Data Sheet

DPIL

Liquid Differential Pressure Sensor

DPIL Liquid Differential Pressure Sensor

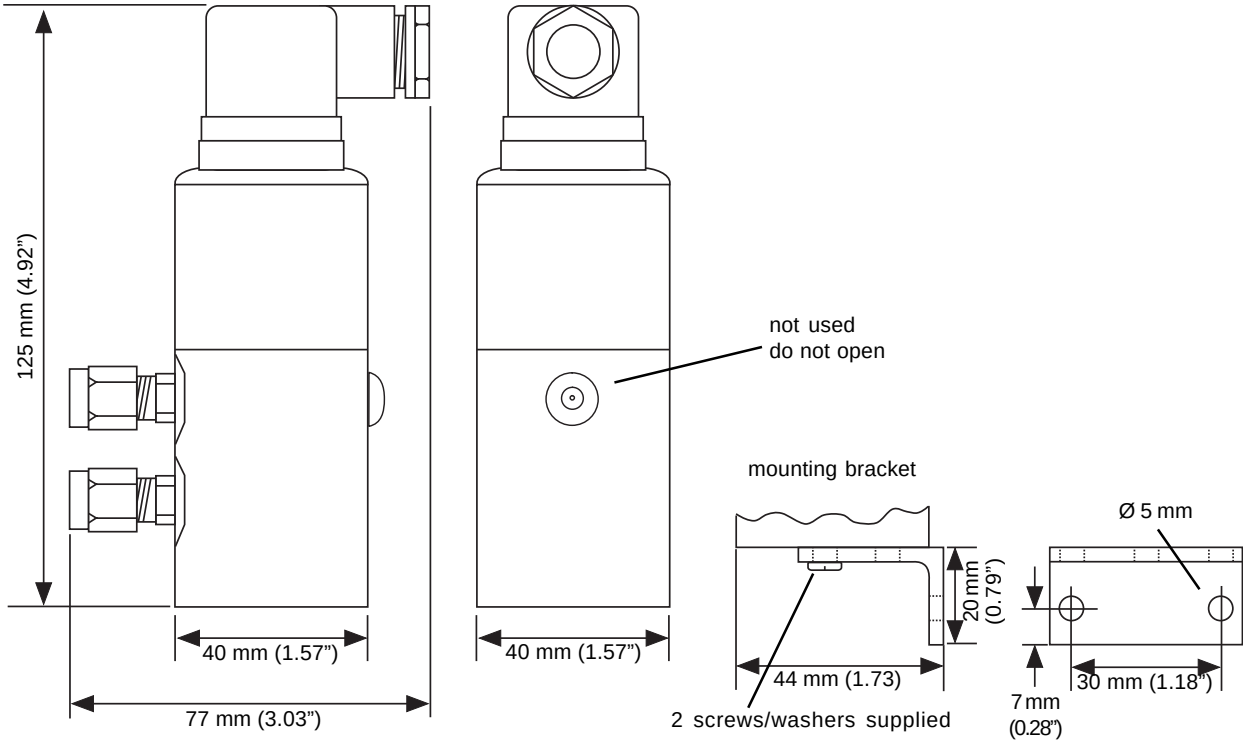
Description

The DPIL is suitable for measurement of differential pressures across pumps, boilers, chillers, filters etc. in HVAC applications. The use of thick film resistances fixed on a ceramic chip gives no mechanical ageing or creepage. The sensor is loop-powered giving a 4 to 20 mA signal equivalent to the measuring range. Electrical connection is via a DIN (4350-A) IP65 connector (supplied) and pressure connections are screw compression fittings for 6 mm pipe. It is supplied complete with a mounting bracket.

Features

- Wide temperature range
- 4 to 20 mA output
- IP65 Housing

Physical



FUNCTIONALITY

The differential pressure is applied across a ceramic chip onto which are fixed thick film resistances. The ceramic chip is protected from the medium by EPDM (Ethylene propylene) seals. The internal amplifier produces a 2 wire (loop-powered) 4 to 20 mA signal.

The pressure connections are screw compression fittings for 6 mm outside diameter pipes.

The electrical connection is via a DIN 43650-A connector with IP65 seal suitable for 11 mm (0.43”) outside diameter cable.

INSTALLATION

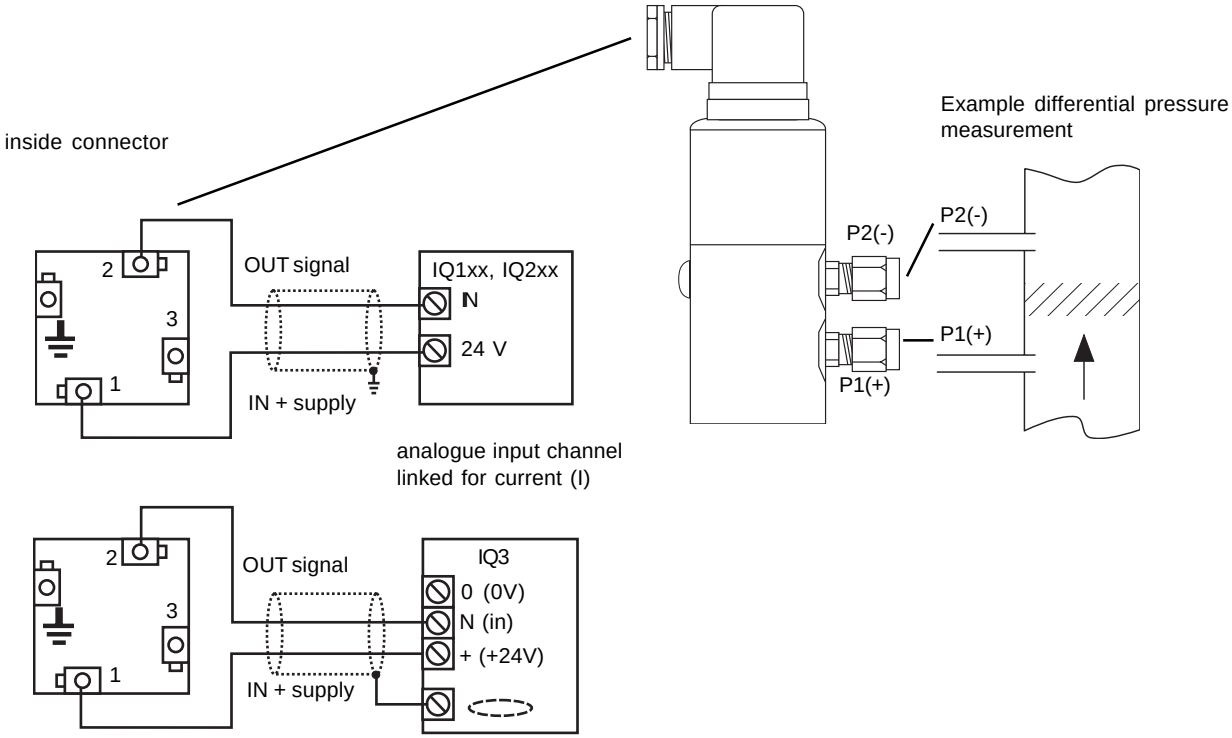
The system pressure (maximum of P1 and P2 above ambient pressure) must be less than the limit stated in the specification. Also the maximum overload on one side (P1 or P2) must not be exceeded (see specifications).

The installation procedure involves:

- Choose location
- Mount sensor
- Connect pressure points
- Connect to controller
- Configure input channel
- Test system

The installation procedure is covered in the DPIL Installation Instructions TG200125.

CONNECTIONS



Note that ⏚ and sensor case have capacitive connection but not electrical connection.

DISPOSAL

WEEE Directive :

At the end of their useful life the packaging and product should be disposed of by a suitable recycling centre.
Do not dispose of with normal household waste.
Do not burn.

ORDER CODES

DPIL/[range] :Liquid differential pressure sensor

[range]	Overload 1 side (max)	
	P1	P2
0.5 :0 to +0.5 bar	3 bar	3 bar
1 :0 to +1 bar	5 bar	5 bar
2.5 :0 to +2.5 bar	12 bar	12 bar
4 :0 to +4 bar	12 bar	12 bar
6 :0 to +6 bar	12 bar	12 bar
10 :0 to +10 bar	20 bar	12 bar

SPECIFICATIONS

Output	:4 to 20 mA (protected against polarity reversal).
Accuracy	:± 1.3% full scale (/0.5, /1, /2.5) ± 0.8% full scale (/4) ± 0.5% full scale (/6, /10)
Temperature coefficient	:± 0.1% full scale /°C (/0.5, /1, /2.5) ± 0.06% full scale /°C (/4) ± 0.04% full scale /°C (/6, /10)
Power	:11 to 33 Vdc
Supply Current	:25 mA (max)
System pressure	:Maximum overpressure (P1 and P2 simultaneously) 25 bar
Overload pressure	:Maximum overpressure (P1 or P2 separately) see table in order code section.
Ruptive pressure	:37.5 bar
Dimensions	:77 mm x 125 mm x 40 mm (max) (3.03” x 4.92” x 1.57”) 77 mm x 145 mm x 40 mm (3.03” x 5.71” x 1.57”) including bracket
Weight	:494g (1.09 lbs)
Load cycle	:50 Hz (max)
Dynamic response	:Response time <5 ms
Pressure connectors	:Screw compression fittings (CuZn vni) for 6 mm O/D pipe

Electrical

Connections	:DIN 43650-A (IP65)
Materials	:housing in contact with medium: Ceramic/INOX 1.4305, PTFE :seals: EPDM (Ethylene propylene)
Temperature	:medium and ambient : -15 °C to +80 °C (+5 °F to +176 °F)
Protection	:IP65
EMC	
Emissions	:EN50081-1
Immunity	:EN50082-1, and -2

Input channel and sensor scaling
The input channel should be linked for loop powered current, I.

The sensor type module must be set up with the correct scaling. The recommended method of setting the sensor type scaling is to use SET. For all IQ2 series controllers with firmware version 2.1 or greater, or IQ3 series controllers, the appropriate SET Unique Sensor Reference given below should be used.

Pressure I 0.5 bar
Pressure I 1 bar
Pressure I 2.5 bar
Pressure I 4 bar
Pressure I 6 bar
Pressure I 10 bar

Alternatively enter scaling manually using sensor type scaling mode 5, characterise, with input type set to 2 (current mA) and table below.

Range	Y	E	U	L	P	I1	I2	O1	O2
0 to 0.5 bar	2	2	0.5	0	2	4	20	0	0.5
0 to 1 bar	2	2	1	0	2	4	20	0	1
0 to 2.5 bar	2	2	2.5	0	2	4	20	0	2.5
0 to 4 bar	2	2	4	0	2	4	20	0	4
0 to 6 bar	2	2	6	0	2	4	20	0	6
0 to 10 bar	2	2	10	0	2	4	20	0	10

type 2 (curr mA)

For all other IQ Controllers see sensor scaling reference card TB100521A.

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