

Pressure Switch

Zeus Medical Gas Alarm Systems

Installation, Operation and Maintenance Manual

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Important

Personnel must make themselves familiar with the contents of this manual and the function of the unit before installing, operating or maintaining any Zeus Alarm Pressure Switches.

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

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0. SAFETY, STORAGE AND HANDLING DATA

The following symbols apply to this product and are used in these instructions and on the product in question. The meanings of these symbols are as specified below: -

	Read instructions
	Ambient temperature range
	Ambient humidity range
	Ambient pressure range
	Date of manufacture

Environmental Transport and Storage Conditions & Operating Conditions

Min ambient temperature -5 degrees Celsius
Max ambient temperature +70 degrees Celsius
Min relative humidity (non-condensing) 10%
Max relative humidity (non-condensing) 95%
Atmospheric pressure range 70-110 kPa

Environmental Operating Conditions

Min ambient temperature -5 degrees Celsius
Max ambient temperature +70 degrees Celsius
Min relative humidity (non-condensing) 10%
Max relative humidity (non-condensing) 95%
Atmospheric pressure range 70-110 kPa

1. GENERAL

Pipeline connection tees may be installed as part of a new pipeline installation or specifically for the installation of alarms on the existing system. In both cases, unless the contract specification states otherwise, flux less brazing with an Oxygen-free Nitrogen purge is the recommended jointing method, as specified in HTM02-01 and HTM2022. Pressure switches may be fitted directly onto tee's using the PTFE washer as the sealing medium, or they may be remotely connected by means of a pipeline connection kit (ref. 6000142).

CAUTION...

Pressure testing of the medical gas distribution system must NOT be carried out with the pressure switches connected. A blanking plug is provided with each tee to blank off the tee during such tests.

DO NOT USE OIL OR GREASE on any medical gas pipeline, for any reason. This could lead to a FIRE or an EXPLOSION.

Only use approved OXYGEN COMPATIBLE lubricants, which can be purchased from Penlon MGS if necessary.

2. INSTALLATION

2.1 Pipeline. Fit tee. (if required)

Tees/adaptor assemblies are available in pipes sizes from 15 to 54mm. Select a convenient location normally downstream of a Zone Service Unit and connect 'Tee' into correct gas service pipeline, using the approved flux less brazing technique. Fit blanking plug and PTFE washer to Tee.

Pressure test the medical gas pipeline in accordance with the contract specification.

Note...

Leave the blanking plug fitted if a delay is expected before the pressure switch is to be connected.

2.2 Pressure switch. Fit.

Mark out and drill mounting hole for steel clip. Secure steel clip into position with a suitable screw and push pressure switch into place. This will not need to be done if the pressure switch is to be mounted directly onto the tee.

2.3 Pressure switch. Connect to pipeline.

When the pressure switch is connected directly onto the pipeline, the blanking plug is removed and the pressure

switch screwed in its place. The PTFE washer will be needed to seal the joint. DO NOT turn the pressure switch using the plastic cover, the hexagonal profile at the base of the pressure switch must be used for this purpose. If the pressure switch is to be remotely connected, fit the connectors to the 1/8" copper tube (cut to length as required) and screw pressure switch onto female stud coupling sealing with the PTFE washer supplied. Undo main body of the male connector from the nut and screw the main body into the tee. Now connect the 1/8" copper tube with ferrule to the main body of the connector. Make sure that all compression joints are formed correctly and do not over torque. Adjust layout of the copper tube and support with cable clips.

Note...

If the pressure switch is connected directly to the tee, it may be difficult to gain access and adjust the settings. For this purpose, the switch may be partially unscrewed from the pipeline to

allow access all around the switches circumference.

2.4 Pressure switch. Electrically connect.

Route electrical cables into pressure switch and secure cable entry as detailed in the contract specification. Electrically connect Line continuity monitoring circuit as follows:-

Line Contact Circuit	Alarm Panel Input Terminals
Pressure Gases (Double Circuit)	
Terminal L	Terminal L
Terminal C	Terminal C (with screen)
Terminal H	Terminal H
Vacuum Systems (Single Circuit)	
Terminal C	Terminal C (with screen)
Terminal A	Terminal L

2.5 Pressure switch. Fit cover.

Locate cover and retain in place with screw.

Commissioning procedure. Carry out.

Carry out the commissioning procedure when all alarm system components are installed and connected.

Pressure switch settings. Adjust as required.

It may be necessary to adjust the pressure switch set-

tings in order to allow for varying pressure requirements throughout a gas pipeline. The following gives details of how to adjust both pressure and vacuum switches.

Adjustment of a positive pressure switch.

To adjust the low pressure setting on a positive pressure switch, the screw found in the centre of the screw is adjusted. Turning this screw clockwise will increase the setting. However this screw adjusts both the low and high pressure settings, so the second screw must also be adjusted (see figure 1 for details). If it is only the high pressure setting, which needs to be adjusted, then only the hexagonal block need be adjusted, with the pressure setting again being increased by turning the screw clockwise.

2.6 Adjustment of a vacuum switch.

A vacuum switch is adjusted simply by turning the thumb wheel found under the printed circuit board.

Pressure Switch Set Points

Ref. no.	Description	Set point (kPa)	
		Low	High
6000131	400 kPa pressure switch	350 falling	480 rising
6000132	700 kPa pressure switch	610 falling	840 rising
6000133	800 kPa pressure switch	640 falling	960 rising
6000134	1100 kPa pressure switch	900 falling	1300 rising

Figure 1. General Dimensions

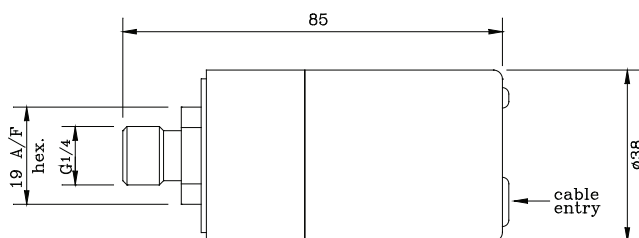


Figure 2. Zeus 6 Wiring Details

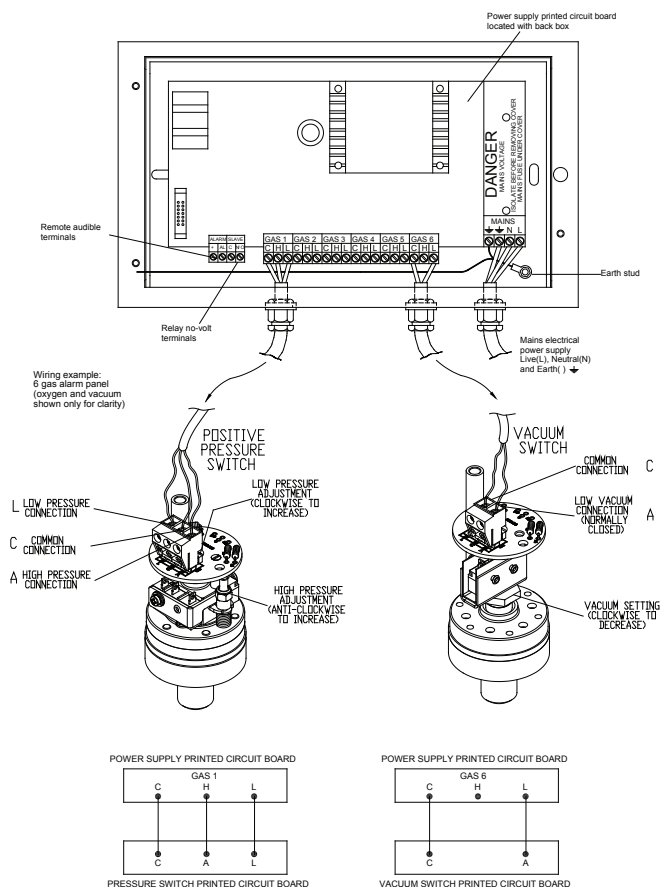
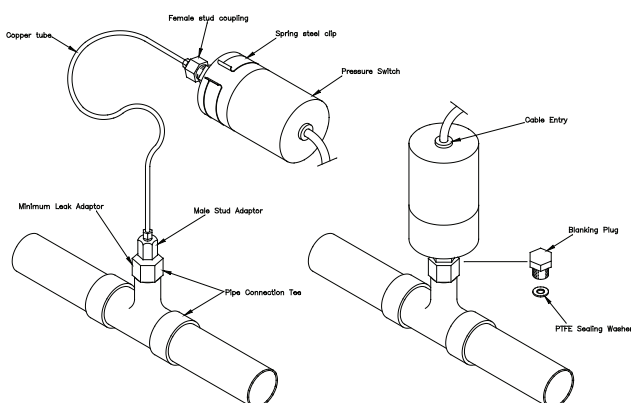


Figure 3. Typical Pressure Switch Installation



6000135	Vacuum switch	40 kPa below atmospheric pressure
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Specification of the Penlon MGS Line Pressure Switch

Connections:	Pressure - G¼ Male (BSP parallel)
	Electrical - to terminal block in accordance with contract specification
Protection:	IP40
Max. pressure:	2000 kPa
Temperature:	Media and ambient -5°C to 70°C
Electrical rating:	Each microswitch - single pole
Resistive:	180R-690R, 0.5W, 12V D.C.
Insulation:	Tested at 1250V for 5 seconds
EC classification:	Low voltage directive

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