

WAGO I/O SYSTEM 750

BACnet/IP Controller 750-830

Release Note

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Every conceivable measure has been taken to ensure the correctness and completeness of this documentation. However, as errors can never be fully excluded we would appreciate any information or ideas at any time.

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1 Important Comments

To ensure fast installation and start-up of the units described in this manual, we strongly recommend that the following information and explanations are carefully read and abided by.

1.1 Legal Principles

1.1.1 Copyright

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1.1.2 Personnel Qualification

The use of the product detailed in this manual is exclusively geared to specialists having qualifications in PLC programming, electrical specialists or persons instructed by electrical specialists who are also familiar with the valid standards. WAGO Kontakttechnik GmbH & Co. KG declines all liability resulting from improper action and damage to WAGO products and third party products due to non-observance of the information contained in this manual.

1.1.3 Intended Use

For each individual application, the components supplied are to work with a dedicated hardware and software configuration. Modifications are only permitted within the framework of the possibilities documented in the manuals. All other changes to the hardware and/or software and the non-conforming use of the components entail the exclusion of liability on part of WAGO Kontakttechnik GmbH & Co. KG.

Please direct any requirements pertaining to a modified and/or new hardware or software configuration directly to WAGO Kontakttechnik GmbH & Co. KG.

1.2 Scope

This Release Note is based on the named hard- and software of respective vendors as well as on associated documentations. Therefore, this Release Note is only valid for the described installation.

Eventually a modified handling is necessary for new hard- and software versions.

Please notice detailed descriptions at respective users manuals.

2 Use

The standardized protocol BACnet (DIN EN ISO 16484-5) is supported by BACnet/IP-Controller 750-830 of WAGO-I/O-SYSTEM 750.

The available Release Note describes the most important items in a short listed form, which should be noted when working with WAGO-BACnet/IP-Controller 750-830 and WAGO-BACnet-Configurator.

This Release Note includes information about performance-settings, tips and tricks as well as up-to-date restrictions and known bugs.

Further information to special items of this Release Note are pointed to specific places in other documentation.

3 Listing in Table Form

3.1 Release Note

1 Maximum amount of objects

Basically the amount of BACnet objects is limited to 1000 (refer to BACnet/IP-Controller 750-830 manual, section 3.1.12.2).

2 Amount of BACnet objects in use

Pure native usage:

- The maximum amount of 1000 objects can be used.

HVAC usage:

- At present the verified amount of BACnet objects is approximately 125 (this has been determined under the following conditions: 96 KBus-Standard I/O modules, manual operation via Modbus RTU RS232-Terminal, Gateway-I/O via Modbus Client, Modbus-Server, WebVisualisation).

A higher amount is more probable and will be evaluated in current analyses.
BACnet side includes: 10 trendlog objects, 2 scheduler objects

3 Internal Mapping

By using BACnet data types of the WAGO-I/O-PRO CAA all structure elements of the single data types are mapped to the dedicated property automatically. Although only the present value shall be used, all of the properties e. g. 23 properties of an analogue value object are mapped. This method unnecessarily allocate memory space.

Alternatively, in order to increase the performance, single IEC variables can be mapped to properties individually. If only the present value is needed in the IEC-application, the dedicated IEC-variable will be assigned to the property by using the internal mapping feature of the BACnet Configurator.

Please note: See tip 1 also

4 **Flash access and memory management**

In general a flash memories has a guaranteed minimum amount of write cycles. In order to ensure the function for the complete life cycle of the device, each trendlog object allocates a cache in the internal RAM, where information is to be stored, before saving them in the flash memory. Please note: In case of a power reset the information that is stored in cache memory will be lost. Cache memory data will be stored in the flash memory not later than 30 seconds.

5 **Trend**

- The maximum of 60 000 trendlog records are available for trending
 - The maximum of 200 trendlog Records can be uploaded in one single request.
-

6 **Create WAGO-I/O-PRO CAA / SYM_XML file**

The settings for the SYM-XML-File of the WAGO-I/O-PRO CAA application can be found in the documentation (BACnet/IP-Controller 750-830 manual, section 3.1.8.2).

The settings for the BACnet controller are different to the settings of the KNX module 753-646 or the KNX IP controller 750-849.

If the settings for the KNX controller are used for BACnet, the format is not valid. The BACnet controller cannot complete the initial phase after a reset (The BT LED will light continuously red).

In order to recover the controller, it must be set to the original delivery status.

Please note: See tip 2 also

7 **Backup & Restore**

Files of the WebVisualisation or internal firmware are not stored by using Backup& Restore. A list of saved files can be found in the BACnet Configurator manual. Should additional files from the controller need to be saved, the user has to initiate this separately by using FTP-download.

8 WAGO-I/O-PRO CAA / blocking function blocks:
ETHERNET_CLIENT_OPEN, ETHERNET_CLIENT_CLOSE

The function blocks mentioned above may block the application program for a certain time (longer period).

If using one of these function blocks, a separate task is strongly recommended (refer to BACnet/IP Controller manual, section 3.1.8.4).

9 COM 0-interface

The COM 0 interface does not work with the Terminal default parameters (like all other interfaces (COM 1, COM 2, ..)) . The following error message occurs:
"These transfer parameters are not supported by the COM port"

Are these parameters are configured explicitly, COM 0 is equivalent to the other COM-interfaces.

10 Controller: changing the IP-address with DHCP

If the DHCP-Lease time expires and the controller gets a new IP-address, the controller does not react to read/ write requests anymore. But, the controller still responds to Who-is requests.

Recommendation: use static IP-addressing instead.

11 Service Read Range

The read request for list elements of an object will be refused with "BACnetError services other", excluding the trendlog object.

12 BACnet-PTP

BACnet-PTP will be supported in version 02.

13 Object Device / Property Active COV Subscriptions

The currently active COV subscriptions are displayed inside the device object. If the amount of 20 COV subscriptions is exceeded once, the active COV subscriptions are not shown in the property anymore.

Reading out the property active COV Subscriptions an error message is displayed differently, depending on the browser being used.

The error message in the device object has no influence to the existing COV subscriptions.

14 BACnet-Configurator / Online monitoring of properties

If objects are selected in the device pool, its properties are displayed in the configuration window and cyclically updated. Fast switching between the different object might cause a freeze of the window in the BACnet configurator. The configurator has to be restarted.

15 Multistate object

If the present value takes over a value of a list element of Fault value (e. g. 3 list elements with Fault value = 1,5,7), the property Reliability does not switch to "multi state fault(9)". It stays with the value "no fault detected (0)". As a work around the detection and processing can be done in WAGO-I/O-PRO CAA.

16 Object Binary Value / Property Elapsed Active Time

If the object Binary value is used in WAGO-I/O-PRO CAA, the value of the property Elapsed Active Time is not updated for Present Value == "active".

A work around is to create a variable (type Unsigned) in the WAGO-I/O-PRO CAA and to map this variable to the property Elapsed Active Time by using the feature "internal Mapping".

17 Object Accumulator

The values of the properties Value Change Time and Value Set are not transferred to WAGO-I/O-PRO CAA.

18 Module 0750-0418

The confirmation bit has no function yet. It can be configured via the BACnet Configurator, but has no influence to the diagnostics.

19 Configurator / Umlaut

Please do not use Umlauts in the current version of the BACnet Configurator. Instead of Umlauts special characters are saved in the controller.

20 WAGO-I/O-CHECK

If connecting *WAGO-I/O-CHECK* with the controller by using a serial connection and control mode is activated, the digital and analogue outputs are controlled via *WAGO-I/O-PRO CAA*. Differently to the 750-841 there is no warning message when enabling the control mode. During Control mode, no access of the outputs is possible from a different fieldbus.

21 Configurator Import of SYM_XML files

If a new SYM XML file is imported in a configuration with an already existing SYM-XML file, the existing configuration will be compared with the new one and are kept, if the names exist already.

Objects, which does not exist, are created automatically.

If object names are equal but differ in type, the comparison cannot be finished successfully. The monitoring of the objects inside the Pool-device doesn't match the imported SYM-XML-file.

Work around: Use a prefix of the object type in front of the name of an IEC object e. g. MV for Multistate value objects. This method can prevent the use of the same object names with different object types.

3.2 Tips

1 Internal-Mapping

By using the internal mapping and without using the features described in the topic above, the amount of objects can be considerably higher (up to the limit of 1000).

2 Set back the controller to the original delivery status

In case of a faulty configuration or an incorrect file the controller indicates an internal error (System failure: all LEDs are flashing, Init error: BT-LED lights continuously), the file system needs to be formatted and extracted.

Take care that the controller has no more access to the network (e. g. remove the network cable from the RJ-45 connector). Reset the controller, start the SW WAGO-Ethernet-Settings and connect the controller via the serial service interface to the PC. Format the file system and create the data structures with “extract”.

3 Persistent data

By configuring the parameter ACC and MOD in the BACnet Configurator it must be defined, whether the online-values are kept or the configuration data will be written in the controller.

The handling of the persistent data are described in the manual of the BACnet Configurator (refer to BACnet-Configurator manual, section 3.1.4 and 4.2).

4 Object Trendlog / Interval

Base of the Trendlog interval is 0,01 s. If values shall be logged every 60 second, the parameter of the trend log object has to be adjusted 6000.

5 Configurator / units in configuration parameters

In the BACnet-Configurator no units are displayed for the configuration parameters. Please have a look in the BACnet/ IP controller manual “objects, properties, services” if a time value needs to be configured in [sec] or in [0,01 sec].

6 Object Binary Output / Object Analog Output

If binary outputs inside the WAGO-I/O-PRO CAA are assigned to the PLC, the property Out of Service will be set to “active”. The status of the output is not displayed on the BACnet side.

7 Object Trendlog / LogDeviceObject property

After creating a new trendlog object the LogDeviceObject property is missing. The property has to be added by using “ add property” in the BACnet Configurator manually.

If the LogDeviceObject property is not an array (standard case) then the property PropertyArrayIndex must be disabled. Use the BACnet Configurator, choose the PropertyArrayIndex, click on the blue radio button and the property will be disabled.

8 Configurator / Display Object names in the area Scan/Database

As long as the object name inside the scan area has not been read out from the Configurator, a generic name appears. By reading out the object name will be updated immediately.



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