

# Differential pressure switches for air, flue and exhaust gases

Pressure switch for gas

# DUNGS®

**LGW...A4 IP 54**

**LGW...A4/2 IP 65**

5.07



## Technical description

The differential pressure switch LGW A4 is an adjustable differential pressure switch for automatic burner controls. It is suitable for switching a circuit on, off or over on changes in actual pressure value relative to the set reference value. The reference value (switching point) is adjusted on a setting wheel provided with a scale. The test nipple is integrated in metal housing as standard.

## Application

Differential pressure monitoring in firing, ventilation and air-conditioning systems.

Differential pressure switches: suitable for air, flue and exhaust gases.  
Pressure switches: suitable for gases of families 1,2,3 and other neutral gaseous media.

## Approvals

EU type test approval as per EU Gas Appliance Directive.  
TÜV (German Technical Inspectorate) test as pressure switch; special construction type as per TRD 604 and VdTÜV leaflet, Edition 100/1.

LGW...A4	CE-0085 AQ 0673
LGW...A4/2	applied

Approvals in other important gas-consuming countries. Special designs for the North American market with UL, FM and CSA registrations.

### 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. The pressure switch operates without any auxiliary power.

### Differential pressure switch LGW A4

The switching mechanism responds to differential pressure which acts between the two pressure chambers. It switches an electric circuit on, off or over when the set reference value is exceeded or undershot.

#### Pressure switch LGW A4

##### Pressure connecting G 1/4

The switching mechanism responds to pressure which switches on, off or over when the set reference value is exceeded or undershot. Single-acting pressure switch in pressure range. The vent plug G 1/8 may not be closed.

### Vacuum switch LGW A4

##### Pressure connection G 1/8

The switching mechanism responds to vacuum which switches an electric circuit on, off or over when the set reference value is exceeded or undershot. Single-acting pressure switch in vacuum range. The vent plug G 1/4 may not be closed.

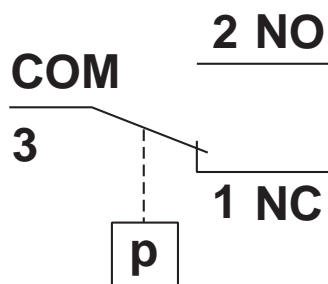
#### LGW A4 switching function

##### As pressure rises:

1 NC opens, 2 NO closes

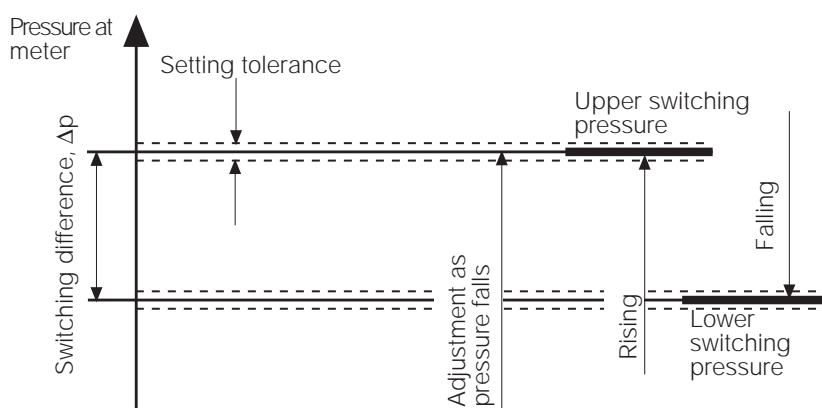
##### As pressure falls:

1 NC closes, 2 NO opens



#### Definition of switching difference $\Delta p$

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



#### LGW...A4, Design: Clear cover

##### Protection class: IP 54

- IP 54**
- 5** Protection against ingress of solid particles  $\geq \varnothing 1$  mm.  
Protection against access to hazardous parts using  $\geq \varnothing 1$  mm wire  
Complete contact protection
  - 4** Protection against a water jet.  
No hazardous conditions may result (water jet).

#### LGW...A4/A2, Design: Metal housing

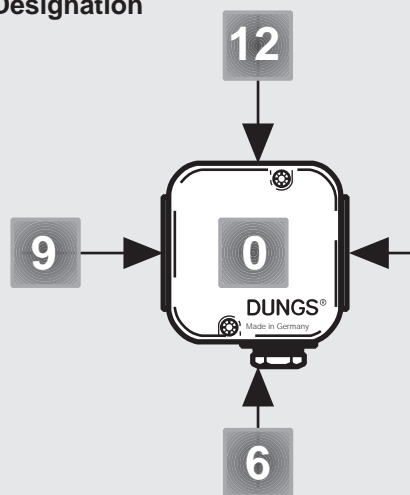
##### Protection class: IP 65

- IP 65**
- 6** Protection against the entry of dust (dust sealed).  
Protection against access to hazardous parts using  $\geq \varnothing 1$  mm wire  
Complete contact protection
  - 5** Protection against a water jet from a nozzle directed at the unit (housing) from any directions  
No hazardous conditions may result (water jet).

Max. operating pressure	LGW 3 A4 - LGW 150 A4 LGW 3 A4/2 - LGW 150 A4/2	500 mbar (50 kPa) 500 mbar (50 kPa)		
Pressure connection	P+: G 1/4 female thread on centre of housing underside: <b>gas or air</b> P-: LGW 4: 2 x G 1/8 female thread on side of housing underside: <b>only air</b> Optional: G 1/4 screw plug on side of housing: <b>gas or air</b>			
Measuring connection	Instrument gland integrated in metal housing			
Temperature range	Ambient temperature: -15 °C to + 70 °C Medium temperature: -15 °C to + 70 °C Storage temperature: -30 °C to + 80 °C			
Materials	<p><b>LGW...A4</b> Housing base aluminum die casting Hood Polycarbonate Switch Polycarbonate Diaphragms NBR Switching contact Standard: fine silver (Ag) Optional: gold-plated fine silver (Au), suitable for DDC applications: 24 VDC; 0.01 A</p> <p><b>LGW...A4/2</b> Housing base Diecast aluminum Hood Extrusion cast zinc, powder-coated Switch Polycarbonate Diaphragms NBR Switching contact Standard: fine silver (Ag) Optional: Sterling silver, gold plated (Au), Suitable for DDC applications: 24 VDC; 0.01 A</p>			
Switching voltage	Ag contact	AC eff.	min. 10 V	max. 250 V
		DC	min. 12 V	max. 48 V
	Au contact	DC	min. 5 V	max. 24 V
Nominal current	Ag contact	AC eff.	10 A	
	Au contact	DC	20 mA	
Switching current	Ag contact	AC eff.	min. 20 mA	max. 6 A bei cos φ 1
		AC eff.	min. 20 mA	max. 3 A bei cos φ 0,6
		DC	min. 20 mA	max. 1 A
	Au contact	DC	min. 5 mA	max. 10 mA
Electrical connection	Standard LGW...A4 Standard LGW...A4/2	at screw terminals via PG 11 cable gland at screw terminals via M20x5 cable gland		
	Special design LGW...A4, LGW...A4/	plug connection for line sockets as per DIN 43 650 A, 3-pin with protection contact		
Degree of protection	LGW...A4 LGW...A4/2	IP 54 as per IEC 529 (EN 60529), (transparent hood) IP 54 as per IEC 529 (EN 60529), (metal housing)		
Adjustment	If pressure increases in vertical installation position. Optionally adjustment for rising or falling pressure possible on site. If installation position deviates, note change in switch point.			
Setting tolerance	±15% switch point deviation referred to reference value and installation in vertical position.			



## Designation



## GGW 3 A4 [AG-PG-MS9-V0]

- **Pressure connection**  
V0 Pressure connection G 1/4, G 1/8, position 0  
V3 Pressure connection G 1/4, optional, position 3
- **screw plug**  
VS0 screw plug at position 0  
VS3 screw plug at position 3
- **Test nipple**  
MS3 Test nipple at position 3  
MS9 Test nipple at position 9  
M9 Test nipple, open position 9
- **Electrical connection**  
PG PG 11 cable gland (standard)  
G 3 Device connector  
M M20 x 1.5 cable gland
- **Contact material**  
Ag Fine silver (standard)  
Au Gold plated fine silver
- **Adjustment ranges [mbar]**  
0,4 - 3  
1 - 10  
2,5 - 50  
30 - 150
- **Pressure switch design**  
GGW...A4 (clear cover, PC) Differential pressure switches when the pressure exceeds or drops below the adjusted setpoint.  
IP 54  
GGW...A4/2 (metal housing, powder-coated) Differential pressure switches when the pressure exceeds or drops below the adjusted setpoint.  
IP 65

## Order example

### Pressure switch design

LGW A4 differential pressure switch

### Setting range

30 - 150 mbar

### Contact material

Ag fine silver (standard)

### Electrical connection

PG screw union

### Test nipple

MS 9

### Pressure connection

At position 0

## LGW 150 A4 [AG-PG 11-MS9-V0]

## Accessories for

## LGW A4 pressure switch

## Order No.

Kit: G3 equipment plug, 3-pin + E

219 659

Kit: G2 equipment plug, 2-pin + E

219 660

Line sockets, 3-pin + E  
grey GDMW

210 318

Line sockets, 2-pin + E  
grey GDMW

210 317

G 1/4 test nipple  
and seal ring

230 398

G 1/4 screw plug  
and seal ring

230 396

Double pressure switch mounting kit

213 910

Metal mounting bracket

230 288

G 1/4 screw-in glands,  
only for air

230 279

G 1/8 screw-in glands,  
only for air

230 278

Glowlamp mounting kit, 220 V

231 773


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**Technical Summary**      1 mbar = 100 Pa = 0.1 kPa ≈ 10 mm WS

1 Pa = 0.01 mbar ≈ 0.1 mm WS

Model	Version [Ag PG MS9 VS3 VO]	Order No.	Setting range [mbar]		Degree of protection	Differential pressure switch Δp [mbar]
<b>LGW...A4</b> Differential pressure switch	LGW 3 A4	221 590	0,4 - 3		IP 54	≤ 0.3
	LGW 10 A4	221 591	1 - 10		IP 54	≤ 0.5
	LGW 50 A4	221 592	2,5 - 50		IP 54	≤ 1
	LGW 150 A4	221 593	30 - 150		IP 54	≤ 3
Supplied in colletive packaging						

Model	Version [Ag M MS9 VS3 VO]	Order No.	Setting range [mbar]		Degree of protection	Differential pressure switch $\Delta p$ [mbar]
<b>LGW...A4/2</b> Differential pressure switch	LGW 3 A4/2	232 041				
	LGW 10 A4/2	232 046	0,4 - 3		IP 65	≤ 0.3
	LGW 50 A4/2	232 048	1 - 10		IP 65	≤ 0.5
	LGW 150 A4/2	232 050	2,5 - 50		IP 65	≤ 1
			30 - 150		IP 65	≤ 3
Supplied in separate packaging						

Model	Version [Ag G3 MS9 VS3 VO]	Order No.	Setting range [mbar]		Degree of protection	Differential pressure switch Δp [mbar]
<b>LGW...A4/2</b> Differential pressure switch	LGW 3 A4/2	232 716	0,4 - 3		IP 65	≤ 0.3
	LGW 10 A4/2	232 717	1 - 10		IP 65	≤ 0.5
	LGW 50 A4/2	232 718	2,5 - 50		IP 65	≤ 1
	LGW 150 A4/2	232 719	30 - 150		IP 65	≤ 3
Supplied in separate packaging including line socket						

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



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