

# Operating instructions

Please keep carefully for future use

## Diaphragm- / Piston Pressure Switch

Series 0163, 0164, 0166, 0167  
Series 0169



GB

### Series 0120 / 0121

Installation and commissioning must be carried out in accordance with these operating Instructions and by authorized, qualified personnel only.



### Operating and use

The pressure switch opens or closes an electrical circuit when a certain (adjustable) pressure is reached. A diaphragm or piston is moved by the increase in pressure. The amount of the diaphragm deflection or piston travel depends on the force of the pressure applied and the (adjustable) spring tension. At a predetermined deflection of the diaphragm or movement of the piston, a electrical contact will be opened or closed.

The pressure switch monitors a preset pressure.

### Conditions governing the use of the product

The following general instructions are to be observed at all times to ensure the correct, safe use of the pressure switch:

- Observe without fail the warning notices and other instructions laid down in the operating instructions.
- Observe the applicable safety regulations laid down by the regulatory bodies in the country of use.
- Do not exceed the specified limits for e.g. pressures, forces, moments or temperatures under any circumstances.
- Give due consideration to the prevailing ambient conditions (temperatures, atmospheric humidity, atmospheric pressure, etc.).
- Never subject pressure switch to intense blows or high vibrations.
- Never expose the pressure switch to severe side impacts or vibrations.
- Use the product only in its original condition. Do not carry out any unauthorized modifications.
- Remove all items providing protection in transit such as foils, caps or cartons.
- Disposal of the above-named materials in recycling containers is permitted.

### Operating conditions

Media temperatures other than room temperature (20°C):

The effects of extreme temperatures (relative to the room temperature) can lead to pronounced variations in the switching point or failure of the pressure switch.

#### Type of protection IPxx:

Type testing does not apply to all ambient conditions without limitations. The user is responsible for verifying that the plug-and-socket connection complies with the specified rules and regulations of CE, or whether it may be used for specialized purposes other than those intended by us.

#### Use with oxygen:

#### Diaphragm pressure switch (0120, 0163, 0164, 0166 and 0167):

If oxygen is used, the applicable accident prevention regulations must be observed. In addition, we recommend a maximum operating pressure of 10 bar (0164 = 50 bar), which should not be exceeded.

#### Piston pressure switch (0121, 0169):

Piston pressure switches are not suitable for gaseous media, particularly oxygen.

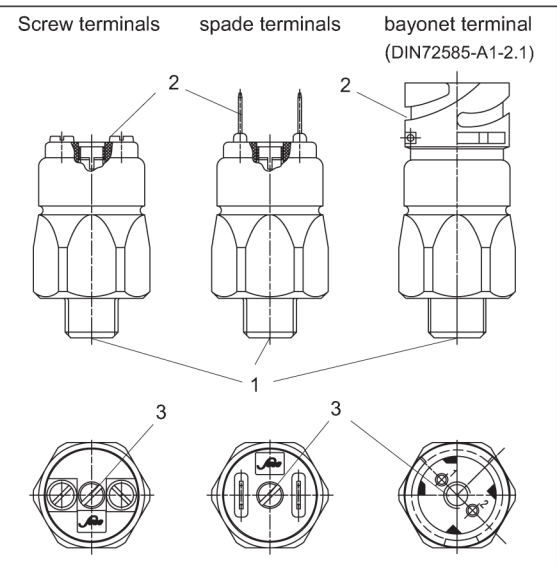
#### Protection against overpressure:

The static overpressure safety is included in the technical data. The overpressure safety corresponds to the hydraulic, pneumatic part of the pressure switch. The dynamic rating of the overpressure safety is smaller than 30 to 50%.

### Technical data

Switch type:	NC (A) or NO (E)
Max. voltage:	42V
Max. current:	4A
Switching capacity:	100 VA
Degree of protection:	
series 0163, 0164, 0166, 0167, 0169:	IP65 (plugs IP00)
series 0120/0121:	IP67 and IP6K9K
Switching frequency:	< 200 min <sup>-1</sup>
Mechanical life:	
Diaphragm pressure switches (0120, 0163, 0164, 0166 and 0167):	10 <sup>6</sup> operations (at set points up to 50 bar)
Diaphragm pressure switches (0167):	10 <sup>5</sup> operations (at set points up to 20 bar)
Piston pressure switches (0121, 0169):	10 <sup>5</sup> operations
Temperature range:	NBR -30°C ... +100°C EPDM -30°C ... +120°C FKM -5°C ... +120°C
Over pressure safety:	
series 0120, 0166:	300 bar
series 0121, 0163, 0164 and 0169:	600 bar
series 0167:	20 bar
Housing material:	
series 0120, 0166, 0163 and 0121, 0169:	zinc plated steel
series 0164:	stainless steel 1.4305 (AISI 303)
series 0167:	brass
Pressure ranges:	
Diaphragm pressure switches (0120, 0164, 0166 and 0163):	0,1-1; 1-10; 10-20; 20-50 bar
Diaphragm pressure switches (0167):	0,1-1; 1-10; 10-20 bar
Piston pressure switches (0121, 0169) :	50-150 bar
Resistance against vibrations:	10g / 5-200Hz sine
Resistance against shock:	294 m/s <sup>2</sup> ; 14 ms semi-sine

### Operating controls and connections




- (1) Hydraulic / Pneumatic connection
- (2) Electrical connection
- (3) Adjustment screw

## Installation

### Mechanical / pneumatic / hydraulic:



With a size 24 open-ended wrench (to DIN 894 or similar), install the pressure switch, by means of the hexagon connector, in the corresponding pressure socket.

 For sealing the system use a standard copper gasket of the appropriate dimensions.


### Electrical:

Connect the cable to the electric connection (2).

## Entry into service

-  1. When putting the pressure switch into service, please observe the applicable safety regulations laid down by the governing bodies in the country of use.
2. Using a continuity tester, wire up the electrical connection (2).
-  3. If using a testing lamp as a continuity tester, observe the maximum permissible switching capacity (see technical data)
4. First, screw in the adjustment screw (3) as far as it will go. To adjust the pressure switch use a screwdriver.
5. Adjust the pressure switch to the desired actuating pressure (a test pressure gauge is required).
6. Ease off the adjustment screw (3) to a sufficient extent to cause the pressure switch to trip (continuity tester reacts).
7. If necessary, adjust the trip pressure setting by turning the adjustment screw (3).

## Removing the pressure switch

-  When removing the pressure switch, observe the following important instructions:
- The system from which the pressure switch shall be moved, must be de-energized and free of pressure.
  - All the relevant safety regulations must be observed.
  - Use a size 24 open-ended wrench (to DIN 894 or similar), to remove the pressure switch.

## Key to drawings:

