

This series of pressure switches can be used for all applications where an electrical circuit is required to close or open at a required pressure.

The robustness of this series of pressure switches enables all applications in all industries to be satisfied.

- Robust & Reliable
- Diaphragm Operated <42 bar
- Piston Operated >42 bar
- Proven Performance
- Wetted parts for use with all Fluids
- Fully Adjustable
- Easily Customised
- Enclosure Rating IP65
- CE marked for all Directives that apply
- LPCB Approved
- UL 508 Certified

Pressure Ranges

TYPE No.	PRESSURE RANGE	HYSTERESIS TYPICAL
1381	-1 to +1 bar	0.04 bar
1381	0.2 to 4 bar	0.07 bar
1381	0.5 to 11 bar	0.3 bar
1381	0.7 to 14 bar	0.4 bar
1381	2 to 28 bar	0.6 bar
1381	2 to 42 bar	0.8 bar
1481	5 to 125 mbar	2.5 mbar
1481	15 to 250 mbar	4 mbar
1481	25 to 400 mbar	10 mbar
1581	9 to 100 bar	10 bar*
1581	14 to 200 bar	18 bar*
1581	20 to 400 bar	25 bar*

*Typical for mid-range set point

Maximum Pressure

To ensure long service life select the pressure range as follows:

Dynamic pressure applications $P_{max} = 75\%$ of Range

Static pressure applications $P_{max} = 100\%$ of Range

Maximum pressure that can be applied is 125% of pressure range (see option Q page 8 for higher pressures.)

Electrical Ratings

10 amp at 250V 50 Hz Inductive load

1 amp at 30V dc Inductive load

For other voltages and currents please consult our technical department.

Setting Accuracy±2%

Temperature Range-10 to +85°C
(Process fluid must not solidify)

Temperature Coefficient0.05%
of range per °C from 20°C



Installation

These pressure switches can be mounted directly on the connecting thread. Sealing grooves are machined onto the end face of parallel threads for use with sealing washers. A Mounting Bracket is available if required.

Vacuum Setting

At ambient pressure the switches will be in the operated condition consequently the wiring should be reversed i.e. NO becomes NC.

Connecting Threads

All connecting threads used in industry are available including British, American and metric. Please state the connection thread when ordering.

Flanges & Hygienic Fittings

(see page 5 for alternative connections)

Flanged fittings are available and all types of Hygienic fittings can be supplied assembled directly onto the pressure switch.

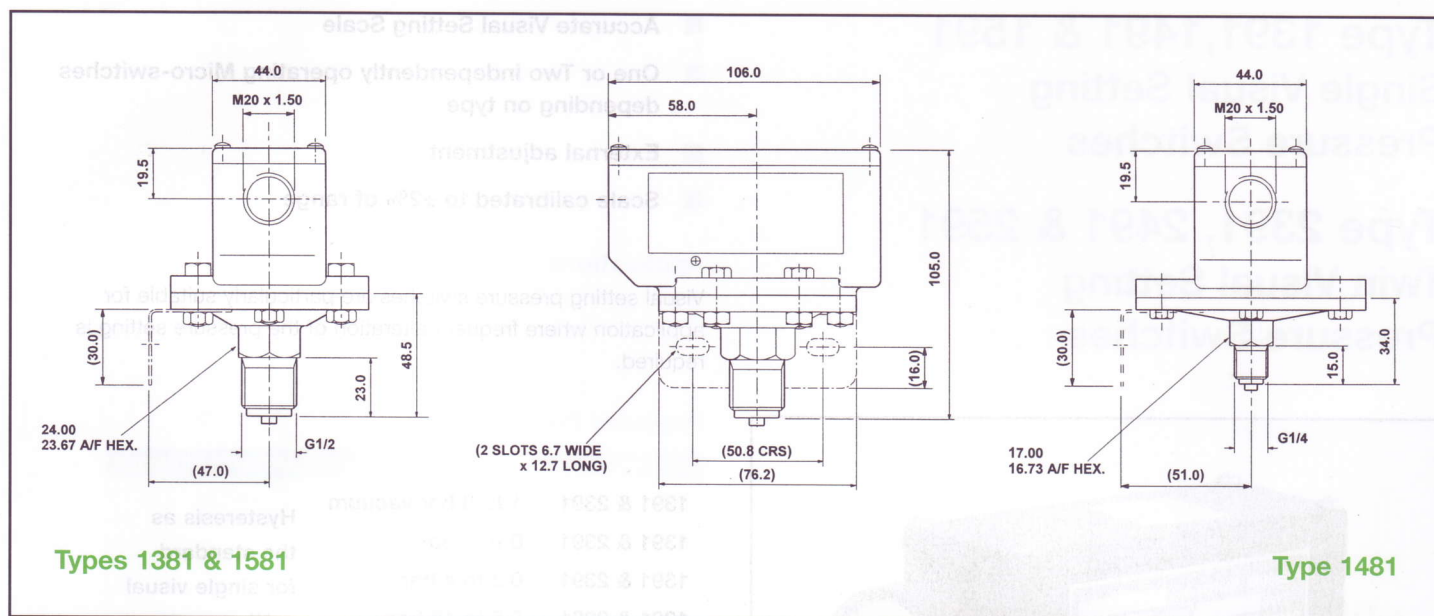
If flush diaphragms are required please consult our Technical Department

Materials of Construction Types 1381 & 1481

DiaphragmBeryllium Copper
SealGlass filled PTFE <11 bar
Nitrile rubber >11 bar
BaseBrass
HousingAluminium / Zinc diecast
CoverGlass Filled Nylon with Nitrile seal

Material of Construction Type 1581

PistonStainless Steel
SealNitrile rubber with PTFE
anti-extrusion rings
BaseStainless Steel
HousingAluminium / Zinc diecast
CoverGlass Filled Nylon with Nitrile seal



Alternative Wetted Parts

(see page 9 for abbreviated chemical compatibility chart)

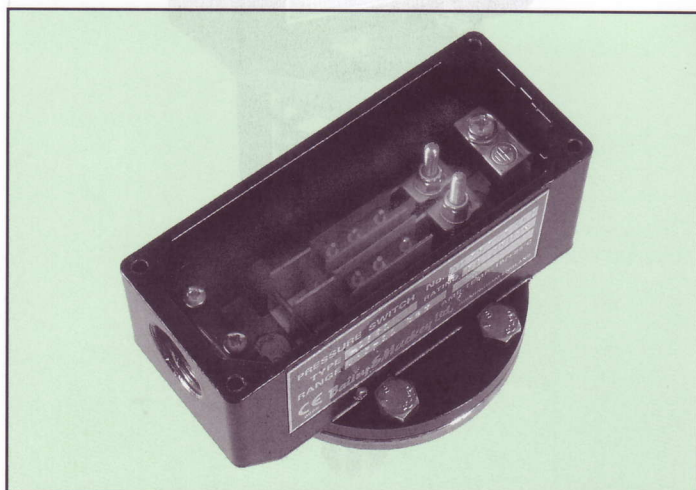
Switches with standard wetted parts above are suitable for applications using air, nitrogen, inert gasses, oils, water & steam.

Alternatives for use with fluids other than these are shown opposite.

Please contact our Technical Department for further information.

MATERIAL	BASE	DIAPHRAGM	PROTECTION DISC
316 Stainless Steel	Yes	No	Yes
17/7 Stainless Steel	No	Yes	No
Carbon Steel	Yes	No	No
UPVC	Yes	No	No
PTFE	Yes	No	Yes
PVDF	Yes	No	No
Silver Plate	No	No	Yes
Pure Silver	No	Yes	Yes
Halar Lined	Yes	No	No
Dykor coated	No	Yes	No
Rubber Lined	Yes	No	No
Chrome Plated	Yes	Yes	No

Varients To Series 1000 Pressure Switches Type 2381, 2481 & 2581 Twin Circuit Pressure Switches



- Two independently operating Micro-switches.
- External Dimensions are the same as the Standard Switches.
- Reset Differentials are approx. twice those given for standard switches.
- Electrical Rating 5 amp at 250V 50Hz
- For Pressure ranges see page 2

Applications

Both micro-switches are SPDT and can be used to give two independent opening or closing contacts at different switch points. The two micro-switches cannot be set to give a switch at the same pressure. A DPDT micro-switch must be used for this function see page 10.

These switches can be set to give High/High, Low/Low or High/Low set points.

To make series 1000 Pressure Switches more suitable for many applications there are several standard options available.

Option D – Degreased for oxygen use

Pressure switches for use on oxygen have to be free from all traces of oil or grease. Diaphragm pressure switches have the diaphragm, pressure chamber and seal specially cleaned and handled during assembly and are marked with the 'Use no oil' symbol.

Option G – Gold plated Micro-switches

Micro-switches with Gold plated contacts are used in low power circuits where the contact resistance of standard silver contacts is to high. For electrical loads below 6V at 0.1A dc.

Option H – Low leak assembly

A modified design of pressure switch is available for use on extinguishers, switchgear, transformers or other sealed pressure systems. Special machining and assembly gives freedom from leaks greater than 10^{-5} Nccs/sec.

Option M – For mining applications

No aluminium parts used.

Option P – With plug & socket

Fitted with 4 – pin plug and socket for SPDT micro-switch version.
Fitted with 7 – pin plug and socket for twin SPDT or DPDT micro-switch versions.

Option Q – Overload Protection

Pressures above the adjustable range shown in the table should not be applied to the switches. Overload will strain the diaphragm, either causing distortion that will alter the set point of the pressure switch or reduce the diaphragm life through fatigue failure. Normally, the pressure range should be chosen to cover the highest pressures likely to develop in the system; Series 1000 switches can be constructed to accept higher pressures than the adjustable range by fully supporting the diaphragm above its normal operating deflection. Maximum temperature is 60°C.

MAXIMUM ADJUSTABLE RANGE	OVERLOAD PRESSURE ALT. 1	OVERLOAD PRESSURE ALT. 2
400 mbar	7 bar	–
1 bar	28 bar	–
4 bar to 42 bar	70 bar	200 bar

Option R & RF – Manual Reset

On some applications, for safety reasons, a manual reset is required e.g. after changing a filter element or for alarm purposes.

R = Manual Reset above the set point

RF = Manual Reset Below the set point.

Option V – Adjustable Hysteresis

This option enables the hysteresis to be increased and can be varied between approximately 5% and 95% of the adjustable pressure range.

Option X

In some applications a higher electrical rating is required this option is fitted with a micro-switch for 15amps at 250V 50Hz.