

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

GW 500 A4
GW...A4 HP
GW...A4/2 HP

5.04

DUNGS[®]
Combustion Controls

Implementos Industriales
Medición y Control de Temperatura
Humedad - Caudal
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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. H₂S, 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.

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

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

Metal bellows (only GW...A4 HP)

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

- applications involving operating pressures greater than 600 mbar
- biogas applications
- aggressive media such as sulphuric acid up to a concentration of 1.0 % by vol.

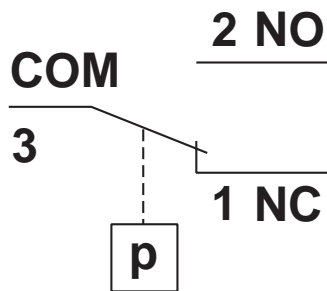
Switching function

As pressure rises:

1 NC opens, 2 NO closes.

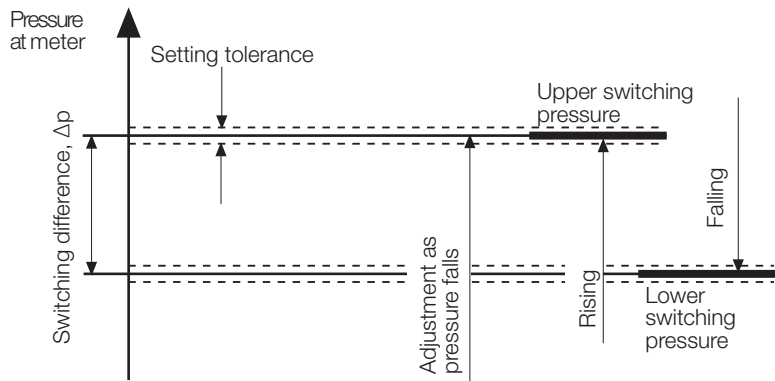
As pressure falls:

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.



GW...A4, Design: Clear cover

Degree of protection IP 54

- IP 54**
- 5 Protection against ingress of solid particles $\phi \geq 1$ mm
 - Protection against access to hazardous parts with a wire, $\phi \geq 1$ 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

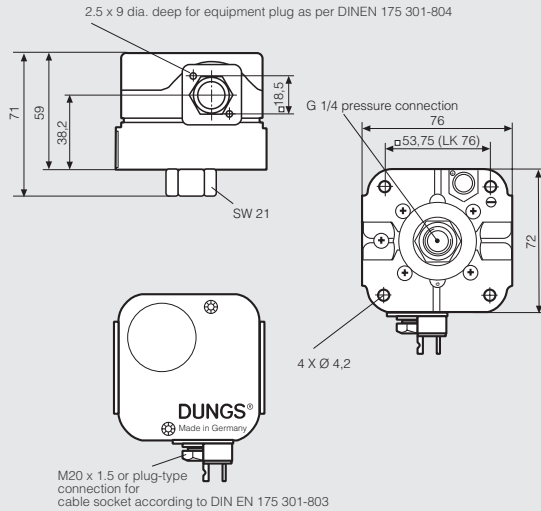
- IP 65**
- 6 Protection against the entry of dust (dust sealed).
 - Protection against access to hazardous parts with a wire, $\phi \geq 1$ mm
 - Complete contact protection
 - 5 Protection against a water jet from a nozzle directed at the unit (housing) from any directions
 - No hazardous conditions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

Specifications

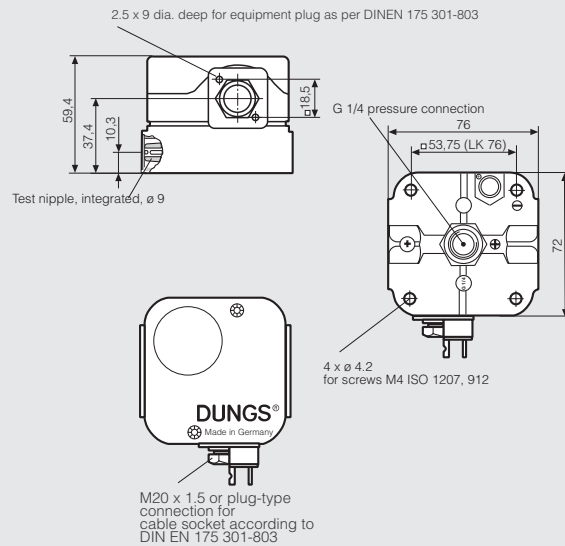
Max. operating pressure	GW 500 A4, ...A4/2	600 mbar (60 kPa)		
	GW 500 A4 HP, ...A4/2 HP	2 bar (200 kPa)		
	GW 2000 A4 HP, ...A4/2 HP	4 bar (400 kPa)		
	GW 6000 A4 HP, ...A4/2 HP	8 bar (800 kPa)		
Pressure connection	P+: centrally on underside of housing, G 1/4 internal thread to ISO 228: Gas or air Special version GW 500 A4: 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	GW...A4			
	Housing lower section	aluminium die casting		
	Switch	polycarbonate		
	Switching contact	silver (Ag) Optional: gold-plated (Au) silver, suitable for DDC applications: DC 24 V; 0.02 A		
	GW 500 A4			
	Diaphragm	NBR		
	GW...A4 HP			
	Metal bellows	1.4541 (stainless steel)		
	GW...A4			
	Hood	polycarbonate		
GW...A4/2				
Hood	die 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 GW...A4	at screw terminals via cable gland, M20x1.5		
	Standard GW...A4/2	at screw terminals via cable gland, M20x1.5		
	Special version GW...A4, GW...A4/2	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 to 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...A4 HP

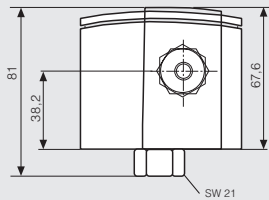


GW 500 A4



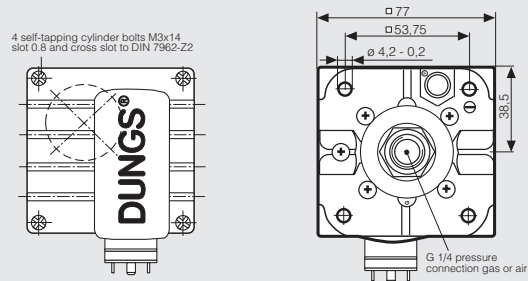
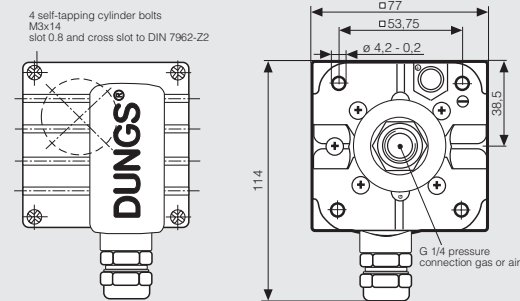
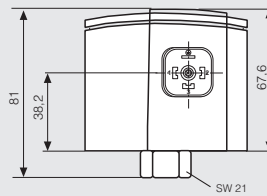
GW...A4/2 HP IP 65

with metal housing,
cable gland M 20 x 1.5



GW...A4/2 HP IP 65

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



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		approx. ± 5 mbar
GW 500 A4	HP	approx. ± 10 mbar
GW 2000 A4	HP	approx. ± 20 mbar
GW 6000 A4	HP	approx. ± 80 mbar



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

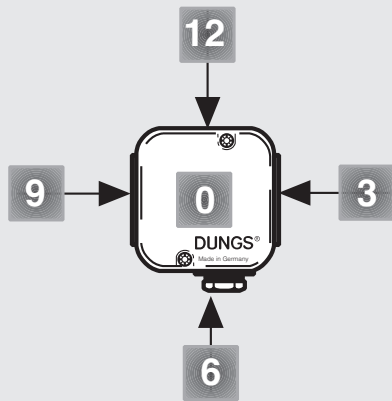


When installed horizontally overhead, the pressure switch switches at a pressure lower



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 HP

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 [HP-Ag-M-V0]

GW 500 A4 Ag-M-MS9-V0-VS3

GW 500 A4 HP-Ag-M-

V0

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

Pressure connection

V0 pressure connection G 1/4 position 0

Test nipple only GW 500 A4 (600 mbar)

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
G 3 Equipment plug

Contact material

Ag silver

Version

HP High-pressure

Adjustment ranges [bar]

GW 500 A4 0,1 - 0,5
GW 2000 A4 0,4 - 2,0
GW 6000 A4 1,0 - 6,0

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)
Pressure switch switches when the pressure exceeds or drops below the adjusted setpoint.

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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

Additional accessories for pressure switch GW 500 A4

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

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flue gases and combustion prod-
ucts**


**GW 500 A4
GW...A4 HP
GW...A4/2 HP**


DUNGS®
Combustion Controls


Technical overview

1 mbar = 100 Pa = 0,1 kPa ≈ 10 mm WS

1 Pa = 0,01 mbar ≈ 0,1 mm WS

Type	Version [-Ag-M-V0]	Order No.	Setting range [bar]		Degree of protection	Differential pressure switch Δp [mbar]
GW...A4 Pressure switch	GW 500 A4 HP	232 034	0,1 - 0,5		IP 54	≤ 30
	GW 2000 A4 HP	232 037	0,4 - 2,0		IP 54	≤ 50
	GW 6000 A4 HP	232 039	1,0 - 6,0		IP 54	≤ 300
Supplied in separate packaging						

Type	Version [-Ag-M-V0]	Order No.	Setting range [bar]		Degree of protection	Differential pressure switch Δp [mbar]
GW...A4/2 Pressure switch	GW 500 A4/2 HP	232 105	0,1 - 0,5		IP 65	≤ 30
	GW 2000 A4/2 HP	232 106	0,4 - 2,0		IP 65	≤ 50
	GW 6000 A4/2 HP	232 107	1,0 - 6,0		IP 65	≤ 300
Supplied in separate packaging						

Type	Version [-Ag-G3-V0]	Order No.	Setting range [bar]		Degree of protection	Differential pressure switch Δp [mbar]
GW...A4/2 Pressure switch	GW 500 A4/2 HP	232 713	0,1 - 0,5		IP 65	≤ 30
	GW 2000 A4/2 HP	232 714	0,4 - 2,0		IP 65	≤ 50
	GW 6000 A4/2 HP	232 715	1,0 - 6,0		IP 65	≤ 300
Supplied in separate packaging including line socket						

Type	Version [Ag-M-MS9-V0]	Order No.	Setting range [bar]		Degree of protection	Differential pressure switch Δp [mbar]
GW 500 A4 Pressure switch	GW 500 A4	157 060	0,1 - 0,5		IP 54	≤ 10
Delivery in bulk packaging						

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