

Product Engineering Sheet

Engineering Specification for a Hydrocarbon Addressable Transmitter

General Description

The combustible gas detector shall be the Addressable Transmitter type with 0-22mA output and have an integral 3-digit display capable of indicating up to 120% LEL (Lower Explosive Limit). Field connection shall be by 3-core screened and armored cable and user interface be made by an external magnet which activates the operational menu. Calibration shall be fully automatic and performed by one man at the location of the transmitter.

The instrument shall be capable of recording the number of successful calibrations, computing the sensor output in mV during calibration and storing in non-volatile memory, along with calibration and set-up parameters.

System Specifications

The instrument shall be capable of measuring 0-120% LEL. The accuracy of the instrument will be $\pm 5\%$. The response time of the instrument when exposed to full scale gas concentration shall be $T_{50} < 10$ seconds. Repeatability shall be $\pm 10\%$ LEL. Calibration level shall be user selectable between 25% and 90% in 1% LEL increments. Calibration will be completed in less than 2 minutes. All calibration parameters will be tested by advanced software routines before being accepted and any errors will be shown on the digital display.

Unless specified otherwise, the following factory default settings shall be used:

Calibration level:	50% LEL
A1 trip level	20% LEL
A2 Open collector output	De-energized and non-latching
A2 Trip level	50% LEL
A2 Open collector output	De-energized and non-latching
Analog output during calibration	1.5mA
MODBUS Baud rate	19200 Baud
MODBUS format	1 stopbit, no parity, 8 databits
MODBUS Node address	1

Mechanical Specifications

The housing size for the Addressable Transmitter shall be 150mm x 150mm x 95mm (6"x6"x3.75"). The weight of the Transmitter, including sensor, shall be 2.5kg (5.5 lbs.). There shall be an EExe II terminal block for field connections.

Electrical Specifications

The operating voltage shall be 24 VDC nominal with a range of 10 VDC/35 VDC. Power consumption (including sensor) shall be 250 mA/310 mA @ 24 VDC, 500 mA/620 mA @ 12 VDC. Analog output during calibration shall be user selectable between 0.0mA, 1.5mA and 2.0mA. Open collector options shall be user selectable Energized/de-energized and Latching/non-latching. MODBUS baud rate shall be user selectable at 2400, 4800, 9600 or 19200 Baud. The MODBUS communications interface shall be based on the RS-485 standard and shall allow two-way addressable communications.

Environmental Specifications

The operating temperature shall be -50°C to +70°C (-58°F to 158°F). The operating humidity range of the instrument shall be 5% to 100% RH, non-condensing. The instrument shall meet EN50082 for EMI/RFI susceptibility at 10V/m. The instrument shall meet EN50081-1/2 in regard to EMI/RFI emission.