Connectivity Solutions for Rockwell Automation

Fieldbus and Ethernet gateways - Embedded connectivity
Remote management - Remote PLC access - CAN Interfaces and gateways
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Our brands

Multi-network connectivity within fieldbus and industrial Ethernet
Anybus gateways and embedded interfaces connect automation devices such as drives, robot controllers and PLCs to any industrial network. This widens the market for device manufacturers and system integrators and substantially reduces costs for network connectivity.

Communication solutions for machines, safety and automotive
IXXAT solutions are especially tailored for communication within machines, safety systems and the automotive sector. The IXXAT offering includes both products and services needed to solve advanced communication issues.

Remote Management of Industrial equipment
Netbiter is a complete solution for remote management enabling supervision and control of field equipment from any location. The effects are substantially lower maintenance costs, less travelling, and better control.

HMS Industrial Networks
HMS Industrial Networks is a leading global supplier of industrial communication technology.

HMS provides network enabling solutions for Rockwell Automation products such as drives, I/Os, power regulators and gateway solutions.

Encompass Program
HMS participates as an Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™. Through Encompass Product Partners, customers can quickly locate complementary products that best solve any application challenges. These products are critical components or connectivity solutions that extend and enhance Rockwell Automation installations.

Flexible solutions for your industrial market

The industrial design of Anybus gateways matches all industrial networking needs, regardless of industrial market.

Flexible solutions for your industrial market

Automotive, factory automation, building automation, food and beverage, mining, oil and gas, water treatment and marine are just some of the industrial segments where Anybus gateways are used in conjunction with many Rockwell Automation customer applications today.

Encompass - a rewarding partnership

“HMS has been an active Encompass member for more than 10 years. The Encompass program has been very beneficial to HMS, not just as a way to get direct sales from Rockwell Automation channels, but also as a way to follow Rockwell Automation through the ever-changing world of industrial automation. Being on the road together with Rockwell Automation and talking to our mutual customers has given us crucial feedback about how our products perform in the field and how we can improve them.”

This has enabled us to develop a brand new generation of HMS products which have been tailor-made to help Rockwell Automation customers solve their connectivity needs, now and in the future.”

Executive Vice President
HMS America

Kevin Knake
HMS America
Solving connectivity problems on the factory floor

ANYBUS X-GATEWAY™
Network-to-network connectivity

1. Extend a production line
   Extend an existing production segment by connecting new machines that communicate on other networks.

2. Upgrade to industrial Ethernet
   The easy way to migrate from fieldbus to industrial Ethernet. Retrofit an old PLC system, and connect it to a newer system, keeping existing I/O modules and wiring infrastructure.

3. Make PLCs talk to each other
   Connect Rockwell PLC systems to PLCs from Siemens, Rockwell, Schneider, Mitsubishi, Beckhoff, ABB etc.

4. Create network segments
   Divide a network topology into logical segments. Create clear cuts between different parts of the plant, both logical and electrical.

5. Connect enterprise systems
   Integrate factory floor data with enterprise level systems such as SCADA, SAP, OPC etc.

6. Connect any industrial device
   Anybus Communicator enables you to connect any device to fieldbus or industrial Ethernet networks.

   If you are system integrator or plant owner, you can choose the best automation device for your needs, regardless of manufacturer.

   If you are a machine builder or device manufacturer, you can make your machines compatible with any network — the fastest and easiest way to enter a new market.

Enter new segments
Anybus gateways are suitable for a wide range of applications within factories, building, power & energy and infrastructure. For example, you can make building automation devices such as temperature sensors, energy meters, gas gauges and water meters part of your industrial network. This gives you better control and helps you reduce energy consumption.

Anybus Configuration Manager:
Connect. Configure. Done!
No matter which gateway you choose, you configure the network connection in the easy-to-use Anybus Configuration Manager. Simply connect the gateway via USB or Ethernet, create the configuration and you’re done!

Markus Bladh
Product Manager,
Gateways
Anybus Communicator™ - Protocol converter gateways

Anybus Communicator RTU

Converting from Modbus RTU protocols to ControlNet, DeviceNet and EtherNet/IP

With the Anybus Communicator RTU you can connect a non-networked device to any major fieldbus or industrial Ethernet network. The Communicator handles the complete Modbus RTU serial protocol without the need for extensive PLC function blocks.

The Communicator RTU has a selectable serial RS-232/422/485 interface making it possible to connect one or multiple devices using just one Communicator. This compact gateway consumes very little space in a cabinet and is easily mounted on a standard DIN rail.

When to use
Integrates non-networked devices and machines with a serial RS-232/422/485 interface to a DeviceNet/ControlNet or EtherNet/IP PLC control system.

Configuration
As the most common serial Modbus RTU interface is used, HMS takes away the hassle of scripting and serial frame building by using an easy 6-step visual configuration wizard that contains predefined Modbus RTU commands.

Features and benefits
• When converting the Modbus RTU protocol, the Communicator acts as Master on the serial network
• Predefined 6-step Modbus RTU configuration wizard
• Enables any automation device with a serial RS-232/422/485 Modbus RTU Slave interface to participate on a network
• No hardware or software changes are required for the connected automation device
• Compatible with all Allen Bradley and Guard PLCs
• Complete protocol conversion performed by the Communicator, no PLC function blocks required
• Save/Load function means a completed configuration can be reused for many other installations
• CE, UL, and HazLoc certifications
• Global free technical support and consultancy
• Configuration video available on www.anybus.com

Network specific features
1 = Network connector, 2 = Baud rate, 3 = I/O data, 4 = Other

ControlNet
1 = 2-Wire Coa (RUN) N/M, 2 = 5 Wire, 3 = 40 kbps N/C, 4 = Communications adapter, profile 1, 2, 3, 4
DeviceNet
1 = 150-Bit PLUS 2 = 150-250 bits 3 = 512 byte N/C, 4 = Communications adapter, profile 1, 2, 3
EtherNet/IP
1 = 10/100 Mbit/s, 2 = 10/100 Mb/s, 3 = 512 byte N/C, 4 = Communications adapter, profile 1, 2, 3, 4

Order information
Network: Part No:
ControlNet AB7001
DeviceNet AB7002
EtherNet/IP 2-port AB7072
*See page 53 for mechanical and technical specifications

Optional accessories
USB-RS232 configuration adapter Part No: 019570

Proven and trusted
The Anybus Communicator has been safely connecting devices to Rockwell Automation networks and systems for over 10 years.

Its flexibility means that it is used in a wide array of industries such as factory automation, mining, waste water management, Wastewater Building and HVAC and many more.

With the Anybus Communicators your devices are connected fast. Its unrivalled performance, flexibility and reliability gives you the peace of mind you need when solving your connectivity problems.

Nilske Selander
Product Manager - Anybus Gateways

Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the Communicator making it easy to include in your network system design.

Anybus Communicator DF1

Converting from DF1 protocols to ControlNet, DeviceNet and EtherNet/IP

The Communicator DF1 is used to enable non-networked automation devices to participate on DeviceNet, ControlNet and EtherNet/IP.

With its selectable serial RS-232/422/485 interface, the Communicator converts the DF1 protocol and enables devices such as Rockwell Automation Allen Bradley PLC 5 and SLC 500 among others, to participate on the network without the need for extensive PLC function blocks.

When to use
Integrates non-networked devices and machines with a serial RS-232/422/485 interface to a DeviceNet/ControlNet or EtherNet/IP PLC control system.

HMS takes away the hassle of scripting and serial frame building by using an easy visual configuration that allows for the easy generation of DF 1 scan lists.

Tech tip
Using the Communicator to connect to serial devices eliminates the need for a serial option card and the need for complex function block programming.

Furthermore, as the Communicator is not restricted to the length of a serial cable, it can be installed anywhere within the installation.

With its intelligent internal data mapping system, the Communicator enables even very slow devices to participate on the network without any performance restrictions.

Features and benefits
• When converting the DF1 protocol the Communicator acts as a DF1 Half Duplex device on the serial network
• Enables any automation device with a serial RS-232/422/485 DF1 interface to participate on a network
• No hardware or software changes are required for the connected automation device
• Compatible with all Allen Bradley and Guard PLCs
• Complete protocol conversion performed by the Communicator, no PLC function blocks required
• Save/Load function means a completed configuration can be reused for many other installations
• CE, UL, and HazLoc certifications
• Global free technical support and consultancy
• Configuration video available on www.anybus.com

Network specific features
1 = Network connector, 2 = Baud rate, 3 = I/O data, 4 = Other

ControlNet
1 = 2-Wire Coa (RUN) N/M, 2 = 5 Wire, 3 = 40 kbps N/C, 4 = Communications adapter, profile 1, 2, 3, 4
DeviceNet
1 = 150-Bit PLUS 2 = 150-250 bits 3 = 512 byte N/C, 4 = Communications adapter, profile 1, 2, 3
EtherNet/IP
1 = 10/100 Mbit/s, 2 = 10/100 Mb/s, 3 = 512 byte N/C, 4 = Communications adapter, profile 1, 2, 3, 4

Order information
Network: Part No:
ControlNet AB7006
DeviceNet AB7001
EtherNet/IP 2-port AB7072
*See page 53 for mechanical and technical specifications

Optional accessories
USB-RS232 configuration adapter Part No: 019570

PROTOCOL CONVERTER GATEWAYS
**Anybus Communicator RS-232/422/485**

Converting from RS-232/422/485 protocols to DeviceNet, DeviceNet and EtherNet/IP

With the Anybus Communicator RS-232/422/485 you can connect your non-networked device to any major fieldbus or industrial Ethernet network. The Communicator handles the complete serial protocol without the need for extensive PLC function blocks.

It supports RS-232/422/485 making it possible to connect one or multiple devices using one Communicator. This compact gateway consumes very little space in a switching cabinet and is easily mounted on a standard DIN rail.

**Protocol configuration**

For industrial devices with a serial RS-232/422/485 interface, HMS makes it possible to configure almost any Produce/Consume, Request/Response or simple ASCII protocols with its flexible serial frame building method.

**When to use**

Integrate non-networked devices and machines using a configurable serial RS-232/422/485 interface to DeviceNet/ControlNet or EtherNet/IP PLC control system.

**APPLICATION EXAMPLE SINGLE-DROP**

- Industrial machine connected via a custom ASCII based RS-232 protocol
- PLC function blocks

**APPLICATION EXAMPLE MULTI-DROP**

- Barcode scanners connected via RS-485 using a custom produce/consume protocol
- Other

**Diagram**

- Build your own RS-232/422/485-based protocol in a graphical environment in just a few minutes
- Proven and trusted intelligent gateways providing unrivalled flexibility and functionality
- No hardware or software changes are required for the connected automation device
- Compatible with all PCs from Rockwell Automation and with other manufacturers such as Siemens, Schneider, Mitsubishi etc.
- Complete protocol conversion performed by the Communicator, no PLC frame blocks required
- Save/Load function means a completed configuration can be reused for many other installations
- Free global technical support and consultancy
- CE, UKCA and HazLoc certifications
- Global free technical support and consultancy
- Configuration video available on www.anybus.com

**Network specific features**

<table>
<thead>
<tr>
<th>Protocol</th>
<th>1 = Network connector</th>
<th>2 = Baud rate</th>
<th>3 = I/O data</th>
<th>4 = Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>ControlNet</td>
<td>1 + 2 * CAN CAN CAN CAN CAN</td>
<td>512 IN/OUT</td>
<td>2 * CAN CAN CAN CAN CAN</td>
<td>12</td>
</tr>
<tr>
<td>DeviceNet</td>
<td>1 + STB BUS</td>
<td>2 * US-200 slave</td>
<td>2 * 512 byte IN/OUT</td>
<td>2</td>
</tr>
<tr>
<td>EtherNet/IP</td>
<td>2 * RJ45</td>
<td>2 * 10/100M</td>
<td>2 * 512 byte IN/OUT</td>
<td>12</td>
</tr>
</tbody>
</table>

**Order information**

<table>
<thead>
<tr>
<th>Network</th>
<th>Part No.</th>
<th>ControlNet</th>
<th>DeviceNet</th>
<th>EtherNet/IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>ControlNet</td>
<td>AB7006</td>
<td>AB7001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DeviceNet</td>
<td>AB7072</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*See page 53 for mechanical and technical specifications

**Did you know?**

- Using the Anybus Communicator together with the HMS M-Bus converter allows data from measuring devices onto DeviceNet, ControlNet or EtherNet/IP.
- M-Bus (Meter-Bus) is a standard protocol for remote reading of measuring devices. It is predominantly used in buildings, for example in water meters or other types of electricity meters, gas meters, water meters or other types of consumption meters.

**Optional accessories**

USB-85232 configuration adapter Part No: 019570

**Anybus Communicator CAN**

Converting from CAN-based protocols to ControlNet, DeviceNet and EtherNet/IP

The Anybus Communicator CAN allows almost any CAN device supporting an 11-bit or 29-bit identifier to be easily integrated into a Rockwell Automation control system.

The Anybus Communicator CAN performs an intelligent conversion between a CAN-based protocol of an automation device and the chosen DeviceNet, ControlNet or EtherNet/IP network. The Communicator CAN is a compact gateway that consumes very little space in a switching cabinet and is easily mounted onto a standard DIN rail.

**When to use**

Generic CAN has traditionally been used with sensors, barcode readers and drives within the European car manufacturing industry.

- Many of these devices have fieldbus support for PROFIBUS or CANopen. In addition they also have a generic CAN port. Through this port these devices can be integrated with a DeviceNet/ ControlNet or EtherNet/IP PLC control system.

**Protocol configuration**

Configuring CAN-based protocols can be quite tricky. With the Anybus Configuration Manager CAN, HMS provides you with a flexible and easy-to-use CAN frame building environment with several built-in CAN functions.

The configuration manager allows for a mixture of both Query/Response and/or Produce/Consume protocols to be configured.

**Network specific features**

<table>
<thead>
<tr>
<th>Protocol</th>
<th>1 = Network connector</th>
<th>2 = Baud rate</th>
<th>3 = I/O data</th>
<th>4 = Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>ControlNet</td>
<td>1 + STB BUS</td>
<td>2 * 10/100M</td>
<td>450 byte IN/OUT</td>
<td>12</td>
</tr>
<tr>
<td>DeviceNet</td>
<td>1 + STB BUS</td>
<td>2 * 10/100M</td>
<td>2 * 512 byte IN/OUT</td>
<td>12</td>
</tr>
<tr>
<td>EtherNet/IP</td>
<td>2 * RJ45</td>
<td>2 * 10/100M</td>
<td>2 * 512 byte IN/OUT</td>
<td>12</td>
</tr>
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</table>

**Order information**

<table>
<thead>
<tr>
<th>Network</th>
<th>Part No.</th>
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<tr>
<td>ControlNet</td>
<td>AB7318</td>
<td>AB7314</td>
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<tr>
<td>DeviceNet</td>
<td>AB7313</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*See page 53 for mechanical and technical specifications

**Did you know?**

- With Anybus Communicator CAN it is possible to configure the CAN protocol SAE J1939. J1939 is often used in the marine industry.

**Optional accessories**

USB-85232 configuration adapter Part No: 019570
Anybus X-gateway[®] - Network to network gateways

Anybus X-gateway DeviceNet and EtherNet/IP Scanner to fieldbus and Ethernet

Connecting CIP devices to any other Fieldbus and Industrial Ethernet network and PLC system

These Anybus X-gateways are bridges between a non-CIP PLC system (Siemens, Schneider, Mitsubishi etc) and Rockwell Automation devices with a DeviceNet or EtherNet/IP interface.

The X-gateway copies cyclic I/O data in both directions enabling data exchange between networks. This ensures a consistent information flow throughout the entire plant.

When to use
Integrating Rockwell Automation devices (e.g. drives) on DeviceNet or EtherNet/IP to another network and PLC system.

Utilizing the Scanner interface on the X-gateway means a Rockwell Automation PLC and RSNetworks is not required. This can be of benefit when retro-fitting an existing (non-CIP) installation with Rockwell Automation devices.

Configuration
EtherNet/IP Adapter setup via an on-board web interface and DeviceNet Adapter setup via the included NetTool-DN config tool.

Order information
DeviceNet Scanner: Part.No included NetTool-DN config tool.
DeviceNet Adapter setup via the on-board web interface and EtherNet/IP Adapter setup via an
Configuration
The X-gateway CANopen can be configured with the free and included CANopen Configuration Manager.

Order information
Network: Part No:
ControlNet A87303
DeviceNet A87302
EtherNet/IP 2-port A87306

Optional accessories
CANopen-to-USB configuration adapter. Part No: 021370

*CAN Configuration Manager available for download at www.anybus.com

Network specific features

Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.

Anybus X-gateway CANopen Master to ControlNet, DeviceNet and EtherNet/IP

Connecting a CANopen network to a Rockwell Automation PLC system

The X-gateway CANopen series provides CANopen Master (Manager) /Slave connectivity to a Rockwell Automation PLC system with ControlNet, DeviceNet or EtherNet/IP.

The fact that Anybus X-gateways combine high reliability and flexibility make them indispensable connectivity tools for system integrators and plant operators within all industries.

When to use
Integrates Rockwell Automation devices to other PLC systems with a CANopen network.

Coupling/Decoupling different parts of a machine or extending the physical network distance within an installation.

Configuration
The X-gateway CANopen can be configured with the free and included CANopen Configuration Manager.

Order information
Network: Part No:
ControlNet A87303
DeviceNet A87302
EtherNet/IP 2-port A87306

Optional accessories
CANopen-to-USB configuration adapter. Part No: 021370

*CAN Configuration Manager available for download at www.anybus.com

Network specific features

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Network specific features

X-gateway DeviceNet PROFINET IO Device AB7670
PROFIBUS Slave AB7663
Modbus-TCP Slave AB7630
DeviceNet Scanner: Part.No
PROFINET Network

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Order information
DeviceNet Scanner: Part.No included NetTool-DN config tool.
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ControlNet A87303
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When to use
Integrates Rockwell Automation devices to other PLC systems with a CANopen network.

Coupling/Decoupling different parts of a machine or extending the physical network distance within an installation.

Configuration
The X-gateway CANopen can be configured with the free and included CANopen Configuration Manager.

Order information
Network: Part No:
ControlNet A87303
DeviceNet A87302
EtherNet/IP 2-port A87306

Optional accessories
CANopen-to-USB configuration adapter. Part No: 021370

*CAN Configuration Manager available for download at www.anybus.com

Network specific features

Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.
**Anybus X-gateway Modbus-TCP Master to ControlNet, DeviceNet and EtherNet/IP**

**Connecting a Modbus-TCP network to a Rockwell Automation PLC system**

The Anybus X-gateway Modbus-TCP series are bridges between a Modbus-TCP network and a Rockwell Automation PLC system with ControlNet, DeviceNet or EtherNet/IP. The X-gateway copies cyclic I/O data in both directions enabling data exchange between networks. This ensures a consistent information flow throughout the entire plant.

**When to use**
Integrating Rockwell Automation devices and PLC systems to Modbus-TCP installations.

**Coupling/Decoupling**
Different parts of a machine or extending the physical network distance within an installation.

**Configuration**
Configuration is made over Ethernet via a built-in web page.

**Tech tip**
The X-gateway is equipped with a SD memory card slot for Easy Replacement®, configuration copy and backup.

**Order information**
- **Part No:** 021530
- **SD memory card, industrial grade**

**Accessories**
- 3D memory card, industrial grade
  - Part No: 021530

The X-gateway consists of two communication interfaces. The first interface provides Modbus-TCP Client (Master) functionality controlling up to 126 Modbus-TCP Slaves. The second interface provides ControlNet, DeviceNet or EtherNet/IP Adapter functionality.

- Allows for fast transparent transfer of I/O data between two networks
- High performance and short throughput delay, approximately 5 ms
- SD memory card slot for backup, configuration and Easy Replacement*
- Dual port switched Ethernet allows easy chaining on the Modbus-TCP and EtherNet/IP network

**Network specific features**
- **Modbus-TCP**
  - 1 = Network connector, 3 = Baud rate, 5 = Amount of slaves / adapters
- **ControlNet**
  - 1 = Network connector, 3 = Baud rate, 4 = Other
- **DeviceNet**
  - 1 = 2*5, 10/100 Mbit/s, 3 = 256 byte IO/CUT
- **EtherNet/IP**
  - 1 = 5 = Amount of slaves / adapters

**Network specific features**
- **ControlNet**
  - 1 = Network connector, 3 = Baud rate, 4 = Other
- **DeviceNet**
  - 1 = 250 kbit/s, 3 = 256 byte IO/CUT
  - 4 = Communications adapter, profile 10G
- **EtherNet/IP**
  - 1 = 2*5, 10/100 Mbit/s, 3 = 256 byte IO/CUT
  - 4 = Ethernet/IPv6 compatible

*See page 53 for mechanical and technical specifications

**Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.
Anybus X-gateway CANopen Slave to ControlNet, DeviceNet and EtherNet/IP

Connecting a CANopen network to a Rockwell Automation PLC system

This Anybus X-gateway is a bridge between a CANopen network and a Rockwell Automation PLC system with ControlNet, DeviceNet or EtherNet/IP. The X-gateway copies cyclic I/O data in both directions enabling data exchange between networks. This ensures a consistent information flow throughout the entire plant.

When to use
Integrating Rockwell Automation devices and PLC systems to CANopen installations.

Configuration
The included Anybus Configuration Manager X-gateway allows you to define the I/O data sizes on each network side and to define the data mapping and separation between cyclic I/O data and parameter data.

Order information
Part No: 019570

Network specific features
* Network connector: 1 = RJ45, 2 = BNC, 3 = D-sub, 4 = Other

<table>
<thead>
<tr>
<th>CANopen</th>
<th>ControlNet</th>
<th>DeviceNet</th>
<th>EtherNet/IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = I/O data, 2 = Cyclic I/O, 3 = Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Optional accessories
USB-RS232 configuration adapter Part No: 019570

Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.

Anybus X-gateway CC-Link Link Slave to ControlNet, DeviceNet and EtherNet/IP

Connecting a CC-Link network to a Rockwell Automation PLC system

This Anybus X-gateway is a bridge between a CC-Link network and a Rockwell Automation PLC system with ControlNet, DeviceNet or EtherNet/IP. The X-gateway copies cyclic I/O data in both directions enabling data exchange between networks. This ensures a consistent information flow throughout the entire plant.

When to use
Integrating Rockwell Automation devices and PLC systems to CC-Link installations.

Configuration
The included Anybus Configuration Manager X-gateway allows you to define the I/O data sizes on each network side and to define the data mapping and separation between cyclic I/O data and parameter data.

Order information
Part No: 019570

Network specific features
* Network connector: 1 = RJ45, 2 = BNC, 3 = D-sub, 4 = Other

<table>
<thead>
<tr>
<th>CC-Link</th>
<th>ControlNet</th>
<th>DeviceNet</th>
<th>EtherNet/IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = I/O data, 2 = Cyclic I/O, 3 = Other</td>
<td></td>
<td></td>
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</tbody>
</table>

Optional accessories
USB-RS232 configuration adapter Part No: 019570

Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.
When to use
Interconnecting PLC systems and networks from similar or different vendors.

Enabling Rockwell Automation devices with a ControlNet interface to participate on other PLC systems and networks.

Coupling/Decoupling different parts of a machine or extending the physical network distance within an installation.

Order information
- Network Ports
- Part No.
- Interface 1: ControlNet Adapter
- Interface 2: Other interface

Order information
- Network Ports
- Part No.
- Interface 1: DeviceNet Adapter
- Interface 2: Other interface

Configuration
- ControlNet I/O data size and other network configurations can be made in various ways depending on the X-gateway version selected.
- DeviceNet I/O data size and other network configurations can be made in various ways depending on the X-gateway version selected.

Network specific features
- Fast I/O data transfer with average timing between networks: 10-15 ms (approx 5 ms with CANopen and Modbus-TCP Master versions)
- Includes Anybus OPC server and IT functions such as web browser, e-mail and FTP client for versions supporting PROFNET and Modbus-TCP

*See page 53 for mechanical and technical specifications

Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.

Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.

When to use
Interconnecting PLC systems and networks from similar or different vendors.

Enabling Rockwell Automation devices with a DeviceNet interface to participate on other PLC systems and networks.

Coupling/Decoupling different parts of a machine or extending the physical network distance within an installation.

Order information
- Network Ports
- Part No.
- Interface 1: ControlNet Adapter
- Interface 2: Other interface

Order information
- Network Ports
- Part No.
- Interface 1: DeviceNet Adapter
- Interface 2: Other interface

Configuration
- ControlNet I/O data size and other network configurations can be made in various ways depending on the X-gateway version selected.
- DeviceNet I/O data size and other network configurations can be made in various ways depending on the X-gateway version selected.

Network specific features
- Fast I/O data transfer with average timing between networks: 10-15 ms (approx 5 ms with CANopen and Modbus-TCP Master versions)
- Includes Anybus OPC server and IT functions such as web browser, e-mail and FTP client for versions supporting PROFNET and Modbus-TCP

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Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.
Connecting an EtherNet/IP network to any other fieldbus or Industrial Ethernet network

This Anybus X-gateway is a bridge between an EtherNet/IP network and any other network from another PLC vendor.

X-gateways are designed for use in industrial automation plants where many different networks are used. They copy cyclic I/O data in both directions enabling a consistent information flow throughout the entire plant.

When to use

Interconnecting PLC systems and networks from similar or different vendors.

Enabling older fieldbus network migration to the EtherNet/IP network.

Coupling/decoupling different parts of a machine or extending the physical network distance within an installation.

Order information

Network: Part No: 019570

- AS-Interface Master
- CANopen Master AB7800
- Modbus TCP Master AB8706
- PROFIBUS Master AB7802
- CANopen Slave AB7838
- CC-Link Slave AB7841
- DeviceNet Adapter AB7834
- DeviceNet Adapter AB7835
- EtherCAT/IP Adapter AB7668
- EtherCAT Slave AB7848
- Interbus Slave AB7836
- Interbus Fiber Optic AB7837
- LonWorks AB7842
- Modbus Plus Slave AB7840
- Modbus RTU Slave AB7839
- Modbus-TCP Slave AB8732
- PROFIBUS Slave AB7832
- PROFIBUS 1D Device AB7649
- PROFIBUS 1D Device AB7942

Configuration

EtherCAT/USB adapter, Ethernet/IP and CANopen

- An easy way to transmit I/O data between an EtherNet/IP network and any other industrial network
- Interconnects Rockwell PLC systems with other PLC types
- Fast I/O data transfer with average timing between networks: 10-15 ms (approx 5 ms with CANopen and Modbus-TCP Master versions)
- Included Anybus OPC server for extended functionality
- Ethernet/IP interface with IT functions such as dynamic web server, supporting downloadable customer-specific web pages
- I/O data configuration via on-board interface or via the free and included Anybus Configuration Manager
- Get up-and-running quickly, no programming skills required
- Robust stand-alone metal housing with CE and UL certifications

Order information

Network: Part No: 019570

- Network connector, 2 = Baud rate, 3 = I/O data, 4 = Other

Network specific features

- EtherCAT: 1 = EIP group 2, 2 = 10/100 Mbit/s, 3 = 512 byte IN/OUT
- DeviceNet: 1 = DLR support, 2 = 100 Mbit/s, 3 = 512 byte IN/OUT
- CANopen: 1 = PDO and SDO

When to use

Integrating Rockwell Automation devices and PLC systems to EtherCAT installations.

Coupling/decoupling different parts of a machine or extending the physical network distance within an installation.

Configuration

The included Anybus Configuration Manager X-gateway allows you to define the I/O data sizes on each network side and to define the data mapping and separation between cyclic I/O data and parameter data.

Order information

Network: Part No: 019570

- ControlNet AB7847
- DeviceNet AB7846
- EtherCAT/USB AB7852

Optional accessories

USB RS-232 configuration adapter Part No: 019570

Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.

When to use

Connecting an EtherCAT network to a Rockwell Automation PLC system

This Anybus X-gateway is a bridge between an EtherCAT network and a Rockwell Automation PLC system with ControlNet, DeviceNet or EtherCAT/IP.

The X-gateway copies cyclic I/O data in both directions enabling data exchange between networks. This ensures for a consistent information flow throughout the entire plant.
Anybus® X-gateway™ - Network to network gateways

Anybus X-gateway J1939 network to EtherNet/IP

Connecting a CAN-based SAE J1939 protocol to a Rockwell Automation PLC system using EtherNet/IP

This Anybus X-gateway is a bridge between the CAN based SAE J1939 network and a Rockwell Automation PLC system with EtherNet/IP.

The X-gateway copies cyclic I/O data in both directions enabling data exchange between networks. This ensures for a consistent information flow throughout the entire plant.

When to use

As a low-cost stand-alone gateway used on oil and gas equipment, marine vessels, locomotives, pumping stations, generators, engine test cells and other mobile and stationary equipment.

Use to access engine parameters from a Programmable Logic Controller (PLC), HMI or PC and send data to the J1939 network for control and management.

Used as an on-vehicle gateway to interface a J1939 network to an on-board industrial automation-based control and monitoring system or HMI.

Configuration

Configuration of the X-gateway J1939 is simple using the free and included Windows™ based Anybus Configurator software. It enables the setting up of an I/O table containing selected J1939 PGNs and the rate that each will be read or written from the J1939 network.

The X-gateway consists of two communication interfaces. The first interface provides SAE J1939 connectivity. The second interface provides ControlNet, DeviceNet or EtherNet/IP Adapter functionality.

- An easy way to transmit I/O data between J1939 and EtherNet/IP. With additional support for Modbus-TCP.
- Fast I/O data transfer with average timing between networks: 10-15 ms
- Use to access engine parameters from a Programmable Logic Controller (PLC), HMI or PC
- Transmission and reception of all types of J1939 messages, including PDUs, broadcast destination and reception of messages (both connection based (FTP/CTS) and broadcast (BAM)) are supported.
- Included Anybus OPC server for extended functionality available with the EtherNet/IP version
- EtherNet/IP interface with IF functions such as digital web server, supporting downloadable customer specific web pages
- Robust stand-alone metal housing with Hazard, ATEX and CE certifications
- Configuration Manager X-gateway allows you to define the I/O data sizes on each network side and to define the data mapping and separation between cyclic I/O data and parameter data.

Did you know?

Anybus Communicator RTU with RTU Master functionality could be used instead if there is no existing Modbus RTU PLC Master within the installation.

Order information

Network No.: EtherNet/IP Part No.: AB7665

Network specific features

<table>
<thead>
<tr>
<th>Interface</th>
<th>Module type</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Other</th>
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When to use

Integrating Rockwell Automation devices and PLC systems to Modbus RTU installations.

Retro-fitting devices on an older installation with a Modbus RTU network into a modern CIP architecture.

Coupling/Descoupling different parts of a machine or extending the physical network distance within an installation.

Did you know?

Modbus RTU installations.

*See page 8

Order information

Network No.: Modbus RTU Part No.: AB7839

Network specific features

<table>
<thead>
<tr>
<th>Interface</th>
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When to use

Integrating Rockwell Automation devices and PLC systems to Modbus RTU installations.

Retro-fitting devices on an older installation with a Modbus RTU network into a modern CIP architecture.

Coupling/Descoupling different parts of a machine or extending the physical network distance within an installation.

Did you know?

Modbus RTU installations.

*See page 8

Order information

Network No.: Modbus RTU Part No.: AB7839

Network specific features

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When to use

Integrating Rockwell Automation devices and PLC systems to Modbus RTU installations.

Retro-fitting devices on an older installation with a Modbus RTU network into a modern CIP architecture.

Coupling/Descoupling different parts of a machine or extending the physical network distance within an installation.

Did you know?

Modbus RTU installations.

*See page 8

Order information

Network No.: Modbus RTU Part No.: AB7839

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</table>

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When to use

Integrating Rockwell Automation devices and PLC systems to Modbus RTU installations.

Retro-fitting devices on an older installation with a Modbus RTU network into a modern CIP architecture.

Coupling/Descoupling different parts of a machine or extending the physical network distance within an installation.

Did you know?

Modbus RTU installations.

*See page 8

Order information

Network No.: Modbus RTU Part No.: AB7839

Network specific features

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</table>

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When to use

Integrating Rockwell Automation devices and PLC systems to Modbus RTU installations.

Retro-fitting devices on an older installation with a Modbus RTU network into a modern CIP architecture.

Coupling/Descoupling different parts of a machine or extending the physical network distance within an installation.

Did you know?

Modbus RTU installations.

*See page 8

Order information

Network No.: Modbus RTU Part No.: AB7839

Network specific features

<table>
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<tr>
<th>Interface</th>
<th>Module type</th>
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</table>

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Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your system design.
Anybus® X-gateway™ - Network to network gateways

Anybus X-gateway Modbus-TCP Slave to ControlNet, DeviceNet and EtherNet/IP

Connecting a Modbus-TCP network to a Rockwell Automation PLC system

This Anybus X-gateway is a bridge between a Modbus-TCP network and a Rockwell Automation PLC system with ControlNet, DeviceNet or EtherNet/IP. The X-gateway copies cyclic I/O data in both directions enabling data exchange between networks. This ensures for a consistent information flow throughout the entire plant.

When to use
Integrating Rockwell Automation devices and PLC systems to Modbus-TCP installations.

Coupling/Decoupling different parts of a machine or extending the physical network distance within an installation.

Configuration
The included Anybus Configuration Manager X-gateway allows you to define the I/O data sizes on each network side and to define the data mapping and separation between cyclic I/O data and parameter data.

Order information
Network: Part No:
ControlNet AB7635
DeviceNet AB7636
EtherNet/IP AB7632

Optional accessories
USB RS232 configuration adapter Part No: 019570

Network specific features
1 = Network connector, 2 = Baud rate, 3 = I/O data, 4 = Other
Network specific features
1 = Modbus-TCP
2 = 512 byte IN/OUT
3 = Class 0, 1 and partial Class 2 slave functionality

Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.

The X-gateway consists of two communication interfaces. The first interface provides Modbus-TCP Slave functionality. The second interface provides ControlNet, DeviceNet or EtherNet/IP Adapter functionality.

The X-gateway copies cyclic I/O data in both directions enabling data exchange between networks. This ensures for a consistent information flow throughout the entire plant.

When to use
Integrating Rockwell Automation devices and PLC systems to PROFIBUS installations.

Retro-fitting an existing installation and migrating from PROFIBUS to Industrial Ethernet (EtherNet/IP)

Coupling/Decoupling different parts of a machine or extending the physical network distance.

Configuration
The included Anybus Configuration Manager X-gateway allows you to define the I/O data sizes on each network side and to define the data mapping and separation between cyclic I/O data and parameter data.

Order information
Network: Part No:
ControlNet AB7645
DeviceNet AB7844
EtherNet/IP AB7832

Optional accessories
USB RS232 configuration adapter Part No: 019570

Network specific features
1 = Network connector, 2 = Baud rate, 3 = I/O data, 4 = Other
Network specific features
1 = PROFIBUS
2 = 10/100 Mbit/s
3 = 5 Mbit/s
4 = 450 byte IN/OUT
5 = 10 Mbit/s, Change-of-state or Cyclic DC

Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.

The X-gateway consists of two communication interfaces. The first interface provides PROFIBUS DP-V1 Slave functionality. The second interface provides ControlNet, DeviceNet or EtherNet/IP Adapter functionality.

The X-gateway copies cyclic I/O data in both directions enabling data exchange between networks. This ensures for a consistent information flow throughout the entire plant.
Anybus X-gateway PROFINET I/O Slave to ControlNet, DeviceNet and EtherNet/IP

Connecting a PROFINET network to a Rockwell Automation PLC system

This Anybus X-gateway is a bridge between a PROFINET I/O network and a Rockwell Automation PLC system with ControlNet, DeviceNet or EtherNet/IP.

The X-gateway copies cyclic I/O data in both directions enabling data exchange between networks. This ensures a consistent information flow throughout the entire plant.

When to use

- Integrating Rockwell Automation devices and PLC systems to PROFINET installations.
- Coupling/Decoupling different parts of a machine or extending the physical network distance within an installation.

Configuration

The included Anybus Configuration Manager X-gateway allows you to define the I/O data sizes on each network side and to define the data mapping and separation between cyclic I/O data and parameter data.

Order information

- Network: Part No: ControlNet AB7651 DeviceNet AB7653 Ethernet/IP AB7849

Optional accessories

- USB-RS232 configuration adapter Part No: 019570

Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.

Did you know?

- The AIDA Group - Audi, BMW, Daimler, Porsche and VW standardize on PROFINET technology.
- Automation devices must fulfill specific PROFINET capabilities to be approved for their production facilities. As the X-gateway technology is certified by AIDA, Rockwell Automation equipment could be installed in these automotive plants.

When to use

- Integrating Rockwell Automation devices and PLC systems to PROFINET IRT installations.
- Coupling/Decoupling different parts of a machine or extending the physical network distance within an installation.

Configuration

The included Anybus Configuration Manager X-gateway allows you to define the I/O data sizes on each network side and to define the data mapping and separation between cyclic I/O data and parameter data.

Order information

- Network: Part No: ControlNet AB7941 DeviceNet AB7940 Ethernet/IP AB7942

Optional accessories

- USB-RS232 configuration adapter Part No: 019570

Using the Rockwell Automation Integrated Architecture Builder (IAB), engineers can integrate the X-gateway making it easy to include in your network system design.

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- The AIDA Group - Audi, BMW, Daimler, Porsche and VW standardize on PROFINET technology.
- Automation devices must fulfill specific PROFINET capabilities to be approved for their production facilities. As the X-gateway technology is certified by AIDA, Rockwell Automation equipment could be installed in these automotive plants.

When to use

- Integrating Rockwell Automation devices and PLC systems to PROFINET IRT installations.
- Coupling/Decoupling different parts of a machine or extending the physical network distance within an installation.

Configuration

The included Anybus Configuration Manager X-gateway allows you to define the I/O data sizes on each network side and to define the data mapping and separation between cyclic I/O data and parameter data.

Order information

- Network: Part No: ControlNet AB7941 DeviceNet AB7940 Ethernet/IP AB7942

Optional accessories

- USB-RS232 configuration adapter Part No: 019570

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When to use

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Order information

- Network: Part No: ControlNet AB7941 DeviceNet AB7940 Ethernet/IP AB7942

Optional accessories

- USB-RS232 configuration adapter Part No: 019570

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- Automation devices must fulfill specific PROFINET capabilities to be approved for their production facilities. As the X-gateway technology is certified by AIDA, Rockwell Automation equipment could be installed in these automotive plants.
Remotely connect to your Rockwell equipment in less than 10 minutes with Remote Access!

Use your Rockwell software tools remotely just as if you were on site. With a Netbiter gateway connected to your Rockwell PLC or machine, you can do programming or debugging from any location using RSLogix Designer, RSNetworx or RSLinx.

Just like being on site!
“Remote Access” is a feature within the Netbiter Remote Management solution which allows you to open up a secure connection to remote machinery and devices. Through this connection, it is possible to do remote configuration, programming or debugging of your own device from any location. Once the communication tunnel is open, you use your standard configuration software to configure the PLC or device.

How it works
On your computer, you run the Netbiter QuickConnect software and a secure tunnel is created to the Netbiter gateway which is connected to the remote device. You can then simply open RSLogix or RSLinx and configure or debug just as if you were on site.

The connection is established via Netbiter Argos in the cloud (www.netbiter.net) which acts as a routing portal. A Netbiter gateway registers at the Netbiter Argos cloud portal at power-up and establishes a remote connection without the need for opening inbound ports in firewalls or setting up VPN connections on site. The result is a secure connection which is set up in a matter of minutes.

Solid security
Security together with ease-of-use are the two main traits of Netbiter Remote Access. Data is encrypted both to and from Netbiter Argos and you can also choose a two-step verification method (you log in with a password and also get an SMS to verify your identity). This ensures secure data connection to your remote equipment.

Is your device ready for Remote Access?
Almost any device can be connected to Netbiter Remote Access. A list of verified devices can be found on netbiter.com and HMS can assist you in testing and verifying your particular device.

View video:
Setup in 7:04
See the full process from connecting the Netbiter to the PLC, establishing the connection and configuring your PLC. https://www.youtube.com/watch?v=okz4UdZ8MHI

Enable Remote Access inside Netbiter Argos.
Enter the IP address of your remote machine or PLC.
Open RSLogix and configure as usual.
The Netbiter Argos service “View and Control” enables you to monitor and control your field equipment in a fast and efficient way.

Solution for all industries
Netbiter offers complete end-to-end solutions for power generators, renewable energy, telecom base stations, tank monitoring, building and HVAC, industrial automation and much more.

Connect and go!
Simply connect any of the Netbiter EasyConnect™ communication gateways to your equipment in the field and you will have an instant connection to the cloud-based Netbiter Argos™ data center, hosted by HMS.

Cloud management features through Netbiter Argos™
Netbiter Argos is a web service for monitoring and controlling your field equipment. By logging on to Netbiter Argos at www.netbiter.net, you are presented with a host of “cloud management services” that enable you to monitor and control your equipment in a fast, efficient and professional way.

Multi-language support
The Netbiter Argos data center is securely hosted by HMS with redundant servers in several locations. Netbiter Argos is available in 9 languages: English, German, French, Italian, Portuguese, Spanish, Swedish, Japanese and Chinese.

Manage and Analyze provides functions such as
- A Netbiter Argos account with the ability to organize and manage multiple sites
- The ability to administrate users and individual access right
- Account administrator and free additional users (admin manages users, system configuration and deployment, user levels available for project manager and regular users)
- Google Map view for account view (all sites), project view and individual sites
- Reports (manually generated or scheduled data reports)
- API for enterprise and third party software integration, functions such as
  - Project & device information
  - Data Export services
  - Alarm states / history
  - Parameter read/write
- For Remote Access users Manage and Analyze provides the ability to consolidate and manage access to multiple sites

View and Control: Features in Netbiter Argos
- Visualization dashboards
- Alarm management
- Data trends / reporting
- Remote access - configuration

Manage and Analyze: Features in Netbiter Argos
- User and project management
- Netbiter API integration
- Visualization dashboards
- Alarm management
- Data trends / reporting
- Remote access - configuration
## TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>EC350</th>
<th>EC310</th>
<th>EC220</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Netbiter EC350</td>
<td>Netbiter EC310</td>
<td>Netbiter EC220</td>
</tr>
<tr>
<td><strong>Order code</strong></td>
<td>NB1005</td>
<td>NB1007</td>
<td>NB1000</td>
</tr>
<tr>
<td><strong>Ethernet</strong></td>
<td>10/100 Mbit/s</td>
<td>10/100 Mbit/s</td>
<td>-</td>
</tr>
<tr>
<td><strong>3G/GSM/GPRS</strong></td>
<td>3G: Five Band UMTS/HSPA+ (WCDMA/FDD) (850/800, 900 and 2100 MHz)</td>
<td>-</td>
<td>Quad band GPRS Class 12 (850/900/1800/1900 MHz)</td>
</tr>
<tr>
<td><strong>Relay output</strong></td>
<td>1 (max 24 V, AC/DC, 1 A)</td>
<td>1 (max 24 V, AC/DC, 1 A)</td>
<td>1 (max 24 V, AC/DC, 1 A)</td>
</tr>
<tr>
<td><strong>Digital inputs</strong></td>
<td>2 (Dry contact)</td>
<td>2 (Dry contact)</td>
<td>2 (Isolated, max 24 V DC)</td>
</tr>
<tr>
<td><strong>Analog inputs</strong></td>
<td>4, all supporting 0-10 V or 0-20 mA and 2 supporting PT100</td>
<td>4, all supporting 0-10 V or 0-20 mA and 2 supporting PT100</td>
<td>2</td>
</tr>
<tr>
<td><strong>Analog output</strong></td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td><strong>Serial port #1</strong></td>
<td>RS-232, 1.2 kbit/s to 115.2 kbit/s</td>
<td>RS-232, 1.2 kbit/s to 115.2 kbit/s</td>
<td>RS-232 (up to 115.2 kbit/s)</td>
</tr>
<tr>
<td><strong>Serial port #2</strong></td>
<td>RS-485, 1.2 kbit/s to 115.2 kbit/s</td>
<td>RS-485, 1.2 kbit/s to 115.2 kbit/s</td>
<td>RS-485 (up to 115.2 kbit/s (isolated))</td>
</tr>
<tr>
<td><strong>GPS</strong></td>
<td>Built-in (antenna via SMA-female)</td>
<td>-</td>
<td>External GPS via RS-232</td>
</tr>
<tr>
<td><strong>Antenna connector</strong></td>
<td>SMA female</td>
<td>SMA female</td>
<td>SMA female</td>
</tr>
<tr>
<td><strong>Protocols</strong></td>
<td>Modbus-RTU, Modbus TCP</td>
<td>Modbus-RTU, Modbus TCP</td>
<td>Modbus-RTU</td>
</tr>
<tr>
<td><strong>Wall mounting / DIN rail?</strong></td>
<td>YES/YES</td>
<td>YES/YES</td>
<td>YES/YES</td>
</tr>
<tr>
<td><strong>Mechanical dimensions (LxWxH)</strong></td>
<td>92 x 135 x 27 mm</td>
<td>92 x 135 x 27 mm</td>
<td>92 x 115 x 25 mm</td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td>-40 to +55 °C</td>
<td>-40 to +55 °C</td>
<td>-30 to +65 °C</td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td>12-48 VDC</td>
<td>12-48 VDC</td>
<td>9-24 V DC</td>
</tr>
<tr>
<td><strong>Power consumption (max at 24 VAC)</strong></td>
<td>4.5 W</td>
<td>2.5 W</td>
<td>2 W</td>
</tr>
<tr>
<td><strong>Certifications</strong></td>
<td>CE, Ex-IECEx, ATEX, Tele, ROM, FCC, IC, PTCRB (ATEX/IECEx pending)</td>
<td>CE, Ex-IECEx, ATEX, Tele, ROM, FCC, IC, PTCRB (ATEX/IECEx pending)</td>
<td>CE, Ex-IECEx, ATEX, Tele, ROM, FCC, IC, PTCRB (ATEX/IECEx pending)</td>
</tr>
<tr>
<td><strong>Housing</strong></td>
<td>Metal (Plastic version to come)</td>
<td>Metal (Plastic version to come)</td>
<td>Metal</td>
</tr>
<tr>
<td><strong>Remote access functionality</strong></td>
<td>YES</td>
<td>YES</td>
<td>-</td>
</tr>
</tbody>
</table>
Communication solutions for machines, safety and automotive

IXXAT®
canAnalyser for DeviceNet and CAN Layer-2 based networks

The canAnalyser is a powerful tool for analyzing and stimulating CAN and DeviceNet systems and devices.

Using the DeviceNet module extension received CAN messages can be interpreted according to the ODVA DeviceNet standard and received parameters are displayed according to Message Group, MAC ID and Message ID.

DeviceNet Module

Using the DeviceNet module the functionality can be extended by an interpretation of all received messages according to the ODVA DeviceNet standard and the display of received parameters according to Message Group, MAC ID and Message ID.

Incoming information is divided into:
- Unconnected Message
- I/O Message
- Duplicate MAC-ID Check Message
- Device Heartbeat Message
- Device Shutdown Message
- Offline Connection Set
- Reserved and invalid DeviceNet messages

and their content is decoded depending on their type (Explicit Messages, I/O Messages, Unconnected).

Signal Interpretation

The canAnalyzer is able to interpret and display the signals received within the CAN messages. This powerful signal interpretation is managed within a database. Databases are easily created and modified by using the included editor tool. Statistical values like bus load or error frames can be evaluated together with the signals from a database. New, script-based statistical functions also permit quick, easy adaptation to specific application needs.

Bundles

canAnalyzer and canAnalyzer-lite are also offered as bundle including in addition the DeviceNet module and a suitable USB-PIC Interface.

When to use

For the development of customized PC-based applications as well as for analyzing and test of DeviceNet systems.

Order information

Version | Order number
--- | ---
canAnalyzer | 1.0.013.3000

canAnalyzer lite | 1.0.016.0000

DeviceNet Module for canAnalyzer or canAnalyzer-lite | 1.0.018.0000

canAnalyzer Bundle DeviceNet (canAnalyzer lite + DeviceNet Module + USB-to-CAN II compact with gal. iso) | 1.0.013.30002

canAnalyzer lite Bundle DeviceNet (canAnalyzer lite + DeviceNet Module + USB-to-CAN II compact with gal. iso) | 1.0.016.00002

When to use

During development, testing, setup and service of DeviceNet and CAN Layer-2 based networks for analyzing data and stimulating devices and systems.

Order information

Version | Order number
--- | ---
canAnalyzer | 1.0.013.3000

canAnalyzer lite | 1.0.016.0000

DeviceNet Module for canAnalyzer or canAnalyzer-lite | 1.0.018.0000

canAnalyzer Bundle DeviceNet (canAnalyzer lite + DeviceNet Module + USB-to-CAN II compact with gal. iso) | 1.0.013.30002

canAnalyzer lite Bundle DeviceNet (canAnalyzer lite + DeviceNet Module + USB-to-CAN II compact with gal. iso) | 1.0.016.00002

canAnalyser - CAN-Interfaces and gateways

IXXAT canAnalyser - CAN-Interfaces and gateways

When to use

For customized PC based applications and conformance testing.

Order information

Version | Order number
--- | ---
USB-to-CAN V2 compact one CAN channel | 1.0.031.12001

USB-to-CAN V2 compact one CAN channel, galvanic isolation | 1.0.028.12002

CAN-IB100/PcLe one CAN channel | 1.0.031.11000

CAN-IB200/PcLe two CAN channels, galvanic isolation | 1.0.023.22001

Driver for ODVA DeviceNet Protocol Conformance Test Software | 1.0.0261.0000

For further interface variants please see www.ixxat.de

The canAnalyser is able to interpret and display the signals received within the CAN messages. This powerful signal interpretation is managed within a database. Databases are easily created and modified by using the included editor tool. Statistical values like bus load or error frames can be evaluated together with the signals from a database. New, script-based statistical functions also permit quick, easy adaptation to specific application needs.

Bundles

canAnalyzer and canAnalyzer-lite are also offered as bundle including in addition the DeviceNet module and a suitable USB-PIC Interface.

When to use

For the development of customized PC-based applications as well as for analyzing and test of DeviceNet systems.

Selected Interfaces

USB-to-CAN V2

Cost-effective CAN interface family for the USB port

The USB-to-CAN V2 is the ideal interface for analysis and mobile service of CAN and DeviceNet systems. It is available in different variants with either one or two CAN interfaces based on ISO 11898-2. Additional options include galvanically isolated CAN interfaces, sub-D9 plug or alternatively RJ45, an embedded version and bulk variants.

CAN-IB100/PcLe and CAN-IB200/PcLe

Flexible PC-capable CAN interface family

With the CAN-IB100/PcLe (passive) and CAN-IB200/PcLe (with 32 bit µC) IXXAT offers two interface boards based on a modern and highly modular concept. The interfaces are available with a standard or an optional low-profile slot bracket and ideally suited for PC based control or analyzing applications. The boards can be equipped with up to four CAN channels (Expansion Board) and an optional galvanic isolation. Besides the PcLe-Versions, the board family also includes variants for PcLe mini and PcLe 104.

Drivers

IXXAT® canAnalyser - CAN-Interfaces and gateways

PC Interfaces for DeviceNet and CAN Layer-2

For customized PC based applications and conformance testing.

IXXAT PC interfaces are offered in a large number of variants for all areas of application and for the most common PC interface standards. Each interface is delivered with a large driver package enabling the easy development of customer-specific applications and also is supported by our analyzing and test tools.

When to use

Drivers for Windows (VCI) and real-time operating systems (OSI) OCX, RTX, VxWorks, QNX and DQNX are included in the scope of delivery for each interface and enable the easy and fast development of customer specific applications. The drivers have an identical programming interface for all CAN interfaces allowing to switch between the interfaces without adapting the application at any time. The VCI CAN driver is available for 32/64 bit Windows operating systems and also includes a simple CAN bus monitor “miniMon”, which enables the transmission and reception of CAN messages.

In addition to customized applications, the CAN interfaces also form the basis for our comprehensive tool chain consisting of analysis and test tools.

Quality you can rely on

All IXXAT CAN interfaces are developed and produced in accordance with the highest quality standards and 100 % tested before delivery.
CAN repeaters enable the physical coupling of CAN and DeviceNet network segments. They can be used to easily change the topology of DeviceNet systems to set-up tree or star networks. The integrated galvanic isolation provides a built-in protection against over voltage and the anti-noise circuit eliminates the effects of EMI.

When to use
CAN repeaters are used to improve the system reliability, for the galvanic protection of system segments or devices as well as for reducing wiring costs.

Order information
On page 41

Highlights
- Cost savings due to simple wiring
- Increased system reliability
- Line protection up to 4 kV
- Almost no influence on real-time behavior
- DIN-Rail backbone bus to line up and connect the devices easily
- Fiber optic enables transmission in areas with high electromagnetic disturbances
- OEM versions and design in solutions available

Increased system reliability and protection
CAN and DeviceNet lines coupled with IXXAT repeaters are independent electric segments that can be optimally terminated in terms of signals. This substantially increases the system’s reliability.

The implemented monitoring function detects lines disturbed by permanent dominant levels. These lines are disconnected automatically, thus allowing the remaining network to continue functioning normally. After the fault has been eliminated, the disconnected segment is automatically reconnected to the network.

Depending on the type of repeater, the CAN lines are protected among each other and against the power supply up to 4 kV. In addition, the built-in CAN bus choke provides protection against signal peaks.

System extension and increased number of nodes
The freedom of using drop-lines and star topologies simplifies the wiring and allows system layouts which could not be realised using the common line structure (Picture 1).

Furthermore, according to the transceiver output capacities, the division of a CAN system into several subsystems, connected via CAN repeaters, increases the maximum number of bus nodes.

Fast and transparent
Using repeaters does not influence the real-time behavior of a system because in terms of transmission behavior, it corresponds to a network that consists only of lines.

Depending on Repeater version or physical layer, typical signal delay is between 150-300 ns, which is equal to a 30-60 m line length. Data transmission is transparent, so it can be used with any higher layer protocol (e.g., DeviceNet, CANopen) or customer-specific protocols.
**CAN Bridges and Gateways**

Easy system extension and remote access for CAN and DeviceNet systems

When to use

CAN bridges are used for increasing the system extension, to increase the system reliability and to couple systems over larger distances using Ethernet or Bluetooth.

Order information

On page 41

When to use CAN bridges are used for increasing the system extension, to increase the system reliability and to couple systems over larger distances using Ethernet or Bluetooth.

**Specifications**

- **Product**
  - CAN-CR200
  - CAN-CR210
  - CAN-CR220
  - CAN-Rep
  - FO-Rep

- **Description**
  - Stackable ISO 11898-2 CAN repeater
  - Stackable ISO 11898-2 fiber optic converter
  - ISO 11898-2 CAN repeater with 4 kV galvanic isolation
  - ISO 11898-2 CAN repeater with low speed option
  - ISO 11898-2 fiber optic converter

- **CAN bus interface**
  - 2 x ISO 11898-2
  - 1 x ISO 11898-2
din rail bus
  - 2 x ISO 11898-2
din rail bus

- **Integrated CAN bus termination**
  - Switchable

- **Galvanic isolation**
  - CAN 1 / CAN 2: 1 kV, 1 sec.
  - CAN 1 / CAN 2 / PWR: 1 kV, 1 sec.

- **LED indicators**
  - Transmission: Defect segment
  - CAN-connector: SUB-D9
  - LED connection: -
  - CAN-connection: -
  - LED-connection: -
  - OF plug: -

- **Baudrate**
  - All baudrates

- **Transmission delay**
  - approx. 200 ns (equal to 40 meter bus length)
  - approx. 300 ns (equal to 60 meter bus length)
  - approx. 200 ns (equal to 40 meter bus length)
  - approx. 300 ns (equal to 60 meter bus length)

- **Power supply**
  - 9-32 V DC, 1.5 W typ., via screw terminals
  - 9-32 V DC, 3 W typ., via screw terminals
  - 9-32 V DC, 1.5 W typ., via screw terminals
  - 9-35 V DC, 3 W typ., via screw terminals

- **Order number**
  - 1.01.0067.44010
  - 1.01.0068.46010
  - 1.01.0063.01020

**Accessories**

- T bus connector, Order no. 1.04.0573.00000

**Highlights**

- Cost savings due to simple wiring
- Allows larger system expansion
- Filter and conversion functionality
- Increased system reliability
- Line protection by galvanic isolation
- Bridging of large distances and easy system access using Bluetooth, Ethernet...
- OEM versions and design in solutions available

**Application scenario in wind turbine**

Three pitch control drives shall communicate with the master controller via CAN. IXXAT CAN Repeaters enable star connection of the individual blades and enable stable communication by eliminating EMI effects and rebuild signals for transmission via sliprings.

**Certifications**

- CE, FCC

**HMS also offers OEM versions of its products and develops highly customized hardware and software solutions for its customers. Customisation of the CANbridge can be easily performed by the customer itself using the Application Development Kit offered for the CANbridge.**
CAN-Bus-Tester 2 (CBT 2)

Easy and powerful analysis of the CAN bus physics and the CAN protocol

The CAN-Bus-Tester 2 is a universal diagnosis tool for maintenance of CAN and DeviceNet systems.

When to use
Measuring instrument for the commissioning, analysis, monitoring, troubleshooting and maintenance of CAN and DeviceNet systems.

Order information
Version Order number
CAN-Bus-Tester CBT 2 1.04.0402.00000

Optional extensions
Tool Add-on 1.04.0402.00001
DeviceNet Add-on 1.04.0402.00002

Features
- Analysis of the signal-to-noise ratio of all telegrams (v-level, turbo, faults)
- Integrated oscilloscope with data interpretation for telegram analysis
- Comprehensive trigger conditions for fault localisation (logical and physical errors)
- Monitoring of bus status, bus load, error telegrams
- Wiring test (termination resistance, short circuits, interruptions, loop resistance, line length)
- Automatic baud rate detection
- Simple connection to CAN systems thanks to automatic baud rate detection and BusScan
- Simple operation via Windows program
- Simple generation of test protocols
- CAN monitor for transmission and reception of CAN messages (optional)

Content of delivery
- CAN-Bus-Tester (CBT 2)
- CAN bus accessories
  - 6 adapter cables (SUB-D, Open style, M12, 7/8", SAE J1939-11, SAE J1939-13)
  - Shorting plug (SUB-D, Open style, M12, 7/8", SAE J1939-11)
  - Termination resistor (SUB-D, M12, 7/8", SAE J1939-11)
  - 5 or 9 adapter (M12, 7/8", SAE J1939-11)
  - Adapter PCB for simple connection of an oscilloscope
- Power unit (100 V - 240 V / 50-60 Hz) with power cable (EU, UK, USA/Japan)
- BNC cable, USB cable
- User’s manual incl. CD with USB driver and application software
- Robust, lockable case

CIP Safety Protocol Stack

For the development of customized CIP Safety target and originator devices (Master/Slave)

The CIP Safety protocol software, developed by IXXAT on behalf of SI and a consortium of companies, allows the implementation of CIP Safety targets (slaves) and CIP Safety originator (master) devices based on sercos or EtherNet/IP. The software is operating system independent (runs within and without an operating system) and can be implemented on various microcontroller systems.

When to use
Fast and easy implementation of the CIP Safety functionality into own devices according to the CIP Safety specification Edition 2.5.

Order information
Version Order number
EtherNet/IP Target 1.02.0501.Lxxx
EtherNet/IP Originator On request

Supplementary services
Hardware and software development services
As development partner we support you at the implementation and portation of CIP Safety, at the development of safety applications and safety hardware as well as at the certification: At this, you can benefit from our comprehensive CIP Safety know-how and our competence in the development of safety hardware and software.

Features
- Operating system independent - Runs with and without an operating system
- Supports CIP Safety on EtherNet/IP and sercos
- Support of multiple CIP Safety instances
- Designed according to IEC 61508 for applications
- up to SIL-3 with support of redundant processor architectures
- Interfaces enable easy porting to different hardware and software platforms
- Simplified integration and re-certification on any target systems
- TÜV pre-certification and included unit tests simplify the required recertification after porting to the safe target platform significantly
- Suitable for different processor architectures and families with Little and Big Endian support, such as TMS320, ColdFire and ARM
- Also prescripted by ODVA CIP Safety conformance test

IXXAT® CIP Safety for EtherNet - CAN-Interfaces and gateways

IXXAT® CAN-Bus-Tester 2 - CAN-Interfaces and gateways

IXXAT® DeviceNet Slave Protocol stack

The DeviceNet Slave Protocol Software allows an easy and quick development of DeviceNet devices. All communication mechanisms defined in the DeviceNet Specification are supported, allowing the developer to concentrate entirely on the actual application.

The DeviceNet Slave Protocol software is delivered as C source code.

For further information please visit the IXXAT webpage: www.ixxat.de
Proven and trusted network interfaces installed in millions of industrial devices worldwide

Anybus® Embedded modules
For over 20 years, Anybus® embedded modules have provided ControlNet, DeviceNet and EtherNet/IP connectivity capabilities for all types of industrial devices.

Instant CIP and other network connectivity with just one development
It doesn’t matter if you manufacture robots, drives, weight scales, barcode scanners or any other industrial device.

Anybus modules will seamlessly integrate into your device and enable you to connect to over 20 different industrial networks.

You choose the solution that meets your demands regarding size, physical interfaces, performance, power consumption, interchangeability and so on.

With Anybus, you will get:
• Global connectivity which will open up new markets for your product.
• A faster ROI and shorter time to market.
• A future-proof solution. Avoid worrying about new networks, network upgrades, maintenance costs and conformance issues.

One development project gives you access to all networks
During the development project, you design the Anybus module into your product.
You implement the Anybus driver in your processor which enables your product to exchange data with the Anybus module. Your product can now participate on the chosen network.

Once you have implemented the Anybus module, your device has full network interchangeability. Simply plug in another Anybus module to offer your product to any market or business segment.

Why Anybus?
"By choosing Anybus, you make sure that you have the latest industrial connectivity technology inside your product. Anybus embedded solutions are built on HMS’s own network processors and combine low costs, flexibility and low power consumption with the performance you need.
Since Anybus incorporates expertise gathered from thousands of device implementations, plus original technology from the network founders, you can rest assured that you get a fast and easy design project, and that there is proven technology inside your product."

Leif Malmberg, Product Line Manager, Embedded Solutions, HMS

Anybus® Embedded - Interchangeable fieldbus and Ethernet connectivity solutions

One CompactCom integration — access to all networks!
The Anybus CompactCom family provides instant connectivity to any CIP or 17 other industrial networks with just one fast, one-time development.

With CompactCom you can keep the same drivers and configuration while switching between the different form factors or networks. This flexibility makes the CompactCom the most compelling alternative to extensive in-house development.

Anybus CompactCom overview
Quick implementation that covers many networks and flexible form factor make Anybus CompactCom a safe choice. CompactCom’s unique generic interface knots together I/O parameters, and diagnostic functionality which creates total transparency when it comes to the data exchange between the network and the device.

- Cost, size and performance optimized family of communication interfaces for a wide range of industrial automation devices.
- Provides instant connectivity to all CIP networks as well as any other network through only one development.
- Switch networks or form factors and keep the same driver and configuration.
- All new and future network updates and enhancements maintained by HMS.
- Short in-design with free assistance from HMS ensures a fast time to market.
- Pre-certified at ODVA for full interoperability and network compliance.
- 3.3 volt design with low power consumption and high data throughput.
- EtherCAT/IP version available with an integrated 2-port switch.
- Beacon-based DLR (Device Level Ring) and linear network topology supported on EtherCAT/IP.
- All modules available with or without plastic housing.
- M12 connectors for IP65/67 available for DeviceNet & EtherCAT/IP.

If you need fast EtherCAT/IP communication
The Anybus CompactCom M40 enables fast communication between your device and EtherCAT/IP. The module supports generic device profiles and comes with a dual port switch implemented in the network processor — the Anybus NP40.

Beacon-based DLR, QuickConnect Class A and CIP energy objects are other supported features.

Used with automation devices such as:
- HMIs
- Drives
- Bar-code scanners
- Welding controllers
- Valve manifolds
- Robot controllers
- Micro PLCs
- Weigh scales
- I/O blocks
- Temperature controllers
- RFID applications

Network specific features
- Ethernet version: 1.3, 2.0, 3.0, 3.2, 3.2LC, 3.0C
- NUT2: 4 x 
- Galvanic isolated bus electronics.
- CIP forwarding support.
- 3.3 volt design with low power consumption and high data throughput.
- Quick implementation that covers many networks and flexible form factor make Anybus CompactCom a safe choice.
- CompactCom’s unique generic interface knots together I/O parameters, and diagnostic functionality which creates total transparency when it comes to the data exchange between the network and the device.
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- All modules available with or without plastic housing.
- M12 connectors for IP65/67 available for DeviceNet & EtherCAT/IP.

Features
- Fast data transfer: Up to 1448 bytes of process data in each direction.
- Up to 1500 bytes of explicit messaging.
- Very low latency <30µs.
- Event-based interface method enables easy access to input and output data at any time.
- Fast, event-based application hardware interfaces: 8/16-bit parallel and high speed SPI. (I/O shift register interface) is also available.
- A complete, interchangeable communication module with a dual port switch.
- One hardware platform for all Ethernet versions. Simply download new firmware to enable communication with another network for example PROFINET or EtherCAT.
- Firmware management tool enables easy download via FTP or serial connection.
- Extended flash-based file system with two-disc access (internal and external).
- Socket interface handling the complete Ethernet frame (support for 20 socket connections).
- Solid security: Mandatory software signatures prevent unauthorized software to be downloaded to the module.
- Profile enabling functionality (add selected profile).
- Short in-design with free assistance from HMS ensures a fast time to market.
- Pre-certified for network compliance (enables faster network certification).

CompactCom 40-series
The Anybus CompactCom 40 series — communication module products in chip, brick and module formats. These are all built on the Anybus NP40 processor making them especially suitable for modern and demanding industrial applications.

Innovative mounting
The Anybus module plugs into a CompactFlash™ connector which is integrated into the host PCB. HMS offers a CompactFlash connector specifically tailored for the CompactCom module.

Best-in-class processor
The M40 is equipped with the best network processor on the market according to independent analyst firm Frost & Sullivan.
**Technical Details - CompactCom M30 Modules**

- **Dimensions (L • W • H):** 51•37•16 mm, 2.01•4.46•0.63" (modules without housing)
- **Protection class:** IP20
- **Hazardous Locations:** Hazardous Locations: Includes parallel and serial application interfaces and full pass-through for serial data.
- **Application Interfaces:** Asynchronous serial interface with baud rate between 19.2 kbps - 625 kbps
- **Power:** 24 VDC ±10%
- **Weight:** 150 g, 0.33 lb

**Technical Details - CompactCom M40 Modules for EtherNet/IP**

- **Dimensions (L • W • H):** 51•37•16 mm, 2.01•4.46•0.63" (modules without housing)
- **Protection class:** IP20
- **Hazardous Locations:** Hazardous Locations: Includes parallel and serial application interfaces and full pass-through for serial data.
- **Application Interfaces:** Configurable CAN 1.0, 2.0A and 2.0B based protocols
- **Power:** 24 VDC ±10%
- **Weight:** 150 g, 0.33 lb

**Technical Details - CompactCom™ 40-series**

- **Dimensions (L • W • H):** 295•225•41 mm, 11.61•8.86•1.61"
- **Protection class:** IP67
- **Hazardous Locations:** Hazardous Locations: Includes parallel and serial application interfaces and full pass-through for serial data.
- **Application Interfaces:** Communicator CANopen, Communicator CAN, Communicator Ethernet
- **Power:** 24 VDC ±10%
- **Weight:** 200 g, 0.44 lb

**Technical Details - Communicator™ 30-series**

- **Dimensions (L • W • H):** 141•70•50 mm, 5.55•2.75•1.97"
- **Protection class:** IP67
- **Hazardous Locations:** Hazardous Locations: Includes parallel and serial application interfaces and full pass-through for serial data.
- **Application Interfaces:** Communicator CANopen, Communicator CAN, Communicator Ethernet
- **Power:** 24 VDC ±10%
- **Weight:** 200 g, 0.44 lb

**Technical Details - Communication™ Port 30-series**

- **Dimensions (L • W • H):** 51•37•16 mm, 2.01•4.46•0.63" (modules without housing)
- **Protection class:** IP20
- **Hazardous Locations:** Hazardous Locations: Includes parallel and serial application interfaces and full pass-through for serial data.
- **Application Interfaces:** Configurable CAN 1.0, 2.0A and 2.0B based protocols
- **Power:** 24 VDC ±10%
- **Weight:** 150 g, 0.33 lb
Case Study: Protocol conversion

Rockwell Automation and HMS provide intelligent solutions for the Guangzhou Metro Line 5 BAS system

Solution: Device connectivity using a custom serial protocol
Country: China
Company: Guangzhou Metro
Summary: Anybus Communicator enables communication between different devices in Guangzhou Metro's surveillance system and the ControlNet network.

System integration made easy for Chinese subway line

Guangzhou Metro Line 5 in China connects various monitoring equipment to ControlNet using solutions from Rockwell Automation and the Anybus Communicator from HMS.

The Guangzhou Metro Line 5 spans 40 kilometers east to west through Guangzhou City. The line includes 24 stations and has a capacity of transporting a whopping 50 million passengers per day.

Like all modern subway lines, the Guangzhou Metro Line 5 has a comprehensive monitoring system overlooking ventilation, air conditioning, water supply, drainage, elevators etc.

The Challenge

The Metro Line system has numerous points with large amounts of data. The monitoring system has a total of about 210,000 I/O points. The entire project was forecasted to contain 280,000 points, of which 70,000 points were allocated to the BAS system.

Consequently, system integration required a great deal of work and deadlines were tight – 24 stations were to be simultaneously opened. Indeed, never before in the country had so many stations been opened at one time.

The Solution

The Rockwell Automation system is widely used in the rail transport field. The central segment of the Metro Line 5 BAS system uses ControlLogix Redundancy Controllers from the Rockwell Automation Integrated Architecture platform.

Together with the Anybus Communicator ControlNet gateway, devices with a serial RS-485 interface with a custom protocol were easily integrated into the system.

The BAS system was implemented one month before Guangzhou Metro Line 5 was successfully commissioned. The system integration was carried out by Beijing-based HollySys Automation Technologies.

"The Communicator required no programming and was configured to use a uniform method to access subsystems; thereby, saving us a great deal of time in the project implementation stage."

Zhao Feng, HollySys’ project manager of the Guangzhou Metro Line 5 project.

Case Study: Network to network

Network to network and PLC system connectivity for C.I.A Automation and Robotics

Solution: Network to Network connectivity
Country: Italy
Company: C.I.A. Automation and Robotics
Summary: Anybus X-gateways provide robots with connectivity to several industrial networks such as for example PROFINET and DeviceNet.

Automation: a must to be able to compete on the global market

C.I.A. Automation and Robotics has extensive experience in the field of advanced automation, proposed as a strategic tool to increase the competitiveness of Italian companies in the world. It offers advanced technologies such as laser scanners, stereoscopic vision equipment and systems that can reproduce a die and copy it directly, automatically recomposing the scanning scattergrams, a very differentiating solution.

The Challenge

"We have produced automation systems, testing benches and machinery managed by PLCs and Scada systems for the foodstuffs, chemical, glass, plastics, metalworking, metallurgical and automobile industries", explained Mr. Angelo Galimberti, the sole director of C.I.A. Automation and Robotics.

"As well as many other applications, such as robotic stations for servo-mechanical machinery, palletisation lines, assembly lines and processing lines such as for handling, cutting, hot and cold pressing, welding, tacking, induction, brazing, deburring, etc.” As most of C.I.A Automation and Robotics applications are specific, they have to interface different kinds of devices in their automatic systems that use different communication protocols.

The Solution

“We have produced various equipment with PROFINET master PLCs and DeviceNet slaves, or with DeviceNet master PLCs and PROFINUS slaves, and so on”, said Galimberti. “HMS products have enabled us to resolve and simplify a number of these applications. The protocols we use are mostly PROFINUS and DeviceNet, which cover almost 90% of the cases we deal with involving robots and PLCs.”

The Result

He added that C.I.A was satisfied with the performance of HMS products and that no major problems were encountered. “I believe that we will continue to find space for HMS products in our future applications, whenever we need to interface system parts that use different communication protocols”, concluded the director of C.I.A. Automation & Robotics.
Remote management helps improve customer care and service

Bauer Compressors is a leading manufacturer of compressor systems that offer commercial and industrial solutions for oxygen, natural gas (CNG), and some noble gases. Having a turnover (not consolidated) of over 140 million Euro worldwide, the BAUER KOMPRESSOREN Group has become a global player in the high pressure sector. A world market share of over 70% for breathing air applications underpins BAUER’s technological leadership.

The Challenge

Bauer recently launched a new product line that includes remote monitoring capability – a feature that is new to the compressor market. In selecting the remote monitoring vendor, Bauer wanted an easy-to-implement solution for the site installations, and a solution that provides easy central management of all the monitored sites. “We wanted to implement remote monitoring on our compressors in order to reduce downtime and optimize gas consumption”, explains Tommy Michaelides, Bauer Compressors Inc., the US subsidiary.

The Solution

Bauer chose the Netbiter Solution, consisting of GSM-enabled remote devices and the Netbiter Online Management Portal. This industrial grade remote management solution enables access to mobile and stationary installations for applications such as monitoring, control, alarm management, data logging, reporting, location tracking and service call. It is primarily made for remote monitoring, but control is also possible for instance PLC parameters can be changed.

“With this web interface, operators can analyze the problem thanks to a PC and a smart phone. Some are using an iPhone, and it is really appreciated by our customers”, explains Tommy Michaelides. “This is a very modular solution we can duplicate easily on any other plant, whatever the compressor or the PLC.”

The Result

"This added-value option is very new in our industry. Return on investment for our customers should be very short. Firstly, it simplifies maintenance operations. Second, it also enables quicker intervention when a problem occurs. Thus, downtimes are reduced and gas consumption can also be optimized. That’s very valuable as gas is expensive”.

Bauer studied the offers from several vendors but the choice was made for HMS: “it was less expensive and it appeared to be more proven. Most of all, as it is a long term project for Bauer, it appears to us to be the most promising offer: the web system is attractive and it is open to all PLCs and any kind of fieldbus”, concludes Tommy Michaelides.

Facts about HMS

- Operations in 30 countries:
  - Sweden, Germany, USA, Japan, Denmark, China, Italy, France, UK and India.
- Customers in more than 50 countries.
- Head office in Halmstad, Sweden.
- More than 350 employees.
- Listed on NASDAQ OMX Nordic Exchange in Stockholm.

Network connectivity expertise at your service

With more than 2 million communication modules installed globally, HMS Industrial Networks is indisputably the world’s number one provider of industrial connectivity solutions.

Customers include most major industrial automation companies such as Rockwell Automation, Siemens, Mitsubishi, Yaskawa, Schneider Electric, Toshiba, Panasonic, ABB and Hitachi.

Focus on what you do best

By partnering with HMS, you get access to the knowledge of some of the world’s leading experts on industrial connectivity — experts who are with you all the way from the design project and throughout the product life cycle.

With HMS as your communication partner, you will not have to worry about network upgrades, new technologies or conformance testing. HMS handles all connectivity issues, so you can focus on your core business.

Partnership with HMS is for the long-term

We work closely with our customers to offer expertise and know-how. We help you broaden your market and stay up-to-date when it comes to network connectivity. Indeed, many of our customers regard HMS as their internal development department for industrial communication.

Get in touch with us, and we’ll tell you more about how to get connected.

Staffan Dahlström
Chief Executive Officer, HMS
Always Free Tech Support
At HMS, technical support for standard products is FREE of charge and available from all HMS offices and distributors around the world. HMS has CIP specialized development engineers, global technical support teams, and CIP-trained sales, all dedicated to increasing your automation performance, raising productivity, decreasing product downtime and reducing your costs and efforts.

Rockwell Automation Knowledge Base Program
In addition to HMS online technical support, HMS’s products can also be found via Rockwell’s own Knowledge Base Support Program. For more information visit: https://rockwellautomation.custhelp.com/

The first line of support
The HMS Academy is an umbrella for all HMS training and e-learning activities. Through our Academy trainings, videos and other materials, you can learn more about industrial communication and get a better insight into HMS products and solutions.

Webinars
Spend an hour with an industrial communication specialist to learn how to connect different fieldbus, industrial Ethernet and wireless networks. HMS webinars are held free of charge via Webex in various languages and at different locations and time-zones.

How-to application notes
Step-by-step instructions on how to carry out specific actions using the different Anybus products.

How-to videos
Screen recordings of how to configure Anybus and Netbiter gateways. Follow these to get up and running in a few minutes.

Hands-on training
Get hands-on training on HMS products and technologies. The trainings are run at an HMS office or at your location if you prefer!

Stay connected!
We regularly send out information specific to an HMS product line via both e-mail and social media. Sign up on our websites and stay informed about the latest HMS product developments, industry news, case studies, tips and tricks and much more.
HMS Industrial Networks

Through the Anybus®, IXXAT® and Netbiter® brands and products, HMS Industrial Networks provides reliable solutions for industrial communication and remote management. HMS’s knowledgeable staff along with distributors and partners in over 50 countries worldwide, are there to help you and your business increase productivity and performance while lowering cost and time to market.

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