GGAO-A4-4
Differential Gas Pressure Switch
Installation Instructions

USA CDN

DUNGS®
Combustion Controls

Table of Contents

Approvals

C SA US

CSA Certified:
CSA C22.2 No.14
CSA C22.2 No.0
UL 508
File # 2620681

Attention

The installation and maintenance of this product must be done under the supervision of an experienced and trained specialist. Never perform work if gas pressure or power is applied, or in the presence of an open flame.

Check the ratings in the specifications to verify that they are suitable for your application.

Please read the instruction before installing or operating. Keep the instruction in a safe place. You find the instruction also at www.dungs.com. If these instructions are not heeded, the result may be personal injury or damage to property.

On completion of work on the pressure switch, perform a leakage and function test.

Any adjustment and application-specific adjustment values must be made in accordance with the equipment manufacturers instructions.

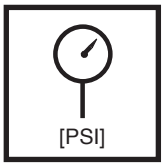
This product is intended for installations covered by, but not limited to, the following fuel gas codes and standards: NFPA 54 or IFGC (International Fuel Gas Code) or the following equipment codes and standards: NFPA 37, NFPA 85, NFPA 86, ANSI Z83.4/CSA 3.7, ANSI Z83.18/CSA 4.9, ANSI Z21.13, CSD-1 and UL 795.

Explanation of symbols

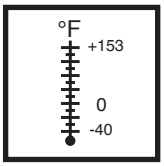
1, 2, 3 ... = Action
• = Instruction

Specification

GGAO-A4… SPDT gas-to-gas differential gas pressure switch requires no auxiliary power. The GGAO-A4… is suitable for making and/or breaking a circuit when the set point is exceeded or undershot. Automatic reset when pressure returns below or above set point.

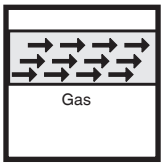


Max. Operating Pressure
MOP = 7 PSI (500 mbar)

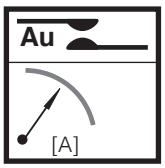


Ambient / Medium Temperature
-40 °F ... +153 °F
(-40 °C … +67 °C)

Electrical Connection
Screw terminals via 1/2" NPT conduit connection



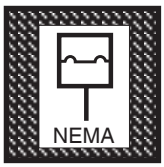
Gases (both + and - connection)
Suitable for natural gas, propane, butane, air & non aggressive gases.
Materials in contact with Gas (+ connection)
Housing: Aluminum
Diaphragm: NBR-based rubber
Materials in contact with Gas/Air (- connection)
Housing: Aluminum & Steel
Diaphragm: NBR-based rubber
Switching contact: Gold (Au)



Contact Rating
AC 10 A resistive @ 120 VAC
AC 8 A inductive @ 120 VAC
DC min. 20 mA @ 12 - 48 VDC
DC max. 1 A @ 12 - 48 VDC

DDC-Application
(gold contact ratings)
min. 5 mA @ 5 VDC
max. 20 mA @ 24 VDC

Switch
SPDT-Single pole, double throw
Switch action
Pressure, vacuum of differential pressure switch



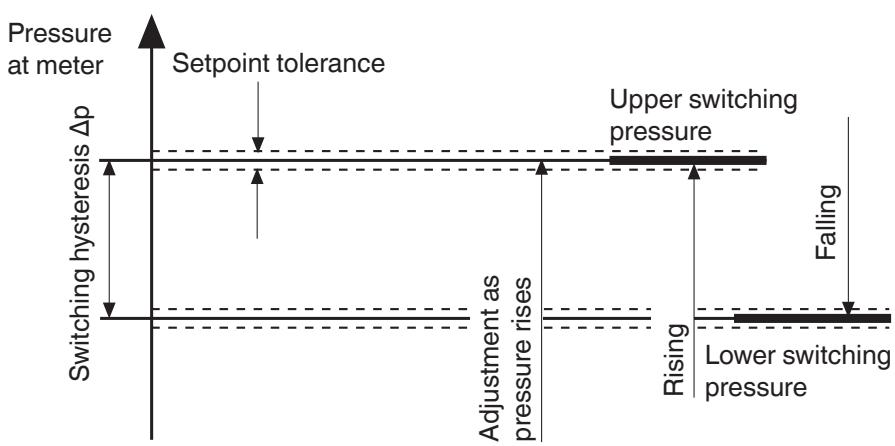
Enclosure
NEMA Type 4

Model Description & Part Number

Type	Version	Description	Order No.	Setting range in. W.C.	Switching hysteresis in. W.C.	Factory Calibration
Gas differential pressure switch	GGAO-A4-4-2	Threaded connection	271329	0.16 - 1.20	≤ 0.12	
	GGAO-A4-4-3	Threaded connection	271330	0.40 - 4.00	≤ 0.20	
	GGAO-A4-4-5	Threaded connection	271331	2.00 - 20.00	≤ 0.40	
	GGAO-A4-4-6	Threaded connection	271332	12.00 - 60.00	≤ 1.2	

Operation

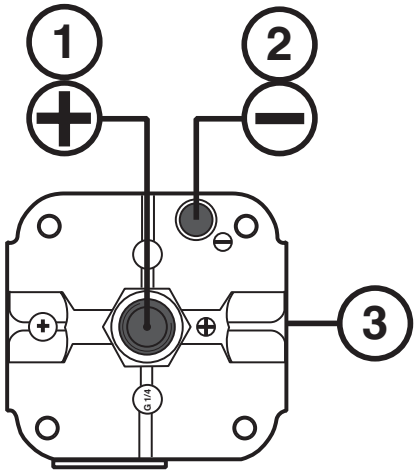
Definition of switching hysteresis Δp
The pressure difference between the upper and lower switching pressures.



Pressure Conn. & Mounting GGAO-A4

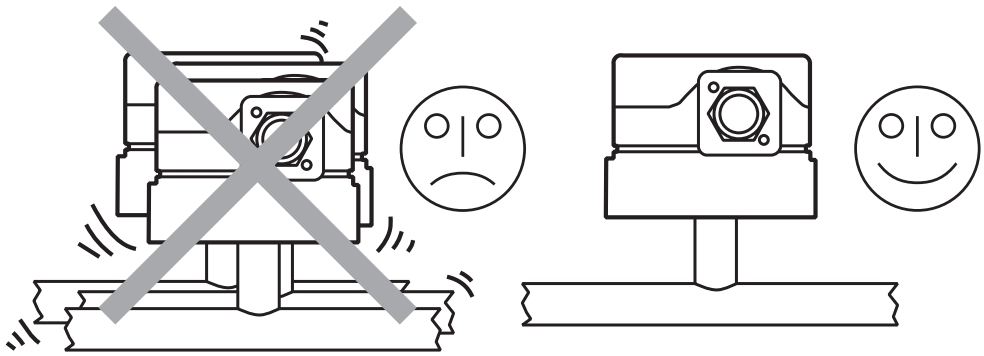
Threaded Connection

1 Pressure connection (+) 1/4" NPT, Gas or Air
2 Pressure connection (–) 1/8" NPT, Gas or Air. May also be used as an atmospheric vent connection.
3 Test nipple p (+) Ø 0.35" (9 mm), integrated

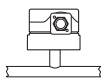
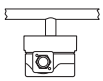
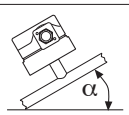


GGAO-A4... Mounting Procedure

- Apply good quality pipe sealant to the male threads only.
- Use 13/16" Wrench to secure the switch to the pipe.
  DO NOT Exceed 13.2 lb-in of Torque on 1/8" Connections
  DO NOT Exceed 17.7 lb-in of Torque on 1/4" Connections
- After installation is complete, perform a leak test.

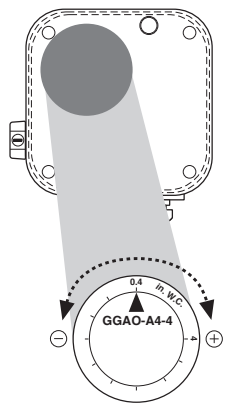


Installation Position

	Standard installation position is **vertical** upright diaphragm.
	When installed **horizontally**, the pressure switch switches at a pressure higher by approx. 0.2 in. W.C.
	When installed **upside down**, the pressure switch switches at a pressure lower by approx. 0.2 in. W.C.
	When installed in **other positions**, the pressure switch switches at pressure deviating from the set reference value by max. ± 0.2 in. W.C. (0.5 mbar)

Adjustment

The scale indicates the setpoint when switch is mounted in the vertical position and increasing pressure.



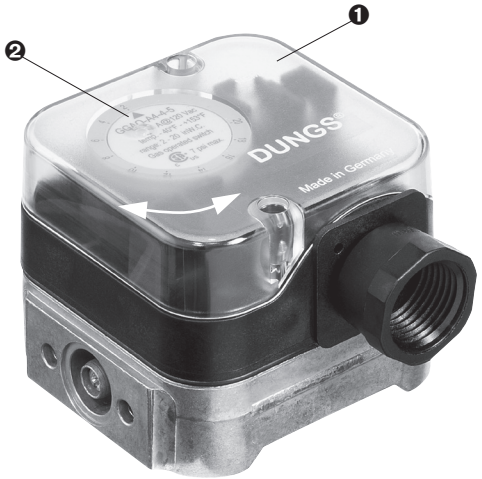
Operation & Adjustment

Adjusting the Set Point

1. Remove the clear cover ❶ from the switch.
2. Adjust the switch to the desired set point by turning the dial. The black arrow on the dial indicates the set point ❷.
3. After adjusting the set point, verify that the pressure switch operates as intended by using an accurate pressure gauge connected upstram of the switch.
4. Replace the clear cover.

Automatic Reset and Operation

The NC contact of the GGAO-A4... breaks when pressure rises above the set point. It makes automatically when pressure falls below set point.

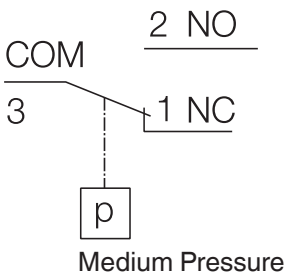


Wiring

1. Remove the clear cover from the switch.
2. Use 14 or 16 AWG wire rated for at least 75 °C.
3. Route the wires through the conduit connector.
4. Connect the wiring to the appropriate screw terminals.
5. Replace the clear cover from the switch.

All wiring must comply with local electrical codes, ordinances and regulations.

Do not exceed the switch ratings given in the specifications and on the switch.



Switching function

As pressure rises above set point:
1 NC opens, 2 NO closes

As pressure falls below set point:
2 NO opens, 1 NC closes

Maintenance & Testing

Annually check the switch for proper operation

- Connect a meter capable of reading +/- 0.1 ohms to the NC and COM contacts.
- Measure the resistance across the NC and COM contacts. If the resistance is more than 1.0 ohm, the switch should be replaced, since this indicates that the switch contacts are starting to either corrode or carbonizing.
- Apply appressure to the + air pressure connection, and confirm that the NC contact breaks when pressure rises above the set point and that the NO contact makes. The NC contact will make automatically when pressure falls below the set point pressure.
- Connect a meter capable or reading +/- 0.1 ohms to the NO and COM contacts.
- Measure the resistance across the NO and COM contacts. If the resistance is more than 1.0 ohm, the switch should be replaced, since this indicates that the switch contacts are starting to either corrode or carbonizing.

Accessories & Replacement

Accessory for pressure switch	Order No.
Replacement cover (cover, O-ring, 2 screws)	262248
Mounting bracket (metal) (1 pcs)	230288
120 VAC light mounting set (yellow)	231772
24 VDC/VAC light mounting set (yellow)	231774
Replacement conduit adapter M 20 to 1/2” NPT	240671
DIN connector (female plug)	210318
DIN connector (male plug)	219659

We reserve the right to make modifications in the course of technical development.

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