Innovative Sensor Technology
physical. chemical. biological.

Heated HYT 223

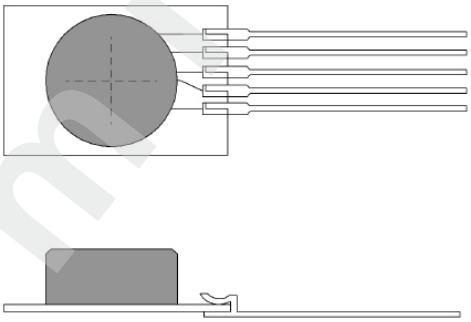
Digital Humidity and Temperature Module

Optimal for critical application areas

Benefits & Characteristics

- Heatable digital humidity sensor
- With PTFE membrane filter for long term stability
- Calibrated and temperature compensated
- High chemical resistance
- Wide humidity and temperature range
- Excellent humidity/temperature accuracy and stability
- I²C protocol (address 0x28 or alternative address)
- Very low drift
- Interchangeable without adjustments
- Very stable at high humidity

Illustration[1)]



1) For actual size, see mechanical dimensions

Technical Data

Operating temperature range:	-20 °C to +120 °C	
Operating humidity range:	0 % RH to 100 % RH	
Hysteresis:	< ±1 % RH	
Linearity error:	< ±1 % RH	
Temperature error:	0.05 % RH/K (0 °C to +60 °C)	
Digital interface:	I²C, address 0x28	
Humidity output signal:	% RH	
Measuring principle:	Capacitive polymer humidity sensor	
	Humidity Sensor	**Heater**
Operating voltage:	2.7 V to 5.5 V	8 - 9 V (for regulated temperature)
Operating voltage limit:	-0.3 V to 6 V	0 - 9 V
Current consumption:	< 22 µA at 1 Hz measuring rate	
Current consumption (sleep):	< 1 µA	
Power consumption:		< 720 mW

	Humidity	Temperature	
Accuracy:	0 °C to 50 °C: ± 1.8 % RH at 0 - 90 % RH ± 3.0 % RH at 90-100 % RH	0 to 60 °C: ± 0.2 °C	
Reproducibility:	±0.2 % RH	±0.1 K	
Resolution:	0.03 % RH	+0.015 °C	
Response time t_{63}:	< 10 s	< 10 s	
Long-term drift:	< 0.5 % RH/a	< 0.05 K/a	

Thermal reconditioning

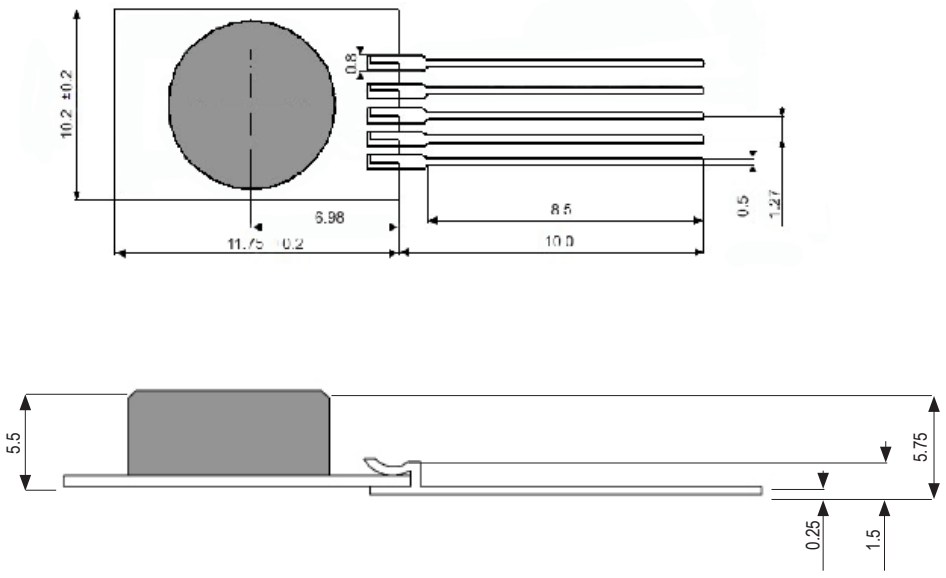
HYT223 contains a microheating structure which allows for thermal reconditioning. A reconditioning cycle is recommended in challenging atmospheres and conditions. Length and interval required depend on the application environment. A possible reconditioning setting is heating the module with 8 to 9 V and 700mW power for 10 minutes every 24 hours.

The temperature regulation is set in a way that the humidity sensor reaches a maximum of 120° C. When this regulation is activated, within the range of 8-9 V supply voltage, a constant temperature is reached.

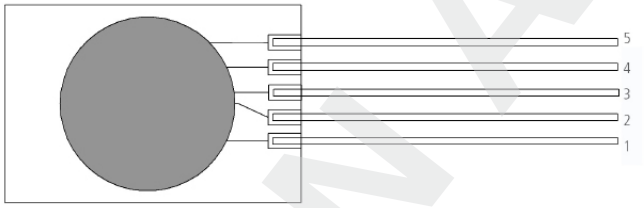
With lower supply voltage heating is not regulated, but it can still be used with slightly higher fluctuations. The exact temperature reached at the humidity sensor depends on the thermal mass of the housing as well as the fixation of the sensor to it. Please refer to the application note for more information on heating and expected temperature ranges.

During reconditioning, the read-out values are not calibrated measurement data.

Mechanical Dimensions



Pin Assignment



1	2	3	4	5
SDA	Ground	VDD	SCL	Heater

Order Information

	Heated HYT 223
Order code	151331

Additional Documents

	Document name:
Application Note:	AHHeatedHYT223_E AHHYTM_E

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