

P233A/F

Sensitive (differential) Pressure Switch for Air

Product Bulletin

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

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.

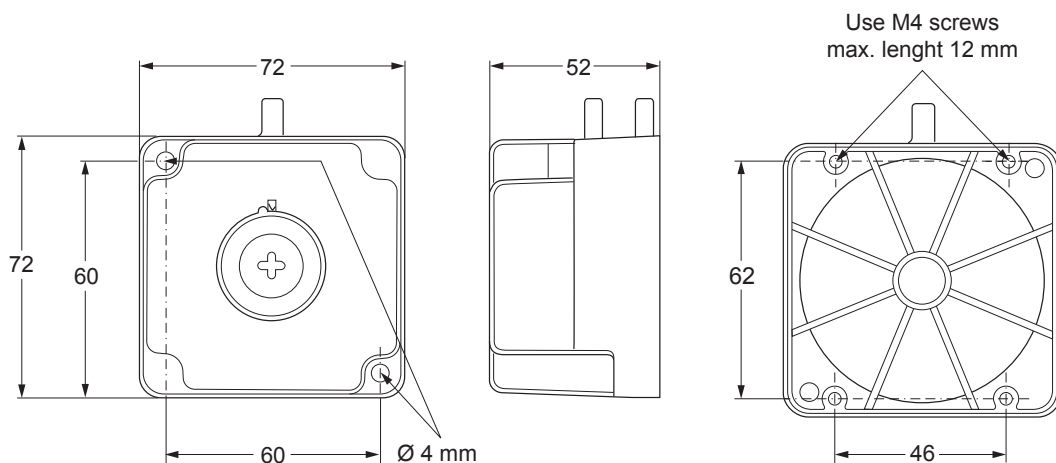
Or to detect a vacuum by using only the low pressure connection and leaving the high-pressure port open to ambient pressure.



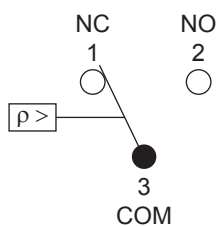
Features and Benefits

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

Dimensions (in mm)



Contact Function



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.

Repair and Replacement

Repair is not possible. In case of a defective or improperly functioning control, please check with your nearest supplier.

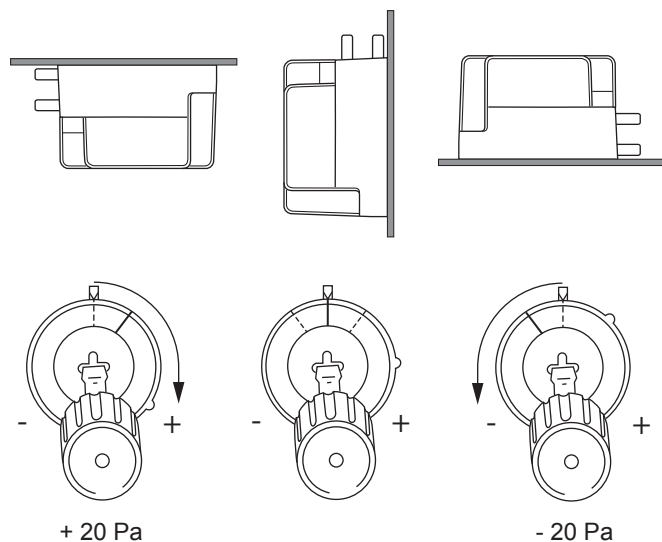
When contacting the supplier for a replacement you should state the type/model number of the control. This number can be found on the side of the control.

Mounting



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.

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



Ordering Information

Ordering Codes

| Codes | Setpoint Range | Accessories Included | Remarks |
|--------------|------------------------|------------------------------------|-----------|
| P233A-4-AAC | 0,5 to 4 mbar | --- | |
| P233A-4-AAD | | | Bull pack |
| P233A-4-AHC | | GMT008N600R + BKT024N002R | |
| P233A-4-AKC | | FTG015N602R (2x) + 2 m tube 4/7 mm | |
| P233A-4-PAC | 50 to 400 Pa | --- | |
| P233A-4-PAD | | | Bull pack |
| P233A-4-PHC | | GMT008N600R + BKT024N002R | |
| P233A-4-PKC | | FTG015N602R (2x) + 2 m tube 4/7 mm | |
| P233A-6-AAD | 0,5 to 6 mbar | | Bull pack |
| P233A-6-AAC | | --- | |
| P233A-10-AAC | 1,4 to 10 mbar | | |
| P233A-10-AAD | | | Bull pack |
| P233A-10-AHC | | GMT008N600R + BKT024N002R | |
| P233A-10-AKC | | FTG015N602R (2x) + 2 m tube 4/7 mm | |
| P233A-10-PAC | 140 to 1000 Pa | --- | |
| P233A-10-PHC | | GMT008N600R + BKT024N002R | |
| P233A-10-PKC | | FTG015N602R (2x) + 2 m tube 4/7 mm | |
| P233A-50-AAC | 6 to 50 mbar | | |
| P233F-P3-AAC | 0,3 mbar fixed setting | --- | |

Accessories

| Codes | Description | |
|-------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| BKT024N002R | Mounting Bracket for P233 A/F |  |
| GMT008N600R | Duct mounting kit Including: 2 m PVC tube 4/7 mm 2 grommets (drilling hole 16 mm) |  |
| FTG015N602R | Duct mounting kit Including: 2 mounting screws O-ring (straight) |  |
| FTG015N603R | Duct mounting kit (bent) Including: mounting screws O-ring |  |

Technical Specification

| | | | |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------|
| Product | P233A | | |
| | Setpoint range 0,5 to 4 mbar | Setpoint range 1,4 to 10 mbar | Setpoint range 6 to 50 mbar |
| Differential (fixed) | ≤ 0,25 mbar | ≤ 0,5 mbar | ≤ 1,2 mbar |
| Sample Media | Air, non inflammable gases, non-aggressive gases | | |
| Max. Continuous Overpressure | 300 mbar | | |
| Calibration Position | With diaphragm vertical (For horizontal position see mounting paragraph) | | |
| Temperature | | | |
| | Calibration | 20 °C | |
| | Operating Limits | -15 to 60°C | |
| | Storage | -35 to 60°C | |
| Operating / Storage Humidity | 10 to 95% RH, non condensing | | |
| Material | | | |
| | Cover | Polycarbonate | |
| | Case | Glass reinforced polycarbonate | |
| | Bottom | Glass reinforced polycarbonate | |
| | Diaphragm | Nitrile butadiene rubber | |
| | Switch | Brass, Phosphorbronze, Silvernickel | |
| Weight | 115 g 330 g for models including grommet and bracket | | |
| Contact Rating (SPDT contact) | I _{max} at 250 Vac: 5A at cosφ=1; 2A at cosφ=0,6 | | |
| Life Cycle | At I _{max} : 200.000 operations (@ 60°C) 50.000 operations (@ -15°C) | | |
| Electrical Connections | Screw terminals, wire diameter 0,5 to 4 mm ² (Connector according DIN 43650 optional) | | |
| Protection Class | IP54 | | |
| CE Compliance | Johnson Controls declares that these products are in compliance with the essential requirements and other relevant provisions of the EMC Directive 2014/30/EU, Low Voltage Directive 2014/35/EU. GAR 2016/426. | | |

Note: 1 mbar = 100 Pa = 9.8 mm WC

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



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