



AKO Industrial Equipment

Temperature & Humidity Transmitter TH Series

Instruction Manual



Duct type **Room type**

Please read the following safety considerations before use.

Safety considerations

Please observe all safety considerations for safe and proper product operation to avoid hazards.

Warning: Fail-safe device must be installed when using the unit with machinery that may cause serious injury or economic loss.(e.g. nuclear power control, medical equipment, ships, railways, aircraft, combustion, safety equipment, etc.)

Warning: Do not connect, repair or inspect the unit while connected to a power source.

Warning: Do not disassemble or modify the unit, please contact us if necessary.

Warning: check input power specification and check power terminal polarity before connecting the power source.

Caution: Do not use the unit outdoors.

Caution: Do not touch the temperature \ humidity Sensor by hands.

Caution: Do not use the water or oil-based detergent when clean the unit.

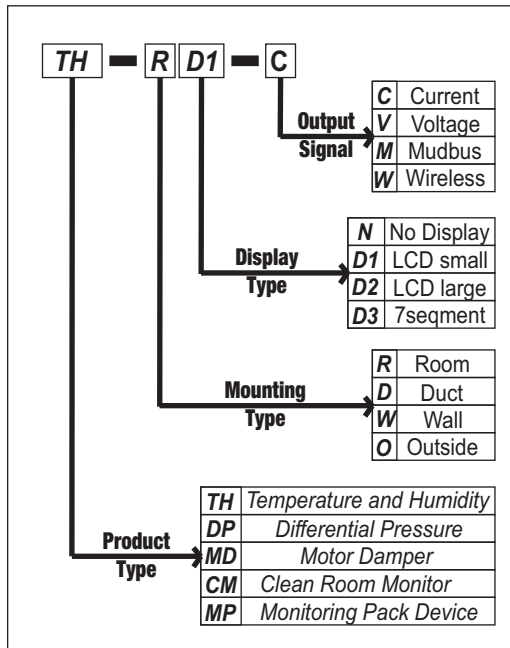
Caution: Do not use the unit where flammable or explosive gas, direct sunlight, radiant heat, vibration or impact may be present.

Caution: keep dust and wire residue from flowing into the unit.

Caution During use:

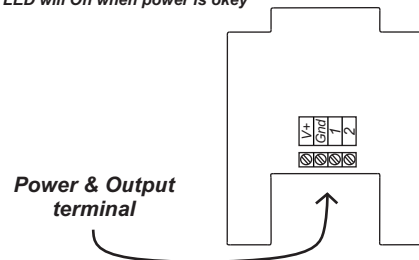
1. Do not store at the high temperature /humidity environment.
 2. For cleaning use dry towel and do not use acid ,chrome acid, solvent but alcohol.
 3. Separate the unit cable from high voltage line. power line to avoid inductive noise.
 4. installation environment: it shall be used indoor and pollution degree 2
- Failure to follow these instruction may result in product damage.

Ordering Information

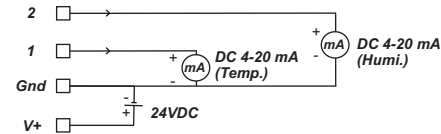


Terminal Connection

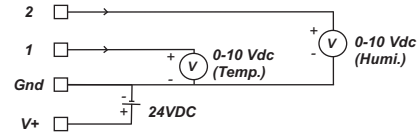
Yellow LED will On when power is okey



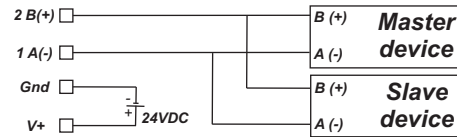
TH - □ - □ - C



TH - □ - □ - V



TH - □ - □ - M

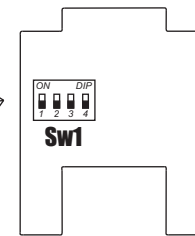


Set Measuring rang

Measuring range is Multi range and can set by 2 Dip switches.

TH - □ - □ - C

TH - □ - □ - V



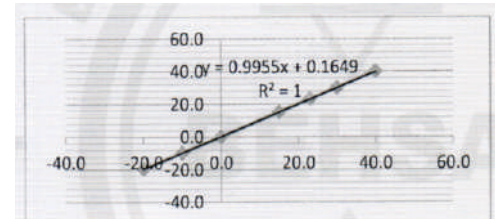
Dip switches for Set measuring rage

SW1		Temperature Range
S1	S2	
Off	Off	0 ... +50 'c
Off	On	0 ... 100 'c
On	Off	-30 ... +20 'c
On	On	-40 ... +125 'c

Specification

Model	TH-D□-□	TH-R□-□
Power supply	24 VDC ± 10% 2.4W	
Measuring Range	-40 ... +125°c , 0 ... 100% RH	
Accuracy	Humidity ±2%RH, Temperature ±0.3°c	
Sensitivity	Humidity ±0.1%RH, Temperature ±0.1°c	
Output signal	TH-□-□-C ==> 4~20 mA TH-□-□-V ==> 0~10 Vdc TH-□-□-M ==> Modbus RTU TH-□-□-W ==> WIFI (Wireless)	
Resolution	16 Bit	
Protection class	IP 65	
Cable	Ø 0.5mm , 4-Wire	

Certificate of Calibration



NO.	REF. TEMP °C	UUC TEMP °C	ERROR °C	EXP. UN °C
1	-20.0	-19.7	0.3	± 0.3
2	-10.0	-9.8	0.2	
3	0.0	0.1	0.1	
4	15.0	15.1	0.1	
5	23.0	23.1	0.1	
6	30.0	30.0	0.0	
7	40.0	40.0	0.0	

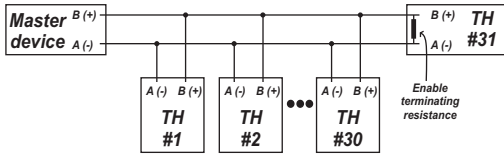
NO.	REF. VALUE %RH	UUC READING %RH	ERROR %RH	EXP. UN %RH
1	20.0	19.4	-0.6	± 1.8
2	40.0	41.8	1.8	
3	60.0	62.4	2.4	
4	80.0	83.9	3.9	

Modbus communication

Interface

Comm. protocol	Modbus RTU
Comm. type	Rs485
Max.connection	255unit(address:01up255) for use max 31 devices, must use Repeater
Comm. method	Two-wire half duplex
Comm. distance	Max. 500m for max 150m, must use Repeater
Comm. speed	9.6 and 19.2kbps(selectable)
Start bit	1-bit (fixed)
Data bit	8-bit (fixed)
Parity bit	None (fixed)
Stop bit	1-bit (fixed)

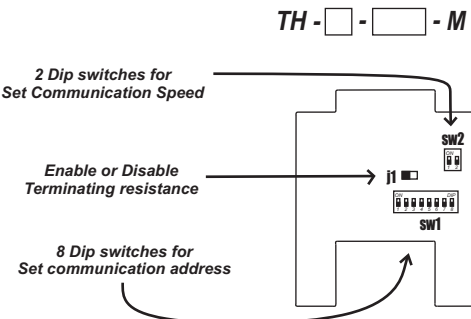
Modbus network connection



Modbus Mapping Table

Address	Item	Remark
40002 (0001)	Temperature value	Temperature value x 0.01
40003 (0002)	Humidity value	Humidity value x 0.01

Modbus communication setting



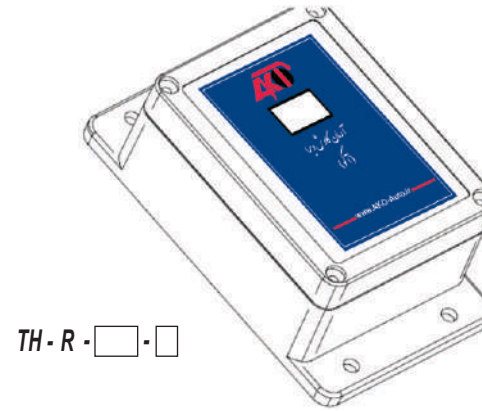
Modbus communication address

SW1								Address
S8	S7	S6	S5	S4	S3	S2	S1	
0	0	0	0	0	0	0	1	1
0	0	0	0	0	0	1	0	2
0	0	0	0	0	0	1	1	3
0	0	0	0	0	1	0	0	4
0	0	0	0	0	1	0	1	5
0	0	0	0	0	1	1	0	6
0	0	0	0	0	1	1	1	7
0	0	0	0	1	0	0	0	8
0	0	0	0	1	0	0	1	9
0	0	0	0	1	0	1	0	10
0	0	0	0	1	0	1	1	11
0	0	0	0	1	1	0	0	12
0	0	0	0	1	1	0	1	13
0	0	0	0	1	1	1	0	14
0	0	0	0	1	1	1	1	15
0	0	0	1	0	0	0	0	16
0	0	0	1	0	0	0	1	17
0	0	0	1	0	0	1	0	18
0	0	0	1	0	0	1	1	19
0	0	0	1	0	1	0	0	20
0	0	0	1	0	1	0	1	21
0	0	0	1	0	1	1	0	22
0	0	0	1	0	1	1	1	23
0	0	0	1	1	0	0	0	24
0	0	0	1	1	0	0	1	25
.
.
.
1	1	1	1	1	1	0	1	253
1	1	1	1	1	1	1	0	254
1	1	1	1	1	1	1	1	255

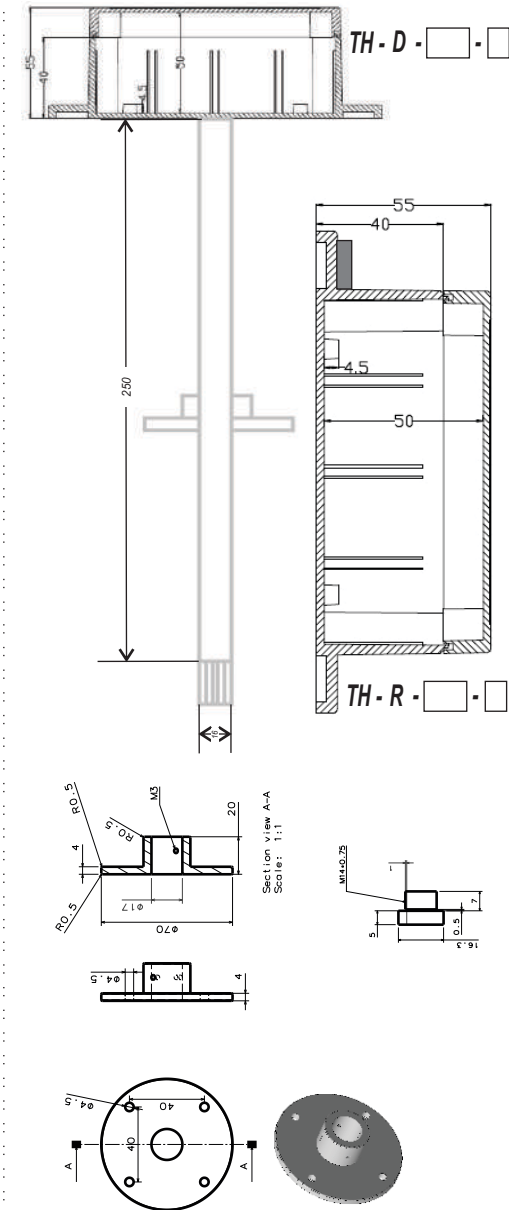
Modbus communication speed

SW2		Baud rate
S7	S6	
0	0	9.6 kbps
0	1	19.2 kbps
1	0	-
1	1	-

Dimensions



TH-R - □ - □



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