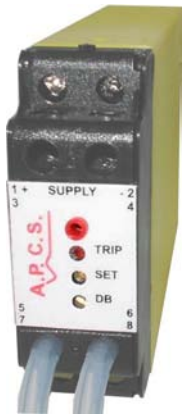
Differential Pressure Monitor v1 PM277

DESCRIPTION

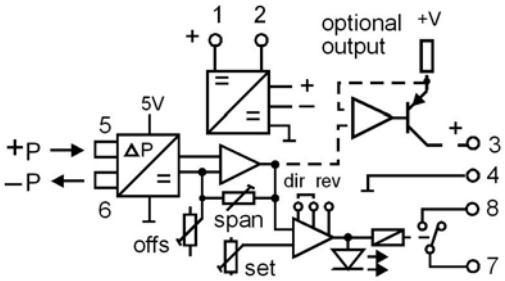


The PM277 provides a retransmit output and an alarm contact for applications requiring electronic differential pressure monitoring. The heart of the PM277 is a piezoresistive silicon pressure transducer, providing high accuracy, long life and total adjust-ability. The base unit contains a stable bridge supply, pre-amplifier, scaling amplifier and a comparator circuit driving a high power relay. The trip point and switching hysteresis are adjustable from the front of the module. A 2mm test socket is used for trip adjustment within a 0 - 5V trip set range calibrated to correspond to the input differential pressure range. Trip status is indicated by a red L.E.D. on the front. High or low setting is selectable internally by coding plugs. Optional features include a wide choice of retransmit analogue output signals for 5kPa range upwards. Power supply can be 12 or 24Vdc or low level (non isolated) AC voltage.

Trip set example:

Input range:	ΔP 0 - 1kPa.
Trip set range:	0 - 5Vdc (test socket to terminal 2).
Required trip point:	0.2kPa.
Set trip to:	$\frac{5}{1} \times 0.2 = 1V$

Block Diagram



General Specifications

Size:	22.5W x 68H x 120D (mm)
Mounting:	Clip for 35mm DIN-Rail.
Housing material:	Polycarbonate.
Electrical connection:	Screw terminals.
Pneumatic connection:	Barbed nozzle for 3.5 - 4mm I.D. tube. Optional quick connector "one touch" for 3.2mm O.D. tube.
Weight:	100 kg.
Protection class:	IP40.
Input pressure ranges:	2kPa up to 0 - 200kPa. (0.3 PSI up to 30 PSI).
Medium compatibility:	Air, low pressure steam, gasoline and oil vapours, ethylene glycol.
Over pressure (max):	100kPa (all ranges).
Static pressure:	100kPa.
Accuracy:	<1% of range (2% <2kPa range).
Linearity:	±1% of range.
Pressure hysteresis:	0.05% of range.
Temperature drift:	0.02% per °C.
Relay contact:	Normally open or normally closed (internally selectable). 8A/250Vac resistive. 3.5A/250V inductive.
Switching hysteresis (DB):	0.5 - 5%.
Power supply swing:	-20...+30%.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)

For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

A.P.C.S.

PM277 - X X X X X

TYPE NO. DESIGNATION

Power Supply:

1 = 12Vdc (30mA - 50mA).
2 = 24Vdc (50mA - 70mA).
# 3 = 12Vac (non isol).
# 4 = 24Vac (non isol).
*) 9= Other (Low voltage, Specify).

Input:

1 = 0 - 2kPa (0.3PSI).
2 = 0 - 5kPa (0.75PSI).
3 = 0 - 10kPa (1.5PSI).
4 = 0 - 20kPa (3.0PSI).
5 = 0 - 50kPa (7.5 PSI).
6 = 0 - 100kPa (15.0PSI).
7 = 0 - 150kPa (22.5PSI).
8 = 0 - 200kPa (30.0PSI).
9 = Other pressure 200kPa max. (Specify).

***) Retransmit Output: (for ≥ 5kPa Range)**

(For 24VDC supply only - 12VDC models have reduced output drive).
0 = None.
1 = 0 - 1mA (10kΩ max).
2 = 0 - 5mA (2kΩ max).
3 = 0 - 1V (100kΩ min).
4 = 0 - 5V (100kΩ min).
5 = 0 - 10V (500kΩ min).
6 = 1 - 5V (100kΩ min).
7 = 4 - 20mA (500Ω max).
8 = 10 - 50mA (200Ω max).
*) 9 = Other (Specify).

Options:

0 = None.
3 = Open collector transistor output.
*) 9 = Other (Specify).

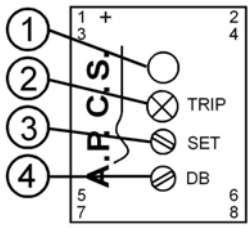
Nozzle Type:

1 = Barbed fitting for 3.5 - 4mm I.D. soft tube.
*) 2 = Quick connection for 3.2mm (1/8") O.D. tube (recommended tube SMC TE 1800 BG)

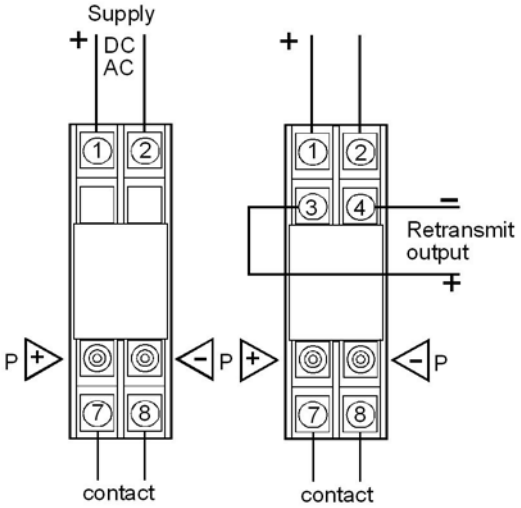
= Not Suitable For Units With Retransmit Output.
*) = Price Extra.

Front Control Explanation

1. Test socket . Reference to terminal 2 for trip adjustment.
2. Status indicator. ON = relay energised.
3. Trip set adjustment (15 turns).
4. Dead band (Hysteresis) adjustment (15 turns).



Connection Diagram



Typical Applications

- Filter blockage monitoring.
- Air flow monitoring using venturi, orifice or pilot tube.
- Level detection using "bubble tube" principal.