RECTANGULAR VARIABLE AIR VOLUME DAMPER

RRVS / RRVS-I

The **RRVS / RRVS-I** damper is a variable air volume (VAV) damper with a rectangular connection. It regulates the airflows in a building for both supply and exhaust air.

It's possible to control the airflow according to a setpoint: temperature, air quality, external signal, or Building Management System (BMS), ...

The **RRVS / RRVS-I** dampers are essential for the management of fresh air in commercial buildings (offices, meeting rooms) and schools. Customizable and available with specific options (special coatings, insulation, etc.), they will meet all your needs.

CODIFICATION

RR ⟶ **RR range** - Rectangular damper

X ⟶ **V** - Variable air volume damper

Y ⟶ **S** - Airtight

Z ⟶ **I** - Insulated

CONSTRUCTION

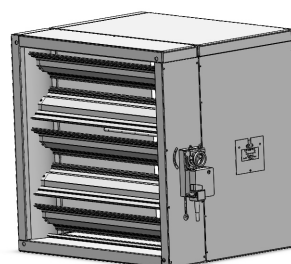| Blades |
|---|
| Galvanized steel
Option : inox 304 L, aluminium

EPDM gaskets |

Casing
Galvanized steel *Option : inox 304 L,*

Linkage
Plastic gear or linkage according to dimensions

Option
Acoustic enclosure Mineral wool, thickness 25 mm Protection plate

Actuators
Belimo LMV D3 MF Option : MP, Modbus or BACnet protocol Specialized actuator manufacturer

AVANTAGES

- **Flexibility** : Wide range of dimensions L x H

- **Reliability** : Belimo actuator In standard
  Regulation – Measurement range from 1 to 12 m/s

- **Adaptability** Several functions available : VAV, CAV, TOR, TOP, …
  Analogic signal, Modbus RTU or BACnet MS/TP

RECTANGULAR VARIABLE AIR VOLUME DAMPER
RRVS / RRVS-I

TECHNICAL CHARACTERISTICS

	RRVS / RRVS-I
Upstream/downstream airtightness (EN1751)	Class 3
Frame's airtightness (EN 1751)	Class C
Dimensions in mm L x H	200 x100 to 1000 x 1000 in standard On request : to 1600 x 1600 in several modules
Operating range	Air velocity : 1 to 12 m/s Pressure, 50 to 450 Pa
Operating temperature	From -20°C to +80°C
Actuator	LMV D3 – NMV D3 – Belimo standard On request : specific manufacturers
Analogic control signal	Signal 0-10V or 2-10V DC
Communication	MPbus, Modbus RTU, Bacnet MS/TP
Option	Acoustic enclosure (mineral wool, thickness 25 mm) and protection plate

ACCESSORIES

Room CO_2 sensor configurable via NFC
with display

SON0008

Room CO_2 sensor configurable via NFC
without display

SON0010

Duct CO_2 sensor configurable in duct

Remote control BOI0021 necessary for configuration

SON0004

Presence sensor

SON0003

Room controller with temperature

possible pairing with CO_2 sensor (Room or duct)

BOI0022

Remote control for actuator configuration - ZTH

TEL0001

ISO 9001 14001 Certified

F2A
Manufacturer
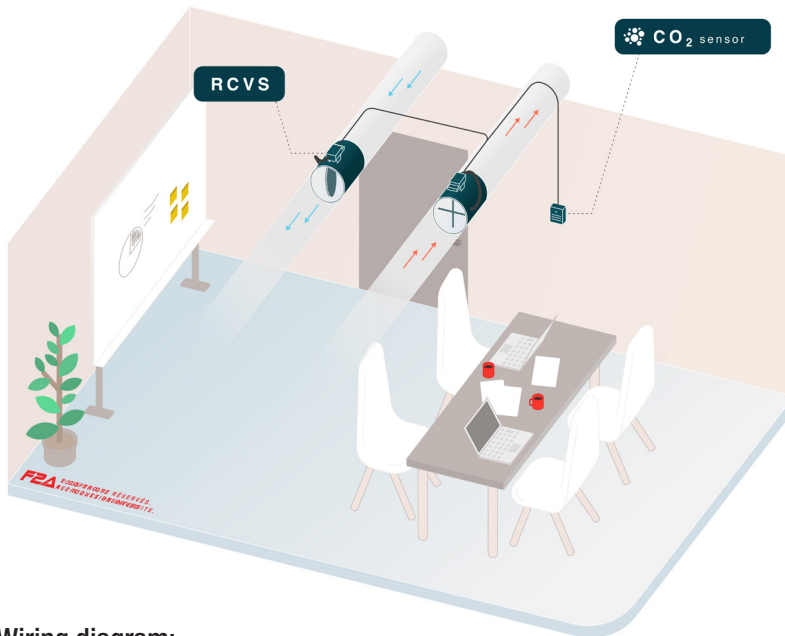Air handling components

RECTANGULAR VARIABLE AIR VOLUME DAMPER
RRVS / RRVS-I

FUNCTIONAL PRINCIPLES

Supply and exhaust air controlled by an room CO_2 sensor

Both RRVS are controlled by an external 0-10V signal from a room CO_2 sensor.

At supply and exhaust:

The CO_2 sensor sends a 0-10V signal based on the measured CO_2 level in the room.

The dampers regulate the airflow between minimum and maximum setpoint according to the control signal sent by the CO_2 sensor.

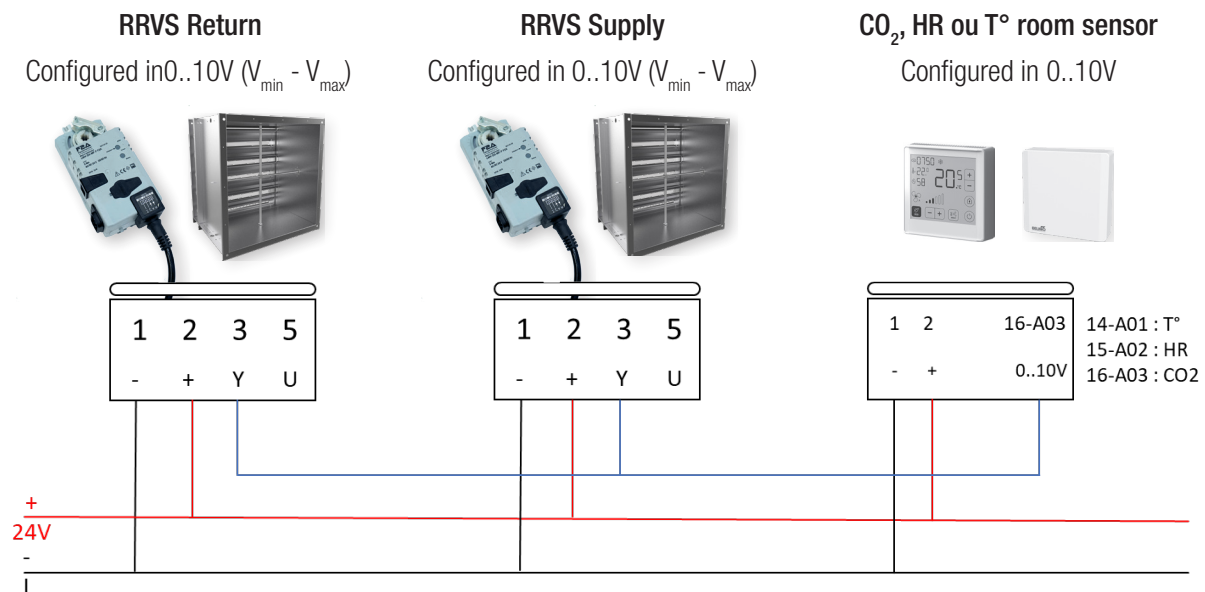Linear regulation between minimum and maximum flow setpoints.

Wiring diagram:

CO_2 sensor configured at 0-10V on range 500-1200 ppm.

RRVS configured with a 0.10V signal and an airflow range of 30-300 m³/h

The CO_2 sensor records a level of 800 ppm and transmits it as a 5V signal to the dampers.

The dampers interpret 5V as a setpoint of 165 m³/h.

RRVS Return	RRVS Supply	CO_2, HR ou T° room sensor
Configured in0..10V (V_{min} - V_{max})	Configured in 0..10V (V_{min} - V_{max})	Configured in 0..10V

1	2	3	5
-	+	Y	U

1	2	3	5
-	+	Y	U

1	2		16-A03
-	+		0..10V

14-A01 : T°
15-A02 : HR
16-A03 : CO2

+
24V
-
⊥

Note : for modulating operation with tight closure, the damper should be set to 2-10V. The damper will close tightly if the signal received at 3-Y is 0V.

The parameters are factory-set and can be modified on site with the TEL0001 remote control.
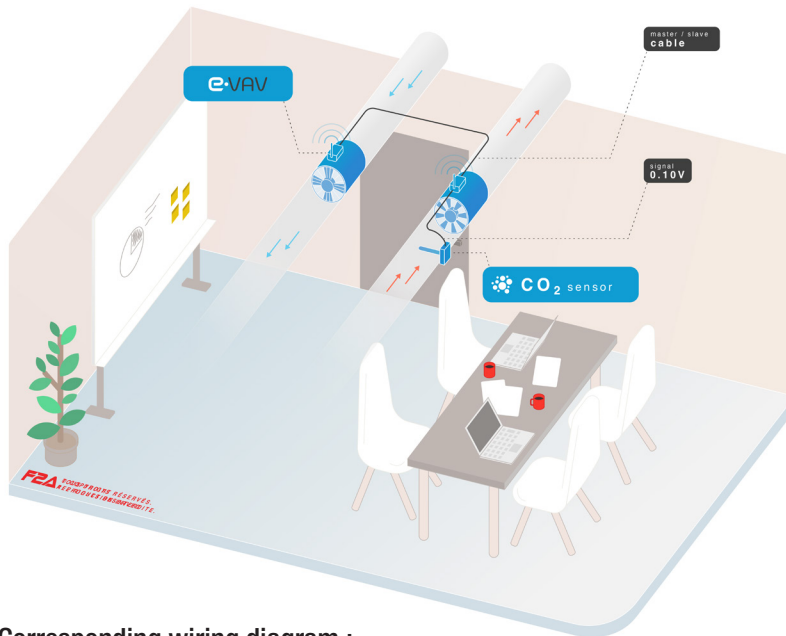
RECTANGULAR VARIABLE AIR VOLUME DAMPER
RRVS / RRVS-I

OPERATING PRINCIPLES

Supply and Exhaust air controlled by a duct CO_2 sensor

Both RRVS are controlled by an external 0-10V signal from a duct CO_2 sensor

At supply and exhaust:

The CO_2 sensor sends a 0-10V signal based on the measured CO_2 level in the room.

The dampers regulate the airflow between minimum and maximum setpoint according to the control signal sent by the CO_2 sensor.

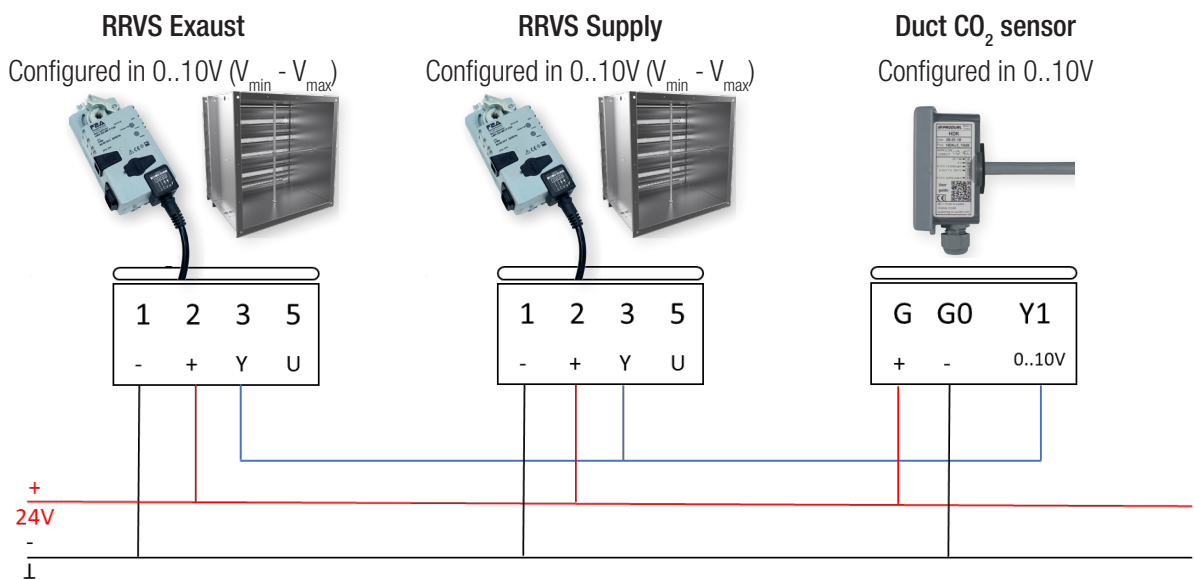Linear regulation between minimum and maximum airflow setpoints.

Corresponding wiring diagram :

CO_2 sensor configured in 0-10V over the range 500-1200 ppm.

RRVS configured with a 0.10V signal and an airflow range of 30-300 m^3/h.

The CO_2 sensor records a rate of 1000ppm and transmits it as a 5V signal to the dampers.

The dampers interpret 5V as a setpoint of 165 m^3/h to maintain.

RRVS Exaust
Configured in 0..10V (V_{min} - V_{max})

RRVS Supply
Configured in 0..10V (V_{min} - V_{max})

Duct CO_2 sensor
Configured in 0..10V

1	2	3	5
-	+	Y	U

1	2	3	5
-	+	Y	U

G	G0	Y1
+	-	0..10V

+ 24V -

Note: for modulating operation with tight closure, the damper must be configured in 2-10V. The damper will be tightly closed if the signal received on 3-Y is 0V. The parameters are factory-configured and can be modified on site with the TEL0001 remote control

OPERATING PRINCIPLES

Supply and Exhaust air controlled by a presence detector

Both RRVS are controlled by an external signal from a presence detector. The presence detector acts as a shunt of the control signal to control the VAV damper. It allows the damper to switch from a minimum to a maximum airflow setpoint.

Two possible scenarios depending on the damper configuration :

Min or max : the damper is at its minimum or maximum airflow.

on/off : the damper is tightly closed or at its maximum airflow..

For supply and exhaust:
In unoccupied mode, the required airflow is minimum, in high occupancy the required airflow is maximum.

Wiring diagram:
Presence detector configured in NO
RRVS configured in 0-10V over the range 30-300 m³/h.

In unoccupied mode, the detector is in the "open" position, the damper receives 0V and interprets the signal as a setpoint of 30 m³/h. In occupied mode, the detector switches to the "closed" position, the damper receives 24V and interprets this signal as a setpoint of 300 m³/h.
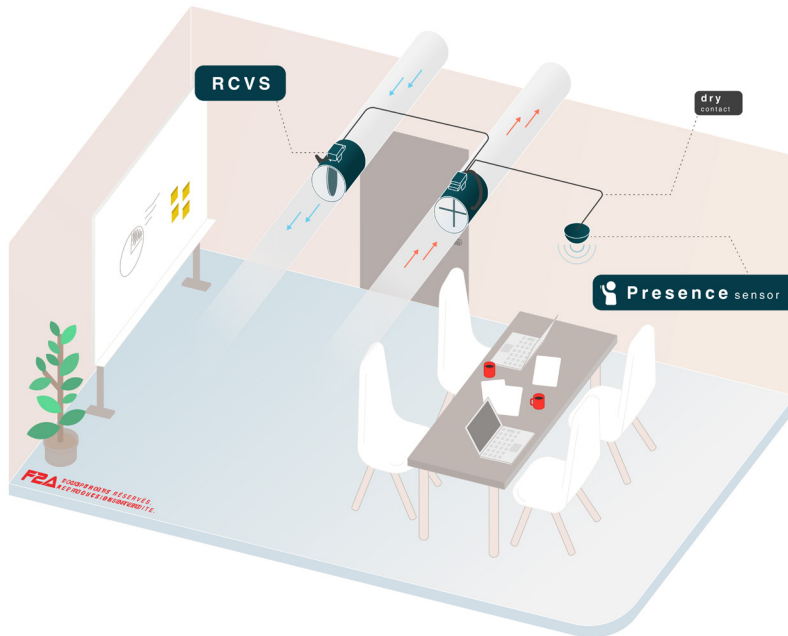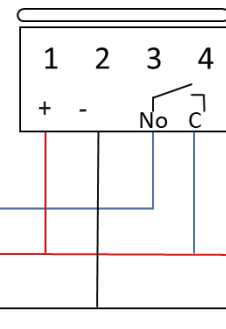

RRVS exhaust
Configuredin 0..10V (V_{min} - V_{max})
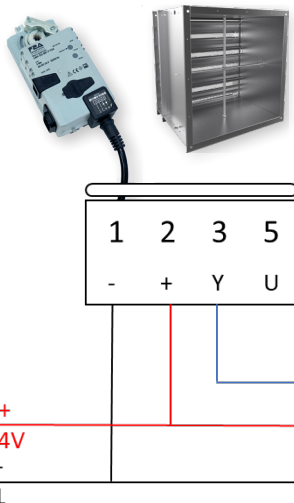
RRVS Supply
Configured in 0..10V (V_{min} - V_{max})
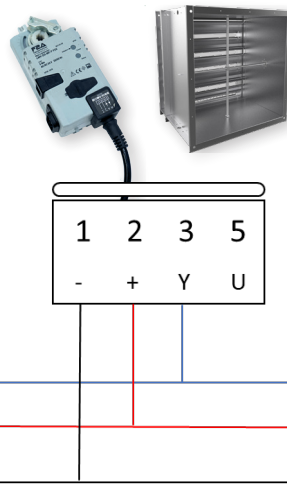
Presence detector normally open
NO to configure on-site

1	2	3	5
-	+	Y	U

1	2	3	5
-	+	Y	U

1	2	3	4
+	-	No	C

+
24V
-
⊥

NB : for modulating operation with tight closure. The damper setting have to be 2-10V. The damper will be closed tight if the signal received on 3-Y is 0V.
The parameters are factory configured and can be modified on site using the TEL0001

OPERATING PRINCIPLES

Supply and exhaust air controlled by a room controller and a CO_2 sensor

The two RRVS are controlled by an external signal from the Room damper. The room controller. It can regulates the temperature according to a setpoint but also in a boost mode or a schedule time.

The room CO_2 sensor wired to the room controller will enable to control the CO_2 level within the room.
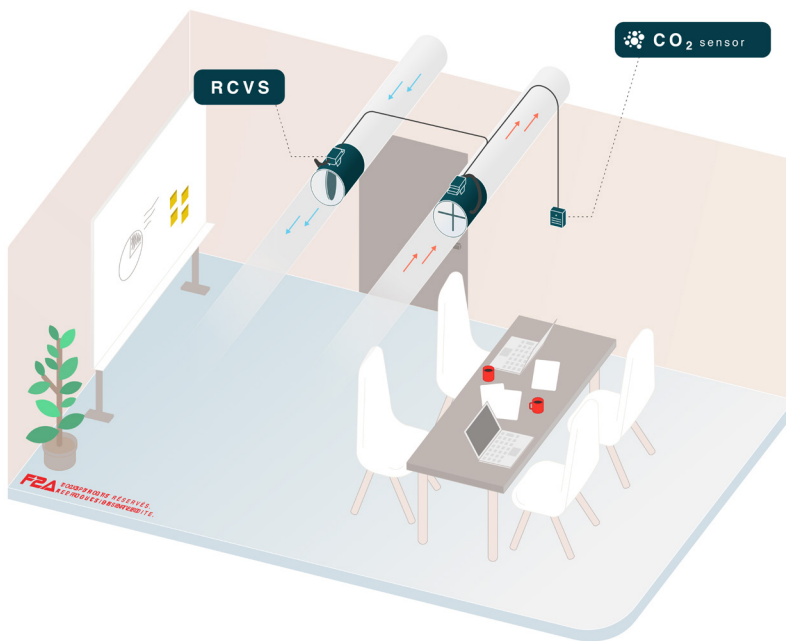
Supply and exhaust:

The CO_2 sensor sends a 0-10V signal according to the CO_2 level measured in the room to the room controller.
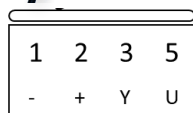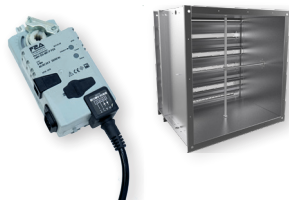
The room controller measures the temperature, compared with the signal from the CO_2 sensor, and defines the right setpoint to send to the dampers.

The damper controls the ariflow according to the setpoint.

Linear regulation between the set minimum and maximum airflow setpoints.

RRVS exhaust	RRVS supply	Room controller	Room CO_2, HR or T° sensor
Configured in 0..10V (V_{min} - V_{max})	Configured in 0..10V (V_{min} - V_{max})		Configured in 0..10V

1	2	3	5
-	+	Y	U

1	2	3	5
-	+	Y	U

G	G0	Y1	U1
+	-	0..10V out	0..10V in

1	2	16-A03
-	+	0..10V

14-A01 : T°
15-A02 : HR
16-A03 : CO2

+
24V
-
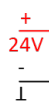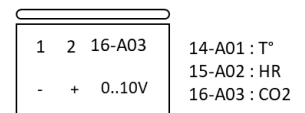
NB : for temperature control, the room controler is needed. For a temperature and CO_2 control, the CO_2 sensor is wired to the room controler. The room controler must be configured to send the right signals to the VAV dampers.

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RECTANGULAR VARIABLE AIR VOLUME DAMPER
RRVS / RRVS-I

DIMENSIONS AND WEIGHTS (KG)

470

Depending on H

170

L nominal + 70

L nominal + 10

Depending on H

100

H nominal + 70

actuator

∅ 10.6   20   20

RRVS : frame and blades in galvanized steel

RRVS-I : frame and blades in galvanized steel, acoustic insulation protected by a galvanized steel plate.
The L x H dimensions remain the same as the version without acoustic insulation

468.2

acoustic insulation
Thi25 mm

acoustic insulation
Thi 25 mm

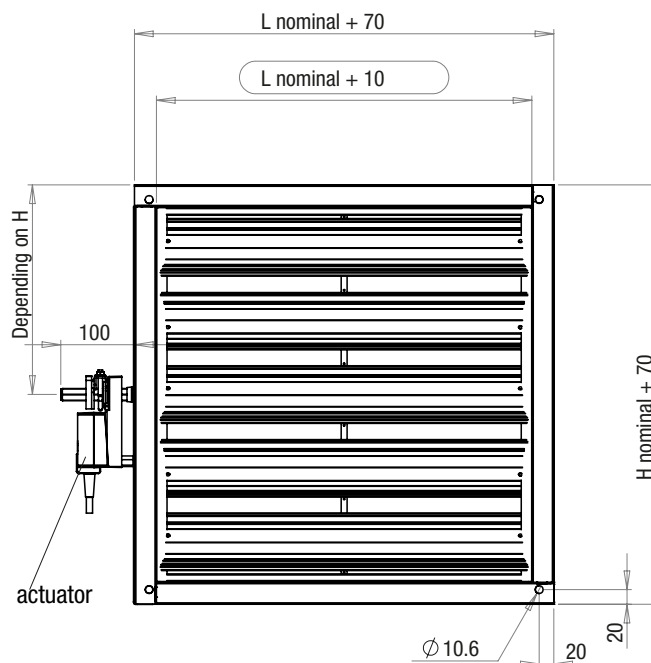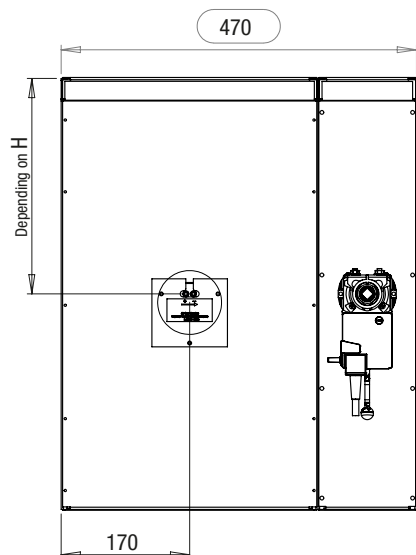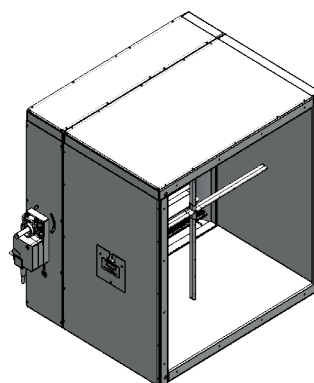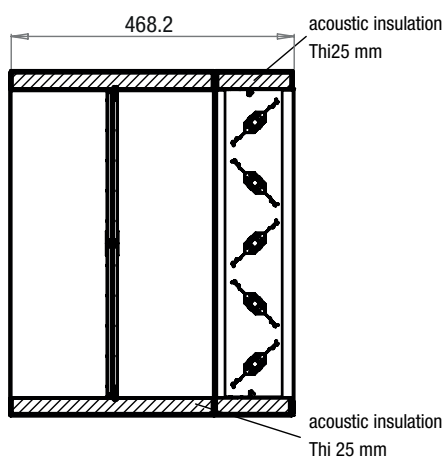| RRVS weight table (standard version)									
H \ L	100	200	300	400	500	600	700	800	900	1000
100	9	10	11	13	15	17	18	20	22	25
200	11	12	14	15	17	19	21	23	25	27
300	13	14	16	18	19	21	23	25	28	30
400	15	17	18	20	22	24	26	28	30	32
500	17	19	21	22	24	26	28	30	33	35
600	19	21	23	25	27	29	31	33	35	38
700	22	23	25	27	29	31	33	35	38	40
800	24	26	27	29	31	33	36	38	40	43
900	26	28	30	32	34	36	38	40	43	45
1000	28	30	32	34	36	38	41	43	45	48

NB : add +10% for insulated version

QUICK DIMENSION SELECTION ACCORDING TO THE AIRFLOW

We recommend an operating range for RRVS between Vmin = 1.5 m/s and Vmax = 5m/s to ensure acceptable noise levels. Beyond that, the use of an acoustic silencers is recommended.

	Minimum airflow		Lp* at 100 Pa	Maximum recommended airflow		Lp* at 100 Pa	Maximum airflow	
	m³/h	l/s	dB(A)	m³/h	l/s	dB(A)	m³/h	l/s
200 x 200	288	81	46	720	202	50	1 728	484
300 x 300	576	161	47	1 440	403	51	3 888	1 089
400 x 400	1 152	323	49	2 880	806	53	6 912	1 935
500 x 500	1 728	484	51	4 320	1 210	55	10 800	3 024
600 x 600	2 592	726	52	6 480	1 814	56	15 552	4 355
800 x 800	4 608	1 290	55	11 520	3 226	58	27 648	7 741
1000 x 1000	7 200	2 016	61	18 000	5 040	64	43 200	12 096

* Lp(A) : acoustic pressure level at a pressure drop of 100 Pa. With room attenuation.

RECOMMENDED AIRFLOW RANGE BY RRVS DIMENSIONS m³/h

Minimum airflow at 1.5 m/s

H \ L	200	300	400	500	600	700	800	900	1000
100	108	162	216	270	324	378	432	486	540
200	216	324	432	540	648	756	864	972	1080
300	324	486	648	810	972	1134	1 296	1 458	1620
400	432	648	864	1080	1296	1512	1 728	1 944	2160
500	540	810	1 080	1350	1620	1890	2 160	2 430	2700
600	648	972	1296	1620	1944	2268	2 592	2 916	3240
700	756	1134	1512	1890	2268	2646	3024	3402	3780
800	864	1296	1728	2 160	2592	3024	3456	3888	4320
900	972	1458	1944	2 430	2916	3402	3888	4374	4860
1000	1 080	1620	2160	2700	3240	3 780	4 320	4 860	5400

* Lp(A) : acoustic pressure level at a pressure drop of 100 Pa. With room attenuation.

< 50	50 - 55	55 - 60	> 60

Maximum airflow at 5 m/s

H \ L	200	300	400	500	600	700	800	900	1000
100	360	540	720	900	1 080	1 260	1 440	1 620	1 800
200	720	1 080	1 440	1 800	2 160	2 520	2 880	3 240	3 600
300	1 080	1 620	2 160	2 700	3 240	3 780	4 320	4 860	5 400
400	1 440	2 160	2 880	3 600	4 320	5 040	5 760	6 480	7 200
500	1 800	2 700	3 600	4 500	5 400	6 300	7 200	8 100	9 000
600	2 160	3 240	4 320	5 400	6 480	7 560	8 640	9 720	10 800
700	2 520	3 780	5 040	6 300	7 560	8 820	10 080	11 340	12 600
800	2 880	4 320	5 760	7 200	8 640	10 080	11 520	12 960	14 400
900	3 240	4 860	6 480	8 100	9 720	11 340	12 960	14 580	16 200
1000	3 600	5 400	7 200	9 000	10 800	12 600	14 400	16 200	18 000

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ACOUSTIC PERFORMANCES

500 x 500 mm						
Pressure drop	50 Pa		100 Pa		250 Pa	
Air velocity	2 m/s	5 m/s	2 m/s	5 m/s	2 m/s	5 m/s
63 Hz	51	53	54	57	59	63
125 Hz	51	56	58	63	65	69
250 Hz	47	53	55	58	64	67
500 Hz	48	54	53	57	65	65
1000 Hz	49	55	55	59	62	64
2000 Hz	43	49	50	56	61	64
4000 Hz	37	45	48	53	61	62
8000 Hz	36	38	39	46	57	57
Global dB	57	62	63	67	72	74
Global dB(A)	52	58	59	63	68	70

600 x 600 mm						
Pressure drop	50 Pa		100 Pa		250 Pa	
Air velocity	2 m/s	5 m/s	2 m/s	5 m/s	2 m/s	5 m/s
63 Hz	52	59	56	59	61	66
125 Hz	51	56	59	63	65	70
250 Hz	48	54	55	59	65	68
500 Hz	49	54	54	58	65	66
1000 Hz	53	56	57	60	64	65
2000 Hz	44	50	51	57	63	66
4000 Hz	37	47	49	54	61	63
8000 Hz	36	38	39	47	58	58
Global dB	58	64	64	68	73	75
Global dB(A)	55	59	60	64	70	72

700 x 700 mm						
Pressure drop	50 Pa		100 Pa		250 Pa	
Air velocity	2 m/s	5 m/s	2 m/s	5 m/s	2 m/s	5 m/s
63 Hz	54	65	57	62	62	69
125 Hz	51	56	59	64	66	71
250 Hz	48	54	56	60	66	70
500 Hz	51	55	55	59	66	67
1000 Hz	57	57	60	61	67	67
2000 Hz	46	51	52	58	65	67
4000 Hz	37	48	50	55	62	64
8000 Hz	36	39	40	48	60	59
Global dB	60	67	65	69	74	77
Global dB(A)	58	60	62	65	71	73

ACOUSTIC PERFORMANCES
Airflow noise sound acoustic power

800 x 800 mm						
Pressure drop	50 Pa		100 Pa		250 Pa	
Air velocity	2 m/s	5 m/s	2 m/s	5 m/s	2 m/s	5 m/s
63 Hz	55	67	59	63	64	70
125 Hz	52	57	60	65	67	72
250 Hz	49	55	57	61	67	71
500 Hz	52	56	56	60	67	69
1000 Hz	58	58	61	62	68	68
2000 Hz	47	52	54	59	66	68
4000 Hz	38	49	51	56	63	65
8000 Hz	38	40	41	49	61	61
Global dB	62	68	66	70	75	78
Global dB(A)	59	61	63	66	73	74

900 x 900 mm						
Pressure drop	50 Pa		100 Pa		250 Pa	
Air velocity	2 m/s	5 m/s	2 m/s	5 m/s	2 m/s	5 m/s
63 Hz	56	68	60	64	65	71
125 Hz	53	58	61	66	68	73
250 Hz	50	57	58	62	68	72
500 Hz	53	57	57	61	68	70
1000 Hz	59	59	62	63	69	69
2000 Hz	48	53	55	60	67	69
4000 Hz	39	50	52	57	64	67
8000 Hz	39	41	42	50	62	62
Global dB	63	69	67	71	76	79
Global dB(A)	60	62	64	67	74	75

1000 x 1000 mm						
Pressure drop	50 Pa		100 Pa		250 Pa	
Air velocity	2 m/s	5 m/s	2 m/s	5 m/s	2 m/s	5 m/s
63 Hz	57	69	61	65	66	72
125 Hz	54	59	62	67	69	74
250 Hz	51	57	59	63	69	73
500 Hz	54	58	58	62	69	71
1000 Hz	60	60	63	64	70	70
2000 Hz	49	54	56	61	68	70
4000 Hz	40	51	53	58	65	67
8000 Hz	39	42	43	51	63	63
Global dB	64	70	68	72	77	80
Global dB(A)	61	63	65	68	75	76

RECTANGULAR VARIABLE AIR VOLUME DAMPER
RRVS / RRVS-I

ACOUSTIC PERFORMANCES
Radiated noise level at a pressure drop of 100 Pa

|			Standard version	Insulated version			Standard version	Insulated version
	Minimum airflow		Global LwA	Global LwA	Maximum recommended airflow		Global LwA	Global LwA
	m³/h	l/s	dB(A)	dB(A)	m³/h	l/s	dB(A)	dB(A)
200 x 200	288	81	34	32	720	202	38	35
300 x 300	576	161	38	36	1 440	403	42	39
400 x 400	1 152	323	40	38	2 880	806	44	41
500 x 500	1 728	484	42	40	4 320	1 210	46	44
600 x 600	2 592	726	44	42	6 480	1 814	48	45
800 x 800	4 608	1 290	47	44	11 520	3 226	51	48
1000 x 1000	7 200	2 016	49	46	18 000	5 040	52	49

12/16

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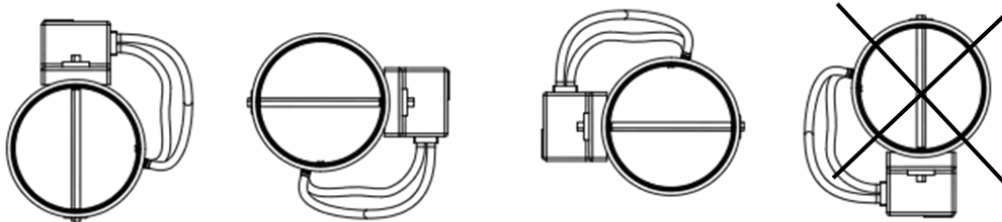
INSTALLATION REQUIREMENTS

Ensure a minimum safety distance of 2 to 3 x Ø between the damper and the nearest network singularity.

Ø d

L min. = 2Ø

Ø d

L min. = 2Ø
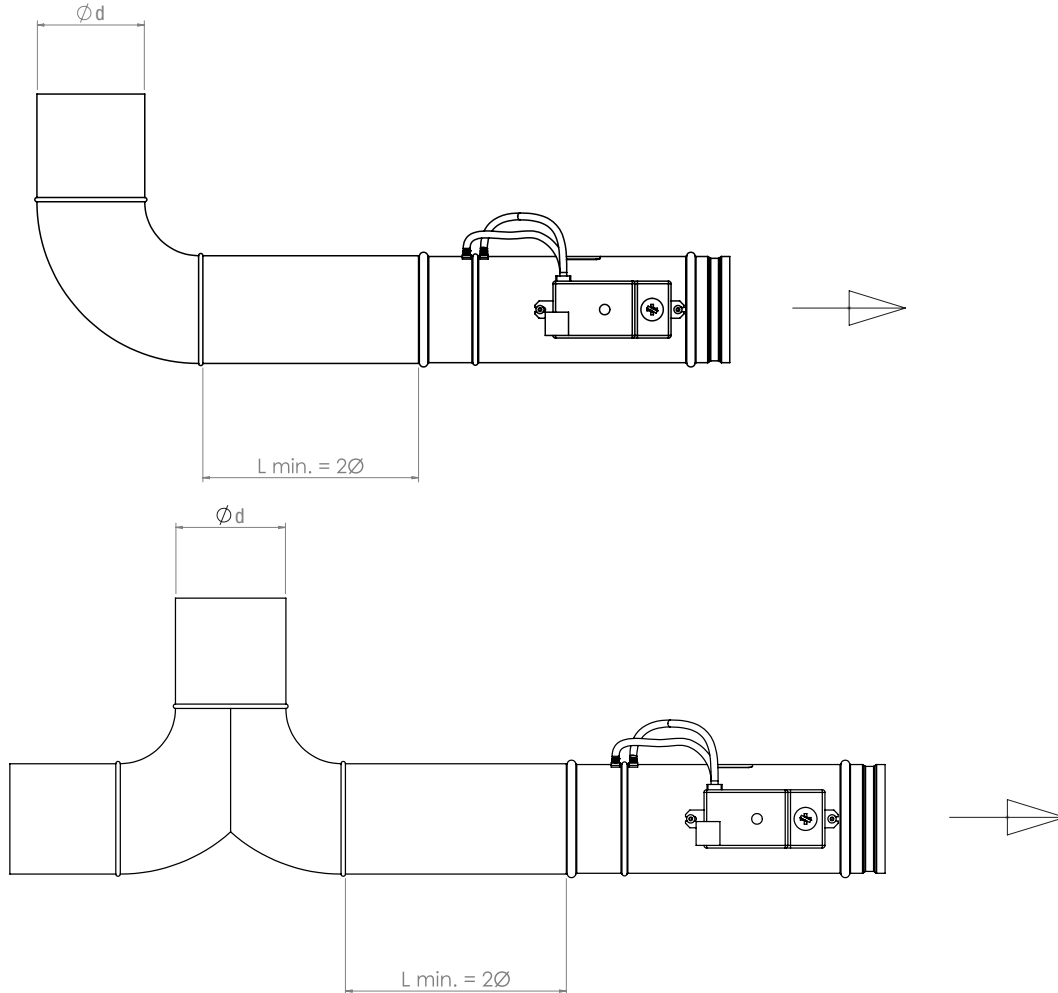
Never position the actuator at the bottom of the controller

Make sure pressure taps are located upstream of the blade

Airflow direction

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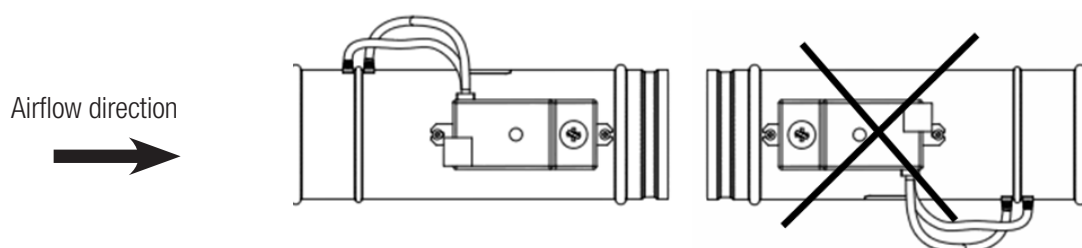
ACTUATORS

Actuators are factory fitted and set according to the required airflow range for the installation

L/H	Actuator torque																		
	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
100	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
150	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
200	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
250	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
300	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
350	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
400	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
450	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
500	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
550	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	10
600	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	10	10
650	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	10	10	10	10
700	5	5	5	5	5	5	5	5	5	5	5	5	5	5	10	10	10	10	10
750	5	5	5	5	5	5	5	5	5	5	5	5	5	10	10	10	10	10	10
800	5	5	5	5	5	5	5	5	5	5	5	5	10	10	10	10	10	10	10
850	5	5	5	5	5	5	5	5	5	5	5	10	10	10	10	10	10	10	10
900	5	5	5	5	5	5	5	5	5	5	5	10	10	10	10	10	10	10	10
950	5	5	5	5	5	5	5	5	5	5	10	10	10	10	10	10	10	10	10
1000	5	5	5	5	5	5	5	5	5	10	10	10	10	10	10	10	10	10	10

The control signal is 2-10 V on RCVS (0-10V signal available on request or can be modified on-site with the optional ZTH-EU remote control, please contact us).
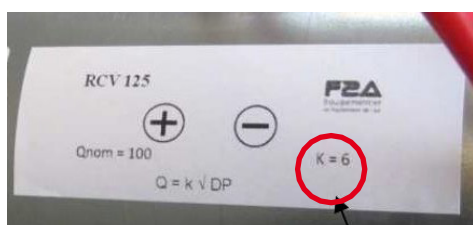
AIRFLOW CONTROL

The measured airflow rate can be calculated using the formula below and a K factor specific to each diameter. Connect to the pressure taps of the damper (+) and (-).

$$Q_V = K \sqrt{\Delta P}$$

Airflow (m³/h)   K factor Δ(total pressure (+) - pressure (-))

The flow rate adjustment accuracy relative to the setpoint is ±10% at minimum flow rate and ±5% at maximum flow rate

ELECTRICAL CONNECTION

MF version actuator: non-communicating (standard)

The MF version does not allow communication. The variable air volume damper operates autonomously based on the setpoints settings. The use of the "U" output signal allows visualizing certain operating parameters (blade opening, setpoint value).
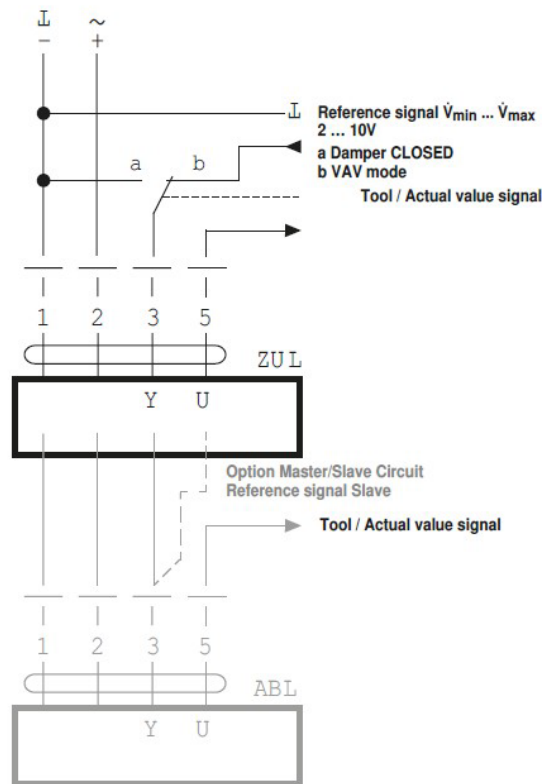
OPERATING PRINCIPLES

Example 1
VAV, analog signal
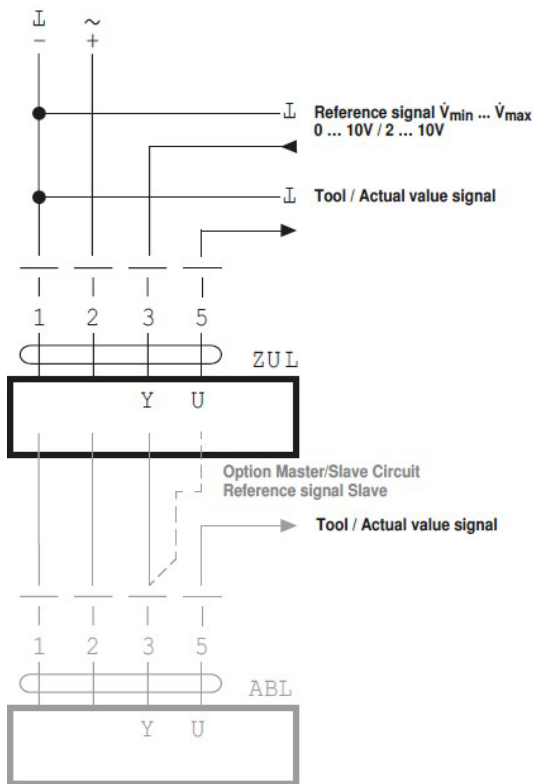
Example 2
VAV with closed mode (CLOSURE), 2...10V

Description :

Damper CLOSED with 0..10V control signal (Mode 2...10 V)

Parameter settings :
Mode 2...10V, closure threshold 0.1V ou 0.5V
If the required threshold of 0.1V is not reached, the value can be switched to 0.5V

With PC-Tool

Function	0.1V Stop level	0.5V Stop level
Damper CLOSED	<0.1V	<0.5V
V_{min}	>0.1V ...2V	>0.5V ...2V
V_{min}... V_{max}	2...10V	2...10V

The Y control signal is calculated based on the factory-set airflow range Qv min/Qv max

The feedback signal U is calculated based on the nominal airflow of the selected damper diameter.

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F2A
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ELECTRICAL CONNECTION

The RRVS dampers can also be used in constant airflow operation.

CONSTANT OPERATION CAV

Commande CAV Ilt is possible to configure the VAV-Compact in CAV mode when constant air flow control is required using the PC-Tool with the "CAV function":

- CLOSED damper - V_{min} - V_{max} - OPEN damper (standard)
- CLOSED damper - V_{min} - V_{max} - Vmax - damper (compatible with NMV-D2M)

Wiring diagram

Notes :
- Contacts switch in the same time
- DC power: *c and e are not available in DC 24V
- CAV applications:
  Mode 2...10V, stop level 0.1V.
- In CAV applications, the level must not be set to 0.5V, otherwise, the open connection 3 is considered as a CLOSED damper

Tool / Actual value signal
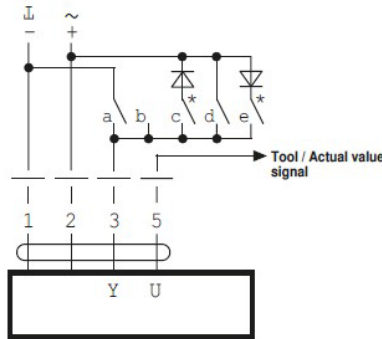
PC-Tool CAV mode settings :
2...10V, threshold 0.1V

CAV function CLOSED - V_{min} - V_{max} - OPEN (standard)

	a	b	c	d	e
Signal	⊥ −		~	~ +	~
Switching terminal 3	3	3	3	3	3
Mode 2 ... 10 V	CLOSED	$\dot{V}_{min}$	CLOSED *	$\dot{V}_{max}$	OPEN *
Mode 0 ... 10 V	$\dot{V}_{min}$	$\dot{V}_{min}$	CLOSED *	$\dot{V}_{max}$	OPEN *

PC-Tool CAV mode settings :
Closed- Vmin - Vmax - Closure threshold

CAV function CLOSED - V_{min} - V_{mid} - V_{max} - OP

	a	b	c	d	e
Signal	⊥ −		~	~ +	~
Switching terminal 3	3	3	3	3	3
Mode 2 ... 10 V	CLOSED	$\dot{V}_{min}$	$\dot{V}_{mid}$ *	$\dot{V}_{max}$	OPEN *
Mode 0 ... 10 V	$\dot{V}_{min}$	$\dot{V}_{min}$	$\dot{V}_{mid}$ *	$\dot{V}_{max}$	OPEN *

PC-Tool CAV mode settings :
Closed- Vmin - Vmid - Vmax

Actuators with communication (optional)

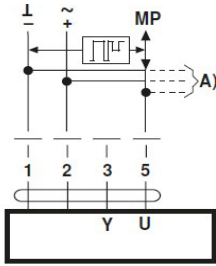Available communication protocols: :
- MP BUS
- BACnet MS TP
- LON
- MODBUS

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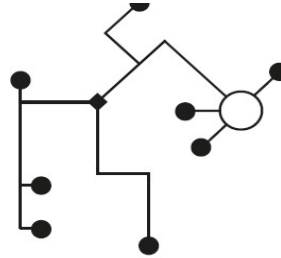Manufacturer
Air handling components

WIRING DIAGRAM

VARIABLE Airflow OPERATION WITH MP BUS (BELIMO protocol)
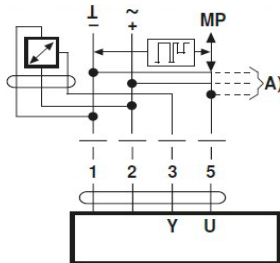
MP-Bus connection

A) Additional actuators and sensors (max. 8)

Wiring topology

There are no restrictions regarding network topology. Star-ring, bus or hybrid forms are permissible.
Communication and power supply can be carried in the same cable on the MP-Bus. Neither special cables nor terminating resistors are required.
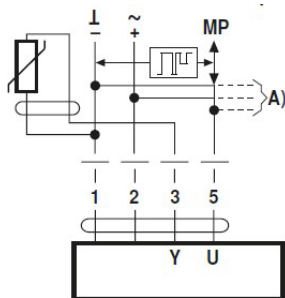
Active sensors connection

A) Additional actuators and sensors (max. 8)
- AC/DC 24V power supply
- Control signal DC 0...10V (max. DC 0...32V)
- Resolution 30 mV

Raccordement avec contact externe
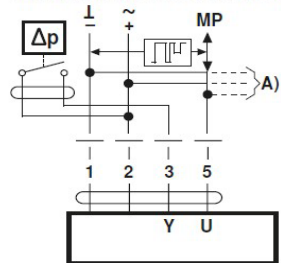
A/ Additional actuators and sensors (max. 8)
- Switching current 16 mA @ 24V
- Start point of the operating range must be parametrised on the MP actuator as ≥0.5 V

Passive sensor connection

| Ni1000 | −28...+98°C | 850...1600 Ω [2] |
| PT1000 | −35...+155°C | 850...1600 Ω [2] |
| NTC | −10...+160°C [1] | 200 Ω...60 kΩ [2] |

A/ Additional actuators and sensors (max. 8)
1) Depending on the type
2) Resolution 1 Ohm Compensation of the measured value is recommended

Local override control

If no sensor is implemented, 3 (Y) connector is available for the safety circuit of local control.
Option: CLOSED - Vmax - OPEN
Comment: available only for 24DC!
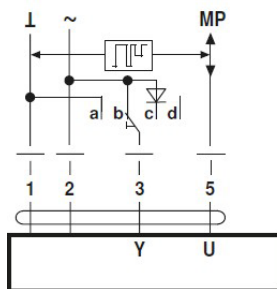
a Closed damper
b Vmax
c Open damper
d Bus mode