

Specification for

Pressure and vacuum switches

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Industrial-process Measurement and Control Standards Policy Committee (PCL/-) to Technical Committee PLC/1, upon which the following bodies were represented:

- British Coal Corporation
- British Gas plc
- Department of Energy (Gas and Oil Measurement Branch)
- Department of Trade and Industry (National Weights and Measures Laboratory)
- Electricity Industry in United Kingdom
- Energy Industries Council
- Engineering Equipment and Materials Users' Association
- GAMBICA (BEAMA Ltd.)
- Health and Safety Executive
- Institution of Gas Engineers

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- British Compressed Air Society
- British Compressed Gases Association
- British Fluid Power Association
- British Pressure Gauge Manufacturers Association
- Department of Trade and Industry (National Engineering Laboratory)
- Institute of Measurement and Control
- Society of British Water Industries

This British Standard, having been prepared under the direction of the Industrial-process Measurement and Control Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 31 January 1992

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Foreword

This British Standard has been prepared under the direction of the Industrial-process Measurement and Control Standards Policy Committee. It supersedes BS 6134:1981 which is withdrawn.

This edition introduces technical changes but it does not reflect a full review or revision of the standard, which will be undertaken in due course. In addition, this edition includes revisions implemented by Amendment No. 1, published in 1982, to BS 6134:1981.

All changes incorporated in this edition of BS 6134 are indicated by a side line in the margin.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies general requirements for pressure and vacuum switches for industrial use and gives performance characteristics that are to be stated by the manufacturer. It is applicable to switches suitable for use up to 1 000 bar and with fluids and in atmospheres that are non-flammable, non-corrosive and non-toxic. It is also applicable to switches suitable for higher pressures, other fluids or atmospheres if in other respects the switches meet the requirements of their special application.

The tests to check compliance with the performance requirements of this standard are type tests (see clause 9) and routine tests (see clause 10).

This standard is not applicable to pressure difference switches, pressure indicating devices or switches with non-electrical outputs.

For switches for use in explosive atmospheres, additional requirements are specified in BS 4683 and BS 5501.

2 References

The titles of the publications referred to in this standard are listed on the inside back cover.

3 Definitions

For the purposes of this British Standard the following definitions apply.

NOTE Where the word “pressure” is used in this standard, it means “pressure”, “vacuum” or “absolute pressure” as applicable, unless otherwise stated.

3.1

gauge pressure switch

a switch with a single pressure connection and responsive to the difference between the pressure applied to that connection and the surrounding atmospheric pressure. The switch is responsive only to pressures greater than the surrounding atmospheric pressure

3.2

vacuum switch

a switch generally similar to a gauge pressure switch but responsive to pressures less than the surrounding atmospheric pressure

3.3

combined pressure and vacuum switch

a switch generally similar to a gauge pressure switch but responsive to pressures both less than and greater than surrounding atmospheric pressure

3.4

absolute pressure switch

a switch with a single pressure connection and responsive to the difference between the pressure applied to that connection and a reference high vacuum

NOTE Such a device is said to be “barometrically compensated” and is insensitive to changes in the surrounding atmospheric pressure.

3.5

pressure difference switch

a switch with two pressure connections and responsive to the difference between the two applied pressures

NOTE Such switches are insensitive to variations in surrounding atmospheric pressure.

3.6

bourdon tube

a curved tube that tends to straighten under internal pressure

3.7

diaphragm

a membrane that tends to deflect under pressure

3.8

capsule

a chamber consisting of two membranes joined at their edges

3.9

capsule stack

a number of capsules assembled in series

3.10

bellows

a cylinder, with thin convoluted walls, that tends to deflect longitudinally under pressure

3.11

piston

a piston, enclosed in a cylinder, that tends to move under pressure

NOTE A seal may be provided to prevent leakage of the pressure medium past the piston.

3.12

set point

the nominal pressure at which the switch is set to operate

3.13

range of adjustment

the upper and lower limits of pressure stated by the manufacturer, within which the set-point is adjusted