

**WAGO I/O SYSTEM 750**

## **Library for Building Automation**

**Library Description for for the  
WAGO BACnet Library  
BACnet\_02.lib**

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Every conceivable measure has been taken to ensure the accuracy and completeness of this documentation. However, as errors can never be fully excluded, we always appreciate any information or suggestions for improving the documentation.

We wish to point out that the software and hardware names, as well as the trademarks of companies used and/or mentioned in the present manual, are generally protected by trademark or patent.

**WAGO-I/O-PRO V2.3 library for building automation**

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# Important Notes

To ensure fast installation and start-up of the units, we strongly recommend that the following information and explanations are carefully read and adhered to.

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The use of the product described in this document is exclusively geared to specialists having qualifications in SPS programming, electrical specialists or persons instructed by electrical specialists who are also familiar with the appropriate current standards. WAGO Kontakttechnik GmbH & Co. KG assumes no liability resulting from improper action and damage to WAGO products and third-party products due to non-observance of the information contained in this document.

## Intended Use

For each individual application, the components are supplied from the factory with a dedicated hardware and software configuration. Modifications are only admitted within the framework of the possibilities documented in this document. 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.

## Scope of Validity

This application note is based on the stated hardware and software from the specific manufacturer, as well as the associated documentation. This application note is therefore only valid for the described installation. New hardware and software versions may need to be handled differently.

Please note the detailed description in the specific manuals.

# Writing into the BACnet Priority Array

## FbBACnetPriorityArray\_AV

WAGO-I/O-PRO-V2.3 Library Elements		
Category:	Building Automation	
Name:	FbBACnetPriorityArray_AV	
Type:	Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:	BACnet_02.lib	
Applicable to:	See Release Note	
Library used:	BACnetAccess.lib BACnetObjects.EXP	
Input parameter:	Data type:	Comment:
rValue	REAL	Value entry
xNULL	BOOL	Enter NULL
bPriority	BYTE	Priority Value range = 1 – 16 Default setting = 16
Output parameter:	Data type:	Comment:
rPresentValue	REAL	Present value
xOverride	BOOL	TRUE-> Override value present
Input/output parameter:	Data type:	Comment:
BACNET_ANALOG_VALUE	<a href="#">BACNET_ANALOG_VALUE</a>	Data type for the "BACnet Analog Value" object
Graphical illustration:		
<div><div>FbBACnetPriorityArray_AV</div><div><div>rValue</div><div>xNULL</div><div>bPriority</div><div>BACNET_ANALOG_VALUE ▶</div></div><div><div>rPresentValue</div><div>xOverride</div></div></div>		

**Functional description:**

The function block is used to write in a prioritized manner to the "Priority\_Array" property of a BACnet Analog Value object type. In this way, it is possible to impact the same "Present\_Value" property from both the BACnet network and the IEC application.

The priority specifies which party is to receive permission to write to the "Present\_Value" property. The "**bPriority**" input is used to determine the write priority of the IEC application. A value of 1 denotes highest priority, and a value of 16 denotes lowest priority.

The "**rValue**" value is only written to the "**BACNET\_ANALOG\_VALUE**" variable when the "**xNULL**" input is not activated. If this input is activated, the "NULL" value is written in the array element (specified via "**bPriority**") of the "**BACNET\_ANALOG\_VALUE**" variables. The "NULL" value can be used to reset write access with a specific priority.

The "**rPresent\_Value**" output indicates the present value. If a value, whose priority is higher than the priority specified at the "bPriority" input, is entered in the priority array, the "**xOverride**" output is set to TRUE.

**Note:**

Changing the priority "**bPriority**" after starting the IEC application is not supported and can cause an error.



## FbBACnetPriorityArray\_BV

WAGO-I/O-PRO-V2.3 Library Elements		
Category:	Building Automation	
Name:	FbBACnetPriorityArray_BV	
Type:	Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:	BACnet_02.lib	
Applicable to:	See Release Note	
Library used:	BACnetAccess.lib BACnetObjects.EXP	
Input parameter:	Data type:	Comment:
xValue	BOOL	Value entry
xNULL	BOOL	Enter NULL
bPriority	BYTE	Priority Value range = 1 – 16 Default setting = 16
Output parameter:	Data type:	Comment:
xPresentValue	BOOL	Present value
xOverride	BOOL	TRUE-> Override value present
Input/output parameter:	Data type:	Comment:
BACNET_BINARY_VALUE	<a href="#">BACNET_BINARY_VALUE</a>	Data type for the "BACnet Binary Value" object
Graphical illustration:		
<div><div>FbBACnetPriorityArray_BV</div><div><div>xValue</div><div>xPresentValue</div><div>xNULL</div><div>xOverride</div><div>bPriority</div><div>BACNET_BINARY_VALUE ▶</div></div></div>		

**Functional description:**

The function block is used to write in a prioritized manner to the "Priority\_Array" property of a BACnet Binary Value object type. In this way, it is possible to impact the same "Present\_Value" property from both the BACnet network and the IEC application.

The priority specifies which party is to receive permission to write to the "Present\_Value" property. The "**bPriority**" input is used to determine the write priority of the IEC application. A value of 1 denotes highest priority, and a value of 16 denotes lowest priority.

The "**xValue**" value is only written to the "**BACNET\_BINARY\_VALUE**" variable when the "**xNULL**" input is not activated. If this input is activated, the "NULL" value is written in the array element (specified via "**bPriority**") of the "**BACNET\_BINARY\_VALUE**" variables. The "NULL" value can be used to reset write access with a specific priority.

The "**xPresent\_Value**" output indicates the present value. If a value, whose priority is higher than the priority specified at the "bPriority" input, is entered in the priority array, the "**xOverride**" output is set to TRUE.

**Note:**

Changing the priority "**bPriority**" after starting the IEC application is not supported and can cause an error.

## FbBACnetPriorityArray\_MV

WAGO-I/O-PRO-V2.3 Library Elements		
Category:	Building Automation	
Name:	FbBACnetPriorityArray_MV	
Type:	Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:	BACnet_02.lib	
Applicable to:	See Release Note	
Library used:	BACnetAccess.lib BACnetObjects.EXP	
Input parameter:	Data type:	Comment:
dwValue	DWORD	Value entry Default setting = 1 Value range = 1- "Number Of States"
xNULL	BOOL	Enter NULL
bPriority	BYTE	Priority Value range = 1 – 16 Default setting = 16
Output parameter:	Data type:	Comment:
dwPresentValue	DWORD	Present value
xOverride	BOOL	TRUE-> Override value present
xError	BOOL	TRUE-> The input value is greater than "Number of States"
Input/output parameter:	Data type:	Comment:
BACNET_MULTISTATE_VALUE	<a href="#">BACNET_MULTISTATE_VALUE</a>	Data type for the "BACnet Multi-state Value" object
Graphical illustration:		
<div><div>FbBACnetPriorityArray_MV</div><div><div>dwValue</div><div>xNULL</div><div>bPriority</div><div>BACNET_MULTISTATE_VALUE ▶</div></div><div><div>dwPresentValue</div><div>xOverride</div><div>xError</div></div></div>		

**Functional description:**

The function block is used to write in a prioritized manner to the "Priority\_Array" property of a BACnet Multi-State Value object type. In this way, it is possible to impact the same "Present\_Value" property from both the BACnet network and the IEC application.

The priority specifies which party is to receive permission to write to the "Present\_Value" property. The **"bPriority"** input is used to determine the write priority of the IEC application. A value of 1 denotes highest priority, and a value of 16 denotes lowest priority.

The values of the priority array are entered at the **"dwValue"** input. The value must be greater than 0 and less than the BACnet Property "Number of State".

The "Number of State" property defines how many states the "Present\_Value" property can accept and can only be adjusted in the BACnet configurator. Therefore, the **"dwValue"** input value cannot be greater than the "Number of States". If not, the **"xError"** output is set to TRUE.

In addition, the **"dwValue"** value is only written to the **"BACNET\_MULTISTATE\_VALUE"** variable when the **"xNULL"** input is not activated. If this input is activated, the "NULL" value is written in the array element (specified via **"bPriority"**) of the **"BACNET\_MULTI\_STATE\_VALUE"** variables. The "NULL" value can be used to reset write access with a specific priority.

The **"dwPresent\_Value"** output indicates the present value. If a value, whose priority is higher than the priority specified at the **"bPriority"** input, is entered in the priority array, the **"xOverride"** output is set to TRUE.

**Note:**

Changing the priority **"bPriority"** after starting the IEC application is not supported and can cause an error.

# Reading and Writing BACnet Setpoints

## FbBACnetInOutValue\_AV

WAGO-I/O-PRO V2.3 Library Elements		
Category:	Building Automation	
Name:	FbBACnetInOutValue_AV	
Type:	Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:	BACnet_02.lib	
Applicable to:	See Release Note	
Library used:	BACnetAccess.lib BACnetObjects.EXP	
Input parameter:	Data type:	Comment:
bPriority	BYTE	Priority Value range: 1 – 16 Default setting = 16
Output parameter:	Data type:	Comment:
-	-	-
Input/Output parameters:	Data type:	Comment:
rValue	REAL	Value entry
BACNET_ANALOG_VALUE	<a href="#">BACNET_ANALOG_VALUE</a>	Input for the "BACnet Analog Value" object
Graphical illustration:		
<div><div>FbBACnetInOutValue_AV</div><div><div>bPriority</div><div>rValue ▶</div><div>BACNET_ANALOG_VALUE ▶</div></div></div>		

### Function description:

The function block is used for the reading and writing of a BACnet object's ANALOG\_VALUE.

A typical application for this function block is the setting of setpoints if these should be configurable both via the BACnet network as well as via the IEC application. The setpoint is specified on the **"rValue"** input. The variable **"rValue"** is executed as IN\_OUT variable and can thus also be output by the value written by the BACnet network.

The **"bPriority"** input is used to determine the write priority of the IEC application. A value of 1 denotes highest priority, and a value of 16 denotes lowest priority.

### Note:

- The variable **"rValue"** cannot reflect the value of the **"Property Present\_Value"**.
- The variable **"rValue"** contains only the value of the priority array whose priority is specified by the input **"bPriority"**.
- Changing the priority **"bPriority"** after starting the IEC application is not supported and can cause an error.

Present Value	25
Priority Array	Priority Value (1...16)
[1]	<null>
[2]	<null>
[3]	<null>
[4]	<null>
[5]	<null>
[6]	<null>
[7]	<null>
[8]	25
[9]	<null>
[10]	<null>
[11]	<null>
[12]	<null>
[13]	<null>
[14]	<null>
[15]	<null>
[16]	20

„rValue“ = 20

„bPriority“ = 16



[16]	20
------	----

## FbBACnetInOutValue\_BV

WAGO-I/O-PRO V2.3 Library Elements		
Category:	Building Automation	
Name:	FbBACnetInOutValue_BV	
Type:	Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:	BACnet_02.lib	
Applicable to:	See Release Note	
Library used:	BACnetAccess.lib BACnetObjects.EXP	
Input parameter:	Data type:	Comment:
bPriority	BYTE	Priority Value range: 1 – 16 Default setting = 16
Output parameter:	Data type:	Comment:
-	-	-
Input/Output parameters:	Data type:	Comment:
xValue	BOOL	Value entry
BACNET_BINARY_VALUE	<a href="#">BACNET_BINARY_VALUE</a>	Input for the "BACnet Analog Value" object
Graphical illustration:		
<div><div>FbBACnetInOutValue_BV</div><div><div>bPriority</div><div>xValue ▶</div><div>BACNET_BINARY_VALUE ▶</div></div></div>		

### Function description:

The function block is used for the reading and writing of a BACnet object's BINARY\_VALUE.

A typical application for this function block is the setting of setpoints if these should be configurable both via the BACnet network as well as via the IEC application. The setpoint is specified on the **"xValue"** input. The variable "xValue" is executed as IN\_OUT variable and can thus also be output by the value written by the BACnet network.

The **"bPriority"** input is used to determine the write priority of the IEC application. A value of 1 denotes highest priority, and a value of 16 denotes lowest priority.

### Note:

- The variable "xValue" cannot reflect the value of the "Property Present\_Value".
- The variable "xValue" contains only the value of the priority array whose priority is specified by the input "bPriority".
- Changing the priority "bPriority" after starting the IEC application is not supported and can cause an error.

Present Value	INACTIVE (0)
Priority Array	Priority Value (1...16)
[1]	<null>
[2]	<null>
[3]	<null>
[4]	<null>
[5]	<null>
[6]	<null>
[7]	<null>
[8]	INACTIVE (0)
[9]	<null>
[10]	<null>
[11]	<null>
[12]	<null>
[13]	<null>
[14]	<null>
[15]	<null>
[16]	ACTIVE (1)

„xValue“ = TRUE

„bPriority“ = 16



[16]	ACTIVE (1)
------	------------



## FbBACnetInOutValue\_MV

WAGO-I/O-PRO V2.3 Library Elements			
Category:		Building Automation	
Name:		FbBACnetInOutValue_MV	
Type:		Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
bPriority		BYTE	Priority Value range: 1 – 16 Default setting = 16
Output parameter:		Data type:	Comment:
-		-	-
Input/Output parameters:		Data type:	Comment:
dwValue		DWORD	Value entry
BACNET_MULTISTATE_VALUE		<a href="#">BACNET_MULTISTATE_VALUE</a>	Input for the "BACnet Multi-state Value" object
Graphical illustration:			
<div><div>FbBACnetInOutValue_MV</div><div><div>bPriority</div><div>dwValue ▶</div><div>BACNET_MULTISTATE_VALUE ▶</div></div></div>			

### Function description:

The function block is used for the reading and writing of a BACnet object's MULTISTATE\_VALUE.

A typical application for this function block is the setting of setpoints if these should be configurable both via the BACnet network as well as via the IEC application. The setpoint is specified on the **"dwValue"** input. The variable **"dwValue"** is executed as IN\_OUT variable and can thus also be output by the value written by the BACnet network.

The **"bPriority"** input is used to determine the write priority of the IEC application. A value of 1 denotes highest priority, and a value of 16 denotes lowest priority.

### Note:

- The variable **"dwValue"** cannot reflect the value of the **"Property Present\_Value"**.
- The variable **"dwValue"** contains only the value of the priority array whose priority is specified by the input **"bPriority"**.
- Changing the priority **"bPriority"** after starting the IEC application is not supported and can cause an error.

Present Value	2
Priority Array	Priority Value (1...16)
[1]	<null>
[2]	<null>
[3]	<null>
[4]	<null>
[5]	<null>
[6]	<null>
[7]	<null>
[8]	2
[9]	<null>
[10]	<null>
[11]	<null>
[12]	<null>
[13]	<null>
[14]	<null>
[15]	<null>
[16]	5

„dwValue“ = 5

„bPriority“ = 16



# Save Setpoint Value as Retentive Value

## FbRetainSetpoint\_AV

WAGO-I/O-PRO-V2.3 Library Elements		
Category:	Building Automation	
Name:	FbRetainSetpoint_AV	
Type:	Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:	BACnet_02.lib	
Applicable to:	See Release Note	
Library used:	BACnetAccess.lib BACnetObjects.EXP	
Input parameter:	Data type:	Comment:
rValue	REAL	Setpoint value entry with priority 16
xNULL	BOOL	Enter NULL
bPrioritySelection	BYTE	Priority Value range = 1 – 15 Default setting = 8
Output parameter:	Data type:	Comment:
rPresentValue	REAL	Present value
Input/output parameter:	Data type:	Comment:
BACNET_ANALOG_VALUE	<a href="#">BACNET_ANALOG_VALUE</a>	Data type for the "BACnet Analog Value" object
typRetain_AV	typRetain_AV	RETAIN Register
adwValuePriorityArray	ARRAY[0..1] OF DWORD	[0] = Overrange setpoint value [1] = Setpoint value with priority 16 Default setting = 2(16#008000000)
Graphical illustration:		
<div><div>FbRetainSetpoint_AV</div><div><div>rValue</div><div>xNULL</div><div>bPrioritySelection</div><div>BACNET_ANALOG_VALUE ▸</div><div>typRetain_AV ▸</div></div><div>rPresentValue</div></div>		

**Functional description:**

The function block is used to save setpoint values as retentive values without declaring the entire **"BACNET\_ANALOG\_VALUE"** variable as RETAIN PERSISTENT. This can contribute to a substantial reduction in usage of RETAIN memory in the controller. A typical application for this function block is the setting of setpoints and parameters via BACnet.

Two out of 16 values from the BACnet Priority Arrays can be saved. After a Reset, the priority array of the BACnet object, which is assigned on the input **"BACNET\_ANALOG\_VALUE"** will be initialized with the stored values.

The setpoint value entered at the **"rValue"** input is always saved as an array value with priority 16 and is one of the two values stored as retentive values. The input **"bPrioritySelection"** determined the priority of the second value from the priority array to be stored as retentive.

The setpoint value is only written to the **"BACNET\_ANALOG\_VALUE"** variable when the **"xNULL"** input is not activated. If the **"xNULL"** input is activated, then the "NULL" value is written. The "NULL" value can reset write access.

The variable **"typRetain\_AV"** must be declared as RETAIN PERSISTENT

The **"rPresent\_Value"** value indicates the present value.

**Notes:**

The BACnet value "NULL" is undefined in the IEC Application. Hence the smallest REAL number in CODESYS will be used to represent "NULL". The "NULL" will be saved in the variable **"typRetain\_AV"** as 16#00800000 which corresponds to the smallest byte content of the REAL number in CODESYS (1.175494351e-38).

Changing the priority **"bPrioritySelection"** after starting the IEC application is not supported and can cause an error.

## FbRetainSetpoint\_BV

WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FbRetainSetpoint_BV	
Type:		Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
xValue		BOOL	Setpoint value entry with priority 16
xNULL		BOOL	Enter NULL
bPrioritySelection		BYTE	Priority Value range = 1 – 15 Default setting = 8
Output parameter:		Data type:	Comment:
xPresentValue		BOOL	Present value
Input/output parameter:		Data type:	Comment:
BACNET_BINARY_VALUE		<a href="#">BACNET_BINARY_VALUE</a>	Data type for the "BACnet Analog Value" object
typRetain_BV		typRetain_BV	RETAIN Register
abValuePriorityArray		ARRAY [0..1 ] OF BYTE	[0] = Overrange setpoint value [1] = Setpoint value with priority 16 Default setting = 2(16#FF)
Graphical illustration:			
<div><div>FbRetainSetpoint_BV</div><div><div>xValue</div><div>xNULL</div><div>bPrioritySelection</div><div>BACNET_BINARY_VALUE ▸</div><div>typRetain_BV ▸</div></div><div>xPresentValue</div></div>			

**Functional description:**

The function block is used to save setpoint values as retentive values without declaring the entire **"BACNET\_BINARY\_VALUE"** variable as RETAIN PERSISTENT. This can contribute to a substantial reduction in usage of RETAIN memory in the controller. A typical application for this function block is the setting of setpoints and parameters via BACnet.

Two out of 16 values from the BACnet Priority Arrays can be saved. After a Reset, the priority array of the BACnet object, which is assigned on the input **"BACNET\_BINARY\_VALUE"** will be initialized with the stored values.

The setpoint value entered at the **"xValue"** input is always saved as an array value with priority 16 and is one of the two values stored as retentive values. The input **"bPrioritySelection"** determined the priority of the second value from the priority array to be stored as retentive.

The setpoint value is only written to the **"BACNET\_BINARY\_VALUE"** variable when the **"xNULL"** input is not activated. If the **"xNULL"** input is activated, then the "NULL" value is written. The "NULL" value can reset write access.

The variable **"typRetain\_BV"** must be declared as RETAIN PERSISTENT

The **"xPresent\_Value"** value indicates the present value.

**Notes:**

There BACnet value "NULL" is undefined in the IEC Application. Hence the value 255 will used to represent "NULL". Hence the "NULL" will be saved in the variable **"typRetain\_BV"** as 16#FF.

Changing the priority **"bPrioritySelection"** after starting the IEC application is not supported and can cause an error.

## FbRetainSetpoint\_MV

WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FbRetainSetpoint_MV	
Type:		Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
dwValue		DWORD	Setpoint value entry with priority 16
xNULL		BOOL	Enter NULL
bPrioritySelection		BYTE	Priority Value range = 1 – 15 Default setting = 8
Output parameter:		Data type:	Comment:
dwPresentValue		DWORD	Present value
Input/output parameter:		Data type:	Comment:
BACNET_MULTISTATE_VALUE		<a href="#">BACNET_MULTISTATE_VALUE</a>	Data type for the "BACnet Multi-state Value" object
typRetain_MV		typRetain_MV	RETAIN Register
adwValuePriorityArray		ARRAY[0..1] OF DWORD	[0] = Overrange setpoint value [1] = Setpoint value with priority 16 Default setting = 2(16#FFFF)
Graphical illustration:			
<div><div>FbRetainSetpoint_MV</div><div><div>dwValue</div><div>xNULL</div><div>bPrioritySelection</div><div>BACNET_MULTISTATE_VALUE ▶</div><div>typRetain_MV ▶</div></div><div>dwPresentValue</div></div>			

**Functional description:**

The function block is used to save setpoint values as retentive values without declaring the entire **"BACNET\_MULTISTATE\_VALUE"** variable as RETAIN PERSISTENT. This can contribute to a substantial reduction in usage of RETAIN memory in the controller. A typical application for this function block is the setting of setpoints and parameters via BACnet.

Two out of 16 values from the BACnet Priority Arrays can be saved. After a Reset, the priority array of the BACnet object, which is assigned on the input **"BACNET\_MULTISTATE\_VALUE"** will be initialized with the stored values.

The setpoint value entered at the **"dwValue"** input is always saved as an array value with priority 16 and is one of the two values stored as retentive values. The input **"bPrioritySelection"** determined the priority of the second value from the priority array to be stored as retentive.

The setpoint value is only written to the **"BACNET\_MULTISTATE\_VALUE"** variable when the **"xNULL"** input is not activated. If the **"xNULL"** input is activated, then the "NULL" value is written. The "NULL" value can reset write access.

The variable **"typRetain\_MV"** must be declared as RETAIN PERSISTENT

The **"dwPresent\_Value"** value indicates the present value.

**Notes:**

There BACnet value "NULL" is undefined in the IEC Application. Hence the value 65535 will used to represent "NULL". Hence the "NULL" will be saved in the variable **"typRetain\_BV"** as 16#FFFF.

Changing the priority **"bPrioritySelection"** after starting the IEC application is not supported and can cause an error.



## FbRetain\_LOOP

WAGO-I/O-PRO-V2.3 Library Elements		
Category:	Building Automation	
Name:	FbRetain_LOOP	
Type:	Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Programm <input type="checkbox"/>
Name of library:	BACnet_02.lib	
Applicable to:	See Release Note	
Library used:	BACnetAccess.lib BACnetObjects.EXP	
Input parameter:	Data type:	Comment:
Input/output parameter:	Data type:	Comment:
BACNET_LOOP	<a href="#">BACNET_LOOP</a>	Data type for the "BACnet Loop Object Type" object
typRetain_Loop	typRetain_Loop	RETAIN Register
rValuePriorityArray	ARRAY [0..5] OF REAL	[0] = Setpoint [1] = Proportional constant [2] = Integral constant [3] = Differential constant [4] = Maximum Output [5] = Minimum Output
Graphical illustration::		
<div><div>FbRetain_LOOP</div><div>BACNET_LOOP ▸</div><div>typRetain_Loop ▸</div></div>		
Functional description:		
<p>The function block is used to save control parameters as retentive values without declaring the entire <b>“BACNET_LOOP”</b> variable as RETAIN PERSISTENT. This can contribute to a substantial reduction in usage of RETAIN memory in the controller.</p> <p>The variable <b>"typRetain_Loop"</b> must be declared as RETAIN PERSISTENT</p>		

# Access to the BACnet-native Object

## FbBACnetNative\_AI

WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FuBACnetNative_AI	
Type:		Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
dwInstance		DWORD	Instance number of the object
Output parameter:		Data type:	Comment:
rPresentValue		REAL	Present value
xError		BOOL	TRUE-> Error has occurred
Graphical illustration:			
<div><div>FbBACnetNative_AI</div><div><div>dwInstance</div><div>rPresentValue</div><div>xError</div></div></div>			

**Functional description:**

The function block is used to read a native ANALOG\_INPUT object in the IEC application.

Each BACnet device within a BACnet possess a unique instance number and can be read from the BACnet configurator (see Figure 1). This instance number of the object is entered at the "**dwInstance**" input.

The screenshot shows a software interface for configuring a BACnet device. At the top, there are three fields: 'Scan' (with a button), 'Device: Device\_0030de0326fa', and 'Object: ANALOG\_INPUT\_0'. Below these, there are three rows of configuration data: 'Name:' with the value 'ANALOG\_INPUT\_0', 'Type:' with the value 'Analog Input', and 'Instance Nr:' with the value '0'. Each row has a corresponding input field with a light blue border.

*Figure 1: Instance number in the BACnet configurator*

The current value is output at "**rPresentValue**". If an error occurs, the "**xError**" output is set to TRUE.

## FbBACnetNative\_AO

WAGO-I/O-PRO-V2.3 Library Elements			
Category:	Building Automation		
Name:	FuBACnetNative_AO		
Type:	Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/>	Program <input type="checkbox"/>
Name of library:	BACnet_02.lib		
Applicable to:	See Release Note		
Library used:	BACnetAccess.lib BACnetObjects.EXP		
Input parameter:	Data type:	Comment:	
rValue	REAL	Value entry	
rSendOnDelta	REAL	Hysteresis for sending conditions Default setting = 1	
xNULL	BOOL	Enter NULL	
bPriority	BYTE	Priority Value range = 1 – 16 Default setting = 16	
dwInstance	DWORD	Instance number of the object	
xUpdate	BOOL	Update values	
Output parameter:	Data type:	Comment:	
rPresentValue	REAL	Present value	
xError	BOOL	TRUE-> Error has occurred	
Graphical illustration:			
<div><div>FbBACnetNative_AO</div><div><div>rValue</div><div>rPresentValue</div><div>rSendOnDelta</div><div>xOverride</div><div>xNULL</div><div>xError</div><div>bPriority</div><div>dwInstance</div><div>xUpdate</div></div></div>			

### Functional description:

The function block is used to write in a prioritized manner to the "Priority\_Array" property of a BACnet-native object. In this way, it is possible to impact the "Present\_Value" property of a native analog object from both the IEC application.

The priority specifies which party is to receive permission to write to the "Present\_Value" property. The "**bPriority**" input is used to determine the write priority of the IEC application. A value of 1 denotes highest priority, and a value of 16 denotes lowest priority.

The "**rValue**" value is only written when there is a value change at the "**rValue**" input and the "**xNULL**" input is not activated. If the "**xNULL**" input is activated, then only the "NULL" value is written. The "NULL" value can be used to reset write access with a specific priority. If there is a rising edge at the "**xUpdate**" input, the input values can be written again.

The "**rSendOnDelta**" parameter indicates the amount by which the input value "**rValue**" must change before a write process is activated. The writing frequency can be limited in this manner.

Each BACnet object within a BACnet network possess a unique instance number and can be read from the BACnet configurator (see Figure 2 ). This instance number of the object is entered at the "**dwlInstance**" input.

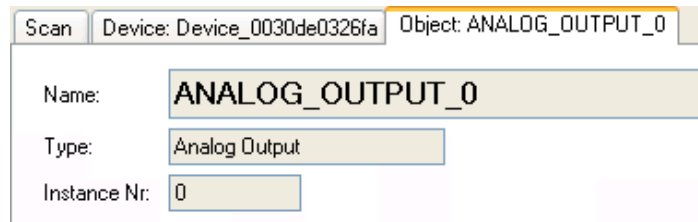


Figure 2: Instance number in the BACnet configurator

The "**rPresent\_Value**" output indicates the present value. If a value, whose priority is higher than the priority specified at the "bPriority", is entered in the priority array, the "**xOverride**" output is set to TRUE. If an error occurs, the "**xError**" output is set to TRUE. The internal BACnetLibError variable of the block indicates the cause of the error.

### Note:

Changing the priority "**bPriority**" after starting the IEC application is not supported and can cause an error.

The block will only work properly if the process image (PA) assignment of the corresponding output module is configured to BACnet (see Figure 3). This is carried out in the CODESYS PLC configuration.

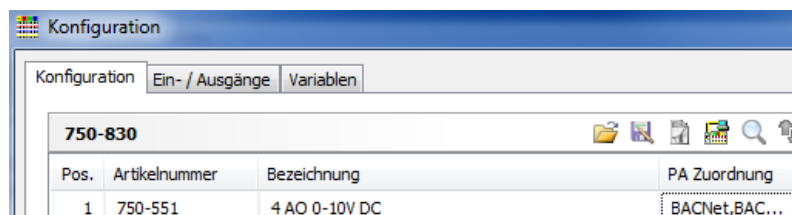


Figure 3: Example of a 4-channel analog output module

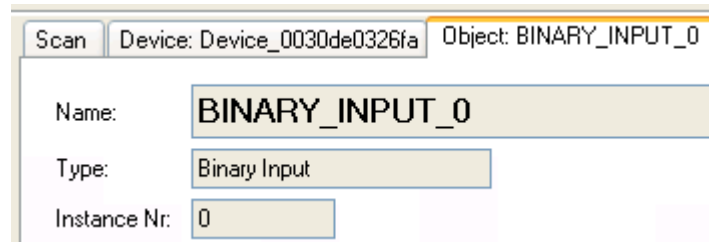
## FbBACnetNative\_BI

WAGO-I/O-PRO-V2.3 Library Elements			
Category:	Building Automation		
Name:	FuBACnetNative_BI		
Type:	Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/>	Program <input type="checkbox"/>
Name of library:	BACnet_02.lib		
Applicable to:	See Release Note		
Library used:	BACnetAccess.lib BACnetObjects.EXP		
Input parameter:	Data type:	Comment:	
dwInstance	DWORD	Instance number of the object	
Output parameter:	Data type:	Comment:	
xPresentValue	BOOL	Present value	
xError	BOOL	TRUE-> Error has occurred.	
Graphical illustration:			
<div><div>FbBACnetNative_BI</div><div><div>dwInstance</div><div>xPresentValue</div><div>xError</div></div></div>			

**Functional description:**

The block is used to read a native BINARY\_INPUT object in the IEC application.

Each BACnet object within a BACnet network possess a unique instance and can be read from the BACnet configurator. This instance number of the object is entered at the "**dwInstance**" input.



The screenshot shows a software interface for configuring a BACnet object. At the top, there is a 'Scan' button and two text fields: 'Device: Device\_0030de0326fa' and 'Object: BINARY\_INPUT\_0'. Below these, there are three labeled input fields: 'Name:' with the value 'BINARY\_INPUT\_0', 'Type:' with the value 'Binary Input', and 'Instance Nr:' with the value '0'.

*Figure 4: Instance number in the BACnet configurator*

The current value is output at "**xPresentValue**". If an error occurs, the "**xError**" output is set to TRUE.

## FbBACnetNative\_BO

WAGO-I/O-PRO-V2.3 Library Elements			
Category:	Building Automation		
Name:	FuBACnetNative_BO		
Type:	Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/>	Program <input type="checkbox"/>
Name of library:	BACnet_02.lib		
Applicable to:	See Release Note		
Library used:	BACnetAccess.lib BACnetObjects.EXP		
Input parameter:	Data type:	Comment:	
xValue	BOOL	Value entry	
xNULL	BOOL	Enter NULL	
bPriority	BYTE	Priority Value range = 1 – 16 Default setting = 16	
dwInstance	DWORD	Instance number of the object	
xUpdate	BOOL	Update values	
Output parameter:	Data type:	Comment:	
xPresentValue	BOOL	Present value	
xError	BOOL	TRUE-> Error has occurred	
Graphical illustration:			
<div><div>FbBACnetNative_BO</div><div><div>xValue</div><div>xPresentValue</div><div>xNULL</div><div>xOverride</div><div>bPriority</div><div>xError</div><div>dwInstance</div><div>xUpdate</div></div></div>			



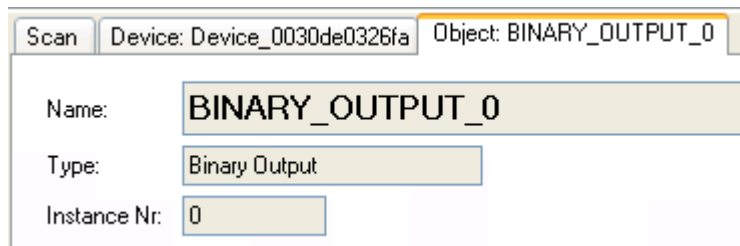
**Functional description:**

The function block is used to write in a prioritized manner to the "Priority\_Array" property of a BACnet-native object. In this way, it is possible to impact the "Present\_Value" property of a native binary object from both the IEC application.

The priority specifies which party is to receive permission to write to the "Present\_Value" property. The "**bPriority**" input is used to determine the write priority of the IEC application. A value of 1 denotes highest priority, and a value of 16 denotes lowest priority.

The "**xValue**" value is only written when there is a value change at the "xValue" input and the "**xNULL**" input is not activated. If the "xNULL" input is activated, then only the "NULL" value is written. The "NULL" value can be used to reset write access with a specific priority. If there is a rising edge at the "**xUpdate**" input, the input values can be written again.

Each BACnet object within a BACnet network possess a unique instance and can be read from the BACnet configurator (s. Figure 5). This instance number of the object is entered at the "**dwInstance**" input.



Scan    Device: Device\_0030de0326fa    Object: BINARY\_OUTPUT\_0

Name: **BINARY\_OUTPUT\_0**

Type: Binary Output

Instance Nr: 0

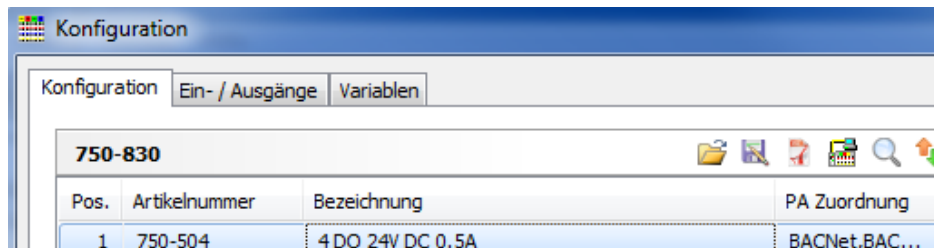
Figure 5: Instance number in the BACnet configurator

The "**xPresent\_Value**" output indicates the present value. If a value, whose priority is higher than the priority specified at the "bPriority" input, is entered in the priority array, the "**xOverride**" output is set to TRUE. If an error occurs, the "**xError**" output is set to TRUE. The internal BACnetLibError variable of the block indicates the cause of the error.

**Note:**

Changing the priority "**bPriority**" after starting the IEC application is not supported and can cause an error.

The block will only work properly if the process image (PA) assignment of the corresponding output module is configured to BACnet. This is carried out in the CODESYS PLC configuration(s. Figure 6).

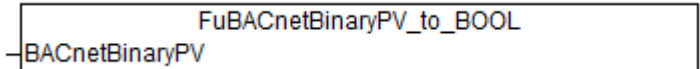


Konfiguration			
Konfiguration    Ein- / Ausgänge    Variablen			
750-830			
Pos.	Artikelnummer	Bezeichnung	PA Zuordnung
1	750-504	4 DO 24V DC 0.5A	BACnet, BAC...

Figure 6: Example of a 4-channel binary output module

# Converting IEC/BACnet Variables

## BACnetBinaryPV\_to\_BOOL

<b>WAGO-I/O-PRO-V2.3 Library Elements</b>		
<b>Category:</b>	Building Automation	
<b>Name:</b>	FuBACnetBinaryPV_to_BOOL	
<b>Type:</b>	Function <input checked="" type="checkbox"/>	Function block <input type="checkbox"/> Program <input type="checkbox"/>
<b>Name of library:</b>	BACnet_02.lib	
<b>Applicable to:</b>	See Release Note	
<b>Library used:</b>	BACnetAccess.lib BACnetObjects.EXP	
<b>Input parameter:</b>	<b>Data type:</b>	<b>Comment:</b>
BACnetBinaryPV	BACnetBinaryPV	
<b>Return value</b>	<b>Data type:</b>	<b>Comment:</b>
FuBACnetBinaryPV_to_BOOL	BOOL	
<b>Graphical illustration:</b>		
		
<b>Functional description:</b>		
The function converts the BACnetBinaryPV data type into the BOOL data type:		

## FuBOOL\_to\_BACnetBinaryPV

WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FuBOOL_to_BACnetBinaryPV	
Type:		Function <input checked="" type="checkbox"/>	Function block <input type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
xInput		BOOL	
Return value		Data type:	Comment:
FuBOOL_to_BACnetBinaryPV		BACnetBinaryPV	
Graphical illustration:			
<div><div><div></div><div>FuBOOL_to_BACnetBinaryPV</div></div><div><div>xInput</div></div></div>			
Functional description:			
The function converts the BOOL data type into the BACnetBinaryPV data type.			

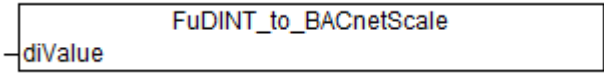
## FuBACnetScale\_to\_DINT

WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FuBACnetScale_to_DINT	
Type:		Function <input checked="" type="checkbox"/>	Function block <input type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
BACnetScale		BACnetScale	
Return value		Data type:	Comment:
FuBACnetScale_to_DINT		DINT	
Graphical illustration:			
<div><div>FuBACnetScale_to_DINT</div><div>-BACnetScale</div></div>			
Functional description:			
The function converts the BACnetScale data type into the DINT data type.			

## FuBACnetScale\_to\_REAL

WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FuBACnetScale_to_REAL	
Type:		Function <input checked="" type="checkbox"/>	Function block <input type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
BACnetScale		BACnetScale	
Return value		Data type:	Comment:
FuBACnetScale_to_REAL		REAL	
Graphical illustration:			
<div><div></div><div>FuBACnetScale_to_REAL</div><div>BACnetScale</div></div>			
Functional description:			
The function converts the BACnetScale data type into the REAL data type.			

## FuDINT\_to\_BACnetScale

WAGO-I/O-PRO-V2.3 Library Elements		
<b>Category:</b>	Building Automation	
<b>Name:</b>	FuDINT_to_BACnetScale	
<b>Type:</b>	Function <input checked="" type="checkbox"/>	Function block <input type="checkbox"/> Program <input type="checkbox"/>
<b>Name of library:</b>	BACnet_02.lib	
<b>Applicable to:</b>	See Release Note	
<b>Library used:</b>	BACnetAccess.lib BACnetObjects.EXP	
<b>Input parameter:</b>	<b>Data type:</b>	<b>Comment:</b>
diValue	DINT	
<b>Return value</b>	<b>Data type:</b>	<b>Comment:</b>
FuDINT_to_BACnetScale	BACnetScale	
<b>Graphical illustration:</b>		
		
<b>Functional description:</b>		
The function converts the DINT data type into the BACnetScale data type.		

## FuREAL\_to\_BACnetScale

WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FuREAL_to_BACnetScale	
Type:		Function <input checked="" type="checkbox"/>	Function block <input type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
rValue		REAL	
Return value		Data type:	Comment:
FuREAL_to_BACnetScale		BACnetScale	
Graphical illustration:			
<div><div><div></div><div>FuREAL_to_BACnetScale</div></div><div>rValue</div></div>			
Functional description:			
The function converts the REAL data type into the BACnetScale data type.			

## FuBACnetTimeStamp\_to\_DT

WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FuBACnetTimeStamp_to_DT	
Type:		Function <input checked="" type="checkbox"/>	Function block <input type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
BACnetTimeStamp		BACnetTime eStamp	
Return value		Data type:	Comment:
FuBACnetTimeStamp_to_DT		DT	
Graphical illustration:			
<div><div>FuBACnetTimeStamp_to_DT</div><div>BACnetTimeStamp</div></div>			
Functional description:			
The function converts the BACnetTimeStamp data type into the DT data type.			



## FuBACnetTimeStamp\_to\_SeqNumber

WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FuBACnetTimeStamp_to_SeqNumber	
Type:		Function <input checked="" type="checkbox"/>	Function block <input type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
BACnetTimeStamp		BACnetTime eStamp	
Return value		Data type:	Comment:
FuBACnetTimeStamp_to_SeqNumber		WORD	
Graphical illustration:			
<div><div></div><div>FuBACnetTimeStamp_to_SeqNumber</div><div>-BACnetTimeStamp</div></div>			
Functional description:			
The function converts the BACnetTimeStamp data type into the WORD data type.			

## FuBACnetTimeStamp\_to\_TOD

WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FuBACnetTimeStamp_to_TOD	
Type:		Function <input checked="" type="checkbox"/>	Function block <input type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
BACnetTimeStamp		BACnetTime eStamp	
Return value		Data type:	Comment:
FuBACnetTimeStamp_to_TOD		TOD	
Graphical illustration:			
<div><div>FuBACnetTimeStamp_to_TOD</div><div>-BACnetTimeStamp</div></div>			
Functional description:			
The function converts the BACnetTimeStamp data type into the TOD data type.			

## FuDT\_to\_BACnetTimeStamp

WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FuDT_to_BACnetTimeStamp	
Type:		Function <input checked="" type="checkbox"/>	Function block <input type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
dtValue		DT	
Return value		Data type:	Comment:
FuDT_to_BACnetTimeSta mp		BACnetTim eStamp	
Graphical illustration:			
<div><div></div><div>FuDT_to_BACnetTimeStamp</div><div>dtValue</div></div>			
Functional description:			
The function converts the DT data type into the BACnetTimeStamp data type.			

## FuSeqNumber\_to\_BACnetTimeStamp

WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FuSeqNumber_to_BACnetTimeStamp	
Type:		Function <input checked="" type="checkbox"/>	Function block <input type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
wValue		WORD	
Return value		Data type:	Comment:
FuSeqNumber_to_BACnetTimeStamp		BACnetTime eStamp	
Graphical illustration:			
<div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></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## FuTOD\_to\_BACnetTimeStamp

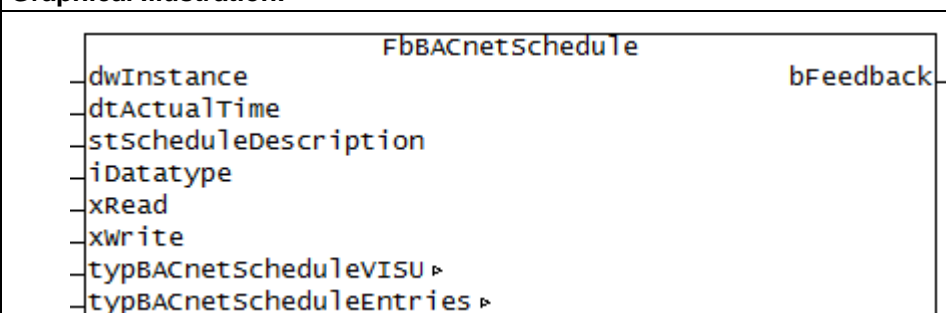
WAGO-I/O-PRO-V2.3 Library Elements			
Category:		Building Automation	
Name:		FuTOD_to_BACnetTimeStamp	
Type:		Function <input checked="" type="checkbox"/>	Function block <input type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Library used:		BACnetAccess.lib BACnetObjects.EXP	
Input parameter:		Data type:	Comment:
todValue		TOD	
Return value		Data type:	Comment:
FuTOD_to_BACnetTimeSt amp		BACnetTim eStamp	
Graphical illustration:			
<div><div></div><div>FuTOD_to_BACnetTimeStamp</div><div>-todValue</div></div>			
Functional description:			
The function converts the TOD data type into the BACnetTimeStamp data type.			

# BACnet Schedule Object

## FbBACnetSchedule

WAGO-I/O-PRO V2.3 Library Elements			
Category:		Building technology	
Name:		FbBACnetSchedule	
Type:		Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Libraries used:		BACnetAccess.lib	
Input Parameter:		Data Type:	Comment:
dwInstance		DWORD	BACnet Schedule instance
dtActualTime		DT	Entry for the current time
stScheduleDescription		STRING	Description text for visualization
iDatatype		INT	Date type of the BACnet Schedule 0 = NULL 1 = DINT 2 = DWORD 3 = BOOL 4 = REAL 5 = ENUM
xRead		BOOL	Reads in current switching entries
xWrite		BOOL	Writes the switching entries from the structure typBACnetScheduleEntries
Output Parameter:		Data Type:	Comment:
bFeedback		BYTE	Error codes: 0 = no error 1 = invalid type 2 = BACnet instance not found 3 = invalid data type 4 = invalid entry 5 = internal error 6 = PV/entries data type collision 7 = max. entries per day exceeded 8 = present value not supported 9 = time entry 24:00 not valid 10 = no entry 99 = unknown error

Input/Output Parameter:	Data Type:	Comment:
typBACnetScheduleVISU	typBACnetScheduleVISU	Placeholder structure for the visualization from the BACnet_02.exp
typBACnetScheduleEntries	typBACnetScheduleEntries	Date structure of the week time switching programs
.artodTime	ARRAY[1..7] OF ARRAY [1..bMax Entries] OF TOD	Switching time of the week entry,  1st array = day of the week 2nd array = entry of the day
.arrValue	ARRAY[1..7] OF ARRAY [1..bMax Entries] OF REAL	Value of the week entry, for iDatatype = DINT, DWORD, REAL  1st array = day of the week 2nd array = entry of the day
.arxValue	ARRAY[1..7] OF ARRAY [1..bMax Entries] OF BOOL	Status of the week entry, for iDatatype = BOOL and ENUM  1st array = day of the week 2nd array = entry of the day
.ariDatatype	ARRAY[1..7] OF ARRAY [1..bMax Entries] OF INT	Data type of the week entry, 0 = NULL 1 = DINT 2 = DWORD 3 = BOOL 4 = REAL 5 = ENUM 1st array = day of the week 2nd array = entry of the day

**Graphical Illustration:**

### Structure of the “typBACnetScheduleEntries” Variable:

```

- typBACnetScheduleEntries
  - ..artodTime
    - ..artodTime[1]
    - ..artodTime[2]
      - ..artodTime[2][1] = TOD#10:10
      - ..artodTime[2][2] = TOD#04:04
      - ..artodTime[2][3] = TOD#05:05
      - ..artodTime[2][4] = TOD#18:18
      - ..artodTime[2][5] = TOD#20:20
      - ..artodTime[2][6] = TOD#00:00
    - ..artodTime[3]
    - ..artodTime[4]
    - ..artodTime[5]
    - ..artodTime[6]
    - ..artodTime[7]
  - ..arrvalue
    - ..arrvalue[1]
    - ..arrvalue[2]
      - ..arrvalue[2][1] = 1010
      - ..arrvalue[2][2] = 404
      - ..arrvalue[2][3] = 505
      - ..arrvalue[2][4] = 0
      - ..arrvalue[2][5] = 2020
      - ..arrvalue[2][6] = 0
    - ..arrvalue[3]
    - ..arrvalue[4]
    - ..arrvalue[5]
    - ..arrvalue[6]
    - ..arrvalue[7]
  - ..arxvalue
    - ..arxvalue[1]
    - ..arxvalue[2]
      - ..arxvalue[2][1] = FALSE
      - ..arxvalue[2][2] = FALSE
      - ..arxvalue[2][3] = FALSE
      - ..arxvalue[2][4] = FALSE
      - ..arxvalue[2][5] = FALSE
      - ..arxvalue[2][6] = FALSE
    - ..arxvalue[3]
    - ..arxvalue[4]
    - ..arxvalue[5]
    - ..arxvalue[6]
    - ..arxvalue[7]
  - ..ariDatatype
    - ..ariDatatype[1]
    - ..ariDatatype[2]
      - ..ariDatatype[2][1] = 4
      - ..ariDatatype[2][2] = 4
      - ..ariDatatype[2][3] = 4
      - ..ariDatatype[2][4] = 4
      - ..ariDatatype[2][5] = 4
      - ..ariDatatype[2][6] = 0
    - ..ariDatatype[3]
    - ..ariDatatype[4]
    - ..ariDatatype[5]
    - ..ariDatatype[6]
    - ..ariDatatype[7]

```

**Switching times [Mon ... Sun] [entry]**

**Value of the entry [Mon ... Sun] [entry]  
for DINT, DWORD, REAL**

**Status the entry [Mon ... Sun][entry]  
for BOOL, ENUM**

**Data type of the entry [Mon ... Sun]  
[entry]**

- 0 = NULL
- 1 = DINT
- 2 = DWORD
- 3 = BOOL
- 4 = REAL
- 5 = ENUM



**FbBACnetSchedule Status Indicator:**

Schedule	Schedule Type	Description
0	REAL	Schedule Description

Actual Value	Actual Type	Status	Actual time
0.00	Default	No error	09:55:06

**Week Time Switching Program:**

	Mo	Tu	We	Th	Fr	Sa	Su
Enable	From		To		Value		
<input checked="" type="checkbox"/>	04:04:00		05:05:00		404.00 <u>Default</u>		
<input checked="" type="checkbox"/>	05:05:00		10:10:00		505.00 <u>Default</u>		
<input checked="" type="checkbox"/>	10:10:00		18:18:00		1010.00 <u>Default</u>		
<input checked="" type="checkbox"/>	18:18:00		20:20:00		0.00 <u>Default</u>		
<input checked="" type="checkbox"/>	20:20:00		00:00:00		2020.00 <u>Default</u>		
<input type="checkbox"/>							

Read

Write

**Function Description:**

The **FbBACnetSchedule** is for reading and writing weekly schedule entries of a BACnet Schedule object.

The BACnet Schedule instance number to be read or written is assigned to the ***“dwInstance”*** input.

The “*dtActualTime*” input is linked to the actual time. The **SysRtcGetTime** function can be used to determine the current system time. This function is found in the **SysLibRtc.lib** library.

The content of the ***“stScheduleDescription”*** input is passed to the visualization as description text for easier identification.

The ***“iDatatype”*** input must match the data type of the Schedule default property of the Schedule object.

The **"xRead"** input reads the current time switching entries and outputs them in the **"typBACnetScheduleEntries"** structure.

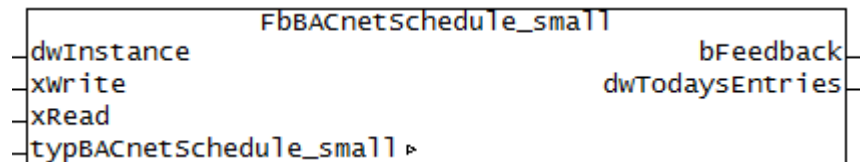
The entries of the ***“typBACnetScheduleEntries”*** structure are written to the BACnet Schedule object via the ***“xWrite”*** input. ***“bFeedback”*** outputs any error codes that arise in the process.

The “**typBACnetScheduleVISU**” structure serves as a placeholder structure and is the link to the visualization elements from the “**BACnet\_02.exp**” library.

## FbBACnetSchedule\_small

WAGO-I/O-PRO V2.3 Library Elements			
Category:		Building technology	
Name:		FbBACnetSchedule_small	
Type:		Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Libraries used:		BACnetAccess.lib	
Input Parameter:		Data Type:	Comment:
dwInstance		DWORD	BACnet Schedule instance
xWrite		BOOL	Writes the schedule entry from the “typBACnetSchedule_small” structure
xRead		BOOL	Reads the schedule entry and passes the content to “typBACnetSchedule_small”
Output Parameter:		Data Type:	Comment:
bFeedback		BYTE	Error codes: 0 = no error 1 = invalid type 2 = BACnet instance not found 3 = invalid data type 4 = invalid entry 5 = internal error 6 = PV/entries data type collision 7 = max. entries per day exceeded 8 = present value not supported 9 = time entry 24:00 not valid 10 = no entry 99 = unknown error
dwTodaysEntries		DWORD	Outputs the number of time switching entries of the respective day

Input/Output Parameter:	Data Type:	Comment:
typBACnetSchedule_small	typBACnetSchedule_small	Data structure of the weekly schedule entry
.wEntryNumber	WORD	Entry number
.bDayofWeek	BYTE	Day of the week
.todTime	TOD	Time switching point
rValue	REAL	Value of the entry for iDatatype = DINT, DWORD, REAL
.xValue	BOOL	Status the entry, for iDatatype = BOOL and ENUM
.bDatatype	BYTE	Data type of the entry 0 = NULL 1 = DINT 2 = DWORD 3 = BOOL 4 = REAL 5 = ENUM

**Graphical Illustration:**

**Structure of the “typBACnetSchedule\_small” Variable:**

<pre> typBACnetSchedule_small ├── .wEntryNumber = 1 ├── .bDayofweek = 1 ├── .todTime = TOD#12:30 ├── .rValue = 21.5 ├── .xValue = FALSE └── .bDatatype = 4           </pre>	<p><b>wEntryNumber</b> = entry</p> <p><b>bDayofWeek</b> = day of the week</p> <p><b>todTime</b> = switching time</p> <p><b>rValue</b> = value of the entry DINT, DWORD, REAL</p> <p><b>xValue</b> = status the entry BOOL, ENUM</p> <p><b>bDatatype</b> = data type of the entry</p> <p>0 = NULL</p> <p>1 = DINT</p> <p>2 = DWORD</p> <p>3 = BOOL</p> <p>4 = REAL</p> <p>5 = ENUM</p>
---	---

**Function Description:**

The **FbBACnetSchedule\_small** function block is for reading and writing a weekly schedule entry of a BACnet Schedule object.

The BACnet Schedule instance number to be read or written is assigned to the **“dwInstance”** input.

The content of the **“typBACnetSchedule\_small”** structure is written to the BACnet Schedule entry via the **“xWrite”** input.

The **“xRead”** input reads in the current time switching entry and outputs it to the **“typBACnetSchedule\_small”** structure.

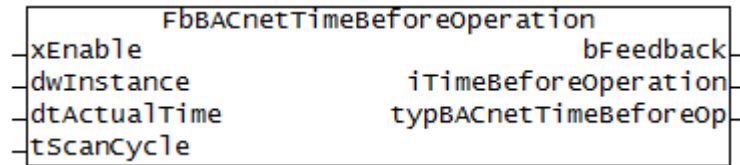
**“bFeedback”** outputs any error codes that arise during reading and writing.

**“dwTodaysEntries”** outputs the number of entries of the day of the week that was entered in the **“typBACnetSchedule\_small.bDayofWeek”** structure.

## FbBACnetScheduleTimeBeforeOperation

WAGO-I/O-PRO V2.3 Library Elements			
Category:		Building technology	
Name:		FbBACnetScheduleTimeBeforeOperation	
Type:		Function <input type="checkbox"/>	Function block <input checked="" type="checkbox"/> Program <input type="checkbox"/>
Name of library:		BACnet_02.lib	
Applicable to:		See Release Note	
Libraries used:		BACnetAccess.lib	
Input Parameter:		Data Type:	Comment:
xEnable		BOOL	Enables the block
dwInstance		DWORD	BACnet Schedule instance
dtActualTime		DT	Entry for the current time
tScanCycle		TIME	Calculation interval Default setting = 5 s
Output Parameter:		Data Type:	Comment:
bFeedback		BYTE	Error codes: 0 = no error 1 = invalid type 2 = BACnet instance not found 3 = invalid data type 4 = invalid entry 5 = internal error 6 = PV/entries data type collision 7 = max. entries per day exceeded 8 = present value not supported 9 = time entry 24:00 not valid 10 = no entry 99 = unknown error
iTimeBeforeOperation		INT	Indicates the time before start of operation (+); for BOOL/ENUM schedules, also with remaining operation time (-) [min]
typBACnetTimeBeforeOp		typBACnetTimeBeforeOp	Data structure of the “Time before operation” and placeholder structure for the visualization from BACnet_02.exp
.stNextType		STRING	Next data type
.todNextOperation		TOD	Time entry of the next switching point
.rNextValue		REAL	Next value
.bNextType		BYTE	Next data type
.stVISUNextVal		STRING	Next value for BOOL/ENUM
.xVISUReal		BOOL	Information for VISU element

**Graphical Illustration:**



**Structure of the “typBACnetTimeBeforeOp” Variable:**

<pre> typBACnetTimeBeforeOp {     .stNextType = 'REAL'     .todNextOperation = TOD#14:00     .rNextValue = 21.5     .bNextType = 4     .stVISUNextVal = ''     .xVISUREAL = TRUE } </pre>	<p><b>stNextType</b> = next data type, in string format</p> <p><b>todNextOperation</b> = next switching time point</p> <p><b>rNextValue</b> = next value</p> <p><b>bNextType</b> = next data type</p> <p><b>stVISUNextVal</b> = next value for BOOL/ENUM</p> <p><b>xVISUREAL</b> = information for VISU element</p>
---	---

**Status Indicator of FbBACnetTimeBeforeOperation:**

Today's next operation	Next operation at	Time before operation	Next Value	Next Type
	10:10:00	207 min	21.50	REAL

**Function Description:**

The **FbBACnetTimeBeforeOperation** function block determines the time before the start of operation (+), or, for the BOOL/ENUM data type, the remaining operation time (-) of the time switching condition. The calculation of the time before operation always starts at 00:00.

If the function block is activated via the “**xEnable**” input, the calculation is performed in the cycle of the “**tScanCycle**” input, and the results are updated at the outputs of the block.

The BACnet Schedule instance number for which the calculation is to be performed is assigned to the “**dwInstance**” input.

The “**dtActualTime**” input is linked to the actual time. The **SysRtcGetTime** function can be used to determine the current system time. This function is found in the **SysLibRtc.lib** library.

“**bFeedback**” outputs any error codes that arise in the process.

The “**iTimeBeforeOperation**” output indicates the time before the start of operation (+) or, for the data type BOOL/ENUM, the remaining operation time (-) of the time switching conditions in **Minutes**. The calculation of the time before operation always starts at 00:00.

The “**typBACnetTimeBeforeOp**” structure contains further output variables with information about the next switching condition and serves as a placeholder structure for the visualization elements from the “**BACnet\_02.exp**”.

# BACnet Objects as an Export File

## General

The BACnetObjects.EXP export file contains the structure of several BACnet objects to define non-native BACnet objects via the IEC application. These objects can be exported to the WAGO BACnet configurator using the SYM\_XML file.

## BACNET\_ANALOG\_VALUE

WAGO-I/O-PRO-V2.3 Library Elements		
Category:	Building Automation	
Name:	BACNET_ANALOG_VALUE	
Type:	Data type <input checked="" type="checkbox"/>	Enumeration <input type="checkbox"/>
Name of export file:	BACnet_02.lib	
Applicable to:	See Release Note	
Declaration:		
TYPE BACNET_ANALOG_VALUE :		
STRUCT		
Object_Identifier	:	BACnetObjectIdentifier;
Object_Name	:	STRING(50);
Object_Type	:	BACnetObjectType;
Present_Value	:	REAL;
Priority_Array	:	BACnetPriorityArray;
Status_Flags	:	BACnetStatusFlags;
Out_Of_Service	:	BOOL;
Relinquish_Default	:	REAL;
Description	:	STRING(50);
Event_State	:	BACnetEventState;
Reliability	:	BACnetReliability;
Units	:	BACnetEngineeringUnits;
COV_Increment	:	REAL;
Time_Delay	:	DWORD;
Notification_Class	:	DWORD;
High_Limit	:	REAL;
Low_Limit	:	REAL;
Deadband	:	REAL;
Limit_Enable	:	BACnetLimitEnable;
Event_Enable	:	BACnetEventTransitionBits;
Acked_Transitions	:	BACnetEventTransitionBits;
Notify_Type	:	BACnetNotifyType;
Event_Time_Stamps	:	ARRAY [1..3] OF BACnetTimeStamp;
END_STRUCT		
END_TYPE		

## BACNET\_BINARY\_VALUE

WAGO-I/O-PRO-V2.3 Library Elements		
Category:	Building Automation	
Name:	BACNET_BINARY_VALUE	
Type:	Data type <input checked="" type="checkbox"/>	Enumeration <input type="checkbox"/>
Name of export file:	BACnet_02.lib	
Applicable to:	See Release Note	
Declaration:		
TYPE BACNET_BINARY_VALUE :		
STRUCT		
Object_Identifier	:	BACnetObjectIdentifier;
Object_Name	:	STRING(50);
Object_Type	:	BACnetObjectType;
Present_Value	:	REAL;
Priority_Array	:	BACnetPriorityArray;
Status_Flags	:	BACnetStatusFlags;
Out_Of_Service	:	BOOL;
Relinquish_Default	:	REAL;
Description	:	STRING(50);
Event_State	:	BACnetEventState;
Reliability	:	BACnetReliability;
Units	:	BACnetEngineeringUnits;
COV_Increment	:	REAL;
Time_Delay	:	DWORD;
Notification_Class	:	DWORD;
High_Limit	:	REAL;
Low_Limit	:	REAL;
Deadband	:	REAL;
Limit_Enable	:	BACnetLimitEnable;
Event_Enable	:	BACnetEventTransitionBits;
Acked_Transitions	:	BACnetEventTransitionBits;
Notify_Type	:	BACnetNotifyType;
Event_Time_Stamps	:	ARRAY [1..3] OF BACnetTimeStamp;
END_STRUCT		
END_TYPE		



## BACNET\_LOOP

WAGO-I/O-PRO-V2.3 Library Elements		
Category:	Building Automation	
Name:	BACNET_LOOP	
Type:	Data type <input checked="" type="checkbox"/>	Enumeration <input type="checkbox"/>
Name of export file:	BACnet_02.lib	
Applicable to:	See Release Note	
Declaration:		
TYPE BACNET_LOOP		
STRUCT		
Object_Identifier	:	BACnetObjectIdentifier;
Object_Name	:	STRING(50);
Object_Type	:	BACnetObjectType;
Proportional_Constant	:	REAL;
Integral_Constant	:	REAL;
Derivative_Constant	:	REAL;
Maximum_Output	:	REAL;
Minimum_Output	:	REAL;
LoopAction	:	BACnetAction;
Setpoint	:	REAL;
Setpoint_Reference	:	BACnetSetpointReference;
Present_Value	:	REAL;
Status_Flags	:	BACnetStatusFlags;
Out_Of_Service	:	BOOL;
Priority_For_Writing	:	DWORD;
Update_Interval	:	DWORD;
Output_Units	:	BACnetEngineeringUnits;
Description	:	STRING(50);
Event_State	:	BACnetEventState;
Reliability	:	BACnetReliability;
COV_Increment	:	REAL;
Bias	:	REAL;
Manipulate_Variable_Reference	:	BACnetDeviceObjectPropertyReference;
Controlled_Variable_Value	:	REAL;
Controlled_Variable_Units	:	BACnetEngineeringUnits;
Controlled_Variable_Reference	:	BACnetDeviceObjectPropertyReference;
Proportional_Constant_Units	:	BACnetEngineeringUnits;
Integral_Constant_Units	:	BACnetEngineeringUnits;
Derivative_Constant_Units	:	BACnetEngineeringUnits;
Time_Delay	:	DWORD;
Notification_Class	:	DWORD;
Error_Limit	:	REAL;
Event_Enable	:	BACnetEventTransitionBits;
Acked_Transitions	:	BACnetEventTransitionBits;
Notify_Type	:	BACnetNotifyType;
Event_Time_Stamps	:	ARRAY [1..3] OF BACnetTimeStamp;
END_STRUCT		
END_TYPE		

## BACNET\_MULTISTATE\_VALUE

WAGO-I/O-PRO-V2.3 Library Elements			
Category:	Building Automation		
Name:	BACNET_MULTISTATE_VALUE		
Type:	Data type	<input checked="" type="checkbox"/>	Enumeration
Name of export file:	BACnet_02.lib		
Applicable to:	See Release Note		
Declaration:			
TYPE BACNET_MULTISTATE_VALUE :			
STRUCT			
Object_Identifier	:	BACnetObjectIdentifier;	
Object_Name	:	STRING(50);	
Object_Type	:	BACnetObjectType;	
Present_Value	:	DWORD;	
Priority_Array	:	BACnetPriorityArray;	
Number_Of_States	:	DWORD;	
Out_Of_Service	:	BOOL;	
Relinquish_Default	:	DWORD;	
Description	:	STRING(50);	
Status_Flags	:	BACnetStatusFlags;	
Event_State	:	BACnetEventState;	
Time_Delay	:	DWORD;	
Notification_Class	:	DWORD;	
Alarm_Values	:	ARRAY [1..24] OF DWORD;	
Fault_Values	:	ARRAY [1..24] OF DWORD;	
Reliability	:	BACnetReliability;	
Event_Enable	:	BACnetEventTransitionBits;	
Acked_Transitions	:	BACnetEventTransitionBits;	
Notify_Type	:	BACnetNotifyType;	
Event_Time_Stamps	:	ARRAY [1..3] OF BACnetTimeStamp;	
END_STRUCT			
END_TYPE			

## BACNET\_MULTISTATE\_INPUT

<b>WAGO-I/O-PRO-V2.3 Library Elements</b>																																					
<b>Category:</b>	Building Automation																																				
<b>Name:</b>	BACNET_MULTISTATE_INPUT																																				
<b>Type:</b>	Data type <input checked="" type="checkbox"/> Enumeration <input type="checkbox"/>																																				
<b>Name of export file:</b>	BACnet_02.lib																																				
<b>Applicable to:</b>	See Release Note																																				
<b>Declaration:</b>																																					
TYPE BACNET_MULTISTATE_INPUT : STRUCT <table> <tr><td>Object_Identifier</td><td>:BACnetObjectIdentifier;</td></tr> <tr><td>Object_Name</td><td>:STRING(50);</td></tr> <tr><td>Object_Type</td><td>:BACnetObjectType;</td></tr> <tr><td>Present_Value</td><td>:DWORD;</td></tr> <tr><td>Number_Of_States</td><td>:DWORD;</td></tr> <tr><td>Out_Of_Service</td><td>:BOOL;</td></tr> <tr><td>Description</td><td>:STRING(50);</td></tr> <tr><td>Status_Flags</td><td>:BACnetStatusFlags;</td></tr> <tr><td>Event_State</td><td>:BACnetEventState;</td></tr> <tr><td>Time_Delay</td><td>:DWORD;</td></tr> <tr><td>Notification_Class</td><td>:DWORD;</td></tr> <tr><td>Alarm_Values</td><td>:ARRAY [1..24] OF DWORD;</td></tr> <tr><td>Fault_Values</td><td>:ARRAY [1..24] OF DWORD;</td></tr> <tr><td>Reliability</td><td>:BACnetReliability;</td></tr> <tr><td>Event_Enable</td><td>:BACnetEventTransitionBits;</td></tr> <tr><td>Acked_Transitions</td><td>:BACnetEventTransitionBits;</td></tr> <tr><td>Notify_Type</td><td>:BACnetNotifyType;</td></tr> <tr><td>Event_Time_Stamps</td><td>:ARRAY [1..3] OF BACnetTimeStamp;</td></tr> </table> END_STRUCT END_TYPE		Object_Identifier	:BACnetObjectIdentifier;	Object_Name	:STRING(50);	Object_Type	:BACnetObjectType;	Present_Value	:DWORD;	Number_Of_States	:DWORD;	Out_Of_Service	:BOOL;	Description	:STRING(50);	Status_Flags	:BACnetStatusFlags;	Event_State	:BACnetEventState;	Time_Delay	:DWORD;	Notification_Class	:DWORD;	Alarm_Values	:ARRAY [1..24] OF DWORD;	Fault_Values	:ARRAY [1..24] OF DWORD;	Reliability	:BACnetReliability;	Event_Enable	:BACnetEventTransitionBits;	Acked_Transitions	:BACnetEventTransitionBits;	Notify_Type	:BACnetNotifyType;	Event_Time_Stamps	:ARRAY [1..3] OF BACnetTimeStamp;
Object_Identifier	:BACnetObjectIdentifier;																																				
Object_Name	:STRING(50);																																				
Object_Type	:BACnetObjectType;																																				
Present_Value	:DWORD;																																				
Number_Of_States	:DWORD;																																				
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Description	:STRING(50);																																				
Status_Flags	:BACnetStatusFlags;																																				
Event_State	:BACnetEventState;																																				
Time_Delay	:DWORD;																																				
Notification_Class	:DWORD;																																				
Alarm_Values	:ARRAY [1..24] OF DWORD;																																				
Fault_Values	:ARRAY [1..24] OF DWORD;																																				
Reliability	:BACnetReliability;																																				
Event_Enable	:BACnetEventTransitionBits;																																				
Acked_Transitions	:BACnetEventTransitionBits;																																				
Notify_Type	:BACnetNotifyType;																																				
Event_Time_Stamps	:ARRAY [1..3] OF BACnetTimeStamp;																																				

## BACNET\_MULTISTATE\_OUTPUT

WAGO-I/O-PRO-V2.3 Library Elements		
Category:	Building Automation	
Name:	BACNET_MULTISTATE_OUTPUT	
Type:	Data type <input checked="" type="checkbox"/>	Enumeration <input type="checkbox"/>
Name of export file:	BACnet_02.lib	
Applicable to:	See Release Note	
Declaration:		
TYPE BACNET_MULTISTATE_OUTPUT :		
STRUCT		
Object_Identifier	:	BACnetObjectIdentifier;
Object_Name	:	STRING(50);
Object_Type	:	BACnetObjectType;
Present_Value	:	DWORD;
Priority_Array	:	BACnetPriorityArray;
Number_Of_States	:	DWORD;
Out_Of_Service	:	BOOL;
Relinquish_Default	:	DWORD;
Description	:	STRING(50);
Status_Flags	:	BACnetStatusFlags;
Event_State	:	BACnetEventState;
Time_Delay	:	DWORD;
Notification_Class	:	DWORD;
Feedback_Value	:	DWORD;
Reliability	:	BACnetReliability;
Event_Enable	:	BACnetEventTransitionBits;
Acked_Transitions	:	BACnetEventTransitionBits;
Notify_Type	:	BACnetNotifyType;
Event_Time_Stamps	:	ARRAY [1..3] OF BACnetTimeStamp;
END_STRUCT		
END_TYPE		



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