

# Manual

# Modbus / BACnet

Model SR IndAC2, NOZ2, HR

Version for software version U3.2 - xx  
Original Manual

**English**



**Biddle**

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# 1. Introduction

## 1.1 About this manual

This manual describes the connection of the comfort air curtain SR the industrial air curtain model IndAC<sub>2</sub>, the air heater model NOZ<sub>2</sub> or the heat recovery unit HR to the communication protocol Modbus RTU, and its use.

For a possible connection to BACnet, the manual describes the installation of a gateway which makes communication with BACnet possible. The contents of this manual also apply to BACnet, unless otherwise specified.

For IndAC<sub>2</sub> and NOZ<sub>2</sub>, it is the case that only units with an automatic control (type Auto) can be connected to a communication protocol.

## 1.2 Required basic knowledge

To use this manual, you must have general knowledge of the communication protocol ('Modbus RTU Slave' or 'BACnet'). This manual is not a guide to these protocols.

For more information about Modbus, please refer to the specifications and guidelines that are available on the website of the Modbus Organization: [www.modbus.org](http://www.modbus.org).

## 1.3 How to read this manual

### 1.3.1 Designations used in the manual

The following symbols are used in the manual:



**Note:**

Refers to an important section in the text.



**Caution:**

If you do not carry out the procedure or action correctly, you may cause damage to the unit.

Follow the instructions precisely.

**Warning:**

If you do not carry out the procedure or action correctly, you may cause physical injury and/or damage.

Follow the instructions precisely.

**Danger:**

Is used to designate actions that are not permitted.

Ignoring this prohibition may lead to serious damage or to accidents resulting in physical injury.

### 1.3.2 Definitions

<b>Modbus RTU</b>	Communication protocol
<b>BACnet</b>	Communication protocol
<b>gateway</b>	Module which attends to the translation between two different communication protocols.
<b>communication parameter</b>	Characteristics of the Modbus connection (baud rate, data, parity, stop bit).
<b>Modbus node address</b>	Number by which the Modbus system recognises the unit.
<b>register address</b>	Position (number) in the Modbus system where the value/variable can be found (also called the Modbus address).
<b>b-touch menu parameter</b>	Number of the (corresponding) function that can be set in the b-touch control panel (via user interface or via settings.txt).
<b>unit code</b>	Eight-digit code that identifies the unit type.
<b>unit ID</b>	Unique number of the unit's control circuit board. This number is used, amongst other things, to specify (via the b-touch control panel) which unit is used as master.
<b>auto master unit</b>	An auto master unit has a control circuit board for automatic control and is selected in order to attend to the global Biddle regulation. This unit also regulates the communication in a master-slave system.
<b>auto slave unit</b>	An auto slave unit has a control circuit board for automatic control, but is largely regulated by the auto master unit.
<b>basic unit</b>	<i>Only with units IndAC<sub>2</sub> and NOZ<sub>2</sub></i> : A basic unit has no control circuit board of its own.
<b>single master system</b>	Set-up of a single auto master unit without auto slave units. Optionally, one or more basic units have been linked.

**master-slave system**

Combination of a single auto master unit and one or more auto slave units.

**multiple master system**

Combination of multiple auto master units.

**local register**

The value of a local register can be individually set and/or read out for each connected unit.

**global register**

The value of a global register is the same for each connected unit and can be set and/or read out on each unit.

**1.3.3 Related documentation**

In addition to this manual, you need the manual for the unit that is being used.

**1.4 Supported Modbus codes**

Modbus codes that are supported are:

CODE	COMMAND
3	read registers
4	read input registers
6	write registers
16	write multiple registers

Modbus codes that are **not** supported and which therefore give an error message are:

CODE	COMMAND
1	read status of outputs
2	read status of inputs
5	write single coil
15	write multiple coils

# 2. . Installation

## 2.1 Special points

### 2.1.1 Modbus/BACnet

The unit has been designed to be able to operate as an RTU Slave within a Modbus RTU communication system.

With the aid of an IntesisBox Gateway, it is also possible to communicate with a BACnet system.

### 2.1.2 Communication parameters

Standard values of the communication parameters for Modbus are:

COMMUNICATION PARAMETER	VALUE
Baud rate	9600
DATA	8
Parity	none
Stop bits	1

The turnaround time between the unit and Modbus is 4.2 msec.

The default value for the Modbus node address is 1.

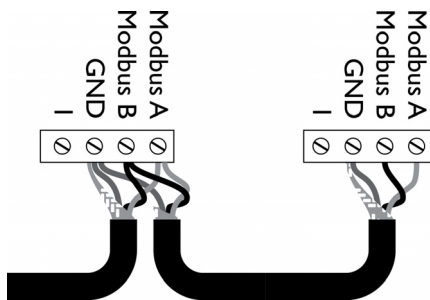


**Note:**

You can modify the parameters via Modbus register addresses 460-464.

### 2.1.3 Wiring

A twisted-pair cable must be used for connection to the Modbus system. The cable must also have a third core for the GND (grounding). Normally, a four-pole, twisted-pair cable is used; one pair is used for communication and one core from the other pair is used as the GND.



Modbus A = -

Modbus B = +

GND = ground



**Note:**

If there is no communication, this may be caused by incorrectly connected wiring. Swap the A- and B+ wires.



**Note:**

For a more reliable signal, it is possible to connect a 120 Ohm resistor. For this purpose, place a bridge between positions I and B of the connection on the unit concerned:

- Sr > X74
- For IndAC<sub>2</sub> and NOZ<sub>2</sub> / HR 12 > X382
- HR 25/35/45 > 52X3

### 2.1.4 Multiple units on Modbus

If you connect multiple units to the Modbus system, various configurations are possible. The configuration determines from which unit the local and global registers can be set and/or read out.



**Note:**

The global registers are used by the automatic control.



**Note:**

For operation, it does not matter whether units without control circuit board (type basic) are also present.



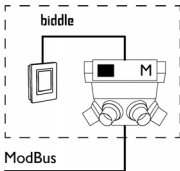
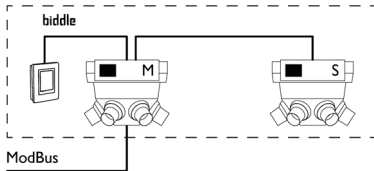
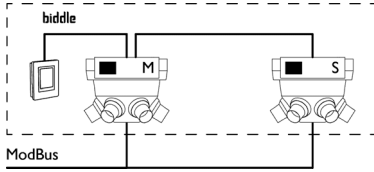
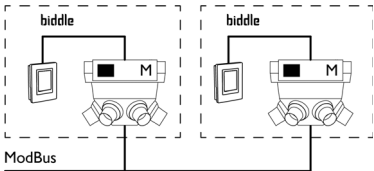
**Note:**

For the illustrations, the NOZ<sub>2</sub> has been used. The same principles apply to other units.



**Note:**

HR units are not suitable to be connected in series.

SINGLE MASTER	MASTER - SLAVE	MULTIPLE MASTER
	<p><i>Default:</i></p>  <p><i>In order also to read local registers of auto slave unit:</i></p> 	
<p><b>Local registers:</b> Relate to the connected unit.</p>	<p><b>Local registers:</b> Relate to individual units (provided that they are connected in series to Modbus).</p>	<p><b>Local registers:</b> Relate to individual units.</p>
<p><b>Global registers:</b> Relate to the connected unit.</p>	<p><b>Global registers:</b> Are the same for each unit.</p>	<p><b>Global registers:</b> Relate to individual Master units (with any corresponding Slave units).</p>

## 2.2 Entering the Modbus node address

Each unit with a control circuit board (type Auto) requires a node address by which the unit is recognised in the Modbus system.

By default, the node address is input by the dip switches on the unit's control circuit board. By default, these are set to 1. Depending on the Modbus network, it may be necessary to change the node address. This can be done in different ways:

- via the *b-touch* control panel
- via Modbus
- via the dip switches on the control circuit board



**Note:**  
Valid node address numbers are 1 - 247.



Invalid node address numbers (0 and 248 up to and including 255) are read as node address 1.

### 2.2.1 Determining system set-up

1. Determine the desired system set-up. See [2.1.4 Multiple units on Modbus](#).
2. Determine the Modbus node addresses to be used.



**Note:**

Use the same numbers in order to read out units as a single system (standard master-slave set-up).

Use a unique number per unit for which you want to read out individual data.

### 2.2.2 Set via the *b-touch* control panel

1. Connect the *b-touch* control panel to the auto master unit.
2. Set the node address via [menu > Maintenance > Modbus](#)



**Note:**

If the node address is set to 0, the code of the dip switches on the control circuit board is used.

3. Also set the node address for any connected auto slave units. Using the arrows, you change between the units in the menu.
4. Repeat steps 1 to 3 inclusive for any other settings.

### 2.2.3 Configuring via Modbus

1. Connect the unit to Modbus.
2. Set register address 461-Permit Modbus settings changes to 1 (changes permitted).
3. In register address 462-Modbus node address, set the desired node address.



**Note:**

If the node address is set to 0, the code of the dip switches on the control circuit board is used.

4. Activate the change by setting register address 460-Activate Modbus settings to 1 (activate changes).



**Note:**  
After activation, change register addresses 460 and 461 back to their default value (0).

- Repeat steps 1 to 4 inclusive for any other units.

### 2.2.4 Configuring via dip switches

The unit's control circuit board contains 8 dip switches. These are coded as follows:

DIP SWITCH	1	2	3	4	5	6	7	8
value (ON)	1	2	4	8	16	32	64	128

- Convert the desired node address to an 8-figure binary code.



**Caution:**  
Note down the code from left (1) to right (8).

For example, node address 2 is 01000000

- Enter the code with the aid of the 8 dip switches ❶ on the control circuit board of the auto master unit.

- 0 = OFF
- 1 = ON

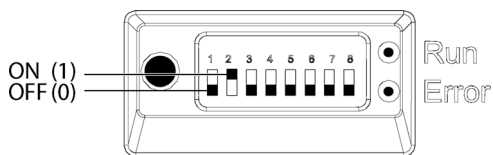
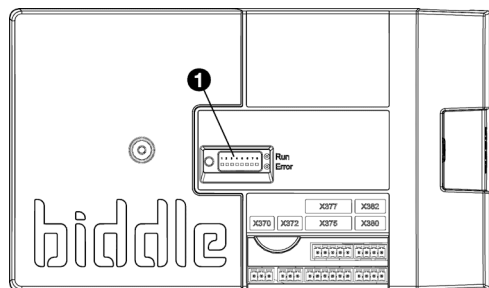


**Note:**  
Use the microswitch (left) and the two LEDs (right) for purposes of orientation.

**For example, node address 2:**

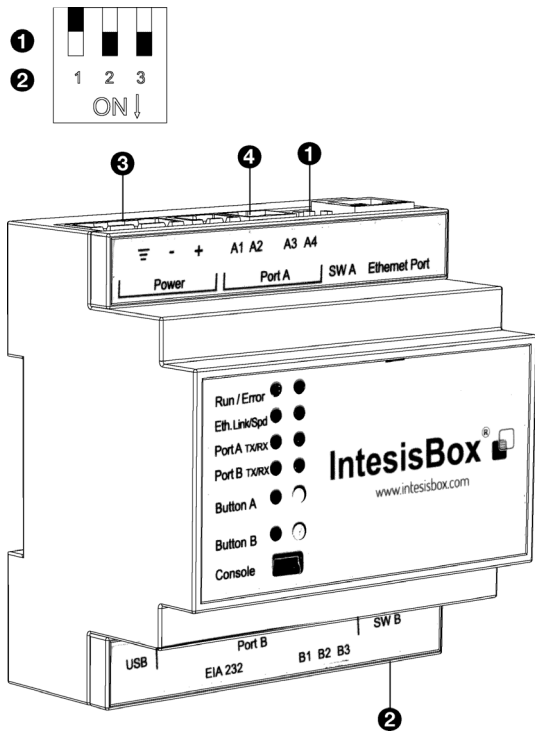
DIP SWITCH	1	2	3	4	5	6	7	8
code	0	1	0	0	0	0	0	0
position	off	on	off	off	off	off	off	off

- Repeat steps 1 and 2 for any other units.
- Switch the power supply OFF and ON in order to activate the new node addresses.



## 2.3 Connecting the gateway for BACnet (accessory)

The unit is designed for communication with a Modbus system. With the aid of a gateway, this can be converted to communication that is suitable for BACnet.



1. Set the dipswitches (❶ and ❷) to the correct positions:

- 1 > OFF
- 2 > ON
- 3 > ON

2. Mount the gateway to the wall or on a DIN rail.

3. Connect the gateway to the BACnet.



**Warning:**  
Make sure that the power supply to the BACnet system which is to be connected is switched OFF.

4. Connect the gateway to the power supply ❸, in accordance with the wiring diagram.



**Warning:**  
Make sure that the power supply is not activated.

5. Connect the unit to the gateway (Port A ❹) as described in 2.4.1 [Connecting the unit to Modbus the b-connect](#).

## 2.4 Connecting the unit to Modbus



**Warning:**  
Make sure that the mains supply is switched off.

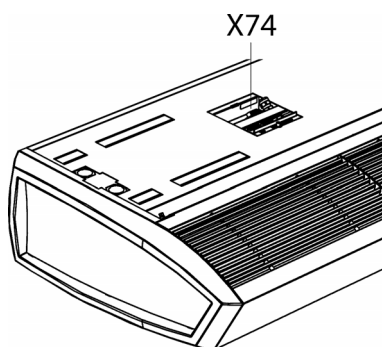
### 2.4.1 Connecting the unit to Modbus the b-connect

1. Lay a cable between the Modbus system the b-connect and the unit.

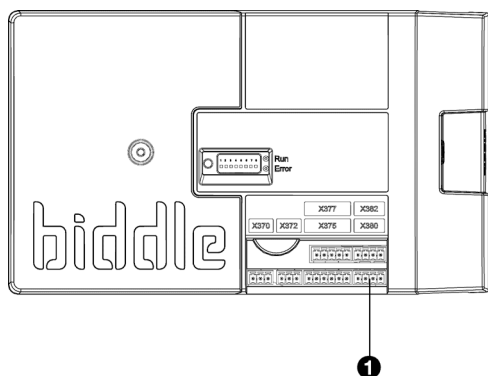


**Note:**  
In the case of BACnet: Lay the cable between the gateway and the unit.

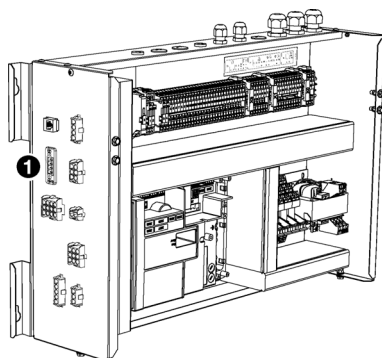
2. Attach the cable to the unit, in accordance with the wiring diagram:

**For SR:**

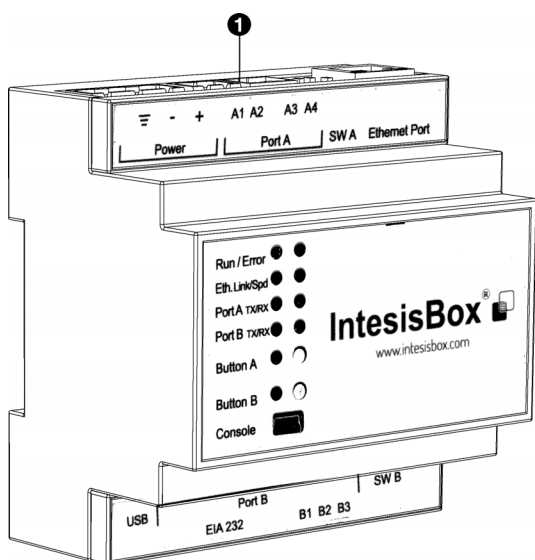
- Connect the cable to terminal X74 on the upper side of the unit.

**For IndAC<sub>2</sub> and NOZ<sub>2</sub> and HR 12:**

- The connection for Modbus is on the control circuit board in the unit. Open the unit as described in the unit's operating manual.
- Lead the cable into the electronic housing.
- Connect the cable to terminal X380 ❶ of the unit's control circuit board.

**For HR 25/35/45:**

- Connect the cable to the side of the electronics module ❶.
3. For a more reliable signal, it is possible to connect a 120 Ohm resistor. For this purpose, place a bridge between positions I and B of the connection on the unit concerned:
    - Sr > X74
    - For IndAC<sub>2</sub> and NOZ<sub>2</sub> / HR 12 > X382
    - HR 25/35/45 > 52X3
  4. Attach the cable to the Modbus-system, in accordance with the wiring diagram.

**Note:**

**In the case of BACnet:** Connect the cable to the gateway (Port A ❶).

**Connecting multiple units to Modbus**

Depending on the chosen set-up, the Modbus connection must be connected in series (See [2.1.4 Multiple units on Modbus](#)).

**Note:**

HR units are not suitable to be connected in series.

**For SR:**

1. Lay a cable between the units.
2. Connect the cable on both units to terminal X74 (on the upper side of the unit), in accordance with the wiring diagram.
3. Repeat steps 1 and 2 for each unit that is to be connected in series.

**For IndAC<sub>2</sub> and NOZ<sub>2</sub>:****Note:**

Only units with a control circuit board (type Auto) can be connected in series to the Modbus system.

1. Lay a cable between the units.
2. Lead the cable into the electronic housings.
3. Connect the cable in the first unit to terminal block X382, in accordance with the wiring diagram.
4. Connect the cable in the second unit to terminal block X380, in accordance with the wiring diagram.
5. Repeat steps 1 to 4 inclusive for each unit that is to be connected in series.

## 2.5 Activating the connection

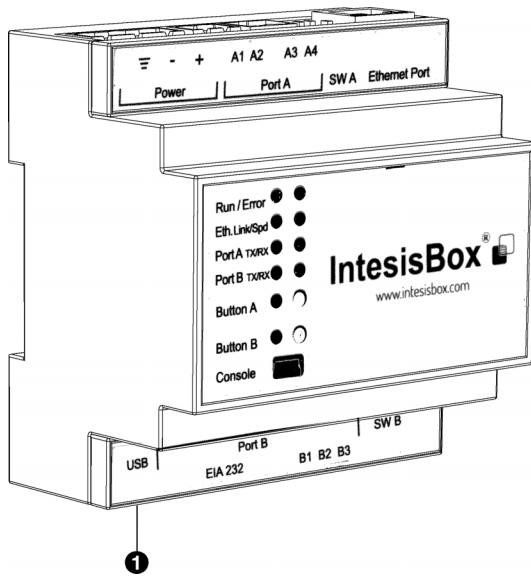
1. Switch on the power supply.

**Note:**

If the connection with the communication protocol is active, you can possibly remove the *b-touch* control panel.

## 2.6 Configuring the gateway for BACnet (accessory)

In order to make communication with BACnet possible, the gateway has to be configured.



1. Download and install the necessary software from the manufacturer's website.

[www.intesisbox.com/intesis/software/intesisbox\\_maps\\_installer.exe](http://www.intesisbox.com/intesis/software/intesisbox_maps_installer.exe)

2. Connect the computer to gateway ❶.



**Note:**  
Use a mini USB type B cable.

3. Open the software on the computer.

4. Import the pre-programmed register addresses via 'Get Project from Device'.



**Note:**  
The addresses are pre-programmed for 'device 1' (unit 1) with node address 1.



**Note:**  
Retrieve the pre-programmed register addresses from Biddle if they have not been programmed in the gateway.

5. Activate the connection via 'Connection'.
6. Add any units via 'Configuration'.
7. Alter the register addresses and supplement as desired via 'Signals'.



**Caution:**  
For BACnet, use whole degrees (°C) as temperature units instead of 0.1°C.



**Note:**  
See [3 Frequently used register addresses](#) and [4 All register addresses](#) for the options.



**Note:**  
The number of data points to be used is dependent on the module applied.

8. Send the (altered) programming to the gateway via 'Receive / Send'.
9. The data can be read out via 'Diagnostic'.

# 3 . . Frequently used register addresses

## 3.1 Introduction

This chapter describes frequently-used functions and their corresponding register addresses. Listed in chapter 4 are all register addresses.

The principle is that the basic settings and checks are set via the *b-touch* control panel. For configurations without *b-touch*: First implement the necessary basic settings and carry out the checks as described in .



**Note:**

Functions can be adjusted both on the *b-touch* control panel and via Modbus. The most-recently sent signal is valid.

Changes via the *b-touch* control panel apply only until the starting time of the next switching moment by Modbus.



**Note:**

Some settings can only be adjusted via the *b-touch* control panel.



**Note:**

It may occur that the system applied uses a value of 1 higher than the register addresses given here. In that case, use 101 for register address 100, for example.



**Note:**

For HR units, the frequently-used register addresses are included in the unit's operating manual.



**Caution:**

For BACnet, use whole degrees (°C) as temperature units instead of 0.1°C.

## 3.2 Putting into operation without *b-touch* control panel

Units can also function without *b-touch* control panel. Required settings and checks must in that case be made via Modbus.

### 3.2.1 Configuring system

Without *b-touch* control panel, the system can be restored via register address 258.



**Note:**

From version U3.2-10 onwards, Master-Slave set-ups without *b-touch* are configured automatically.

### 3.2.2 Required settings

1. Specify in register address 253 (communication *b-touch* necessary) that the unit is to function (0) without *b-touch* control panel.

REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT
253	communication <i>b-touch</i> necessary 0= not necessary 1= necessary	-	0	1	

2. For units without *b-touch* control panel, set the Modbus addresses below.

REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT
<b>For all units</b>					
424	Required room temperature	0.1°C	10	400	210
331	Installation height	cm	100	1500	-
<b>Only for NOZ</b>					
332	Nozzle angle	°	13	53	33
<b>Only for IndAC<sub>2</sub> and SR</b>					
289	Door response: automatic 0= immediate 1= gradual	-	0	1	0



REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT
319-330	Normal monthly temperatures (TJAN-TDEC) <b>Caution:</b> Only set if the outdoor temperature is <b>not</b> provided via Modbus (address 430), the IR sensor (address 381) or a wired outdoor temperature sensor.	0.1°C	-300	300	-
339	Function, input 3 0= no door contact switch 13= door contact switch NO 63= door contact switch NC	-	0	71	0
381	IR sensor functions 0= no function +1= 30 min. on +2= outdoor temperature sensor +4= door contact switch +8= early start door contact switch	-	0	15	0
<b>Only for HR</b>					
350	<b>Control type</b> 10= automatic CO <sub>2</sub> control (settings)	-	0	30	10
351	CO <sub>2</sub> level 1	ppm	200	2000	800
352	CO <sub>2</sub> level 2	ppm	200	2000	1000
353	CO <sub>2</sub> level 3	ppm	200	2000	1200

### 3.2.3 Check IR sensor

Only for IndAC<sub>2</sub> and SR

Only with use of IR sensor (register address 381 (IR sensor functions) is other than 0)



#### **Caution:**

Adjust the IR sensor properly in order to be able to detect whether the door is open and in order to be able to measure the outdoor temperature. Consult the unit's manual for the correct position.

- I. Check the registration of the door position:
  - Check the value of register address 506 (IR counter – total.)
  - Walk through the door opening.
  - Check that the value of 506 has increased.

### 3.2.4 Check outdoor temperature

Only for IndAC<sub>2</sub> and SR

**When using IR sensor:** See previous section 'Check IR sensor'.

**When using a different outdoor temperature sensor:** Check whether register address 202 (current outdoor temperature) is indicating a realistic value.

### 3.2.5 Check wired door contact switch

Only for IndAC<sub>2</sub> and SR

Only with use of wired door contact switch (register address 339 (Function, input 3) is other than 0)

- I. Check the registration of the door position:
  - Check the value of register address 227 (Door open ratio)
  - Open the door
  - Check that the value of 227 increases. (this may take some time)

## 3.3 Register addresses for general use



**Note:**

For register addresses 400/410/420 to 409/419/429 inclusive, there applies a relationship as described below for 400/410/420:

400 = current status of the function

410 = allow amendments via *b-touch*

420 = Modbus setpoint for the function

REGISTER ADDRESS	DESCRIPTION	RO/RW*	UNIT	MINIMUM	MAXIMUM	DEFAULT
420	Turning the unit ON and OFF	rw	-	0	2	1
424	Required room temperature	rw	0.1 °C	10	400	210
440	Minimum band width, heating/cooling	rw	0.1 °C	0	100	20
276	Room temperature, start	rw	0.1 °C	10	400	210
421	<b>For SR and IndAC<sub>2</sub>:</b> Switching the heating on and off	rw	-	0	1	1

REGISTER ADDRESS	DESCRIPTION	RO/RW*	UNIT	MINIMUM	MAXIMUM	DEFAULT
428	For NO <sub>2</sub> and HR: Switching the temperature control on and off	rw	-	0	3	1
425	Automatic or manual control	rw	-	0	1	1
422	Manual setting of the strength	rw	%	0	100	50
423	Adjusting the automatic strength control	rw	-	-3	3	0
426	For HR: Mode: ventilation/recirculation/night cooling	rw	-	0	10	0
	For NO <sub>2</sub> : Ventilation modes setting	rw	-	0	2	2
427	Ventilation valve position	ro	%	0	value address 302	100
*ro = read only (read only)						
*rw = read & write (read and write)						

#### 420 Turning the unit ON and OFF

You can switch the unit ON and OFF manually.

The unit can also be switched ON and OFF in other ways:

- Using external controls (see register address 361, 337, 338, 339)
- Via the internal timer or via an external release signal on the unit.

#### Values

VALUE	OPTION	DESCRIPTION
0	Off	The unit is switched off. <ul style="list-style-type: none"> <li>• The unit reacts to signals on the inputs on the unit and to the control panel, and to the timer.</li> <li>• If this function is enabled, the unit will start working when the temperature in the room drops below the night temperature.</li> <li>• The frost protection is active.</li> </ul>
1	On	The unit is on (normal operation) <ul style="list-style-type: none"> <li>• Depending on the situation, the fan(s) and heating are active or on stand-by.</li> </ul>

#### 424 Required room temperature

You can set the temperature to a comfortable level. In this register address, the default value of the desired temperature is set.

**Note:**

Register address 276 (Room temperature, start) is also adjusted with this.

**Note:**

For units which both heat and cool, this room temperature is applicable for heating. Add the band width to this (register address 440) for the cool set point.

**440 Minimum band width, heating/cooling**

*Only with units that can both heat and cool (type HC6)*

The set room temperature is used for the heating function. Set the number of degrees above the set room temperature at which the unit must switch over to the cooling function.

This band width, added to the room temperature, is the set point for the cooling function.

**276 Room temperature, start**

Set the room temperature that is to be used by default when the unit is started up, even if the desired room temperature has been temporarily altered via other register addresses.

**421 Switching the heating on and off****For SR and IndAC<sub>2</sub>**

The unit's heating can be switched on and off manually.

Switching the heating off disables the room temperature control and possibly a function [Heating on](#) of an output.

If the heating has been switched on via this function, it may happen that the automatic control switches the heating off again. This may be due to an external signal, for example, or because the desired temperature has been reached.

The heating may also have been switched off by the control itself:

- by an external signal on the unit's input, see: register addresses 337/338/339 (function of the inputs)
- when the outdoor temperature is higher than the setting of register address 311 Outdoor temperature, heating OFF.

**Values**

VALUE	OPTION	DESCRIPTION
0	Heating off	Heating is switched off
1	Heating on	Heating is switched on

**428 Switching the temperature control on and off****For HR and NOZ<sub>2</sub>**

The unit's temperature control can be selected.

This function can be deactivated via register address 286 Temperature control option OFF.

The heating or cooling may also have been switched off by the control itself:

- by an external signal on the unit's input, see:
  - register addresses 337/338/339 (function of the inputs)

**Values**

VALUE	OPTION	DESCRIPTION
0	0 = no control	no temperature control
1	1 = heating (not for change-over)	Heating is switched on
2	2 = cooling (not for change-over)	Cooling is switched on
3	3 = automatic switching, heating/cooling	Heating and cooling are automatically determined by the room temperature or an input signal.

**425 Automatic or manual control**

The unit has an automatic mode and a manual mode. When the unit is switched on, it is always in automatic mode.

In order to be able to use both modes, register address 275 (Select modes) must be set to 3= manual or automatic.

In the manual mode, the unit operates at a fixed set fan speed, possibly influenced by the settings of function 26. [Manual Door response \(26. Manual: Door response\)](#) register address 294 Door response: manual.

**Values**

VALUE	OPTION	DESCRIPTION
0	Manual	Manual control of the air curtain strength
1	Automatic	Automatic control of the air curtain strength

**422 Manual setting of the strength**

With the manual setting, you can choose the fan strength (0-100%). This setting may need to be changed during the day.

**values IndAC<sub>2</sub> and NOZ<sub>2</sub>**

VALUE	OPTION	DESCRIPTION
0	off	Fan not running
1-100	percentage	% of the fan strength

**values SR**

VALUE	OPTION	DESCRIPTION
0-10	off	Fan not running
15-25	strength 1	The fan is running at the corresponding strength
30-40	strength 2	
45-55	strength 3	
60-70	strength 4	
75-85	strength 5	
90-100	strength 6	

**values HR**

VALUE	OPTION	DESCRIPTION
0	off	Fan not running
1-49	strength 1	The fan is running at the corresponding strength
50-79	strength 2	
80-100	strength 3	

The unit can only be controlled manually if the functions below have been set as follows:

MENU PARAMETER	REGISTER ADDRESS	DESCRIPTION	VALUE
1	275	Select modes (Options for modes)	1 = allowed: manual 3 = allowed: manual, automatic
0.6	405	<b>Automatic or manual control</b> Current status <b>Caution:</b> Use this address only for reading out. Use 425 for writing.	0 = manual

**423 Adjusting the automatic strength control**

In automatic mode, the fan strength of the airflow is controlled automatically. You can adjust the automatic strength.

**Values**

VALUE	DESCRIPTION	
	INDAC <sub>2</sub> / NOZ <sub>2</sub>	SR
+3	20% increase	the automatic control is adjusted upwards.
+2	15% increase	
+1	7% increase	
0	no adjustment	the strength remains the same
-1	7% reduction	the automatic control is adjusted downwards.
-2	15% reduction	
-3	20% reduction	

The unit can only be controlled automatically if the functions below have been set as follows:

MENU PARAMETER	REGISTER ADDRESS	DESCRIPTION	VALUE
1	275	Select modes (Options for modes)	2 = allowed: automatic 3 = allowed: manual, automatic
0.6	405	<a href="#">Automatic or manual control</a> Current status <b>Caution:</b> Use this address only for reading out. Use 425 for writing.	1 = automatic

**426 Mode: ventilation/recirculation/night cooling**

**For HR with recirculation module**

The unit is designed to use heat recovery on ventilation air. Depending on the type and the settings, the unit can also recirculate or supply ventilation air without heat recovery from extracted air (night cooling).



**Note:**  
Register address 301 must have the value 1 (default) (100% recirculation/ventilation).

VALUE	OPTION	DESCRIPTION	
		UNIT OPERATION ON (DAYTIME)	UNIT OPERATION OFF (NIGHT TIME)
0	recirculation <i>(only functional in the case of units with a recirculation module and in manual control)</i>	recirculation (no heat recovery)	off
2	ventilation <i>(only functional in manual control)</i>	ventilation (heat recovery from the extracted air)	off
10	ventilation with night cooling	ventilation (heat recovery from the extracted air)	ventilation (fan speed 2) (cooling with fresh air via by-pass, no heat recovery)

#### 426 Ventilation modes setting /

#### 427 Ventilation valve position

#### For NOZ<sub>2</sub> with ventilation (NOZ<sub>2</sub> V)

Indicate what the ventilation/recirculation proportions should be.



**Note:**

Recirculation is only possible with a 3-way damper module.

**values, register address 426**

VALUE	OPTION	DESCRIPTION
0	100% recirculation	<i>only possible with a 3-way damper module</i>
1	0-100% ventilation	the ventilation percentage is dependent on register address 301 Ventilation control: <ul style="list-style-type: none"> <li>• 301=1 (on/off): ventilation percentage value address 302</li> <li>• 301=2 (0-100%): ventilation percentage value address 407</li> </ul>
2		

#### Related register addresses

REGISTER ADDRESS	DESCRIPTION	RO/RW*	UNIT	MINIMUM	MAXIMUM	DEFAULT
301	Ventilation control	rw	-	1	2	1



REGISTER ADDRESS	DESCRIPTION	RO/RW*	UNIT	MINIMUM	MAXIMUM	DEFAULT
302	Maximum position of ventilation valve	rw	%	0	100	100
103	<a href="#">Ventilation valve position</a> <b>Caution:</b> Use this address only for reading out. Use 427 for writing.	ro	%	0	value address 302	100

### 3.4 Register addresses for air curtains (IndAC<sub>2</sub> and SR)

REGISTER ADDRESS	DESCRIPTION	RO/RW*	UNIT	MINIMUM	MAXIMUM	DEFAULT
289	Door response: automatic	rw	-	0	1	0
290	Fan speed in event of closed door	rw	%	0	100	<b>IndAC<sub>2</sub>:</b> 5 <b>SR:</b> 20
219	Status input 3	ro	-	0	1	
340	Release delay door contact switch	rw	s	0	1000	0
291	Room temperature control in event of closed door	rw	-	0	1	0
292	Fan speed, room temperature control in event of closed door	rw	%	0	100	0
293	Stand-by heating	rw	%	0	100	100
294	Door response: manual 0= no response 1= response as with 289 auto	rw	-	0	1	0
204	Outdoor temperature (X540)	ro	0.1°C			
*ro = read only (read only)						
*rw = read & write (read and write)						

#### 289 Door response

The unit can respond in various ways to the opening and closing of the door. Configure whether the response should be direct or gradual.

**Direct change:** The unit responds immediately to the opening and closing of the door by quickly switching between the fan speeds for the door open situation and the door closed situation. Use this setting if the door is not often opened repeatedly in quick succession.

**Gradual change:** The speed at which the unit responds to the opening and closing of the door is based on the open/closed

ratio. If the door opens repeatedly in quick succession, the unit adjusts gradually, so that it does not need to start up completely over and over again and high fan strengths (with attendant noise) are not so necessary. Use this setting if the door regularly opens repeatedly in quick succession and the changes between low and high fan strengths are undesired.

#### values

VALUE	OPTION	DESCRIPTION
0	Direct change	The unit responds immediately to the opening and closing of the door by quickly switching between the fan speeds for the door open situation and the door closed situation.
1	Gradual change	The speed at which the unit responds to the opening and closing of the door is based on the open/closed ratio.

#### 290 Fan speed in event of closed door

Set what the fan speed must be if the door is closed.

If this function is set to 0 (fans off) or 5, then, because of the room temperature control, the fans may nevertheless start working while the doors are closed.

#### 219 Status input 3

The function of input 3 (register address 339) relates to the door contact switch. Read out here whether the contact has been made.

VALUE	OPTION	DESCRIPTION
0	open	contact has not been made
1	closed	contact made

#### 340 Release delay door contact switch

Set the number of seconds that the unit must continue running after the door has been closed.

#### 291 Room temperature control

If the fan speed for closed door (register address 290) has been set to 0 or 5, the unit does not help keep the room at the correct temperature.

If room temperature control is indeed desired, this can still be activated here.

**values**

VALUE	OPTION	DESCRIPTION
0	off	no room temperature control
1	on	room temperature control implemented

**292 Fan speed, room temperature control in event of closed door**

Set the percentage of the fan speed that must be used for room temperature control if this has been set (register address 291 = 1).

As soon as the room temperature has been reached, the fans switch off.

**293 Stand-by heating**

The control can be set in such a way that heat is immediately available when the door is opened. This is a percentage of the maximum heat that is available for this function. The maximum heat depends on the outdoor temperature, among other things.

Set the amount of heating that must be available when the door is opened:

- If immediate heat is important, set a high percentage.
- If saving energy is important, set a low percentage.

**Note:**

The room temperature control can affect this quantity of available heat.

**294 Manual: Door response**

Set the way in which the unit in manual mode should respond to the opening and closing of the door:

- Direct response.
- No response. (The unit always works on the set fan setting)

**values**

VALUE	OPTION	DESCRIPTION
0	none	no response to door use
1	immediate	immediate response to door use

**204 Outdoor temperature (X540)**

**With the SR and IndAC<sub>2</sub>** the outdoor temperature is used by the control. An average value is taken over a period of 3 minutes.

The outdoor temperature can be determined in various ways:

- By the IR sensor. (only with SR)
- By a wired outdoor sensor.
- By making an estimate on the basis of the month of the year and your country.

**With the NOZ<sub>2</sub> and HR** this function is not applicable.

### 3.5 Register addresses for check on temperature control

The control keeps the room at the desired temperature. With the aid of the register addresses below, one can examine what the corresponding settings are and what the actual operation is.

REGISTER ADDRESS	DESCRIPTION	RO/RW*	UNIT	MINIMUM	MAXIMUM	DEFAULT
401	Switching the heating on and off	rw	-	0	1	1
408	<b>For NOZ<sub>2</sub> and HR:</b> Switching the temperature control on and off	rw	-	0	3	1
241	Current status heating/cooling	ro	-	0	2	
240	Current setpoint, room temperature	ro	0.1 °C			
203	Room temperature for control	ro	0.1 °C			
209	Discharge temperature/supply temperature setpoint	ro	0.1 °C			
208	Discharge temperature/supply temperature	ro	0.1 °C			
148	Position of water valve for 100% cooling and for 4-pipe system. (X372)	ro	%	0	100	
149	Position of water valve for heating and changeover. (X370)	ro	%	%	%	
*ro = read only (read only)						
*rw = read & write (read and write)						

**401 Switching the heating on and off**

Read out here whether the heating has been switched on by the user.

**Note:**

The current operation (register address 241) may deviate from this as a result of other factors.

**Values**

VALUE	OPTION	DESCRIPTION
0	Heating off	Heating is switched off
1	Heating on	Heating is switched on

**408 Switching the temperature control on and off**

Read out here which temperature control has been set by the user.

**Note:**

The current operation (register address 241) may deviate from this as a result of other factors.

**Values**

VALUE	OPTION	DESCRIPTION
0	0 = no control	no temperature control
1	1 = heating (not for change-over)	Heating is switched on
2	2 = cooling (not for change-over)	Cooling is switched on
3	3 = automatic switching, heating/cooling	Heating and cooling are automatically determined by the room temperature or an input signal.

**241 Current status heating/cooling**

Here, read out the current operation of the unit.

**Note:**

The current operation may deviate from the user settings: for example, due to the outdoor temperature.

VALUE	OPTION	DESCRIPTION
0	ambient	no heating or cooling active
1	cooling	the unit is cooling down
2	heating	the unit is heating up

**240 Current setpoint, room temperature**

Here, read out the current setpoint for the room temperature control.

**Note:**

For combination heating and cooling, this setpoint applies for the current function (see address 241).

Read out the setpoint for the other function in register address 238 Required room temperature for cooling or 239 Required room temperature for heating.

**203 Room temperature for control**

The control is based on the measured room temperature

The value is corrected with the value that has been set in register address 280 Calibration of room temperature sensor.

**Note:**

Via Register address 360 Indoor temperature sensor it can be determined which room temperature is used for the control.

**209 Discharge temperature/supply temperature setpoint**

The control determines which discharge temperature is required in order to achieve the desired room temperature.

If 209 is set to 0, no temperature control is active.

**208 Discharge temperature/supply temperature**

The discharge temperature (sensor X350) is used by the control.

In the event of multiple units, the average value is used.

**Note:**

If a sensor is not detected, the control uses the lowest possible value (-499).

**148 Position of water valve for 100% cooling and for 4-pipe system. (X372)**

The automatic control calculates how much the air must be cooled in order to achieve the desired discharge temperature, and adjusts the position of the water valve accordingly.

**Note:**

For units with change-over, the valve position for cooling is indicated in register address 149.

**149 Position of water valve for heating and changeover. (X370)**

The automatic control calculates how much heat must be added in order to achieve the desired discharge temperature, and adjusts the position of the water valve accordingly.

Applicable to units with hybrid heating:

- 0-50% = water heating capacity 0-100%
- 50-100% = auxiliary electrical heating capacity 0-100%

e.g.: 149 = 75 means that 100% of the water heating and 50% of the electrical heating will be used.

### 3.6 Register addresses for check whether on/off

REGISTER ADDRESS	DESCRIPTION	RO/RW*	UNIT	MINIMUM	MAXIMUM	DEFAULT
400	Turning the unit ON and OFF <b>Caution:</b> Use this address only for reading out. Use 420 for writing.	rw	-	0	2	1
102	Fan strength	ro	%	0	100	

#### 400 Turning the unit ON and OFF

See explanation at 3.3 - Register addresses for general use, pagina 18: 420 Turning the unit ON and OFF.

#### 102 Fan strength

The fan strength is adjusted to the current situation.

The current fan strength can be read out here. In the event of multiple units, the fan strength is the same for all units.



**Note:**

With HR units, the percentages may deviate from the set fan speeds.

# 4. . All register addresses



**Caution:**

The register addresses apply to all unit types, unless specific units are named.

**In that event, do NOT alter the address for other units.**



**Caution:**

For BACnet, use whole degrees (°C) as temperature units instead of 0.1°C.



**Note:**

It may occur that the system applied uses a value of 1 higher than the register addresses given here. In that event, you use 101 for register address 100, for example.



**Note:**

Menu parameters 0 - 1 are functions in the home screen of the *b-touch* control panel.



**Note:**

The data type for all register addresses is int 16, unless otherwise specified.

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	100	Discharge temperature setpoint	0.1°C					ro	L	M=S
	101	<b>For SR:</b> run time, discharge outlet valve motor (number of motor pulses)	1/50 Hz					ro	L	M=S
	102	Fan strength	%	0	100			ro	G	M=S



SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	103	<b>For NOZ<sub>2</sub>:</b> Ventilation valve position	%	0	128 (=100%)			ro	L	M=S
	104	Status bits outputs	Bit	0	6		0 (+1) = output 1 1 (+2) = output 2 2 (+4) = cooling 3 (+8) = heating 4 (+16) = on 5 (+32) = room control active (menu parameter 45.1 (105) is not active) 6 (+64) = output 3	ro	L	M=S
45.1	105	Valve position set-point when extra frost protection active	%	0	100			ro	G	M=S
	140	Unit temperature, sensor X360 <b>For HR:</b> temperature inlet air	0.1°C					ro	L	M≠S
	141	Discharge temperature, sensor X350 <b>For HR:</b> temperature of supply air	0.1°C					ro	L	M≠S
	142	Error bits from unit	Bit	0	15			ro	L	M≠S
	143	not applicable								

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	144	Status bits inputs	Bit	0	6		0 (+1) = ok (not used) 1 (+2) = err (not used) 2 (+4) = status config. button 3 (+8) = input 1 4 (+16) = input 2 5 (+32) = defrost signal 6 (+64) = input 3	ro	L	M≠S
	145	Temperature sensor X540 <b>For IndAC<sub>2</sub> and SR:</b> Out-door temperature <b>For NOZ<sub>2</sub>:</b> Room temperature <b>For HR:</b> temperature of fresh air	0.1°C					ro	L	M≠S
	146	Input voltage, analogue input X375	0.01 V					ro	L	M≠S
	147	<b>For SR:</b> Air pressure, filter sensor	0.1 Pa					ro	L	
	148	Position of water valve for 100% cooling and for 4-pipe system. (X372)	%	0	100			ro	L	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	149	Position of water valve for heating and changeover. (X370)	%	0	100		<i>applicable to units with hybrid heating:</i> <ul style="list-style-type: none"> <li>• 0-50% = water heating capacity 0-100%</li> <li>• 50-100% = auxiliary electrical heating capacity 0-100%</li> </ul> <i>e.g.: 149=75 means 100% water heating + 50% electrical heating.</i>	ro	L	M≠S
	150	Temperature sensor X354 <b>For SR H3:</b> Medium sensor <b>For IndAC<sub>2</sub>:</b> Room temperature <b>For NOZ<sub>2</sub> ventilation:</b> Inlet temperature of ventilation air <b>For HR:</b> temperature of extract air	0.1°C					ro	L	M≠S
	151	Input voltage, analogue input X377	0.01 V	-	-	-		ro	L	
	152	Current fan speed, (supply) fan	%	0	100			ro	L	
	153	<b>For HR:</b> Current fan speed, (extract) fan	%	0	100			ro	L	
	154	Serial number low	-				Serial number = low + (high x 65536) <b>Caution:</b> data type is Uint16	ro	L	
	155	Serial number high	-					ro	L	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	156	Unit code low (hex)	-				Unit code = value 157, followed by value 156. (For example: 157 = 2062 156 = 0331 Unit code = 20620331) <b>Caution:</b> data type is hex	ro	L	
	157	Unit code high (hex)	-					ro	L	
	158	Software version, control circuit board	-				<b>Caution:</b> data type is Uint16	ro	L	
	200	Temperature sensor X540 (average value in the event of multiple units) <b>For IndAC<sub>2</sub> and SR:</b> Out-door temperature sensor <b>For NOZ<sub>2</sub>:</b> Room temperature sensor <b>For HR:</b> temperature of fresh air	0.1°C				0 = no sensor detected	ro	G	M=S
	201	<b>For SR:</b> temperature <i>b-touch</i> control panel (if in use) <b>For HR, IndAC<sub>2</sub> and NOZ<sub>2</sub>:</b> same as 205	0.1°C					ro	G	M=S

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	202	<b>For HR, IndAC<sub>2</sub> and SR:</b> current outdoor temperature (IR sensor, sensor X540 or temperature table (highest of all units)) <b>For NOZ<sub>2</sub>:</b> not applicable (always 0)	0.1°C					ro	G	M=S
	203	Room temperature for control (night, heating or cooling) (has already been calibrated with register address 280)	0.1°C					ro	G	M=S
	204	<b>For HR, IndAC<sub>2</sub> and SR:</b> Outdoor temperature (X540) (average over 3 minutes) <b>For NOZ<sub>2</sub>:</b> not applicable (always 0)	0.1°C					ro	G	M=S

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	205	<b>For IndAC<sub>2</sub>, NO<sub>2</sub> and SR:</b> Unit temperature (X360) (lowest value in the event of multiple units) filtered with time constant from menu 30 (settings file) <b>For HR:</b> Temperature, inlet air (X360)	0.1°C					ro	G	M=S
	206	<b>For IndAC<sub>2</sub>, NO<sub>2</sub> and SR:</b> Temperature sensor (X360) (average value in the event of multiple units) <b>For HR:</b> Temperature, inlet air (X360)	0.1°C					ro	G	M=S
	207	Outdoor temperature measured with external source <b>(not applicable)</b>	0.1°C					ro	G	M=S
	208	Discharge temperature/supply temperature (X350) (average value in the event of multiple units)	0.1°C					ro	G	M=S

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	209	Discharge temperature/supply temperature setpoint (calculated on the basis of the PID factors)	0.1°C				0 = no control	ro	G	M=S
	210	Temperature sensor X354 (highest value in the case of multiple units) <b>For SR H3:</b> Medium sensor <b>For IndAC<sub>2</sub>:</b> Room temperature <b>For NOZ<sub>2</sub> ventilation:</b> Inlet temperature of ventilation air <b>For HR:</b> Temperature of extract air	0.1°C	0	700			ro	G	M=S
	211	Status input 1, (or-ed in the case of multiple units)	-	0	1		0= open 1= closed	ro	G	M=S
	212	Status output 1	-	0	1		0= open 1= closed	ro	G	M=S
	213	Status output 2	-	0	1		0= open 1= closed	ro	G	M=S
	214	Status digital input, control panel	-	0	1		0= open 1= closed	ro	G	M=S
	215	Input voltage, analogue input X375 (highest value in the case of multiple units)	0.1V					ro	G	M=S
	216	ErrorFlags-0	Bit	0	65536			ro	G	M=S
	217	ErrorFlags-1	Bit	0	65536			ro	G	M=S

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	218	Status input 2 (or-ed in the case of multiple units)	-	0	1		0= open 1= closed	ro	G	
	219	Status input 3 (or-ed in the case of multiple units)	-	0	1		0= open 1= closed	ro	G	
	220	Status output 3 (or-ed in the case of multiple units)	-	0	1		0= open 1= closed	ro	G	
	221	<b>For HR:</b> <a href="#">Current mode operation</a>	-	01	51	-	see table under 'frequently used register addresses' (unit manual)	ro	G	
	222	not applicable								
	223	<b>For IndAC<sub>2</sub>, NO<sub>2</sub> and SR</b> Energy consumption, total	<b>IndAC<sub>2</sub> and SR</b>  0.1 kWh/m <b>NO<sub>2</sub>:</b> kWh/unit	0	65536			ro	G	
	224	not applicable								
	225	U0T (same as 500)	0.001 m/s	0	65536			ro	G	
	226	U0C (same as 501)	0.001 m/s	0	65536			ro	G	
	227	Door open ratio	%	0	100			ro	G	
	228	Heating capacity	0.1kW					ro	G	
	230	<b>For SR:</b> Fil-ter current level (same as 507)	Pa					ro	G	
	231	<b>For SR:</b> Fil-ter contamination limit (same as 508)	Pa					ro	G	
	232	<b>For SR:</b> Fil-ter clean	Pa					ro	G	



SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	233	<b>For SR:</b> Fil-ter contamination percentage	%	0	300			ro	G	
	235	<b>For HR:</b> CO <sub>2</sub> level	ppm	0	2000			ro	G	
	238	<i>Only for combined heating and cooling:</i> Required room temperature for cooling	0.1°C	-285	1000			ro	G	
	239	<i>Only for combined heating and cooling:</i> Required room temperature for heating	0.1°C	-285	1000			ro	G	
	240	Current setpoint, room temperature <b>Caution:</b> For combination heating and cooling, this setpoint applies to the current function (see address 241). Read out the setpoint for the other function in address 238 or 239.	0.1°C	-285	1000			ro	G	
	241	Current status heating/cooling	-	0	2		0= ambient 1= cooling 2= heating	ro	G	
<b>Menu settings</b>										
	253	communication b-touch necessary	-	0	1		0= not necessary 1= necessary	rw		

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	254	Reset error messages	-	0	1		0= read 1= write reset	rw	G	
	255	not applicable								
	256	Reset user settings	-	0	1			rw	G	
	258	Reset system	-	0	1			rw	G	
	259	Reset default outdoor temperature table	-	0	1			rw	G	
<b>Filter</b>										
	260	Carry out filter check	-	0	1	0	0= read 1= write reset	rw	G	
	261	Reset Filter	-	0	1	0	0= not active 1= reset filter lifespan	rw	G	
	262	Track filter lifespan	-	0	1	1	0= do not track 1= do track	rw	G	
	263	Elapsed filter time	weeks	0	255	0		rw	G	
	264	Filter dirty	weeks	1	52	13		rw	G	
	265	Filter check time	min.	0	1439	0		rw	G	
	266	Filter cleaning interval adjustment	weeks	-3	+3	0		rw	G	
<b>Timer</b>										
	270	Date								
13	273	Internal timer	-	0	1	0	0= not in use 1= in use	rw	G	
<b>Settings</b>										
1	275	Select modes	-	1	3	3	1= manual 2= automatic 3= manual or automatic	rw	G	
5	276	Room temperature, start	0.1°C	10	400	210		rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
6	277	Minimum discharge temperature: (minimum difference between room temperature and discharge temperature)	0.1°C	-100	150	10		rw	G	
8	278	Night temperature	0.1°C	100	300	150		rw	G	
8.5	279	Night temperature control and sensor	-	0	7	0	<b>SR, NOZ<sub>2</sub> and HR:</b> 0= no night control 1= night control implemented <b>IndAC<sub>2</sub>:</b> 0= no night control 1= night control with unit sensor 5= night control with floor sensor	rw	G	
9	280	Calibration of room temperature sensor	0.1°C	-50	50	0		rw	G	
7	281	<b>For HR and NOZ<sub>2</sub>:</b> Minimum discharge temperature for cooling.	0.1°C	-100	500	100		rw	G	
<b>Access control</b>										
	283	not applicable								
<b>Display</b>										
21.1	284	Display on/off button	-	0	1	0	0= visible 1= hidden	rw	G	
21.2	285	Temperature display	-	0	4	1	0= no display 1= room temperature calibrated 2= room temperature 3= setpoint	rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
21.3	286	<b>For IndAC<sub>2</sub> and SR:</b> Heating OFF option <b>For HR and NOZ<sub>2</sub>:</b> Temperature control option OFF	-	0	1	1	0= hidden 1= visible	rw	G	
21.4	287	Error display	-	0	3	1	0= hide everything 1= everything visible 2= hide F1 3= hide F2/F3	rw	G	
<b>Door response</b>										
25.1	289	<b>For IndAC<sub>2</sub> and SR:</b> Door response: automatic	-	0	1	0	0= immediate 1= gradual	rw	G	
25.2	290	<b>For IndAC<sub>2</sub> and SR:</b> Fan speed in event of closed door	%	0	100	<b>IndA C<sub>2</sub>: 5</b> <b>SR:</b> 20		rw	G	
25.3	291	<b>For IndAC<sub>2</sub> and SR:</b> Room temperature control in event of closed door	-	0	1	0	0= off 1= on	rw	G	
25.4	292	<b>For IndAC<sub>2</sub> and SR:</b> Fan speed, room temperature control in event of closed door	%	0	100	0	0= automatic 1-100=	rw	G	
25.5	293	<b>For IndAC<sub>2</sub> and SR:</b> Stand-by heating	%	0	100	100		rw	G	
26	294	<b>For IndAC<sub>2</sub> and SR:</b> Door response: manual	-	0	1	0	0= no response 1= response as with 289 auto	rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
<b>Fan</b>										
31	295	Maximum fan speed (in automatic mode)	%	50	100	100		rw	G	
32	296	For IndAC <sub>2</sub> and NOZ <sub>2</sub> : Deceleration time	s	5	900	5		rw	G	
<b>Boost function (heating)</b>										
33.1	297	For units with heating: Boost function	-	0	1	0	0= off 1= on	rw	G	
33.2	298	For units with heating: Boost: temperature difference	0.1°C	-100	-15	-15		rw	G	
33.3	299	For units with heating: Boost: speed increase	%	0	80	0		rw	G	
<b>Ventilation</b>										
35.1	301	For NOZ <sub>2</sub> ventilation: Ventilation control	-	1	2	1	1= On/off 2= 0% – 100%	rw	G	
35.2	302	For NOZ <sub>2</sub> ventilation: Maximum position of ventilation valve	%	0	100	100		rw	G	
35.3	303	For NOZ <sub>2</sub> ventilation with 3-way damper module: Minimum fan speed during ventilation	%	0	100	0		rw	G	
35.4	304	For NOZ <sub>2</sub> ventilation with 3-way damper module: Maximum fan speed during ventilation	%	0	100	100		rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
<b>Temperature</b>										
41	311	<b>For IndAC<sub>2</sub> and SR:</b> Out-door temperature, heating OFF	0.1°C	-300	300	180		rw	G	
42	312	<b>For IndAC<sub>2</sub> and SR:</b> Out-door temperature, fan OFF	0.1°C	100	500	500		rw	G	
43	313	<b>For IndAC<sub>2</sub> and SR:</b> Out-door temperature, unheated usage	0.1°C	150	500	500		rw	G	
44	314	<b>For IndAC<sub>2</sub> and SR:</b> Coun-try code for out-door temperature table <b>(not used)</b>	-	0	65535	0		rw	G	
45.1	315	<b>For IndAC<sub>2</sub> and SR:</b> Addi-tional frost protec-tion: valve setting	%	0	100	0		rw	G	
45.2	316	<b>For IndAC<sub>2</sub> and SR:</b> Addi-tional frost protec-tion: maximum outdoor tempera-ture	0.1°C	100	300	150		rw	G	
46	317	Maximum dis-charge tempera-ture	0.1°C	0	500	500		rw	G	
47	318	Room tempera-ture, overheat pro-tection	0.1°C	15	150	20		rw	G	
	319 - 330	Normal monthly temperatures (TJAN-TDEC)	0.1°C	-300	300	-		rw	G	
<b>Installation</b>										

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
50	331	Installation height	cm	100	1500	-		rw	G	
52	332	Nozzle angle	°	13	53	33		rw	G	
<b>Valve</b>										
	335	not applicable								
	336	not applicable								
<b>Inputs and outputs</b>										
60.1	337	Function, input 1	-	0	71	0	see table, unit manual	rw	G	
		<b>For HR:</b> Alarm functions (activated by input 1 (i1) or by register address 435)	-	0	41	0	0= no function 30= smoke extraction 31= fire mode 40= smoke alarm 41= fire alarm	rw	G	
60.2	338	Function, input 2	-	0	71	0	see table, unit manual	rw	G	
60.3	339	Function, input 3	-	0	71	0	0= no door contact switch 13= door contact switch NO 63= door contact switch NC	rw	G	
60.4	340	<b>For IndAC<sub>2</sub> and SR:</b> Release delay door contact switch (input 3 or IR sensor)	s	0	1000	0		rw	G	
60.5	341	<b>For IndAC<sub>2</sub> and SR:</b> Release delay, input 1	s	0	1000	0		rw	G	
61.1	342	Function of output 1	-	0	69	1	see table, unit manual	rw	G	
61.2	343	Function, output 2	-	0	69	1		rw	G	
61.3	344	Function, output 3	-	0	69	1		rw	G	
	346	not applicable								
	347	not applicable								
	348	not applicable								

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	350	<b>For HR: Control type</b> <b>Caution: do NOT change value!</b>	-	0	30	10	10= automatic CO <sub>2</sub> control (settings)	rw	G	
62.2	351	<b>For HR: CO<sub>2</sub> level 1</b>	ppm	200	2000	800		rw	G	
62.3	352	<b>For HR: CO<sub>2</sub> level 2</b>	ppm	200	2000	1000		rw	G	
62.4	353	<b>For HR: CO<sub>2</sub> level 3</b>	ppm	200	2000	1200		rw	G	
	354	not applicable								
<b>Sensors</b>										
71	360	<b>For IndAC<sub>2</sub> and SR:</b> Indoor temperature sensor	-	0	6	1	0,1,3= unit sensor 2 = floor sensor X354 (IndAC <sub>2</sub> ) 4= average, unit and floor sensor (IndAC <sub>2</sub> ) 5= average, unit sensor and sensor in control panel (SR) 6= average, unit and IR sensor (SR)	rw	G	
<b>Control panel input</b>										
65	361	<b>For SR:</b> Function, control panel input	-	0	2	0	0= no function 1 = On/off 2 = temperature sensor	rw	G	
<b>Daikin</b>										
66	362	<b>For SR:</b> Dai-kin settings	-	0	3	0	0 = on 1 = use hybrid heating	rw	G	



SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
66.1	363	<b>For SR:</b> Temperature difference for hybrid heating on (same as 298)	0.1°C	-100	-15	-15		rw	G	
<b>Hystereses</b>										
	364	Hysteresis, fan on/off	0.1°C	5	30	10		rw	G	
	365	Hysteresis, over-heating	0.1°C	5	10	10		rw	G	
	366	Hysteresis, night temperature	0.1°C	5	30	15		rw	G	
	367	Hysteresis, boost function	0.1°C	5	10	5		rw	G	
	368	Hysteresis, room temperature	0.1°C	5	30	10		rw	G	
<b>Biddle specific parameters</b>										
	369	Time constant, inlet temperature	min.	0	99	1		rw	G	
	370	Time constant, door open ratio	min.	0	60	6		rw	G	
	371	K factor <b>NOZ25</b>	-	100	10000	2000		rw	G	
	372	K factor <b>NOZ50</b>	-	100	10000	4400		rw	G	
	373	P factor, room temperature	-	0	99	3		rw	G	
	374	I factor, room temperature	-	0	99	2		rw	G	
	375	D factor, room temperature	-	0	99	0		rw	G	
	376	P factor, discharge temperature	-	0	99	50		rw	G	
	377	I factor, discharge temperature	-	0	99	4		rw	G	
	378	D factor, discharge temperature	-	0	99	0		rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	379	<b>For IndAC<sub>2</sub> and SR:</b> Model calculation: sensors or setpoint	-	0	2	2	0= setpoint 1= sensors 2= highest value	rw	G	
	380	Deflection module, model calculation	-	1	100	33	33= SR 25= IndAC <sub>2</sub>	rw	G	
<b>IR sensor</b>										
74	381	<b>For IndAC<sub>2</sub> and SR:</b> IR sensor functions	-	0	15	0	0= no function +1= 30 min. on + +2= outdoor temperature sensor +4= door contact switch +8= early start	rw	G	
74.1	382	<b>For IndAC<sub>2</sub> and SR:</b> IR sensor: correction to outdoor temperature	0.1°C	-100	100	0		rw	G	
74.2	383	<b>For IndAC<sub>2</sub> and SR:</b> IR sensor: correction to room temperature	0.1°C	-100	100	0		rw	G	
74.5	384	<b>For IndAC<sub>2</sub> and SR:</b> Reset IR sensor	-	0	1	0	0= always read 1= reset write values	rw	G	
PIRA	385	<b>For IndAC<sub>2</sub> and SR:</b> IR parameters (Biddle setting)	ms			1000		rw	G	
PIRB	386		%	0	100	33		rw	G	
PIRC	387		0.1°C			30		rw	G	
PIRD	388		0.1°C			5		rw	G	
PIRE	389	<b>For IndAC<sub>2</sub> and SR:</b> time frame for maximum temperature increase (390)	s			900		rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
PIRF	390	<b>For IndAC<sub>2</sub> and SR:</b> maximum increase in outdoor temperature over time frame 389 (limited temperature increase due to direct sunlight)	0.1°C			5		rw	G	
PIRG	391	<b>For IndAC<sub>2</sub> and SR:</b> IR parameters (Bid-dle setting)	ms			3000		rw	G	
PIRH	392		0.1°C			10		rw	G	
PIRI	393		0.1°C			10		rw	G	
PIRJ	394		-			-		rw	G	
PIRK	395		min.			240		rw	G	
PIRL	396		-			5		rw	G	
IRO N	397	<b>For IndAC<sub>2</sub> and SR:</b> Time unit on after IR sensor detects per-son	min.	1	60	10		rw	G	
<b>Users' functions</b>										
0.1	400	<b>Turning the unit ON and OFF</b> Current status <b>Caution:</b> Use this address only for reading out. Use 420 for writing.	-	0	2	1	0 = off 1 = on 2 = holiday setting <b>(not applicable)</b>	rw	G	
0.2	401	<b>For SR and IndAC<sub>2</sub>:</b> <b>Switching the heating on and off</b> Current status <b>Caution:</b> Use this address only for reading out. Use 421 for writing.	-	0	1	1	0 = heating off 1 = automatic control active	rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
0.3	402	<b>Manual setting of the strength</b> Current status <b>Caution:</b> Use this address only for reading out. Use 422 for writing.	%	0	100	50	For HR: 0 = 0% 1 - 49 = 35% 50 - 79 = 65% 80 - 100 = 95%	rw	G	
0.4	403	<b>Adjusting the automatic strength control</b> Current status <b>Caution:</b> Use this address only for reading out. Use 423 for writing.	-	-3 (appr ox. - 20%)	3 (appr ox. +20%)	0		rw	G	
0.5	404	<b>Required room temperature</b> Current status <b>Caution:</b> Use this address only for reading out. Use 424 for writing.	0.1°C	10	400	210		rw	G	
0.6	405	<b>Automatic or manual control</b> Current status <b>Caution:</b> Use this address only for reading out. Use 425 for writing.	-	0	1	1	0 = manual 1 = automatic	rw	G	
	406	<b>For HR: Mode:</b> <b>ventilation/recirculation/night cooling</b> Current status <b>Caution:</b> Use this address only for reading out. Use 426 for writing.	-	0	10	0	0= recirculation 1,2= ventilation 10= ventilation with night cooling	rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	406	<b>For NOZ<sub>2</sub>:</b> Ventilation modes setting <b>Caution:</b> Use this address only for reading out. Use 426 for writing.	-	0	2	2	0 = 100% recirculation 1,2 = ventilation, percentage dependent on value address 301: • 301=1: percentage value address 302 • 301=2: percentage value address 407	rw	G	
	407	<b>For NOZ<sub>2</sub>:</b> Ventilation valve position <b>Caution:</b> Use this address only for reading out. Use 427 for writing.	%	0	value address 302	100		rw	G	
0.2	408	<b>For NOZ<sub>2</sub> and HR:</b> Switching the temperature control on and off Current status <b>Caution:</b> Use this address only for reading out. Use 428 for writing.	-	0	3	1	0 = no control 1 = heating (not for change-over) 2 = cooling (not for change-over) 3 = automatic switching, heating/cooling	rw	G	
	409	not applicable	-							
	410	Turning the unit ON and OFF change via the b-touch control panel	-	0	1	0	0 = permitted (change of value**) 1 = not permitted	rw	G	
	411	<b>For SR and IndAC<sub>2</sub>:</b> Switching the heating on and off change via the b-touch control panel	-	0	1	0	0 = permitted (change of value**) 1 = not permitted	rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	412	Manual setting of the strength change via the <i>b-touch</i> control panel	-	0	1	0	0 = permitted (change of value**) 1 = not permitted	rw	G	
	413	Adjusting the automatic strength control change via the <i>b-touch</i> control panel	-	0	1	0	0 = permitted (change of value**) 1 = not permitted	rw	G	
	414	Required room temperature change via the <i>b-touch</i> control panel	-	0	1	0	0 = permitted (change of value**) 1 = not permitted	rw	G	
	415	Automatic or manual control change via the <i>b-touch</i> control panel	-	0	1	0	0 = permitted (change of value**) 1 = not permitted	rw	G	
	416	<b>For HR:</b> Mode: ventilation/recirculation/night cooling change via the <i>b-touch</i> control panel	-	0	1	0	0 = permitted (change of value**) 1 = not permitted	rw	G	
	416	<b>For NO<sub>2</sub>:</b> Ventilation modes setting change via the <i>b-touch</i> control panel	-	0	1	0	0 = permitted (change of value**) 1 = not permitted	rw	G	
	417	<b>For NO<sub>2</sub>:</b> Ventilation valve position change via the <i>b-touch</i> control panel	-	0	1	0	0 = permitted (change of value**) 1 = not permitted	rw	G	
	418	<b>For NO<sub>2</sub> and HR:</b> Switching the temperature control on and off change via the <i>b-touch</i> control panel	-	0	1	0	0 = permitted (change of value**) 1 = not permitted	rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	419	not applicable								
	420	Turning the unit ON and OFF Modbus setpoint	-	0	2	1	0 = off 1 = on 2 = holiday setting <b>(not applicable)</b>	rw	G	
	421	<b>For SR and IndAC<sub>2</sub>:</b> Switching the heating on and off Modbus setpoint	-	0	1	1	0 = heating off 1 = automatic control active	rw	G	
	422	Manual setting of the strength Modbus setpoint	%	0	100	50	<i>For HR:</i> 0 = 0% 1 - 49 = 35% 50 - 79 = 65% 80 - 100 = 95%	rw	G	
	423	Adjusting the automatic strength control Modbus setpoint	-	-3 (approx. -20%)	3 (approx. +20%)	0		rw	G	
	424	Required room temperature Modbus setpoint <b>Caution:</b> in this way, register address 276 will be changed. <b>For HR and NO<sub>2</sub>:</b> in this way, the setpoint for cooling will also be determined	0.1°C	10	400	210		rw	G	
	425	Automatic or manual control Modbus setpoint (only valid if register address 275 is set to '3')	-	0	1	1	0 = manual 1 = automatic	rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	426	<b>For HR:</b> Mode: ventilation/recirculation/night cooling Modbus setpoint	-	0	10	0	0= recirculation 1,2= ventilation 10= ventilation with night cooling	rw	G	
	426	<b>For NO<sub>2</sub>:</b> Ventilation modes setting Modbus setpoint	-	0	2	2	0 = 100% recirculation 1,2 = ventilation, percentage dependent on value address 301: <ul style="list-style-type: none"> <li>• 301=1: percentage value address 302</li> <li>• 301=2: percentage value address 407</li> </ul>	rw	G	
	427	<b>For NO<sub>2</sub>:</b> Ventilation valve position Modbus setpoint (The maximum value is the value of address 302)	%	0		100		rw	G	
	428	<b>For NO<sub>2</sub> and HR:</b> Switching the temperature control on and off Modbus setpoint	-	0	3	1	0 = no control 1 = heating (not for change-over) 2 = cooling (not for change-over) 3 = automatic switching, heating/cooling	rw	G	
	429	not applicable								
	430	<b>For SR and IndAC<sub>2</sub>:</b> Outdoor temperature measured via Modbus (note: update every 60 min.)	0.1°C	-500	800			rw	G	



SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	431	<b>For NO<sub>2</sub></b> : Room temperature measured via Modbus (note: update every 60 min.)	0.1°C	-500	800			rw	G	
	432	<b>For HR</b> : CO <sub>2</sub> level from BMS (note: update every 60 min.)	ppm	0	2000	0		rw	G	
	435	<b>For HR</b> : Activate alarm functions (register address 337)	-	0	1	0	0 = inactive 1 = active	rw	G	
	437	<i>Only for heating and cooling via change-over: Change-over signal</i>	-	0	2	...	0 = inactive 1 = cooling 2 = heating	rw	G	
5.1	440	<i>Only for combined heating and cooling: <a href="#">Minimum band width, heating/cooling</a> Minimum temperature difference between setpoint for heating and setpoint for cooling. When combined with the setpoint for heating (424), this is the setpoint for cooling (238).</i>	0.1°C	0	100	20		rw	G	
31.1	441	<b>For IndAC<sub>2</sub>, NO<sub>2</sub> and SR</b> : <a href="#">Minimum fan speed, unheated</a> (in automatic mode)	%	0	100	0		rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
31.2	442	<b>For IndAC<sub>2</sub>, NOZ<sub>2</sub> and SR:</b> Minimum fan speed, heating(in automatic mode)	%	0	100	0		rw	G	
31.3	443	<b>For IndAC<sub>2</sub>, NOZ<sub>2</sub> and SR:</b> Minimum fan speed, cooling(in automatic mode) (for NOZ <sub>2</sub> used as fixed setting during cooling with automatic control)	%	0	100	0		rw	G	
	460	Activate Modbus settings <i>Caution: can only be changed if 461=1</i> <i>Caution: after activation, the value returns to default (0)</i>		0	1	0	0= do not activate 1= activate changes, register addresses 462-464	rw	G	
	461	Permit Modbus settings changes <i>Caution: after activation of 460, the value returns to default (0)</i>		0	1	0	0 = not permitted 1 = permitted	rw	G	
	462	Modbus node address <i>Caution: changes must be activated via address 460</i>		0	247	0	0= use dipswitch setting 1-247	rw	G	
	463	Communication parameter: baud rate <i>Caution: changes must be activated via address 460</i>		0	4	0	0=9600 bps 1=19200 bps 2=38400 bps 3=57600 bps 4=115200 bps	rw	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	464	Communication parameters: data, parity, stopbits <i>Caution: changes must be activated via address 460</i>		0	5	0	0=8,none,1 1=8,none,2 2=8,even,1 3=8,even,2 4=8,odd,1 5=8,odd,2	rw	G	
<b>Other functions that can be read out</b>										
	500	<b>For IndAC<sub>2</sub> and SR:</b> Required total strength of the air curtain (indicative)	10 <sup>-3</sup> m/s					ro	G	
	501	<b>For IndAC<sub>2</sub> and SR:</b> Required strength against convection of the air stream of the air curtain (indicative)	10 <sup>-3</sup> m/s					ro	G	
	502	<b>For IndAC<sub>2</sub> and SR:</b> Door open ratio	%	0	100			ro	G	
	503	<b>For IndAC<sub>2</sub> and SR:</b> Person counter	-					ro	G	
	504	<b>(not applicable)</b>	-							
	505	<b>For IndAC<sub>2</sub> and SR:</b> IR counter – day	-				<b>Caution:</b> data type is Uint16	ro	G	
	506	<b>For IndAC<sub>2</sub> and SR:</b> IR counter – total	-				<b>Caution:</b> data type is Uint16	ro	G	
	507	<b>For SR:</b> Current filter contamination	Pa					ro	G	

SETTINGS FILE	REGISTER ADDRESS	DESCRIPTION	UNIT	MINIMUM	MAXIMUM	DEFAULT	OPTIONS	RO* / RW*	LOCAL / GLOBAL	MASTER VS SLAVE
	508	<b>For SR:</b> Fil-ter dirty	Pa					ro	G	
	509	not applicable								
	510	not applicable								
	511 - 518	IR sensor current temperature, surfaces 1 – 8	0.1°C					ro	L	
	519	not applicable								
	520	not applicable								
	521 - 523	IR sensor, lowest temperature, surfaces 1 – 3 over the most recent period	0.1°C					ro	L	
	524 - 528	IR sensor filtered temperature, average of surfaces 4-8	0.1°C							
	529	not applicable								
	530	not applicable								
	531	not applicable								
	532	not applicable								
	533	not applicable								
	534	not applicable								
* ro = read only (read only)										
* rw = read & write (read and write)										
** change of value = changes via the <i>b-touch</i> control panel apply only until the starting time of the next switching moment by Modbus.										

## 4.1 Register types

TYPE	LENGTH (WORDS)	DESCRIPTION
int16	1	Signed Integer (-32768 tot 32767)
uint16	1	Unsigned Integer (0-65536)

# 5 . . Errors

## 5.1 Resolving simple problems

PROBLEM	POSSIBLE CAUSE	SOLUTION
The unit does not respond to Modbus commands.	No communication with the Modbus network.	<ul style="list-style-type: none"> <li>Check the connection and the cables of the Modbus network.</li> </ul>
	The distance between the Modbus system and the first unit is too great, which results in the module not getting enough power supply.	<ul style="list-style-type: none"> <li>Remove excess control cable.</li> </ul>
	The wiring has been connected wrongly.	<ul style="list-style-type: none"> <li>Reverse the Modbus A- and Modbus B+ connections.</li> </ul>
	The unit has an incorrect Modbus node address.	<ul style="list-style-type: none"> <li>Check the unit's Modbus node address.</li> </ul>
	The baud rate of the Modbus system has been set wrongly.	<ul style="list-style-type: none"> <li>Set the Modbus system to the correct baud rate.</li> </ul> Default value is 9600.
The unit functions differently from expectations.	The unit is being controlled temporarily via the <i>b-touch</i> control panel.	<ul style="list-style-type: none"> <li>Changes via the <i>b-touch</i> control panel apply only until the starting time of the next switching moment by Modbus.</li> <li>If desired, modify the associated register address so that changes via the <i>b-touch</i> control panel are not permitted.</li> </ul>
The values of the readings are not correct.	The wrong register address is being read out.	<ul style="list-style-type: none"> <li>Read out the correct register address.</li> <li>It may occur that the system uses a value of 1 higher. In that event, use 101 for register address 100, for example.</li> </ul>
	The read-out type is incorrect.	<ul style="list-style-type: none"> <li>Check the type of the address.</li> </ul>
There are errors in the communication.	Poor Modbus cabling.	<ul style="list-style-type: none"> <li>Replace the cabling with better-quality cabling.</li> </ul>
	Excessively long Modbus cabling.	<ul style="list-style-type: none"> <li>Remove excess cabling.</li> </ul>

## 5.2 Reading out errors

### 5.2.1 Reading out errors

Errors are recorded with a binary code in two registers. These are registers 216 and 217.

In the log file “log\_error.csv”, which can be read out with a USB flash drive, the errors are indicated with a numeric value.

### 5.2.2 Error codes in registers

For an explanation of the error messages, please refer to the manual for the unit.



Note:

Not all error codes are applicable to each unit.

#### *Error codes in register 216/ErrorFlags[0]*

	<b>ERRORFLAGS[0]; MODBUS 216</b>	<b>LOG_ERROR.CSV</b>		
<b>BIT</b>	<b>VALUE</b>	<b>VALUE</b>	<b>CODE</b>	<b>DESCRIPTION</b>
0	1	0	E6	Risk of freezing
1	2	1	E2	Wrong connection
2	4	2	E1	No communication
3	8	3	E7	Fan not running
4	16	4	E3	Too much heating
5	32	5	E5	Heating stays on
6	64	6	E4	Too much heating
7	128	7	F2	Too much heating
8	256	8	F3	Too little heating
9	512	9	F5	Faulty air discharge sensor
10	1024	10	F6	Faulty air inlet sensor
11	2048	11	F4	Control panel sensor is faulty
12	4096	12	F8	Faulty pressure sensor
13	8192	13	F1	Error in air damper
14	16384	14	F2	Too much cooling
15	32768	15	F3	No cooling

**Error codes in register 217/ErrorFlags[1]**

	<b>ERRORFLAGS[1]; MODBUS 217</b>	<b>LOGERROR.CSV</b>		
<b>BIT</b>	<b>VALUE</b>	<b>VALUE</b>	<b>CODE</b>	<b>DESCRIPTION</b>
0	1	16	-	Filters need cleaning
1	2	17	-	No power supply
2	4	18	-	Outdoor temperature sensor – replace battery
3	8	19	-	Indoor temperature sensor – replace battery
4	16	20	F7	Faulty outdoor temperature sensor
5	32	21	F11	Faulty pipe sensor
6	64	22	F9	Faulty connection, building management system (BMS)
7	128	23	F10	Faulty wireless indoor temperature sensor
8	256	24	F12	Faulty room sensor (IndAC <sub>2</sub> )
9	512	25	F13	Faulty pipe sensor
10	1024	26	F14	Faulty room sensor(NOZ <sub>2</sub> )
11	2048	27	F15	Faulty IR sensor (SR IndAC <sub>2</sub> )
12	4096	28	F16	Fault medium sensor (Daikin hybrid)
13	8192	29	F17	Faulty CO <sub>2</sub> sensor (HR)

### 5.3 Deleting errors

Most error messages will disappear automatically when the problem is resolved. Certain errors have to be remedied, however, by deleting the error message. This can be done in two ways:

- Via the *b-touch* control panel:  
[menu > Maintenance > Current errors](#)
- Via Modbus: Register address 254 Reset error messages

# 6. . Addresses

If you have any comments or queries relating to this product, please do not hesitate to contact your Biddle branch.

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## For more information

If you have any comments or queries relating to this product, please do not hesitate to contact Biddle. You will find the contact information for your Biddle branch in chapter [6 Addresses](#).

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