



## ARP 2.0 & ARP + Fan Control v2.1

### User Guide

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## INTRODUCTION

The following User Guide gives a brief graphical description of how to operate the ARP Control. This document shall be considered as a cheat sheet because only a brief description of each function is given; this is not an inclusive operator's manual. The operator of the ARP Control shall understand all information provided in this guide in addition to the Installation Guide and the Troubleshooting Guide. Please see aforesaid guides for important safety information.

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## FAN CONTROL & NON-FAN CONTROL

This user manual covers two types of control.

ARP v2.0 is the version without fan set point control. The cooling unit boiler protection functions the same as the v1.0 and v1.1 ARP control.

ARP v2.1 is the version with fan set point control. This version of control has added function of turning on/off one or more 12VDC fans to help the cooling unit move heat away from the fridge.

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## BUTTON FUNCTION

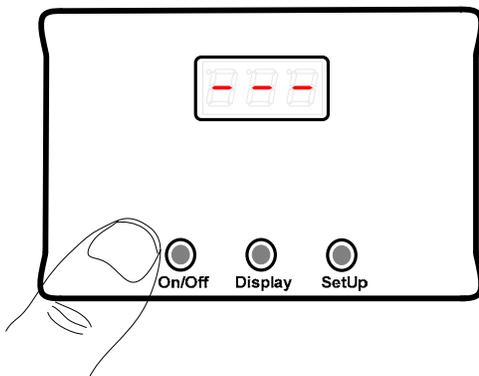
The following terms are used in the text to indicate how to make changes to the ARP control using the push buttons.

**Momentarily Press:** This indicates that the operator depresses the button and then immediately releases in order to make a change.

**Press and Hold:** This indicates that the operator holds the button until a change occurs, once the change takes effect, release the button.

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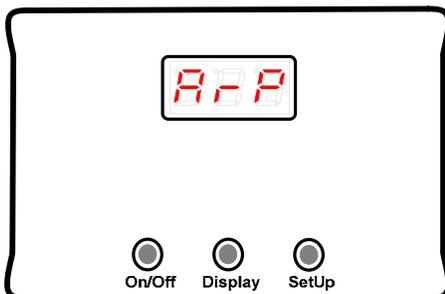
## ARP FUNCTION



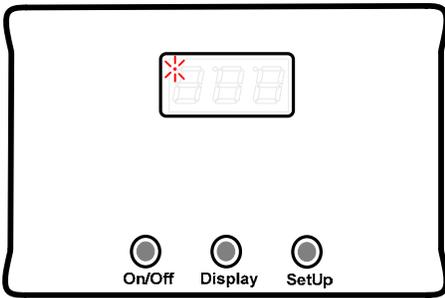
### 1.1 Turn on ARP Control

Momentarily press the **On/Off** button on the left to start the control in the ARP mode.

Three bars will appear for one second, and then the display will show **ArP** for 3 seconds. The control is now in ARP mode.

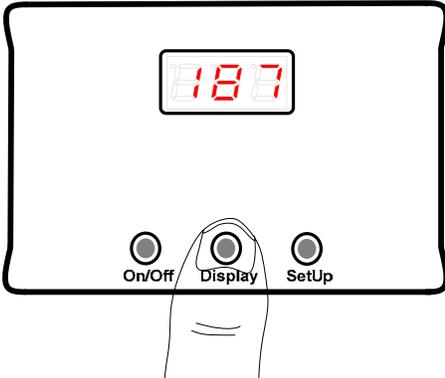


In ARP mode, fan control is active for the v2.1 control. The ARP control will turn on/off the fan when the fan thermistor reaches the fan set point. Please see the Troubleshooting Guide to setup desired fan control temperature.



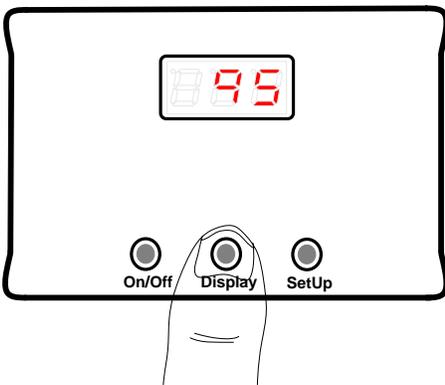
Once the control has started, the left dot will flash every 4 seconds.

The left dot must be flashing for the control to be protecting your refrigerator. To check control operation without waiting for the dot flash please use procedures [1.2](#) or [1.4](#) below.



### 1.2 View Boiler Temperature

Press and hold the center **Display** button till the present boiler temperature is displayed and then release the button. This may take 2 seconds. The boiler temperature will display every other second till you press and hold the **Display** button again. If you have the v2.0 control the display will resume flashing the single dot. For the v2.1 control, see next section.



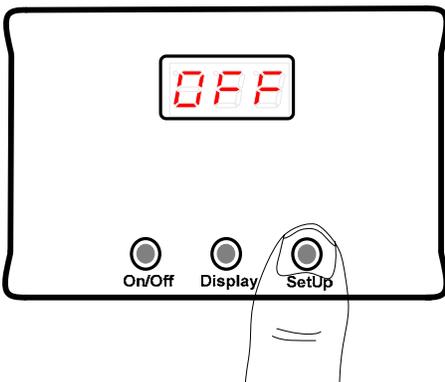
### 1.3 View Fan Temperature

If the control is a v2.1 control, after viewing the boiler temperature, press and hold the center **Display** button to view the present fan thermistor temperature.

The fan temperature is only displayed in °F. The fan thermistor temperature will display every other second.

Press and hold the center **Display** button again, the display will return to flash the left dot.

If the fan thermistor is measuring lower than 75°F, the display will show **OR** (Out of Range).



### 1.4 Test ARP Relay

The next two modes of operation will override any ARP display functions. Make sure to return the ARP Control to the desired mode of operation when tests are completed.

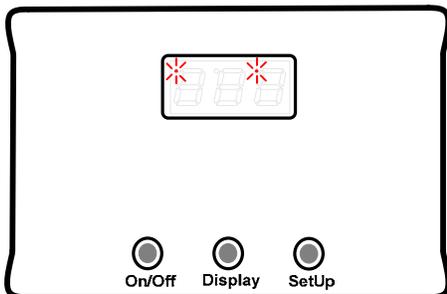
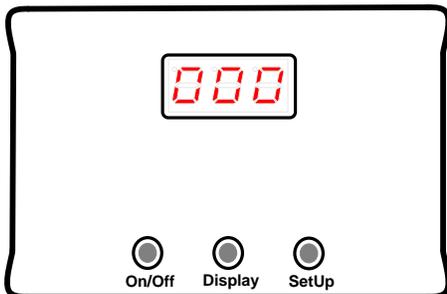
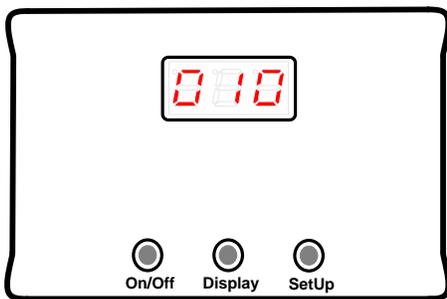
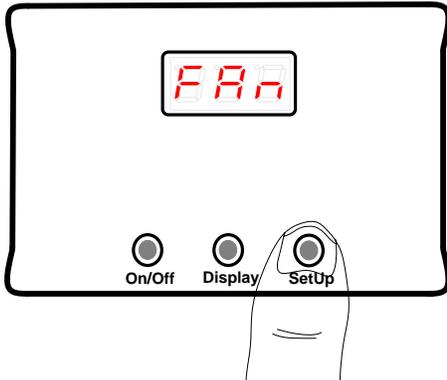
Press the **SetUp** button to test the ARP relay. Your fridge should shut off and the display will flash **OFF** every other second until the ARP relay is toggled back on by pressing the **SetUp** button again. The display will either flash out the left dot or **FAn** if you have a v2.1 fan control.

This test should be preformed in both the gas and electric modes to confirm the function of the control.

### 1.5 Test Fan Relay

Press the **SetUp** button again to test the fan relay if you have a v2.1 control. Your fan should turn on, also your fridge will be turned back on from the previous test. The display will flash **FAn** every other second.

Press the button again to turn off the fan. The display will flash the left dot.



### 1.6 ARP Protection Period

When the ARP Control detects an overheat situation, the control turns off the refrigerator and starts a countdown period. The countdown period is the time until the ARP attempts to restart the refrigerator.

One of two events will occur at the end of the countdown period:

- 1) If the boiler has cooled enough, the control will restart the refrigerator.
- 2) If the temperature is still too high to restart the fridge, **000** will flash until it is safe to restart the fridge.

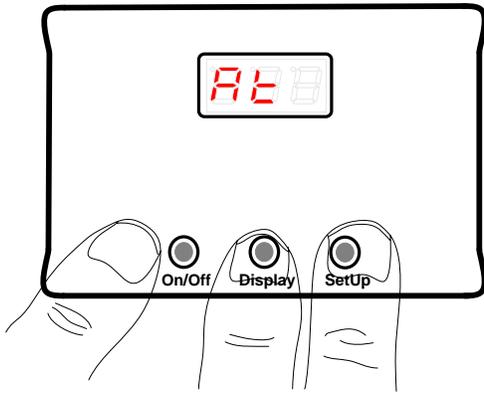
When the countdown period has ended and the ARP Control has restarted the fridge, the two dots on the right and left will flash for an hour to let you know that the fridge is restarting.

After a successful restart, the single dot will resume flash

### 1.7 Excessive Overheat Condition

If the control turns off the refrigerator 5 times in a row or your boiler temperature has reached 250°C, the ARP will turn off the refrigerator and rapidly flash **OFF** until the operator resets the control by turning off the ARP. Please consult an RV repair facility to restart your fridge if this event occurs. Please see next section and Troubleshooting Guide for further details.





### 2.3 Auto Tune Mode

Auto Tune is only necessary if the default ARP Control settings do not work. 90% of fridges will work with the default settings.

To start Auto Tune, hold down both the right **SetUp** and the center **Display** buttons. Then momentarily press the **On/Off** button. Wait until **At** is displayed to release the **Display** and **SetUp** buttons. **At** will be shown for 3 seconds, and then flashes shortly every other

second thereafter when the control is in the Auto Tune mode.



If **\*Err** is displayed during an Auto Tune session, please contact technical support.

### 2.4 Auto Tune Procedure

The ARP control ships preset for a majority of refrigerators. But, each fridge can have different control parameters even between two refrigerators that are the same make and model. For this reason, Auto Tune should be run if the programmed settings are not working.

It must be noted that Auto Tune procedures requires the cooling unit to be working properly and the ARP Control to be installed correctly. Auto Tune will automatically determine your fridge unique control parameters. We recommend using Auto Tune in the following manner:

1) Level fridge and make sure any auxiliary cooling fans are functioning properly. The fans are extremely important for any fridge in a slide-out installation. Also, we are told that some slide-outs do not always have the same level as the coach, check the fridge level according to your fridge user manual.

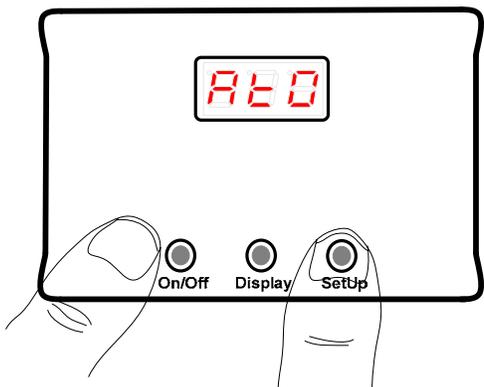
2) Run Auto Tune for a period of 24 hours in the following manner:

12 hours with the fridge in the LP gas mode.

12 hours with the fridge in the 120VAC mode.

The above recommendation is a rule of thumb, do what is convenient. Please use both heat sources during a 24 hour period so that the Auto Tune procedure is accurate.

3) Use the On/Off button to end the Auto Tune session and store settings. See next section to determine the **AtO** value after Auto Tune is completed. If the **AtO** value is greater than 235°C the ARP Control shall be set into the C-L mode, see Troubleshooting Guide for C-L setting.



### 2.5 Setup Mode

Hold down the right **SetUp** button and then momentarily press the **On/Off** button, when **AtO** displays, release the **SetUp** button.



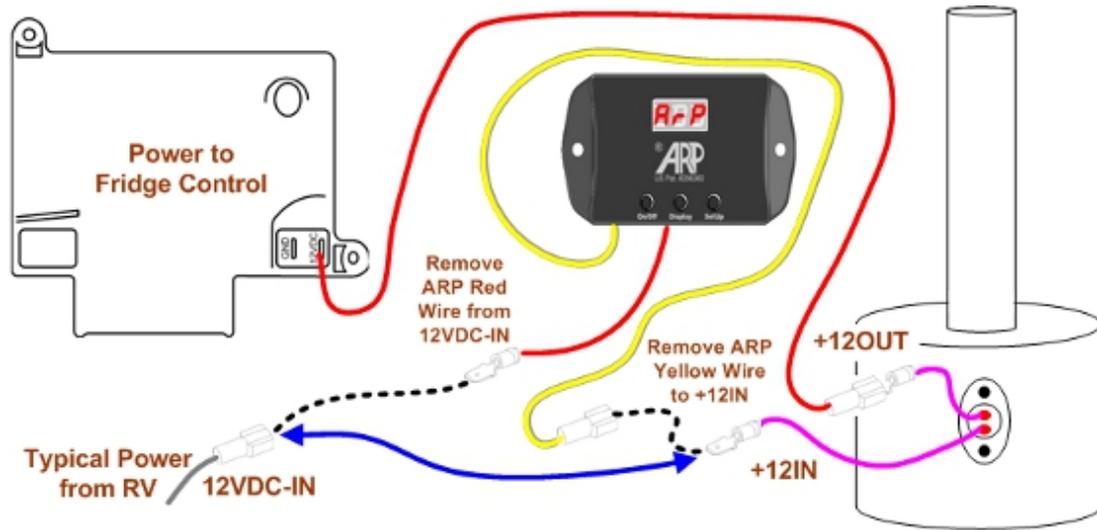
**AtO** and its value will alternatively display.



Please see the Troubleshooting Guide for further information concerning the Setup

Mode functions and adjustment for both ARP and the optional fan control.

## RESTORE SETTINGS for FACTORY WARRANTY



To remove ARP Control connect 12VDC-IN to +12IN

Any Factory Safety Device

### Restore Factory settings for Troubleshooting and Warrantee Service

#### 4.1 Bypass ARP Control

The figure above shows how to bypass the v2.x ARP Control for either troubleshooting or to meet factory warranty conditions. Due to legal considerations, refrigeration manufactures and their representatives cannot refuse a warranty nor refuse to work on your fridge if the ARP has been bypassed as shown above.

## CONCLUSION

The ARP Control will protect your fridge by limiting the boiler temperature. The ARP Control may only be installed on cooling units that function properly; if your fridge is failing or has failed the ARP Control cannot perform its designed function nor fix the cooling unit. The ARP Control performs a different function than the factory recalls on your fridge, therefore all factory recalls must be installed and working properly on your fridge.

The ARP Control has a number of functions that allow the operator to test the operation of the control. Upon initial install the operator shall perform the relay test found in [1.4](#) of this User Guide and during an inspection every 6 months thereafter. Please see the Installation Guide and the Troubleshooting Guide for further information on how to install and setup the control if the default programming does not work for your installation. Further modes of operation are defined in the aforesaid documents. Please check for updated documents online.