

Belimo ZoneEase™ VAV – Zone Control made easy!



Features and technical specifications valid for ZoneEase VAV v1.7

Content



- Facts about Belimo ZoneEase™ VAV
- Benefits & Value Add
- Application overview
- Application examples
- Ecosystem overview / Technical data
- Workflow description / Cloud interface & Excel
- Q&A

Scalable zone control: Standalone or BMS-integrated

Facts about Belimo ZoneEase™ VAV



- VAV-based zone solution (5 / 10 Nm) for IAQ (CO₂) control, room temperature control & air flow control
- Realization with supply air only / supply & extract air / supply & 2nd supply Air
- Guided commissioning with cloud and smartphone app
- Cloud-based engineering and commissioning with progress tracking
- Remote maintenance with cloud-synchronized ZoneEase VAV smartphone app
- Simple analyses of system state with smartphone app
- Standalone or BMS/DDC-integrated BACnet MS/TP or Modbus RTU zone control (configurable)
- 19 preloaded and configurable control applications. No free programming of applications.
- Direct access to VAV solution without opening the ceiling (smartphone access through room unit)
- OEM Data Protection and GDPR compliance

Benefits & Value Add

Belimo ZoneEase™ VAV

- Simple & innovative VAV-based zone control solution for temperature, IAQ, or air flow control
- All required ecosystem devices out of one hand – tested, easy to order, easy to get support
- Direct access to the VAV solution without the need to open the ceiling
- Smartphone access (NFC + smartphone app) to the Room Unit and VAV Actuator
- Standalone or BMS-integrated (BACnet MS/TP or Modbus RTU) realization
- Cloud and smartphone app based efficient commissioning with progress tracking inside cloud
- Workforce efficiency thanks to Cloud / Excel-import and smartphone-integrated workflows
- Ready to select from the 19 pre-loaded configurable control applications

Application overview

Pre-loaded configurable applications

IAQ (CO₂) and air flow control

- [08] Indoor air quality control (CO₂)
- [09] Air flow control (VAV)

Room comfort

- [02] Cooling only
- [03] Cooling or heating (changeover)
- [04] Cooling + 1-stage electric reheat
- [05] Cooling + 2-stage electric reheat
- [06] Cooling + on/off hydronic reheat
- [07] Cooling + modulating hydronic reheat

Applications with parallel fan

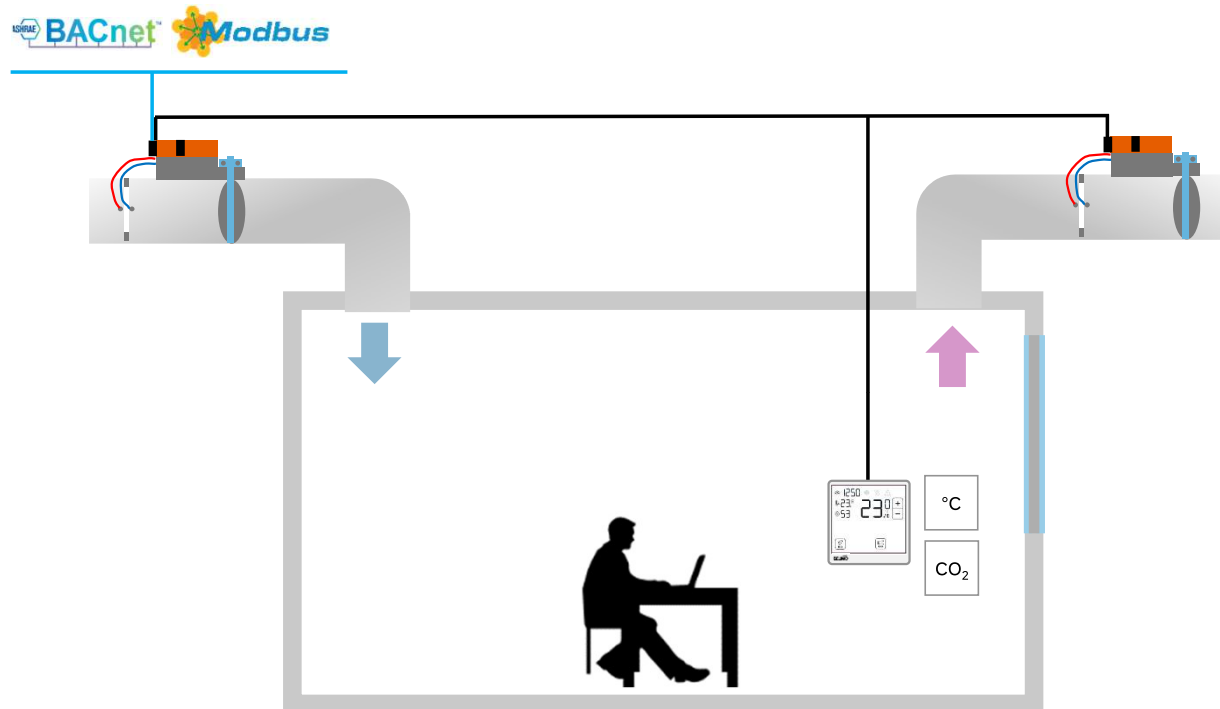
- [10] Cooling only
- [11] Cooling + 1-stage electric reheat
- [12] Cooling + 2-stage electric reheat
- [13] Cooling + on/off hydronic reheat
- [14] Cooling + modulating hydronic reheat

Applications with series fan

- [15] Cooling only
- [16] Cooling or heating (changeover)
- [17] Cooling + 1-stage electric reheat
- [18] Cooling + 2-stage electric reheat
- [19] Cooling + on/off hydronic reheat
- [20] Cooling + modulating hydronic reheat

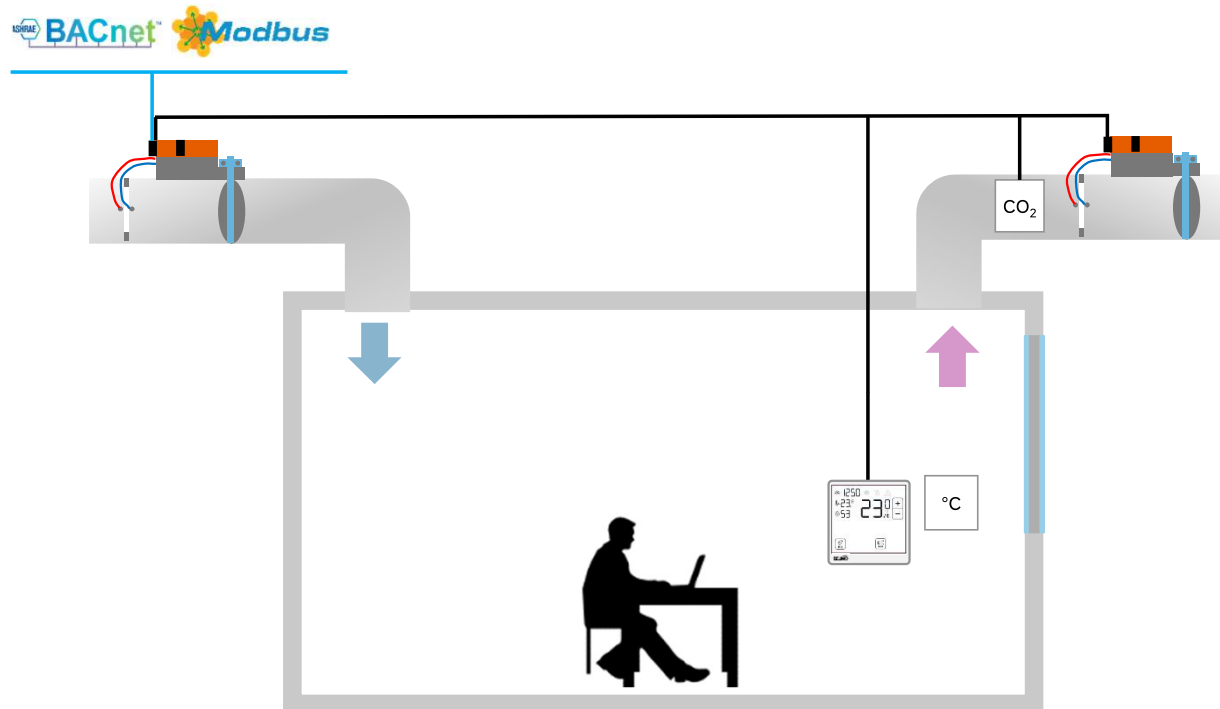
Application Example 1

[08] Indoor Air Quality Control / CO₂ measurement with room unit



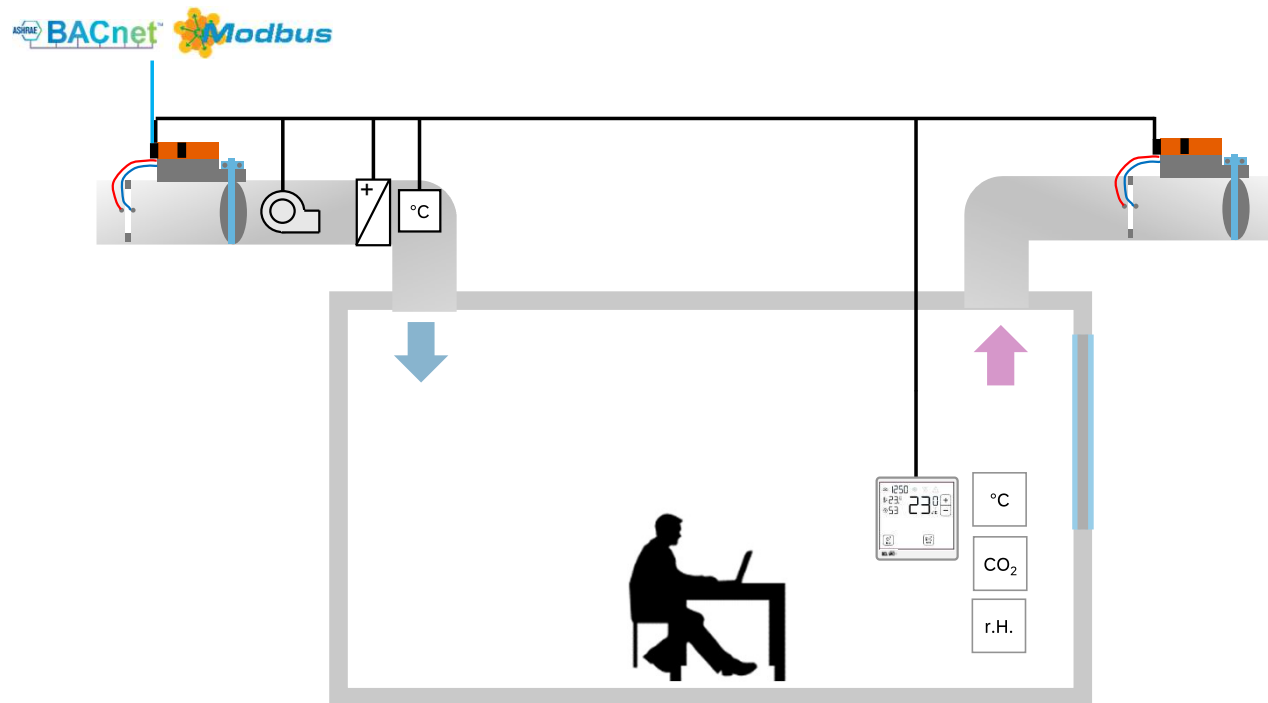
Application Example 2

[08] Indoor Air Quality Control / CO₂ measurement with duct sensor



Application Example 3

[18] Cooling / heating with series fan + modulating hydronic reheat



ZoneEase VAV Ecosystem Components

Ecosystem Overview



ZoneEase VAV Control Actuators
5 / 10Nm



Room Operating Units and
Display App



Duct Sensors (Temp. / CO₂)



Secondary VAV Controller
5 / 10 Nm



Zone Valve Actuator
(on/off or modulating)



ZoneEase VAV Ecosystem Components

Technical data actuators / sensors



LMV / NMV-BAC-001

- 5 / 10 Nm VAV control actuator
- BACnet MS/TP or Modbus RTU
- Integrated dp sensor
- Pluggable terminals
- NFC powerless / powered
- AI for external sensor (temp. or CO2)



LMV / NMV-BAC-002

- + 3 digital outputs for reheat / fan control



LMV / NMV-D3-MP-A7

- VAV-Compact for extract air or 2nd supply air control
- 5 / 10 Nm
- Application specific MP-Bus communication



CQ24A-MPL-A8

- Hot water reheat valve actuator
- Application specific MP-Bus communication



22DC11 – Duct CO2 sensor

- 0..2000 ppm measuring range
- 0-10 V output signal
- +/- 50 ppm + 3% MV



22DT-12H – Duct temperature sensor

- Pt1000 1/3 DIN
- 0-10 V output signal
- 8 selectable measurement ranges

ZoneEase VAV Ecosystem Components

Technical data Room Operating Units (ROU)



ZoneEase VAV room units with e-paper display

- Variants:
 - P-22RT-1T00D-1 – Room temperature
 - P-22RTH-1T00D-1 – Room temp. + re. humidity
 - P-22RTM-1T00D-1 – Room CO₂ + temp. + RH
- Key Features:
 - Sharp and power-saving e-paper display
 - Configurable display elements
 - Configurable access rights
 - Display color can be inverted
 - DI for presence detector or el. reheater monitoring



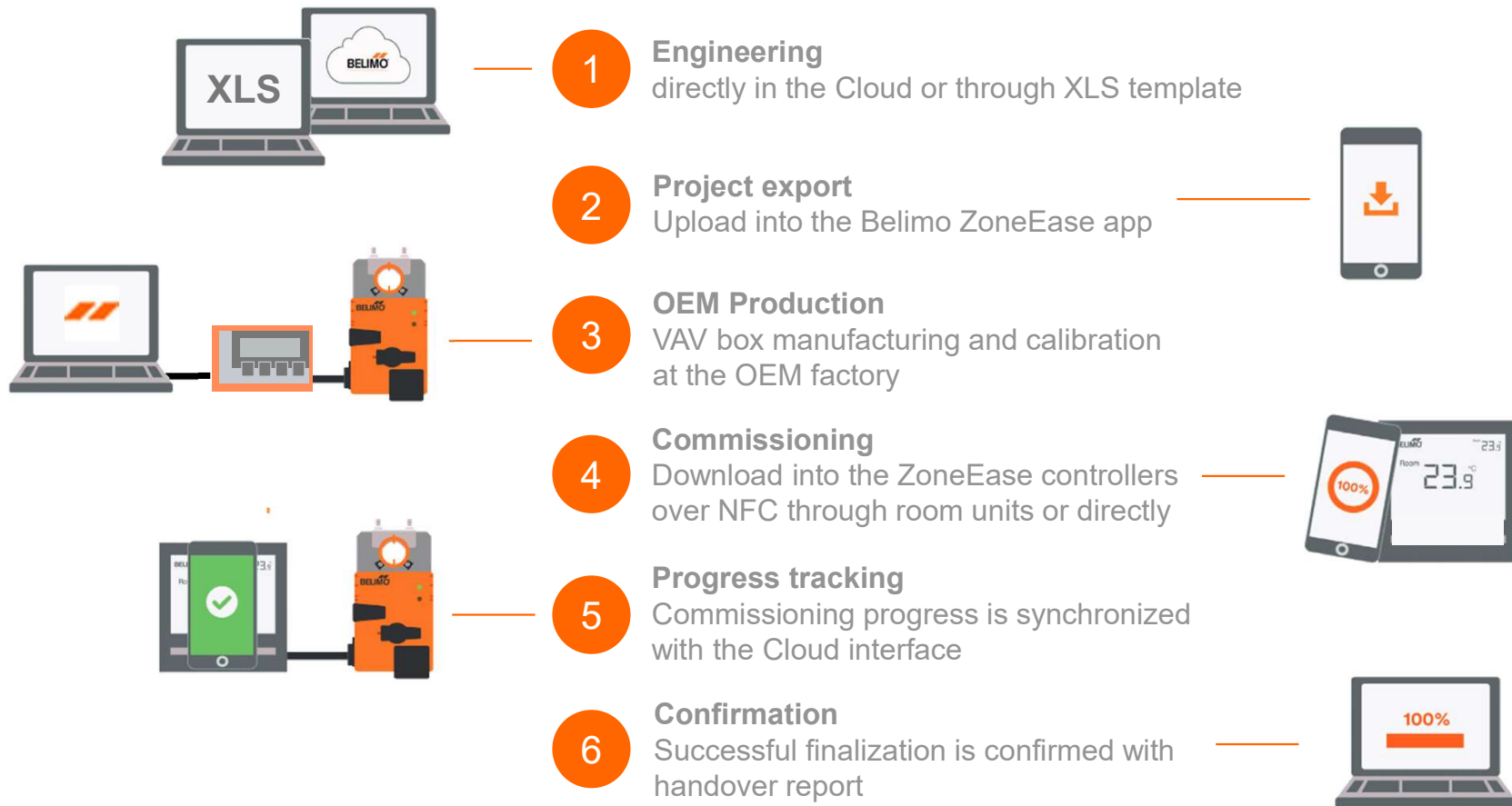
ZoneEase VAV room units with virtual display

- Variants:
 - P-22RT-1T-1 – Room temperature
 - P-22RTH-1T-1 – Room temp. + rel. humidity
 - P-22RTM-1T-1 – Room CO₂ + temp. + RH
- Key Features:
 - No physical display – tamper-proof
 - Virtual display with Belimo Display App
 - Configurable access rights
 - DI for presence detector or el. reheater monitoring



Cloud-based Engineering and Commissioning Workflow

Seamless import and export of project data



Cloud interface and Excel template

Excel and cloud project/documentation handling



BELIMO Projects Support

Projects > Project Details

Project Details

Progress **ZE-TestProject_1**

Last updated on 2/3/22, 4:15 PM

Project Settings -
Create Report

Calibration 0%
0 devices out of 9 done
9 pending Show

Download 0%
0 devices out of 9 done
9 pending Show

Commissioning 0%
0 devices out of 9 done
9 pending Show

Site Structure and Devices

Expand All Collapse All Filter... X Reset Filter

Structure	Calibration	Download	Commissioning	Last Contact	Last Contact By	Serial Number
Longus-Hinwil	🟢	🟢	🟢			
Floor 3						
R03-22-A	🟢	🟢	🟢			
R03-23-A	🟢	🟢	🟢			
R03-24-A	🟢	🟢	🟢			
R03-25-A	🟢	🟢	🟢			
Floor 4						

Edit Site Structure

BELIMO Projects Support

Projects > Project Details > Site Model Edit

Site Model Edit

Site Editor for Project: **ZE-TestProject_1**

Save Draft
Publish Draft
Discard Draft

Import From File

Collapse All

Structure	Control	Vmin [m³/h]	Vmax Cooling [m³/h]	Vmax Heating [m³/h]	Application Number	Actions
Longus-Hinwil						
Floor 3						
R03-22-A						
SUP-R-DN160	300	1'000	1'000	8, CO2		
R03-23-A						
SUP-R-DN160	300	1'000	1'000	8, CO2		
R03-24-A						

BELIMO

Building	Floor	Room	Box ID	Vmin [m³/h]	Vmax Cooling [m³/h]	Vmax Heating [m³/h]	Baudrate	Address	Instance Number	Object Name	Location	Description	BACnet Trunk No.	Application Number	Boost Mode Time [min]	Eco Mode Heating Shift [A°C]	Eco Mode Cooling Shift [A°C]	Off Mode Damper Pos	Room Unit Display	Room Unit Rights	Room Unit Logo	Setpoint Temp High Lim [°C]	Setpoint Temp Low Lim [°C]	CO2 Sensor min Limit [ppm]	CO2 Sensor max Limit [ppm]	Damper Sync Position	Power On Mode	Occupancy Sensor	Room Unit Temp. Unit	AI sensor configuration	Pressure dependence mode	Box Calibration	Values needed <i>only</i> , if boxes not factory calibrated!	PoE Settings			
D45EuDN7/1	10	zzonease_en	si	18	15	121	114	115	117	118	119	120	167	4	2	5	6	7	24	25	26	60	61	27	28	105	106	29	150	151	152	11	12	103	124	125	126
Longus-Hinwil	Floor 3	R03-22-A	SUP-R-DN160	300	1000	1000	2	2	23	R03-22-A-S	R03_S	ZoneEt	1	8	10	4	4	1	1	1	1	28	18	600	2000	1	2	10	2	150	4000	0	0	1			
Longus-Hinwil	Floor 3	R03-23-A	SUP-R-DN160	300	1000	1000	2	4	24	R03-23-A-S	R03_S	ZoneEt	1	8	10	4	4	1	1	1	1	28	18	600	2000	1	2	10	2	150	4000	0	0	1			
Longus-Hinwil	Floor 3	R03-24-A	SUP-R-DN160	300	1000	1000	2	5	25	R03-24-A-S	R03_S	ZoneEt	1	8	10	4	4	1	1	1	1	28	18	600	2000	1	2	10	2	150	4000	0	0	1			
Longus-Hinwil	Floor 3	R03-25-A	SUP-R-DN160	300	1000	1000	2	5	26	R03-25-A-S	R03_S	ZoneEt	1	8	10	4	4	1	1	1	1	28	18	600	2000	1	2	10	2	150	4000	0	0	1			
Longus-Hinwil	Floor 4	R04-22-A	SUP-R-DN160	300	1000	1000	2	6	27	R04-22-A-S	R03_S	ZoneEt	1	8	10	4	4	1	1	1	1	28	18	600	2000	1	2	10	2	150	4000	0	0	1			
Longus-Hinwil	Floor 4	R04-24-A	SUP-R-DN160	300	1000	1000	2	7	28	R04-24-A-S	R03_S	ZoneEt	1	8	10	4	4	1	1	1	1	28	18	600	2000	1	2	10	2	150	4000	0	0	1			
Longus-Hinwil	Floor 4	R04-25-A	SUP-R-DN160	300	1000	1000	2	8	29	R04-25-A-S	R03_S	ZoneEt	1	8	10	4	4	1	1	1	1	28	18	600	2000	1	2	10	2	150	4000	0	0	1			
Longus-Hinwil	Floor 4	R04-26-A	SUP-R-DN160	300	1000	1000	2	9	30	R04-26-A-S	R03_S	ZoneEt	1	8	10	4	4	1	1	1	1	28	18	600	2000	1	2	10	2	150	4000	0	0	1			
Longus-Hinwil	Floor 4	R04-27-A	SUP-R-DN160	300	1000	1000	2	10	31	R04-27-A-S	R03_S	ZoneEt	1	8	10	4	4	1	1	1	1	28	18	600	2000	1	2	10	2	150	4000	0	0	1			

Q & A

What customers often ask



Q: What types of communication are supported? Can I also use analogue control for the ZoneEase VAV system?

A: ZoneEase VAV supports BACnet MS/TP and Modbus RTU for communication to the BMS. Analogue control and feedback is not supported.

Q: Can I do supply and extract air control, or use more than one supply air VAV controller?

A: Yes, when using an additional L/NMV-D3-MP-A7, either as extract air VAV or second supply air VAV controller, which is controlled by the supervisory L/NMV-BAC-.. The ZoneEase system supports max one additional VAV controller.

Q: What types of control loops are supported? Can I also use humidity control?

A: ZoneEase VAV supports control loops for room temperature and IAQ / CO₂, which can be combined in most of the applications. If a humidity (RH) sensor is available, this signal can be used for monitoring, but not for control.

Q: Can I connect other devices than the room units or supplementary actuators to the ZoneEase MP-Bus?

A: The ZoneEase MP-Bus is an application-specific MP-Bus. Other devices than the ZoneEase Room Operating Units, a secondary VAV controller (at MP address 7) and a zone valve actuator (at MP address 8) can't be connected.

Q: What types of reheat aggregates are supported? Are there any safety functions?

A: Electrical reheat: 1-stage and 2-stage; hydronic reheat: on/off or modulating. Some safety functions are provided by the system, and some need to be enabled and configured. Using these reheat aggregates requires the use of L/NMV-BAC-002 actuators.

Q: Can I use the ZTH handheld tool with ZoneEase VAV actuators?

A: The ZTH tool can only be used as interface converter at the Belimo PC-Tool when parameterizing L/NMV-BAC-... For on-site parameterization, the ZoneEase VAV smartphone app (Android only) is used and can connect to the ZoneEase system over NFC or Bluetooth (with ZIP-BT-NFC converter).

Q: Can I configure my ZoneEase VAV project with the Belimo PC-Tool?

A: Configuration or network configuration of L/NMV-BAC-.. is only possible with the Cloud application. The PC-Tool is used for OEM calibration only.