Weather protection grille

ALAS

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Weather protection grille ALAS

Contents

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Description

External air intake or return air grille with fixed, rain-repellent blades and back-fitted wire mesh grid. Mounting holes drilled as standard.
At an extra charge, all models are available with an installation frame made of primed angular steel 30/30/3.

ALAS with self-regulating heating strip
A better way of preventing ice formation is the installation of a self-regulating heating strip. It is a heating strip that adapts the heating output to the environment at any position of the grille. Available in any length, rated capacity max. 36 W/m. It can be used up to -8 °C and 80% of relative humidity.

ALAS with self-regulating "top" heating strip
A better way of preventing ice formation is the installation of a self-regulating heating strip. It is a heating strip that adapts the heating output to the environment at any position of the grille. Available in any length, rated capacity max. 64 W/m. It can be used up to -15 °C and 80% of relative humidity.

Self-regulating heating strip
The heating unit consists of semi-conductive, cross linked plastic with two stranded copper conductors. As soon as ice is formed, a current will flow through the heating element and generate heat. As soon as parts of the heating strip have defrosted and dried, the temperature rises on these parts and the resistance increases. This will minimise the current flow and the heating output.

Construction

Frame and blades
- Galvanised sheet steel (-SV, standard)
  - without paint (-0000, not possible for -SB)
- Painted sheet steel (-SB)
  - RAL colour can be freely selected (-xxxx) (always with 4 digits) (not possible for -SV).
- Aluminium (-AL)
  - natural, not painted (-0000)
  - painted to a freely selectable RAL colour (-xxxx) (always with 4 digits).
  - Natural colour anodised aluminium (E6/EV1) (-ELOX)

Wire mesh grille
- Galvanised steel (only for the models -SV and -SB)
- Stainless steel 1.4301 (V2A) (only for -AL model)

Fixing lugs
- Galvanised sheet steel, supplied loose as standard (mounting must be done on site).

Model

ALAS	- rectangular design with fixed rain-repellent blades and back-fitted wire mesh.
ALAS-...-N0-...	- single design (standard) (width max. 2000 mm and height max. 1995 mm available)
ALAS-...-BB-...	- band design horizontal arrangement (installation dimension, horizontal EMB > 2000 mm)
ALAS-...-BH-...	- band design vertical arrangement (installation dimension, vertical EMH > 1995 mm)
ALAS-...-BD-...	- band design horizontal and vertical arrangement (installation dimension, horizontal EMB > 2000 mm and installation dimension, vertical EMH > 1995 mm)

(horizontal and vertical arrangement according to SCHAKO standard for band design)

Accessories

Installation frame (-ER0 / -ER2)
- without installation frame (-ER0) (standard)
- with installation frame and wall anchors (-ER2), made of primed angular steel 30/30/3, with fastening holes (without fastening holes in case of advance delivery)

Heating strip (-HB0 /-HB1 / -HB2)
- without heating strip (-HB0) (standard)
- with heating strip 36 W/m (-HB1), self-regulating, made of plastic material, can be used up to -8 °C and 80% of relative humidity (mounted ex works).
- with heating strip Top 64 W/m (-HB2), self-regulating, made of plastic material, can be used up to -15 °C and 80% of relative humidity (mounted ex works).

Insect screen (-IG0 / -IG1)
- without insect screen (-IG0) (standard)
- with insect screen (-IG1), made of stainless steel 1.4301 (V2A).

Attention!
We would like to point out that for cleaning stainless steel models, only suitable cleaning materials may be used!

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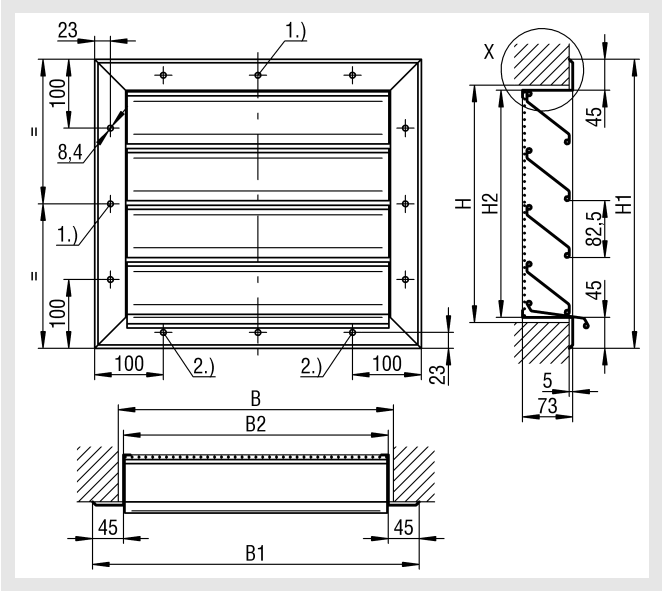
Models and dimensions

Dimensions of single design (-N0)

ALAS-...-N0-...



Available sizes

B	B1	B2
400	475	389
600	675	589
800	875	789
1000	1075	989
1200	1275	1189
1400	1475	1389
1600	1675	1589
1800	1875	1789
2000	2075	1989

H	H1	H2
345	420	338
510	585	503
675	750	668
840	915	833
1005	1080	998
1170	1245	1163
1335	1410	1328
1500	1575	1493
1665	1740	1658
1830	1905	1823
1995	2070	1988

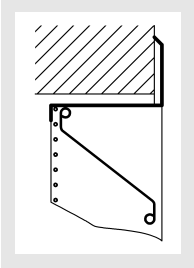
All combined widths and heights available!

1.) from height or width ≥ 1600, 3 fastening holes per side

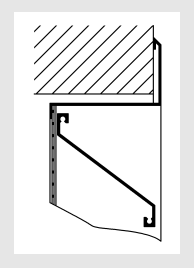
2.) additional holes for widths ≥ 900

Detail X

ALAS-...-SV



ALAS-...-AL



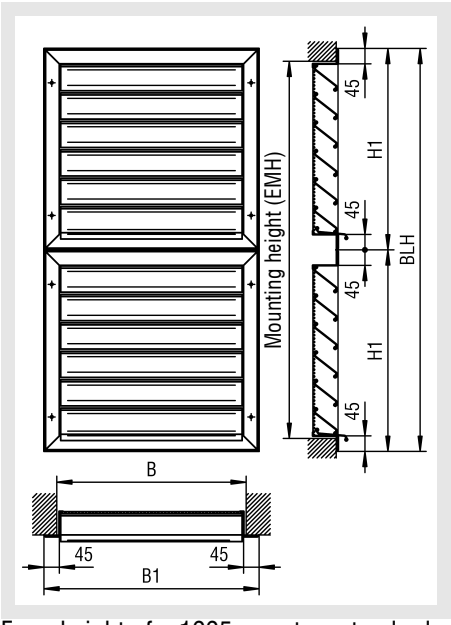
Dimensions of band design (-BH / -BB / -BD)

Band design arranged vertically (-BH)

Division SCHAKO standard for band design:

- 2-part for a vertical installation dimension EMH > 1995 mm up to ≤ 3990 mm.
- multi-part for a vertical installation dimension EMH > 3990 mm.

ALAS-...-BH-...



For a height of > 1995 mm, two standard external air intake grilles must be installed on top of each other.

Installation height (EMH): **EMH = (H1xa) – (2x45) + 15**

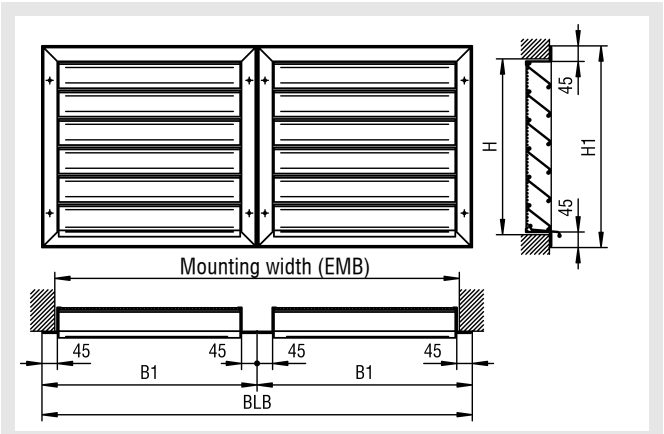
a = Number of grilles H1 = ([EMH–15] + [2x45]) / a

Band design arranged horizontally (-BB)

Division SCHAKO standard for band design:

- 2-part for a horizontal installation dimension EMB > 2000 up to ≤ 4000 mm.
- multi-part for a horizontal installation dimension EMB > 4000 mm.

ALAS-...-BB-...



For a width of > 2000 two standard surrounding air suction grilles must be installed next to each other.

Installation width (EMB): **EMB = (B1xa) – (2x45) + 15**

a = Number of grilles H1 = ([EMB–15] + [2x45]) / a

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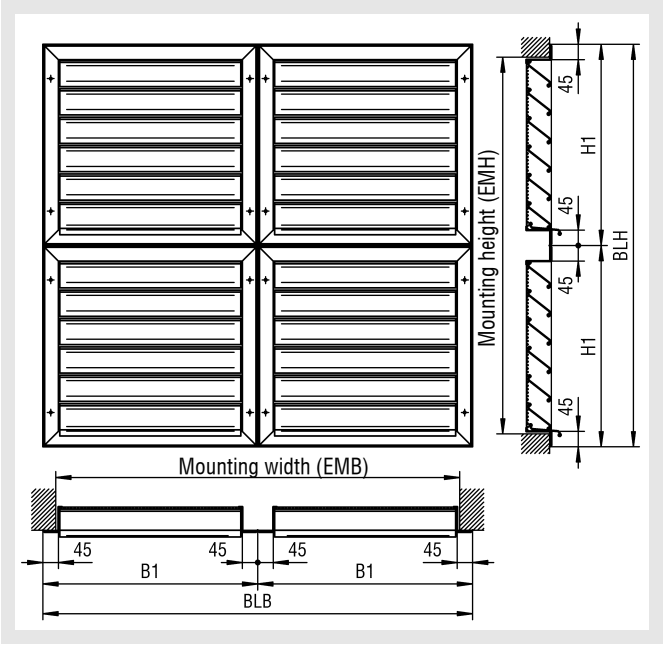
Band design arranged vertically and horizontally (-BD)
Vertical arrangement SCHAKO standard for band design:

- 2-part for a vertical installation dimension EMH > 1995 mm up to ≤ 3990 mm.
- multi-part for a vertical installation dimension EMH > 3990 mm.

Horizontal arrangement SCHAKO standard for band design:

- 2-part for a horizontal installation dimension EMB > 2000 up to ≤ 4000 mm.
- multi-part for a horizontal installation dimension EMB > 4000 mm.

ALAS-...-BD-...

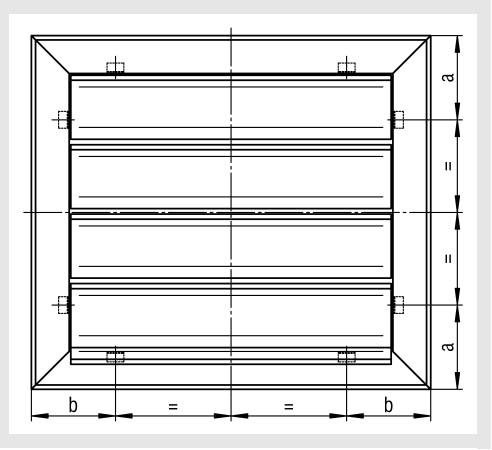


Vertical and horizontal arrangement according to SCHAKO standard for band design:
When the weather protection grille ALAS is designed as a band, the band length BLH and BLB is divided uniformly.
Other arrangement types are available upon request.
When the band design is used, any number of grilles can be installed next to each other. Expansion joints have to be allowed when fixing air suction grilles on site.

At an extra charge, all models are available with an installation frame made of primed angular steel 30/30/3.

Fixing lugs

- not removable from the outside
- supplied loose as standard (mounting must be done on site)
- made of galvanised sheet steel



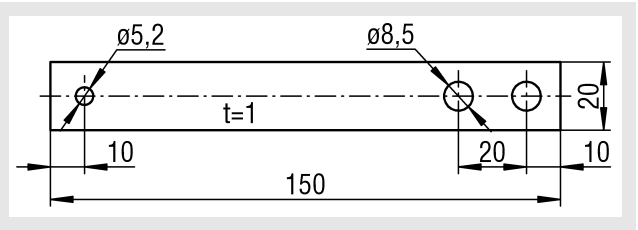
Sectioning of fixing lug
Height:

H ≤ 800 ⇒ a=100 ⇒ 2 fixing lugs per side
800 < H ≤ 1100 ⇒ a=140 ⇒ 2 fixing lugs per side
1100 < H ≤ 1800 ⇒ a=230 ⇒ 2 fixing lugs per side
1800 < H ≤ 2000 ⇒ a=230 ⇒ 3 fixing lugs per side

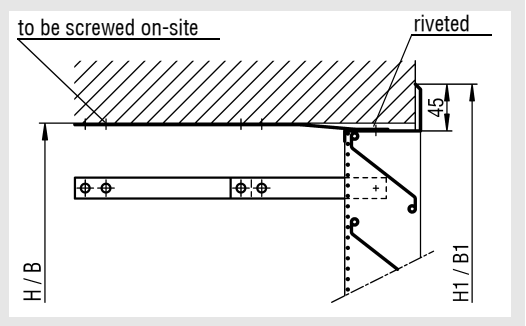
Width:

B ≤ 900 ⇒ b= ---- ⇒ no fixing lug
900 < B ≤ 1200 ⇒ b=140 ⇒ 2 fixing lugs per side
1200 < B ≤ 1800 ⇒ b=230 ⇒ 2 fixing lugs per side
1800 < B ≤ 2000 ⇒ b=230 ⇒ 3 fixing lugs per side

Separate fixing lugs



Mounting detail fixing lug



Two individual fixing lugs per overall lug.

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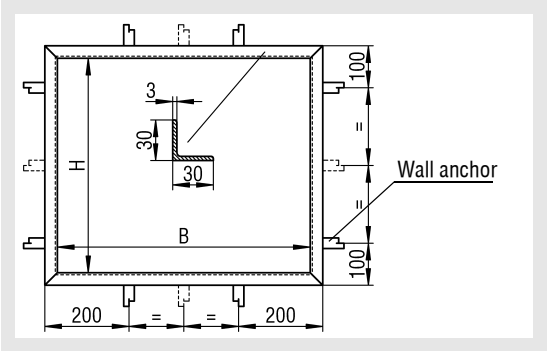
Dimensions of accessories

Installation frame (-ER0 / -ER2)

- without installation frame (-ER0) (standard)
- with installation frame and wall anchors (-ER2)

Installation frame (-ER2) in single design (-N0)



Number of wall anchors for mounting frame

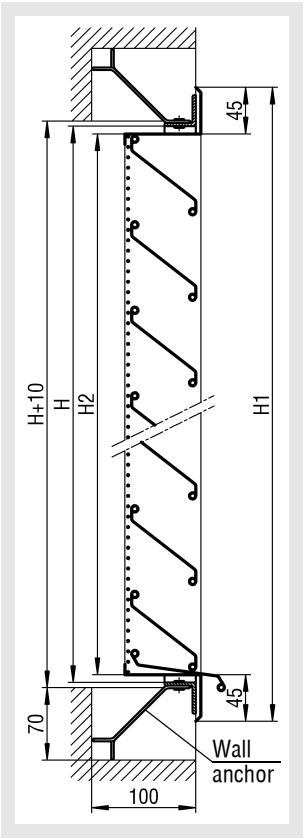
Height: H ≤ 1000 = 2 wall anchors per side
1000 < H ≤ 2000 = 3 wall anchors per side

Width: B ≤ 800 = without wall anchors
800 < B ≤ 1000 = 2 wall anchors per side
1000 < B ≤ 2000 = 3 wall anchors per side

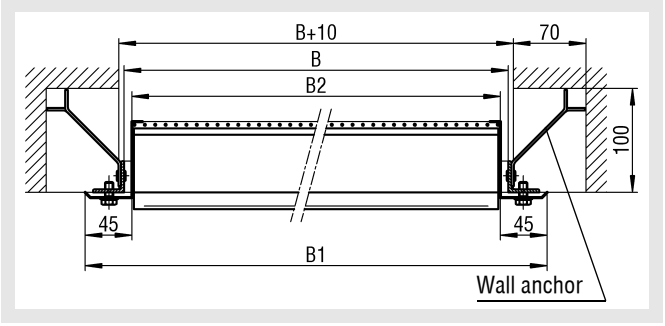
If the mounting frame is shipped beforehand, it will be delivered unperforated.
The individual parts of the installation frame in band design are supplied loose and must be screwed together on site.

Mounting detail (installation frame in single design)

in the height
ALAS-...-N0-...-ER2



Horizontal
ALAS-...-N0-...-ER2



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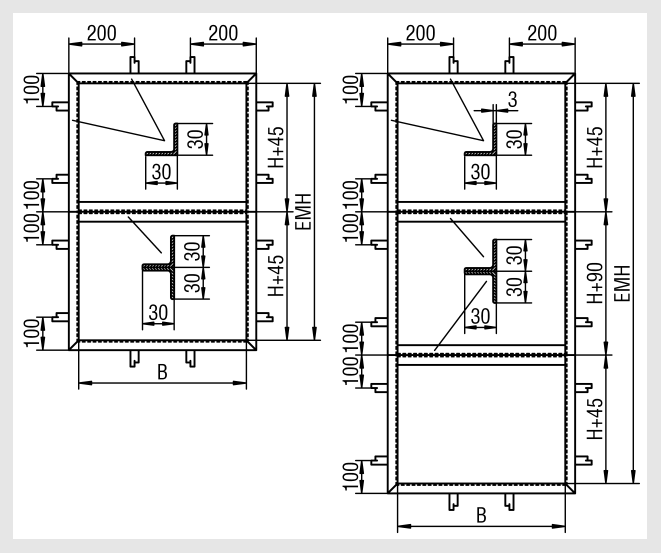
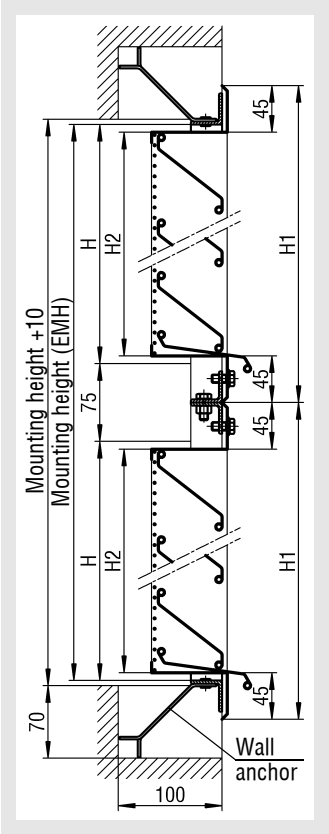
Installation frame (-ER2) in band design (-BH / -BB / -BD)

Band design arranged vertically (-BH)

Arrangement:

- 2-part for a vertical installation dimension EMH > 1995 mm up to ≤ 3990 mm.
- multi-part for a vertical installation dimension EMH > 3990 mm.

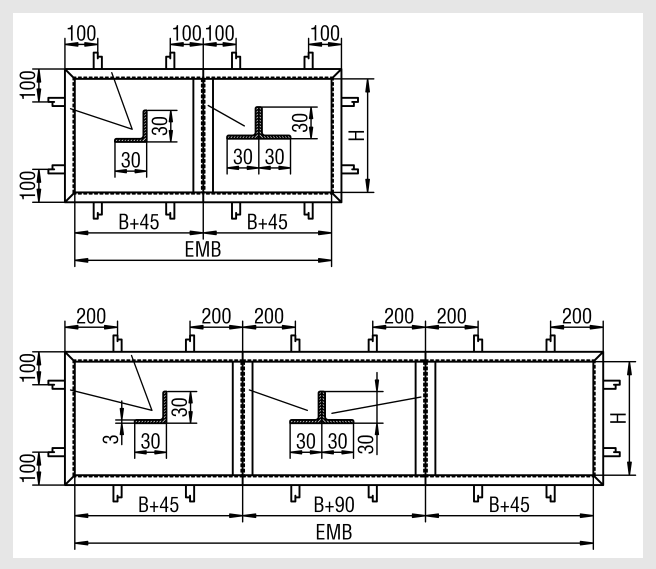


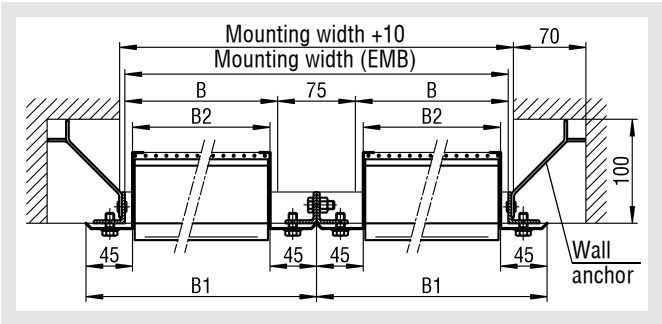


Band design arranged horizontally (-BB)

Arrangement:

- 2-part for a horizontal installation dimension EMB > 2000 up to ≤ 4000 mm.
- multi-part for a horizontal installation dimension EMB > 4000 mm.





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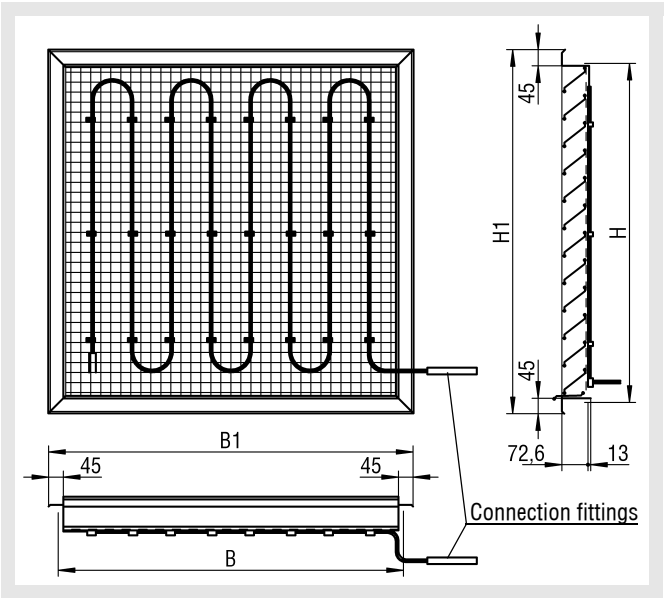
Heating strip (-HB /-HB1 / -HB2)

- without heating strip (-HB0) (standard)
- with heating strip 36 W/m (-HB1), self-regulating, made of plastic material, can be used up to -8 °C and 80% of relative humidity (mounted ex works).
- with heating strip Top 64 W/m (-HB2), self-regulating, made of plastic material, can be used up to -15 °C and 80% of relative humidity (mounted ex works).

Heating strip 36 W/m (-HB1)

ALAS-...-HB1-...



Per m² approx. 10 m heating strip

Protective measures for ALAS with heating strip

1. Protection against too high contact voltage: residual current circuit breaker, nominal fault current 30 mA (according to VDE 0100/5.73 § 13)
2. Protection against atmospheric overvoltage:
   (according to VDE 0100/5.73 § 18 and the "General Lightning Protection Regulations", ABB, Ed. 68 § 8)
   a) with surge arresters according to VDE 0675/5.72
   b) It is also advisable to connect the heating elements via a plug-and-socket device. During the season in which atmospheric disturbances (e.g. thunderstorms) occur, disconnect the system from the power. Hang the plug together with all moving connections at a distance of min. 2 m from the power supply socket.

Connecting the heating strip

a) The electrical connection must be performed by a qualified electrician taking all protective measures into consideration!
b) The following rules and regulations must be observed:
   - VDE directives
   - Regulations of the local power supply company

Technical details regarding the heating strip

Structure

1. 1.2 mm² multi-strand copper conductor
2. Self-regulating, semi-conductive heating element
3. 0.7 mm electrical insulation made of modified polyolefin
4. Protection mesh made of galvanised copper leads
5. Outer casing made of modified polyolefin

Thermal safety class 0 according to VDE 0721 Part 2 E § 10

Technical data

Nominal voltage		230 V
Rated power		
- Ice-water:	at 0°C	36 W/m
- Air:	at 0°C	18 W/m
max. resistance of protective mesh		0,0152 Ω/m
max. permitted surrounding temperature		
- switched on		+ 65 C°
- switched off		+ 85 C°

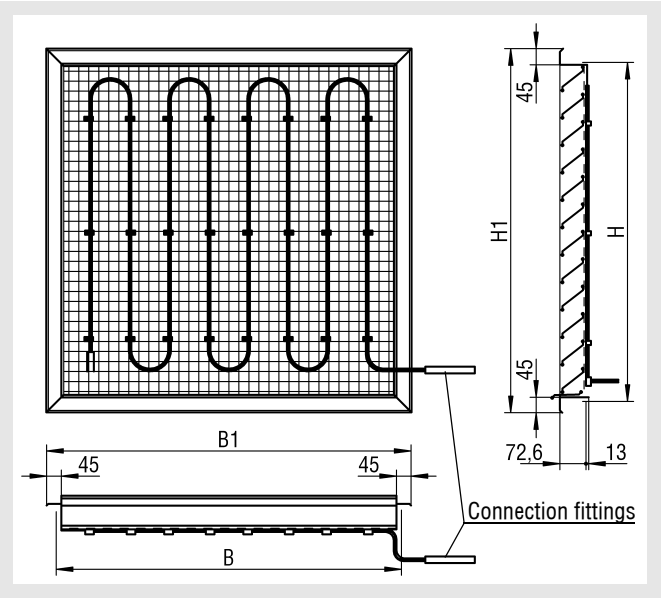
Note

- The heating strip protective mesh must be connected to a protective conductor potential.
- Provide FI residual current protective device
- When used on metal, it must be included in the protective measures.
- Protective measures and protection from contact have to be ensured during installation.
- **End of heating strip not heated connection spigot fitting**
- The heating strips are fitted during manufacture.

Weather protection grille ALAS

Heating strip Top 64 W/m (-HB2)

ALAS-…-HB2-…



Per m² approx. 10 m heating strip

Protective measures for ALAS with "top" heating strip

1. Protection against too high contact voltage: residual current circuit breaker, nominal fault current 30 mA (according to VDE 0100/5.73 § 13)
2. Protection against atmospheric overvoltage: (according to VDE 0100/5.73 § 18 and the "General Lightning Protection Regulations", ABB, Ed. 68 § 8)
   a) with surge arresters according to VDE 0675/5.72
   b) It is also advisable to connect the heating elements via a plug-and-socket device. During the season in which atmospheric disturbances (e.g. thunderstorms) occur, disconnect the system from the power. Hang the plug together with all moving connections at a distance of min. 2 m from the power supply socket.

Connecting the heating strip

a) The electrical connection must be performed by a qualified electrician taking all protective measures into consideration!
b) The following rules and regulations must be observed:
   - VDE directives
   - Regulations of the local power supply company

Technical details regarding the "top" heating strip
Structure

1. 1.4 mm² multi-strand copper conductor
2. Self-regulating, semi-conductive heating element
3. Insulation made of fluoro polymer
4. Protection mesh made of galvanised copper leads
5. Outer casing made of fluoro polymer

Temperature classification T4 in accordance with European standard EN 50014.

Technical data

Nominal voltage		230 V
Rated power		
- Air:	at 10°C	64 W/m
max. resistance of protective mesh		0,01 Ω/m
max. temperature of use (permanently switched on)		+ 110 C°

Note

- The heating strip protective mesh must be connected to a protective conductor potential.
- Provide FI residual current protective device
- When used on metal, it must be included in the protective measures.
- Protective measures and protection from contact have to be ensured during installation.
- The heating strips are fitted during manufacture.

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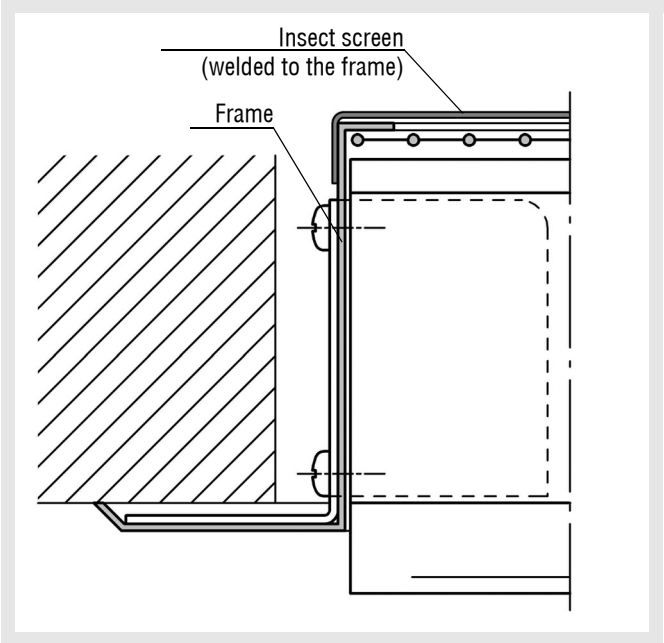
Insect screen (-IG0 / -IG1)

- without insect screen (-IG0) (standard)
- with insect screen (-IG1), made of stainless steel 1.4301 (V2A).

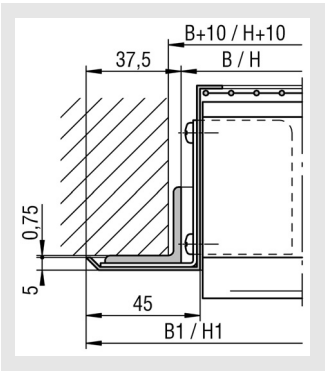
ALAS-...-IG1-...



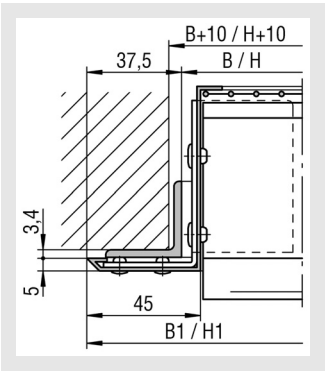
Installation

Installation ALAS with installation frame in front of the wall

ALAS-...-SV-...-ER2

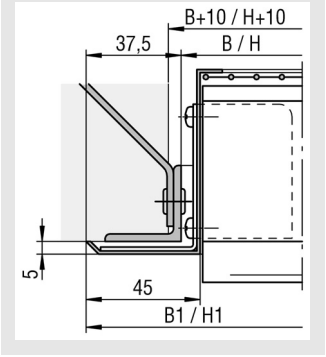


ALAS-...-AL-...-ER2

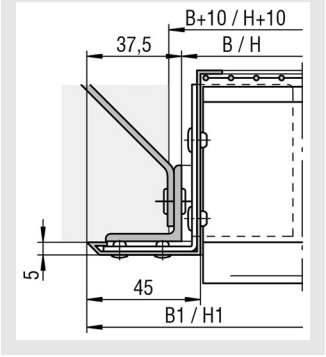


Installation ALAS with installation frame into the wall (mortar)

ALAS-...-SV-...-ER2



ALAS-...-AL-...-ER2

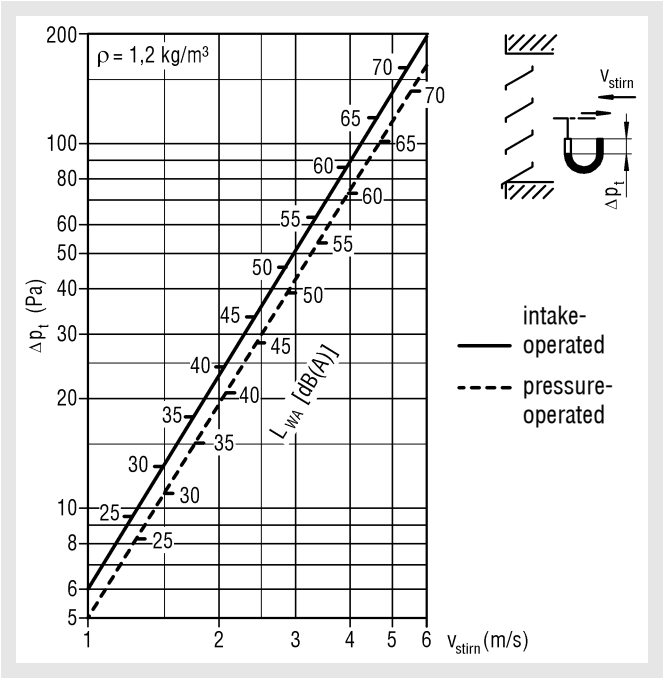


Weather protection grille ALAS

Technical data

Pressure loss and noise level

ALAS-...-SV / ALAS-...-AL



Area correction

F	(m²)	0,5	1	1,5	2	2,5	3	4
KF	[dB(A)]	-3	0	+2	+3	+4	+5	+6

Correction factor with insect screen (MW=1.45 mm, D=0.5 mm) relative to 1 m²

v_{stirn}	(m/s)	0,5	1,0	1,5	2,0	2,5	3,0
KF	[dB(A)]	+ 4	+ 6	+ 8	+ 10	+ 12	+ 14
	(Pa)	+ 8	+ 10	+ 14	+ 18	+ 22	+ 28

Free cross-section in m²

		B								
		400	600	800	1000	1200	1400	1600	1800	2000
H	345	0,0578	0,0878	0,1178	0,1478	0,1778	0,2078	0,2378	0,2678	0,2978
	510	0,0963	0,1463	0,1963	0,2463	0,2963	0,3463	0,3963	0,4463	0,4963
	675	0,1348	0,2048	0,2748	0,3448	0,4148	0,4848	0,5548	0,6248	0,6948
	840	0,1733	0,2633	0,3533	0,4433	0,5333	0,6233	0,7133	0,8033	0,8933
	1005	0,2118	0,3218	0,4318	0,5418	0,6518	0,7618	0,8718	0,9818	1,0918
	1170	0,2503	0,3803	0,5103	0,6403	0,7703	0,9003	1,0303	1,1603	1,2903
	1335	0,2888	0,4388	0,5888	0,7388	0,8888	1,0388	1,1888	1,3388	1,4888
	1500	0,3273	0,4973	0,6673	0,8373	1,0073	1,1773	1,3473	1,5173	1,6873
	1665	0,3658	0,5558	0,7458	0,9358	1,1258	1,3158	1,5058	1,6958	1,8885
	1830	0,4043	0,6143	0,8243	1,0343	1,2443	1,4543	1,6643	1,8743	2,0843
	1995	0,4428	0,6728	0,9028	1,1328	1,3628	1,5928	1,8228	2,0528	2,2828
										FQ (m²)

Free cross-section for band design in m²

		H										
		345	510	675	840	1005	1170	1335	1500	1665	1830	1995
FQ	(m²)	0,1478	0,2463	0,3448	0,4433	0,5418	0,6403	0,7388	0,8373	0,9358	1,0343	1,1328
KF	(-)	0,0065	0,0108	0,0152	0,0195	0,0238	0,0280	0,0324	0,0367	0,0410	0,0454	0,0495

FQ_{band} = FQ - (KF x number of webs)

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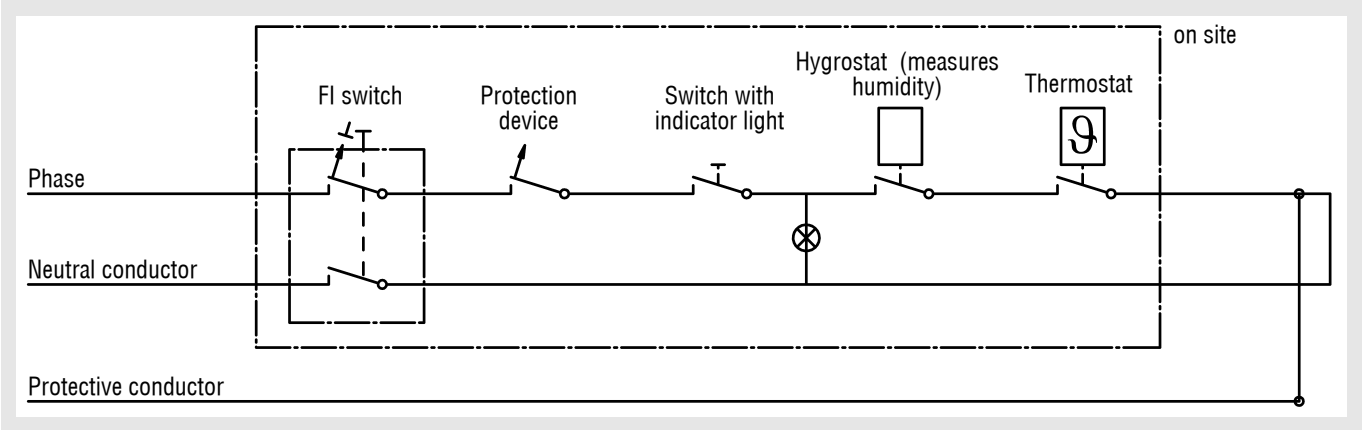
Circuit diagram

ALAS-...-HB1 (with heating strip 36 W/m)
ALAS-...-HB2 (with heating strip Top 64 W/m)



A completely wired switch cabinet is available on special request!

Legend

B	(mm)	=	Width
H	(mm)	=	Height
Δp_t	(Pa)	=	Pressure loss
L_{WA}	[dB(A)]	=	A-weighted sound power level, relative to 1 m² ($L_{WA} = (L_{WA} / m^2) + KF$)
v_{stirn}	(m/s)	=	Intake velocity, relative to (H - 80) x B
F	(m²)	=	Cross-section area, relative to (H - 80) x B
KF	(m)	=	Surface area correction factor
KF	(-)	=	Correction factor
FQ	(m²)	=	free cross-section per running metre
MW	(mm)	=	mesh width
D	(mm)	=	diameter of the mesh wire
ρ	(kg/m³)	=	density

Weather protection grille ALAS

Order code

01	02	03	04	05	06	07	08	09
Type	Width	Height	Single / band design	Material	Paint	Installation frame	Heating strip	Insect screen
Example								
ALAS	-0600	-1000	-N0	-SV	-0000	-ER0	-HB0	-IG0

All fields must be filled when ordering.

Sample
ALAS-0600-1000-N0-SV-0000-ER0-HB0-IG0

Weather protection grille ALAS, rectangular model | width 600 mm | height 1000 mm | single design | galvanised sheet steel | without paint | without installation frame | without heating strip | without insect screen

Order details

01 - Type

ALAS = Weather protection grille ALAS, rectangular model

02 - Width

0400 = 400 mm
0600 = 600 mm
0800 = 800 mm
1000 = 1000 mm
1200 = 1200 mm
1400 = 1400 mm
1600 = 1600 mm
1800 = 1800 mm
2000 = 2000 mm
xxxx = Width can be freely selected (in mm, always with 4 digits)

03 - Height

0345 = 345 mm
0510 = 510 mm
0675 = 675 mm
0840 = 840 mm
1005 = 1005 mm
1170 = 1170 mm
1335 = 1335 mm
1500 = 1500 mm
1665 = 1665 mm
1830 = 1830 mm
1995 = 1995 mm
xxxx = Height can be freely selected (in mm, always with 4 digits)

04 - Single / band design

N0 = Single design (standard)
(width max. 2000 mm and height max. 1995 mm available)
BB = Horizontal band design
(mounting height EMB > 2000 mm)
BH = Vertical band design
(mounting height EMH > 1995 mm)
BD = Horizontal and vertical band design
(installation dimension, horizontal EMB > 2000 mm and installation dimension, vertical EMH > 1995 mm)

(horizontal and vertical arrangement according to SCHAKO standard for band design)

05 - Material

SV = Galvanised sheet steel (standard) (wire mesh grille made of galvanised steel)
SB = Painted sheet steel (wire mesh grille made of galvanised steel)
AL = Aluminium (stainless steel wire mesh grille 1.4301, V2A)

06 - Paint

0000 = without paint (standard) (not possible for -SB)
xxxx = painted to a freely selectable RAL colour (always with 4 digits) (not possible for -SV)
ELOX = natural colour anodised (E6/EV1) (only possible for -AL)

07 - Installation frame

ER0 = Without installation frame (standard)
ER2 = with installation frame and wall anchors, made of primed angular steel 30/30/3, with fastening holes (without fastening holes in case of advance delivery)

Weather protection grille ALAS

08 - Heating strip

HB0 = without heating strip (standard)

HB1 = with heating strip 36 W/m, self-regulating, made of plastic material, can be used up to -8 °C and 80% of relative humidity (mounted ex works).

HB2 = with heating strip Top 64 W/m, self-regulating, made of plastic material, can be used up to -15 °C and 80% of relative humidity (mounted ex works).

09 - Insect screen

IG0 = without insect screen (standard)

IG1 = with insect screen, made of stainless steel 1.4301 (V2A)

Weather protection grille ALAS

Specification texts

External air intake or return air grille with fixed, rain-repellent blades and back-fitted wire mesh grid. With fixing lugs made of galvanised sheet steel, supplied loose as standard (mounting must be done on site).
Product: SCHAKO **type ALAS-…**

Dimensions

- Width (-xxxx)
  - Standard width:
    0400 - 0600 - 0800 - 1000 - 1200 - 1400 - 1600 - 1800 - 2000
  - Width can be freely selected (in mm, always with 4 digits)
- Height (-xxxx)
  - Standard height:
    0345 - 0510 - 0675 - 0840 - 1005 - 1170 - 1335 - 1500 - 1665 - 1830 - 1995
  - Height can be freely selected (in mm, always with 4 digits)

Single / band design

- Single design (-N0) (standard)
  (width max. 2000 mm and height max. 1995 mm available)
- Horizontal band design (-BB)
  (horizontal installation dimension EMB > 2000 mm)
- Vertical band design (-BH)
  (mounting height EMH > 1995 mm)
- Horizontal and vertical band design (-BD)
  (installation dimension, horizontal EMB > 2000 mm and installation dimension, vertical EMH > 1995 mm)

(horizontal and vertical arrangement according to SCHAKO standard for band design)

Material (frame and blades) **and paint**

- made of galvanised sheet steel (-SV, standard), with galvanised steel wire mesh.
  - without paint (-0000, not possible for -SB)
- made of painted sheet steel (-SB), with galvanised steel wire mesh
  - painted to a freely selectable RAL colour (-xxxx) (always with 4 digits) (not possible for -SV).
- made of aluminium (-AL), with stainless steel wire mesh 1.4301 (V2A).
  - natural, not painted (-0000)
  - painted to a freely selectable RAL colour (-xxxx) (always with 4 digits).
  - natural colour anodised aluminium (E6/EV1) (-ELOX), (only possible for -AL)

Accessories:

- Installation frame (-ER0 / -ER2)
  - without installation frame (-ER0) (standard)
  - with installation frame and wall anchors (-ER2), made of primed angular steel 30/30/3, with fastening holes (without fastening holes in case of advance delivery)

- Heating strip (-HB0 /-HB1 / -HB2)
  - without heating strip (-HB0) (standard)
  - with heating strip 36 W/m (-HB1), self-regulating, made of plastic material, can be used up to -8 °C and 80% of relative humidity (mounted ex works).
  - with heating strip Top 64 W/m (-HB2), self-regulating, made of plastic material, can be used up to -15 °C and 80% of relative humidity (mounted ex works).

- Insect screen (-IG0 / -IG1)
  - without insect screen (-IG0) (standard)
  - with insect screen (-IG1), made of stainless steel 1.4301 (V2A).