

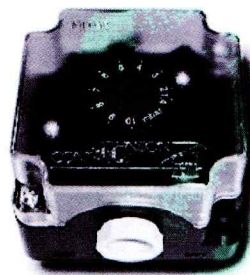
## Series P233A/F series Sensitive (differential) Pressure Switch for Air

### Introduction

This (differential) pressure switch is used to sense flow of air, single or differential air pressure.

Typical applications include:

- Detect clogged filter
- Detect frost or ice build-up on air conditioning coils
- Air proving in heating or ventilation ducts.
- Maximum airflow controller for variable air volume system.
- Detect blocked flue or vent
- Monitor fan operation



Series P233A Sensitive Pressure switch for Air

### Description

This switch senses a change in the (differential) pressure (either velocity pressure or pressure drop across a restriction) as the airflow changes. The (differential) pressure is applied to the two sides of a diaphragm in the control. The spring-loaded diaphragm moves and actuates the switch. The series P233A/F can also be used to detect small positive gauge pressure by using only the high-

pressure connection and leaving the low-pressure port open. Or to detect a vacuum by using only the low pressure connection and leaving the high-pressure port open to ambient pressure.

### Feature and Benefits

|   |   |
|---|---|
| <input type="checkbox"/> One switch to measure relative pressure, vacuum or differential pressure | Provides versatility to match various applications                |
| <input type="checkbox"/> Various accessories available  | Provides flexibility  |
| <input type="checkbox"/> Compact and durable construction   | Provides durability in combination with neutral gases             |
| <input type="checkbox"/> Easy mounting and wiring, various mounting possibilities                 | Reduce installation time  |
| <input type="checkbox"/> Standard PG 11 nipple and optional DIN 43650 connector                   | Provides flexibility in wiring connections                        |
| <input type="checkbox"/> Accurate and stable switch point   | Provides high accuracy and repeatability                          |
| <input type="checkbox"/> SPDT contact standard  | Can be used for "normally open" or "normally closed" applications |

**Note**

These controls are designed for use only as operating controls. Where an operating control failure would result in personal injury or loss of property it is the responsibility of the installer to add devices or systems that protect against, or warn of, control failure.

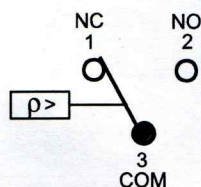
**Contact function**

Fig. 1

**Adjustment**

The scale values indicate the approximate switching point at increasing pressure (contacts 3-1 to open). If accurate setting is required, the approximate setting on the scale should be corrected by using a pressure gauge.

**Mounting**

- Select a location where vibrations are minimal.
- When mounting in horizontal positions the following corrections should be taken into account.

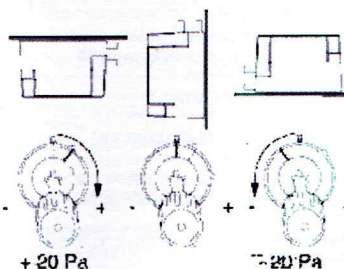


Fig. 2

**Repair and replacement**

Repair is not possible. In case of a defective or improperly functioning control, please check with your nearest supplier. When contacting the supplier for a replacement you should state the type/model number of the control. This number can be found on the side of the control.

**Type number selection table**

| Order number | Setpoint range (mbar) | Accessories incl.                 | Remarks     |
|--------------|-----------------------|-----------------------------------|-------------|
| P233A-4-AAC  | 0,5 to 4              | No                                |             |
| P233A-4-AAD  | 0,5 to 4              | No                                | Bulk pack   |
| P233A-4-AHC  | 0,5 to 4              | GMT008N600R + BKT024N002R         |             |
| P233A-4-PHC  | 0,5 to 4              | GMT008N600R + BKT024N002R         | Scale in Pa |
| P233A-4-PAC  | 0,5 to 4              |                                   | Scale in Pa |
| P233A-4-AKC  | 0,5 to 4              | FTG015N602R (2x) + 2m tube 4/7 mm |             |
| P233A-10-AAC | 1,4 to 10             | No                                |             |
| P233A-10-AHC | 1,4 to 10             | GMT008N600R + BKT024N002R         |             |
| P233A-10-PHC | 1,4 to 10             | GMT008N600R + BKT024N002R         | Scale in Pa |
| P233A-10-AAD | 1,4 to 10             | No                                | Bulk pack   |
| P233A-10-AKC | 1,4 to 10             | FTG015N602R (2x) + 2m tube 4/7 mm |             |
| P233A-50-AAC | 6 to 50               | No                                |             |
| P233F-P3-AAD | 0,3 fixed setting     | No                                | Bulk pack   |

**Accessories**

**BKT024N002R**  
Mounting Bracket for P233A/F



**GMT008N600R**  
Duct mounting kit

Including:  
2m PVC tube 4/7 mm  
2 grommets (drilling hole 16mm)



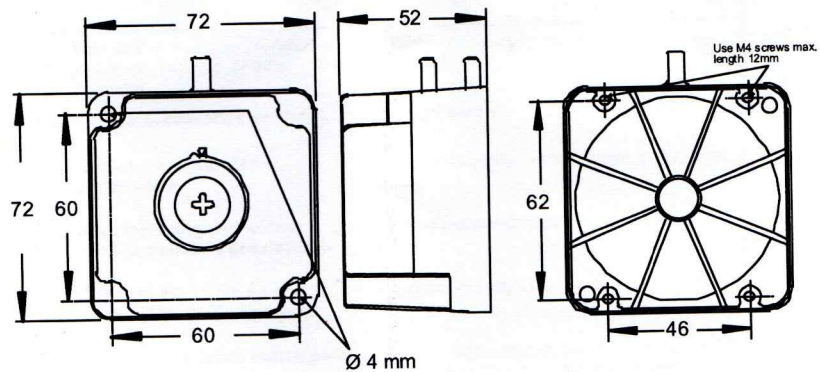
**FTG015N602R**  
Duct mounting kit (straight)

Including:  
2 mounting screws  
O-ring



**FTG015N603R**  
Duct mounting kit (bent)

Including:  
2 mounting screws  
O-ring

**Dimensions (mm)**

## Specifications

|  | Setpoint range<br>0,5 to 4mbar   | Setpoint range<br>1,4 to 10mbar | Setpoint range<br>6 to 50mbar |
|--|--|---------------------------------|-------------------------------|
| <b>Differential (fixed)</b>              | = 0,25mbar   | = 0,5mbar                       | = 1,2mbar                     |
| <b>Sample media</b>                      | Air, non-inflammable gases, non-aggressive gases   |                                 |                               |
| <b>Max. continuous overpressure</b>      | 300 mbar   |                                 |                               |
| <b>Calibration position</b>              | With diaphragm vertical. (For horizontal position make corrections as mentioned in fig 2)  |                                 |                               |
| <b>Calibration temperature</b>           | 20°C   |                                 |                               |
| <b>Operating temp. Limits</b>            | -15 to +60 °C  |                                 |                               |
| <b>Storage temperature</b>               | -35 to 60°C  |                                 |                               |
| <b>Operating/storage humidity</b>        | 10 to 95%RH, non condensing  |                                 |                               |
| <b>Material</b>                          | Cover: Polycarbonate<br>Case: Glass reinforced polycarbonate<br>Bottom: Glass reinforced polycarbonate<br>Diaphragm: Nitrile butadiene rubber<br>Switch: Brass, Phosphorbronze, Silvernickel |                                 |                               |
| <b>Weight</b>                            | 115 g<br>330 9 For models including grommet and bracket  |                                 |                               |
| <b>Contact rating<br/>(SPDT contact)</b> | I <sub>max</sub> at 250Vac: 5A at cosφ =1; 2A at cosφ =0,6   |                                 |                               |
| <b>Life cycle</b>                        | At I <sub>max</sub> : 200.000 operations (@ 60°C)<br>50.000 operations (@ -15°C)   |                                 |                               |
| <b>Electrical connections</b>            | Screw terminals, wire diameter 0,5 to 4mm <sup>2</sup><br>(Connector according DIN 43650 optional)   |                                 |                               |
| <b>Protection class</b>                  | IP 54  |                                 |                               |
| <b>Approvals</b>                         | 73/23/EEC<br>89/336/EEC  |                                 |                               |

Note: 1mbar = 100 Pa = 9,8 mm WC

The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, consult the local Johnson Controls office or representative. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products.

**JOHNSON  
CONTROLS**

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