



# ThermoWorks

## Operating Instructions for MicroCal 2 & 3

### FEATURES

MicroCal 2 - 12 preset adjustable temperatures, individually °C/°F selectable. Fixed thermocouple type.

MicroCal 3 - 23 preset fixed temperatures °C or °F. Fixed thermocouple type.

**All Models:** CJC selectable on/off, auto-off selectable on/off and selectable display contrast adjustment.

### ON/OFF

To turn the instrument on press the ON/OFF button. All display segments will be tested. The thermocouple type will be displayed in the text line above the set temperature. The start-up simulation temperature will be the same as it was when the unit was last switched off. The unit is now ready to simulate temperature. To turn the instrument off, press the ON/OFF button. 'Saving data' followed by 'MicroCal OFF' will be displayed in the text line.

### DISPLAY

The display has two sections. The main section is a 4-digit temperature display located in the lower portion of the viewing area, where output values are displayed. The other section is a 12-digit alphanumeric dot matrix text line, located at the top of the viewing area, above the temperature display. Set-up information and command prompts will be displayed here.

### RESOLUTION

The unit resolution will be 0.1° within the range ±1999.9° and will be 1° outside of this.

### INSTRUMENTS

This unit should only be used with the appropriate thermocouple instruments conforming to one of the following standards.

Type K Nickel-chromium/Nickel-aluminum BS EN 60584:1996

Type J Iron/Constantan BS EN 60584:1996

Type T Copper/Copper-nickel BS EN 60584:1996

All thermocouple tables to ITS 90.

### AUTO-OFF

In simulation mode auto-off is set at 30 minutes. This can be disabled. In ambient measurement mode the auto-off is fixed at 10 minutes.

### AMBIENT MEASUREMENT FACILITY

This facility allows the internal CJC temperature of the unit to be measured. This allows the user to determine if the unit has sufficiently acclimatized. Acclimatization is crucial for accurate simulation output. Start the unit by pressing the ON/OFF button while pressing the UP and DOWN buttons. Do not release the UP and DOWN buttons until the software revision is displayed. The software revision is shown on startup in this mode.

### SIMULATION TEMPERATURE (MicroCal 2 & 3)

Start the unit by pressing the ON/OFF button.

Press the UP or DOWN buttons to adjust the output temperature. Release the button when the required temperature is displayed. Press and hold the button to scroll through the available temperatures in a continuous loop.

### MicroCal 3

Press both UP and DOWN buttons together to return to 0°C (32°F)

### MicroCal 2

Press both UP and DOWN buttons together to return to 0°C (32°F). If this temperature has been adjusted the new value will be displayed.

### INTERNAL/EXTERNAL CJC (Cold Junction Compensation)

The unit will automatically adjust the thermocouple milli-volt output to allow for changes in the ambient temperature when the CJC is set to 'INTERNAL'. Use CJC 'EXTERNAL' if the output is being wired through and "ice point reference".

### BUTTON FUNCTION IN THE PARAMETER SET-UP MENU (MicroCal 2 & 3)

Press the MODE button to enter the parameter set-up menu. The parameter and its current setting will be shown in the text line. Press the MODE button to move to the next parameter. Use either the UP or DOWN button to change setting (i.e. Y to N, °C to °F, Internal CJC to External CJC). When setting display contrast press and hold the UP button to increase contrast (darken the display) and the DOWN button to decrease contrast (lighten the display). Press both UP and DOWN buttons together to return to the factory default.

When all parameters have been scrolled through, 'End of list' will be displayed while the settings are saved.

### MICROCAL 3 Only

Parameter Set-up Menu List:

Temp in <°C> <°F>

<Internal CJC> <External CJC>

Auto Off <Y> <N>

Contrast Set

End of List

### MICROCAL 2 Only

The MicroCal 2 has a split set-up menu. Press the MODE button to enter the set-up menu. If 'Set Temp = N' when the mode button is pressed again the PARAMETER SET-UP MENU is selected. If 'Set Temp = Y' the TEMPERATURE CONFIGURATION MENU is selected.

Set Temp = N

Parameter Set-up Menu List:

<Internal CJC> <External CJC>

Auto Off <Y> <N>

Contrast Set

End of List

Set Temp = Y

Temperature Configuration List:

Temp in <°C> <°F>

Adjust Value

Save Value <N> <Y>

End of List

Each Temperature can be individually configured, in °C or °F, to any value within the range of the unit.

When adjusting temperature values the UP button increases the value and the DOWN button decreases the value. Press both UP and DOWN buttons together to return to the factory default value for that temperature location.

To set all temperatures values to °C, start the unit by pressing the ON/OFF button while pressing the MODE and UP buttons. When MODE and UP buttons are released the unit will start up. To set all temperature values to °F, start the unit by pressing the ON/OFF button while pressing the MODE and DOWN buttons. When MODE and DOWN buttons are released the unit will start up.

### BATTERIES

'LO BAT' indicates that the batteries need replacing as soon as possible. The unit will continue to function but to maintain accuracy new batteries are required. Replace both batteries with AAA, MN2400 or equivalent 1.5 Volt alkaline batteries. If 'Battery Flat' is displayed in the text line the instrument has detected that there is insufficient battery voltage left to function correctly. The instrument will shut down and will not simulate again until new batteries have been installed.

### EMC/RFI

Reading may be affected if the unit is operated within a radio frequency electromagnetic field strength of approximately 3 volts per meter, but the performance of the instrument will not be permanently affected.

### GUARANTEE

This instrument is guaranteed for a period of one year from the date of purchase against mechanical and electrical manufacturing defects. There are no user serviceable parts inside the instrument. Any attempted repair by unauthorized persons voids the warranty. Return to your supplier for service/repair.