



# Model 1708

## Digital Relative Humidity & Temperature Probe

### USER MANUAL

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## Description

The 1708 digital relative humidity and temperature probe is a compact and low energy consuming IC sensor with RS-485 and USB communication.

## Specifications

### Physical Dimensions

Diameter: 1/4" OD

Length: 4", 6", 8" or 12"

Cable: 24" Length, 28AWG Shielded

### Power

Voltage: 3.5V to 5V

Current: Max 2mA

### Wiring

Power (+): Red

Power (-): Black

Data A: Green

Data B: White

### Temperature Range & Accuracy

Range: 41°F to 203°F

Accuracy:  $\pm 0.25^{\circ}\text{F}$  (Standard) &  
 $\pm 0.1^{\circ}\text{F}$  (Optional)

### Relative Humidity Range & Accuracy

Range: 0%RH - 100%RH

Accuracy:  $\pm 1.5\%\text{RH}$  (up to 80%RH,  
50°F-140°F)  
 $\pm 2\%\text{RH}$  (all others)

### Communication Protocol

RS-485

Baud Rate: 9600

Data Bits: 8

Stop Bits: 1

Parity: None

Adaptor: USB 2.0

## Commands

### Address

The 1708 probe can be called using ASCII commands by its serial number. Each sensor has a unique serial number. The serial number address is 6-character long and cannot be changed.

Typical serial number will resemble 00000 or 03A001.

Commands are structured as [Address][Command]\r. \r represents carriage return or “enter”. Note that all write commands need to be preceded by the write enable command. See example.

### Sample Read Command

Command	#000000RD\r
Response	#000000RD=23.23, 24\r

### Sample Write Command

Write Enable Command	#000000WE\r
Write Command	#000000SS=000000\r
Response	#000000SS=000000\r

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## Command List

Command	Sample Response	Description
RD	23.23,24	Read Both Temperature in °C and Relative Humidity in %RH
RT	23.23	Read Temperature in °C
RH	24	Read Relative Humidity in %RH
RC(A) or RC(B) or RC(C)	1.0	Read Calibration Constants A, B, C for Temperature $\text{Reading} = A + B(\text{Raw Reading}) + C(\text{Raw Reading})^2$
RC(D) or RC(E) or RC(F)		Read Calibration Constants D, E, F for Humidity $\text{Reading} = D + E(\text{Raw Reading}) + F(\text{Raw Reading})^2$
RS <sub>(1)</sub>	000000	Read Settings
WE	WE	Write Enable
SC(A) or SC(B) or SC(C)	1.0	Write calibration constants A, B, C for Temperature $\text{Reading} = A + B(\text{Raw Reading}) + C(\text{Raw Reading})^2$
SC(D) or SC(E) or SC(F)	1.0	Write calibration constants D, E, F for Relative Humidity $\text{Reading} = D + E(\text{Raw Reading}) + F(\text{Raw Reading})^2$
SS	100000	Write Setting

Note (1): Settings 6 digitals: 000000

1st digit - check sum enable, 0=Not enabled, 1 = Enabled

2nd digit – 0=No delay, 1 – 9=delay 1-9 bytes in response

3-6 digit – Reserved