

# Model S4100T

H<sub>2</sub>S Addressable Transmitter



General Monitors



## 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



## Features & Benefits

- RS-485 dual Modbus serial interface in addition to 4-20mA provide measurement, setup and status of up to 247 nodes.
- 18.5-35VDC operation allows for longer cable runs and lower cost installation.
- User-changeable H<sub>2</sub>S range provides convenient, flexible operation.
- Three-digit display offers over-scale readings and alarm status.
- Single-point calibration enables easy, fast and simple one-person calibration.
- Fully adjustable and configurable open collector outputs result in lower wiring cost and flexible operation.

## Description

The General Monitors Model S4100T Hydrogen Sulphide Addressable Transmitter is a highly reliable, self-contained, microprocessor- controlled single-point monitor with integral three-digit readout. It is designed to measure and display concentrations of H<sub>2</sub>S 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 incorporated in the transmitter housing or remotely mounted at distances in excess of 600 m.

The S4100T records the number of successful calibrations, computes sensor resistance in Kohms during calibration and stores sensor condition data in a non-volatile memory, together with calibration and setup parameters.

The S4100T's user interface is menu-driven. In addition, the instrument may be addressed via the dual Modbus RTU interface that is based upon the RS-485 standard. Modbus output provides status, alarm, fault, and other information for operation, trouble-shooting or unit configuration.

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.



The Safety Company

*Because every life has a **purpose...***

Specification	
<b>APPLICATION SENSOR TYPE</b>	Hydrogen sulphide gas monitor continuous diffusion, thin-film MOS, adsorption type
<b>MEASURING RANGE</b>	0-20 ppm, 0-50 ppm and 0-100 ppm
<b>MEASURING RESOLUTION</b>	1 ppm
<b>OVER-RANGE INDICATION</b>	Display flashes for readings greater than 99% FSD, but continues to display gas concentration up to 120%
<b>CALIBRATION LEVEL</b>	50% of selected measuring range
<b>A1 TRIP LEVEL*</b>	1 ppm increments 1-19 ppm for 0-20 ppm measuring range, default 5 ppm 5-45 ppm for 0-50 ppm measuring range, default 10 ppm 10-60 ppm for 0-100 ppm measuring range, default 25 ppm
<b>A1 OPEN COLLECTOR OUTPUTS*</b>	Energised/de-energised and Latching/non-latching
<b>A2 TRIP LEVEL*</b>	1 ppm increments 1-19 ppm for 0-20 ppm measuring range, default 10 ppm 10-45 ppm for 0-50 ppm measuring range, default 25 ppm 10-95 ppm for 0-100 ppm measuring range, default 50 ppm
<b>A2 OPEN COLLECTOR OUTPUT*</b>	Energised/de-energised and Latching/non-latching
<b>FAULT OPEN COLLECTOR OUTPUT</b>	Normally energised
<b>ANALOG OUTPUT DURING CALIBRATION*</b>	0.0 mA, 1.5 mA or 2.0 mA
<b>SERIAL COMMUNICATIONS INTERFACE</b>	Dual RS485 Modbus, min. 2400, max. 19200 Baud EIA 485 Standard & Modicon
<b>STABILITY, LONG TERM</b>	± 4 ppm or 10% of applied gas whichever is greater (over 21 days)
<b>ACCURACY (LINEARITY)</b>	± 2 ppm or 10% of applied gas whichever is greater (10°C to +50°C)
<b>RESPONSE TIME</b>	T50 < 10 seconds
<b>APPROVALS</b>	Hazardous area standard - ATEX 112G- EEx em II T5 (-40°C to +55°C) & T4 (-40°C to +70°C) IP66/67. Approved for Russia and Kazakhstan Tested to EN 60079-0:2009, EN 60079-7:2007, EN 60079-18:2009

\* User selectable

**Electronics and detector are suitable for SIL 3 stand-alone, non-voting application and have safe fail figure of >99%(SFFF).**

Note: This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products. Specifications subject to change without notice.



**ID 1467-02-MC / Dec 2015**  
© MSA 2015 Printed in U.S.A.

**Corporate Headquarters:**  
**MSA**  
1000 Cranberry Woods Drive  
Cranberry Township, PA 16066  
United States  
+1-724-776-8600  
[info.us@MSAsafety.com](mailto:info.us@MSAsafety.com)

**Design Center:**  
**General Monitors Ireland Limited**  
Ballybrit Business Park  
Ballybrit, Galway  
Ireland H91H6P2  
+353 (0)91 751175  
[info.gmil@MSAsafety.com](mailto:info.gmil@MSAsafety.com)

Additional locations can be found on our web site:  
[www.MSAsafety.com](http://www.MSAsafety.com)

Mechanical Specifications	
<b>HEIGHT EXCL. SENSOR</b>	150mm (6")
<b>HEIGHT INCL. SENSOR</b>	200mm (8")
<b>WIDTH</b>	150mm (6")
<b>DEPTH</b>	95mm (3.75")
<b>WEIGHT INCL. SENSOR</b>	2.5kg (5.5 lbs)
<b>MOUNTING HOLES</b>	4 x 7mm (0.28") dia holes
<b>TERMINATION</b>	EExe II terminal block
Environmental Specification	
<b>OPERATING TEMPERATURE RANGE (CONTINUOUS) MIN/MAX</b>	-40°C to +70°C
<b>STORAGE TEMPERATURE RANGE MIN/MAX</b>	-50°C to +85°C
<b>RELATIVE HUMIDITY MIN/MAX</b>	10% to 95%, non-condensing
<b>EMI/RFI SUSCEPTIBILITY</b>	Meets relevant standards EN50270, EN55011:ENV50204
<b>EMI/RFI EMISSION</b>	Meets relevant standards EN50270, EN55011:ENV50204
Electrical Specification	
<b>SUPPLY VOLTAGE MIN/MAX</b>	18.5 VDC / 35 VDC
<b>ELECTRICAL CONNECTION</b>	Screened and armoured 3 core cable
<b>SUPPLY CURRENT CONSUMPTION, INCLUDING SENSOR TYP/MAX</b>	140mA/200mA @ 24 VDC
<b>SUPPLY FUSE RATING</b>	18VDC - 35VDC operation, 500mA Char 'T' PC ≥ 1500A
<b>ANALOG OUTPUT CURRENT RANGE</b>	0 - 22mA
<b>ANALOG OUTPUT TERMINATION RESISTANCE MIN/MAX</b>	(Including total cable resistance) 0-750 ohms
<b>ANALOG OUTPUT OPEN-CIRCUIT DETECTION CURRENT MIN/MAX</b>	1mA - 22mA
<b>ANALOG OUTPUT FUSE RATING</b>	63mA Char 'F' PC ≥ 1500A
<b>STANDARD CONFIGURATION</b>	<b>S4100T-15-0-1</b> 51457-9 0-20 ppm sensor, no additional sensor housing

**Specifications subject to change without notice.**