

# Zehnder Silvertop

Installation, Service and User Manual

always the best climate



## Contents

<b>1.</b>	<b>Transport and unpacking</b>	<b>5</b>
1.1.	Checks during acceptance	5
1.2.	Unpacking	5
1.3.	Storage	5
1.4.	Disposal	5
1.5.	Transport and handling	5
<b>2.</b>	<b>Installation conditions</b>	<b>6</b>
2.1.	Space requirement	6
2.2.	Set up	7
<b>3.</b>	<b>Operating instructions</b>	<b>8</b>
3.1.	General	8
3.2.	Functional description	8
3.3.	Control mode (except SEASON)	9
3.3.1.	SEASON	9
3.3.2.	ECO	9
3.3.3.	DIVA	9
3.3.4.	LOBBY	9
3.3.5.	MAC2 (not possible with Zehnder Silvertop 06 and 08)	10
3.3.6.	QUATTRO (not possible with Zehnder Silvertop 06 - 08)	10
3.4.	Components	11
3.4.1.	SEASON	11
3.4.2.	ECO DIVA MAC2 QUATTRO	12
3.5.	Designation of the elements in the control cabinet	13
3.5.1.	ECO/DIVA/LOBBY/MAC2/QUATTRO controller	13
<b>4.</b>	<b>Electrical</b>	<b>13</b>
4.1.	Power supply	13
4.2.	Control of the SEASON model	14
4.2.1.	Remote alarms	14
4.2.2.	0-10 V external (potentiometer)	14
4.2.3.	Bypass	15
4.2.4.	Automatic defrosting	15
4.3.	Control of the ECO/DIVA/LOBBY/MAC2/QUATTRO model	16
4.3.1.	Temperature sensor	16
4.3.2.	Connection terminal block	17
4.4.	Electrical connection and operation of the plate heat exchanger	18
4.5.	Automatic defrosting	18
4.6.	Connection of the filter pressure switches	19
4.7.	Connection of the fan pressure switches	19
4.8.	Connection of the pressure transducers for LOBBY MAC2 QUATTRO	19
4.9.	Connection of the motors	20
4.10.	Connection of the CO <sub>2</sub> sensor	20
4.11.	Night Cooling (night-time boost ventilation)	20
4.12.	Hot water/cold water or changeover coil	21
4.13.	Direct expansion coil - cooling or changeover	22
4.14.	Electrical battery	22
4.15.	Defrosting coil	22
4.16.	Fire protection function	23
4.17.	Dehumidification function	23
4.18.	Connection of MODBUS/WEB/BACnet	24
4.19.	Connection of the signal amplifier	24
4.20.	LON	25

## Contents

<b>5.</b>	<b>Configuration</b>	<b>25</b>
5.1.	Control (integrated or remote) RJ9 4P4C	25
5.2.	Configuration example	26
5.3.	Standard settings (operating menus)	26
5.3.1.	Operating mode menu	27
5.3.2.	Temperature control menu	28
5.3.3.	Ventilation control menu	28
5.3.4.	Time settings menu	29
5.4.	Changing the operator parameters (password 3333 required)	30
5.4.1.	Date and time setting of the timeswitches	30
5.4.2.	Changing fan speed/pressure, low speed (PV) and high speed (GV)	30
5.4.3.	Changing the temperature setpoint	31
5.4.4.	Forced switch-on or switch-off of the unit, low level (PV) or high level (GV), via remote control	31
5.4.5.	Language selection	31
5.5.	Intermediate settings (service level)	32
5.5.1.	Configuration menu at the „Service“ access level	32
5.6.	Changing the service parameters (password 2222)	33
5.6.1.	Unit control mode	33
5.6.2.	Overventilation parameters	33
5.6.3.	CO <sub>2</sub> setpoint for DIVA QUATTRO option	33
5.7.	Administrator settings	34
5.7.1.	Configuration menu at the “Admin” access level	34
5.8.	Changing the admin parameters (password 1111)	35
5.8.1.	MODBUS	35
5.8.2.	Signal amplifier	35
5.8.3.	Internet communication	35
5.8.4.	BACnet	36
5.8.5.	LON communication (for CORRIGO with LON option)	36
5.8.6.	Activating the fire protection function	36
5.8.7.	Activating the dehumidification function	36
<b>6.</b>	<b>Troubleshooting</b>	<b>37</b>
6.1.	Error types	37
6.2.	Alarm directory	38
6.3.	Acknowledgement of the “Perform maintenance” error	40
<b>7.</b>	<b>Maintenance</b>	<b>41</b>
7.1.	Mandatory maintenance	41
7.2.	Replacing the battery	41
<b>8.</b>	<b>Annexes</b>	<b>42</b>
8.1.	Control circuit diagram	42
8.2.	Connecting the Zehnder Silvertop 06-08 motors	43
8.3.	Connecting the Zehnder Silvertop 15-52 motors	44
8.4.	Zehnder Silvertop performance graphs	45
8.5.	MODBUS and BACnet tables	47
	<b>Declaration UE of conformity</b>	<b>50</b>

## Legal regulations

All rights reserved.

This manual has been compiled with the utmost care. Nevertheless, the publisher accepts no liability for damage caused by missing or incorrect details in this operating manual. We reserve the right at any time and without prior notification to change the content of these instructions in part or as a whole.

The information contained in these documents is the property of Zehnder Group. Any form of publication, whether in whole or in part, requires the written approval of Zehnder Group. In-house duplication, designated for the evaluation of the product or for proper use, is permitted and not subject to approval.

### Zehnder manufacturer's warranty

The current device terms are available online

( <https://www.caladair.com/en/espace-client/media/sales-terms-and-conditions>).

Hardcopies can be obtained via our established sales channels..

### Trademarks

All trademarks are recognised, even if they are not separately labelled. A missing label does not mean that an article or sign is free of trademark rights.

© 2021 Zehnder Group

## Safety notes

In accordance with the regulations in force, the installation and maintenance of the unit must only be carried out by suitably qualified personnel for this type of unit and for carrying out such operations.

Use personal protective equipment to prevent damage related to electrical hazards, mechanical hazards (injuries when handling metal sheets, sharp edges, etc.), optical hazards (UVC radiation: use safety goggles according to EN170) or acoustic hazards.

Do not use the unit for any purpose other than its intended use. This unit must only be used to supply air that is free from hazardous substances.

For transporting the unit, follow the instructions in the chapter "Transport and handling".

Carry out earthing in accordance with the applicable standards. Never operate an unearthed unit.

Before any intervention, make sure that the unit is switched off and wait until all moving parts (shutters, rotary heat exchanger, fan, etc.) have come to a standstill before opening the shutters.

During operation, the inspection doors and shutters must always be fitted and closed.

The unit is switched on and off exclusively via the repair switch.

Safety and control devices must not be removed, short-circuited or put out of operation.

When working on the unit, pay attention to the temperature that certain components can reach (water coil or electric heating element, motor, etc.).

The installation must comply with fire safety regulations.

Waste must be disposed of in accordance with the applicable regulations.

We are not liable for any damage caused by improper use of the equipment, unauthorised repairs or modifications, or failure to comply with these instructions.

## 1. Transport and unpacking

The units are mounted on longitudinal beams or blocks and delivered packed in plastic film.

### 1.1. Checks during acceptance

On delivery of the equipment, check the condition of the packaging and the unit. In the event of damage, this should be documented as precisely as possible on the carrier's delivery note.

### 1.2. Unpacking

When unpacking the equipment, check that

- All packages are present,
- The intended accessories are present (coils, covers, electrical components, etc.).

After unpacking the equipment, the waste must be disposed of in accordance with the regulations in force.

No packaging may be released into the environment.

### 1.3. Storage

The equipment must be stored in a protected, dry place at a temperature between -20°C and 40°C, and the packaging must not be considered sufficient for weatherproof storage.

### 1.4. Disposal

Disposal of the unit must be carried out in an environmentally sound manner. Do not dispose of the unit with your household waste.

1. Check with the supplier for options to return the unit.
2. If the unit cannot be returned, check local regulations for options for recycling the components.
3. Do not dispose of the batteries of the wireless controls with normal household waste. These must be disposed of at specially designated disposal points.

### 1.5. Transport and handling

The units may only be transported in their installation position.

When transporting the unit with a forklift truck, make sure that the forklift truck is designed for the load capacity.

Adapt the choice for the means of transport to the weight of the delivered unit (see weight specification in the instructions).

If the unit is transported by crane, use 4 ropes of the same length. These should be at least as long as the greatest distance between 2 anchor points.

If  $L + W + H > 5$  metres, the unit must be lifted using a lifting beam.

## 2. Installation conditions

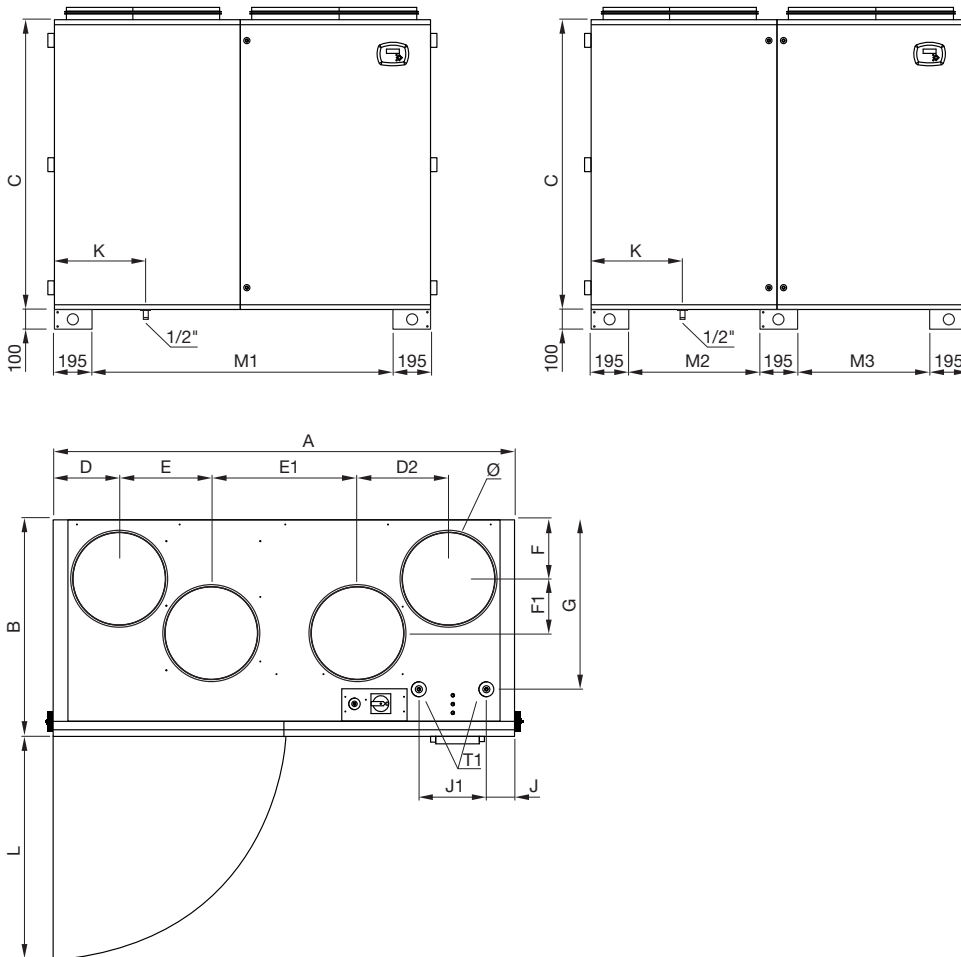
### 2.1. Space requirement

In general, it is desirable to keep a clearance of at least the dimension L for maintenance work on the access side. A siphon is required for the units. In order for the siphon to be installed, an appropriate height must be taken into account when installing the units.

G - J - J1 - T1 for water coil (PREMIUM BC / INFINITE BC)

Model	Ø	A	B	C	D	D1	D2	E	E1	E2	F	F1	G	J	J1	K	L	M1	M2	M3	T1	SEASON SMART kg	PREMIUM SMART INFINITE kg	PREMIUM INFINITE kg
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	inch			
06	200	1105	570	1040	145	-	-	225	365	225	135	150	385	75	130	265	545	720	-	-	1/2	175	180	185
08	250	1265	700	1150	170	-	-	235	415	270	160	225	485	75	180	275	625	880	-	-	1/2	250	255	260
15	15	1590	750	1200	230	-	-	315	500	315	210	190	585	100	230	435	770	1200	-	-	1/2	320	330	335
23	400	1735	1065	1340	270	-	-	330	535	330	250	420	755	100	230	440	855	1350	-	-	1/2	490	500	510
35	450	1950	1210	1495	295	-	-	340	615	405	280	515	805	100	305	475	960	-	685	685	1/2	635	650	660
52	-	2185	1520	1625	85	405	960	120	140	120	50	260	1115	100	380	525	1120	-	810	810	1	875	890	905

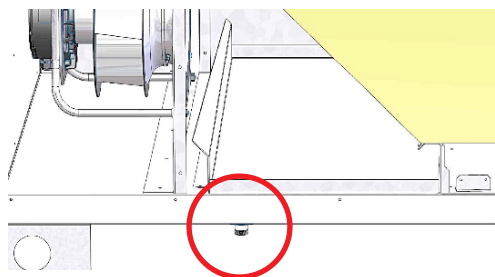
(T1 = diameter of the threaded steel gas pipe)



## 2.2. Set up

The unit must be set up on a sufficiently stable surface (if necessary, use vibration mounts).

For the air connection, the duct cross-sections are based on the dimensions of the canvas connectors, which must be properly tensioned. The ducts must be insulated if necessary, and the nearest accessory must be mounted at a distance equal to 2.5 times the diameter (T-piece, etc.). The weight of the ducts must not put a burden on the unit. Select a set-up location for the unit where the elements inside the unit cannot be damaged by weather or surrounding temperatures during installation and subsequent use.



Lift the condensate tray by hand to remove the locking screw. Then cut off the grommet at the bottom so that the drain can be positioned under the unit as shown in the illustration above. When cutting off the grommet, note that it serves as a sealing washer.

A siphon must be provided on each condensate drain.

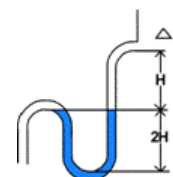
A single siphon must not be used for several drain pipes.

Note: The siphon must be connected professionally to ensure optimum condensate drainage.

The height  $H$  must at least correspond to the maximum vacuum inside the unit ( $D_p$  in mm).

Example:  $D_p = 500 \text{ Pa} = 50 \text{ mm CE}$

bei  $H > 50 \text{ mm} / 2H > 100 \text{ mm}$



### 3. Operating instructions

#### 3.1. General

The compact ventilation solutions in the Zehnder Silvertop product range are equipped with highly efficient heat recovery and are suitable for installation in various properties such as offices, schools, nurseries, shopping centres, apartment buildings, restaurants, etc. Thanks to their top-mounted duct connections, the Zehnder Silvertop ventilation units are also ideal for installation in confined spaces.

The pre-installed, pre-configured ventilation unit allows for easy plug-and-play installation, and the control unit mounted on the ventilation unit ensures easy installation, configuration and operation of the unit.

The Zehnder Silvertop product range is available in 6 sizes and with 5 different operating modes.

**SEASON:** Control of fans and bypass via potentiometer. Without connection option for a coil.

**FIRST:** Automatic control of fans and bypass. Enables control of an external changeover coil (or a non-integrated hot water coil and/or an external cold water coil). If desired, it is possible to connect an external electrical battery and an external cold water coil.

**PREMIUM BC:** Economical control of fans and bypass. Enables the control of an integrated hot water coil and an additional external cold water coil.

**PREMIUM BE:** Automatic control of fans and bypass. Enables the control of an integrated electric battery and an additional external cold water coil.

**INFINITE BC:** Automatic control of fans and bypass. Enables control of an integrated hot water battery, an integrated defrosting coil and an additional external cold water coil.

**INFINITE BE:** Automatic control of fans and bypass. Allows control of an integrated electric battery, an integrated defrosting coil and an additional external cold water coil.

**SMART:** Automatic control of fans and bypass. Allows control of an integrated defrosting coil and an external changeover coil (or an external hot water coil and/or an external cold water coil).

#### 3.2. Function description

Except SEASON model

##### Commissioning:

- The extract air fan or VAR pressure control mode starts simultaneously with the exhaust air shutter.
- The supply fan or VAS pressure control mode starts after a preset time simultaneously with the outdoor air flap.
- The temperature control starts according to the configured control mode.  
The electric heating element (if configured) is only switched on by the flow monitor.  
Pumps that have not yet been activated are switched on.
- After a preset time, the alarm evaluation is activated. The system is then in normal operation.

##### Starting conditions:

The unit switches on when one of the following conditions is met:

- The time program (timeswitch) for the normal or low fan speed is set to "On".
- The system is switched on manually via the CORRIGO controller.

One of the digital inputs for forced switching is activated.

##### Shutdown:

The unit is switched off according to the following procedure:

- Deactivation of the alarm evaluation.
- Switch off the electric heating element (if configured).
- After a certain time (which is preset separately for each fan), the fans are switched off.
- The outdoor air and exhaust air shutters are closed.
- The signals to the actuators are set to zero and the pumps are stopped.

##### Switch-off conditions:

The unit switches off when one of the following conditions is met:

- The time program (timeswitch) for the normal or low fan speed is set to "Off" and the signal for forced switch-on is also set to "Off".
- Activation of the external switch-off command.
- The system is switched off manually via the CORRIGO controller.
- Triggering an alarm with shut-off function. The system restarts automatically as soon as the alarm is acknowledged.



### 3.3. Control mode

#### 3.3.1. SEASON

1 fan speed adjustable via potentiometer.

Each fan is separately adjustable via a potentiometer integrated in the unit.

Possibility of additional remote controlled forced switch-off (standard on the power contactor (not included in the scope of delivery)).

#### 3.3.2. ECO

1 or 2 fan speeds adjustable via display / remote control / external control "VALVE MODE (%)" (fan operation in %).

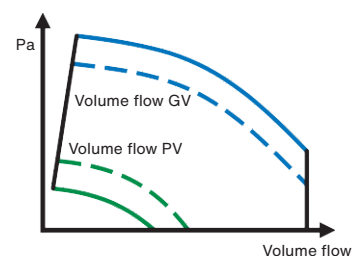
Set a minimum level (PV - 1/2) and a maximum level (GV - 1/1) in %.

Equipped with factory-fitted timeswitch for:

- High level (GV - 1/1) from 06:00 to 22:00
- Low level (PV - 1/2) from 22:00 to 06:00

Possibility of an additional external forced switching (PV - 1/2) or (GV - 1/1).

Possibility of an additional external forced shutdown).



#### 3.3.3. DIVA

Proportional control of the ventilation between two fan speeds (PV/GV) via CO<sub>2</sub> control "MODE AUTO CO<sub>2</sub>" (AUTO CO<sub>2</sub> MODE).

Set a minimum level (PV - 1/2) and a maximum level (GV - 1/1) in %.

The CO<sub>2</sub> setpoint is factory-fitted to 1000 ppm (according to EPBD).

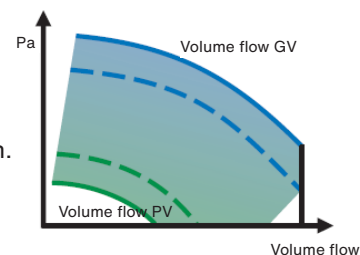
The change between (PV - 1/2) and (GV - 1/1) is made depending on the CO<sub>2</sub> concentration.

Equipped with factory-fitted timeswitch for permanent operation (PV - 1/2).

Possibility of an additional external forced switching (PV - 1/2) or

(GV - 1/1) (potential-free NO contacts).

Possibility of an additional external forced switch-off (potential-free NO contact).



**Note: In order for the CO<sub>2</sub> controller to function, the following conditions must be met for the system:**

- Timeswitch (GV - 1/1) set to 0 (not active) (normal fan speed standby function)
- Timeswitch (PV - 1/2) in operation (low fan speed standby function)
- Forced switch-on (GV - 1/1) and forced switch-off not switched on.

#### 3.3.4. LOBBY

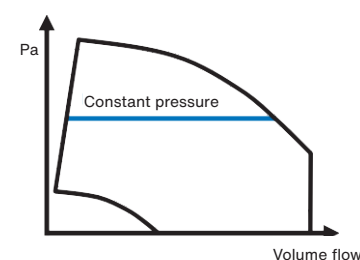
Ventilation constant pressure. (Pa) "Constant pressure operation".

Setting a constant pressure (Pa).

Equipped with factory-fitted timeswitch for permanent operation (PV - 1/2).

Possibility of an additional external forced switching (PV - 1/2).

Possibility of an additional external forced shutdown.



### 3.3.5. MAC2 (not possible with Zehnder Silvertop 06 and 08)

Choice of 1 or 2 constant discharge capacities. (m<sup>3</sup>/h) "Constant volume operation".

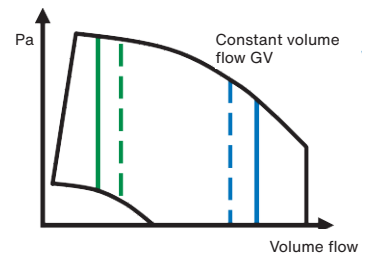
Setting of 1 or 2 constant air volumes (PV - 1/2 and GV - 1/1) (m<sup>3</sup>/h).

Equipped with factory-fitted timeswitch for:

- High level (GV - 1/1) from 06:00 to 22:00
- Low level (PV - 1/2) from 22:00 to 06:00

Possibility of an additional external forced switching (PV - 1/2) and/or (GV - 1/1) (potential-free NO contacts).

Possibility of an additional external forced switch-off (potential-free NO contacts).



### 3.3.6. QUATTRO (not possible with Zehnder Silvertop 06 - 08)

Proportional control of ventilation between 2 constant air volumes (m<sup>3</sup>/h) depending on CO<sub>2</sub>

Setting of a minimum (NS - 1/2) and a maximum air volume (GV - 1/1) (m<sup>3</sup>/h).

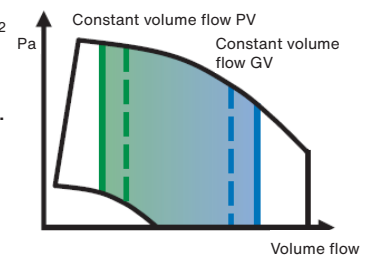
The CO<sub>2</sub> setpoint is factory-fitted to 1000 ppm (according to EPBD).

The change between (PV - 1/2) and (GV - 1/1) is made depending on the CO<sub>2</sub> concentration.

Equipped with factory-fitted timeswitch for permanent operation (PV - 1/2).

Possibility of an additional external forced switching (PV - 1/2) (potential-free NO contacts).

Possibility of an additional external forced switch-off (potential-free NO contacts).

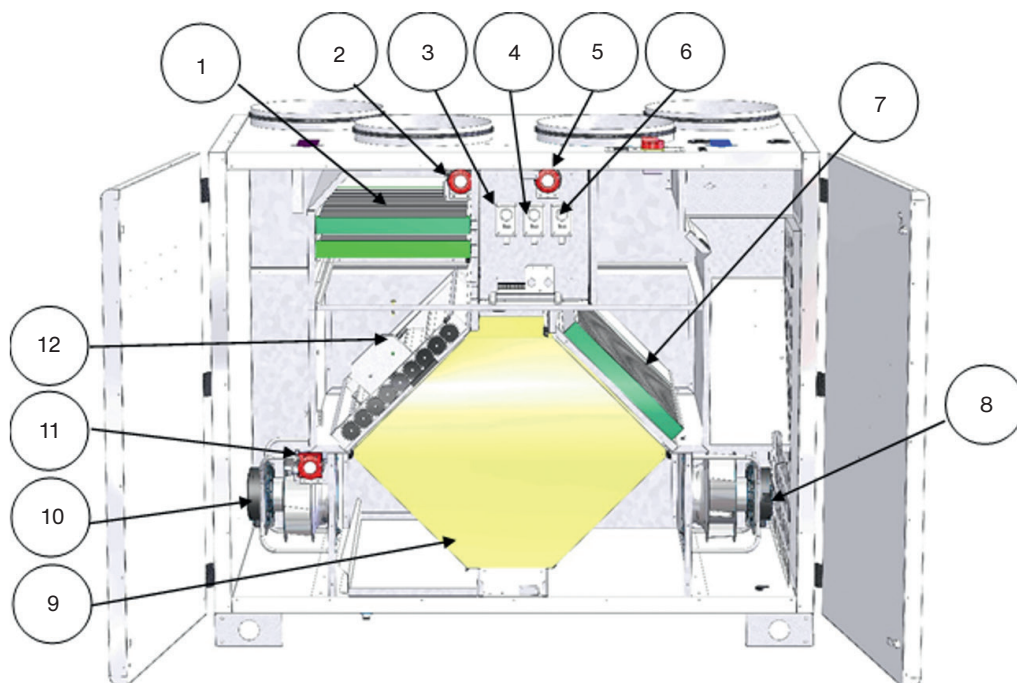


**Note: In order for the CO<sub>2</sub> controller to function, the following conditions must be met for the system:**

- Timeswitch (GV - 1/1) set to 0 (not active) (normal fan speed standby function)
- Timeswitch (PV - 1/2) in operation (low fan speed standby function)
- Forced switch-on (GV - 1/1) and forced switch-off not switched on.

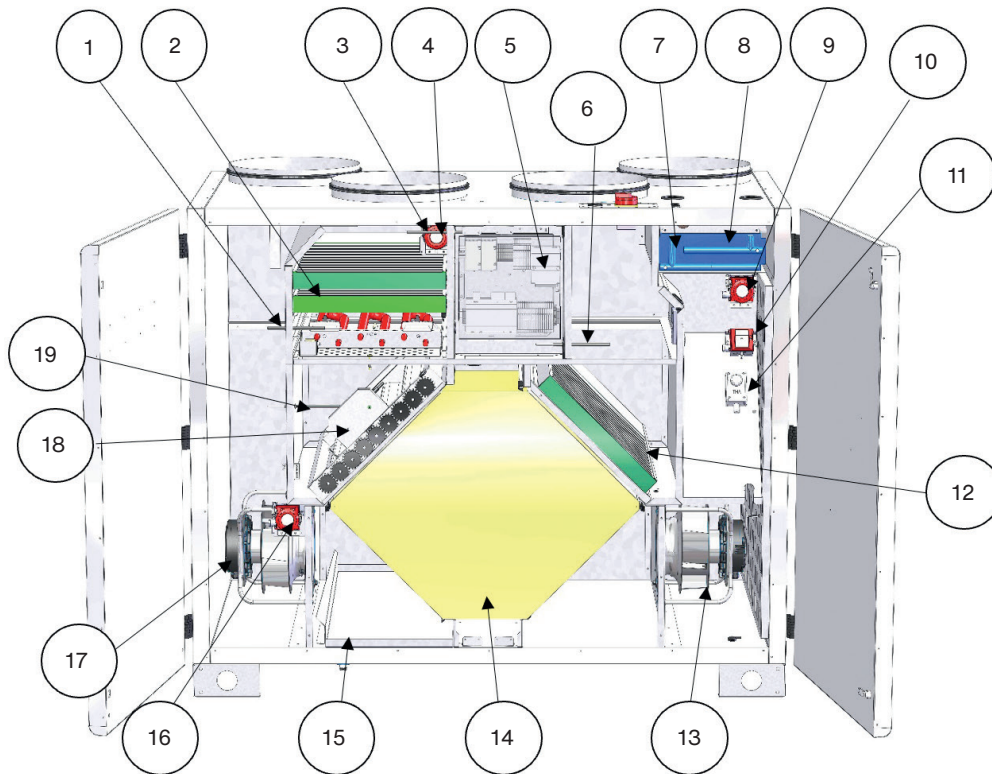
### 3.4. Components

#### 3.4.1. SEASON



Number	Description
1	Supply air filter FS
2	Filter pressure switch DEPFS
3	TH1 winter setpoint thermostat for bypass closure (+18°C)
4	TH2 summer setpoint thermostat for bypass closure (+24°C)
5	Supply air pressure switch DEPS
6	Defrost thermostat (+5°C)
7	Extract air filter FR
8	Supply fan (VAS/VS)
9	Heat exchanger + condensate tray
10	Extract air fan (VAR/VR)
11	Extract air pressure switch DEPR
12	Bypass

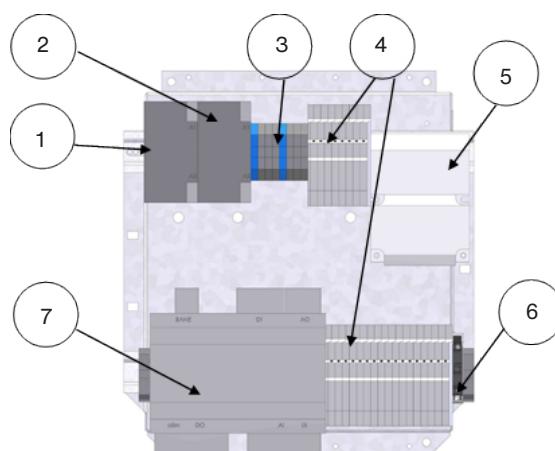
3.4.2. ECO DIVA MAC2 QUATTRO



Number	Description
1	Defrost temperature sensor SDG
2	Supply air filter FS
3	Filter pressure switch DEPFS
4	External temperature sensor SEG
5	Control board
6	Extract air temperature sensor SRG
7	Hot water coil (model BC) or electric battery (model BE)
8	Supply air temperature sensor SSG
9	Supply air pressure switch DEPS (ECO-DIVA model) Supply air pressure transducer TRPS (LOBBY model) Supply air pressure transducer TRPS (MAC2-QUATTRO model)
10	Extract air pressure transducer (TRPR) LOBBY model
11	Frost protection thermostat THA (BC model) or safety thermostat THS (BE model)
12	Extract air filter FR
13	Supply fan (VAS/VS)
14	Heat exchanger
15	Removable condensate tray
16	Extract pressure switch DEPR (ECO-DIVA model) Extract pressure transducer TRPR (MAC2-QUATTRO model)
17	Extract air fan (VAR/VR)
18	Bypass
19	Defrosting coil (SMART and INFINITE models) with THSD safety thermostat + SBD temperature sensor on defrost coil

### 3.5. Designation of the elements in the control cabinet

#### 3.5.1. ECO/DIVA/LOBBY/MAC2/QUATTRO controller



Number	Description	Description
1	K1	Electric defrosting coil contact of the electric heating battery
2	KD	Electric heating coil contact
3	Terminal block	Terminal block for the power supply to the fan
4	Terminal block	Control terminal block
5	Control unit	Control-power transformer 230/24 V
6	BFUS	Fuse terminal
7	Controller	CORRIGO controller E283W3

## 4. Electrical

### 4.1. Power supply

Model	Output Electric-motor (W)	Operating temp. (°C / °C)	Degree of protection	Thermal protection class *	FIRST, PREMIUM BC and SEASON		INFINITE BC and SMART		PREMIUM BE			INFINITE BE		
					Supply voltage (V/Ph/Hz)	Current draw (A)	Supply voltage (V/Ph/Hz)	Current draw (A)	Supply voltage (V/Ph/Hz)	Model	Current draw (A)	Supply voltage (V/Ph/Hz)	Model	Current draw (A)
06	2 x 169	-20 / 60	IP54/B	PTI	230/1/50	3.4	230/1/50	8.8	230/1/50	-	8.8	230/1/50	-	14.2
08	2 x 170	-20 / 60	IP54/B	PTI	230/1/50	4.0	230/1/50	14.8	230/1/50	-	14.8	230/1/50	-	25.7
15	2 x 480	-20 / 40	IP54/B	PTI	230/1/50	4.9	400/3+N/50	9.7	230/1/50	-	21.2	400/3+N/50	-	15.1
23	2 x 750	-20 / 40	IP54/B	PTI	230/1/50	7.2	400/3+N/50	13.0	400/3+N/50	-	13.0	400/3+N/50	-	22.8
35	2 x 1000	-20 / 50	IP54/B	PTI	400/3+N/50	3.8	400/3+N/50	21.2	400/3+N/50	-	19.0	400/3+N/50	-	36.3
52	2 x 1700	-20 / 40	IP54/B	PTI	400/3+N/50	5.8	400/3+N/50	27.4	400/3+N/50	-	23.1	400/3+N/50	-	44.7

\* PTI: Integrated thermal protection

### 4.2. Control of the SEASON model

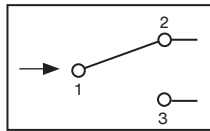
The components are connected at the factory (see chapter “Complete circuit diagram”).

#### 4.2.1. Remote alarms

A remote alarm can be connected directly to the following pressure switches:

- DEPS = supply air pressure switch (NO contact available on terminal block (terminals 25-26))
- DEPR = extract air pressure switch
- DEPFS = filter pressure switch

- 1 Supply line (COM)
- 2 Normally closed contact (NC)
- 3 Normally open contact (NO)

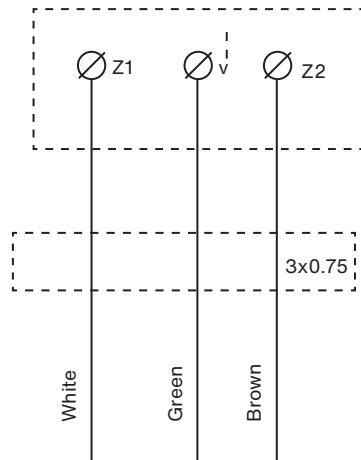


Attention: max. 5 A / 230 VAC and max. 4 A / 24 VDC

#### 4.2.2. 0-10 V external (potentiometer)

The fan potentiometers are connected at the factory. There is the option of replacing them with remote potentiometers or external 0-10 V potentiometers. To connect an external element, disconnect the cables on the back of the potentiometers and connect it directly to these cables.

Current connection



- White = 0 V = Z1
- Green = 0-10 V = to
- Braun = +10 V = Z2

### 4.2.3. Bypass

The thermostats are set at the factory:

TH1 = outdoor temperature for heat recovery via heat exchanger (factory setting 18°C)

TH2 = outdoor temperature for cold recovery via heat exchanger (factory setting 24°C)

The heat exchanger bypass is connected at the factory (see circuit diagram chapter IV.2).

Its operation is automatic via two thermostats:

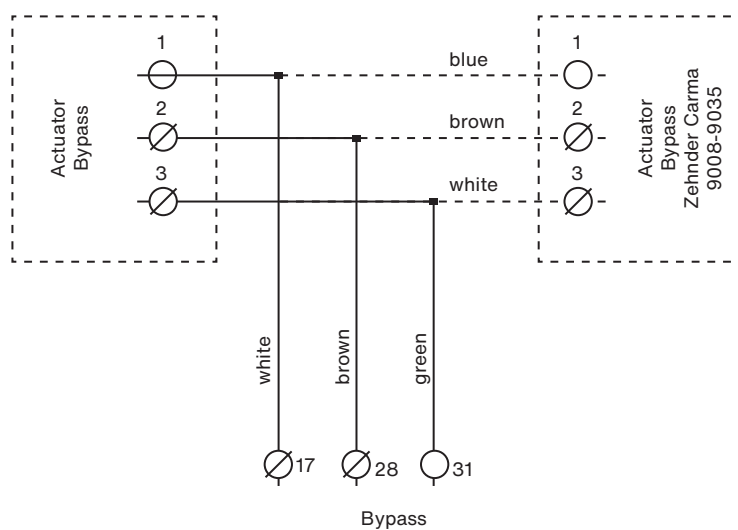
#### In winter:

When the outdoor temperature drops below 18°C (adjustable), the bypass closes and allows maximum heat recovery.

#### In summer:

Cold recovery: When the outdoor temperature rises above 24°C (adjustable), the bypass closes and enables maximum cold recovery.

FREE COOLING: When the temperature is between 24°C and 18°C (adjustable), the bypass is open so that the outdoor air can flow in directly.



### 4.2.4. Automatic defrosting

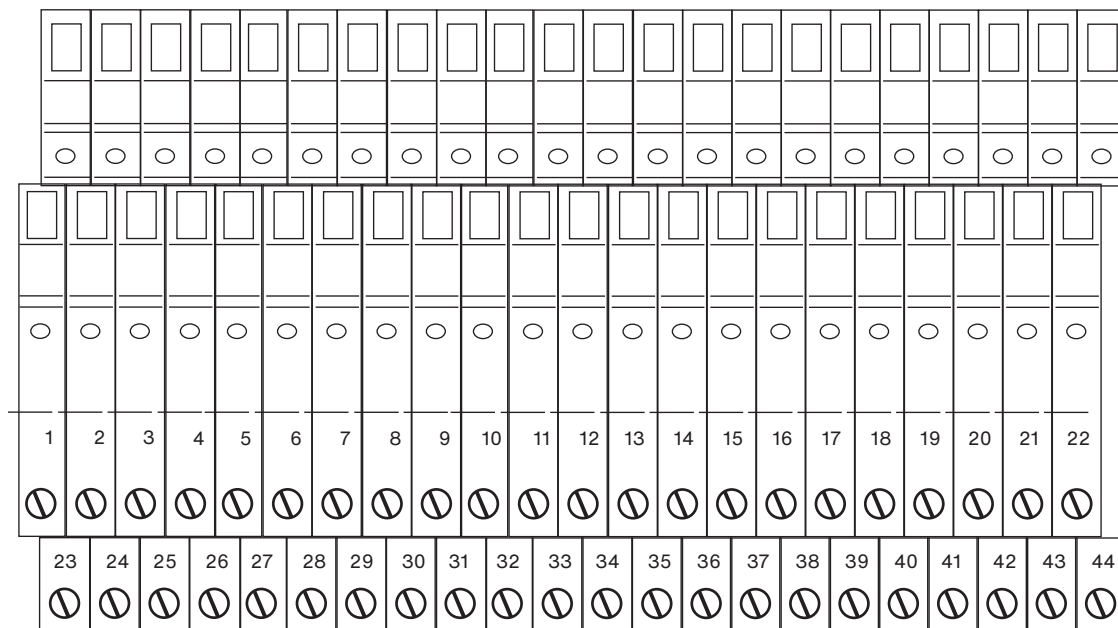
Defrosting takes place by opening the bypass as soon as the defrosting temperature (SDG) falls below 5°C (thermostat installed at the outlet). As soon as the temperature rises above +5°C again, the bypass closes.

### 4.3. Control of the ECO/DIVA/LOBBY/MAC2/QUATTRO models

#### 4.3.1. Temperature sensor

The temperature sensors are connected directly to the controller.

- SSG: Supply air temperature sensor on AGND(30) and AI1(31)
- SEG: External temperature sensor on AGND(30) and AI2(32)
- SDG: Defrost temperature sensor on AGND(33) and AI3(34)
- SRG: Extract air temperature sensor on AGND(33) and AI4(35)
- SBD: Defrosting element temperature sensor on AGND(40) and UI1(41) on SMART and INFINITE models (replaced by 1030 ohm resistor on other models)





### 4.3.2. Connection terminal block

See chapter 3.5 pages 14 and 15.

Description	Terminals	Connection
<b>ADP (bypass when not in use)</b>	1-2	Connection to the terminals of an NC contact of the fire alarm remote switch-off
<b>DAD (bypass when not in use)</b>	3-4	Connection to the fault contact DAD
<b>THA / THS (bypass if not used)</b>	5-6	Connection to the NC contact of the THA (PREMIUM BC and INFINITE BC) or Connection to the NC contact of the THS (PREMIUM BE and INFINITE BE)
<b>ED-TOUCH</b>	7-8 + A*-B* (Port2)	Connection to external touch screen
<b>MF PV</b>	9-10	Connection to the external potential-free NO contact of the forced switch-on low fan speed
<b>MF GV</b>	11-12	Connection to the external potential-free NO contact of the forced switch-on high fan speed
<b>ARR EXT</b>	13-14	Connection to the external potential-free NO contact of the external forced switch-off
<b>BC</b>	15-16-17	BC: Connection to the three-way valve of the hot water coil (see chapter IV.12)
<b>BE</b>	18 + DO3**	BE: Connection to the relay of the electrical battery (see chapter IV.14)
<b>Heat pump</b>	18 + DO3**	Connection to the function ON/OFF button of the hot water circulation pump (Attention: max. 24 V 2 A via relay) (see chapter IV.12)
<b>Cold pump</b>	19 + DO4**	Connection to the function ON/OFF button of the cold water circulation pump (Attention: max. 24 V 2 A via relay)** (see chapter IV.12)
<b>AL</b>	20 + DO5**	24 V output available if unit fails (Attention: maximum 24 V 2 A via relay)
<b>DBE</b>	21 + DO6**	Connection to the terminals of the defrosting coil relay (see chapter IV.15)
<b>NC (Night Cooling) (LOBBY)</b>	22 + DO7**	24 V output available when the unit is connected with the LOBBY EC option to open the shutters in the Night Cooling phase. (Attention: maximum 24 V 2 A via relay)
<b>TRPS (LOBBY MAC2 QUATTRO)</b>	23 AGND* + UI2*	Connection to the supply air pressure transducer (see chapter IV.9)
<b>DEPS (ECO DIVA)</b>	24 + UI2*	Connection to terminals 1 and 3 of the supply pressure switch (see chapter IV.7)
<b>TRPR (LOBBY MAC2 QUATTRO)</b>	25 AGND* + UI3*	Connection to the extract air pressure transducer (see chapter IV.8)
<b>DEPR (ECO DIVA)</b>	26 + UI3*	Connection to terminals 1 and 3 of the extract air pressure switch (see chapter IV.7)
<b>CO<sub>2</sub> (DIVA)</b>	27 AGND* UI4*	Connection to the CO <sub>2</sub> sensor (see chapter IV.10) For DIVA option
<b>BF</b>	28-29-30	BF: Connection to the three-way valve of the cold water coil (see chapter IV.12)
<b>DEPFS DEPFR</b>	31-32 33-34	Connection to terminals 1 and 3 of the supply air filter pressure switch (see chapter IV.6) Connection to terminals 1 and 3 of the extract air filter pressure switch (see chapter IV.6)
<b>RMS</b>	35 + DO1**	Connection to terminals 1 and 2 of the outdoor air flap
<b>RMR</b>	36 + DO2**	Connection to terminals 1 and 2 of the outdoor air flap
<b>BIM</b>	37-38-39	Connection to the valve actuator of the motorised bypass (see chapter IV.4)
<b>0-10V S</b>	40-41	Connection to the supply fan (see chapter "Annexes")
<b>0-10V R</b>	42-43	Connection to the extract air fan (see chapter "Annexes")

\* Connection directly to the CORRIGO controller

\*\* Connection directly to the CORRIGO controller and a maximum of 8 A to all DO

**4.4. General**

The heat exchanger bypass is connected at the factory.

Its operation is automatically controlled via the programming of the CORRIGO controller and via the sensors installed as standard in our units.

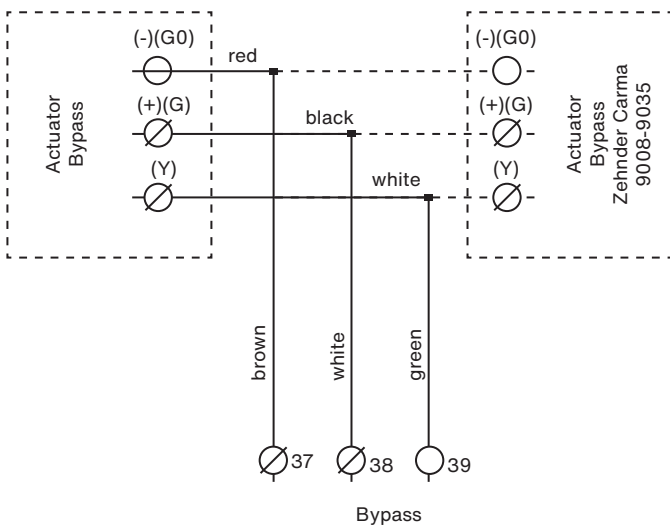
**In winter:**

When heating is required, the bypass closes gradually until it is completely closed to ensure maximum heat recovery. If this is not sufficient to reach the setpoint temperature, the heating coil is used.

**In summer:**

**Cold recovery:** When the outdoor temperature is higher than the indoor temperature and cooling is required, the bypass closes gradually until it is completely closed to ensure maximum cold recovery. If this is not sufficient to reach the setpoint temperature, the cooling coil is used.

**FREE COOLING:** If the outdoor temperature is below the room temperature and there is a need for cooling, the bypass opens gradually until it is completely open and fresh outdoor air can be fed into the interior of the building cost-neutrally. If this is not sufficient to reach the setpoint temperature, the cooling coil is used.



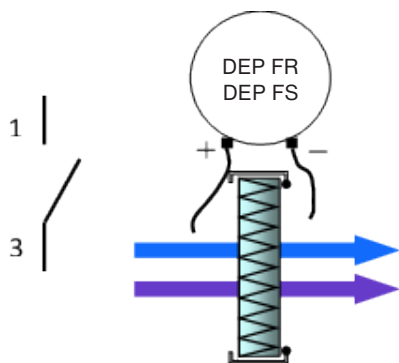
**4.5. Automatic defrosting**

This function, which cannot be regulated, is automatically controlled via the programming of the CORRIGO controller and via the sensors installed as standard in our ventilation units. Defrosting starts by opening the bypass as soon as the defrosting temperature (SDG) falls below 5°C (temperature sensor installed at the outlet). If the bypass is not sufficient to defrost the heat exchanger (at outdoor temperatures below -10°C), the supply fan adjusts its flow rate to maintain the temperature at the defrost sensor at 5°C.

**On the SMART INFINITE BE and INFINITE BC/CO models,** the defrosting coil is mounted on the fresh air supply upstream of the plate heat exchanger. It regulates the heat exchanger to an inlet temperature of -5°C. This eliminates the risk of ice formation and keeps the bypass closed as much as possible. This ensures a maximum level of efficiency of the system. If the defrosting coil is not sufficient to defrost the heat exchanger, the modulation function of the bypass and then the fan are used as described above.

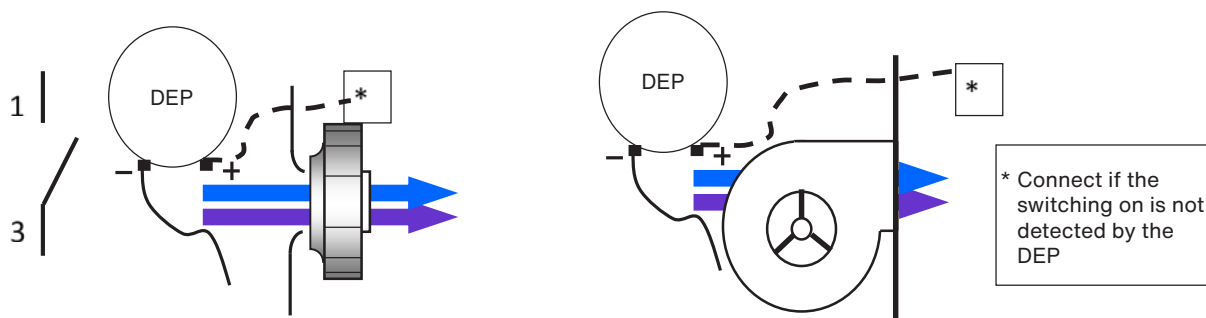
#### 4.6. Connection of the filter pressure switches

The supply air filter pressure switch is wired and connected at the factory.

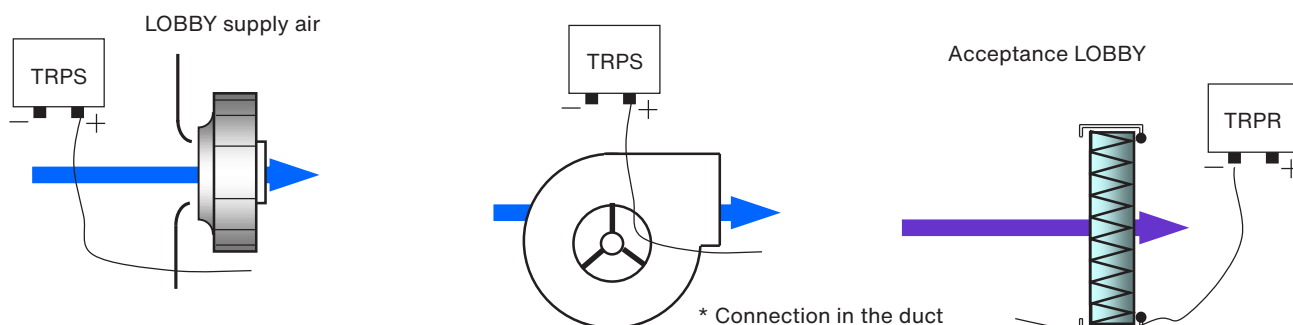
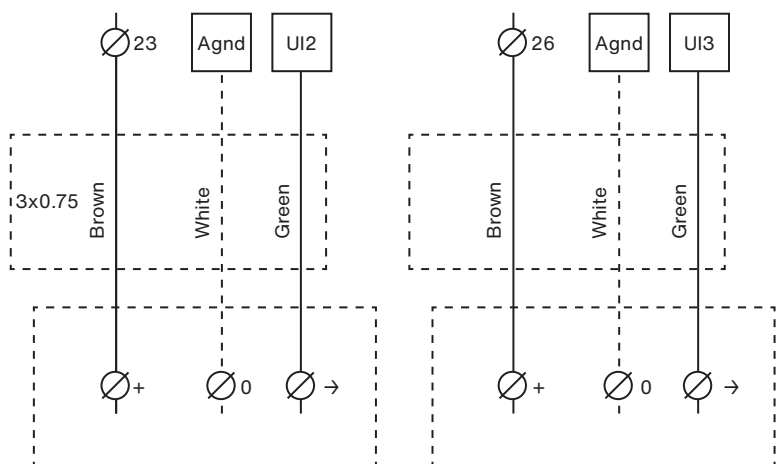


#### 4.7. Connection of the fan pressure switches

The fan pressure switches are factory-wired and connected for ventilation.



#### 4.8. Connection of the pressure transducers for LOBBY, MAC2, QUATTRO

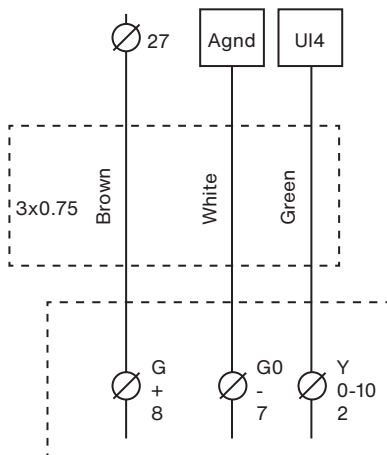


#### 4.9. Connection of the motors

See chapter “Annexes”

#### 4.10. Connection of the CO<sub>2</sub> sensor

The CO<sub>2</sub> sensor is wired at the factory (DIVA/QUATTRO option).



#### 4.11. Night Cooling (night-time boost ventilation)

This function is used in summer to cool buildings at night with the help of fresh outdoor air. This means that less cooling power has to be provided during the day. The Night Cooling function is only available from 00:00 to 07:00. In the Night Cooling phase, the heating and cooling coils are blocked at 0 V. The heat exchanger switches to fresh air. At the end of a Night Cooling phase, the heating is blocked for 60 minutes at 0 V. Operating conditions configurable according to chapter V.5.b.2

- The outdoor temperature was above 22°C during the day.
- The timeswitches are set either to PV or to switch off between 00:00 and 07:00.
- The outdoor temperature is below 18°C during the Night Cooling phase.
- The outdoor temperature is above 10°C during the Night Cooling phase.
- The room temperature is higher than 18°C.

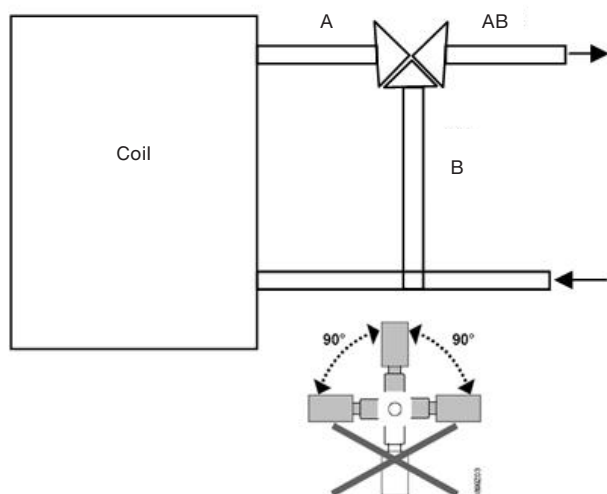
In the Night Cooling phase, the fans run at 85%. This fan speed is adjustable (see chapter V.5.a).

In the LOBBY model, a 24 V output (connection via relay) is available between terminals 22 and DO7 for forced opening of the volume flow controllers in the night cooling phase.

#### 4.12. Hot water/cold water or changeover coils

For PREMIUM BC and INFINITE BC or FIRST units with changeover or cooling module, a condensate drain via siphon must be provided. Make sure that the inspection doors (pipes, cables, etc.) can be opened unimpeded.

The coil is already installed in the unit and the frost protection thermostat is connected. However, the 3-way valve still has to be wired. If you use a cooling or changeover coil, move the supply air sensor behind the coil.



Disconnect the unit from the mains before connecting the valve

Connect the valve actuator of the 3-way valve as follows:

##### Heating coil:

Terminal **15** at +24 V (G) of the valve actuator

Terminal **16** at 0 V (G0) of the valve actuator

Terminal **17** at 10 V (Y) of the valve actuator

Connect the NC contact (C and 2) of the antifreeze thermostat **THA** to 5 and 6.

Possibility of connecting the hot water circulation pump to the unit via terminals **DO3 of the controller and 18 of the terminal block**. (Note: Connection 24 V output via relay)

##### Cooling coil:

Terminal **28** at +24 V (G) of the valve actuator

Terminal **29** at 0 V (G0) of the valve actuator

Terminal **30** at 10 V (Y) of the valve actuator

Connect the NC contact (C and 2) of the antifreeze thermostat **THA** to 5 and 6.

Possibility of connecting the cold water circulation pump to the unit via terminals **DO4 of the controller and 19 of the terminal block**. (Note: Connection 24 V output via relay)

##### Changeover coil:

The changeover valve must be installed upstream of the mixer in the flow.

The 3-way valve and the change-over valve must be wired.

Connect the assembly as follows:

Red cable of the changeover valve (CO) to 10 V (Y) of the valve actuator

Terminal **15** at +24 V (G) of the valve actuator

Terminal **16** at 0 V (G0) of the valve actuator

Terminal **17** to the brown cable of the change-over valve (heating signal)

Terminal **30** to the black cable of the change-over valve (cooling signal)

Connect the NC contact (C and 2) of the antifreeze thermostat **THA** to 5 and 6.

Possibility of connecting the circulation pump to the terminals **DO3 of the controller and 18 of the terminal block** (heating requirement) and to the terminals **DO4 of the controller and 19 of the terminal block** (cooling demand). (Note: Connection 24 V output via relay)

**NOTE: In this case, use a relay for each output and wire it in parallel with the relay of the circulation pump.**

**4.13. Coil for direct evaporation - cooling or changeover**

On units with DX coil, the additional module is equipped with a condensate tray.  
 A condensate drain via a siphon must be provided.

The following is provided:

- a 24 V output when heating or cooling is required
- a 0-10 V heating output and a 0-10 V cooling output.

**Heating requirement:**

- 24 V output: Connection to terminals DO3 of the controller and 18 of the terminal block so that a start command can be sent to control a DX module (caution: maximum 24 V/2 A via relay).
- 0-10 V output: Connection to terminals 16 and 17 (16 = 0 V and 17 = 0/10 V)

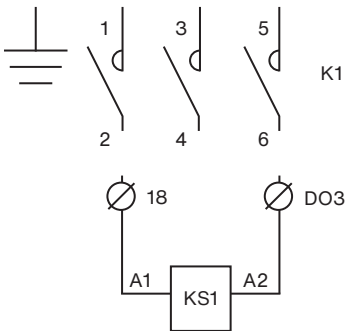
**Cooling requirement:**

- 24 V output: Connection to terminals DO4 of the controller and 19 of the terminal block so that a start command can be sent to control a DX module (caution: maximum 24 V/2 A via relay).
- 0-10 V output: Connection to terminals 29 and 30 (29 = 0 V and 30 = 0/10 V)

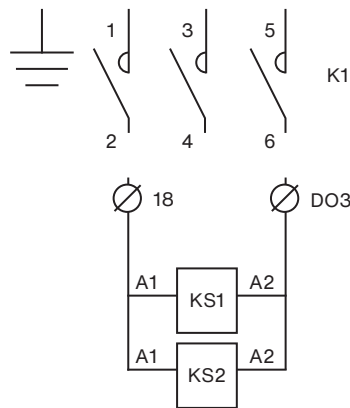
**NOTE:** When assigning the 24 V outputs, use one relay for each output and wire it in parallel with the relay of the DX unit.

**NOTE:** Under no circumstances do the start commands with 24 V and 0-10 V control safety, short-circuit protection, etc. of the direct evaporation.

**4.14. Electrical battery**

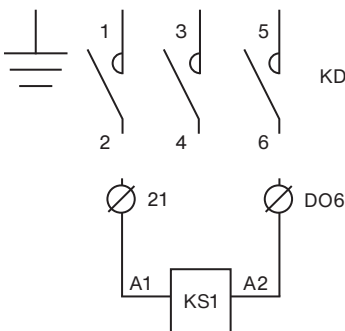


Zehnder Silvertop 06 - 08  
 Zehnder Silvertop 15 PREMIUM BE

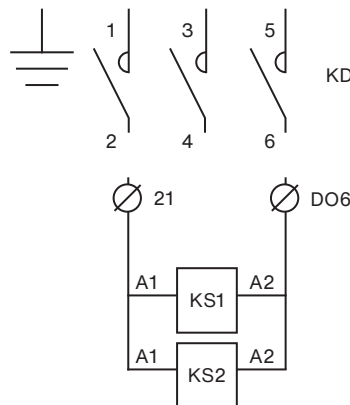


Zehnder Silvertop 15 INFINITE  
 Zehnder Silvertop 23 - 52

**4.15. Defrosting battery**



Zehnder Silvertop 06 - 08



Zehnder Silvertop 15 - 52

#### 4.16. Fire protection function

See configuration in chapter V.8

The fire protection function can be controlled in 2 ways:

- Switch-off by the fire alarm contact: Connection between terminals 1 and 2 (potential-free NC contact). Complete switch-off of the unit control. (indicator no longer available)
- Fire alarm: This function allows control of the supply and extract fans according to 5 operating modes available in the control parameters (function can be activated locally). In this case, an alarm is displayed on the “Fire alarm” page.
  1. “Stop”: Complete switch-off of the unit
  2. “Permanent operation”: Commissioning or operation of the unit on GV. The fire protection function has priority over all other alarms.
  3. “Normal operation”: Operation of the unit depending on the configuration at the place of use (Stop/PV/GV).
  4. “Supply fan only”: Commissioning or operation of the supply fan on GV (extract air off)
  5. “Extract fan only”: Commissioning or operation of the extract fan on GV (supply air off).

The digital input “Stop ext.” has priority over the fire protection function.



**This function is not suitable for the French market and must in any case be validated by an inspection body.**

The digital input for the fire alarm must be connected between terminals DI8 of the controller and 13 of the terminal block (potential-free contact required).

#### 4.17. Dehumidification function

See configuration in chapter V.8

The unit can be coupled to a COMBIBOX CONCEPT module equipped with a cooling coil (water or DX cold only) followed by a heating element/coil (water, electric or DX hot). In this case, the supply of the amount of warm or cold air required for dehumidification is automatically adjusted via the controller, while maintaining the optimum operating temperature. Within the period with cooling demand, temperature control is prioritised over the dehumidification.

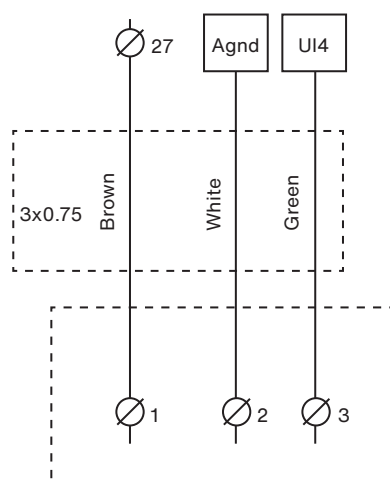


**The function is not available in DIVA/QUATTRO mode.**

Connect the elements/coil according to the instructions in chapters IV.12 and IV.14.

Position the humidity sensor on the supply or extract air duct, depending on the type of humidity control. For room humidity control for an extract air unit without recovery, a room humidity sensor must be positioned in your building. This must be installed in a neutral location (without interference from external influences).

Connect the humidity sensor as follows:



**4.18. Connection of MODBUS, WEB, BACnet**

(see configuration in chapter V.8)

MODBUS RS485 and BACnet MS/TP: Use a shielded twisted pair cable of the type BELDEN 8723 or equivalent to connect the BMS to the controller (connect to port 1 (BANE) / connect shield to N and do not connect E).

WEB / MODBUS TCP/IP and BACnet IP: Connection to the TCP/IP port

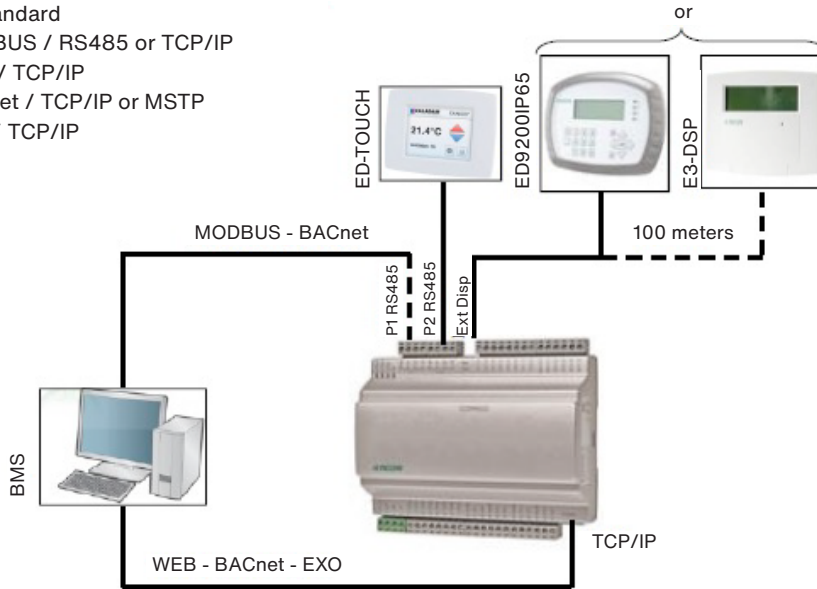
BMS: en standard

MODBUS / RS485 or TCP/IP

WEB / TCP/IP

BACnet / TCP/IP or MSTP

EXO / TCP/IP



**4.19. Connection of the signal amplifier**

(see configuration in chapter V.8)

**A signal amplifier is required in the following cases:**

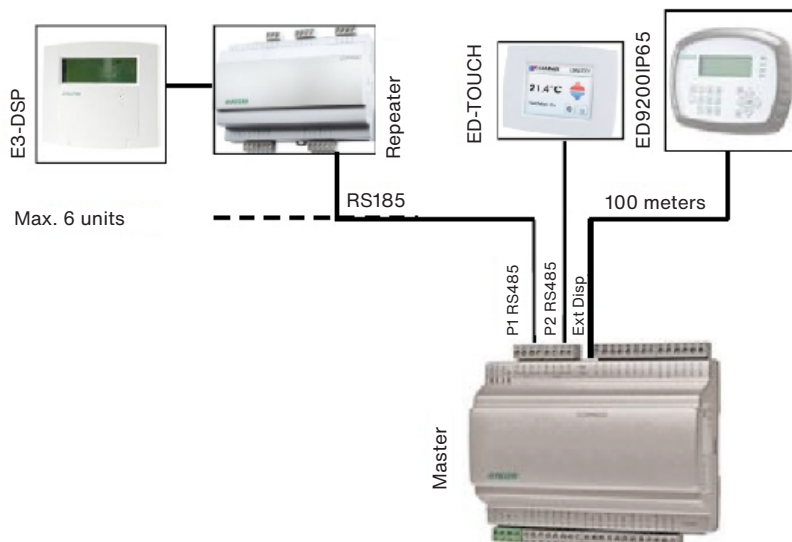
- Connecting more than one unit (maximum 6) to one screen
- Use of a remote control from a distance of more than 100 m

In this case, the remote control works from a distance of up to 1 km. For wiring, use a shielded twisted pair cable of the type BELDEN 8723 or equivalent between the signal amplifier and the controller. Wire the single-phase 230 V power supply.

**Connect the wires to port 1 as follows:**

- B of the signal amplifier to terminal B of the controller (core of the shielded cable as in the illustration below)
- A of the signal amplifier to terminal A of the controller (core of the shielded cable as in the illustration below)
- N of the signal amplifier to terminal N of the controller (shielding of the shielded cable as in the illustration below)

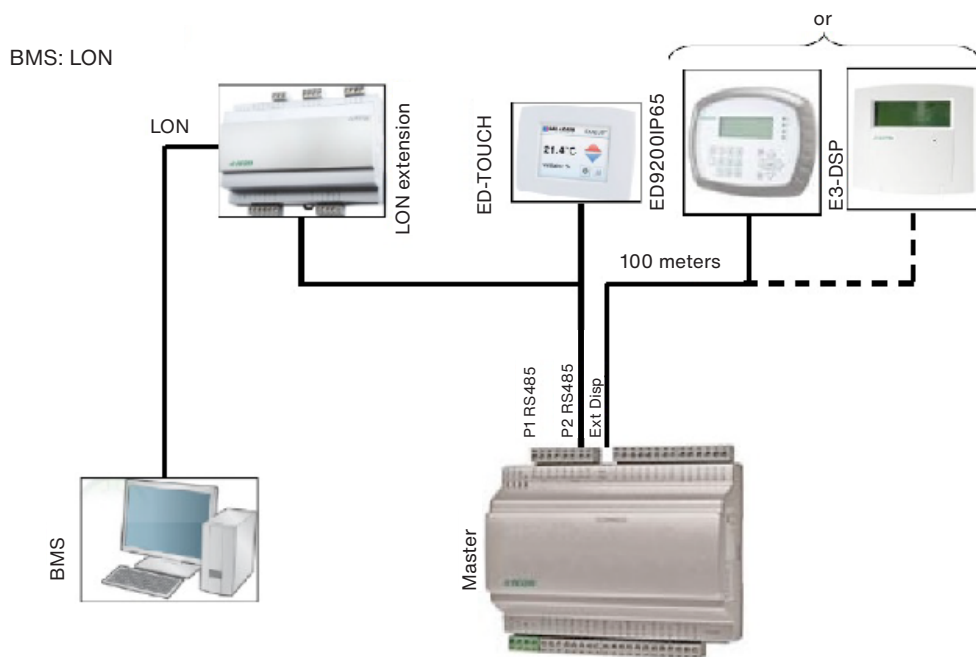
**A single-phase 230 V power supply must be provided at the signal amplifier.**





### 4.20. LON

(see configuration in chapter V.8) port 2 of the master with port 1 of the LON controller.



## 5. Configuration

### 5.1. Control (integrated or remote control)

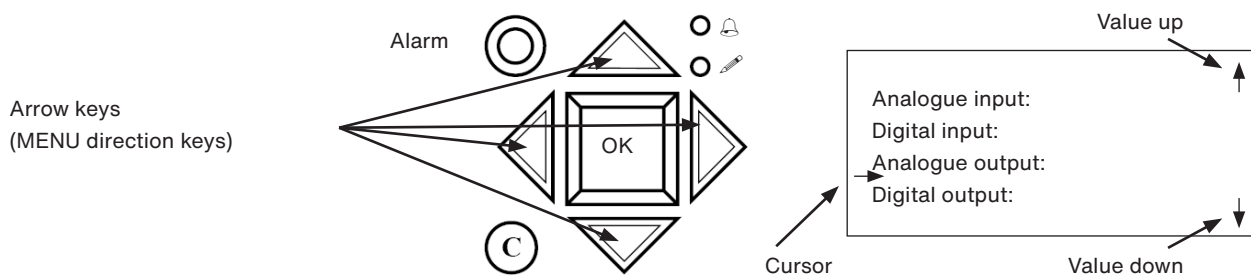
The display has four lines of twenty characters each and is backlit. This lighting is not permanently switched on, but is activated by pressing a key. The lighting switches off again after a certain period of inactivity.

There are two LEDs on the front panel:

The alarm LED, represented by the bell symbol. 🔔

The input LED, represented by the pen symbol. ✎

- Fast flashing = value can be edited
- Slow flashing = A password must be entered to edit a value
  - Use the up, down, left and right arrow keys to navigate through the menus.
  - The up and down arrow keys can be used to increase or decrease the value of a parameter at the respective access level, while the right and left arrow keys are used to navigate within a parameter value.
  - Press the OK key to confirm the entry or a selection; press the C key to delete it.
  - The alarm key (red) gives access to the error list.
  - Use the arrow key pointing to the left to exit the alarm menu and return to the main menu.
  - The cursor shows you which movements are possible and which arrow keys are to be pressed.



### 5.2. Configuration example

- Use the cursor to open the desired menu

When this menu opens:

Time: E.g.: **10:33**  
Date: E.g.: **08/12/23 (year/month/day)**  
Day: E.g.: **Tuesday**

Press the OK key.

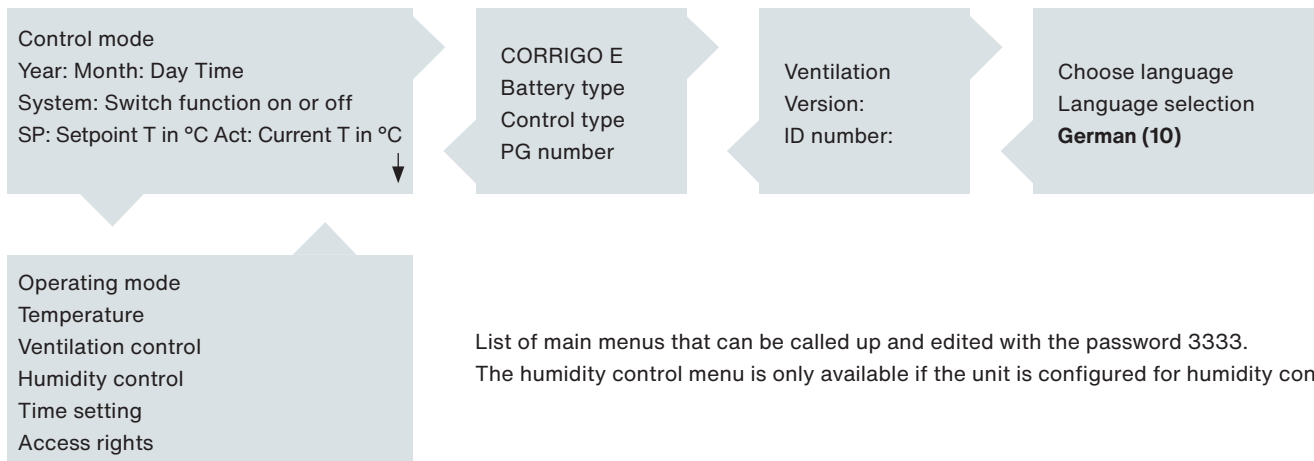
and enter the password if necessary.

- Enter the desired value using the arrow keys or the numeric keypad.
- To confirm, press the OK key to move to the next field.
- Once all values are updated, press the left arrow key to return to the home page.

### 5.3. Standard settings (operating menus)

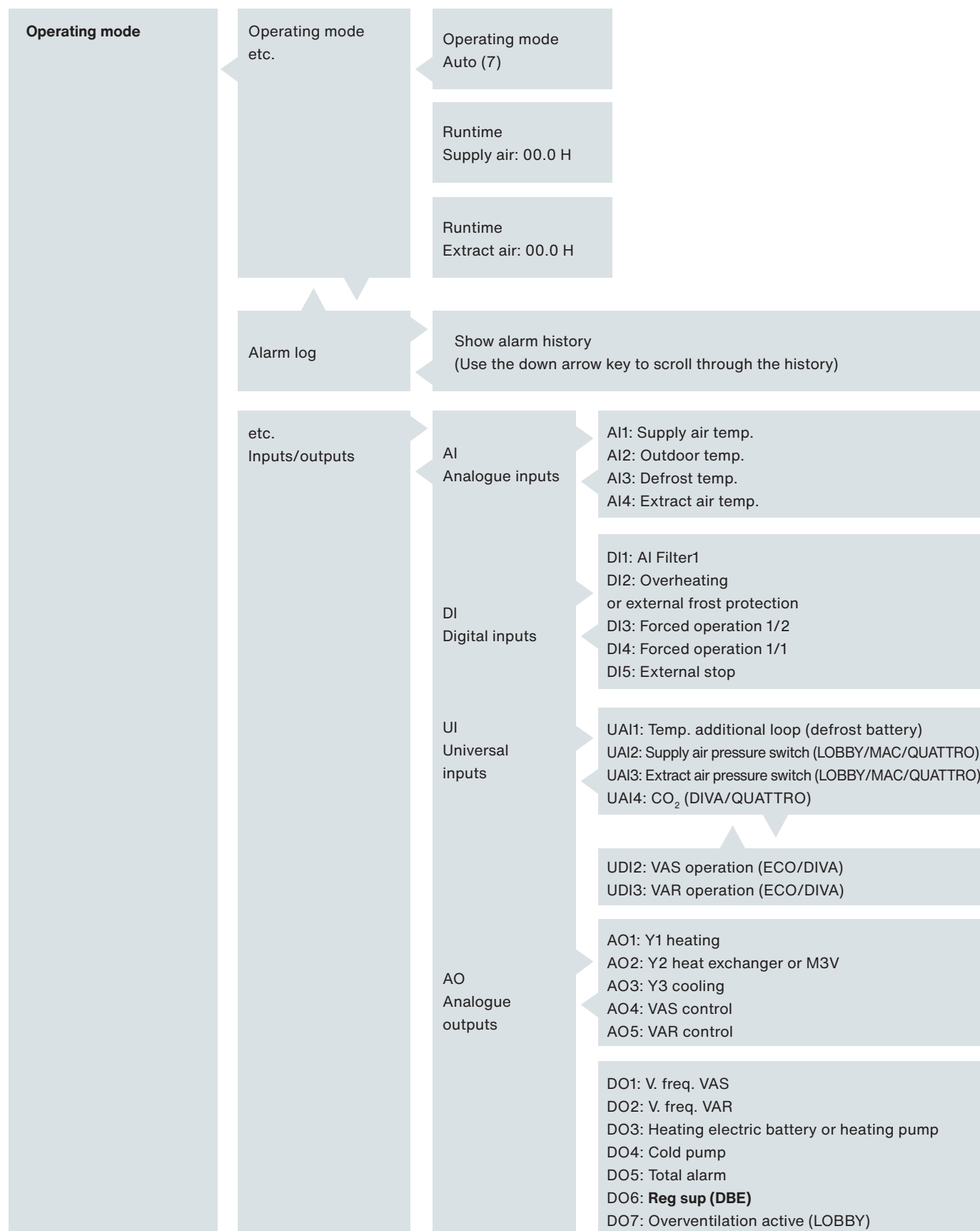
Normal text format = display only / bold formatted text = change possible / bold formatted, underlined text = change possible with password 3333 ... = not used or not accessible.

**NOTE: Only parameters formatted in bold may be changed, otherwise any claim to support is forfeited.**



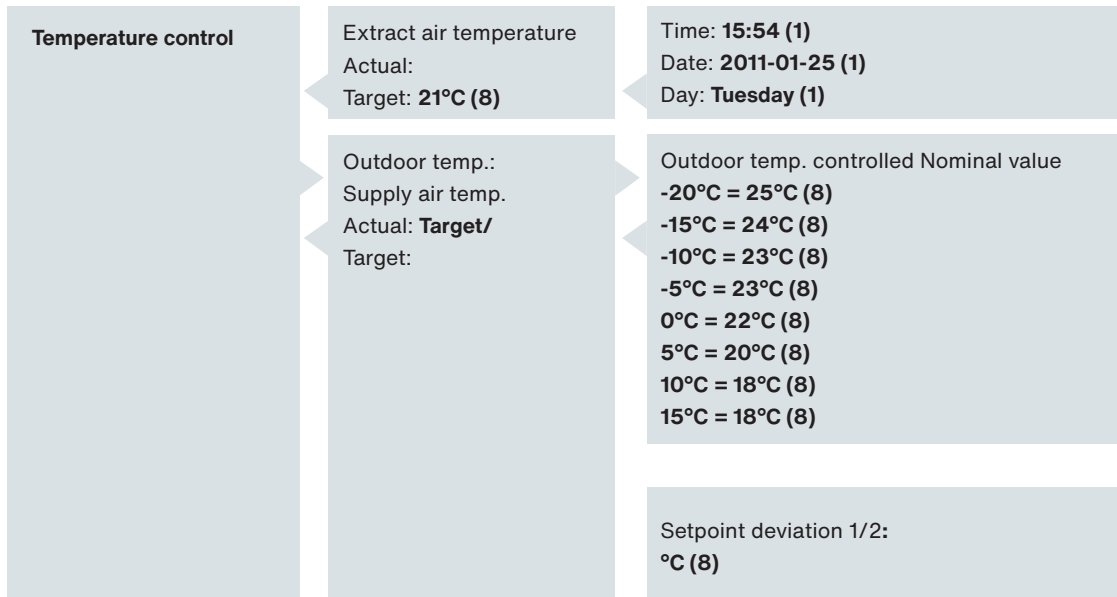
#### (10) Language settings (see chapter V.4.e)

### 5.3.1. Operating mode menu



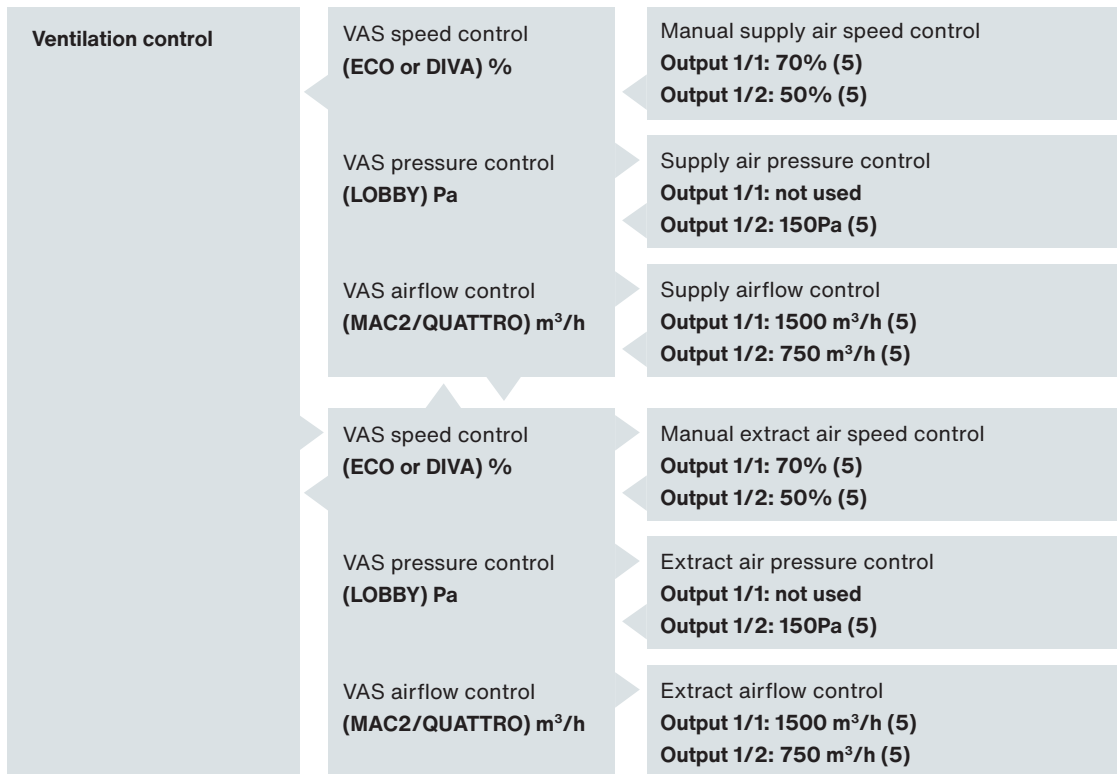
(7) Set on/off operation of the unit (see chapter V.4.d)

### 5.3.2. Temperature control menu



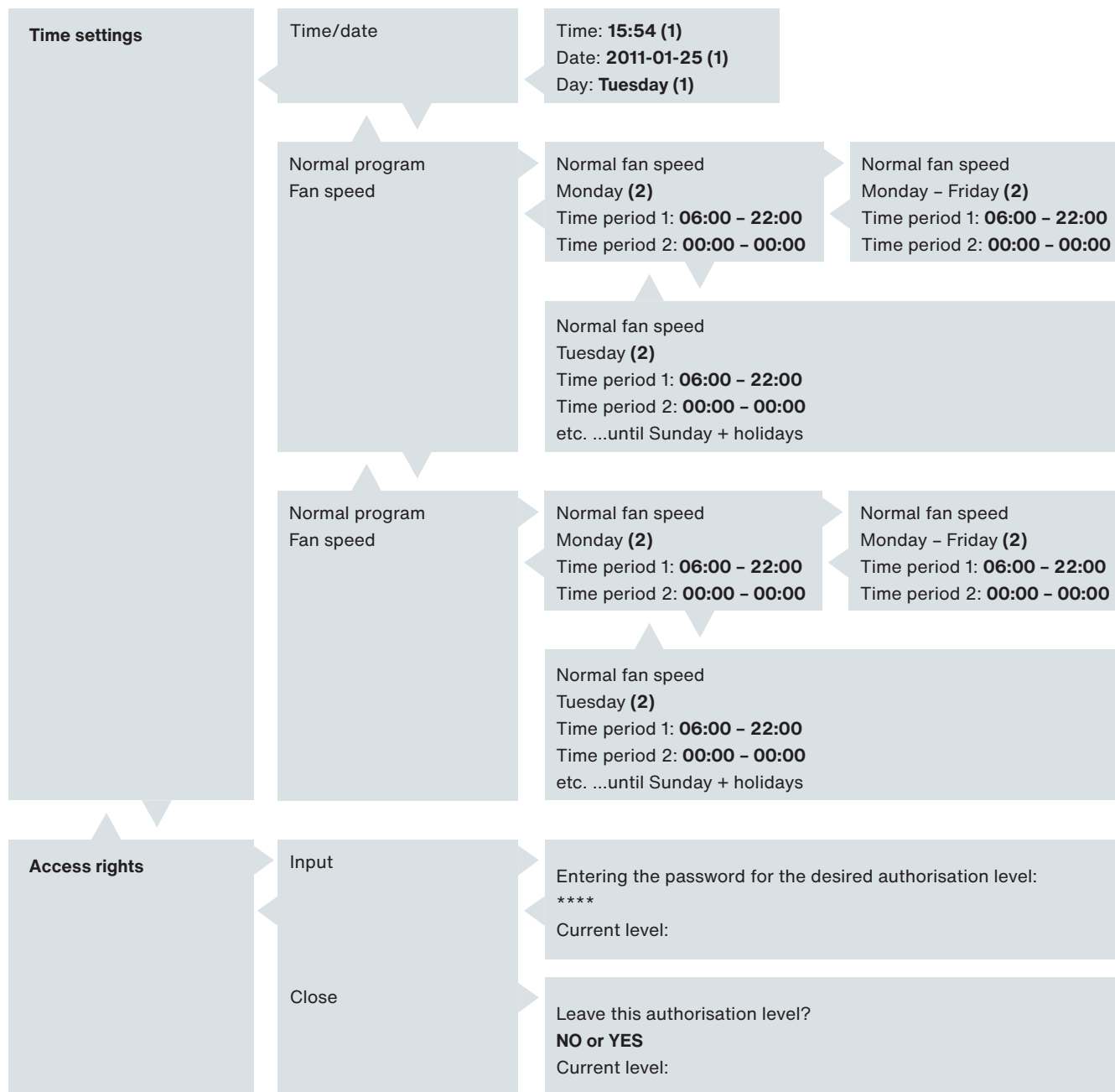
(8) Setting the temperature set point (see chapter V.4.c)

### 5.3.3. Ventilation control menu



(5) Adjustment of fan speed, pressure and volume flow (see chapter V.4.b)

### 5.3.4. Time settings menu



1. Setting the time and date (see chapter V.4.a)
2. Setting the time programme GV (see chapter V.4.a)
3. Setting the time programme PV (see chapter V.4.a)
4. Setting holiday periods (see chapter V.4.a)

## 5.4. Changing the operator parameters (password 3333 required)

### 5.4.1. Date and time setting of the timeswitches

#### Date and time of the CORRIGO controller [(1) chapter V.3.d]

Access: Time setting / Time / Date

The date and time of the controller are preset in CORRIGO. The changeover between summer/winter time is automatic. Setting the operating times of the system [(2) (3) chapter V.3.d]

Access:

- **Normal fan speed programme: Time setting / normal fan speed program**
- **Low fan speed programme: Time setting / low fan speed program**

The system is set to normal fan speed (GV-1/1) from 07:00 to 22:00 and to low fan speed (PV-1/2) from 22:00 to 06:00. Only the **DIVA / LOBBY / QUATTRO** models are permanently set to low fan speed (PV-1/2).

As shown in the tree structure, it is also possible to change the periods from Monday to Friday in the display for Monday by pressing the right arrow key.

Note: If the low fan speed (PV-1/2) and the normal fan speed (GV-1/1) are active in the same time window, the unit runs on GV.



**DIVA/QUATTRO:** In order for the CO<sub>2</sub> controller to function, no time window with normal fan speed (GV-1/1) may be active.

**LOBBY:** Only the timeswitch for the low fan speed (PV-1/2) may be active.

**NIGHT COOLING:** The function is only active when the unit is running at low fan speed (PV-1/1) or is switched off between 00:00 and 07:00. (Example: If the unit is running at low fan speed (PV-1/2) between 02:00 and 06:00 and at normal fan speed (GV-1/1) the rest of the time, NIGHT COOLING can only work from 02:00 to 06:00).

#### Holiday period [(4) chapter V.3.d] (password 3333 required)

Access: Time setting / holidays

No holiday periods are set in the system. If the runtime is to be shortened during the holiday period, the time settings for holiday operation must be made according to chapter V.3.4 and then the holiday days must be set.

### 5.4.2. Changing fan speed/pressure, low speed (PV) and high speed (GV)

#### ECO / DIVA [(5) chapter V.3.c]

Access: Ventilation control / speed control VAS 1/1 and 1/2 or speed control VAR 1/1 and 1/2

The fan speed of the unit can be changed in PV-1/2 mode (low speed) and in GV-1/1 mode (normal speed) to control the volume flow for each fan.

- To set the initial volume flow (GV-1/1), set the system to normal fan speed with the “forced switch-on GV” terminals (bridge between terminals 11 and 12).
- To set the initial PV volume flow, set the system to low fan speed with the “Forced switch-on PV” terminals (bridge between terminals 9 and 10).

#### LOBBY [(5) chapter V.3.c]

Access: Ventilation control / speed control VAS 1/2 or speed control VAR 1/2

To adjust the volume flows, change the constant pressure of your unit for each fan.

- To set the initial PV volume flow, set the system to normal fan speed with the “Forced switch-on PV” terminals (bridge between terminals 9 and 10).

#### MAC2 / QUATTRO [(5) chapter V.3.c]

Access: Ventilation control / airflow control VAS 1/1 and 1/2 or speed control VAR 1/1 and 1/2

To adjust the volume flows, change the volume flow of your unit for each fan.

- To set the initial volume flow (GV-1/1), set the system to normal fan speed with the “forced switch-on GV” terminals (bridge between terminals 11 and 12).
- To set the initial PV volume flow, set the system to low fan speed with the “Forced switch-on PV” terminals (bridge between terminals 9 and 10).

### 5.4.3. Changing the temperature setpoint

[(8) chapter 5.3.2]

Access: Temperature control

The setting is based on the control of the following temperatures:

- External temperature controlled supply air temperature (default setting). This means that the supply air temperature setpoint changes depending on the outdoor temperature. This was implemented to align with the EPBD.
- Extract air temperature.
- Increase or decrease of the set point possible when the unit is running at low level. If you have a cooling coil, you should increase the setpoint in summer.

### 5.4.4. Forced switch-off of the unit or forced switch-on to PV or GV via remote control

[(7) chapter 5.3.1]

Access: Operating mode / Operating mode

It is possible to switch off the unit via the control of the CORRIGO (7) (stop) or to perform a forced switch-on to PV (7). (Manual fan speed 1/2) or GV (7) (manual fan speed 1/1). By default, the unit operates in automatic mode via the timeswitches.

(7) (auto)



**When exiting automatic mode, an alarm is displayed. The operating modes Manual fan speed 1/1 and Manual fan speed 1/2 may only be used for commissioning and troubleshooting. Any other setting will inevitably lead to a malfunction of the unit.**

### 5.4.5. Language selection

[(10) chapter 5.3]

Access: Home / Language selection

### 5.5. Intermediate settings (service level)

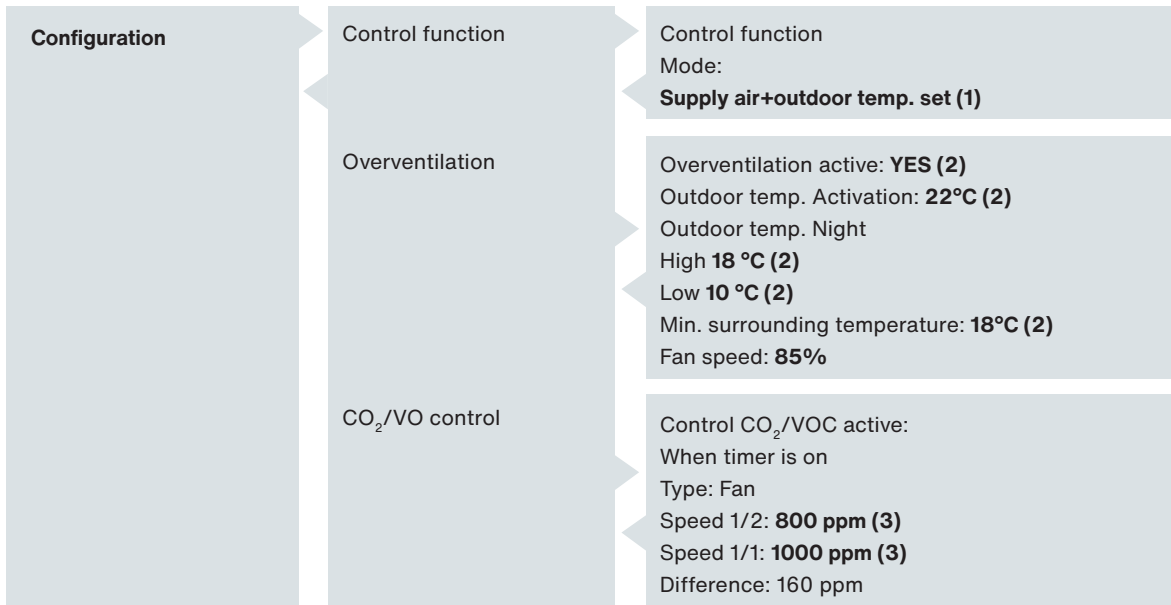
Access to the system level configuration menu is required to set the control mode, Night Cooling parameters and CO<sub>2</sub> setpoint. The access right of the “Service” level is required for this. Follow the instructions below:



Use the arrow keys to enter the code 2222 and confirm with the OK key. Press the left arrow key twice to access the menus. In case of an operating error, press the C key twice and repeat the procedure.

#### 5.5.1. Configuration menu at the “Service” access level

Access to the system level configuration menu is required to set the control mode, Night Cooling parameters and CO<sub>2</sub> setpoint. The access right of the “Service” level is required for this. Follow the instructions below:



1. Selection of the control mode (see chapter V.6)
2. Changing the Night Cooling settings (see chapter V.6)
3. Changing the CO<sub>2</sub> setpoints (DIVA and QUATTRO only) (see chapter V.6)



## 5.6. Changing the service parameters (password 2222)

### 5.6.1. Unit control mode

[(1) chapter 5.5.1]

Access: Configuration / Control function

The control mode of the CORRIGO is set to external temperature controlled supply air control as standard. It is also possible to switch to extract air control mode.



**NOTE: If the unit is to be controlled depending on the surrounding temperature, the “extract air control” control mode must be set. Any other choice could cause the unit to malfunction.**

### 5.6.2. Overventilation parameters

[(2) chapter 5.5.1]

Access: Configuration / Boost ventilation

The boost ventilation level is set to 85% at the factory. It can be changed. The temperature for switching on the Night Cooling function (daytime outdoor temperature/day) can also be edited and the function can be deactivated.

### 5.6.3. CO<sub>2</sub> setpoint for DIVA QUATTRO option

[(3) chapter 5.5.1]

Access: Configuration / CO<sub>2</sub>/COV control

The CO<sub>2</sub> setpoints are factory set to PV = 800 ppm and GV = 1000 ppm. If a CO<sub>2</sub> concentration of 1000 ppm is reached, the fan speed is increased proportionally until the maximum fan speed is reached.

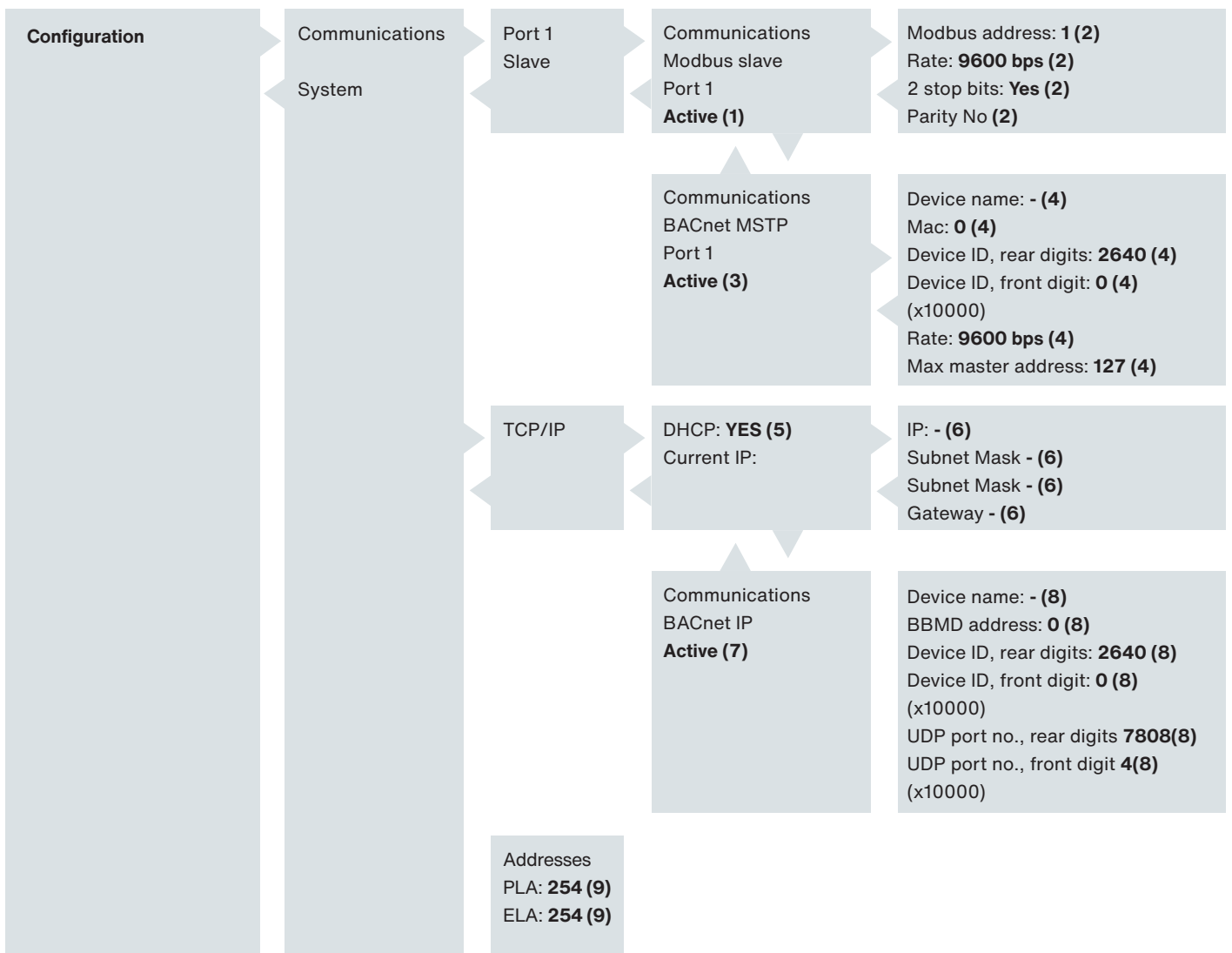
### 5.7. Administrator settings

Access to the system level configuration menu is required to set the control mode, Night Cooling parameters and CO<sub>2</sub> setpoint. The access right of the “Service” level is required for this. Follow the instructions below:



Use the arrow keys to enter the code 1111 and confirm with the OK key. Press the left arrow key twice to access the menus. In case of an operating error, press the C key twice and repeat the procedure.

#### 5.7.1. Configuration menu at the “Admin” access level



**1 and 2 activating the MODBUS RS485 and changing the parameters (see chapter V.8)**

**3 and 4 activating BACnet MSTP and changing the parameters (see chapter V.8)**

**5 and 6 changing the TCP/IP address parameters (see chapter V.8)**

**7 and 8 activating the BACnet IP and changing the parameters (see chapter V.8)**

**9 addressing the signal amplifier (see chapter V.8)**

## 5.8. Changing the admin parameters (password 1111)

### 5.8.1. Modbus

The simplified Modbus table can be found at the end of the instructions.

Access: Configuration / Communication

The **Modbus TCP/IP** is activated in the DHCP by default. To determine the DHCP address or to set the fixed IP address, see [(5)(6) chapter V.7]; the Modbus IP port always remains 502 and the Device ID 255.

The **Modbus RS485** must be activated [(1) chapter V.7]. Change communication speed, parity and stop bits [(2) chapter V.7].

#### Modbus type

1 = Coil status register (mode function 1, 5 and 15)

2 = Input status register (mode function 2)

3 = Holding register (mode function 3, 6 and 16)

4 = Input register (mode function 4)

#### Supported Modbus function

Read Coils (1)

Read discrete input (2)

Read Holding registers (3)

Read Input registers (4)

Write single Coils (5)

Write single register (6)

Write multiple Coils (15)

Write multiple register (16)

#### EXOL type

R = Real (-3.3E38 – 3.3E38)

I = Integer (-32768 – 32767)

X = Index (0 – 255)

L = Logic (0/1)

#### Transmission mode

The controller uses the RTU transmission mode.

A maximum of 47 registers can be read in a single message.

The Modbus must wait at least 3.5 times for a character (4 ms at 9600 bps) between two messages. It is limited to 10 fast data transmissions every 30 seconds; the other data transmissions have a response time of about 1 s.

For all signals of the real number type (with floating point), the scaling factor 10 applies; except for the signals for time settings with the scaling factor 100 and the signals for the air volume with the scaling factor 1. The scaling factor 1 applies to the signals for integers, indices and Boolean values.

### 5.8.2. Signal amplifier

#### [(3) chapter 5.6.1]

Access: Configuration / System

An operating manual is enclosed with each signal amplifier. If several CORRIGO controllers are linked to one remote control (up to 6 CORRIGO controllers), the PLA/ELA address of each CORRIGO controller must be changed. In this case, each CORRIGO must be assigned a separate address, which must be entered precisely into the signal amplifier. For the operation of the signal amplifier and the setting of the signal amplifier addresses, the operating instructions enclosed with the signal amplifier must be followed.

### 5.8.3. Internet communication

#### [(5) (6) chapter 5.6.1]

The web page is already loaded and the controller is set to the DHCP.

To determine the DHCP address or to set the fixed IP address, see [(5)(6) chapter V.7] or via E-Tool software <http://www.regin.se>

#### 5.8.4. BACnet

The simplified BACnet table can be found at the end of the instructions.

**Access:** Configuration / Communication

The **BACnet IP** must be activated [(7) chapter V.7]. To determine the DHCP address or to set the fixed IP address, see [(5) (6) chapter V.7]. To set the Port No. ID, see [(8) chapter V.7].

The **BACnet MSTP** must be activated [(3) chapter V.7]. To change the data transmission speed, ID, address, etc., see [(4) chapter V.7]. Rate = 9600 / MAC Address = 0 / Device ID = 2640 / Max. Master = 127

##### BACnet type

10XXXX = Read and write Binary

20XXXX = Read binary

30XXXX = Read and write analog

40XXXX = Read analog

30XXXX = Read and write multistate AV = Analogue value

40XXXX = Read multistate BV = Binary value

(XXX = MODBUS address) MSV = Multistate value

**BMMD address:** The BMMD address is used to detect units that are connected to different BACnet/IP subnets and separated by an IP router. The address is entered as "Host": Here, "Host" can be the host name if the DNS is configured. If the DNS is not configured, the host address should be entered in the format xxx.xxx.xxx followed by the port number (default 47808).

**MAC:** The MAC address of the unit. This only has to be unique for the subnet.

**Device ID:** Device identifier for identifying the device in the BACnet network. This number may not be duplicated in the BACnet network, i.e. it must be unique. To set an ID value of 34600, the back digits would be set to 4600 and the front digit to 3. For more information, see the CORRIGO PICS via <http://www.regin.se>

#### 5.8.5. LON communication (for CORRIGO with LON option)

The LON function is set as follows:

In the Configuration menu / Communication / Function Port 2 = Activate the function Port 2 in the extension unit.

On the right-hand side, register extension unit 1 under CORRIGO E28 LON.

The key for the service PIN is located on the back of the controller

The communication table can be found at <http://www.regincontrols.com>.

#### 5.8.6. Activating the fire protection function

##### Input configuration

Access: Configuration / Input Output / DI / DI8

Register input DI8 as "Fire alarm" "NO".

##### Function configuration

Access: Configuration / Fire protection function

Select the desired mode when activating the fire protection function.

"Stop": Complete switch-off of the unit

"Permanent operation": Commissioning or operation of the unit on GV. The fire protection function has priority over all other alarms.

"Normal operation": Operation of the unit depending on the configuration at the place of use (Stop/PV/GV).

"Supply fan only": Commissioning or operation of the supply fan on GV (extract air off)

"Extract fan only": Commissioning or operation of the extract fan on GV (supply air off).

##### Alarm configuration

Access: Configuration / Alarm configuration

Enter the alarm number "10". On the right-hand side, enter "Active" as priority "Alarm C".

#### 5.8.7. Activating the dehumidification function

##### Input configuration

Access: Configuration / Input Output / UI / UI4

Register input UI4 as "Room humidity".

##### Function configuration

Access: Configuration / Humidity control

Select "Dehumidification"

Setpoint adjustment

Access: Humidity control

Enter the desired setpoint.

## 6. Troubleshooting

### 6.1. Error types

The EASY controller is equipped with alarms. When the red LED flashes, press the alarm key (red) to indicate the error. It is a class A or C error (see below).

Error type:

A: The error causes the ventilation system to stop. The unit cannot be put back into operation until the problem has been corrected and the error has been acknowledged.

C: The error does not stop the ventilation system. It will be automatically deleted as soon as the problem is solved.

To acknowledge an error, press the alarm key (red), "Cancel" and then "Save" the error with the arrow keys and the OK key. Attention: do not "block".

Description	Cause
The CORRIGO display does not switch on.	<ul style="list-style-type: none"> <li>- The unit is not powered properly (CORRIGO P/B LED off).</li> <li>- Press a key to switch on the display (backlight).</li> <li>- The control fuses are out of service.</li> </ul>
The fan or fans are not working.	<ul style="list-style-type: none"> <li>- The timeswitches are set to 0.</li> <li>- No external start command</li> <li>- External shutdown</li> <li>- Active alarm</li> </ul>
The remote control does not work or displays incorrect values.	<ul style="list-style-type: none"> <li>Remote control cable longer than 100 m</li> <li>Signal amplifier incorrectly connected</li> </ul>

## 6.2. Alarm directory

No.	Display	Description	Type	Time	Cause
1	<b>Malfunction supply air fan</b>	(UDI2 must be closed ("ON") while the fan is running.) or UAI2 must be above 30 Pa while the fan is running.)	A	30s (120s at LOBBY)	The pressure switch is connected incorrectly (pressure switch must be set to 30 Pa). The pressure detected by the measuring transducer is less than 30 Pa. (LOBBY) (Contact us.) The motor is out of operation. The thermal motor protection has been triggered. Check the connections of the transparent pipes (chapters IV.8 and IV.9) Water in the transparent tube. 0-10 V motor inverted.
2	<b>Malfunction extracr air fan</b>	(UDI3 must be closed ("ON") while the fan is running.) or UAI3 must be above 30 Pa while the fan is running.)	A	30s (120s at LOBBY)	The pressure switch is connected incorrectly (pressure switch must be set to 30 Pa). The pressure detected by the measuring transducer is less than 30 Pa. (LOBBY) (Contact us.) The motor is out of operation. The thermal motor protection has been triggered. Check the connections of the transparent pipes (chapters IV.8 and IV.9) Water in the transparent tube. 0-10 V motor inverted.
6	<b>Filter dirty</b>	DI1 must be open ("OFF") if there is no error.	C	5s	The filter(s) are dirty. The filter pressure switch(es) are connected incorrectly (The pressure switches must be set to 150 Pa for G4 and to 200 Pa for F7) Check the connections of the transparent pipes (chapter IV.8)
8	<b>External frost protection</b>	Ext DI2 must be closed ("ON") if there is no error.	C	120s	The thermostat THA is not set to 5°C. The thermostat THA is out of operation. The circulation pump is out of operation. The 3-way valve is incorrectly wired, incorrectly connected hydraulically or out of service.
15	<b>High supply air temperature</b>	Ext AI1 has risen to over 50°C.	A	30s	The supply air temperature has exceeded 50°C. The temperature setpoint is too high. The supply fan has switched off (VAS error) although the heating coil was fully charged.
23	<b>Overheating of electrical battery</b>	Ext DI2 must be closed ("ON") if there is no error.	A	5s	The safety thermostat THS has been triggered. To reset the THS, press the reset key on the electrical battery. Power failure The supply fan has switched off (VAS error) although the electrical battery was fully charged.
27	<b>External temp. sensor error</b>	Check value at Ext. AI2.	A	5s	The external temperature sensor SEG is out of operation. The external temperature sensor SEG is wired incorrectly (see chapter IV.3).

No.	Display	Description	Type	Time	Cause
31	<b>VAS pressure error</b>	More than 50 Pa deviation between supply air setpoint and pressure measured at Ext. UAI1	C	30min	The supply air network does not correspond to the selected fan or the pressure setpoint. The filter is dirty.
32	<b>VAR pressure error</b>	More than 50 Pa deviation between setpoint and exhaust pressure measured at Ext UAI2	C	30min	The extract air network does not correspond to the selected fan or the pressure setpoint. The filter is dirty.
35	<b>Manual</b>	Operation in manual mode	C	5s	Error message for information (the unit was stopped directly on the display or switched to PV or GV (see (7) chapter V.3.a).
36 to 44	<b>...in manual mode</b>	Functions have been changed to manual mode.	C	5s	In the Manual/Auto menu, everything must be set to Auto.
48	<b>Battery weak</b>	Internal battery error	A	5s	The internal battery of the CORRIGO is out of service. Change the battery immediately so that the programming is not lost. See chapter VII.2
49	<b>AS-temp. sensor error</b>	Check value at Ext. AI1.	A	5s	The supply air temperature sensor SSG is out of operation. The supply air temperature sensor SSG is wired incorrectly (see chapter V.3.a).
50	<b>AR-temp. sensor error</b>	Check value at Ext. AI3.	A	5s	The extract air temperature sensor SRG is out of operation. The extract air temperature sensor SRG is wired incorrectly (see chapter V.3.a).
55	<b>VAS pressure sensor error</b>	Check value at Ext. UAI1.	A	5s	The 0-10 V signal is inverted. Short circuit at the supply air pressure transducer
56	<b>VAR pressure sensor error</b>	Check value at Ext. UAI2.	A	5s	The 0-10 V signal is inverted. Short circuit on the extract air pressure transducer
59	<b>Fault on the CO<sub>2</sub> sensor</b>	Check value at Ext. AI4.	A	5s	The 0-10 V signal is inverted. Electrical short circuit on the CO <sub>2</sub> sensor
85	<b>...in manual mode</b>	Functions have been changed to manual mode.	A	5s	In the Manual/Auto menu, everything must be set to Auto.
86	<b>Perform maintenance</b>	Regular maintenance	C	5s	See chapter VI.3
87	<b>...in manual mode</b>	Functions have been changed to manual mode.	C	5s	In the Manual/Auto menu, everything must be set to Auto.

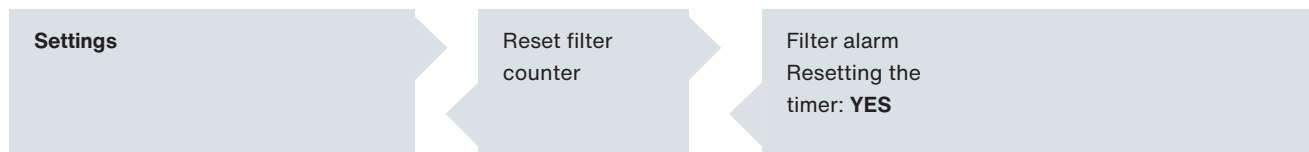
### 6.3. Acknowledgement of the “Perform maintenance” error

Access to the “Settings” menu is required for this configuration. The access right of the “Service” level is required for this.

Follow the instructions below:



Use the arrow keys to enter the code 2222 and confirm with the OK key. Press the left arrow key twice to access the menus. In case of an operating error, press the C key twice and repeat the procedure.



An alarm appears every 6 months to indicate that maintenance is due. Enter YES to reset the meter.



## 7. Maintenance

### 7.1. Mandatory maintenance

#### External components of the unit

Check the ducts, canvas connectors and vibration dampers and replace them if necessary. Ensure that no vibrations can be transmitted to the external components by the elements connected to the unit.

#### Unit and controller

Check connections annually.

#### Air filtration

\*Do not damage the filters.

Classification	Max. pressure drop	Filter efficiency class	Reference	Washing* Blow cleaning*	Aspiration* Exhaust*
Gravimetric	Gravimetric	ePM10 50% (M5)	M5	Limited (1 to 4 times)	YES
Opacimetric	Opacimetric	ePM1 55% (F7)	F7	NO	

Components	Maintenance interval			
	1 MONTH	3 MONTHS	6 MONTHS	12 MONTHS
Filter	Blow cleaning (M5 filter)	Washing (M5 filter)	Replace filter if necessary	Mandatory filter replacement

### 7.2. Alarm directory

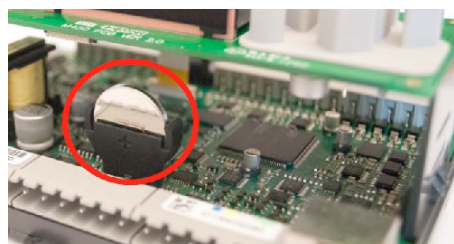
If the low battery alarm appears and the red lamp glows, the reserve battery to back up the memory and the real-time timeswitch is too low. The procedure for replacing the battery is described below. The operation of the timeswitch is secured by a condenser so that it can continue to run for about 10 minutes after an interruption in the power supply. If the battery change takes less than 10 minutes, the program does not need to be reloaded, and the timeswitch continues to run normally.

The replacement battery is a CR2032 type battery.



Using a small screwdriver, press the clips down on both sides of the housing and detach the cover from the base mount. Hold the base mount and remove the lid.

Inserting the battery

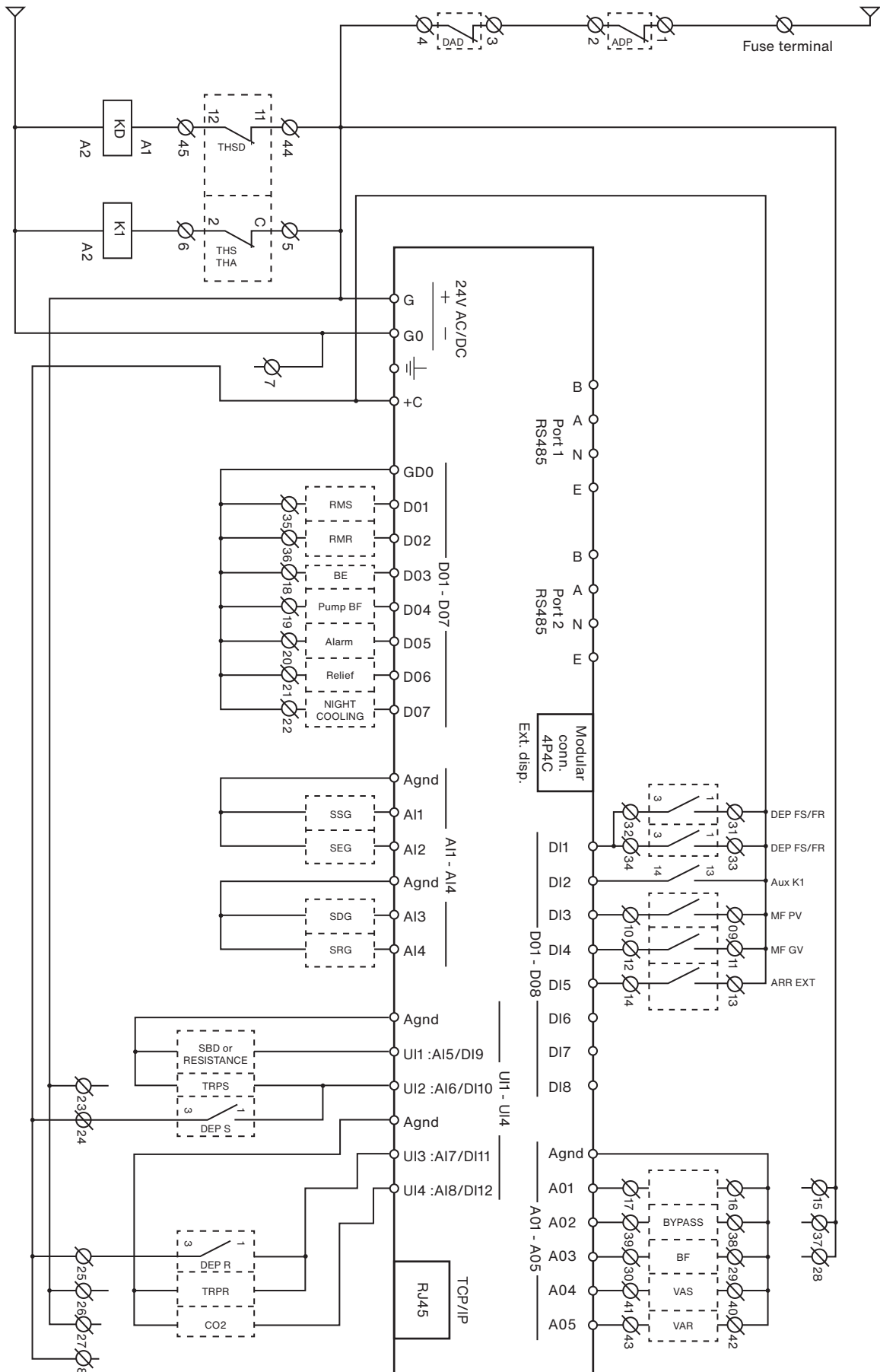


Take hold of the battery and carefully pull it out upwards.

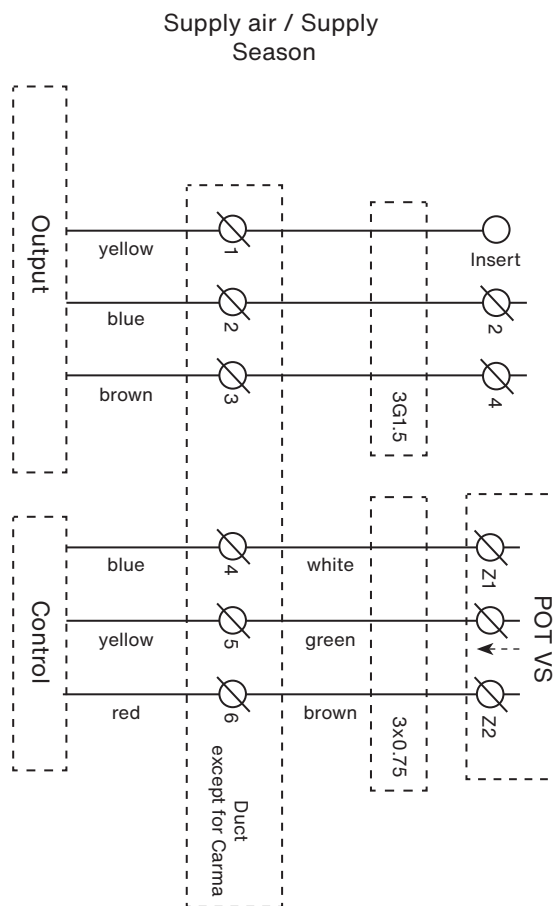
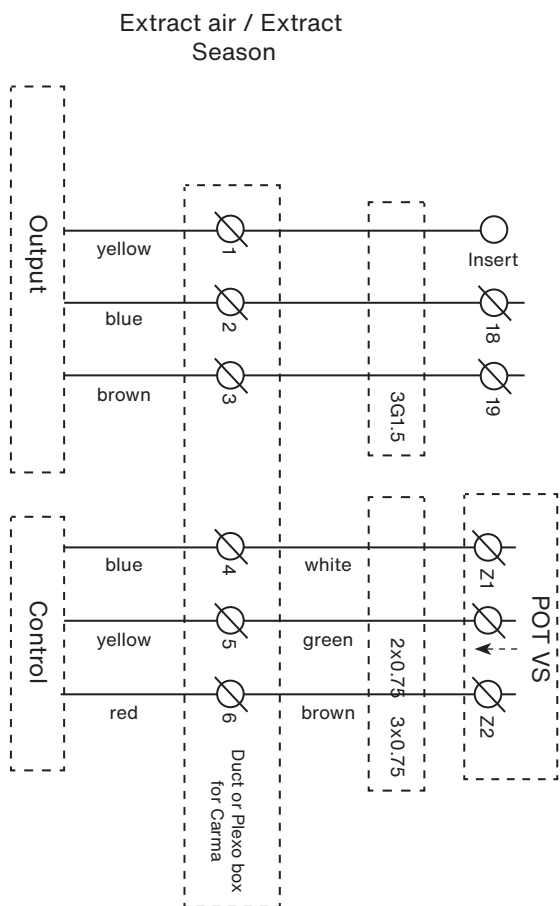
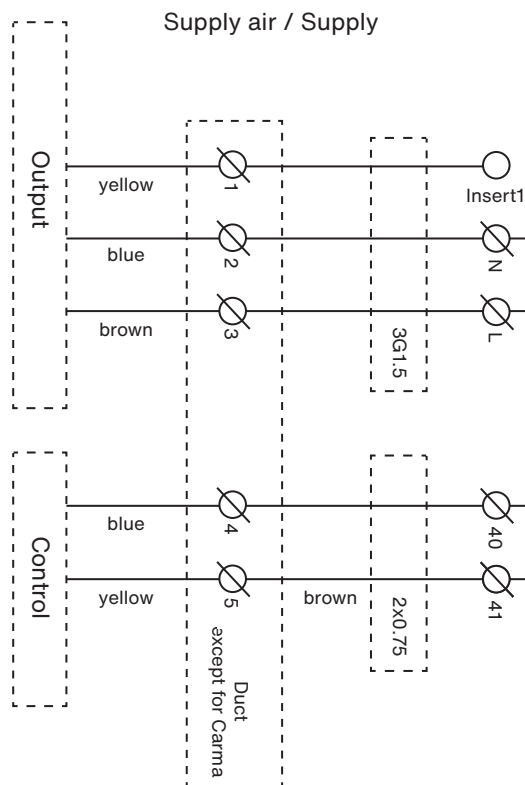
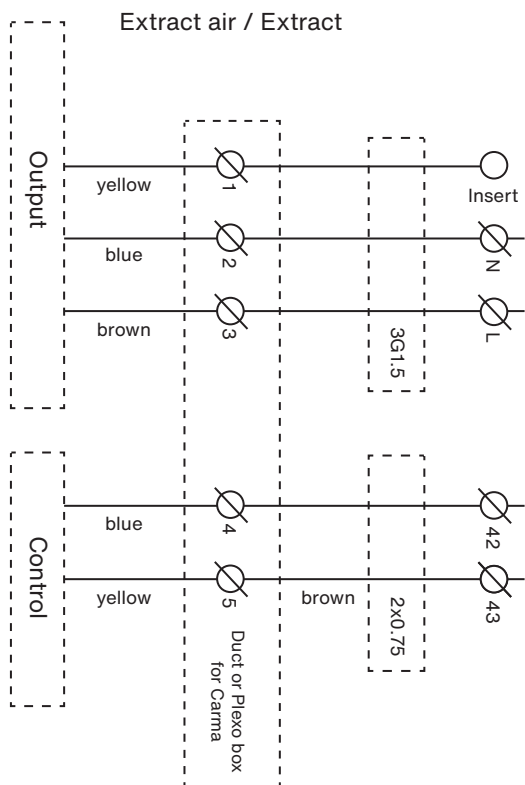
Push the new battery into the base mount and press it in firmly. Note: Pay attention to the correct polarity of the battery!

8. Annexes

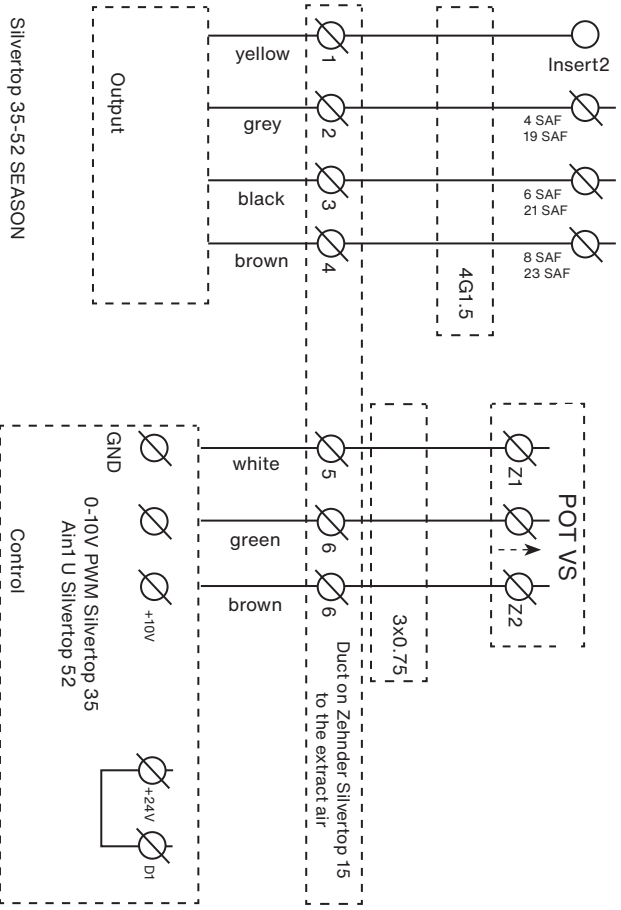
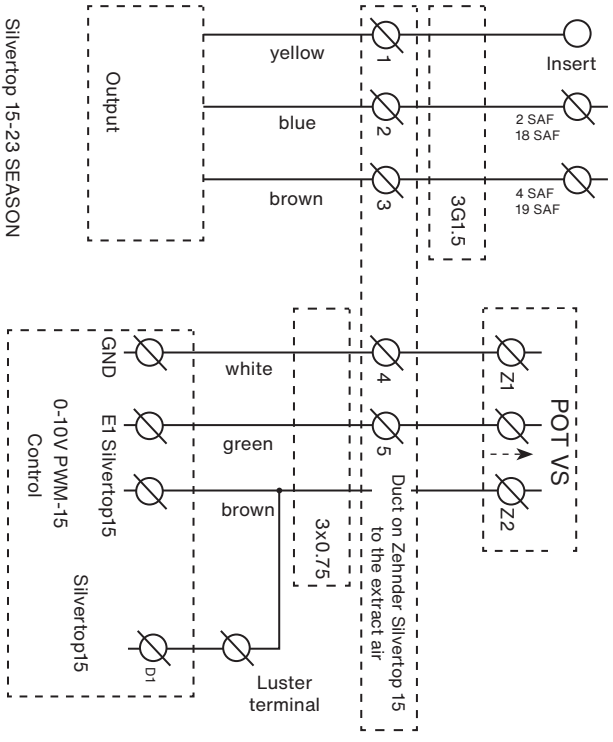
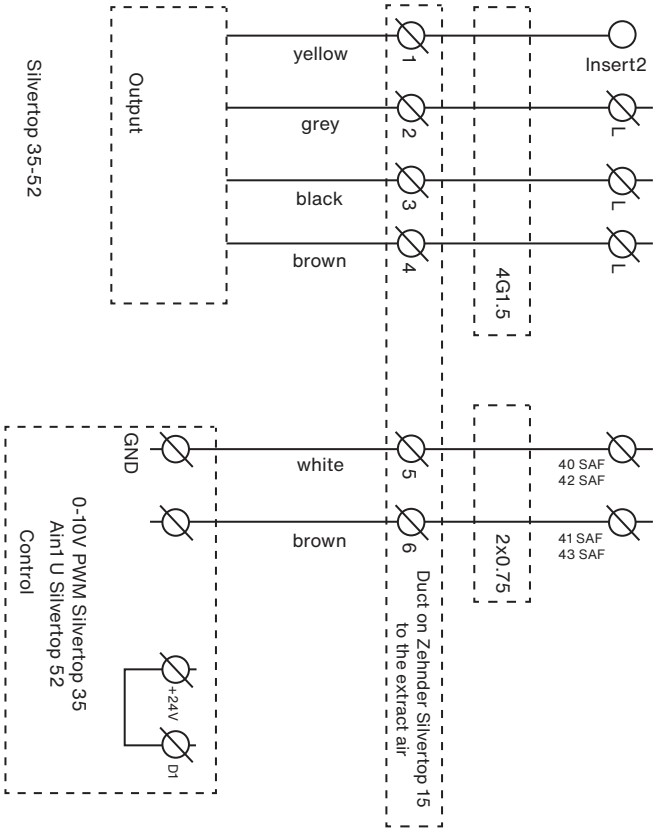
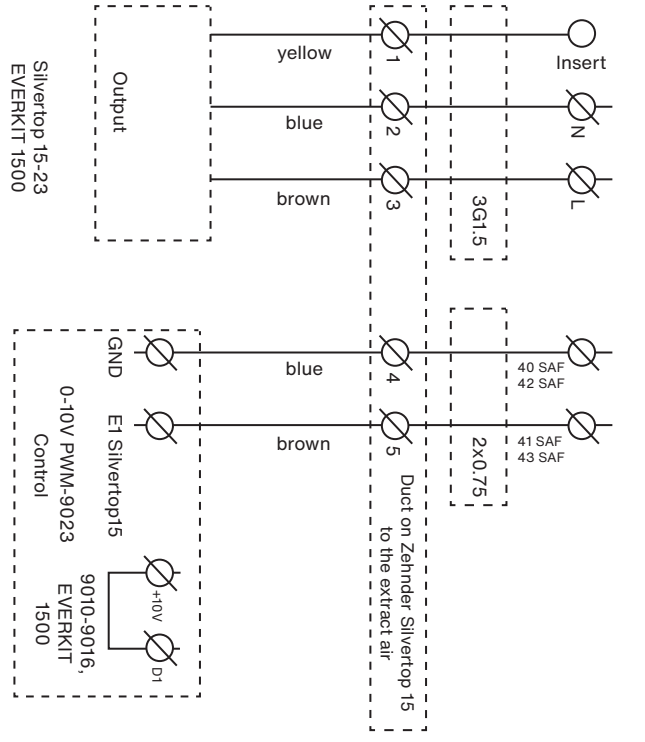
8.1. Control circuit diagram



## 8.2. Connection of the Zehnder Silvertop 06-08 motors

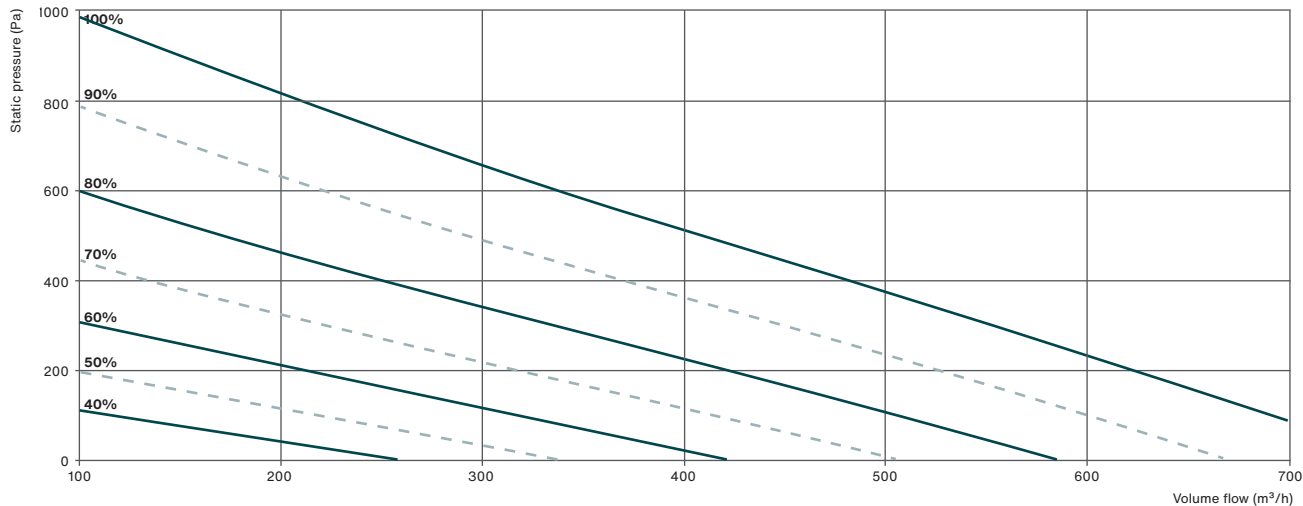


### 8.3. Connection of the Zehnder Silvertop 15-52 motors

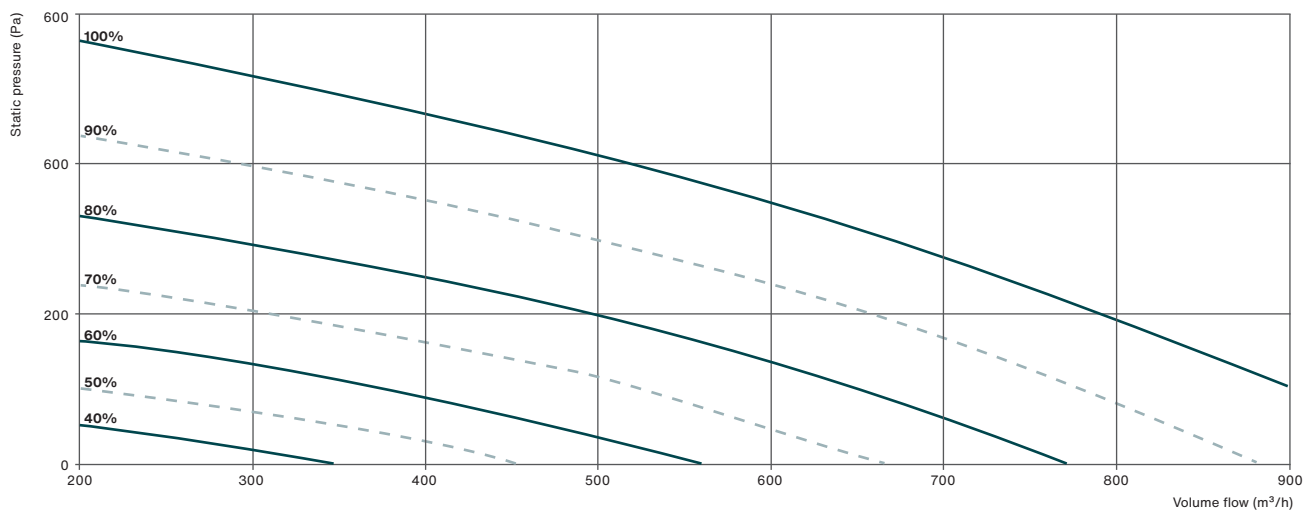


### 8.4. Zehnder Silvertop performance graphs

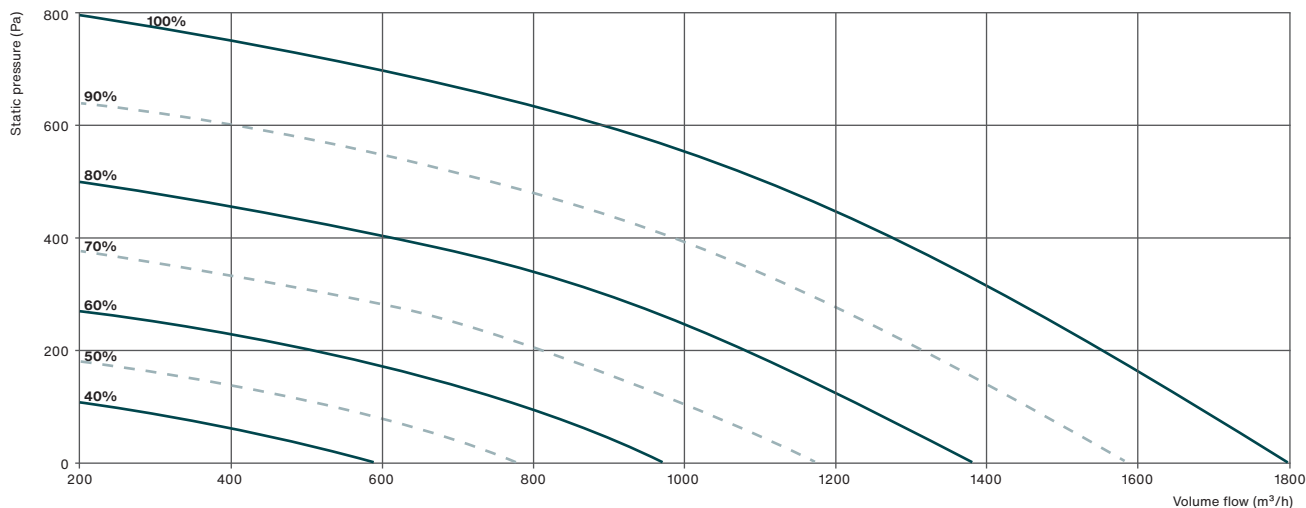
#### Zehnder Silvertop 06



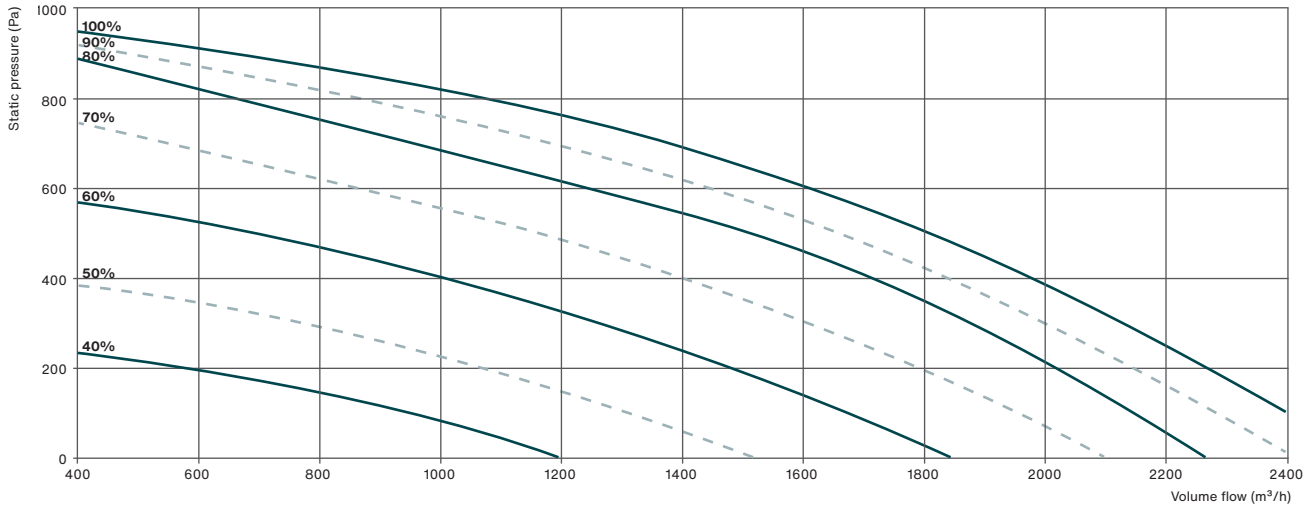
#### Zehnder Silvertop 08



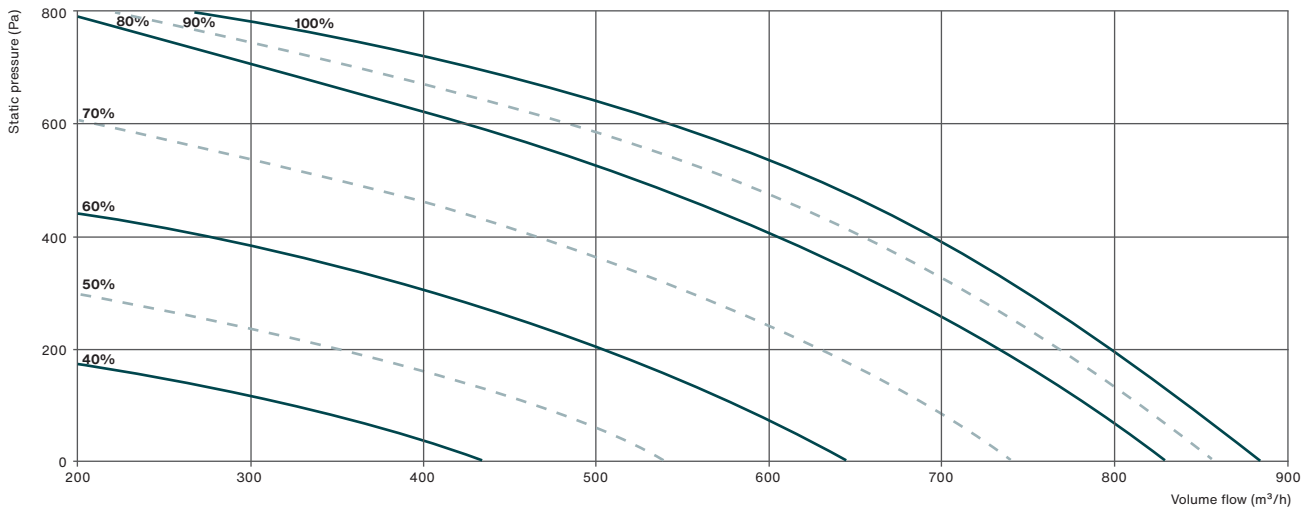
#### Zehnder Silvertop 15



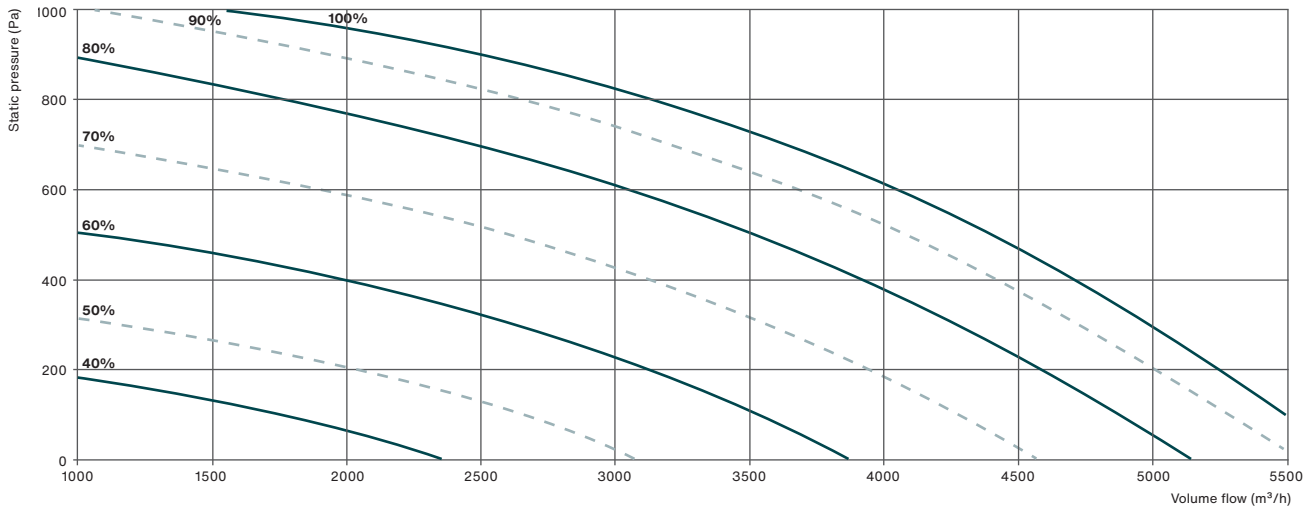
**Zehnder Silvertop 23**



**Zehnder Silvertop 35**



**Zehnder Silvertop 52**



## 8.5. Modbus and BACnet tables

INPUT REGISTER				
Function	Description	EXO Type	Modbus address	BACnet address
<b>Device status</b>	Modbus: 0 = stop 1 = start 2 = start low fan speed 3 = start max. fan speed 4 = start normal fan speed 5 = in operation 8 = CO <sub>2</sub> operation 9 = Night Cooling 11 = in the shutdown phase  BACnet: 1 = stop 2 = start 3 = start low fan speed 4 = start max. fan speed 5 = start normal fan speed 6 = in operation 9 = CO <sub>2</sub> operation 10 = Night Cooling 12 = in the shutdown phase	X	3	MSV,40003
<b>Outdoor temperature</b>	In °C	R	1	AV,40001
<b>Runtime of the supply fan</b>	In hours	R	4	AV,40004
<b>Extract fan runtime</b>	In hours	R	5	AV,40005
<b>Supply air temperature</b>	In °C	R	7	AV,40007
<b>Extract air temperature</b>	In °C	R	9	AV,40009
<b>Supply air pressure</b>	In Pa for the LOBBY model	R	13	AV,40013
<b>Extract air pressure</b>	In Pa for the LOBBY model	R	14	AV,40014
<b>Supply air volume flow</b>	In m <sup>3</sup> /h for the MAC2 / QUATTRO model	R	15	AV,40015
<b>Extract air volume flow</b>	In m <sup>3</sup> /h for the MAC2 / QUATTRO model	R	16	AV,40016
<b>CO<sub>2</sub></b>	In ppm for the DIVA / QUATTRO model	R	17	AV,40017
<b>Rel. humidity</b>	In %	R	23	AV,40023
<b>Analogue output</b>	0-10 V heating (water coil )	R	54	AV,40119
<b>Analogue output</b>	0-10 V heat exchanger	R	55	AV,40120
<b>Analogue output</b>	0-10 V cooling	R	56	AV,40121
<b>Analogue output</b>	0-10 V supply air	R	57	AV,40122
<b>Analogue output</b>	0-10 V extract air	R	58	AV,40123

HOLDING REGISTER					
Function	Description	EXO Type	Modbus address	BACnet address	Factory setting
Supply air setpoint	Configuration with constant supply air	R	1	AV,30001	18
Supply air setpoint	Configuration of ext. temp. controlled supply air control at -20 °C ext. temperature	R	10	AV,30010	25
Supply air setpoint	Configuration of ext. temp. controlled supply air control at -15 °C ext. temperature	R	11	AV,30011	24
Supply air setpoint	Configuration of ext. temp. controlled supply air control at -10 °C ext. temperature	R	12	AV,30012	23
Supply air setpoint	Configuration of ext. temp. controlled supply air control at -5 °C ext. temperature	R	13	AV,30013	23
Supply air setpoint	Configuration of ext. temp. controlled supply air control at 0 °C ext. temperature	R	14	AV,30014	22
Supply air setpoint	Configuration of ext. temp. controlled supply air control at +5 °C ext. temperature	R	15	AV,30015	20
Supply air setpoint	Configuration of ext. temp. controlled supply air control at +10 °C ext. temperature	R	16	AV,30016	18
Supply air setpoint	Configuration of ext. temp. controlled supply air control at +15 °C ext. temperature	R	17	AV,30017	18
Extract air setpoint	Configuration for extract air control	R	18	AV,30018	21
Setpoint supply air speed GV	In % for the ECO and DIVA model	R	424	AV,30424	70
Setpoint supply air speed PV	In % for the ECO and DIVA model	R	425	AV,30425	50
Extract air speed setpoint GV	In % for the ECO and DIVA model	R	426	AV,30426	70
Extract air speed setpoint PV	In % for the ECO and DIVA model	R	427	AV,30427	50
High supply air pressure setpoint	In Pa for the LOBBY model	R	24	AV,30024	150
Low supply air pressure setpoint	In Pa for the LOBBY model	R	25	AV,30025	150
Setpoint high extract air pressure	In Pa for the LOBBY model	R	26	AV,30026	150
Setpoint low extract air pressure	In Pa for the LOBBY model	R	27	AV,30027	150
Supply air flow rate GV setpoint	In m <sup>3</sup> /h for Model MAC2 and QUATTRO model	R	28	AV,30028	xxx
Supply air flow rate PV setpoint	In m <sup>3</sup> /h for Model MAC2 and QUATTRO model	R	29	AV,30029	xxx
Setpoint extract air flow rate GV	In m <sup>3</sup> /h for Model MAC2 and QUATTRO model	R	30	AV,30030	xxx
Setpoint extract air flow rate PV	In m <sup>3</sup> /h for Model MAC2 and QUATTRO model	R	31	AV,30031	xxx
CO <sub>2</sub> setpoint	In ppm for the DIVA and QUATTRO model	R	32	AV,30032	1000
Forced release of the unit operating mode	Modbus 0 = manual stop 1 = manual low fan speed 2 = manual normal fan speed 3 = auto	X	368	MSV,30368	3
	BACnet 1 = manual stop 2 = manual low fan speed 3 = manual normal fan speed 4 = auto				4



<b>INPUT STATUS REGISTER</b>				
<b>Function</b>	<b>Description</b>	<b>EXO Type</b>	<b>Modbus address</b>	<b>BACnet address</b>
<b>Alarm overview</b>	If 1 = ALARM	L	30	BV,20030
<b>VAS error</b>	If 1 = ALARM	L	33	BV,20033
<b>VAR error</b>	If 1 = ALARM	L	34	BV,20034
<b>Filter error</b>	If 1 = ALARM	L	38	BV,20038
<b>Frost protection error</b>	If 1 = ALARM	L	40	BV,20040
<b>Fire protection error</b>	If 1 = ALARM	L	42	BV,20042
<b>Overheating electrical battery error</b>	If 1 = ALARM	L	55	BV,20055
<b>Battery error</b>	If 1 = ALARM	L	80	BV,20080

Mâcon Loché, on 29 August 2022

Ref: EU

## EU-Declaration of conformity

**We declare under our sole responsibility that the products**

- ECOVOR™ - ECOBLUE™ - ECONIZER™- NOE™ - NOE LOBBY™
- MINIMAX™ - MINIBLUE™ - MINIBLUE LOBBY™ - MAXIPLUS™ - CITYCOOL™
- COMBIBOX CONCEPT™ - CMH - EVENTYS™
- CARMA™ - NEOTIME™ - FREETIME™ - EXAECO™- HEXAMOTION™- SILVERTOP™ - EVERSKEY™
- ELECTROPACK™ - AQUAPACK™ - LOBBY™ - SYSTEM TOP™ - SYSTEM DIV™ - WONDEROOM™
- CVFMI - CVFTI - CVFM - CVFT
- REFLEX™ - DIABLO™ - PYROSTAR™ - CDF
- EVERKIT™
- THERMOVER™

**satisfy the provisions of the following applicable Directives and harmonised standards:**

- Machinery Directive 2006/42/EC
- Low Voltage Directive 2014/35/EU
- EMC Directive - Electromagnetic Compatibility Directive 2014/30/EU
- RoHS II Directive - Directives on the restriction of the use of certain hazardous substances in electrical and electronic equipment 2011/65/EU and 2015/863/EU
- ErP Directive 2009/125/EC



**Furthermore, for the products**

COMBIBOX CONCEPT™ - CMH - CARMA™ - EXAECO™ - EVENTYS™ - FREETIME™ - NEOTIME™ -  
HEXAMOTION™ - SILVERTOP™ - THERMOVER™ - EVERKIT™ (Dual flow unit section)

**the following standards and specifications were applied:**

- EN 1886: 2008 - Ventilation for buildings. Air handling units.  
Mechanical performance
- EN 13053+A1: 2011 - Ventilation for buildings. Air handling units.  
Rating and performance for units, components and sections.  
This declaration is valid only for products installed according to the supplied instructions and  
having undergone no modification.

Hervé Nuzzo,  
President

CALADAIR INTERNATIONAL  
61 Rue Saint-Véran  
71000 Macon Loche  
Tél. : 03 85 36 82 00  
Fax : 03 85 36 82 01

**Company**

1st line of address ▪ Town ▪ Country  
email ▪ web