

SimpleTH_Probe 485

Temperature-Humidity Probe



SimpleTH_Probe 485 온-습도 프로브는 RS-485 통신을 사용하여 여러 지점의 온도, 습도를 동시에 감시 할 수 있습니다.

Temp/RH specifications

Relative humidity

Sensor	Planar Capacitive Polymer
Range	0 to 100%RH
Accuracy (@ 25°C)	± 3.5%, 20~80%RH
	± 4.5%, 0~20, 80~100%RH
Resolution	0.1% RH

Temperature

Sensor	Integral PTAT Silicon Transistor
Scale	-40~125 °C
Accuracy	± 0.3 °C, 0~70 °C
Resolution	0.1 °C

RS-485 (Modbus ASCII)

Setup

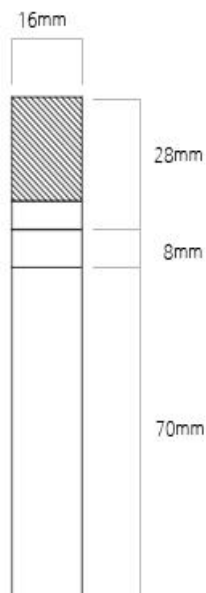
Baud Rate	9600
Data bit	8 bit
Parity	None
Stop bit	1
Flow Control	None
ID No.	0x01 ~ 0xEF (239 ID's)

Protocol (ID예:0x80)

ID check	: FF 04 8002 0001 7A <CR><LF>
ID change	: FF A0 8002 00XX CRC<CR><LF>
RH Req.	: 80 04 0004 0001 77 <CR><LF>
Temp Req.	: 80 04 0005 0001 76 <CR><LF>

(For details, refer to RS-485 Modbus protocol)

Shape & Dimension



Connection

Cable (4 Wire) Connection

● RED	Vcc (7 ~ 24Vdc)
● BLACK	GND
● GREEN	Data (+) (RS-485)
○ WHITE	Data (-) (RS-485)

* Wire length change required : Call to factory

Order No.

Nomenclature **Simple TH_Probe 485**

Temp/Humidity Probe

485 Communication

Probe Version

* Terminate Resistor(120 Ohm) **not** included

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RS-485 Modbus Protocol

01. General setting

- A. Protocol type
- Modbus Serial on RS-485 (ASCII transmission mode)
- B. Set-up
- Baud rate : 9600 bps
- Stop bits : 1
- Parity check : No
- Data Size : 8
- Flow control : No
- C. Protocol Frame
- ASCII Mode

Start	ID	Func.	Data	CRC	End
:	2chars	2chars	0 upto 2 x 252 char(s)	xx	CR,LF

02. Address Setting

A. Address check

- Command

Start	ID	Func.	Data	CRC	End
:	FF	04	8002 0001	7A	CR,LF

- Response (Default : 0x80)

Start	ID	Func.	Data	CRC	End
:	FF	04	02 0080	7B	CR,LF

B. Address change

- Command (Example ID : 0x82)

Start	ID	Func.	Data	CRC	End
:	FF	A0	8002 0082	5D	CR,LF

- Response

Start	ID	Func.	Data	CRC	End
:	FF	A0	8002 0082	5D	CR,LF

03. Temperature / RH reading

A. RH/Temp(both)

- Command

Start	ID	Func.	Data	CRC	End
:	80	04	0004 0002	76	CR,LF

- Response

Start	ID	Func.	Data	CRC	End
:	80	04	04 HHHH TTTT	xx	CR,LF

* ASCII HEX "HHHH" → Decimal ÷ 100 ▶ RH value

* ASCII HEX "TTTT" → Decimal ÷ 100 ▶ Temp value

B. Relative Humidity only

- Command

Start	ID	Func.	Data	CRC	End
:	80	04	0004 0001	77	CR,LF

- Response

Start	ID	Func.	Data	CRC	End
:	80	04	02 HHHH	xx	CR,LF

* ASCII HEX "HHHH" → Decimal ÷ 100 ▶ RH value

C. Temperature only

- Command

Start	ID	Func.	Data	CRC	End
:	80	04	0005 0001	76	CR,LF

- Response

Start	ID	Func.	Data	CRC	End
:	80	04	02 TTTT	xx	CR,LF

* ASCII HEX "TTTT" → Decimal ÷ 100 ▶ Temp value

04. CRC

- 1) 시작문자(:)와 끝 문자(CR LF)를 제외한 모든 문자를 더하여 하위 8비트 데이터를 취함
- 2) 2의 보수(반전 후 1 더하기)로 만들
- 3) ASCHEX 형태로 High Low 순서로 전송