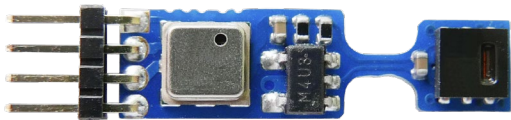# Air humidity

Miniature multi-sensor module for measuring temperature, humidity, and pressure with integrated EEPROM FH0D 46-C

Our new plug-in digital multi-sensor module - with its miniature design and extremely low energy consumption - combines the measurable variables - temperature, atmospheric humidity, and atmospheric pressure. It takes a complete reading of all these ambient parameters and can thus accurately determine all humidity-related and pressure-dependent variables, e.g. the frequently needed mixture ratio (r).

It communicates its findings via an I²C interface; the user can selectively access individual sensor variables and data saved to the integrated EEPROM.

Before leaving our factory the sensor module is adjusted and assigned an electronic identification code that can be read out on receipt of the appropriate command. The integrated EEPROM can be used to save the user's own adjustment data, fine tuning, or electronic ID data (ID number, comments text, etc.). Since the saved parameters are retained in the EEPROM, a multi-sensor module can only be exchanged or replaced with modules that are identically calibrated and have all the same data.

The module is specially designed with very good thermal isolation to withstand temperature influence / thermal conduction and thus ensure that all variables are measured precisely. This system - unlike analog measured value processing - virtually excludes the risk of varying line lengths or disturbance factors adversely affecting the accuracy of measured results.

Technical data

Temperature range	-40 to +85 °C
Accuracy	+5 to +60 °C, typical ±0.2 K
	+5 to +60 °C, maximum 0.4 K
	-20 to +85 °C, maximum 0.7 K
Reproducibility	typical ±0.1 K
Humidity range	5.0 to 98.0 % RH
Accuracy	10 to 90 % RH, maximum ±3 % RH
(incl. hysteresis)	at 23 °C ±5 K
	5 to 98 % RH, maximum ±5 % RH
	at 23 °C ±5 K
Hysteresis	typical ±1 % RH
Pressure range	300 to 1100 mbar
Accuracy	700 to 1100 mbar, ±2.5 mbar at 23 °C ±5 K
Internal memory	two-wire serial EEPROM
	4 kbit (512 x 8 bit)

I²C interface	
Data rate	0 to 400 kHz
Sampling rate	2/sec at highest resolution
Electrical data	
Power supply	2.1 to 3.6 V, typical 3.3 V
Current consumption	during measuring typical 310 µA
	in standby typical 0.35 µA
Energy consumption	during measuring typical 1.02 mW
	in standby typical 1.16 µW
Connection	male strip connector, 4-pin,
	spacing 1.27 mm see pin assignment

lead-free, halogen-free, and RoHS-compliant
(restriction of hazardous substances)

Pin assignment

1 SDA
2 VCC
3 GND
4 SCL
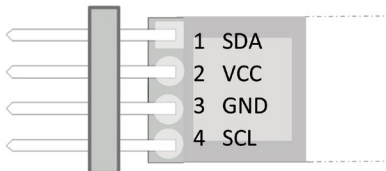
Dimensions
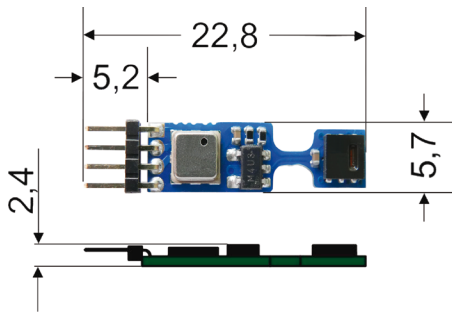
Variants

	Order no.
Miniature multi-sensor module for, humidity, temperature, and pressure with integrated EEPROM	
packaging unit 1 piece	**FH0D46C**
packaging unit 10 pieces	**FH0D46CVE0010**
packaging unit 100 pieces	**FH0D46CVE0100**