



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 7416 cfm or 12600 m³/h
- 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 7.9 × 3.9 – 23.6 × 23.6 in

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. 3 ft 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 176 °F

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 = 15.7 in 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	7.9 × 3.9 – 23.6 × 23.6 in
Volume flow rate range	83 - 7416 cfm or 140 - 12600 m³/h
Volume flow rate control range	approx. 25 to 100 % of the nominal volume flow rate
Scale accuracy	±4 %
Minimum differential pressure	.20 in wg
Maximum differential pressure	4.02 in wg
Operating temperature	50 to 122 °F

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 [cfm]	q_v [m³/h]	$\Delta p_{st min}$ [in wg]		Δq_v [±%]
			1	2	
7.9 × 3.9	83	140	.20	.03	17
7.9 × 3.9	144	246	.20	.09	11
7.9 × 3.9	220	376	.20	.20	8
7.9 × 3.9	347	590	.20	.50	5
11.8 × 3.9	138	234	.20	.04	13
11.8 × 3.9	290	492	.20	.16	8
11.8 × 3.9	422	716	.20	.33	6
11.8 × 3.9	551	936	.20	.56	5
11.8 × 5.9	174	295	.20	.02	15
11.8 × 5.9	322	547	.20	.07	10
11.8 × 5.9	623	1059	.20	.26	6
11.8 × 5.9	975	1656	.20	.63	5
11.8 × 7.9	254	432	.20	.02	14
11.8 × 7.9	417	710	.20	.06	10
11.8 × 7.9	739	1257	.20	.20	7
11.8 × 7.9	1091	1854	.20	.45	5
15.7 × 7.9	424	720	.20	.04	12
15.7 × 7.9	714	1213	.20	.11	8
15.7 × 7.9	1240	2106	.20	.32	6
15.7 × 7.9	1854	3150	.20	.72	4
19.7 × 7.9	381	648	.20	.02	15
19.7 × 7.9	574	977	.20	.04	11
19.7 × 7.9	1174	1995	.20	.18	7
19.7 × 7.9	1907	3240	.20	.49	5
23.6 × 7.9	477	810	.20	.02	15
23.6 × 7.9	807	1370	.20	.06	10
23.6 × 7.9	1460	2480	.20	.20	7
23.6 × 7.9	2140	3636	.20	.43	5
15.7 × 9.8	424	720	.20	.02	14
15.7 × 9.8	706	1198	.20	.07	10
15.7 × 9.8	1138	1932	.20	.17	7
15.7 × 9.8	1875	3186	.20	.47	5
19.7 × 9.8	498	846	.20	.02	15
19.7 × 9.8	975	1655	.20	.08	9
19.7 × 9.8	1727	2932	.20	.26	6
19.7 × 9.8	2521	4284	.20	.55	5



NS	q _v [cfm]	q _v [m³/h]	Δp _{st min} [in wg]		Δq _v [±%]
			1	2	
23.6 × 9.8	636	1080	.20	.02	14
23.6 × 9.8	1057	1795	.20	.07	10
23.6 × 9.8	1901	3231	.20	.22	7
23.6 × 9.8	2776	4716	.20	.46	5
15.7 × 11.8	657	1116	.20	.04	12
15.7 × 11.8	1172	1992	.20	.13	8
15.7 × 11.8	1911	3249	.20	.34	6
15.7 × 11.8	2712	4608	.20	.69	4
19.7 × 11.8	773	1314	.20	.04	12
19.7 × 11.8	1134	1928	.20	.08	9
19.7 × 11.8	2115	3593	.20	.27	6
19.7 × 11.8	3348	5688	.20	.67	4
23.6 × 11.8	742	1260	.20	.02	14
23.6 × 11.8	1418	2409	.20	.08	9
23.6 × 11.8	2409	4094	.20	.24	6
23.6 × 11.8	3708	6300	.20	.57	5
15.7 × 15.7	848	1440	.20	.04	12
15.7 × 15.7	1428	2425	.20	.11	8
15.7 × 15.7	2479	4212	.20	.32	6
15.7 × 15.7	3708	6300	.20	.72	4
19.7 × 15.7	763	1296	.20	.02	15
19.7 × 15.7	1515	2574	.20	.08	9
19.7 × 15.7	2818	4787	.20	.27	6
19.7 × 15.7	3814	6480	.20	.49	5
23.6 × 15.7	953	1620	.20	.02	15
23.6 × 15.7	2030	3448	.20	.10	9
23.6 × 15.7	3380	5741	.20	.27	6
23.6 × 15.7	4280	7272	.20	.43	5
19.7 × 19.7	996	1692	.20	.02	15
19.7 × 19.7	2422	4113	.20	.12	8
19.7 × 19.7	3988	6776	.20	.34	6
19.7 × 19.7	5043	8568	.20	.55	5
23.6 × 19.7	1271	2160	.20	.02	14
23.6 × 19.7	2640	4487	.20	.10	8
23.6 × 19.7	4416	7503	.20	.29	6
23.6 × 19.7	5551	9432	.20	.46	5
23.6 × 23.6	1483	2520	.20	.02	14
23.6 × 23.6	4128	7014	.20	.18	7
23.6 × 23.6	6189	10517	.20	.40	5
23.6 × 23.6	7416	12600	.20	.57	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 .60 in wg

NS	q _v [cfm]	q _v [m³/h]	1	2	3	4
7.9 × 3.9	83	140	.16	.09	.10	.07
7.9 × 3.9	144	246	.18	.12	.12	.09
7.9 × 3.9	220	376	.19	.14	.14	.11
7.9 × 3.9	347	590	.20	.15	.15	.12
11.8 × 3.9	138	234	.16	.10	.11	.08
11.8 × 3.9	290	492	.19	.14	.14	.11
11.8 × 3.9	422	716	.19	.15	.15	.13
11.8 × 3.9	551	936	.20	.16	.16	.14
11.8 × 5.9	174	295	.17	.10	.12	.08
11.8 × 5.9	322	547	.19	.13	.14	.11
11.8 × 5.9	623	1059	.20	.14	.16	.13
11.8 × 5.9	975	1656	.20	.15	.18	.15
11.8 × 7.9	254	432	.18	.12	.12	.09
11.8 × 7.9	417	710	.19	.13	.14	.12
11.8 × 7.9	739	1257	.20	.15	.17	.14
11.8 × 7.9	1091	1854	.20	.16	.18	.16
15.7 × 7.9	424	720	.18	.12	.14	.10
15.7 × 7.9	714	1213	.19	.13	.16	.12
15.7 × 7.9	1240	2106	.20	.15	.18	.15
15.7 × 7.9	1854	3150	.21	.16	.20	.17
19.7 × 7.9	381	648	.19	.12	.14	.09
19.7 × 7.9	574	977	.19	.12	.15	.11
19.7 × 7.9	1174	1995	.20	.13	.17	.13
19.7 × 7.9	1907	3240	.20	.14	.18	.15
23.6 × 7.9	477	810	.19	.11	.14	.10
23.6 × 7.9	807	1370	.19	.12	.16	.12
23.6 × 7.9	1460	2480	.19	.13	.17	.14
23.6 × 7.9	2140	3636	.20	.13	.18	.15
15.7 × 9.8	424	720	.18	.11	.13	.09
15.7 × 9.8	706	1198	.18	.12	.15	.11
15.7 × 9.8	1138	1932	.19	.13	.16	.13
15.7 × 9.8	1875	3186	.20	.14	.18	.15
19.7 × 9.8	498	846	.19	.11	.14	.10
19.7 × 9.8	975	1655	.19	.12	.16	.12
19.7 × 9.8	1727	2932	.19	.13	.17	.14
19.7 × 9.8	2521	4284	.19	.14	.18	.15
23.6 × 9.8	636	1080	.19	.12	.15	.10
23.6 × 9.8	1057	1795	.19	.12	.16	.12
23.6 × 9.8	1901	3231	.19	.13	.17	.14
23.6 × 9.8	2776	4716	.19	.14	.18	.15
15.7 × 11.8	657	1116	.18	.12	.14	.11
15.7 × 11.8	1172	1992	.19	.13	.16	.13
15.7 × 11.8	1911	3249	.20	.14	.18	.16



NS	q _v [cfm]	q _v [m³/h]	1	2	3	4
15.7 × 11.8	2712	4608	.21	.16	.20	.17
19.7 × 11.8	773	1314	.19	.12	.15	.11
19.7 × 11.8	1134	1928	.19	.12	.16	.12
19.7 × 11.8	2115	3593	.19	.13	.18	.14
19.7 × 11.8	3348	5688	.20	.14	.19	.16
23.6 × 11.8	742	1260	.19	.12	.15	.10
23.6 × 11.8	1418	2409	.19	.12	.16	.12
23.6 × 11.8	2409	4094	.19	.13	.17	.14
23.6 × 11.8	3708	6300	.19	.14	.18	.16
15.7 × 15.7	848	1440	.18	.12	.15	.11
15.7 × 15.7	1428	2425	.19	.13	.17	.14
15.7 × 15.7	2479	4212	.20	.15	.19	.16
15.7 × 15.7	3708	6300	.21	.16	.21	.18
19.7 × 15.7	763	1296	.19	.11	.15	.10
19.7 × 15.7	1515	2574	.19	.12	.17	.13
19.7 × 15.7	2818	4787	.20	.14	.18	.15
19.7 × 15.7	3814	6480	.20	.14	.19	.16
23.6 × 15.7	953	1620	.19	.11	.16	.11
23.6 × 15.7	2030	3448	.19	.12	.17	.14
23.6 × 15.7	3380	5741	.19	.12	.19	.15
23.6 × 15.7	4280	7272	.20	.13	.19	.16
19.7 × 19.7	996	1692	.19	.11	.15	.11
19.7 × 19.7	2422	4113	.19	.12	.17	.14
19.7 × 19.7	3988	6776	.19	.13	.18	.15
19.7 × 19.7	5043	8568	.19	.14	.19	.16
23.6 × 19.7	1271	2160	.19	.12	.16	.12
23.6 × 19.7	2640	4487	.19	.12	.18	.14
23.6 × 19.7	4416	7503	.19	.12	.19	.16
23.6 × 19.7	5551	9432	.19	.14	.19	.16
23.6 × 23.6	1483	2520	.19	.12	.16	.12
23.6 × 23.6	4128	7014	.19	.12	.18	.15
23.6 × 23.6	6189	10517	.19	.13	.19	.16
23.6 × 23.6	7416	12600	.19	.14	.20	.17

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: 7.9 × 3.9 to 23.6 × 23.6 in
- Volume flow rate range: 83 – 7416 cfm or 140 – 12600 m³/h
- Volume flow rate control range: approx. 25 – 100 % of the nominal volume flow rate
- Minimum differential pressure: .20 in wg
- Maximum permissible differential pressure: 4.02 in wg
- Casing air leakage acc. to EN 1751, class C

Sizing data

- q_v [cfm]
- Δp_{st} [in wg]

Air-regenerated noise

- L_{PA} [dB(A)]

Case-radiated noise

- L_{PA} [dB(A)]



Order code

EN-Ex – D – P1 / 15.7 × 7.9

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 [in]

Specify size width × height

Order example: EN-Ex-D-P1/15.7x7.9

Type

EN-Ex

Acoustic cladding

with acoustic cladding

Material

Powder-coated RAL 7001 (silver grey)

Nominal size [JO]

Width 15.7, height 7.9

Variants

EN-Ex



- Air terminal units for constant air volume flow control

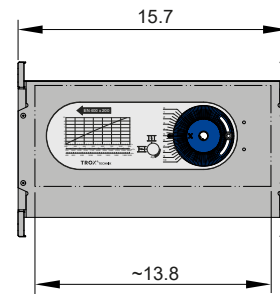
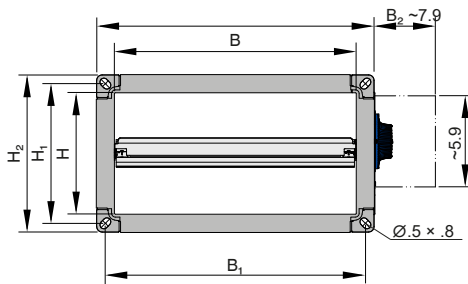
EN-Ex-D



- 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

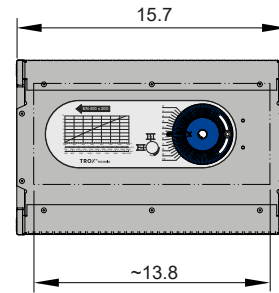
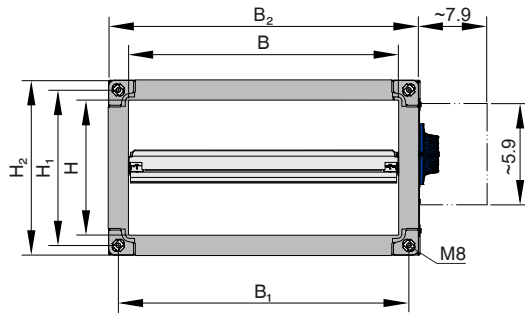
Air terminal unit without acoustic cladding (EN-EX)



Product specific data EN-Ex

NS	B	H	L	B ₁	B ₂	H ₁		lbs
7.9 × 3.9	7.9	3.9	15.7	9.1	10.2	5.1	6.3	9
11.8 × 3.9	11.8	3.9	15.7	13.0	14.2	5.1	6.3	11
11.8 × 5.9	11.8	5.9	15.7	13.0	14.2	7.1	8.3	13
11.8 × 7.9	11.8	7.9	15.7	13.0	14.2	9.1	10.2	13
15.7 × 7.9	15.7	7.9	15.7	16.9	18.1	9.1	10.2	15
15.7 × 9.8	15.7	9.8	15.7	16.9	18.1	11.0	12.2	18
15.7 × 11.8	15.7	11.8	15.7	16.9	18.1	13.0	14.2	19
15.7 × 15.7	15.7	15.7	15.7	16.9	18.1	16.9	18.1	29
19.7 × 7.9	19.7	7.9	15.7	20.9	22.0	9.1	10.2	19
19.7 × 9.8	19.7	9.8	15.7	20.9	22.0	11.0	12.2	20
19.7 × 11.8	19.7	11.8	15.7	20.9	22.0	13.0	14.2	21
19.7 × 15.7	19.7	15.7	15.7	20.9	22.0	16.9	18.1	32
19.7 × 19.7	19.7	19.7	15.7	20.9	22.0	20.9	22.0	34
23.6 × 7.9	23.6	7.9	15.7	24.8	26.0	9.1	10.2	22
23.6 × 9.8	23.6	9.8	15.7	24.8	26.0	11.0	12.2	23
23.6 × 11.8	23.6	11.8	15.7	24.8	26.0	13.0	14.2	25
23.6 × 15.7	23.6	15.7	15.7	24.8	26.0	16.9	18.1	37
23.6 × 19.7	23.6	19.7	15.7	24.8	26.0	20.9	22.0	40
23.6 × 23.6	23.6	23.6	15.7	24.8	26.0	24.8	26.0	44

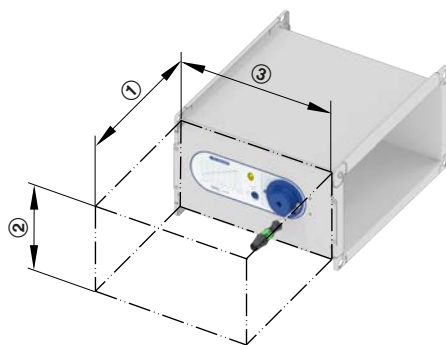
Air terminal unit with acoustic cladding (EN-Ex-D)



Product specific data EN-Ex-D

NS	B	H	L	B ₁	B ₂	H ₁	H ₂	lbs
7.9 × 3.9	7.9	3.9	15.7	9.1	10.2	5.1	6.3	14
11.8 × 3.9	11.8	3.9	15.7	13.0	14.2	5.1	6.3	18
11.8 × 5.9	11.8	5.9	15.7	13.0	14.2	7.1	8.3	20
11.8 × 7.9	11.8	7.9	15.7	13.0	14.2	9.1	10.2	22
15.7 × 7.9	15.7	7.9	15.7	16.9	18.1	9.1	10.2	26
15.7 × 9.8	15.7	9.8	15.7	16.9	18.1	11.0	12.2	29
15.7 × 11.8	15.7	11.8	15.7	16.9	18.1	13.0	14.2	31
15.7 × 15.7	15.7	15.7	15.7	16.9	18.1	16.9	18.1	40
19.7 × 7.9	19.7	7.9	15.7	20.9	22.0	9.1	10.2	31
19.7 × 9.8	19.7	9.8	15.7	20.9	22.0	11.0	12.2	32
19.7 × 11.8	19.7	11.8	15.7	20.9	22.0	13.0	14.2	34
19.7 × 15.7	19.7	15.7	15.7	20.9	22.0	16.9	18.1	45
19.7 × 19.7	19.7	19.7	15.7	20.9	22.0	20.9	22.0	49
23.6 × 7.9	23.6	7.9	15.7	24.8	26.0	9.1	10.2	34
23.6 × 9.8	23.6	9.8	15.7	24.8	26.0	11.0	12.2	36
23.6 × 11.8	23.6	11.8	15.7	24.8	26.0	13.0	14.2	40
23.6 × 15.7	23.6	15.7	15.7	24.8	26.0	16.9	18.1	51
23.6 × 19.7	23.6	19.7	15.7	24.8	26.0	20.9	22.0	55
23.6 × 23.6	23.6	23.6	15.7	24.8	26.0	24.8	26.0	61

En-Ex Installation space



Space required

①	②	③
7.9	H	7.9

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. 3 ft 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

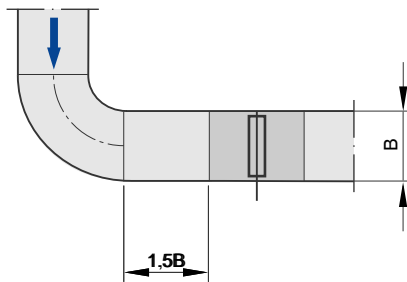
Upstream conditions

The volume flow rate accuracy Δq_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.

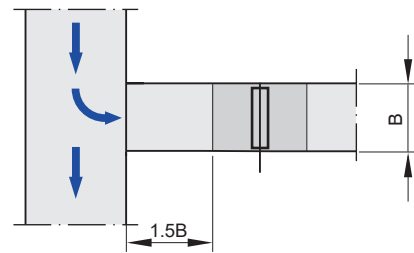
Space required for commissioning and maintenance

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



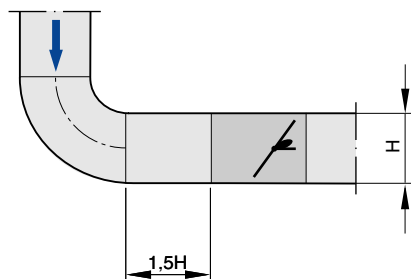
Junction, horizontal



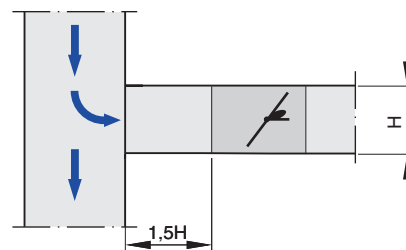
Between any bend and the CAV terminal unit, a straight duct section of at least 1.5B upstream length is required to achieve the stated volume flow rate accuracy Δq_v .

A junction from a main duct causes strong turbulence. The specified volume flow rate accuracy Δq_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 Δq_v .

A junction from a main duct causes strong turbulence. The specified volume flow rate accuracy Δq_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 [in]; [in]

Nominal size

B [in]; [in]

Duct width

B₁ [in]; [in]

Screw hole pitch of flange (horizontal)

B₂ [in]; [in]

Overall dimension of flange (width)

H[in];[in]

Duct height

H₁ [in]; [in]

Screw hole pitch of flange (vertical)

H₂ [in]; [in]

Overall dimension of flange (height)

m [lbs]

Unit weight including the minimum required attachments for manual adjustment

L_{PA} [dB(A)]

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

L_{PA1} [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_{PA2} [dB(A)]

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

L_{PA3} [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_{st} [inWg]; [inWg]

Static differential pressure

Δ_{pst min} [inWg]

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_{vNom} [cfm]; [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_v [cfm]; [l/s]; [CFM]

Volume flow rate

Δ_{qv} [%]

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

Lengths [in]; [in]

All lengths are given in inches [in] 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.