

# 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

EU type test approval as per EC Gas Appliance Directive:

GW...A4            CE-0085 AO 3220

EU type test approval as per EC Pressure Equipment Directive:

GW...A4            CE0036

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.

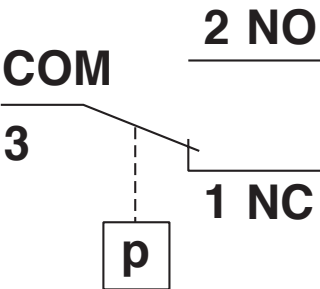
**Switching function**

**As pressure rises:**

1 NC opens, 2 NO closes.

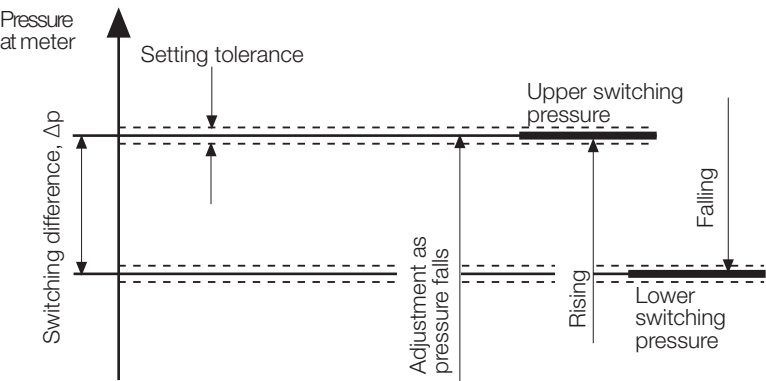
**As pressure falls:**

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**

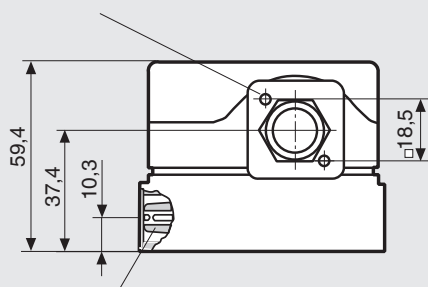
- IP 65**
- 6 Protection against the entry of dust (dust sealed).  
Protection against access to hazardous parts using  $\varnothing \geq 1$  mm wire  
Complete contact protection
  - 5 Protection against a water jet from a nozzle directed at the unit (housing) from any directions  
No hazardous conditions 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><br>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)<br>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)<br>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<br>AC eff. max. 3 A with $\cos \varphi$ 0,6              |
|                       |                                                                                                                                                                                               | DC min. 20 mA max. 1 A                                                                                     |
|                       | Au contact                                                                                                                                                                                    | 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.<br>Optional rising or dropping pressure adjustment on-site possible.<br>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

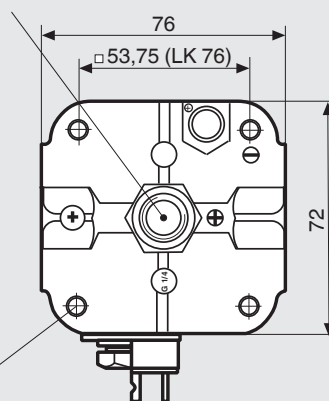


G 1/4 pressure connection

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**

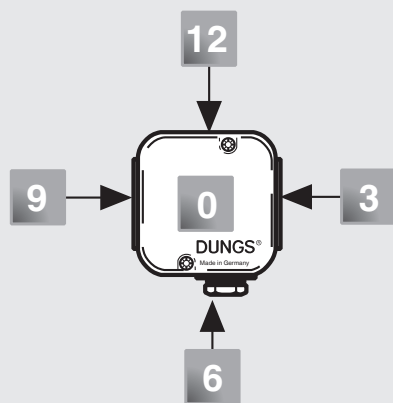


**When installed horizontally overhead, the pressure switch switches at a pressure lower**



**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

210 318

grey GDMW for GW...A4, GW...A4/2

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**



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

| Type                                                                           | Version<br>[Ag-M-MS9-V0] | Order<br>No. | Setting range<br>[mbar] | Degree of pro-<br>tection                                                                    | Differential pres-<br>sure switch Δp<br>[mbar] |
|--------------------------------------------------------------------------------|--------------------------|--------------|-------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>GW 500 A4</b><br>Pressure<br>switch<br><br>Supplied in collective packaging | GW 500 A4                | 157 060      | 100-500                 | IP 54<br> | ≤ 10                                           |

| Type                                                                           | Version<br>[Ag-M-MS9-V0-VS3] | Order<br>No. | Setting range<br>[mbar] | Degree of pro-<br>tection                                                                    | Differential pres-<br>sure switch Δp<br>[mbar] |
|--------------------------------------------------------------------------------|------------------------------|--------------|-------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>GW 500 A4</b><br>Pressure<br>switch<br><br>Supplied in collective packaging | GW 500 A4                    | 221 201      | 100-500                 | IP 54<br> | ≤ 10                                           |

| Type                                                                           | Version<br>[Ag-G3-MS9-V0-Ag] | Order<br>No. | Setting range<br>[mbar] | Degree of pro-<br>tection                                                                      | Differential pres-<br>sure switch Δp<br>[mbar] |
|--------------------------------------------------------------------------------|------------------------------|--------------|-------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>GW 500 A4</b><br>Pressure<br>switch<br><br>Supplied in collective packaging | GW 500 A4                    | 218 270      | 100-500                 | IP 54<br> | ≤ 10                                           |

| Type                                                                           | Version<br>[Ag-M-MS9-V0-VS3] | Order<br>No. | Setting range<br>[mbar] | Degree of pro-<br>tection                                                                      | Differential pres-<br>sure switch Δp<br>[mbar] |
|--------------------------------------------------------------------------------|------------------------------|--------------|-------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>GW 500 A4/2</b><br>Pressure<br>switch<br><br>Supplied in separate packaging | GW 500 A4                    | 237 804      | 100-500                 | IP 65<br> | ≤ 10                                           |

| Type                                                                           | Version<br>[Ag-G3-MS9-V0-VS3] | Order<br>No. | Setting range<br>[mbar] | Degree of pro-<br>tection                                                                      | Differential pres-<br>sure switch Δp<br>[mbar] |
|--------------------------------------------------------------------------------|-------------------------------|--------------|-------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>GW 500 A4/2</b><br>Pressure<br>switch<br><br>Supplied in separate packaging | GW 500 A4                     | 238 572      | 100-500                 | IP 65<br> | ≤ 10                                           |

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

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