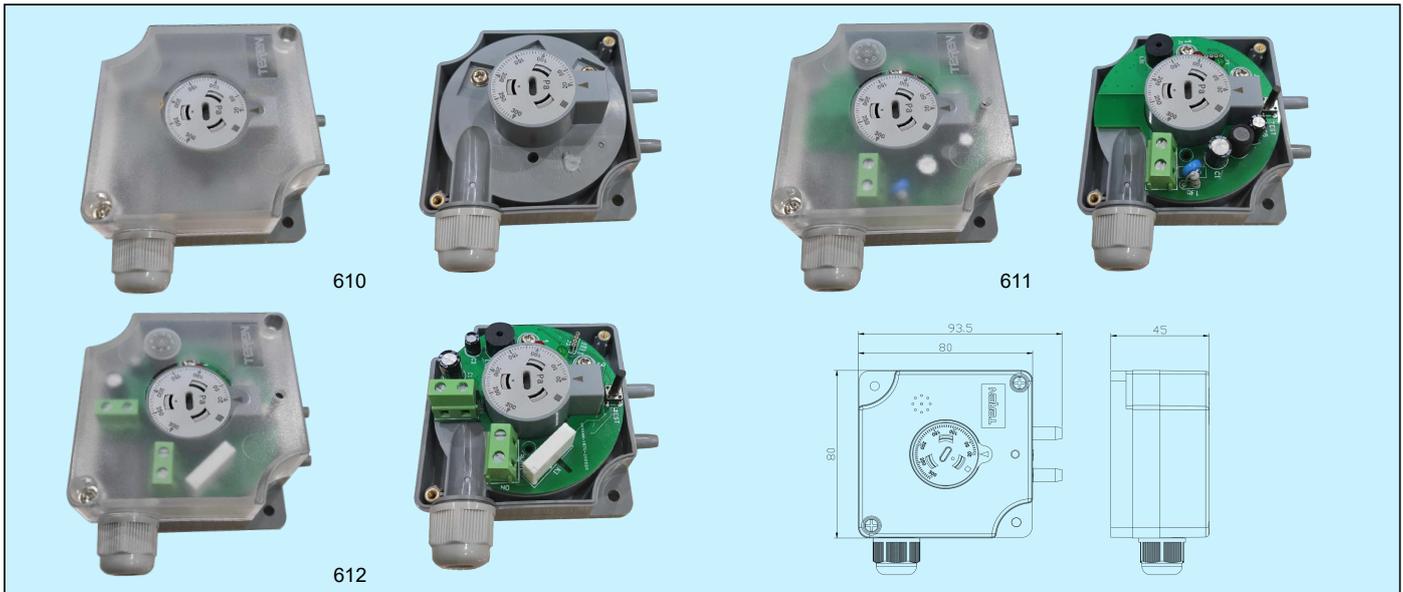


610/611/612 Adjustable Differential Pressure Switch



Applications & Features

Monitor overpressure, vacuum and differential pressure of air and other non-combustible, non-aggressive gases. 610 has SPDT output only; 611 has local sound and light alarm only; 612 has SPST output and local sound and light alarm. And 611/612 have mute button to stop the sound alarm. 610 has high protection rate up to IP65 which can be used in outside.

Specifications

Adjustable range: 4 ranges, see models

Pressure limit: 10kPa(0~50°C)

Working temperature: -30~70°C(610), -10~50°C(611/612) (medium and environment)

Storage temperature: -40~70°C

Pressure connection: φ6.0mm plastic tube, “+” is high and “-” is low pressure port

Service life: over 10⁶ switching cycles

Max. switching frequency: 6 switching cycles/min

Repeatability: ±2%

Electrical characteristics:

Model	610	611	612
Power	-	85~250VAC	9~28VAC/DC
Sound and light alarm	-	Red/Green LED, Buzzer/Mute button	
Output	SPDT 2A/250VAC 1A/30VDC	-	SPST 3A,30VDC/AC
EMC	GB14536.1/GB14536.7,IEC60730-1/IEC60730-2-6		
Connection	Screw terminals		

Materials: housing fire retardant PC (UL94V-0), diaphragm silicone and contact silver alloy

Weight: 610: about 130g, 611/612: about 155g

Protection: 610: standard IP54, optional IP65, add suffix -S; 611/612: IP40

Certification: CE, RoHS

Installation: vertical, with the pressure ports P1 and P2 downward. This is the factory-calibrated position. If horizontally installation needed, the switching value should plus about 20pa (when cover is upward) and minus about 10pa (when cover is downward). See operation manual.

Note: this page is the datasheet of 610/611/612. The follow-up pages are the operation manual of 611 only. 610/612 has other specific manual.

Models

Model	610	611	612	Description
				Adjustable Differential Pressure Switch
				Adjustable Differential Pressure Alarm
				Adjustable Differential Pressure Switch, with sound and light alarm
Adjustable range		0	1	20-300Pa
			2	50-500Pa
			3	100-1000Pa
				0.5-2.5kPa
Engineering unit			0	Pa
			7	mbar
			8	inch WC
			9	mm WC

Dead Band

Part No.	Range	DB
61x.0	20-300Pa	10±5Pa
61x.1	50-500Pa	20±8Pa
61x.2	100-1000Pa	50±15Pa
61x.3	0.5-2.5kPa	100±30Pa

Dead Band is factory set. Customers can not adjust.

Accessories (should be ordered separately)

Part No	Description
1001	Individual accessory package: clear PVC tube 2M, connectors (1003) 2 pcs, screws 4 pcs
1002	plastic pipe 2m
1003	1 pc pressure connection part, straight type
1008	Individual accessory package: clear PVC tube 2M, connectors (1009) 2 pcs, screws 4 pcs
1009	1 pc pressure connection part, L type



Alarm function description

	Green LED	Red LED	Buzzer
Normal working status (switch has not been actuated)	On	Off	Silent
Normal status, in test operation: press the test/mute button	Off	On for 1s	Sound for 1s
Alarm status (switch has been actuated)	Off	Flash: On for 1s/Off for 1s	When the red light is on, it will sound synchronously (beep for 1s, stop for 1s)
During alarm status, press the test/mute button	Off	Flash: On for 1s/Off for 1s	The beeping buzzer is silent. However, if the switch still keep in the same alarm status for 60 min, the buzzer will start to beep again (beep for 1s, stop for 1min); or after the alarm status is eliminated, the switch will be actuated once the alarm status comes again and the buzzer will beep.

Switch Body Installation

Please read this manual carefully before installation. The upper cover could be opened for adjusting set point and electrical wiring. But the bottom cover cannot be opened. Otherwise, the switch will be damaged.

Please check if the switch body is leaking. If so, it is damaged and cannot be installed. The switch body should be installed on a vertical stable surface. And it should be near the pressure sampling site as near as possible.

(1) Installing position:

Vertically install the switch with the pressure port downward as Fig. 1. It is the best and recommended way. It can eliminate the possible condensing, and it is the factory calibrating position.

It can be installed horizontally when the environment does not have any condensing. The cover is upward and the switch value should plus about 20pa. When it can only be installed with the cover downward, the switch value should minus about 10pa.

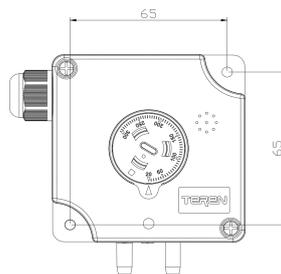


Fig. 1

(2) Fasten with screws:

As Fig. 1, fasten the product with 2 screws (max. $\phi 4\text{mm}$) directly on installation surface. Do not fasten the screws too much. Otherwise, the switch may be damaged.

Pressure Connect



Do not let the tube to be tied as a knot, especially when the tube passes edges and corners. Otherwise, the switch cannot work.

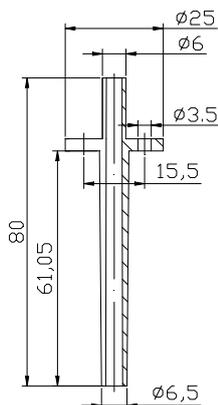


Fig. 2 Accessory 1003

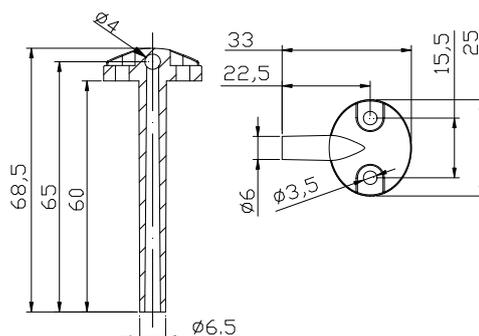


Fig. 3 Accessory 1009

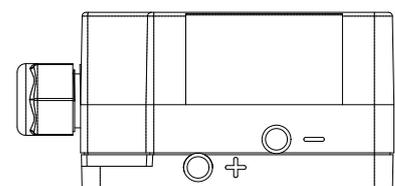


Fig. 4

(1) Insert the 2 pressure connection parts as Fig. 2 or 3 with the longer side (60mm) into the prepared holes. Each part should be installed with 2 screws. Be sure to seal the holes after installing to keep the holes airtight.

(2) Connect the plastic tube. The standard accessory is 2m long with inner $\phi 6\text{mm}$. Cut the tube as short as possible to connect the ports "+" & "-" on the switch and the other side of accessory of 1003 or 1009 as Fig. 2 or 3. "+" is high port on the bottom of the switch and "-" is low port on the switch body as Fig. 4.

(3) After connecting the tube, please check if the connection is tight. And it should be inspected during daily maintenance. The switch can not work correctly if it is leaking.

Electrical Connection



The operating technician should be trained and operate regularly.



Be sure to **DISCONNECT** the external power before electrical wiring. Otherwise, possible damage or even electric shock could happen.

(1) The switch body as Fig. 5 is under the front cover.

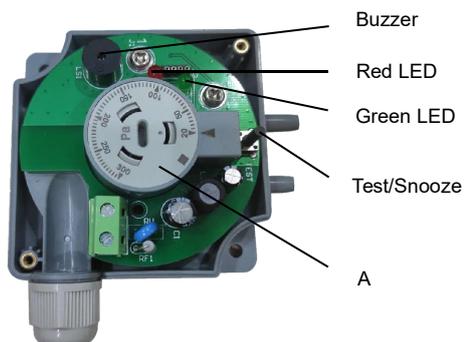


Fig. 5

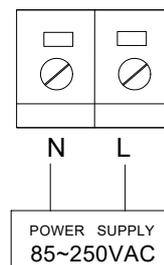


Fig. 6

(2) Pressure/Differential Pressure setting

The field adjustable scale indicates the set point. It means the contact will actuate when the applied (differential) pressure increases to this scale. It is accurate only when the switch is installed vertically with the "+" and "-" ports downward as Fig. 1. When the applied (differential) pressure falls down below the set point, the contact will restore to the original status.

- open the front cover.
- screw the printed scale dial (A in Fig. 5) to the required set point. It should be operated with a straight screw driver. When rotating the dial, the screwdriver should be vertical to the dial, lightly rotate the dial to prevent the dial from loosening due to improper operation.

(3) Finish the electrical connection and restore the front cover

- Feed the cable into the switch through the cable entry and connect to the screw terminals N and L, as Fig. 6. There is an O-ring inside the entry to keep the seal.
- Close the front cover with screwing the two screws tightly.

Power and Test

Be sure to start testing after the front cover is closed. Use instruments if needed. Increase the applied (differential) pressure slowly. When it arrives the set point, the switch will actuate and the red LED will be flash with the buzzer beeping. Then decrease the (differential) pressure slowly. When it is lower than the set point, the switch will restore to the original status and sound and light alarm will be eliminated. Please note the dead band characteristics for this product. If all tests are correct, the installation and all pressure/electrical connections are finished correctly.



The max. working differential pressure is 10kPa(0~50°C). If over pressured, the switch will be damaged.

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