



## Air terminal devices

### Slot Diffusers Type PureLine18

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#### Product overview

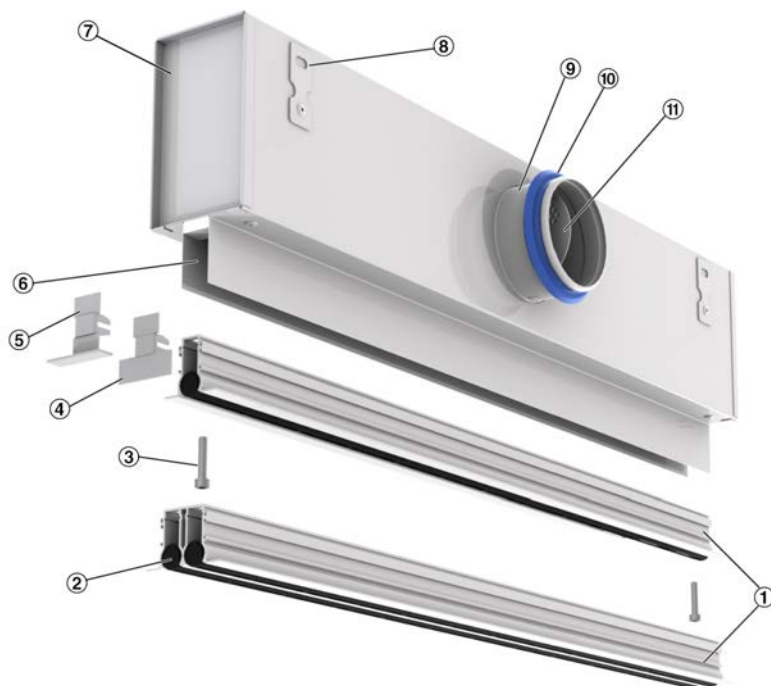


Fig. 1: Schematic illustration of PL18\*-SF

- ① Diffuser face (with 1 slot or 2 slots)
- ② Adjustable air control element
- ③ Screw fixing
- ④ End plate
- ⑤ End angle
- ⑥ Neck

- ⑦ Plenum box
- ⑧ Suspension lug
- ⑨ Spigot
- ⑩ Lip seal
- ⑪ Damper blade for volume flow rate balancing

Optional equipment: ④ ⑤ ⑩ ⑪

## Important notes

### Information on the installation manual

This manual enables operating or service personnel to correctly install the product described below and to use it safely and efficiently.

It is essential that these individuals read and fully understand this manual before starting any work. The basic prerequisite for safe working is to comply with the safety notes and all instructions in this manual.

The local regulations for health and safety at work and general safety regulations also apply.

### Qualified staff

#### Specialist personnel

Specialist personnel are individuals who have sufficient professional or technical training, knowledge and actual experience to enable them to carry out their assigned duties, understand any potential hazards related to the work under consideration, and recognise and avoid any risks involved.

#### Limitation of liability

The information in this manual has been compiled with reference to the applicable standards and guidelines, the state of the art, and our expertise and experience of many years.

The manufacturer does not accept any liability for damages resulting from:

- Non-compliance with this manual
- Incorrect use
- Operation or handling by untrained individuals
- Unauthorised modifications

The actual scope of delivery may differ from the information in this manual for special constructions, additional order options or as a result of recent technical changes.

### Personal protective equipment

Personal protective equipment must be worn for any work in order to reduce health or safety hazards to the minimum.

The appropriate protective equipment for a job must be worn for as long as the job takes.

### Industrial safety helmet



Industrial safety helmets protect the head from falling objects, suspended loads, and the effects of striking the head against stationary objects.

### Protective gloves



Protective gloves protect hands from friction, abrasions, punctures, deep cuts, and direct contact with hot surfaces.

### Safety shoes



Safety shoes protect the feet from crushing, falling parts and prevent slipping on a slippery floor.

#### Correct use

Air terminal devices are used for the ventilation of rooms in industrial and comfort areas. The air terminal devices are connected to a supply air or extract air system (by others), which is typically connected to an air handling unit.

Air terminal devices supply cold or warm air to rooms (within the stated supply air to room air temperature differences).

Installation, operation and maintenance may have to meet increased hygiene requirements for certain areas of application.

The installation of air terminal devices in humid rooms, areas with potentially explosive atmospheres or rooms with dust-laden or aggressive air has to be assessed for each individual case.

## Transport and storage

### Delivery check

Upon delivery, carefully remove the packaging and check the unit for transport damage and completeness. In case of any damage or an incomplete shipment, contact the shipping company and your supplier immediately. Put the product back into its packaging after the delivery check to protect it from dust and contamination.



### Fixing and installation material

*Fixing and installation material is not part of the supply package (unless stated otherwise), but has to be provided by others; it has to be suitable for the installation situation.*



### Factory setting

*The air control elements are factory set to a certain position. Changing this factory setting increases the commissioning time and cost. Be careful when you unpack and install the air control elements so as not to accidentally change their position.*

## Transport on site



### CAUTION!

#### **Danger of injury from sharp edges, sharp corners and thin sheet metal parts!**

Sharp edges, sharp corners and thin sheet metal parts may cause cuts or grazes.

- Be careful when carrying out any work.
- Wear protective gloves, safety shoes and a hard hat.

Please note:

- Be careful when unloading or moving the product, and pay attention to the symbols and information on the packaging.
- If possible, take the product in its transport packaging up to the installation location.
- Use only lifting and transport gear designed for the required load.
- Always secure the load against tipping and falling.
- Do not move bulky items just by yourself. Get help to prevent injuries and damage.

## Storage

Please note:

- Store the product only in its original packaging
- Protect the product from the effects of weather
- Protect the product from humidity, dust and contamination
- Storage temperature: -10 °C to 50 °C.
- Relative humidity: 95% max., no condensation

## Packaging

Properly dispose of packaging material.



Nominal length	L <sub>1</sub>	L <sub>3</sub>
	[mm]	
600	600	595
700	700	695
800	800	795
900	900	895
1000	1000	995
1100	1100	1095
1200	1200	1195
1300	1300	1295
1400	1400	1395
1500	1500	1495
1600	1600	1595
1700	1700	1695
1800	1800	1795
1900	1900	1895
2000	2000	1995

Variant	M	O
	[mm]	
PL18-1-HS / HA	18	
PL18-2-HS / HA	35	
PL18-1-VS	18	
PL18-2-VS	35	
PL18-1-PF-HA		54
PL18-2-PF-HA		67
PL18-1-SF-HA		50
PL18-2-SF-HA		63

Variant	ØD	C
	[mm]	
PL18-1	78	42
PL18-1	98	50
PL18-2	98	50
PL18-2	123	48

Plenum box variant	Variant	Weight [kg/m]
Diffuser face	PL18-1	0.5
Diffuser face	PL18-2	0.8
Plenum box HS/HA	PL18-1	2.4
Plenum box HS/HA	PL18-2	3.4
Plenum box VS	PL18-1	2.9
Plenum box VS	PL18-2	2.8

Total weight [kg] =  
 Weight of diffuser face × L<sub>1</sub>  
 + Weight of plenum box × L<sub>3</sub>

Enter lengths in [m]

**Technical data**

Nominal length	600 – 2000 mm, in increments of 100 mm
Number of slots	1 or 2
Minimum volume flow rate, with Δt <sub>z</sub> = -10 K	5 l/s or 17 m³/h
Maximum volume flow rate, with L <sub>WA</sub> ≈ 50 dB(A)	84 l/s or 302 m³/h
Supply air to room air temperature difference	-10 to +10 K

## Installation

### General information

#### Personnel:

- Specialist personnel

#### Protective equipment:

- Industrial safety helmet
- Protective gloves
- Safety shoes

#### Installation notes:

- For room heights up to 4 m (lower edge of suspended ceiling)
- Flush ceiling installation
- Fix the device only to load-bearing structural elements.
- Load suspension systems only with the weight of the device. Adjacent components and connecting ducts must be supported separately.
- The diffusers must remain accessible for cleaning even after installation.
- Installation and sealing material which the manufacturer provides is usually supplied in an extra bag.

Before you install the product, take suitable precautions to protect air distribution components from contamination during installation (VDI 6022). If this is not possible, at least cover the devices or take other precautions to protect them from contamination. In this case you have to ensure that the devices cannot be activated. Ensure that all components are clean before you install them. If necessary, clean them thoroughly. If you have to interrupt the installation procedure, protect all openings from the ingress of dust or moisture.

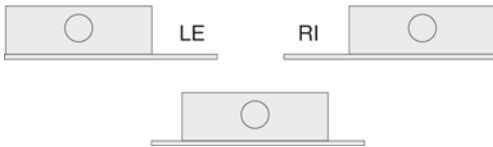


Fig. 4: Position of plenum box

If  $(L_3 + 5) < L_1$ , the plenum box can be positioned to the left, to the right or in the centre.

## Ceiling installation

If possible, install the device before fixing the ceiling tiles; if this is not possible, remove the adjacent ceiling tiles.

Use only approved and adequately sized suspension systems (fixing material is not included in the supply package). Dimensions and weight ↪ Chapter 4 'Technical data' on page 4.

If you have to install larger devices, it is best to either ask someone to give you a hand or use a lift.

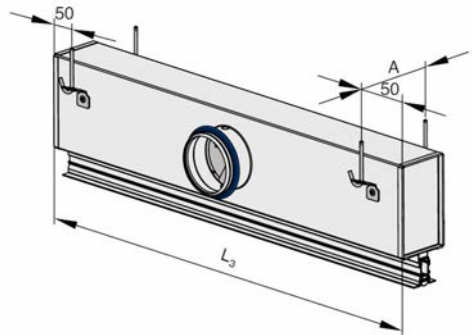


Fig. 5: Plenum box suspension

Variant	A [mm]	L <sub>3</sub>
PL18-1/2-HS/HA	140	↪ Table on page 5
PL18-1/2-VS	178	

- ▶ Fix the suspension parts such as ropes, cables or metal hangers (Fig. 5/1) to the ceiling.
- ▶ Use all of the available suspension points on the plenum box.

Horizontal run sections

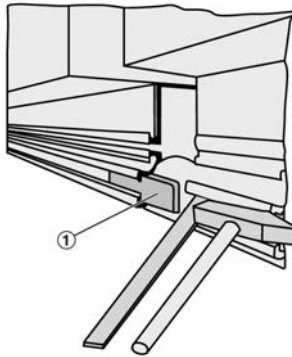


Fig. 6: Linking slot diffusers

3. ▶ The supplied alignment plates (Fig. 6/1) help you align slot diffusers for a continuous linear arrangement.

Fix an alignment plate (2 each per diffuser) on one side, then connect the next diffuser to it.

Fixing EA end angles

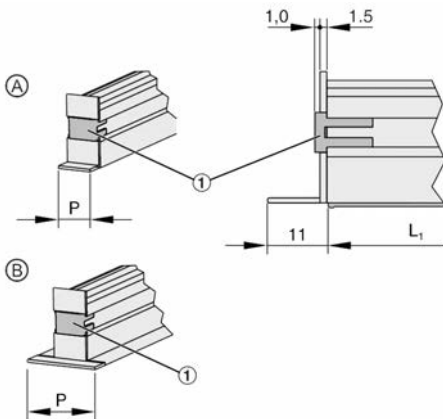


Fig. 7: EA end angle without and with extended border

Fixing EP end plates

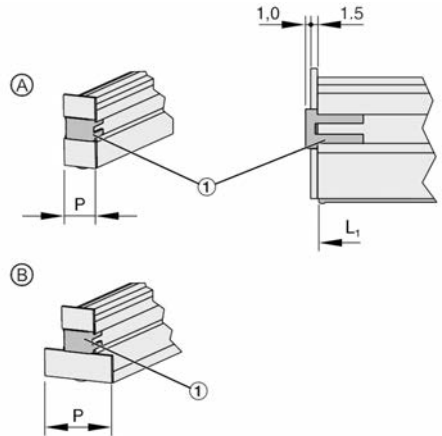


Fig. 8: EP end plate without and with extended border

Single diffusers are factory fitted with end plates or end angles. For a continuous linear arrangement the end plates or end angles have to be fitted by others. The end plates or end angles have to be fixed with the provided clamps (Fig. 7/1 and Fig. 8/1).

Variant	Ⓐ without extended border	Ⓑ with extended border
	P [mm]	
PL18-1	18	38
PL18-2	35	55

**Fitting corner sections**

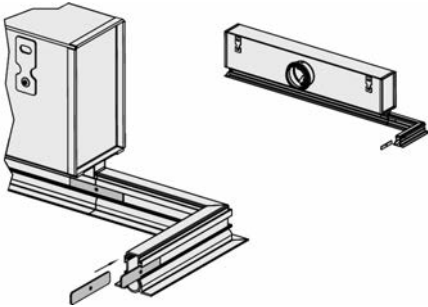


Fig. 9: Fitting a corner section with extended border

Corner sections are supplied with two alignment plates.

**Installation in panelled ceilings**

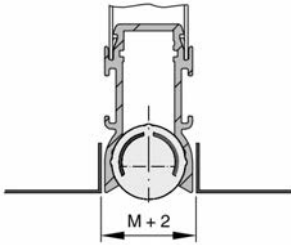


Fig. 10: Installation without extended border into a ceiling with rectangular panels; required length of installation opening when an end plate is used:

$L1 + 7$

**T-bar ceiling**

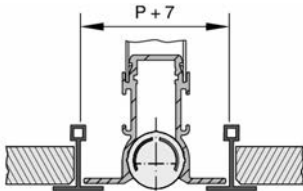


Fig. 11: Installation with extended border into a T-bar ceiling; required length of installation opening when an end angle is used:  $L1 + 29$

**Installation in continuous ceilings**

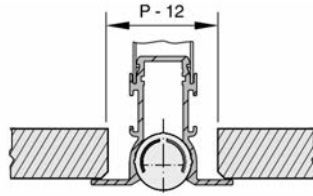


Fig. 12: Installation with extended border into a continuous ceiling; required length of installation opening when an end angle is used:  $L1 + 7$

**Installation into continuous ceilings with detachable diffuser face fixing**

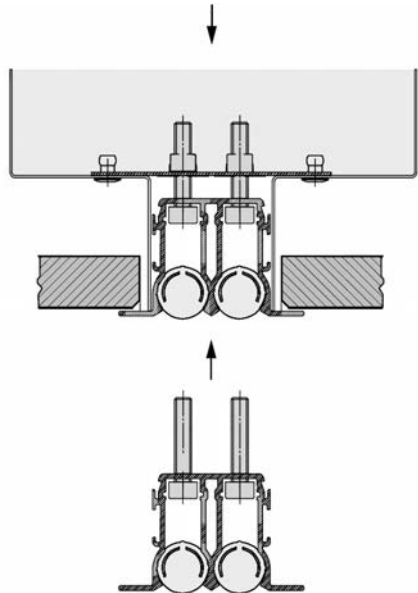


Fig. 13: PL18-2-SF



**Assembling the detachable diffuser face fixing**

The face of slot diffusers with detachable diffuser face fixing (variant FS or DS) can be fixed to the plenum box after the false ceiling has been completed.

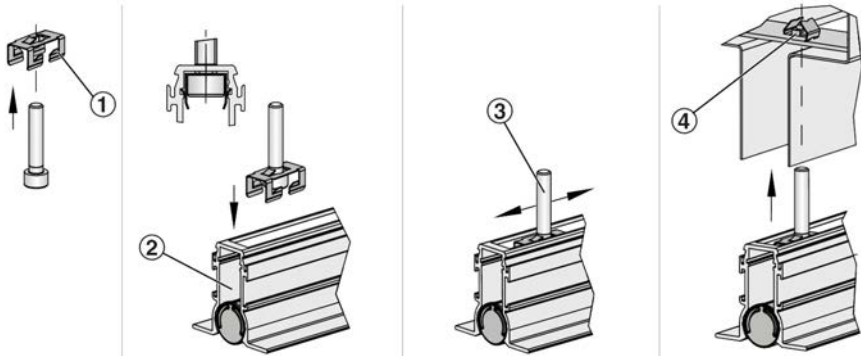


Fig. 14: Diffuser faces with detachable fixing

Assemble the fixing material as shown. The fixing material ① is supplied separately. Then insert the fixture into the diffuser face ② and position it as required ③. Move the diffuser face towards the plenum box such that the screws fit into the supplied fixing holes ④ in the plenum box. Using an Allen key (SW4) simplifies the fixing procedure. To remove the diffuser face, first remove the Allen screws (SW4 Allen key).

**Installation into continuous ceilings with spring clip fixing**

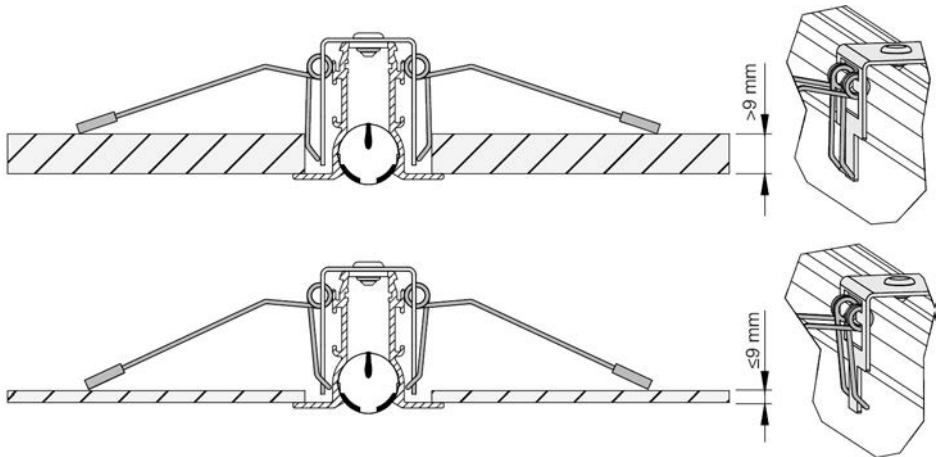


Fig. 15: PL18-DF: The position of the spring clip depends on the ceiling thickness; for installation dimensions ↻ table on page 10

### Installation dimensions for installation into continuous ceilings with spring clip fixing

Variant	P	Installation opening	
		Width	Length (with end angle)
PL-18-1	38	32	L1 + 7
PL-18-2	55	49	

#### Duct connection

The plenum box has a spigot for duct connection. Variants with a double lip seal allow for a sufficiently tight connection; additional sealing is not required.

### Initial commissioning, maintenance and cleaning

#### Initial commissioning

Before you start commissioning:

- Check that the air terminal devices are correctly seated.
- Remove protective film, if any.
- Ensure that all air terminal devices are clean and free from residues and foreign matter.
- Check that electrical connections (if any) have been correctly made.
- Ensure that the device has been correctly fixed and connected to the ducting.

For commissioning see also VDI 6022, part 1 – 'Hygiene requirements for ventilation and air-conditioning systems and units'.

#### Volume flow rate balancing

When several diffusers are connected to just one volume flow controller, it may be necessary to balance the volume flow rates.

Slot diffusers with plenum box and damper blade (variant -D): The damper blade can be adjusted even after the diffuser face has been installed.

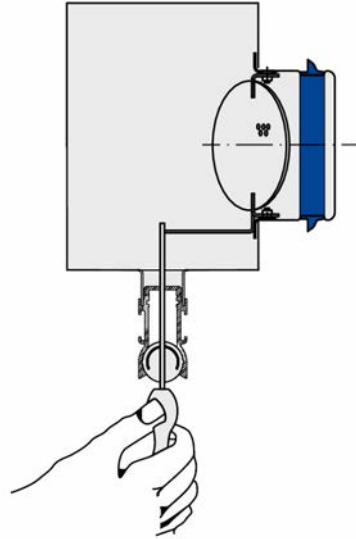


Fig. 16: Setting the damper blade, e.g. with a screwdriver


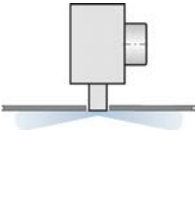
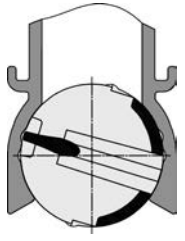
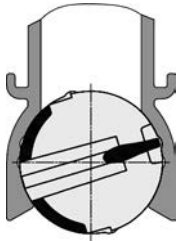

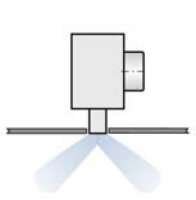
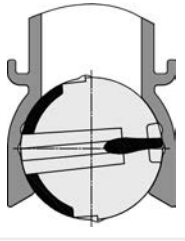
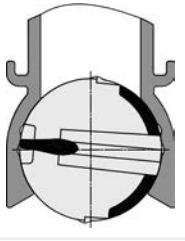
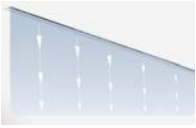
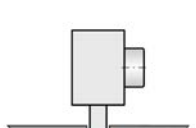
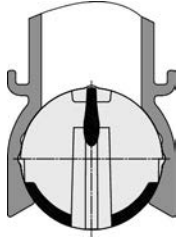
Move the air control element near the spigot in such a way that it is possible to insert a screw driver.


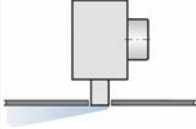
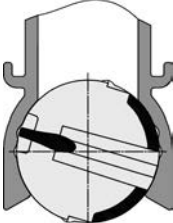

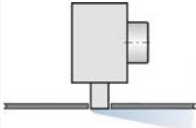
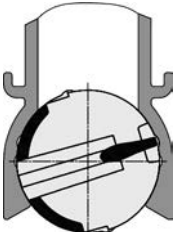
**Setting the air discharge direction**

These are only schematic diagrams to illustrate the setting of the air control elements.

The mullions of the air control elements have grooves that make it easier to adjust the elements. We recommend you to use both hands to adjust the air control elements.

**Air discharge – ceiling installation**

Air discharge	Setting of the air control elements		
Alternating horizontal air discharge  			Alternating air control elements set to left-hand or right-hand air discharge
Alternating angled air discharge  			Alternating air control elements set to left-hand or right-hand air discharge
Vertical air discharge  			

Air discharge		Setting of the air control elements	
One-way horizontal air discharge to the left			
One-way horizontal air discharge to the right			

## Maintenance and cleaning

Please note:

- The cleaning intervals given in the VDI 6022 standard apply.
- Clean surfaces with a damp cloth.
- Use only common household cleaners, do not use any aggressive cleaning agents.
- Do not use cleaning agents that contain chlorine.
- Do not use equipment for removing stubborn contamination, e.g. scrubbing sponges or scouring cream, as it may damage the surfaces.