

## Features

- Microprocessor based
- 4-20mA Analogue Output
- Voltage free relay contacts
- RS485 digital interface
- Alphanumeric dot-matrix display
- "One Person" calibration
- Dual detectors
- Certified ATEX II 2 G Ex d IIC T6
- Temperature compensation
- Standalone operation



The Monicon S500L-IR-C2H2 is a high quality, self contained, NDIR (Non Dispersive Infra Red) gas monitor that offers a host of sophisticated features to provide fast, reliable warnings against explosive concentrations of acetylene gas.

The S500L-IR-C2H2 will operate as a standalone instrument or in conjunction with a controller or a computer. It is housed in an attractive, compact diameter enclosure and may be configured or calibrated by one person, without declassifying the hazardous area.

The gas concentration is indicated on a rugged 4-character alphanumeric display which also indicates instrument status.

The S500L-IR-C2H2 is fully user programmable and no physical adjustments are necessary during calibration as the on-board computer assists the calibration procedure. Because the unit uses infrared energy rather than catalysts, the sensor is unaffected by catalytic poisons that have an adverse affect on traditional "pellistor" based sensors.

All user variables are stored in non-volatile memory (EEPROM) and retained indefinitely even during total power failure.

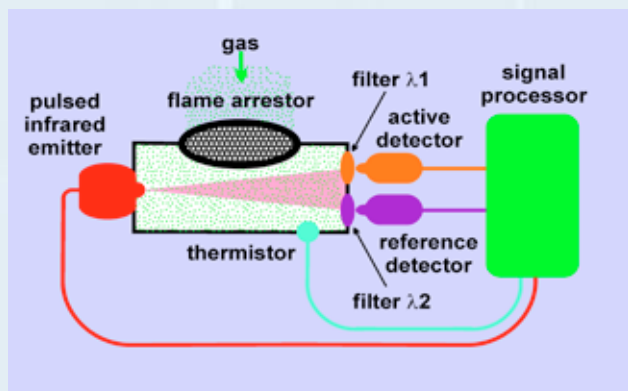
## Typical Applications for the S500L-IR-C2H2

- Plastic manufacturing*
- Chemical processing*
- Oxy-acetylene welding*
- Oxy-acetylene cutting*
- Gas processing*
- Acetylene storage*
- Cable repair*
- Glass manufacture*
- Laboratories*
- Chemical synthesis*

The instrument uses advanced NDIR technology combined with surface-mount microprocessor and firmware technology. A pulsed infrared source emits a broad spectrum infrared beam within an optical cavity. The system measures the adsorption of infrared energy as it passes through a gas sample. Acetylene has clearly defined absorption characteristics, so the concentration can be determined by the absorption of infrared radiation at the wavelength determined by filter lambda 1 in the diagram.

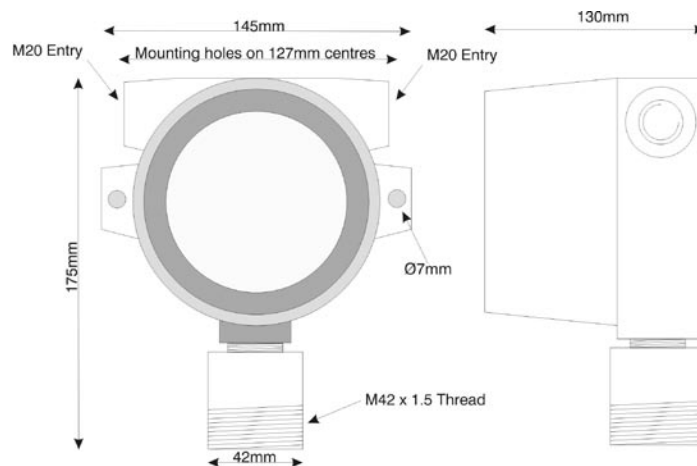
To compensate for interfering factors filter lambda 2 isolates another wavelength which is used to measure the total transmission through the optical cavity and is not affected by acetylene. By comparing the infrared energy reaching each of the two detectors, the concentration of the gas sample can be determined. The signal processor compares and linearises these two signals and factors in variations in temperature.

The unit is calibrated or user-programmed by activating magnetic switches with a magnet. The operator is then guided through a variety of options by a user-friendly menu. The CPU constantly verifies system operation. In the unlikely event of a fault, the operator is alerted with a helpful diagnostic display.



## S500L-IR-C2H2 Specifications

Supply voltage	Nominal 24Vdc (operates from 20Vdc to 35Vdc)
Power consumption	2W nominal, 2.3W maximum
Circuit protection	Electronic current limiter, 1.5A auto-reset
Transient Protection	PCB mounted, 3 Joule, Metal Oxide Varistor
Analogue output	4-20mA current source referenced to 0V
Analogue output load	500 Ohms maximum
Operating temperature	-20°C to +50°C
Storage temperature	-20°C to +66°C
Humidity range	10%RH to 90%RH (Non-condensing)
Preconditioning Requirements	Operational: 30 seconds, Specification: 15 minutes
Full-Scale range	0 - 100% LEL acetylene
Response time (T90)	Typically <30 seconds
Drift, S.T.P. continuous duty in air	<3% over three months
Linearity	±5%
Repeatability	±2%
Resolution	1%
Sensor MTBF	10 years (calculations based on MIL-HDBK-217F)
Recommended calibration interval	12 months (depending on application)
Weight	1.8Kg (including sensor)
RS485 operating mode	Slave mode, half duplex, polled (Modbus protocol TBA)
Max. units on RS485 loop	100
RS485 comm parameters	1200-N-8-1
RS485 error checking	1 byte checksum
Unit interrogation time	40mS
Relay contacts	SPST, NO, 125V @ 0A5 (30V DC @ 1A) each for A1 & A2
Option setting	Digital setting (all options fitted as standard and user selectable)
Alarm setting	Digital setting (fully adjustable between 10% and 90% of full scale)
Alarm types	Energised/de-energised. Enrichment/deficiency. User selectable
ATEX certification - S500L-IR	II 2 G Ex d IIC T6 Tamb -20°C to +60°C (certificate number Baseefa08ATEX0056)
Recommended calibration flow rate	500mL per minute
Mounting holes	2 holes, diam 7mm, spaced 127mm
User variable storage	Non-volatile RAM (EEPROM)
Electromagnetic Conformance (EMC)	Complies with EN50081 and EN50082
Cable gland entries	2 entries, each M20 x 1.5
Terminations	PCB mounted terminal blocks to accept 1.5mm <sup>2</sup> cable
Enclosure material	Aluminium pressure die-casting, chromated with with blue epoxy finish.



**Monicon Technology Ltd**  
Ballybrit Industrial Estate  
Monivea Road  
Galway  
Ireland

Tel: +353 91 752884  
Fax: +353 91 752886  
e-mail: sales@monicon.com  
web-site: www.monicon.com