

# OPERATION MANUAL

## HANDHELD DATA LOGGING PYROMETER

# BARTLETT

INSTRUMENT COMPANY

1404 Avenue M  
Fort madison, IA 52627

[www.bartinst.com](http://www.bartinst.com)

### OPERATION

Press button to turn on the data logging pyrometer. The message -ON- will be displayed for a few seconds during initialization. After initialization the display will change to the current thermocouple temperature in Fahrenheit. For information on setting up data logging capabilities see **MENU OPTIONS**.

To turn the data logging pyrometer off see **OFF** option in the **MENU**. Turning the pyrometer off will restart data collection. All previously recorded information will be overwritten.

### DATA LOGGER MENU

1. Press and hold the button for five seconds. After five seconds the display will change to °F °C. This is the first menu option.
2. Release the button.
3. Press and release the button to display the next menu option.
4. To select the menu option that is being displayed do not press the button for five seconds and the displayed menu option will be selected.

### MENU OPTIONS

#### 1. °F °C – TEMPERATURE SCALE

Temperature scale can be set as Fahrenheit or Celsius. Press and release the button to change the temperature scale option. When the desired temperature scale is displayed do not press the button for five seconds and the option will be selected.

- a. °F – Fahrenheit temperature scale
- b. °C – Celsius temperature scale

**NOTE:** When the temperature scale is Celsius the data logger will display the message °C for one second every ten seconds.

**NOTE:** Entering the continuous data collection menu option will restart data collection.

**2. DATA – DATA COLLECTION REVIEW**

Data collection review will begin with the most recent temperature reading and continues until the oldest temperature reading has been displayed. The review displays two different pieces of information – the index number of the reading and the temperature reading. The index number is used to keep track of which temperature reading is being displayed. The most recent temperature reading is number one; the next most recent temperature reading is number two and so on. Press and release the button to display the next piece of information.

**EXAMPLE:**

DATA LOGGER DISPLAY	ACTION	NOTE
1	Press and release button	First temperature reading index
73 °F	Press and release button	First temperature reading
2	Press and release button	Second temperature reading index
78 °F	Press and release button	Second temperature reading
3	Press and release button	Third temperature reading index
83 °F	Press and release button	Third temperature reading
Done	Press and release button	All recorded temperature readings have been displayed

When all recorded information has been displayed the message **D ONE** will be displayed. Press and release the button one more time to return to normal operation.

**NOTE:** To exit data collection review at any time press and hold the button until the message **D ONE** is displayed. Release the button to return to normal operation.

**3. LOG – DATA COLLECTION INTERVAL**

Data will be recorded at the selected interval. Press and release the button to change the displayed option. When the desired option is displayed do not press the button for five seconds and the option will be selected. The possible data collection intervals are displayed below followed by the length of time that data collection will continue when the **CYCL** option is set for **ONCE**, see **CYCL** menu option. 864 individual temperature readings will be recorded.

- a. 1 Second (00.01) – 14 minutes, 24 seconds
- b. 5 Seconds (00.05) – 1 hour, 12 minutes
- c. 10 Seconds (00.10) – 2 hours, 24 minutes

- d. 30 Seconds (00.30) – 7 hours, 12 minutes
- e. 1 Minute (01.00) – 14 hours, 24 minutes
- f. 6 Minutes (06.00) – 86 hours, 24 minutes
- g. 10 Minutes (10.00) – 144 hours

Note: Entering the data collection interval menu option will restart data collection

#### **4. CYCL – CONTINUOUS DATA COLLECTION**

- a. **ONCE** – data will be recorded until memory is full. After memory is full any new temperature readings will not be recorded.
- b. **LOOP** – data will be collected continuously at interval selected in LOG. After memory is full any new information will overwrite the oldest stored readings. This setting ensures that you will have the most recent temperature readings recorded.

**NOTE:** Entering the continuous data collection menu option will restart data collection.

#### **5. CLAS – CLASSIFICATION VERSION NUMBER**

The version number identifies the model and firmware version of the data logger

#### **6. ID – COMPUTER COMMUNICATIONS IDENTIFICATION NUMBER**

The computer communications identification number is used for optional PC communications. ID can be set from 1 to 10. This feature is not currently available.

#### **7. OFF – TURN OFF DATA LOGGER**

Select this menu option to shut off the data logger. Shutting off the data logger will help to conserve battery life. Once **OFF** is displayed, to shut down the data logger, press and hold the button until **DONE** is displayed. Release The button and it will power down.

**NOTE:** Turning the pyrometer off will restart data collection.

### **DEFAULT SETTINGS**

The first time the data logger is turned on the temperature scale will be in **FAHRENHEIT**, data collection will run at a **1 MINUTE** interval, continuous data collection will be set to **ONCE**, and ID will be set to 1.

### **DATA COLLECTION**

Data collection starts when the data logger is turned on using the previously selected settings. Changing any of the settings in the menu will restart data collection, overwriting any information that has already been recorded.

## LOW BATTERY WARNING

When the battery starts to run out of power the controller will display the message “bat” for one second every five seconds. When this “bat” warning message is displayed the temperature readings may no longer be accurate. It is time to replace the batteries.

## THERMOCOUPLE FAIL

If the pyrometer senses that a thermocouple is not connected or the thermocouple is broken the message “FAIL” will be displayed. This warning can only protect against a broken thermocouple. It is not possible to detect if the thermocouple is reading incorrectly.

## RATE OF RISE AND FIRING TIME

When the data logging pyrometer is displaying the temperature quickly press and release the button to access the rate of rise and firing time. Rate of rise is displayed in degrees Fahrenheit (Celsius) per hour. Firing time is displayed in hours and minutes and is the length of time since data collection was started or restarted. If the kiln has decreased in temperature during the last six minutes a negative sign will be displayed before the rate of rise. The data logging pyrometer can display rates of rise between -999 and 9999 degrees per hour.

### EXAMPLE:

DATA LOGGER DISPLAY	ACTION	NOTE
200	Press and release button	Kiln is increasing in temperature at 200 degrees Fahrenheit per hour
3.57	Press and release button	The data logger has been collecting data for 3 hours and 57 minutes since the last restart

**NOTE:** data must be collected for at least six minutes before the rate of rise is calculated. If less than six minutes have elapsed since data collection was restarted then the rate of rise will be zero.

## TECHNICAL SPECIFICATIONS

THERMOCOUPLE INPUT	TYPE K (MAXIMUM RESISTANCE 100 OHMS)
ACCURACY	+/- 10°F
COLD JUNCTION COMPENSATION	ELECTRONIC
POWER INPUT	9 VOLT BATTERY
OPERATING TEMPERATURE RANGE	0°F TO 125°F OR -17°C TO 52°C