Humidity and Temperature MODBUS sensor



Description

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

Applications

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

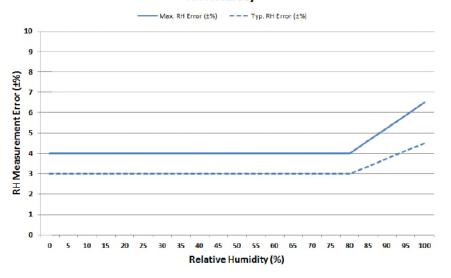


Technical Specifications

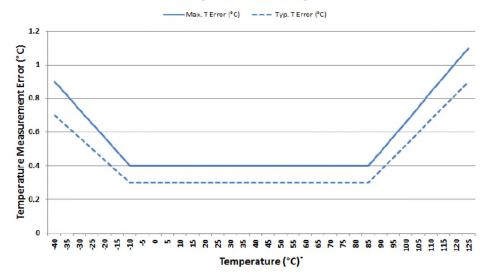
Humidity	
sensing principle	capacitive
Measuring Range	0 to 100% RH
Accuracy Typ.	± 3% (0% ≤ rH ≤ 80%)
resolution min.	0.2 %

Temperature	
sensing principle	capacitive
Measuring Range	- 40°C to +125°C
Accuracy Typ.	$\pm 0.3^{\circ}$ C (- 10° C \leq ta \leq +85 $^{\circ}$ C)
resolution min.	0.08ºC

RH Accuracy



Temperature Accuracy



Humidity and Temperature MODBUS sensor



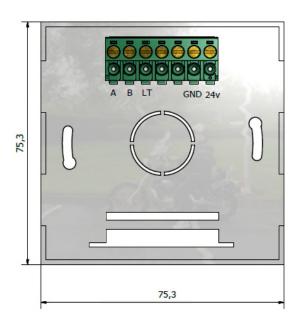
Electrical Specification	ns	General Specification	NS .
Power supply	24 Vdc (7-28 Vdc)	Regulatory Compliance	CE Mark: EMC 2004/108/EC, RoHS 2011/65/EU, WEEE
Power consumption	Less than 10mA		EN61000-6-1/2/3/4
		Casing Material	ABS UL94-V0
Operating Temperature	-40 ~ +125º C	Protection Class	IP20
Storage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

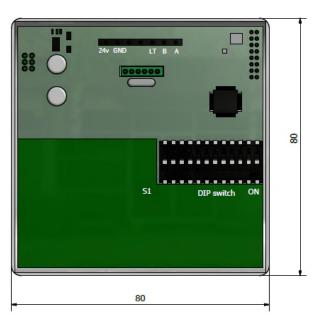
MODBUS RE	GISTERS
	ERS [100-101-102-103-104-105-106-107-108] i.e. if protocol-message address and counts from 0
HOLDING REG	ISTERS [101-102-103-104-105-106-107-108-109] i.e. if device address counts from 1
Unsigned integer 1	l6 bits [100-101-102-103-104] i.e. HOLDING REGISTERS
100	Last measured Humidity value (Integer value)
101	Last measured temperature value (Integer value)
102	Last measured Humidity sensor value (Integer value)
	%RH= (125* [102])/(65536) - 6
103	Last measured Temperature sensor value (Integer value)
	${}^{\circ}\text{C} = (175,72*[103])/(65536) - 46,85$
104	TIME REFERENCE
105 & 106	Last Measured temp value in IEEE-754 float big endian - single precision 4 bytes - Swap Words
	Example: if the number were 1,2345678 in hex 0x3f9e0651 then the transmitted number will be
	105: 0x0651
	106:0x3f9e
107 & 108	Last measured humidity value in IEEE-754 float big endian - single precision 4 bytes - Swap Words

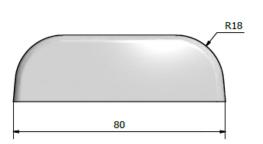


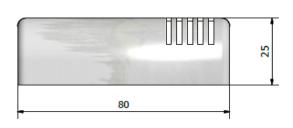
Installation Diagram - Cabling - Housing Dimensions (mm)

PIN	Signal
1	A-RS485
2	B-RS485
3	Line Termination
4	
5	
6	GND
7	24V dc













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	2		
	OFF	OFF											EVEN	2		
			ON	ON											9600	
			ON	OFF											19200	
			OFF	OFF											2400	
													i			
					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 11
					ON	ON	ON	ON	OFF	ON	OFF	OFF				12
					ON	ON	ON	ON	OFF	OFF	ON	ON				12
					ON	ON	ON	OFF	ON	OFF	ON	OFF				21
					ON	ON	ON	UFF	ON	OFF	ON	OFF				21
					ON	OFF	OFF	OFF	ON	ON	ON	OFF				115
					0.1	UI.	OI I	011	0.1	0.1	0.1	OII				110
					ON	OFF				127						
					3.1											
					OFF	OFF	ON	OFF	ON	ON	OFF	OFF				211
					OFF	OFF	OFF	OFF	OFF	OFF	ON	ON				252

Default Values-Configuration by factory

*(1) ON=0 OFF=1 Address= Binary DIP switch combination from 0 to 257 address

Ordering Info Codes

Product Name	Reference
Humidity and Temperature MODBUS sensor	EN220212