Anybus X-gateway CANopen - EtherCAT
INSTALLATION SHEET
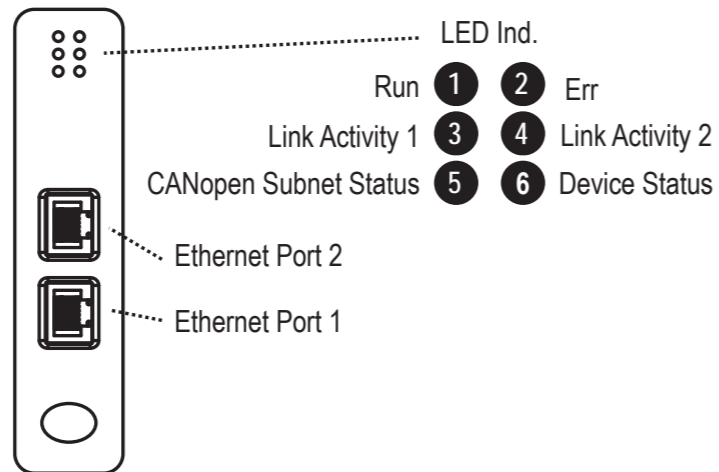

HMS Industrial Networks AB
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Tel: +46 35 172900
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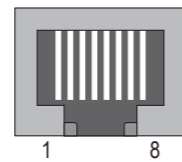
HMS

Module Front

LED Ind.

Run	❶	❷	Err
Link Activity 1	❸	❹	Link Activity 2
CANopen Subnet Status	❺	❻	Device Status

Ethernet Port 2

Ethernet Port 1

Ethernet Port

Pin no	Description
1	TX+
2	TX-
3	RX+
6	RX-
4, 5, 7, 8	Termination

LED Indicators

LED no	Indication	Meaning
1 (Run)	Off	INIT state
	Blinking green	PRE-OPERATIONAL state
	Single flash, green	SAFE-OPERATIONAL state
	Green	OPERATIONAL state
2 (Err)	Off	EtherCAT communication in working order
	Blinking red	General configuration error
	Single flash, red	EtherCAT state changed autonomously
	Double flash, red	Sync manager watchdog timeout
	Red	Application watchdog timeout
3 (Link activity 1)	Off	No link sensed on port 1/2
4 (Link activity 2)	Green	Link sensed on port 1/2
	Flickering green	Exchanging packets on port 1/2
5 (CANopen Subnet Status)[1]	Off	Power off
	Flickering green/red	The LSS services are in progress
	Blinking green	Pre-operational state
	Single flash, green	Stopped state
	Green	Operational state
	Blinking red	Configuration error
	Single flash, red	Warning limit reached
	Double flash, red	Error control event
	Triple flash, red	Sync error
	Quadruple flash, red	Data communication timeout
	Red	Bus off
6 (Device Status)	Off	Power off
	Single flash, green	Bootup
	Green	Running
	Single flash, red	Initialization error
	Double flash, red	Timeout
	Triple flash, red	Hardware failure
	Quadruple flash, red	General error
	Red	Fatal error

1. This LED shows the status of the CANopen subnet that is controlled by the X-Gateway CANopen.

Accessories Checklist

The following items are required for installation:

CANopen:

- CANopen configuration tool (available at www.anybus.com)
- CANopen adapter for configuration tool (not included)
- CANopen cable (not included)
- EDS file, available at www.anybus.com

EtherCAT Interface:

- EtherCAT configuration tool (not included)
- Standard LAN cable (CAT5, STP or UTP, not included)
- Device Description File, available at www.anybus.com

Installation and Startup Summary

- Select baud rate and an unused node address for the interface. (Cover the switches with the enclosed switch covers.)
- Connect the gateway to the CANopen network.
- Install the EDS file in the CANopen configuration tool.
- Power up and (if required) configure the module.
- Restart the module after the CANopen interface has been configured.
- Connect the gateway to the EtherCAT network.
- Install the Device Description File in the EtherCAT configuration tool.
- Power up and (if required) configure the module.

Please note that the module will start up as a CANopen slave. The module can be reconfigured as a CANopen master during configuration.
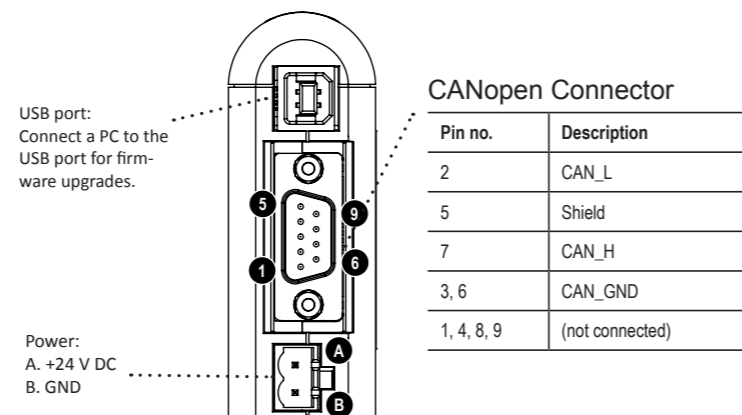
Side View

Setting	Baud Rate (kbit/s)
0	20
1	50
2	125
3	250
4	500
5	800
6	1000
7	Auto
8, 9	Not available

Baud rate

Address x10
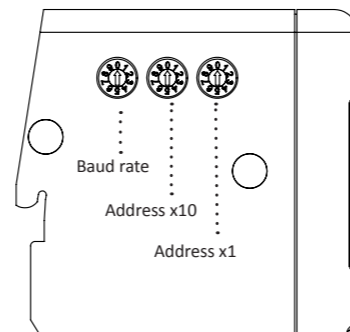
Address x1

Allowed node address range is 1 - 127. Addresses 1 - 99 are available using the address rotary switches. To set e.g. node address 42, set the left address switch to 4 and the right address switch to 2. Cover the switches with the enclosed switch covers to ensure EMC compliance.

Bottom View

USB port:
Connect a PC to the USB port for firmware upgrades.

Power:
A. +24 V DC
B. GND

CANopen Connector

Pin no.	Description
2	CAN_L
5	Shield
7	CAN_H
3, 6	CAN_GND
1, 4, 8, 9	(not connected)

Technical Details

- Power supply:
  24 V DC (-10% to +10%).

- Power consumption:
  Maximum power consumption is 250 mA @ 24 V DC.
  Typical power consumption: 100 mA @ 24 V DC.

- Protective Earth (PE):
  Internal connection to PE via DIN-rail.
  Note: Make sure the DIN-rail is properly connected to PE.

CANopen Support

Technical support regarding the CANopen fieldbus system should be addressed to CAN in Automation (CiA).
Online: www.can-cia.org

EtherCAT Support

Technical support regarding the EtherCAT fieldbus system should be addressed to the EtherCAT technology group.
Online: www.ethercat.org

For maintenance and support, contact the HMS support department. Contact information is available at the support pages at www.anybus.com.
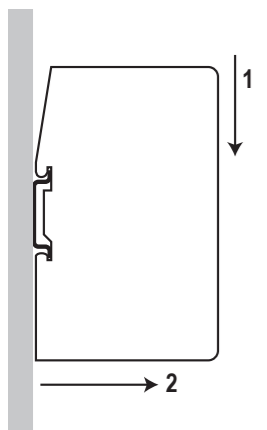
Further information and documents about this product can be found at the product pages on www.anybus.com.

DIN-rail Mounting
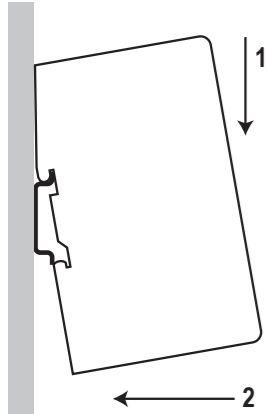
To snap the gateway on, first press it downwards (1) to compress the spring in the DIN-rail mechanism, then push it against the DIN-rail as to make it snap on (2).

To snap the gateway off, push it downwards (1) and pull it out from the DIN-rail (2), as to make it snap off from the DIN-rail.

Additional Installation and Operating Instructions

Supply voltage: The X-gateway requires a regulated 24 V (21.6 V to 26.4 V) DC power source.

Field wiring terminal markings (wire type (Cu only, 14-30AWG) "Use 60/75 or 75°C copper (CU) wire only"
Terminal tightening torque (5-7 lb-in (0.5 - 0.8 Nm)).

Use in Overvoltage Category I Pollution Degree 2 Environment.

Install in an enclosure considered representative of the intended use. To comply with ATEX directives, the equipment must be installed within an IP54 enclosure and must be installed with a transient suppressor on the supply that does not exceed 140% (33.6 V DC) of the nominal rated supply voltage.

Operating temperature/Surrounding temperature:
-25 to +55 degrees C @ 250 mA @ 24 V DC.

Maximum surface temperature: 135 degrees C.

Pressure: 850 - 1050 millibar.

This product is designed to safely operate in class I, division 2 Hazardous location according to ANSI/ISA 12.12.01-2011 and category 3, zone 2 according to EN 60079-0, EN 60079-11, and EN 60079-15.

SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C AND D HAZARDOUS LOCATIONS, OR NONHAZARDOUS LOCATIONS ONLY.

Warnings

- **WARNING - EXPLOSION HAZARD - SUBSTITION OF ANY COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.**

- **WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES.**

- **WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT WHILE THE CURCUIT IS LIVE OR UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS.**

- **WARNING - EXPLOSION HAZARD - THE USB CONNECTOR IS NOT FOR USE IN HAZARDOUS LOCATIONS AND FOR TEMPORARY CONNECTION ONLY. DO NOT USE, CONNECT OR DISCONNECT UNLESS THE AREA IS KNOWN TO BE NONHAZARDOUS. CONNECTION OR DISCONNECTION IN AN EXPLOSIVE ATMOSPHERE COULD RESULT IN AN EXPLOSION.**

- **WARNING - INSTALL IN AN ENCLOSURE CONSIDERED REPRESENTATIVE OF THE INTENDED USE. TO COMPLY WITH ATEX DIRECTIVES, THE EQUIPMENT MUST BE INSTALLED WITHIN AN IP54 ENCLOSURE AND MUST BE INSTALLED WITH A TRANSIENT SUPPRESSOR ON THE SUPPLY THAT DOES NOT EXCEED 140% (33.6 V DC) OF THE NOMINAL RATED SUPPLY VOLTAGE.**

UL Certification

IND: CONT. EQ. FOR HAZ LOC.
CL I, DIV 2
GP A,B,C,D
TEMP CODE **T4**
E203225

LISTED 67AM

Atex Certification

EX nA ic IIC T4 Gc
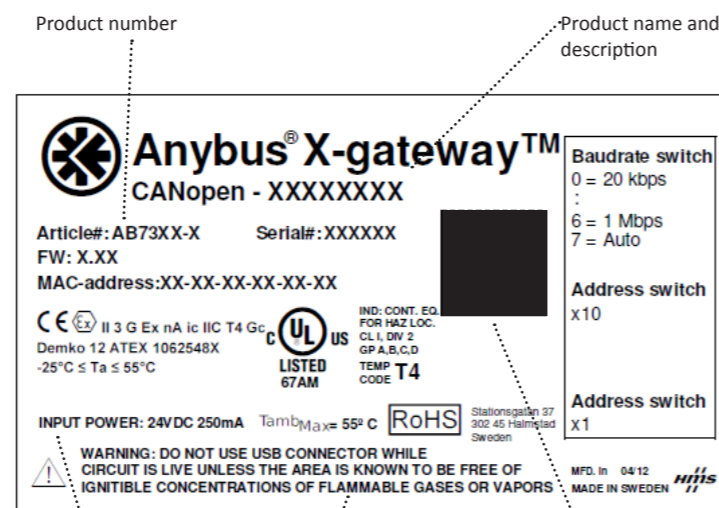
II 3 G

DEMKO 12 ATEX 1062548X

EMC Compliance (CE)

This product is in accordance with the EMC directive 2004/108/EC through conformance with the following standards:

- **EN 61000-6-4 (2007)**
  Emission standard for industrial environment
  EN 55016-2-3, Class A (2006)

- **EN 61000-6-2 (2005)**
  Immunity for industrial environment
  EN 61000-4-2 (2009)
  EN 61000-4-3 (2006)
  EN 61000-4-4 (2004)
  EN 61000-4-5 (2005)
  EN 61000-4-6 (2007)

Label Markings

Product number

Product name and description

Anybus® X-gateway™
CANopen - XXXXXXXX

Article#: AB73XX-X   Serial#: XXXXXX
FW: X.XX
MAC-address: XX-XX-XX-XX-XX-XX

CE II 3 G Ex nA ic IIC T4 Gc
Demko 12 ATEX 1062548X
-25°C ≤ Ta ≤ 55°C

IND: CONT. EQ.
FOR HAZ LOC.
CL I, DIV 2
GP A,B,C,D
TEMP CODE **T4**
LISTED 67AM

INPUT POWER: 24VDC 250mA   Tamb Max= 55° C   RoHS

Stationsgatan 37
302 45 Halmstad
Sweden

WARNING : DO NOT USE USB CONNECTOR WHILE CIRCUIT IS LIVE UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITIBLE CONCENTRATIONS OF FLAMMABLE GASES OR VAPORS

MFD. In   04/12
MADE IN SWEDEN

Baudrate switch
0 = 20 kbps
:
6 = 1 Mbps
7 = Auto

Address switch
x10

Address switch
x1

Surrounding air temperature and electrical ratings

Warnings

Product information bar code

HMS Industrial Networks AB
Stationsgatan 37
302 45 Halmstad
Sweden

Further information and documents about this product can be found at the product pages on www.anybus.com.