

# Klima-Set Differential pressure switch for air

KS...A2-7

5.21

**DUNGS®**  
Combustion Controls

neuvità  
nouveau new

- RoHS II 2011/65/EU
- max. operating pressure 10 kPa



## Technical description

Two separate pressure chambers with pressure-side connection to hose nipples.

Connection of  $\varnothing 4$  mm for each pressure chamber.

Reference value (pressure difference) can be set directly. Reference value can be read off externally through the transparent hood.

Precise function through special switching system in a frictionless bearing. Contact switchover is performed when the set reference value is exceeded or undershot. Complete mounting kit enclosed.

## Application

The equipment is used in ventilation and air-conditioning systems, DDC.

It is specially designed for monitoring air ducts, filters, drive units and blowers.

## Approvals

EC type testing certificate as per:

- EC-Gas Appliances Regulation

Approvals in other important gas-consuming countries.

Functional description

Differential pressure switch in pressure and vacuum ranges. The differential pressure acts via the diaphragm against the force of the setting spring on the microswitch.  
If the set reference value is exceeded or undershot, the circuit is switched on, off or over.  
The differential pressure switch of the Klima-Set works without an auxiliary power.

DDC application

The switching contacts of the Klima-Set are made of gold-plated silver, for 24 V DC; 0.02 A.  
When using the Klima-Set in conventional systems at 250 V AC, 4 A ohmic load, 2 A inductive load, cos φ 0.6, the gold-plated coating on the switching contacts burns off.  
**This makes a subsequent DDC application impossible.**



Make sure that no condensate can enter into the pressure switch. Icing may occur at temperatures below zero which may lead to a malfunction or failure of the equipment.

Specifications

|                         |                                                                                                                                                                       |                                                                         |           |            |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------|------------|
| Max. operating pressure | 10 kPa (100 mbar)                                                                                                                                                     |                                                                         |           |            |
| Pressure connection     | Hose connector for hose ø 4                                                                                                                                           |                                                                         |           |            |
| Temperature range       | Ambient temperature                                                                                                                                                   | -15 °C to +85 °C                                                        |           |            |
|                         | Medium temperature                                                                                                                                                    | -15 °C to +85 °C                                                        |           |            |
|                         | Storage temperature                                                                                                                                                   | -30 °C to +85 °C                                                        |           |            |
| Materials               | Housing                                                                                                                                                               | Polycarbonate                                                           |           |            |
|                         | Switching part                                                                                                                                                        | Polycarbonate                                                           |           |            |
|                         | Diaphragms                                                                                                                                                            | NBR                                                                     |           |            |
|                         | Switching contact                                                                                                                                                     | gold-plated silver (Au), suitable for DDC applications: 24 V DC; 0.02 A |           |            |
| Switching voltage       | Au contact                                                                                                                                                            | DC                                                                      | min. 5 V  | max. 24 V  |
| Nominal current         | Au contact                                                                                                                                                            | DC                                                                      |           | 20 mA      |
| Switching current       | Au contact                                                                                                                                                            | DC                                                                      | min. 5 mA | max. 20 mA |
| Electrical connection   | On terminal screws via cable duct M20 x 1,5                                                                                                                           |                                                                         |           |            |
| Protection type         | IP 54 as specified in IEC 529 (EN 60529), optional IP 65                                                                                                              |                                                                         |           |            |
| Setting tolerance       | see setting range page 4, switching point deviation, relative to nominal value, with vertical mounting position. Rising (↑) or falling (↓) setting available on site. |                                                                         |           |            |
| Deviation               | Permissible deviation of the set value ≤ ± 15 % in the service life test according to EN 1854                                                                         |                                                                         |           |            |

Klima-Set scope of supply mit Zubehör

- 1. LGW...C2 differential pressure switch
- 2. Mounting plate
- 3. Connection hose 4 x 1.5, 2 m
- 4. fixing screws (6 x)
- 5. hose connection (2 x)
- 6. Extension tube (2 x)
- 7. Operating and assembly instructions

Mounting plate



Hose connection



Fixing screws



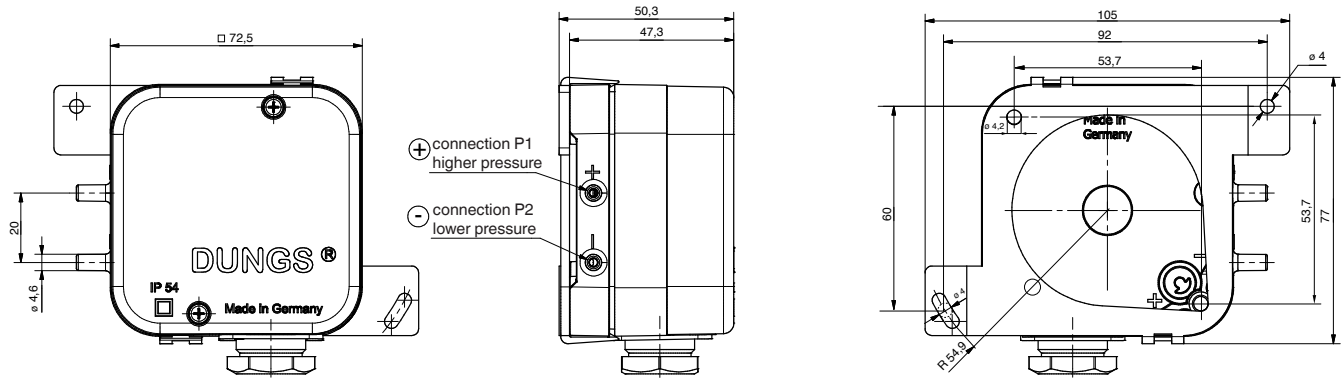
Connection hose  
dia. 4 x 1.5 x 2000



Extension tube



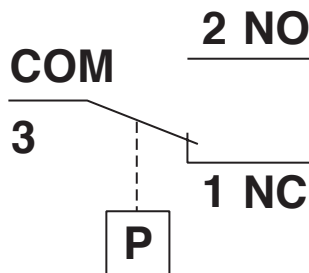
## Dimensions [mm]



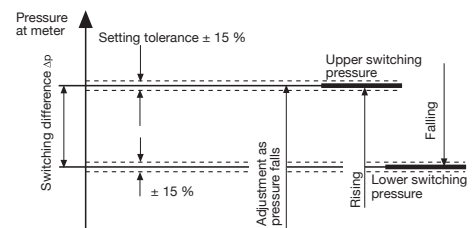
## Switching functions

As differential pressure rises:  
1 NC opens  
2 NO closes

As differential pressure falls:  
1 NC closes  
2 NO opens



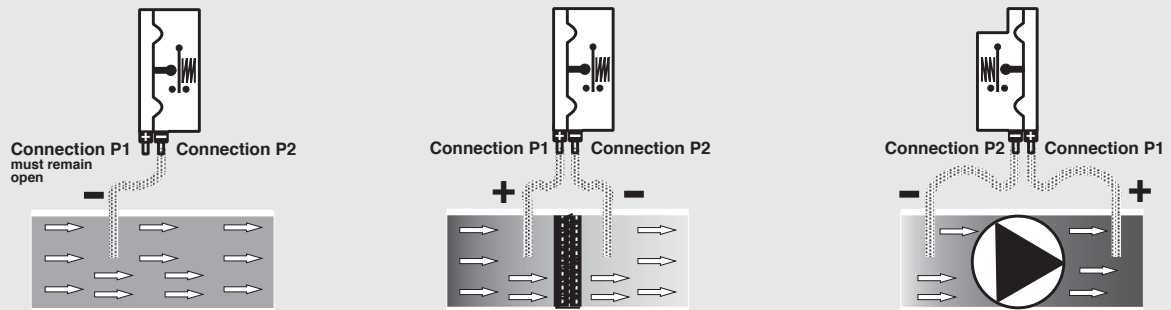
## Switching difference $\Delta p$



The switching difference  $\Delta p$  is the pressure difference between the upper and lower switching pressures.

## Schematic diagram

### Application and connection examples



## Monitoring system vacuum

To monitor the pressure in vacuum systems.

Connect Klima-Set to the air duct via connection p2 (-).

Do not connect connection p1 (+) to the air duct.

Do not close the hose connection sleeve of connection p1 (+), a connection to atmosphere must exist.

Important: No dirt must enter into the equipment through connection p1 (+).

## Filter monitoring

To monitor filter fouling, Klima-Set can be connected as shown above. Connection p1 (+) is connected upstream of the filter and connection p2 (-) downstream of the filter with the air channel in flow direction of volumetric flow.

## Blower monitoring

In the blower monitoring system, connection p1 (+) is connected on the pressure side downstream of the blower and connection p2 (-) is connected to the air duct upstream of the blower.

Always connect **higher pressure** to connection p1 (+).  
Always connect **higher vacuum** to connection p2 (-).

## Example - System pressure

Higher pressure:  
e.g. 240 Pa: Connection p1 (+)  
Lower pressure:  
e.g. 180 Pa: Connection p2 (-)

## Example - System vacuum

Lower vacuum:  
e.g. -130 Pa: Connection p1 (+)  
Higher vacuum:  
e.g. -210 Pa: Connection p2 (-)

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**Brief technical data**

1 mbar = 100 Pa = 0.1 kPa ≈ 10 mm WS      1 Pa = 0.01 mbar ≈ 0.1 mm WS

| Type                | Order No.<br>with<br>accessories<br>1 piece | Order No.<br>without<br>accessories<br>60 pieces | Setting range<br>[Pa] | min. / max.      | Adjust-<br>ment | Switch-<br>ing diffe-<br>rence Δp<br>[Pa] | Max.<br>operating<br>pressure<br>[kPa] |
|---------------------|---------------------------------------------|--------------------------------------------------|-----------------------|------------------|-----------------|-------------------------------------------|----------------------------------------|
| <b>KS 150 A2-7</b>  | 257 842                                     | 260 427                                          | 20-150                | ± 8 Pa / ± 15 %  | ↓               | ≤ 18                                      | 10                                     |
| <b>KS 300 A2-7</b>  | 257 843                                     | 260 428                                          | 20-300                | ± 8 Pa / ± 15 %  | ↓               | ≤ 20                                      | 10                                     |
| <b>KS 600 A2-7</b>  | 257 844                                     | 260 429                                          | 30-600                | ± 10 Pa / ± 15 % | ↓               | ≤ 30                                      | 10                                     |
| <b>KS 1000 A2-7</b> | 257 845                                     | 260 430                                          | 0,1-1,0 kPa           | -      ± 15 %    | ↑               | ≤ 40                                      | 10                                     |
| <b>KS 3000 A2-7</b> | 257 846                                     | 260 431                                          | 0,3-3,0 kPa           | -      ± 15 %    | ↑               | ≤ 80                                      | 10                                     |

| Accessories/Spare parts for Klima-Set |         |
|---------------------------------------|---------|
| KS-accessories complete               | 258 247 |
| Mounting plate                        | 230 301 |
| Connecting tube ø 4 x 1,5, 2 m (1 x)  | 230 303 |
| Hose connection (2 x)                 | 230 306 |
| Synthetic tubes (2 x)                 | 230 307 |
| Operation and assembly instructions   | 260 437 |
| Connector socket                      | 231 770 |
| Line socket                           | 210 318 |
| Assembly set display yellow 24 V      | 231 774 |
| Assembly set display yellow 230 V     | 231 773 |
| Assembly set display green 24 V       | 248 240 |
| Assembly set display green 230 V      | 248 239 |
| Replacement set cover IP 54           | 230 276 |
| Replacement set cover IP 65           | 257 841 |
| Adapter ø 4/6 (2 x)                   | 266 037 |
| Cylinder head screw ø 3x14 (2 x)      | 266 045 |

We reserve the right to make any changes in the interest of technical progress.

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