3/31/23, 1:16 PM

How do I update my firmware to be compatible with the RTD Pt1000?

Slice Engineering

How do I update my firmware to be compatible with the RTD Pt1000?

The RTD Pt1000 works natively with Marlin, Duet/RepRapFirmware (RRF), and Klipper.

Marlin

When compiling Marlin, choose temperature sensor #1047 if you are not using a MAX31865 amplifier.

If you want to print above 300°C, you will need to raise the maximum temperature value. If you are using Marlin 2.0.5.4 and older, you will need to change the thermistor table for thermistor 1047. Marlin 2.0.5.4 and older only have values up to 300°C. You will need to add more values to go to 500°C. Please follow the example below.

```
#pragma once

#define REVERSE_TEMP_SENSOR_RANGE_1047 1

// Pt1000 with 4k7 pullup
constexpr temp_entry_t temptable_1047[] PROGMEM = {
  // only a few values are needed as the curve is very flat
  PtLine(  0, 1000, 4700),
  PtLine( 50, 1000, 4700),
  PtLine(100, 1000, 4700),
  PtLine(150, 1000, 4700),
  PtLine(200, 1000, 4700),
  PtLine(250, 1000, 4700),
  PtLine(300, 1000, 4700),
  PtLine(350, 1000, 4700),
  PtLine(400, 1000, 4700),
  PtLine(450, 1000, 4700),
  PtLine(500, 1000, 4700)
};
```

RRF (Duet)

If you are using RRF, you must edit the M305 or M308 line in your config.g. RRF 2.x or earlier will use the M305 command while RRF 3.x will use the M308 command. The M305 command should look something like

this:

M305 P1 X501

The 4700 value in the R field has different values for different Duet boards. You can find the value for your Duet board at the bottom of this page.
The M308 command should look something like this:

M308 S1 P"temp1" Y"PT1000"

The P field should be the name of the socket that the temperature sensor is being plugged into. You find more information to better configure your sensor by looking at the documentation provided for the M305 and M308 commands found in the Gcode Dictionary.

Klipper

When configuring Klipper, if you are directly connecting the RTD Pt1000 without an amplifier, use the following parameter when configuring your "printer.cfg" file. Klipper will default to a 4.7 kilo ohm pull-up resistor.

```
sensor_type: PT1000
```

ⓘ Refer to documentation at Klipper3d.org PRIOR TO USE.

https://support.sliceengineering.com/portal/en/kb/articles/how-do-i-update-my-firmware-to-be-compatible-with-the-rtd-pt1000