



Visual display of the damper blade position



Large dimensions as double version



Conforms to VDI 6022

# Constant volume flow control CAV terminal units

## EN-Ex



### For precise control of normal to high constant volume flows in potentially explosive atmospheres according to ATEX

Rectangular, mechanically self-powered air terminal units for supply and extract air systems with constant air volume flows, approved and certified for potentially explosive atmospheres (ATEX)

- ATEX-compliant construction
- Approved for gases, mists, vapours and dusts in zones 1, 2, 21 and 22
- Suitable for volume flow rates up to 12600 m<sup>3</sup>/h or 3500 l/s
- Volume flow rate adjustment from outside by rotary knob
- High control accuracy
- No on-site test measurements required for commissioning
- Casing air leakage to EN 1751, class C
- Visual display of the damper blade position for operating point optimisation

Optional equipment and accessories

- Acoustic cladding for the reduction of case-radiated noise
- Secondary silencer Type TX for the reduction of air-regenerated noise

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## General information

### Application

- Rectangular EXCONTROL-KVS control units for supply or extract air volume flow control in constant volume flow systems
- For use in potentially explosive atmospheres (ATEX)
- Mechanical self-powered volume flow control without external power supply
- Simplified project handling by ordering based on nominal size

### Special characteristics

- ATEX mark and certification
- ATEX equipment-group II, approved for zones 1, 2, 21 and 22
- Setting of the volume flow setpoint from the outside by rotary knob
- High control accuracy of the set volume flow rate
- Correct operation even under unfavourable upstream conditions
- Visual display of the damper blade position for operating point optimisation

### Nominal sizes

- 19 nominal sizes from 200 × 100 – 600 × 600 mm

### Variants

- EN-Ex: Air terminal units
- EN-EX-D: Air terminal units with acoustic cladding
- Units with acoustic cladding and/or secondary silencer Type TX for demanding acoustic requirements

### Construction

- Galvanised sheet steel
- P1: Powder-coated, silver grey (RAL 7001)

### Parts and characteristics

- Air terminal unit ready for commissioning
- Damper blade with low-friction bearings
- Bellows for vibration damping
- Cam plate with leaf spring
- Rotary knob pointer and scale for adjusting the flow rate setpoint
- Each air terminal unit is tested in the factory on a special ventilation test rig
- Visual display of the damper blade position for operating point optimisation
- Terminal point for equipotential bonding
- Enclosed ground cable (approx. 1 m length)

### Classification

- Zones 1 and 2 (atmosphere: gases): II 2 G c II T5/T6
- Zones 21 and 22 (atmosphere: dusts): II 2 D c II T 80 °C

### Useful additions

- Secondary silencer Type TX

### Construction features

- Rectangular casing
- Construction and materials comply with the EU directive for use in potentially explosive atmospheres (ATEX)
- Flanges on both ends, suitable for duct connections
- Air terminal units from H = 400 mm as double version (2 dampers with separate setting scales)

### Material and surfaces

#### Galvanised sheet steel construction

- Casing and damper blade made of galvanised sheet steel
- Leaf spring made of stainless steel
- Polyurethane bellows
- Plain bearings with PTFE coating
- Cam plate and adjusting unit made of galvanised sheet steel

#### Powder-coated construction (P1)

- Casing and damper blade made of galvanised sheet steel, powder-coated
- Leaf spring made of stainless steel
- Polyurethane bellows
- Plain bearings with PTFE coating
- Cam plate and adjusting unit made of galvanised sheet steel

#### Variant with acoustic cladding (-D)

- Acoustic cladding made of galvanised sheet steel
- Rubber seal for the insulation of structure-borne noise
- Lining made of mineral wool

#### Mineral wool

- Acc. to EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Non-hazardous thanks to high biosolubility according to the German Ordinance on Hazardous Substances and Note Q of the European Regulation (EC) No. 1272/2008

### Standards and guidelines

#### Meets the hygiene requirements of

- EN 16798, Part 3
- VDI 6022, Sheet 1
- DIN 1946, Part 4
- For further standards and guidelines, please refer to the hygiene certificate

#### Casing air leakage

- EN 1751, Class C

#### ATEX Directive 2014/34/EU

- Equipment and protective systems intended for use in potentially explosive atmospheres

### Maintenance

- Maintenance-free, as construction and materials are not subject to wear and tear

## Function

### Functional description

The air terminal unit is a mechanical self-powered unit and works without external power supply. A damper blade with low-friction bearings is adjusted by aerodynamic forces so that the set volume flow rate is kept constant within the differential pressure range. The aerodynamic forces of the airflow create a closing torque on the damper blade. An inflating bellows amplifies this force and at the same time acts as a damping element. The closing torque is countered by a leaf spring that unrolls over a cam plate. The cam plate is adapted in such a way that the damper blade moves when the differential pressure changes. As a result, the volume flow rate remains constant within narrow tolerances.

### Efficient commissioning

Using the rotary knob, the desired volume flow setpoint can be set quickly on the external scale, no prior measurement required. The advantage over conventional flow adjustment dampers is that no repeated measurements or adjustments during commissioning are required. Should the system pressure change, e.g. by opening or closing of duct sections, the flow rates in the entire system will also change if flow adjustment dampers are used; however, this is not the case with mechanical self-powered air terminal units. The air terminal unit reacts immediately and keeps the set air volume constant.

### Schematic illustration of the EN-Ex



- ① Damper blade
- ② Bellows
- ③ Bellows inlet
- ④ Scale sticker
- ⑤ Connection for equipotential bonding
- ⑥ Visual display of the damper blade position
- ⑦ Rotary knob



## Technical data

Nominal sizes	200 × 100 – 600 × 600 mm
Volume flow rate range	39 – 3500 l/s or 140 – 12600 m <sup>3</sup> /h
Volume flow rate control range	approx. 25 to 100 % of the nominal volume flow rate
Scale accuracy	±4 %
Minimum differential pressure	50 Pa
Maximum differential pressure	1000 Pa
Operating temperature	10 to 50 °C

## Quick sizing

Quick sizing tables provide a good overview of the minimum differential pressures, the volume flow rate accuracy and the room sound pressure levels that can be expected. Intermediate values may be achieved by interpolation. Precise results and spectral data for all control components can be obtained by using our Easy Product Finder design programme. The nominal size is initially selected according to the given volume flow rates  $q_{vmin}$  and  $q_{vmax}$ .

### Volume flow rate ranges and minimum differential pressure values

The minimum pressure difference of the air terminal units is an important variable for planning the air duct network and for dimensioning the fan, including speed control. It must be ensured that under all operating conditions a sufficient pressure difference ( $\Delta p_{st min}$ ) is present above the air terminal unit. The measurement point(s) for fan speed control must be selected accordingly.

### Volume flow rate ranges and minimum differential pressure values

NS	$q_v$ [l/s]	$q_v$ [m³/h]	$\Delta p_{st min}$ [Pa]		$\Delta q_v$ [±%]
			1	2	
200 × 100	39	140	50	7	17
200 × 100	68	246	50	22	11
200 × 100	104	376	50	51	8
200 × 100	164	590	50	125	5
300 × 100	65	234	50	9	13
300 × 100	137	492	50	39	8
300 × 100	199	716	50	82	6
300 × 100	260	936	50	140	5
300 × 150	82	295	50	5	15
300 × 150	152	547	50	17	10
300 × 150	294	1059	50	64	6
300 × 150	460	1656	50	157	5
300 × 200	120	432	50	6	14
300 × 200	197	710	50	16	10
300 × 200	349	1257	50	51	7
300 × 200	515	1854	50	111	5
400 × 200	200	720	50	9	12
400 × 200	337	1213	50	27	8
400 × 200	585	2106	50	80	6
400 × 200	875	3150	50	179	4
500 × 200	180	648	50	5	15
500 × 200	271	977	50	11	11
500 × 200	554	1995	50	46	7
500 × 200	900	3240	50	122	5
600 × 200	225	810	50	5	15
600 × 200	381	1370	50	15	10
600 × 200	689	2480	50	49	7
600 × 200	1010	3636	50	106	5
400 × 250	200	720	50	6	14
400 × 250	333	1198	50	17	10
400 × 250	537	1932	50	43	7
400 × 250	885	3186	50	117	5
500 × 250	235	846	50	5	15
500 × 250	460	1655	50	20	9
500 × 250	815	2932	50	64	6
500 × 250	1190	4284	50	136	5



NS	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Δp <sub>st min</sub> [Pa]		Δq <sub>v</sub> [±%]
			1	2	
600 × 250	300	1080	50	6	14
600 × 250	499	1795	50	17	10
600 × 250	897	3231	50	54	7
600 × 250	1310	4716	50	114	5
400 × 300	310	1116	50	10	12
400 × 300	553	1992	50	32	8
400 × 300	902	3249	50	85	6
400 × 300	1280	4608	50	171	4
500 × 300	365	1314	50	9	12
500 × 300	535	1928	50	19	9
500 × 300	998	3593	50	66	6
500 × 300	1580	5688	50	166	4
600 × 300	350	1260	50	6	14
600 × 300	669	2409	50	21	9
600 × 300	1137	4094	50	60	6
600 × 300	1750	6300	50	142	5
400 × 400	400	1440	50	9	12
400 × 400	674	2425	50	27	8
400 × 400	1170	4212	50	80	6
400 × 400	1750	6300	50	179	4
500 × 400	360	1296	50	5	15
500 × 400	715	2574	50	19	9
500 × 400	1330	4787	50	66	6
500 × 400	1800	6480	50	122	5
600 × 400	450	1620	50	5	15
600 × 400	958	3448	50	24	9
600 × 400	1595	5741	50	66	6
600 × 400	2020	7272	50	106	5
500 × 500	470	1692	50	5	15
500 × 500	1143	4113	50	31	8
500 × 500	1882	6776	50	85	6
500 × 500	2380	8568	50	136	5
600 × 500	600	2160	50	6	14
600 × 500	1246	4487	50	26	8
600 × 500	2084	7503	50	72	6
600 × 500	2620	9432	50	114	5
600 × 600	700	2520	50	6	14
600 × 600	1948	7014	50	44	7
600 × 600	2921	10517	50	99	5
600 × 600	3500	12600	50	142	5

1 Basic unit

2 Additional silencer TX (consider additionally)

## Quick sizing table for sound pressure levels

The quick sizing tables include common sound insulation and attenuation values. If the sound pressure level is above the permissible value, a larger air terminal unit and/or a silencer or acoustic cladding are required. For more information on the acoustic data, see General Information and Nomenclature.

### Sound pressure level at differential pressure 150 Pa

NS	q <sub>v</sub> [l/s]	q <sub>v</sub> [m <sup>3</sup> /h]	1	2	3	4
200 × 100	39	140	40	23	26	18
200 × 100	68	246	44	29	31	23
200 × 100	104	376	47	34	35	27
200 × 100	164	590	50	38	38	31
300 × 100	65	234	41	26	28	20
300 × 100	137	492	47	35	35	28
300 × 100	199	716	48	38	38	33
300 × 100	260	936	49	40	41	36
300 × 150	82	295	43	26	30	21
300 × 150	152	547	47	32	35	27
300 × 150	294	1059	49	36	40	33
300 × 150	460	1656	50	38	44	38
300 × 200	120	432	44	29	31	23
300 × 200	197	710	47	33	36	29
300 × 200	349	1257	49	37	42	36
300 × 200	515	1854	51	39	46	41
400 × 200	200	720	45	30	34	25
400 × 200	337	1213	47	33	39	31
400 × 200	585	2106	50	37	45	38
400 × 200	875	3150	53	40	49	43
500 × 200	180	648	47	29	34	23
500 × 200	271	977	48	30	37	27
500 × 200	554	1995	49	33	42	33
500 × 200	900	3240	50	36	45	38
600 × 200	225	810	48	28	36	25
600 × 200	381	1370	48	29	39	29
600 × 200	689	2480	48	32	43	34
600 × 200	1010	3636	49	33	45	37
400 × 250	200	720	44	28	32	23
400 × 250	333	1198	46	30	37	28
400 × 250	537	1932	48	33	41	33
400 × 250	885	3186	49	36	45	38
500 × 250	235	846	47	28	35	24
500 × 250	460	1655	47	30	39	29
500 × 250	815	2932	47	32	42	34
500 × 250	1190	4284	47	34	44	37
600 × 250	300	1080	47	29	37	26
600 × 250	499	1795	47	30	39	30
600 × 250	897	3231	47	32	43	35
600 × 250	1310	4716	47	34	45	37
400 × 300	310	1116	44	29	35	27
400 × 300	553	1992	47	33	41	33
400 × 300	902	3249	50	36	46	39



NS	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	1	2	3	4
400 × 300	1280	4608	52	39	50	43
500 × 300	365	1314	47	30	38	28
500 × 300	535	1928	48	31	40	31
500 × 300	998	3593	48	33	44	36
500 × 300	1580	5688	49	35	47	39
600 × 300	350	1260	47	29	37	26
600 × 300	669	2409	47	30	41	31
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400 × 400	1750	6300	53	40	52	46
500 × 400	360	1296	47	28	37	26
500 × 400	715	2574	48	31	42	32
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500 × 500	1143	4113	47	31	43	34
500 × 500	1882	6776	47	33	45	38
500 × 500	2380	8568	47	34	47	40
600 × 500	600	2160	47	29	40	29
600 × 500	1246	4487	47	31	44	35
600 × 500	2084	7503	47	32	47	39
600 × 500	2620	9432	47	34	48	40
600 × 600	700	2520	47	29	40	29
600 × 600	1948	7014	47	31	46	37
600 × 600	2921	10517	47	33	48	40
600 × 600	3500	12600	47	34	49	42

**Air-regenerated noise**

1 basic unit, 2 basic unit with TX additional silencer

**Case-radiated noise**

3 Basic unit, 4 Basic unit with insulation shell

**Note**

The sound power levels for calculating the sound pressure levels were measured in the TROX laboratory according to DIN EN ISO 5135 - see "General information and Nomenclature".



## Specification text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design program.

### Specification text

Air terminal units in rectangular design for constant air volume systems, mechanically self-powered, without external power supply, for supply or extract air, in 19 nominal sizes.

Air terminal unit ready for commissioning, consisting of the casing with smooth-running control damper, control bellows and external cam disc with leaf spring as well as components for equipotential bonding and explosion protection. The air terminal units are factory adjusted and preset to a reference air volume. Sound power level measured according to DIN EN ISO 5135. Meets the hygiene requirements according to VDI 6022. Meets the requirements of ATEX Directive 2014/34 EU.

### Special features

- ATEX mark and certification
- ATEX equipment-group II, approved for zones 1, 2, 21 and 22
- Setting of the volume flow setpoint from the outside by rotary knob
- High control accuracy of the set volume flow rate
- Correct operation even under unfavourable upstream conditions
- Visual display of the damper blade position for operating point optimisation

### Materials and surfaces

Galvanised sheet steel construction

- Casing and damper blade made of galvanised sheet steel
- Leaf spring made of stainless steel
- Polyurethane bellows
- Plain bearings with PTFE coating
- Cam plate and adjusting unit made of galvanised sheet steel

Powder-coated construction (P1)

- Casing and damper blade made of galvanised sheet steel, powder-coated
- Leaf spring made of stainless steel

- Polyurethane bellows
  - Plain bearings with PTFE coating
  - Cam plate and adjusting unit made of galvanised sheet steel
- Variant with acoustic cladding (-D)

- Acoustic cladding made of galvanised sheet steel
- Rubber seal for the insulation of structure-borne noise
- Lining made of mineral wool

Mineral wool

- Acc. to EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Non-hazardous thanks to high biosolubility according to the German Ordinance on Hazardous Substances and Note Q of the European Regulation (EC) No. 1272/2008

### Construction

- Galvanised sheet steel
- P1: Powder-coated, silver grey (RAL 7001)

### Technical data

- Nominal sizes: 200 × 100 to 600 × 600 mm
- Volume flow rate range: 39 – 3500 l/s or 140 – 12600 m<sup>3</sup>/h
- Volume flow rate control range: approx. 25 – 100 % of the nominal volume flow rate
- Minimum differential pressure: 50 Pa
- Maximum permissible differential pressure: 1000 Pa
- Casing air leakage acc. to EN 1751, class C

### Sizing data

- $q_v$  [m<sup>3</sup>/h]
- $\Delta p_{st}$  [Pa]

Air-regenerated noise

- $L_{PA}$  [dB(A)]

Case-radiated noise

- $L_{PA}$  [dB(A)]



Order code

EN-Ex - D - P1 / 400 × 200

1 2 3 4

**1 Type**

EN-Ex Air terminal unit

**2 Acoustic cladding**

No entry: without acoustic cladding

D with acoustic cladding

**3 Material**

No entry: galvanised sheet steel

P1 Powder-coated RAL 7001 (silver grey)

**4 Nominal size [mm]**

Specify size width × height

**Order example: EN-Ex-D-P1/400×200**

Type	EN-Ex
Acoustic cladding	with acoustic cladding
Material	Powder-coated RAL 7001 (silver grey)
Nominal size [mm]	Width 400, height 200

## Variants

### EN-Ex



- Air terminal units for constant air volume flow control
- 

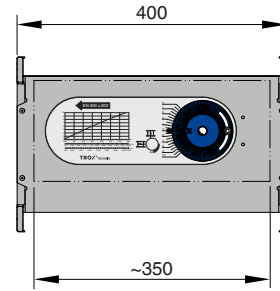
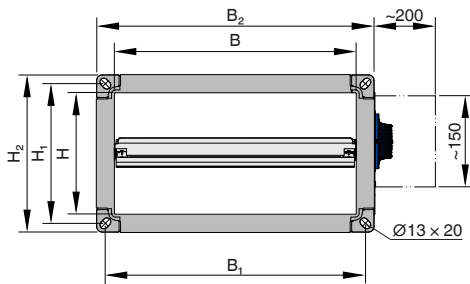
### EN-Ex-D



- Air terminal units with acoustic cladding for constant air volume flow control
  - For rooms in which the case-radiated noise of the unit is not sufficiently reduced by a suspended ceiling
  - The rectangular ducts for the room under consideration must have adequate acoustic insulation (provided by others) on the fan and room ends
  - Acoustic cladding cannot be retrofitted
-

## Dimensions

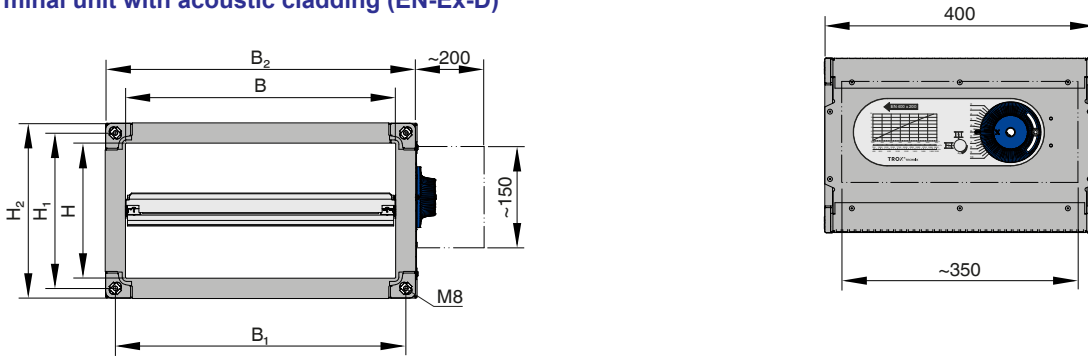
**Air terminal unit without acoustic cladding (EN-EX)**



**Product specific data EN-Ex**

NS	B	H	L	B <sub>1</sub>	B <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>	kg
200 × 100	200	100	400	230	260	130	160	4
300 × 100	300	100	400	330	360	130	160	5
300 × 150	300	150	400	330	360	180	210	6
300 × 200	300	200	400	330	360	230	260	6
400 × 200	400	200	400	430	460	230	260	7
400 × 250	400	250	400	430	460	280	310	8
400 × 300	400	300	400	430	460	330	360	8,5
400 × 400	400	400	400	430	460	430	460	13
500 × 200	500	200	400	530	560	230	260	8,5
500 × 250	500	250	400	530	560	280	310	9
500 × 300	500	300	400	530	560	330	360	9,5
500 × 400	500	400	400	530	560	430	460	14,5
500 × 500	500	500	400	530	560	530	560	15,5
600 × 200	600	200	400	630	660	230	260	10
600 × 250	600	250	400	630	660	280	310	10,5
600 × 300	600	300	400	630	660	330	360	11,5
600 × 400	600	400	400	630	660	430	460	17
600 × 500	600	500	400	630	660	530	560	18
600 × 600	600	600	400	630	660	630	660	20

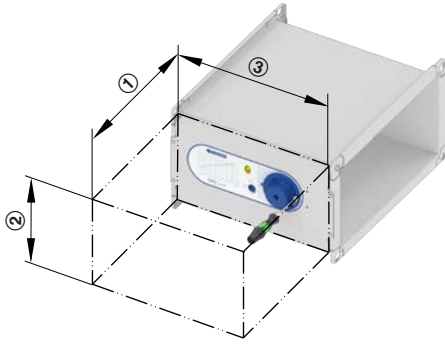
Air terminal unit with acoustic cladding (EN-Ex-D)



Product specific data EN-Ex-D

NS	B	H	L	B <sub>1</sub>	B <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>	kg
200 × 100	200	100	400	230	260	130	160	6,5
300 × 100	300	100	400	330	360	130	160	8
300 × 150	300	150	400	330	360	180	210	9
300 × 200	300	200	400	330	360	230	260	10
400 × 200	400	200	400	430	460	230	260	12
400 × 250	400	250	400	430	460	280	310	13
400 × 300	400	300	400	430	460	330	360	14
400 × 400	400	400	400	430	460	430	460	18
500 × 200	500	200	400	530	560	230	260	14
500 × 250	500	250	400	530	560	280	310	14,5
500 × 300	500	300	400	530	560	330	360	15,5
500 × 400	500	400	400	530	560	430	460	20,5
500 × 500	500	500	400	530	560	530	560	22
600 × 200	600	200	400	630	660	230	260	15,5
600 × 250	600	250	400	630	660	280	310	16,5
600 × 300	600	300	400	630	660	330	360	18
600 × 400	600	400	400	630	660	430	460	23
600 × 500	600	500	400	630	660	530	560	25
600 × 600	600	600	400	630	660	630	660	27,5

**En-Ex Installation space**



**Space required**

①	②	③
200	H	200

H: Unit height

## Product details

### Installation and commissioning

- Installation with horizontal airflow: Do not point the operating side (setting scale, handwheel) upwards
- Connections for equipotential bonding on the customer side (ground cable approx. 1 m long included in the scope of delivery)
- Setting of the volume flow setpoint from the outside by rotary knob
- Loosen and lock the rotary knob with hexagon socket screw
- No repeat measurements or adjustments required during commissioning
- EN-Ex-D: For constructions with acoustic cladding, ducts on the room side should have cladding up to the acoustic cladding of the air terminal unit

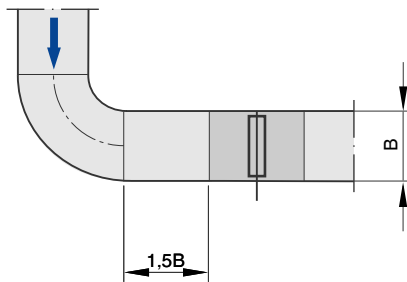
### Upstream conditions

The volume flow rate accuracy  $\Delta q_v$  applies to a straight upstream section of the duct. Fittings such as bends, junctions, or changes in cross-section cause turbulence that can influence the volume flow accuracy. Duct connections, e.g. branches off the main duct, must comply with EN 1505. Free air intake only with 1.5B or 1.5H straight upstream length.

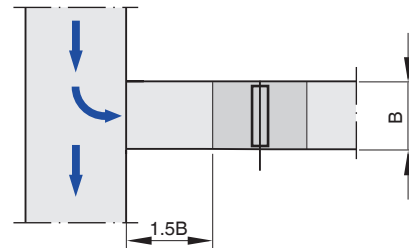
### Space required for commissioning and maintenance

To enable commissioning and maintenance work, keep sufficient installation space clear in the area of the operating side (setting scale, rotary knob, optional attachment parts). If necessary, inspection openings of sufficient size are required.

#### Bend, horizontal

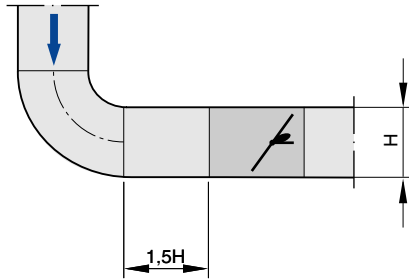
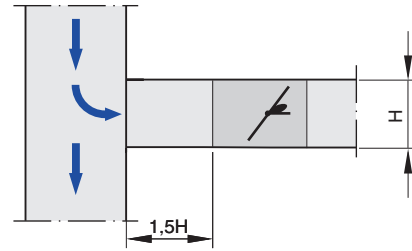


#### Junction, horizontal



Between any bend and the CAV terminal unit, a straight duct section of at least 1.5B upstream length is required to achieve the stated volume flow rate accuracy  $\Delta q_v$ .

A junction from a main duct causes strong turbulence. The specified volume flow rate accuracy  $\Delta q_v$  can only be achieved with a straight duct section of at least 1.5B upstream. If there is no straight upstream section at all, the control will not be stable, even with a perforated plate.

**Bend, vertical****Junction, vertical**

Between any bend and the CAV terminal unit, a straight duct section of at least  $1.5B$  upstream length is required to achieve the stated volume flow rate accuracy  $\Delta q_v$ .

A junction from a main duct causes strong turbulence. The specified volume flow rate accuracy  $\Delta q_v$  can only be achieved with a straight duct section of at least  $1.5H$  upstream. If there is no straight upstream section at all, the control will not be stable, even with a perforated plate.



## Nomenclature

**NS** [mm]; [in]

Nominal size

**B** [mm]; [in]

Duct width

**B<sub>1</sub>** [mm]; [in]

Screw hole pitch of flange (horizontal)

**B<sub>2</sub>** [mm]; [in]

Overall dimension of flange (width)

**H** [mm]; [in]

Duct height

**H<sub>1</sub>** [mm]; [in]

Screw hole pitch of flange (vertical)

**H<sub>2</sub>** [mm]; [in]

Overall dimension of flange (height)

**m** [kg]

Unit weight including the minimum required attachments for manual adjustment

**L<sub>PA</sub>** [dB(A)]

Sound pressure level of the air-regenerated noise of the air terminal unit, A-weighted, system attenuation taken into account

**L<sub>PA1</sub>** [dB(A)]

Sound pressure level of air-regenerated noise of the air terminal unit with secondary silencer, A-weighted, system attenuation taken into account

**L<sub>PA2</sub>** [dB(A)]

Sound pressure level of the case-radiated noise of the air terminal unit, A-weighted, system attenuation taken into account

**L<sub>PA3</sub>** [dB(A)]

Sound pressure level of the case-radiated noise of the air terminal unit with acoustic cladding, A-weighted, system attenuation taken into account

**Δp<sub>st</sub>** [Pa]; [inWg]

Static differential pressure

**Δp<sub>st min</sub>** [Pa]

Static minimum differential pressure: The static minimum differential pressure is equal to the pressure loss of the terminal unit when the damper blade is open, caused by flow resistance (damper blade). If the differential pressure on the CAV terminal unit is too low, the set volume flow may not be achieved, not even when the damper blade is open. Important factor for planning the ductwork and for rating the fan including speed control. Sufficient differential pressure must be ensured at all air terminal units for all operating conditions, and that the measurement point(s) for speed control are selected accordingly.

**q<sub>vNom</sub>** [m<sup>3</sup>/h]; [l/s]

Nominal volume flow rate (100 %)

- The value depends on product type and nominal size
- Values are published on the internet and in technical leaflets, and stored in the Easy Product Finder design software.
- Upper limit of the setting range and maximum possible volume flow setpoint of the CAV terminal unit

**q<sub>v</sub>** [m<sup>3</sup>/h]; [l/s]; [CFM]

Volume flow rate

**Δ<sub>qv</sub>** [%]

Volume flow rate accuracy in relation to the setpoint (tolerance)

**Lengths** [mm]; [in]

All lengths are given in millimetres [mm] unless stated otherwise.

### Basic unit

Unit for controlling volume flow rates. The main components are the casing with damper blade to restrict the volume flow and the manual adjustment unit for setting the setpoint volume flow. Important distinguishing features: Geometry or unit shape, material variants, acoustic properties (e.g. acoustic cladding option), volume flow rate range.

### Control component

Electrical device mounted on the basic unit for setpoint adjustment. The actuator does not assume any control function, restriction or shut-off and is not used for actual value feedback. Important distinguishing features: Supply voltage, control (min/max, variable).

EN in Ex version are not available with actuator.

### Volume flow controller

The basic unit is a functioning constant air terminal unit without external power supply.