



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

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



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 test approval as per EC Gas Appliance Directive:

GGW...A4... CE-0085 AO 3220

EC type test approval as per EC Pressure Equipment Directive:

GGW...A4... CE0036

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 (-)] and excess pressure with respect to the atmosphere exists type GGW...A4 must be employed.

If the lower pressure is [G 1/8 (-)], and 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 pressureswitch 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 over-pressure 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.

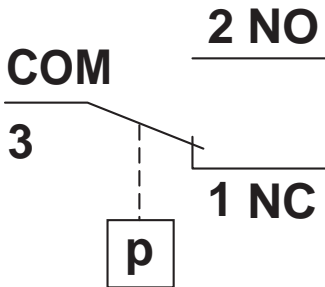
**Switching function**

**As pressure rises:**

1 NC opens, 2 NO closes.

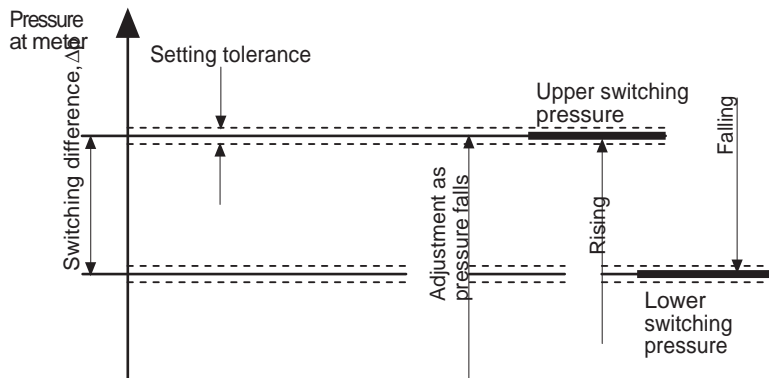
**As pressure falls:**

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).

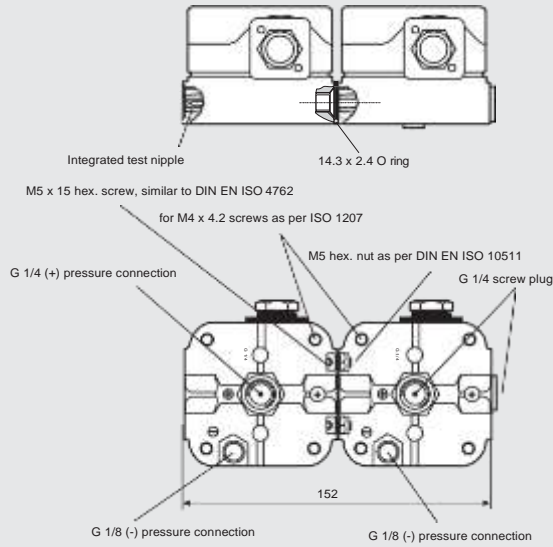
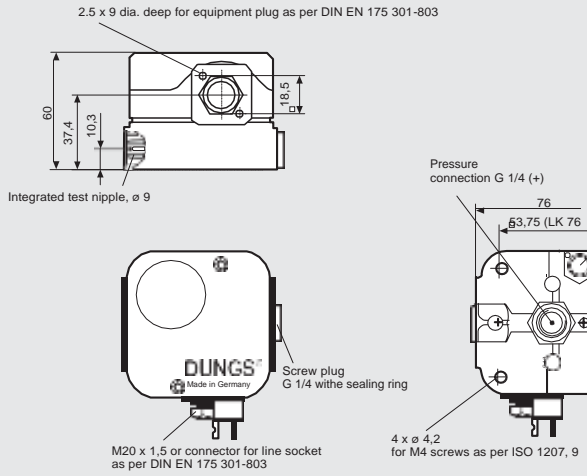
**Technical specifications**

Max. operating pressure	GGW 3 A4	- GGW 150 A4 500 mbar (50 kPa)	
	GGW 3 A4/2	- GGW 150 A4/2 500 mbar (50 kPa)	
	GGW 3 A4-U	- GGW 150 A4-U	-500 mbar (-50 kPa)
	GGW 3 A4-U/2	- GGW 150 A4-U/2	-500 mbar (-50 kPa)
Pressure connection	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+: On the side of the housing with closure screw, G 1/4: <b>Gas or air</b>		
	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>		
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. 24V	max. 250 V)
	(DC)	min. 24V	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.		

**Dimensions [mm]**

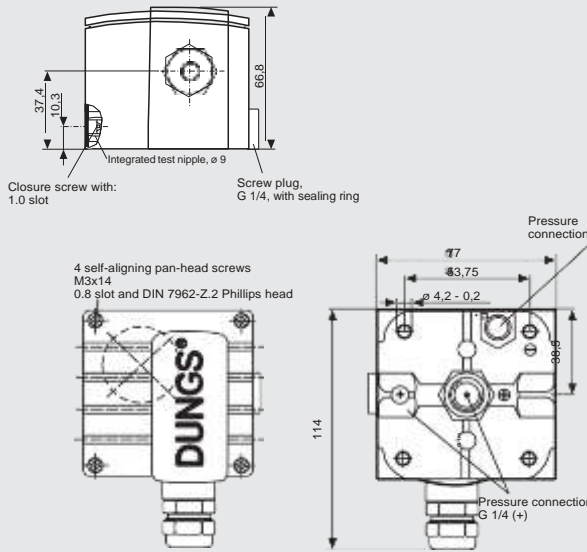
**GGW...A4**  
**GGW...A4-U**

**GGW... / ...A4**



**GGW...A4/2**

with metal housing,  
 cable gland M 20 x 1.5



**Installation position**



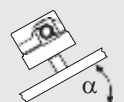
**Standard installation position**



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



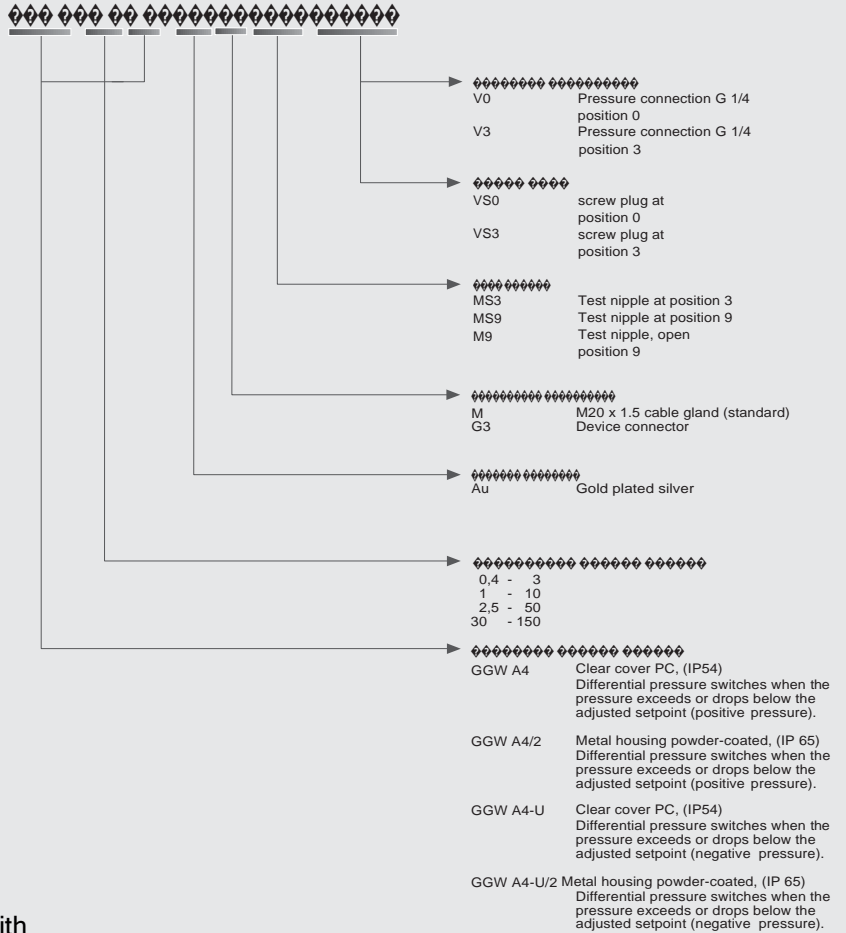
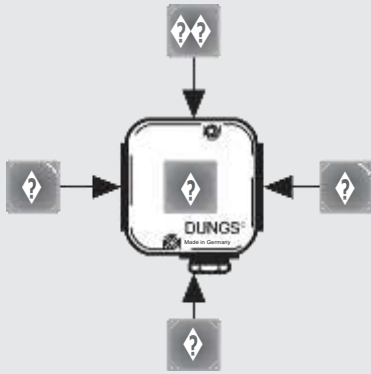
**When installed horizontally overhead, the pressure switch switches at a pressure lower by approx. 0.5 mbar**



**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**



**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 (5 x)	230 398
G 1/4 screw plug and seal ring (5 x)	230 396
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

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

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



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	Setting range [mbar]	Degree of protection	Differential pressure switch Δp [mbar]
<b>GGW...A4</b>	GGW 3 A4	248 673	0,4 - 3	IP 54	≤ 0,3
Differential pressure switch (positive pressure)	GGW 10 A4	248 276	1 - 10	IP 54	≤ 0,5
	GGW 50 A4	246 176	2,5 - 50	IP 54	≤ 1
	GGW 150 A4	248 295	30 - 150	IP 54	≤ 3
	<b>GGW...A4-U</b>	GGW 3 A4-U	248 327	-0,4 - -3	IP 54
Differential pressure switch (negative pressure)	GGW 10 A4-U	240 358	-1 - -10	IP 54	≤ 0,5
	GGW 50 A4-U	246 178	-2,5 - -50	IP 54	≤ 1
	GGW 150 A4-U	247 980	-30 - -150	IP 54	≤ 3
	Supplied in separate packaging				

Model	Version [Au-M-MS9-V0-VS3]	Order number	Setting range [mbar]	Degree of protection	Differential pressure switch Δp [mbar]
<b>GGW...A4/2</b>	GGW 3 A4/2	248 686	0,4 - 3	IP 65	≤ 0,3
Differential pressure switch (positive pressure)	GGW 10 A4/2	248 687	1 - 10	IP 65	≤ 0,5
	GGW 50 A4/2	248 688	2,5 - 50	IP 65	≤ 1
	GGW 150 A4/2	248 689	30 - 150	IP 65	≤ 3
	<b>GGW...A4-U/2</b>	GGW 3 A4-U/2	248 690	-0,4 - -3	IP 65
Differential pressure switch (negative pressure)	GGW 10 A4-U/2	248 691	-1 - -10	IP 65	≤ 0,5
	GGW 50 A4-U/2	248 692	-2,5 - -50	IP 65	≤ 1
	GGW 150 A4-U/2	248 693	-30 - -150	IP 65	≤ 3
	Supplied in separate packaging				