

# Di-LOG

...measurably better

operating manual

## DL7101 DIGITAL THERMOMETER



CE

## Safety Information

This instrument is a portable 3½ digit, compact-sized digital thermometer designed to use external K-type thermocouple as temperature sensor. Temperature indication follows National Bureau of Standards and IEC584 temperature/voltage tables for K-type thermocouples. Two K-type thermocouples are supplied with the thermometer.

## Safety Information

It is recommended that you read the safety and operation instructions before using the thermometer.



### **Warning:**

TO AVOID ELECTRICAL SHOCK. DO NOT USE THIS INSTRUMENT WHEN VOLTAGES AT THE MEASUREMENT SURFACE EXCEED 24V AC OR 60V DC.



### **Warning:**

TO AVOID DAMAGE OR BURNS. DO NOT MAKE TEMPERATURE MEASUREMENTS IN MICROWAVE OVENS.



### **Caution:**

REPEATED SHARP FLEXING CAN BREAK THE THERMOCOUPLE LEADS. TO PROLONG LEAD LIFE, AVOID SHARP BENDS IN THE LEADS, ESPECIALLY NEAR THE CONNECTOR.

THE  SYMBOL ON THE INSTRUMENT INDICATES THAT THE OPERATOR MUST REFER TO AN EXPLANATION IN THIS MANUAL.

## Specifications Electrical

### Temperature Scale:

Celsius (°C), Fahrenheit (°F) user-selectable

### Measurement Range:

-50°C to 1300°C, -58°F to 2000°F

### Resolution:

1°C or 1°F, 0.1°C or 0.1°F

### Accuracy:

Accuracy is specified for operating temperatures over the range of 18°C to 28°C (64°F to 82°F), for one year, not including thermocouple error.

±2°C ----- -50°C to 0°C

±4°F ----- -58°F to 32°F

±(0.5% rdg+1°C) ----- 0°C to 1000°C

±(0.8% rdg+1°C) ----- 1000°C to 1300°C

±(0.5% rdg+2°F) ----- 32°F to 2000°F

### Temperature Coefficient:

0.1 times the applicable accuracy specification per °C from 0°C to 18°C and 28°F to 50°F (32°F to 64°F and 82°F to 122°F).

### Input protection:

60V de or 24V rms ac maximum input voltage on any combination of input pins.

## Specifications Electrical

### Reading Rate:

2.5 times per second.

### Input Connector:

Accepts standard miniature thermocouple connectors (flat blades spaced 7.9mm, centre to centre). 'K' type.

## Environmental

### Ambient Operating Range:

0°C to 50°C (32°F to 122°F)

### Storage Temperature

-20°C to 60°C (-4°F to 140°F)

### Relative Humidity:

0% to 80% (0°C to 35°C) (32°F to 95 °F)

0% to 70% (35°C to 50°C) (95°F to 122°F)

## General

**Display:**

3½ digit liquid crystal display (LCD) with maximum reading of 1999.

**Battery:**

Standard 9V battery (NEDA 1604, IEC 6F22)

**Dimensions:**

162mm (H)×76mm(W)×38.5mm(D)

**Weight:**

210g

**Supplied Probe:**

1.2m type "K" thermocouple bead probe (Teflon tape insulated).

Maximum insulation temperature 260°C (500°F)

Probe accuracy  $\pm 2.2^{\circ}\text{C}$  or  $\pm 0.75\%$  of reading

(Whichever is greater) from 0°C to 800°C.

## Operating Instructions

### Selecting the Temperature Scale

Readings are displayed in either degrees Celsius ( $^{\circ}\text{C}$ ), degrees Fahrenheit ( $^{\circ}\text{F}$ ). When the thermometer is turned on, it is set to the temperature scale that was in use when the thermometer was last turned off. To change the temperature scale, press the  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$  key.

### Single-Thermocouple Temperature Measurement

The thermometer displays the temperature of the thermocouple that is connected to the selected input. Press the T2 key to display the temperature of the thermocouple connected to the T2 input. Press the T1 key to display the temperature of the thermocouple connected to the T1 input. The input selection cursor indicates which input is selected.

### Differential Temperature Measurement

Differential temperature measurement is selected by pressing the T1-T2 key. This causes the thermometer to display the temperature difference between the two thermocouples (the temperature of thermocouple T1 minus the temperature of thermocouple T2). The selection is indicated by the input selection cursor.

### Selecting the Display Resolution

The thermometer allows two choices of resolution:

High resolution:  $0.1^{\circ}\text{C}$  or  $0.1^{\circ}\text{F}$

Low resolution:  $1^{\circ}\text{C}$  or  $1^{\circ}\text{F}$

## Overload Display (1)

The digital display will indicate 1 when the input exceeds the measurement range selected. If measuring above 199.9°F, change the resolution to 1°F. Be certain to seat the thermocouple connector properly and check that the leads are not broken.

## Hold Mode

Pressing the HOLD key to enter the Data Hold mode, the "HOLD" annunciator is displayed. When HOLD mode is selected, the thermometer holds the present reading and stops all further measurements. Pressing the HOLD key again cancels HOLD mode, causing the thermometer to resume taking measurements.

## Max Mode

Press the MAX key to enter the MAX mode. The thermometer then records and updates the maximum values and the MAX annunciator appears on the display. Press the MAX key again to exit the MAX recording mode. In the MAX mode, press HOLD key to stop the recording, press HOLD again to resume recording.

## Backlight Mode

Press the Backlight key to turn on the LCD backlight function. Press the Backlight key again to turn off the LCD backlight function.

## Operator Maintenance



### **Warning:**

**TO AVOID POSSIBLE ELECTRICAL SHOCK, DISCONNECT THE THERMOCOUPLE CONNECTORS FROM THE THERMOMETER BEFORE REMOVING THE COVER.**

## Battery Replacement

The battery symbol  appears on the lower right of the LCD when the 9V battery needs to be replaced.

Replace the 9V battery as follows:

1. Turn the meter off and disconnect the temperature probe.
2. Remove the rubber holster that surrounds the entire meter by pulling it over the top of the meter.
3. Remove the small Phillips head screw on the rear of the meter.
4. Open the battery compartment and replace the 9V battery.

Re-assemble the meter before operating.

## Warranty & Maintenance

### 24 Month Warranty

Di-Log instruments are subject to stringent quality controls. If in the course of normal daily use a fault occurs we will provide a 24 month warranty (only valid with invoice).

Faults in manufacture and materials defect will be rectified by us free of charge, provided the instrument has not been tampered with and returned to us unopened.

Damage due to dropping abuse or misuse is not covered by the warranty.

Outside the warranty period we offer a full repair and re-calibration service.

### Maintenance

**WARNING** Do not attempt to repair or service your meter unless you are qualified to do so and have the relevant calibration, performance test and service information. To avoid electrical shock or damage to the meter do not get water inside the case.

Periodically wipe the case with a damp cloth and mild detergent. Do not use chemical solvent.

Clean the input terminals with cotton bud, as dirt or moisture in the terminals can affect readings.

### Di-Log Test Equipment

28 Wheel Forge Way,  
Trafford Park,  
Manchester  
M171EH, UK

tel: + 44 161 877 0322

fax: + 44 161 877 1614

email: [sales@dilog.co.uk](mailto:sales@dilog.co.uk)

website: [www.dilog.co.uk](http://www.dilog.co.uk)