

Two-Wire Toxic Gas Transmitter

Toxic Gas Transmitters for the detection of _____ (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 sensing module. For outdoor locations or for all units supplied with the Auto-Test generator, a splash guard shall be supplied for the sensing module. Gas transmitters shall be ATI Series A12 loop-powered 2-wire type with integral LCD display or approved equal.

Gas transmitters shall measure gas concentrations in the installation area using electrochemical diffusion sensors. Sensors shall be housed in a convenient snap-in module that also contains complete sensor range and calibration data stored in non-volatile memory. Sensor range and calibration data shall be automatically read into the transmitter when the sensing module is connected, and the transmitter shall verify that the correct sensor has been installed. Sensor modules shall be capable of calibration using a spare transmitter at any convenient location, with the new calibration data stored in the sensor module memory.

Gas transmitter electronic modules shall be designed as plug-in units that can be easily removed for service without disconnecting field wiring. Modules shall be universal, capable of accepting any sensor module regardless of gas type or range. An LCD display on the front of the transmitter shall display gas concentration in engineering units, and shall also provide an operational interface for service personnel. Four optical 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 optical controls shall be operable through the enclosure window without removing the cover.

Gas transmitters shall operate from power supplies of 12-40 VDC, and shall be capable of driving external loads up to 675 ohms with a standard 24 VDC supply. Transmitters shall be CSA/NRTL certified explosion-proof for Class 1, Group B, C, & D locations and also intrinsically safe when used with an appropriate I.S. barrier.

OPTIONAL: Each sensor module shall be supplied with an Auto-Test feature consisting of an electrochemical gas generator closely coupled to the sensor which shall automatically generate a small concentration of gas every 24 hours to verify sensor operation. During the verification test, the output from the transmitter shall be held at 4 mA to avoid activation of alarms. Should the sensor fail to respond to the verification test, the output of the transmitter shall go to 3.5 mA to indicate that the sensor should be checked.
