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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



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-

Series P233A Sensitive Pressure switch for Air

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

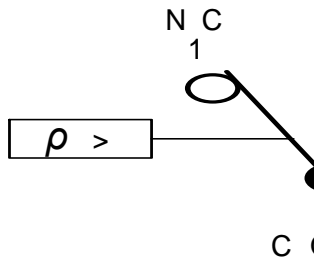


Fig. 1

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.

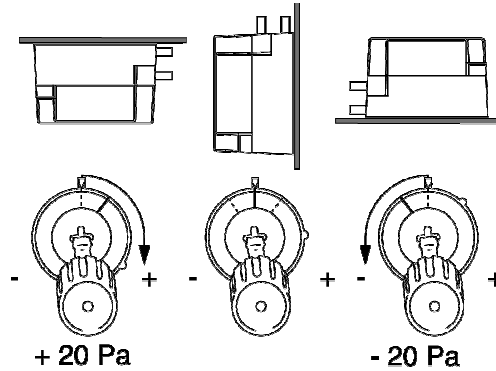


Fig. 2

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	Accessories incl.	Remarks
P233A-4-AAC	0,5 to 4 mbar	No	
P233A-4-AAD	0,5 to 4 mbar	No	Bulk pack
P233A-4-AHC	0,5 to 4 mbar	GMT008N600R + BKT024N002R	
P233A-4-AKC	0,5 to 4 mbar	FTG015N602R (2x) + 2m tube 4/7 mm	
P233A-4-PAC	50 to 400 Pa	No	
P233A-4-PAD	50 to 400 Pa	No	Bulk pack
P233A-4-PHC	50 to 400 Pa	GMT008N600R + BKT024N002R	
P233A-4-PKC	50 to 400 Pa	FTG015N602R (2x) + 2m tube 4/7 mm	
P233A-6-AAD	0,5 to 6 mbar	No	Bulk pack
P233A-10-AAC	1,4 to 10 mbar	No	
P233A-10-AAD	1,4 to 10 mbar	No	Bulk pack
P233A-10-AHC	1,4 to 10 mbar	GMT008N600R + BKT024N002R	
P233A-10-AKC	1,4 to 10 mbar	FTG015N602R (2x) + 2m tube 4/7 mm	
P233A-10-PAC	140 to 1000 Pa	No	
P233A-10-PHC	140 to 1000 Pa	GMT008N600R + BKT024N002R	
P233A-10-PKC	140 to 1000 Pa	FTG015N602R (2x) + 2m tube 4/7 mm	
P233A-50-AAC	6 to 50 mbar	No	
P233F-P3-AAD	0,3 mbar fixed setting	No	Bulk pack

Specifications

	Setpoint range 0,5 to 4mbar	Setpoint range 1,4 to 10mbar	Setpoint range 6 to 50mbar
Differential (fixed)	≤ 0,25mbar	≤ 0,5mbar	≤ 1,2mbar
Sample media	Air, non-inflammable gases, non-aggressive gases		
Max. continuous overpressure	300 mbar		
Calibration position	With diaphragm vertical. (For horizontal position make corrections as mentioned in fig 2)		
Calibration temperature	20°C		
Operating temp. Limits	-15 to +60 °C		
Storage temperature	-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 250Vac:	5A at $\cos\phi=1$; 2A at $\cos\phi=0,6$	
Life cycle	At I_{max} :	200.000 operations (@ 60°C) 50.000 operations (@ -15°C)	
Electrical connections	Screw terminals, wire diameter 0,5 to 4mm ² (Connector according DIN 43650 optional)		
Protection class	IP 54		
Approvals	73/23/EEC 89/336/EEC 90/396/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.



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