

.NET Bridge™

The Anybus .NET Bridge enables factory-floor data from PROFINET, PROFIBUS, EtherNet/IP or EtherCAT to be presented to .NET applications.

As a .NET programmer, you can send and receive messages to and from a PLC system that could be used to control a process. You can also collect data for statistics, analyses and maintenance.



Typical Industries



Availability

PROFIBUS
Order number AB9071

PROFINET
Order number AB9077

EtherNet/IP
Order number AB9078

EtherCAT
Order number AB9079

The Anybus .NET Bridge acts as a translator between a function block in a PLC and a .NET object in a computer. The product is an external interface that may be mounted in a cabinet, close to the industrial network. It uses a separate standard (TCP/IP UDP/IP) Ethernet connection to the computer. No additional hardware is needed.

How it works

The information exchange between the Operational Technology (OT) side and the Information Technology (IT) side is made using messages. These messages are defined in a spreadsheet template (Microsoft Excel) that is included in the configuration software.

Using the spreadsheet, the Anybus .NET Bridge Code Generator creates C# files for the .NET programmer and PLC files for the PLC programmer.

The configuration software also includes two simulators — a PLC simulator for the .NET programmer and a .NET simulator for the PLC programmer.

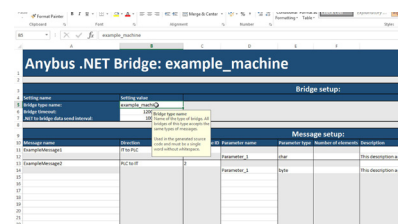
A function block (provided by HMS) manages the handshake on the PLC side and provides an easy-to-use interface for the PLC programmer.

Features and benefits

- Bridges between the logic in a PLC and the logic in a computer with .NET.
- Two-way communication.
- Configurable send/receive frequency.
- PLC simulator mode to make it easy for the .NET programmer during development and commissioning.
- .NET simulator mode to make it easy for the PLC programmer during development and commissioning.
- Defining the configuration is isolated to one single spreadsheet (requires excel).
- Possible to send messages in sequence (up to 251bytes x 65,535).
- DIN-rail or wall mount options.

Example use cases:

- An ordering system in a computer needs to tell a robot to fetch something in a warehouse.
- An on demand production unit need the custom settings defined by a user (maybe on the web) in order to produce the custom defined product.
- Communicate simulated data from a computer to a PLC during testing and commissioning.
- Collecting KPIs from a PLC for analyses and reports.
- Collecting sensor data as base for maintenance.
- Send KPI and sensor data from a PLC to a computer for advanced calculation and then receive the result.



The Anybus .NET Bridge Code Generator



HMS provides a full 3 year product guarantee



TECHNICAL SPECIFICATIONS

Technical Details		Standard
Weight	160 g, 0,35 lb	
Dimensions (L-W-H)	110*35*101 mm, 4,33*1,38*3,98"	
Protection class	IP20, NEMA rating 1	
Enclosure material	PC ABS, UL 94 VO	
Installation position	Horizontal	
Mounting	DIN rail (35*7,5/15) or Wall Mount	EN 50022
Certifications		
CE	2004/108/EC	EN 61000-6-4 EN 61000-6-2
Electrical Characteristics		
Power	24 VDC +/- 10 %	
Current consumption	Typical 150 mA @ 24 V	
Hardware Characteristics		
Reverse voltage protection	Yes	
Short circuit protection	Yes	
Galvanic isolation on subnetwork	Yes	
Environmental Characteristics		
Operating temp	-25 to 70 °C, -13 to 158 °F	IEC 60068-2-1 IEC 60068-2-2
Storage temp	-40 to 85 °C, -40 to 185 °F	IEC 60068-2-1 IEC 60068-2-2
Relative Humidity	5-95 % non condensing	IEC 60068-2-30
Installation altitude	Up to 2 000 m	
Immunity and Emission for Industrial Environment		
Electrostatic discharge	+/- 4 kV	EN 61000-4-2
Electromagnetic RF fields	10 V/m 80 MHz - 1 GHz 3 V/m 1,4 GHz - 2,0 GHz 1 V/m 2,0 GHz - 2,7 GHz	EN 61000-4-3
Fast Transients	+/- 1 kV	EN 61000-4-4
Surge protection	+/- 1 kV	EN 61000-4-5
RF conducted interference	10 Vrms	EN 61000-4-6
Emission (at 10 m)	40 dB 30 MHz - 230 MHz 47 dB 30 MHz - 1 GHz	EN 55016-2-3
Insulation, transient voltage (not for personal safety)		
Power to PE	1 500 V	EN 60950-1
Power to X1	2 500 V	EN 60950-1
Power to X2	1 500 V	EN 60950-1
X2 to PE	500 V	EN 60950-1
X2 Shields to PE	500 V	EN 60950-1
X2 to X2 Shields	500 V	EN 60950-1
X2.1 to X2.2	500 V	EN 60950-1
Security		
If a firewall is located between the .NET Bridge and the computer, it is only necessary to open the ports 2000 TCP, 2001 TCP, 2002 TCP or UDP depending on configuration.		
This product assumes that the Ethernet connection between the .NET Bridge and the computer are secured with external encryption if needed.		

NETWORK SPECIFIC FEATURES

1 = Network connector, 2 = Baud rate,
3 = I/O data,

SLAVE / ADAPTER / SERVER / DEVICE		
PROFIBUS	1 = DSUB9F	2 = Up to 12 Mbit/s 3 = 239bytes x 65,535
PROFINET IRT - 2 port	1 = 2xRJ45	2 = 100 Mbit/s 3 = 251bytes x 65,535
EtherNet/IP	1 = 2xRJ45	2 = 100 Mbit/s 3 = 251bytes x 65,535
EtherCAT	1 = 2xRJ45	2 = 100 Mbit/s 3 = 251bytes x 65,535



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