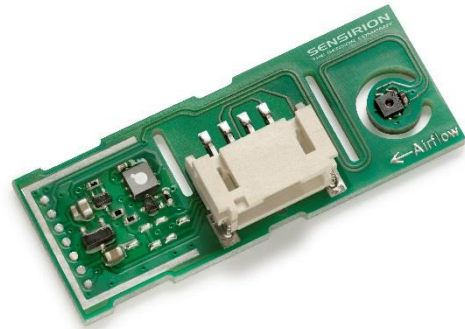


# Datasheet SVM30

## Multi-gas, humidity and temperature sensor combo module

- Measures indoor air quality parameters total VOC (tVOC), CO<sub>2</sub>-equivalent (CO<sub>2</sub>eq), relative humidity RH and temperature T
- Automatic baseline compensation and humidity compensation of MOX gas sensor
- Outstanding long-term stability and reliability
- Fully factory calibrated and tested
- Digital I2C interface
- 5V supply voltage
- Dimensions: 39 x 15 x 6.5 mm



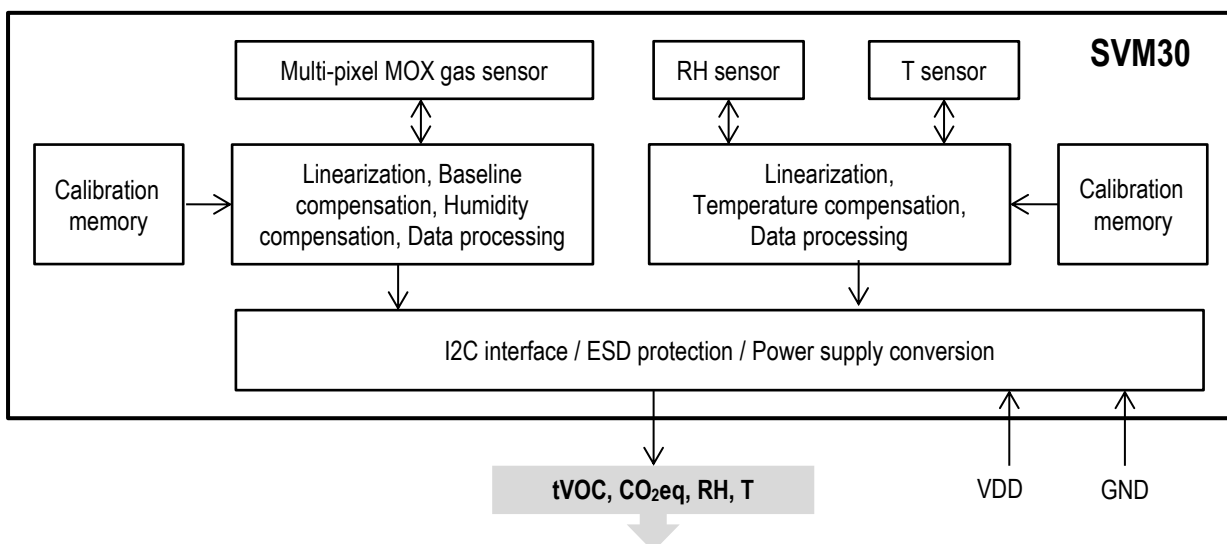
### Product Summary

The SVM30 is a Multi-gas, humidity and temperature sensor combo module containing an SGP30 gas sensor as well as an SHTC1 humidity and temperature sensor.

The SGP30 gas sensor on the SVM30 combines multiple metal-oxide sensing elements – the pixels – on one chip, thereby offering the possibility to measure a total VOC signal (tVOC) and a CO<sub>2</sub> equivalent signal (CO<sub>2</sub>eq) with one single sensor-chip. The SVM30 further offers calibrated air quality output signals as well as compensation of humidity cross-sensitivity. The sensing element features an unmatched robustness against contamination by siloxanes present in real-world applications enabling a unique long-term stability and low drift.

The humidity and temperature sensor on SVM30 covers a humidity measurement range of 0 to 100 %RH and a temperature measurement range of -20 to 85 °C with a typical accuracy of ±5 %RH and ±1°C.

The gas and RH/T sensor components are designed with Sensirion's CMOSens® technology. This technology offers a complete sensor system on a single chip, including the sensing elements, analog and digital signal processing, A/D converter, calibration and data memory and a digital communication interface supporting I2C standard mode. Sensirion's state-of-the-art production process, including full calibration and testing of the sensors, guarantees high reproducibility and reliability.



# Content

|                                                      |    |
|------------------------------------------------------|----|
| 1 Gas, humidity and temperature sensor specification | 3  |
| 1.1 Gas sensing performance                          | 3  |
| 1.2 Air Quality Signals                              | 4  |
| 1.3 Relative humidity                                | 5  |
| 1.4 Temperature                                      | 5  |
| 1.5 Recommended operating conditions                 | 5  |
| 2 Electrical specification                           | 6  |
| 2.1 Electrical characteristics                       | 6  |
| 2.2 Absolute maximum ratings                         | 6  |
| 3 Timing specification                               | 6  |
| 3.1 Sensor system timing                             | 6  |
| 4 Mechanical specification                           | 7  |
| 4.1 Sensor dimensions and mechanical design          | 7  |
| 4.2 Connector specification and pin assignment       | 7  |
| 5 Interface specification                            | 8  |
| 6 Operation                                          | 9  |
| 6.1 Power-Up and Communication Start                 | 9  |
| 6.2 Measurement Communication Sequence               | 9  |
| 6.3 Measurement Commands                             | 11 |
| 6.4 Soft Reset                                       | 13 |
| 6.5 Get Serial ID                                    | 13 |
| 6.6 Checksum Calculation                             | 14 |
| 6.7 Conversion of the sensor output for RH and T     | 14 |
| 7 Application description                            | 15 |
| 7.1 Typical application diagram                      | 15 |
| 7.2 Mounting recommendations                         | 15 |
| 8 Quality                                            | 16 |
| 9 Ordering Information                               | 16 |
| 10 Important notices                                 | 17 |
| 10.1 Warning, personal injury                        | 17 |
| 10.2 ESD precautions                                 | 17 |
| 10.3 Warranty                                        | 17 |
| 11 Revision history                                  | 18 |
| 12 Headquarters and subsidiaries                     | 18 |