



Model 1707

Digital Temperature Probe

USER MANUAL

Rev.0
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🏠 870 Cambridge Dr., Elk Grove Village, IL 60007, USA

☎ +1-847-364-0163

✉ sales@gtwlabs.com

🌐 www.gtwlabs.com

Description

The 1707 digital temperature probe is a compact and low energy consuming IC temperature sensor with RS-485 and USB communication. Its stainless-steel construction is water tight.

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

Temperature Range & Accuracy

Range: 41°F to 203°F
Accuracy: $\pm 0.25^{\circ}\text{F}$ (Standard) &
 $\pm 0.1^{\circ}\text{F}$ (Optional)

Communication Protocol

RS-485
Baud Rate: 9600
Data Bits: 8
Stop Bits: 1
Parity: None
Adaptor: USB 2.0

Wiring

Power (+): Red
Power (-): Black
Data A: Green
Data B: White

Commands

Address

The 1707 temperature 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\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	Read Temperature in °C
RC(A) or RC(B) or RC(C)	1.0	Read Calibration Constants A, B, C $\text{Reading} = A + B(\text{Raw Reading}) + C(\text{Raw Reading})^2$
RS ₍₁₎	000000	Read Settings
WE	WE	Write Enable
SC(A) or SC(B) or SC(C)	1.0	Write calibration constants A, B, C
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

3rd-6th digit – Reserved