



# Single room control system

## FSL-CONTROL III

for decentralised ventilation units

Geräteschema Diagnose Konfiguration Hand Steuerung Verbindung MBE/GA **TROX<sup>®</sup>TECHNIK**  
The art of handling air

Diagnose > Gerätestatus

### Gerätestatus

Adresse	Bezeichnung	Wert
13000	Gerätestatus: Grün=Regelung Grau=Regelung+Übersteuerung Rot=keine Regelung	

### Geräteinformationen

Adresse	Bezeichnung	Wert
11055	FSL-CONTROL III Gerätetyp: 1-SEK 2-ZULSEK 3-ZUS 4-ZABSEK 5-ZAS	4
11009	Gerätebezeichnung	SA-V-HV-ZL-MA
11000	Seriennummer	DE1690073010001
11056	Master/Slave Gerät: 0-Slave 1-Master	1
11036	Softwarename	FSL-CONTROL III
11045	Softwareversion	8.8

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# 1 Menu schematic illustration unit

Hauptseite

Geräteschema

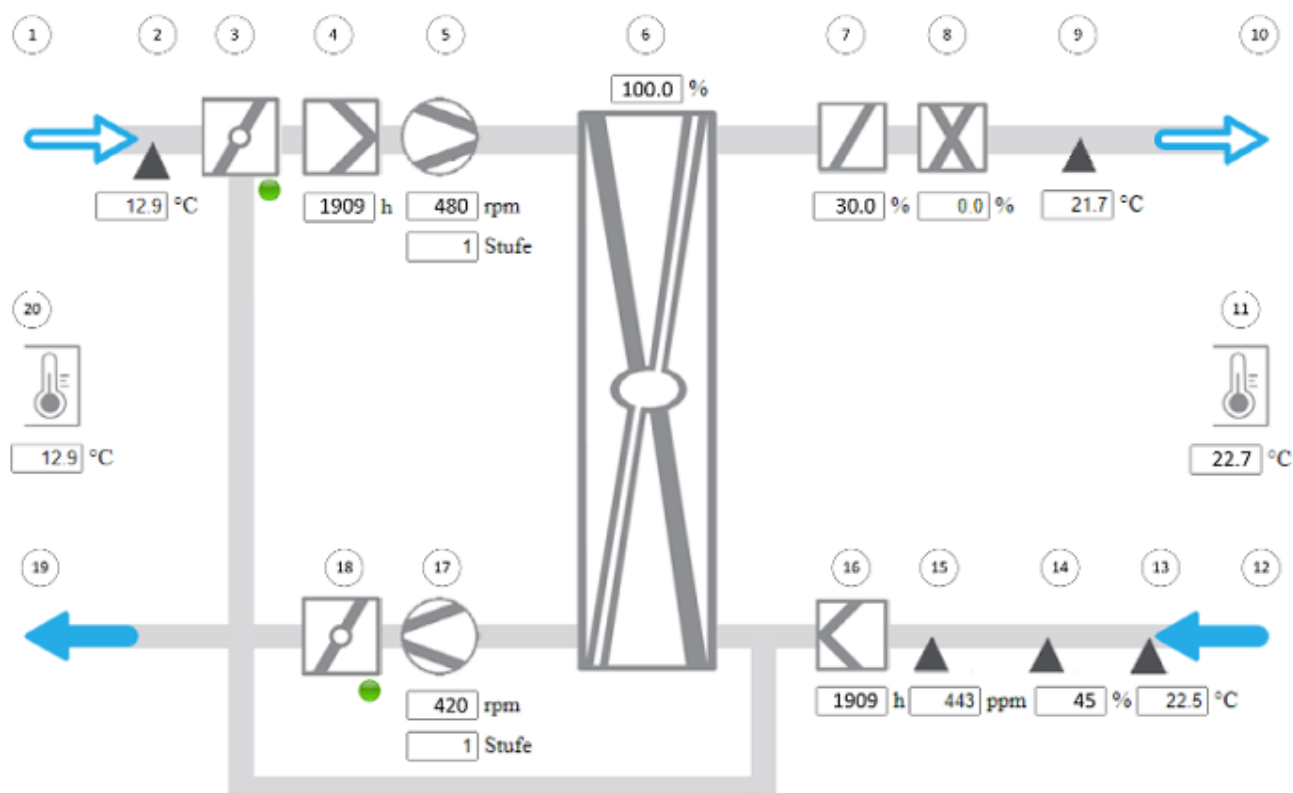





Fig. 1: Schematic illustration

- |    |                                                        |    |                                           |
|----|--------------------------------------------------------|----|-------------------------------------------|
| 1  | Outdoor air                                            | 11 | Room temperature                          |
| 2  | Outdoor air temperature                                | 12 | Extract air                               |
| 3  | Shut-off damper                                        | 13 | Extract air temperature                   |
| 4  | Filter operating hours                                 | 14 | Extract air humidity (ROOMAIR-U-ZAS only) |
| 5  | Fan speed and fan stage                                | 15 | Air quality                               |
| 6  | Control input signal of bypass / rotary heat exchanger | 16 | Filter operating hours                    |
| 7  | Control input signal of heating valve                  | 17 | Fan speed and fan stage                   |
| 8  | Control input signal of cooling valve                  | 18 | Shut-off damper                           |
| 9  | Supply air temperature                                 | 19 | Exhaust air                               |
| 10 | Supply air                                             | 29 | Outdoor air temperature                   |

## 2 Diagnostics menu

### 2.1 'Diagnostics → unit status'

#### Unit status

Address	Name	Value	Explanation
13000	Unit status	 green	<ul style="list-style-type: none"> <li>■ Automatic mode</li> <li>■ Unit OK</li> </ul>
		 grey	<ul style="list-style-type: none"> <li>■ Override active</li> <li>■ Unit OK</li> </ul>
		 red	Unit inactive (e. g. as a result of frost protection)

#### Unit information

Address	Name
11055	<b>Display of unit type</b> 1 = Secondary air unit 2 = Supply and secondary air unit, with option to switch to secondary air 3 = Supply air and secondary air unit 4 = Supply and extract air unit, with heat recovery, and option to switch to secondary air 5 = Supply and extract air unit, with heat recovery and secondary air admixture
11009	<b>Unit description</b> Individual unit description
11000	<b>Serial number</b> Serial number of the unit
11056	<b>Master / Slave</b> 0 = Slave unit 1 = Master unit
11036	<b>Software name</b> FSL-CONTROL III
11045	<b>Software version</b> Display of software version

Address	Explanation
11059	<b>Operating type override</b> 0 = No override active 1 = Boost activated 2 = Class activated 3 = Night purge activated 4 = Fan forced operation activated
11060	<b>Operating status</b> 0 = none 1 = Standby 2 = Control system 3 = Manual mode 6 = Fire emergency stop 7 = Frost alarm 8 = Priming 11 = Night purge
11061	<b>Setting of operating type by...</b> 1 = Room control panel 2 = Management and control equipment / building automation and control systems (MCE/BACS) 3 = Real time clock 4 = Digital input 5 = Master 6 = PC
11131	<b>Frost protection</b> 0 = Frost protection inactive 1 = Frost protection active

#### Operating information

Address	Explanation
11057	<b>Operating mode</b> 1 = OFF 2 = Automatic 3 = Manual mode
11058	<b>Operating type</b> 0 = No default 1 = Standby 2 = Unoccupied 3 = Occupied

#### Ventilation information

Address	Explanation
11078	<b>Fan stage supply air</b> Setting of active fan stage for supply air fan.
11260	<b>Volume flow rate supply air</b> Specification of the supply air volume flow.

'Diagnostics → temperature control'

Address	Explanation
11077	<b>Fan stage extract air</b> Setting of active fan stage for extract air fan
11261	<b>Volume flow rate extract air</b> Specification of the extract air volume flow.
11092	<b>Type of ventilation</b> 0 = No ventilation 1 = Secondary air operation 2 = Outdoor air operation
11121	<b>Specification of the fan stages TROX room control panel</b> 255 = None (control panel without selector switch) 1 = 0 2 = 1 3 = 2 4 = 3 10 = Automatic

## System information

Address	Explanation
11120	<b>Number of active devices in the system</b> Display of recognised master-slave devices in the TROX network
11257	<b>RTC function</b> 0 = RTC inactive 1 = RTC active
11258	<b>Activated MCE/BACS protocol</b> 0 = no connection to MCE/BACS 1 = Modbus 2 = BACnet
9271	<b>Communication counter master-slave</b> Used for monitoring communication between the master device and the connected slave devices

## Hours of operation

Address	Explanation
11085	<b>Operating hours of fan, supply air</b> Display of operating hours of supply air fan.
11083	<b>Operating hours of fan, extract air</b> Display of operating hours of extract air fan.
11087	<b>Operating hours of fan, secondary air</b> Display of operating hours of secondary air fan (if available)

Address	Explanation
11089	<b>Operating hours filter</b> Display of operating hours of outdoor air filters.
11254	<b>Operating hours remaining filter time</b> Display of the remaining hours until the next filter exchange is due.
11062	<b>Operating house unit</b> Display of total operating hours of the ventilation unit.
11251	<b>Operating hours since the unit was last restarted</b> Display of operating hours since the device was last restarted.

## Controller information

Address	Explanation
13004	<b>SD card</b> 0 = SD card inactive 1 = SD card active
11117	<b>SD card write status</b> 0 = Card is not being written to 1 = Card is being written to
13003	<b>Firmware version</b> Output of the current controller firmware.
13002	<b>Firmware revision</b> Output of the current controller revision
13005	<b>Controller type</b> Output of the controller type

## 2.2 'Diagnostics → temperature control'

### Temperature control

Address	Explanation
17305	Output of the configured control strategy 0 = Supply air temperature control (an extract air temperature sensor must be configured for supply air temperature control). 1 = Room temperature control 2 = Extract air temperature control
11104	Output of the current control sequence 1 = Cooling 2 = Cooling with heat recovery 3 = Heating with heat recovery 4 = Heating
11124	Temperature Offset room control panel

Address	Explanation
11133	Output of current outdoor air temperature
11138	Output of current flow temperature
11137	Output of current return temperature
11135	Output of the current extract air temperature (optional)
11136	Output of the current mixed air temperature (optional)



### Temperature sensor

If no measured value is available, e. g. missing temperature sensor, the value 32767 is displayed.

### Room / supply air temperatures

Address	Name
11095	Upper temperature limit for cooling, comfort zone [1/10 °C]*
11096	Lower temperature limit for heating, comfort zone [1/10 °C]*
11134	Actual value room temperature [1/10 °C]
11093	Setpoint room temperature [1/10 °C]
11132	Actual value supply air temperature [1/10 °C]
11097	Setpoint supply air temperature [1/10°C]

\* An upper and lower temperature limit is usually set for Occupied and Unoccupied.

For room temperature control to an absolute value, the setpoint value is displayed here.

For supply air temperature control, the setpoint value is displayed here.

### Control variables

Address	Name
11140	Actual value of heating valve control [1/10%] *
11141	Actual value of cooling valve control [1/10%] *
11145	Actual value of bypass damper control [1/10%] Bypass or rotary heat exchanger [1/10%] heat recovery *
11262	Output of the speed of the rotary heat recovery unit *

\*Display depends on the device equipment

## 2.3 'Diagnostics → fan control'

### Type of ventilation

Address	Name
11092	Type of ventilation: 0 = No ventilation 1 = Secondary air operation 2 = Outdoor air operation
11201	Position of outdoor air dampers 0 = closed 1 = open
11256	Fresh air 0 = Deactivated 1 = Activated
11078	Output of calculated fan stage supply air
11077	Output of calculated fan stage extract air
11079	Output of calculated fan stage secondary air
11081	Output of fan speed, supply air [1/min]
11080	Output of fan speed, extract air [1/min]

### Fan stages

Address	Name
11106	Fan speed off Temperature control
11107	Fan speed off Humidity control
11111	Fan stage off Air quality control

### Measured values humidity/air quality

Address	Name
11110	Room air humidity [%] *
11113	Room air quality [ppm] *

\*Display depends on the device equipment

'Diagnostics → Alarm und filter reset'

## 2.4 'Diagnostics → Alarm und filter reset'

### Reset filter hours

Address	Name
10006	Reset filter hours: 0 = No default 1 = Reset

### A-Alarm Standby

Address	Name
11255	A-Alarm Fan blockage – unit in Standby 0 = Inactive 1 = Active

### A alarm

Category A alarms may result in devices being switched off.

The alarm is always output as a collective fault signal (address 11160) and individually (address 11146 – 11159).

The collective fault message (address 11159) is a 16-digit bit strip that summarises all category A alarm messages. It is output as a decimal number that must be converted into the binary number system. The following alarms are shown, depending on the bit used:

- Bit 0 = Conflict of master – slave version
- Bit 1 = No communication expansion module
- Bit 2 = Missing communication RBG Type01\_Digital
- Bit 3 = Extract air temperature sensor - measured value outside tolerance
- Bit 4 = Group alarm of connected slave devices if there is an A alarm
- Bit 5 = Supply air fan blockage
- Bit 6 = Extract air fan blockage
- Bit 7 = Temperature sensor return - measured value outside tolerance
- Bit 8 = Temperature sensor flow - measured value outside tolerance
- Bit 9 = Temperature sensor supply air - measured value outside tolerance
- Bit 10 = Fire emergency stop
- Bit 11 = Temperature sensor room air - measured value outside tolerance
- Bit 12 = Temperature sensor outdoor air - measured value outside tolerance
- Bit 13 = currently not used
- Bit 14 = currently not used
- Bit 15 = currently not used

#### Examples:

- 1) **Address 11160** ⇒ 32 (decimal) ⇒  
0000000000010000 (binary)  
Bit 5 = 1 ⇒ Blockage supply air fan

2) **Address 11160** ⇒ 8224 (decimal) ⇒  
000010000010000 (binary)

Bit 5 = 1 ⇒ Blockage supply air fan

Bit 11 = 1 ⇒ Room air temperature sensor - measured value outside tolerance

The alarms of category A are individually listed below.

Alarm status of the respective alarms

Value 0 - no alarm

Value 1 - Alarm present

### A alarm

Address	Name
11159	Alarm A Collective fault signal, see above for description
11146	Conflict master - slave version
11147	No communication with expansion module
11148	Missing communication RBG Type01_Digital
11149	Temperature sensor extract air - Measured value outside tolerance
11150	Group alarm A Alarms Slaves (A1,A2,A3.. > 0)
11151	Supply air fan blockage
11152	Extract air fan blockage
11153	Temperature sensor return - Measured value outside tolerance
11154	Temperature sensor flow - Measured value outside tolerance
11155	Temperature sensor supply air - Measured value outside tolerance
11156	Fire emergency stop
11157	Temperature sensor room air - Measured value outside tolerance
11158	Temperature sensor outdoor air - Measured value outside tolerance

### B alarm

If a category B alarm is present, a notification is sent. The devices continue to run in the current operating mode.

The alarm is always output as a collective fault signal (address 11174) and individually (address 11160 – 11173).



The collective fault message (address 11174) is a 16-digit bit strip that summarises all category B alarm messages. It is output as a decimal number that must be converted into the binary number system. The following alarms are shown, depending on the bit used:

- Bit 0 = Missing heating / cooling medium
- Bit 1 = Filter change / filter pressure monitoring triggered
- Bit 2 = Frost return temperature
- Bit 3 = Frost outdoor air temperature
- Bit 4 = Frost room air / extract air temperature
- Bit 5 = Frost 1 supply air temperature (< 12°C)
- Bit 6 = Frost 2 supply air temperature (< 8°C)
- Bit 7 = Temperature sensor mixed air - measured value outside tolerance
- Bit 8 = SD card defective
- Bit 9 = Rotary heat recovery unit wear
- Bit 10 = Humidity sensor - measured value outside tolerance
- Bit 11 = Air quality sensor - measured value outside tolerance
- Bit 12 = Window contact triggered
- Bit 13 = Rotary heat recovery unit defective
- Bit 14 = currently not used
- Bit 15 = currently not used

#### Examples

1) **Address 11173** ⇒ 32 (decimal) ⇒ 0000000000010000 (binary)

Bit 5 = 1 ⇒ Frost 1 supply air temperature

2) **Address 11173** ⇒ 8224 (decimal) ⇒ 000010000010000 (binary)

Bit 5 = 1 ⇒ Frost 1 supply air temperature

Bit 11 = 1 ⇒ Air quality sensor - measured value outside tolerance

#### B alarm

Address	Name
11174	Alarm B Collective fault signal
11160	Missing heating/cooling medium
11161	Filter change reached or pressure monitoring triggered
11162	Frost return temperature
11163	Frost outdoor temperature
11164	Frost room air / extract air temperature
11165	Frost supply air temperature 1 (limit 12°C)
11166	Frost supply air temperature 2 (limit 8°C)
11167	Temperature sensor mixed air - measured value outside tolerance
11168	SD card defective
11169	Rotary heat recovery unit wear

Address	Name
11170	Humidity sensor - measured value outside tolerance
11171	Air quality sensor - measured value outside tolerance
11172	Window contact activated
11173	Rotary heat recovery unit defective

## 2.5 'Diagnostics → Remaining runtimes\*+'

This page provides an overview of all running timers.

#### Reset times

This way, all timers can be reset to "0".

If the unit is in frost protection mode, for example, because the outdoor temperature was missing and this temperature is now present, the waiting time can be shortened. Use only for commissioning!

#### Operating type overrides

Address	Name
11229	Display of the remaining time in the operating type override Boost
11230	Display of the remaining time in the operating type override Class
11231	Display of the remaining time after activation of overtime
11232	Display of the minimum runtime in the operating type override Night Purge
11259	Display of the remaining delay after activation of occupancy by DI
11279	Remaining runtime occupancy through DI

#### Fan

Address	Name
11233	Display of remaining runtime when switching from SEC to ODA or ODA to SEC
11235	Display of the start-up delay of the supply air fan when the shut-off dampers open and the fan was previously switched off.
11236	Display of the start-up delay of the extract air fan when the shut-off dampers open and the fan was previously switched off.
11234	Display of the remaining runtime when switching the fan stages.

'Diagnostics → IO connections\*+'

## Frost

Address	Name
11237	Display until it is checked again whether the supply air temperature is still < 12 °C.
11238	Display until it is checked again whether the supply air temperature is still < 8 °C.
11239	Display until it is checked again whether the condition for room temperature frost (default: 8 °C) is still present.  Room temperature frost is also displayed if there is no information about the extract air temperature, although the value is required (supply air or extract air temperature control active)
11240	Display until it is checked again whether the condition for outdoor temperature frost (default: -20 °C) is still present.
11241	Display until it is checked again whether the condition for return temperature frost (default: 8 °C) is still present. Currently in use.
11242	Display until it is checked again whether the condition for heat recovery temperature frost is still present. Different temperatures are stored for the different heat recovery units:  <b>Cross-flow heat recovery:</b> -6 °C (if the outside temperature is lower than -6 °C, the bypass is switched or, if active, the secondary air cycle is executed)  <b>Cross-counterflow:</b> -4°C (If the outdoor temperature is lower than -4°C, the bypass is switched or, if active, the secondary air cycle is executed).  <b>Rotary heat recovery:</b> -20 °C (This switches off the heat recovery temperature frost, as rotors cannot freeze).
11243	Display of run time in outdoor air mode with the secondary air cycle activated
11244	Display of run time in secondary air mode with the secondary air cycle activated
11246	Display of the remaining duration of the pre-purge process

## Filters

Address	Name
11245	Display of the minimum duration until the filter change is displayed for filter pressure monitoring. (Default: 30 min) To prevent gusty wind from triggering the system. Filter pressure monitoring is only active on the master units of the *-HE and *-HV variants.

## 2.6 'Diagnostics → IO connections\*+'

This page gives an overview of the status of all analogue and digital inputs and outputs.

For all non-configured inputs and outputs, "0" or "32767" is displayed.

The designations refer to the standard wiring of the unit type ZAB.

The wiring of the ZAS devices deviates from this standard wiring; in this case, please always check the wiring diagrams.

## AO

Address	Name
11175	Heating valve control signal
11176	Bypass damper control signal / rotary heat recovery unit
11177	Supply air fan control signal
11178	Extract air fan control signal
11179	Control input signal of LED control panel
11180	Cooling valve control signal
11181	Secondary air damper/fan control signal
11182	Free

## AI

Address	Name
11185	Current supply air temperature
11186	Current outdoor air temperature
11187	Current air quality
11188	Current humidity
11189	Current resistance value setpoint adjuster
11190	Current resistance button (only RBG Type02) If RBG Type03 is configured, then '32767' At the press of the button = '0'
11191	Current room air temperature

'Diagnostics → secondary air admixture\*+'

Address	Name
11192	Current extract air temperature (temperature sensor = NTC10k)
11193	Current return temperature
11194	Current flow temperature
11195	Current measured value of flow sensor (currently not used)
11196	Current extract air temperature (temperature sensor = 0...10 VDC)

**DO**

Address	Name
11201	Condition of shut-off dampers
11202	A alarm output
11203	B alarm output
11204	"In operation" signal output 1 = Occupied / Unoccupied 0 = Standby
11205	Enabling reheater (currently not used)
11206	Heat transfer fluid request Use only in case of Changeover!
11207	Cooling medium request Use only in case of Changeover!
11208	Humidification request (currently not used)
11209	Enabling preheater (currently not used)
11210	Enabling secondary heating system (room-related!)
11211	Enabling secondary cooling system (room-related!)

**DI**

The wiring status is basically displayed here.  
1 = Wired  
0 = Not wired

Address	Name
11213	Speed signal supply air fan
11214	Speed signal extract air fan
11215	Speed signal rotary heat recovery unit (not available for all unit variants)
11216	Occupancy switch 1 = Occupied (overrides RTC, RBG, MCE/BACS) 0 = Occupied / Unoccupied control via RBG, RTC, MCE/BACS

Address	Name
11217	Window contact 1 = Contact closed, device functioning 0 = Contact open, operating mode = OFF
11218	Fire emergency stop 1 = Contact closed, device functioning 0 = contact open, operating mode = OFF, operating mode = 6 (fire)
11219	Enabling 1 = Contact closed, device functioning 0 = Contact open, operating mode = OFF
11220	Change Over 1 = Cooling 0 = Heating
11221	Frost protection sensor Not supported.
11222	Filter monitoring 1 = triggered (time and/or pressure) 0 = not triggered
11223	Night purge Not supported.
11224	Fume cupboard switching 1 = Fan forced operation active 0 = Fan forced operation inactive  Attention: The fan force operation must be activated via fan control*+, address 17472.

**2.7 'Diagnostics → secondary air admixture\*+'**

**Mixed air temperature control**

Address	Name
11136	Current mixed air temperature Output when mixed air temperature sensor is configured.
11098	Setpoint value of mixed air temperature 0 = No mixed air temperature control active
11144	Output signal for SEC damper 0 = No mixed air temperature control active
11091	Increase of the control voltage for SUP (supply) fan with SEC admixture if condensate prevention is active.

'Help'

## Ventilation

Address	Name
11092	Type of ventilation 0 = OFF 1 = Secondary air operation 2 = Outdoor air operation
11078	Calculated fan stage SUP, depending on temperature and air quality
11077	Calculated fan stage ETA, depending on temperature and air quality
11078	Calculated fan stage SEC, depending on temperature and air quality

## Measured values for condensate prevention

Address	Name
11110	Humidity (measured at the ETA)
11135	Current extract air temperature (measured at the humidity + temperature combination sensor)

## Help information for fan control

Address	Name
11253	Fan control To check which control function is currently being performed. A flow chart is required for interpretation!

## 2.8 'Help'

### Display of help pages

Here you will find further information regarding the parameters and settings.

### 3 Configuration menu

#### 3.1 'Configuration → unit description'

Address	Name
17009	Entry of project-specific unit description (max.16 characters)

#### 3.2 'Configuration → temperature control'

##### Temperature setpoint values

Entry of temperature setpoint values for heating and cooling for Occupied and Unoccupied modes. The range between the setpoint value for heating and the setpoint value for cooling is the comfort temperature range.

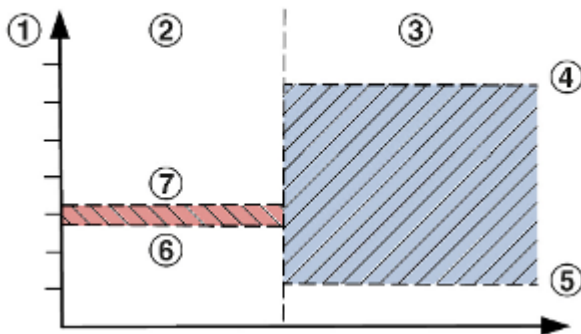


Fig. 2: Comfort zone

- red Comfort temperature range for Occupied
- blue Comfort temperature range for Unoccupied
- 1 Room temperature setpoint value
- 2 Occupied
- 3 Unoccupied
- 4 Cooling setpoint value for Unoccupied
- 5 Heating setpoint value Unoccupied
- 6 Heating setpoint value for Occupied
- 7 Cooling setpoint value for Occupied

Address	Name
17322	Cooling temperature setpoint value for Occupied
17323	Heating temperature setpoint value for Occupied
17324	Cooling temperature setpoint value for Unoccupied
17325	Heating temperature setpoint value for Unoccupied



For values marked with [1/10 °C], the values are always entered with a factor of 10.

**Example:** 17322 cooling temperature setpoint value for Occupied = 26 °C

Entry : 260

##### Master controller

Address	Name
17319	Proportionality coefficient
17320	Integration time

The values are already preset at the factory. No adjustments are required here.

##### Supply air temperature limits

Entry of minimum and maximum supply air temperature for Occupied and Unoccupied modes.

Address	Name
17311	Supply air temperature upper limit for Unoccupied
17309	Supply air temperature lower limit for Unoccupied
17310	Supply air temperature upper limit for Occupied
17308	Supply air temperature lower limit for Occupied

##### Winter compensation

Entry of parameters for the winter compensation function.

Address	Name
17478	Activation of winter compensation 0 = Winter compensation inactive 1 = Winter compensation active
17479	Entry of start temperature
17480	Entry of end temperature
17481	Entry of maximum setpoint value increase

'Configuration → clock and timer'

## Heating coil

Address	Name
17315	Proportionality coefficient
17316	Integration time
17331	minimum control value
17332	maximum control value

The values are already preset at the factory. No adjustments are required here.

## Cooling coil

Address	Name
17312	Proportionality coefficient
17313	Integration time
17329	minimum control value
17330	maximum control value

The values are already preset at the factory. No adjustments are required here.

## Temperature sensor Offset

**i** *The temperature sensor offset is used as a corrective value when there are temperature deviations.*

*The entered value is a constant and always has the same effect.*

*Recommendation: Offset = 0*

Address	Name
17273	Entry of supply air temperature sensor correction
17276	Entry of room temperature sensor correction

## 3.3 'Configuration → clock and timer'

### Current date and time in the unit

Display of the date and time saved in the FSL-CONTROL III control system.

### Set internal clock

Decentralised ventilation units from TROX can be delivered with factory-set date and time. However, it may be necessary to change settings or correct deviations.

Address	Name
10008	Default current date
10010	Default current time
10007	Set date and time 0 = No transfer 1 = Transfer to the control system
18077	Summertime (DST) setting 0 = Inactive 1 = Active

### **i** Number format

*Date: ddmmyy [6 digits without separators]*

*Time: hhmmss [6 digits without separators]*

*The data is transferred by entering "1" and Return in the entry field (address 10007).*

### Enabling timer

Activate/deactivate the timer.

Recommendation: Deactivate the timer when connecting the devices to an MCE/BACS.

### Weekly programme

An individual profile can be selected for each day of the week.

Address	Name
18000	Profile for Monday
18001	Profile for Tuesday
18002	Profile for Wednesday
18003	Profile for Thursday
18004	Profile for Friday
18005	Profile for Saturday
18006	Profile for Sunday

### Profile 1 – 7

For each profile, 10 different switching points can be freely selected.

The following operating types and overrides are available:

- 1 - Standby
- 2 - Unoccupied
- 3 - Occupied
- 4 - Boost
- 5 - Class
- 6 - Night purge
- 7 - Forced switching

Address	Name
18007	Switching point 1
18008	Switching point 2
18009	Switching point 3
18010	Switching point 4
18011	Switching point 5
18012	Switching point 6
18013	Switching point 7
18014	Switching point 8
18015	Switching point 9
18016	Switching point 10



Always start the profile entry at 00:00 in 'Unoccupied' mode.

We recommend separate profiles for weekdays, weekends and holidays.

For supply air temperature control, please replace the operating type 'Unoccupied' with 'Standby'. The switching points are always active until the following switching point is reached.

Entry is always a combination of time and operating type or override.

Prefixed zeros are not displayed after entry.

**Example 1:** Entry of Unoccupied at 00:00 midnight

Entry = 00002 Display = 2

**Example 2:** Entry of Night purge at 02:00 am

Entry = 2006 Display = 2006

#### Example for office

Office hours: 8:00 am – 5:00 pm

- 00.00 mid-night - Start Unoccupied ⇒ 2
- 02.00 am - Start Night purge ⇒ 2006
- 05.00 am - End Night purge (Unoccupied) ⇒ 5002
- 07.00 am - Pre-tempering (Occupied) ⇒ 7003
- 07.45 am - Flush with fresh air (Boost) ⇒ 7454
- 08.00 am - Normal operation (Occupied) ⇒ 8003
- 12.30 pm - Lunch break (Unoccupied) ⇒ 12302
- 01.30 pm - Normal operation (Occupied) ⇒ 13303
- 05.00 pm - Unoccupied ⇒ 17002
- 09.00 pm - Rep. Unoccupied ⇒ 21002



#### Further information

### 3.4 'Configuration → Fan control'

#### Air quality control (optional)

With air quality control, the outdoor air volume flow is controlled depending on the room air quality.

This type of control is only possible with an air quality sensor (optional equipment or by others). The internal sensor optionally detects the CO<sub>2</sub> concentration or the VOC content of the extract air. Air quality control is always active in the 'Occupied' operating type. In the 'Unoccupied' operating mode, air quality control is inactive.

Activation of the function in the 'Unoccupied' operating type in address line 17378.

The switching thresholds apply for both 'Occupied' and 'Unoccupied' operating types. If a switching threshold is exceeded, the configured fan stage is activated.



#### Secondary air function

For devices with secondary air switching, secondary air mode is active until the first switching threshold is reached. If the measured air quality value exceeds the first switching threshold, supply air and extract air operation is activated. When the other switching thresholds are reached, the fan speed is increased.

Address	Name
17378	Enabling air quality control in Unoccupied 0 = Inactive 1 = Active
17111	Fresh air 0 = Inactive 1 = Active
17380	First switching threshold for air quality 0..2000 ppm
17381	Second switching threshold for air quality 0..2000 ppm
17382	Third switching threshold for air quality 0..2000 ppm
17383	Fourth switching threshold for air quality 0..2000 ppm
17384	Fifth switching threshold for air quality 0..2000 ppm

**Recommendation**

- Limit value for first fan stage: 500 ppm*
- Limit value for second fan stage: 750 ppm*
- Limit value for third fan stage: 900 ppm*
- Limit value for fourth fan stage: 2100 ppm*
- Limit value for fifth fan stage: 2100 ppm*

## Humidity control

Humidity control is currently not supported.

## Presence via DI

If an on-site presence switch is connected, the corresponding settings can be made here. When activated, the ventilation unit is switched into Occupancy mode.

Address	Name
17148	Time until triggering
17149	Enter the duration
17150	Operating type after termination

## 3.5 'Configuration → Interfaces'

### Device restart

Address	Name
10003	Device restart 0 = No default 1 = Restart

**Device restart**

*To change some settings, the control system will need to be restarted. To restart, enter 1 in the entry field for address 10003 and confirm with Return.*

### Slave devices

Address	Name
17048	Entry of the number (!) of connected devices  For master in combination with one slave = 1, for several slaves = number of slaves. For slave devices, the value corresponds to the number of following slave devices.

### Settings SL1 Connection X1 Serial Bus

The SL1 connection / terminal X1 is used for master devices to connect the devices to the MCE/BACS.

1 – 127 is available as the address range. A serial bus string can consist of max. 32 devices. With slave devices, the master device is connected at connections SL1 / terminal X1.

**Factory-set Modbus address**

*The factory setting is Modbus address 1 for the master devices and Modbus address 2 for slave devices. In the case of connection from a master device to exactly one slave device, no settings are required. If several slave devices are connected to one master device, the Modbus address is incremented by "1" for each connected slave device.*

- Example slave 1 = Modbus address terminal X1 = 2*
- Slave 2 = Modbus address terminal X1 = 3*
- Slave n = Modbus address terminal X1 = n + 1*

Address	Name	Explanation
16124	Entry of Modbus address terminal X1	
16125	Serial protocol type 3 = Modbus RTU / Modbus TCP / BACnet IP 4 = BACnet MS/TP	



Address	Name	Explanation
16129	Baud rate X1 (RS485-1) 0 = 9600 1 = 19200 2 = 38400 3 = 57600 4 = 76800 Baud	For master devices according to the customer's serial bus system.  For slave devices, the baud rate is exclusively 38400 baud (value = 2).
16126	Data bits X1 (RS485-1)	For master devices according to the customer's serial bus system.  For slave devices, the number of data bits is exclusively 8 (value = 8).
16128	Parity X1 (RS485-1) 0 = Zero 1 = Odd 2 = Even	For master devices according to the customer's serial bus system.  For slave devices, the parity is exclusively even (value = 2)
16127	Stop bits X1 (RS485-1)	For master devices according to the customer's serial bus system.  For slave devices, the number of stop bits is exclusively 1 (value = 1).

**Settings SL2 Connection X2 Serial Bus**

For master devices, the SL 2 connection / terminal X2 is used to connect the first slave device.

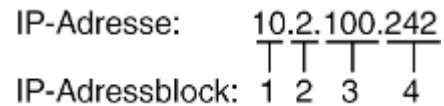
The Modbus address SL 2 / terminal X2 is always 1, no settings are needed.

Address	Name
15774	Address

**IP address**

The entry fields are used to set the IP address of the FSL-CONTROL III control system. For the entry, the IP address is divided into four address blocks (points).

**Entry of IP address**



IP address factory setting

Master devices - 10.2.100.242

Slave devices - 10.2.100.243

Address	Name
11267	IP address block 1
11268	IP address block 2
11269	IP address block 3
11270	IP address block 4

**Access with PC and web browser**

Connect the ventilation unit and PC with a patch cable and enter the IP address into the address line of the web browser to get access to the ventilation unit. Here, conditions can be checked, values can be read out and settings can be configured.

**IP gateway**

The address of the IP gateway is entered in the entry fields. The input syntax follows the IP address; see 'IP address' on page 17.

Address	Name
11271	IP gateway block 1
11272	IP gateway block 2
11273	IP gateway block 3
11274	IP gateway block 4

**IP network mask**

The address of the IP netmask is entered in the entry fields. The input syntax follows the IP address; see 'IP address' on page 17.

Address	Name
11275	IP network mask block 1
11276	IP network mask block 2
11277	IP network mask block 3
11278	IP network mask block 4

'Configuration → Control panel'

## Accepting network settings

Address	Name
10023	To accept changes to the factory preset IP address, IP gateway and IP network mask, please confirm with "1" and Return.

## BACnet

**i**  
*In BACnet, the instance number is displayed as a sum (BACnet identifier + BACnet subnet \* 65536). The BACnet ObjectName describes the device name in BACnet.*

*In addition, the BACnet identifier and BACnet Object\_Name can be used for own settings. Please ensure uniqueness in the network.*

Address	Name
17565	Enter the BACnet identifier as an integer. In BACnet, the identifier is displayed as an instance number according to the logic (BACnet subnet x 65536) + BACnet identifier. Example: Address 17565 = 7 and address 17566 = 1, instance = 1 x 65536 + 7 = 65543.
17569	The BACnet Object Name is displayed as the device name.
17566	BACnet Subnet

## 3.6 'Configuration → Control panel'

### Times

Address	Name
17439	Run time of overtime operation
17464	Boost run time
17469	Class run time

The values are already preset at the factory and can be customised for specific projects.

### HMI digital

Address	Name
17589	Language selection 0 = German 1 = English

Address	Name
17588	Air quality display 0 = inactive 1 = active
17598	Assessment of air quality 0 = inactive 1 = active
17583	Display limit yellow
17584	Display limit red
17585	User password 0 = inactive
17586	Service password
17591	Display sleepscreens 0 = inactive 1 = active
17594	Display time 0 = inactive 1 = active
17597	Room temperature measurement 0 = inactive 1 = active
17600	Display icon labelling 0 = inactive 1 = active
17599	Display remaining run times 0 = inactive 1 = active
17592	Dimming the display Info: Display of the sleep screen after double the time
17593	Residual brightness in dimmed state

The values are already preset at the factory and can be customised for specific projects.

### 3.7 'Configuration → Temperature control\*+'

#### Basic settings

Address	Name
17305	Control strategy 0 = Supply air temperature control For isothermal introduction of the supply air. Devices only cover the ventilation heat loss. It is important that the integrated extract air temperature sensor is activated, otherwise room air/extract air frost is active. Replace absence with standby in the clock and time programme. 1 = Room temperature control In conjunction with room temperature via control panel or MCE/BACS. 2 = Extract air temperature control In conjunction with integrated extract air temperature sensor.
17306	Register type 0 = no register 1 = Changeover In changeover mode, the device requires information regarding the medium present via DI or MCE/BACS. If no information is available, the valves are not actuated. 2 = 2L heating Also enter for isothermal supply air intake. 3 = 2L cooling 4 = 4L heat exchanger 5 = Electric heating coil Only for X-CUBE/SCHOOLAIR-V-HV-EH, X-CUBE/SCHOOLAIR-D-HV-EH and X-CUBE/SCHOOLAIR-S-HV-EH.
17327	minimum outside temperature to enable the active cooling sequence, Default setting: 10 °C
17328	Switchover delay heating-cooling, Default setting: 1 min
17110	Room / extract air temperature deviation for max. fan speed, Default setting: 3 K. This means that, if the deviation is > 3 K, the devices switch to the third fan stage. All other stages according to the resulting characteristic curve.

#### Temperature setpoint values

Address	Name
17322 – 17325	↳ 'Temperature setpoint values' on page 13
17318	Hysteresis threshold for supply air temperature presetting: 0.2 K; i.e., the supply air temperature may deviate from the specified supply air temperature by this value.

#### Master controller

The master controller affects the deviation between the setpoint and actual room temperature. The control of the valves is not affected at this point. The control parameters of the valves are set via addresses 17312, 17313, 17315, 17316.

Address	Name
17319	Cascade control proportionality coefficient default setting: 15
17320	Cascade control integration time default setting: 400

#### Supply air temperature limits

Address	Name
17311	Entry of the supply air temperature upper limit for Unoccupied
17309	Entry of the supply air temperature lower limit for Unoccupied
17310	Entry of the supply air temperature upper limit for Occupied
17308	Entry of the supply air temperature lower limit for Occupied

#### Winter compensation

Address	Name
17478	Enabling winter compensation 0 = inactive 1 = active (default)
	Entry of the parameters for winter compensation via addresses 17479, 17480 and 17481.

#### Heating coil

Address	Name
17315 – 17316 17331 – 17332	No changes to the default settings are required.

#### Cooling coil

Address	Name
17312 – 17313 17329 – 17330	No changes to the default settings are required.

'Configuration → Temperature control\*+'

## WRG

Address	Name
17336	<p>Heat recovery type</p> <p>1 = Plate heat recovery unit Setting for the following unit types:</p> <ul style="list-style-type: none"> <li>■ All X-CUBE/ROOMAIR units</li> <li>■ X-CUBE/SCHOOLAIR-B-0-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-B-HE-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-V-0-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-V-1800-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-V-HE-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-D-0-2L / -4L</li> </ul> <p>2 = Rotary heat recovery unit Setting for the following unit types:</p> <ul style="list-style-type: none"> <li>■ X-CUBE/SCHOOLAIR-B-HV-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-V-HV-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-V-HV-EH</li> <li>■ X-CUBE/SCHOOLAIR-D-HV-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-D-HV-EH</li> <li>■ X-CUBE/SCHOOLAIR-S-HV-EH</li> </ul>
17337	<p>Heat recovery proportionality coefficient No changes to the default settings are required.</p>
17338	<p>Heat recovery integration time No changes to the default settings are required.</p>
17339	<p>Heat recovery year-round 0 = inactive For all units with a plate-type heat recovery unit and without a condensate drain. Condensate is avoided because the bypass opens when the outdoor temperature is too cold and the air goes directly to the heat exchanger. The available water-side output must cover the entire ventilation heat loss. 1" = active Basically for all *-HV unit variants, as the rotary heat recovery unit does not generate any condensate to the outside. A condensate connection is mandatory for units with plate heat recovery. In addition, the frost protection cycle (Configuration -&gt; Frost protection*+) must be activated.</p>
17340	<p>Minimum setpoint value of the heat recovery unit (HRU) No changes to the default settings are required.</p>
17341	<p>Maximum setpoint value of hear recovery unit No changes to the default settings are required.</p>

Address	Name
17344	<p>Heat recovery rate of HRU Settings as follows:</p> <p>60%</p> <ul style="list-style-type: none"> <li>■ All X-CUBE/ROOMAIR appliances with cross-flow heat recovery</li> <li>■ X-CUBE/SCHOOLAIR-B-0-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-V-0-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-V-1800-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-D-0-2L / -4L</li> </ul> <p>80%</p> <ul style="list-style-type: none"> <li>■ X-CUBE/SCHOOLAIR-S-HV-EH</li> </ul> <p>81%</p> <ul style="list-style-type: none"> <li>■ X-CUBE/ROOMAIR-B-ZAB/SEK-HE</li> <li>■ X-CUBE/ROOMAIR-V-ZAB/SEK-HE</li> </ul> <p>84%</p> <ul style="list-style-type: none"> <li>■ X-CUBE/SCHOOLAIR-B-HE-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-V-HE-2L / -4L</li> </ul> <p>75%</p> <ul style="list-style-type: none"> <li>■ X-CUBE/SCHOOLAIR-B-HV-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-V-HV-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-V-HV-EH</li> <li>■ X-CUBE/SCHOOLAIR-D-HV-2L / -4L</li> <li>■ X-CUBE/SCHOOLAIR-D-HV-EH</li> </ul>
17342	<p>Minimum temperature difference: No changes to the default settings are required.</p>
17343	<p>Waiting time if temperature conditions are favourable</p>

## Rotary heat exchanger for heat recovery

Address	Name
17606	<p>Minimum monitoring time for wear/defect detection in minutes</p>
17608	<p>Activation of defect monitoring</p>
17607	<p>Activation of wear monitoring</p>
17609	<p>Input of max. speed with max. control</p>
17610	<p>Enter the max. deviation in %</p>

**Electric heating coil**

Address	Name
17378	Enabling electric heating coil Dynamic Dynamic influences the maximum heating capacity of the electric heating coil depending on the outdoor air temperature and the fan stage. 0 = inactive 1 = active Only for X-CUBE/SCHOOLAIR-V-HV-EH, X-CUBE/SCHOOLAIR-D-HV-EH and X-CUBE/SCHOOLAIR-S-HV-EH.
17579	Electric heating coil proportion Dynamic Information on proportion Dynamic.

**Temperature sensor Offset**

For the correction of various temperature sensors. Please make sure that the Offset affects the entire temperature range.

Address	Name
17273	Supply air temperature Offset
17274	Outdoor air temperature Offset
17276	Room air temperature Offset Insofar as a correction of the measurement must be made in the control panel. Please check the installation location of the control panel.
17277	Extract air temperature Offset Affects input AI8, which is always used for extract air temperature if the extract air temperature sensor is an NTC 10k, i.e. for all CO <sub>2</sub> - / temperature combination sensors.
17278	Return temperature Offset
17279	Flow temperature Offset
17280	Extract air temperature Affects input AI12, which is always used for extract air temperature when the extract air temperature sensor outputs a 0...10 VDC signal, i.e. for all CO <sub>2</sub> - / humidity / temperature combination sensors. Primarily in the X-CUBE/ROOMAIR-U-ZAS.

**3.8 'Configuration → Fan control\*+'****Air quality control**

Address	Name
17290	Sensor type 0 = none, for all slaves. For master devices, if the integrated CO <sub>2</sub> sensor is not used. 2 = Titec CO <sub>2</sub> The units are supplied with a CO <sub>2</sub> sensor as standard. 3 = Titec VOC
17376	Enabling air quality control 0 = inactive For master devices without internal sensor and without on-site sensor incl. transmission via MCE/BACS. 1 = active For master devices with integrated sensors and for master devices without internal sensors with simultaneous transmission of measured values via the on-site MCE/BACS. The master decides independently which fan stage is active, based on the measured values.
17377	Enabling air quality control in Occupied 0 = inactive during Occupied 1 = active during Occupied (= default setting)
17378	Enabling air quality control in Unoccupied 0 = inactive during Unoccupied (= default setting) 1 = active during Unoccupied
17111	Fresh air 0 = inactive If the measured value for the room air quality is below the first threshold value, the unit ventilates with secondary air in Occupied. 1 = active Regardless of the indoor air quality, the unit always ventilates with outdoor air when Occupied.
17380	First switching threshold for air quality If the measured value is below the 1st switching threshold, the unit ventilates with secondary air, provided that fresh air = 0. If the measured value is above the 1st switching threshold, the unit ventilates with outdoor air. Fan stage = Stage 1.
17381	Second switching threshold for air quality If the measured value is above the 2nd switching threshold, the unit ventilates with outdoor air in the 2nd stage.
17382	Third switching threshold for air quality If the measured value is above the 3rd switching threshold, the unit ventilates with outdoor air in the 3rd stage.

'Configuration → Secondary air admixture...

Address	Name
17383	Fourth switching threshold for air quality If the measured value is above the 4nd switching threshold, the unit ventilates with outdoor air in the 4nd stage.
17384	Fifth switching threshold for air quality If the measured value is above the 5nd switching threshold, the unit ventilates with outdoor air in the 5nd stage.

## Humidity control

Humidity control is not currently supported.

## Fan stages

Address	Name
17072	Minimum fan stage during Occupied 1 = Default setting, fans always run during Occupied.
17074	maximum fan stage during Occupied 3 = Default setting; this setting limits the available fan stages to 3 stages during Occupied.
17071	Minimum fan stage Unoccupied 0 = Default setting, the fans can be switched off provided that the room temperature is within the set point range.
17073	maximum fan stage Unoccupied 4 = Default setting; this setting limits the available fan stages to 4 stages during Unoccupied. The 4th fan stage is activated during Night Purge.
17112	Reduction in fan stage temperature without cooling If the unit are not cooling (2L - heating), this parameter can be used to reduce the fan speed so that the rooms are not heated up too much when the outside temperature is too high(> 28 °C).

## Settings Operating type Override settings

Address	Name
17462	Enabling Boost 0 = inactive 1 = active
17463	Fan stage during Boost; entry of the active fan stage for Boost mode. Default stage = stage 4. During Boost, ventilation always uses outdoor air.
17467	Enabling Class 0 = inactive 1 = active

Address	Name
17468	Fan stage during Class; entry of the active fan stage for Class mode. Default stage = stage 2. During Class, ventilation always uses outdoor air.
17450	Enabling Night Purge 0 = inactive 1 = active
17456	Fan stage during Night Purge; entry of the active fan stage for Night Purge mode. Default stage = stage 4. During Night Purge, ventilation always uses outdoor air. Activation via RTC or MCE/BACS required.
17472	Enabling Fan Force mode operation For combination with fume cupboards or separate, time-limited extract air. 0 = inactive 1 = active Activation always via DI or MCE/BACS.
17473	Fan stage Fan forced switching supply air Entry of fan stage for supply air fan.
17474	Fan stage Fan forced switching extract air Entry of fan stage for extract air fan. The stage should always be > 0.

## Times

Address	Name
17105	Minimum time at current fan stage To prevent the unit from jumping back and forth between different stages too quickly.
17061	Out damper runtime The fans are only put into operation after this time has elapsed. No change required.
17359	Locking time switchover secondary air - outdoor air The unit can only switch from outdoor air mode to secondary air mode, or vice versa, once this blocking time has elapsed.

## 3.9 'Configuration → Secondary air admixture damper\*+'

These settings are only required for X-CUBE/ROOMAIR-U-ZAS.

**Secondary air damper**

Address	Name
17345	Enabling secondary air damper 0 = inactive 1 = active Secondary air damper must be active.
17352	Minimum delay time in current direction of action No changes required.

**Condensate prevention**

The X-CUBE/ROOMAIR-U-ZAS does not require a condensate drain, as condensate forming is prevented by the temperature control. For this purpose, the air temperature upstream of the heat recovery unit is raised by mixing in secondary air to such an extent that no condensate is formed.

Address	Name
17346	Prevention of condensation - minimum temperature difference (between extract air and outdoor air temperature) for activation Default setting = 5 K. No changes required. The outdoor air must be at least 5 K cooler than the extract air temperature.
17347	Prevention of condensation - temperature offset with regard to the calculated minimum mixed air temperature Default setting = 2 K. For safety reasons, the mixing air temperature to be achieved is raised by 2 K and therefore more secondary air is added.
17349	Maximum total control input signal of supply air fan For mixing, the control voltage of the supply air fan is increased so that it draws in more air in total. This value limits the maximum possible control voltage for acoustic reasons.

**Mixed air temperature control**

Address	Name
17350 – 17351	No changes required.

**Fan stages**

These settings affect the fan stages in regard to air quality.

Address	Name
17106	minimum outdoor air stage Default setting = 1 The unit always ventilates with outdoor air at stage 1 during Occupied mode. This means that pure secondary air operation is not possible during Occupied mode.
17107	maximum outdoor air stage Default setting = 3 For limiting the fan stage with outdoor air. If further fan stages are permitted, the difference is covered by secondary air.
17109	maximum stage supply and extract air Default setting = 3

**3.10 'Configuration → Secondary air admixture fan\*+'**

These settings are only required for X-CUBE/ROOMAIR-B-ZAB+SEK.

**Secondary air fan**

Address	Name
17354	Enabling secondary air fan 0 = inactive 1 = Active The secondary air fan must be activated.

**Fan stages**

Address	Name
17355	Minimum secondary air stage Default setting = 1. This means that the secondary air fan always runs at stage 1 so that the supply air is not forced back by the secondary air fan.
17356	Maximum secondary air stage Setting according to the number of fan stages.
17108	minimum supply/extract air stage To ensure the minimum outdoor air volume. Usually stage 1
17109	maximum supply/extract air stage Setting according to the number of fan stages. If a maximum outdoor air volume has been defined in the project, this volume can be set here.

'Configuration → Characteristics\*+'

## 3.11 'Configuration → Characteristics\*+'

### Control input signal fan supply air

Address	Name
17080 – 17084	For entering the control voltage of the supply air fan for up to 5 stages. Stage 1 – 3 represent normal operation, Stage 4 for Boost and Night Purge. Control voltages according to table, ↪ 'Control voltages' on page 25.
17498	Supply air pressure monitoring limit Entry of the control voltage of the max. fan stage (usually stage 3) up to which the filter pressure monitoring is active. For projects where air volumes exceed the nominal air volume.

### Volume flow fan supply air

Address	Name
17075 – 17079	For entering the volume flow rate in the individual fan stages for supply air. This value is output to MCE/BACS.

### Control input signal fan extract air

Address	Name
17090 – 17094	For entering the control voltage of the extract air fan for up to 5 stages. Stage 1 – 3 represent normal operation, Stage 4 for Boost and Night Purge. Control voltages according to table, ↪ 'Control voltages' on page 25.
17499	Extract air pressure monitoring limit Entry of the control voltage of the max. fan stage (usually stage 3) up to which the filter pressure monitoring is active. For projects where air volumes exceed the nominal air volume. Note: Only the outdoor air filter is monitored.

### Volume flow fan extract air

Address	Name
17075 – 17079	For entering the volume flow rate in the individual fan stages for extract air. This value is output to MCE/BACS.

### Control input signal fan secondary air

Address	Name
17095 – 17099	For entering the control voltage of the secondary air fan for up to 5 stages.



**Control voltages**

**X-CUBE/SCHOOLAIR-B Control voltages [V]**

Volume flow rate		X-CUBE/SCHOOLAIR-B...							
		-0-2L / -4L		-HE-2L / -4L		-HV-2L / -4L *1		-HV-2L / -4L *2	
[m³/h]	[l/s]	SUP	EHA	SUP	EHA	SUP	EHA	SUP	EHA
150	42	42	40	26	29	26	29	25	23
200	56	52	50	32	37	30	33	30	28
250	69	62	60	39	44	34	37	34	32
300	83	72	70	45	52	38	41	40	37
320	89	76	74	47	56	39	43	42	39
350	97			51	60	42	45	45	42
400	111			58	68	46	49	50	48
450	125			64	76	49	54	55	53
500	139					53	58	61	58
550	153					57	62	66	63
600	167					61	66	70	67

\*1 with fans from Ziehl-Abegg (colour = blue)

\*2 with fans from Dunli (colour = black)

**X-CUBE/SCHOOLAIR-V control voltages [V]**

Volume flow rate		X-CUBE/SCHOOLAIR-V...									
		-0-2L / -4L		-1800-2L / -4L		-HE-2L / -4L		-HV-2L / -4L / -EH *1		-HV-2L / -4L / -EH *2	
[m³/h]	[l/s]	SUP	EHA	SUP	EHA	SUP	EHA	SUP	EHA	SUP	EHA
150	42	44	44	40	43	27	25	29	26	25	23
200	56	56	56	50	53	35	32	33	30	30	28
230	64	64	64	56	59	39	37	36	33	32	30
240	67	66	66	58	61	41	38	37	34	33	31
250	69	68	68	60	63	42	40	38	34	34	32
280	78	76	76	66	69	47	44	40	37	37	35
300	83	80	80	70	73	50	47	42	38	40	37
320	89	85	85	74	77	52	50	44	40	42	39
350	97			80	83	57	55	46	42	45	42
360	100					58	56	47	43	46	43
400	111							51	46	50	48
450	125							55	50	55	53
500	139							60	54	61	58
550	153							64	58	66	63
600	167							68	62	70	67

\*1 with fans from Ziehl-Abegg (colour = blue)

\*2 with fans from Dunli (colour = black)

'Configuration → Characteristics\*+'

## X-CUBE/SCHOOLAIR-D control voltages [V]

Volume flow rate		X-CUBE/SCHOOLAIR-D...					
		-D-0		-HV		-HV-EH	
[m³/h]	[l/s]	SUP	EHA	SUP	EHA	SUP	EHA
150	42	49	53				
200	56	63	66				
250	69	76	80	23	20	23	20
300	83	90	94	26	22	26	22
320	89	95	100	27	23	27	23
400	111			31	28	31	28
500	139			37	33	37	33
600	167			44	39	44	39
700	194			50	46	50	46
800	222			57	53	57	53
900	250			65	61	65	61
1000	278			73	69	73	69
1100	306			81	78	81	78

## X-CUBE/SCHOOLAIR-S control voltages [V]

Volume flow rate		X-CUBE/SCHOOLAIR-S...	
		-HV-EH	
[m³/h]	[l/s]	SUP	EHA
200	56	28	24
300	83	36	30
400	111	43	36
500	139	50	41
600	167	57	47
700	194	64	53
800	222	71	59
900	250	79	64
1000	278	86	70
1050	292	89	73

**X-CUBE/ROOMAIR-B Control voltages [V]**

Volume flow rate		X-CUBE/ROOMAIR-B...						
		-ZAB/SEK		-ZAB/SEK-HE		-ZAB+SEK		
[m <sup>3</sup> /h]	[l/s]	SUP	EHA	SUP	EHA	SUP	EHA	SEC
60	17	33	33	24	26	19	21	31
90	25	46	46	33	35	31	32	39
120	33	57	57	43	44	43	44	47
150	42	70	70	53	54	55	55	55

**X-CUBE/ROOMAIR-V control voltages [V]**

Volume flow rate		X-CUBE/ROOMAIR-V...			
		-ZAB/SEK		-ZAB/SEK-HE	
[m <sup>3</sup> /h]	[l/s]	SUP	EHA	SUP	EHA
60	17	39	43	21	21
90	25	44	47	31	30
120	33	55	56	41	40
150	42	68	70	51	49

**X-CUBE/ROOMAIR-U control voltages [V]**

Volume flow rate		X-CUBE/ROOMAIR-U...	
		-U-ZAS	
[m <sup>3</sup> /h]	[l/s]	SUP	EHA
60	17	28	30
90	25	39	40
120	33	49	51
150	42	59	61

**Heating valve characteristic**

The settings depend on the valve-actuator combination used.

Actuator	Valve			
	Siemens - straight-way valve Siemens - 3-way valve		Frese - pressure-independent control valve	
Möhlenhoff, thermoelectric	X		X	
Möhlenhoff, electromotive		X		X
Address 17229	100	100	0	0
Address 17230	13	0	100	100

'Configuration → Characteristics\*+'

## Characteristic bypass/rotary heat exchanger

The settings depend on the design implementation in the unit.

Please note the following table:

### Rotary heat exchanger (X-CUBE/SCHOOLAIR-B / -V / -D / -S - HV)

Address	X-CUBE/SCHOOLAIR...	
	-B-HV -V-HV	-D-HV -S-HV
17231	22	35
17232	100	100

#### Note

During the function test, the control input signal of the heat recovery unit has the following meaning:

100% - 100% heat recovery = maximum speed

0% - 0% heat recovery = minimum speed

### Plate heat recovery unit (all other unit variants)

Address	X-CUBE/ROOMAIR-B...			X-CUBE/SCHOOLAIR-B...	
	-ZAB/SEK	-ZAB/SEK-HE	-ZAB+SEK	-0-2L/ -4L	-HE-2L/ -4L
17231	0	0	0	100	100
17232	100	100	100	0	0

Address	X-CUBE/ROOMAIR-V...		X-CUBE/SCHOOLAIR-V...		
	-ZAB/SEK	-ZAB/SEK-HE	-0-2L/ -4L	-HE-2L/ -4L	-1800-2L/ -4L
17231	100	100	100	100	0
17232	0	0	0	0	100

Address	X-CUBE/SCHOOLAIR-D...	
	-2L/4L	
17231	0	
17232	100	

Address	X-CUBE/ROOMAIR-U...	
	-ZAS	
17231	100	
17232	0	

**Note**

During the function test, the control input signal of the heat recovery unit has the following meaning:

100% - 100 % Bypass / 0% heat recovery

0% - 0% Bypass / 100 % heat recovery

Special case SCHOOLAIR-V-0-2L / -4L: Damper open = 100% heat recovery!

**Cooling valve characteristic**

Address	Name
17239 – 17340	Usually, the same settings must be made here as for the heating valve.

**Secondary air damper characteristic at AO5**

Please note that the LED for the control panel is connected to AO5, exception: X-CUBE/ROOMAIR-U-ZAS.

Address	Name
17237	AO5 characteristic min = 0
17238	AO5 characteristic max = 60 Limitation to 6 VDC, as the LED at the control panel is operated with 5 VDC.

**Secondary air damper characteristic at AO7**

Address	Name
17241	AO7 characteristic min = 0
17242	AO7 characteristic max = 100

**3.12 'Configuration → IO connections\*+'**

The configuration described below represents the standard wiring of decentralised ventilation units. Deviations are documented with the wiring diagrams.

**Unit restart**

Address	Name
10003	After any changes, the controller must be restarted. Enter a "1" and confirm with Return.

**Assignment of analogue inputs**

Address	Name
17177	Assignment AI1 = 1 (Supply air temperature, NTC 10k)

Address	Name
17178	Assignment AI2 = 2 (Outdoor air temperature, NTC 10k)
17179	Assignment AI3 = 8 (CO <sub>2</sub> - sensor, 0 ... 10 VDC- signal)
17180	Assignment AI4 = 9 (Humidity sensor, 0 ... 10 VDC signal)
17181	Assignment AI5 = 12 (Analogue control panel setpoint value adjuster, 5k)
17182	Assignment AI6 = 13 (Analogue control panel, selector switch or push button)
17183	Assignment AI7 = 14 (Analogue control panel, room temperature, NTC 10k or 20k)
17184	Assignment AI8 = 6 (Extract air temperature, NTC 10k)
17185	Assignment AI9 = 5 (Return temperature, NTC 10k)
17186	Assignment AI10 = 4 (Flow temperature, NTC 10k)
17187	Assignment AI11 = currently not used
17188	Assignment AI12 = 7 (extract air temperature, 0 ... 10 VDC-Signal, X-CUBE/ROOMAIR-U-ZAS)
17189	Assignment AI13 = 3 (mixed air temperature, NTC 10k, X-CUBE/ROOMAIR-U-ZAS)
17190	Assignment AI14 = currently not used

'Configuration → IO connections\*+'

## Assignment of analogue outputs

Address	Name
17219	Assignment AO1 = 1 (Heating valve, 0 ... 10 VDC)
17220	Assignment AO2 = 5 / 7 (Bypass damper / rotary heat recovery)
17221	Assignment AO3 = 3 (Fan supply air, 0 ... 10 VDC)
17222	Assignment AO4 = 4 (Fan extract air, 0 ... 10 VDC)
17223	Assignment AO5 = 14 (LED control panel, 0 ... 10 VDC)
17224	Assignment AO6 = 2 (Cooling valve, 0 ... 10 VDC)
17225	Assignment AO7 = 6 (Secondary air damper / fan, 0 ... 10 V)
17226	Assignment AO8 = 9 (Output volume flow rate, 0 ... 10 VDC)
17227	Assignment AO9 = currently not used
17228	Assignment AO10 = currently not used

## Assignment of digital inputs

Address	Name
17116	Assignment DI1 = 1 (Speed signal fan supply air)
17117	Assignment DI2 = 2 (Speed signal fan extract air)
17118	Assignment DI3 = Rotor run monitoring (only for units with rotary heat recovery unit)
17119	Assignment DI4 = 10 (Presence key) Switching: Open = valid operating type (RTC, DI, MCE/BACS), Closed = Occupied
17120	Assignment DI5 = 5 (window contact) Switching: Open = Device OFF, Closed = Automatic
17121	Assignment DI6 = 6 (fire emergency stop) Switching: Open = Device OFF, Closed = Automatic
17122	Assignment DI7 = 7 (external enabling) Switching: Open = Device OFF, Closed = Automatic

Address	Name
17123	Assignment DI8 = 8 (changeover) Switching: Open = Heating, Closed = Cooling
17124	Assignment DI9 = currently not used
17125	Assignment DI10 = 4 (filter pressure monitoring)
17126	Assignment DI11 = currently not used
17127	Assignment DI12 = 12 (Fan forced switching) Switching: Open = inactive Closed = active
17128	Assignment DI13 = 2 currently not used
17129	Assignment DI14 = 2 currently not used
17130	Assignment DI15 = 2 currently not used
17131	Assignment DI16 = 2 currently not used

## DI

NC-NO contact

Normally Closed - 0

Normally Open - 1

To perform the functions correctly, the DIs must be configured as follows.

Address	Name
17132	DI1 switch type = 1
17133	DI2 switch type = 1
17134	DI3 switch type = 0
17135	DI4 switch type = 1
17136	DI5 switch type = 0
17137	DI6 switch type = 0
17138	DI7 switch type = 1
17139	DI8 switch type = 0
17140	DI9 switch type = 1
17141	DI10 switch type = 1
17142	DI11 switch type = 1
17143	DI12 switch type = 1
17144	DI13 switch type = 1
17145	DI14 switch type = 1
17146	DI15 switch type = 1
17147	DI16 switch type = 1

**Assignment of digital outputs**

Address	Name
17153	Assignment DO1 = 1 (shut-off dampers)
17154	Assignment DO2 = 2 (A alarm) Switching: Open = inactive Closed = A alarm present
17155	Assignment DO3 = 3 (B alarm) Switching: Open = inactive Closed = B alarm present
17156	Assignment DO4 = 4 (ready for operation) Switching: Open = inactive Closed = Device active
17157	Assignment DO5 = currently not used
17158	Assignment DO6 = 7 (heating request, related to the valve)
17159	Assignment DO7 = 8 (cooling request, related to the valve)
17160	Assignment DO8 = currently not used
17161	Assignment DO9 = currently not used
17162	Assignment DO10 = 11 (heating request/ enabling, related to the room) Switching: Open = inactive Closed = Enabling for external heat transfer fluid
17163	Assignment DO11 = 12 (cooling request/ enabling, related to the room) Switching: Open = inactive Closed = Enabling for external coolant
17164	Assignment DO12 = currently not used

Address	Name
17169	DO5 switch type = 1
17170	DO6 switch type = 0
17171	DO7 switch type = 0
17172	DO8 switch type = 1
17173	DO9 switch type = 1
17174	DO10 switch type = 0
17175	DO11 switch type = 0
17176	DO12 switch type = 0

**DO Assignment digital outputs**

NC-NO contact

Normally Closed - 0

Normally Open - 1

To perform the functions correctly, the DOs must be configured as follows.

Address	Name
17165	DO1 switch type = 1
17166	DO2 switch type = 1
17167	DO3 switch type = 1
17168	DO4 switch type = 0

'Configuration → Device configuration\*+'

To implement the wiring of the DI / DO according to the wiring documents:

## Digital inputs

X3	Function	Open	Closed	Cable breakage resistance	physical address controller	Assignment		DI switch type	
						Address		Address	
1	Fume cupboard switching	Inactive	Active		DI 12	17127	12	17143	1
2	Changeover	Heating	Cooling	Yes	DI 8	17123	8	17139	0
3	Start operation	Off	Automatic		DI 7	17122	7	17138	1
4	Fire emergency stop	Off	Automatic	Yes	DI 6	17121	6	17137	0
5	Window contact	Off	Automatic	Yes	DI 5	17120	5	17136	0
6	Presence detector	current operating type	Occupied		DI 4	17119	10	17135	1

## Digital outputs

X5	Function	Open	Closed	Cable breakage resistance	physical address controller	Assignment		DO Switch type	
						Address		Address	
1	Cooling medium request	Inactive	Active		DO7	17159	7	17171	0
2	Heat transfer fluid request	Inactive	Active		DO6	17158	6	17170	0
3	Ready for operation	Device inactive	Device active		DO4	17156	4	17168	0
4	B alarm	no alarm	Alarm		DO3	17155	3	17167	1
5	A alarm	no alarm	Alarm		DO2	17154	2	17166	1
6	Enabling heating (room related)	Not enabled	Enabling		DO10	17162	11	17174	0
6	Enabling cooling (room related)	Not enabled	Enabling		DO11	17163	12	17175	0

### 3.13 'Configuration → Device configuration\*+'

Please restart the controller after making any changes!

#### Unit restart

Address	Name
10003	After any changes, the controller must be restarted. Enter a "1" and confirm with Return.

#### Device configuration

Address	Name
17036	FSL-CONTROL III unit type 1 = Secondary air units (e.g. X-CUBE/ROOMAIR-U-SEK) 2 = Supply and secondary air unit with separate secondary air fan (currently not available) 3 = Supply and secondary air unit (SEC via mixing damper), (e.g. X-CUBE/ROOMAIR-U-ZUS) 4 = Supply and extract air unit (almost all X-CUBE/ROOMAIR and X-CUBE/SCHOOLAIR units)



Address	Name
	5 = Supply and extract air unit with secondary air admixture (e.g. X-CUBE/ROOMAIR-U-ZAS, X-CUBE/ROOMAIR-B-ZAB+SEK)
17042	<p>Enabling Master</p> <p>This setting determines whether the device is a master (1) or a slave (0) device. 1 = Master 0 = Slave</p>
17358	<p>Enabling secondary air changeover</p> <p>1 = active 0 = inactive Usually activated</p>
17046	<p>Control panel type</p> <p>0 = No CP All master devices without control panel. Often when connected to the MCE/BACS. Instead of room temperature control, extract air temperature can also be activated. Standard for all slave devices</p> <p>1 = Digital control panel 2 = analogue control panel with 20k temperature sensor - all control panels are surface-mounted CPs with selector switch - all control panels for flush mounting 3 = analogue control panel with 10k temperature sensor - Schneider STR504</p>
17044	<p>Start operating mode</p> <p>Refers to the behaviour of the devices after restarting the controller. 1 = OFF 2 = Automatic 3 = Manual</p> <p>Only "2" is permitted here.</p>
17045	<p>Start operating type</p> <p>Refers to the behaviour of the devices after restarting the controller. 1 = Standby 2 = Unoccupied 3 = Occupied</p> <p>Default setting = 3</p>
17047	<p>Number of IO modules</p> <p>Currently only applies to X-CUBE/ROOMAIR-U-ZAS and X-CUBE/ROOMAIR-B-ZAB+SEK with 4L heat exchanger and analogue room control unit connection. In this case, the IOs on the controller are not sufficient and an additional module is required. Only then, a "1" is to be entered here.</p> <p>Default setting = 0.</p>

### 3.14 'Configuration → Functions\*+'

#### Night purge

Please note: Night ventilation must also be activated either via RTC or MCE/BACS.

Address	Name
17450	<p>Enabling Night Purge</p> <p>0 = Night Purge inactive 1 = Night Purge active</p>
17451	<p>Start month</p> <p>To define the period in which night purge may be carried out.</p>
17452	<p>End month</p> <p>To define the period in which night purge may be carried out.</p>
17453	<p>Minimum outdoor temperature</p> <p>Setting of the lower limit of the outdoor temperature.</p>
17455	<p>Stop delta outdoor temperature - room temperature</p> <p>If the difference between the outdoor temperature and the room temperature is smaller than the set value, Night Purge is terminated.</p>
17456	<p>Fan stage</p> <p>Setting of the fan stage during Night Purge. Usually stage 4.</p>
17458	<p>Minimum time for Night Purge</p> <p>Setting of the minimum duration of Night Purge. Usually 5 minutes.</p>

#### Filter monitoring

Address	Name
17494	<p>Enabling filter monitoring</p> <p>0 = No filter monitoring 1 = Filter monitoring active</p> <p>Activation of filter monitoring, regardless of whether by time or by time and pressure.</p>
17495	<p>Time monitoring of filter change interval</p> <p>Setting of the time span after which the filter change is displayed. Usually 2500 h.</p>
17496	<p>Pressure monitoring</p> <p>Affects all device types: *-HE, *-HV and *-HV-EH and must be activated. In addition, filter monitoring (4) must be set for DI10 and Normally Closed (0) must be selected as the switch type.</p>

'Configuration → Functions\*+'

Address	Name
17497	Pressure monitoring message delay Enter the duration for which the pressure monitoring must have been triggered before the message is sent. Usually 30 minutes To prevent gusts of wind from triggering the device.
17498	Limit supply air pressure monitoring Definition of the max. control voltage of the fans up to which pressure monitoring is carried out. Usually level 3
17499	Limit extract air pressure monitoring Definition of the max. control voltage of the fans up to which pressure monitoring is carried out. Usually level 3

## Priming

Address	Name
17422	Starting month for priming Determination of the months in which priming is carried out.
17423	Last month for priming Determination of the months in which priming is carried out.  Please note that priming is always (!) carried out within this period. Therefore no use, but only the temperature-controlled activation of the priming process. Default setting = 0.
17415	Minimum outdoor temperature Specifies the outdoor temperature at which the priming process is activated, i.e. priming takes place if the temperature falls below the entered value. For ventilation units with electric post-heating coil (*-EH), enter -250 and deactivate priming.
17416	Maximum priming time Setting of the duration of the priming process. Usually 3 minutes (180 sec).
17418	Heating valve setting at the end of the process The valve is set to this value after priming so that the supply air temperature setpoint value is reached more quickly.
17419	Hold time for heating valve position After the priming process, the valve is moved to the setpoint value (17418) and held for the duration of the value specified here. Regulation of the supply air temperature does not take place during this period.

Address	Name
17414	Minimum priming duration with return temperature monitoring Currently not in use.
17421	Minimum return temperature to end the priming process. Currently not in use.

## Logging

The devices permanently log all existing data. E.g. sensor values, operating status, MCE/BACS.

Address	Name
17558	Enabling logging 0 = inactive 1 = active = Default setting
17562	Number of files 31, i.e., a separate file is created for each day of the month. Thus, the last 31 days are always logged.
17559	Logging interval 20, i.e., data is written every 20 seconds. Please do not make any changes, as the resulting amount of data can be processed very well.
17561	Lines per file 4320, corresponds to logging every 20 seconds within 24 hours.
17560	Lines per write operation 10 so that the SD card is not accessed too often.

## FTP

Address	Name
17564	Enabling FTP access to the controller 1, so that the controller can be accessed via the service tool, e.g. for software updates.
16138	Enabling FTP Volume 0 = Flash memory 1 = SD card To read the data from the SD card, "1" must be entered here.
16136	Web pages 0 = Use of the web pages located on the controller 1 = Use of the web pages on the SD card.  This means that two different languages can be realised.

### 3.15 'Configuration → Alarms\*+'

Individual alarm messages can be suppressed here. No settings are necessary.

0 - The alarm is not output

1 - The alarm is output

### 3.16 'Configuration → Frost protection\*+'

#### Supply air frost protection

Address	Name
17403	Supply air frost protection start temperature Entry of the minimum supply air temperature. The frost protection function is carried out if the temperature falls below this value. Default setting = 8 °C.
17389	Duration Duration of the frost protection function caused by supply air frost. Default setting = 360 seconds.
17390	Restart frost protection delta supply air Enter the temperature at which frost protection is terminated. Default setting = 1 K.

#### Room frost protection

Address	Name
17391	Room frost protection start temperature Entry of the minimum room temperature. The frost protection function is carried out if the temperature falls below this value. Default setting = 8 °C.
17392	Duration Duration of the frost protection function caused by room frost. Default setting = 360 seconds.
17393	Restart frost protection delta room Enter the temperature at which frost protection is terminated. Default setting = 1 K.

#### Outdoor temperature Frost protection

Address	Name
17394	Outdoor temperature Frost protection Start temperature Enter the minimum outdoor air temperature. The frost protection function is carried out if the temperature falls below this value. Default setting = -20 °C.

Address	Name
17395	Duration Duration of the frost protection function caused by supply air frost. Default setting = 900 seconds.
17396	Restart frost protection delta outdoor temperature Enter the temperature at which frost protection is terminated. Default setting = 2 K.

#### Heat recovery unit frost protection

Address	Name
17397	Heat recovery unit frost protection start temperature Entry of the minimum outdoor air temperature: If the value falls below this value, the bypass is opened or the frost protection cycle is carried out (with year-round heat recovery in conjunction with plate-type heat recovery unit). Different values must be set for the different heat recovery systems: Cross-flow heat recovery unit = -6°C Cross counterflow heat recovery unit = -4°C Rotary heat recovery unit = -20°C (rotor does not produce condensate that has to be discharged!)
17399	Duration Duration of the frost protection function caused by heat recovery frost. Default setting = 360 seconds.
17398	Delta temperature close bypass Enter the temperature at which the bypass is closed. Default setting = 1 K.

'Configuration → Frost protection\*\*'

## Heat recovery Frost protection cycle

Address	Name
17409	Enabling frost protection cycle This function enables year-round heat recovery with plate heat recovery units. Please note that this function generates condensate and the devices must (!) have a condensate drain. 0 = inactive 1 = active
17410	Secondary air operating time The secondary air is used to defrost the heat recovery unit, if necessary. Default setting = 20 minutes.
17411	Outdoor air operating time Definition of the maximum duration in supply air and extract air mode until switching to secondary air. Default setting = 180 minutes (i.e. the system switches every 3 hours at the latest).

### 3.17 'Configuration → Control panel\*+'

Control panel type / Setpoint adjuster / Push-button / Selector switch The settings can be found in the following table:

Address	Honeywell, 5-stage M546FB8 *2	Thermokon, WRF04 PSTD NTC 20k 5k gn 5V SA Axx82515	Schneider STR504 M536BA4 *2	Thermokon, WRF04 PTD NTC 20k 5k gn Axx79777	Titec RTF3-NTC10k Axx59069	Thermokon, WRF06-TD-20k Axx81503	Thermokon WRF07 PTD NTC20k BTyp6 5k-gn Axx79778 Axx79779 Axx81579
	Value	Value	Value	Value	Value	Value	Value
17046 *1	2	2	3	2	3	2	2
17425	1	1	1	1	0	0	1
17434	30	30	30	30	0	30	30
17433	-30	-30	-30	-30	0	-30	-30
17436	5500	2500	5500	2500	0	2500	2500
17437	4785	3000	4785	3000	0	3000	3000
17435	100	100	100	100	0	100	100
17426	1	1	1	1	0	1	1
17427	1	1	1	1	0	1	1
17428	1	1	1	1	0	1	1
17424	1	1	0	1	0	1	1

\*1 Control panel setting via Configuration --> Device configuration --> Address 17046 \*2 no longer available

#### Times

Address	Name
17439	Run time of overtime operation Determination of the duration for overtime. Function must be activated, see address 17426 Default setting = 60 minutes
17464	Boost run time Default setting = 15 minutes
17469	Class run time Default setting = 60 minutes

#### 3.17.1 Control panel digital

Address	Name
17589	Language selection 0 = German 1 = English
17588	Air quality display 0 = inactive 1 = active

Address	Name
17598	Assessment of air quality 0 = inactive 1 = active
17583	Display limit yellow
17584	Display limit red
17585	User password 0 = inactive

'Configuration → Overall configuration\*+...

Address	Name
17586	Service password
17591	Display sleepscreen 0 = inactive 1 = active
17594	Display time 0 = inactive 1 = active
17597	Room temperature measurement 0 = inactive 1 = active
17600	Display icon labelling 0 = inactive 1 = active
17599	Display remaining run times 0 = inactive 1 = active
17592	Dimming the display Info: Display of the sleep screen after double the time
17593	Residual brightness in dimmed state

The values are already preset at the factory and can be customised for specific projects.

### 3.18 'Configuration → BACnet data points'

For project-specific naming of the data points. The entries are displayed as Object Name in the BACnet Explorer.

### 3.19 'Configuration → Options\*+'

For enabling the Modbus or BACnet interface to the MCE/BACS. Please ensure that only one(!) interface to the MCE/BACS is active at any one time if the devices are connected to an MCE/BACS. This is a chargeable option, and therefore protected against access with a separate password.

For communication via Modbus RTU or Modbus TCP:

Modbus protocol = 1

For communication via BACnet MS/TP or BACnet IP:

BACnet = 1

For communication via BACnet IP, enter address 16125

= 3, ↻ 'Settings SL1 Connection X1 Serial Bus'

on page 16

### 3.20 'Configuration → Overall configuration\*+'

After commissioning, a protocol with all settings can be generated here. Using the Print command in the browser and the selection of a \*pdf printer, a \*.pdf can be generated and given to the customer with the protocol for the commissioning.

## 4 Manual control menu

### 4.1 'Manual control → Commands'

#### Operating mode

Address	Name
10000	Operating mode 0 = No default 1 = <b>Off</b> : At Off, the device is completely off, frost protection continues to be active! 2 = <b>Auto</b> : Corresponds to normal operation 3 = <b>Manual operation</b> : For the functional test
10003	Device restart 0 = No default 1 = <b>Restart</b> : Some settings within the configuration require a restart.

#### Reset filter hours

Address	Name
10006	Reset filter operating hours 0 = No default 1 = <b>Reset</b> : The hours until the next filter change are reset to the pre-set value. ↳ <i>Configuration of functions*+ filter monitoring address 17495</i> . It does not matter whether the filter change was initiated on the basis of time or pressure.

#### Control variables of actuators

For the functional test of devices  
Requirement: Manual operation, see operating mode address 10000 = "3"

Address	Name
10012	Bypass / rotary heat exchanger Entry of 0...100 % With plate rotary heat exchangers, the percentage refers to the bypass! This means that 100% corresponds to 0% heat recovery, as 100% of the air flows through the bypass. With rotary heat exchangers, the entry refers to the heat recovery itself, i.e. 100% corresponds to max. heat recovery = highest speed.
10013	Outside damper Entry of 0 or 100 % 100% = dampers open
10015	Heating valve Entry of 0...100 % The characteristic of the valves is adjusted here: ↳ <i>address 17229 + 17230</i>

Address	Name
10016	Cooling valve Entry of 0...100 % The characteristic of the valves is adjusted here: ↳ <i>address 17239 + 17240</i>
10017	Supply air fan Entry as: Stage 0...5 or Voltage 0.6 – 10 VDC = 6...100% The fans only start up from approx. 1.7 VDC
10018	Extract air fan Entry as: Stage 0...5 or Voltage 0.6 – 10 VDC = 6...100% The fans only start up from approx. 1.7 VDC
10019	Secondary air fan Entry as: Stage 0...5 or Voltage 0.6 – 10 VDC = 6...100% The fans only start up from approx. 1.7 VDC

### 4.2 'Manual control → commands\*+'

#### Operating mode

Address	Name
10000	Operating mode 0 = No default 1 = <b>Off</b> : At Off, the device is completely off, no frost protection! 2 = <b>Auto</b> : Corresponds to normal operation 3 = <b>Manual operation</b> : For the functional test
10003	Device restart 0 = No default 1 = <b>Restart</b> : Some settings within the configuration require a restart.

#### Operating type

Address	Name
10001	Operating type 1 = <b>Standby</b> : To switch off the devices, frost protection active, no temperature maintenance. 2 = <b>Unoccupied</b> : Temperature maintenance active, no air quality 3 = <b>Occupied</b> : Temperature maintenance active, air quality active
10002	Operating type override 1 = <b>Boost</b> : Purge ventilation mode 2 = <b>Class</b> : For quiet operation 3 = <b>Night purge</b> 4 = <b>Fume cupboard switch</b>

'Manual control → commands\*+'

## Reset operating hours

Address	Name
10006	Reset filter operating hours 0 = No default 1 = <b>Reset:</b> The hours until the next filter change are reset to the pre-set value. ↳ <i>Configuration of functions*+ filter monitoring address 17495</i> . It does not matter whether the filter change was initiated on the basis of time or pressure.
10005	Reset fan operating hours 0 = No default 1 = <b>Reset:</b> Reset fan operating hours
10004	Reset device operating hours 0 = No default 1 = <b>Reset:</b> Reset device operating hours

## Control variables of actuators

For the functional test of devices

Requirement: Manual operation, see operating mode address 10000 = "3"

Address	Name
10012	Bypass / rotary heat exchanger Entry of 0...100 %  With plate rotary heat exchangers, the percentage refers to the bypass! This means that 100% corresponds to 0% heat recovery, as 100% of the air flows through the bypass. With rotary heat exchangers, the entry refers to the heat recovery itself, i.e. 100% corresponds to max. heat recovery = highest speed.
10013	Outside damper Entry of 0 or 100 % 100% = dampers open
10015	Heating valve Entry of 0...100 %  The characteristic of the valves is adjusted here: ↳ <i>Heating valve characteristic Address 17229 + 17230</i>
10016	Cooling valve Entry of 0...100 % The characteristic of the valves is adjusted here: ↳ <i>Cooling valve characteristic Address 17239 + 17240</i>
10017	Supply air fan Entry as: Stage 0...5 or Voltage 0.6 – 10 VDC = 6...100% The fans only start up from approx. 1.7 VDC

Address	Name
10018	Extract air fan Entry as: Stage 0...5 or Voltage 0.6 – 10 VDC = 6...100% The fans only start up from approx. 1.7 VDC
10019	Secondary air fan Entry as: Stage 0...5 or Voltage 0.6 – 10 VDC = 6...100% The fans only start up from approx. 1.7 VDC
10014	Secondary air damper Entry of 0 ... 100% The characteristic curve of the damper is set here: ↳ <i>Secondary air damper characteristic at AO5 Address 17237 + 17238</i> or ↳ <i>Secondary air damper characteristic at AO7 Address 17241 + 17242</i>



## 5 MCE/BACS connection menu

Display of values, only if the interfaces Modbus or BACnet are active. Display of "32767" = no MCE/BACS connection active. Description of all data points, see installation and configuration manual. BACnet: Interface is not certified. Up to and including software version 6.4, max. three slaves are supported.

From software version 7.4, a maximum of 10 slaves are supported.

### 5.1 'Connection MCE/BACS → Device => MCE/BACS'

Display of all data points sent from the device to the MCE/BACS.

### 5.2 'MCE/BACS connection → MCE/BACS => Device'

Display of all data points sent from the MCE/BACS to the devices.

With a Modbus connection, the MCE/BACS can be simulated by making entries.

If BACnet is active, the entries are directly overwritten by the BACnet-variables.

BACnet: For BACnet communication, the values coming from the MCE/BACS are written into a buffer, processed, but not deleted. For this reason, for some data points, the MCE/BACS must send an "invalid".

Subject: AV12 → flnPvOperatingTypeOverriding (specification of the operating type override) and MV1 → elnOperatingType (specification of the operating type)

## 6 Glossary

**ABL (ETA)**

Extract air

**AI**

Analogue Input

**AO**

Analog Output

**AUL (ODA)**

Outdoor air

**DI**

Digital Input

**DO**

Digital Output

**MCE/BACS**

Management and control equipment / building automation and control systems

**RGB**

Room control panel

**RTC**

Real Time Clock

**RWT**

Rotary heat exchanger

**SEK (SEC)**

Secondary air

**WRG**

Heat recovery system

**ZUL (SUP)**

Supply air

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