APPLICATION

The gas pressure switch C6097A is used to detect the pressure of city gas, natural gas, LP gas or air etc. When the gas pressure changes, the diaphragm of the pressure receiving part detects it and operates the (SPDT) switch to ON/OFF control of the external electrical circuit.

These switches are widely used to detect the upper limit or lower limit pressure of gas or air to be supplied to a gas burner, or to detect the clogging of the interlock filter of a burner blower.

SPECIFICATIONS

Product range
There are two versions available: stand alone and flange mounted, see table 1. and 2.

Table 1. C6097A flanged mounted models

<table>
<thead>
<tr>
<th>Model</th>
<th>Operating pressure range (mbar)</th>
<th>Nominal operating differential (mbar)</th>
<th>Maximum working pressure (mbar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C6097A22300</td>
<td>2.5 ... 50</td>
<td>0.6</td>
<td>300</td>
</tr>
<tr>
<td>C6097A2310</td>
<td>50 ... 150</td>
<td>2.8</td>
<td>500</td>
</tr>
<tr>
<td>C6097A2410</td>
<td>100 ... 500</td>
<td>7.0</td>
<td>600</td>
</tr>
</tbody>
</table>

Table 2. C6097A stand alone models

<table>
<thead>
<tr>
<th>Model</th>
<th>Operating pressure range (mbar)</th>
<th>Nominal operating differential (mbar)</th>
<th>Maximum working pressure (mbar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C6097A2110</td>
<td>1.0 ... 10</td>
<td>0.4</td>
<td>200</td>
</tr>
<tr>
<td>C6097A2210</td>
<td>2.5 ... 50</td>
<td>0.6</td>
<td>300</td>
</tr>
<tr>
<td>C6097A2310</td>
<td>30 ... 150</td>
<td>2.8</td>
<td>500</td>
</tr>
<tr>
<td>C6097A2410</td>
<td>100 ... 500</td>
<td>7.0</td>
<td>600</td>
</tr>
</tbody>
</table>

NOTE: The operating differential is the difference between the upper and lower operating pressures at one set point.

Dimensions
See Figure 1.

Connection
Inlet positive pressure Rp1/4” internal pipe thread (2 x).
Differential pressure Rp 1/8” internal pipe thread.
All connections according to ISO 7-1

Set point accuracy
15% of the full scale (when pressure is increased)

NOTE: The knob readings are approximations of the actual settings.

Torsion and bending stress
Pipe connections meet group 2, according to EN161 requirements.

Contact ratings
Resistive load: 250 Vac, 5A
Inductive load: 250Vac, 3A (power factor 0.6)
Minimum contact current and voltage: 50 mA, 24 Vac

Material of pressure receiving parts
NBR single diaphragm

Material of housing
Aluminium die-cast

Material of case
Polybutylene terephthalate

Material of cover
Polycarbonate

Ambient temperature range
-15 ... 60 C
Relative humidity: max. 90% at 40 C (non-condensing)

Sensed medium temperature range
-15 ... 80 C

Electrical connection
Plug connection according to PG11 or three pin plug connector ("DIN plug")
Protection against electrical shock: class I

Wire connection terminals
M3.5 screw terminals, including earth connection
Enclosure
IP54
Seals and gaskets
Hydrocarbon resistant NBR rubber type

Standards and Approvals
The C6097A pressure switch conforms with the following EC directives:
- Gas Appliance Directive (90/396/EEC)
  PIN: CE-0063AR1571
- Low Voltage Directive (73/23/EEC)

INSTALLATION

1. Read these instructions carefully. Failure to follow the instructions could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. The installation has to be carried out by qualified personnel only.
4. Carry out a thorough checkout when installation is completed.
5. Electrical installation must be in accordance with local requirements.

Stand alone models

Flanged mounted models

A Bracket mounting hole (3), M4 tapping, depth 5 mm
B Cover screw
C Dial indicator
D Conduit hole 22 mm (for plug connection PG11) or, three pin (DIN) plug connection
E Inlet positive pressure (Rp 1/4")
F Pressure test nipple (Ø 9)
G Differential pressure (Rp 1/8")
H  
J  
K  
L Earth connection terminal
M Mounting screw holes (2 x 4.5 mm) for flanged versions

Fig. 1. Installation drawing C6097A gas pressure switch
Mounting and orientation
In vertical, or horizontal plane with the setting dial facing upwards. Make sure that dirt or humidity does not get into the connection open for ventilation (G in Figure 1).

⚠️ WARNING

- Turn off gas supply before installation.
- Disconnect power supply to the pressure switch before beginning the installation to prevent electrical shock and damage to the equipment.
- Do not remove the seal over the pressure inlets, until ready to connect piping.

Connecting positive pressure inlet (stand alone)
1. Take care that dirt does not enter the pressure switch during handling.
2. Remove the dust seal from the positive pressure inlet.
3. Apply a moderate amount of good quality compound to the pipe for fitting only, leaving the end thread bare, PTFE tape tape may be used as an alternative.
4. Use a sound tapper fitting with thread according to ISO 7-1 (BS21, DIN 2999) or new, properly reamed pipe, free from swarf.
5. Screw the pressure switch onto the pipe, using the wrench boss incorporated in the housing.
6. Complete the electrical connections as instructed in the Electrical connections section.

Connecting positive pressure inlet (flange mounted)
1. Take care that dirt does not enter the pressure switch during handling.
2. Remove the dust seal from the positive pressure inlet.
3. Place the O-ring. If necessary grease it slightly to keep it in place.
4. Mount the pressure switch on the valve body and screw it tightly with the two M4 mounting screws.
5. Complete the electrical connections as instructed in the Electrical connections section.

Electrical connection

⚠️ WARNING

- Switch off power supply before making electrical connections.
- Take care that the wiring is in accordance with local regulations.

Use lead wire that can withstand 105 °C ambient.

The electrical ON/OFF operator is provided with a terminal block for electrical connections.

Wiring
Follow the instructions supplied by the appliance manufacturer. Refer to Figure 2. and 3. Connection diagram C6097A.
Accurate pressure set point adjustment
(stand alone only)
(tolerance < 3% over total scale)
1. Remove the screw from the test nipple inlet.
2. Connect the tube of the pressure measurement device to the nipple (Fig. 1. F).
3. Remove the cover of the pressure switch.
4. Slowly release pressure of the main gas supply line until the desired value is reached.
5. Turn dial slowly until contact 1-3 opens and contact 2-3 closes.
6. Replace the cover.
7. Disconnect the pressure measurement device and replace the screw.

Checkout
Checking cut-off pressure
After the installation is completed, continue with the following procedures:
1. Slowly close manual main valve with the burner in operation. Shut down should occur when the pressure drops below the set point and the alarm (if connected) should be energized.
2. Re open the manual main valve. The pressure should rise and exceed the set point value, the burner should start up and the alarm turn off after the reset button is depressed.