ULTIMA® **MOS-5E**

Gas Transmitter

Hydrogen Sulphide Addressable Transmitter

Description

The ULTIMA MOS-5E Hydrogen Sulphide Addressable Transmitter is a highly reliable, self contained, micro-processor-controlled single point monitor with integral 3 digit readout. It is designed to measure and display concentrations of H_2S in three ranges: 0–20 ppm, 0–50 ppm or 0–100 ppm, but will continue to display concentrations up to 120 % FSD. The sensing element may be incor porated in the transmitter housing or remotely mounted at distances in excess of 600 m.

The ULTIMA MOS-5E will record the number of successful calibrations and compute the sensor resistance in Kohms during calibration and store sensor condition data in a non-volatile memory, together with calibration and set-up parameters.

The ULTIMA MOS-5E user interface is menu driven. In addition the instrument may be addressed via the Dual ModBus RTU interface which is based on the RS-485 standard. The ModBus output provides status, alarm, fault and other information for operation, trouble-shooting or configuration of the unit.

A1 and A2 Alarm Trip levels are user selectable in 1 ppm increments from 1-19 ppm for 0–20 ppm, 5–45 ppm for 0-50 ppm or 10–95 ppm for 0–100 ppm measuring range. Calibration level is 50 % of selected measuring range.

Features & Benefits

- RS-485 Dual ModBus Serial Interface in addition to 4–20 mA provides measurement, set-up and status of up to 247 nodes
- 18.5–35 VDC operation allows longer cable runs and lower cost installation
- User changeable H_2S range enables convenient, flexible operation
- 3 digit display shows over-scale readings and alarm status
- Single-point calibration provides easy, fast and simple one-man calibration
- Fully adjustable and configurable open collector outputs result in lower wiring cost and flexible operation

Applications

- Refineries
- Drilling Platforms and Rigs
- Gas and Oil Production Platforms
- Mud Logging Operations
- Desulphurisation Facilities
- Heavy Water Nuclear Facilities
- Wastewater Treatment Plants
- Chemical Plants
- Well Head Sites
- Oil Recovery/Reinjection Sites

Specifications

System Specifications	
Sensor Type	Continuous diffusion, Thin-fim MOS, adsorption type
Sensor Life	3 to 5 years typical
Measuring Ranges*	0–20 ppm, 0–50 ppm, 0–100 ppm
Resolution	1 ppm
Over-range Indication	Flashing readings in 99%–120% of selected measuring range
Calibration Level	50% of selected measuring range

A1, A2 Trip Levels*			
Range	**Adjustable**	**A1 Default**	**A2 Default**
0–20 ppm	1–19 ppm	5 ppm	10 ppm
0–50 ppm	5–45 ppm	10 ppm	25 ppm
0–100 ppm	10–60 ppm	25 ppm	50 ppm

A1, A2 Open Collector Outputs*	Energised/de-energised and latching/non-latching
Fault Open Collector Output	Normally energised
Serial Communications Interface	Dual RS485 ModBus, 2400–19200 Baud
Long Term Stability	± 4 ppm or 10% of applied gas (over 21 days)
Accuracy	± 2 ppm or 10 % of applied gas (10°C to 50°C)
Response Time	T_{50} < 2 minutes
Approvals	ATEX II2G EEx d e m II B+H2 T5 (–50°C to + 55°C) & T4 (–50°C to + 70°C) IP 66/67 SIL 3 suitable

* *User selectable*

Mechanical Specifications	
Height	150 mm (6 inches) excl. sensor 200 mm (8 inches) incl. sensor
Width	150 mm (6 inches)
Depth	95 mm (3.75 inches)
Weight	2.5 kg (5.5 lbs) incl. sensor
Mounting Holes	4 x 7 mm (0.28 inches) dia holes
Termination	EEx e II Terminal Block
Environmental Specifications	
Operating Temperature Range (continuous)	–50 °C to +70 °C
Storage Temperature Range	–50 °C to +85 °C
Relative Humidity	5% to 100% non-condensing
Electrical Specifications	
Supply Voltage min./max.	18.5 – 35 VDC
Electrical Connection	3 wires, screened and armoured cable
Current Consumption	max. 200 mA at 24 VDC max. 360 mA at 12 VDC
Supply Fuse Rating	18 VDC – 35 VDC operation 500 mA Char 'T' PC ≥ 1500A
Analog Output	4–20 mA
Output Resistance	max. 750 ohms
Analog Output Fuse Rating	63 mA Char 'F' PC ≥ 1500A

Ordering Information

ULTIMA MOS-5E			
Measuring Range	**0–20 ppm**	**0–50 ppm**	**0–100 ppm**
4–20 mA, ModBus	MOS5E-1501	MOS5E-1301	MOS5E-1101

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