2.1 Recommended Operating Conditions

The sensor shows best performance when operated within recommended normal temperature and humidity range of 5 °C – 60 °C and 20 %RH – 80 %RH, respectively. Long-term exposure to conditions outside normal range, especially at high humidity, may temporarily offset the RH signal (e.g. +3%RH after 60h kept at >80%RH). After returning into the normal temperature and humidity range the sensor will slowly come back to calibration state by itself. Prolonged exposure to extreme conditions may accelerate ageing.

3 Electrical Specifications

3.1 Electrical Characteristics

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units	Comments
Supply voltage	V_{DD}		2.4	3.3	5.5	V	
Power-up/down level	V_{POR}		1.8	2.1	2.4	V	
Slew rate change of the supply voltage	$V_{DD,slew}$		-	-	20	V/ms	Voltage changes on the VDD line between $V_{DD,min}$ and $V_{DD,max}$ should be slower than the maximum slew rate; faster slew rates may lead to reset;
Supply current	I_{DD}	idle state (single shot mode)	-	0.2	2.0	µA	Current when sensor is not performing a measurement during single shot mode
		idle state (periodic data acquisition mode)	-	45	-	µA	Current when sensor is not performing a measurement during periodic data acquisition mode
		Measuring	-	800	1500	µA	Current consumption while sensor is measuring
		Average	-	2	-	µA	Current consumption (operation with one measurement per second at lowest repeatability, single shot mode)

Table 3 Electrical specifications, values measured at 25°C.

3.2 Timing Specifications

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units	Comments
Power-up time	t_{PU}	After hard reset, $V_{DD} \geq V_{POR}$	-	0.5	1.5	ms	Time between VDD reaching VPOR and sensor entering idle state
Soft reset time	t_{SR}	After soft reset.	-	0.5	1.5	ms	Time between ACK of soft reset command and sensor entering idle state
Measurement duration	$t_{MEAS,l}$	Low repeatability	-	2.5	4.5	ms	The three repeatability modes differ with respect to measurement duration, noise level and energy consumption.
	$t_{MEAS,m}$	Medium repeatability	-	4.5	6.5	ms	
	$t_{MEAS,h}$	High repeatability	-	12.5	15.5	ms	

Table 4 System timing specifications, valid from -40 °C to 125 °C and VDDmin to VDDmax

3.3 Absolute Minimum and Maximum Ratings

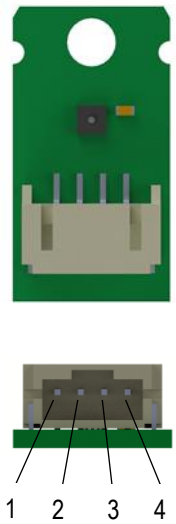
Stress levels beyond those listed in Table 5 may cause permanent damage to the device or affect the reliability of the sensor. These are stress ratings only and functional operation of the device at these conditions cannot be guaranteed.

Parameter	Rating	Units
Supply voltage V_{DD}	-0.3 to 6	V
Max Voltage on pins SDA and SCL	-0.3 to VDD+0.3	V
Input current on any pin	±100	mA
Temperature range	-25 to 85	°C
ESD HBM (human body model)[6]	4	kV

Table 5 Absolute minimum and maximum ratings; values are target specs and not confirmed by measurements yet

4 Pin Assignment

The connector of the SCC30-DB is Scondar SCT2001WR-S-4P (compatible to JST part no. S4B-PH-SM4-TB).



Pin No.	Name	Description
1	SCL	Serial data; input / output
2	VSS	Ground
3	VDD	Supply Voltage
4	SDA	Serial clock; input / output

Figure 4 Connector pin assignment of the SCC30-DB module.

[6] According to JEDEC JS-001