



Interface specification BACnet aicore™ air+ GHM spray

BACnet parameter specification for the Güntner Motor Management aicore™ airin conjunction with the Güntner Hydro Management GHM spray
Applicable for interface modules 5215518 & 5215482

[guntner.com/uk](https://www.guntner.com/uk)

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1 Introduction

This document describes the BACnet Communication of the Güntner Motor Management aicore™ air in conjunction with the Güntner Hydro Management GHM spray. Communication of the Güntner controllers takes place via a gateway from Modbus RTU to BACnet IP or BACnet MS/TP.

The aicore™ air and GHM spray are available via the gateway as BACnet device.

The corresponding modules are available with the following ERP numbers and each consist of the configured gateway and an installation kit:

- BACnet IP: 5215518
- BACnet MS/TP: 5215482
- Installation kits (depending on the size of the aicore™ air housing):
 - aicore™ air: 5215522 (200) / 5215523 (300) / 5215524 (400)
 - aicore™ air ec: 5215534 (200) / 5215535 (300) / 5215559 (400)

For connection to a BACnet network, specialist knowledge is required.

The following additional documents are available:

- EDE file: "aicore air+GHM spray_BACnet.zip"
- The PICS document for the Intesis gateway can be downloaded here:
<https://www.bacnetinternational.net/btl/index.php?m=199>
→ "pics_intesisbox_bacnet_server_rev_14_.pdf"

The aicore™ air- & GHM spray parameters are available on the BACnet page via the object property "Present Value" (85).

2 Settings

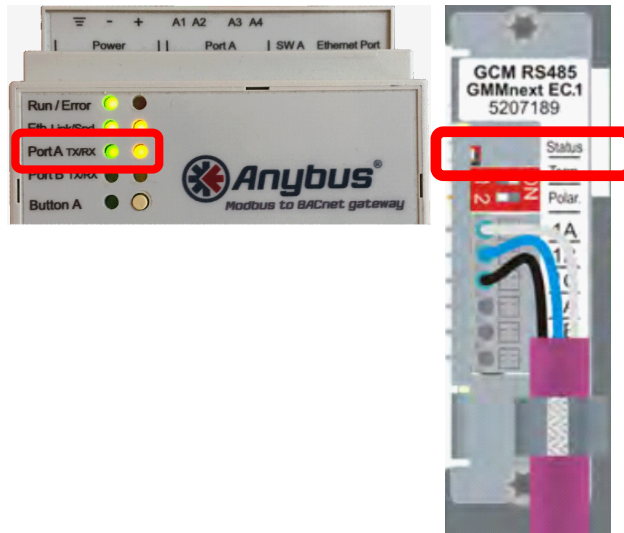
2.1 aicore™ air + GHM spray

The following values must be set so that communication with the BACnet gateway can take place.

Modbus parameters	aicore™ air, see aicore™ air manual	GHMspray, see GHMspray Manual
Modbus address	1	2
Baud rate	19200	19200
Framing	8,N,1	8,N,1
Data format	16 bit	---

2.2 Gateway

The green and orange LED indicators "Port A TX/RX" on the gateway flash green/orange and signal an established Modbus connection.



For BACnet MS/TP, the terminating resistor (1) and polarization (2, 3) can be activated via the DIP switches "SW B".



The following values are standard settings for the gateway and can be changed if necessary.

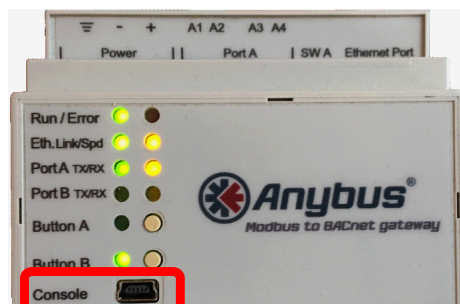
BACnet parameters on the gateway		
General	Device name	aicore™ air+ GHM spray
	Device instance	915003
BACnet IP	IP address	192,168.0.20
	Subnet mask	255,255.0.0
	UDP port	47808
BACnet MS/TP	Baud rate	Auto
	Max. masters	127
	Max. info frames	1
	MAC address	0

These parameters can be changed via the "Intesis MAPS" configuration tool.

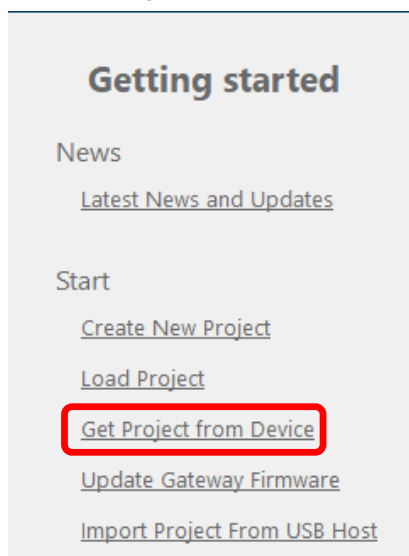
<https://www.intesis.com/products/intesis-maps>

Changing the parameters:

- 1 Establish a USB connection between a PC and the gateway



- 2 Run the program "Intesis MAPS" and select "Get Project from Device":



- 3 Under "Select Discovery Mode", select "USB" and then the COM port for the USB connection. The correct COM port is the one where gateway information can be read out on the right-hand side. Now press the "Import Project" button.

Discovered Devices

Select Discovery Mode

☐ IP

☒ USB

COM7
COM6
COM5
COM3
COM11
COM17

Description	Value
Gateway Name	GMMnext EC
Serial Number	000K5446
Application Name	IBOX-BAC-MBM
License	100
License Comments	-
Version	1.1.3.0
Config file name	GMMnext_BACnetMSTP_01_00_00
Last Configuration Date	07/07/2021 15:01:59
MAC Address	CC:3F:1D:01:24:AC
IP Address	192.168.0.20
Netmask	255.255.0.0
Gateway	0.0.0.0
DHCP	OFF
Current Date Time	08/07/2021 12:30:52
Gateway Operating Time	0000d 03:38:10

Refresh

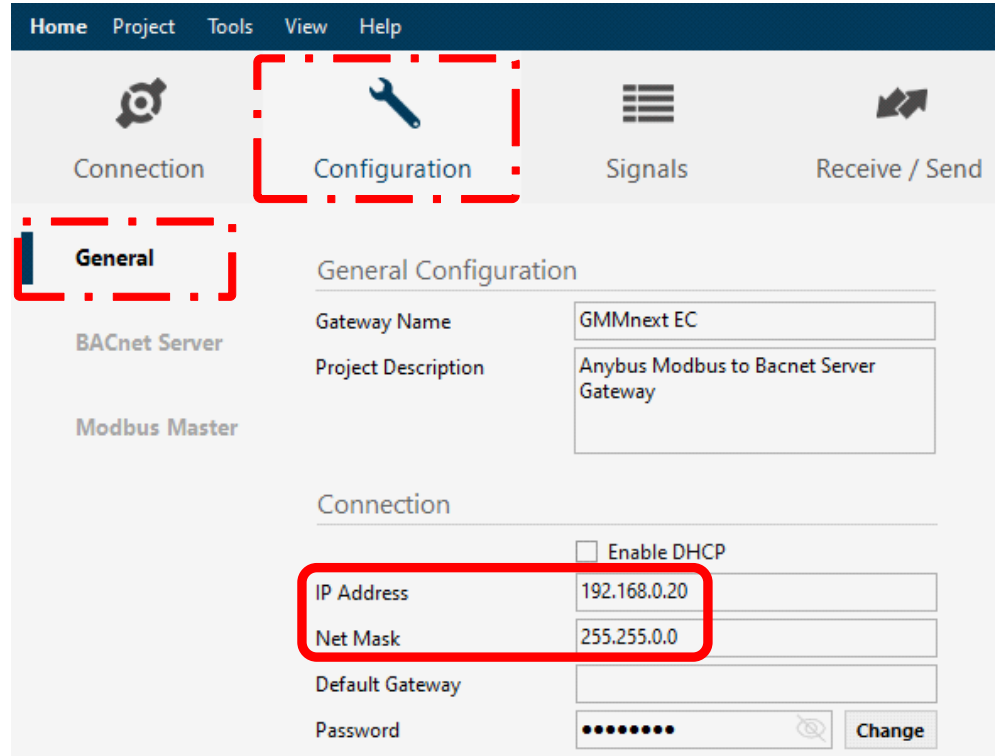
Import Project

- 4 Once the project import is complete, the following message must be acknowledged and the project saved locally on the PC:

Project has been successfully downloaded.
Please, select the folder to save it.

OK

- 5 The configuration can then be changed via the "Configuration" tab.
a) General parameters under the "General" menu:
→ IP address and subnet mask



Home Project Tools View Help

Connection Configuration Signals Receive / Send

General

BACnet Server

Modbus Master

General Configuration

Gateway Name GMMnext EC

Project Description Anybus Modbus to Bacnet Server Gateway

Connection

☐ Enable DHCP

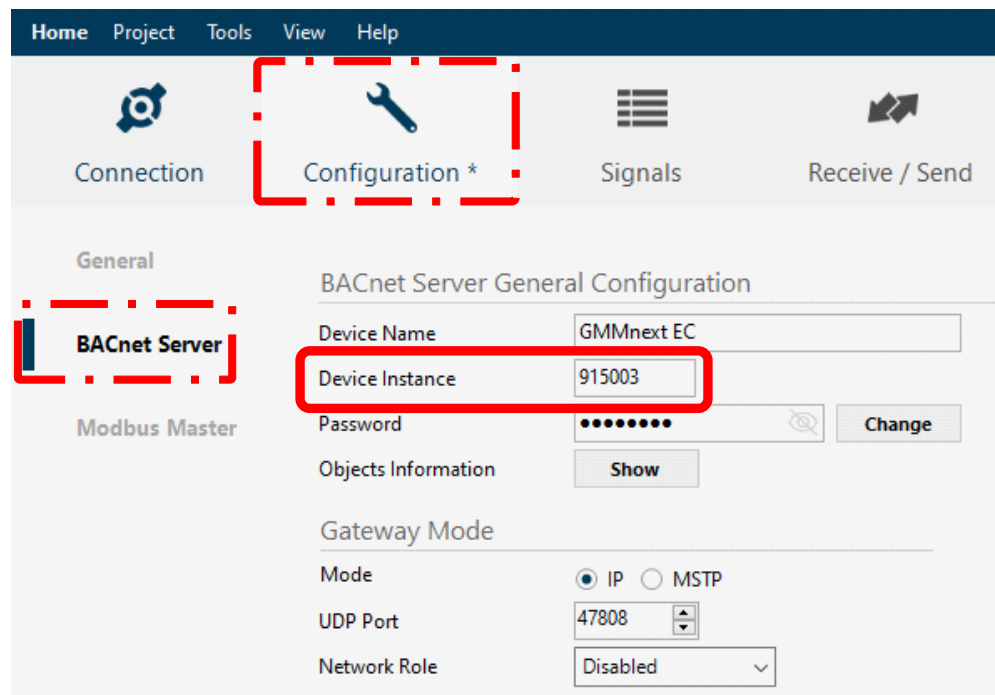
IP Address 192.168.0.20

Net Mask 255.255.0.0

Default Gateway

Password Change

- b) BACnet connection settings under the "BACnet Server" menu:
→ Device instance



Home Project Tools View Help

Connection Configuration * Signals Receive / Send

General

BACnet Server

Modbus Master

BACnet Server General Configuration

Device Name GMMnext EC

Device Instance 915003

Password Change

Objects Information Show

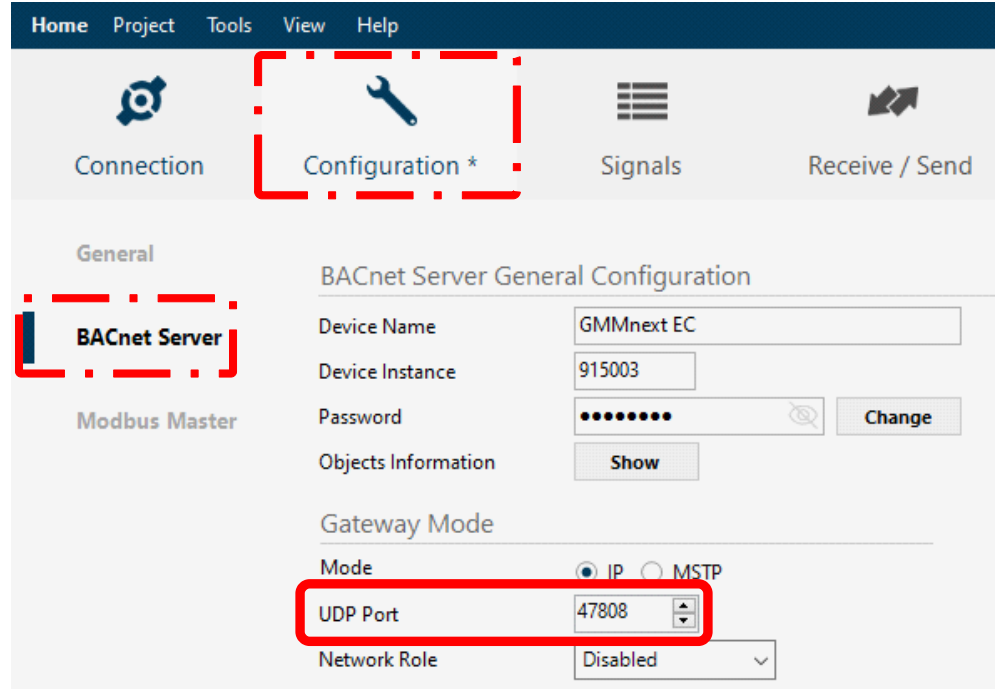
Gateway Mode

Mode ☒ IP ☐ MSTP

UDP Port 47808

Network Role Disabled

- c) With BACnet IP:
→ UDP port



Home Project Tools View Help

Connection **Configuration *** Signals Receive / Send

General

BACnet Server

Modbus Master

BACnet Server General Configuration

Device Name: GMMnext EC

Device Instance: 915003

Password: Change

Objects Information: Show

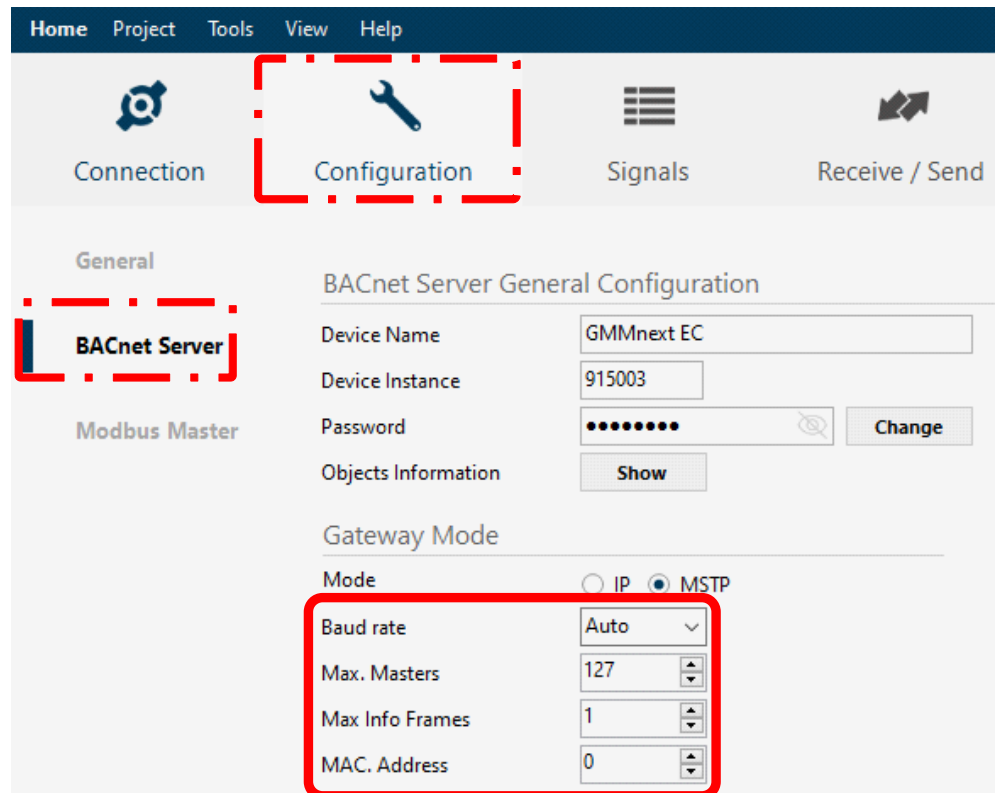
Gateway Mode

Mode: ☒ IP ☐ MSTP

UDP Port: 47808

Network Role: Disabled

- d) With BACnet MS/TP:
→ Baud rate, max. masters, max. info frames, MAC address



Home Project Tools View Help

Connection **Configuration** Signals Receive / Send

General

BACnet Server

Modbus Master

BACnet Server General Configuration

Device Name: GMMnext EC

Device Instance: 915003

Password: Change

Objects Information: Show

Gateway Mode

Mode: ☐ IP ☒ MSTP

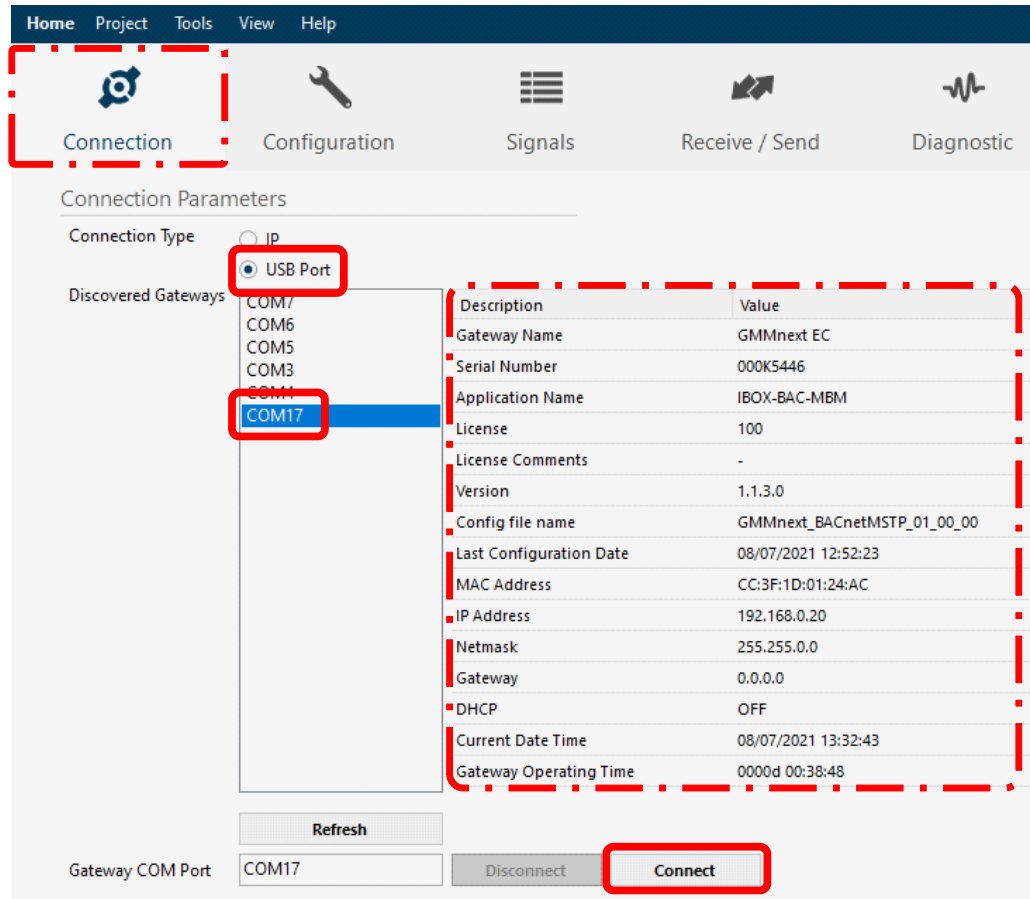
Baud rate: Auto

Max. Masters: 127

Max Info Frames: 1

MAC Address: 0

- 6 In order to load the changed configuration to the gateway again, a connection to the gateway must be established via the "Connection" tab.
Under "Connection Type", select "USB Port" and then the COM port for the USB connection. The correct COM port is the one where gateway information can be read out on the right-hand side.
Now press the "Connect" button.



Home Project Tools View Help

Connection Configuration Signals Receive / Send Diagnostic

Connection Parameters

Connection Type ☐ IP ☒ USB Port

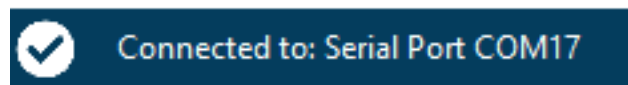
Discovered Gateways

Description	Value
Gateway Name	GMMnext EC
Serial Number	000K5446
Application Name	IBOX-BAC-MBM
License	100
License Comments	-
Version	1.1.3.0
Config file name	GMMnext_BACnetMSTP_01_00_00
Last Configuration Date	08/07/2021 12:52:23
MAC Address	CC:3F:1D:01:24:AC
IP Address	192.168.0.20
Netmask	255.255.0.0
Gateway	0.0.0.0
DHCP	OFF
Current Date Time	08/07/2021 13:32:43
Gateway Operating Time	0000d 00:38:48

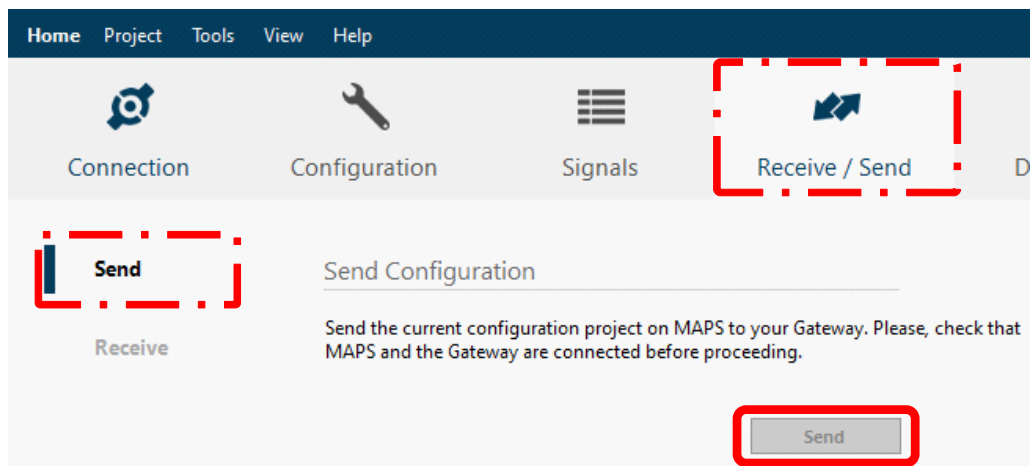
Refresh

Gateway COM Port

A successful connection will be shown at the bottom of the screen:



- 7 Finally, the changed configuration should be loaded to the gateway.
To do this, open the "Receive/Send" tab and press the "Send" button in the "Send" menu.



3 Data points of the aicore™ air+ GHM spray

aicore air

BACnet objects			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Object type	Object instance	Object name	Modbus data address	Modbus data type	Access size	Designator
Device	915003	aicore air + GHM spray	-	-	-	-
Binary input	1	Diagnosis: Fan warning active	256	Discrete input	Bit	Diagnosis: Fan warning active
Binary input	2	Diagnosis: Fan alarm active	257	Discrete input	Bit	Diagnosis: Fan alarm active
Binary input	3	Diagnosis: Fans alarm active	258	Discrete input	Bit	Diagnosis: Fans alarm active (group message)
Binary input	4	Diagnosis: Sensor alarm active	259	Discrete input	Bit	Diagnosis: Sensor alarm active
Binary input	5	Diagnosis: Control alarm message (Prio 1): Signal level	260	Discrete input	Bit	Diagnosis: Control alarm message (Prio 1): Signal level
Binary input	6	Diagnosis: Control operating message: Signal level	261	Discrete input	Bit	Diagnosis: control operating message: Signal level
Binary input	7	Diagnosis: Control warning message (Prio 2): Signal level	262	Discrete input	Bit	Diagnosis: Control warning message (Prio 2): Signal level
Binary input	8	Inverse run: Inverse operation active	263	Discrete input	Bit	Inverse operation: Inverse operation active
Binary input	9	Manual mode: Manual mode active	265	Discrete input	Bit	Manual mode: Manual mode active
Binary input	10	Night setback: Night setback active	267	Discrete input	Bit	Night setback: Night setback active
Binary input	11	Subcooler: Subcooler active	269	Discrete input	Bit	Subcooler: Subcooler active
Binary input	12	Control cycle 1: Release active	7171	Discrete input	Bit	Control cycle 1: Release active
Binary input	13	Control cycle 2: Release active	7172	Discrete input	Bit	Control cycle 2: Release active
Binary input	14	Maintenance run fan group 1: Maintenance run active	7186	Discrete input	Bit	Maintenance run fan group 1: Maintenance run active
Binary input	15	Maintenance run fan group 2: Maintenance run active	7187	Discrete input	Bit	Maintenance run fan group 2: Maintenance run active

BACnet objects			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Object type	Object instance	Object name	Modbus data address	Modbus data type	Access size	Designator
Binary input	16	Control cycle 1 setpoint displacement: Setpoint displacement active	7190	Discrete input	Bit	Control cycle 1 setpoint displacement: Setpoint displacement active
Binary input	17	Control cycle 2 setpoint displacement: Setpoint displacement active	7191	Discrete input	Bit	Control cycle 2 setpoint displacement: Setpoint displacement active
Binary input	18	Control cycle 1 threshold: Threshold active	7195	Discrete input	Bit	Control cycle 1 threshold value: Threshold value active
Binary input	19	Control cycle 2 threshold: Threshold active	7196	Discrete input	Bit	Control cycle 2 threshold value: Threshold value active
Binary input	20	Fan 1: Alarm active	7200	Discrete input	Bit	Fan 1: Alarm active
Binary input	21	Fan 2: Alarm active	7201	Discrete input	Bit	Fan 2: Alarm active
Binary input	22	Fan 3: Alarm active	7202	Discrete input	Bit	Fan 3: Alarm active
Binary input	23	Fan 4: Alarm active	7203	Discrete input	Bit	Fan 4: Alarm active
Binary input	24	Fan 5: Alarm active	7204	Discrete input	Bit	Fan 5: Alarm active
Binary input	25	Fan 6: Alarm active	7205	Discrete input	Bit	Fan 6: Alarm active
Binary input	26	Fan 7: Alarm active	7206	Discrete input	Bit	Fan 7: Alarm active
Binary input	27	Fan 8: Alarm active	7207	Discrete input	Bit	Fan 8: Alarm active
Binary input	28	Fan 9: Alarm active	7208	Discrete input	Bit	Fan 9: Alarm active
Binary input	29	Fan 10: Alarm active	7209	Discrete input	Bit	Fan 10: Alarm active
Binary input	30	Fan 11: Alarm active	7210	Discrete input	Bit	Fan 11: Alarm active
Binary input	31	Fan 12: Alarm active	7211	Discrete input	Bit	Fan 12: Alarm active
Binary input	32	Fan 13: Alarm active	7212	Discrete input	Bit	Fan 13: Alarm active
Binary input	33	Fan 14: Alarm active	7213	Discrete input	Bit	Fan 14: Alarm active

BACnet objects			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Object type	Object instance	Object name	Modbus data address	Modbus data type	Access size	Designator
Binary input	34	Fan 15: Alarm active	7214	Discrete input	Bit	Fan 15: Alarm active
Binary input	35	Fan 16: Alarm active	7215	Discrete input	Bit	Fan 16: Alarm active
Binary input	36	Fan 17: Alarm active	7216	Discrete input	Bit	Fan 17: Alarm active
Binary input	37	Fan 18: Alarm active	7217	Discrete input	Bit	Fan 18: Alarm active
Binary input	38	Fan 19: Alarm active	7218	Discrete input	Bit	Fan 19: Alarm active
Binary input	39	Fan 20: Alarm active	7219	Discrete input	Bit	Fan 20: Alarm active
Binary input	40	Fan 1: Warning active	7232	Discrete input	Bit	Fan 1: Warning active
Binary input	41	Fan 2: Warning active	7233	Discrete input	Bit	Fan 2: Warning active
Binary input	42	Fan 3: Warning active	7234	Discrete input	Bit	Fan 3: Warning active
Binary input	43	Fan 4: Warning active	7235	Discrete input	Bit	Fan 4: Warning active
Binary input	44	Fan 5: Warning active	7236	Discrete input	Bit	Fan 5: Warning active
Binary input	45	Fan 6: Warning active	7237	Discrete input	Bit	Fan 6: Warning active
Binary input	46	Fan 7: Warning active	7238	Discrete input	Bit	Fan 7: Warning active
Binary input	47	Fan 8: Warning active	7239	Discrete input	Bit	Fan 8: Warning active
Binary input	48	Fan 9: Warning active	7240	Discrete input	Bit	Fan 9: Warning active
Binary input	49	Fan 10: Warning active	7241	Discrete input	Bit	Fan 10: Warning active
Binary input	50	Fan 11: Warning active	7242	Discrete input	Bit	Fan 11: Warning active
Binary input	51	Fan 12: Warning active	7243	Discrete input	Bit	Fan 12: Warning active
Binary input	52	Fan 13: Warning active	7244	Discrete input	Bit	Fan 13: Warning active
Binary input	53	Fan 14: Warning active	7245	Discrete input	Bit	Fan 14: Warning active
Binary input	54	Fan 15: Warning active	7246	Discrete input	Bit	Fan 15: Warning active

BACnet objects			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Object type	Object instance	Object name	Modbus data address	Modbus data type	Access size	Designator
Binary input	55	Fan 16: Warning active	7247	Discrete input	Bit	Fan 16: Warning active
Binary input	56	Fan 17: Warning active	7248	Discrete input	Bit	Fan 17: Warning active
Binary input	57	Fan 18: Warning active	7249	Discrete input	Bit	Fan 18: Warning active
Binary input	58	Fan 19: Warning active	7250	Discrete input	Bit	Fan 19: Warning active
Binary input	59	Fan 20: Warning active	7251	Discrete input	Bit	Fan 20: Warning active
Binary input	60	Analogue input 1: Alarm active	8175	Discrete input	Bit	Analogue input 1: Alarm
Binary input	61	Analogue input 2: Alarm active	8176	Discrete input	Bit	Analogue input 2: Alarm
Binary input	62	Analogue input 3: Alarm active	8177	Discrete input	Bit	Analogue input 3: Alarm
Binary input	63	Analogue input 4: Alarm active	8178	Discrete input	Bit	Analogue input 4: Alarm
Binary input	64	Analogue input 5: Alarm active	8179	Discrete input	Bit	Analogue input 5: Alarm
Binary value	0	Manual mode: Manual mode on	265	Coil	Bit	Manual mode: Manual mode on
Binary value	1	Manual mode: Inverse operation	266	Coil	Bit	Manual mode: Inverse operation
Binary value	2	Night setback: Night setback on	268	Coil	Bit	Night setback: Night setback on
Binary value	3	Control cycle 1 setpoint displacement: Setpoint displacement on	8133	Coil	Bit	Control cycle 1 setpoint displacement: Setpoint displacement on
Binary value	4	Control cycle 2 setpoint displacement: Setpoint displacement on	8134	Coil	Bit	Control cycle 2 setpoint displacement: Setpoint displacement on
Multistate value	0	Standard protocol: System of units	1	Holding register	Word	Standard protocol: System of units
Multistate value	1	Standard protocol: Modbus data format	2	Holding register	Word	Standard protocol: Modbus data format
Multistate value	2	Control: Operating mode	305	Holding register	Word	Control: Operating mode
Multistate value	3	Control cycle 1: Setpoint count	3826	Holding register	Word	Control cycle 1: Setpoint count

BACnet objects			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Object type	Object instance	Object name	Modbus data address	Modbus data type	Access size	Designator
Multistate value	4	Control cycle 2: Setpoint count	3827	Holding register	Word	Control cycle 2: Setpoint count
Multistate input	0	Control cycle 1: Refrigerant	3910	Holding register	Word	Control cycle 1: Refrigerant
Multistate input	1	Control cycle 2: Refrigerant	3911	Holding register	Word	Control cycle 2: Refrigerant
Multistate input	2	Control cycle 1: Fluid dimension	4001	Input register	Word	Control cycle 1: Fluid dimension
Multistate input	3	Control cycle 2: Fluid dimension	4002	Input register	Word	Control cycle 2: Fluid dimension
Analogue value	0	Inverse run: Control value	4097	Holding register	Word	Inverse operation: Control value
Analogue value	1	Manual mode: Fans control value	4099	Holding register	Word	Manual mode: Fan control value
Analogue value	2	Night setback: Maximum control value	4100	Holding register	Word	Night setback: Maximum control value
Analogue value	3	Subcooler: Control value	4101	Holding register	Word	Subcooler: Control value
Analogue value	4	Control cycle 1 master external: Control value master external bus	7762	Holding register	Word	Control cycle 1 master control value: Control value master external bus
Analogue value	5	Control cycle 2 master external: Control value master external bus	7763	Holding register	Word	Control cycle 2 master control value: Control value master external bus
Analogue value	6	Control cycle 1 setpoint 1: Pressure	7802	Holding register	Word	Control cycle 1 setpoint 1: Pressure
Analogue value	7	Control cycle 2 setpoint 1: Pressure	7803	Holding register	Word	Control cycle 2 setpoint 1: Pressure
Analogue value	8	Control cycle 1 setpoint 1: Temperature	7812	Holding register	Word	Control cycle 1 setpoint 1: Temperature
Analogue value	9	Control cycle 2 setpoint 1: Temperature	7813	Holding register	Word	Control cycle 2 setpoint 1: Temperature
Analogue value	10	Control cycle 1 setpoint 2: Pressure	7822	Holding register	Word	Control cycle 1 setpoint 2: Pressure
Analogue value	11	Control cycle 2 setpoint 2: Pressure	7823	Holding register	Word	Control cycle 2 setpoint 2: Pressure
Analogue value	12	Control cycle 1 setpoint 2: Temperature	7832	Holding register	Word	Control cycle 1 setpoint 2: Temperature
Analogue value	13	Control cycle 2 setpoint 2: Temperature	7833	Holding register	Word	Control cycle 2 setpoint 2: Temperature

BACnet objects			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Object type	Object instance	Object name	Modbus data address	Modbus data type	Access size	Designator
Analogue input	0	Fans: Number of fans	276	Holding register	Word	Fans: Number of fans
Analogue input	1	Fan 1: Operating hours	3969	Input register	Word	Fan 1: Operating hours
Analogue input	2	Fan 2: Operating hours	3970	Input register	Word	Fan 2: Operating hours
Analogue input	3	Fan 3: Operating hours	3971	Input register	Word	Fan 3: Operating hours
Analogue input	4	Fan 4: Operating hours	3972	Input register	Word	Fan 4: Operating hours
Analogue input	5	Fan 5: Operating hours	3973	Input register	Word	Fan 5: Operating hours
Analogue input	6	Fan 6: Operating hours	3974	Input register	Word	Fan 6: Operating hours
Analogue input	7	Fan 7: Operating hours	3975	Input register	Word	Fan 7: Operating hours
Analogue input	8	Fan 8: Operating hours	3976	Input register	Word	Fan 8: Operating hours
Analogue input	9	Fan 9: Operating hours	3977	Input register	Word	Fan 9: Operating hours
Analogue input	10	Fan 10: Operating hours	3978	Input register	Word	Fan 10: Operating hours
Analogue input	11	Fan 11: Operating hours	3979	Input register	Word	Fan 11: Operating hours
Analogue input	12	Fan 12: Operating hours	3980	Input register	Word	Fan 12: Operating hours
Analogue input	13	Fan 13: Operating hours	3981	Input register	Word	Fan 13: Operating hours
Analogue input	14	Fan 14: Operating hours	3982	Input register	Word	Fan 14: Operating hours
Analogue input	15	Fan 15: Operating hours	3983	Input register	Word	Fan 15: Operating hours
Analogue input	16	Fan 16: Operating hours	3984	Input register	Word	Fan 16: Operating hours
Analogue input	17	Fan 17: Operating hours	3985	Input register	Word	Fan 17: Operating hours
Analogue input	18	Fan 18: Operating hours	3986	Input register	Word	Fan 18: Operating hours
Analogue input	19	Fan 19: Operating hours	3987	Input register	Word	Fan 19: Operating hours
Analogue input	20	Fan 20: Operating hours	3988	Input register	Word	Fan 20: Operating hours

BACnet objects			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Object type	Object instance	Object name	Modbus data address	Modbus data type	Access size	Designator
Analogue input	21	Ambient humidity: Humidity value	4096	Input register	Word	Humidity: Humidity value
Analogue input	22	Ambient temperature: Temperature value	4097	Input register	Word	Ambient temperature: Temperature value
Analogue input	23	Fans: Air volume	4098	Input register	Word	Fans: Air volume
Analogue input	24	Fans: Total power	4099	Input register	Word	Fans: Total power
Analogue input	25	Control cycle 1: Current pressure value	7468	Input register	Word	Control cycle 1: Current pressure value
Analogue input	26	Control cycle 2: Current pressure value	7469	Input register	Word	Control cycle 2: Current pressure value
Analogue input	27	Control cycle 1: Current pressure setpoint	7478	Input register	Word	Control cycle 1: Current pressure setpoint
Analogue input	28	Control cycle 2: Current pressure setpoint	7479	Input register	Word	Control cycle 2: Current pressure setpoint
Analogue input	29	Control cycle 1: Current temperature value	7488	Input register	Word	Control cycle 1: Current temperature value
Analogue input	30	Control cycle 2: Current temperature value	7489	Input register	Word	Control cycle 2: Current temperature value
Analogue input	31	Control cycle 1: Current temperature setpoint	7498	Input register	Word	Control cycle 1: Current temperature setpoint
Analogue input	32	Control cycle 2: Current temperature setpoint	7499	Input register	Word	Control cycle 2: Current temperature setpoint
Analogue input	33	Control cycle 1 fans: Control value	7508	Input register	Word	Control cycle 1 fans: Control value
Analogue input	34	Control cycle 2 fans: Control value	7509	Input register	Word	Control cycle 2 fans: Control value

GHM spray

BACnet objects			Güntner Modbus aicore air specification / Güntner Modbus GHM spray specification			
Object type	Object instance	Object name	Modbus data address	Modbus data type	Access size	Designator
Multistate value	100	GHM: Operating mode	53249	Holding register	Word	Operating mode
Analogue value	100	GHM: Control value external bus	53248	Holding register	Word	Control value external bus
Analogue value	101	GHM: Setpoint 1	53257	Holding register	Word	Setpoint 1
Analogue value	102	GHM: Setpoint 2	53258	Holding register	Word	Setpoint 2
Analogue input	100	GHM: Manual mode	53289	Holding register	Word	Manual mode
Analogue input	101	GHM: Status of digital inputs	53530	Input register	Word	Status of the digital inputs
Analogue input	102	GHM: Status of digital outputs	53531	Input register	Word	Status of the digital outputs
Analogue input	103	GHM: Scaled value AI1	53533	Input register	Word	Scaled value of AI1
Analogue input	104	GHM: Scaled value AI2	53535	Input register	Word	Scaled value of AI2
Analogue input	105	GHM: Scaled value AI4	53539	Input register	Word	Scaled value of AI4
Analogue input	106	GHM: Raw value AO1	53540	Input register	Word	Raw value output AO1
Analogue input	107	GHM: Raw value AO2	53541	Input register	Word	Raw value output AO2
Analogue input	108	GHM: Control value	53542	Input register	Word	Control value
Analogue input	109	GHM: Status of the GIOD's digital outputs	53546	Input register	Word	Status of the GIOD's digital outputs
Analogue input	110	GHM: Fault message of the GHMspray controller	53547	Input register	Word	Fault messages of the GHM spray controller