



# Humidity and Temperature MODBUS sensor

## Description

This sensor is designed to measure the temperature and relative humidity in indoor environments such as schools, hotels, commercial buildings, offices, homes...

## Applications

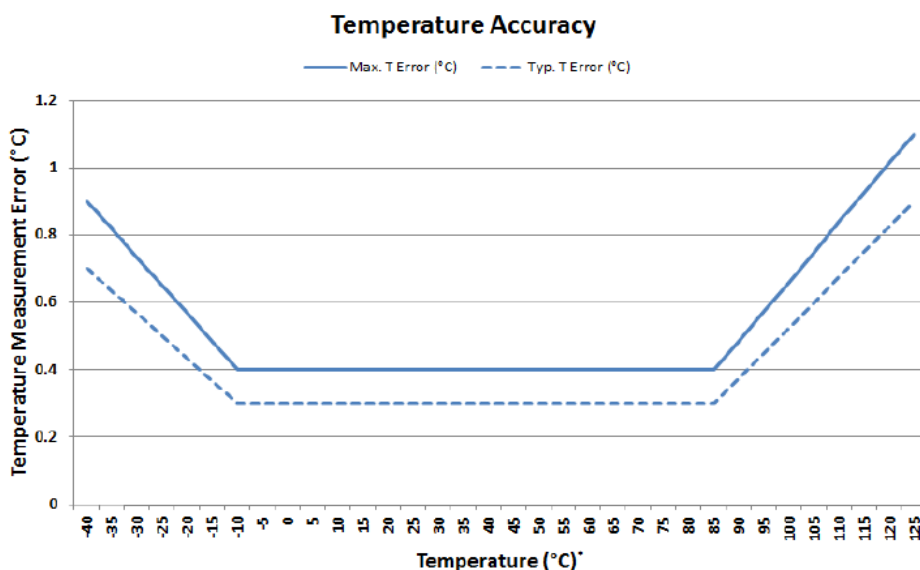
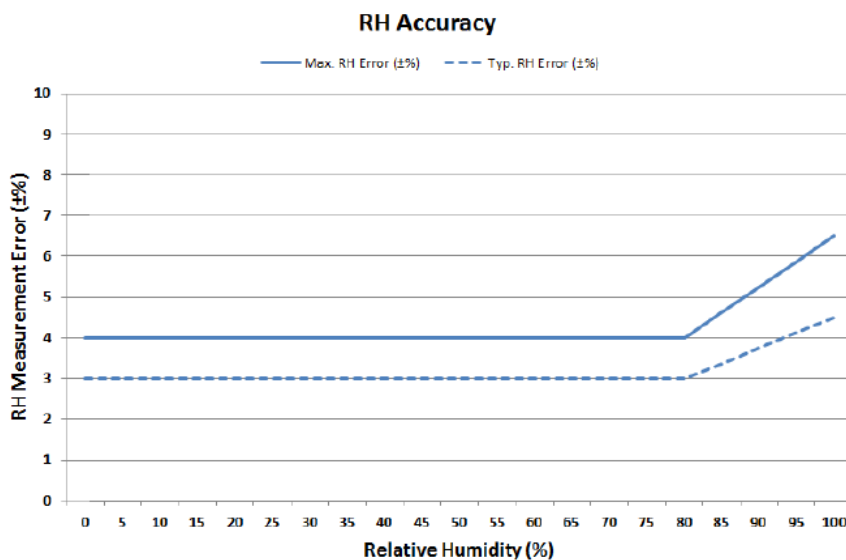
- HVAC applications for building management
- Air conditioning
- Hotels, museums, offices...



## Technical Specifications

Humidity	
sensing principle	capacitive
Measuring Range	0 to 100% RH
Accuracy Typ.	± 3% (0% ≤ rH ≤ 80%)
resolution min.	0.2 %

Temperature	
sensing principle	capacitive
Measuring Range	- 40°C to +125°C
Accuracy Typ.	± 0.3°C (- 10°C ≤ ta ≤ +85°C)
resolution min.	0.08°C





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Electrical Specifications		General Specifications	
Power supply	24 Vdc (7-28 Vdc)	Regulatory Compliance	CE Mark: EMC 2004/108/EC, RoHS 2011/65/EU, WEEE
Power consumption	Less than 10mA		EN61000-6-1/2/3/4
Operating Temperature	-40 ~ +125° C	Casing Material	ABS UL94-V0
Storage Temperature	-40 ~ + 120 °C	Protection Class	IP20
Operating Humidity	0 ~ 95% non-condensing	Housing color	White
Electrical connection	screw terminals max. 1.5 mm2	Dimensions	80x80x25 mm 3.15x3.15x0.98 "
MODBUS output	EIA-485 physical layer RTU <i>Default: 9600, even, 1 bit, address 7</i>	Weight	0.049 kg

## MODBUS REGISTERS

**INPUT REGISTERS [100-101-102-103-104-105-106-107-108]** i.e. if protocol-message address and counts from 0

**HOLDING REGISTERS [101-102-103-104-105-106-107-108-109]** i.e. if device address counts from 1

Unsigned integer 16 bits [100-101-102-103-104] i.e. HOLDING REGISTERS

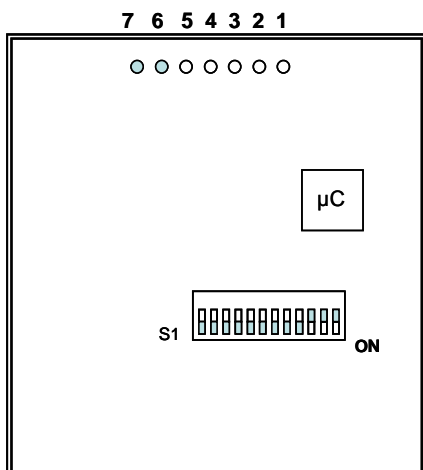
100	Last measured Humidity value (Integer value)
101	Last measured temperature value (Integer value)
102	Last measured Humidity sensor value (Integer value) $\%RH = (125 * [103]) / (65536) - 6$
103	Last measured Temperature sensor value (Integer value) $^{\circ}C = (175,72 * [104]) / (65536) - 46,85$
104	TIME REFERENCE
105 & 106	Last Measured temp value in IEEE-754 <b>float big endian</b> -single precision 4 bytes - Swap Words <i>Example: if the number were 1,2345678 in hex 0x3f9e0651 then the transmitted number will be</i> <i>105: 0x0651</i> <i>106: 0x3f9e</i>
107 & 108	Last measured humidity value in IEEE-754 <b>float big endian</b> - single precision 4 bytes - Swap Words



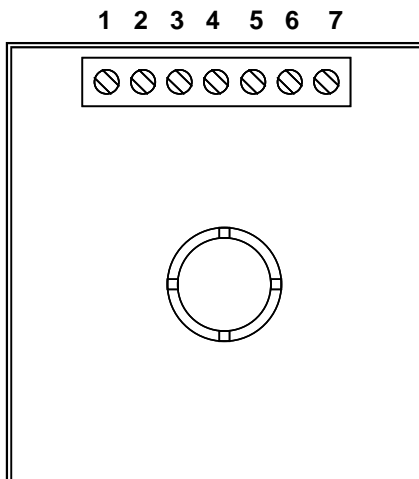
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## Installation Diagram - Cabling

**Back View  
Front Plate**

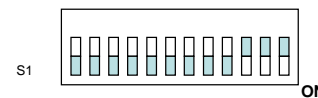


**Back plate View**



PIN	Signal
1	A-RS485
2	B-RS485
3	LT
4	
5	
6	<b>GND</b>
7	<b>24V dc</b>

## DIP switch configuration – MODBUS settings



DIP switch NR	12	11	10	9	8	7	6	5	4	3	2	1				
SIGNAL	PARITY1	PARITY0	BAUD1	BAUD0	ADD7	ADD6	ADD5	ADD4	ADD3	ADD2	ADD1	ADD0	PARITY	STOP BITS	BAUDRATE	ADDRESS *(1)
	ON	ON											EVEN	1		
	ON	OFF											ODD	1		
	OFF	ON											NONE	1		
	OFF	OFF											EVEN	2		
			ON	ON											9600	
			ON	OFF											19200	
			OFF	ON											38400	
			OFF	OFF											57600	
					ON	ON	ON	ON	ON	ON	OFF	ON				2
					ON	ON	ON	ON	ON	OFF	OFF	OFF				7
					ON	ON	ON	ON	OFF	ON	ON	ON				8
					ON	ON	ON	ON	OFF	ON	ON	OFF				9
					ON	ON	ON	ON	OFF	ON	OFF	ON				10
					ON	ON	ON	ON	OFF	ON	OFF	OFF				11
					ON	ON	ON	ON	OFF	OFF	ON	ON				12
					ON	ON	ON	OFF	ON	OFF	ON	OFF				21
					ON	OFF	OFF	OFF	ON	ON	ON	OFF				115
					ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF				127
					OFF	OFF	ON	OFF	ON	ON	OFF	OFF				211
					OFF	OFF	OFF	OFF	OFF	OFF	ON	ON				252

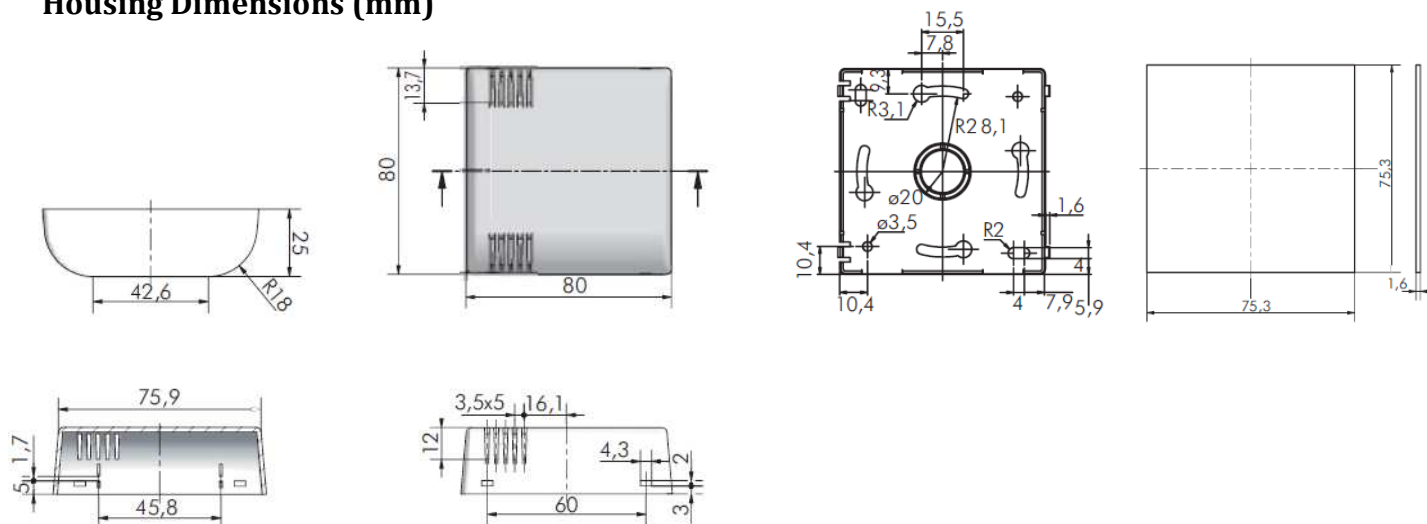
Default Values-Configuration by factory  
 \*(1) Address= Binary DIP switch combination from 0 to 257 address

ON=0  
 OFF=1



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## Housing Dimensions (mm)



## Ordering Info Codes

Product Name	Reference	EAN-nr
Humidity and Temperature MODBUS sensor	EN220212	8437013200158