

UDC2000 TAC Tip

TIME DUPLEX ON/OFF OPERATION

A **Time Duplex (Heat / Cool) ON/OFF** controller has a switching **Deadband** and **Hysteresis** that is used to define switching thresholds where the **Heat (Relay 1)** and **Cool (Relay2)** will change their output states.

- Decreasing the **Hysteresis** or the **Deadband** will cause the output relays to turn on and off more frequently (faster cycling) and hold the temperature closer to the set point.
- Increasing the **Hysteresis** or the **Deadband** will cause the output relays to turn on and off less frequently (slower cycling) and increase the temperature cycling above and below the set point.

In the UDC 2000 the Hysteresis is set by adjusting the “**HYST**” value in the **Control Group**. This value is set in percent of the Input 1 span. The Deadband is set by adjusting the “**DBAND**” value in the **Control Group**. This value is also set in percent of the Input 1 span

Example

Input 1= T thermocouple Hi (TH), IN1 HI = 700, IN1 LO = -300

Input 1 Span = 700 - (-300) = 1000

Set point = 500°

Hysteresis = 2.0% = .02 x 1000 = 20

Deadband = 5.0% = .05 x 1000 = 50

