

# High-pressure switch for gas, air, flue gases and combustion products

GW...A4 HP  
GW...A4/2 HP

**DUNGS**®  
Combustion Controls

5.04



## Technical description

The GW...A4 HP 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.

## 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...A4 HP

The pressure counteracts the force of the setting spring on the micro-switch via the metal bellows. The pressure switch does not require power assistance.

## Pressure switch GW...A4 HP

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

All gas-carrying parts are made of 1.4541 stainless steel and, therefore, are suitable for:

- applications involving operating pressures greater than 600 mbar
- aggressive media such as sulphuric acid up to a concentration of 1.0 % by vol., humid
- fluids (on request)

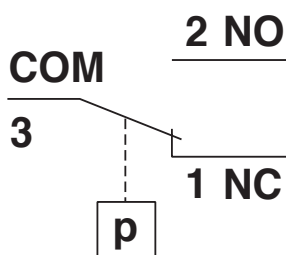
### Switching function

#### As pressure rises:

1 NC opens, 2 NO closes.

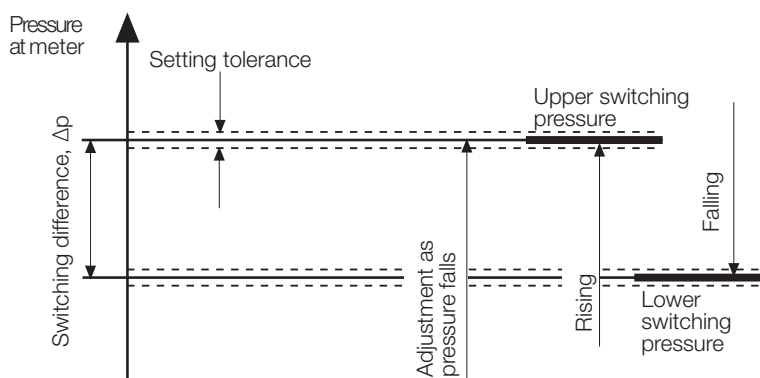
#### As pressure falls:

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  $\geq 1$  mm  
Protection against access to hazardous parts with a wire,  $\geq 1$  mm  
Complete contact protection
  - 4** Protection against a water jet.  
No hazardous conditions may result.

## GW...A4, Design: Metal housing

### Degree of protection IP 65

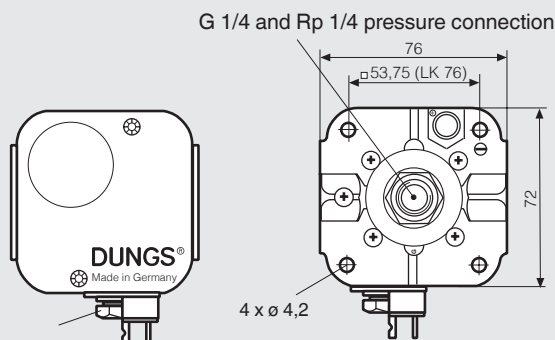
- IP 65**
- 6** Protection against the entry of dust (dust sealed).  
Protection against access to hazardous parts with a wire,  $\geq 1$  mm  
Complete contact protection
  - 5** Protection against a water jet from a nozzle directed at the unit (housing) from any directions  
No hazardous conditions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

## Specifications

|                         |                                                                                                                                                                                                |                                                                                         |                                              |                                  |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------|----------------------------------|
| Max. operating pressure | GW 500 A4 HP                                                                                                                                                                                   | $p_{\max}$                                                                              | = 2 bar (gas) @ setting range 0.1 - 0.15 bar |                                  |
|                         |                                                                                                                                                                                                | $p_{\max}$                                                                              | = 5 bar (gas) @ setting range 0.15 - 0.5 bar |                                  |
|                         | GW 2000 A4 HP<br>GW 6000 A4 HP                                                                                                                                                                 | $p_{\max}$<br>$p_{\max}$                                                                | = 5 bar (gas)<br>= 8 bar (gas)               |                                  |
| Pressure connection     | p+: centrally on underside of housing internal thread G 1/4 and Rp 1/4, <b>Gas or air</b>                                                                                                      |                                                                                         |                                              |                                  |
| 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 HP</b>                                                                                                                                                                              |                                                                                         |                                              |                                  |
|                         | Housing lower section                                                                                                                                                                          | aluminium die casting                                                                   |                                              |                                  |
|                         | Switch                                                                                                                                                                                         | polycarbonate                                                                           |                                              |                                  |
|                         | Switching contact                                                                                                                                                                              | standard:<br>silver gold-plated (Au), suitable for<br>DDC applications: DC 24 V; 0,02 A |                                              |                                  |
|                         | Metal bellows                                                                                                                                                                                  | 1.4541 (stainless steel)                                                                |                                              |                                  |
|                         | Hood                                                                                                                                                                                           | polycarbonate                                                                           |                                              |                                  |
|                         | <b>GW...A4/2 HP</b>                                                                                                                                                                            |                                                                                         |                                              |                                  |
|                         | Hood                                                                                                                                                                                           | die cast zinc, powder coated                                                            |                                              |                                  |
| Switching voltage       |                                                                                                                                                                                                | AC eff.                                                                                 | min. 24 V                                    | max. 250 V                       |
|                         |                                                                                                                                                                                                | DC                                                                                      | min. 24 V                                    | max. 48 V                        |
|                         | DDC application:                                                                                                                                                                               | DC                                                                                      | min. 5 V                                     | max. 24 V                        |
| Nominal current         |                                                                                                                                                                                                | AC eff.                                                                                 | 10 A                                         |                                  |
|                         | DDC application:                                                                                                                                                                               | DC max.                                                                                 | 20 mA                                        |                                  |
| Switching current       |                                                                                                                                                                                                | AC eff.                                                                                 | min. 20 mA                                   | max. 6 A with $\cos \varphi$ 1   |
|                         |                                                                                                                                                                                                | AC eff.                                                                                 |                                              | max. 3 A with $\cos \varphi$ 0,6 |
|                         |                                                                                                                                                                                                | DC                                                                                      | min. 20 mA                                   | max. 1 A                         |
|                         | DDC application:                                                                                                                                                                               | DC                                                                                      | min. 5 mA                                    | max. 20 mA                       |
| Electrical connection   | Pplug connection for line sockets as per<br>DIN EN 175 301-803, 3-pin with protection contact                                                                                                  |                                                                                         |                                              |                                  |
| Degree of protection    | GW...A4 HP                                                                                                                                                                                     | IP 54 to IEC 529 (EN 60529), (clear hood)                                               |                                              |                                  |
|                         | GW...A4/2 HP                                                                                                                                                                                   | IP 65 to 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                                                                                               |                                                                                         |                                              |                                  |
| Deviation               | Permissible deviation of the set value ≤ ± 15 % in the service life test according to EN 1854                                                                                                  |                                                                                         |                                              |                                  |

## Dimensions [mm]

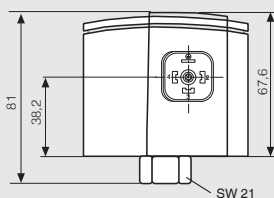
### GW...A4 HP



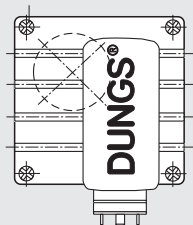
M20 x 1.5 or plug-type connection for cable socket according to DIN EN 175 301-803

### GW...A4/2 HP IP 65

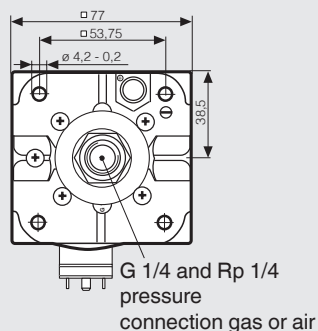
with metal housing, plug-in connection for sockets in according to DIN EN 175 301-803



4 self-tapping cylinder bolts M3 x 14 slot 0.8 and cross slot to DIN 7962-Z2



SW = Wrench width



## Installation position



Standard installation position; if a different installation position is used, pay attention to the changed operating points:

|            |    |                     |
|------------|----|---------------------|
| GW 500 A4  | HP | ca. $\pm 0,010$ bar |
| GW 2000 A4 | HP | ca. $\pm 0,020$ bar |
| GW 6000 A4 | HP | ca. $\pm 0,080$ bar |



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

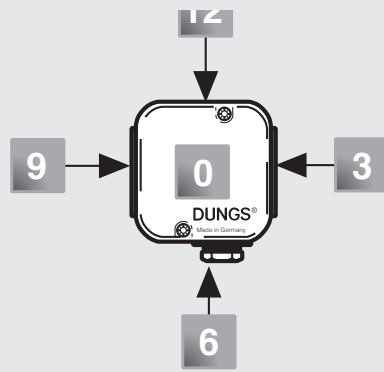


When installed horizontally overhead, the pressure switch switches at a pressure lowe

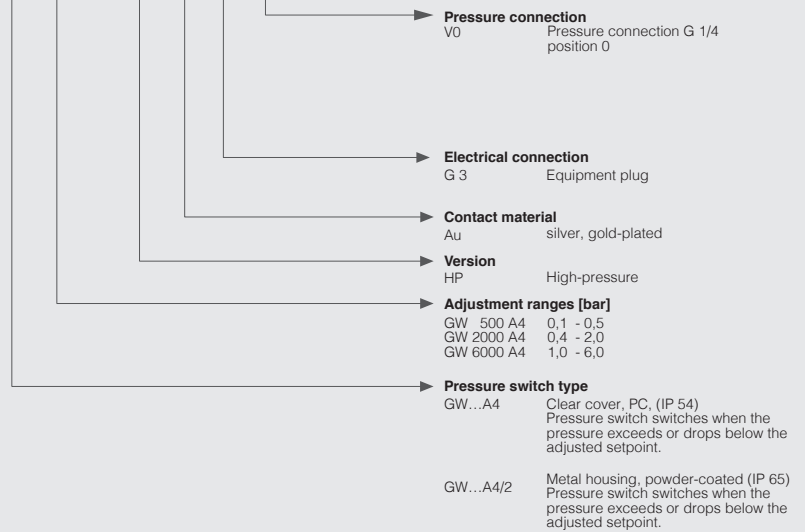


When installed at an intermediate position, the pressure switch responds if there is maximum upper or lower pressure deviation w.r.t. the set pressure reference value.

## Designation



## GW 500 A4 HP Au-G3-V0



## Ordering example

### Pressure switch design

Pressure switch GW...A4 HP

### Adjustment range

0.1 - 0.5 bar

### Contact material

Au

### Electrical connection

G3 equipment plug

### G 1/4 pressure connection

V0; at position 0

**GW 500 A4 HP [Au-M-V0]**

## Accessories for pressure switches GW...A4 HP

## Bestell-Nr.

|                                                             |         |
|-------------------------------------------------------------|---------|
| Kit: G3 equipment plug, 3-pin + E for GW...A4               | 219 659 |
| Line sockets, 3-pin + E<br>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 |

High-pressure switch for gas, air,  
flue gases and combustion prod-  
ucts

GW...A4 HP  
GW...A4/2 HP



**Technical overview** 1 bar = 1000 mbar = 100 kPa  $\approx$  10000 mm WS

| Type                                 | Version<br>[Au-G3-V0] | Order<br>No.<br>1 piece | Setting range<br>[bar] $\pm$ 15 % | p <sub>max</sub><br>[bar]                | Degree of<br>protection | Differential pres-<br>sure switch $\Delta p$ [bar]<br>p $\uparrow$ min. p $\uparrow$ max. |             |
|--------------------------------------|-----------------------|-------------------------|-----------------------------------|------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------|-------------|
| <b>GW...A4 HP</b><br>Pressure switch | GW 500 A4 HP          | 254 285                 | 0.1 - 0.5 $\uparrow \square$      | 2 @ 0.1 - 0.15 bar<br>5 @ 0.15 - 0.5 bar | IP 54                   | $\leq 0,03$                                                                               | $\leq 0,03$ |
|                                      | GW 2000 A4 HP         | 254 286                 | 0.4 - 2.0 $\uparrow \square$      | 5                                        | IP 54                   | $\leq 0,05$                                                                               | $\leq 0,10$ |
|                                      | GW 6000 A4 HP         | 254 287                 | 1.0 - 6.0 $\uparrow \square$      | 8                                        | IP 54                   | $\leq 0,30$                                                                               | $\leq 0,30$ |
| with line socket                     |                       |                         |                                   |                                          |                         |                                                                                           |             |

| Type                                   | Version<br>[Au-G3-V0] | Order<br>No.<br>1 piece | Setting range<br>[bar] $\pm$ 15 % | p <sub>max</sub><br>[bar]                | Degree of<br>protection | Differential pres-<br>sure switch $\Delta p$ [bar]<br>p $\uparrow$ min. p $\uparrow$ max. |             |
|----------------------------------------|-----------------------|-------------------------|-----------------------------------|------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------|-------------|
| <b>GW...A4/2 HP</b><br>Pressure switch | GW 500 A4/2 HP        | 254 282                 | 0.1 - 0.5 $\uparrow \square$      | 2 @ 0.1 - 0.15 bar<br>5 @ 0.15 - 0.5 bar | IP 65                   | $\leq 0,03$                                                                               | $\leq 0,03$ |
|                                        | GW 2000 A4/2 HP       | 254 283                 | 0.4 - 2.0 $\uparrow \square$      | 5                                        | IP 65                   | $\leq 0,05$                                                                               | $\leq 0,10$ |
|                                        | GW 6000 A4/2 HP       | 254 284                 | 1.0 - 6.0 $\uparrow \square$      | 8                                        | IP 65                   | $\leq 0,30$                                                                               | $\leq 0,30$ |
| with line socket                       |                       |                         |                                   |                                          |                         |                                                                                           |             |

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

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