

# Differential pressure switches for air, flue and exhaust gases

Pressure switch for gas



LGW...A4  
LGW...A4/2

5.08



## Technical description

The differential pressure switch LGW...A4 is an adjustable differential pressure switch as per EN 1854 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

EC type test approval as per EC Gas Appliance Directive:

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

EC type test approval as per EC Pressure Equipment Directive:

LGW...	CE0036
--------	--------

Pressure switch Class "S" as per EN 1854.

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. 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.

### Overpressure switch LGW...A4

#### Pressure connection G 1/4

Single-acting pressure switch in the overpressure range.

The switching mechanism responds if there is an overpressure which switches on, off or over to an electric circuit if the set reference value is exceeded or undershot.

**The pressure connection G 1/8 may not be closed.**

### Vacuum switch LGW...A4

#### Pressure connection G 1/8

Single-acting pressure switch in the low pressure range. The switching mechanism responds to vacuum which switches an electric circuit on, off or over when the set reference value is exceeded or undershot.

**The pressure connection G 1/4 may not be closed.**

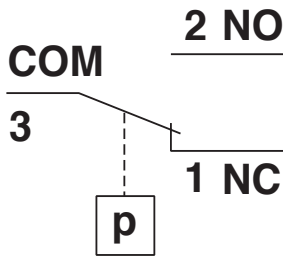
### LGW...A4 switching function

#### As pressure rises:

1 NC opens, 2 NO closes

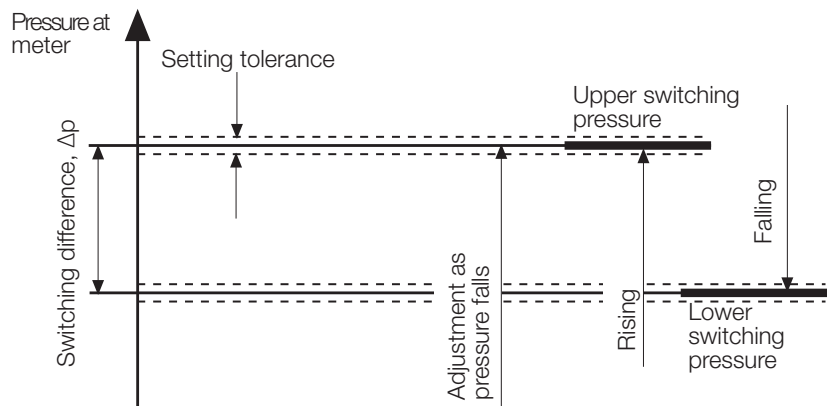
#### As pressure falls:

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  $\varnothing \geq 1$  mm.  
Protection against access to hazardous parts using  $\varnothing \geq 1$  mm wire  
Complete contact protection

4 Protection against a water jet.  
No hazardous conditions may result.

### LGW...A4/2, 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  $\varnothing \geq 1$  mm wire  
Complete contact protection

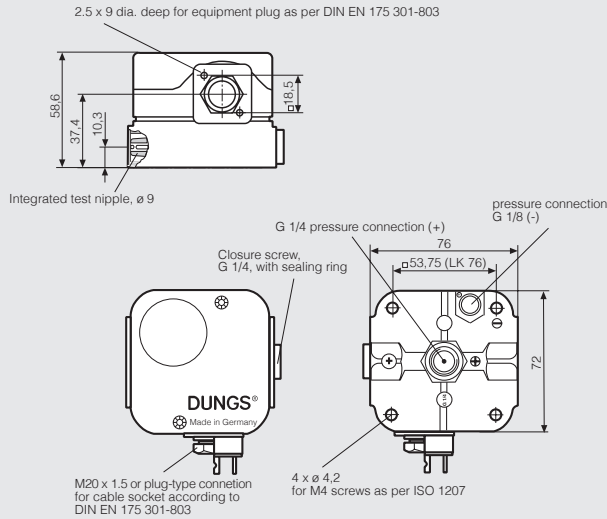
5 Protection against a water jet from a nozzle directed at the unit (housing) from any directions  
No hazardous conditions may result (water jet).

## Specifications

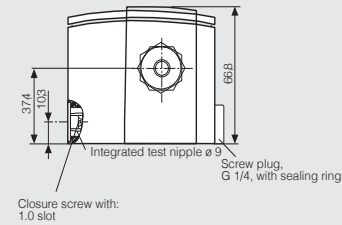
Max. operating pressure	LGW 3 A4 - LGW 150 A4 LGW 3 A4/2 - LGW 150 A4/2	500 mbar (50 kPa) 500 mbar (50 kPa)
Pressure connection	P+: G 1/4 female thread ISO 228 on centre of housing underside: <b>gas or air</b> P+: G 1/4 screw plug on side of housing: <b>gas or air</b> P-: G 1/8 female thread ISO 228 on side of housing underside: <b>only air</b>	
Measuring connection	Instrument gland integrated in metal housing, $\varnothing$ 9	
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></p> <p>Housing base           aluminum die casting Hood                     Polycarbonate Switch                    Polycarbonate Diaphragms             NBR Switching contact      Standard: Ag                                   Optional: Ag gold-plated (Au),                                   suitable for DDC applications: 24 VDC; 0.02 A</p> <p><b>LGW...A4/2</b></p> <p>Housing base           Diecast aluminum Hood                     Extrusion cast zinc, powder-coated Switch                    Polycarbonate Diaphragms             NBR Switching contact      Standard: Ag                                   Optional: Ag gold plated (Au),                                   Suitable for DDC applications: 24 VDC; 0.02 A</p>	
Switching voltage	Ag contact	AC eff.   min. 24 V   max. 250 V DC       min. 24 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 $\cos \varphi$ 1 AC eff.   min. 20 mA   max. 3 A bei $\cos \varphi$ 0,6 DC       min. 20 mA   max. 1 A
	Au contact	DC       min. 5 mA    max. 20 mA
Electrical connection	Standard	at screw terminals via M20 x 1.5 cable gland
	Special design	plug connection for line sockets as per DIN EN 175 301-803, 3-pin with protection contact
Degree of protection	LGW...A4 LGW...A4/2	IP 54 as per IEC 529 (EN 60529), (transparent hood) IP 65 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	$\pm 15\%$ switch point deviation referred to reference value and installation in vertical position. Optionally, rising ( $\uparrow$ ) or falling ( $\downarrow$ ) adjustment possible on site.	
Deviation	Permissible deviation of the set value $\leq \pm 15\%$ in the service life test according to EN 1854	
Reference value setting device	Standard: blue Version "Y": Yellow	

## Dimensions [mm]

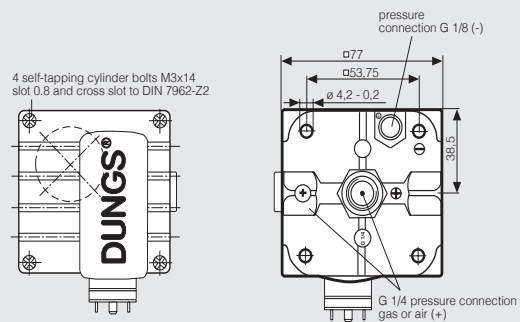
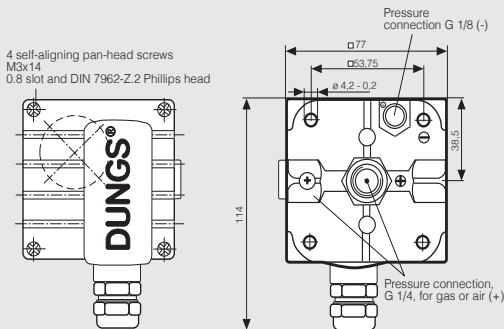
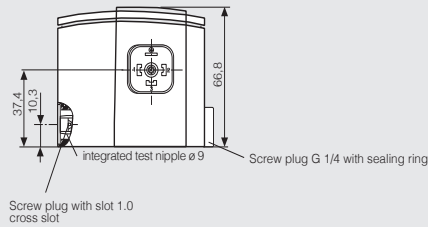
### LGW... A4



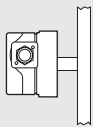
### LGW... A4/2 with metal housing, cable gland M 20 x 1.5



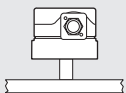
### LGW... A4/2 with metal housing, plug-in connection for sockets accord. to DIN EN 175 301-803



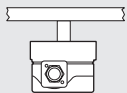
## Installation position



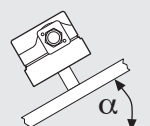
**Standard installation position**  
In case of deviations, observe the changes in switching point



**When installed horizontally, the pressure switch switches at a pressure higher by approx. 0.5 mbar**

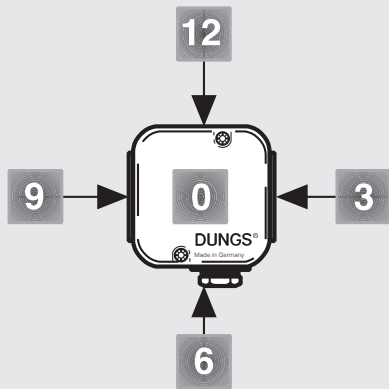


**When installed horizontally overhead, the pressure switch switches at a pressure lower by approx. 0.5 mbar**



**When installed in an intermediate installation position, the pressure switch switches at pressure deviating from the set reference value by max.  $\pm 0.5$  mbar.**

## Designation



## LGW 3 A4 [Y-Ag-M-MS9-V0-VS3]

→	<b>Pressure connection</b>	
	V0	Pressure connection G 1/4 position 0
	V3	Pressure connection G 1/4 position 3
→	<b>screw plug</b>	
	VS0	screw plug at position 0
	VS3	screw plug at position 3
→	<b>Test nipple</b>	
	MS3	Test nipple at position 3
	MS9	Test nipple at position 9
	M9	Test nipple, open position 9
→	<b>Electrical connection</b>	
	M	M20 x 1.5 cable gland
	G 3	Device connector
→	<b>Contact material</b>	
	Ag	
	Au	
→	<b>Version</b>	
	Y	Gas model (yellow reference value setting device)
→	<b>Adjustment ranges [mbar]</b>	
	0,4 - 3	
	1 - 10	
	2,5 - 50	
	30 - 150	
→	<b>Pressure switch design</b>	
	LGW...A4	Clear cover, PC, (IP 54) Differential pressure switch switches when the pressure exceeds or drops below the adjusted setpoint.
	LGW...A4/2	Metal housing, powder-coated, (IP 65)

## Order example

### Pressure switch design

LGW...A4 differential pressure switch

### Setting range

30 - 150 mbar

### Contact material

Ag

### Electrical connection

Cable gland M20 x 1.5

### Test nipple

MS 9

### Pressure connection G 1/4

V0-VS3; at position 0 and position 3 with closure screw

**LGW 150 A4 [Ag-M-MS9-V0-VS3]**

## Accessories for

### LGW...A4 pressure switch

## Order No.

Kit: G3 equipment plug, 3-pin + E

219 659

Line sockets, 3-pin + E  
grey GDMW

210 318

G 1/4 test nipple and seal ring (1 x)

266 042

G 1/8 test nipple and seal ring (1 x)

230 397

G 1/4 screw plug and seal ring (1 x)

266 044

G 1/8 screw plug and seal ring (1 x)

270 802

Double pressure switch mounting kit (not for /2-version)

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

Mounting kit glowlamp , 230 V yellow

231 773

Mounting kit glowlamp, 120 V yellow

231 772

Mounting kit display-LED, 24 V yellow

231 774

Mounting kit glowlamp, 230 V green

248 239

Mounting kit display-LED, 24 V green

248 240

Differential pressure switches  
for air, flue and exhaust gases  
Pressure switch for gas

LGW...A4  
LGW...A4/2

**DUNGS**<sup>®</sup>  
Combustion Controls

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

1 Pa = 0.01 mbar ≈ 0.1 mm WS

Type	Version [Ag-M-MS9-V0-VS3]	Order No. 1 piece	Order No. 48 pieces	Setting range [mbar]	max.	Switching difference [mbar]	Degree of pro- tection
Differential pressure switch	LGW 3 A4	272 338	221 590	0,4 - 3	± 15 %	≤ 0,3	IP 54
	LGW 10 A4	272 344	221 591	1 - 10	± 15 %	≤ 0,5	IP 54
	LGW 50 A4	272 342	221 592	2,5 - 50	± 15 %	≤ 1	IP 54
	LGW 150 A4	272 353	221 593	30 - 150	± 15 %	≤ 3	IP 54

	[Au-M-MS9-V0-VS3]	1 piece	48 pieces	[mbar]	max.	[mbar]	
Differential pressure switch	LGW 3 A4	229 382	–	0,4 - 3	± 15 %	≤ 0,3	IP 54
	LGW 10 A4	229 383	–	1 - 10	± 15 %	≤ 0,5	IP 54
	LGW 50 A4	229 384	–	2,5 - 50	± 15 %	≤ 1	IP 54
	LGW 150 A4	229 385	–	30 - 150	± 15 %	≤ 3	IP 54

	[Ag-G3-MS9-V0-VS3]	1 piece	48 pieces	[mbar]	max.	[mbar]	
Differential pressure switch	LGW 3 A4	272 351	230 630	0,4 - 3	± 15 %	≤ 0,3	IP 54
	LGW 10 A4	272 348	230 631	1 - 10	± 15 %	≤ 0,5	IP 54
	LGW 50 A4	272 347	230 632	2,5 - 50	± 15 %	≤ 1	IP 54
	LGW 150 A4	272 361	230 633	30 - 150	± 15 %	≤ 3	IP 54

Type	Version [Ag-M-MS9-V0-VS3]	Order No. 1 piece	Order No. 48 pieces	Setting range [mbar]	max.	Switching difference [mbar]	Degree of pro- tection
Differential pressure switch	LGW 3 A4/2	232 041	–	0,4 - 3	± 15 %	≤ 0,3	IP 65
	LGW 10 A4/2	232 046	–	1 - 10	± 15 %	≤ 0,5	IP 65
	LGW 50 A4/2	232 048	–	2,5 - 50	± 15 %	≤ 1	IP 65
	LGW 150 A4/2	232 050	–	30 - 150	± 15 %	≤ 3	IP 65

	[Ag-M-MS9-V0-VS3]	1 piece	48 pieces	[mbar]	max.	[mbar]	
Differential pressure switch	LGW 3 A4/2	232 716	–	0,4 - 3	± 15 %	≤ 0,3	IP 65
	LGW 10 A4/2	232 717	–	1 - 10	± 15 %	≤ 0,5	IP 65
	LGW 50 A4/2	232 718	–	2,5 - 50	± 15 %	≤ 1	IP 65
	LGW 150 A4/2	232 719	–	30 - 150	± 15 %	≤ 3	IP 65

including line socket

Type	Version [Ag-M-MS9-V0-VS3]	Order No. 1 piece	Order No. 48 pieces	Setting range [mbar]	max.	Switching difference [mbar]	Degree of pro- tection
Differential pressure switch	LGW 3 A4 Y	272 358	242 864	0,4 - 3	± 15 %	≤ 0,3	IP 54
	LGW 10 A4 Y	272 360	242 865	1 - 10	± 15 %	≤ 0,5	IP 54
	LGW 50 A4 Y	272 355	242 866	2,5 - 50	± 15 %	≤ 1	IP 54
	LGW 150 A4 Y	272 359	242 867	30 - 150	± 15 %	≤ 3	IP 54