



Fluid Power Specialist



SELECTING A PRESSURE GAUGE

When selecting a pressure gauge, it is important to consider the following factors to ensure safety and accuracy:

1. Pressure fluid composition
2. Pressure fluid temperature
3. Ambient conditions
4. Pressure range
5. Conditions affecting wear of the system
6. Method of mounting
7. Required accuracy

Pressure fluid composition

Since the sensing element of a pressure gauge may be exposed directly to the measured medium, consider the characteristics of this medium. It may be corrosive, it may solidify at various temperatures, or it may contain solids that will leave deposits inside the sensing element. For pressure fluids that will not solidify under normal conditions or leave deposits, a Bourdon tube gauge is acceptable. Otherwise a diaphragm seal should be used. Lenz chemical compatibility chart (on our website) is designed to aid in the selection of the proper sensing element material.

Pressure fluid temperature

Steam and other hot media may raise the temperature of the gauge components above the safe working limits of the sealed joints. In these cases it is recommended that a siphon, cooling tower or diaphragm seal be used in conjunction with the pressure gauge.

Ambient conditions

The normal ambient temperature range for Lenz pressure gauges is -40 degrees F to +140 degrees F (-40 C to +60 C) for dry or silicone-filled gauges and -4 degrees F to +140 degrees F (-20 C to +60 C) for glycerine-filled gauges. The error caused by temperature changes is +0.3% per 18 degrees F rise or fall, respectively. The reference temperature is 70 degrees F (20 C). The correction is for the temperature of the gauge, and not the temperature of the measured medium. Remote gauge mounting using a diaphragm seal and capillary line is one alternative for applications involving extreme ambient temperature.

Moisture and weather effects must also be considered. Liquid-filled gauges prevent condensation build up. For outdoor use, stainless steel, brass, or plastic cased gauges are recommended.

Conditions affecting wear of the system

In applications involving severe pressure fluctuation or pulsation, the use of restrictors and/or snubbers is recommended. In addition, liquid-filled gauges increase the service life of gauges in these conditions. Lenz liquid-filled gauges are generally filled with glycerine. Silicone for larger temperature extremes and Halocarbon for use with oxidizing agents such as chlorine, oxygen, and hydrogen peroxide are also available.

Pressure range

A gauge of twice the working pressure is generally selected. The working pressure in all cases should be limited to 75% of the gauge range. Where alternating pressure and pulsation are encountered, working pressure should be limited to 2/3 of the gauge.

Method of mounting

Radial (LM) and back (CBM or LBM) connections are available for most Lenz gauges. Lenz stocks gauges with standard NPT threaded connections. Other types such as SAE, BSP, flare connection, special fittings are available as a special order.

Pressure gauges should be mounted in the upright position. For applications where the gauge is mounted sideways, horizontally, or upside down, contact Lenz customer service for gauge type compatibility.

Required Accuracy

Lenz stocks gauges with accuracies from 3/2/3% of span (ASME Grade B to Grade 4A).

To ensure safe and accurate gauge selection, you must take all of the above factors into consideration. When in doubt, please do not hesitate to contact your local stocking Lenz distributor or Lenz customer service for a



BAC



AFC



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