

# Differential Pressure Switch for air, flue and exhaust gases

AA-A2...

**DUNGS®**  
Combustion Controls



## Approvals

### UL Listed

- UL 353
- File # MH 16628

### CSA Certified

- CSA C22.2 No. 14
- File # 201527

### FM Approved

- Class 3510, 3530
- File # J.I. 0D6A1.AF

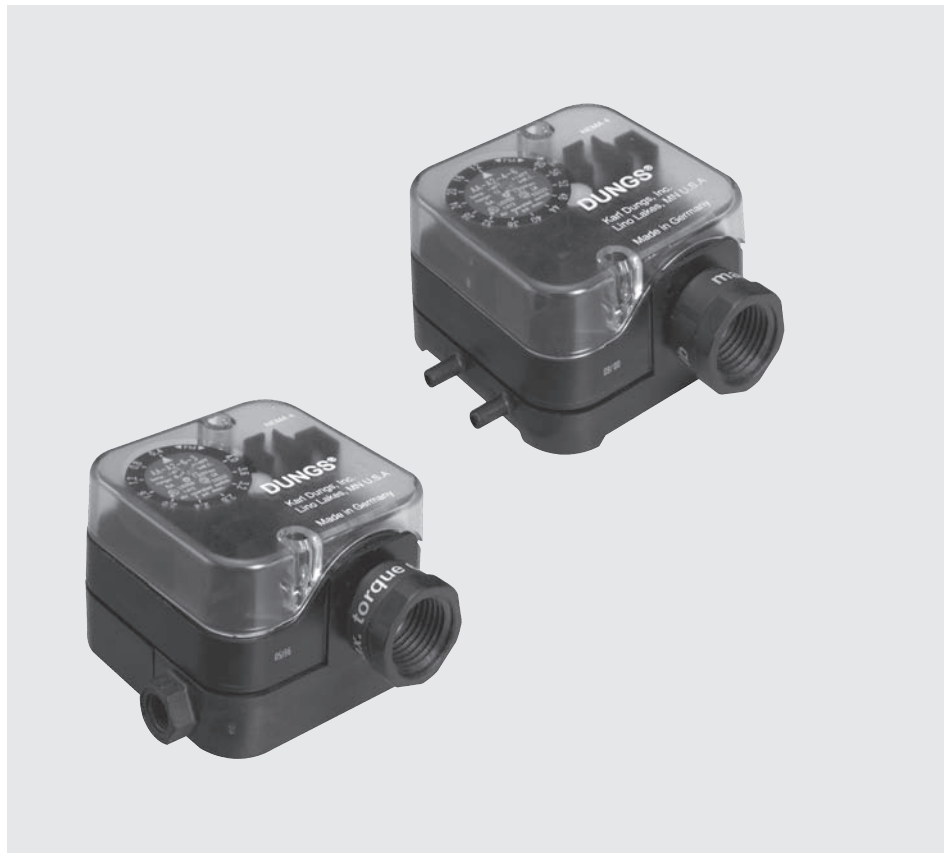
### Commonwealth of Massachusetts Approved Product

- Approval code G3-0106-191
- Air pressure switch for differential, vacuum or pressure

### Codes and Standards

This product is recommended for installations covered by but not limited to NFPA 85, NFPA 86, ANSI Z83.4/CSA 3.7, ANSI Z83.18/CSA 4.9, ANSI Z21.13, CSD-1, UL 795, CSA B149.1, CSA B149.3 and CSA B149.6.

**DUNGS is an ISO 9001  
manufacturing facility.**



## Description

AA-A2... differential pressure switches are field adjustable, compact pressure switches for automatic burner controls. Available with hose or NPT threaded connections.

AA-A2-4... differential pressure switches are suitable for making and/or breaking a circuit when the medium pressure changes relative to the set point. AA-A2-4... versions feature hose connections.

AA-A2-6... differential pressure switches are suitable for making and/or breaking a circuit when the medium pressure changes relative to the set point. AA-A2-6... versions feature NPT threaded connections that also include a test button in the lower housing.

## Application

Differential pressure monitoring in firing, ventilation and air-conditioning systems. The AA-A2... can be used as a pressure, vacuum or differential pressure switch for air and non-aggressive gases. Not suitable for natural gas, propane, butane and other combustible gases.

**AA-A2...** SPDT differential pressure switch in pressure and vacuum ranges. The differential pressure acts via the diaphragm against the force of the setting spring on the microswitch. The pressure switch operates without any auxiliary power

## Specifications

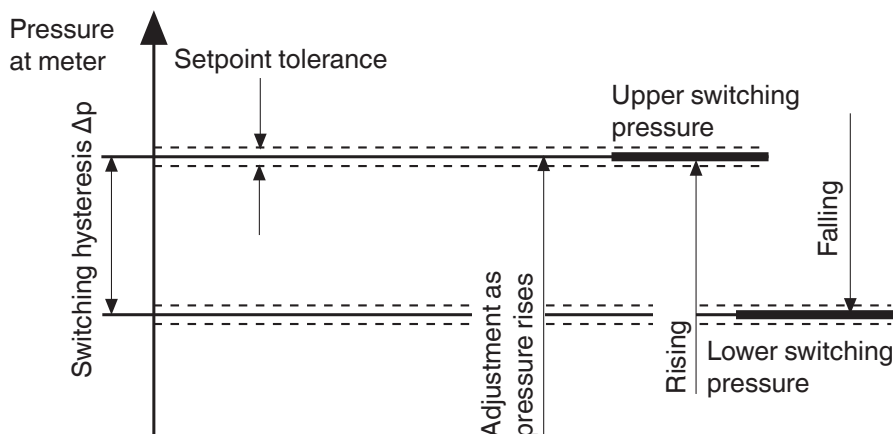
|                         |                                                                                                               |                                                                                                                |
|-------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Max. operating pressure | 7 PSI (500 mbar)                                                                                              |                                                                                                                |
| Pressure connection     | <b>AA-A2-4 Hose connection</b><br>5/32" (4.6 mm) dia. positive<br>5/32" (4.6 mm) dia. negative                | <b>AA-A2-6 Threaded connection</b><br>1/4" NPT positive<br>1/8" NPT negative<br>5/32" (4.6 mm) test connection |
| Temperature range       | Ambient temperature<br>Medium temperature                                                                     | -40 °F to +140 °F (-40 °C to +60 °C)<br>-40 °F to +140 °F (-40 °C to +60 °C)                                   |
| Materials               | Housing:<br>Switch:<br>Diaphragm:<br>Switching contact:                                                       | Polycarbonate<br>Polycarbonate<br>NBR-based rubber<br>Silver (Ag)                                              |
| Electrical ratings      | AC eff.<br>DC                                                                                                 | min. 24 V max. 250 V<br>min. 24 V max. 48 V                                                                    |
| Current ratings         | AC 5A resistive @ 120 VAC<br>AC 3A inductive @ 120 VAC<br>DC min. 20 mA @ 24 VDC<br>DC max. 1A @ 12 - 48 VDC  |                                                                                                                |
| Electrical connection   | Screw terminals via 1/2" NPT conduit connection                                                               |                                                                                                                |
| Enclosure rating        | NEMA Type 4                                                                                                   |                                                                                                                |
| Setting tolerance       | ±15% switching point deviation referred to set point, adjusted as pressure rises, vertical diaphragm position |                                                                                                                |
| Installation position   | Multipoised                                                                                                   |                                                                                                                |



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.

### Definition of switching hysteresis $\Delta p$

The pressure difference between the upper and lower switching pressures.



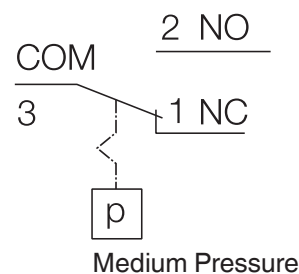
### AA-A2... switching function

**As pressure rises:**

1 NC opens, 2 NO closes

**As pressure falls:**

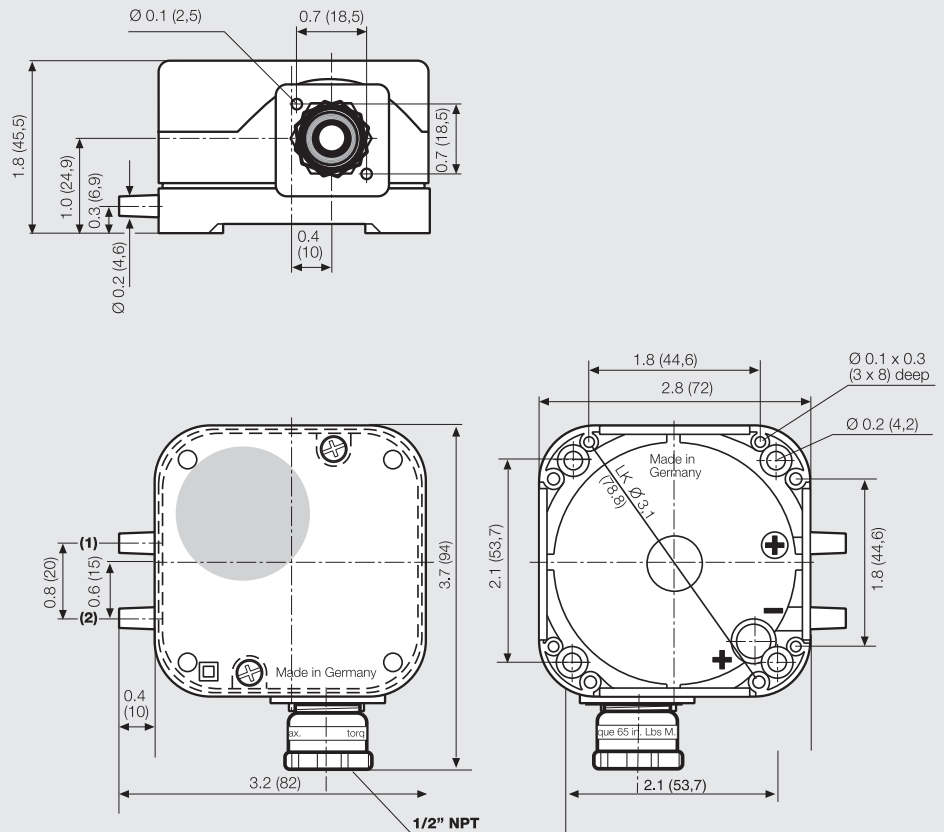
1 NC closes, 2 NO opens



### Dimensions inch (mm)

- 1 Pressure connection (+)
- 2 Pressure connection (-)
- 3 Test nipple p(+)

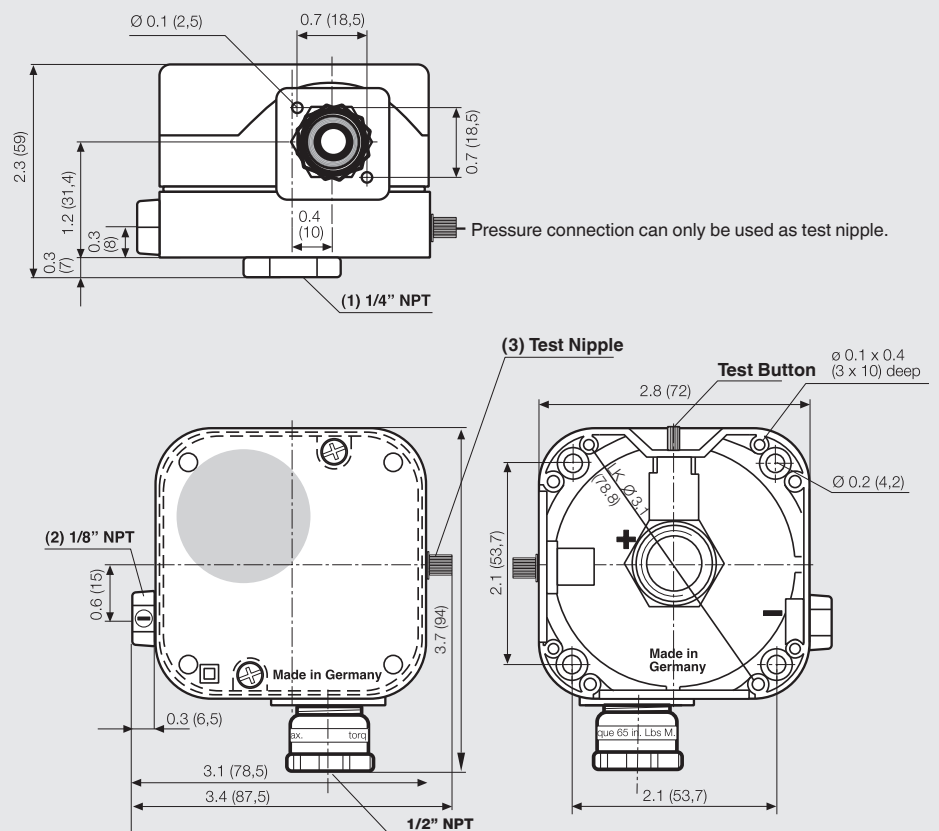
### AA-A2-4... Hose connection



### Dimensions inch (mm)

- 1 Pressure connection (+)
- 2 Pressure connection (-)
- 3 Test nipple p(+)

### AA-A2-6... Threaded connection



### Test button

The AA-A2-6... threaded version is equipped with a test button. When the test button is pressed, the connection to the 1/4" NPT pressure connection is

interrupted and the pressure below the diaphragm is relieved. The microswitch of the pressure switch changes the contact position from NO to NC.

If the test button is released, the pressure below the diaphragm is built up again and the microswitch changes to its original position.

**Differential Pressure Switch  
for air, flue and exhaust gases**

**AA-A2...**



| Type               | Version   | Description         | Order No. | Setting range<br>in. W.C | Switching<br>hysteresis<br>in. W.C. | Factory<br>Calibration |
|--------------------|-----------|---------------------|-----------|--------------------------|-------------------------------------|------------------------|
| <b>AA-A2-4-...</b> | AA-A2-4-2 | Hose connection     | 217-060A  | 0.16 - 1.20              | ≤ 0.12                              |                        |
|                    | AA-A2-4-3 | Hose connection     | 217-061A  | 0.40 - 4.00              | ≤ 0.20                              |                        |
|                    | AA-A2-4-5 | Hose connection     | 217-062A  | 2.00 - 20.00             | ≤ 0.40                              |                        |
|                    | AA-A2-4-6 | Hose connection     | 217-063A  | 12.00 - 60.00            | ≤ 1.20                              |                        |
| <b>AA-A2-6-...</b> | AA-A2-6-2 | Threaded connection | 217-329A  | 0.16 - 1.20              | ≤ 0.12                              |                        |
|                    | AA-A2-6-3 | Threaded connection | 217-330A  | 0.40 - 4.00              | ≤ 0.20                              |                        |
|                    | AA-A2-6-5 | Threaded connection | 217-331A  | 2.00 - 20.00             | ≤ 0.40                              |                        |
|                    | AA-A2-6-6 | Threaded connection | 217-332A  | 12.00 - 60.00            | ≤ 1.20                              |                        |

**Accessories for pressure switch**

|                                                                         | Order No.                              |
|-------------------------------------------------------------------------|----------------------------------------|
| Klima-Set (Duct mounting kit)                                           | 217-897                                |
| Replacement cover                                                       | 228-732                                |
| Mounting plate (plastic)                                                | 230-301 (recommended mounting bracket) |
| Mounting bracket (plastic)                                              | 230-273 (optional mounting bracket)    |
| 120 VAC light mounting set (orange)                                     | 231-772                                |
| 120 VAC light only<br>(for switches with kit 231-772 already installed) | 244-156                                |
| 24 VDC/VAC light mounting set (orange)                                  | 231-774                                |
| Replacement conduit adapter PG 11 to 1/2" NPT                           | 220-566                                |
| Replacement conduit adapter M 20 to 1/2" NPT                            | 240-671                                |
| DIN connector (female plug)                                             | 210-318                                |
| Male plug for DIN connector                                             | 219-659                                |

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

**Karl Dungs Inc.**  
**3890 Pheasant Ridge Drive NE**  
**Suite 150**  
**Blaine, MN 55449, U.S.A.**  
**Phone 763 582-1700**  
**Fax 763 582-1799**  
**e-mail [info@karldungsusa.com](mailto:info@karldungsusa.com)**  
**Internet <http://www.dungs.com/usa/>**

**Karl Dungs GmbH & Co. KG**  
**P.O. Box 12 29**  
**D-73602 Schorndorf, Germany**  
**Phone +49 (0)7181-804-0**  
**Fax +49 (0)7181-804-166**  
**e-mail [info@dungs.com](mailto:info@dungs.com)**  
**Internet <http://www.dungs.com>**