

# Pressure switch for gas, air, flue gases and com- bustion products

GW 500 A4  
GW 500 A4/2

**DUNGS**®  
Combustion Controls

5.09



## Technical description

The GW...A4 pressure switch is an adjustable pressure switch as per EN 1854 (GW 6000 A4 as per DIN 3398T3) for burners.

It is suitable for closing, opening or switching over a current circuit when the actual pressure value deviates from the specified pressure setpoint. The specified pressure setpoint (operating point) is set at a setting wheel using a scale.

## Application

Pressure monitoring in burner control systems

Suitable for gases of gas families 1,2,3 and other neutral gaseous media, as well as air, flue gases and combustion products.

GW 500 A4: Free of non-ferrous metals, suitable for gases up to max. 0.1 % by vol. H<sub>2</sub>S, dry.

## Approvals

EC type testing certificate as per:

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

Approvals in other important gas-consuming countries.

### Functional

Pressure switch for applications involving excess pressure.

### GW 500 A4

The pressure switch acts via a rubber diaphragm against the force of the setting spring on the micro-switch.

### Pressure switch GW...A4

The switching mechanism reacts to overpressure and closes, opens or switches over a current circuit when the specified pressure setpoint is overshoot or undershot.

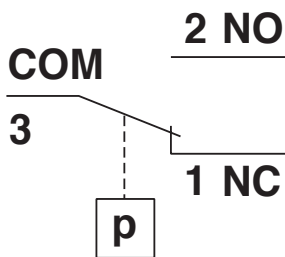
#### Switching function

##### As pressure rises:

1 NC opens, 2 NO closes.

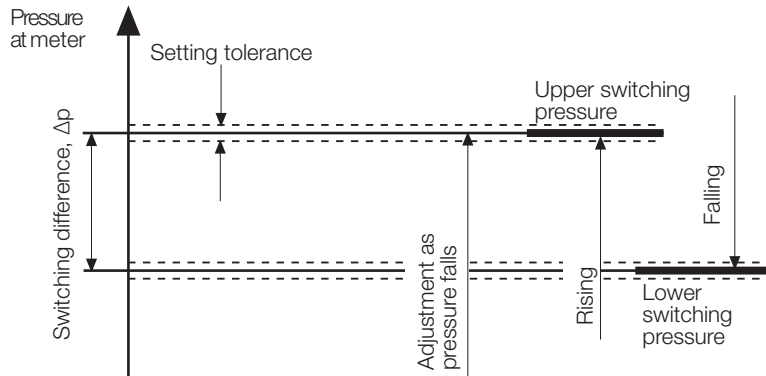
##### As pressure falls:

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.



#### GW...A4, Design: Clear cover

##### Degree of protection IP 54

- IP 54**
- 5 Protection against ingress of solid particles  $\varnothing \geq 1$  mm  
Protection against access to hazardous parts with a wire,  $\varnothing \geq 1$  mm  
Complete contact protection
  - 4 Protection against a water jet.  
No hazardous conditions may result.

#### LGW...A4/2, Design: Metal housing

##### Protection class: IP 65

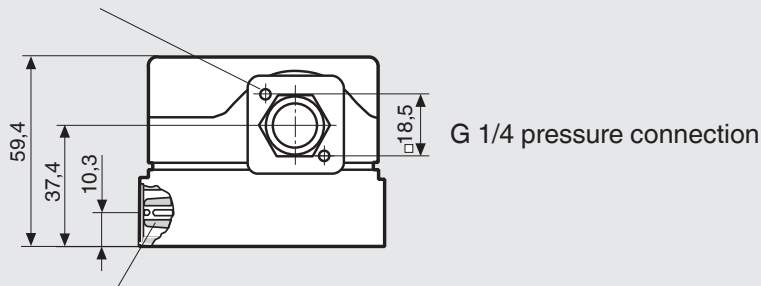
- IP 65**
- 6 Protection against the entry of dust (dust sealed).  
Protection against access to hazardous parts using  $\varnothing \geq 1$  mm wire  
Complete contact protection
  - 5 Protection against a water jet from a nozzle directed at the unit (housing) from any directions  
No hazardous conditions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

## Specifications

Max. Betriebsdruck	GW 500 A4	600 mbar (60 kPa)			
Pressure connection	p+: centrally on underside of housing, G 1/4 internal thread to ISO 228: <b>Gas or air</b> Special version: additional G 1/4 internal thread at side				
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>GW...A4</b>				
	Housing lower section	aluminium die casting			
	Switch	Polycarbonat			
	Switching contact	Standard: Silber (Ag) Optional: gold-plated (Au) silver, suitable for DDC applications: DC 24 V; 0.02 A			
	Diaphragm	NBR			
	Hood	polycarbonate			
	<b>GW...A4</b>				
	Housing lower section	aluminium die casting			
	Switch	Polycarbonat			
	Switching contact	Standard: Silber (Ag) Optional: gold-plated (Au) silver, suitable for DDC applications: DC 24 V; 0.02 A			
Diaphragm	NBR				
Hood	Extrusion cast zinc, powder-coated				
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 with $\cos \varphi 1$	
		AC eff.		max. 3 A with $\cos \varphi 0,6$	
	Au contact	DC	min. 20 mA	max. 1 A	
		DC	min. 5 mA	max. 20 mA	
Electrical connection	Standard:	at screw terminals via cable gland, M20x1.5			
	Special version:	plug connection for line sockets as per DIN EN 175 301-803, 3-pin with protection contact			
Degree of protection	GW...A4	IP 54 to IEC 529 (EN 60529), (clear hood)			
	GW...A4/2	IP 65 as per 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.				
Setting tolerance	±15% switch point deviation based on the setpoint and with unit installed in a vertical position				

**Dimensions [mm]**  
**GW 500 A4**

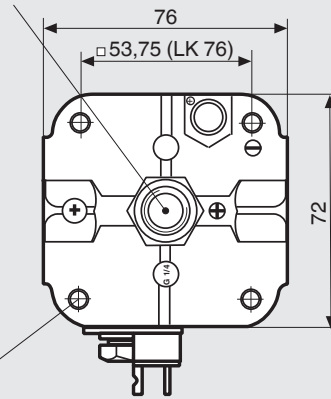
2.5 x 9 dia. deep for equipment plug as per DIN EN 175 301-803



Test nipple, integrated  $\varnothing 9$



M20 x 1.5 or plug-type connection for cable socket according to DIN EN 175 301-803



4 x  $\varnothing 4.2$   
 for screws M4 ISO 1207, 912

**Installation position**



**Standard installation position; if a different installation position is used, pay attention to the changed operating points:**  
 GW 500 A4                      ca.  $\pm 5$  mbar



**When installed horizontally, the pressure switch switches at a pressure higher**

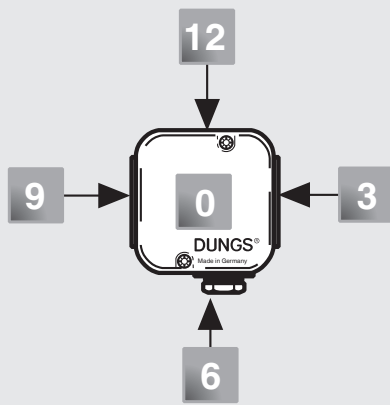


**When installed horizontally overhead, the pressure switch switches at a pressure lower**



**When installed at an intermediate position, the pressure switch responds if there is maximum upper or lower pressure deviation w.r.t. the set pressure reference value.**

## Designation



### Ordering example

#### Pressure switch design

Pressure switch GW A4

#### Adjustment range

100 - 500 mbar

#### Contact material

Ag

#### Electrical connection

Cable gland M20 x 1.5

#### G 1/4 pressure connection

V0; at position 0

**GW 500 A4 [Ag-M-V0]**

### GW 500 A4

### Ag-M-MS9-V0-VS3

#### Pressure connection

V0 Pressure connection G 1/4 position 0  
V3 Pressure connection G 1/4 position 3

#### Verschlußschraube

VS0 Verschlußschraube an Position 0  
VS3 Verschlußschraube an Position 3

#### Pressure connection

V0 Pressure connection G 1/4 position 0

#### Meßstutzen nur GW 500 A4 (600 mbar)

MS3 Meßstutzen an Position 3  
MS9 Meßstutzen an Position 9  
M9 Meßstutzen, offen, Position 9

#### Electrical connection

M Cable gland M20 x 1,5  
G 3 Equipment plug

#### Contact material

Ag silver  
Au silver, gold-plated

#### Adjustment ranges [mbar]

GW 500 A4 100-500

#### Pressure switch type

GW...A4 Clear cover, PC, (IP 54)  
Pressure switch switches when the pressure exceeds or drops below the adjusted setpoint.  
GW...A4/2 Metal housing, powder-coated (IP 65)  
Differential pressure switch switches when the pressure exceeds or drops below the adjusted setpoint.

## Accessories for pressure switches

### GW...A4

## Order No.

Kit: G3 equipment plug, 3-pin + E for GW...A4

219 659

Line sockets, 3-pin + E  
grey GDMW for GW...A4,GW...A4/2

210 318

Fluorescent lamp assembly kit 230 V yellow

231 773

Fluorescent lamp assembly kit 120 V yellow

231 772

Display LED assembly kit 24 V yellow

231 774

Fluorescent lamp assembly kit 230 V green

248 239

Display LED assembly kit 24 V green

248 240

Test nipple G 1/4 with ring seal (5 x)

230 398

Screw plug G 1/4 with ring seal (5 x)

230 396

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

213 910

Mounting bracket, metal

230 288

Pressure switch for gas, air, flue  
gases and combustion products

GW 500 A4  
GW 500 A4/2

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**Technical overview**    1 mbar = 100 Pa = 0,1 kPa ≈ 10 mm WS                      1 Pa = 0,01 mbar ≈ 0,1 mm WS

Type	Version	Order No.	Order No.	Setting range	max.	Degree of protection [mbar]		Degree of protection
						p ↑ min.	p ↑ max.	
GW 500 A4 Pressure switch	[Ag-M-MS9-V0]	1 piece	48 pieces	[mbar]				
	GW 500 A4	157 060	-	100 - 500	± 15 %	≤ 10	≤ 15	IP 54
GW 500 A4 Pressure switch	[Ag-G3-MS9-V0]	1 piece	48 pieces	[mbar]				
	GW 500 A4	218 270	-	100 - 500	± 15 %	≤ 10	≤ 15	IP 54
GW 500 A4/2 Pressure switch	[Ag-M-MS9-V0-VS3]	1 piece	48 pieces	[mbar]				
	GW 500 A4	237 804	-	100 - 500	± 15 %	≤ 10	≤ 15	IP 65
GW 500 A4/2 Pressure switch including line socket	[Ag-G3-MS9-V0-VS3]	1 piece	48 pieces	[mbar]				
	GW 500 A4	238 572	-	100 - 500	± 15 %	≤ 10	≤ 15	IP 65