

D4-HTC2 / P49-HTC2
Temperature Controller (PT 100)

Dual Setpoint

-50°C to 440°C

Operating instructions
and

Guarantee Certificate

www.icon-electronics.com

Description:

This device interfaces directly with a 3-wire PT100. (0.1 °C resolution). It offers 2 set points with individual hysteresis settings. Both relays may be configured for heating or cooling. By selecting the climate control configuration, R1 is energised when the temperature is below the pre-set level, and R2 is energised when the temperature is above the pre-set level. The maximum and minimum allowable temperatures may also be pre-set.

The menu can be reduced and the parameters locked with an access code to protect programmed values. (see menu configuration).

Operation:

The relays change state when the probe temperature reaches the pre-set temperature(s). Once the temperature has changed (in the opposite direction) by the pre-set hysteresis amount(s), the relays resume their original state. When configured for climate control, R1 is used for heating, and R2 for cooling . In this configuration both relays are controlled by one set point, and one hysteresis adjustment.

Menu functionality:

All adjustments are made via the three front mounted buttons. Press the “MENU” button repeatedly until the desired setting is reached, press “SELECT” to display the current value of the selected setting. The “+” and “-” buttons are used to change the value. “ENTER” will return the device to the menu. The “BACK” button will exit the menu.

Adjustable parameters:

- Pre-set temperature for relay 1 (R1) “°C .1” (default value: 25.0)
When the probe temperature reaches this value, relay 1 changes state.
- Pre-set temperature for relay 2 (R2) “°C .2” (default value: 25.0)
When the probe temperature reaches this value, relay 2 changes state.
- Hysteresis for relay 1 “HYS.1” (default value: 1.0, range 1-100.0 °C)
Once the pre-set temperature is reached, it must change (in the opposite direction) by this amount before relay 1 resumes it’s original state.
- Hysteresis for relay 2 “HYS.2” (default value: 1.0, range 1-100.0 °C)
Once the pre-set temperature is reached, it must change (in the opposite direction) by this amount before relay 2 resumes it’s original state.
- Offset “OFSt” (default value: 0, range –10.0 to +10.0 °C)
This value is added (or subtracted if negative) to the current temperature.
- Maximum “Hi” user setting (default value: 440.0)
This is the maximum value obtainable via setting number 1 and 2 (“°C.1” / “°C.2”).
- Minimum “LO” user setting (default value: -50.0)
This is the minimum value obtainable via setting number 1 and 2 (“°C.1” / “°C.2”).
- Element type “TYPE” (default: Heating)
The device may be configured for :
 - Heating “HEAT”
Both relays are energised when the temperature is BELOW their individual pre-set temperatures.
 - Cooling “COOL”
Both relays are energised when the temperature is ABOVE their individual pre-set temperatures
 - Climate control “C.cnt”
R1 is energised when the temperature is BELOW the pre-set temperature, and R2 when the temperature is ABOVE the pre-set temperature. Only one temperature and one hysteresis setting is available in this mode.
- Reset “RESt”
By selecting this setting, the device is reset to the factory defaults

Menu Configuration

When not in the menu, press and hold “+” and “-”. After 3 seconds the display will toggle through the **available** options:

“loc” = available parameters may be viewed, but not changed.

“u.loc” = available parameters may be changed.

“rEdu” = remove advanced parameters from menu.

“Full” = all parameters are available.

“CodE:” = Enter a code between 1 & 9999.

To set an option, release the buttons while the option is being displayed. To enter a code, release the buttons while “CodE” is displayed, then use “+” & “-” to enter a value. To skip code entry, press “Enter” while “CodE” is displayed.

Once the code is entered, the first four options are not available until the correct code is re-entered. To clear the code (in case it is forgotten), hold the “+” & “-” buttons while the device powers up.

Menu operation example: Set the setpoint to 30.0°C:

Press “MENU” to display “°C 1”. Press “SELECT” to view the current value. Use the “+” and “-” buttons to change the value to 30.0. Press “ENTER” to return to the menu. Press “BACK” to exit the menu.

Climate control Example:

If the temperature is set to 25 °C, and the hysteresis is set to 2, and the temperature being read is rising from 10 °C, the heating relay (R1) will be energised until the temperature reaches 25°C. At this point, R1 will de-energise. If the temperature keeps rising, the cooling relay (R2) will energise when the temperature reaches 27°C (25° + 2° hysteresis). If the temperature then drops to 25 °C, the cooling relay will de-energize, and the heating relay will energise when the temperature drops to 23 °C (25° - 2°hysteresis).

Notes:

- If the temperature being read is outside the device’s temperature range, the message “t Lo” or “t Hi” is displayed.
- Make all adjustments and reset device before connecting relay.
- Probe lead resistance could affect the accuracy as much as 0.3 °C / ohm
- If the probe is faulty, or not connected, “P.Err” is displayed.
- If the input voltage is below the minimum operating voltage, the relay may not energize. Even though the device’s display is on.

Specifications:

Temperature range:	-50.0 °C to + 440.0 °C
Resolution:	0.1°C
Accuracy:	±0.5 °C (@ 25 °C ambient)
Input voltage:	±15% of rated input
Probe:	PT100 (38.5 ohm/ 100 °C)

12 Month guarantee:

Our product is guaranteed for a 12 (twelve) month period from date of purchase. This guarantee is valid for defects arising from failure during specified conditions. This guarantee does not cover damage due to abuse, tampering or improper installation. Our company does not accept liability for any consequential damage or loss arising from product malfunction. Should this product prove to be defective, kindly return it for inspection or repair. For further information contact your nearest distributor.

Relay specifications:

Contact rating:	10A250 VAC 2500VA (Resistive)
Mechanical life:	30 million operations
Electrical life:	250 000 operations (at maximum load)

