






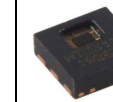


		Sensirion		Renesas	Silicon Labs	STMicroelectronics	Bosch Sensortec	Texas Instruments	TE Connectivity	
		https://www.sensirion.com			https://www.silabs.com	https://www.st.com	https://www.bosch-sensortec.com	https://www.ti.com	https://www.te.com/sensors	
		SHT35A	SHTC1	HS3001	Si7021-A20-GM	HTS221	BME280	HDC2010	HTU31D	
special features							pressure sensor			
sensor location		top	top	top	top	top	top	bottom	top	
A/D Converter	max. resolution			14-bit	14-bit	16-bit		14-bit		
	programmable?	✓		✓				✓	✓	
Interface Type	I ² C	✓	✓	✓	✓	✓	✓	✓	✓	
	SPI					✓	✓			
separate enable/disable for each sensor?					✓		✓	✓		
alert pin		✓					✓	✓		
auto-measurement mode		✓					✓	✓		
software configurable parameters		alert conditions, sampling rate, measurement resolution		measurement resolution			setup IIR filter and oversampling function, measurement cycle	alert conditions, sampling rate, measurement resolution	measurement resolution	
integrated heater ?		✓	no	no	✓	✓	no	✓	✓	
Automotive Grade		AEC-Q100	AEC-Q100	-	-	-	-	-	AEC-Q100	
Humidity Sensor Performance	Accuracy, typ. (%RH)	±1,5 (@ 0...80%RH), ±2,0 (@ 0...100%RH)	±3,0 (@ 20...80%RH), ±5,0 (@ 0...100%RH)	±1,5 (@ 10...90%RH)	±3,0 (@ 20...80%RH)	±3,5 (@ 20...80%RH), ±5,0 (@ 0...100%RH)	±3,0 (@ 20...80%RH)	±2,0 (@ 10...80%RH), ±3,0 (@ 0...100%RH)	±2,0 (@ 20...100%RH)	
	Repeatability, typ. (%RH)	0,08 - 0,21	0,1				0,008	0,1		
	Resolution, typ. (%RH)	0,01	0,01	0,01 - 0,7		0,004	0,008		0,007-0,02	
	Response Time τ63% (s)	8	8	4	17	10	1	8	5	
	Long-term drift (%RH/yr)	<0,25 typ. (0,5 max)	<0,25 typ. (0,5 max)	0,1 typ. (0,25 max.)	0,25 (@ 20-80%RH)	0,5 (@ 20-80%RH)	0,5 (@ 10-90%RH)	0,25 (@ 20-50%RH)	<0,5 typ.	
Hysteresis @ 25°C (%RH)	±0,8	±1	±1	±1	±1	±1	±1	±0,7		
Temperature Sensor Performance	Accuracy, typ. (°C)	±0,2 (@ -40...90°C)	±0,3 (@ 5...60°C), ±0,5 (@ -20...80°C)	±0,2 (@ -10...80°C)	±0,3 (@ -10...85°C)	±0,5 (@ 15-40°C)	±0,5 (@ 25°C), ±1,0 (@ 0...65°C), ±1,25 (@ -20...0°C)	±0,3 (@ -25...110°C)	±0,3 (@ -40...100°C)	
	Repeatability, typ. (°C)	0,04 - 0,15	0,1				0,01		0,012-0,04	
	Resolution, typ. (°C)	0,01	0,01			0,016		0,1		
	Response Time τ63% (s)	2 max.	<5 to 30	2	<5	15 typ.			10 typ.	
	Long-term drift (°C/yr)	< 0,03	< 0,02	< 0,02	< 0,01	< 0,05			0,04 typ.	
Startup Time		<1 ms (after hard reset)	<0,239 ms (after hard reset)	n/a	<25-80 ms (power up)		<2 ms (power up)		<10 ms (power up)	
Measurement Duration (Humidity)		2,5...12,5 ms typ.	14,4 ms max.		2,6 - 10 ms typ.			0,275-0,66 ms typ.	1,11...8,34 ms typ.	
Electrical Characteristics	Power Supply	min (V)	2,4	1,62	2,3	1,7	1,71	1,62	3,0	
		max (V)	5,5	1,98	5,5	3,6	3,6	3,6	5,5	
	Operating Temperature	min (°C)	-40	-40	-40	-40	-40	-40	-40	-40
		max (°C)	+125	+125	+125	+85	+120	+85	+85	+125
	Supply Current (*)	Idle	45 µA typ.	1,5 µA max.	1 - 3 µA max.	62 nA typ.	0,5 µA typ.	0,5 µA max.	50 nA typ.	0,2 µA max.
		Measuring	600 (typ.) - 1500 µA (max.)	385 (typ.) - 465 µA (max.)		180 µA (max.)		340 µA (typ.)	650 (typ.) - 890 µA (max.)	450 µA (max.)
Average(**)		1,7 µA typ.	4,8 µA typ.	1,5-24 µA typ.		2 µA typ.	1,8 µA typ.	0,105-0,5 µA typ.		
Package		8-pin DFN (2,5 x 2,5 mm) 	4-pin DFN (2 x 2 x 0,75 mm) 	6-pin LGA (3mm x 2,41mm) 	6-pin DFN (3x3 mm) 	6-pin HLGA (2 x 2 x 0,9 mm) 	8-pin LGA (2,5 mm x 2,5 mm x 0,93 mm) 	6-pin DSBGA (1,5 mm x 1,5 mm x 0,675 mm) 	6-pin DFN (2,5 x 2,5 mm) 	
Development Tools		Evaluation Kit	Evaluation Kit	1) USB eva key (no micro) for use with a PC 2) Wireless Sensor Hub Evaluation Kit for IoT	Evaluation Kit	Evaluation Kit (with STM32 MCU)	github section with sensor BME280 API, drivers and examples. No evaluation board.	USB plugin PC module with MSP430F5528 MCU and 2 other eva kits	none (no software, no evaluation tools)	
Online Support		developer website		private support request	private support request, public forum	private support request, public forum	community	private support request, 24h chat, e2e Community	none (customer service call/chat only)	
Price Indication (***)		△	▽	△	◇	▽	◇	▽▽	▽	

* for typical values please refer to manufacturer spec for applied **test conditions**

** refer to manufacturer spec which **operation scenarios** have been used

*** see article text for further explanation

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