Graduate Technical Test

Operation Manual

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Prepared by Zhongfan Zhang

Contents

1 Setup

1.1 Requirements

- Java SE Runtime Environment (build 13.0.2+8)
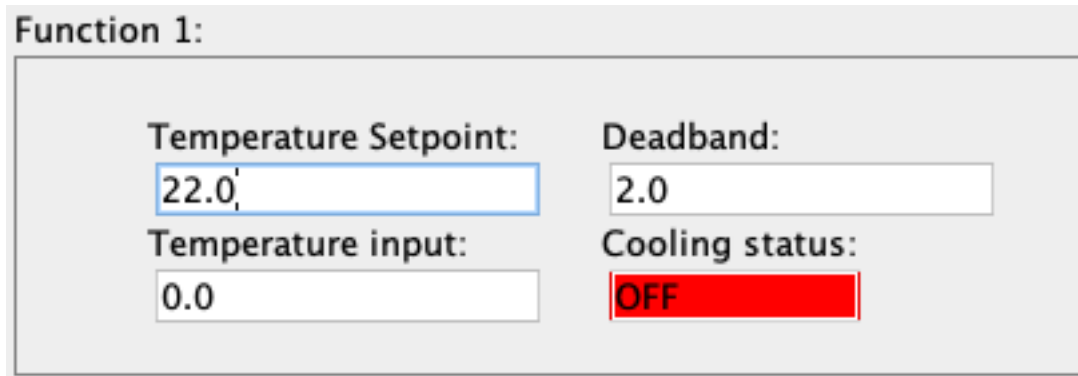
- 10KB harddrive space

1.2 Installation

The program can be run directly by downloading the .jar file and executing it.

2 GUI Overview

To complete input for any input fields, the "Enter" key must be pressed. I.e. the display will only update if the "Enter" key is detected while one of the text fields is highlighted.

2.1 Function 1

Figure 1: Default display of the Function 1 part of the GUI.

2.1.1 Inputs

All input fields must be non-empty, valid numeric values.

- The **Temperature input** field is the input that is compared to the **Deadband** and **Temperature Setpoint** inputs to determine the output of the **Cooling Status** field. This Field is initially set to 0.0 degrees.

- The **Temperature Setpoint** input is used to set the temperature above which cooling will be turned on. This field is initially set to 22.0 degrees.

- The **Deadband** input is used to set the size of the deadband (in degrees). If the Temperature input 0 field is lower than (**Temperature Setpoint** - **Deadband**) then cooling is set to off, if the **Temperature input** field is between **Temperature Setpoint** and (**Temperature Setpoint** - **Deadband**) then the cooling status will not be changed. This field is initially set to 2.0 degrees.

2.1.2   Outputs

- **Cooling Status** is the only output of the Function 1 section of the program. This field will have a red background and displays "OFF" when cooling is set to off, a green background and "ON" when cooling is set to on. The off status can be seen in figure 1 on the previous page and the on status can be seen in figure 2 below. This field is initially set to off.

Figure 2: Caption

2.2 Function 2

Figure 3: The initial state of the function 2 part of the program

2.2.1 Inputs

Temperature inputs 1 to 8 take non-empty, valid decimal numeric values. For example "22.01" and "50" are valid inputs, while "ffff" and "a50f" are not. Inputs greater than 100 will not be considered for output.

2.2.2 Outputs

The output displays the 3 highest values from the inputs in descending order from top to bottom, the labels will display the name of the respective input. The output fields are initially set to "Output off". See figure 4 on the next page for a example of inputs and outputs.

Function 2:

Temperature input 1:
123.0

Temperature input 2:
3.141592653589793

Temperature input 3:
5.0

Temperature input 4:
2.0

Temperature input 5:
0.0

Temperature input 6:
0.0

Temperature input 7:
0.0

Temperature input 8:
0.0

Input 3:
5.0

Input 2:
3.141592653589793

Input 4:
2.0

Figure 4: Function 2 with example inputs