CTC AppNotes
A series of technical documents written by members of the CTC community

Ordering considerations for hazardous location loop power sensors

4-20 mA sensor showing CSA & ATEx approval

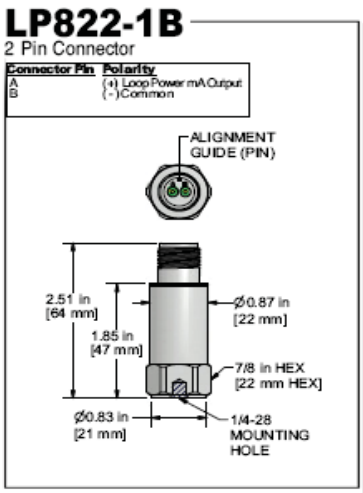
Hazardous locations are found in many industries. Many areas that were once considered "safe" areas may be reclassified in the future as hazardous areas, as companies seek to reduce areas where liability claims may be excessive should accidents happen. With this in mind the sensors approved for use in rated areas seem to be proliferating and a brief guide as to what needs to be considered when specifying sensors may be helpful to the vibration analyst.

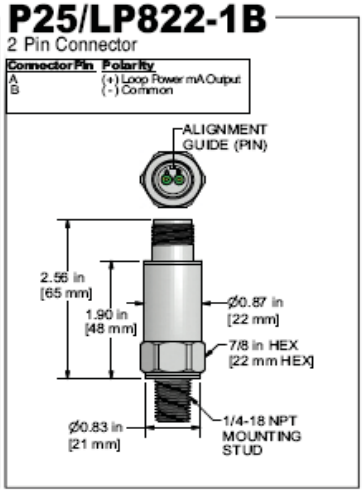
1. Know your rating. The first thing to remember when choosing sensors is to know what category of rating the area falls under to ensure that the sensor chosen will meet the criteria for that area. In each of the three major rating agencies (ATEX, IECEx and CSA) there are two basic divisions variously called things like Zone one and Zone 2, or Class I (or class II) divisions 1 and 2. Each of these designations may have differing requirements based on the location and the chemicals/gases/dusts that are present.

IECEx sensor with dynamic acceleration output for use in Intsinsically safe areas that require IECEx approval.

Velocity output sensor—low capacitance .

2. Know the data you need to pass on. In the vibration field we all know that we are passing on vibration data, but exactly what portion of the data is needed to make accurate decisions when vibration levels change? Choosing the correct sensor will let you pass on the important information and not waste time with irrelevant information. Do you need to send velocity? Acceleration? Displacement?





Some of the many mounting options for the LP 822 series sensors.

3. Know how to install it. There are many options for mounting and the correct part needs to be specified for the correct locations. Some locations require special studs for mounting, some require energy limiting barriers. Still other location ratings require special cables or specially installed connectors.

4. Know who has the final authority. Every plant that has a hazardous designated area must also have a local authority or safety officer that has the final say on what can or cannot be used in each situation. This local person always has the final say in what is allowable in any hazardous location.

As always the support personnel at CTC are available to help you decide which sensors may be a good fit and to help you define the questions you need to answer in order to specify the proper parts needed for your particular situation.

If you have any questions or for further information please contact CTC directly via Email at dgripe@ctconline.com or sales@ctconline.com or feel free to call 1-800-999-5290 in the US and Canada or +1-585-924-5900 internationally.