technologies

BRH 100RA

Redundant Relative Humidity, Temperature & Pressure Sensor

Self-monitoring capacitive, redundant humidity and temperature sensor with quality index and drift evaluation for the most demanding applications and very long maintenance and calibration intervals. Additionally, a piezo-resistive pressure sensor. All measurands protected in a light-robust housing with metal-mesh-filter cap.

Features

- Redundant [2x] humidity and [3x] temperature sensor
- Excellent humidity & temperature resistance
- Precise high humidity performance
- Integrated pressure sensor
- Precision rH/T measurement
  - **rH** **0 … 100 % rH**
    - Accuracy: ±0.5 % rH typ.
    - Long-term stability ±0.19 % rH/year typ.
  - **T** **−40 … +85 °C**
    - Accuracy: ±0.1 °C typ.
    - Long-term stability: ±0.03 °C/year typ.
  - **Td** Dew point calculation
  - **p** **300 … 1250 hPa**
    - Accuracy: ±0.5 hPa typ.
    - Long-term stability: ±0.16 hPa/year typ.

- Output
  - RS485 Modbus-RTU

- Operating Voltage
  - 5 DC (±10%)

- 16mm tubing with 100mm length
- Metal mesh protection cap or various options
- Specific length cable connection with open end

Applications

- Weather stations
- Cooling applications
- Agricultural storage
- Greenhouse applications
- Datacenters
- Climate monitoring
- Smart Farming

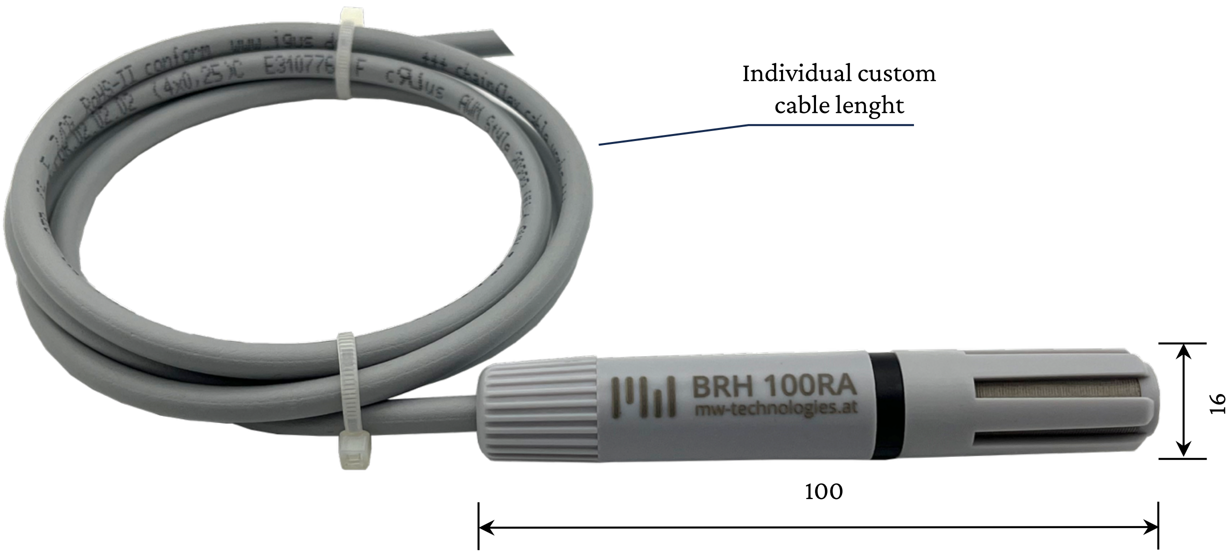
Specifications

Electrical Data

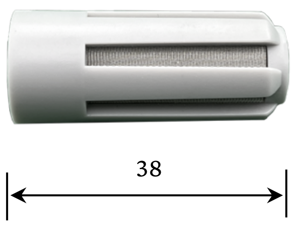
All specifications at T_A = 25 °C unless otherwise noted.

Parameter	***Min.***	***Typ.***	***Max.***	***Unit***	***Conditions/Comments***
Operating temperature	−40		85	°C	probe
Humidity					
rH accuracy		±0.5	±2	% rH	10…50% rH
		±1.0	±2	% rH	10…70% rH
		±1.0	±2.5	% rH	10…80% rH
		±1.5	±3.0	% rH	10…90% rH
rH repeatabiltiy		±0.02		%	
rH response time		4		secs	
Temperature					
T accuracy		±0,1	0,2	°C	0…50°C
		±0,1	0,3	°C	-40…100°C
		±0,1	0,4	°C	-40…125°C
Pressure					
Operating pressure range	300		1250	hPa	
p accuracy		±0,50		hPa	
Working environment humidity	0		100	% rH	no condensation
Storage temperature	−10		80	°C	
Storage humidity	20		60	% rH	
Power supply					
DC voltage	4.5	5	5.5	V	
Current consumption			4	mA	
Communication parameter					
Output		RS485			Modbus-RTU
EMC Standards					
Standard	Emission residential area			EN61000-6-3:2020	
	Suceptibility residential area			EN61000-6-1:20190	

Mechanical Data



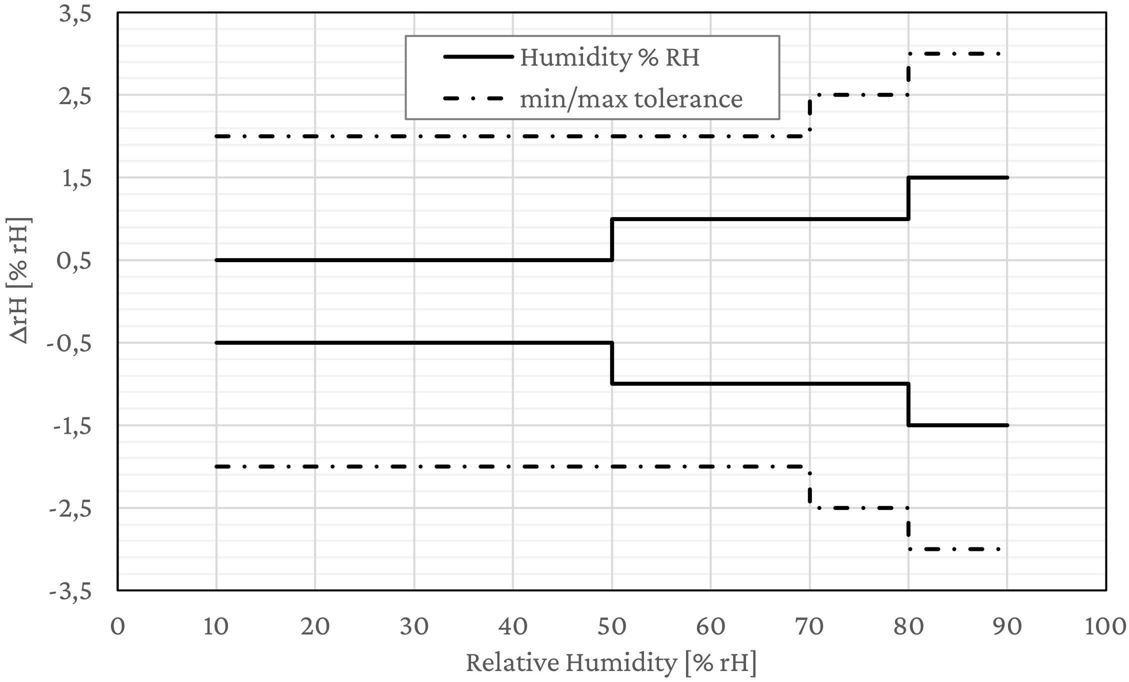
Metal Grid Protection Cap
Pore size 40µm



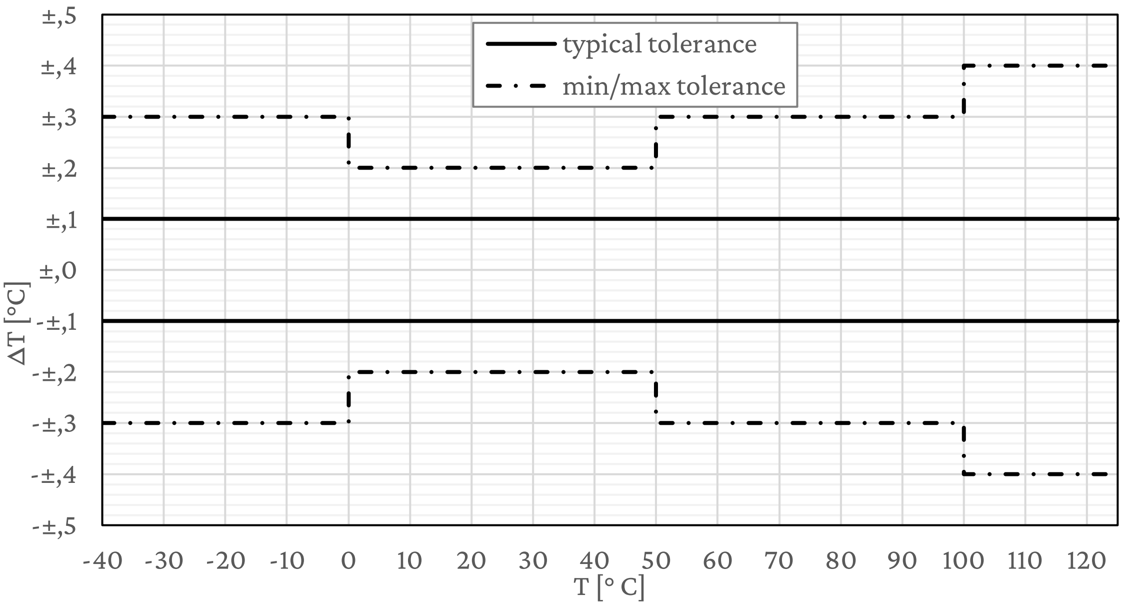
[1] All dimensions in millimeter
(tolerance : ±0.2)
[2] Scale : freestyle

Typical Characteristics

Humidity



Temperature



Ordering

Product/Replacement part	*Order number*
BRH 100RA	700000
Filter cap 40µm metal grid plastic housing	530001

Revision History

2025-10-14	**Rev. 0:** Initial Version

Disclaimer

All product, product specifications and data are subject to change without notice.

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