

Anybus-X

Ethernet to DeviceNet Gateway

Installation Guide

AB7607

Part no. SP0848

Rev. 1.23



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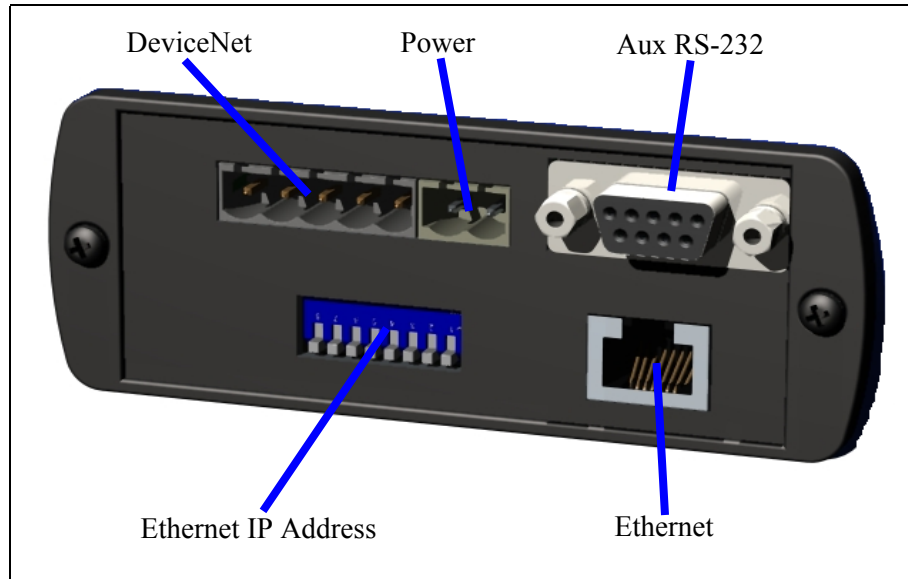
Installation Items Checklist

- Anybus-X Ethernet to DeviceNet Gateway (part number AB7607).
- *Anybus-X Ethernet to DeviceNet Gateway User Manual* downloadable from <http://www.anybus.com> and go to the support section
- Power cable for connection to supplied 2 position connector.
- DeviceNet cable for connection to supplied 5 position connector.
- Ethernet cable for connection to RJ-45 connector.
- DeviceNet configuration tool such as RSNetworkx for DeviceNet or NetTool-DN.
- EDS file, *AB7607.eds*, downloadable from <http://www.anybus.com> and go to the support section.

Installation and operation requirements

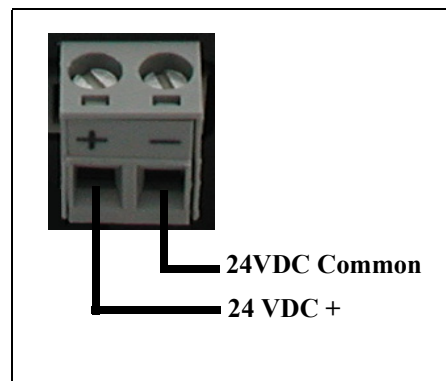
- Power, input and output (I/O) wiring must be in accordance with Class 1, Division 2 wiring methods – article 501-4 (b) of the National Electric code, NFPA 70 and in accordance with local codes.
- **Warning – Explosion Hazard** – Substitution of components may impair suitability for class 1, Division 2.
- **Warning – Explosion Hazard** – When in hazardous locations turn off power before replacing or wiring modules.
- **Warning – Explosion Hazard** – Do not disconnect equipment unless power has been switched off or the area is known to be nonhazardous.
- Terminal tightening torque must be between 5 – 7 lbs-in (0,5-0,8 Nm).
- For use in Class 2 circuits only.
- Suitable for Surrounding temperature of 65 C max.
- Use 60/75 C copper wire only.

Connectors



Connecting Power

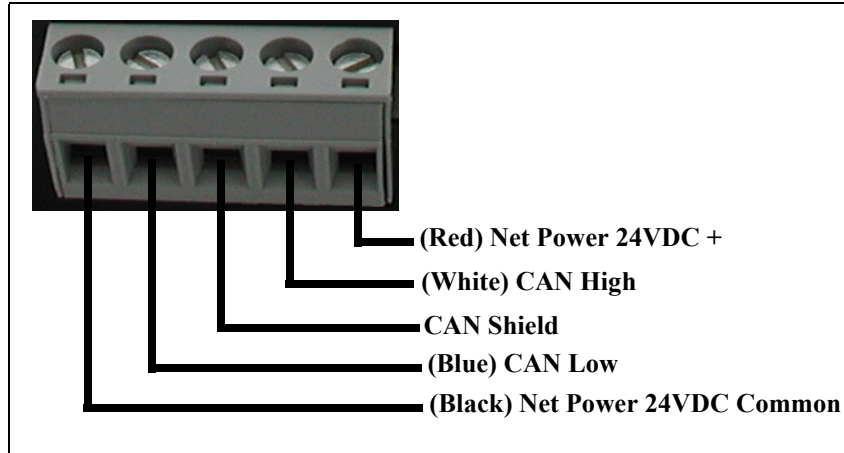
The Anybus-X requires 24 volts DC power on the 2 position terminal block connector.



Connecting to DeviceNet

DeviceNet Connector

DeviceNet is connected to the 5 position terminal block connector.



A 120 ohm termination resistor (not provided) between CAN High and CAN Low may be required for proper network termination.

Setting the MAC ID and Baud Rate

Factory default DeviceNet settings are:

MAC ID	63
Baud Rate	125K

Setting MAC ID and Baud Rate Using the Anybus-X Configuration Tool

The DeviceNet configuration can be set using the BWConfig tool. When launched, the tool (shown below) will allow the DeviceNet configuration to be edited and downloaded to the module. Once the configuration has been downloaded, the Anybus-X will be reset automatically by the tool. See the Configuration section of the user manual for complete details on using BWConfig.

The screenshot shows the 'BridgeWay Configuration - Untitled' window. It has a menu bar with 'File', 'View', 'Configuration', 'I/O', 'Flash', and 'Help'. Below the menu is a toolbar with icons for file operations and configuration. The main area is divided into three sections:

- BridgeWay Configuration:**
 - Device: Ethernet to DeviceNet Gateway
 - Client Interface: DeviceNet Master
 - Serial Number: 00000000
 - Mode: Idle (dropdown)
 - Server Interface: Ethernet Server
 - Firmware Revision: 1.07.00
 - Error: No Error
- Ethernet Configuration:**
 - DHCP: ON (dropdown)
 - IP Address: 192 . 168 . 1 . 10
 - Subnet Mask: 255 . 255 . 255 . 0
 - Gateway Address: 0 . 0 . 0 . 0
 - Speed: Auto (dropdown)
 - Duplex: Auto (dropdown)
 - ☐ Enable Modbus Timeout
 - Modbus Timeout (ms): 0
- DeviceNet Configuration:**
 - Status:
 - Error:
 - MAC Address: 3
 - ☐ AutoBaud Rate: 500K (dropdown)
 - ☐ Swap I/O Bytes

At the bottom, there is a status bar with 'Ready' on the left and 'OFFLINE' on the right.

Setting MAC ID and Baud Rate Using a Node Commissioning Tool

A DeviceNet node commissioning utility, such as RSNetworkx or NetTool-DN, may be used to change the MAC ID and baud rate settings. Refer to the user documentation for the tool being used, or the Anybus-X user manual for more details.

Connecting to Ethernet

Ethernet Connector

The Ethernet cable is connected to the RJ45 connector on the end of the module.

Setting the IP Address

Setting the IP Address Using the Anybus-X Configuration Tool

The Ethernet configuration can be set using the BWConfig tool. When launched, the tool (shown above) will allow the Ethernet configuration to be edited and downloaded to the module. Once the configuration has been downloaded, the Anybus-X will be reset automatically by the tool. See the Configuration section of the user manual for complete details on using BWConfig.

Setting the IP Address Using DHCP/BOOTP

When DHCP/BOOTP is enabled, the IP address settings will be configured by the DHCP or BOOTP server on the network.

This is the default setting of the Anybus-X when it is shipped. The DHCP option is enabled or disabled using the Anybus-X's Settings web page.

Setting the IP Address with the Configuration Switch

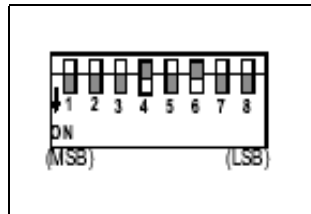
The IP configuration switch is an 8 position DIP switch located on the end of the module. If any of the 8 switches are in the ON position, the IP address will be set as follows:

IP Address:	192.168.1. <i>n</i>
Subnet Mask:	255.255.255.0
Gateway Address:	0.0.0.0

Where *n* is the value represented in binary by the DIP switch.

This address is a private address and can only be used on a local intranet.

Example:



The switch represents the binary value 00010100, or 20 decimal. (The switch position is shown in White in the diagram.)

The resulting IP address will be 192.168.1.20.

Setting the IP Address Using ARP

The IP address can be set using the Ping command from a PC after the module's Ethernet address is entered into the ARP table.

All 8 switches of the IP Address Configuration DIP switch must be set to the ON position prior to powering up the module. The Arp/Ping feature is disabled if any switch is in the OFF position.

On a PC connected to the Anybus-X using Ethernet bring up a MS DOS™ window type:

```
arp -s <Desired IP Address> <Module Ethernet Address>
```

The MAC address can be found on the back of the module. Next type:

```
ping <Desired IP Address>
```

This will set the IP address of the module. Now type:

```
arp -d <Desired IP address>
```

to remove the static entry from the ARP table.

Example:

The following commands will set the IP address of a Anybus-X with MAC address 00-30-11-02-00-5E to 65.106.34.252.

```
arp -s 65.106.34.252 00-30-11-02-00-5e
```

```
ping 65.106.34.252
```

```
arp -d 65.106.34.252
```

Setting the IP Address Using the Web Page

The IP address can also be configured using the Status and Settings web page. The web pages are accessed by typing the current IP address of the Anybus-X into a web browser URL. The Status and Settings web page appears as shown below.

Status & Settings	
Product Name	Ethernet to DeviceNet Gateway
Vendor ID	170
Product Type	12
Product Code	1
Product Revision	1.07.01
Anybus Revision	1.18
Serial Number	0xA0004DA9
DeviceNet MAC ID	1
DeviceNet Baud Rate	500K
DeviceNet Autobaud Enabled	NO
DeviceNet Network Status	ONLINE-IDLE
DeviceNet Scanner Mode	IDLE
IP Address	65.106.34.213
Subnet Mask	255.255.255.192
Gateway IP Address	65.106.34.193
Mail Server IP Address	0.0.0.0
DHCP enabled	☒
Submit Values	
Reset Module	

The IP address, subnet mask, and default gateway address are displayed in the edit boxes on the web page. Changing any values and clicking the Submit Values button will set the addresses in the Anybus-X. Note that a power cycle or module reset is required for the changes to take effect.

The Reset Module button can be used to reset the Anybus-X from the web browser. The Scanner Mode will display “RESETTING...” while the module resets and comes back online. The web page will be refreshed after the module has booted.

Note: If your web browser is configured to cache web pages, it may appear that the Anybus-X has not changed address after you power cycle the module. Make sure that the browsers settings are configured to always reload pages. On Internet Explorer this is done in the Temporary Internet Files Settings dialog by selecting the “Every Visit” option for when the browser should check for page changes.

Configuration Port Connector

The configuration port is the 9-pin D-Subminiature female connector on the end of the Anybus-X. The connector has a standard RS-232 DTE pin configuration. The connections to be made are shown in Figure 1..

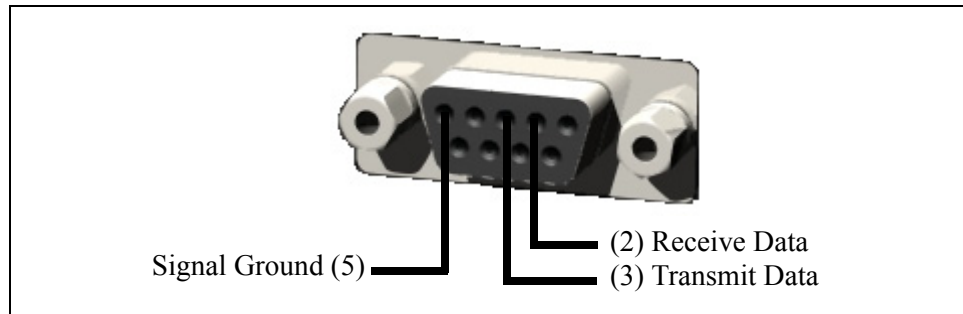


Figure 1. Configuration Port Connector

The Anybus-X is connected to a PC for configuration using a null-modem cable. A null-modem cable has pins 2 and 3 swapped so that the PC's Transmit line is connected to the Anybus-X's Receive line, and the PC's Receive line is connected to the Anybus-X's Transmit line.

Note: The Anybus-X does not make use of the modem control signals specified for a DTE connector. Connecting the module through devices, such as isolation modules, which assume control of these lines may cause the BWConfig communications to be unreliable.

Further Technical Information

Complete technical information on installing and configuring the Anybus-X can be found in the *Anybus-X Ethernet to DeviceNet Gateway User Manual*. The User Manual can be downloaded from the HMS web site at:

<http://www.anybus.com> and go to the support section

or requested directly using the contact information supplied below.

Technical Specifications

Environmental Specifications

Operating Temperature: 0 to 70 degrees Celsius

Non-Operating Temperature: -25 to 85 degrees Celsius

EMC Directive Compliance

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN50081-2-EMC Generic Emission Standard, Part 2 - Industrial Environment
- EN50082-2-EMC Generic Immunity Standard, Part 2 - Industrial Environment

This product is intended for use in an industrial environment.

Electrical Specifications

Power Supply: 12-30 VDC.

Current Requirements: 130-140 mA at 24 VDC.

Warranty

HMS Industrial Networks AB warrants all new products to be free of defects in material and workmanship when applied in the manner for which they were intended and according to HMS Industrial Networks AB' published information on proper installation. The Warranty period is one year from the date of shipment.

HMS Industrial Networks AB will repair or replace, at its option, all products returned to it freight prepaid, which prove upon examination to be within the Warranty definitions and time period.

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Support

For product support, visit the HMS web site at:

<http://www.anybus.com> and go to the support section

or contact:

Support

HMS Sweden (Head Office)

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