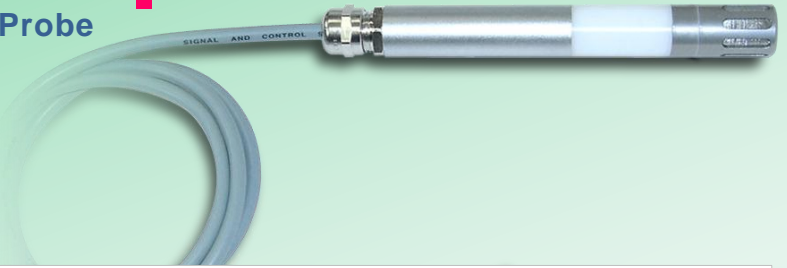


## MHTP – 485 S

### Temperature-Humidity Probe

MHTP-485S 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)	±3.0% from 0 to 80%RH
	±4.5% from 80 to 100%RH
Resolution	0.1% RH

##### Temperature

Sensor	Integral PTAT Silicon Transistor
Scale	-20°C to 80°C
Accuracy	±0.4°C from -10 to 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 (ID# : 0x80)

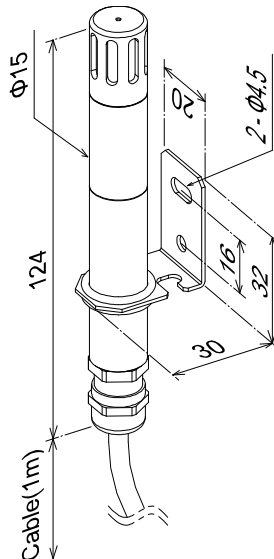
ID check	: FF 04 8002 0001 7A <CR> <LF>
ID change	: FF A0 8002 00XX CRC <CR> <LF>
RH Req.	: 80 04 0004 0001 77 <CR> <LF>
Temp Req.	: 80 04 0005 0001 76 <CR> <LF>

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

#### Shape & Dimension

##### Dimension (mm)

Probe : Φ15x124  
Bracket : 30x32x20  
Rubber Ring x 2



##### Cable

4 wire  
Length : 1m (Default)

\* Probe fixture : Option

#### 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

MHTP – 485 S

Temp/Humidity Probe

485 Communication

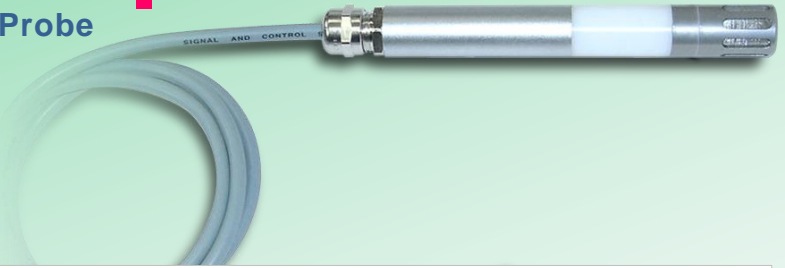
Probe Version

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

## MHTP – 485 S

### Temperature-Humidity Probe

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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