

INDUSTRIAL PRODUCT DATASHEET

Grove - SEN54 All-in-one environmental sensor - VOC, RH, Temp, PM1.0/2.5/4/10 with proprietary algorithms, HVAC, Air Purifier

All-in-one environmental sensor providing accurate particulate, VOC, humidity, and temperature measurements with adaptive algorithms, low power, and a 10-year lifetime for HVAC and air purification.

SKU

101021013

UPDATED

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PRICE

\$49.00(Excl. VAT)



Overview

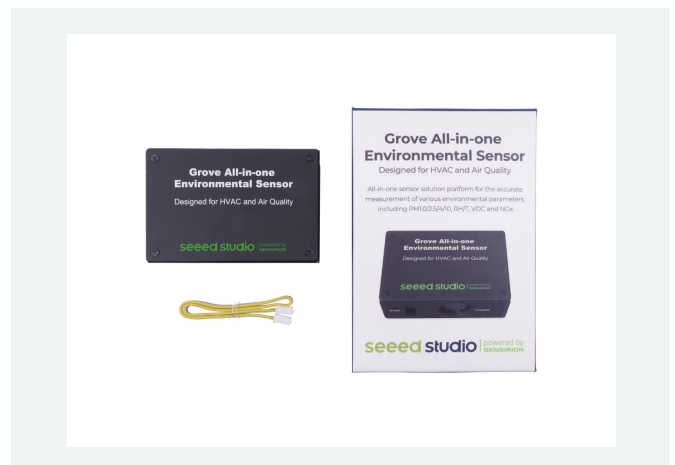


The Grove - SEN54 All-in-one environmental sensor accurately measures particulate matter (PM1.0, PM2.5, PM4, PM10), volatile organic compounds (VOCs), humidity, and temperature. It features proprietary algorithms for straightforward integration into HVAC and air purifier applications, an adaptive STAR engine for enhanced accuracy and stability, and low power consumption of 6.8 mA in RHT/Gas-Only Measurement Mode with a fully calibrated digital output and 10-year lifetime.

Key Features

- **All-in-one enviromental sensor:** providing accurate measurement of particulate matter, volatile organic compounds (VOCs), humidity and temperature.
- **Easy integration into various applications:** the proprietary algorithms enable straightforward integration into Heating, Ventilation, Air Conditioning and Air Purifier
- **Adaptive algorithm:** the STAR engine accelerates its response to ambient temperature which improves measurement accuracy and stability
- **Low power consumption:** costs only 6.8 mA under RHT/Gas-Only Measurement Mode and 2.6 mA for Idle Mode
- **Superior sensing accuracy and lifetime:** provide fully calibrated outputs with a digital interface and the high robustness enable fine performance for up to 10 years

Product Gallery



Specification

Parameter	Conditions	Value	Units
Sampling interval	-	1±0.03	s
Lifetime	24 h/day operation	> 10	years
Acoustic emission level	0.2m	24	dB(A)
Long term acoustic emission level drift	0.2m	+0.5	dB(A) / year

Parameter	Conditions	Value	Units
Mass concentration specified range		0 to 1'000	µg/m ³
Mass concentration size range	PM1.0	0.3 to 1.0	µg
	PM2.5	0.3 to 2.5	µg
	PM4	0.3 to 4.0	µg
	PM10	0.3 to 10.0	µg

Parameter	Conditions	Value	Units
Compensated outputs	-	Temperature and Relative Humidity	°C %RH
Typical accuracy temperature	@ 15-30 °C, 50 %RH	± 0.45	°C
Max. accuracy temperature	@ 15-30 °C, 50 %RH	± 0.7	°C
Repeatability temperature	@ 25 °C, 50 %RH, τ 63%	< 60	s

Parameter	Comments	Values			Units
		Min	Typ	Max	
Output signals	VOC Index	1	-	500	VOC Index points
Device-to-device variation	VOC Index		<±15		VOC Index points
Repeatability	VOC Index		<±5		VOC Index points

Part List

Grove - all in one environmental sensor SEN54	x1
Grove cable	x1

Compliance & Logistics



HSCODE	9031809090
USHSCODE	9031808085
UPC	
COO	CHINA

Resource Links

- <https://www.seeedstudio.com/Grove-All-in-one-Environmental-Sensor-SEN54-p-5374.html>
- [Grove - SEN5X All-in-one environmental sensor Datasheet](#)
- [Community Innovations: A Showcase of Sensirion-Based Grove Projects](#)

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