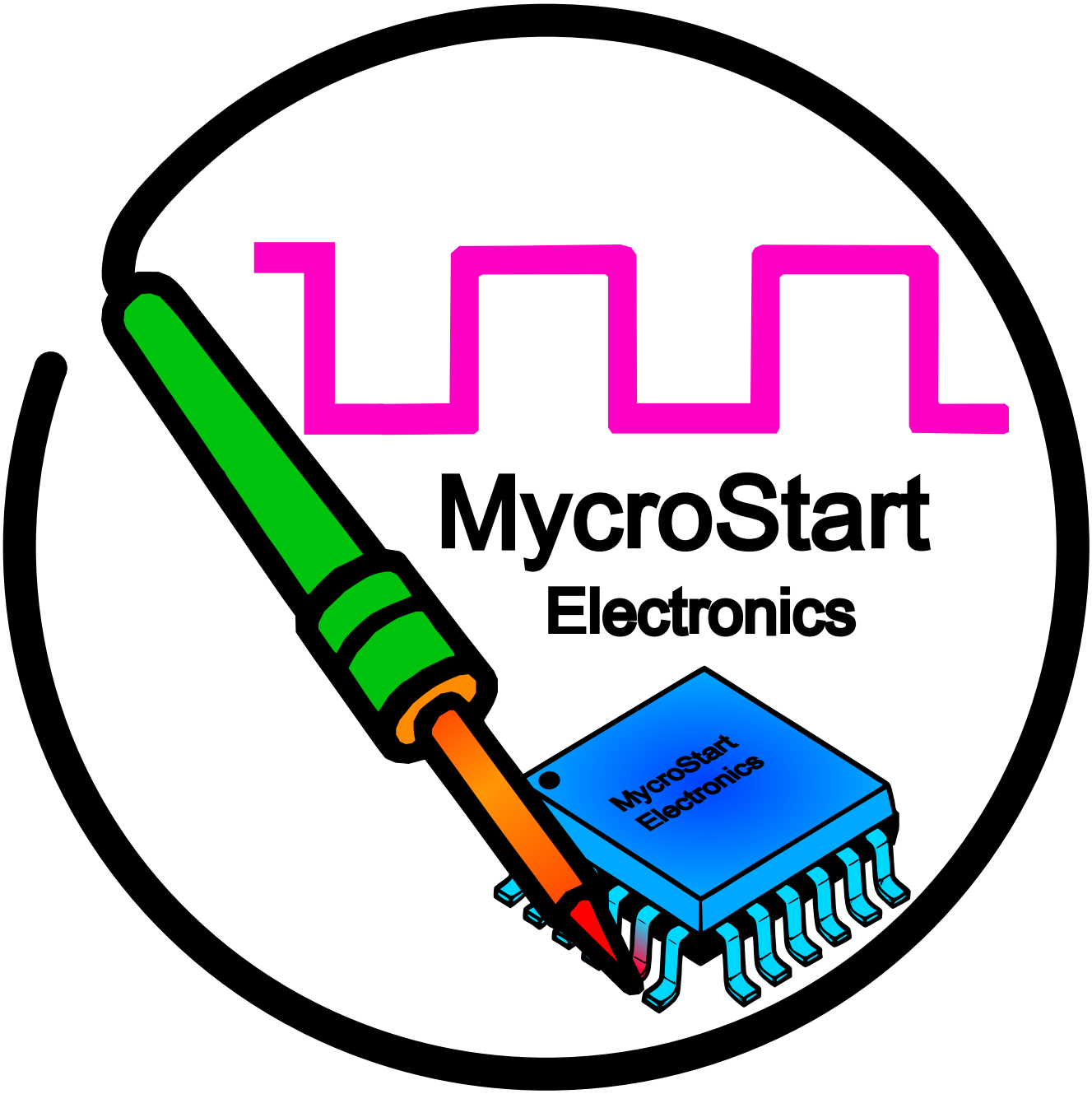
MycroStart
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INTRODUCTION TO MYCROCOOL

Thank you for choosing MyrcoStart Engineering Technology's MycroCool!

With MycroCool, you gain seamless control and real-time monitoring of your walk-in refrigerator.

PART IDENTIFICATION

- MycroCool
- Power Cord
- Two Temperature Probes
- Wifi Antenna
- SD Card
- Two Quick Connect Attached to Wire
- Two Wago's

MYCROCOOL SYSTEM OVERVIEW

The **MycroCool controller** is a control board designed to override the traditional temperature limitations of a standard air-conditioning unit. Most consumer AC units are locked out from cooling below approximately **60 °F** in order to reduce the risk of the evaporator fins freezing. This limitation makes it difficult to use a typical AC unit for specialized cooling applications.

When paired with a suitable air-conditioning unit, MycroCool enables users to create a **customized, DIY cooling system** tailored to specific needs. By monitoring both the room temperature and the fin temperature, the controller manages cooling performance while protecting the AC system from freeze-up and rapid cycling.

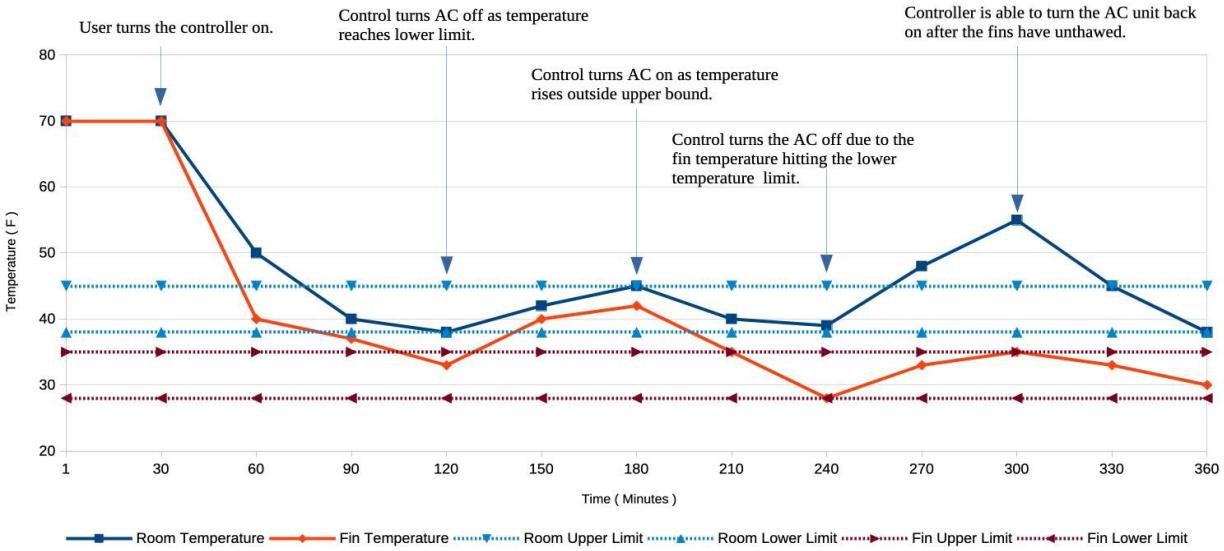
The MycroCool maintains the desired temperature of your application by using a **primary sensor**, also referred to as the **room temperature sensor**. Depending on room size, humidity level, and air-conditioning capacity, a **secondary sensor** (the **fin sensor**) monitors the temperature of the AC fins to determine when ice is beginning to accumulate. When the fin sensor detects icing conditions, the controller temporarily disables the compressor to allow the fins to defrost.

To protect the air-conditioning unit, the MycroCool system also prevents rapid cycling. After the compressor turns off, the controller enforces a **minimum five-minute delay** before it can turn on again.

Because of this protective delay, MycroCool requires the use of **temperature ranges** rather than single setpoints for both the room temperature and the fin temperature. Each range defines the acceptable upper and lower temperature limits that the system will maintain.

Tip: A wider temperature range results in fewer compressor cycles, which contributes to longer equipment life. For most applications, a **5 °F range** provides an effective balance between comfort and system longevity.

The **secondary fin sensor** is essential for maintaining performance and preventing freeze-up. The fin temperature range determines the amount of frost accumulation permitted before the system initiates a temporary shutdown for defrosting. Once the fins have warmed to the upper limit of the set range, the controller allows the compressor to resume operation.



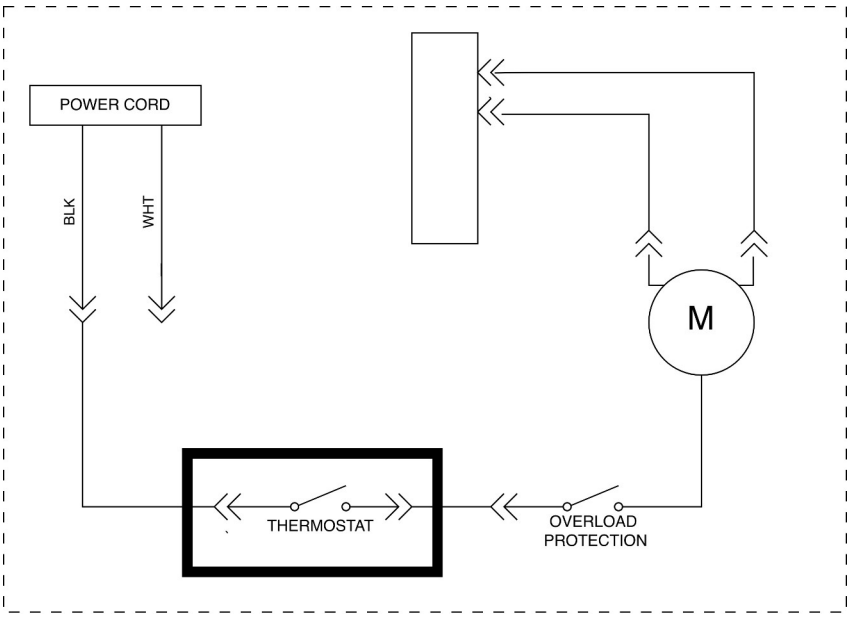
INSTALLATION GUIDE

Control Method by Faking AC Conditioner's Temperature Signals

Under normal circumstances, an air conditioner will include some type of thermostat. Modern units typically use NTC thermistor sensors connected to a control board, while older systems rely on a temperature-sensitive switch that controls the AC compressor directly.

Below is a simplified diagram showing an example of what might appear on an AC unit. The “motor” shown (not the fan motor) represents the compressor. The thermostat may connect directly to the high-power relay.

For installation instructions, please watch the video at: **mycrostartelectronics.com**



Control Method by Direct Power of the AC Conditioner's Condenser

SOFTWARE UPDATES

While we have taken great care to ensure that the MycroCool software is stable, reliable, and thoroughly tested, we recognize that improvements and refinements may be needed over time. To support long-term usability and continuous enhancement, the system includes a convenient method for applying software updates through the SD card slot. This allows users to easily install new features, performance improvements, and important fixes without specialized tools or technical procedures.

Step to update the MycroCool control board:

1. Software updates can be found at mycrostartelectronics.com under software updates.
2. Download the latest version and copy it to the SD card.
3. Unplug the MycroCool from its power source.
4. Install the SD card into the MycroCool.
5. Power on the MycroCool and allow additional minute or so for power on.
6. Software should be successfully installed you can verify by checking the updated software version in the “About Screen”.

DISCLAIMER AND SAFETY NOTICE

The MycroCool controller is intended for use by individuals who possess appropriate knowledge of electrical systems, refrigeration principles, and air-conditioning equipment. Although the controller is

designed to operate safely under normal and correctly installed conditions, improper installation, configuration, or use can create hazardous situations, including equipment damage, electrical shock, fire, and loss of cooling.

Use of the MycroCool controller may require **modification of an existing air-conditioning unit**. Any such modification will **void the manufacturer's warranty** on that equipment. The user is fully responsible for understanding the implications of altering or bypassing standard AC safety features and operating limits.

This product involves exposure to live electrical circuits during installation. **Electrical shock hazards are present**, and all exposed wiring must be properly insulated, enclosed, or otherwise protected in accordance with local electrical codes and safe-installation practices. Failure to take proper precautions may result in injury or equipment damage.

Mycrostart Electronics cannot anticipate every possible installation method or application. Users are responsible for ensuring that their setup is safe, compliant with applicable codes, and suitable for their specific environment. The user assumes all risks associated with incorrect wiring, improper mounting, unsafe modifications, or operation outside the intended scope of the product.

By installing or using the MycroCool controller, the user acknowledges that Mycrostart Electronics is **not liable for any damages, injuries, or equipment failures** resulting from misuse, improper installation, unauthorized modification, or unsafe operating conditions. Individuals who are not fully confident in their ability to install or configure this system safely should seek qualified professional assistance.

That said, the MycroCool system can serve as an enjoyable and rewarding project for those who have the proper skills and preparation. We hope you have a positive experience building your custom cooling system, and we wish you success and safe operation throughout your project.