips, tricks, and solutions.
- User-Friendly support portal:

Rest assured, we're here to make your technical journey smoother, wherever you are!

IDX's experience with the Anybus Communicators

To find out how automation professionals have found the next generation Anybus Communicator, we caught up with Jehrene Phillip, Industrial Communications Specialist at Industrial Data Xhcange (IDX).

With the next generation Anybus Communicator we've modified the hardware with a dedicated Ethernet configuration port, front forward ports and a screw-in serial cable connector. Did you find any of these hardware features useful?

The Ethernet ports are exceptional and incredibly user-friendly. The inclusion of dual ports now simplifies daisy-chaining Anybus Communicators together. Additionally, the dedicated Ethernet configuration port represents a significant enhancement, eliminating the need for a serial converter. This means we can now utilize readily available Ethernet cables on-site, eliminating the inconvenience of searching for specific serial cables that often go missing. The transition from the RJ11 connector used in older gateways to Ethernet is particularly noteworthy, as it aligns with current industry standards and streamlines installations. Furthermore, the replacement of the sub-D connector on serial units with a direct terminal connection is a marked improvement. The front-facing ports have also been well-received, especially by end users with minimal space availability, they have noted the neatness and compact integration into their panels. The angled design of the connection points allows for easier cable bending, reducing the need for sharp bends.

Another aspect of the hardware that stands out is the organization of LED lights, with pertinent information conveniently printed alongside them. This design upgrade eliminates the need to refer to a separate sheet, improving accessibility and user experience.

How did you find the new user interface?

The user interface (UI) experience was highly satisfying. I appreciated the immediate access to comprehensive information upon log in, as it provided clear guidance without the necessity of consulting the manual. The convenience of utilizing an IP address to access the web interface is particularly noteworthy, eliminating the need to download software, which often posed challenges for customers due to IT restrictions on their laptops. The combination of the IP address and intuitive UI has significantly enhanced customer satisfaction levels.

Did you use any features on the UI?

Yes indeed, apart from the general features that are required during configuration like adapting communication and protocol setting which have now been implemented on a useful left stacked library format in the UI, we also found that the endian swapping and duplication on both nodes and transactions within nodes very valuable. The endian swap proved to be highly effective for installations involving smaller byte sizes. Additionally, the duplication feature makes repetitive configu-

rations a breeze to implement. In these particular case studies, the mining company often implements pilot projects at specific sites, and once successful the rollout is then duplicated across other sites. The export/import of configuration files is highly useful for this type of work.

The IO data map makes it easy to work with the stored data and the ability to move your data within the memory space allows for optimizing the stored data in your application.

Did you use any of the diagnostic features?

Certainly, we frequently utilize the diagnostic features which prove its value. There's a scarcity of serial Modbus RTU diagnostic tools available, which is why I rely heavily on the Anybus communicator's live data analysis to troubleshoot Modbus RTU slave devices and examine configurations before implementing them on live networks.

The live data analysis feature also aids new customers significantly. I often recommend to them to initially set up one or two nodes and verify that everything operates as expected before deploying configurations to multiple nodes.

Furthermore, the event log within the diagnostics tab is highly beneficial. It's convenient how data is logged, allowing us to start or stop the log and export it as needed. This feature proves especially helpful when collaborating with end-users, enabling seamless integration, and providing valuable feedback based on the logged data.

Moreover, the event logs play a crucial role when multiple transactions are programmed or configured onto the unit and a single transaction suddenly fails. The log provides insights by displaying missed transactions along with relevant messages, serving as a guide to identify and address the underlying issue.

Contact HMS for the full interview and more interviews with other automation experts.

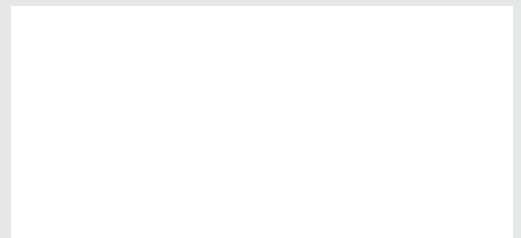**Jehrene Ann Phillip**
Industrial
Communications
Specialist

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The Industrial Data Communications Experts

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