Hazardous Location Classifications (NEC)

**Class I:** *Areas in which flammable gases or vapors may be present in the air in sufficient quantities to be explosive*

- **Group A:** Atmospheres containing acetylene
- **Group B:** Atmospheres such as butadiene, ethylene oxide, propylene oxide, acrolein, or hydrogen (gases or vapors equivalent in hazard to hydrogen, such as manufactured gas)
- **Group C:** Atmospheres such as cyclopropane, ethyl ether, ethylene, gas or vapors of equivalent hazard
- **Group D:** Atmospheres such as acetone, alcohol, ammonia, benzene, benzol, butane, gasoline, hexane, lacquer solvent vapors, naphtha, natural gas, propane, or gas or vapors of equivalent hazard

**Class II:** *Areas made hazardous by the presence of combustible dust*

- **Group E:** Atmospheres containing combustible metal dusts, regardless of resistivity; dust of similarly hazardous characteristics having a resistivity of less than 100 KΩs-cm; electrically conductive dusts
- **Group F:** Atmospheres containing combustible carbon black, charcoal, or coke dusts having more than 8% total volatile material; dusts so sensitized that they present an explosion hazard, and dusts having a resistivity of greater than 100 Ω-cm but less than or equal to 1x10^8 Ω-cm
- **Group G:** Atmospheres containing combustible dust having resistivity equal to or greater than 100K Ω-cm; electrically nonconductive dusts

**Class III:** *Areas made hazardous by the presence of easily ignitable fibers or dust, but which are not likely to be in suspension in the air in quantities that are sufficient to ignite*

- **Division 1:** Atmospheres where hazardous concentrations exist continuously, intermittently or periodically under normal operating conditions
- **Division 2:** Atmospheres where hazardous concentrations exist only in case of accidental rupture or breakdown of equipment

Hazardous Location Pressure Measurement with NOSHOK Pressure Transmitters

NOSHOK has solutions to your applications in areas with flammable gases and liquids. Let's start with the definitions related to equipment used in hazardous environments:

**Intrinsic Safety Protection**

Protection in which the measurement system contains only transmitters and associated equipment that are incapable of causing ignition of the surrounding flammable atmosphere. Normally an intrinsic safety barrier is employed between the transmitter which is located in the hazardous area and the downstream receiving equipment. This barrier contains an electrical network designed to limit the energy (voltage and current) available to the protected circuit in the hazardous location under specified fault conditions. NOSHOK 625, 626 and 627 Series are Factory Mutual and Canadian Standards Association approved as intrinsically safe.

**Non-Incendive Protection**

Protection in which the measurement may contain arcing or sparking equipment but is still incapable, under specified test conditions, of igniting the flammable gas, vapor or dust-air mixture. This applies only in Division 2 environments. An intrinsic safety barrier is not required in this measurement system. No special wiring is required. NOSHOK 623 and 624 Series are Factory Mutual and Canadian Standards Association approved as non-incendive.

**Explosion-Proof Protection**

Protection in which the enclosure of the transmitter is capable of withstanding an explosion of the specified gas or vapor that may occur within it and of preventing the ignition of a specified gas or vapor surrounding the enclosure by sparks, flashes or explosion of the gas or vapor within, and that operates at such an external temperature that a surrounding flammable atmosphere will not be ignited. Explosion-proof installation techniques are required including special electrical conduit and junction boxes. NOSHOK 621 and 622 Series are Factory Mutual approved as explosion-proof.