ALG
Linear bar grille for supply, extract or transfer air, wall or ceiling mounting

QUICK FACTS
○ For supply, extract or transfer air
○ Fixed spread pattern
○ Can easily be cleaned
○ Installed using mounting frames FHB / FHA or commissioning box TRG
○ Standard colour White RAL 9003
  - 5 alternative standard colours
  - Other colours upon request

<table>
<thead>
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<th>ALG Size</th>
<th>25 dB(A)</th>
<th>30 dB(A)</th>
<th>35 dB(A)</th>
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<td>576</td>
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Data in the table applies to supply air for ALG + TRG with a total pressure drop of 50 Pa.

*) Lp10A = Sound pressure incl. A-filter with 4 dB room attenuation and 10 m² room absorption area.
Contents

Technical description ................................. 3
  Design ............................................................. 3
  Materials and surface treatment ....................... 3
  Customizing ...................................................... 3
  Accessories ...................................................... 3
  Planning ........................................................... 3
  Installation ....................................................... 3
  Commissioning with TRG ................................. 3
  Maintenance ....................................................... 3
  Environment ....................................................... 3

Sizing ............................................................. 4
  ALG - Supply- and Extract air ........................... 4
  Engineering graphs - ALG - Supply air .................. 5
  Engineering graphs - ALG - Extract air .................. 6
  Sound data corrections for ALG with FHA ............... 7
  Engineering graphs - ALG + TRG - Supply air .......... 8
  Engineering graphs - ALG + TRG - extract air ......... 10

Dimensions and weight ................................. 12

Order key ........................................................... 13

Specification example .................................. 13
Technical description

Design
The diffuser consists of a frame which holds in place a number of horizontal fixed bars which direct the airflow. The grille is supplied with countersunk screw holes when the sum of the width and height exceed 700 mm.

Materials and surface treatment
The grille is manufactured in extruded aluminium and painted.
- Standard colour:
  - White semi-gloss, lustre 40, RAL 9003/NCS S 0500-N
- Alternative standard colours:
  - Silver gloss, lustre 80, RAL 9006
  - Grey aluminium gloss, lustre 80, RAL 9007
  - Blanc semi-brillant, lustre 40, RAL 9010
  - Black semi-gloss, lustre 35, RAL 9005
  - Grey semi-gloss, lustre 30, RAL 7037
- Non-painted finish and other colours available on request.

Customizing
In addition to the ten sizes kept in stock, other dimensions are available to order. The maximum dimensions are 1200 x 600 mm (W x H). Please contact your nearest sales representative for further information.

Accessories
Commissioning box:
TRG. Manufactured in galvanized sheet steel. Includes removable damper, distribution plate, fixed measurement outlet and sound attenuation material with a reinforced surface layer, to Fire Resistance Class B-s1,d0 according to EN ISO 11925-2.

Mounting frame with damper:
FHA. Manufactured in galvanized sheet steel. With a sliding damper in the rear. Can be used as a simpler alternative to the TRG. N.B. No measurement function included.

Fixing frame:
FHB. Manufactured in galvanized sheet steel. Used when the commissioning box is not used.

Planning
The grille can be installed in a wall, ceiling or in a windowsill. For floor installations the universal grill models MFA, UFA or UFK are recommended instead. Please refer to separate documentation for these products. Stocked sizes according to table under the section Ordering key, see Standard range.

Free area
To obtain the free area, the nominal area of the grille is multiplied by the factor f = 0.52.

Example:
Grille: ALG 400 – 200
Nominal area of grille: (0.4 – 0.02)x(0.2 – 0.02) = 0.0684 m²
Free area of grille: 0.52 x 0.0684 = 0.036 m²

Installation
The hole is cut using the nominal width and height dimensions. The mounting frame (FHA/FHB) is pushed into the duct and fixed in position using blind rivets. The grille is then pressed in place onto the mounting frame. When the TRG commissioning box is used, the telescopic frame is first pulled out of the box. The box is then pushed into place from behind the hole and attached to the framework of the building using either perforated band or blind rivets. The telescopic mounting frame is pushed into the box from the room side and fixed to the sides using blind rivets. See figure 1.

The grille is subsequently pressed into place in the mounting frame. If the sum of the width and height of the grille exceeds 700 mm, the grille should be screwed into place on the wall through the countersunk holes.

Commissioning with TRG
This must be carried out with the grille installed. The measurement tubes and damper cords pulled through the grilles bars. The k-factor is found on the product label and is also in the relevant k-factor guide which is to be found on our website. See Figure 1.

K-factor is labeled on the product and also available in the relevant installation-commissioning-maintenance file, available for download at www.swegon.se

Maintenance
The grille can be cleaned when necessary using lukewarm water and detergent. If the TRG commissioning box is used the inside of this should be vacuum cleaned when needed. The duct system is accessible without the use of tools. The grille is first pulled off the fixing frame. The measurement plate is then taken out of the fixing frame and the damper unit is removed by turning the damper out its bayonet fastener.

Environment
The Declaration of construction materials is available at www.swegon.com.

Figure 1. Installation. Commissioning.
To secure the damper action (2) in the duct connection and to secure the octagonal perforated face plate (3) against the duct connection.
1. Commissioning box
2. Damper action
3. Octagonal air distribution plate
4. Mounting frame
5. Grille

Figure 2. Installation alternatives, applies for all connections (B, K, L)
Sizing

- Sound level dB(A) applies to rooms of 10 m² equivalent absorption area, which gives 4 dB room attenuation.
- The throw $l_{0.2}$ is applicable to isothermal conditions. The graphs present the data for the ALG mounted with the upper edge 200 mm from the ceiling.
- Recommended maximum under-temperature is 6 K.
- For calculating the width of the air stream, air velocities in the occupied zone or sound levels in rooms with other dimensions, please refer to our web calculation softwares available for download at www.swegon.com.

Sound data

ALG - Supply- and Extract air

Sound power level $L_w$ (dB)

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<th>Table K</th>
<th>Size</th>
<th>Mid-frequency (octave band) Hz</th>
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<tr>
<td>All</td>
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<td>ALG+TRG</td>
<td>Mid-frequency (octave band) Hz</td>
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<td>Supply Air</td>
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<td>125</td>
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Sound attenuation $\Delta L$ (dB)

<table>
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<th>Mid-frequency (octave band) Hz</th>
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<td>1000-200</td>
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Sizing

- Sound level dB(A) applies to rooms of 10 m² equivalent absorption area, which gives 4 dB room attenuation.
- The throw $l_{0.2}$ is applicable to isothermal conditions. The graphs present the data for the ALG mounted with the upper edge 200 mm from the ceiling.
- Recommended maximum under-temperature is 6 K.
- For calculating the width of the air stream, air velocities in the occupied zone or sound levels in rooms with other dimensions, please refer to our web calculation softwares available for download at www.swegon.com.
Engineering graphs - ALG - Supply air

Air flow - Pressure drop - Sound level - Throw

- The graphs must not be used for commissioning.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.

ALG + FHB, Height = 100, Supply air

![Graph ALG + FHB, Height = 100, Supply air]

ALG + FHB, Height = 150, Supply air

![Graph ALG + FHB, Height = 150, Supply air]

ALG + FHB, Height = 200, Supply air

![Graph ALG + FHB, Height = 200, Supply air]
**Engineering graphs - ALG - Extract air**

*Air flow - Pressure drop - Sound level*

- The graphs must not be used for commissioning.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.

**ALG + FHB, Height = 100, Extract air**

![Graph](image1.png)

**ALG + FHB, Height = 150, Extract air**

![Graph](image2.png)

**ALG + FHB, Height = 200, Extract air**

![Graph](image3.png)
Engineering graphs - ALG with damper FHA

Airflow - Pressure drop - Sound level
- Data apply to fully open FHA damper. Corrections for throttled damper are made in accordance with the graphs and tables under the heading Sound Data Correction. The pressure drop for the grille must be added to the data for FHA. The sound level need not be added.
- The graphs must not be used for commissioning.
- dB(A) value applies to a normally attenuated room (4 dB room attenuation).
- dB(C) value lies normally 6-9 dB above the dB(A) value.

Sound data corrections for ALG with FHA
The sound values stated for the grille plus damper are valid when the damper is in the fully open position. In order to obtain the sound level for a throttled damper, first calculate the pressure drop ratio between throttled and open damper. Then go to the graph to the right. The value obtained is added to the sound level for an open damper.

The maximum throttling ratio $\Delta p_{\text{throttled}} / \Delta p_{\text{open}}$ is 4.5 for all sizes.

(1.) = dB(A)-increase
(2.) = Trottle ratio = $\Delta p_{\text{throttled}} / \Delta p_{\text{open}}$

Example:
FHA 1000 x 200. Requisite air flow is 250 l/s at 40 Pa. $\Delta p$ open damper: 10 Pa $\Delta p$ throttling: 40 Pa

$$\frac{40}{10} = 4 \leq 4.5 \rightarrow \text{OK}$$

Sound increase according to diagram, 18 dB(A). The total sound level is then 25 + 18 = 43 dB(A).
Engineering graphs - ALG + TRG - Supply air

Air flow - Pressure drop - Sound level - Throw

- The graphs must not be used for commissioning.
- $\nabla =$ Minimal flow to obtain sufficient commissioning pressure.

- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.
- The dB(C) value is normally 6-9 dB's higher than the dB(A) value.

ALG 200-100 + TRG-B Ø125, Supply air

ALG 300-100 + TRG-B Ø160, Supply air

ALG 300-150 + TRG-B Ø200, Supply air

ALG 400-100 + TRG-B Ø160, Supply air

ALG 400-200 + TRG-B Ø250, Supply air

ALG 400-150 + TRG-B Ø250, Supply air
**Engineering graphs - ALG + TRG - extract air**

**Air flow - Pressure drop - Sound level**
- The graphs must not be used for commissioning.
- \( V \) = Minimal flow to obtain sufficient commissioning pressure.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.

**ALG 200-100 + TRG-B Ø125, Extract air**

**ALG 300-100 + TRG-B Ø160, Extract air**

**ALG 300-150 + TRG-B Ø200, Extract air**

**ALG 400-100 + TRG-B Ø160, Extract air**

**ALG 400-150 + TRG-B Ø250, Extract air**

**ALG 400-200 + TRG-B Ø250, Extract air**

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Swegon reserves the right to alter specifications.

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Dimensions and weight

In order to obtain the exact dimensions of the grille, the figures in the ALG diagram above must be added to the nominal dimensions.

Hole making size, fixing frame FHB = nominal dimensions. (Grille size designation.)

Size of the opening, TRG= nominal dimensions + 5 mm (Size designation of the grille + 5mm).

<table>
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<tr>
<th>Table of dimensions TRG</th>
<th>Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>ØD</th>
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<th>I</th>
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**Order key**

### Product
- Linear bar grille: ALG
  - Nom. width: See dimension table
  - Nom. height: See dimension table

### Accessories
- Commissioning box with removable damper
  - Nom. width: 200, 300, 400, 500, 600
  - Nom. height: 100, 150, 200
  - Mating duct dimension: 125, 160, 200, 250, 315

**Connection alternatives**
- B = Rear side connection
- K = Short side connection
- L = Long side connection

**Standard range:**
- 200-100-125
- 300-100-160
- 300-150-200
- 400-100-160
- 400-150-250
- 400-200-250
- 500-100-200
- 500-150-250
- 500-200-315
- 600-200-315

### Mounting frame with damper
- Nom. width:
- Nom. height:

### Fixing frame
- Nom. width:
- Nom. height:

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**Specification example**

Swegon's rectangular grille for wall/ceiling mounting of the type ALG with the commissioning box TRG, with the following functions:

- Fixed horizontal bars
- Powder-coated in white, RAL 9003/NCS S 0500-N
- Cleanable commissioning box TRG with removable commissioning damper including a lockable adjustment, measurement function with low method error and internal acoustic attenuation with reinforced surface layer.

**Size:**
- ALGc aaa - bbb with TRGd aaa - bbb - ccc - d xx items

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