

Model S4100T

H₂S Addressable Transmitter



Features

- RS-485 Dual MODBUS Serial Interface in addition to 4-20mA
- 18.5-35VDC Operation
- User changeable H₂S range
- 3 Digit Display
- Single-point calibration
- Fully adjustable and configurable open-collector outputs

Benefits

- Provides measurement, set-up and status of up to 247 nodes
- Allows longer cable runs and lower cost installation
- Convenient, flexible operation
- Displays over-scale readings and alarm status
- Easy, fast and simple one-man calibration
- Lower wiring cost and flexible operation

Description

The General Monitors Model S4100T 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 H₂S in three ranges: 0-20ppm, 0-50ppm or 0-100ppm, but will continue to display concentrations up to 120% FSD. The sensing element may be incorporated in the transmitter housing or remotely mounted at distances in excess of 600m.

The S4100T 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 S4100T's 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 1ppm increments from 1-19ppm for 0-20ppm, 5-45ppm for 0-50ppm or 10-95ppm for 0-100ppm measuring range. Calibration level is 50% of selected measuring range.

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



MODEL S4100T

Specification

Application: Hydrogen Sulphide Gas Monitor
Sensor Type: Continuous diffusion,
 Thin-film Mos, adsorption type

Measuring range: * 0-20ppm, 0-50ppm and
 0-100ppm

Measuring Resolution: 1 ppm

Over-range Indication: Display flashes for readings greater than 99% FSD, but continues to display gas concentration up to 120%

Calibration level: 50% of selected measuring range

A1 Trip level: * 1ppm increments 1-19ppm for 0-20ppm measuring range, default 5ppm
 5-45ppm for 0-50ppm measuring range, default 10ppm
 10-60ppm for 0-100ppm measuring range, default 25ppm

A1 Open Collector

Output: * Energised/de-energised and latching/non-latching

A2 Trip level: * 1 ppm increments 1-19ppm for 0-20ppm measuring range, default 10ppm
 10-45ppm for 0-50ppm measuring range, default 25ppm
 10-95ppm for 0-100ppm measuring range, default 50ppm

A2 Open Collector

Output: * Energised/de-energised, latching/non-latching

Fault Open Collector

Output: Normally energised

Analogue Output during

Calibration: * 0.0mA, 1.5mA or 2.0mA

Serial Communications

Interface: Dual RS485 MODBUS, min. 2400, max. 19200 Baud
 EIA 485 Standard & Modicon

Stability, Long

Term: ± 4ppm or 10% of applied gas whichever is greater (over 21 days)

Accuracy

(Linearity) ± 2ppm or 10% of applied gas whichever is greater (10°C to 50°C)

Response Time: T50 < 2 minutes

Approvals: Hazardous area standards -
 ATEX II2G EEx em II
 T5 (-50°C to + 55°C) &
 T4 (-50°C to + 70°C)
 IP66/67.
 Approved for Russia and
 Kazakhstan
 Tested to EN45544

The Electronics and Detector are suitable for a SIL 3 Stand Alone, Non Voting application and have a Safe Fail Figure of >99%(SFFF)

* User selectable

Mechanical Specification

Height excl. sensor: 150mm (6")
Height incl. sensor: 200mm (8")
Width: 150mm (6")
Depth: 95mm (3.75")
Weight incl. sensor: 2.5kg (5.5 lbs)
Mounting holes: 4 x 7mm (0.28") dia holes
Termination: EExe II Terminal Block

Environmental Specification

Operating temperature range (continuous)
min/max: -50°C to +70°C
Storage temperature range
min/max: -50°C to +85°C
Relative humidity
min/.max: 5% to 100% non-condensing
EMI/RFI
Susceptibility: Meets EN50082 @ 10V/m
EMI/RFI
Emission: Meets EN50081 - 1/2

Electrical Specification

Supply voltage
min/max: 18.5VDC to 35VDC
Electrical connection: Screened and armoured 3 core cable

Supply current consumption, including sensor typ/max: 140mA/200mA @ 24VDC,
 240mA/360mA @ 12VDC

Supply fuse rating: 18VDC - 35VDC operation
 500mA Char 'T' PC ≥ 1500A

Analogue output current

range: 0-22 mA

Analogue output termination resistance min/max (including total cable resistance):
 0-750 ohms

Analogue output open-circuit detection current min/max: 1mA - 22mA
Analogue output fuse rating: 63mA Char 'F' PC ≥ 1500A

Standard

Configuration: S4100T-15-0-1

Specification subject to change without notice

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