

# Differential pressure switches for gas, air, flue and exhaust gases

GGW...A4  
GGW...A4-U  
GGW...A4/2  
GGW...A4-U/2

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

5.03



## Technical description

The differential pressure switch GGW...A4 is an adjustable gas-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.

## Applications

Differential pressure switch in furnace, ventilation, and air conditioning applications. Differential pressure switch: Suitable for employment with gas family 1, 2, 3, and other, neutral, gaseous media as well as air, smoke and exhaust gases. It does not contain any

non-ferrous metals, suitable for gases of up to max. 0.1 vol % H<sub>2</sub>S, dry.

## Certifications

EC type testing certificate as per:

- EC-Gas Appliances Regulation
- EC-Pressure Equipment Directive

Pressure switches class "S" as per EN 1854.

Approvals in other important gas-consuming countries.

**Function**

Differential pressure switch operating in the over- and under-pressure ranges. The differential pressure acts on the membrane, pressing it against the force of the adjusting spring and against the microswitch. The pressure switch operates without outside power.

**Differential pressure switch GGW...A4 and GGW...A4-U**

The switching apparatus reacts to the difference in pressure between the two pressure chambers [G 1/4 (+) <-> G 1/8 (-)] and, if the pressure exceeds or drops below the setpoint, activates or switches an electrical circuit.

**Unit selection**

If the lower pressure is [G 1/8 (-)] excess pressure with respect to the atmosphere exists type GGW...A4 must be employed.

If the lower pressure is [G 1/8 (-)], lower pressure with respect to the atmosphere exists type GGW...A4-U must be employed.

**Overpressure switch GGW...A4 Pressure connection G 1/4 (+)**

Single-acting pressure switch in the over-pressure 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.**

**Low pressure switch GGW...A4-U Pressure connection G 1/8**

Single-acting pressure switch in the underpressure range.

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

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

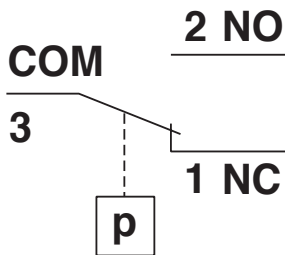
**Switching function**

**As pressure rises:**

1 NC opens, 2 NO closes.

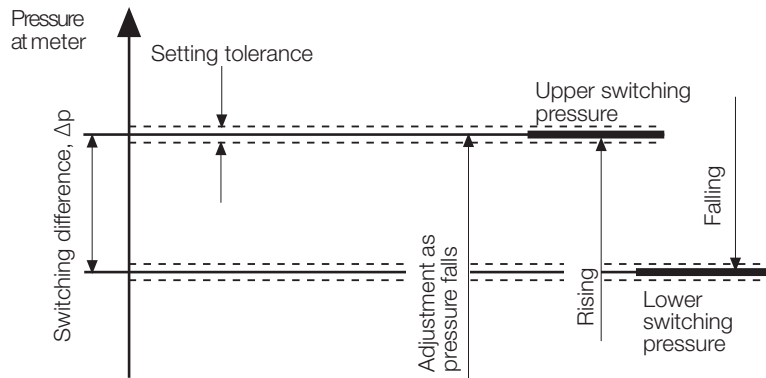
**As pressure falls:**

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.



**GGW...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.

**GGW...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).

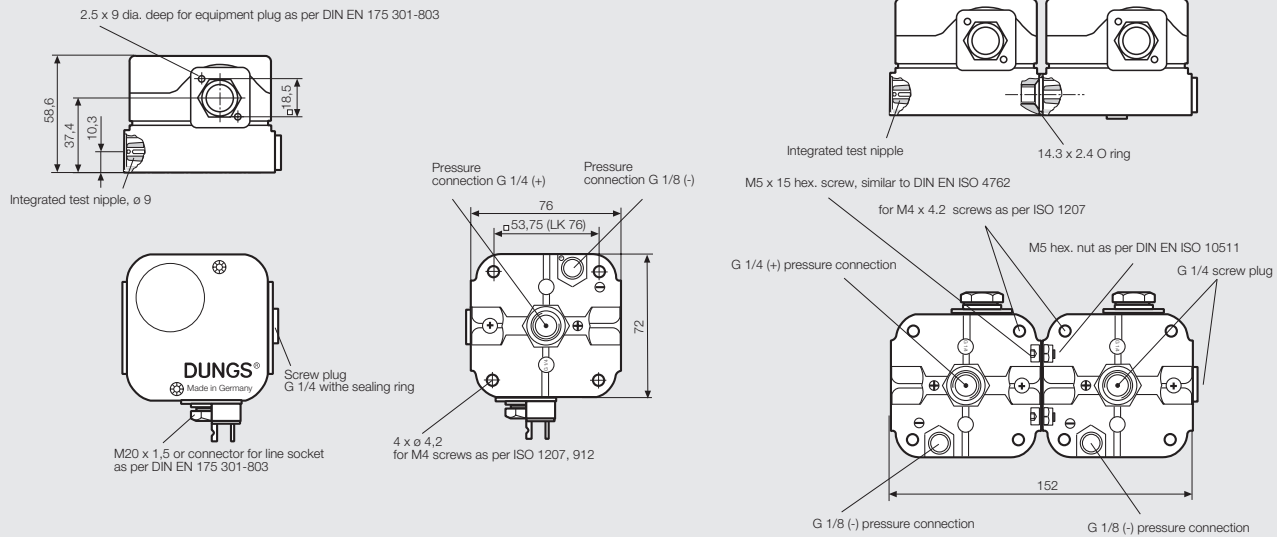
## Technical specifications

Max. operating pressure	GGW 3 A4 - GGW 150 A4	0...500 mbar (50 kPa)	
	GGW 3 A4/2 - GGW 150 A4/2	0...500 mbar (50 kPa)	
	GGW 3 A4-U - GGW 150 A4-U	0...-500 mbar (-50 kPa)	
	GGW 3 A4-U/2 - GGW 150 A4-U/2	0...-500 mbar (-50 kPa)	
Pressure connection	<p>P+: In the center of the underside of the housing, G 1/4 internal thread in accord. with ISO 228: <b>Gas or air.</b></p> <p>P+: On the side of the housing with closure screw, G 1/4: <b>Gas or air</b></p> <p>P-: On the side of the underside of the housing, G 1/8 internal thread in accord. with ISO 228: <b>Gas or air.</b></p>		
Metering connection	Metering connection tube integrated into the 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	<b>GGW...A4</b>		
	Housing base	aluminium die casting	
	Cover	Polycarbonate	
	Switch portion	Polycarbonate	
	Membrane	NBR	
	Switch contact	Ag gold-plated (Au) suitable for DDC applications: 24 VDC; 0.01 A	
	<b>GGW...A4/2</b>		
	Housing base	aluminium die casting	
	Cover	Zinc diecast, powder-coated	
	Switch portion	Polycarbonate	
	Membrane	NBR	
	Switch contact	Ag gold-plated (Au) suitable for DDC applications: 24 VDC; 0.01 A	
Switching voltage	DC	min. 5 V	max. 24 V
	(AC eff.)	min. 24 V	max. 250 V)
	(DC)	min. 24 V	max. 48 V)
Nominal current	DC	20 mA	
	(AC eff.)	10 A)	
Switching current	DC	min. 5 mA	max. 20 mA
	(AC eff.)	min. 20 mA	max. 6 A $\cos \varphi$ 1)
	(AC eff.)	min. 20 mA	max. 3 A $\cos \varphi$ 0,6)
	(DC)	min. 20 mA	max. 1 A)
Electrical connection	Standard	at screw terminals via cable gland, M20 x 1,5	
	Special design	plug connection for line sockets as per DIN EN 175 301-803, 3-pin with protection contact	
Degree of protection	GGW...A4	IP 54 in accord. with IEC 529 (EN 60529), (clear cover).	
	GGW...A4/2	IP 65 in accord. with IEC 529 (EN 60529), (metal housing).	
Adjustment	With rising pressure and installed in a vertical position. Optional rising or dropping pressure adjustment on-site possible. Note switch point change if installation position changes.		
Adjustment tolerance	$\pm$ 15% switch point deviation based on the setpoint and with unit installed in a vertical position. Optionally, rising ( $\blacktriangle$ ) or falling ( $\blacktriangledown$ ) adjustment possible on site.		
Deviation	Permissible deviation of the set value $\leq \pm$ 15 % in the service life test according to EN 1854		

## Dimensions [mm]

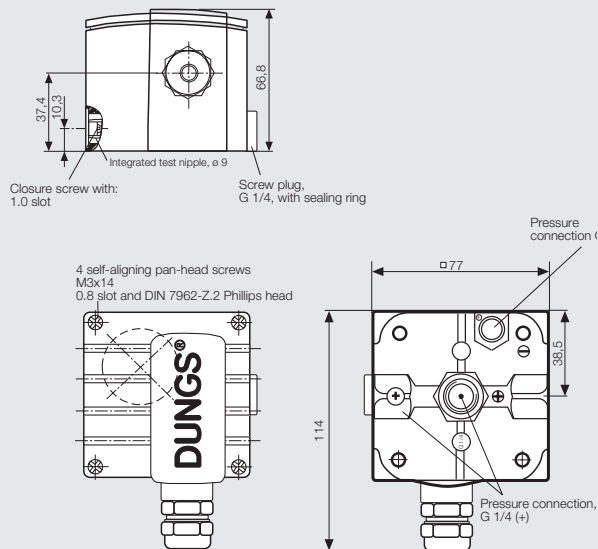
GGW...A4  
GGW...A4-U

GGW... / ...A4

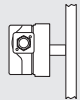


## GGW...A4/2

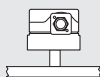
with metal housing,  
cable gland M 20 x 1.5



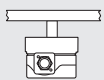
## Installation position



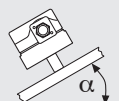
Standard installation position



When installed horizontally, the pressure switch switches at a pressure higher by approx. 0.5 mbar (GGW...A4) or higher negative pressure (GGW...A4-U).

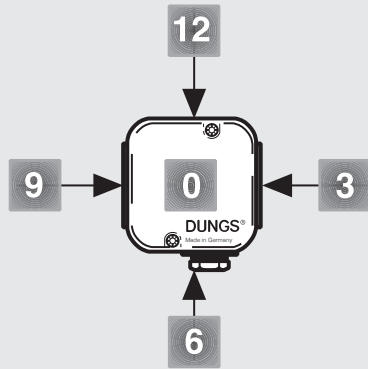


When installed horizontally overhead, the pressure switch switches at a pressure lower by approx. 0.5 mbar (GGW...A4) or lower negative pressure (GGW...A4-U).



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



## GGW 150 A4 [Au-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 (standard)  
G3 Device connector
- **Contact material**  
Au Gold plated silver

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

- **Pressure switch design**  
GGW A4 Clear cover PC, (IP54)  
Differential pressure switches when the pressure exceeds or drops below the adjusted setpoint (positive pressure).
- GGW A4/2 Metal housing powder-coated, (IP 65)  
Differential pressure switches when the pressure exceeds or drops below the adjusted setpoint (positive pressure).
- GGW A4-U Clear cover PC, (IP54)  
Differential pressure switches when the pressure exceeds or drops below the adjusted setpoint (negative pressure).
- GGW A4-U/2 Metal housing powder-coated, (IP 65)  
Differential pressure switches when the pressure exceeds or drops below the adjusted setpoint (negative pressure).

## Ordering example

### Pressure switch design

Differential pressure switch GGW A4

### Adjustment range

30 – 150 mbar

### Contact material

Au

### Electrical connection

Cable gland M20 x 1,5

### Metering connection

MS 9

### Pressure connection G1/4

V0-VS3: at position 0 and position 3 with screw plug

## GGW 150 A4 [Au-M-MS9-V0-VS3]

Accessories for pressure switch GGW A4	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
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
Cylinder head screw $\varnothing$ 3 x 14 (2 x)	266 045



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GGW...A4/2  
GGW...A4-U/2



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Technical data 1 mbar = 100 Pa = 0,1 kPa ≈ 10 mm WS

1 Pa = 0,01 mbar ≈ 0,1 mm WS

Model	Version [Au-M-MS9-V0-VS3]	Order number (1 piece)	Setting range		Degree of protection	Differential pressure $\Delta p$ [mbar]
			[mbar]	max.		
<b>GGW...A4</b> Differential pressure switch (positive pressure)	GGW 3 A4	248 673	0,4 - 3	± 15 %		≤ 0,3
	GGW 10 A4	248 276	1 - 10	± 15 %		≤ 0,5
	GGW 50 A4	246 176	2,5 - 50	± 15 %		≤ 1
	GGW 150 A4	248 295	30 - 150	± 15 %		≤ 3
<b>GGW...A4-U</b> Differential pressure switch (negative pressure)	GGW 3 A4-U	248 327	-0,4 - -3	± 15 %		≤ 0,3
	GGW 10 A4-U	240 358	-1 - -10	± 15 %		≤ 0,5
	GGW 50 A4-U	246 178	-2,5 - -50	± 15 %		≤ 1
	GGW 150 A4-U	247 980	-30 - -150	± 15 %		≤ 3

Supplied in separate packaging

Model	Version [Au-M-MS9-V0-VS3]	Order number (1 piece)	Setting range		Degree of protection	Differential pressure $\Delta p$ [mbar]
			[mbar]	max.		
<b>GGW...A4/2</b> Differential pressure switch (positive pressure)	GGW 3 A4/2	248 686	0,4 - 3	± 15 %		≤ 0,3
	GGW 10 A4/2	248 687	1 - 10	± 15 %		≤ 0,5
	GGW 50 A4/2	248 688	2,5 - 50	± 15 %		≤ 1
	GGW 150 A4/2	248 689	30 - 150	± 15 %		≤ 3
<b>GGW...A4-U/2</b> Differential pressure switch (negative pressure)	GGW 3 A4-U/2	248 690	-0,4 - -3	± 15 %		≤ 0,3
	GGW 10 A4-U/2	248 691	-1 - -10	± 15 %		≤ 0,5
	GGW 50 A4-U/2	248 692	-2,5 - -50	± 15 %		≤ 1
	GGW 150 A4-U/2	248 693	-30 - -150	± 15 %		≤ 3

Supplied in separate packaging

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

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