Manual of Petroleum Measurement Standards Chapter 21.1

Flow Measurement Using Electronic Metering Systems—Electronic Gas Measurement

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Flow Measurement Using Electronic Metering Systems—Electronic Gas Measurement

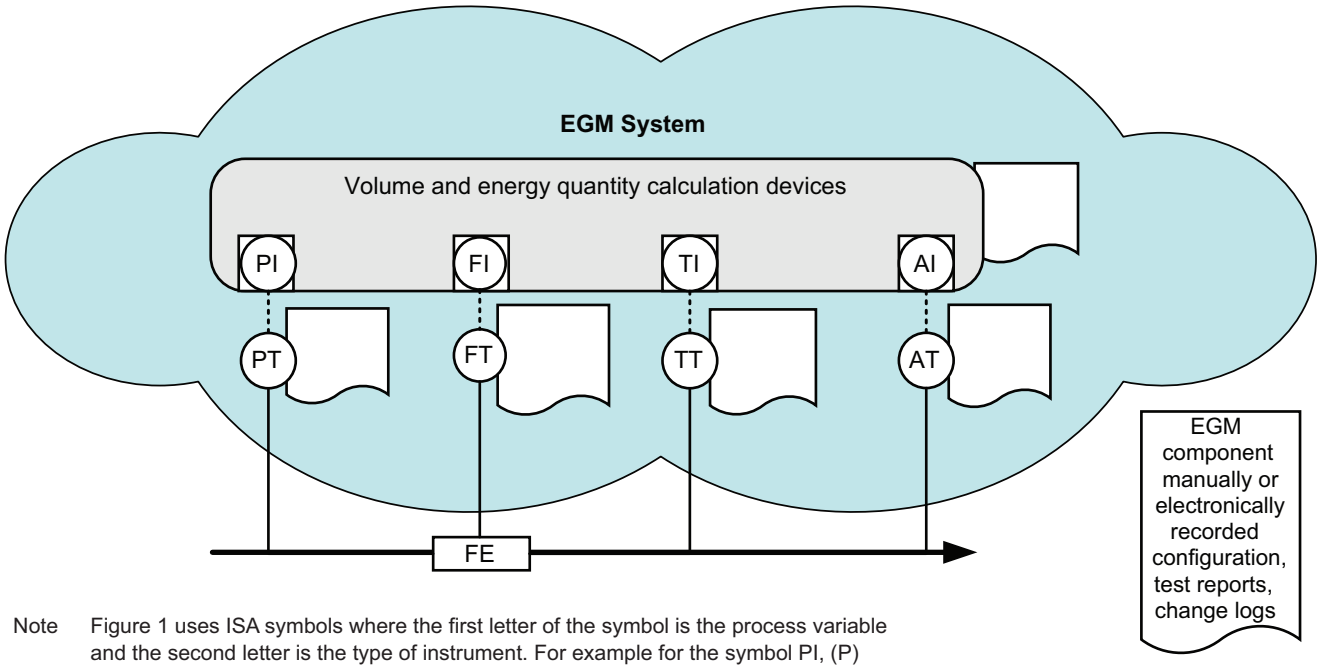
1 Scope

This standard describes the minimum specifications for electronic gas measurement systems used in the measurement and recording of flow parameters of gaseous phase hydrocarbon and other related fluids for custody transfer applications utilizing industry recognized primary measurement devices.

Electronic gas measurement (EGM) systems may be comprised of a number of components which work together to measure and record gas flow as shown in Figure 1. The components contained in the cloud are considered part of the EGM system. The components may be considered individually or be integral parts of the EGM system and the calculations may be performed onsite and/or off-site.

This standard provides the minimum reporting and change management requirements of the various intelligent components required for accurate and auditable measurement. The requirements can be met by a combination of electronically and/or manually recorded configuration, test reports, change record reporting of the electronic gas measurement system components and flow parameters. It is recognized that diagnostic capabilities of the newer meter and transmitter technologies are important but due to the device specific complexity, intelligent device diagnostics are out of scope for this standard.

For all existing installations, the decision to upgrade the system to satisfy the current standard is at the discretion of the parties involved.



Note Figure 1 uses ISA symbols where the first letter of the symbol is the process variable and the second letter is the type of instrument. For example for the symbol PI, (P) stands for pressure instrument and (I) stands for indicator. The process variables in the figure are pressure (P), flow rate (F), temperature (T), and analytical (A) and the types of instruments are indicator (I), transmitter (T), element (E).

Figure 1—Graphical Representation of an Electronic Gas Measurement (EGM) System and Its Relationship to Other Devices