Anybus® X-gateway™ CANopen® - Modbus RTU
INSTALLATION SHEET

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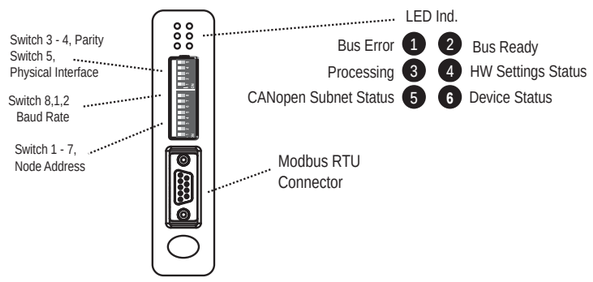
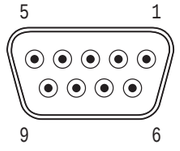
Module Front



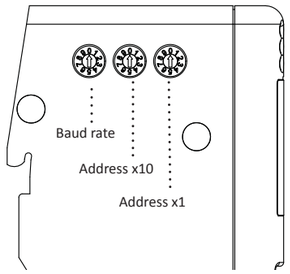
Modbus RTU Connector



Pin no	Name	Function
2	RS232 - Tx	Transmit signal
3	RS232 - Rx	Receive signal
5	GND	Signal ground
6	+5 V	Power supply
7	RS485 D0	
8	RS485 D1	
Casing	PE	
1, 4, 9	-	(not connected)

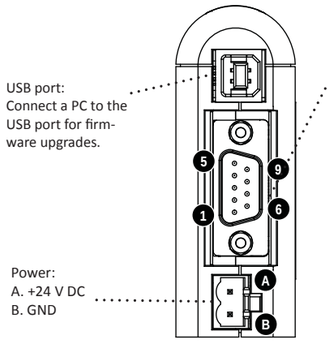
Side View

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



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



CANopen Connector

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

LED Indicators

LED no	Indication	Meaning
1 (Bus Error)	Off Red	Normal operation Bus Error
2 (Bus Ready)	Off Green Red	No power Bus ready Bus timeout error
3 (Processing)	Off Flashing green	No query is currently being processed Processing query
4 (HW Settings Status)	Off Red	Using switch settings, normal operation Not configured. Operating at 19200 bps. Will only respond to broadcast messages.
5 (CANopen Subnet Status)[1]	Off Flickering green/red Blinking green Single flash, green Green Blinking red Single flash, red Double flash, red Triple flash, red Quadruple flash, red Red	Power off The LSS services are in progress Pre-operational state Stopped state Operational state Configuration error Warning limit reached Error control event Sync error Data communication timeout Bus off
6 (Device Status)	Off Single flash, green Green Single flash, red Double flash, red Triple flash, red Quadruple flash, red Red	Power off Bootup Running Initialization error Timeout Hardware failure General error Fatal error

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

Configuration Switches

NOTE: Changes to the configuration switches will only take effect after the gateway has been restarted.

The first 7 switches are used to set the node ID, using binary format.

Sw. 1	Sw. 2	Sw. 3	Sw. 4	Sw. 5	Sw. 6	Sw. 7	Node ID
64	32	16	8	4	2	1	
OFF	OFF	OFF	OFF	OFF	OFF	OFF	(invalid)
OFF	OFF	OFF	OFF	OFF	OFF	ON	1
...	...	...	...	...	...		...
ON	ON	ON	ON	ON	ON	ON	127 (64+32+16+8+4+2+1)

The remaining switches are used to set the baud rate, the parity and stop bits, and the physical interface type. **Bold text** = default value.

Sw. 8	Sw. 1	Sw. 2				Baud rate			
OFF	OFF	OFF				(invalid)			
OFF	OFF	ON				1200 bps			
OFF	ON	OFF				2400 bps			
OFF	ON	ON				4800 bps			
ON	OFF	OFF				9600 bps			
ON	OFF	ON				19200 bps			
ON	ON	OFF				38400 bps			
ON	ON	ON				57600 bps			

			Sw. 3	Sw. 4			Parity	Stop bits	
			OFF	OFF			(invalid)	(invalid)	
			OFF	ON			None	2	
			ON	OFF			Even	1	
			ON	ON			Odd	1	

					Sw. 5				Interface
					OFF				RS485
					ON				RS232

Accessories Checklist

The following items are required for installation:

CANopen:

- ACM 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

Modbus RTU Interface:

- Modbus RTU cable (not included)
- Configuration tool (not included)

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 Modbus RTU network.
- Set baud rate etc. using the switches.
- 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.

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), at: www.can-cia.org

Modbus RTU Support

Technical quiestions regarding the Modbus RTU fieldbus system should be addressed to the Modbus IDA organization, at: modbus-ida.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.

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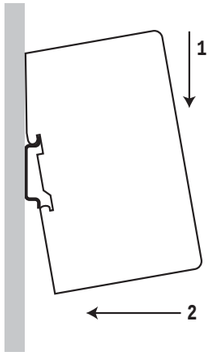
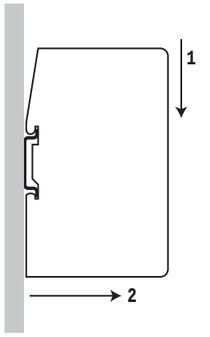
DIN Rail Mounting



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



To dismount the gateway, push it downwards (1) and pull it out from the rail (2).

Additional Installation and Operating Instructions

This equipment requires a regulated 24 V (21.6 V to 26.4 V) DC power source

Field wiring terminal markings (wire type (Cu only, 14-30 AWG))
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 conforming to EN 60664-1.

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

Maximum surface temperature: 135 °C

Pressure: 850–1050 millibar (85–105 kPa)

This product is designed to safely operate in class I, division 2 Hazardous location according to ANSI/ISA 12.12.01-2013 and category 3, zone 2 according to EN 60079-0:2012 and EN 60079-15:2010.

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

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.

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.**

Attention!

- **ATTENTION – RISQUE D'EXPLOSION – LE REMPLACEMENT DE TOUT COMPOSANTS INVALIDE LA CERTIFICATION CLASS I, DIVISION 2.**
- **ATTENTION – RISQUE D'EXPLOSION – EN ZONE EXPLOSIVE, VEUILLEZ COUPER L'ALIMENTATION ÉLECTRIQUE AVANT LE REMPLACEMENT OU LE RACCORDEMENT DES MODULES.**
- **ATTENTION – RISQUE D'EXPLOSION – NE PAS DÉCONNECTER L'ÉQUIPEMENT TANT QUE L'ALIMENTATION EST TOUJOURS PRÉSENTE OU QUE LE PRODUIT EST TOUJOURS EN ZONE EXPLOSIVE ACTIVE.**
- **ATTENTION – RISQUE D'EXPLOSION – LE CONNECTEUR USB N'EST PAS FAIT POUR UN USAGE EN MILIEU EXPLOSIF. NE PAS, BRANCHER ET DEBRANCHER SANS SAVOIR SI LA ZONE N'EST PAS IDENTIFIEE NON EXPLOSIVE. BRANCHER OU DEBRANCHER EN ZONE EXPLOSIVE PEUT ENTRAINER UNE EXPLOSION.**
- **AVERTISSEMENT – INSTALLER DANS UNE ARMOIRE VERROUILLEE VALIDANT L'ACTE VOLONTAIRE D'UTILISATION.**

UL Certification

c UL us LISTED

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

Ex II 3 G

DEMKO 12 ATEX 1062548X

EMC Compliance (CE)

CE

This product is in accordance with the EMC directive 2014/30/EU through conformance with the following standards:

- **EN 61000-6-4 (2007)**
  Emission standard for industrial environment
  EN 55016-2-3, Class A (2010)
  EN 55022, Class A (2011)

- **EN 61000-6-2 (2005)**
  Immunity for industrial environment
  EN 61000-4-2 (2009)
  EN 61000-4-3 (2006)
  EN 61000-4-4 (2012)
  EN 61000-4-5 (2014)
  EN 61000-4-6 (2014)

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