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# How to Install and Use Temperature Probes

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## Installation Steps

1. Connect the probe to the main board as shown in Fig. 1.
2. Restart USB connection.
3. Rename probes to match your application in the "Setup" tab.



Fig. 1: Insert the temperature probe in one of the "Temperature Probes" plugs.

## Notes About Heat Transfer

The temperature is sampled at the middle of the temperature probe. The sampled temperature may be much lower than the actual temperature of the device you want to protect. Keep this in mind when setting the cutoff temperature limits. For example, if you want to protect your ESC, you will want to limit the junction (die) temperature inside the FET's body. Since it can't be measured directly, you will need to set a lower temperature limit. See Figures below for examples:

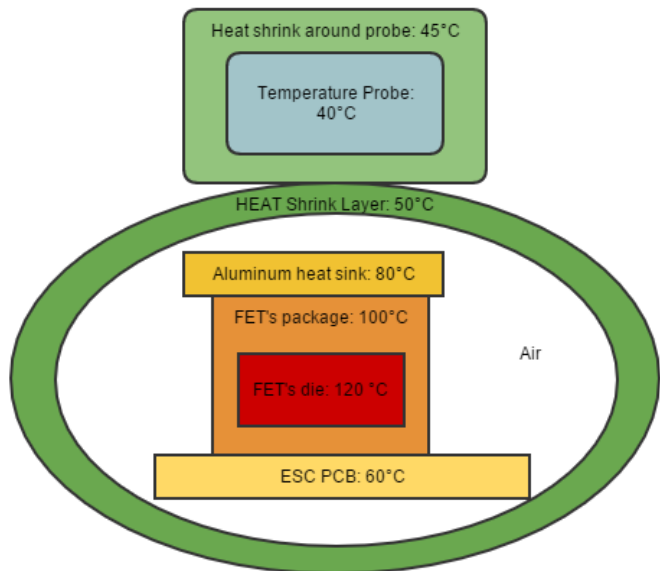


Fig. 2: Example temperature distribution (ballpark figures only).

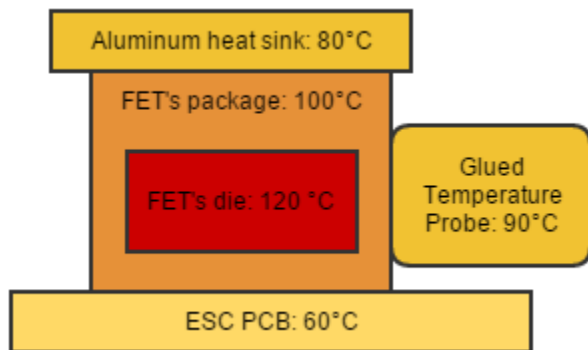


Fig. 3: Example solution: glue probe's sensor as close as possible to the heat source. Use appropriate adhesive that can withstand the temperature.

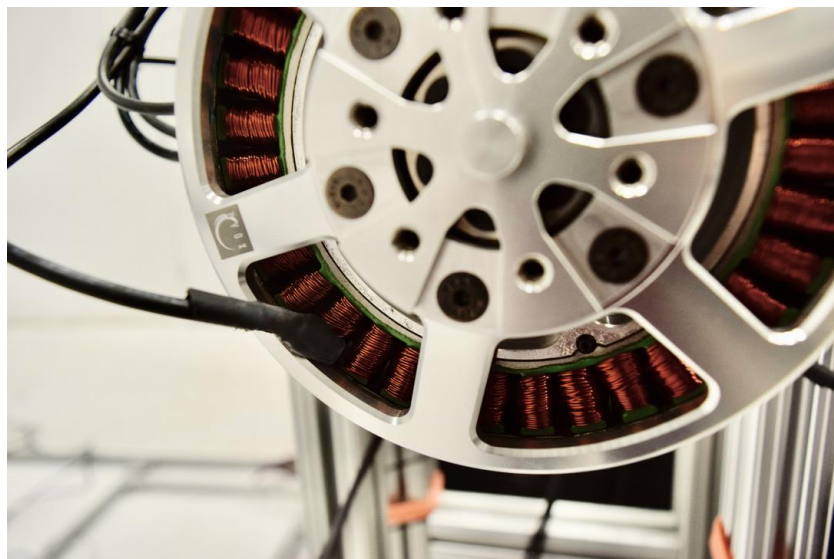


Fig. 4: Example probe touching motor coils.



Installing a temperature probe has case by case considerations. We recommend carefully cutting away the outer heat shrink layer on the probe and permanently attaching the probe as close as possible to the heat source. Our software will remember the name you assign to a probe, so you can consider probes as sacrificial elements that you leave on the motor, esc, lipo, etc.

Contact us if you need advice or have special layout considerations.

## Troubleshooting

If your probe does not seem to work, check the following: 1) Ensure the connector is firmly pressed into the board. 2) Available probes are scanned by the circuit upon power-up. Disconnect and reconnect the USB. 3) A probe's default name is a serial number (eg. 4H7C). Make sure you have assigned a proper name to your probe in the Setup Tab.

## Where to Buy

Compatible temperature probes can be purchased in the Tyto Robotics [online store](#).