Types of Pressure Gauges

Pressure gauges measure the amount of pressure in a certain field and are a vital instrument used mainly in manufacturing, engineering and transportation applications. MGA Controls has compiled a handy guide to the main types of pressure gauges and their uses.

What are the main types of pressure gauges?

The Bourdon Tube and capsule gauges are common types of pressure gauges used in the engineering and manufacturing industries. Here, we provide further information regarding the uses of these instruments, while also looking at contact and differential pressure gauges.

What is a Bourdon Tube pressure gauge?

In 1849, Frenchman Eugene Bourdon invented his pressure gauge design. One of the most commonly used pressure gauges in the 21st Century, Bourdon Tube models are a popular choice due to their high level of accuracy and sensitivity. The Bourdon tube pressure gauge is the original kind of visual measurement device, consisting of a 'bourdon tube' – a 'C' shaped tube that tries to straighten itself when pressure is applied. When this happens, the pointer responds by moving around the dial.

What is a capsule pressure gauge?

The capsule pressure gauge contains a bellow type element instead of a Bourdon tube and is specifically used to measure low pressure efficiently. The capsule pressure gauge can measure negative values up to 600mbar with a high level of accuracy. The pressure gauge is made up of two thin diaphragms that are welded together. When the pressure change, it causes the capsule to change shape on both sides of the measuring element. It is then transferred through mechanical movement, causing the pointer to show the pressure measurement. Most capsule gauges are made out of stainless steel, making them suitable for use in corrosive environments and gaseous media.

What is a differential pressure gauge?

Differential pressure gauges use a U-tube to illustrate the difference in pressure between two points. The instrument contains two entrance ports, which are both connected to monitored pressure capacities. This allows the instrument to display both pressure measurements, making it more efficient than reading the pressure from two gauges and calculating the difference.
There are three types of differential pressure gauges:

- Piston
- Dual Diaphragm
- All-Welded

The three differential pressure gauges are suitable for varying applications and the choice of pressure gauge will depend on specific applications. Dual diaphragms work best with low differential pressure, while all welded pressure gauges are perfect for corrosive atmospheres. Piston differential pressure gauges work best with gaseous media.

MGA Controls has a wide range of pressure gauges, including the ones mentioned here. If you require more information, please contact our technical team by calling **+44 1704 898980** or emailing sales@mgacontrols.co.uk