Pressure Transmitter Usage in Natural Gas Compression for Upstream Oil & Gas

Natural Gas Compression Applications for Pressure Transmitters

**Natural Gas Compression**

Interstate natural gas pipelines extend from the Atlantic Ocean to the Pacific Ocean and from Canada south to Mexico. Along the thousands of miles these pipeline networks extend, natural gas compressor stations are located every 40 to 100 miles. Natural gas compressor stations are responsible for keeping natural gas between the 200 and 1500 PSI required to reliably and efficiently transport gas from production areas to consumers.

Typical natural gas compressor stations utilize turbine, motor or engine-driven compressors. Both turbine and engine driven compressors utilize a small portion of the incoming natural gas to fuel the combustion cycles responsible for repressurization of the natural gas for transportation. Motor driven compressors require a reliable source of electricity to power the electric motor that compresses the gas. All three compressor types require constant pressure measurement before, during and after compression to ensure safe, efficient natural gas compression.
**Pressure Transmitter Application in Natural Gas Compression Applications**

Pressure transmitters are used in natural gas compression for upstream oil and gas extraction in the following compressor applications:

- Compressor Station Intake Line
- Compressor Station Output Line
- Intake and Output Flow Rate Monitoring
- Intake, Output, and Injector Systems for engine and turbine compressors
- Compressor Control
- Three Phase Filter Monitoring

Natural gas compressor applications necessitate the use of Class I Division I and/or Class I Division II hazardous area certified pressure transmitter systems. Transmitters should also exhibit good vibration resistance and ingress protection. The **WIKA E-10/E-11** has been designed with in mind for all natural gas compressor applications.

**Pressure Transmitter Selection Considerations**

1. Absolute or Gauge Pressure Measurement
2. Cable or Flying Lead Pressure Transmitter Wiring
3. Class I Division I or Class I Division II Hazardous Area Requirements
4. Conduit or Non-Conduit Pressure Transmitter Protection
5. Intrinsically Safe, Explosion Proof, and Non-Incendive Pressure Transmitters
6. Media Compatibility for Pressure Transmitters
7. Moisture Resistance in Pressure Transmitters
8. Pressure Transmitter Accuracy and Errors
9. Radio Frequency (RFI) and Electromagnetic Interference (EMI) in Pressure Transmitters
10. Vertical or Horizontal Pressure Transmitter Mounting
11. Vibration Resistance in Pressure Transmitters