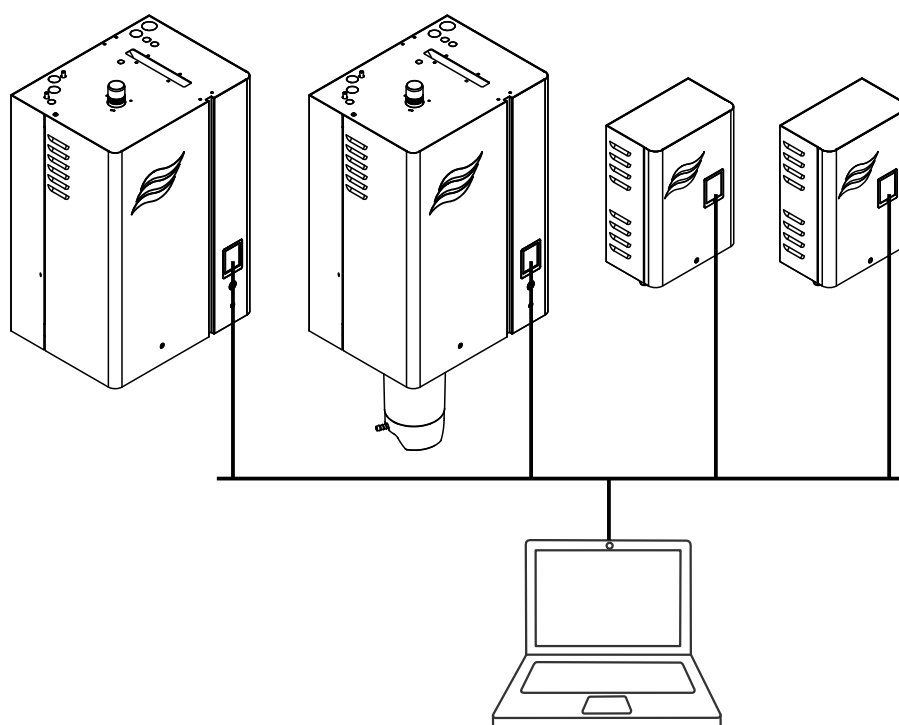




# BACnet on-board

Supplemental Installation and Operation Manual

For use with RS, DL, ME and RO-A units  
with Software version 5.8.x.x

# Thank you for choosing Condair

Installation date (MM/DD/YYYY):

Commissioning date (MM/DD/YYYY):

Site:

Model:

Serial number:

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# 1 Introduction

## 1.1 Notes on this addendum manual

Condair devices equipped with an Integrated Controller can be connected via the corresponding interface on the Integrated Controller (BACnet on-board) to a BACnet IP network or a BACnet MS/TP network.

This manual describes how to install and configure BACnet on-board (see [chapter 3](#)) to connect Condair devices with Integrated Controller to a building management system.

This addendum manual is intended for use by engineers and properly trained technical personnel. Please read this manual thoroughly before working on the Integrated Controller.

If you have questions after reading this documentation, please contact your Condair representative. They will be glad to assist you.

### Symbols used in this manual



#### CAUTION!

The catchword "CAUTION" used in conjunction with the caution symbol in the circle designates notes in this manual that, if neglected, may cause **damage and/or malfunction of the unit or other material assets**.



#### WARNING!

The catchword "WARNING" used in conjunction with the general caution symbol designates safety and danger notes in this manual that, if neglected, may cause **injury to persons**.



#### DANGER!

The catchword "DANGER" used in conjunction with the general caution symbol designates safety and danger notes in this manual that, if neglected, may lead to **severe injury or even death of persons**.

### Safekeeping

Please safeguard this addendum manual in a safe place, where it can be immediately accessed. If the equipment changes hands, the documentation must be passed on to the new operator.

If the documentation gets mislaid, please contact your Condair representative for replacement.

### Language versions

This addendum manual is available in various languages. Please contact your Condair representative for information.

## 1.2 Functions overview

The following table gives you an overview of the supported protocols and functions.

|                                             | <b>BACnet on-board<br/>Integrated controller</b> |
|---------------------------------------------|--------------------------------------------------|
| BACnet IP                                   | yes                                              |
| BACnet MS/TP Master Mode                    | yes                                              |
| BACnet MS/TP Slave Mode                     | yes                                              |
| BACnet IP and BACnet MS/TP<br>BTL certified | no                                               |
| Remote "RS draining"                        | no                                               |
| BACnet Service COV (Change of Value)        | no                                               |

Please refer to the BACnet Protocol Implementation Conformance Statement (PICS, see [chapter 4.2](#)) and the objects tables (see [chapter 3.4](#)) for detailed information.

## 2 For your safety

---

### General

Every person working with the Condair Integrated Controller must have read and understood this addendum manual, and the installation manual and operation manual of the Condair Integrated Controller, before carrying out any work.

Knowing and understanding the contents of the manuals is a basic requirement for protecting the personnel against any kind of danger, to prevent faulty operation, and to operate the unit safely and correctly.

All icons, signs and markings applied to the unit must be observed and kept in readable state.

### Qualification of personnel

All work described in this addendum manual **may only be carried out by specialists who are well trained and adequately qualified and are authorised by the customer.**

For safety and warranty reasons any action beyond the scope of this manual must be carried out only by qualified personnel authorised by the manufacturer.

It is assumed that all persons working with the Condair Integrated Controller are familiar and comply with the appropriate local regulations on work safety and the prevention of accidents.

### Intended use

The BACnet on-board interfaces Condair Integrated Controller are intended exclusively for connecting the Condair Integrated Controller to a BACnet based network. Any other type of application, without the written consent of the manufacturer, is considered as not conforming with the intended purpose and may lead to the Condair Integrated Controller becoming dangerous.

Operation of the equipment in the intended manner requires **that all the information contained in this addendum manual as well as in the installation manual and operation manual of the Condair Integrated Controller are observed.**

### Danger that may arise from the Condair Integrated Controller



**DANGER!**  
**Risk of electric shock!**

**The control unit where the Integrated Controller is located is mains powered. Live parts may be exposed when the control unit is open. Touching live parts may cause severe injury or danger to life.**

**Prevention:** Before commencing any work disconnect the corresponding Condair device from the mains supply via the electrical isolator in the mains supply line, and secure electrical isolator in "Off" position against inadvertent switching on.

---

### **Safety reporting**

All persons working with the Condair Integrated Controller are obliged to report any alterations to the system that may affect safety to the owner without delay and to **secure such systems against accidental power-up**.

### **Prohibited modifications to the unit**

**No modifications must be undertaken** on the Condair Integrated Controller without the express written consent of the manufacturer.

For the replacement of defective components use exclusively **original accessories and spare parts** available from your Condair representative.

## 3 Network integration via BACnet on-board

### 3.1 Notes for the planning engineer

#### 3.1.1 Overview

The BACnet on-board functionality of the Integrated Controllers allows to connect Condair devices via the RJ45 Ethernet interface to a BACnet IP network or via the RS485 interface to a BACnet MS/TP network without further options.

The following protocol options are available as standard:

| Interface on the Integrated Controller | Protocol     | Description                       |
|----------------------------------------|--------------|-----------------------------------|
| RJ45 Ethernet port                     | BACnet IP    | BACnet IP                         |
| RS485 interface                        | BACnet MS/TP | BACnet MS/TP Master or Slave Mode |

Please refer to the BACnet object tables in [chapter 3.4](#) for detailed information regarding the available read out and settings functions.



## Principle BACnet MS/TP network

The diagram below shows the connection of a Condair Integrated Controller to a BACnet MS/TP network. The diagram also shows an application an application encountered in practice: BACnet MS/TP communicates with the higher-level BACnet IP via a router.

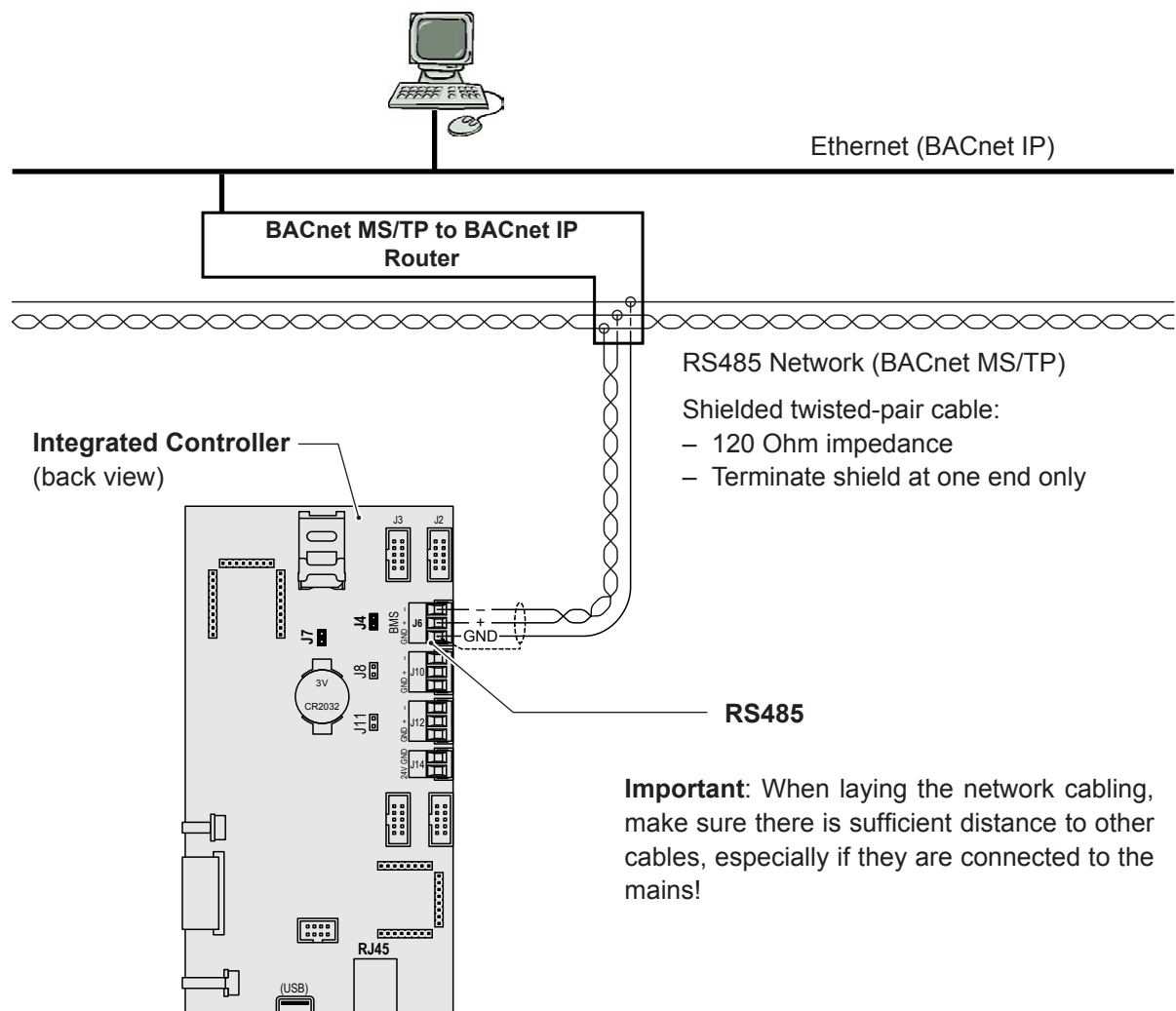
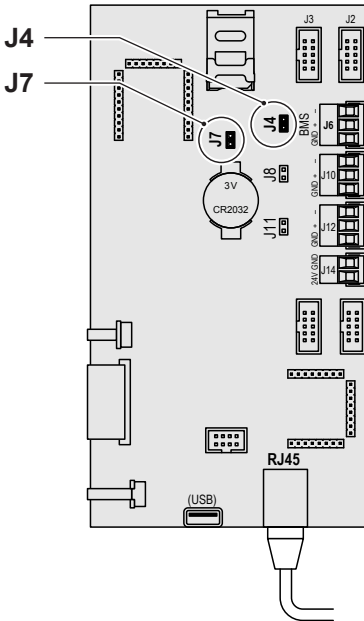
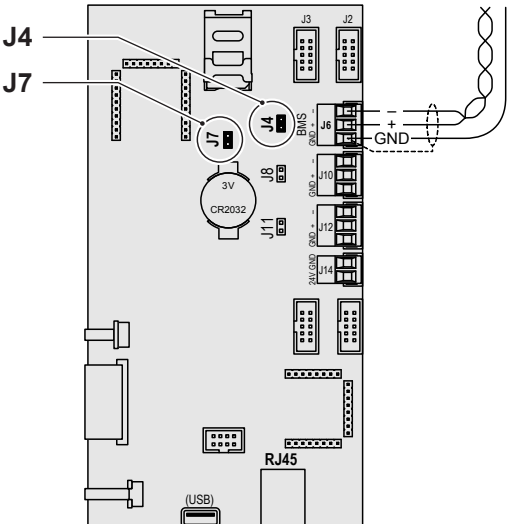


Fig. 2: Principle BACnet MS/TP network

## 3.2 Wiring

1. Lead the network cable through a cable gland or the rectangular cable lead-through into the control unit.
2. Connect network cable according to the following wiring diagrams to the corresponding interface connector on the Integrated Controller.

| BACnet IP                                                                                                                                                                                                                                                                                                                                                                                                                 | BACnet MS/TP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>The diagram shows the component layout for a BACnet IP board. It includes a 3V CR2032 battery, a USB port, an RJ45 port, and various connectors labeled J2 through J14. Jumper J7 is located near the USB port, and Jumper J4 is located near the RJ45 port. Labels J4 and J7 point to their respective locations on the board.</p> |  <p>The diagram shows the component layout for a BACnet MS/TP board. It includes a 3V CR2032 battery, a USB port, an RJ45 port, and various connectors labeled J2 through J14. Jumper J7 is located near the USB port, and Jumper J4 is located near the RJ45 port. Labels J4 and J7 point to their respective locations on the board. A twisted pair cable is shown connected to the RJ45 port, with a GND connection point indicated.</p> |
| <p><b>Jumper settings:</b></p> <p>Jumper <b>J7</b> and <b>J4</b> do not have any effect for BACnet IP communication.</p>                                                                                                                                                                                                                                                                                                  | <p><b>Important:</b> all devices must be connected to each other via GND</p> <p><b>Jumper settings:</b></p> <ul style="list-style-type: none"><li>– Jumper <b>J7</b> must be set on all Integrated Controllers.</li><li>– Jumper <b>J4</b> must be set on the first and the last Integrated Controller in the network (serves as terminating resistor at the start and end of the network). Jumper J4 set = terminating resistor active.</li></ul>                                                                            |

## 3.3 Configuration

After network wiring connections have been completed, the Condair Integrated Controller needs to be setup to operate and communicate through BACnet IP or BACnet MS/TP with the building management system. This setup includes the settings in the "**Communication**" and the "**Control Settings**" submenu of the Condair Integrated Controller.

### 3.3.1 Configuring the Condair Integrated Controller (software version 5.8.x.x)

#### 3.3.1.1 Setup the communication parameters

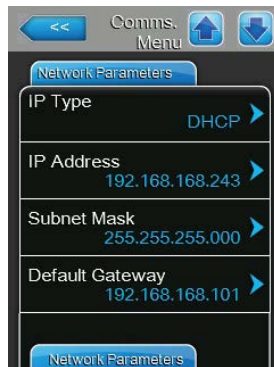
Select "Communication" submenu as shown below.



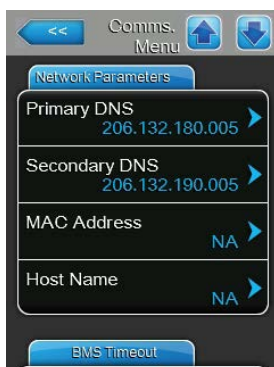
Then setup the communication parameters in the corresponding tabs listed below.

#### Network Parameters Tab

The following network settings are used only for the communication via the integrated BACnet IP interface.

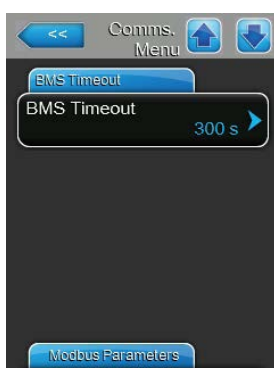


- **IP Type:** with this setting you determine whether you want to assign the IP Address, the Subnet Mask, the Standard Gateway as well as the Primary and Secondary DNS address as fixed values or whether these should be dynamically assigned via a DHCP server.  
Note: after 5 unsuccessful attempts at obtaining an address with DHCP the system will revert to fixed assignment  
Factory setting: **DHCP**  
Options: **DHCP** (dynamic assignment)  
**Fixed** (fixed assignment)
- **IP Address:** This field shows the actual IP address of the device assigned manually or assigned by a DHCP server.  
If the parameter "IP Type" is set to "Fix", the IP address of the device can be set via this field. If the parameter "IP type" is set to "DHCP", the IP address of the device is assigned by a DHCP server.
- **Subnet Mask:** This field shows the actual subnet mask of the IP network assigned manually or assigned by a DHCP server.  
If the parameter "IP Type" is set to "Fix", the subnet mask can be set via this field. If the parameter "IP type" is set to "DHCP", the subnet mask is assigned by a DHCP server.



- **Default Gateway:** This field shows the actual IP address of the default gateway assigned manually or assigned by a DHCP server. If the parameter "IP Type" is set to "Fix", the IP address of the default gateway can be set via this field. If the parameter "IP type" is set to "DHCP", the IP address of the default gateway is assigned by a DHCP server.
- **Primary DNS:** This field shows the actual IP address of the primary domain name server (DNS) assigned manually or assigned by a DHCP server. If the parameter "IP Type" is set to "Fix", the IP address of the primary domain name server can be set via this field. If the parameter "IP type" is set to "DHCP", the IP address of the primary domain name server is assigned by a DHCP server.
- **Secondary DNS:** This field shows the actual IP address of the secondary domain name server (DNS) assigned manually or assigned by a DHCP server. If the parameter "IP Type" is set to "Fix", the IP address of the secondary domain name server can be set via this field. If the parameter "IP type" is set to "DHCP", the IP address of the secondary domain name server is assigned by a DHCP server.
- **MAC Address:** Factory set MAC Address (Media Access Control) of the device. Not modifiable.
- **Host Name:** Host Name of the device automatically generated by the control. Format: "IC\_"+"Serial number of the device". Not modifiable.

### BMS Timeout Tab



- **BMS Timeout:** with this setting you determine the maximum time the humidifier will wait with no communication from the BMS network before warning W35 "BMS Timeout" is triggered. The device is stopped until a valid signal is transmitted again.

**Note:** The BMS timeout is only evaluated if the signal source (Path: Menu> Configuration> Control Settings > Source) is not set to "Analog".

Factory setting: **300 s**

Setting range: **1 ... 300 s**

### BACnet Parameters Tab



- **BACnet:** with this setting you can activate ("MSTP" or "BACnet/IP") or deactivate ("Off") the communication via the integrated BACnet interface. Note: For some settings, the device will reboot to apply the changes.

**Important!** If the control signal is also to be sent via BACnet, always make sure that the signal source in the submenu "Configuration> Control settings > Source" is set to the BACnet protocol, see [chapter 3.3.1.2](#)).

Factory setting: **Off**

Options: **Off** (BACnet interface deactivated)

**MSTP** (BACnet MS/TP via RS 485 interface)

**BACnet/IP** (BACnet IP via RJ45 interface)

## BACnet IP Settings

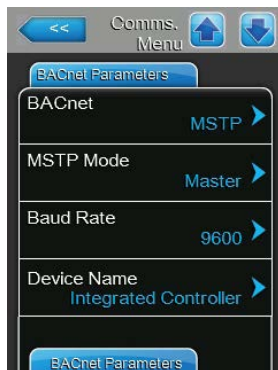
The following settings appear only, if the parameter "BACnet" is set to "BACnet/IP".



- **Device Name:** with this setting you determine the name of the device for the communication via the integrated BACnet interface.  
Note: The name assigned here is also assigned to the object name of the device object.
- **Device Description:** with this setting you determine a short description of the device.  
Note: The device description assigned here is also assigned to the property "Description" in the device object.
- **Device Location:** with this setting you determine the designation of the device location.  
Note: The location assigned is also assigned to the property "Location" in the device object.
- **Node ID:** with this setting you assign a node ID to the device for the communication over the BACnet IP protocol.  
Factory setting: **1001**  
Setting range: **1 - 4194303**
- **BACnet IP Port:** with this setting you assign a IP port number for the device.  
Factory setting: **47808**  
Setting range: **1 - 65535**
- **Foreign Device:** With this setting, you determine whether the device logs in to an external BACnet IP Broadcast Management Device (BBMD) ("On") so that it can receive broadcast messages (messages to all participants) on the IP network or not ("Off").  
Note: In an IP network, routers generally block broadcast messages (messages to all participants) to reduce traffic. This prevents a BACnet IP device from being detected via the "Who-is" service, or to answer via the "I-Am" service. In order for the BACnet IP broadcast messages to be forwarded to other network segments anyway, a BBMD (BACnet IP Broadcast Management Device) is required. These devices integrated into the IP network forward BACnet IP broadcast messages to other network segments. Only one BBMD may be integrated per network segment.  
Factory setting: **Off**  
Options: **Off or On**
- **BBMD IP Address:** With this setting, you specify the IP address of the external BBMD to which the device should log on.

## BACnet MS/TP Settings

The following settings appear only, if the parameter "BACnet" is set to "MSTP".



- **MSTP Mode:** with this setting you determine whether the device should act as Master or Slave.  
Factory setting: **Master**  
Options: **Master or Slave**
- **Baudrate:** with this setting you set the Baudrate for the data transfer.  
Factory setting: **9600**  
Options: **9600, 19200, 38400, 57600, 76800**
- **Device Name:** with this setting you determine the name of the device for the communication via the integrated BACnet interface.  
Note: The name assigned here is also assigned to the object name of the device object.
- **Device Description:** with this setting you determine a short description of the device.  
Note: The device description assigned here is also assigned to the property "Description" in the device object.
- **Device Location:** with this setting you determine the designation of the device location.  
Note: The location assigned is also assigned to the property "Location" in the device object.
- **Node ID:** with this setting you assign a node ID to the device for the communication over the BACnet MS/TP protocol.  
Factory setting: **1001**  
Setting range: **1 - 4194303**
- **BACnet MSTP MAC:** with this setting you assign a MSTP MAC address for the device.  
Factory setting: **127**  
Setting range: **0 - 127 (for Master)**  
**0 - 254 (for Slave)**

### 3.3.1.2 Setup control settings

By default the Condair Integrated Controller is configured to operate on a hardwired analog control signal from an external humidity controller or a humidity sensor (if internal P or PI controller is used) connected to the driver board inside the control unit.

Note: If you want the Condair Integrated Controller to be controlled via a hardwired analog control signal set "Signal Source" to "Analog" and set the other control settings as required (see "Operation Manual" of the corresponding device for details).

If you want to control the Condair Integrated Controller via one of the integrated BACnet on-board interfaces the "Control Settings" must be adjusted as follows:

1. Close control unit and switch it on.
2. Select "Control Settings" submenu as shown below.



3. Set **control settings** as follows (see rightmost screen):

|                |                                                                                                                                                                                                                        |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Signal Source: | <b>BACnet</b>                                                                                                                                                                                                          |
| System Mode:   | <b>Humidifying</b> or <b>Cooling</b> (only by ME)                                                                                                                                                                      |
| Control Mode:  | <b>Demand</b> (if you use an external demand control signal)<br><b>RH P</b> (if a sensor signal and proportional controller is used)<br><b>RH PI</b> (if a sensor signal and proportional-integral controller is used) |

Note: see "Operation Manual" of the corresponding for details on control settings.

### 3.3.1.3 Monitoring of bus communication:

The monitoring of the bus communication described below only takes place if the "Source" parameter in the "Control Settings" menu is not set to "Analog".

As soon as the control signal (demand or humidity signal) is transmitted via the BACnet IP or BACnet MSTP bus system, communication via the bus system is also monitored.

The control signal must be periodically updated within the time set in "BMS Timeout".

If the control signal is not updated within the set time, warning W35 "BMS Timeout" will be triggered and the humidification will be stopped until a writable object (AV or AO) receives an updated value.

This monitoring is intended to prevent the humidifier from humidifying with the last transmitted value in the event of a bus failure.

## 3.4 Communication tables

### 3.4.1 DL - BACnet on-board (Integrated Controller Software version 5.8.x.x)

| Object Name           | Description                         | Range                                                                                                                                                                                                                                                                                          | Object-Type | Object-ID | Read (R)<br>Write (W) |
|-----------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|-----------------------|
| Integrated Controller | Humidifier                          | —                                                                                                                                                                                                                                                                                              | DEV         | 1001      | —                     |
| Hum. Status           | Operating status                    | 1 = Initializing<br>2 = Diagnostic<br>3 = Stopped<br>4 = Flushing<br>5 = Standby<br>6 = Flushed<br>7 = Humidifying<br>8 = Ready<br>9 = Refreshing<br>10 = Air Prs.Cleaning<br>11 = Filling<br>12 = Cond.Flush<br>13 = Switched Off<br>14 = Remote Off<br>15 = Regenerating<br>16 = Temp. Flush | MI          | 500       | R                     |
| Service Status        | Maintenance and malfunctions status | 1 = Service Info<br>2 = Warning<br>3 = Activation Code<br>4 = Out of Commissioning<br>5 = Refill Disinfection<br>6 = Service<br>7 = Fault<br>8 = Replace Ag Cartridge<br>9 = Disinfection                                                                                                      | MI          | 549       | R                     |
| Device Type           | Device type                         | 1 = Hum<br>2 = Hum + FC<br>3 = Hum + RO-C<br>4 = RO                                                                                                                                                                                                                                            | MI          | 597       | R                     |
| Fault Code            | Error code <sup>2)</sup>            | 0 = no Error                                                                                                                                                                                                                                                                                   | AI          | 10759     | R                     |
| Operating Hours       | Operating hours                     | 0 - 1'200'000 h                                                                                                                                                                                                                                                                                | AI          | 10699     | R                     |
| Next Service          | Next service                        | 0 - 10000 h                                                                                                                                                                                                                                                                                    | AI          | 10700     | R                     |
| Humidity Control      | Actual humidity or demand           | 0 - 100 %                                                                                                                                                                                                                                                                                      | AI          | 10729     | R                     |
| Max. Capacity         | Max. capacity <sup>1)</sup>         | 2 - 1000 kg/h<br>4 - 2573 lb/hr                                                                                                                                                                                                                                                                | AI          | 10596     | R                     |
| Capacity              | Actual capacity <sup>1)</sup>       | 0 - 1000 kg/h<br>0 - 2573 lb/hr                                                                                                                                                                                                                                                                | AI          | 10702     | R                     |
| Remain.Capacity       | Remaining Ag-Ion Capacity           | 0 - 58.4 Ah                                                                                                                                                                                                                                                                                    | AI          | 10701     | R                     |
| Target Ag-Ion Curr.   | Target Ag-Ion Current               | 0 - 29.2 mA                                                                                                                                                                                                                                                                                    | AI          | 10703     | R                     |
| PS4                   | Inlet pressure PS4 <sup>1)</sup>    | 0 - 12.0 bar<br>0 - 174.0 psi                                                                                                                                                                                                                                                                  | AI          | 10732     | R                     |
| PS5                   | Nozzle pressure PS5 <sup>1)</sup>   | 0 - 12.0 bar<br>0 - 174.0 psi                                                                                                                                                                                                                                                                  | AI          | 10733     | R                     |
| Water Temperature     | Water temperature <sup>1)</sup>     | °C or °F                                                                                                                                                                                                                                                                                       | AI          | 10734     | R                     |
| Conductivity          | Conductivity                        | µS/cm                                                                                                                                                                                                                                                                                          | AI          | 10735     | R                     |
| Pump Current          | Pump current                        | 0 - 5.0 A                                                                                                                                                                                                                                                                                      | AI          | 10727     | R                     |
| Ag-Ion Current        | Ag-Ion current                      | mA                                                                                                                                                                                                                                                                                             | AI          | 10632     | R                     |

<sup>1)</sup> According to the settings <Imperial> or <Metric> in the DL controller software.

<sup>2)</sup> See Error code description in the malfunction list in the DL operation manual.

| Object Name     | Description                          | Range                               | Object-Type | Object-ID | Read (R)<br>Write (W) |
|-----------------|--------------------------------------|-------------------------------------|-------------|-----------|-----------------------|
| Setpoint        | Humidity setpoint                    | 0 - 95 %                            | AV          | 10602     | R/W                   |
| Band Channel 1  | Proportional band                    | 6 - 65 %                            | AV          | 10604     | R/W                   |
| ITime Channel 1 | Integral time                        | 1 - 60 min                          | AV          | 10606     | R/W                   |
| Manual Capacity | Manual capacity                      | 20 - 100 %                          | AV          | 10610     | R/W                   |
| RhorDemand      | Actual humidity or demand via BACnet | 0 - 100 %<br>Relinquish Default = 0 | AO          | 10611     | R/W                   |

| Object Name | Description                     | Range                       | Object-Type | Object-ID | Read (R)<br>Write (W) |
|-------------|---------------------------------|-----------------------------|-------------|-----------|-----------------------|
| Safety Loop | Safety loop                     | 0 = Open<br>1 = Closed (ok) | BI          | 578       | R                     |
| Y1          | Y1 inlet valve                  | 0 = Closed<br>1 = Open      | BI          | 603       | R                     |
| Y2          | Y2 valve                        | 0<br>1                      | BI          | 604       | R                     |
| Y3          | Y3 valve<br>air cleaning        | 0 = Closed<br>1 = Open      | BI          | 605       | R                     |
| Y4          | Y4 valve<br>external pipe flush | 0 = Closed<br>1 = Open      | BI          | 606       | R                     |
| Y5          | Y5 valve<br>spray circuit       | 0 = Closed<br>1 = Open      | BI          | 607       | R                     |
| Y6          | Y6 valve<br>spray circuit       | 0 = Closed<br>1 = Open      | BI          | 608       | R                     |
| Y7          | Y7 valve<br>spray circuit       | 0 = Closed<br>1 = Open      | BI          | 609       | R                     |
| Y8          | Y8 valve<br>spray circuit       | 0 = Closed<br>1 = Open      | BI          | 610       | R                     |
| Y9          | Y9 valve<br>spray circuit       | 0 = Closed<br>1 = Open      | BI          | 611       | R                     |
| Y10         | Y10 valve<br>drain (NO)         | 0 = Open<br>1 = Closed      | BI          | 612       | R                     |
| Y11         | Y11 auxiliary outlet<br>valve   | 0 = Open<br>1 = Closed      | BI          | 613       | R                     |
| FC Enable   | FC enable                       | 0 = Off<br>1 = On           | BI          | 636       | R                     |

### 3.4.2 ME - BACnet on-board (Integrated Controller software version 5.8.x.x)

| Object Name                  | Description                             | Range                                                                                                                                                                                                                                                                                                                        | Object-Type | Object-ID | Read (R)<br>Write (W) |
|------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|-----------------------|
| Integrated Controller        | Humidifier                              | —                                                                                                                                                                                                                                                                                                                            | DEV         | 1001      | —                     |
| Operation Status             | Operating status                        | 1 = Initializing<br>2 = Diagnostic<br>3 = Stopped<br>4 = Humidifying<br>5 = Cooling<br>6 = Holding<br>7 = Draining<br>8 = Refreshing<br>9 = Filling<br>10 = Standby<br>11 = Diluting<br>12 = Drain Assisting<br>13 = Bleeding<br>14 = Ramping Up<br>15 = Switched Off<br>16 = Remote Off<br>17 = Purging<br>18 = Drain Check | MI          | 500       | R                     |
| Service Status               | Maintenance and malfunctions status     | 1 = Service Info<br>2 = Warning<br>3 = Service<br>4 = Refill Liquid<br>5 = Replace PureFlow Ag+<br>6 = Replace UV Bulb<br>7 = Matrix Wash Over<br>8 = Out of Commissioning<br>9 = Activation Code<br>10 = Fault                                                                                                              | MI          | 549       | R                     |
| Fault Code                   | Error code <sup>2)</sup>                | 0 = no Error                                                                                                                                                                                                                                                                                                                 | AI          | 10650     | R                     |
| Operating Hours              | Operating hours                         | 0 - 1'200'000 h                                                                                                                                                                                                                                                                                                              | AI          | 10626     | R                     |
| Next Service                 | Next service                            | 0 - 10000 h                                                                                                                                                                                                                                                                                                                  | AI          | 10627     | R                     |
| Next UV Bulb ex-<br>change   | Next UV bulb<br>exchange                | 0 - 450 d                                                                                                                                                                                                                                                                                                                    | AI          | 10628     | R                     |
| Next PureFlo Ag+<br>exchange | Next PureFlo Ag+<br>exchange            | 0 - 350 d                                                                                                                                                                                                                                                                                                                    | AI          | 10629     | R                     |
| Humidity Control             | Actual humidity or<br>demand            | 0 - 100 %                                                                                                                                                                                                                                                                                                                    | AI          | 10526     | R                     |
| Temperature Control          | Actual air<br>temperature <sup>1)</sup> | °C or °F                                                                                                                                                                                                                                                                                                                     | AI          | 10527     | R                     |
| UV Current                   | UV current                              | 0 - 4.0 A                                                                                                                                                                                                                                                                                                                    | AI          | 10532     | R                     |
| Capacity 1                   | Water capacity<br>stage 1 <sup>1)</sup> | 5.0 - 200.0 kg/h<br>11.0 - 440.9 lb/hr                                                                                                                                                                                                                                                                                       | AI          | 10588     | R                     |
| Capacity 2                   | Water capacity<br>stage 2 <sup>1)</sup> | 5.0 - 200.0 kg/h<br>11.0 - 440.9 lb/hr                                                                                                                                                                                                                                                                                       | AI          | 10589     | R                     |
| Capacity 3                   | Water capacity<br>stage 3 <sup>1)</sup> | 5.0 - 200.0 kg/h<br>11.0 - 440.9 lb/hr                                                                                                                                                                                                                                                                                       | AI          | 10590     | R                     |
| Capacity 4                   | Water capacity<br>stage 4 <sup>1)</sup> | 5.0 - 200.0 kg/h<br>11.0 - 440.9 lb/hr                                                                                                                                                                                                                                                                                       | AI          | 10591     | R                     |
| Capacity 5                   | Water capacity<br>stage 5 <sup>1)</sup> | 5.0 - 200.0 kg/h<br>11.0 - 440.9 lb/hr                                                                                                                                                                                                                                                                                       | AI          | 10592     | R                     |
| Capacity 6                   | Water capacity<br>stage 6 <sup>1)</sup> | 5.0 - 200.0 kg/h<br>11.0 - 440.9 lb/hr                                                                                                                                                                                                                                                                                       | AI          | 10622     | R                     |
| Capacity 7                   | Water capacity<br>stage 7 <sup>1)</sup> | 5.0 - 200.0 kg/h<br>11.0 - 440.9 lb/hr                                                                                                                                                                                                                                                                                       | AI          | 10623     | R                     |
| Speed Pump 1                 | Demand pump 1                           | 0 - 100 %                                                                                                                                                                                                                                                                                                                    | AI          | 10631     | R                     |
| Speed Pump 2                 | Demand pump 2                           | 0 - 100 %                                                                                                                                                                                                                                                                                                                    | AI          | 10632     | R                     |
| Speed Pump 3                 | Demand pump 3                           | 0 - 100 %                                                                                                                                                                                                                                                                                                                    | AI          | 10633     | R                     |

| Object Name              | Description                            | Range        | Object-Type | Object-ID | Read (R)<br>Write (W) |
|--------------------------|----------------------------------------|--------------|-------------|-----------|-----------------------|
| Speed Pump 4             | Demand pump 4                          | 0 - 100 %    | AI          | 10634     | R                     |
| Speed Pump 5             | Demand pump 5                          | 0 - 100 %    | AI          | 10635     | R                     |
| Speed Pump 6             | Demand pump 6                          | 0 - 100 %    | AI          | 10636     | R                     |
| Speed Pump 7             | Demand pump 7                          | 0 - 100 %    | AI          | 10637     | R                     |
| Conductivity             | Conductivity                           | µS           | AI          | 10530     | R                     |
| Water Temperature        | Actual water temperature <sup>1)</sup> | °C or °F     | AI          | 10529     | R                     |
| Incoming Air Temperature | Actual air temperature <sup>1)</sup>   | °C or °F     | AI          | 10528     | R                     |
| Actual Stage             | Number of running stages               | 0 - 7 stages | AI          | 10624     | R                     |
| Level                    | Water level in tub                     | 0 - 8        | AI          | 10595     | R                     |

<sup>1)</sup> According to the settings <Imperial> or <Metric> in the ME controller software.

<sup>2)</sup> See Error code description in the malfunction list in the ME operation manual.

| Object Name        | Description                                         | Range                                                                                                                                                                                   | Object-Type | Object-ID | Read (R)<br>Write (W) |
|--------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|-----------------------|
| Setpoint Channel 1 | Humidity setpoint                                   | 0 - 95 %                                                                                                                                                                                | AV          | 10602     | R/W                   |
| Band Channel 1     | Proportional band humidity control                  | 6 - 65 %                                                                                                                                                                                | AV          | 10604     | R/W                   |
| ITime Channel 1    | Integral time humidity control                      | 1 - 60 min                                                                                                                                                                              | AV          | 10606     | R/W                   |
| Setpoint Channel 2 | Temperature setpoint <sup>1)</sup>                  | 5 - 40 °C<br>41 - 104 °F                                                                                                                                                                | AV          | 10603     | R/W                   |
| Band Channel 2     | Proportional band temperature control <sup>1)</sup> | 1 - 50 °C<br>34 - 122 °F                                                                                                                                                                | AV          | 10605     | R/W                   |
| ITime Channel 2    | Integral time temperatur control                    | 1 - 60 min                                                                                                                                                                              | AV          | 10607     | R/W                   |
| Manual Mode        | Matrix wash over / Tank draining                    | Read:<br>0 = Off<br>1 = Initialisation<br>2 = Process active<br>3 = Process completed<br><br>Write:<br>0 = Stop active process<br>1 = Start matrix wash over<br>2 = Start tank draining | AV          | 10675     | R/W                   |
| RHorDemand         | Actual humidity or demand via BACnet                | 0 - 100%<br>Relinquish Default = 0                                                                                                                                                      | AO          | 10611     | R/W                   |
| Temperature        | Actual temperature via BACnet <sup>1)</sup>         | -25 - 100 °C<br>-13 - 212 °F<br>Relinquish Default = 0                                                                                                                                  | AO          | 10612     | R/W                   |

<sup>1)</sup> According to the settings <Imperial> or <Metric> in the ME controller software.

| Object Name             | Description              | Range                       | Object-Type | Object-ID | Read (R)<br>Write (W) |
|-------------------------|--------------------------|-----------------------------|-------------|-----------|-----------------------|
| Safety Loop             | Safety loop              | 0 = Open<br>1 = Closed (ok) | BI          | 532       | R                     |
| Dosing Pump Level Float | Dosing pump level        | 0 = Empty<br>1 = Ok         | BI          | 534       | R                     |
| Standing Water          | Leakage sensor           | 0 = Fault<br>1 = Ok         | BI          | 535       | R                     |
| Drain Valve             | Drain valve              | 0 = Open<br>1 = Closed      | BI          | 537       | R                     |
| Inlet Valve             | Inlet valve              | 0 = Closed<br>1 = Open      | BI          | 536       | R                     |
| Drain Pump              | Drain pump               | 0 = Off<br>1 = On           | BI          | 551       | R                     |
| Pump 1 Error            | Fault pump 1             | 0 = Fault<br>1 = Ok         | BI          | 572       | R                     |
| Pump 2 Error            | Fault pump 2             | 0 = Fault<br>1 = Ok         | BI          | 573       | R                     |
| Pump 3 Error            | Fault pump 3             | 0 = Fault<br>1 = Ok         | BI          | 574       | R                     |
| Pump 4 Error            | Fault pump 4             | 0 = Fault<br>1 = Ok         | BI          | 575       | R                     |
| Pump 5 Error            | Fault pump 5             | 0 = Fault<br>1 = Ok         | BI          | 576       | R                     |
| Pump 6 Error            | Fault pump 6             | 0 = Fault<br>1 = Ok         | BI          | 577       | R                     |
| Pump 7 Error            | Fault pump 7             | 0 = Fault<br>1 = Ok         | BI          | 578       | R                     |
| Water Inlet             | Fault water inlet        | 0 = Fault<br>1 = Ok         | BI          | 579       | R                     |
| Water Temp              | Fault water temperature  | 0 = Fault<br>1 = Ok         | BI          | 580       | R                     |
| Water Outlet            | Fault water outlet       | 0 = Fault<br>1 = Ok         | BI          | 581       | R                     |
| Level Sensor            | Fault level sensor       | 0 = Fault<br>1 = Ok         | BI          | 582       | R                     |
| Water Condu             | Fault water conductivity | 0 = Fault<br>1 = Ok         | BI          | 583       | R                     |
| System Reset            | Remote reset             | 0 = Off<br>1 = On           | BV          | 586       | R/W                   |

### 3.4.3 RS - BACnet on-board (Integrated Controller software version 5.8.x.x)

| Object Name           | Description                                | Range                                                                                                                                                                                               | Object-Type | Object-ID | Read (R)<br>Write (W) |
|-----------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|-----------------------|
| Integrated Controller | Humidifier                                 | —                                                                                                                                                                                                   | DEV         | 1001      | —                     |
| Status A              | Operating status unit A                    | 1 = Initializing<br>2 = Diagnostic<br>3 = Stopped<br>4 = Break<br>5 = Level test<br>6 = Standby<br>7 = Humidifying<br>8 = Filling<br>9 = Idle<br>10 = Draining<br>11 = Remote off<br>12 = Keep Warm | MI          | 500       | R                     |
| Status B              | Operating status unit B                    | 1 = Initializing<br>2 = Diagnostic<br>3 = Stopped<br>4 = Break<br>5 = Level test<br>6 = Standby<br>7 = Humidifying<br>8 = Filling<br>9 = Idle<br>10 = Draining<br>11 = Remote off<br>12 = Keep Warm | MI          | 654       | R                     |
| Service Status A      | Maintenance and malfunctions status unit A | 1 = Service Info<br>2 = Warning<br>3 = RO Service<br>4 = Extended Maint.<br>5 = Small Maint.<br>6 = Activation Code<br>7 = Fault                                                                    | MI          | 549       | R                     |
| Service Status B      | Maintenance and malfunctions status unit B | 1 = Service Info<br>2 = Warning<br>3 = RO Service<br>4 = Extended Maint.<br>5 = Small Maint.<br>6 = Activation Code<br>7 = Fault                                                                    | MI          | 655       | R                     |
| Mode                  | Device type                                | 1 = RS<br>2 = RS+ RO<br>3 = RO                                                                                                                                                                      | MI          | 717       | R                     |
| Nominal Voltage       | Nominal voltage                            | 1 = 200 V<br>2 = 208 V<br>3 = 230 V<br>4 = 240 V<br>5 = 400 V<br>6 = 415 V<br>7 = 440 V<br>8 = 460 V<br>9 = 480 V<br>10 = 500 V<br>11 = 550 V<br>12 = 600 V<br>13 = 380 V                           | MI          | 699       | R                     |
| Level A               | Water level unit A                         | 0 = no level<br>1 = low<br>2 = low-mid<br>3 = mid<br>4 = mid-high<br>5 = high                                                                                                                       | AI          | 10820     | R                     |

| Object Name     | Description                          | Range                                                                         | Object-Type | Object-ID | Read (R)<br>Write (W) |
|-----------------|--------------------------------------|-------------------------------------------------------------------------------|-------------|-----------|-----------------------|
| Level B         | Water level unit B                   | 0 = no level<br>1 = low<br>2 = low-mid<br>3 = mid<br>4 = mid-high<br>5 = high | AI          | 10821     | R                     |
| Fault Code      | Error code <sup>2)</sup>             | 0 = No Error                                                                  | AI          | 10823     | R                     |
| Operating Hours | Operating hours                      | 0 - 1'200'000 h                                                               | AI          | 10699     | R                     |
| Next Service A  | Next service unit A                  | 0 - 6000 h                                                                    | AI          | 10758     | R                     |
| Next Service B  | Next service unit B                  |                                                                               | AI          | 10759     | R                     |
| System Demand   | System demand                        | 0 - 100 %                                                                     | AI          | 10057     | R                     |
| Channel 1       | Input signal channel 1 unit A        | 0 - 100 %                                                                     | AI          | 10001     | R                     |
| Channel 2       | Limiter signal channel 2 unit A      | 0 - 100 %                                                                     | AI          | 10002     | R                     |
| Max Capacity    | Max. capacity <sup>1)</sup>          | 5 - 160 kg/h<br>10 - 360 lb/hr                                                | AI          | 10596     | R                     |
| Capacity A      | Max. capacity unit A <sup>1)</sup>   | 5 - 40 kg/h<br>10 - 90 lb/hr                                                  | AI          | 10754     | R                     |
| Capacity B      | Max. capacity unit B <sup>1)</sup>   | 5 - 40 kg/h<br>10 - 90 lb/hr                                                  | AI          | 10755     | R                     |
| Capacity        | Actual capacity <sup>1)</sup>        | 0 - 160 kg/h<br>0 - 360 lb/hr                                                 | AI          | 10702     | R                     |
| Cylinder A      | Actual capacity unit A <sup>1)</sup> | 0 - 40 kg/h<br>0 - 90 lb/hr                                                   | AI          | 10734     | R                     |
| Cylinder B      | Actual capacity unit B <sup>1)</sup> | 0 - 40 kg/h<br>0 - 90 lb/hr                                                   | AI          | 10735     | R                     |

<sup>1)</sup> According to the settings <Imperial> or <Metric> in the RS controller software.

<sup>2)</sup> See Error code description in the malfunction list in the RS operation manual.

| Object Name          | Description                                  | Range                               | Object-Type | Object-ID | Read (R)<br>Write (W) |
|----------------------|----------------------------------------------|-------------------------------------|-------------|-----------|-----------------------|
| Setpoint Channel 1   | Setpoint channel 1 unit A                    | 0 - 95 %                            | AV          | 10010     | R/W                   |
| Setpoint Channel 2   | Setpoint channel 2 limiter unit A            | 10 - 95 %                           | AV          | 10013     | R/W                   |
| Band Channel 1       | P-Band unit A (Proportional band)            | 6 - 65 %                            | AV          | 10011     | R/W                   |
| Band Channel 2       | P-Band limiter unit A (Proportional band)    | 6 - 65 %                            | AV          | 10014     | R/W                   |
| ITime Channel 1      | Integral time channel 1 unit A               | 1 - 60 min                          | AV          | 10012     | R/W                   |
| Damp Channel 2       | Damp time channel 2 unit A                   | 0 - 60 s                            | AV          | 10015     | R/W                   |
| Manual Capacity A    | Manual capacity unit A                       | 20 - 100 %                          | AV          | 10008     | R/W                   |
| Digital RH/Demand A1 | Actual humidity or demand via BACnet unit A  | 0 - 100 %<br>Relinquish Default = 0 | AO          | 10044     | R/W                   |
| Digital RH/Demand A2 | Actual humidity or limiter via BACnet unit A | 0 - 100 %<br>Relinquish Default = 0 | AO          | 10045     | R/W                   |

| Object Name          | Description                                  | Range                       | Object-Type | Object-ID | Read (R)<br>Write (W) |
|----------------------|----------------------------------------------|-----------------------------|-------------|-----------|-----------------------|
| Blower Pack A        | Blower ready unit A                          | 0 = Off<br>1 = On           | BI          | 653       | R                     |
| Blower Pack B        | Blower ready unit B                          | 0 = Off<br>1 = On           | BI          | 689       | R                     |
| Safety Loop A        | External safety loop unit A                  | 0 = Open<br>1 = Closed (ok) | BI          | 578       | R                     |
| Safety Loop B        | External safety loop unit B                  | 0 = Open<br>1 = Closed (ok) | BI          | 662       | R                     |
| Overheat Switch A    | Internal safety loop unit A                  | 0 = Open<br>1 = Closed (ok) | BI          | 648       | R                     |
| Overheat Switch B    | Internal safety loop unit B                  | 0 = Open<br>1 = Closed (ok) | BI          | 685       | R                     |
| Heating Voltage A    | Heating voltage unit A                       | 0 = Off<br>1 = On           | BI          | 650       | R                     |
| Heating Voltage B    | Heating voltage unit B                       | 0 = Off<br>1 = On           | BI          | 687       | R                     |
| Temperature Switch A | Internal safety loop unit A (security level) | 0 = Open<br>1 = Closed (ok) | BI          | 649       | R                     |
| Temperature Switch B | Internal safety loop unit B (security level) | 0 = Open<br>1 = Closed (ok) | BI          | 686       | R                     |
| Leakage Sensor A     | Leakage sensor unit A                        | 0 = Off (Leak)<br>1 = On    | BI          | 647       | R                     |
| Leakage Sensor B     | Leakage sensor unit B                        | 0 = Off (Leak)<br>1 = On    | BI          | 684       | R                     |
| Main Contactor A     | Contactor unit A                             | 0 = Off<br>1 = On           | BI          | 733       | R                     |
| Main Contactor B     | Contactor unit B                             | 0 = Off<br>1 = On           | BI          | 734       | R                     |
| Relay Pump AC A      | Pump unit A                                  | 0 = Off<br>1 = On           | BI          | 735       | R                     |

| Object Name     | Description                 | Range                  | Object-Type | Object-ID | Read (R)<br>Write (W) |
|-----------------|-----------------------------|------------------------|-------------|-----------|-----------------------|
| Relay Pump AC B | Pump unit B                 | 0 = Off<br>1 = On      | BI          | 736       | R                     |
| Inlet 1 A       | Inlet valve 1 unit A        | 0 = Closed<br>1 = Open | BI          | 760       | R                     |
| Inlet 1 B       | Inlet valve 1 unit B        | 0 = Closed<br>1 = Open | BI          | 761       | R                     |
| Inlet 2 A       | Inlet valve 2 unit A        | 0 = Closed<br>1 = Open | BI          | 762       | R                     |
| Inlet 2 B       | Inlet valve 2 unit B        | 0 = Closed<br>1 = Open | BI          | 763       | R                     |
| Drain 1 A       | Drain cool valve unit A     | 0 = Closed<br>1 = Open | BI          | 764       | R                     |
| Drain 1 B       | Drain cool valve unit B     | 0 = Closed<br>1 = Open | BI          | 765       | R                     |
| Drain 2 A       | Complete drain valve unit A | 0 = Closed<br>1 = Open | BI          | 766       | R                     |
| Drain 2 B       | Complete drain valve unit B | 0 = Closed<br>1 = Open | BI          | 767       | R                     |
| Fan Activate A  | External fan unit A         | 0 = Off<br>1 = On      | BI          | 777       | R                     |
| Fan Activate B  | External fan unit B         | 0 = Off<br>1 = On      | BI          | 778       | R                     |
| Flush A         | Hygiene flush unit A        | 0 = Closed<br>1 = Open | BI          | 781       | R                     |
| Flush B         | Hygiene flush unit B        | 0 = Closed<br>1 = Open | BI          | 782       | R                     |

### 3.4.4 RO-A - BACnet on-board (Integrated Controller software version 5.8.x.x)

| Object Name           | Description                            | Range                                                                                                                                   | Object-Type | Object-ID | Read (R)<br>Write (W) |
|-----------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|-----------------------|
| Integrated Controller | Reverse osmosis                        | —                                                                                                                                       | DEV         | 1001      | —                     |
| Status RO             | Operating status RO                    | 1 = Initializing<br>2 = Diagnostic<br>3 = Stopped<br>4 = Standby<br>5 = Refreshing<br>6 = Flushing<br>7 = Producing<br>8 = Regeneration | MI          | 731       | R                     |
| Capacity RO           | Capacity RO                            | 0 - 100%                                                                                                                                | AI          | 10779     | R                     |
| Next Service RO       | Next Maintenance RO                    | 0 - 1'200'000 h                                                                                                                         | AI          | 10784     | R                     |
| Operating Hours       | Operating hours RO                     | 0 - 1'200'000 h                                                                                                                         | AI          | 10785     | R                     |
| Inlet pressure RO     | Inlet pressure<br>(fresh water) RO     | 0 - 12.0 bar<br>0 - 174.0 psi                                                                                                           | AI          | 10824     | R                     |
| Tank pressure RO      | Pure water tank RO                     | 0 - 12.0 bar<br>0 - 174.0 psi                                                                                                           | AI          | 10825     | R                     |
| Guard RO              | Overcurrent pump RO                    | 0 = Fault<br>1 = Ok                                                                                                                     | BI          | 724       | R                     |
| Leakage RO            | Leak sensor RO                         | 0 = Fault<br>1 = Ok                                                                                                                     | BI          | 727       | R                     |
| Inlet RO              | Inlet valve RO                         | 0 = Closed<br>1 = Open                                                                                                                  | BI          | 768       | R                     |
| Drain RO              | Drain valve RO                         | 0 = Closed<br>1 = Open                                                                                                                  | BI          | 769       | R                     |
| Service Status A      | Maintenance and<br>malfunctions status | 1 = Service Info<br>2 = Warning<br>3 = RO Service<br>6 = Activation Code<br>7 = Fault                                                   | MI          | 549       | R                     |
| Fault Code            | Error code <sup>2)</sup>               | 0 = No Error                                                                                                                            | AI          | 10823     | R                     |

RO = Reverse Osmosis

<sup>2)</sup> See Error code description in the malfunction list in the RS operation manual.

### 3.5 Operating trouble list

| Problem                                                                                                         | Solutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cannot see/change set object/parameter from BMS                                                                 | <p>Check "Control Mode" setting in the "Control Settings" submenu.</p> <ul style="list-style-type: none"> <li>– Demand type controls use internal algorithms to generate a signal telling the Condair Integrated Controller to operate at a certain output percentage. These types of controls do not report the detected humidity or temperature level or set point to the Condair Integrated Controller. As a result the set point and humidity/temperature levels cannot be monitored through the Condair Integrated Controller when using demand controls.</li> <li>– Sensor ("transducer") type controls report a sensed humidity/temperature value to the Condair Integrated Controller. The set point is configured at the control unit and the Condair Integrated Controller uses internal algorithms to determine the output percentage. Since the Condair Integrated Controller knows both the set point and humidity/temperature level, these values may be monitored through the Condair Integrated Controller.<br/>Note: "Control Mode" must be set to "rH P" or "rH PI".</li> </ul> |
| Condair Integrated Controller does not respond to humidity values or demand values written over BACnet.         | <ul style="list-style-type: none"> <li>– Check that Condair Integrated Controller is configured to be controlled via automation system (see <a href="#">chapter 3.3.1</a>).<br/>Note: If "Source" in the controller settings is set to "Analog" the Condair Integrated Controller will look for a control signal connected to the driver board only.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| The device will not respond to control signal connected to the driver board.                                    | <ul style="list-style-type: none"> <li>– Check that "Source" in the controller settings is configured for "Analog" control.<br/>Note: If the "Signal Source" is set to "Modbus", the Condair Integrated Controller will look for a control value sent by the BMS.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| The BACnet node ID, BACnet IP port or BACnet MSTP MAC settings are not accepted. Original values remain active. | <ul style="list-style-type: none"> <li>– Check if the input is within the valid value range. If this is not the case, the entered value is ignored.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Problem                             | Solutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Intermittent Communications.        | <ul style="list-style-type: none"> <li>– Check whether the wire type and run length meet the requirements of the corresponding network.</li> <li>– Look for wire runs in close proximity to equipment generating significant electrical noise (such as VFD's, medical equipment, X-ray machinery, servers, etc.).</li> <li>– Check that wire shield is terminated at one end only.</li> <li>– Confirm correct polarity of conductors at each device.</li> <li>– Check BACnet/LonWorks addresses for conflicts with any device.</li> </ul> <p>Note: Each device on the network must have a unique address.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| No communication can be established | <ul style="list-style-type: none"> <li>– Check that latest software version of the device is installed.</li> <li>– <b>With BACnet IP:</b><br/>Check the IP address, subnet mask and default gateway. These parameters must be in the same range as the client (client = BACnet device, for example a building controller or workstation requesting data from the humidifier)<br/>Check if other network participants or firewalls are blocking BACnet messages.</li> <li>– <b>With BACnet MS/TP:</b><br/>Ensure that all devices in the MS/TP network use the same baud rate.<br/>Notice: Baud rate 76800 is not a standard baud rate and is not supported by many devices or notebooks.<br/>Check the times of the properties "APDU Segment Timeout" and "APDU Timeout" in the Device object. These should be the same for all subscribers in the same BACnet MS/TP network.</li> <li>– <b>With BACnet MS/TP Master:</b><br/>Check the MAC address. This should be in the range 0-127.<br/>The value in the Device Object property "Max Master" must be equal to or higher than the MAC address.</li> <li>– <b>With BACnet MS/TP Slave:</b><br/>MS/TP slave devices cannot be detected automatically via the "Who-is" BACnet service and therefore have to be manually added to the network.</li> </ul> |
| Invalid data                        | <ul style="list-style-type: none"> <li>– Check BACnet addresses for conflicts with any device.</li> </ul> <p>Note: Each device on the network must have a unique address.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Problem                                                                                                     | Solutions                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Error code "0" is shown though a fault is present on the Integrated Controller.                             | <ul style="list-style-type: none"> <li>– Check software version of the Integrated Controller. Error code indication is not supported with software version 1.x.x.x.</li> </ul>                                                                                                                                        |
| Wrong values (e.g. temperature, pressure, mass flow) are shown via BMS.                                     | <ul style="list-style-type: none"> <li>– Check software version of the Integrated Controller.</li> <li>– Check the "Units" setting in the "General" menu.</li> </ul>                                                                                                                                                  |
| More variables or additional information is required from the Condair Integrated Controller.                | Contact Condair Technical Services for additional support.                                                                                                                                                                                                                                                            |
| The "Units" property is not defined for all BACnet objects, although the BACnet standard lists these units. | <ul style="list-style-type: none"> <li>– BACnet objects that have units which differ depending on the setting "Metric" or "Imperial" are to and with software version 5.7.x.x not fixed implemented. These include units such as temperature (°C or °F), pressure (bar or psi), mass flow (kg/h or lb/hr).</li> </ul> |

## 4 Appendix

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### 4.1 Object abbreviations

|                       |                                                              |
|-----------------------|--------------------------------------------------------------|
| AI = Analog Input     | Analog value, readable                                       |
| AO = Analog Output    | Analog control signal, readable and writable (with priority) |
| AV = Analog Value     | Analog setting, readable and writable                        |
| BI = Binary Input     | Binary state value, readable                                 |
| BV = Binary Value     | Binary value, readable and writable                          |
| MI = Multistate Input | Multistate status value, readable                            |

# 4.2 Declaration of Conformity for the implementation of BACnet protocols (PICS)

## INTEGRATED CONTROLLER BACnet Protocol Implementation Conformance Statement

### Basic Information

|                               |                                                                          |
|-------------------------------|--------------------------------------------------------------------------|
| Document Revision:            | 2.00                                                                     |
| Issue Date:                   | March 2018                                                               |
| Vendor Name:                  | Condair Group AG (Vendor ID: 976)                                        |
| Product Name:                 | Integrated Controller (IC)                                               |
| Firmware Revision:            | 14.1.35.1 (BACnet Driver)                                                |
| Application Software Version: | 5.7.x.x and 5.8.x.x                                                      |
| BACnet Protocol Revision:     | Version 1, Revision 14                                                   |
| Product Description:          | The products are humidifiers, adiabatic coolers or water treatment units |

### BACnet Standardized Device Profile

- B-SS BACnet Smart Sensor
- B-SA BACnet Smart Actuator

### BACnet Interoperability Building Blocks Supported (BIBBs)

- DS-RP-B Data Sharing, Read Property-B
- DS-WP-B Data Sharing, Write Property-B
- DS-RPM-B Data Sharing, Read Property Multiple-B
- DM-DOB-B Device Management, Dynamic Object Binding-B\*
- DM-DDB-B Device Management, Dynamic Device Binding-B\*

\*not supported by MS/TP slave

### Standard Object Types

- Analog Input
- Analog Output
- Analog Value
- Multi State Input
- Multi State Value
- Binary Input
- Binary Value
- Device

### Optional Supported Properties

Description  
Description, Max Pres Value, Min Pres Value  
Description  
Description, State Text  
Description, State Text  
Description, Active Text, Inactive Text  
Description, Active Text, Inactive Text  
Description, Location (both read- and writeable)  
Max Segm Accepted  
APDU Segm. Timeout, APDU Timeout (both read and writeable)  
Max Info Frames (only BACnet MS/TP)  
Max Master (read- and writeable BACnet MS/TP Master)

### The following conditions apply to all object types Objects

- Objects may be neither dynamically created nor deleted
- Does not support any optional properties unless they are listed
- No proprietary properties are implemented
- No additional properties may be written, except they are listed above or required by the BACnet specification

### Data Link Layer Options

- BACnet IP
- BACnet MS/TP Master Baud rates: 9'600, 19'200, 38'400, 57'600, 76'800
- BACnet MS/TP Slave Baud rates: 9'600, 19'200, 38'400, 57'600, 76'800

1902 / EN

**Segmentation Capability**

Segmented requests and responses are supported. Window size: 8

**Device Address Binding**

Static address binding is not supported

**Network Options**

No networking options are supported.

**Character Sets Supported**

ANSI UTF-8

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Attention: ..... Date: .....  
Company: ..... Fax #: .....  
From: ..... Page:        of  
Subject: .....

☐ FOR YOUR INFORMATION      ☐ RESPONSE REQUESTED

MESSAGE:

Distributor / Agent P.O. Number: ..... Sales Order Number: .....

Desired interface option:

- ☐ BACnet IP  
☐ BACnet MS/TP Master  
☐ BACnet MS/TP Slave

Settings for BACnet IP only:

- IP Address: .....  
- Subnet Mask: .....  
- Default Gateway Address: .....  
- BACnet Node ID (Device Instance): .....  
- BACnet IP Port: .....

Settings for BACnet MS/TP only:

- MAC Address BACnet MS/TP: .....  
- Baud rate: .....  
- BACnet Node ID (Device Instance): .....

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**Notes**

# Warranty

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Condair Inc. and/or Condair Ltd. (hereinafter collectively referred to as THE COMPANY), warrant for a period of two years after installation or 30 months from manufacturer's ship date, whichever date is earlier, that THE COMPANY's manufactured and assembled products, not otherwise expressly warranted (with the exception of the cylinder), are free from defects in material and workmanship. No warranty is made against corrosion, deterioration, or suitability of substituted materials used as a result of compliance with government regulations.

THE COMPANY's obligations and liabilities under this warranty are limited to furnishing replacement parts to the customer, F.O.B. THE COMPANY's factory, providing the defective part(s) is returned freight prepaid by the customer. Parts used for repairs are warranted for the balance of the term of the warranty on the original humidifier or 90 days, whichever is longer.

The warranties set forth herein are in lieu of all other warranties expressed or implied by law. No liability whatsoever shall be attached to THE COMPANY until said products have been paid for in full and then said liability shall be limited to the original purchase price for the product. Any further warranty must be in writing, signed by an officer of THE COMPANY.

THE COMPANY's limited warranty on accessories, not of the companies manufacture, such as controls, humidistats, pumps, etc. is limited to the warranty of the original equipment manufacturer from date of original shipment of humidifier.

THE COMPANY makes no warranty and assumes no liability unless the equipment is installed in strict accordance with a copy of the catalog and installation manual in effect at the date of purchase and by a contractor approved by THE COMPANY to install such equipment.

THE COMPANY makes no warranty and assumes no liability whatsoever for consequential damage or damage resulting directly from misapplication, incorrect sizing or lack of proper maintenance of the equipment.

THE COMPANY makes no warranty and assumes no liability whatsoever for damage resulting from freezing of the humidifier, supply lines, drain lines, or steam distribution systems.

THE COMPANY retains the right to change the design, specification and performance criteria of its products without notice or obligation.



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