

Differential pressure switches for air, flue and exhaust gases

DUNGS®

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 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.

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 % H₂S, 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

Approvals in other important gas-consuming countries.

TÜV (German Technical Inspectorate) inspection for pressure switches of special construction as per TRD 604 and VdTÜV Technical Data Sheet, edition 100/1, as well as Class "S" as per EN 1854.

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 and, if the pressure exceeds or drops below the setpoint, activates or switches an electrical circuit.

Unit selection

If the lower pressure is p_2 (upper chamber) excess pressure with respect to the atmosphere exists type GGW...A4 must be employed.

If the lower pressure is p_2 (upper chamber), 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

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 over-pressure range. The vent plug G 1/8 may not be closed.

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

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.

Single-acting pressure switch in the low pressure range. The vent plug G 1/4 may not be closed.

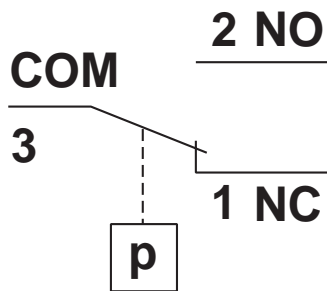
Switching function

As pressure rises:

1 NC opens, 2 NO closes.

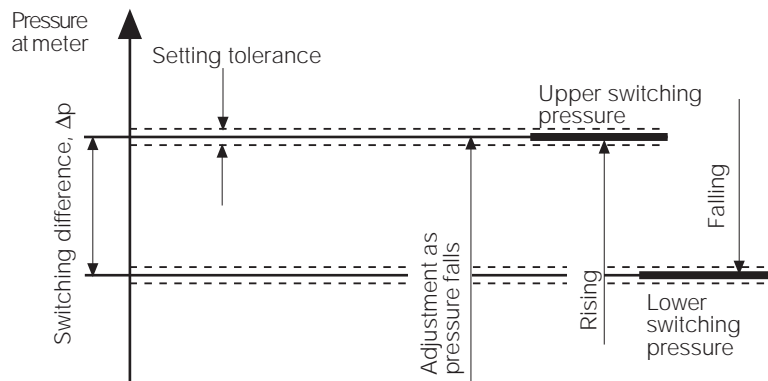
As pressure falls:

1 NC closes, 2 NO opens.



Definition of switching difference Δp

The switching difference Δp 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

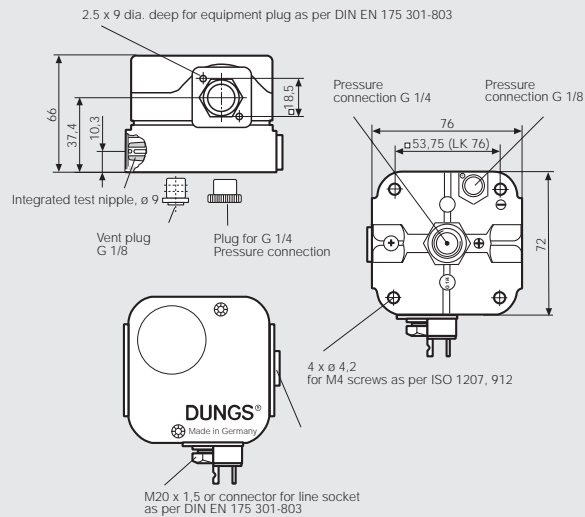
- IP 65**
- 6 Protection against the entry of dust (dust sealed).
Protection against access to hazardous parts using $\varnothing \geq 1$ mm wire
Complete contact protection
 - 5 Protection against a water jet from a nozzle directed at the unit (housing) from any directions
No hazardous conditions may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

Technical specifications

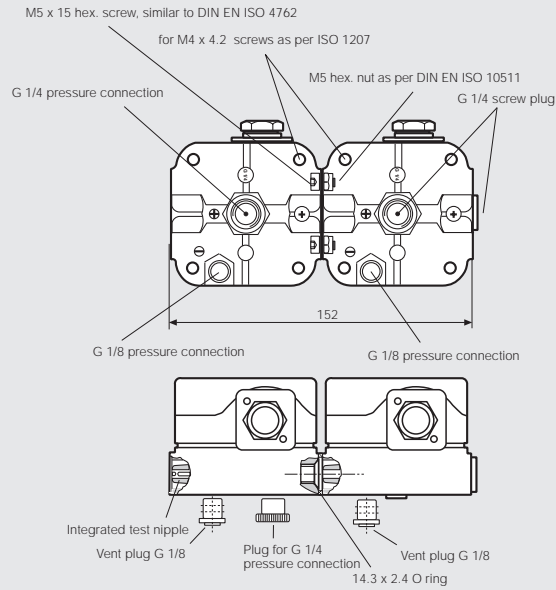
Max. operating pressure	GGW 3 A4 - GGW 150 A4	500 mbar (50 kPa)
	GGW 3 A4/2 - GGW 150 A4/2	500 mbar (50 kPa)
	GGW 3 A4-U - GGW 150 A4-U	-500 mbar (-50 kPa)
	GGW 3 A4-U/2 - GGW 150 A4-U/2	-500 mbar (-50 kPa)
Pressure connection	P+: In the center of the underside of the housing, G 1/4 internal thread in accord. with ISO 228: Gas or air.	
	P+: On the side of the housing with closure screw, G 1/4: Gas or air	
	P-: On the side of the underside of the housing, G 1/8 internal thread in accord. with ISO 228: Gas or air.	
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	GGW...A4	
	Housing base	aluminium die casting
	Cover	Polycarbonate
	Switch portion	Polycarbonate
	Membrane	NBR
	Switch contact	Standard: fine silver (Ag) Optional: gold-plated fine silver(Au) suitable for DDC applications: 24 VDC; 0.01 A
	GGW...A4/2	
	Housing base	aluminium die casting
	Cover	Zinc diecast, powder-coated
	Switch portion	Polycarbonate
	Membrane	NBR
	Switch contact	Standard: fine silver (Ag) Optional: gold-plated fine silver(Au) suitable for DDC applications: 24 VDC; 0.01 A
Switching voltage	Ag contact	AC eff. min. 24 V max. 250 V
	Au contact	DC min. 24 V max. 48 V
		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 $\cos \varphi$ 1
		AC eff. min. 20 mA max. 3 A $\cos \varphi$ 0,6
		DC min. 20 mA max. 1 A
	Au contact	DC min. 5 mA max. 10 mA
		The electrical breaking capacity was inspected in accordance with DIN 1854 point 8.5.3 and point 7.5.2.1.
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

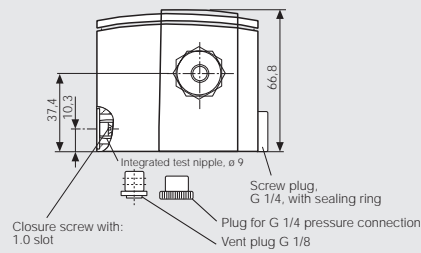


GGW...A4 / GGW...A4



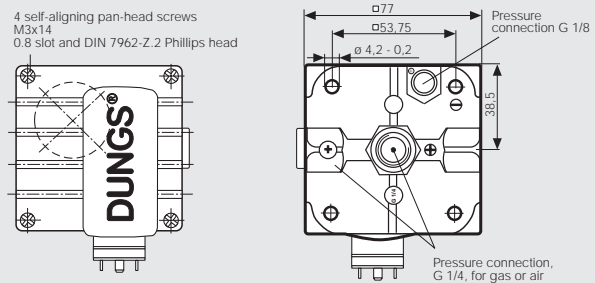
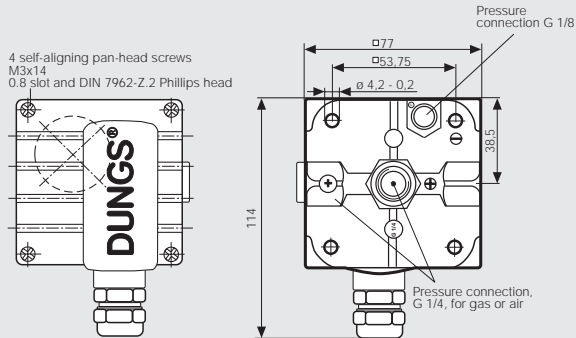
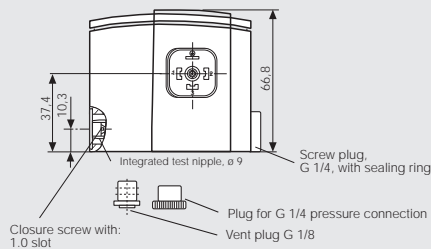
GGW...A4/2

with metal housing,
cable gland M 20 x 1.5

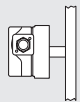


GGW...A4/2

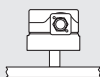
with metal housing, plug-in connection for
sockets in accord. with DIN EN 175 301-803



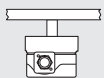
Installation position



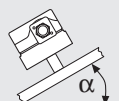
Standard installation position



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

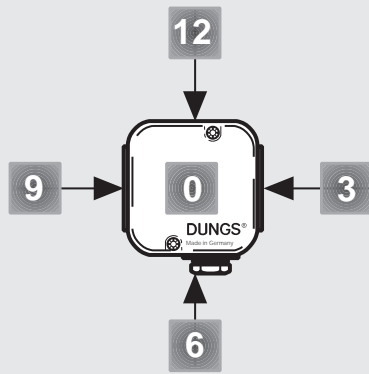


When installed horizontally overhead, the pressure switch switches at a pressure lower by approx. 0.5 mbar



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



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

Ordering example

Pressure switch design

Differential pressure switch GGW A4

Adjustment range

30 – 150 mbar

Contact material

Ag, fine silver (standard)

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

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).

GGW 150 A4 [Ag-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

213 910

Metal mounting bracket

230 288

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
gas, air, flue and exhaust gases**

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



DUNGS®

Technical data 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 number	Setting range [mbar]	Degree of protection	Differential pressure switch Δp [mbar]	
GGW...A4 Differential pressure switch (positive pressure)	GGW 3 A4	232 108	0,4 - 3		IP 54	≤ 0,3
	GGW 10 A4	232 109	1 - 10		IP 54	≤ 0,5
	GGW 50 A4	232 110	2,5 - 50		IP 54	≤ 1
	GGW 150 A4	232 111	30 - 150		IP 54	≤ 3
GGW...A4-U Differential pressure switch (negative pressure)	GGW 3 A4-U	232 991	-0,4 - -3		IP 54	≤ 0,3
	GGW 10 A4-U	232 992	-1 - -10		IP 54	≤ 0,5
	GGW 50 A4-U	232 993	-2,5 - -50		IP 54	≤ 1
	GGW 150 A4-U	232 994	-30 - -150		IP 54	≤ 3

Supplied in separate packaging

Model	Version [Ag-M-MS9-V0-VS3]	Order number	Setting range [mbar]	Degree of protection	Differential pressure switch Δp [mbar]	
GGW...A4/2 Differential pressure switch (positive pressure)	GGW 3 A4/2	232 112	0,4 - 3		IP 65	≤ 0,3
	GGW 10 A4/2	232 113	1 - 10		IP 65	≤ 0,5
	GGW 50 A4/2	232 114	2,5 - 50		IP 65	≤ 1
	GGW 150 A4/2	232 115	30 - 150		IP 65	≤ 3
GGW...A4-U/2 Differential pressure switch (negative pressure)	GGW 3 A4-U/2	232 995	-0,4 - -3		IP 65	≤ 0,3
	GGW 10 A4-U/2	232 996	-1 - -10		IP 65	≤ 0,5
	GGW 50 A4-U/2	232 997	-2,5 - -50		IP 65	≤ 1
	GGW 150 A4-U/2	232 998	-30 - -150		IP 65	≤ 3

Supplied in separate packaging

Model	Version [Ag-G3-MS9-V0-VS3]	Order number	Setting range [mbar]	Degree of protection	Differential pressure switch Δp [mbar]	
GGW...A4/2 Differential pressure switch (positive pressure)	GGW 3 A4/2	232 720	0,4 - 3		IP 65	≤ 0,3
	GGW 10 A4/2	232 722	1 - 10		IP 65	≤ 0,5
	GGW 50 A4/2	232 723	2,5 - 50		IP 65	≤ 1
	GGW 150 A4/2	232 724	30 - 150		IP 65	≤ 3
GGW...A4-U/2 Differential pressure switch (negative pressure)	GGW 3 A4-U/2	232 999	-0,4 - -3		IP 65	≤ 0,3
	GGW 10 A4-U/2	233 000	-1 - -10		IP 65	≤ 0,5
	GGW 50 A4-U/2	233 001	-2,5 - -50		IP 65	≤ 1
	GGW 150 A4-U/2	233 002	-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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