ADVANTAGE 3 OPERATING INSTRUCTIONS

Operating Modes

The Advantage 3 has 3 modes of operation;

- OFF (Indicator only)
- PROGRAMMER (master)
- CONTROLLER (slave)

OFF

Display toggles between thermocouple load temperature reading (˚C/F) and OFF.
Heat output remains off (no control action).
Previous operation as programmer or controller is indicated by LED.
If previous mode was controller then any Set Point received on S.P. IN connector (from Master) is re-transmitted on S.P. OUT connector (to slave).

CONTROLLER

To select this mode from **OFF**, use **SET** button to toggle display to show **CONt,** push **ENTER.**
The unit is now set in controller mode with the display continuously showing load temperature.
The unit will now receive incoming set point; this value can be viewed by holding down **CHECK** button.
If set point is **0000** then no control action is performed.
Once the unit receives a set point signal, control action commences.
Relay output on/off action is indicated by **HEAT** LED.
Perform **RESET** operation to end controller action and return to **OFF** mode.
Following manual reset operation, unit continues to pass incoming set point value to the next slave controller until programme is ended.

PROGRAMMER

Set mode display to **PROG**, push **SET** and **START** LED is lit with previous **START** temperature value flashing on display.
To keep this value push **ENTER** or change this value by pushing **SET.**
Value is changed one digit at a time using **SET** to increment a digit and **ENTER** to move to the next digit.
After entering the final digit the whole value flashes.
The value can be set to **0000** by pushing **RESET** button, then setting a new value digit by digit.
Once correct value is flashing push **ENTER** to store this setting.
Continue this procedure to enter new values for **UP** rate, **SOAK** temperature, **SOAK** time, **DOWN** rate and **OFF** temperature.
Once **OFF** temperature is stored, the display shows **run.**

To commence the program cycle, push **RUN** button.
Programmer unit (master) now runs the stored program and transmits Set Point value for additional slaves, with current programme segment LED lit and **HEAT** LED showing output relay condition.
Display shows actual load temperature, but will flash **HELD** if this unit's temperature or any slave channel's temperature is lower than the set point by a value exceeding the stored **HOLD-BACK** value.
When program cycle is completed, the master and slave units switch to the **OFF** mode.

Viewing Set Point Value during programme cycle

To show the set point on a programmer unit, push the **CHECK** button once. The display flashes the set point value 5 times (alternating between **SP** and value).
For a controller unit push and hold the **CHECK** button.
The set point value is displayed until the button is released.

Program Check/ Alter

While viewing set point on programmer unit (master), further pushes of **CHECK** button will display each program segment value in turn; **START, UP, SOAK, TIME, DOWN, OFF**, **Units (C/F)**, **Pb** and **H**.
While any value is flashing (except START, Units, Pb and H) pushing the SET button allows this value to be altered.
Firstly, value flashes (fast) along with **Programmer** LED (arrow) to indicate **ALTER** mode.
During this stage, program is paused, with all channels controlling at present set point.
To change value, use **SET** and **ENTER** routine.
To ignore **Alter** and resume program cycle push **ENTER.**

Program Halt

The program cycle can be paused at any time using **HALT** function.
This is set by keeping **HALT** button pushed for 3 seconds (display shows - - - -) until display flashes **HALT.**
To end **HALT** function push **HALT** button once.

Units (C/F), Prop-Band and Hold Back setting

With unit in **OFF** mode push **ENTER** and **RUN** switches together until display blanks.
Upon release, display shows previously set units **C or F**. Push **SET** to toggle value.
Push **ENTER** to store.
Pb (Prop-band) setting is now displayed. Use **SET** button to select values; 5,10, 20 or 40.
Pushing **ENTER** stores desired value.
Display now shows **Hb** (Hold-Back) setting.
Use **SET** button to select; 10, 20, 40 or 60.
Pushing **ENTER** stores desired value. Unit returns to **OFF** mode.

Reset function

To exit **PROGRAMMER** or **CONTROLLER** mode push **RESET** button once then, while display showing **rst,** push and hold **RESET** and release when display blanks.
This procedure ensures that the program is not ended accidentally.

Calibration.

Calibration is simply achieved by connecting a thermocouple simulator (e.g. TCS 145C. Ensure Adv-3 is set to same units as reference unit, C/F) to the T.C. input and checking/ adjusting the display using the span and zero pots (Rear panel). Adjust at low (zero) and high (span) value, say 100 C (200 F) and 1200 C (2000F, note: reading >1200 C and display shows HIGH). Allow 30 minute warm-up before adjustment (Zero pot= anticlockwise to increase/ Span pot= clockwise to increase). Repeat Span/ Zero until no further adjustment needed. Unit should rarely require adjustment, annual check recommended.