P-SENSOR (LCD) ORDER DESCRIPTION

GENERAL
CMR manufactures the P-Sensors to suit many low pressure and volume measurement applications. Because of the variety of pressure ranges, output signals and power supplies it has been necessary to design an easy to use selection table for anybody to make up a P-Sensor specification to satisfy a requirement. On the P-Sensor selection table you will find all specifications available with the associated ordering code.

P- SENSOR BASE PART NUMBER
The P-Sensor part number starts with a base part number of the type of sensor. Code '23' which is a P-Sensor in a standard ABS enclosure.
The part number therefore starts with '23'.

P-SENSOR Display Type
The P-Sensor will have a number to identify the display model. The Code is '2' for LCD Display.
The part number extends to '232' for LCD display.

TUBE CONNECTORS
6 mm barbed nipples to fit CMR Tube are fitted as standard into the ABS box. They have the Code 'A'.
4 mm barbed nipples to suit the CMR Silicone Tube are also available as Code 'B',
The example has 6 mm barbed nipples, which is standard.
The part number therefore extends to '232A'.

NEGATIVE PRESSURE RANGE
The negative range is specified as (-). If the application requires to measure a negative pressure against a reference, i.e. a room has to be at negative pressure compared with the corridor, then the room has to be connected to the red or (+) nipple. The blue (-) nipple shall be connected to the reference in this case the corridor.

The negative room pressure shall suck on the red (+) nipple and the P-Sensor produces an output signal equivalent of the negative pressure measured.
In the example we have chosen - 25 which has the Code '0025'.
The part number extends to '232A0025'.

If the P-Sensor must only measure in the positive range i.e 0-25 then the negative range will always be selected as 0 and the Code is always '0000'.

PRESSURE UNITS
The negative pressure and the positive pressure range must be expressed in units i.e. Pa. The CMR transducers are in Pascals (Pa) as standard.
In the example Pa was selected with Code 'P'.
The part number extends '232A0025P'.

POSITIVE PRESSURE RANGE
To measure positive pressure against a reference it is necessary to select a positive range i.e. +25. The Code is '0025'.
This means the P-Sensor selected above can measure from - 25 Pa to 0 and from 0 to +25 Pa.
The output voltage would therefore be 5 V or 12 mA at 0 Pa.
The part number extends to '232A0025P0025'.

LCD DISPLAY UNITS
As the P-Sensor has an LCD Display the units shall be factory configured to show Pa, kPa, mB, m/s, m3/s, m3/h, l/s etc. It is good to specify the units when selecting the part number as this is all part of the validation of the instrument.
In the example Code 'P' for Pa was selected.
The part number extends to '232A0025P0025P'.

OUTPUT SIGNAL
The industry standards for output signals are 0-10 V or 4-20 mA, but other signals can be adjusted via the keyboard.

If 0-10 V is the output signal for -25 Pa to + 25 Pa, then 5 V is 0 Pa. From 5 V to 0 V the P-Sensor measures from 0 Pa to - 25 Pa i.e.(-)12.5 Pa would be 2.5 V.
From 5 V to 10 V the P-Sensor would measure positive pressure from 0 Pa to + 25 Pa i.e. +12.5 Pa would be 7.5 V.
It is standard to use equal ranges -25 Pa to +25 Pa rather than -25 Pa to + 50 Pa but the P-Sensor can be adjusted via the keyboard to provide any offset.

In the example, we have selected the standard Dual (0-10 V & 4-20 mA) which has the Code '1'.
The part number extends to '232A0025P0025P1'.

POWER SUPPLY
CMR can supply 24 Vdc/24 Vac non-isolated which does not have an isolation transformer and is also suitable for 3-Wire connection. CMR has also a 24 Vac transformer isolated version which at present is very popular for long distance power up solutions but more 24 Vdc units are used to suit the BMS Power Supplies.

110 Vac and 230 Vac are less used, but also selectable. In the example we have selected 24 Vac transformer isolated power supply which has the Code '3'.
The part number extends to '232A0025P0025P13'.

FINAL PART NUMBER
The part number to order is '232A0025P0025P13'.

Now try and select your own P-Sensor using the P-Sensor Order Selection Table.

P-SENSOR ORDER SELECTION TABLE

The selection table has been prepared to make ordering easy. Each column contains a number of different options which are available and a part number can be established depending on a specific requirement.

The example part number 232A0025P0025P13 which is printed above the selection table is identified as being a P-Sensor with ABS enclosure, having a base part Number, an LCD Display, 6 mm barbed tube connectors, a negative pressure range of -25, range units in Pa (Pascals) and a positive range of +25, LCD configured in Pa (Pascals) with dual output signals of 0-10 V & 4-20 mA, which would mean in this case 0 Pa is 5 V & 12 mA. The power supply is an isolated 24 Vac (4 wire).

The P-Sensor would be supplied with an LCD-display-keyboard mounted into the lid and the measured units are Pa (Pascals). The decimal point is user adjustable to 1 on the keyboard which indicates from -25.0 Pa to +25.0 Pa. It comes standard with a traceable calibration certificate to national and international Standards (UKAS).

EXAMPLE PART NUMBER SELECTION (The code after the (=) sign is used i.e. 6 mm = A)

23	2	A	0025	P	0025	P	1	3
P-Sensor	Display	**Nipple**	**Negative**	**Range**	**Positive**	**Display**	**Output**	**Power**
Part No.	**Type**	**Size**	**Range**	**Units**	**Range**	**Units**	**Signal**	**Supply**
Base = 23	LCD = 2	6 mm = A	0000	Pa = P	0000	Pa = P	Dual = 1	24 Vdc/ac = 2
		4 mm = B	0010		0010	kPa = K		24 Vac = 3
			0025		0025	mB = B		110 Vac = 4
			0030		0030	m/s = V		230 Vac = 5
			0050		0050	m3/s = Q		
			0060		0060	m3/h = M		
			0100		0100	l/s = L		
			0120		0120	ACR = A		
			0125		0125			
			0150		0150			
			0200		0200			
			0250		0250			
			0500		0500			
			0750		0750			
			1000		1000			
			1250		1250			
			1500		1500			
			2000		2000			
			2500		2500			
			5000		5000			
			7500		7500			

HOW TO ORDER

EXAMPLE
A wall mount pressure transmitter is required of the type P-Sensor
An LCD complete with keyboard is required as standard.
The tube connections must be 6 mm for CMR Tube.
The negative pressure range must be -100 Pa
The measured units must be in Pascals (Pa)
The positive pressure range must be +100 Pa
The units on the LCD display must be configured in Pa to show on the LCD display
The output signal must be dual (0-10 V & 4-20 mA)
The power supply must be 24 Vdc non-isolated.

Call CMR for assistance at any time.

The part number for this P-Sensor is 23 2 A 0100 P 0100 P 1 2.

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