

# DPG

Low velocity terminal for small airflows



## QUICK FACTS

- Theatre diffuser for mounting in floor
- Fixed spread pattern
- Simple installation
- Requires no maintenance
- Cleanable
- Suitable also as traditional wall diffuser near ceiling
- Standard colour Black RAL 9005
  - 5 alternative standard colours
  - Other colours upon request

# Technical description

## Design

Circular low velocity terminal consisting of two parts: front plate and mounting frame. The circular mounting frame is equipped with a circular inlet spigot with rubber seal. The field perforated front plate is twisted into place over the mounting frame.

The low velocity terminal is available in three different types, depending on what pressure drop is desired. Type 1 and 2 are equipped with pressure raising inserts and are suitable for pressurised installation floors, in the riser of steps etc. Type 0 has no insert and is designed for installations with commissioning box ALS.

## Materials and surface treatment

The mounting frame is manufactured in galvanized sheet steel. The front plate is in aluminium and can be painted in a colour selected by the customer. The standard version is painted.

- Standard colour:
  - Black semi-gloss, lustre 35, RAL 9005
- Alternative standard colours:
  - Silver gloss, lustre 80, RAL 9006
  - Grey aluminium gloss, lustre 80, RAL 9007
  - White semi-gloss, lustre 40, RAL 9010
  - White semi-gloss, lustre 40, RAL 9003/NCS S 0500-N
  - Grey semi-gloss, lustre 30, RAL 7037
- Non-painted finish and other colours available on request.

## Accessories

### Commissioning box:

ALS. Manufactured in galvanized sheet steel. Include removable commissioning damper, fixed measurement outlet and sound attenuator with reinforced surface layer, to Fire Resistance Class B-s1,d0 according to EN ISO 11925-2. Tightness class C on the housing according to SS-EN 12237.

## Installation

The hole is cut as illustrated in the figure. The mounting frame is placed in the hole and fastened using screws into the floor structure. The front plate is then twisted into place in the mounting frame. See Figure 2.

## Commissioning

It is recommended that the space behind the terminals should be used as a pressure chamber. The supply air duct to the pressure chamber is then equipped with a measurement and commissioning damper. When the low velocity terminal is used together with the commissioning box ALS, is the commissioning done by measuring the pressure from the hole in the centre of front plate. See Figure 2.

Measurement accuracy and requirement on straight duct before the commissioning box, see Figure 2. The requirements of straight duct depends on the type of disturbance before the commissioning box. Figure 2 shows a bend, a dimensional change and a T-piece. Other types of disturbances requires at least 2xD straight (D = connection dimension) for measurement accuracy of  $\pm 10\%$  of the flow.

## Maintenance

The terminal is cleaned when necessary using lukewarm water with detergent added.

## Environment

The Declaration of construction materials is available at [www.swegon.com](http://www.swegon.com).

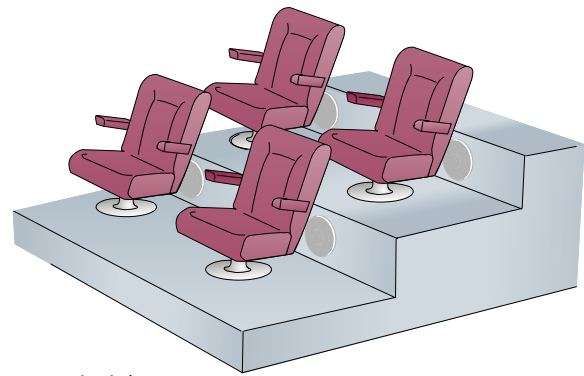


Figure 1. Principle, DPG.

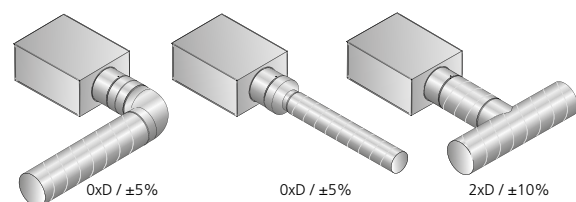
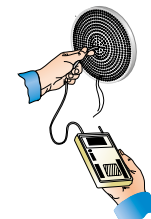
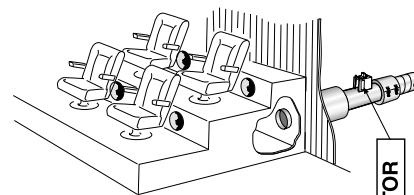
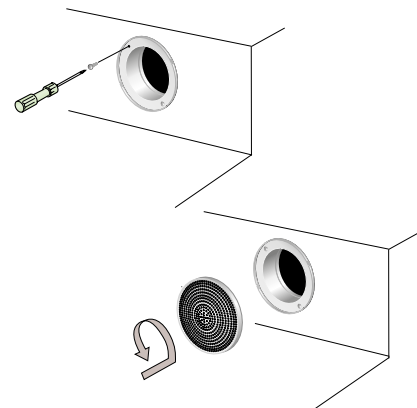


Figure 2. Installation. Commissioning. Maintenance.

# Sizing

- Sound pressure level dB(A) applies to rooms with 10 m<sup>2</sup> equivalent sound absorption area.
- Sound attenuation ( $\Delta L$ ) below is shown in the octave band. Orifice attenuation is included in the values.
- The near zones  $a_{0.20}$  and  $b_{0.20}$  are measured at  $\Delta t$  -3 K and refer to max. velocity irrespective of distance from floor.
- $\Delta t$  is the difference between the room temperature at 1.2 m above floor level and supply air temperature.
- Recommended maximum under temperature 6 K.
- For calculation of the width of air stream, air velocity in the affected area or sound levels in rooms with other dimensions, refer to our calculation software ProAir web. These are available from [www.swegon.com](http://www.swegon.com).

$L_w$  = Sound power level

$L_{p10A}$  = Sound pressure level dB (A)

$K_{ok}$  = Correction for producing the  $L_w$  value in the octave band

$L_w = L_{p10A} + K_{OK}$  gives the frequency divided octave band

## Sound data - DPG

### Sound power level $L_w$ (dB)

Table  $K_{ok}$

Size	Mid-frequency (octave band) Hz							
DPG	63	125	250	500	1000	2000	4000	8000
125	-3	-4	-8	-4	1	-3	-7	-17
Size	Mid-frequency (octave band) Hz							
DPG + ALS	63	125	250	500	1000	2000	4000	8000
125	0	2	2	-2	-1	-4	-7	-7
Tol. $\pm$	2	2	2	2	2	2	2	2

### Sound attenuation $\Delta L$ (dB)

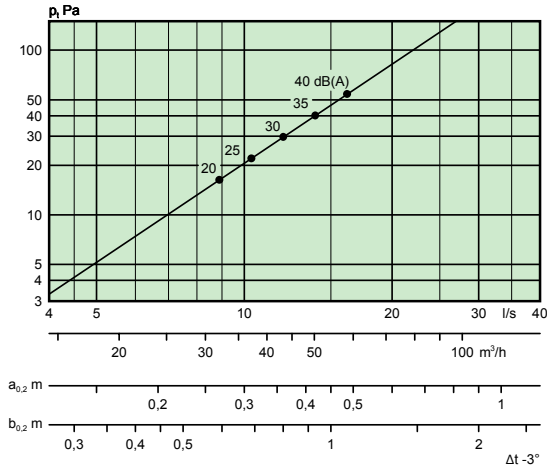
Table  $\Delta L$

Size	Mid-frequency (octave band) Hz							
DPG	63	125	250	500	1000	2000	4000	8000
125	20	16	12	7	2	2	2	2
Size	Mid-frequency (octave band) Hz							
DPG + ALS	63	125	250	500	1000	2000	4000	8000
125	20	16	9	17	23	16	11	13
Tol. $\pm$	2	2	2	2	2	2	2	2

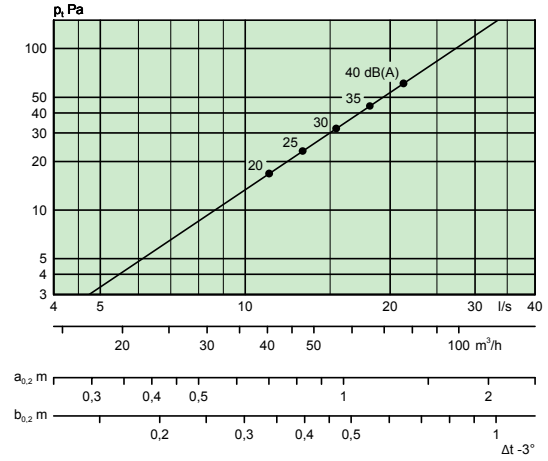
### Engineering graphs - DPG

- The graphs illustrate data for DPG installed in the open space below the seats, that functions as a plenum chamber.
- The near zones  $a_{0,20}$  and  $b_{0,20}$  are measured at  $\Delta t -3$  K.
- The diagrams must not be used for commissioning.
- The dB(C) values normally lie 6-9 dB higher than dB(A) values.

DPG 1-125 with pressure insert 70



DPG 2-125 with pressure insert 85

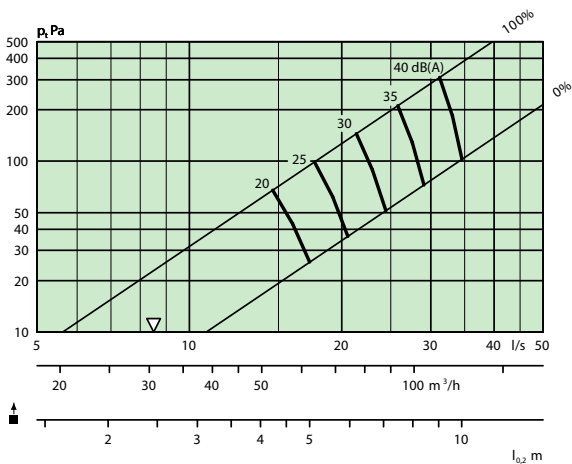


### DPG with ALS - Supply air

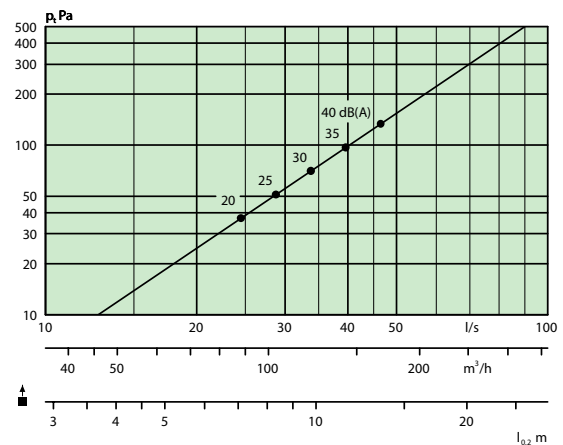
#### Airflow - Pressure drop - Sound level - Throw

- The diagram must not be used for commissioning.
- $\nabla$  = minimum flow required to obtain sufficient commissioning pressure.
- dB(C) values normally lie 6-9 dB higher than dB(A) values.

DPG 0-125 + ALS 100-125, wall terminal



DPG 0-125 as wall diffuser for mixing ventilation



# Dimensions and weights Order key

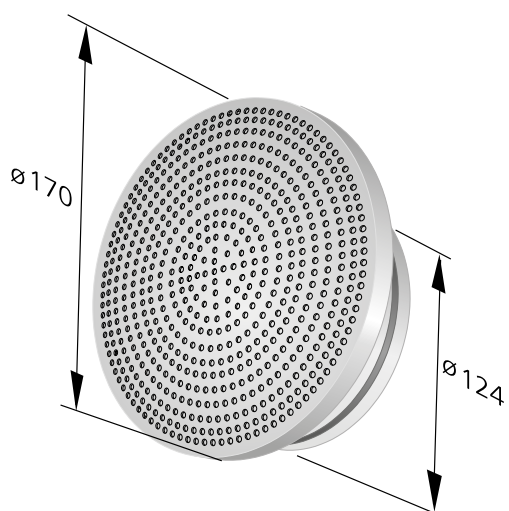


Figure 3. DPG. Weight 0.5 kg

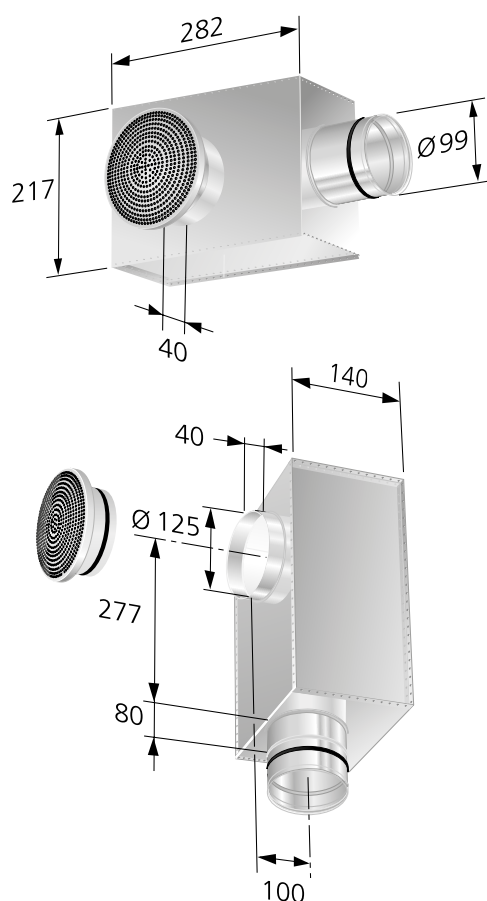


Figure 4. DPG with ALS commissioning box

## Product designation

Circular low velocity terminal	DPG	a	-aaa	-b
Version				
Size: 125				
Version:				
Excluding pressure insert 0				
Including pressure insert 70:1				
Including pressure insert 85:2				

## Accessories

Commissioning box	ALS	d	-aaa-bbb
Version			
For DPGa 0-125:	ALS 100-125		

## Specification example

Swegon's circular low velocity terminal type DPG, with the following functions:

- Fixed spread pattern
- Non-fouling
- Cleanable
- Powder-coated in black, RAL 9005

Accessories:

Commissioning box:	ALSd aaa-bbb	xx items
Size:	DPGa aaa-b	xx items