

## DBL

Adjustable differential pressure switch for air or other non-combustible, non-aggressive gases



*Adjustable differential pressure switch for monitoring overpressure, vacuum and differential pressure of air or other non-combustible, non-aggressive gases.*

- For differential pressure up to 5 kPa
- Lowest set point value is 20 Pa
- Compact design
- Excellent long-term stability
- Easy installation and mounting
- Can be used at temperatures down to -20°C

### Application

DBL is a pressure switch for supervision of air or non-aggressive, non-flammable gases in air handling systems. The device may be used in, for instance, the following applications:

- Air filters and air handling units
- Industrial air cooling circuits
- Fan overheating protection
- Ventilation duct flow monitoring
- Air control and fire protection dampers
- Frost protection for heat exchangers

### Function

The switching pressure can be adjusted without a pressure gauge using a scaled adjustment knob. The pressure connected to the high pressure point inlet (P1) is compared

to the low pressure connected to P2. When the differential pressure exceeds the setpoint value, the contact will close or open.

When the pressure switch is used to supervise a fan, it is possible to leave the P2 pressure connection (for atmospheric pressure) open.

### Installation

The setpoint value is set using a knob under the lid, with the setpoint value visible through the lid. The lid is secured with a single screw to facilitate mounting and service.

The device hysteresis is pre-set upon delivery.

DBL has 3 internal flat plug connectors located under the plastic cover. 3 push-on screw terminals are included upon delivery for easy connection.

## Technical data

<b>Media</b>	Air or other non-combustible, non-aggressive gases
<b>Ambient temperature</b>	-20...+85 °C (-20...+60 °C UL version)
<b>Storage temperature</b>	-40...+85 °C
<b>Max. overload pressure</b>	10 kPa
<b>Switch capacity</b>	Over 10 <sup>6</sup> switching operations
<b>Protection class</b>	IP54 or IP65
<b>Accessories (optional)</b>	Two pressure outlets (cut 60°) and 2 m plastic tube. Art. no.: DBZ-06
<b>Exchange contact</b>	The contact range varies depending on the model, please consult the code table below
<b>Cable connection</b>	Flat pin, 6.3 x 0.8 mm in accordance with DIN 46244. Cable gland with cable strain relief
<b>Pressure connection</b>	Connection pipes for 6 mm tube P1 (+) connects to higher pressure, P2 (-) to lower pressure
<b>Weight, incl. packaging</b>	0.17 kg

## Material

<b>Sensor housing</b>	Polystyrene
<b>Membrane</b>	Silicone
<b>Mounting bracket, optional</b>	Galvanized steel

## Models

Article	Range	Hysteresis
DBL-205A...	30...400 Pa	0.15 ± 15%
DBL-205B...	50...500 Pa	0.2 ± 15%
DBL-205C...	20...300 Pa	0.1 ± 15%
DBL-205D...	200...1000 Pa	1.0 ± 15%
DBL-205E...	500...2500 Pa	1.5 ± 15%
DBL-205G...	100...1000 Pa	0.5 ± 15%
DBL-205H...	1000...5000 Pa	2.5 ± 15%

## Accessories

Article	Description
DBZ-06	Connection set with 2 ABS duct connections, 2 m PVC hose and 4 screws
DBZ-14A	Complete set with mounting bracket and screws, 70 x 60 mm (S-shaped)
DBZ-14B	Complete set with mounting bracket and screws, 55 x 60 mm (L-shaped)

## Code selection table

DBL-205	Scale (mbar)	Unit of measure	Protection	Contacts	Certificate	Packing
0,3...4,0 (30...400 Pa)	A					
0,5...0,5 (50...500 Pa)	B					
0,2 ...3,0 (20...300 Pa)	C					
2...10 (200...1000 Pa)	D					
5...25 (500...2500 Pa)	E					
1...10 (100...1000Pa)	G					
10...50 (1...5 kPa)	H					
mbar	B					
Pa	P					
inWC	W					
IP54 (standard)			5			
IP65			6			
1,5 (0,4) A, 250 V AC*				H		
0,1 A, 24 V DC				L		
CE					C	
UL					U	
ATEX					X	
Single						S
Multiple						M

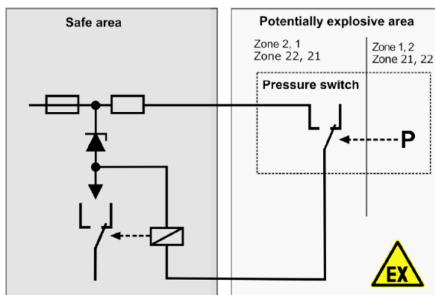
\* 1.0 (0.4) A, 250 V AC in the UL version.

Code example:

DBL-205BP5HCS. Differential pressure switch with scale 50...500 Pa, IP54, contacts 1.5 (0.4) A at 250 V AC, CE conformity, individually packed.

## ATEX version

Wiring:



Conformity

Type of control EC EPS 24 ATEX 1 040 X  
 Category II 2G and II 2D  
 Fire protection type Ex ia IIC T4 Gb and Ex ia IIIB T135°C Db  
 Conformity EU ATEX Directive  
 EU RoHS Directive

Characteristics:

Gas for IIC 30 VDC / 60 mA; 24 VDC / 100 mA  
 Dust for IIIB 30 VDC / 60 mA / 0,6 W  
 Capacitance - Ci 0 µF  
 Inductance - Li 0 mH

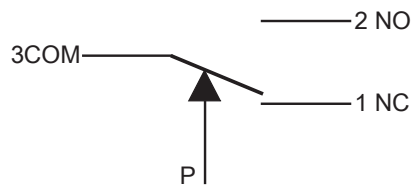
### Ex i-circuits

This pressure switch can be used in potentially explosive zones 1 & 2 and 21 & 22. In the safe area, an associated isolating means (separating barrier, switching amplifier) must be connected before. The entire isolating circuit must then be proved to keep inherent safety. For this purpose, the power specifications (P, I, U) of the barrier must be lower and the characteristics (L, C) higher than those of the pressure switch and of the connection line (blue colour).

## UL version

Conformity: CE compliance; ANSI; UL508; CSA C22.2#14

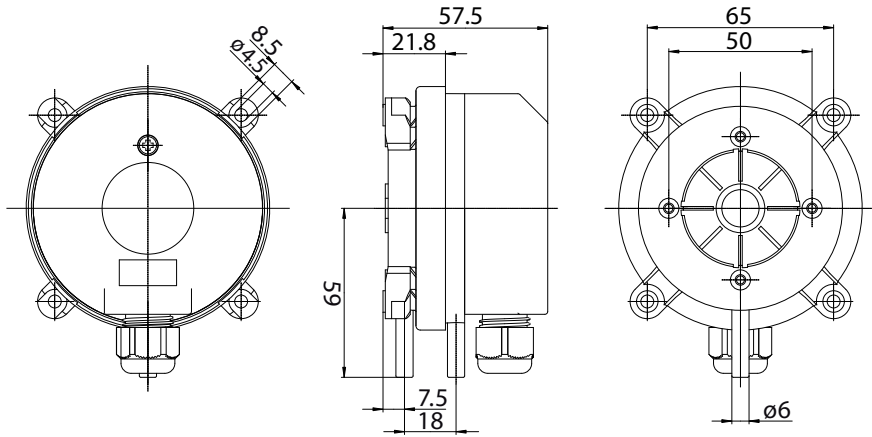
## Wiring



1 = Normally Closed (NC)  
 2 = Normally Open (NO)  
 3 = Common (COM)

## Dimensions

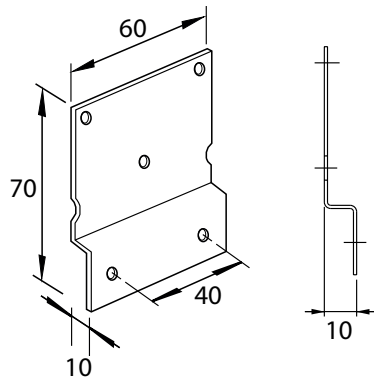
### Dimensions pressure switch



[mm]

### Dimensions mounting brackets (optional)

DBZ-14A:



[mm]

DBZ-14B:

