Differential pressure switches for air, flue and exhaust gases

Pressure switch for gas

DUNGS®

LGW…A4
LGW…A4/2

5.08

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

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

Approvals in other important gas-consuming countries.

TÜV (German Technical Inspectorate) test as pressure switch; special construction type as per TRD 604 and VdTÜV leaflet, Edition 100/1, as well as Class "S" as per EN 1854.

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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.

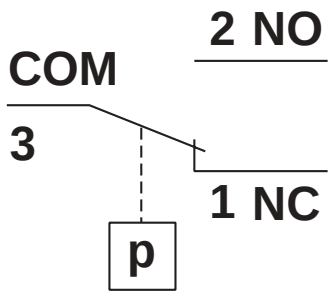
Differential pressure switch LGW…A4
The switching mechanism responds to differential pressure which acts between the two pressure chambers. It switches an electric circuit on, off or over when the set reference value is exceeded or undershot.

Overpressure switch LGW…A4
Pressure connection G 1/4
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.
Single-acting pressure switch in the overpressure range. The vent plug G 1/8 may not be closed.

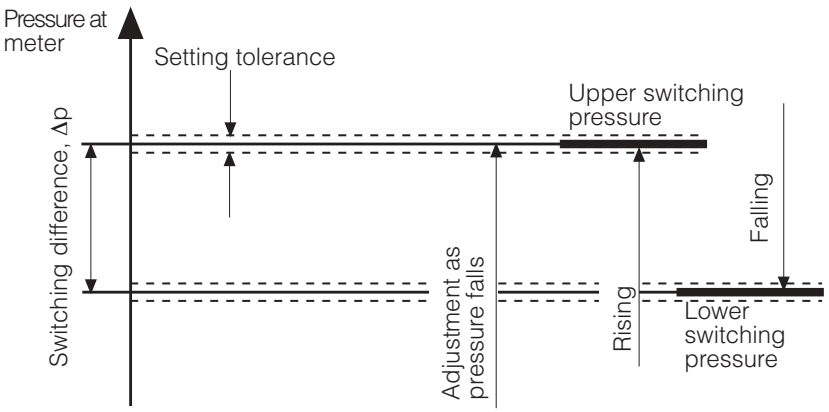
Vacuum switchLGW…A4
Pressure connection G 1/8
The switching mechanism responds to vacuum which switches an electric circuit on, off or over when the set reference value is exceeded or undershot. Single-acting pressure switch in vacuum range. The vent plug G 1/4 may not be closed.

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 Δp
The switching difference Δp 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 ø ≥ 1 mm.
Protection against access to hazardous parts using ø ≥ 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

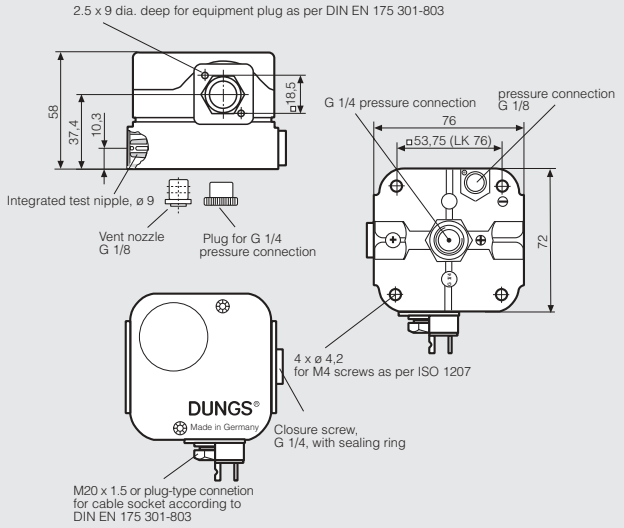
IP 65
6 Protection against the entry of dust (dust sealed).
Protection against access to hazardous parts using ø ≥ 1 mm wire
Complete contact protection
5 Protection against a water jet from a nozzle directed at the unit (housing) from any directions
No hazardous conditions may result (water jet).

Specifications

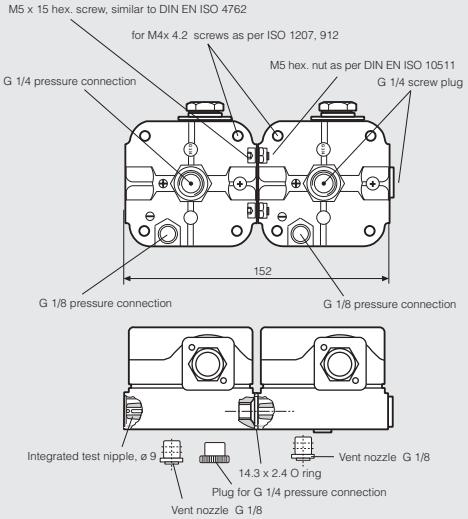
Max. operating pressure	LGW 3 A4 - LGW 150 A4	500 mbar (50 kPa)		
	LGW 3 A4/2 - LGW 150 A4/2	500 mbar (50 kPa)		
Pressure connection	P+: G 1/4 female thread ISO 228 on centre of housing underside: **gas or air**			
	P+: G 1/4 screw plug on side of housing: **gas or air**			
	P-: G 1/8 female thread ISO 228 on side of housing underside: **only air**			
Measuring connection	Instrument gland integrated in metal housing, ø 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	**LGW…A4**			
	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; 0.02 A		
	LGW…A4/2			
	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; 0.02 A		
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. 20 mA
Electrical connection	Standard LGW…A4	at screw terminals via M20 x 1.5 cable gland		
	Standard LGW…A4/2	at screw terminals via M20 x 1.5 cable gland		
	Special design LGW…A4, LGW…A4/2	plug connection for line sockets as per DIN EN 175 301-803, 3-pin with protection contact		
Degree of protection	LGW…A4	IP 54 as per IEC 529 (EN 60529), (transparent hood)		
	LGW…A4/2	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	±15% switch point deviation referred to reference value and installation in vertical position.			
Reference value setting device	Standard: blue			
	Version "Y": Yellow			

Dimensions [mm]

LGW… A4

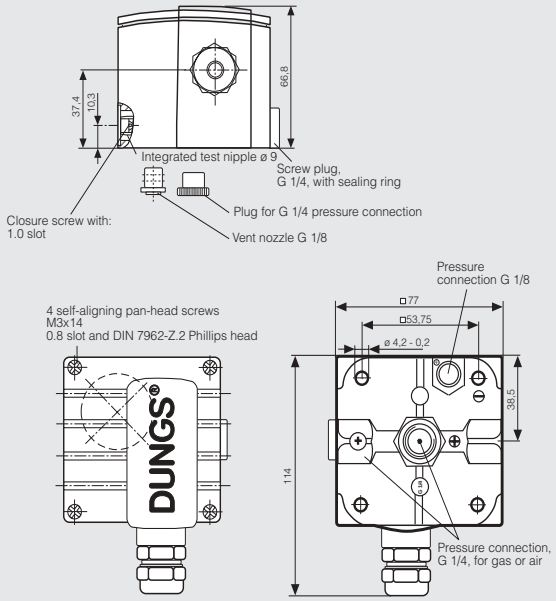


LGW… A4 / LGW…A4



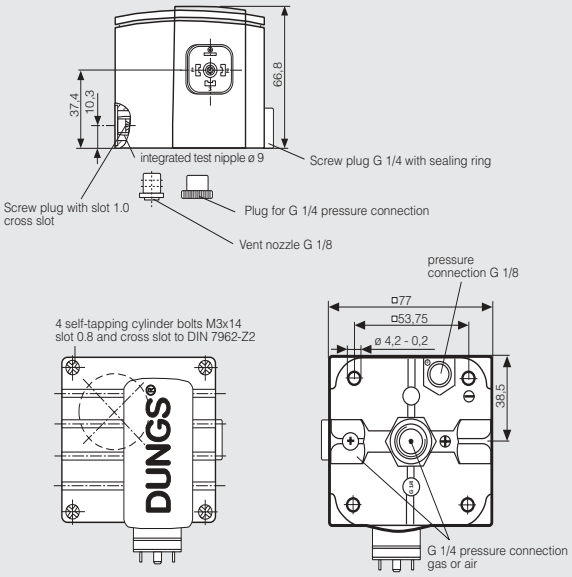
LGW… A4/2

with metal housing,
cable gland M 20 x 1.5

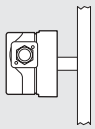


LGW… A4/2

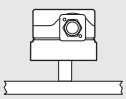
with metal housing, plug-in connection for sockets accord. to DIN EN 175 301-803



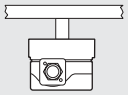
Installation position



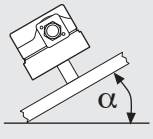
Standard installation position



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

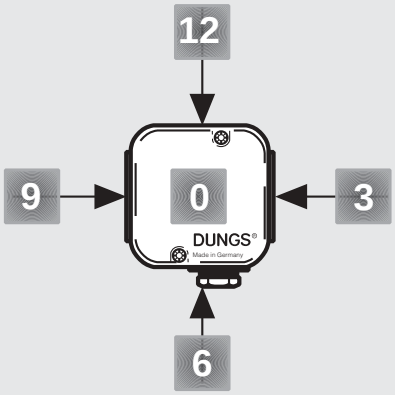


When installed horizontally overhead, the pressure switch switches at a pressure lower by approx. 0.5 mbar



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

Designation



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

Pressure connection
- V0 — Pressure connection G 1/4 position 0
- V3 — Pressure connection G 1/4 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
- M — M20 x 1.5 cable gland
- G 3 — Device connector

Contact material
- Ag — Fine silver (standard)
- Au — Gold plated fine silver

Version
- Y — Gas model (yellow reference value setting device)

Adjustment ranges [mbar]
- 0,4 - 3
- 1 - 10
- 2,5 - 50
- 30 - 150

Pressure switch design
- 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) Differential pressure switch switches when the pressure exceeds or drops below the adjusted setpoint.

Order example

Pressure switch design
LGW…A4 differential pressure switch
Setting range
30 - 150 mbar
Contact material
Ag fine silver (standard)
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 (5 x)	230 398
G 1/4 screw plug and seal ring (5 x)	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, 230 V	231 773
Glowlamp mounting kit, 120 V	231 772
Signal lamp mounting kit, 24 V	231 774

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

LGW…A4
LGW…A4/2

DUNGS®

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

Model	Version [Ag-M-MS9-V0-VS3]	Order No.	Setting range [mbar]		Degree of protection	Differential pressure switch Δp [mbar]
LGW…A4	LGW 3 A4	221 590	0,4 - 3		IP 54	≤ 0.3
Differential	LGW 10 A4	221 591	1 - 10		IP 54	≤ 0.5
pressure	LGW 50 A4	221 592	2,5 - 50		IP 54	≤ 1
switch	LGW 150 A4	221 593	30 - 150		IP 54	≤ 3
Supplied in colletive packaging						

Model	Version [Ag-M-MS9-V0-VS3]	Order No.	Setting range [mbar]		Degree of protection	Differential pressure switch Δp [mbar]
LGW…A4/2	LGW 3 A4/2	232 041	0,4 - 3		IP 65	≤ 0.3
Differential	LGW 10 A4/2	232 046	1 - 10		IP 65	≤ 0.5
pressure	LGW 50 A4/2	232 048	2,5 - 50		IP 65	≤ 1
switch	LGW 150 A4/2	232 050	30 - 150		IP 65	≤ 3
Supplied in separate packaging						

Model	Version [Ag-G3-MS9-V0-VS3]	Order No.	Setting range [mbar]		Degree of protection	Differential pressure switch Δp [mbar]
LGW…A4/2	LGW 3 A4/2	232 716	0,4 - 3		IP 65	≤ 0.3
Differential	LGW 10 A4/2	232 717	1 - 10		IP 65	≤ 0.5
pressure	LGW 50 A4/2	232 718	2,5 - 50		IP 65	≤ 1
switch	LGW 150 A4/2	232 719	30 - 150		IP 65	≤ 3
Supplied in separate packaging including line socket						

Model	Version [Y-Ag-M-MS9-V0-VS3]	Order No.	Setting range [mbar]		Degree of protection	Differential pressure switch Δp [mbar]
LGW…A4	LGW 3 A4 Y	242 864	0,4 - 3		IP 54	≤ 0.3
Differential	LGW 10 A4 Y	242 865	1 - 10		IP 54	≤ 0.5
pressure	LGW 50 A4 Y	242 866	2,5 - 50		IP 54	≤ 1
switch	LGW 150 A4 Y	242 867	30 - 150		IP 54	≤ 3
Supplied in colletive packaging						

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

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