

JPC

5



PRESSURE SWITCHES

Air switches
Positive Pressure switches
Vacuum pressure switches
Differential pressure switches

Elastomer membrane types, medium pressure range
(20 to 1500 mbar)

The professional solution: an extended, rational, and consistent range of products

Technical catalogue for R&D department

Edition 31/05/2013



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General Terms of Sales

GENERAL: our sales are made under the here below terms of sales. Any contrary conditions provided by the buyer shall not be binding and shall not have any legal effect.

The execution and delivery of any purchase order is made in conformity with the present general terms of sales and it is noted that the buyer first has full knowledge of these terms.

In case of dispute on any of the herein below terms, we will consider ourselves as completely free from any contract related to the execution of any pending order. If some specific conditions are stated by the buyer, these conditions will be considered by us as a formal acceptance only after our written consent.

ORDER: we will commit only on orders for which an order acknowledgement has been issued. The sale is regarded executed at the date of order acceptance by JPC. Any cessation or cancellation of pending orders, for whatever reasons, cannot be accepted by JPC without a compensation equal to the ordered goods value.

Any manufactured product being subjected of a prototype or a pre-serie accepted by the customer will be regarded as in compliance with the customer's specifications. No goods can be returned without JPC's written consent. In this case, a credit note valuable on a further purchase order will be issued only if the goods are returned in the original delivery conditions. All manufactured goods made upon a specific order cannot be either returned or be subjected to a credit note.

PRICES: our price offers are remitted under the existing conditions at the date of offer, for mentioned quantities. They can be revised after the call period has expired. Orders for lower quantities than quoted: our offers are subjected to price revisions.

Orders with prices related to our general price list can be revised at any time, in accordance to the existing terms at the delivery date. Our prices are VAT exclusive for unpacked materials according to the EXW Incoterm.

For orders less than € 75 Excl. tax exclusive of fees, administrative costs amounting to € 7.62 Excl. tax will be charged to customer.

DELIVERY TIME: our delivery times are estimated bona fide. They are purely informative and cannot be considered as commitments. Unless our prior express consent, no overrun will be regarded as a justification of order cancellation or set rights to any compensation or deduction.

DELIVERY: Whatever mean of transportation, all risk of loss or damage in transit shall be borne by the purchaser.

The buyer must ensure of the good conditions of the delivered goods and he must make, within the legal terms, all necessary reserves and legal actions in order to preserve his rights against the carrier.

Regarding the conformity and visible quality of delivered goods related to an order, the buyer must send his eventual written claim within an 8 days legal notice from the collection date. Claims will be taken into account only if the goods are kept in the consignment conditions.

For manufacturing reasons, we reserve the right of delivering plus or minus 10 percent of the ordered quantities.

PAYMENT TERMS: unless other arrangements expressly provided by special conditions at the bottom of our order acknowledgment, our invoice is resolvable by draft accepted at 30 days end of month .

The invoices less than € 150 Excl. tax, the first order and the files not accepted by our factoring company are resolvable cash on order.

No discount for pre-payment is accepted.

Whatever the mean of payment, we reserve the ability of cancelling or postponing any blanket or purchase order, invoicing any related charges and to ask for an immediate payment of all pending invoices and all implemented collection charges until total settlement has been completed.

In no way, payments due to JPC can be postponed or be subjected to either deduction nor compensation unless JPC's express written consent.

We reserve the right to require an agreed guarantee of the customer's execution of commitments, even during the execution of a blanket or purchase order.

Any refuse from the customer will open JPC's right to partial or total order cancellation.

Any payment to JPC will apply to due amounts whatever the cause, starting with the oldest due amounts.

RETENTION OF PROPERTY: our goods are sold with a retention of property.: according to the terms of the 1980/05/12 Law and the 1985/01/25 Law (amended 1994/06/10), the Seller shall keep the ownership of the Products until the full payment of the agreed price is made including any other payments outstanding, if any, from the Purchaser to the Seller. However, the Purchaser shall bear the risk of the loss, damages, harms, deterioration or destruction of the sold Products since such Products are at the disposal of the Purchaser and he must have subscribed any related insurance.

In the event of payment delayed by the Purchaser and 8 days after receipt of a registered reminder letter remained unfruitful, the contract shall be regarded as executed. In such an event, JPC will reserve the right to take back the goods and all related settlements by the Purchaser will not be refunded and regarded as damages, without any restitution or compensation claim from the Purchaser related to an eventual resell.

To prevail over the aforesaid clause and in the event of collective judicial proceedings, JPC will notify its such express will to the Purchaser or to its official representative, by registered letter, to have the goods returned.

PROPERTY OF TOOLS: the tools that have been fully settled to JPC are the customer's property. They remain at his entire disposal at JPC's facility if the end product is made by JPC, or in the sub-contractor's French or Foreign facility if the product is sub-contracted or imported.

Unless otherwise written consent from the Purchaser, all tools unused for more than 2 years will be considered as abandoned and will be destroyed. Storage charges can be invoiced if the customer wishes to keep unused tools.

Tools for which a partial amount has been invoiced to the Purchaser remain the property of JPC. The tools are made to fit the manufacturing equipment, Norms or Standards in force at JPC's or at its sub-contractors. Unless otherwise specified, their lifetimes are equal to 3 years life according to the annual quantities provided by the Purchaser during original negotiation or on the original order. In the meantime, all maintenance and repairs charges shall be borne by JPC. For additional quantities than provided, all maintenance and repairs charges shall be borne by the Purchaser.

WARRANTY: goods manufactured by JPC are covered by a 1 year warranty coming into force at the delivery date.

For all imported good, our warranty period is limited to the manufacturer's warranty. We cannot be held as responsible for any manufacturing ascertained default on goods re-sold as are. We forward the claims on delivered goods and apply the eventual warranty clauses after agreement receipt from our constituents.

To benefit the warranty, The Purchaser must send a written claim to JPC, providing all ascertained defaults and give JPC all means to ascertain and bring corrective actions.

Packing, freight, return, carriage, un-assembly and re-assembly charges shall be borne by the Purchaser.

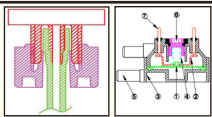


LIABILITY LIMITATIONS: the buyer must ensure that the use of the purchased products complies with Norms and Rules into force, whatever the advices or recommendations shown in the seller's documents. De facto, he resigns all claims against the Seller. No request for compensations for direct or indirect damages or loss is receivable. JPC's liability is strictly limited to the aforesaid obligations.

APPROPRIATE COURT – APPLICABLE LAWS: all sales by JPC are subjected to French Laws including the 1980 Vienna Convention on International Sales. Any controversy, dispute or claim arising out of or related to this contract or breach thereof shall be settled by arbitration of The Tribunal de Commerce Court held in Meaux, 77, France.

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Summary

En raison de l'évolution technique constante de nos produits, les plans, dessins, photos et caractéristiques repris dans les pages techniques sont communiqués sans engagement et peuvent être modifiés sans préavis

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	ZA Miniature pressure switches for conventional wiring with 6.3 QC terminals, Slow action contact NO contacts, plastic fitting 19 NC contacts, plastic fitting 20 NO contacts, metal fitting 21 NC contacts, metal fitting 22	
	ZQ Miniature pressure switches, high electrical rating, single pole snap action contact Plastic fittings 23 Metal fittings 24	
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Summary

Differential pressure switches

45-50



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ZE	Miniature single pole air switches, slow action contact, for printed circuits boards, plastic fittings NO contact, 6.35 mm pitch NO contact, 5 mm pitch	53 54
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Technical foreword of elastomeric membrane pressure switches



Technical foreword of elastomeric membrane pressure switches

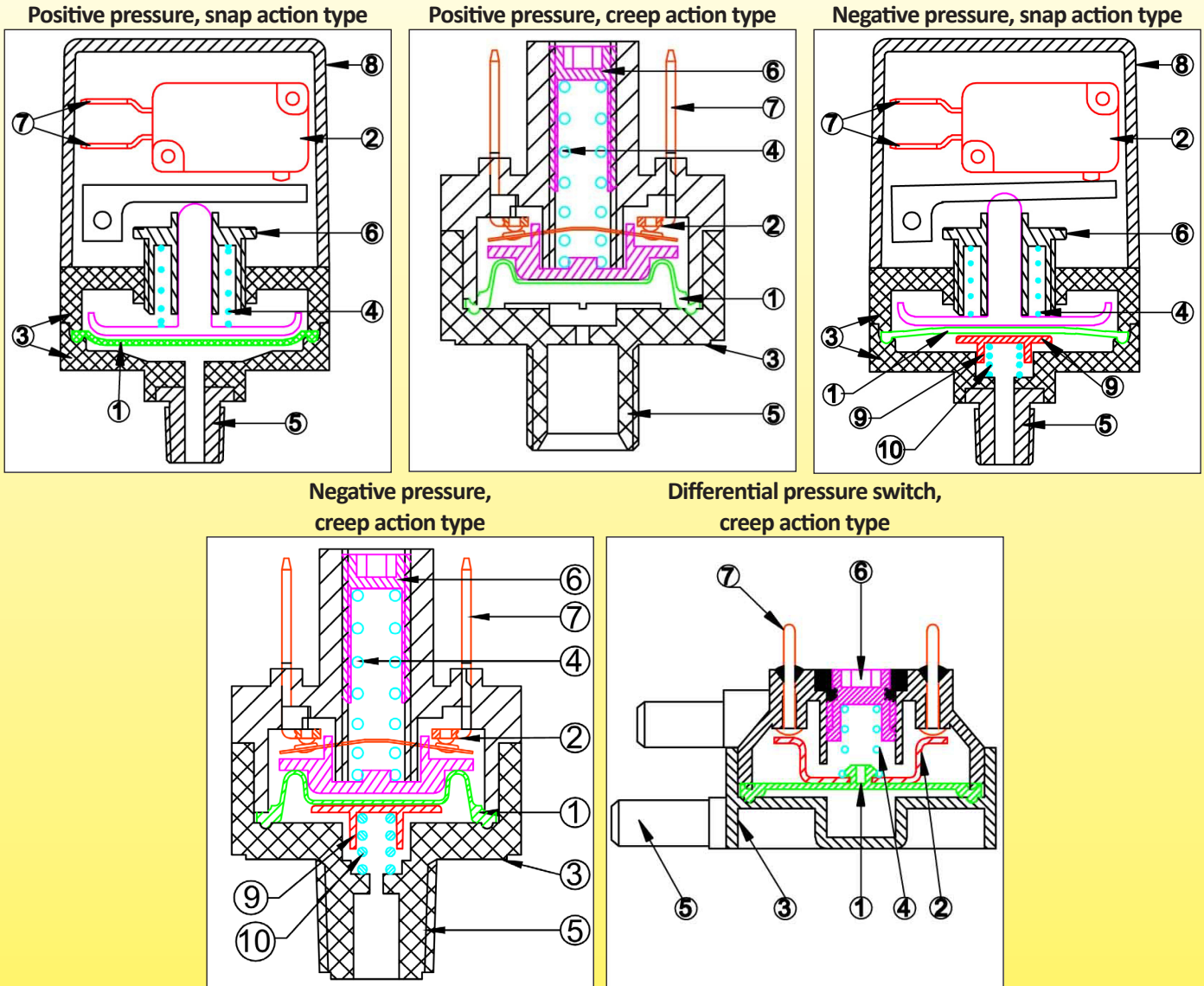
A

Operating principle

The pressure switches of this catalogue are made according to the flexible elastomeric membrane technology.

The pressure applied deforms the membrane which then actuates an electrical contact.

A counter-pressure system, which force is provided either by the contact system itself or by a spring, is applied to the membrane to adjust the set point



- | | |
|-------------------------|--|
| 1: Membrane | 6: Adjustment system |
| 2: Electrical switch | 7: Electrical connection |
| 3: Pressurized body | 8: Protection housing (Option) |
| 4: Back pressure spring | 9: Spring cap (negative pressure only) |
| 5: Pressure inlet | 10: Spring (negative pressure only) |

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B

Description of the different parts

1 : The membrane

- *The membrane area:* to a given pressure, the larger the membrane area, the greater the force with which the membrane pushes the contact system.

- *The membrane flexibility:* it is essential for the realization of switches that are measuring low pressures below 0.1 MPa (1 bar). Elastomers used must be flexible and resilient. In general, the lower the pressure is, the more flexible the membrane must be for fine sensitivity.

- *The membrane thickness:* the thin membranes cannot withstand high pressures. The thickness of the membrane will be optimized to give the best sensitivity while resisting the maximum pressure to which it may be subjected in operation. The maximum pressure limit can vary from 0.05 MPa to 1 MPa depending on the models and thicknesses.

- *The temperature resistance of the membrane:*

Compared to metal diaphragms, elastomeric membrane have the advantage of flexibility, allowing the use for low pressure measurements. Elastomers are still limited by their temperature (usually not more than 85 ° C in constant temperature), although it is possible, under certain conditions to use silicone membranes that offer greater thermal resistances (up to 125 ° C or more).

- *The chemical resistance of the membrane:*

The type of elastomer must be compatible with the nature of the fluid or liquid with which the membrane comes into contact. In addition, it must not harden or crack over time. The gas or liquids in contact with the membrane can have a corrosive or destructive effect on short, medium or long term on it, eg ozone, chlorine and its compounds, bromine and its compounds. The chemical composition of the membrane and how it is vulcanized or molded are the parameters that will influence this resistance.

Contact with drinking water:

In some applications, when the float is in contact with drinking water, health standards are added, which regulate the chemical composition. The highest standards known, that are used as a normative reference in many countries are those issued by the FDA (Food and Drug Administration, USA) and the WRC (water research council, GB). These standards provide particularly the maximum permissible surface in contact with water and the maximum temperature at which the plastic may be exposed without harmful compounds are released into the water. The WRC also tests elastomers to ensure that they do not facilitate the spread of bacteria

- *The number of membranes:* some countries and safety standards require two membranes, especially for applications where the switch is in contact with water or people can be immersed. This solution is available in most JPC products however it reduces the accuracy of the pressure switches.

2 : Electrical contacts

A certain force is required to actuate the electrical contact device. It can range from a few grams for systems with creep action contacts, to several hundred grams for snap action micro-switches.

In general, the force required to operate an electrical contact increases with its electrical rating.

Creep action contacts

In apparatus slow breaking both sides deviate slowly at speeds of the order of 1/10 mm per second.

In the normal atmosphere, then occurs when the contacts are close together, an electrical arc.

The length of this arc is a function of voltage.

For voltages up to 24V DC or 110V AC, the duration of this arc is short, less than 0.1s.

For higher voltages, the arc lasts much longer, producing premature fusion of the contact, and many radio interference.

This is why it is not recommended, despite the mechanical advantages (simplicity, low cost, high precision) to use this contact in 230V networks to control multiple cycling applications.

Their disadvantages:	Their advantages:
- Do not allow to cut high amperages due to the large arcs (and the radio interference which are the consequence) that occur between the contacts when they are in close proximity to each other. As electric arcs increase with voltage, they are generally not used for voltages above 24V.	- Inexpensive
- There are no slow break pressure switches with a change-over contact, they are usually designed to close the contact when the pressure rises (normally open contact NO), but some models are available with a contact which opens with increasing pressure (normally close contact, NC).	- Low operating force allowing the use for low pressure values.
	- Low differential values between high and low pressure switching levels.
	- Easy and inexpensive making of gold-plated contacts for use in low voltage.

Technical foreword of elastomeric membrane pressure switches

Snap action contacts

On snap action switches, the contact opening speed is around 1m per second (100.000 faster).

The contact spacing reaches the distance to extinguish the arcing in less than 1/1000 sec. Therefore there is no radio interference, and the contact does not deteriorate. Mechanically, this type of contact, also called "energy storing contact" is much more complicated, expensive, and does not allow such a great control than reed switches.

The snap action micro switch is particularly suitable for devices operating at 240 or 400 V.

Their disadvantages:	Their advantages:
- Expensive	- High ratings in 110 and 230V, up to 30A.
- Large actuating force limiting their use in low pressure or requesting the use of large diameter membranes	- NO, NC or SPDT contacts
- Large differential travel on the switch, affecting the accuracy of pressure control and providing important distance in high and low pressure switching levels.	- Snap action contacts do not generate EMC

Silver contacts, gold plated contacts

The contact of a micro-switch wears by micro vaporization at each open and close cycle. This wear is proportional to the strength and duration of the electric arc.

The most common contact material is pure or alloyed silver. This material was chosen because it is the best conductor of heat and electricity known.

Its thermal conductivity quickly evacuates the temperature peak occurring during these cycles.

Its very good electrical conductivity provides very low contact resistance, usually less than 3 milli-ohms.

However it oxidizes and is gradually covered with a thin layer of silver oxide, which is not electrically conductive.

This layer is easily vaporized when the switch is used in common household voltages (240V, 300V). However, when used in low voltage (less than 12V) and very low currents (a few milli-amps), and less than 800mW, the contact opening arc is no longer sufficient to vaporize the silver oxide layer. The solution is to plate the contact with a thin layer of gold (said gold flash) 3 to 5 microns thick, to ensure its protection.

Comparison of contact materials and plating

Silver and silver alloys	Gold plated silver
High electrical rating, mandatory use for electrical rating higher than 1A 250VAC	Cannot be used on voltages lower than 0.1 millivolt, because the contact resistance is too high.
Oxidize and the contact resistance increases with time if they are used to cut electrical rating less than 20V and 100 mA	The use on voltages higher than 30V and / or with currents above 100 mA causes vaporization of the gold flash protection. Then the contact behaves like a standard silver contact
Cannot be used in oxidizing atmosphere	If the load is less than 30 mV and 10 mA, there is no change in the contact resistance and the electrical life becomes very important (except atmospheric contamination by hydrocarbon)

3 : The pressurized body (pressure chambers)

The pressurized body consists of two half-shells which enclose a membrane. It must meet several constraints

Pressure resistance:

The design must allow these shells to withstand the maximum pressure at which the switch will be submitted. If the switch is subjected to a pressure greater than the pressure for which it was designed, the body will deform or break.

Temperature resistance: the pressurized bodies of pressure switches of this catalogue are made of plastic. Plastic strengths decrease with temperature. Any abnormal temperature rise, out of specified limits will result in a decrease in pressure resistance.

Use in contact with drinking water: when plastic is in contact with drinking water, sanitation standards require that it does not release harmful chemicals into the water. The standards and accepted concentrations differ by country, but all give a maximum operating temperature of plastic materials related to temperature. If an application requires compliance to these standards, it is necessary to provide the standard to be met and the maximum water temperature at which the switch will be submitted.

Corrosion: Some disinfectants chemicals, such as ozone and chlorine compounds used in swimming pools and whirlpools can damage some plastics. It is necessary to inform us if such conditions are encountered in the application, so that the choice of the plastic parts in contact is made wisely. In some slow-break switches, especially differential pressure switches for air, the electrical contacts are in contact with the fluid in the pressure chamber where they are located. Thus these contacts are in the presence of air from the pressure source to be measured, and therefore may be oxidized or corroded by the latter. It is important in these applications, to provide information on the quality of the air which pressure is measured.

4 : The back pressure spring

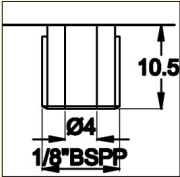
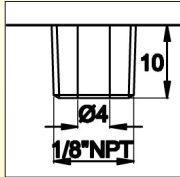
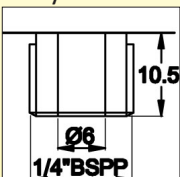
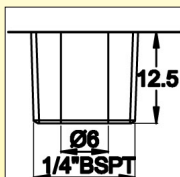
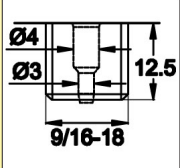
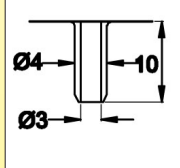
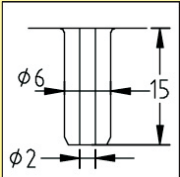
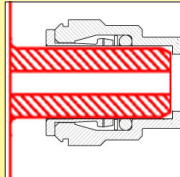
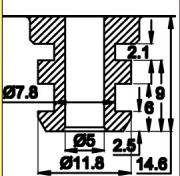
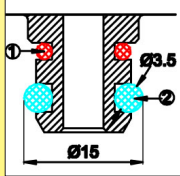
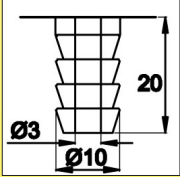
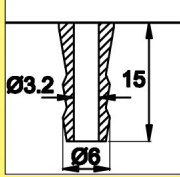
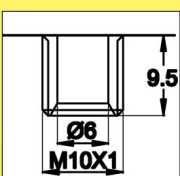
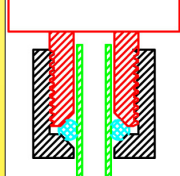
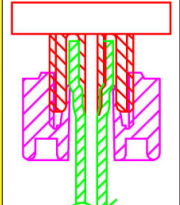
We, at JPC, always make the back pressure spring in stainless steel to withstand various environmental media encountered in applications.

When a switch is subjected to a pressure greater than that for which it was designed, the back pressure spring, or the contact mechanism will be subjected to high stresses that can cause a permanent deformation and thus, result in the set point change of the device.

Technical foreword of elastomeric membrane pressure switches

5 : The pressure inlet




The connection can be done according to several basic systems

Description	Drawing	
By a plastic thread. The most common are M10 x 1, 1/8 NPT, 1/8 BSPT, 1/8 BSPP, 1/4 NPT, 1/4 BSPT, 1/4 BSPP. This system is frequently used to control pressure of liquids.	<p>Cylindrical</p> 	<p>Conical</p> 
By a metallic thread. The most common are M10 x 1, 1/8 NPT, 1/8 BSPT, 1/8 BSPP, 1/4 NPT, 1/4 BSPT, 1/4 BSPP. This system is frequently used to control pressure of liquids.	<p>Cylindrical</p>  <p>Parallel thread</p>	<p>Conical</p>  <p>Taped thread</p>
By a fluted or smooth spout for 6x3mm flexible tubes and other diameters. This system is frequently used to control air pressure or vacuum, and for pneumatic remote controls. This solution must be used for low pressure, less than 250 mBars.		
By a smooth spout dia. 6 mm for "Push in" fittings (ISO14743)		
By quick assembly tip without thread, with O-ring seal. This system is widely used in mass production applications in water heaters, boilers and appliances (1: retaining clips, 2 O-ring)		
By a barbed spout for flexible PVC tubes. This system is frequently used to control pressure or air in pneumatic control systems. Pressure limited to 500mbar		
With a threaded spout, with O-Ring gasket compressed by a nut on a soft or hard tube		
With a smooth spout for 6x3mm flexible tubes and clamping nut. This solution is used in air switch tubing. Maximum pressure 1 Bar (0.1 MPa)		





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6 : The adjustment system

Adjusting a pressure switch is made by a force opposed to the movement of the membrane actuating the electrical contact system. This force is produced by a spring which is more or less compressed depending on the setting value to obtain. There are three possible settings:

Description	Picture
- Fixed setting: there is no adjustment possible, as the force is provided by a calibrated spring which is not reachable. This type of control is inexpensive, but with quite large setting tolerances. It is suitable for mass production.	
- Sealed setting: the setting is provided by a screw which compresses the spring more or less. After adjustment, the screw is factory sealed. This type of setting is accurate but not accessible by the user.	
- Unsealed setting: the end user can change the set point value of the point by himself, with a screw, a dial or a knob. This type of setting is for advanced users.	

7: The electrical connection

Description	Picture	Description	Picture
Pins for printed circuits		Screw terminals	
Tabs		Lead wires	

8 : The protection housing

The protection housing can have two functions:

- Ingress protection against attacks from the outside environment (rain, dust, shock)
- Protection against the conditions in which the product will be installed in its application.

In most cases, pressure switches will be integrated by an OEM into a machine or equipment. Then it is this machine or equipment that will ensure protection against water, dust, shock and other contaminants.

- *Protection against usual external environment:* These are usually plastic housings providing an IP (Protection against the penetration of water and dust, EN 60529 ingress protection) and an IK (Protection against shock, EN 50102).

Some pressure switches may receive protection by epoxy resin or polyurethane potting. The pressure switches themselves have an IP00 degree of protection as they are components to be integrated. Some safety standards require a particular degree of protection

- *Protection during the welding process:* special protections are required if switches are soldered on electronic circuits (pressure switches with pin terminals). The solder flux is corrosive and can penetrate by capillarity and cause the oxidation of the contacts. Their use should be limited to a minimum. Similarly, the duration and the temperature at which the pressure switch terminals are subject may, if they exceed certain limits, cause melting of the plastic body of the switch and its deterioration or change its set point.

- *Protection against gas and dust explosive atmospheres:* JPC level switches are not designed for use in these environments and therefore do not meet the applicable standards in this field of application

C: Air switches and pressure switches, what differences?

Pressure switch

A pressure switch is a pressure control device

Pressure switches are used to control the pressure of a medium and operate an electrical device. When pressure rises to the set point value, they switch off the equipment or switch on an alarm. Fluid they control can be air or water. There is no barometric or ambient temperature compensation in pressure switches.

There are 3 types of pressure switches:

- Positive pressure switches,
- Negative (vacuum) pressure switches,
- Differential pressure switches (pressure difference between 2 pressure ports)

There are two types of pressure switches electrical action:

- **Pressure control:** they switch off when the set point is reached and when pressure goes below the pressure hysteresis value (also named differential), they automatically switch on again.
- **Pressure high limit,** with manual reset: they switch off when the set point is reached and do not automatically switch on when pressure decreases. To restart, it is necessary to manually actuate the reset button

Unique features of pressure switches of this catalogue:

1. Wide range of pressure connection systems:

- Center spout for 1/8" and 1/16" OD soft tubing with 1/4"NPT mounting screw (fits also directly on 1/4" pipes threads)
- Center spout for 1/8" and 1/16" OD soft tubing with 9/16-18" mounting screw, 2 flats D slot
- Side spout for 1/8" and 1/16" OD soft tubing -1/8 NPT plastic or metal thread
- M10 x 100 plastic or metal thread -M8x 125 metal tread
- 1/4 BSPP plastic or metal
- Barbed fitting (metal)
- 1/4 NPT plastic or Brass or stainless steel,
- Snap on with O-ring

2. Easy to handle:

- 1" (25 mm x 25 mm) square shape housing easy to hand screw

3. Riveted switch and mechanism:

- No end customer access to mechanism and unknown changes,

4. Air switches temperature and pressure compensation:

- Located inside the 1/4 NPT thread or beside : no air leak inside the electrical body, means no condensation inside it and no electrical hazard

5. Worldwide switch approvals:

Most of products are UL(file E246956) and they use UL,CSA,CE, VDE, ENEC approved microswitches in standard. The same model can be used anywhere in the world.

6. Wide range of accessories:

Self-locking stainless steel or common plastic nuts, tubing, hose securing nut, adhesive gaskets, housing.

7. Tough Membrane design:

- No barometric compensation hole in membrane, rejected by some certification laboratories or customer applications,
- Most products designed to receive 2 membranes to comply with class II insulation requests in Europe.

8. Lowest market price and adapted solutions:

- 50 years OEM components experience: trained manufacturing organization: we made our first pressure switch in 1945.

9. The world's largest air switch range:

PC board types, snap action switches for high voltage and ratings or slow make and break contact for electronic application, silver, gold or copper contacts, 1 switch, 2 switches, 3 switches, 1 or 2 membranes and plenty of pressure connection fittings.

Air switch

An air switch is a remote control device

An air switch is a remote control device

An air switch is a wireless control used as an electrically safe remote control to operate motors or pumps or electrical devices. This is a shockproof, explosion proof and waterproof system. The system works on a sealed air displacement principle. It uses an air bellows actuator (air button, foot pedal) joined by tubing to an air switch contained within the equipment or appliance to be switched. As the transmitter button is depressed and released, sealed air is displaced and transmitted through an air hose connected to a pressure sensitive switch, switching the equipment on. Air switches have integrated compensation system (usually a small calibrated leak named bleed hole) to avoid an erratic operation due to internal air volume pressure difference with the ambience when temperature or barometric pressure changes. Most common applications are in swimming - pools, spas and hot tubs, showers, saunas, plumbing tools, sink erasers, garbage disposals. They switch motors, pumps, lights, blowers or pc board loads.

They exist with two types of actions:

- **Latching (or bistable):** The circuit remains energized until the air transmitter is depressed and released again, switching the equipment off.

- **Non-latching (or momentary):** The circuit is energized when the air transmitter is pressed. When the air transmitter is released, it switches off.

Air switch applications :

- When a standard electrical switch is impractical, hazardous or impossible,
- To increase safety. An air switch is a safe and convenient on/off remote control for use in wet, humid or watery places

As only air is used to switch a distant electrical circuit, it provides full electrical insulation: no risks of electrical shocks, sparks or explosion at the point of actuation. Therefore, it is the best choice for hot tubs, spas, whirlpools and garbage disposals. Air switches are also a cost effective solution in some hazardous locations (e.g. explosive vapors such as gasoline or other solvents).

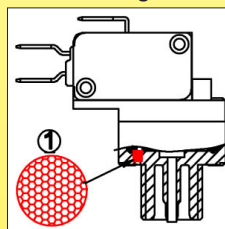
- Air switches eliminate spurious switching signals and electrical interferences which can be picked up by cables used on low voltage circuits.

- Easy installation: no electrical wiring between air switch and transmitter

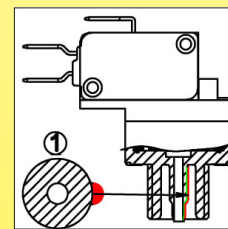
- Air switches are the most economical solution for short distance remote control.

How to select an air switch:

1. Select action (latching or non-latching).
2. Select rating, number of switches, contact: depends of what you want to switch (motor, relay, low voltage electronic board)
3. Select sensitivity: the maximum operating distance is linked to length of PVC tubing between air switch and air button, volume of air button. Avoid small volume air button and long tubing. Sensitivity decreases when rating increases. A high rating air switch can only be used with short distance tubing.



Air switch with bleed hole on pressure chamber



Air switch with bleed hole on air spout

D: Important parameters to select a pressure switch

Accuracy, actuating force and differential are given by membrane surface.

The bigger the surface is, the better the accuracy is, and the lower the differential is. Surface is proportional to the square of diameter. A 45 mm diameter membrane pressure switch will be 4 time more sensitive to pressure than a 22 mm diameter membrane because it will need 4 time less pressure to actuate a mechanism that need the same operating force.

Sensitivity is also given by the membrane hardness, and its thickness. The thinner it is and the softer it is, the more sensitive the pressure switch is. But thin and soft membranes cannot withstand high pressure. Therefore, selecting a device is always a compromise between sensitivity and maximum pressure.

High rating switches need a high force to actuate them. The higher the electrical rating is, the higher the force needed to actuate the contact is. It is very difficult to actuate high rating switches with low pressure and small membrane surface.

The selection of a pressure switch model will therefore take into account:

- the pressure ranges which must be submitted,
- the fluid or liquid to be monitored,
- the type of contact (NO, NC or SPDT),
- the electrical rating (voltage, amperage),
- whether or not of a setting by the user,
- the use at positive pressure, vacuum or differential,
- its pressure connection (fitting type),
- the environment (protection against water, dust, shock)
- the temperature at which the membrane is exposed.

For example, a small diameter membrane (25mm) is sufficient to actuate a slow break micro switch at 20 millibars with a 1 ampere rating, but it will take a 45 mm membrane to operate at the same pressure a snap action switch with a 15 amperes rating.

Positive pressure switches

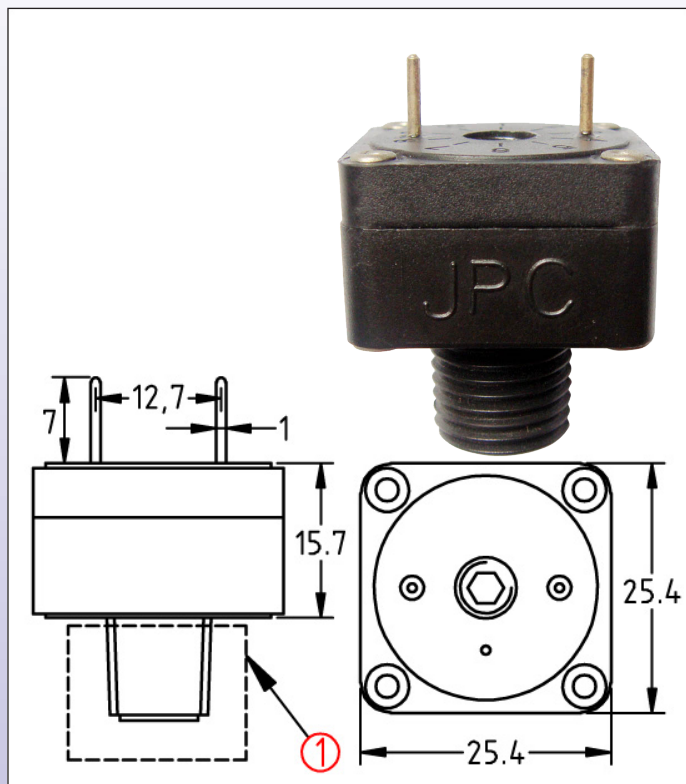


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Slow action contact miniature pressure switches for printed circuit boards with mm pitch, 6.35 plastic fitting

SPNO contact : Type ZE

DIMENSIONS



Uses: Low voltage, high sensitivity

Main applications: Electronic printed circuit. This pressure switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request

Fluid: water or air

Fitting: Plastic

Pressure: positive

Housing: PA66, UL94 VO

Contact: single pole normally open, slow make.

Electrical rating:

- Silver contact: max 1A 250V

- Gold plated contact: max 100 mA, 24V

Action: momentary, close on pressure rise.

Set point calibration: factory calibrated and sealed, not field adjustable

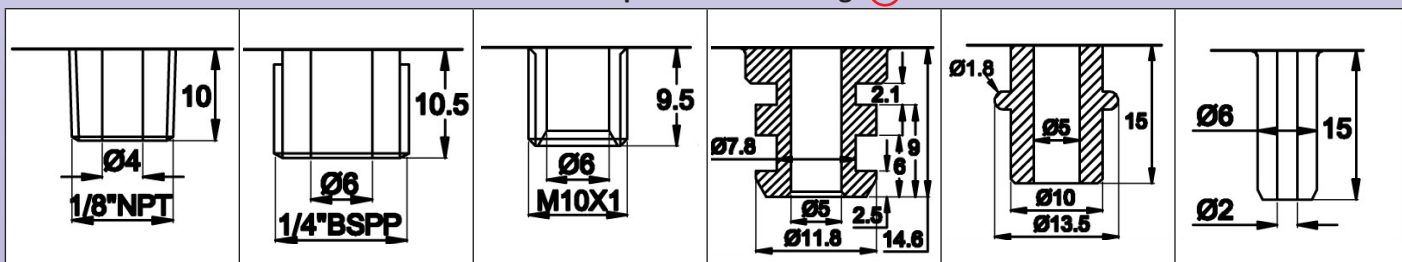
Set point calibration limits: standard calibration 50mbar, other values are achievable from 20 to 400 mbar

Electrical connection: printed circuit terminal, dia 1 mm, 12.7 mm spacing

Maximum pressure: 2 bars (29 PSI)

Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (with calibration at 50 mbar):

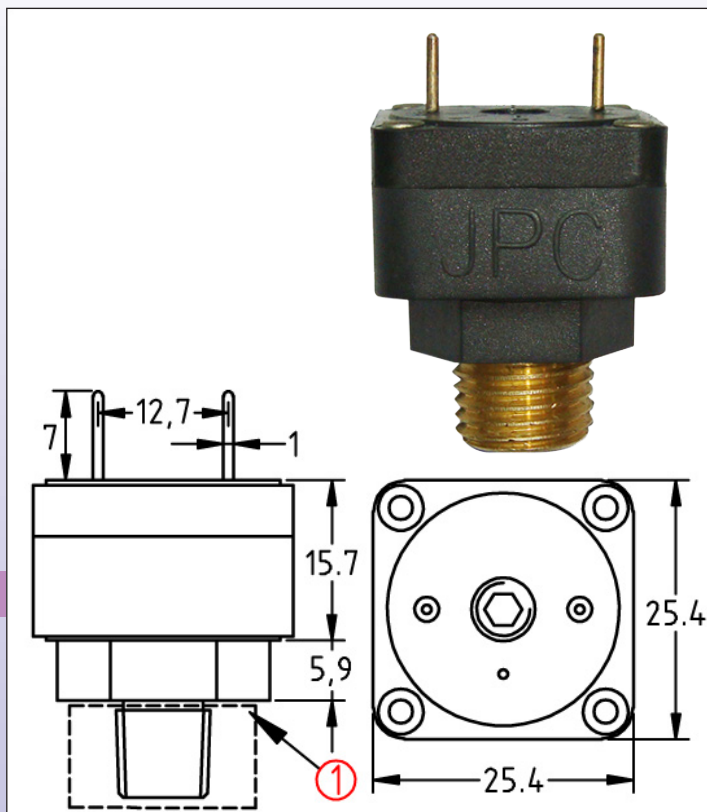
Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZE2X28F105000000	ZE2X28FG050000000
1/4" BSPP	ZE2X2QF105000000	ZE2X2QFG050000000
M10 x 1	ZE2X2MF105000000	ZE2X2MFG050000000
Snap in fitting, 2 grooves dia 7.8	ZE2X2TF105000000	ZE2X2TFG050000000
Snap in fitting, 1 groove dia 10	ZE2X2ZF105000000	ZE2X2ZFG050000000
Snap in fitting, 1 spout dia 6 mm	ZE2X2AF105000000	ZE2X2AFG050000000

Other set point values: replace 050 in the product reference by the requested value in mbar

Slow action contact miniature pressure switches for printed circuit boards with 6.35mm pitch, metal fitting

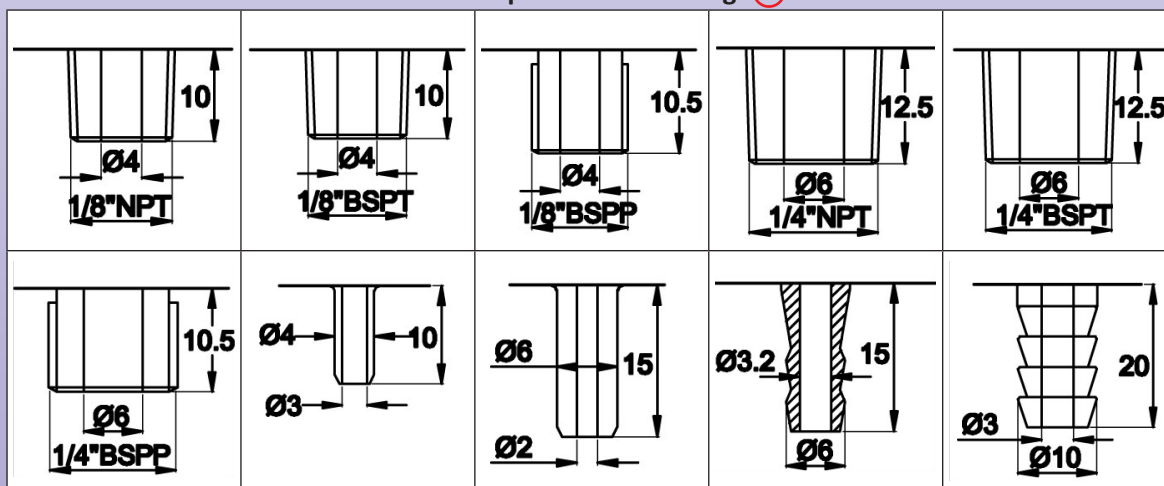
SPNO contact : Type ZE

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuit. This pressure switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: water or air
Fitting: Brass (stainless steel on request)
Pressure: positive
Housing: PA66, UL94 VO
Contact: single pole normally open, slow make.
Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, close on pressure rise.
Set point calibration: factory calibrated and sealed, not field adjustable
Set point calibration limits: standard calibration 50mbar, other values are achievable from 20 to 400 mbar
Electrical connection: printed circuit terminal, dia 1 mm, 12.7 mm spacing
Maximum pressure: 2 bars (29 PSI)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (with calibration at 50 mbar and brass fitting):

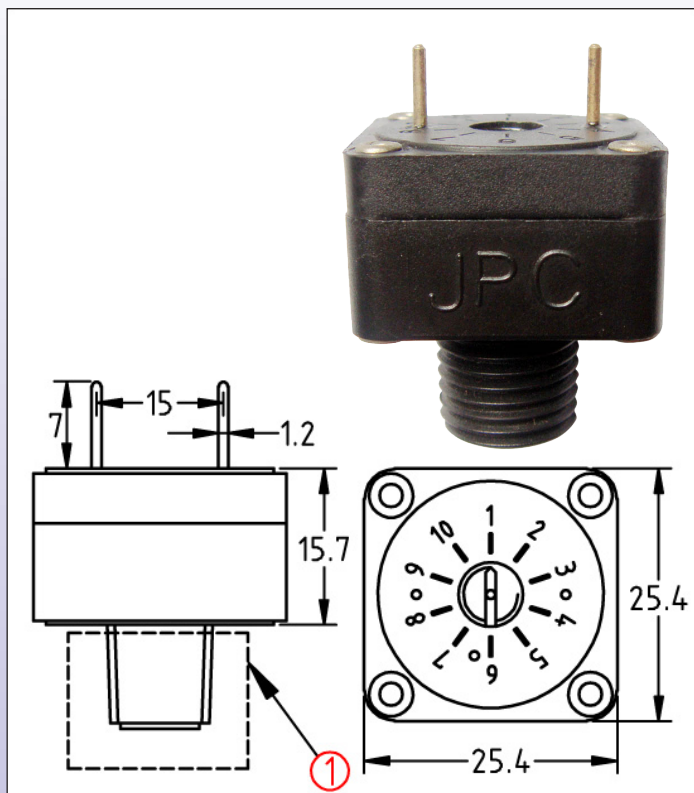
Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZE2X2RF105000000	ZE2X2RFG050000000
1/8" BSPT	ZE2X2PF105000000	ZE2X2PFG050000000
1/8" BSPP	ZE2X2LF105000000	ZE2X2LFG050000000
1/4" NPT	ZE2X2CF105000000	ZE2X2CFG050000000
1/4" BSPT	ZE2X2SF105000000	ZE2X2SFG050000000
1/4" BSPP	ZE2X22F105000000	ZE2X22FG050000000
Smooth spout dia 4 mm	ZE2X23F105000000	ZE2X23FG050000000
Spout dia 6 mm	ZE2X27F105000000	ZE2X27FG050000000
Fluted spout dia 6 mm	ZE2X2JF105000000	ZE2X2JFG050000000
Barbed spout dia 10 mm	ZE2X29F105000000	ZE2X29FG050000000

Other set point values: replace 050 in the product reference by the requested value in mbar

Slow action contact miniature pressure switches for printed circuit boards with 5 mm pitch, plastic fitting

SPNO contact : Type ZE

DIMENSIONS



Uses: Low voltage, high sensitivity

Main applications: Electronic printed circuit. This pressure switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request

Fluid: water or air

Fitting: Plastic

Pressure: positive

Housing: PA66, UL94 VO

Contact: single pole normally open, slow make.

Electrical rating:

- Silver contact: max 1A 250V

- Gold plated contact: max 100 mA, 24V

Action: momentary, close on pressure rise.

Set point calibration: factory calibrated and sealed, not field adjustable

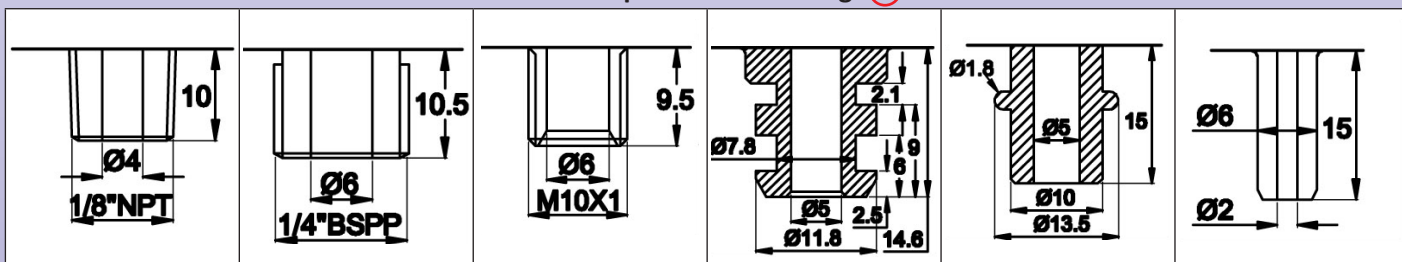
Set point calibration limits: standard calibration 50mbar, other values are achievable from 20 to 400 mbar

Electrical connection: printed circuit terminal, dia 1.2 mm, 15 mm spacing

Maximum pressure: 2 bars (29 PSI)

Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (with calibration at 50 mbar):

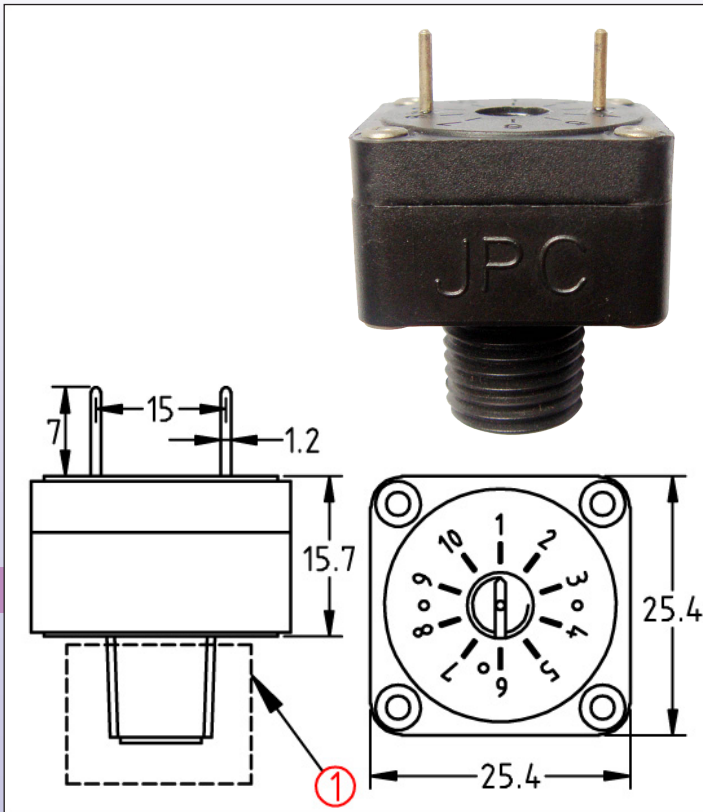
Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZE2X28L105000000	ZE2X28LG050000000
1/4" BSPP	ZE2X2QL105000000	ZE2X2QLG050000000
M10 x 1	ZE2X2ML105000000	ZE2X2MLG050000000
Snap in fitting, 2 grooves dia 7.8	ZE2X2TL105000000	ZE2X2TLG050000000
Snap in fitting, 1 groove dia 10	ZE2X2ZL105000000	ZE2X2ZLG050000000
Snap in fitting, 1 spout dia 6 mm	ZE2X2AL105000000	ZE2X2ALG050000000

Other set point values: replace 050 in the product reference by the requested value in mbar

Slow action contact miniature pressure switches for printed circuit boards with 5 mm pitch, plastic fitting

SPNC contact : Modèle ZE

DIMENSIONS



Uses: Low voltage, high sensitivity

Main applications: Electronic printed circuit. This pressure switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request

Fluid: water or air

Fitting: Plastic

Pressure: positive

Housing: PA66, UL94 VO

Contact: single pole normally closed, slow break.

Electrical rating:

- Silver contact: max 1A 250V

- Gold plated contact: max 100 mA, 24V

Action: momentary, open on pressure rise.

Set point calibration: factory calibrated and sealed, not field adjustable

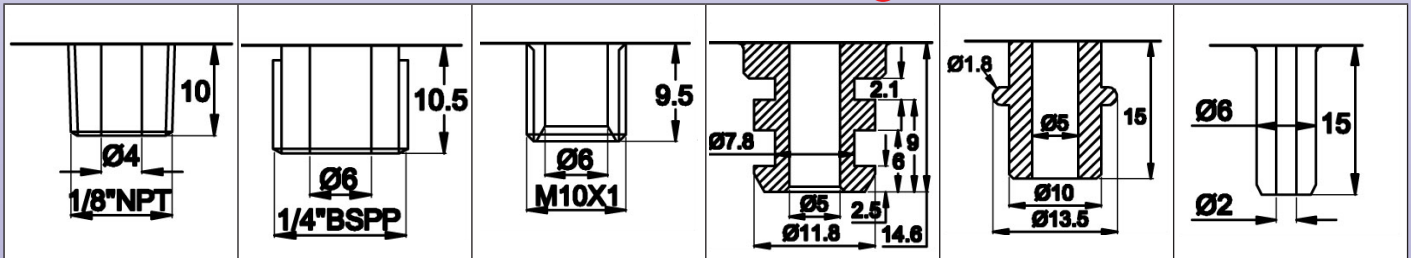
Set point calibration limits: standard calibration 50mbar, other values are achievable from 20 to 400 mbar

Electrical connection: printed circuit terminal, dia 1.2 mm, 15 mm spacing

Maximum pressure: 2 bars (29 PSI)

Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (with calibration at 50 mbar):

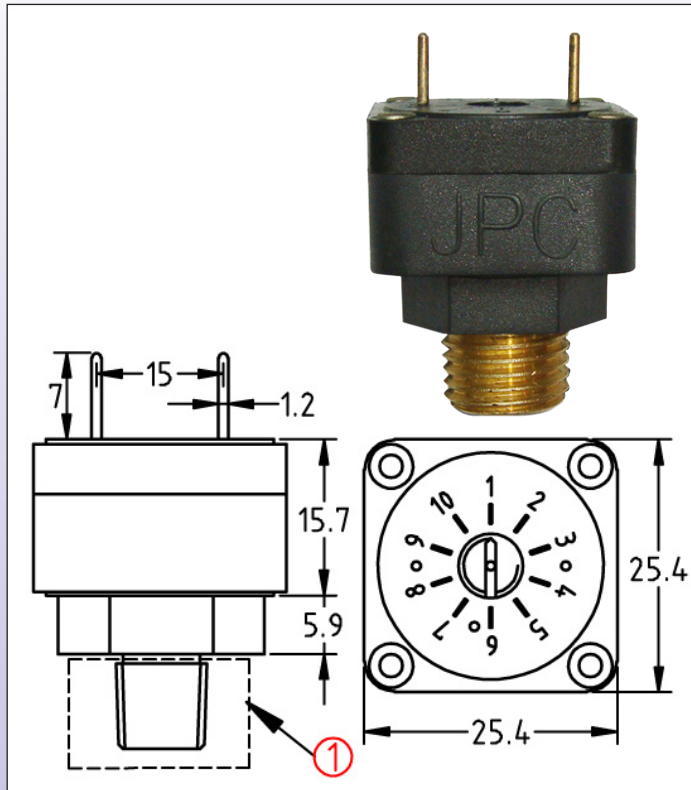
Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZE2X18L105000000	ZE2X18LG050000000
1/4" BSPP	ZE2X1QL105000000	ZE2X1QLG050000000
M10 x 1	ZE2X1ML105000000	ZE2X1MLG050000000
Snap in fitting, 2 grooves dia 7.8	ZE2X1TL105000000	ZE2X1TLG050000000
Snap in fitting, 1 groove dia 10	ZE2X1ZL105000000	ZE2X1ZLG050000000
Snap in fitting, 1 spout dia 6 mm	ZE2X1AL105000000	ZE2X1ALG050000000

Other set point values: replace 050 in the product reference by the requested value in mbar

Slow action contact miniature pressure switches for printed circuit boards with 5 mm pitch, metal fitting

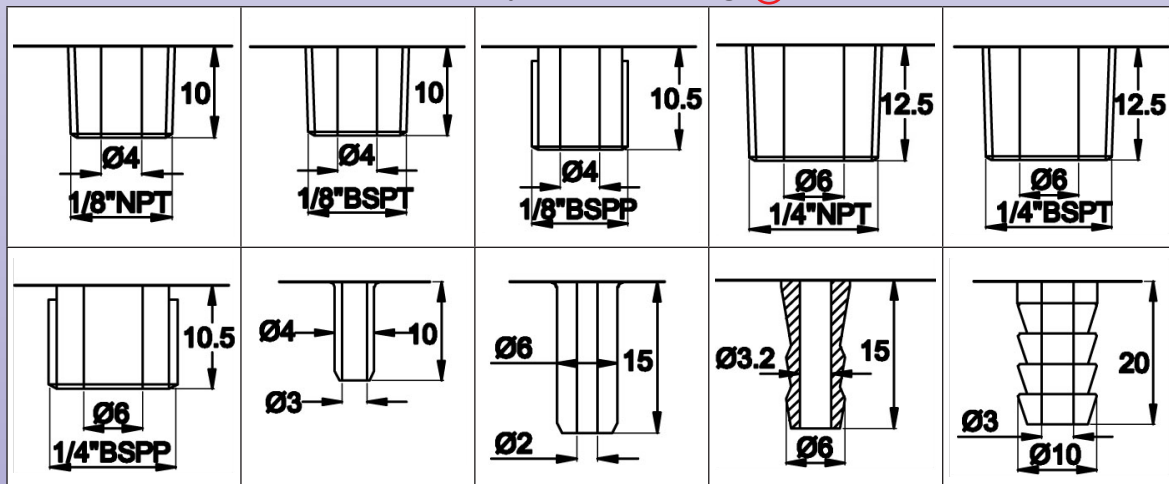
SPNO contact : Type ZE

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuit. This pressure switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: water or air
Fitting: Brass (stainless steel on request)
Pressure: positive
Housing: PA66, UL94 VO
Contact: single pole normally open, slow make.
Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, close on pressurise.
Set point calibration: factory calibrated and sealed, not field adjustable
Set point calibration limits: standard calibration 50mbar, other values are achievable from 20 to 400 mbar
Electrical connection: printed circuit terminal, dia 1.2 mm, 15 mm spacing
Maximum pressure: 2 bars (29 PSI)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (with calibration at 50 mbar and brass fitting):

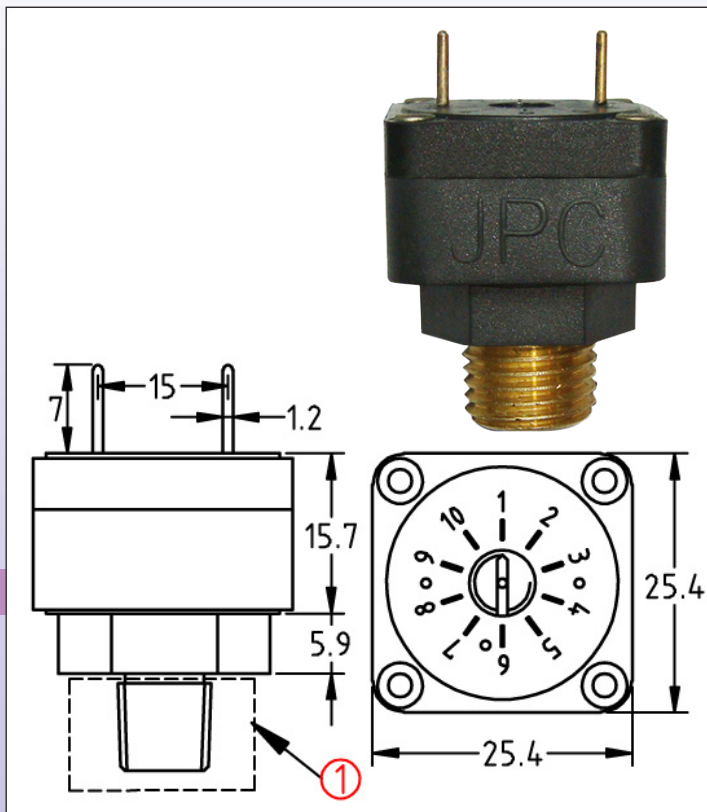
Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZE2X2RL105000000	ZE2X2RLG050000000
1/8" BSPT	ZE2X2PL105000000	ZE2X2PLG050000000
1/8" BSPP	ZE2X2LL105000000	ZE2X2LLG050000000
1/4" NPT	ZE2X2CL105000000	ZE2X2CLG050000000
1/4" BSPT	ZE2X2SL105000000	ZE2X2SLG050000000
1/4" BSPP	ZE2X22L105000000	ZE2X22LG050000000
Smooth spout dia 4 mm	ZE2X23L105000000	ZE2X23LG050000000
Spout dia 6 mm	ZE2X27L105000000	ZE2X27LG050000000
Fluted spout dia 6 mm	ZE2X2JL105000000	ZE2X2JLG050000000
Barbed spout dia 10 mm	ZE2X29L105000000	ZE2X29LG050000000

Other set point values: replace 050 in the product reference by the requested value in mbar

Slow action contact miniature pressure switches for printed circuit boards with 5 mm pitch, metal fitting

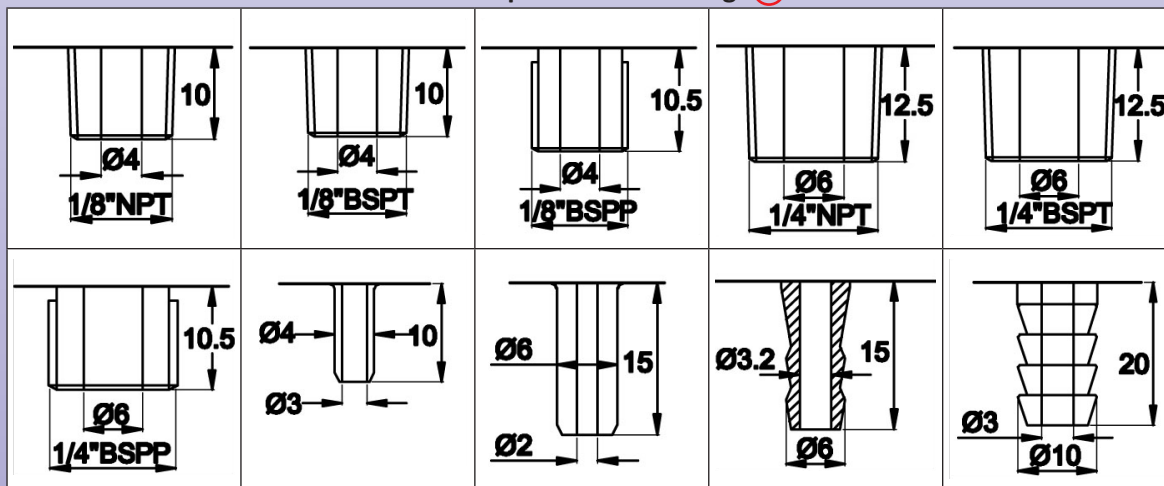
SPNC contact : Type ZE

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuit. This pressure switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: water or air
Fitting: Brass (stainless steel on request)
Pressure: positive
Housing: PA66, UL94 VO
Contact: single pole normally close, slow break.
Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, open on pressure rise.
Set point calibration: factory calibrated and sealed, not field adjustable
Set point calibration limits: standard calibration 50mbar, other values are achievable from 20 to 400 mbar
Electrical connection: printed circuit terminal, dia 1.2 mm, 15 mm spacing
Maximum pressure: 2 bars (29 PSI)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (with calibration at 50 mbar and brass fitting):

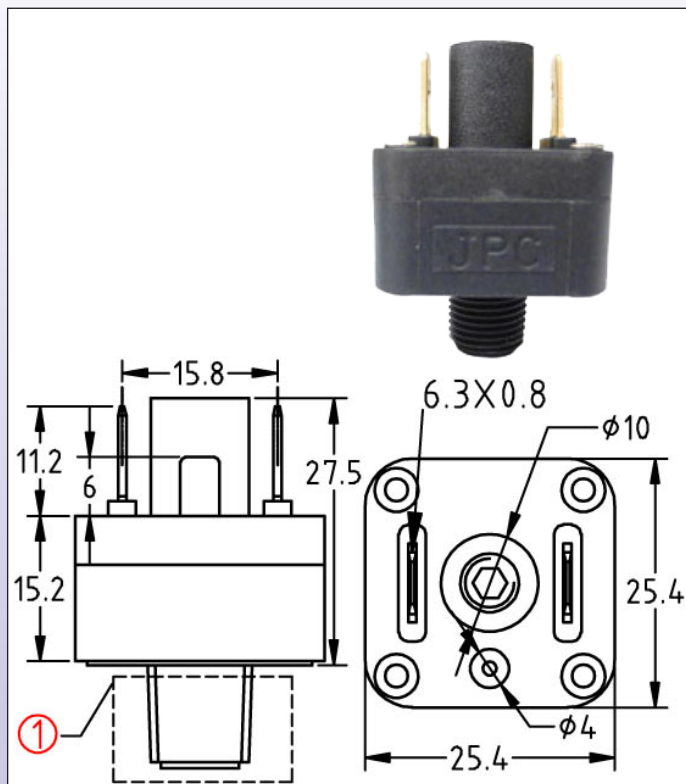
Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZE2X1RL105000000	ZE2X1RLG050000000
1/8" BSPT	ZE2X1PL105000000	ZE2X1PLG050000000
1/8" BSPP	ZE2X1LL105000000	ZE2X1LLG050000000
1/4" NPT	ZE2X1CL105000000	ZE2X1CLG050000000
1/4" BSPT	ZE2X1SL105000000	ZE2X1SLG050000000
1/4" BSPP	ZE2X12L105000000	ZE2X12LG050000000
Smooth spout dia 4 mm	ZE2X13L105000000	ZE2X13LG050000000
Spout dia 6 mm	ZE2X17L105000000	ZE2X17LG050000000
Fluted spout dia 6 mm	ZE2X1JL105000000	ZE2X1JLG050000000
Barbed spout dia 10 mm	ZE2X19L105000000	ZE2X19LG050000000

Other set point values: replace 050 in the product reference by the requested value in mbar

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Slow action contact miniature pressure switches , 6.3 x 0.8 mm QC terminals, plastic fitting SPNO contact : Type ZA

DIMENSIONS



Uses: Low voltage, high sensitivity

Main applications: Electronic circuits. Pressure sensing on water heaters. This pressure switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request

Fluid: water or air

Fitting: Plastic

Pressure: positive

Housing: PA66, UL94 VO

Contact: single pole normally open, slow make.

Electrical rating:

- Silver contact: max 1A 250V

- Gold plated contact: max 100 mA, 24V

Action: momentary, close on pressure rise.

Set point calibration: factory calibrated and sealed, not field adjustable

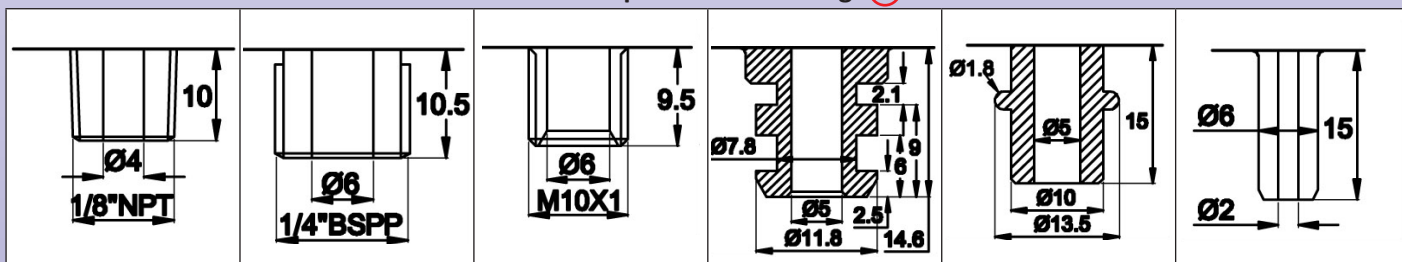
Set point calibration limits: standard calibration 150mbar, other values are achievable from 100 to 1300 mbar

Electrical connection: 6.35 x 0.8 mm quick connect terminals

Maximum pressure: 2 bars (29 PSI)

Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



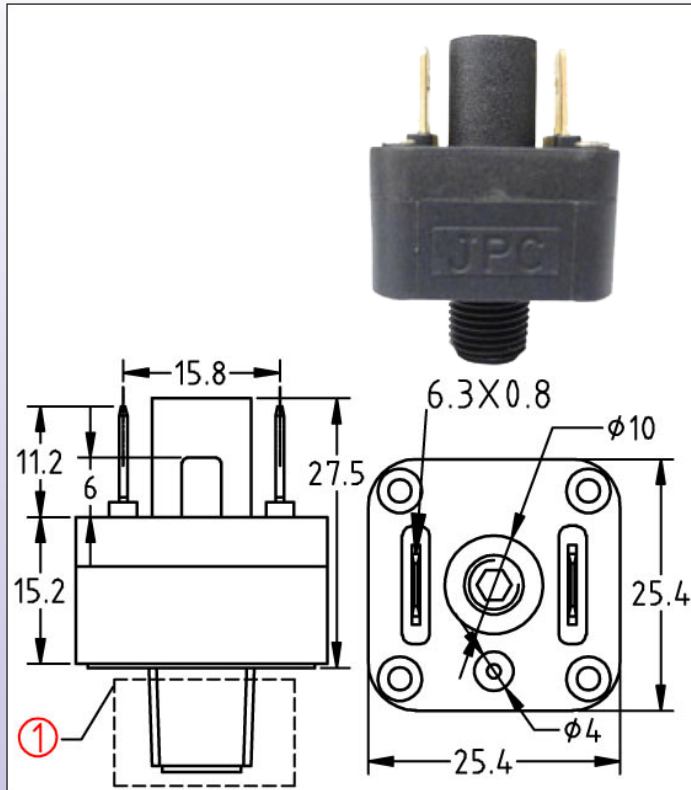
References (with calibration at 150 mbar):

Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZA2X28EA0A500000	ZA2X28EG0A500000
1/4" BSPP	ZA2X2QEA0A500000	ZA2X2QEG0A500000
M10 x 1	ZA2X2MEA0A500000	ZA2X2MEG0A500000
Snap in fitting, 2 grooves dia 7.8	ZA2X2TEA0A500000	ZA2X2TEG0A500000
Snap in fitting, 1 groove dia 10	ZA2X2ZEA0A500000	ZA2X2ZEG0A500000
Snap in fitting, 1 spout dia 6 mm	ZA2X2AEA0A500000	ZA2X2AEG0A500000

Other set point values: replace A50 in the product reference by the requested value in mbar

Slow action contact miniature pressure switches, 6.3 x 0.8 mm QC terminals, plastic fitting SPNC contact : Type ZA

DIMENSIONS



Uses: Low voltage, high sensitivity

Main applications: Electronic circuits. Pressure sensing on water heaters. This pressure switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request

Fluid: water or air

Fitting: Plastic

Pressure: positive

Housing: PA66, UL94 VO

Contact: single pole normally close, slow break.

Electrical rating:

- Silver contact: max 1A 250V

- Gold plated contact: max 100 mA, 24V

Action: momentary, open on pressure rise.

Set point calibration: factory calibrated and sealed, not field adjustable

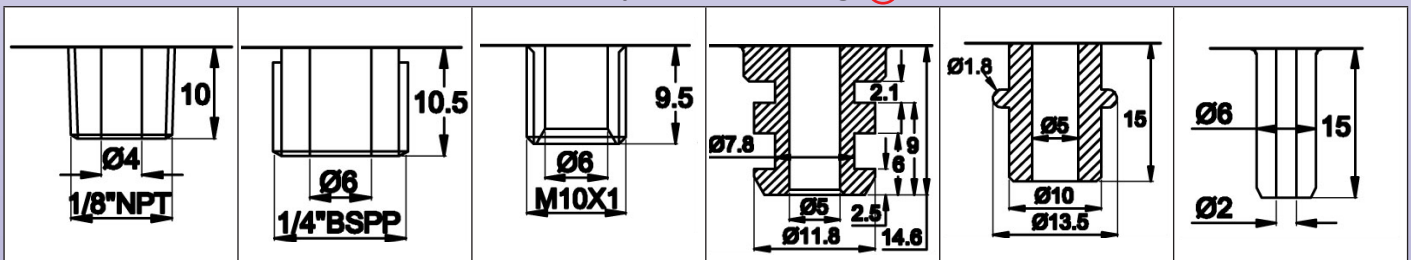
Set point calibration limits: standard calibration 150mbar, other values are achievable from 100 to 1300 mbar

Electrical connection: 6.35 x 0.8 mm quick connect terminals

Maximum pressure: 2 bars (29 PSI)

Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



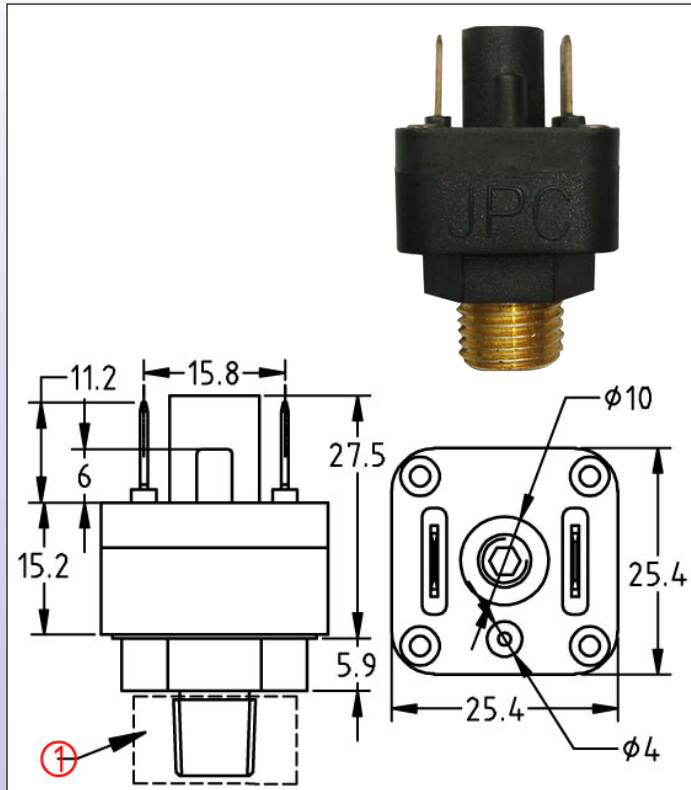
References (with calibration at 150 mbar):

Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZA2X18EA0A500000	ZA2X18EG0A500000
1/4" BSPP	ZA2X1QEA0A500000	ZA2X1QEG0A500000
M10 x 1	ZA2X1MEA0A500000	ZA2X1MEG0A500000
Snap in fitting, 2 grooves dia 7.8	ZA2X1TEA0A500000	ZA2X1TEG0A500000
Snap in fitting, 1 groove dia 10	ZA2X1ZEA0A500000	ZA2X1ZEG0A500000
Snap in fitting, 1 spout dia 6 mm	ZA2X1AEA0A500000	ZA2X1AEG0A500000

Other set point values: replace A50 in the product reference by the requested value in mbar

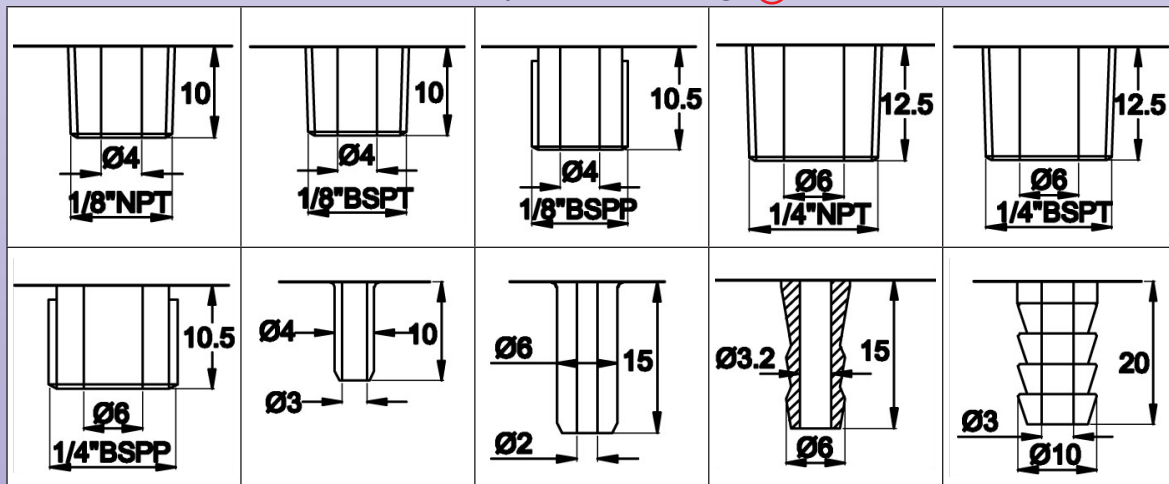
Slow action contact miniature pressure switches, 6.3 x 0.8 mm QC terminals , metal fitting SPNO contact : Type ZA

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuit. This pressure switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: water or air
Fitting: Brass (stainless steel on request)
Pressure: positive
Housing: PA66, UL94 VO
Contact: single pole normally open, slow make.
Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, close on pressure rise.
Set point calibration: factory calibrated and sealed, not field adjustable
Set point calibration limits: standard calibration 150mbar, other values are achievable from 100 to 1300 mbar
Electrical connection: 6.35 x 0.8 mm quick connect terminals
Maximum pressure: 2 bars (29 PSI)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



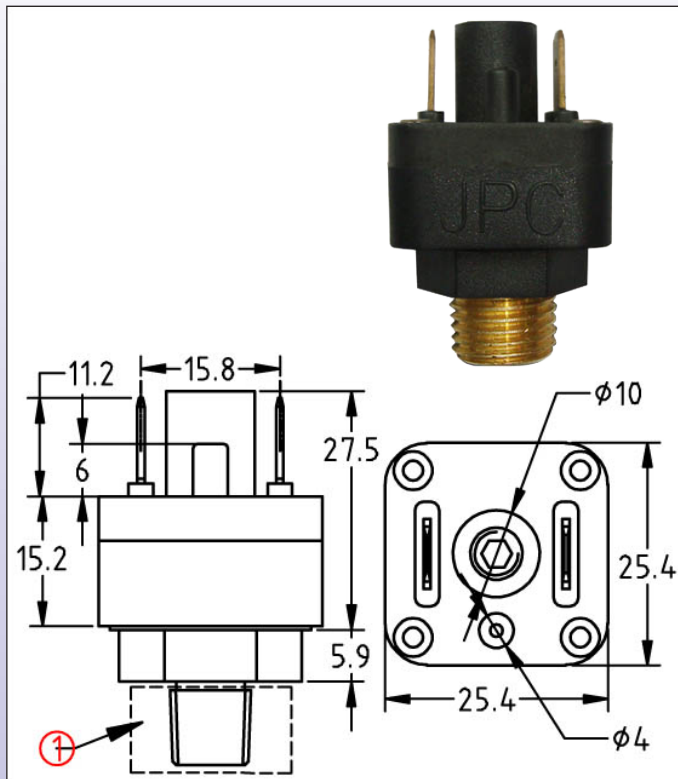
References (with calibration at 150 mbar and brass fitting):

Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZA2X2REA0A500000	ZA2X2REG0A500000
1/8" BSPT	ZA2X2PEA0A500000	ZA2X2PEG0A500000
1/8" BSPP	ZA2X2LEA0A500000	ZA2X2LEG0A500000
1/4" NPT	ZA2X2CEA0A500000	ZA2X2CEG0A500000
1/4" BSPT	ZA2X2SEA0A500000	ZA2X2SEG0A500000
1/4" BSPP	ZA2X22EA0A500000	ZA2X22EG0A500000
Smooth spout dia 4 mm	ZA2X23EA0A500000	ZA2X23EG0A500000
Spout dia 6 mm	ZA2X27EA0A500000	ZA2X27EG0A500000
Fluted spout dia 6 mm	ZA2X2JEA0A500000	ZA2X2JEG0A500000
Barbed spout dia 10 mm	ZA2X29EA0A500000	ZA2X29EG0A500000

Other set point values: replace A50 in the product reference by the requested value in mbar

Slow action contact miniature pressure switches, 6.3 x 0.8 mm QC terminals , metal fitting SPNC contact : Type ZA

DIMENSIONS



Uses: Low voltage, high sensitivity

Main applications: Electronic printed circuit. This pressure switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request

Fluid: water or air

Fitting: Brass (stainless steel on request)

Pressure: positive

Housing: PA66, UL94 VO

Contact: single pole normally close, slow break.

Electrical rating:

- Silver contact: max 1A 250V

- Gold plated contact: max 100 mA, 24V

Action: momentary, open on pressure rise.

Set point calibration: factory calibrated and sealed, not field adjustable

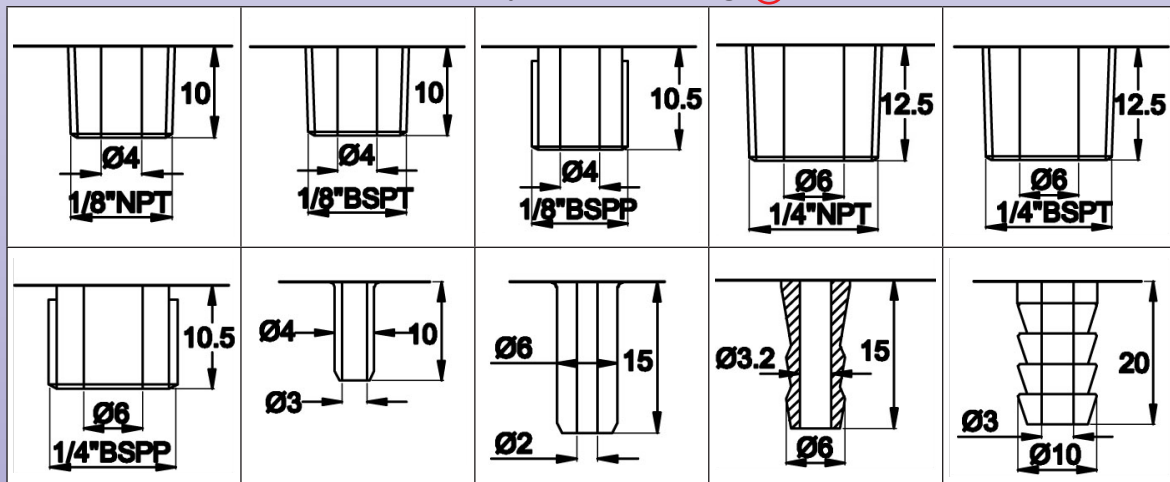
Set point calibration limits: standard calibration 150mbar, other values are achievable from 100 to 1300 mbar

Electrical connection: 6.35 x 0.8 mm quick connect terminals

Maximum pressure: 2 bars (29 PSI)

Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



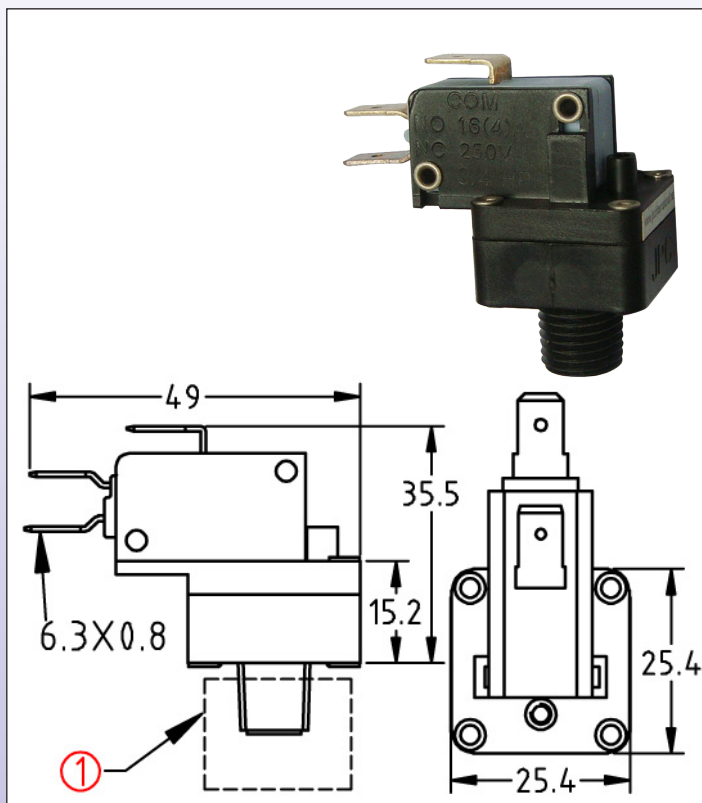
References (with calibration at 150 mbar and brass fitting):

Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZA2X1REA0A500000	ZA2X1REG0A500000
1/8" BSPT	ZA2X1PEA0A500000	ZA2X1PEG0A500000
1/8" BSPP	ZA2X1LEA0A500000	ZA2X1LEG0A500000
1/4" NPT	ZA2X1CEA0A500000	ZA2X1CEG0A500000
1/4" BSPT	ZA2X1SEA0A500000	ZA2X1SEG0A500000
1/4" BSPP	ZA2X12EA0A500000	ZA2X12EG0A500000
Smooth spout dia 4 mm	ZA2X13EA0A500000	ZA2X13EG0A500000
Spout dia 6 mm	ZA2X17EA0A500000	ZA2X17EG0A500000
Fluted spout dia 6 mm	ZA2X1JEA0A500000	ZA2X1JEG0A500000
Barbed spout dia 10 mm	ZA2X19EA0A500000	ZA2X19EG0A500000

Other set point values: replace A50 in the product reference by the requested value in mbar

Snap action contact miniature pressure switch, plastic fitting. SPDT contact : Type ZQ

DIMENSIONS



Uses: High electrical rating, for 250V .

Main applications: Pressure sensing on water heaters, boilers, and electrical appliances.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Double membrane on request.

Fluid: water or air

Fitting: Plastic

Pressure: positive

Housing: PA66, UL94 VO

Contact: SPDT, snap action. NO or NC contacts available with MOQ

Electrical rating: Depends on microswitch operating force that is linked to the electrical rating

- Standard rating micro-switch (medium and high pressure calibration only): 16A 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC

- High rating micro-switch (medium and high pressure calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch)

- Low force micro-switch (set points less than 150 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch)

- On request: up to 25A 250V

Action: momentary.

Set point calibration: factory calibrated and sealed, not field adjustable

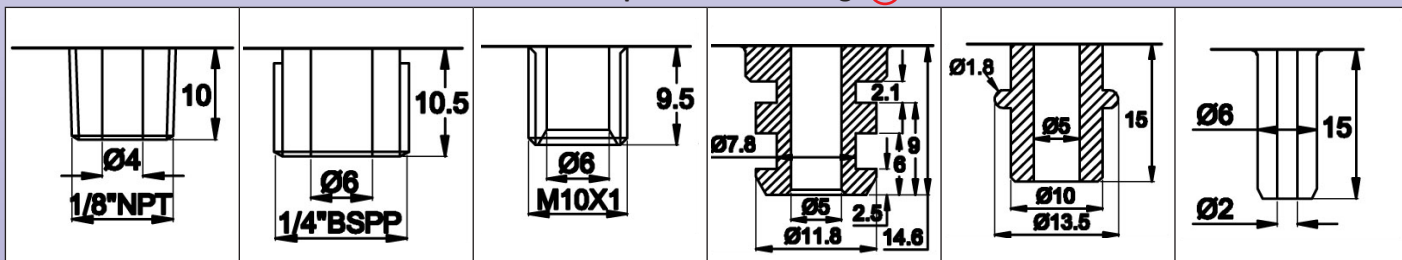
Set point calibration limits: from 50 to 1500 mbar

Electrical connection: 6.35 x 0.8 mm quick connect terminals

Maximum pressure: 4 bars (58 PSI)

Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①

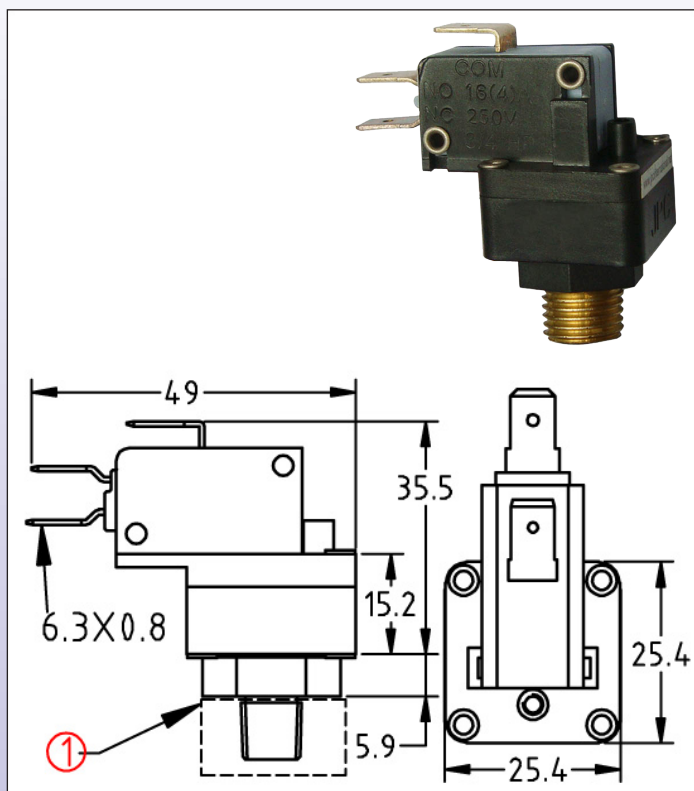


References (with SPDT contact):

Pressure inlet	Standard rating micro- switch (Calibration : 800 mbar)	Low pressure micro-switch (Calibration 150 mbar)	High rating micro-switch (Calibration 800 mbar)
1/8" NPT	ZQ2K28U1UH000000	ZQ2728U50A500000	ZQ2K28U6UH000000
1/4" BSPP	ZQ2K2QU1UH000000	ZQ272QU50A500000	ZQ2K2QU6UH000000
M10 x 1	ZQ2K2MU1UH000000	ZQ272MU50A500000	ZQ2K2MU6UH000000
Snap in fitting, 2 grooves dia 7.8	ZQ2K2TU1UH000000	ZQ272TU50A500000	ZQ2K2TU6UH000000
Snap in fitting, 1 groove dia 10	ZQ2K2ZU1UH000000	ZQ272ZU50A500000	ZQ2K2ZU6UH000000
Snap in fitting, 1 spout dia 6 mm	ZQ2K2AU1UH000000	ZQ272AU50A500000	ZQ2K2AU6UH000000
	Other set point values: replace H00 in the product reference by the requested value in mbar	Other set point values: replace A50 in the product reference by the requested value in mbar	Other set point values: replace H00 in the product reference by the requested value in mbar

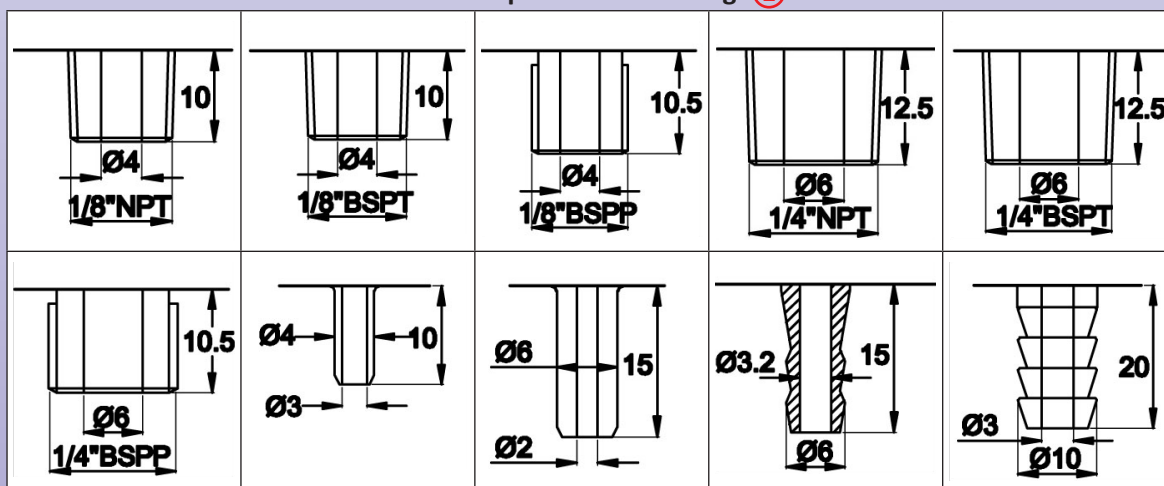
Snap action contact miniature pressure switch, metal fitting. SPDT contact : Type ZQ

DIMENSIONS



Uses: High electrical rating, for 250V.
Main applications: Pressure sensing on water heaters, boilers, and electrical appliances.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request. Double membrane on request.
Fluid: water or air
Fitting: Brass (stainless steel on request)
Pressure: positive
Housing: PA66, UL94 VO
Contact: SPDT, snap action. NO or NC contacts available with MOQ
Electrical rating: Depends on micro-switch operating force that is linked to the electrical rating
 - Standard rating micro-switch (medium and high pressure calibration only): 16A 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC
 - High rating micro-switch (medium and high pressure calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch)
 - Low force micro-switch (set points less than 150 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch)
 - On request: up to 25A 250V
Action: momentary.
Set point calibration: factory calibrated and sealed, not field adjustable
Set point calibration limits: from 50 to 1500 mbar
Electrical connection: 6.35 x 0.8 mm quick connect terminals
Maximum pressure: 4 bars (58 PSI)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①

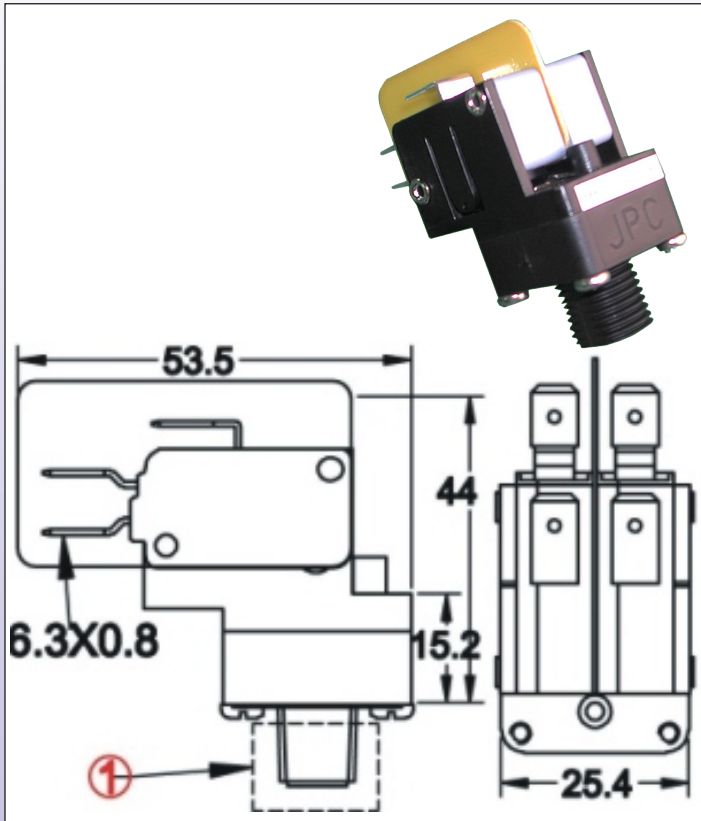


References (with SPDT contact and brass fitting):

Pressure inlet	Standard rating micro- switch (Calibration : 800 mbar)	Low pressure micro-switch (Calibration 150 mbar)	High rating micro-switch (Calibration 800 mbar)
1/8" NPT	ZQ2K2RU1UH000000	ZQ272RU50A500000	ZQ2K2RU6UH000000
1/8" BSPT	ZQ2K2PU1UH000000	ZQ272PU50A500000	ZQ2K2PU6UH000000
1/8" BSPP	ZQ2K2LU1UH000000	ZQ272LU50A500000	ZQ2K2LU6UH000000
1/4" NPT	ZQ2K2CU1UH000000	ZQ272CU50A500000	ZQ2K2CU6UH000000
1/4" BSPT	ZQ2K2SU1UH000000	ZQ272SU50A500000	ZQ2K2SU6UH000000
1/4" BSPP	ZQ2K22U1UH000000	ZQ272U50A500000	ZQ2K22U6UH000000
Smooth spout dia 4 mm	ZQ2K23U1UH000000	ZQ2723U50A500000	ZQ2K23U6UH000000
Spout dia 6 mm	ZQ2K27U1UH000000	ZQ2727U50A500000	ZQ2K27U6UH000000
Fluted spout dia 6 mm	ZQ2K2JU1UH000000	ZQ272JU50A500000	ZQ2K2JU6UH000000
Barbed spout dia 10 mm	ZQ2K29U1UH000000	ZQ2729U50A500000	ZQ2K29U6UH000000
	Other set point values: replace H00 in the product reference by therequested value in mbar	Other set point values: replace A50 in the product reference by the requested value in mbar	Other set point values: replace H00 in the product reference by the requested value in mbar

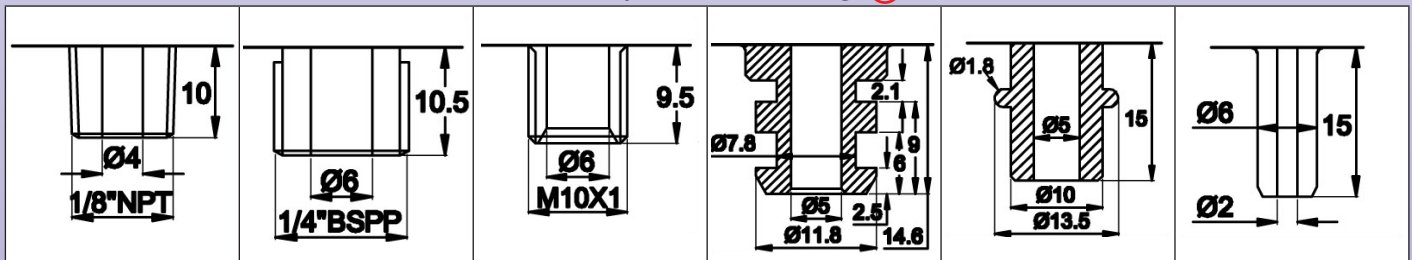
Snap action double pole contact miniature pressure switch, plastic fitting. DPDT contact : Type ZW

DIMENSIONS



Uses: High electrical rating, for 250V .
Main applications: Pressure sensing on water heaters, boilers, and electrical appliances.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
 Double membrane on request.
Fluid: water or air
Fitting: Plastic
Pressure: positive
Housing: PA66, UL94 VO
Contact: DPDT, snap action. NO or NC contacts available with MOQ
Electrical rating: Depends on microswitch operating force that is linked to the electrical rating
 - Standard rating micro-switch (medium and high pressure calibration only): 16A 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC
 - High rating micro-switch (medium and high pressure calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch)
 - Low force micro-switch (set points less than 200 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch)
 - On request: up to 25A 250V
Action: momentary.
Set point calibration: factory calibrated and sealed, not field adjustable. On request it is possible to have staggered calibration
Set point calibration limits: from 100 to 1500 mbar
Electrical connection: 6.35 x 0.8 mm quick connect terminals
Maximum pressure: 4 bars (58 PSI)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



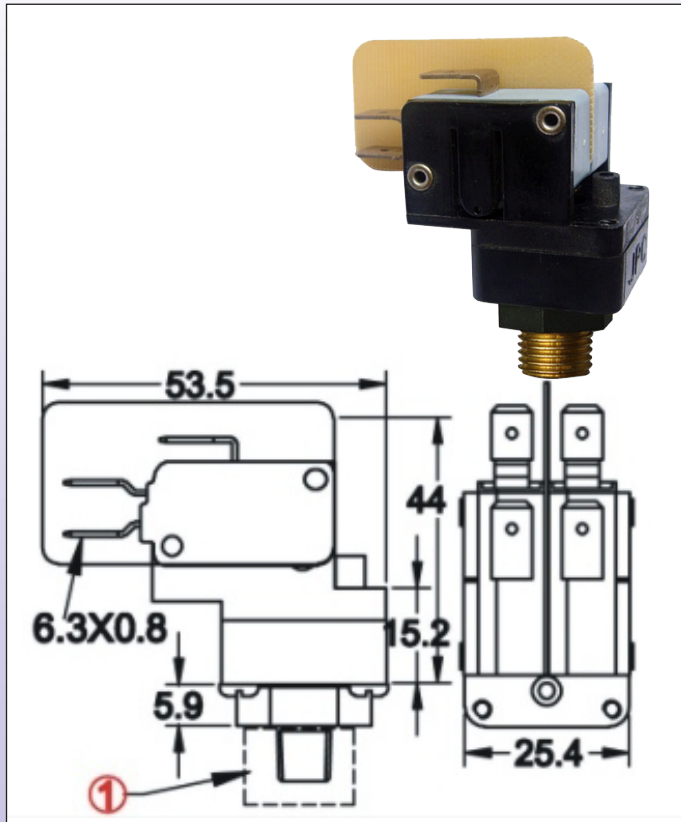
References (with SPDT contact):

Pressure inlet	Standard rating micro- switch (Calibration : 800 mbar)	Low pressure micro-switch (Calibration 150 mbar)	High rating micro-switch (Calibration 800 mbar)
1/8" NPT	ZW2K28U1UH000000	ZW2728U50A500000	ZW2K28U6UH000000
1/4" BSPP	ZW2K2QU1UH000000	ZW272QU50A500000	ZW2K2QU6UH000000
M10 x 1	ZW2K2MU1UH000000	ZW272MU50A500000	ZW2K2MU6UH000000
Snap in fitting, 2 grooves dia 7.8	ZW2K2TU1UH000000	ZW272TU50A500000	ZW2K2TU6UH000000
Snap in fitting, 1 groove dia 10	ZW2K2ZU1UH000000	ZW272ZU50A500000	ZW2K2ZU6UH000000
Snap in fitting, 1 spout dia 6 mm	ZW2K2AU1UH000000	ZW272AU50A500000	ZW2K2AU6UH000000
	Other set point values: replace H00 in the product reference by the requested value in mbar	Other set point values: replace A50 in the product reference by the requested value in mbar	Other set point values: replace H00 in the product reference by the requested value in mbar

Snap action double pole contact miniature pressure switch, metal fitting.

DPDT contact : Type ZW

DIMENSIONS



Uses: High electrical rating, for 250V.

Main applications: Pressure sensing on water heaters, boilers, and electrical appliances. Membranes: EPDM, dia 22 mm. Silicone or NBR on request. Double membrane on request.

Fluid: water or air

Fitting: Brass (stainless steel on request)

Pressure: positive

Housing: PA66, UL94 VO

Contact: DPDT, snap action. NO or NC contacts available with MOQ

Electrical rating: Depends on micro-switch operating force that is linked to the electrical rating

- Standard rating micro-switch (medium and high pressure calibration only): 16A 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC

- High rating micro-switch (medium and high pressure calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch)

- Low force micro-switch (set points less than 200 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch)

- On request: up to 25A 250V

Action: momentary.

Set point calibration: factory calibrated and sealed, not field adjustable. On request it is possible to have staggered calibration

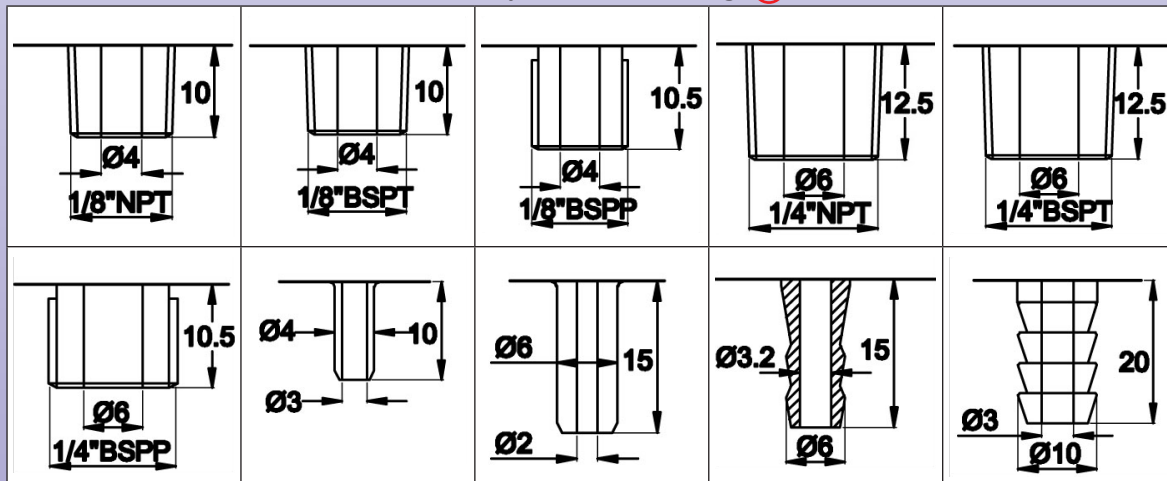
Set point calibration limits: from 100 to 1500 mbar

Electrical connection: 6.35 x 0.8 mm quick connect terminals

Maximum pressure: 4 bars (58 PSI)

Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①

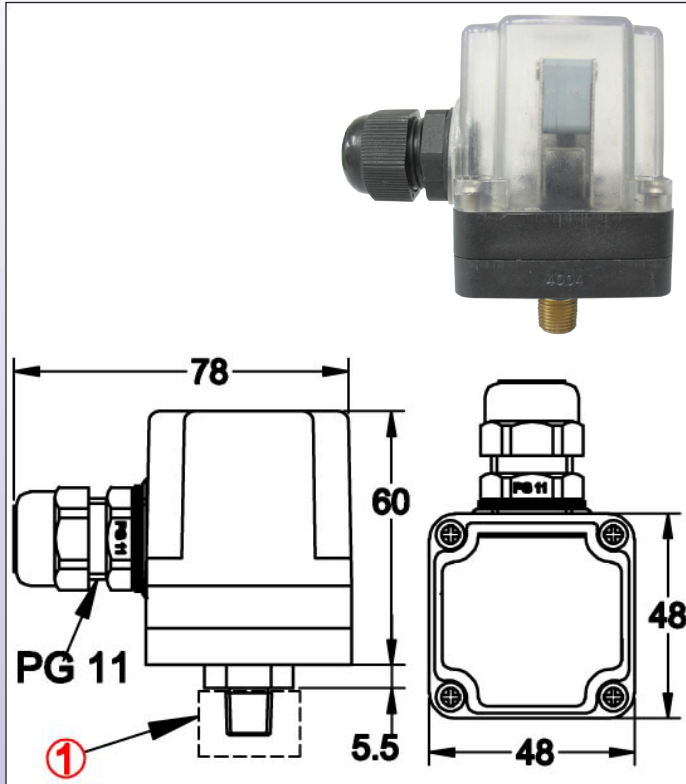


References (with SPDT contact):

Pressure inlet	Standard rating micro- switch (Calibration : 800 mbar)	Low pressure micro-switch (Calibration 150 mbar)	High rating micro-switch (Calibration 800 mbar)
1/8" NPT	ZW2K2RU1UH000000	ZW272RU50A500000	ZW2K2RU6UH000000
1/8" BSPT	ZW2K2PU1UH000000	ZW272PU50A500000	ZW2K2PU6UH000000
1/8" BSPP	ZW2K2LU1UH000000	ZW272LU50A500000	ZW2K2LU6UH000000
1/4" NPT	ZW2K2CU1UH000000	ZW272CU50A500000	ZW2K2CU6UH000000
1/4" BSPT	ZW2K2SU1UH000000	ZW272SU50A500000	ZW2K2SU6UH000000
1/4" BSPP	ZW2K22U1UH000000	ZW2722U50A500000	ZW2K22U6UH000000
Smooth spout dia 4 mm	ZW2K23U1UH000000	ZW2723U50A500000	ZW2K23U6UH000000
Spout dia 6 mm	ZW2K27U1UH000000	ZW2727U50A500000	ZW2K27U6UH000000
Fluted spout dia 6 mm	ZW2K2JU1UH000000	ZW272JU50A500000	ZW2K2JU6UH000000
Barbed spout dia 10 mm	ZW2K29U1UH000000	ZW2729U50A500000	ZW2K29U6UH000000
	Other set point values: replace H00 in the product reference by the requested value in mbar	Other set point values: replace A50 in the product reference by the requested value in mbar	Other set point values: replace H00 in the product reference by the requested value in mbar

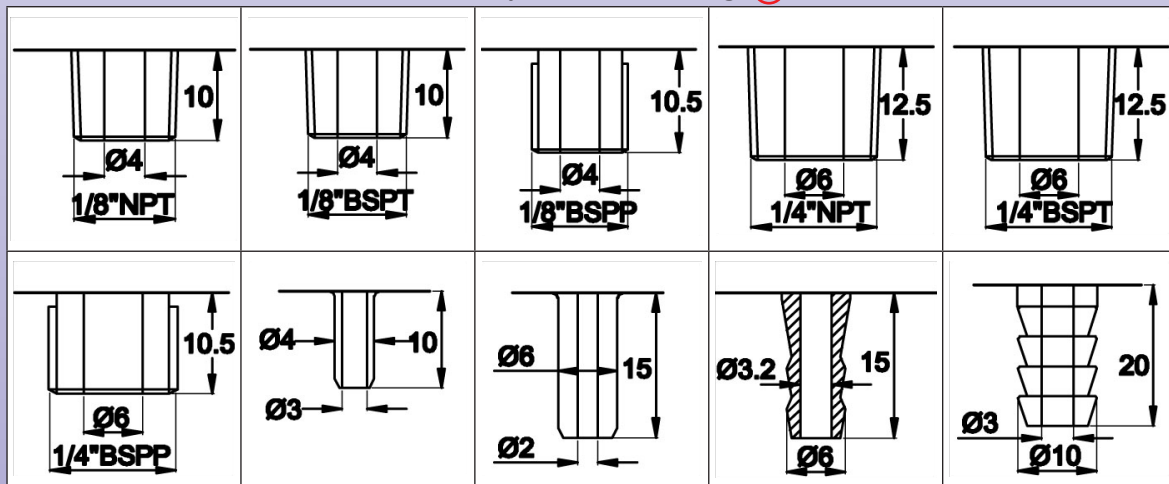
Snap action contact pressure switch, field adjustable, IP65 housing, metal fitting. SPDT contact : MA1

DIMENSIONS



Uses: High electrical rating, for 250V.
Main applications: Pressure sensing on water heaters, boilers, spas and swimming pool heaters and filters, electrical appliances used outside.
Membrane: EPDM, dia 45 mm. Silicone or NBR on request
Fluid: water or air
Fitting: Brass (stainless steel on request)
Pressure: positive
Housing: PA66, UL94 VO, IP65, PG11 cable gland
Contact: SPDT, snap action. NO or NC contacts available with MOQ
Electrical rating: Depends on micro-switch operating force that is linked to the electrical rating
 - Standard rating micro-switch (medium and high pressure calibration only): 16A 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC
 - High rating micro-switch (medium and high pressure calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch)
 - Low force micro-switch (set points less than 150 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch)
 - On request: up to 25A 250V
Action: momentary.
Set point calibration: Field adjustable with knob
Adjustment ranges (mbar): 25-100 (code 010) ; 50-400 (code 040) ; 100-800 (code 080) ; 200-1500 (code 150)
Electrical connection: screw terminals
Maximum pressure: 6 bars (87 PSI)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (SPDT contact, brass fitting, adjustment range 50 to 400 mbar):

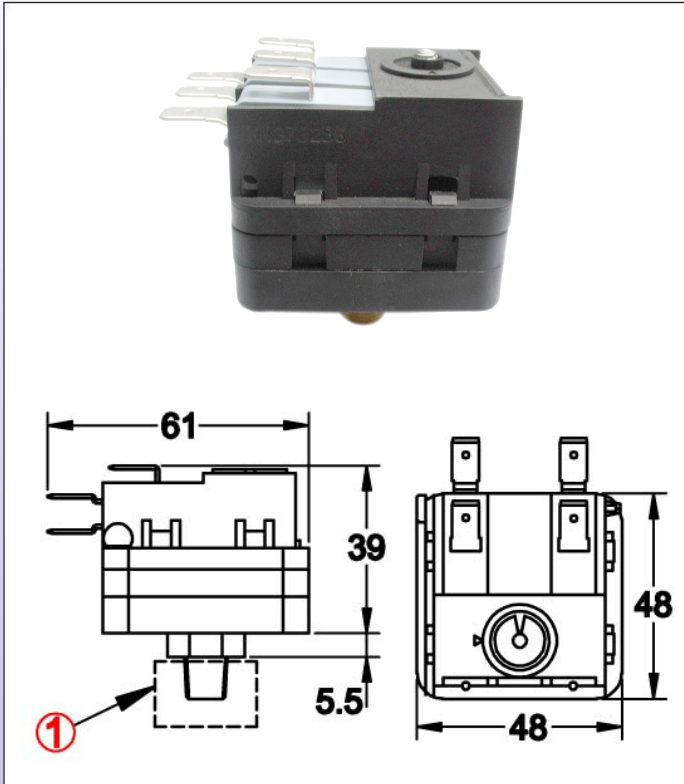
Pressure inlet	Standard rating micro- switch	Low pressure micro-switch	High rating micro-switch
1/8" NPT	MA10U145H040DE00	MA10U540H040DE00	MA10U647H040DE00
1/8" BSPT	MA10U145L040DE00	MA10U540L040DE00	MA10U647L040DE00
1/8" BSPP	MA10U145D040DE00	MA10U540D040DE00	MA10U647D040DE00
1/4" NPT	MA10U145K040DE00	MA10U540K040DE00	MA10U647K040DE00
1/4" BSPT	MA10U1452040DE00	MA10U5402040DE00	MA10U6472040DE00
1/4" BSPP	MA10U1453040DE00	MA10U5403040DE00	MA10U6473040DE00
Smooth spout dia 4 mm	MA10U145E040DE00	MA10U540E040DE00	MA10U647E040DE00
Spout dia 6 mm	MA10U145F040DE00	MA10U540F040DE00	MA10U647F040DE00
Fluted spout dia 6 mm	MA10U145G040DE00	MA10U540G040DE00	MA10U647G040DE00
Barbed spout dia 10 mm	MA10U145J040DE00	MA10U540J040DE00	MA10U647J040DE00

Other set point values: replace 040 in the product reference by 015, 080 or 150

Snap action contact pressure switch, field adjustable, metal fitting.

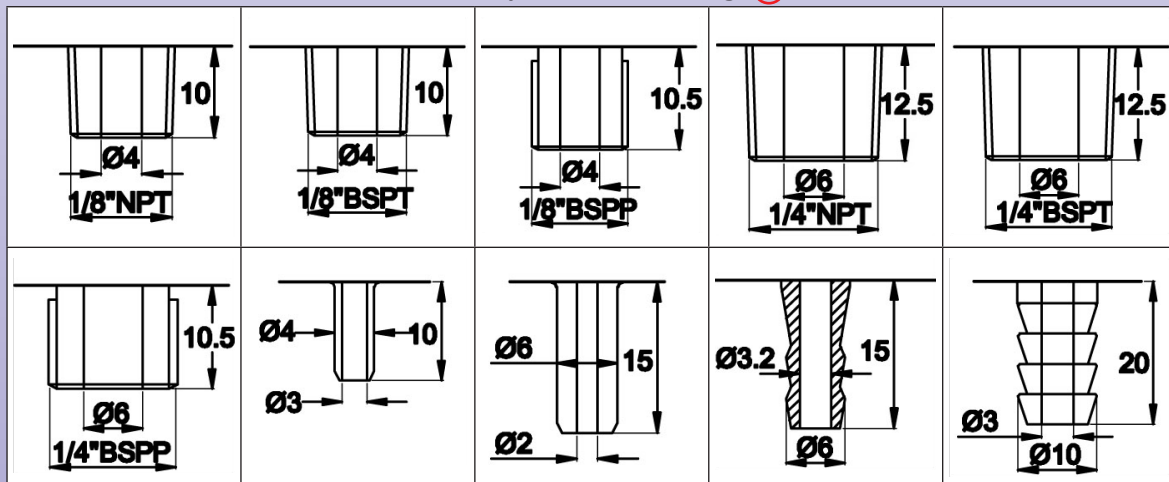
DPDT contact : Type MN2

DIMENSIONS



Uses: High electrical rating, for 250V.
Main applications: Pressure sensing on water heaters, boilers, spas and swimming pool heaters and filters, electrical appliances (For incorporation).
Membrane: EPDM, dia 45 mm. Silicone or NBR on request
Fluid: water or air
Fitting: Brass (stainless steel on request)
Pressure: positive
Housing: PA66, UL94 VO, IP00
Contacts: two SPDT switches, snap action. NO or NC contacts available with MOQ
Electrical rating: Depends on micro-switch operating force that is linked to the electrical rating
 - Standard rating micro-switch (medium and high pressure calibration only): 16A
 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC
 - High rating micro-switch (medium and high pressure calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch)
 - Low force micro-switch (set points less than 150 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch)
 - On request: up to 25A 250V
Action: momentary.
Set point calibration: Field adjustable with screw driver at +/-20% of the factory calibration value
Calibration limits: 100 to 1500 mbar
Electrical connection: 6.35 x 0.8 mm terminals
Maximum pressure: 6 bars (87 PSI)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (SPDT contact, brass fitting, calibrated at 400 mbar) :

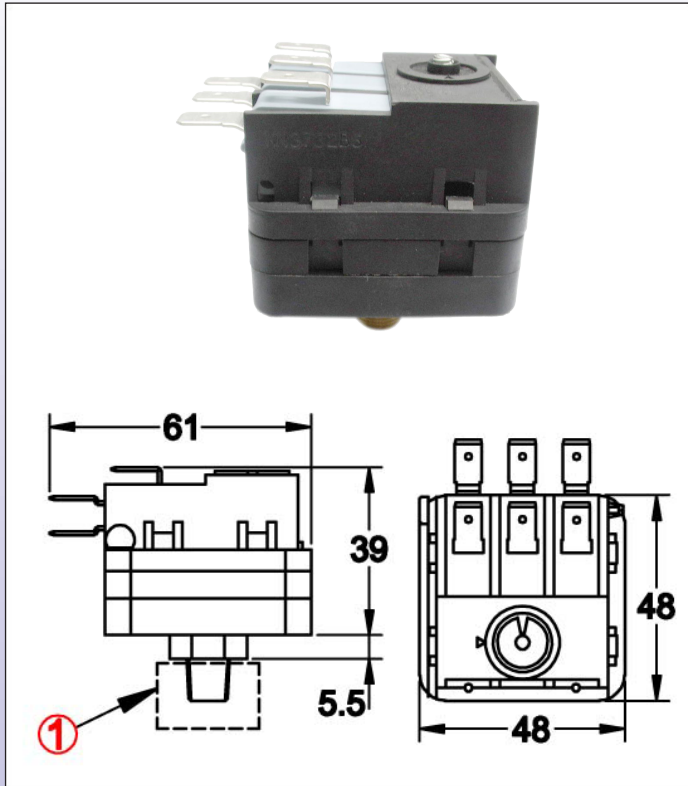
Pressure inlet	Standard rating micro- switch	Low pressure micro-switch	High rating micro-switch
1/8" NPT	MN20U145H040DE00	MN20U540H040DE00	MN20U647H040DE00
1/8" BSPT	MN20U145L040DE00	MN20U540L040DE00	MN20U647L040DE00
1/8" BSPP	MN20U145D040DE00	MN20U540D040DE00	MN20U647D040DE00
1/4" NPT	MN20U145K040DE00	MN20U540K040DE00	MN20U647K040DE00
1/4" BSPT	MN20U1452040DE00	MN20U5402040DE00	MN20U6472040DE00
1/4" BSPP	MN20U1453040DE00	MN20U5403040DE00	MN20U6473040DE00
Smooth spout dia 4 mm	MN20U145E040DE00	MN20U540E040DE00	MN20U647E040DE00
Spout dia 6 mm	MN20U145F040DE00	MN20U540F040DE00	MN20U647F040DE00
Fluted spout dia 6 mm	MN20U145G040DE00	MN20U540G040DE00	MN20U647G040DE00
Barbed spout dia 10 mm	MN20U145J040DE00	MN20U540J040DE00	MN20U647J040DE00

Other set point values: replace 040 in the product reference by the calibration value

Snap action contact pressure switch, field adjustable, metal fitting.

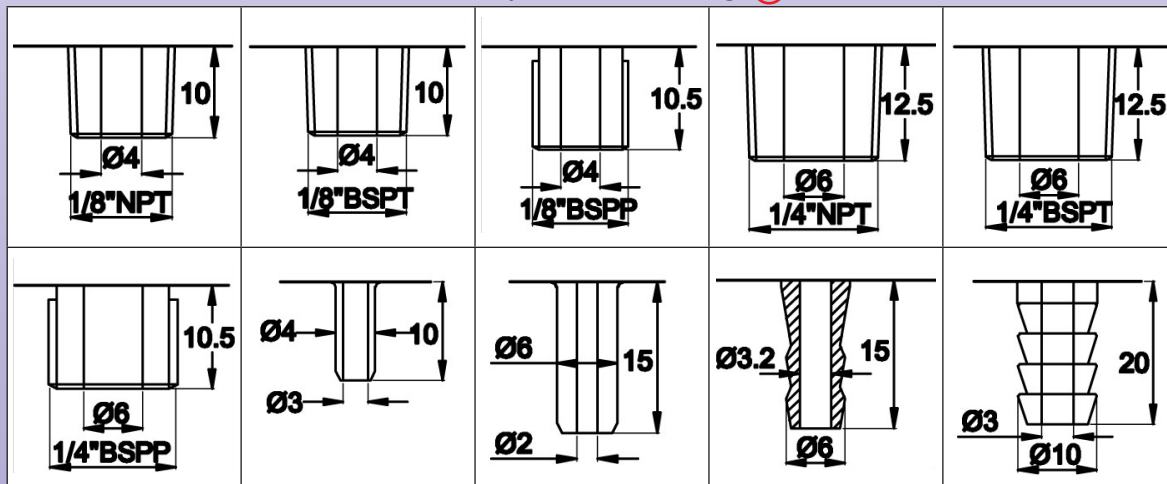
3 poles DT contact : Type MN3

DIMENSIONS



Uses: High electrical rating, for 250V.
Main applications: Pressure sensing on water heaters, boilers, spas and swimming pools heaters and filters, electrical appliances (For incorporation).
Membrane: EPDM, dia 45 mm. Silicone or NBR on request
Fluid: water or air
Fitting: Brass (stainless steel on request)
Pressure: positive
Housing: PA66, UL94 VO, IP00
Contacts: 3 SPDT switches, snap action. NO or NC contacts available with MOQ Electrical rating: Depends on micro-switch operating force that is linked to the electrical rating
 - Standard rating micro-switch (medium and high pressure calibration only): 16A 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC
 - High rating micro-switch (medium and high pressure calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch)
 - Low force micro-switch (set points less than 150 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch)
 - On request: up to 25A 250V
Action: momentary.
Set point calibration: Field adjustable with screw driver at +/- 20% of the factory calibration value
Calibration limits: 150 to 1500 mbar
Electrical connection: 6.35 x 0.8 mm terminals
Maximum pressure: 6 bars (87 PSI)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (SPDT contact, brass fitting, calibrated at 400 mbar):

Pressure inlet	Standard rating micro- switch	Low pressure micro-switch	High rating micro-switch
1/8" NPT	MN30U145H040DE00	MN30U540H040DE00	MN30U647H040DE00
1/8" BSPT	MN30U145L040DE00	MN30U540L040DE00	MN30U647L040DE00
1/8" BSPP	MN30U145D040DE00	MN30U540D040DE00	MN30U647D040DE00
1/4" NPT	MN30U145K040DE00	MN30U540K040DE00	MN30U647K040DE00
1/4" BSPT	MN30U1452040DE00	MN30U5402040DE00	MN30U6472040DE00
1/4" BSPP	MN30U1453040DE00	MN30U5403040DE00	MN30U6473040DE00
Smooth spout dia 4 mm	MN30U145E040DE00	MN30U540E040DE00	MN30U647E040DE00
Spout dia 6 mm	MN30U145F040DE00	MN30U540F040DE00	MN30U647F040DE00
Fluted spout dia 6 mm	MN30U145G040DE00	MN30U540G040DE00	MN30U647G040DE00
Barbed spout dia 10 mm	MN30U145J040DE00	MN30U540J040DE00	MN30U647J040DE00

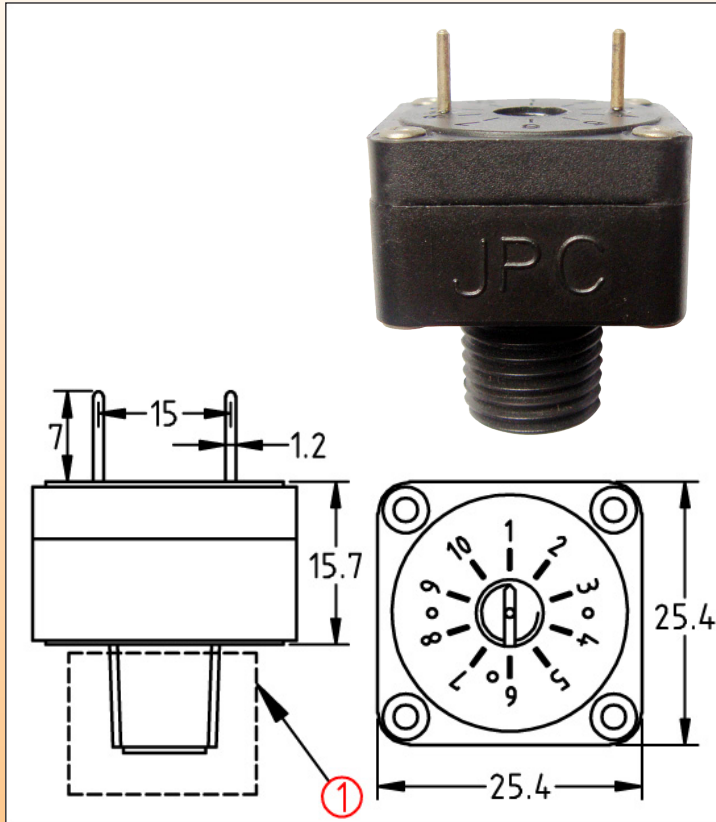
Other set point values: replace 040 in the product reference by the calibration value

Negative pressure (Vacuum) switches

Slow action contact miniature vacuum switches for printed circuit boards with 5 mm pitch, plastic fitting

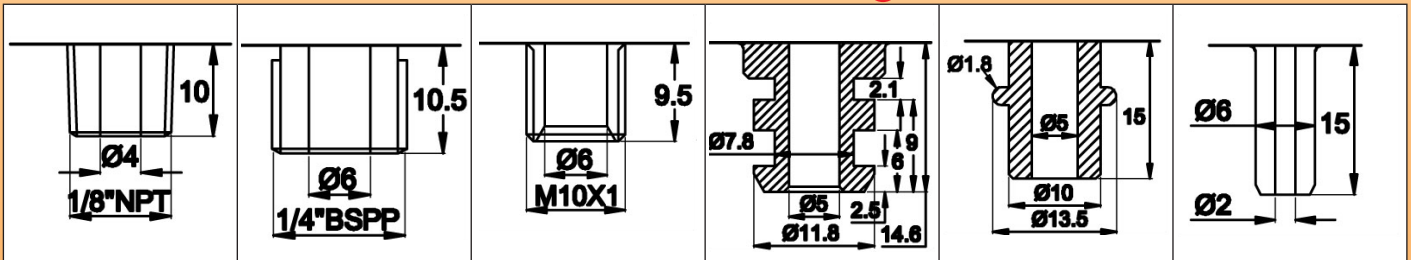
SPNO contact : Type ZF

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuit. This vacuum switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: air or water
Fitting: Plastic
Pressure: negative (Vacuum)
Housing: PA66, UL94 VO
Contact: single pole normally open at atmospheric pressure, slow make. Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, close on vacuum increase (=decrease of absolute pressure).
Set point calibration: factory calibrated and sealed, not field adjustable
Set point calibration limits (relative pressure): standard calibration minus 50mbar, other values are achievable from minus 20 to minus 200 mbar
Electrical connection: printed circuit terminal, dia 1.2 mm, 15 mm spacing
Maximum pressure: 2 bars (29 PSI)
Maximum vacuum: minus 500 mbar (relative pressure)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (with calibration at minus 50 mbar):

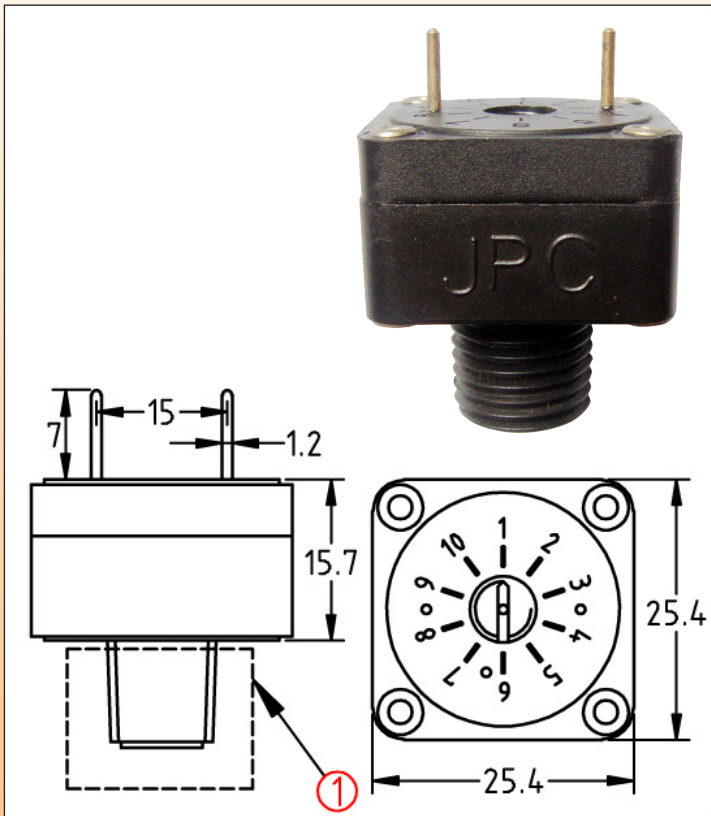
Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZF2X28L105000000	ZF2X28LG050000000
1/4" BSPP	ZF2X2QL105000000	ZF2X2QLG050000000
M10 x 1	ZF2X2ML105000000	ZF2X2MLG050000000
Snap in fitting, 2 grooves dia 7.8	ZF2X2TL105000000	ZF2X2TLG050000000
Snap in fitting, 1 groove dia 10	ZF2X2ZL105000000	ZF2X2ZLG050000000
Snap in fitting, 1 spout dia 6 mm	ZF2X2AL105000000	ZF2X2ALG050000000

Other set point values: replace 050 in the product reference by the requested value in mbar

Slow action contact miniature vacuum switches for printed circuit boards with 5 mm pitch, plastic fitting

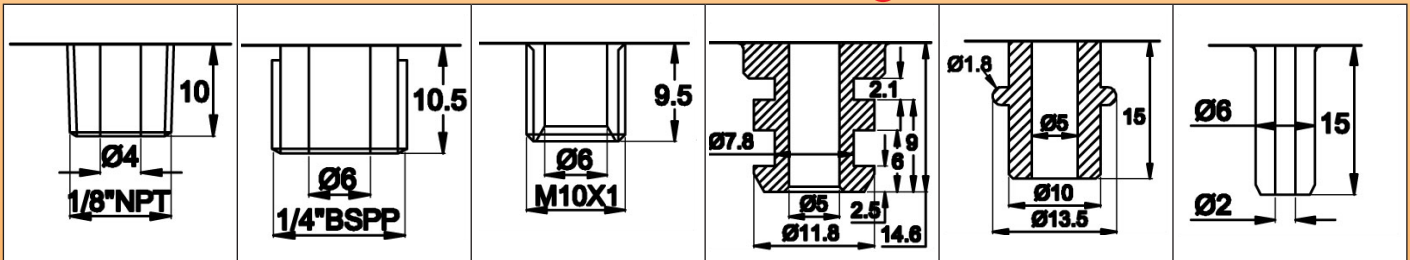
SPNC contact : Type ZF

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuit. This vacuum switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: air or water
Fitting: Plastic
Pressure: negative (Vacuum)
Housing: PA66, UL94 VO
Contact: single pole normally closed at atmospheric pressure, slow break. Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, open on vacuum increase (=decrease of absolute pressure).
Set point calibration: factory calibrated and sealed, not field adjustable
Set point calibration limits (relative pressure): standard calibration minus 50mbar, other values are achievable from minus 20 to minus 200 mbar
Electrical connection: printed circuit terminal, dia 1.2 mm, 15 mm spacing
Maximum pressure: 2 bars (29 PSI)
Maximum vacuum: minus 500 mbar (relative pressure)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (with calibration at minus 50 mbar):

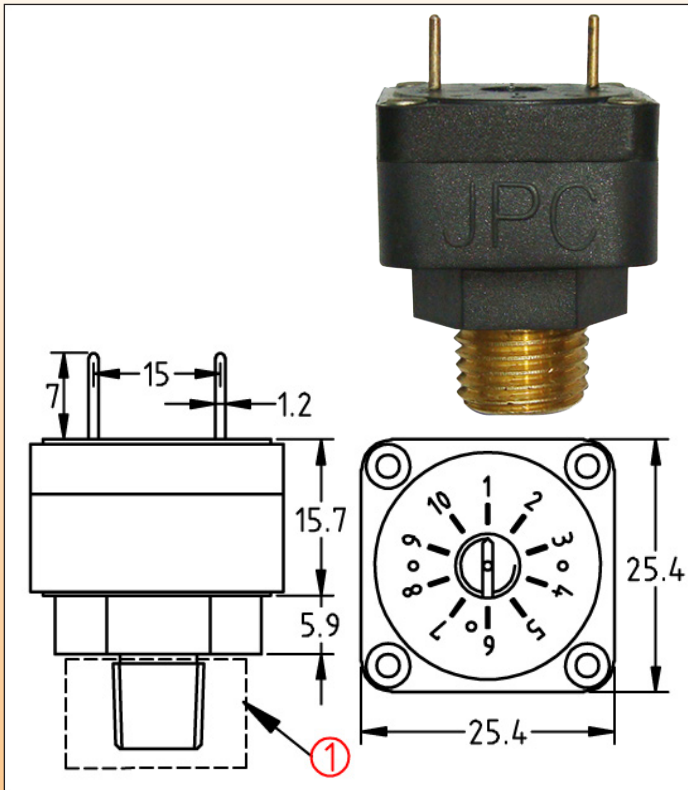
Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZF2X18L105000000	ZF2X18LG050000000
1/4" BSPP	ZF2X1QL105000000	ZF2X1QLG050000000
M10 x 1	ZF2X1ML105000000	ZF2X1MLG050000000
Snap in fitting, 2 grooves dia 7.8	ZF2X1TL105000000	ZF2X1TLG050000000
Snap in fitting, 1 groove dia 10	ZF2X1ZL105000000	ZF2X1ZLG050000000
Snap in fitting, 1 spout dia 6 mm	ZF2X1AL105000000	ZF2X1ALG050000000

Other set point values: replace 050 in the product reference by the requested value in mbar

Slow action contact miniature vacuum switches for printed circuit boards with 5 mm pitch, metal fitting

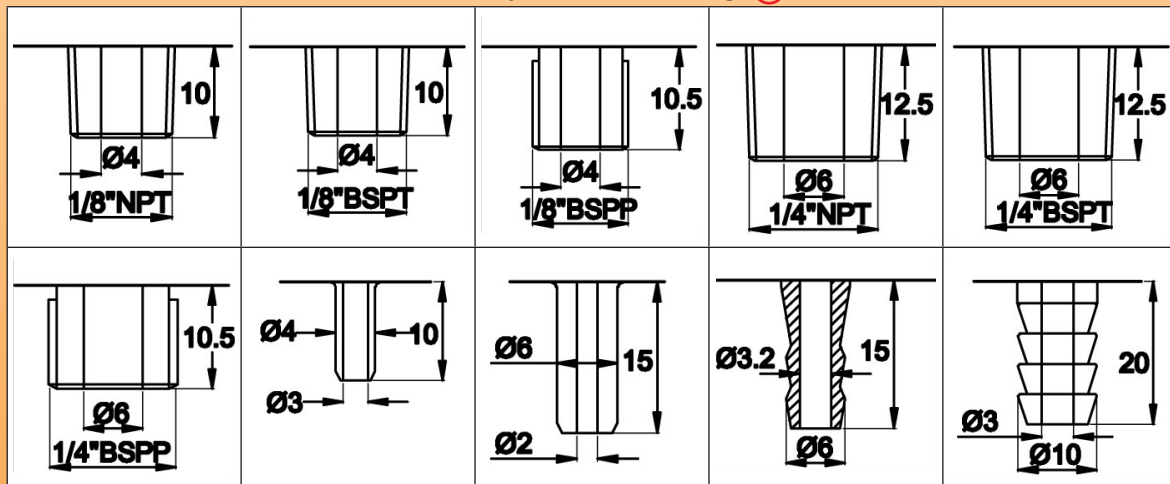
SPNO contact : ZF

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuit. This vacuum switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: air or water
Fitting: brass (stainless steel on request)
Pressure: negative (Vacuum)
Housing: PA66, UL94 VO
Contact: single pole normally open at atmospheric pressure, slow make.
Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, close on vacuum increase (=decrease of absolute pressure).
Set point calibration: factory calibrated and sealed, not field adjustable
Set point calibration limits (relative pressure): standard calibration minus 50mbar, other values are achievable from minus 20 to minus 200 mbar
Electrical connection: printed circuit terminal, dia 1.2 mm, 15 mm spacing
Maximum pressure: 2 bars (29 PSI)
Maximum vacuum: minus 500 mbar (relative pressure)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (with calibration at minus 50 mbar and brass fitting):

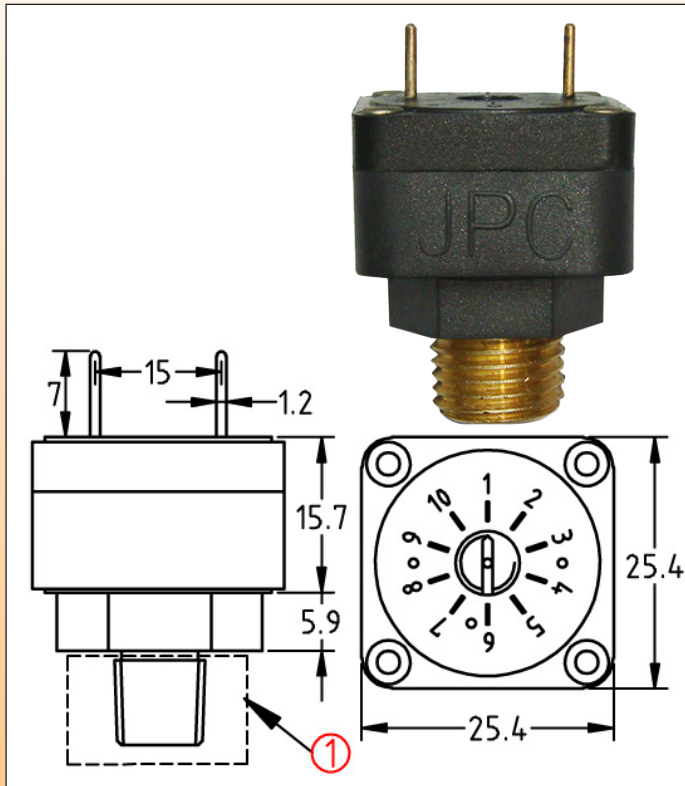
Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZF2X2RL105000000	ZF2X2RLG050000000
1/8" BSPT	ZF2X2PL105000000	ZF2X2PLG050000000
1/8" BSPP	ZF2X2LL105000000	ZF2X2LLG050000000
1/4" NPT	ZF2X2CL105000000	ZF2X2CLG050000000
1/4" BSPT	ZF2X2SL105000000	ZF2X2SLG050000000
1/4" BSPP	ZF2X22L105000000	ZF2X22LG050000000
Smooth spout dia 4 mm	ZF2X23L105000000	ZF2X23LG050000000
Spout dia 6 mm	ZF2X27L105000000	ZF2X27LG050000000
Fluted spout dia 6 mm	ZF2X2JL105000000	ZF2X2JLG050000000
Barbed spout dia 10 mm	ZF2X29L105000000	ZF2X29LG050000000

Other set point values: replace 050 in the product reference by the requested value in mbar

Slow action contact miniature vacuum switches for printed circuit boards with 5 mm pitch, metal fitting

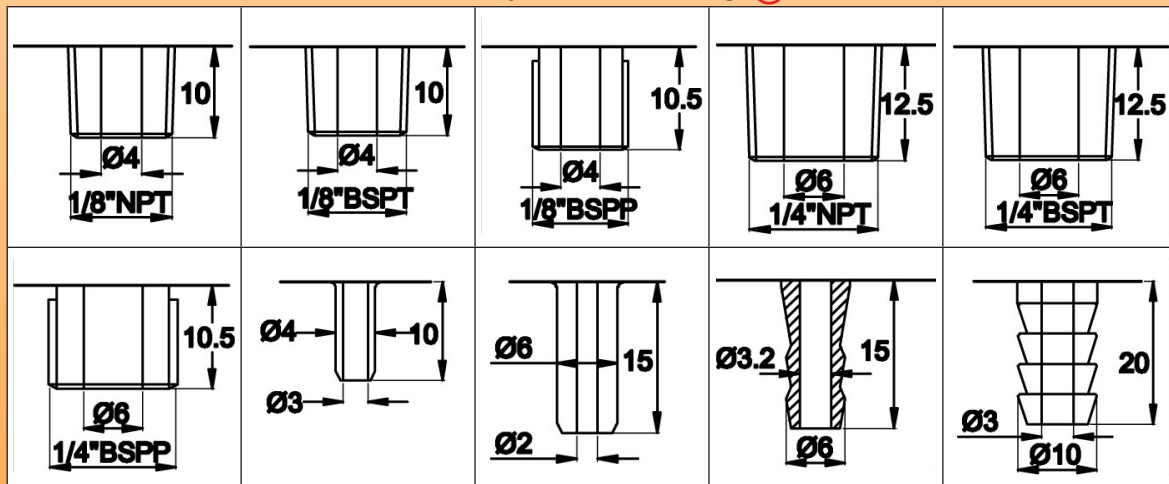
SPNC contact : Type ZF

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuit. This vacuum switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: air or water
Fitting: Brass (stainless steel on request)
Pressure: negative (Vacuum)
Housing: PA66, UL94 VO
Contact: single pole normally closed at atmospheric pressure, slow break.
Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, open on vacuum increase (=decrease of absolute pressure).
Set point calibration: factory calibrated and sealed, not field adjustable
Set point calibration limits (relative pressure): standard calibration minus 50mbar, other values are achievable from minus 20 to minus 200 mbar
Electrical connection: printed circuit terminal, dia 1.2 mm, 15 mm spacing
Maximum pressure: 2 bars (30 PSI)
Maximum vacuum: minus 500 mbar (relative pressure)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



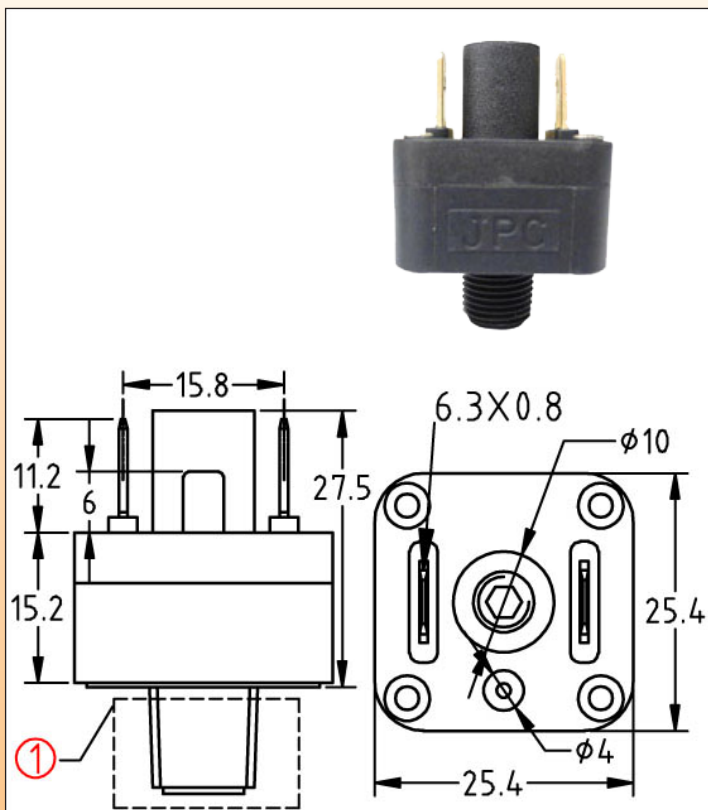
References (with calibration at minus 50 mbar and brass fitting):

Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZF2X1RL105000000	ZF2X1RLG050000000
1/8" BSPT	ZF2X1PL105000000	ZF2X1PLG050000000
1/8" BSPP	ZF2X1LL105000000	ZF2X1LLG050000000
1/4" NPT	ZF2X1CL105000000	ZF2X1CLG050000000
1/4" BSPT	ZF2X1SL105000000	ZF2X1SLG050000000
1/4" BSPP	ZF2X12L105000000	ZF2X12LG050000000
Smooth spout dia 4 mm	ZF2X13L105000000	ZF2X13LG050000000
Spout dia 6 mm	ZF2X17L105000000	ZF2X17LG050000000
Fluted spout dia 6 mm	ZF2X1JL105000000	ZF2X1JLG050000000
Barbed spout dia 10 mm	ZF2X19L105000000	ZF2X19LG050000000

Other set point values: replace 050 in the product reference by the requested value in mbar

Slow action contact miniature vacuum switches, 6.35 x 0.8 mm terminals, plastic fitting SPNO contact : Type ZF

DIMENSIONS



Uses: Low voltage, high sensitivity

Main applications: Electronic printed circuit. This vacuum switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request

Fluid: air or water

Fitting: Plastic

Pressure: negative (Vacuum)

Housing: PA66, UL94 VO

Contact: single pole normally open at atmospheric pressure, slow make.

Electrical rating:

- Silver contact: max 1A 250V

- Gold plated contact: max 100 mA, 24V

Action: momentary, close on vacuum increase (=decrease of absolute pressure).

Set point calibration: factory calibrated and sealed, not field adjustable

Set point calibration limits (relative pressure): standard calibration minus 50mbar, other values are achievable from minus 20 to minus 200 mbar

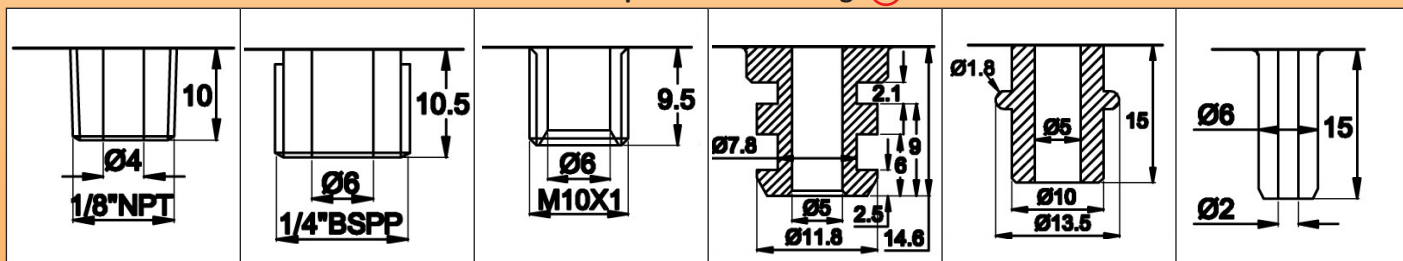
Electrical connection: two 6.35 x 0.8 mm quick connect terminals

Maximum pressure: 2 bars (29 PSI)

Maximum vacuum: minus 500 mbar (relative pressure)

Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



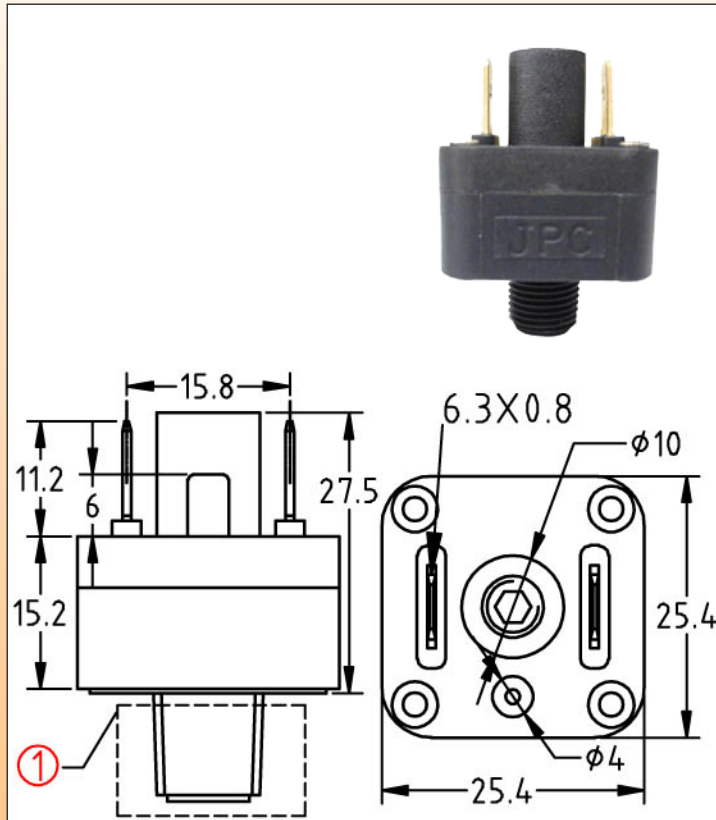
References (with calibration at minus 50 mbar):

Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZF2X28EA05000000	ZF2X28EG05000000
1/4" BSPP	ZF2X2QEA05000000	ZF2X2QEG05000000
M10 x 1	ZF2X2MEA05000000	ZF2X2MEG05000000
Snap in fitting, 2 grooves dia 7.8	ZF2X2TEA05000000	ZF2X2TEG05000000
Snap in fitting, 1 groove dia 10	ZF2X2ZEA05000000	ZF2X2ZEG05000000
Snap in fitting, 1 spout dia 6 mm	ZF2X2AEA05000000	ZF2X2AEG05000000

Other set point values: replace 050 in the product reference by the requested value in mbar

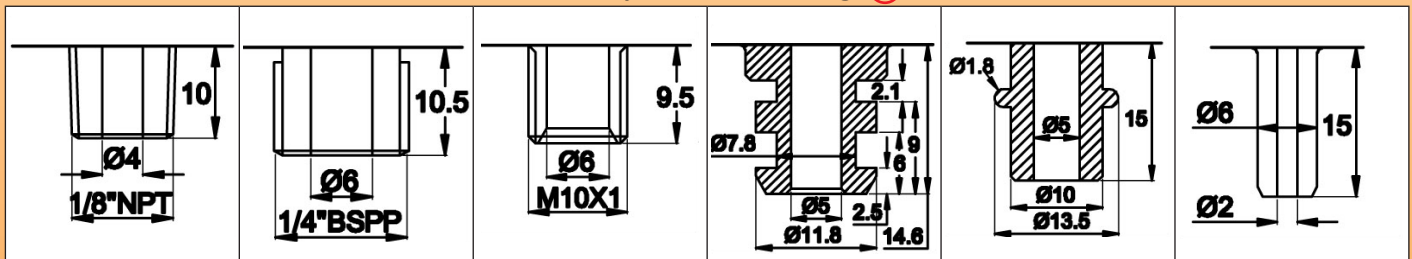
Slow action contact miniature vacuum switches, 6.35 x 0.8 mm terminals, plastic fitting SPNC contact : Type ZF

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuit. This vacuum switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: air or water
Fitting: Plastic
Pressure: negative (Vacuum)
Housing: PA66, UL94 VO
Contact: single pole normally closed at atmospheric pressure, slow break.
Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, open on vacuum increase (=decrease of absolute pressure).
Set point calibration: factory calibrated and sealed, not field adjustable
Set point calibration limits (relative pressure): standard calibration minus 50mbar, other values are achievable from minus 20 to minus 200 mbar
Electrical connection: two 6.35 x 0.8 mm quick connect terminals
Maximum pressure: 2 bars (29 PSI)
Maximum vacuum: minus 500 mbar (relative pressure)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



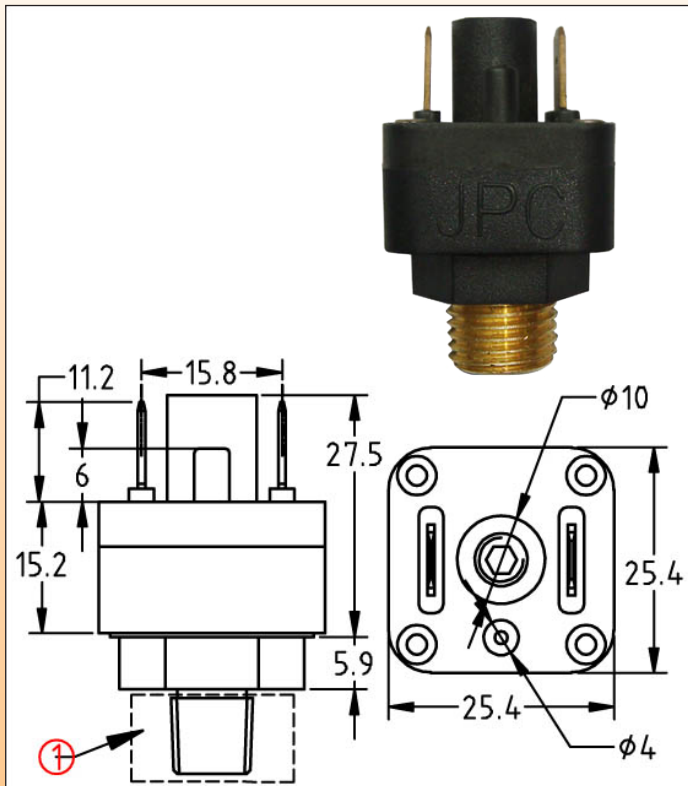
References (with calibration at minus 50 mbar):

Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZF2X18EA05000000	ZF2X18EG05000000
1/4" BSPP	ZF2X1QEA05000000	ZF2X1QEG05000000
M10 x 1	ZF2X1MEA05000000	ZF2X1MEG05000000
Snap in fitting, 2 grooves dia 7.8	ZF2X1TEA05000000	ZF2X1TEG05000000
Snap in fitting, 1 groove dia 10	ZF2X1ZEA05000000	ZF2X1ZEG05000000
Snap in fitting, 1 spout dia 6 mm	ZF2X1AEA05000000	ZF2X1AEG05000000

Other set point values: replace 050 in the product reference by the requested value in mbar

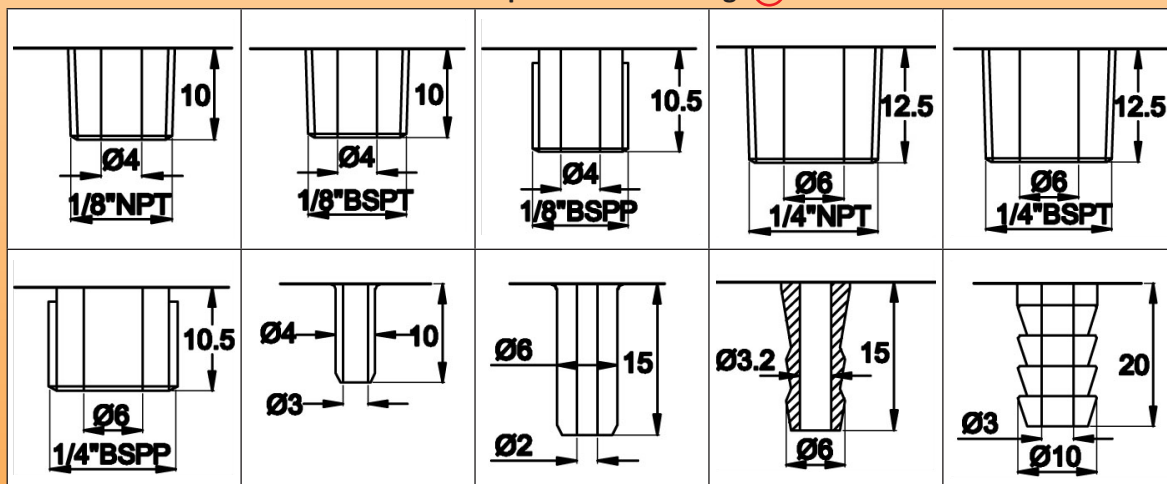
Slow action contact miniature vacuum switches, 6.35 x 0.8 mm terminals, metal fitting SPNO contact : Type ZF

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuit. This vacuum switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: air or water
Fitting: brass (stainless steel on request)
Pressure: negative (Vacuum)
Housing: PA66, UL94 VO
Contact: single pole normally open at atmospheric pressure, slow make.
Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, close on vacuum increase (=decrease of absolute pressure).
Set point calibration: factory calibrated and sealed, not field adjustable
Set point calibration limits (relative pressure): standard calibration minus 50mbar, other values are achievable from minus 20 to minus 200 mbar
Electrical connection: two 6.35 x 0.8 mm quick connect terminals
Maximum pressure: 2 bars (29 PSI)
Maximum vacuum: minus 500 mbar (relative pressure)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



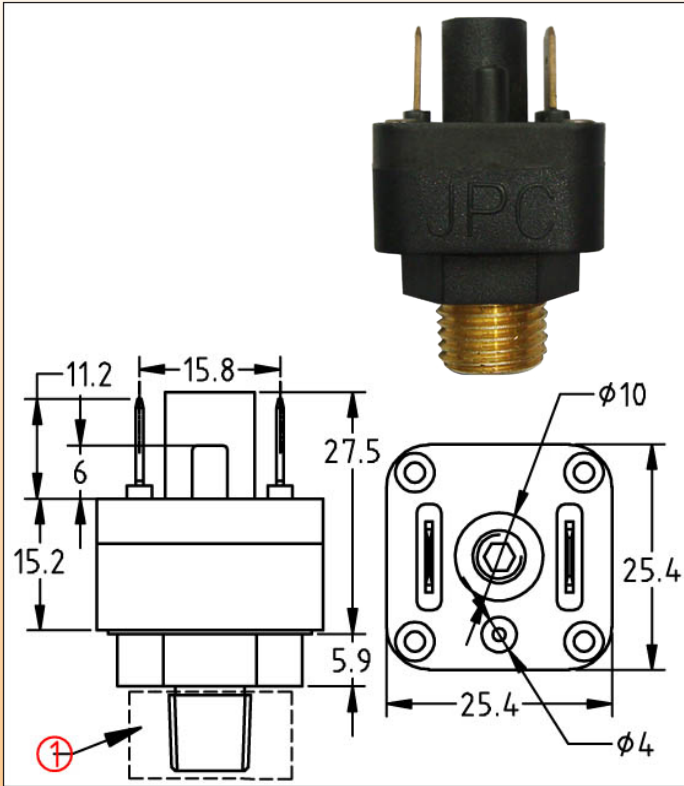
References (with calibration at minus 50 mbar and brass fitting):

Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZF2X2REA05000000	ZF2X2REG05000000
1/8" BSPT	ZF2X2PEA05000000	ZF2X2PEG05000000
1/8" BSPP	ZF2X2LEA05000000	ZF2X2LEG05000000
1/4" NPT	ZF2X2CEA05000000	ZF2X2CEG05000000
1/4" BSPT	ZF2X2SEA05000000	ZF2X2SEG05000000
1/4" BSPP	ZF2X22EA05000000	ZF2X22EG05000000
Smooth spout dia 4 mm	ZF2X23EA05000000	ZF2X23EG05000000
Spout dia 6 mm	ZF2X27EA05000000	ZF2X27EG05000000
Fluted spout dia 6 mm	ZF2X2JEA05000000	ZF2X2JEG05000000
Barbed spout dia 10 mm	ZF2X29EA05000000	ZF2X29EG05000000

Other set point values: replace 050 in the product reference by the requested value in mbar

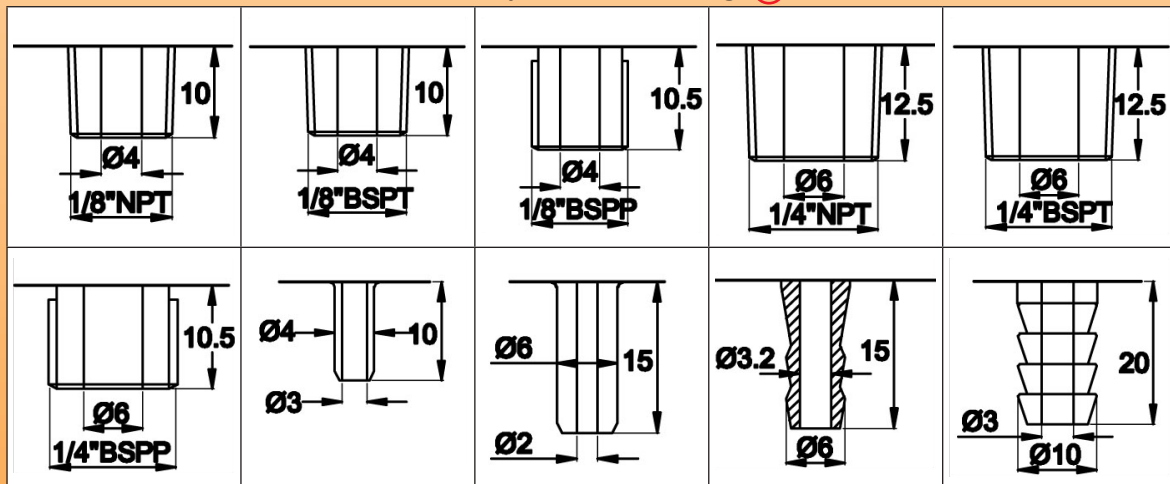
Slow action contact miniature vacuum switch, 6.35 x 0.8 mm terminals, metal fitting SPNC contact : Type ZF

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuit. This vacuum switch is more sensible than snap action models and can be calibrated at lower pressure values. Very small differential.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: air or water
Fitting: Brass (stainless steel on request)
Pressure: negative (Vacuum)
Housing: PA66, UL94 VO
Contact: single pole normally closed at atmospheric pressure, slow break.
Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, open on vacuum increase (=decrease of absolute pressure).
Set point calibration: factory calibrated and sealed, not field adjustable
Set point calibration limits (relative pressure): standard calibration minus 50mbar, other values are achievable from minus 20 to minus 200 mbar
Electrical connection: two 6.35 x 0.8 mm quick connect terminals
Maximum pressure: 2 bars (29 PSI)
Maximum vacuum: minus 500 mbar (relative pressure)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



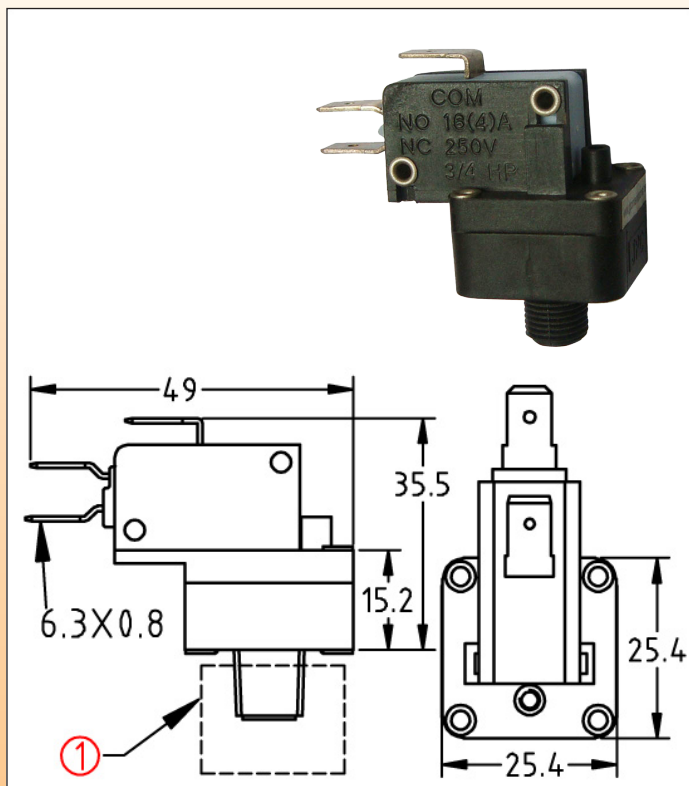
References (with calibration at minus 50 mbar and brass fitting):

Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZF2X1REA05000000	ZF2X1REG05000000
1/8" BSPT	ZF2X1PEA05000000	ZF2X1PEG05000000
1/8" BSPP	ZF2X1LEA05000000	ZF2X1LEG05000000
1/4" NPT	ZF2X1CEA05000000	ZF2X1CEG05000000
1/4" BSPT	ZF2X1SEA05000000	ZF2X1SEG05000000
1/4" BSPP	ZF2X12EA05000000	ZF2X12EG05000000
Smooth spout dia 4 mm	ZF2X13EA05000000	ZF2X13EG05000000
Spout dia 6 mm	ZF2X17EA05000000	ZF2X17EG05000000
Fluted spout dia 6 mm	ZF2X1JEA05000000	ZF2X1JEG05000000
Barbed spout dia 10 mm	ZF2X19EA05000000	ZF2X19EG05000000

Other set point values: replace 050 in the product reference by the requested value in mbar

Snap action contact miniature vacuum switch, plastic fitting. SPDT contact : Type ZD

DIMENSIONS



Uses: High electrical rating, for 250V.

Main applications: Vacuum detection on pumps, filters, ventilation, and electrical appliances.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request. Double membrane on request.

Fluid: water or air

Fitting: Plastic

Pressure: negative (Vacuum)

Housing: PA66, UL94 VO

Contact: SPDT, snap action. NO or NC contacts available with MOQ

Electrical rating: Depends on micro-switch operating force that is linked to the electrical rating

- Standard rating micro-switch (medium and high vacuum calibration only): 16A 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC. Differential about 60 mbar

- High rating micro-switch (medium and high vacuum calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch). Differential about 90 mbar.

- Low force micro-switch (vacuum less than minus 150 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch) Differential about 40 mbar.

- On request: up to 25A 250V

Action: momentary.

Set point calibration: factory calibrated and sealed, not field adjustable

Calibration condition: the contact between Com and NC opens when vacuum pressure goes from atmospheric pressure to requested vacuum set point.

Set point calibration limits: from minus 50 to minus 700 mbar

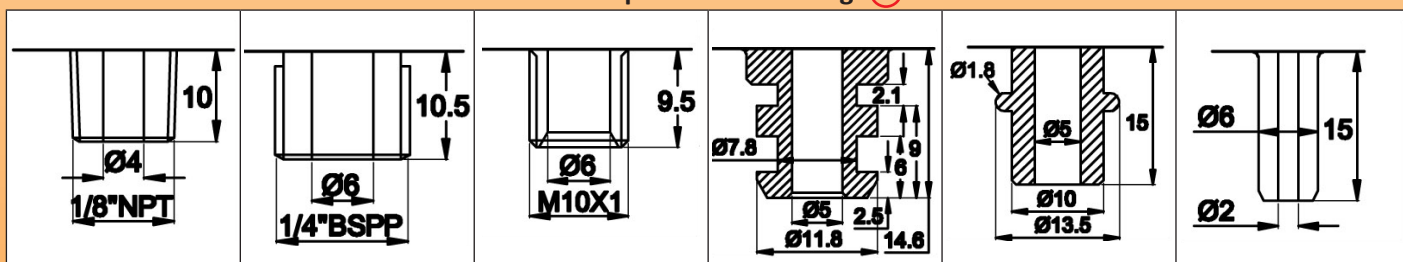
Electrical connection: 6.35 x 0.8 mm quick connect terminals

Maximum pressure: 4 bars (58 PSI)

Maximum vacuum: minus 700 mbar (relative pressure)

Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



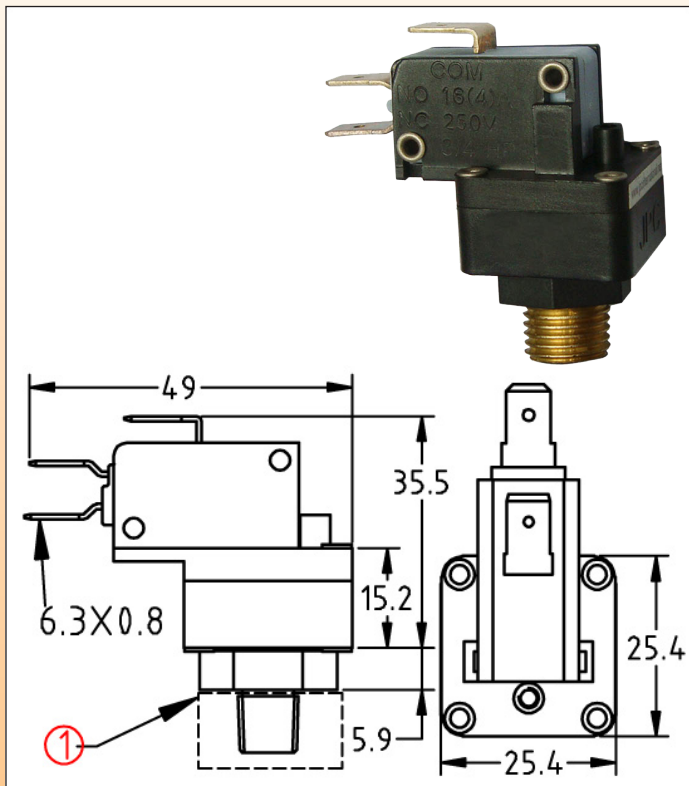
References (with SPDT contact):

Pressure inlet	Standard rating micro- switch (Calibration : minus 200 mbar)	Low pressure micro-switch (Calibration minus 100 mbar)	High rating micro-switch (Calibration minus 300 mbar)
1/8" NPT	ZD2228U10B000000	ZD2528U50A000000	ZD2B8U60C0000000
1/4" BSPP	ZD222QU10B000000	ZD252QU50A0000000	ZD2BQU60C0000000
M10 x 1	ZD222MU10B0000000	ZD252MU50A0000000	ZD2BMU60C0000000
Snap in fitting, 2 grooves dia 7.8	ZD222TU10B0000000	ZD252TU50A0000000	ZD2BTU60C0000000
Snap in fitting, 1 groove dia 10	ZD222ZU10B0000000	ZD252ZU50A0000000	ZD2BZU60C0000000
Snap in fitting, 1 spout dia 6 mm	ZD222AU10B0000000	ZD252AU50A0000000	ZD2BAU60C0000000
	Other set point values: replace B00 in the product reference by the requested value in mbar	Other set point values: replace A00 in the product reference by the requested value in mbar	Other set point values: replace 000 in the product reference by the requested value in mbar

Snap action contact miniature vacuum switch, SPDT contact

Metal fitting : Type ZD

DIMENSIONS



Uses: High electrical rating, for 250V.

Main applications: Vacuum detection on pumps, filters, ventilation, and electrical appliances.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request. Double membrane on request.

Fluid: water or air

Fitting: brass (stainless steel on request)

Pressure: negative (Vacuum)

Housing: PA66, UL94 VO

Contact: SPDT, snap action. NO or NC contacts available with MOQ.
Electrical rating: Depends on micro-switch operating force that is linked to the electrical rating

- Standard rating micro-switch (medium and high vacuum calibration only): 16A 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC. Differential about 60 mbar

- High rating micro-switch (medium and high vacuum calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch). Differential about 90 mbar.

- Low force micro-switch (vacuum less than minus 150 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch) Differential about 40 mbar.

- On request: up to 25A 250V

Action: momentary.

Set point calibration: factory calibrated and sealed, not field adjustable

Calibration condition: the contact between Com and NC opens when vacuum pressure goes from atmospheric pressure to requested vacuum set point.

Set point calibration limits: from minus 50 to minus 700 mbar

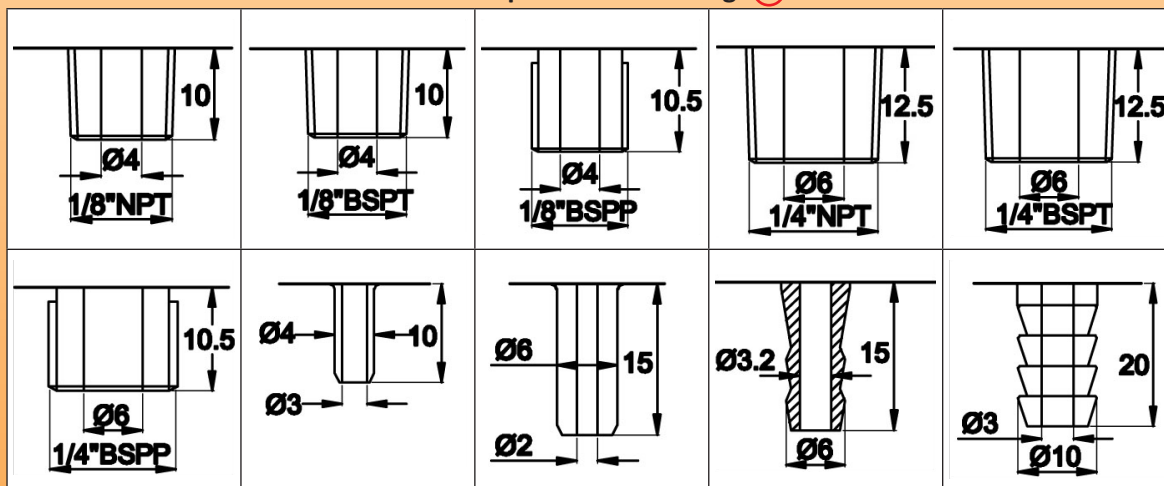
Electrical connection: 6.35 x 0.8 mm quick connect terminals

Maximum pressure: 4 bars (58 PSI)

Maximum vacuum: minus 700 mbar (relative pressure)

Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



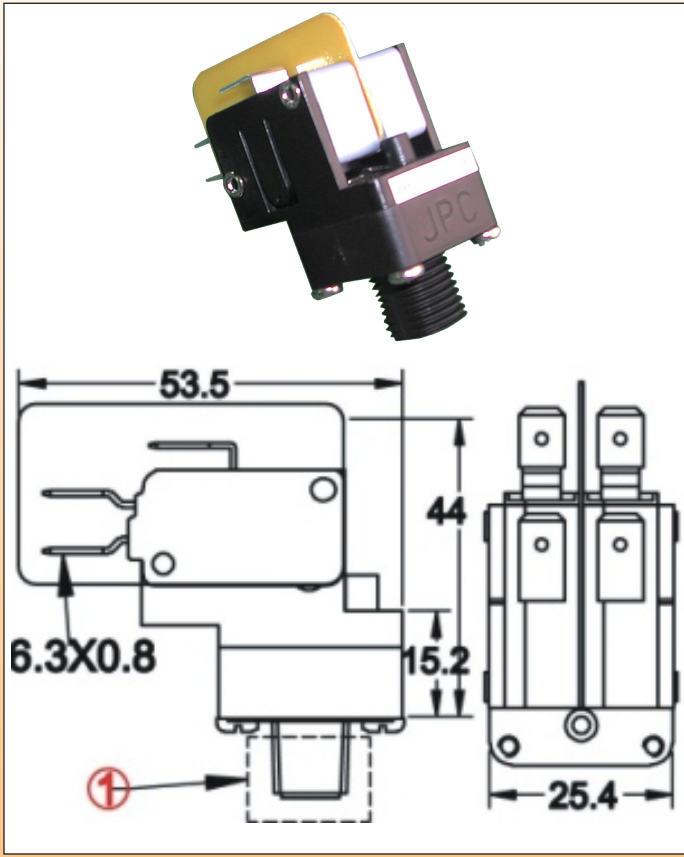
References (with SPDT contact and brass fitting):

Pressure inlet	Standard rating micro- switch (Calibration : minus 200 mbar)	Low pressure micro-switch (Calibration minus 100 mbar)	High rating micro-switch (Calibration minus 300 mbar)
1/8" NPT	ZD222RU10B000000	ZD252RU50A000000	ZD2BRU60C0000000
1/8" BSPT	ZD222PU10B000000	ZD252PU50A000000	ZD2BPU60C0000000
1/8" BSPP	ZD222LU10B000000	ZD252LU50A000000	ZD2BLU60C0000000
1/4" NPT	ZD222CU10B000000	ZD252CU50A000000	ZD2BCU60C0000000
1/4" BSPT	ZD222SU10B000000	ZD252SU50A000000	ZD2BSU60C0000000
1/4" BSPP	ZD222U10B000000	ZD252U50A000000	ZD2B2U60C0000000
Smooth spout dia 4 mm	ZD2223U10B000000	ZD2523U50A000000	ZD2B3U60C0000000
Spout dia 6 mm	ZD2227U10B000000	ZD2527U50A000000	ZD2B7U60C0000000
Fluted spout dia 6 mm	ZD222JU10B000000	ZD252JU50A000000	ZD2BJU60C0000000
Barbed spout dia 10 mm	ZD2229U10B000000	ZD2529U50A000000	ZD2B9U60C0000000
	Other set point values: replace B00 in the product reference by the requested value in mbar	Other set point values: replace A00 in the product reference by the requested value in mbar	Other set point values: replace 000 in the product reference by the requested value in mbar

Snap action contact miniature vacuum switch, DPDT contact

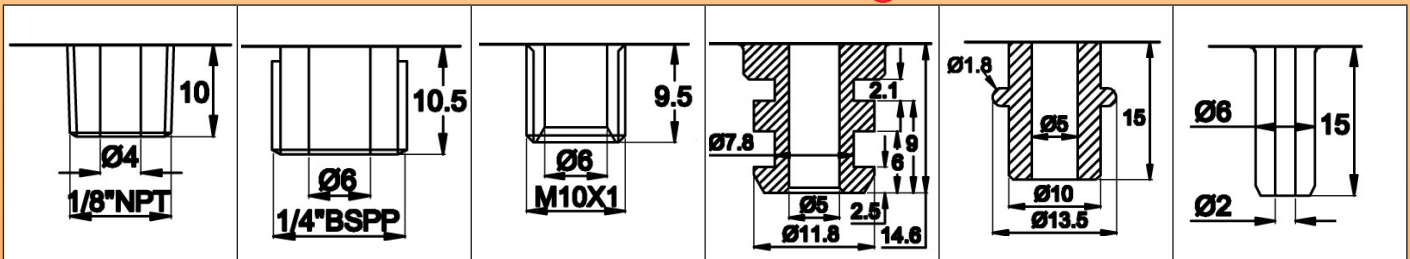
Plastic fitting : Type ZT

DIMENSIONS



Uses: High electrical rating, for 250V.
Main applications: Vacuum detection on pumps, filters, ventilation, and electrical appliances.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request. Double membrane on request.
Fluid: water or air
Fitting: Plastic
Pressure: negative (Vacuum)
Housing: PA66, UL94 VO
Contact: two SPDT switches, snap action. NO or NC contacts available with MOQ
Electrical rating: Depends on micro-switch operating force that is linked to the electrical rating
 - Standard rating micro-switch (medium and high vacuum calibration only): 16A 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC. Differential about 60 mbar
 - High rating micro-switch (medium and high vacuum calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch). Differential about 90 mbar.
 - Low force micro-switch (vacuum less than minus 150 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch) Differential about 40 mbar.
 - On request: up to 25A 250V
Action: momentary.
Set point calibration: factory calibrated and sealed, not field adjustable
Calibration condition: the contact between Com and NC opens when vacuum pressure goes from atmospheric pressure to requested vacuum set point.
Set point calibration limits: from minus 50 to minus 700 mbar
Electrical connection: 6.35 x 0.8 mm quick connect terminals
Maximum pressure: 4 bars (59 PSI)
Maximum vacuum: minus 700 mbar (relative pressure)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



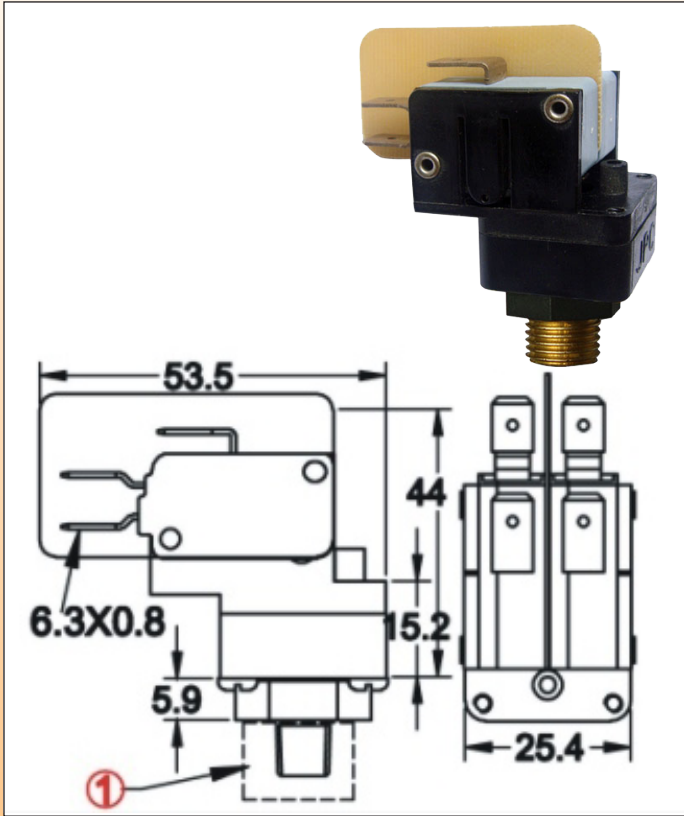
References (with SPDT contact):

Pressure inlet	Standard rating micro- switch (Calibration : minus 200 mbar)	Low pressure micro-switch (Calibration minus 100 mbar)	High rating micro-switch (Calibration minus 300 mbar)
1/8" NPT	ZT2228U10B000000	ZT2528U50A000000	ZT2B8U60C0000000
1/4" BSPP	ZT222QU10B000000	ZT252QU50A000000	ZT2BQU60C0000000
M10 x 1	ZT222MU10B000000	ZT252MU50A000000	ZT2BMU60C0000000
Snap in fitting, 2 grooves dia 7.8	ZT222TU10B000000	ZT252TU50A000000	ZT2BTU60C0000000
Snap in fitting, 1 groove dia 10	ZT222ZU10B000000	ZT252ZU50A000000	ZT2BZU60C0000000
Snap in fitting, 1 spout dia 6 mm	ZT222AU10B000000	ZT252AU50A000000	ZT2BAU60C0000000
	Other set point values: replace B00 in the product reference by the requested value in mbar	Other set point values: replace A00 in the product reference by the requested value in mbar	Other set point values: replace 000 in the product reference by the requested value in mbar

Snap action contact miniature vacuum switch, DPDT contact

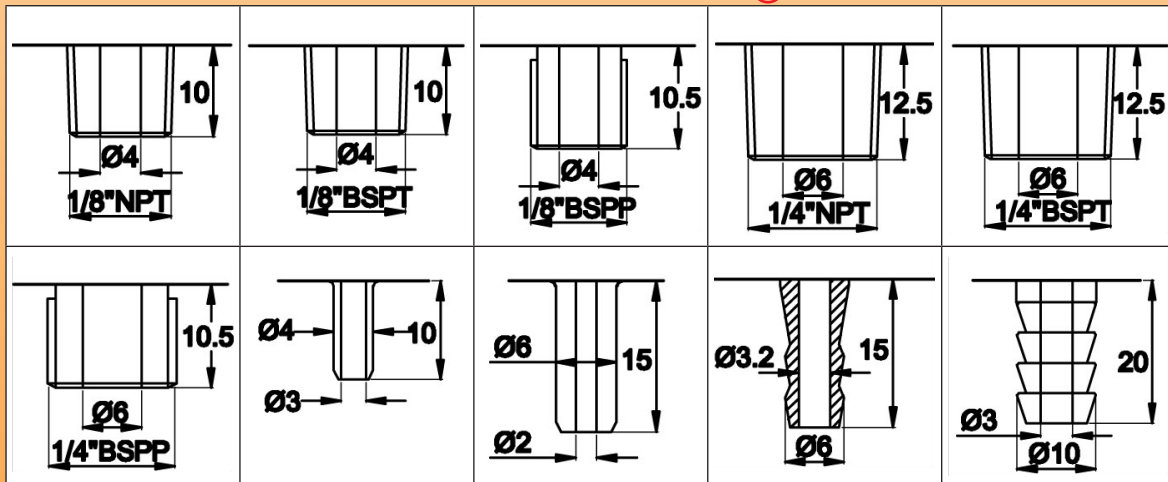
Metal fitting : Type ZT

DIMENSIONS



Uses: High electrical rating, for 250V.
Main applications: Vacuum detection on pumps, filters, ventilation, and electrical appliances.
Membranes: EPDM, dia 22 mm. Silicone or NBR on request. Double membrane on request.
Fluid: water or air
Fitting: brass (stainless steel on request)
Pressure: negative (Vacuum)
Housing: PA66, UL94 VO
Contact: two SPDT switches, snap action. NO or NC contacts available with MOQ
Electrical rating: Depends on micro-switch operating force that is linked to the electrical rating
 - Standard rating micro-switch (medium and high vacuum calibration only): 16A 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC. Differential about 60 mbar
 - High rating micro-switch (medium and high vacuum calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch). Differential about 90 mbar.
 - Low force micro-switch (vacuum less than minus 150 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch) Differential about 40 mbar.
 - On request: up to 25A 250V
Action: momentary.
Set point calibration: factory calibrated and sealed, not field adjustable
Calibration condition: the contact between Com and NC opens when vacuum pressure goes from atmospheric pressure to requested vacuum set point.
Set point calibration limits: from minus 50 to minus 700 mbar
Electrical connection: 6.35 x 0.8 mm quick connect terminals
Maximum pressure: 4 bars (58 PSI)
Maximum vacuum: minus 700 mbar (relative pressure)
Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (with SPDT contact and brass fitting):

Pressure inlet	Standard rating micro- switch (Calibration : minus 200 mbar)	Low pressure micro-switch (Calibration minus 100 mbar)	High rating micro-switch (Calibration minus 300 mbar)
1/8" NPT	ZT222RU10B000000	ZT252RU50A000000	ZT2BRU60C0000000
1/8" BSPT	ZT222PU10B000000	ZT252PU50A000000	ZT2BPU60C0000000
1/8" BSPP	ZT222LU10B000000	ZT252LU50A000000	ZT2BLU60C0000000
1/4" NPT	ZT222CU10B000000	ZT252CU50A000000	ZT2BCU60C0000000
1/4" BSPT	ZT222SU10B000000	ZT252SU50A000000	ZT2BSU60C0000000
1/4" BSPP	ZT222U10B000000	ZT252U50A000000	ZT2B2U60C0000000
Smooth spout dia 4 mm	ZT2223U10B000000	ZT2523U50A000000	ZT2B3U60C0000000
Spout dia 6 mm	ZT2227U10B000000	ZT2527U50A000000	ZT2B7U60C0000000
Fluted spout dia 6 mm	ZT222JU10B000000	ZT252JU50A000000	ZT2BJU60C0000000
Barbed spout dia 10 mm	ZT2229U10B000000	ZT2529U50A000000	ZT2B9U60C0000000
	Other set point values: replace B00 in the product reference by the requested value in mbar	Other set point values: replace A00 in the product reference by the requested value in mbar	Other set point values: replace 000 in the product reference by the requested value in mbar

Differential pressure switches

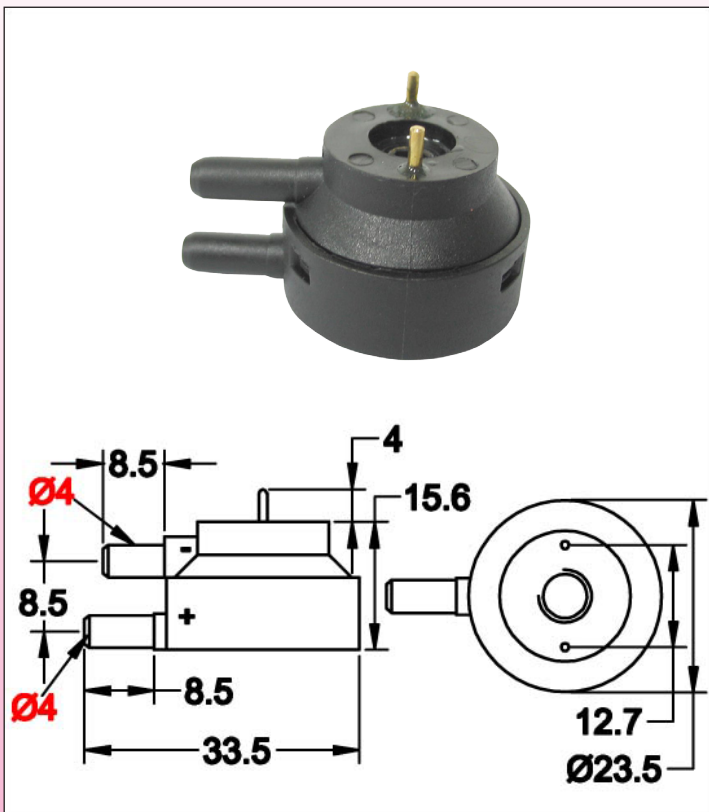


En raison de l'évolution technique constante de nos produits, les plans, dessins, photos et caractéristiques repris dans les pages techniques sont communiqués sans engagement et peuvent être modifiés sans préavis

Low pressure, slow action contact differential pressure switches for it printed circo boards with 6.35mm pitch

SPNO contact : Type ZH

DIMENSIONS



Uses: Low voltage, high sensivity

Main applications: Electronic printed circuits. Detection of low positive, negative or differential pressure. Measurement of liquid levels, air flow, filters efficiency. Very small differential, about 2 millibars

Membranes: EPDM, dia 22 mm. Silicone or NBR on request

Fluid: water or air (no liquid input on the negative pressure inlet)

Fitting: two plastic spouts dia 4 mm for soft PVC tube 3x6 mm (1/8")

Pressure: Differential

Housing: PA66, UL94 VO

Contact: single pole normally open, slow action.

Electrical rating:

- Silver contact: max 1A 250V

- Gold plated contact: max 100 mA, 24V

Action: momentary, close by pressure rise on positive pressure inlet

Set point calibration: factory calibrated and sealed, not field adjustable

Set point calibration limits: from 10 to 400 mbar

Differential: less than 5 mbar

Electrical connection: printed circuit terminal, dia 1.2 mm, 12.7mm spacing

Maximum pressure: 500 mbar (7 PSI)

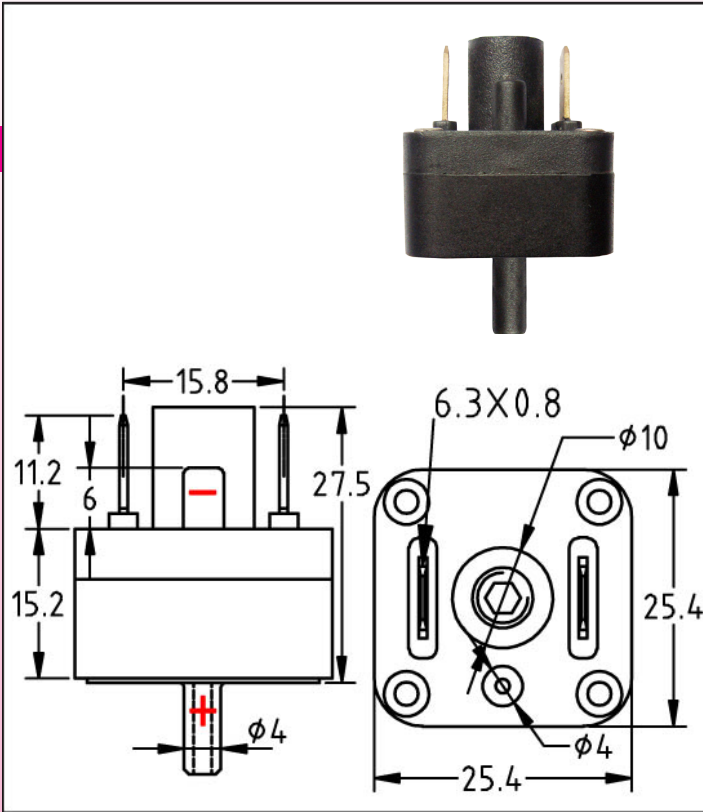
Ambient temperature limits: 0 to 85°C

References:

Calibration (mbar)	Silver contact	Gold plated contact
20	ZH2X25T102000000	ZH2X25TG02000000
50	ZH2X25T105000000	ZH2X25TG05000000
75	ZH2X25T107500000	ZH2X25TG07500000
100	ZH2X25T10A000000	ZH2X25TG0A000000
150	ZH2X25T10A500000	ZH2X25TG0A500000

Medium pressure, slow action contact differential pressure switches, 6.35x0.8 mm terminals SPNO contact : Type ZA

DIMENSIONS



Uses: Low voltage, high sensitivity

Main applications: Detection of medium positive, negative or differential pressure. Measurement of liquid levels, water filters efficiency.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request

Fluid: water or air (no liquid input on the negative pressure inlet)

Fitting: two plastic spouts dia 4 mm for soft PVC tube 3x6 mm (1/8"). On request threaded fitting on positive inlet

Pressure: Differential

Housing: PA66, UL94 VO

Contact: single pole normally open, slow action. NC contact is available on request (MOQ)

Electrical rating:

- Silver contact: max 1A 250V

- Gold plated contact: max 100 mA, 24V

Action: momentary, close by pressure rise on positive pressure inlet

Set point calibration: factory calibrated and sealed, not field adjustable

Set point calibration limits: from 10 to 400 mbar

Differential: less than 10 mbar

Electrical connection: two 6.3 x 0.8 mm quick connect terminals

Maximum positive pressure: 1000 mbar (15 PSI)

Maximum negative pressure: minus 500 mbar

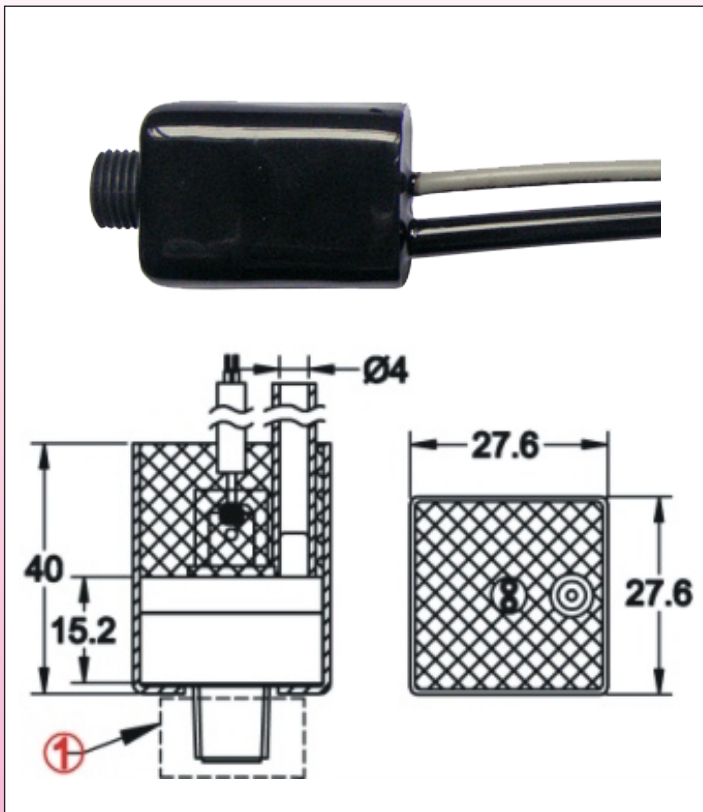
Ambient temperature limits: 0 to 85°C

References:

Calibration (mbar)	Silver contact	Gold plated contact
75	ZA2X24EA07500000	ZA2X24EG07500000
100	ZA2X24EA0A000000	ZA2X24EG0A000000
200	ZA2X24EA0B000000	ZA2X24EG0B000000
300	ZA2X24EA0C000000	ZA2X24EG0C000000
400	ZA2X24EA0D000000	ZA2X24EG0D000000

Medium pressure, slow action contact differential pressure switches , waterproof, IP65 SPNO contact : Type ZC

DIMENSIONS



Uses: Low voltage, high sensitivity . For use in places where IP65 is requested

Main applications: Detection of medium positive, negative or differential pressure. Measurement of liquid levels, water filters efficiency.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request

Fluid: water or air (no liquid input on the negative pressure inlet)

Fitting: soft PVC tube 3x6 mm (1/8") length 200 mm on negative inlet. 4 mm diameter spout or plastic fitting on positive inlet.

Pressure: Differential

Housing: PA66, UL94 VO, PVC and ABS

Contact: single pole normally open, slow action. NC contact is available on request (MOQ)

Electrical rating:

- Silver contact: max 1A 250V

- Gold plated contact: max 100 mA, 24V

Action: momentary, close by pressure rise on positive pressure inlet

Set point calibration: factory calibrated and sealed, not field adjustable

Set point calibration limits: from 10 to 400 mbar

Differential: less than 10 mbar

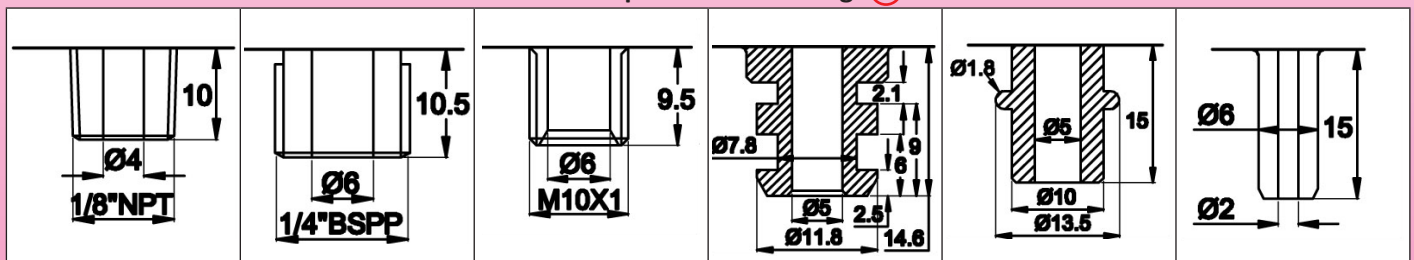
Electrical connection: 500 mm cable, AWG24, UL style 2464

Maximum positive pressure: 1000 mbar (15 PSI)

Maximum negative pressure: minus 500 mbar

Ambient temperature limits: 0 to 85°C

Available pressure inlet fittings ①



References (with calibration at 300 mbar):

Pressure inlet	Silver contact	Gold plated contact
1/8" NPT	ZC2X28EA0C000000	ZC2X28EG0C000000
1/4" BSPP	ZC2X2QEA0C000000	ZC2X2QEG0C000000
M10 x 1	ZC2X2MEA0C000000	ZC2X2MEG0C000000
Snap in fitting, 2 grooves dia 7.8	ZC2X2TEA0C000000	ZC2X2TEG0C000000
Snap in fitting, 1 groove dia 10	ZC2X2ZEA0C000000	ZC2X2ZEG0C000000
Snap in fitting, 1 spout dia 6 mm	ZC2X2AEA0C000000	ZC2X2AEG0C000000
4 mm dia spout for 3x6 mm PVC tube	ZC2X24EA0C000000	ZC2X24EG0C000000

Other set point values: replace C00 in the product reference by the requested value in mbar

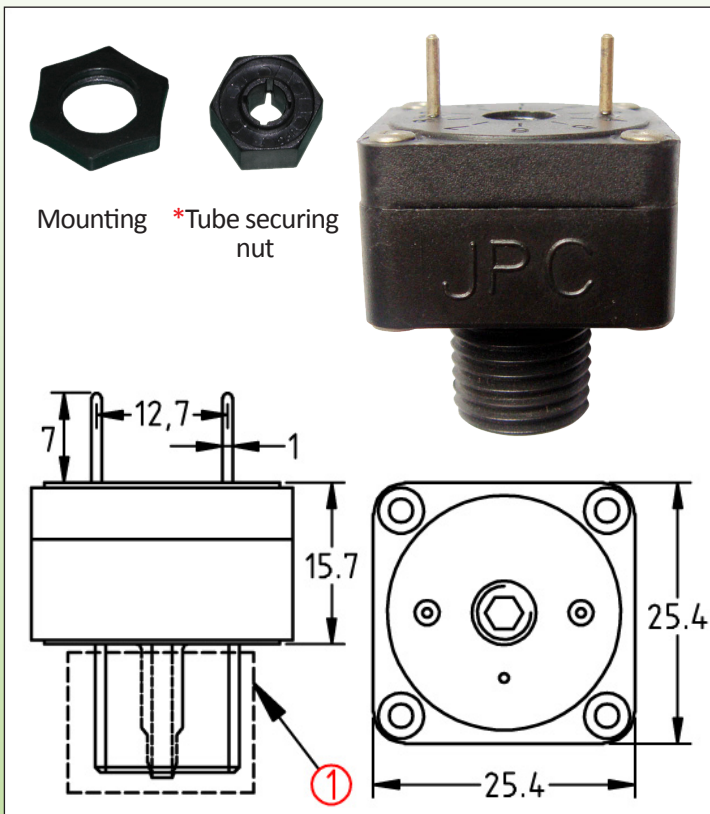


Air switches

Air buttons and air pedals

Slow action contact miniature air switches for printed circuit boards with 6.35 mm pitch, SPNO contact : Type ZE

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuits and remote controls for spa, swimming pools and saunas. This pressure switch is more sensible than snap action models and allows longer tubing distance
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: air
Fitting: Plastic spout for 1/8(3mm) or 1/16(1.5mm) ID flexible plastic tubing maximum hardness 70 shore A
Pressure: positive
Housing: PA66, UL94 VO and ABS
Contact: single pole normally open, slow make.
Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, close on pressure impulse.
Set point calibration: 50mbar, factory calibrated and sealed, not field adjustable. Other values on request
Electrical connection: printed circuit terminal, dia 1 mm, 12.7 mm spacing
Maximum pressure: 2 bars (29 PSI)
Ambient temperature limits: 0 to 85°C
Barometric compensation: groove on 4 mm spout for ¼ NPSM, calibrated orifice on 9/16-18
Caution: This compensation is skipped if using ¼ thread for pressure connection
Mounting fittings: ¼" NPSM or 9/16-18 (2 possible flat positions)
Switch operation: Operates on a sealed pressure air displacement. Do not use pressure transmitters with air input to avoid pumping action.
 Use air transmitters with enough air volume to achieve minimum operating pressure.
Caution: too long connecting tubing and/or too small pressure transmitter will not operate the air switch or will operate it with a momentary action.
Accessories: shipped with plastic nut. Maximum tightening torque with plastic nut is 0.08mkg (0.8Nm).
Recommended value: 0.5 Nm . Stainless steel nut or tube securing nut (*) on request

Available pressure inlet fittings ①	Mounting	*Tube securing nut

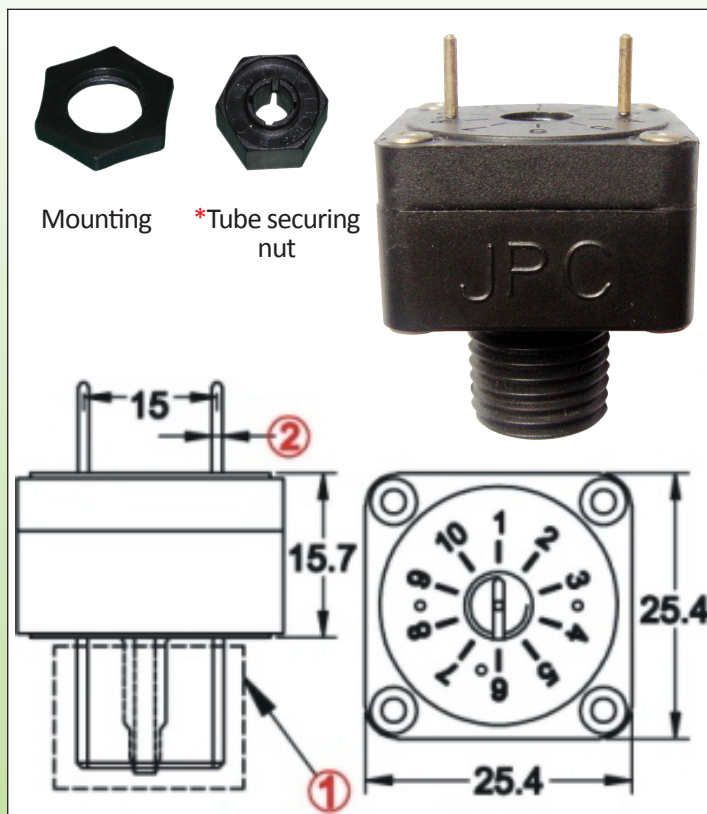
References (with calibration at 50 mbar):

Pressure inlet	Silver contact	Gold plated contact
9/16-18+ spout, 2 flats at 0°, standard nut	ZE2X2UF105000008	ZE2X2UFG05000008
9/16-18+ spout, 2 flats at 90°, standard nut	ZE2X2WF105000008	ZE2X2WFG05000008
1/4 NPSM + spout, standard nut	ZE2X2IF105000006	ZE2X2IFG05000006
9/16-18+ spout, 2 flats at 0°, tube securing nut	ZE2X2UF105000009	ZE2X2UFG05000009
9/16-18+ spout, 2 flats at 90° tube securing nut	ZE2X2WF105000009	ZE2X2WFG05000009
1/4 NPSM + spout, tube securing nut	ZE2X2IF105000007	ZE2X2IFG05000007

Other set point values: replace 050 in the product reference by the requested value in mbar

Slow action contact miniature air switches for printed circuit boards with 5mm pitch, SPNO contact : Type ZE

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Electronic printed circuits and remote controls for spa, swimming pools and saunas. This pressure switch is more sensible than snap action models and allows longer tubing distance
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: air
Fitting: Plastic spout for 1/8(3mm) or 1/16(1.5mm) ID flexible plastic tubing maximum hardness 70 shore A
Pressure: positive
Housing: PA66, UL94 VO and ABS
Contact: single pole normally open, slow make.
Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, close on pressure impulse.
Set point calibration: 50mbar, factory calibrated and sealed, not field adjustable. Other values on request
Electrical connection: printed circuit terminal, dia 1.2 mm, 15 mm spacing
Maximum pressure: 2 bars (29 PSI)
Ambient temperature limits: 0 to 85°C
Barometric compensation: groove on 4 mm spout for ¼ NPSM, calibrated orifice on 9/16-18
Caution: This compensation is skipped if using ¼ thread for pressure connection
Mounting fittings: ¼" NPSM or 9/16-18 (2 possible flat positions)
Switch operation: Operates on a sealed pressure air displacement. Do not use pressure transmitters with air input to avoid pumping action.
 Use air transmitters with enough air volume to achieve minimum operating pressure.
Caution: too long connecting tubing and/or too small pressure transmitter will not operate the air switch or will operate it with a momentary action.
Accessories: shipped with plastic nut. Maximum tightening torque with plastic nut is 0.08mkg (0.8Nm).
Recommended value: 0.5 Nm . Stainless steel nut or tube securing nut (*) on request

Available pressure inlet fittings ①	Mounting	*Tube securing nut

References (with calibration at 50 mbar):

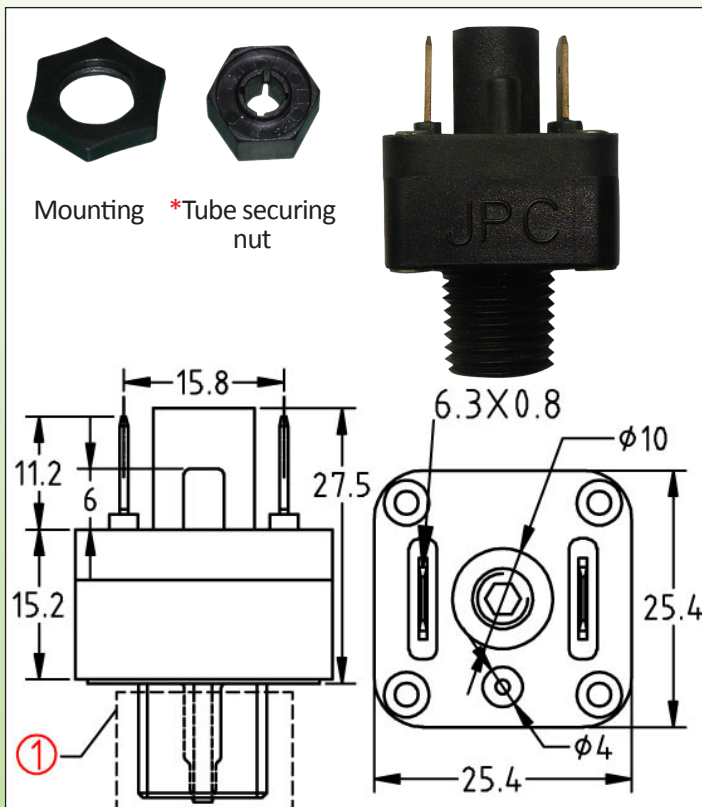
Pressure inlet	Silver contact	Gold plated contact
9/16-18+ spout, 2 flats at 0°, standard nut	ZE2X2UL105000008	ZE2X2ULG05000008
9/16-18+ spout, 2 flats at 90°, standard nut	ZE2X2WL105000008	ZE2X2WLG05000008
1/4 NPSM + spout, standard nut	ZE2X2IL105000008	ZE2X2ILG05000008
9/16-18+ spout, 2 flats at 0°, tube securing nut	ZE2X2UL105000009	ZE2X2ULG05000009
9/16-18+ spout, 2 flats at 90° tube securing nut	ZE2X2WL105000009	ZE2X2WLG05000009
1/4 NPSM + spout, tube securing nut	ZE2X2IL105000009	ZE2X2ILG05000009

Other set point values: replace 050 in the product reference by the requested value in mbar

Slow action contact miniature air switches, 6.35 x 0.8 mm terminals

SPNO contact : Type ZF

DIMENSIONS



Uses: Low voltage, high sensitivity
Main applications: Remote controls for spa, swimming pools saunas, intrusion detection carpets, plumbing equipment. This pressure switch is more sensitive than snap action models and allows longer tubing distance
Membranes: EPDM, dia 22 mm. Silicone or NBR on request
Fluid: air
Fitting: Plastic spout for 1/8(3mm) or 1/16(1.5mm) ID flexible plastic tubing maximum hardness 70 shore A
Pressure: positive
Housing: PA66, UL94 VO and ABS
Contact: single pole normally open, slow make.
Electrical rating:
 - Silver contact: max 1A 250V
 - Gold plated contact: max 100 mA, 24V
Action: momentary, close on pressure impulse.
Set point calibration: 50mbar, factory calibrated and sealed, not field adjustable. Other values on request
Electrical connection: printed circuit terminal, dia 1.2 mm, 15 mm spacing
Maximum pressure: 2 bars (29 PSI)
Ambient temperature limits: 0 to 85°C
Barometric compensation: groove on 4 mm spout for ¼ NPSM, calibrated orifice on 9/16-18
Caution: This compensation is skipped if using ¼ thread for pressure connection
Mounting fittings: ¼" NPSM or 9/16-18 (2 possible flat positions)
Switch operation: Operates on a sealed pressure air displacement. Do not use pressure transmitters with air input to avoid pumping action.
 Use air transmitters with enough air volume to achieve minimum operating pressure.
Caution: too long connecting tubing and/or too small pressure transmitter will not operate the air switch or will operate it with a momentary action.
Accessories: shipped with plastic nut. Maximum tightening torque with plastic nut is 0.08mkg (0.8Nm).
Recommended value: 0.5 Nm . Stainless steel nut or tube securing nut (*) on request

Available pressure inlet fittings ①	Mounting	*Tube securing nut

References (with calibration at 50 mbar):

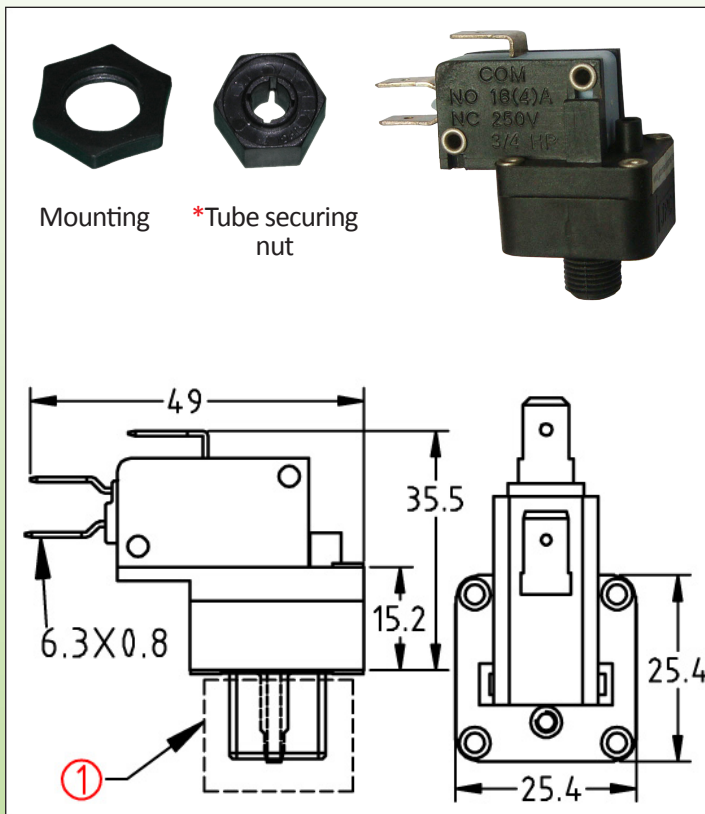
Pressure inlet	Silver contact	Gold plated contact
9/16-18+ spout, 2 flats at 0°, standard nut	ZF2X2UEA05000008	ZF2X2UEG05000008
9/16-18+ spout, 2 flats at 90°, standard nut	ZF2X2WEA05000008	ZF2X2WEG05000008
1/4 NPSM + spout, standard nut	ZF2X2IEA05000006	ZF2X2IEG05000006
9/16-18+ spout, 2 flats at 0°, tube securing nut	ZF2X2UEA05000009	ZF2X2UEG05000009
9/16-18+ spout, 2 flats at 90° tube securing nut	ZF2X2WEA05000009	ZF2X2WEG05000009
1/4 NPSM + spout, tube securing nut	ZF2X2IEA05000007	ZF2X2IEG05000007

Other set point values: replace 050 in the product reference by the requested value in mbar

Snap action contact airswitch, high electrical rating

Momentary or alternate action : Type ZP

DIMENSIONS



Uses: High electrical rating, for 250V.

Main applications: Direct actuating of pumps and blowers in spas and swimming pools, sink erasers, professional or home appliances used with risks of water splashing. Resist to spas and swimming pools ozone concentration.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request. Double membrane on request.

Fluid: air

Fitting: Plastic spout for 1/8(3mm) or 1/16(1.5mm) ID flexible plastic tubing maximum hardness 70 shore A

Pressure: positive

Housing: PA66, UL94 VO and ABS

Contact: SPNO or SPDT, snap action. SPNC contacts available with MOQ

Electrical rating: Depends on micro-switch operating force that is linked to the electrical rating

- Standard rating micro-switch (medium and high pressure calibration only): 16A 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC

- High rating micro-switch (medium and high pressure calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch)

- Low force micro-switch (set points less than 150 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch)

- On request: up to 25A 250V

Action: momentary or alternate (Latching). Electrical connection: 6.35 x 0.8 mm quick connect terminals

Maximum pressure: 4 bars (58 PSI)

Ambient temperature limits: 0 to 85°C

Barometric compensation: groove on 4 mm spout for ¼ NPSM, calibrated orifice on 9/16-18

Caution: This compensation is skipped if using ¼ thread for pressure connection

Mounting fittings: ¼" NPSM or 9/16-18 (2 possible flat positions)

Switch operation: Operates on a sealed pressure air displacement. Do not use pressure transmitters with air input to avoid pumping action. Use air transmitters with enough air volume to achieve minimum operating pressure.

Caution: too long connecting tubing and/or too small pressure transmitter will not operate the air switch or will operate it with a momentary action.

Accessories: shipped with plastic nut. Maximum tightening torque with plastic nut is 0.08mkg (0.8Nm).

Recommended value:

0.5 Nm . Stainless steel nut or tube securing nut (*) on request

Available pressure inlet fittings ①	Mounting	*Tube securing nut

References (SPNO contact)

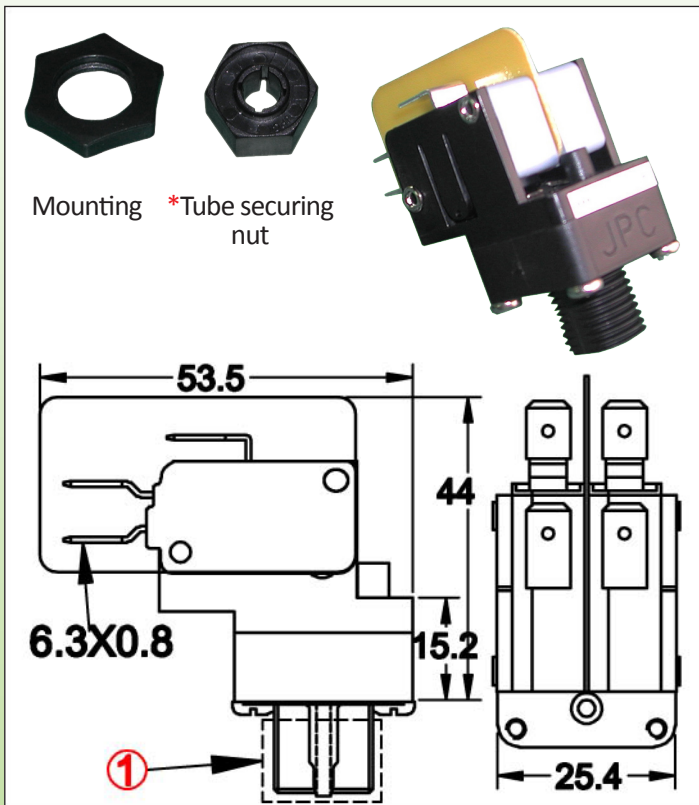
Pressure inlet	Standard rating micro-switch	Low pressure micro-switch	High rating micro-switch
9/16-18+ spout, 2 flats at 0°, standard nut	ZP153UU100000008	ZP103UU500000008	ZP173UU600000008
9/16-18+ spout, 2 flats at 90°, standard nut	ZP153WU100000008	ZP103WU500000008	ZP173WU600000008
1/4 NPSM + spout, standard nut	ZP153IU100000006	ZP103IU500000006	ZP173IU600000006
9/16-18+ spout, 2 flats at 0°, tube securing nut	ZP153UU100000009	ZP103UU500000009	ZP173UU600000009
9/16-18+ spout, 2 flats at 90° tube securing nut	ZP153WU100000009	ZP103WU500000009	ZP173WU600000009
1/4 NPSM + spout, tube securing nut	ZP153IU100000007	ZP103IU500000007	ZP173IU600000007

SPDT contacts: replace the fifth character "2" in the reference by "3"

Double pole snap action contact airswitch, high electrical rating

Momentary or alternate action : Type ZV

DIMENSIONS



Uses: High electrical rating, for 250V.

Main applications: Direct actuating of pumps and blowers in spas and swimming pools, sink erasers, professional or home appliances used with risks of water splashing. Resist to spas and swimming pools ozone concentration.

Membranes: EPDM, dia 22 mm. Silicone or NBR on request. Double membrane on request.

Fluid: air

Fitting: Plastic spout for 1/8(3mm) or 1/16(1.5mm) ID flexible plastic tubing maximum hardness 70 shore A

Pressure: positive

Housing: PA66, UL94 VO and ABS

Contact: two SPNO or SPDT, snap action switches. SPNC contacts available with MOQ

Electrical rating: Depends on micro-switch operating force that is linked to the electrical rating

- Standard rating micro-switch (medium and high pressure calibration only): 16A 125/250VAC; 1/2HP 125VAC; 3/4HP 250VAC

- High rating micro-switch (medium and high pressure calibration only): 2HP 240V, 21(8) A 240V (UL, CSA VDE switch)

- Low force micro-switch (set points less than 150 mbar): 1/4HP 6(1) A 240V (UL, CSA VDE switch)

- On request: up to 25A 250V

Action: momentary or alternate (Latching). One momentary and one alternate version is possible on request

Electrical connection: 6.35 x 0.8 mm quick connect terminals

Maximum pressure: 4 bars (58 PSI)

Ambient temperature limits: 0 to 85°C

Barometric compensation: groove on 4 mm spout for 1/4 NPSM, calibrated orifice on 9/16-18

Caution: This compensation is skipped if using 1/4 thread for pressure connection

Mounting fittings: 1/4" NPSM or 9/16-18 (2 possible flat positions)

Switch operation: Operates on a sealed pressure air displacement. Do not use pressure transmitters with air input to avoid pumping action.

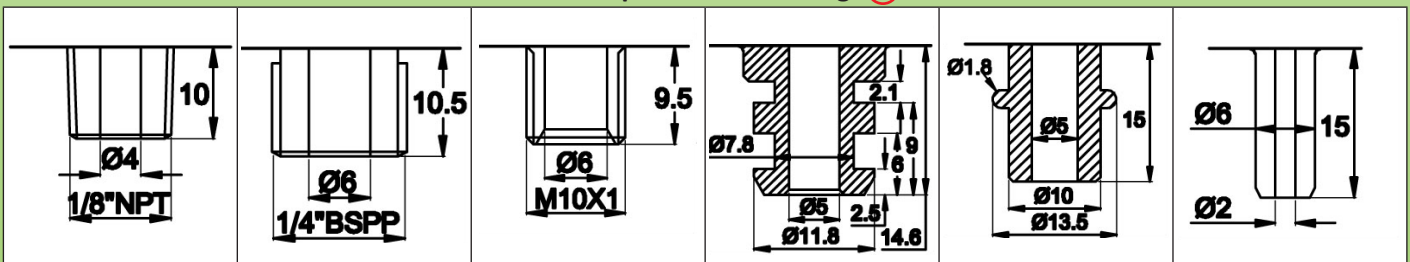
Use air transmitters with enough air volume to achieve minimum operating pressure.

Caution: too long connecting tubing and/or too small pressure transmitter will not operate the air switch or will operate it with a momentary action.

Accessories: shipped with plastic nut. Maximum tightening torque with plastic nut is 0.08mkg (0.8Nm).

Recommended value: 0.5 Nm . Stainless steel nut or tube securing nut (*) on request

Available pressure inlet fittings ①



References (SPNO contact)

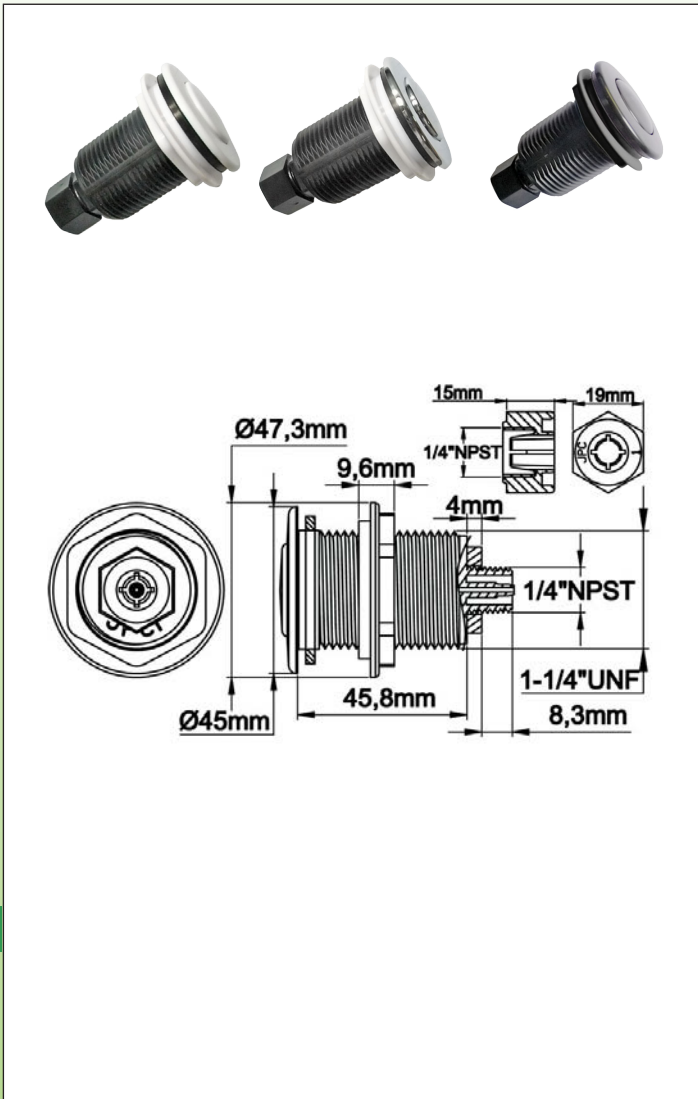
Pressure inlet	Standard rating micro-switch	Low pressure micro-switch	High rating micro-switch
9/16-18+ spout, 2 flats at 0°, standard nut	ZV153UU100000008	ZV103UU500000008	ZV173UU600000008
9/16-18+ spout, 2 flats at 90°, standard nut	ZV153WU100000008	ZV103WU500000008	ZV173WU600000008
1/4 NPSM + spout, standard nut	ZV153IU100000006	ZV103IU500000006	ZV173IU600000006
9/16-18+ spout, 2 flats at 0°, tube securing nut	ZV153UU100000009	ZV103UU500000009	ZV173UU600000009
9/16-18+ spout, 2 flats at 90° tube securing nut	ZV153WU100000009	ZV103WU500000009	ZV173WU600000009
1/4 NPSM + spout, tube securing nut	ZV153IU100000007	ZV103IU500000007	ZV173IU600000007

SPDT contacts: replace the fifth character "2" in the reference by "3"

Air buttons (air transmitters)

TYPE: 66ZM5

DIMENSIONS



Use: Remote operation of air switches. This pneumatic switching technology safely isolates the user from the electrical current. The air transmitters provide the pulse air pressure needed to operate a remote air switch

Typical applications: Spas, swimming pools, electrical equipment remote operating of electrical devices on/off including motors, lights, pumps, air blowers, or other associated equipment.

Operating distance: With appropriate tubing, these hand actuation transmitters can operate air switches from distances of up to 30 meters (100 feet.)

Air volume: 11 cm³

Button and bezels: ABS, Ozone and UV resistant, low profile dome design, interchangeable.

Standard Color: Black, White (Bone) and nickel plated. Any other color and finish can be made with MOQ (consult factory).

Mounting: Through tub wall, with 1"1/4-12 UNF nut and flat NBR gasket.

Mounting hole: Drill a dia. 32+1/-0 mm (1"1/4) hole. The 1"1/4 nut is staggered to allow using this button for replacement into preexisting dia. 37.3+/-1 mm holes.

Wall thickness: From 2 mm to 45 mm (1/16" to 1-5/8").

Cylinder material: ABS; ozone and UV resistant.

Gasket: NBR.

Nut: ABS.

Bellow: EPDM, impervious to ozone and chemically treated swimming pool and spa water. No micro leak to avoid pumping action with air switches. Stainless steel spring.

Tube connection: Spout for 3 mm or 1.7 mm (1/8" or 1/16" I.D) flexible PVC or rubber tubing. We recommend tube securing nut to avoid accidental tubing disconnection.

Mechanical life: > 100.000 cycles.

Ambient temperature: -20+85°C

Spare parts: Cylinder assembly, button and bezel kit are available separately.

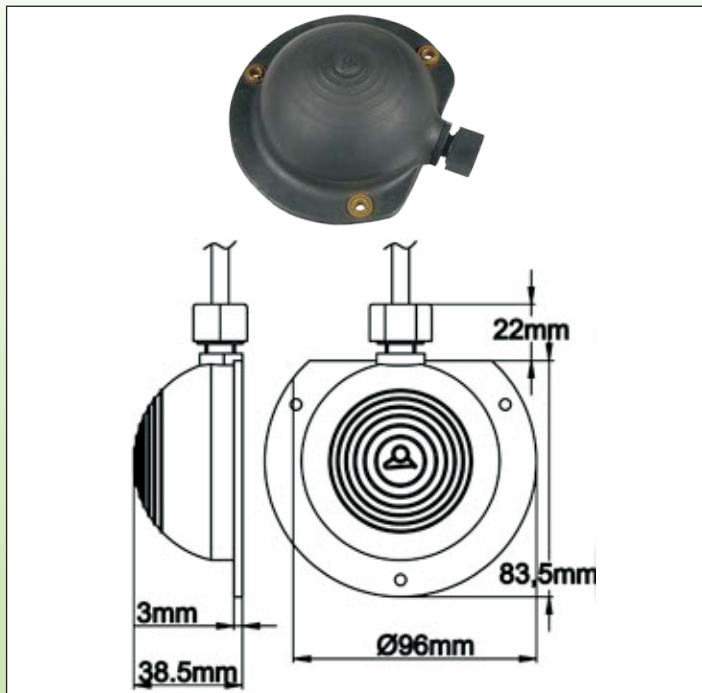
Options: Custom buttons with logo.

References

Model	Black (RAL9005)	Nicked plated	White (RAL9003)
With tube securing nut	66ZM500060510000	66ZM500060710000	66ZM500060410000
Without tube securing nut	66ZM500060500000	66ZM500060700000	66ZM500060400000

Foot air pedal (air transmitters) TYPE: 66ZMD7

DIMENSIONS



Use: Remote hand free operation of air switches. Even in wet or hazardous environments, this pneumatic foot pedal safely isolates the user operating power tools and other electrical devices from the electrical current. The foot air pedal provide the pulse air pressure needed to operate a remote air switch

Two switching logics are possible, depending of the air switch used:

- *Momentary Switching:* Press and hold for on, release for off
- *Alternate Action Switching:* Press for on, press again for off

Typical applications: Electrical equipment remote operating of electrical devices on/off including motors, lights, pumps, air blowers, or other associated equipment.

Operating distance: With appropriate tubing, these foot air pedals can operate air switches from distances of up to 30 meters (100 feet.)

Air volume: 55 cm³

Accidental actuation prevention: By steel strong shroud, 1.2 mm thickness. Anti-skid protection is provided by 4 rubber feet.

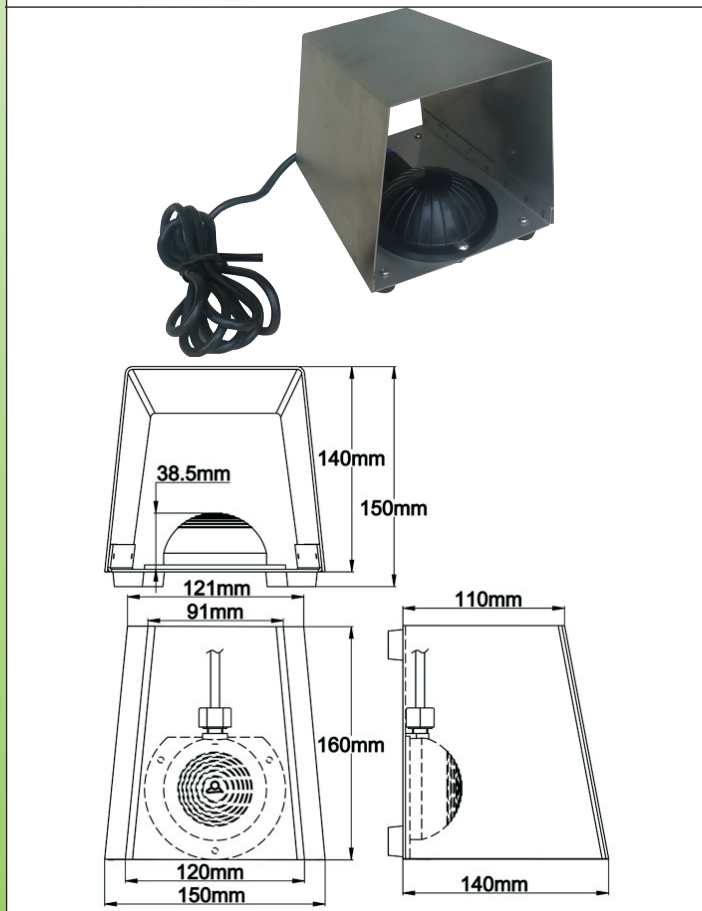
Standard Color: Foot shroud: orange epoxy painting. Any other color can be made with MOQ (consult factory). Stainless steel foot shroud on request.

Bellow material: Strong, rubber No micro leak to avoid pumping action with air switches.

Tube connection: Spout for 3x6 mm flexible PVC or rubber tubing (1/8" I.D), with tube securing nut to avoid accidental tubing disconnection.

Mechanical life: > 100.000 cycles

Ambient temperature: -20+60°C



References

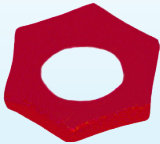
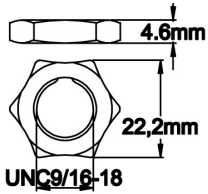
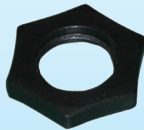
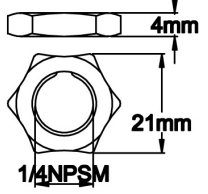

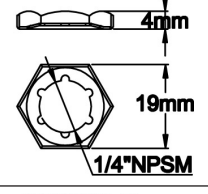

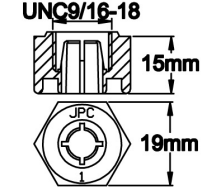

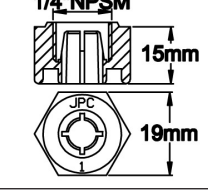
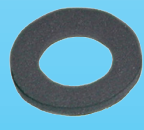
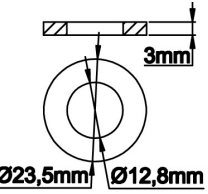

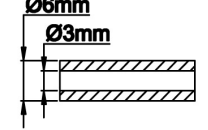

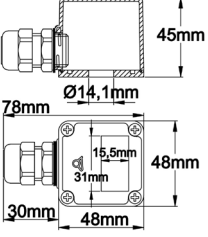

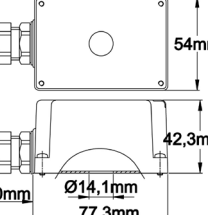
Foot pedal with steel shroud:	66ZMD70383S10000
Foot pedal without steel shroud :	66ZMD70383S00000




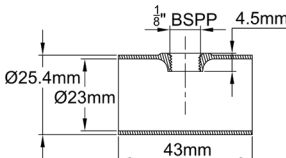

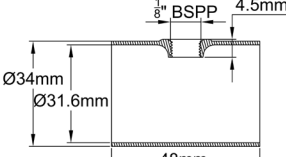
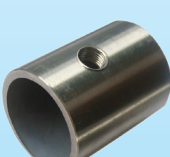
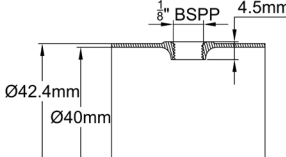
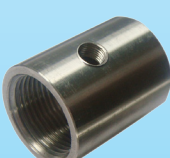
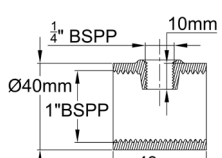
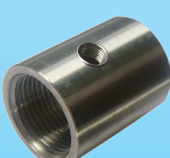
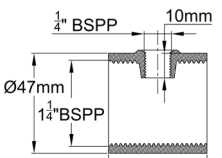
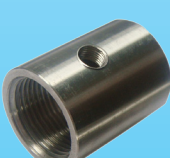
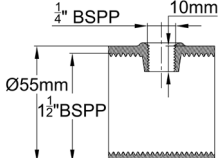
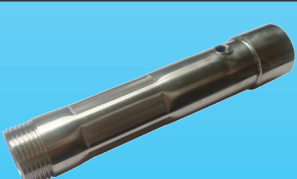
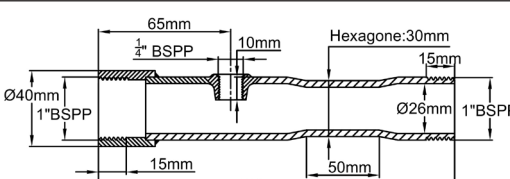
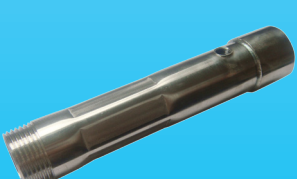
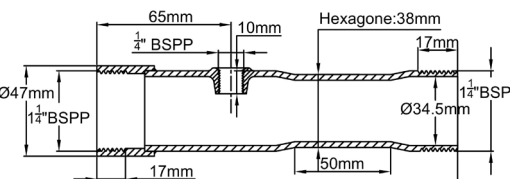

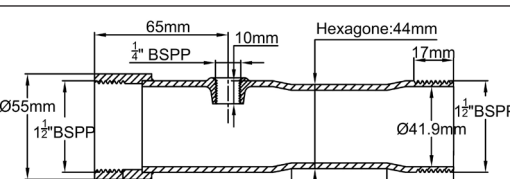
Pressure switches accessories

Nuts, gaskets, PVC tubes

En raison de l'évolution technique constante de nos produits, les plans, dessins, photos et caractéristiques repris dans les pages techniques sont communiqués sans engagement et peuvent être modifiés sans préavis

	 <p>UNC9/16-18</p>	<p>9/16-18 mounting nut, ABS, red</p> <p>Reference Z6VE1000350007A</p>
	 <p>1/4 NPSM</p>	<p>1/4" NPSM mounting nut, ABS, black</p> <p>Reference Z6VE1000350003A</p>
	 <p>1/4" NPSM</p>	<p>Self-locking 1/4" NPSM mounting nut, stainless steel</p> <p>Reference Z6VE1000350001A</p>
	 <p>UNC9/16-18</p> <p>JPC</p>	<p>9/16-18 tube securing nut, ABS, red</p> <p>Reference Z6VE1000350009A</p>
	 <p>1/4" NPSM</p> <p>JPC</p>	<p>1/4" NPSM tube securing nut, ABS, black</p> <p>Reference Z6VE1000350006A</p>
	 <p>Ø23,5mm Ø12,8mm</p>	<p>Waterproof adhesive foam gasket for 1/4" NPSM and 9/16-18 threads</p> <p>Reference Z6JO1000350001A</p>
	 <p>Ø6mm Ø3mm</p>	<p>1/8 ID x 1/4 OD soft PVC tube, black</p> <p>Reference Z6TU70000000000</p>
	 <p>45mm</p> <p>78mm</p> <p>30mm</p> <p>48mm</p> <p>14,1mm</p> <p>15,5mm</p> <p>31mm</p>	<p>Black ABS housing 48x48x59 mm, IP54, with PG11 cable gland. Bottom side with 14.1 mm dia. hole for pressure switch, Fits types: ZE, ZA, ZF, ZG, ZB</p> <p>Reference 66FS04848590P002</p>
	 <p>54mm</p> <p>77,3mm</p> <p>42,3mm</p> <p>30mm</p> <p>Ø14,1mm</p>	<p>Black ABS housing, 76x55x50mm, IP20, with PG11 cable gland. Bottom side with 14.1 mm dia. hole for pressure switch, Fits types: ZP, ZQ, ZW, ZY, ZA, ZF, ZG, ZB</p> <p>Reference 66FS07655500P002</p>

Aisi 304 Stainless steel fittings and Tees* BSPP threads

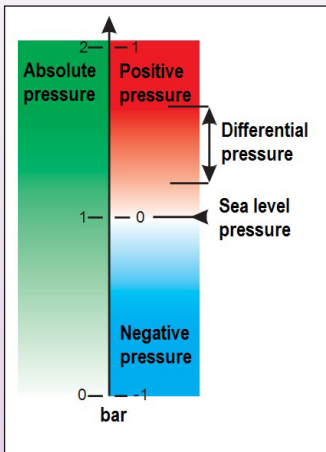
		<p>Butt welding tee, 25.4x23 mm tube, length 43 mm, with 1/8"BSPP female thread</p> <p>Reference 66RRA1252343G81A</p>
		<p>Butt welding tee, 34 x 31.6 mm tube, length 48 mm, with 1/8"BSPP female thread</p> <p>Reference 66RRA1343248G81A</p>
		<p>Butt welding tee, 42.4 x 40 mm tube, length 50 mm, with 1/8"BSPP female thread</p> <p>Reference 66RRA1424050G81A</p>
		<p>1"BSPP x 1"BSPP female coupling, length 43 mm, with 1/8"BSPP female thread</p> <p>Reference 66RRA140G143G51A</p>
		<p>1"1/4 BSPP x 1"1/4 BSPP female coupling, length 48 mm, with 1/8"BSPP female thread</p> <p>Reference 66RRA147G448G51A</p>
		<p>1"1/2 BSPP x 1"1/2 BSPP female coupling, length 50 mm, with 1/8"BSPP female thread</p> <p>Reference 66RRA155G250G51A</p>
		<p>180 mm long 1"BSPP male x 1"BSPP female coupling, (To deport the pressure switch from heating zones), with 1/8"BSPP female thread</p> <p>Reference 66RRA140U1A8G51A</p>
		<p>180 mm long 1"1/4BSPP male x 1"1/4BSPP female coupling, (to deport the pressure switch from heating zones), with 1/8"BSPP female thread</p> <p>Reference 66RRA147U4A8G51A</p>
		<p>180 mm long 1"1/2BSPP male x 1"1/2BSPP female coupling, (to deport the pressure switch from heating zones), with 1/8"BSPP female thread</p> <p>Reference 66RRA155U2A8G51A</p>

* These references are available on request in 316 or 316L stainless steel and with NPT threads (MOQ apply)

Absolute pressure, barometric pressure, negative pressure, differential pressure

1. Definitions

Although pressure is an absolute value, the current measures pressure, are usually made relative to ambient air pressure. In other cases, the measurements are compared to vacuum. This leads to confusion and errors



- The absolute pressure is the one that takes as its point zero the interstellar vacuum pressure. There is no negative pressure relative to this vacuum pressure
- Barometric pressure, also called relative pressure, which the zero point is taken at atmospheric pressure. The value, measured in absolute pressure of the atmospheric pressure is typically about 100 kPa at sea level, but varies with altitude and weather
- The negative-pressure is the pressure measured by regarding as zero the atmospheric pressure. It is expressed as the difference in pressure relative to atmospheric or barometric pressure and preceded by a minus sign.

The zero point reference used in pressure is often implied by the context, and is added only when clarification is needed. For example: The tire pressure and blood pressure are relative pressures by convention, while atmospheric pressure, the pressure of deep vacuum and altimeter pressure are absolute pressures.

The indication of moderate depression is often ambiguous, as with forgetfulness of the negative sign, it may represent an absolute pressure or a barometric pressure.

Thus, if the minus sign is forgotten, a vacuum of 25 kPa can be understood as an absolute pressure of 25 kPa (about 75 kPa below atmospheric pressure) or a barometric pressure of 25 kPa below atmospheric pressure

- The differential-pressure is the pressure difference between two points. Differential pressures are commonly used in industrial processes. Differential pressure switches and differential pressure gauges have two inlet ports, each connected to one of the volumes whose pressure is to be monitored.

2. Units

2-1 Legal Unit

Since 1971, the SI (International System of Units) unit of pressure is the Pascal (Pa), equal to one newton per square meter (N/m^2). This unit name is entered into force in 1971, and before that, pressure in SI was expressed in N/m^2 .

2-2 Traditional Units and notation

Sometimes the zero reference is shown in brackets after the unit, for example 101 kPa (abs).

The pound per square inch (PSI) is still widely used in the United States and Canada, specially for cars. A suffix is often placed behind PSI to indicate the zero reference measurement : PSIA for absolute, PSIG for barometric pressure, PSID for differential pressure.

Because pressure was once commonly measured by its ability to displace a column of liquid in a graduated glass tube, pressures are often expressed as a length in mm or inches of a particular fluid such as mercury (Hg) or water.

Although dated, these units are still used in many areas: Blood pressure is measured in millimeters of mercury in most parts of the world, and respiratory pressures expressed in centimeters of water are still common. Natural gas pressures in pipeline are measured in inches of water, expressed as "WC" ("water column"). In vacuum systems, the Torr (torr), the millimeters of mercury (mmHg) and inches of mercury (inHg) are most commonly used. Torr and mmHg usually indicates an absolute pressure, while inHg usually indicates a relative pressure

Atmospheric pressures are usually expressed in kPa (kilopascals), or atmospheres (atm), except in meteorology where the hectopascal (hPa) and millibar (mbar) are preferred.

2-3 Other older units of pressure

- The barye (BA), was defined as equal to 1 dyn/cm^2 in the former CGS unit system

- The technical atmosphere ("at") symbol) was defined as the pressure exerted by a column of water 10 meters: $1 \text{ "at"} = 98066.5 \text{ Pa}$

- The normal atmosphere (atm) was defined in 1954 as being equal to $1,013,250 \text{ dynes per cm}^2$ ($101,325 \text{ Pa}$). It corresponds to the pressure from a height of 760 mm of mercury at 0°C under normal acceleration of gravity (9.80665 m/s^2). It represents the average atmospheric pressure at sea level using the latitude of Paris. It was used in technical documents during the period 1960-1980.

- The Torr (torr), was defined as being equal to $1/760$ of an atmosphere, which was then represented by a column of mercury 760 mm

- Other hybrid units: mmHg/cm^2 or gram-force/cm^2 , the kg/cm^2 , the g/mol^2 .

For the record, the use of the kilogram, gram, kilogram force or gram force (or their symbols) as a unit of force is prohibited in the SI system as the unit of force is the Newton (N).

Alphabetical list

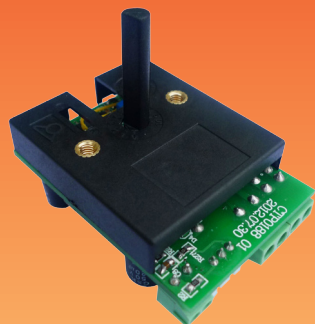
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If you are using pressure switches on your devices, many components made by Ultimheat may also be used on them.



Room humidistats
(Catalogue N°8)



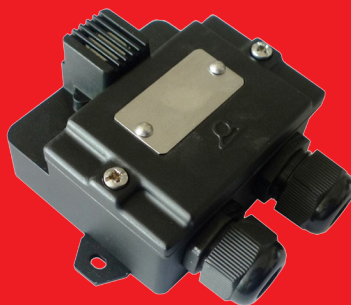
Room thermostat for incorporation on mounting boards or inside wall mounting housing (Catalogue N°2)



Waterproof silicone caps for sensors and wires output
(Catalogue N°2)



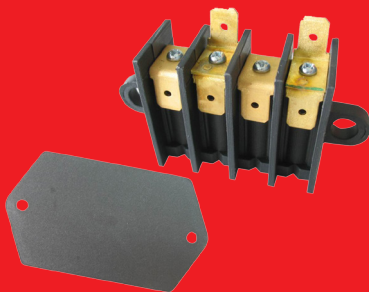
Humidistats for incorporation for humidifiers and dehumidifiers
(catalogue N°8)



Freeze detection fixed setting thermostats for incorporation
(catalogue N°3)



Vertical level switches
(Catalogue N°7)



Connection blocks made on customer specs (Catalogue N°10)





Stroke or paddle flow switches
(catalogue N°6)



Radiant and convection room temperature sensors (catalogue N°3)

Other catalogues

 **JPC** 1




ELECTROMECHANICAL AND ELECTRONIC THERMOSTATS RANGE
for incorporation


For these thermostats incorporated inside various boxes, housing and cabinets: See catalogues N° 2 and 3
Explosion proof versions: See catalogue N° 4

The professional solution: an extended, rational, and consistent range of products

Technical catalogue for R&D department
Edition 20/10/2012

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 **JPC** 4




EXPLOSION PROOF THERMOSTATS
Types Y9


For industrial and high end applications in non-hazardous area: See our catalogue 3
For standard applications with ingress protection housing, in non-hazardous area: see our catalogue 2
For incorporation in non-hazardous area see our catalogue 1

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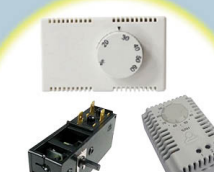
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For OEM applications

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