

# Anybus CompactCom BACnet/IP

How to configure an Anybus CompactCom BACnet/IP module with a WAGO 750-830









### More information about the network and products

The most recent manuals and files for the Anybus CompactCom BACnet/IP modules can be found on the HMS webpage <u>www.anybus.com</u>.

The BACnet International has a webpage on the Internet: <u>www.bacnetinternational.org</u>. Several technical guides are available in or via this page.

For information concerning the WAGO Controller system refer to the WAGO homepage <u>www.wago.com</u>.

### History

| Revision | Date       | Description   |
|----------|------------|---------------|
| 1.00     | 2011-07-04 | Created       |
| 1.01     | 2011-08-02 | Minor changes |

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# 1. Applicable Anybus products

| Description       | Name / Type |
|-------------------|-------------|
| Anybus CompactCom | BACnet/IP   |

### 2. Requirements

| Description   | Name / Type                   | Version |
|---|-------------------------------|---------|
| WAGO BACnet/IP programmable fieldbus controller                             | 750-830                       | n.a.    |
| PC with WAGO BACnet Configurator software                                   | WAGO BACnet Configurator      | 1.3.9.0 |
| Anybus CompactCom   | BACnet/IP                     | n.a.    |
| PC with software to setup and communicate with the Anybus CompactCom module | E.g. ABCC Development Tool II | 1.00.02 |
| Configuration cables  | n.a.                          | n.a.    |
| Ethernet TP cable   | n.a.                          | n.a.    |
| Power supply 24VDC  | n.a.                          | n.a.    |



### 3. Solution overview

Below you find an overview of the system configuration that is described in this document. Other nodes may be attached to the network, but are not necessary. This application note describes the necessary steps to configure an Anybus CompactCom BACnet/IP module with a WAGO 750-830 controller.

Note: This document is only valid for Anybus CompactCom BACnet/IP modules.



Figure 1 Hardware connection overview.



## 4. Anybus CompactCom BACnet/IP configuration

#### 4.1. Hardware

Ensure that the Anybus CompactCom BACnet/IP module is connected and configured in accordance with its manual. (<u>www.anybus.com</u>) prior to performing the steps described in section 5 of this application note.

#### 4.2. Software

Ensure that the Anybus CompactCom BACnet/IP module is implemented and configured in accordance with its manual. (www.anybus.com) prior performing the steps described in section 5 of this application note.

To be able to setup and communicate with the Anybus CompactCom BACnet/IP module on the application side, an internal ABCC Development Tool has been used.

In this application note, write data is set up to two Booleans.



### 5.WAGO configuration

#### 5.1. Hardware

Ensure that the WAGO 750-830 is connected and configured in accordance with its manual (<u>www.wago.com</u>) prior to performing the steps described this section.

#### 5.2. Software

Install and configure the WAGO BACnet Configurator software:

- 1. Start Windows Control Panel.
- 2. Navigate to *Network Connections*. (How this is done depends on which version of Windows that is used)
- 3. Right click on the network used for setting up this application and click on Properties.
- 4. Select *Cimetrics BACstac(TM) Standard Edition v4.3 Protocol* and click on the *Properties* button.
- 5. Click Edit and ensure that the correct network card is selected in the *Address->Adapter:* drop down menu.

#### 5.3. WAGO BACnet Configurator configuration

Configure the WAGO BACnet Configurator:

- 1. Ensure that the program used for communicating with the Anybus CompactCom module is running.
- 2. Start the WAGO BACnet Configurator software.

There should now be at least one *Controller* and one *WAGO BACnet/IP Controller (or Device\_...)* in the *Device Pool* field under *Scan*.



| WAGO BACnet Configurator - New Project  |                     |                   |               |         |             | - 0 ×      |
|---|---------------------|-------------------|---------------|---------|-------------|------------|
| File Edit View Pool Device Extr   Image: | as Help             | 🕒  : til 🔹 🐜 🥐 De | evice Auto Di | scovery |             | × ( )      |
| Device Pools A & & × ×<br>Database (0)<br>Import (0)<br>□ Fr Scan (2)   | Database<br>Name: [ | Database          |               |         |             |            |
| Controller [200] WAGO BACnet/IP Controller [199] WAGO BACnet/IP Controller [199]  | InstNr              | Device Name       | Vendorld      | #Objs   | In Database | BACnet MAC |
|   | •                   |                   |               |         |             | •          |

**Figure 1 Controllers** 

- 3. Right click the *Controller* and then click on *Add to Database*.
- 4. Do the same for *WAGO BACnet/IP Controller (it may take a while)*. If a *Task Status Add to Database* window appears click on the *Continue Add to Database* button.





The two controllers should now also be under *Database* (2) in the *Browsing & Monitoring->Device Pools* tab.

- 5. Right click WAGO BACnet/IP Controller under Database (2) and click on Configure.
- 6. Double click *BINARY\_OUTPUT\_0*.



| Province & Manitarian & Configure: WAGO                 | BACnet /IP Cont | troller [199] |                |            |                    |        |        |        |        |        |       |      |              |                     |            |
|---|-----------------|---------------|----------------|------------|--------------------|--------|--------|--------|--------|--------|-------|------|--------------|---------------------|------------|
| ice Configuration                                       | Deuteeu WACC    | DAC-++ (D.C.  |                |            | Lines i i i i      |        |        |        |        |        |       |      |              |                     |            |
| WAGO BACnet/IP Controller [199]                         | Device: w/AGC   | BAChet/IP Co  | outroller BBMD | IP Setting | gs   IEC Variables |        |        |        |        |        |       |      |              |                     |            |
| 🖃 🧰 Device  | Name:           | WAGO I        | BACnet/IP (    | Contro     | ller               |        |        |        |        |        |       |      |              |                     |            |
| Dev199: WAGO BACnet/IP Cont Dev199: WAGO BACnet/IP Cont | Instance Nr:    | 199           | Online         | Address:   | 0:10.11.4.250-bac  | )      |        |        |        |        |       |      |              |                     |            |
| E Outputs   | Deservations    |               |                |            |                    | _      |        |        |        |        |       |      |              |                     | in at a 25 |
|   | Description.    | 200.000.000   |                | 200.00     | 10100              |        |        |        |        |        |       |      |              | U.                  | ijecis. Zo |
|   | Device Link:    | Database \ V  | VAGO BACnet/IP | Controller | [199]              |        |        |        |        |        |       |      |              |                     |            |
|   | Configuration   | Info          |                |            |                    |        |        |        |        |        |       |      |              |                     |            |
|   | Version:        |               |                |            |                    |        |        |        |        |        |       |      | Creation Dat | e: 7/1/2007 12      | 00:00 AM   |
|   | Author:         |               |                |            |                    |        |        |        |        |        |       |      | Creation UT  | C Date: 7/1/2007 12 | 00:00 AM   |
|   | Comments:       |               |                |            |                    |        |        |        |        |        |       | ~    | Creation Too | ol:                 |            |
|   |                 |               |                |            |                    |        |        |        |        |        |       |      | Device Type  | e:                  |            |
|   |                 |               |                |            |                    |        |        |        |        |        |       | -    | Format Versi | on: -               |            |
|   | Override File:  | No Override   | File loaded.   |            |                    |        |        |        |        |        |       |      | Import       | Upload from Device  | Remo       |
|   | SYM XML:        | No SYM XMI    | File loaded.   |            |                    |        |        |        |        |        |       |      | Import       | Upload from Device  | Remo       |
|   | Object          | Name          | Present Value  | Unit       | Type               | InstNr | #Prons | Source | Create | SubCOV | SubCO | Intr |              |                     |            |
|   | ANALOG          | INPLIT 0      | 0              | 2          | Analog Input       | 0      | 9      | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | ANALOG          | INPUT 1       | 0              | ?          | Analog Input       | 1      | 9      | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | ANALOG          | INPUT_2       | 0              | ?          | Analog Input       | 2      | 9      | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | ANALOG_         | INPUT_3       | 0              | ?          | Analog Input       | 3      | 9      | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | ANALOG_         | OUTPUT_0      | 0              | ?          | Analog Output      | 0      | 11     | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | ANALOG_         | OUTPUT_1      | 0              | ?          | Analog Output      | 1      | 11     | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | ANALOG_         |               | 0              | ?          | Analog Output      | 2      | 11     | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | ANALOG          | OUTPUT_3      | U              | 3          | Analog Output      | 3      | 11     | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   |                 | INPUT_U       | INACTIVE       |            | Binary Input       | 1      | 0      | Native | Yee    | Yee    | Tes   | Yee  |              |                     |            |
|   | BINARY          | INFUT_1       | INACTIVE       |            | Binary Input       | 2      | 8      | Native | Yee    | Yee    | Yee   | Yee  |              |                     |            |
|   | BINARY          | NPUT 3        | INACTIVE       |            | Binary Input       | 3      | 8      | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | BINARY          | NPUT 4        | INACTIVE       |            | Binary Input       | 4      | 8      | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | BINARY_         | NPUT_5        | INACTIVE       |            | Binary Input       | 5      | 8      | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | BINARY_         | NPUT_6        | INACTIVE       |            | Binary Input       | 6      | 8      | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | BINARY          | NPLIT_7       | INACTIVE       | _          | Rinary Input       | 7      | 8      | Native | Yee    | Yee    | Yee   | Yes  |              |                     |            |
|   | BINARY_         | OUTPUT_0      | INACTIVE       |            | Binary Output      | 0      | 10     | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | BINARY_         |               | INACTIVE       |            | Binary Output      | 1      | 10     | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   |                 |               | INACTIVE       |            | Binary Output      | 2      | 10     | Native | Yes    | Yes    | Yee   | Yee  |              |                     |            |
|   | BINARY          | DUTPUT A      | INACTIVE       |            | Binary Output      | 3      | 10     | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | BINARY          | OUTPUT 5      | INACTIVE       |            | Binary Output      | 5      | 10     | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | BINARY (        | OUTPUT 6      | INACTIVE       |            | Binary Output      | 6      | 10     | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | BINARY_         | OUTPUT_7      | INACTIVE       |            | Binary Output      | 7      | 10     | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   | WAGO BA         | Cnet/IP Con   |                |            | Device             | 199    | 32     | Native | Yes    | Yes    | Yes   | Yes  |              |                     |            |
|   |                 |               |                |            |                    |        |        |        |        |        |       |      |              |                     |            |

Figure 3 Double click BINARY\_OUTPUT\_0

7. Right click *Present Value* and select *Client Mappings.* 

| e Configuration  | Device: WAGC   | BACnet/IP C | ion | troller Object: BINARY_C                         | DUTP | UT_0                     |     |     |     |        |
|--|----------------|-------------|-----|--|------|--------------------------|-----|-----|-----|--------|
| WAGO BALnet/IP Controller [199] Device Dev199: WAGO BACnet/IP Cont | Name:          | BINARY      | Y_  | OUTPUT_0   |      |                          |     |     |     |        |
| i Derriss, miss andream can  | Type:          | Binary Outp | ut  |  |      |                          |     |     |     |        |
| Outputs AOD: ANALOG OUTPUT 0                                       | Instance Nr:   | 0           |     | HW Inst Nr: 0                                    |      |                          |     |     |     |        |
| AO1: ANALOG_OUTPUT_1   | Source:        | Native      |     |  |      |                          |     |     |     |        |
| AO3: ANALOG_OUTPUT_3   | Name           |             | A   | Value  |      | Туре                     | Opt | Acc | Mod | Int. C |
| BOO. BINARY_OUTPUT_0   | Event S        | tate        |     | STATE_NORMAL (0)                                 |      | Enum: EventState         |     | 8   |     |        |
| BO2: BINARY_OUTPUT_1   | 🗄 💽 Object     | Identifier  |     | {BINARY_OUTPUT.0}                                |      | Object Identifier        |     | 6   |     |        |
| BO3: BINARY_OUTPUT_3   | Object         | Name        |     | BINARY_OUTPUT_0                                  |      | CharString               |     | ۵   |     |        |
| BO4: BINARY_OUTPUT_4   | Object         | Object Type |     | BINARY_OUTPUT (4)                                |      | Enum: Object Type        |     | 8   |     |        |
| BOG: BINARY OUTPUT 6   | Out Of Service |             |     |  |      | Bool                     |     | 6   |     |        |
| BO7: BINARY_OUTPUT_7   | Polarity       |             |     | NORMAL (0)                                       |      | Enum: Polarity           |     | 6   |     |        |
|  | Present        | Value       |     | Rescan Object                                    | _    | Enum: Binary PV          |     | 6   |     |        |
|  | 🗄 💽 Priority   | Array       |     | Add Property                                     | ,    | Array: Priority Value    |     | 6   |     |        |
|  | Relingu        | ish Defau   |     | Remove Property                                  |      | Enum: Binary PV          |     | 6   |     |        |
|  | Status F       | lags        |     | Reset Value                                      |      | Bit String: Status Flags |     | ۵   |     |        |
|  |                |             |     | Add Element<br>Add Elements<br>Remove Element(s) | •    |                          |     |     |     |        |
|  |                | 6           | 2   | Copy Value                                       |      |                          |     |     |     |        |
|  |                | 12          | 5   | Paste Value                                      |      |                          |     |     |     |        |
|  |                | 12          | 6   | Paste Value as new                               | _    |                          |     |     |     |        |
|  |                |             |     | Client Mappings                                  | -    | ħ                        |     |     |     |        |

**Figure 1 Client Mappings** 

8. If there is anything mapped, select this and click on *Delete Map*.



- 9. Under the Database field select Database (2) -> Controller [200] -> Values -> BV1: Binary\_Value\_1 -> Present Value
- 10. Click on Add Read Map
- 11. Click on Close.

| Client Mapping Editor            |             |                     |                                 | ×  |
|----------------------------------|-------------|---------------------|---------------------------------|----|
| Present Value, BINARY_OUTPUT_0 ( | (0), Device | _0030de043689 [199] |                                 |    |
| Database 🖄 옯 🛪                   | Туре        | Remote Property     |                                 |    |
| 🖃 🗗 Database (2) 🔺               |             |                     |                                 |    |
| Controller [200]                 |             |                     |                                 |    |
| 🕀 🧰 Alams                        |             |                     |                                 |    |
| Device                           |             |                     |                                 | _  |
| 🖃 🧰 Values                       |             |                     |                                 |    |
|                                  | -           |                     |                                 |    |
| 🖃 🐻 BV1: Binary_Value_1          |             |                     |                                 |    |
| Object Type                      |             |                     |                                 |    |
| 💽 Present Value 😑                | -           |                     |                                 |    |
| Event State                      |             |                     |                                 |    |
| Alam Value                       |             |                     |                                 |    |
| Notify Type                      | -           |                     |                                 |    |
| Device_0030de043689 [199]        |             |                     |                                 |    |
|                                  |             |                     | 2014                            |    |
|                                  | Parameter   | "<br>"              |                                 |    |
|                                  | Write Pho   | nty:                | Use Subscription:               |    |
|                                  | Poll Cycle  |                     | COV Expiry:                     |    |
|                                  |             |                     |                                 |    |
|                                  | Real Incre  | ement Threshold:    | Request Confirmed Notifications |    |
|                                  |             |                     |                                 |    |
|                                  |             |                     |                                 |    |
|                                  | Add Read    | Map Add Write Map   | Delete Map                      | se |

Figure 4 Add Read Map

12. Click on the Store and Download button.



| ing & Monitoring   🐁 Configure: WAGO 8/    | 3ACnet/IP Cont          | troller [199]* |                            |                          |    |       |         |     |        |                    |
|--|-------------------------|----------------|----------------------------|--------------------------|----|-------|---------|-----|--------|--------------------|
| nfiguration 🖄 D                            | Device: WAGO            | BACnet/IP Co   | ontroller Object: BINARY_O | UTPUT_0                  |    |       |         |     |        |                    |
| Device                                     | Name                    | DINADY         |                            |                          |    |       |         |     | Object | Supported Services |
| Dev 199: WAGO BACnet/IP Cont               |                         | Distanti       | _001101_0                  |                          |    |       |         |     | Create | COV Server         |
| Outputs                                    | Type:                   | Binary Outpu   | 4                          |                          |    |       |         |     |        | COV Property Serv  |
| ADD ANALOG_OUTPUT_D<br>AD1 ANALOG_OUTPUT_1 | Instance Nr.<br>Source: | 0<br>Native    | HW livet Nr: 0             |                          |    |       |         |     |        | V Alarm Generator  |
| A02 ANALOG OUTPUT 2                        | Name                    | 1000000        | Value                      | Tune                     | 0  | + Ann | Mod let | C1  |        |                    |
| BOO BINARY_OUTPUT_0                        | Event S                 | tate           | STATE NORMAL (0)           | Enum EventState          | ~, |       |         |     |        |                    |
| BO1: BINARY_OUTPUT_1                       | E Object I              | Identifier     | (BINARY_OUTPUT.0)          | Object Identifier        |    | 8     |         |     |        |                    |
| BO3 BINARY_OUTPUT_3                        | Dbject 1                | Name           | BINARY_OUTPUT_0            | CharString               |    | 68    |         |     |        |                    |
| BO4 BINARY_OUTPUT_4                        | Object 1                | Туре           | BINARY_OUTPUT (4)          | Enum: Object Type        |    | ۵     |         |     |        |                    |
| BOS BINARY OUTPUT 6                        | Out Of 5                | Service        | 8                          | Bool                     |    | 6     |         |     |        |                    |
| BO7: BINARY_OUTPUT_7                       | Polarity                |                | NORMAL (0)                 | Enum: Polarity           |    | 6     |         |     |        |                    |
|  | Present                 | Value          | INACTIVE (0)               | Enum: Binary PV          |    | 6     |         | Pr_ |        |                    |
| 6  | 🗉 💽 Priority            | Array          | Priority Value [116]       | Array: Priority Value    |    | 6     |         |     |        |                    |
|  | Relinqui                | ish Default    | INACTIVE (0)               | Enum: Binary PV          |    | 6     |         |     |        |                    |
|  | Status F                | Flags          |                            | Bit String: Status Flags |    | 60    |         |     |        |                    |
|  |                         |                |                            |                          |    |       |         |     |        |                    |
|  |                         |                |                            |                          |    |       |         |     |        |                    |

Figure 2 Store and Download

- 13. A Download Configuration window appears. Click on the Download Configuration button.
- 14. Select the Browsing & Monitoring tab.
- 15. Select, in the *Device Pools* field, *Scan -> WAGO BACnet/IP Controller -> Outputs -> BINARY\_OUTPUT\_0 -> Present Value*. The value should be *INACTIVE (0)*.

#### 5.4. Update value

Change the value of the second data instance the program used for communicating with the Anybus CompactCom module to 1.

The Present Value field in WAGO BACnet Configurator is now set to ACTIVE (1).