

BACnet IP Manual

thevios 5

thevios®

Revision

Revision	Date	Description	Author
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1 General information

This document describes the BACnetIP interface for the thevios 5 device.

Depending on the configuration level, not all measured values and configuration parameters listed in this document are available.

Protocol

The protocol used is the internationally standardised BACnetIP protocol. This enables connection to corresponding remote stations, such as an automation station or a building management system, which support the BACnetIP protocol.

2 Commissioning

2.1 Montage nach Montageanleitung

The installation instructions supplied with the appliance contain illustrations for the following section.

For installation and connection, be sure to follow local regulations, guidelines and standards applicable at the time of installation.



Mounting instructions thevios 5
<https://www.thermokon.de/direct/files/thevios-5-bacnetip-mont-de-en-all.pdf>

2.2 Network communication settings thevios 5

The configuration of the thevios 5 is carried out via a web interface. Access is via an IP connection.

2.2.1 Network connection via DHCP server

As soon as the thevios 5 is connected to a network whose IP addresses are managed by a DHCP server, it is added to the network and assigned an IP address. The device is then displayed as a participant in the list of connected devices. This can be viewed via the manufacturer-specific router or switch configuration menus.

2.2.2 Network connection without DHCP server (with static IP-address)

For networks without a DHCP server, a configuration IP address can be activated. To communicate with this address, the following settings must be made on the network adapter of the computer used:

IP-address: 169.254.254.5

Subnet mask: 255.255.255.0

A configuration IP address can be activated while the device is in operation. To do this, press the button on the underside of the thevios 5 until the status LED lights up blue (approx. 10 seconds).

After restarting the thevios 5, the web interface can be accessed via the following configuration IP address:

http://169.254.254.1/

The network settings for operating the device can be configured in the web interface.

2.2.3 Web- User Interface thevios 5

Access to the web interface of the thevios 5 is password protected.

Default access password:

thevios25

The access password can be changed in the web interface via the 'Change password' tab.

(6-10 characters, letters (upper/lower case), special characters, digit numbers 0-9)

Recommendation: Change the default password on first use to prevent unauthorised access.

3 BACnet Object description

3.1 General Objects

The following objects are used for the basic settings of the device.

Obj. type	Inst.-Nb.	Objekt name	Present Value ID Description
DEV	Device ID	Instance Number_thevios BACnetIP	
FIL	0	config.bin <i>Filetransfer</i> for transferring configuration data The configuration and creation of a 'configuration file' is done using the web interface.	

3.2 Device object

Property	Access	Range	Default
Object Identifier (Device ID)	R	0...4194302	MAC-Adresse
Object Name	R/W	max. 32 characters	DeviceID_ModelName Bsp.: "1195011_Thevios BACnet IP"
Object Type	R		Device
Description	R/W	max. 32 characters	
Location	R/W	max. 32 characters	
System Status	R		Operational
Vendor Name	R		Thermokon Sensortechnik GmbH
Vendor Identifier	R		396
Model Name	R		Thevios BACnet IP
Protocol Version	R		1
Protocol Revision	R		12
Max. APDU Length	R		1476
Segmentation Support	R		no
APDU Timeout	R		3000 ms
Number APDU Retries	R		3
Max Info Frames	R		1

To keep the amount of data during communication to a minimum, only important parameters necessary for ongoing operation are implemented as objects. Full configuration is carried out via a web interface.

3.3 Sensor values thevios 5

The desired unit system (SI - IMP) can be configured via a web interface. The listed measured values can be read out using the following objects:

Obj. Type	Inst.-Nb	Objekt Name	Description	Values/ Range
BI	100	Occupancy	0: No Movement 1: Movement detected	0..1
AI	101	Temperature	Value in [°C °F]	
AI	102	Temperature IR	Value in [°C °F]	
AI	103	Relative Humidity	Value in [%]	
AI	104	Absolute Humidity	Value in [g/m³ gr/ft³]	
AI	105	Enthalpy	Value in [kJ/kg BTU/lb]	
AI	106	Dewpoint	Value in [°C °F]	
AI	107	CO2	Value in [ppm]	
AI	108	VOC	Value in [%]	
AI	109	CO2 VOC Mix	Value in [%]	
AI	110	Light Intensity	Value in [lux]	
AI	111	Temperature MIX	Mixed value from object 101 and 102 Value in [°C °F]	
AI	112	PM1 (Particulate matter < 1 µg/m³)	Particle size up to 1 µg/m³ Value in [ug/m³]	
AI	113	PM2 (Particulate matter < 2,5 µg/m³)	Particle size up to 2,5 µg/m³ Value in [ug/m³]	
AI	114	PM3 (Particulate matter < 4 µg/m³)	Particle size up to 4 µg/m³ Value in [ug/m³]	
AI	115	PM4 (Particulate matter < 10 µg/m³)	Particle size up to 10 µg/m³ Value in [ug/m³]	

3.4 Offset values thevios 5

The offset values are configured via the web interface and are used to compensate for environmental conditions and external influences such as draughts.

Obj. Type	Inst.-Nb	Object name	Unit	Range
AV	3111	Temperature Offset	[°C °F]	-15..+15
AV	3211	Temperature IR Offset	[°C °F]	-15..+15
AV	3311	Relative Humidity Offset	[%]	-5..+5
AV	3711	CO2 Offset	[ppm]	-150..+150
AV	3811	VOC Offset	[%]	-15..+15
AV	4111	Partikel 1 ug/m ³ Offset	[µm/m ³]	-100..+100
AV	4211	Partikel 2,5 ug/m ³ Offset	[µm/m ³]	-100..+100
AV	4411	Partikel 4 ug/m ³ Offset	[µm/m ³]	-100..+100
AV	4511	Partikel 10 ug/m ³ Offset	[µm/m ³]	-100..+100

3.5 Correction values thevios 5

Obj. Type	Inst.-Nb	Objekt name	Description	Values
AV	3030	Occupancy Sensitivity	Adjusting the sensitivity of the PIR motion detector 60 = medium 30 = high 15 = very high	0..255
AV	3031	Occupancy Follow-up time	Time until the counter is reset from 1 to 0 after a movement; if further movements occur within the configured period, the counter remains at 1.	[sec]
AV	3032	Occupancy Mode	LED lighting behaviour 1 LED permanently off 2 LED on/off 3 LED walk test	1..3
AV	4023	Light Intensity Factor	Factor value for adaptation to local conditions	0...10000
AV	4323	Temperature Mix Ratio	For calculating the temperature mix value from room temperature and infrared sensor. Example: Value: 30 configured the temperature mix from 30% room temperature sensor + 70% IR sensor	0..100
AV	3923	CO2 VOC Mix Ratio	For calculating the CO2 VOC mix value from CO2 and VOC values. Example: Value: 30 configured for the temperature mix of 30% CO2 sensor value + 70% VOC sensor value	0..100

3.6 LED Configuration thevios 5

Obj. Type	Inst.-Nb	Objekt name	Description	Values
MV	16000	LED-Ring Mode	1: Off 2: Traffic Light Function (TLF) 3: Individual (BMS Mode) 4: Status indicator	1..4
MV	16004	LED-Color <i>Only active for configured object 16000: Individual (BMS mode)</i>	1: off 2: yellow 3: green 4: cyan 5: blue 6: white 7: red 8: orange 9: magenta	1..9
MV	16011	LED Aktive State	GLT LED control option Status storage via web interface 1= no active state 2= state 1 3= state 2 4= state 3 5= state 4	1..5
BV	16002	TLF Day Night Mode	0: Day Mode = 100% Brightness 1: Night Mode = 25% Brightness	0..1

3.7 Additional Objects thevios 5

Obj. Type	Inst.-Nb	Objekt name	Description	Values
AI	118	Sensor ID	For technical identification of device sensors (bit-coded)	
AV	119	Sensor Error	Error code in case of malfunction Contact Thermokon Support. (0 = no error)	
BV	1180	Device restart	Register for querying whether the device has been restarted. After querying, the register is reset. 0: No restart 1: Restart	0..1
BV	1237	Save to EEPROM	0: Default value 1: Save	0..1
AV	2104	Maintenance interval	0: Off 6: 6 months 12: 12 months 24: 24 months	0..48
AV	2105	Calibration interval	0: Off 6: 6 months 12: 12 months 24: 24 months	0..48
BV	17005	BUS Communication error	Check communication interface	

4 BACnet PICS

BACnet Protocol Implementation Conformance Statement

Date:	01.10.2025
Vendor Name:	Thermokon Sensortechnik GmbH (Vendor ID: 396)
Product Names:	thevios 5
Firmware Revision:	1.3.0
Application Software Version:	1.3.0
BACnet Protocol Revision:	1.12
Product Description:	Sensor device with BACnet IP interface.
BACnet Standardized Device Profile:	BACnet Smart Sensor (B-SS)

5 BACnet BIBBs

Supported BIBBS	BIBB Name
DS-RP-B	Data Sharing, Read Property, B
DS-RPM-B	Data Sharing, Read Property Multiple, B
DS-WP-B	Data Sharing, Write Property, B
DM-DOB-B	Device Management, Dynamic Object Binding, B
DM-DCC-B	Device Management, Device Communication Control, B
DM-DDB-B	Device Management, Dynamic Device Binding, B

BACnet Standard Application Services Supported:

ReadProperty
ReadPropertyMultiple
WriteProperty
DeviceCommunicationControl
WhoHas
Whols

Standard Object Types Supported:

Object-Type	Dynamically Creatable Deleteable	Optional Properties supported	Writable Properties
Analog Input	☐	COV Increment	COV Increment
Binary Input	☐	COV Increment	COV Increment Present Value
Analog Value	☐	Description	Present Value
Binary Value	☐	Description	Present Value
Multistate Value	☐	Description	Present Value
Device	☐	Description	Description - Location - Objekt Name

Device Address Binding:

Is static device binding supported?

Yes

☐

No

☒

Character Sets Supported:

UTF-8

Special Functionality:

Maximum APDU size in octets: 1476

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