SC-214 µLogger

Chemical Detection System/ Sensor Evaluation Kit

SEACOAST SCIENCE, INC
A CHEMICAL SENSOR COMPANY

Sensors:	One chemicapacitive and up to 8 chemiresistive sensor readouts Temperature and humidity
Operating temperature:	-40°C to +125°C *(battery temp range may be more restrictive)*
Operating humidity:	Non-condensing
Weight:	0.7oz, optional 0.4oz case
Power:	1.5VDC via AAAA Battery or 5VDC via USB
Communication:	USB 2.0 Mini-B
Dimensions:	53mm x 45mm x 17mm
Warranty:	Limited 30-day warranty from date of delivery

Standard Features:

- Advanced Microprocessor Control System
- Nine Sensor Array including
  - 8 chemiresistive sensors
  - 1 chemicapacitive sensor
- Temperature and Humidity Sensor
- Vented Plastic Enclosure
- USB 2.0 A to Mini-B Cable
- USB data output
- Remote Data Logging
- AAAA battery power
- Real Time Data Logging Software
- Remote Data Collection Setup and Retrieval Software
- Device Drivers
- User manual

The SC-214 µLogger is a state-of-the-art, compact, remote chemical vapor detection system. The device responds to a broad range of chemical gases in ambient air. It features an advanced microprocessor, onboard temperature and humidity detection, and an array of patented chemicapacitive and chemiresistive sensors. The unit can operate autonomously on battery power for up to 5 hours or can stream data indefinitely over USB 2.0.

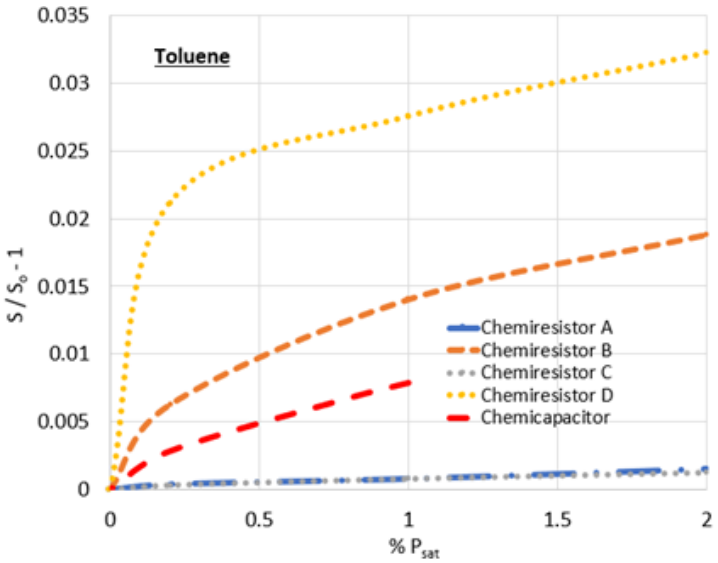
The SC-214 nine-sensor array consists of one chemicapacitive sensor and one to eight chemiresistive sensors. Each sensor can be coated with a custom polymer designed to give unique responses to various classes of chemicals. This allows the user to tune the system for custom chemical detection applications. Temperature and humidity detection allow for the development of compensation and calibration algorithms.

info@seacoastscience.com 760.268.0083 www.seacoastscience.com

Rev. 20220117

Detection Capabilities

Depending on the selected polymer coating, each sensor can have a unique response to a broad range of chemical vapors. Sensors may have strong changes in resistivity or capacitance to some classes of chemicals and little or no response to other chemical classes. Resistivity or capacitance may also increase or decrease relative to the baseline, depending on the analyte, temperature, and humidity conditions. Users can coat blank sensors themselves with their own conductive chemically absorbent polymers or can consult with us to select coatings from our array of custom polymers.



Responses of four chemiresistive sensors coated with different polymers to toluene vapor

Chemical classes detectable by Seacoast Science proprietary polymers

COMPOUND TYPE	TYPICAL COMPOUNDS	RANGE OF BOILING POINTS
Alcohols	C1– C6	50 – 175°C
Aldehydes	C1– C8	50 – 175°C
Amides	C3– C4	150 – 250°C
Carboxylic acids	C1– C4	100 – 150°C
Esters	C2– C10	30 – 200°C
Ethers	C2– C8	30 – 110°C
Heterocycles	C5– C8	100 – 150°C
Halogenated hydrocarbons	C1– C8	30 – 120°C
Ketones	C3– C8	50 – 175°C
Nitriles	C2– C5	50 – 120°C
Nitroalkane/aromatic	C1– C6	100 – 210°C
Phosphonates	C3– C9	180 – 210°C
Sulfides	C4– C8	90 – 150°C
Alkanes/Alkenes/Alkynes	C4– C12	30 – 220°C
Aromatics	C6– C11	80 – 220°C

Optional Accessories

SC-Res: Single blank, uncoated chemiresistive sensor

SC-Cap: Single blank, uncoated chemicapacitive sensor

SC-Res Custom: Single custom coated chemiresistive sensor

SC-Cap Custom: Single custom coated chemicapacitive sensor

SC-Case: Vented ABS plastic case

Contact us for more information on our custom polymers and detection capabilities.

info@seacoastscience.com 760.268.0083 www.seacoastscience.com

Rev. 20220117