

Combustible Gas Transmitter

Combustible Gas Transmitters for the detection of methane _____ (or Specify Gas) shall be provided to monitor ambient gas concentration in _____ (Specify location). Each gas transmitter shall consist of an explosion-proof electronic transmitter with close coupled combustible gas sensor. For outdoor locations or for all units supplied with the Auto-Test generator, a splash guard shall be supplied for the sensor. Gas transmitters shall be ATI Model A12-17 3-wire type with integral LCD display or approved equal.

Gas transmitters shall measure combustible gas concentrations in the installation area using poison-resistant catalytic bead type sensors. Sensors shall be housed in a 316 stainless steel housing with flame arrestor to meet explosion-proof requirements. Sensors shall be contained in a housing that also incorporates an electrochemical hydrogen generator. The hydrogen generator shall be used to provide an Auto-Test function that will automatically test combustible gas sensors for response every 24 hours. During the sensor functional test, the transmitter output shall be held at 4 mA. In the event that the Auto-Test detects a sensor failure, the output of the transmitter will go to 3 mA to provide remote trouble indication.

The Combustible Gas transmitter electronic module shall be designed as plug-in unit that can be easily removed for service without disconnecting field wiring. Modules shall be interchangeable, allowing immediate exchange of transmitter electronics in the event of a fault in a module. An LCD display on the front of the transmitter shall display gas concentration in % LEL (Lower Explosive Limit), and shall also provide an operational interface for service personnel. Four magnetic controls shall allow operators to perform calibration functions, lock the 4-20 mA output, or manually vary the output signal for test purposes. The entire transmitter electronic unit shall be housed in an explosion-proof enclosure with window, and the magnetic controls shall be operable through the enclosure window without removing the cover.

For transmitters equipped with the Auto-Test sensor verification system, the electronic transmitter shall also keep a test log and display the results of each test on the LCD display. The log shall be accessible to operators through an information sequence activated by the front magnetic switches.

Gas transmitters shall operate from power supplies of 12-40 VDC, and shall be capable of driving external loads up to 1000 ohms with a standard 24 VDC supply. Transmitters and sensor shall be designed to meet explosion-proof specifications for Class 1, Group B, C, & D, Class 2, Groups E & F; and Class 3 locations.

OPTIONAL: Combustible gas transmitters shall be provided in a dual conduit version to allow the sensor only to be mounted near the ceiling while the transmitter display and controls are mounted at a more convenient elevation. Flexible tubing shall be permanently installed to allow calibration gas to be fed to the sensor from the transmitter location. This system will allow one man calibration, even when the sensor is not easily accessible.
