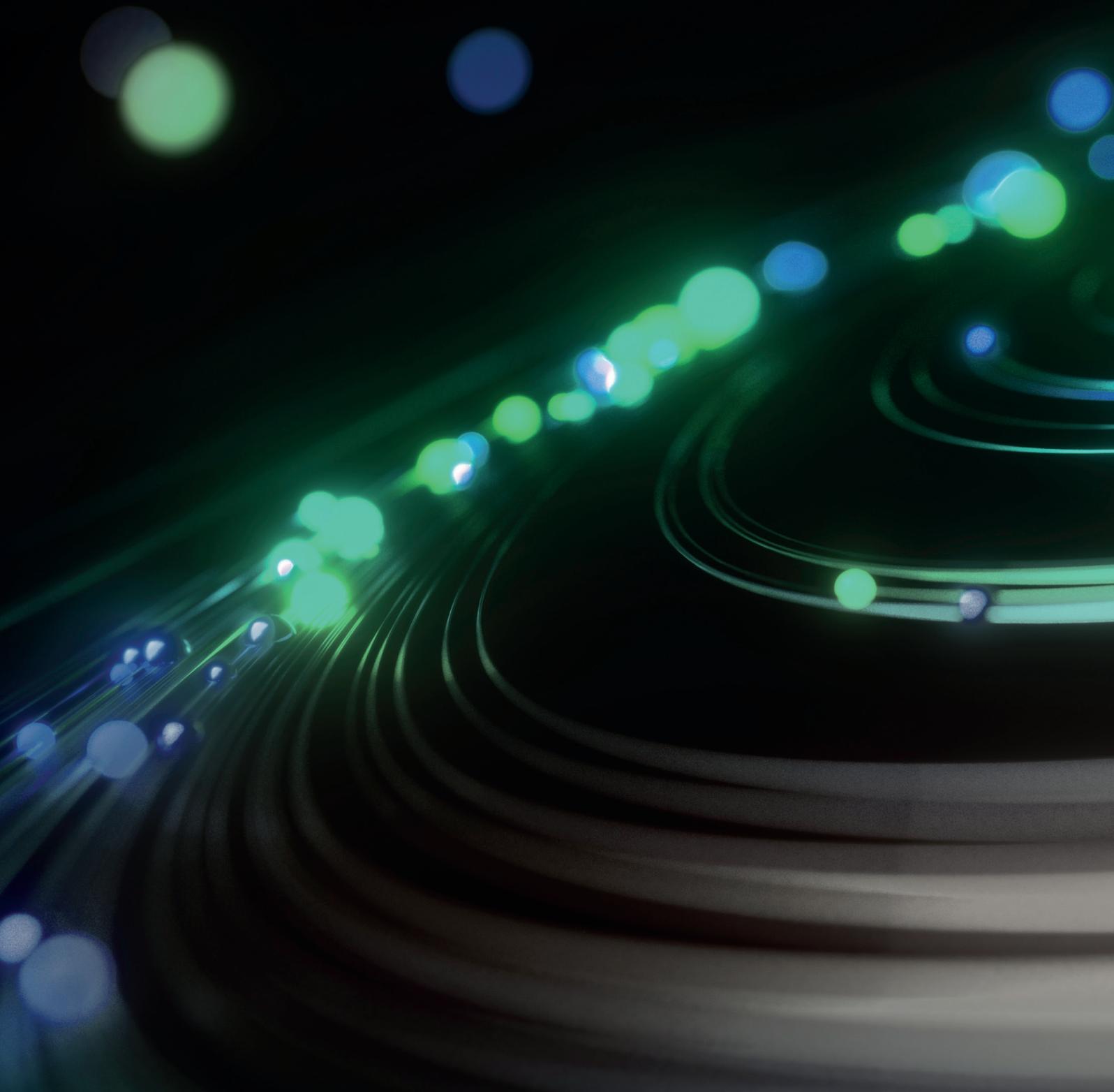


Temperature sensors

Experts in environmental sensing



SENSIRION

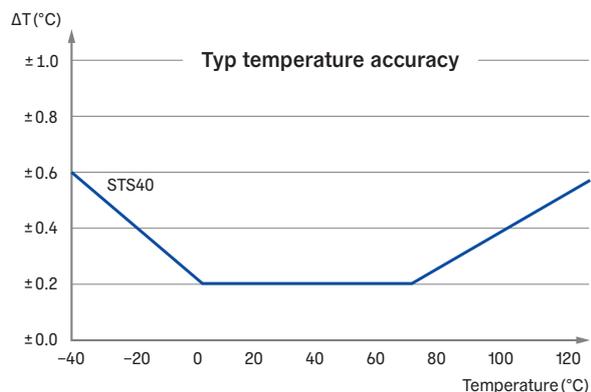
Digital temperature sensors



STS4x Series

- Compact package: $1.5 \times 1.5 \times 0.5 \text{ mm}^3$
- Wide supply voltage range: 1.08–3.6 V
- Features: three distinctive I²C addresses

Temperature sensor	STS40
Typical accuracy (°C)	± 0.2 (0 to 65°C)
Typ long-term drift (°C/y)	<0.03
Operating range (°C)	-40 to +125
Response time $\tau_{63\%}$ (s) ¹	>2 sec
Electrical	
Interface	I ² C
Supply voltage range (V)	1.08 to 3.6
Measurement duration (high/low) (ms) ²	6.9 (high repeatability) 1.3 (low repeatability)
Avg current consumption (high/low) (µA) ³	2.3 (high repeatability) 0.4 (low repeatability)
Idle current (µA)	0.08



Please note that above values are of indicative value only. For detailed information please consult the respective datasheets.

¹ Temperature response times very much depend on thermal conductivity of the substrate material of the sensor.

² Different measurement modes possible (differing either in resolution or repeatability).

“High” indicates a measurement with the highest precision/power mode (highest resolution, best repeatability), “low” indicates a measurement with the lowest precision/power mode (lowest resolution, least repeatability).

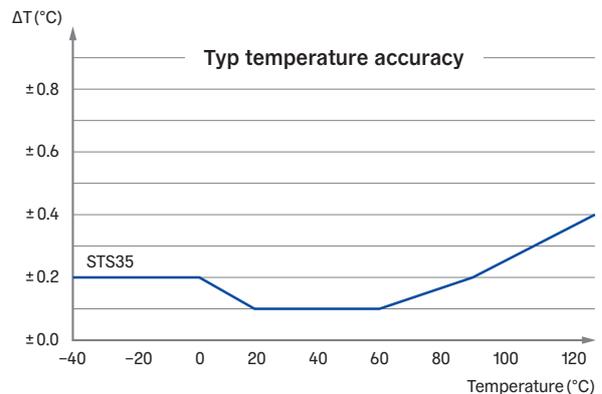
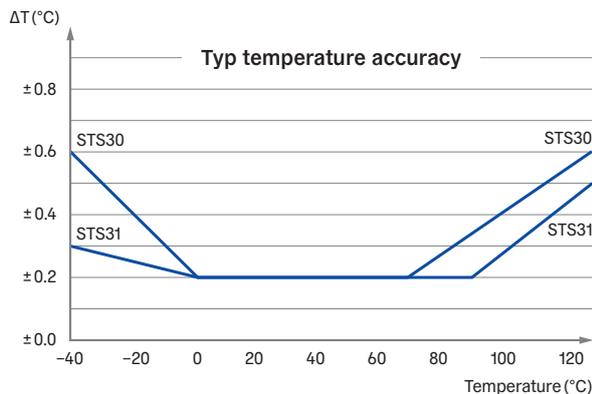
³ Values for one T measurement per second VDD = 3V; different measurement modes possible (differing either in resolution or repeatability).



STS3x Series

- Compact package: 2.5 × 2.5 × 0.9 mm³
- Wide supply voltage range: 2.15 – 5.5 V
- Features: alert function, two user selectable I²C addresses

Temperature sensor	STS30	STS31	STS35
Typical accuracy (°C)	± 0.2 (0 to 65 °C)	± 0.2 (0 to 90 °C)	± 0.1 (20 to 60 °C)
Typ long-term drift (°C/y)	< 0.03	< 0.03	< 0.03
Operating range (°C)	-40 to 125	-40 to 125	-40 to 125
Response time T _{63%} (s) ¹	> 2	> 2	> 2
Electrical			
Interface	I ² C	I ² C	I ² C
Supply voltage range (V)	2.15 to 5.5	2.15 to 5.5	2.15 to 5.5
Measurement duration (high/low) (ms) ²	12.5 (high) 2.5 (low)	12.5 (high) 2.5 (low)	12.5 (high) 2.5 (low)
Avg current consumption (high/low) (µA) ³	10 (high) 2 (low)	10 (high) 2 (low)	10 (high) 2 (low)
Idle current (µA)	0.2	0.2	0.2



Please note that above values are of indicative value only. For detailed information please consult the respective datasheets.

¹ Temperature response times very much depend on thermal conductivity of the substrate material of the sensor.

² Different measurement modes possible (differing either in resolution or repeatability).

“High” indicates a measurement with the highest precision/power mode (highest resolution, best repeatability), “low” indicates a measurement with the lowest precision/power mode (lowest resolution, least repeatability).

³ Values for one T measurement per second VDD = 3V; different measurement modes possible (differing either in resolution or repeatability).

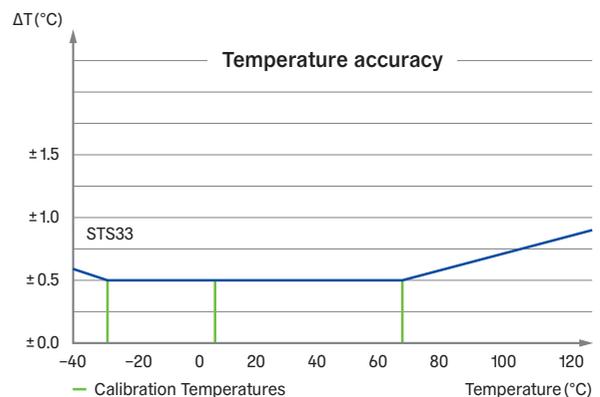
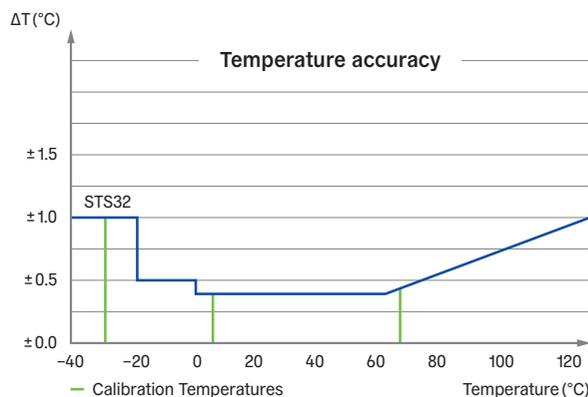
Digital temperature sensors with ISO 17025 calibration



STS32/33

- ISO 17025 calibration certificate available
- Calibration set points: T = -30°C, 5°C and 70°C
- Identification with unique chip serial number

Temperature sensor	STS32	STS33
Max. accuracy (°C)	± 0.4 (0 to 65°C)	± 0.48 (-30 to 70°C)
Typ long-term drift (°C/yr)	<0.01	<0.01
Operating range (°C)	-40 to 125	-40 to 125
Response time $\tau_{63\%}$ (s) ¹	>2	>2
Electrical		
Interface	I ² C	I ² C
Supply voltage range (V)	2.15 to 5.5	2.15 to 5.5
Measurement duration (high/low) (ms) ²	12.5 (high) 2.5 (low)	12.5 (high) 2.5 (low)
Avg current consumption (high/low) (µA) ³	10 (high) 2 (low)	10 (high) 2 (low)
Idle current (µA)	0.2	0.2



Please note that above values are of indicative value only. For detailed information please consult the respective datasheets..

¹ Temperature response times very much depend on thermal conductivity of the substrate material of the sensor.

² Different measurement modes possible (differing either in resolution or repeatability).

“High” indicates a measurement with the highest precision/power mode (highest resolution, best repeatability), “low” indicates a measurement with the lowest precision/power mode (lowest resolution, least repeatability).

³ Values for one T measurement per second VDD = 3V; different measurement modes possible (differing either in resolution or repeatability).

High-accuracy digital temperature sensors

The high-accuracy digital temperature sensors are based on Sensirion's CMOSens® Technology, which combines the strengths of standard CMOS production processes and advanced MEMS technology on a single silicon chip. The working principle behind all STSxx temperature sensors is a silicon bandgap thermometer. Our temperature sensors provide the following key features:

- Highest accuracy
- Low power consumption and minimal size
- Designed for mass production
- Fully calibrated, linearized signal
- 3-point ISO 17025 calibration available

For more information, please visit: www.sensirion.com/temperature

What we offer

Expert first contact

- Specialized and experienced sales force
- Worldwide presence with a global distribution network

Design-in support

- Assistance in the integration of SHTxx sensors into your application
- Proven best practices to ensure that your production concept accommodates the requirements of SHTxx sensors

Fast and easy product evaluation

- Comprehensive product portfolio
- Easy-to-use evaluation kits for effortless humidity and temperature measurement during sensor evaluation
- Technical documents – data sheets, sample codes, application notes

Lifetime support

- Reliable and flexible production
- Sustainable product innovation roadmap to meet your future needs

The background is a dark, almost black, space filled with out-of-focus light spots (bokeh) in various colors including white, light blue, green, and purple. In the lower right quadrant, there are several bright, thin, diagonal light trails in shades of blue and green, suggesting motion or data flow.

Technology at heart,
future in mind.