micro-Air ASY-364-X20-IP EasyStart Advanced Soft Starters User Manual

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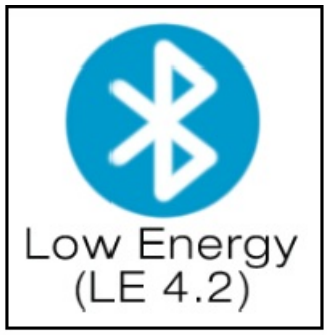
WARNING
Bluetooth operation with Easy Start is designed to provide diagnostic feedback when troubleshooting an A/C system. It should be used only by qualified HVAC technicians and HVAC engineers with a good understanding of the system. Changing fault detection, limits, and values in the Bluetooth application for Easy Start can damage the connected compressor or Easy Start under some circumstances. Please use our Easy Start Knowledge Bank or contact us using the Micro-Air Contact Us Page for more assistance.

Introduction

This document provides instruction on how to operate the Bluetooth interface of Bluetooth Easy Start models. Bluetooth operation is a diagnostic aid to monitor and modify Easy Start and does not control your A/C like a thermostat. Ideally, the Bluetooth interface will not be needed, however there are some circumstances for its use. It only communicates with a smart device through the official Easy Start App.
These instructions are only valid for Bluetooth capable models. Non-Bluetooth models cannot be upgraded in the field or at the factory to Bluetooth models.
Warning: The Bluetooth interface means there is no need at any point for any reason to remove the Easy Start lid for these models. Doing so without instruction may void the warranty.
Is my Easy Start a Bluetooth Model?
There are a few ways to identify if an Easy Start is a Bluetooth model.

- Model numbers with a -BLUE suffix are Bluetooth models, for example: ASY-368-X48-BLUE
- Inspect the lid of Easy Start and there should be a Bluetooth sticker as shown below
- Models with opaque lids are not Bluetooth models
- Inspect the long edges of the Easy Start circuit board for the Bluetooth chip as shown below. It may be

obscured by the large black start capacitor in the box



Bluetooth Sticker

Bluetooth Chip

Connecting to Easy Start

A smart device with the Easy Start app downloaded to it is required to use Easy Start's Bluetooth interface. Easy Start itself must be powered to establish a connection. Typically, this is when a cooling or heating cycle is called for by the thermostat. Note: Some A/C systems will shut down if a fault occurs and remove power. You must move the Easy Start black and white wires to the input side of power so that you can connect to Easy Start if needed in these circumstances.

Download the App

The app can be downloaded from the App Store or the Google Play Store. It is called "Easy Start" by CseaTec LLC. Allow any permissions asked for by the app so that the app has access to the smart device's Bluetooth functionality.

Android users

Some versions of Android have Bluetooth permissions as a subset of location services permissions. These versions of Android mean that location services must be allowed for the app to function. If you have difficulty connecting, please verify this permission in:

Settings->Apps->Easy Start->Permissions

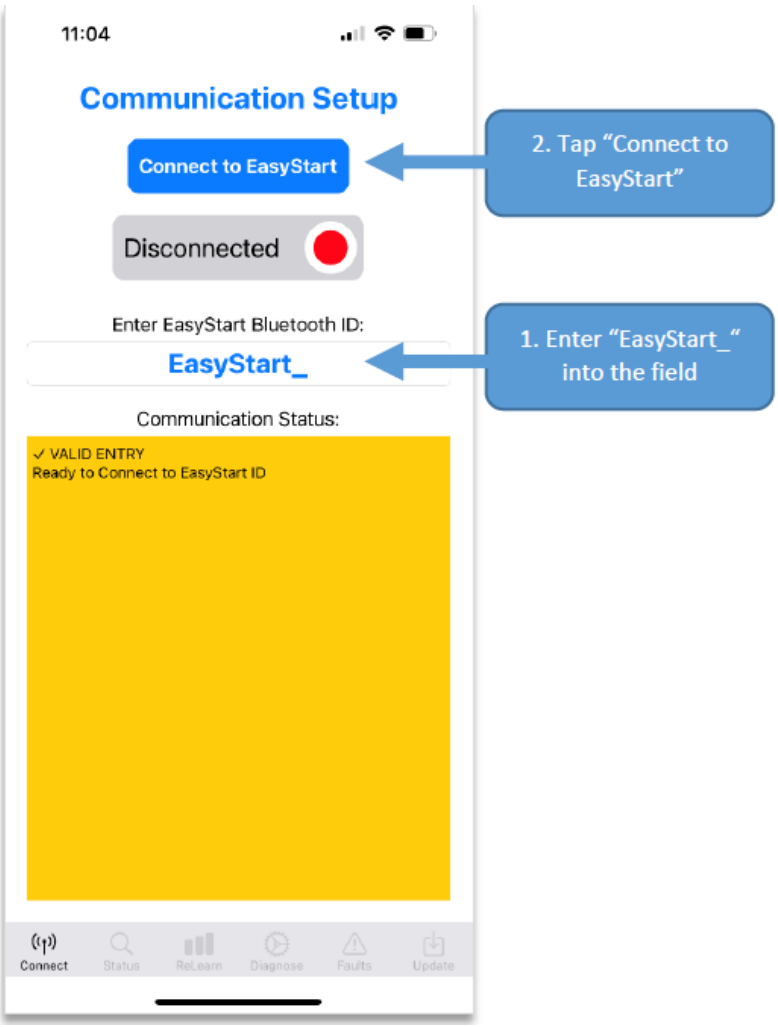
Permissions should be set for "When using the app".

Prepare Easy Start for a Connection

Easy Start must be powered to communicate with it. Determine if Easy Start is powered by looking for the green POWER LED located near the wire entry to the box. This LED is easily visible through the clear cover when lit.

Open the App and Connect

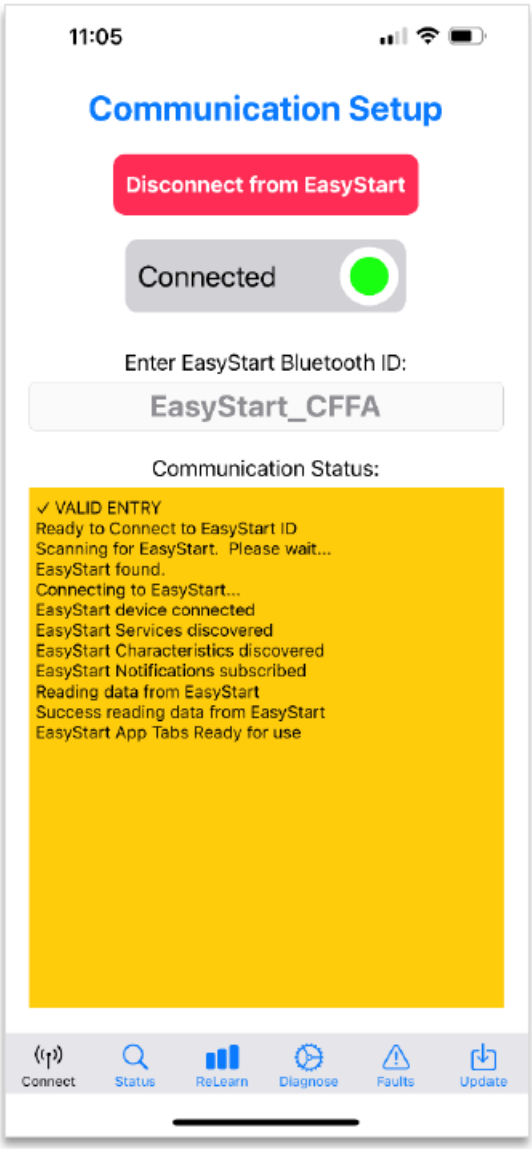
- When the app opens it will start on the Connect tab, shown in Figure 1. This page is used to establish the connection to the Easy Start. The other tabs will become available once a successful connection is made.
- Enter the full unique Bluetooth ID of your Easy Start into the appropriate field. You can also scan for the Easy Start by entering "Easy Start" into the field.



- Tap the "Connect to Easy Start" button to attempt a connection. If you are scanning and have more than one Easy Start then ensure only the one you want to connect to is powered.
- A successful connection is shown in Figure 2. "Connected" is shown in the status box with a green circle and the other tabs along the bottom become available.
- If you used the scanning feature, the Bluetooth ID field will be updated with the full unique Bluetooth ID for the Easy Start it is connected to. Future connections can use this ID instead of scanning. The ID should be noted and used if more than one local Easy Start can be powered at one time.
- Tap the "Disconnect from Easy Start" button to terminate the connection and prepare for a new one. Closing the app will also close the connection. Only one EasyStart connection at a time.

Connection Troubleshooting

Is my Easy Start Bluetooth?
See section Is my Easy Start a Bluetooth Model? to verify.
Is the Easy Start Powered?
Ensure that the POWER LED is solid green on the Easy Start circuit board. If it is off then Easy Start is not powered. Verify that line voltage is across the Easy Start white and black wires.
Is the Correct App Installed?
Micro-Air has a few apps for our products. Use the Download the App section and other app screenshots for reference to ensure you have the correct one.
Is the Bluetooth ID Field Entry Formatted Correctly?
All Bluetooth ID field entries are case sensitive. When scanning,
"Easy Start_" must be used as shown in Figure 1. When using a unique Easy Start ID, it has a capitalized 4-character suffix.



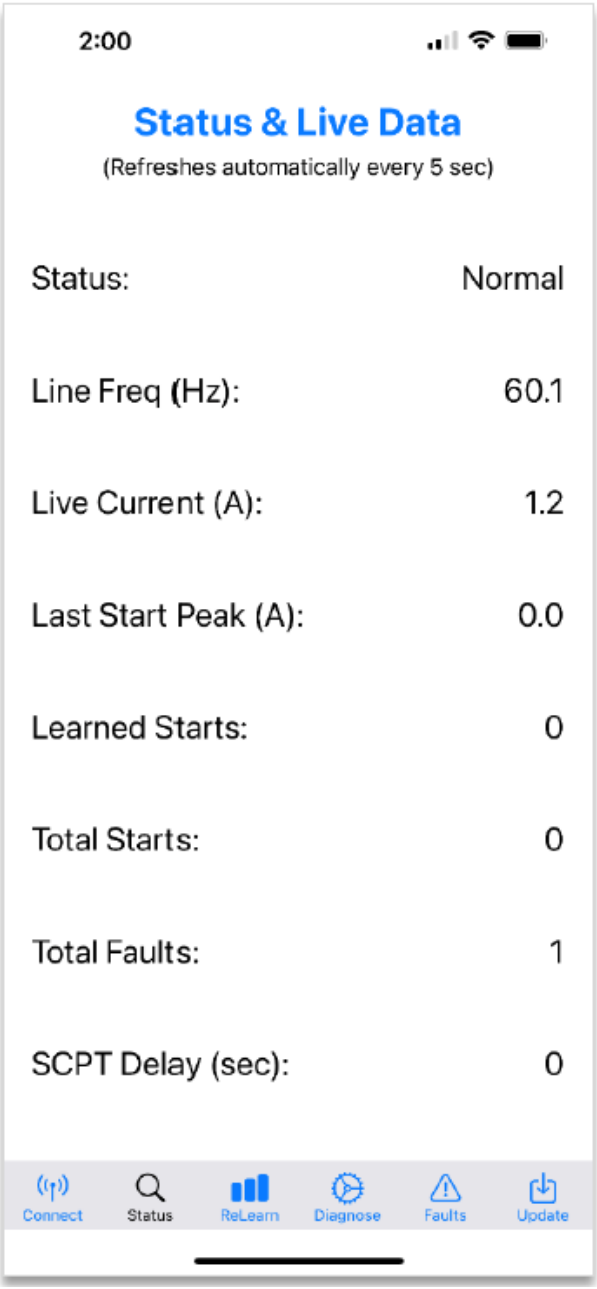
the example “Easy Start CFFA”.

Are the Required Permissions Given to the App? Is Bluetooth Turned-On in General?

- The app requires Bluetooth permissions from the smart device to use Bluetooth. This is done slightly differently between Android and iOS, then can differ further across their own versions. This is typically done from the main phone settings for all downloaded apps.
- Android users can see the Download the App section for some additional potential changes.
- Ensure that Bluetooth is enabled from the main Bluetooth settings of the smart device.
- Android users can the system’s built-in Bluetooth scanner to see if the Easy Start is broadcasting. If you see the Easy Start’s Bluetooth ID in the list of devices the scanner can hear, but the Easy Start app does not find it, then it is likely a permission issue after checking the other recommendations.
- If it is not in the list then Easy Start may not be powered. iOS does not natively allow viewing these connections.

Status Tab

Once connected, tap the status tab along the bottom to switch to the Status & Live Data page, This page will show the current state of Easy Start and some basic diagnostic information.



Status

This shows the current status of the Easy Start. These mirror the LED code shown on the Easy Start circuit board. Visit our Easy Start Knowledge Bank for the latest information on what these statuses mean, as well as troubleshooting steps to take.

Live Current

This is a measurement of the amperage passing through Easy Start's white wire, moment to moment. Measurements below 2 amps are effectively no current. Easy Start is very accurate in its operating range.
This is the bulk of a system's current draw but you must use other techniques if you want to know the total draw of the system, for example the motor start winding, fans, and pumps.

Last Start Peak

This is a measurement of the instantaneous peak current seen during the last start. This can vary over the learning starts and should not be considered "final" until 5 Learned Starts are completed. You can see this just under the Last Start Peak measurement. Even then it may be normal to shift over time.
This is not the measurement to use when attempting to size a generator or determine generator compatibility.

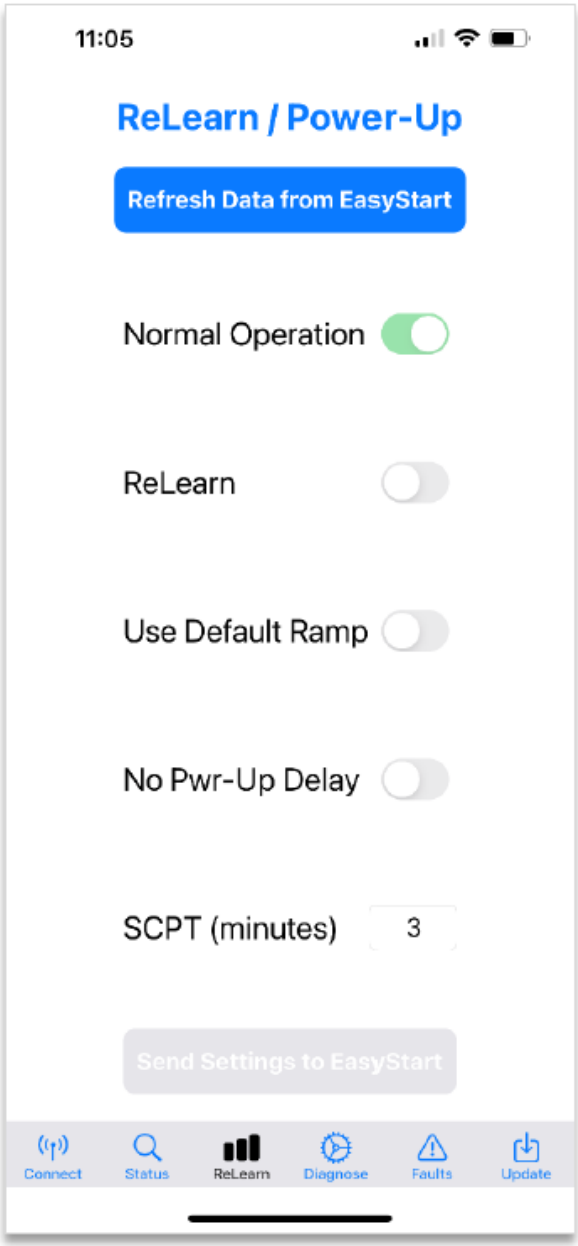
Please visit our Easy Start Knowledge Bank for the latest information on sizing a generator with Easy Start.
Note: Large variances in Last Start Peak current is typically not an issue. It is natural for this number to shift up and down as characteristics of the motor and environmental factors change over time. We always recommend to first try the system on your intended power source before using Last Start Peak as a troubleshooting tool. Even then, using the information in the Status or Diagnose Tab sections are best.

SCPT Delay

SCPT stands for Short-Cycle Prevention Timer. Power to Easy Start and the compressor will be regularly cycled during normal operation. This delay is (typically) set to 3 minutes when a cycle terminates and counts down to 0, where only then is a new cycle allowed to start if called for by the thermostat. The time left for this delay is shown here. Easy Start does not need to be actively powered for this logic to operate.

Re-learn Tab

Once connected, tap the Re-learn tab along the bottom to switch to the Re-learn / Power-Up page,



This page allows for modifying Easy Start behavior for certain situations that call for it. Tap “Refresh Data from Easy Start” at the top to get the latest settings stored in the connected Easy Start. If you make a change, tap “Send Settings to Easy Start” at the bottom to save the new settings to the connected Easy Start.

Normal Operation

This is the switch set to let Easy Start operate as advertised. If not yet learned (just installed), it will go through its 5 learning starts and use that information to deliver the most current reduction possible for every subsequent start.

Re-Learn

This switch is used to Re-learn (Factory Reset) the device and erase and previously learned data. See section Re-Learn (Factory Reset) Procedure for details on how and when to appropriately use this switch.

Use Default Ramp

This switch should only be used as a diagnostic tool, as it bypasses any learned data and applies fixed settings to start the motor every time. This could be useful to rule out bad learned data or just see the compressor start. Even then, it is best to not use this setting unless otherwise directed by Micro-Air.

No Pwr-Up Delay

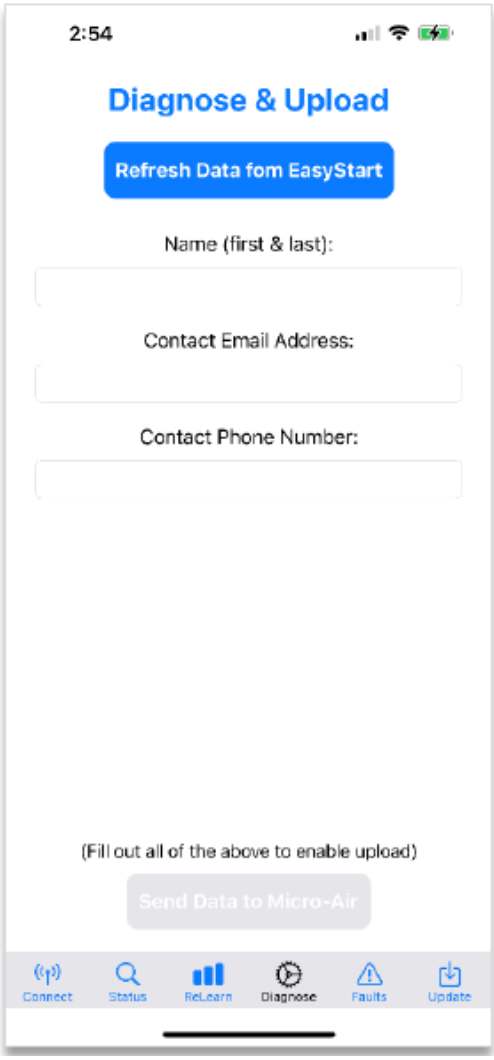
This switch is used to bypass Easy Start's fan delay. See section Setting No Power Up Delay for details on how and when to appropriately use this switch. The default setting of off is appropriate for most applications. This switch is enabled/disabled independently from the other switches.

SCPT (minutes)

This field allows modifying the length of the SCPT. The default time is 3 minutes and ranges are valid between 1 and 10 minutes. See section SCPT Delay for more information on what SCPT is.
Note: This may be increased in some circumstances as described in the Status Tab section. It should never be less-than 3 minutes unless your application requires it. See section Setting No Power Up Delay for more details on appropriate use.

Diagnose Tab

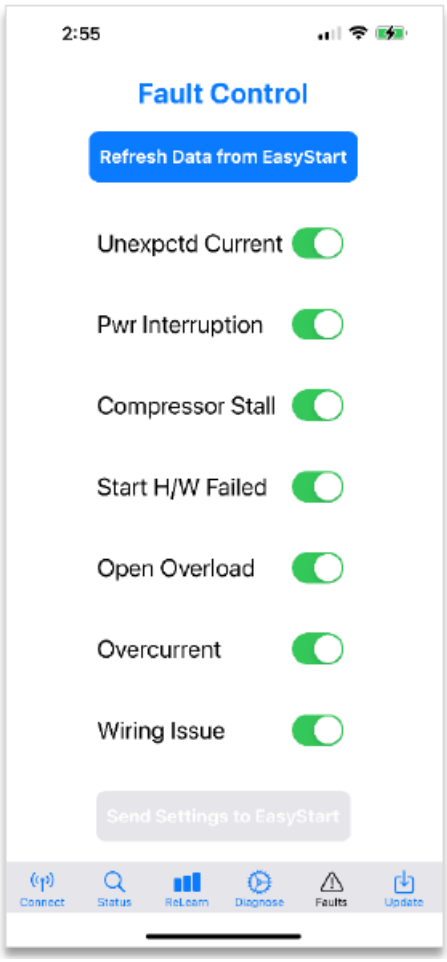
- Once connected, tap the Diagnose tab along the bottom to switch to the Diagnose and Upload page.



- Using this page will upload data from memory inside Easy Start to Micro-Air for evaluation.
- An internet connection on the smart device is required for this feature.
- The upload should be followed up with a report using the Micro-Air Contact Us Page on our website if you are not already working with a Micro-Air service technician.
- It should describe any issues you are having and what you have done so far.
- Fill out the fields appropriately to enable sending the data. Wait until the unit has run (or been stopped on a fault) for a minute or so.
- Tap the “Refresh Data from Easy Start” button to put the latest information into the app. Tap “Send Data to Micro-Air” to upload the data, then follow-up as described above.

Faults Tab

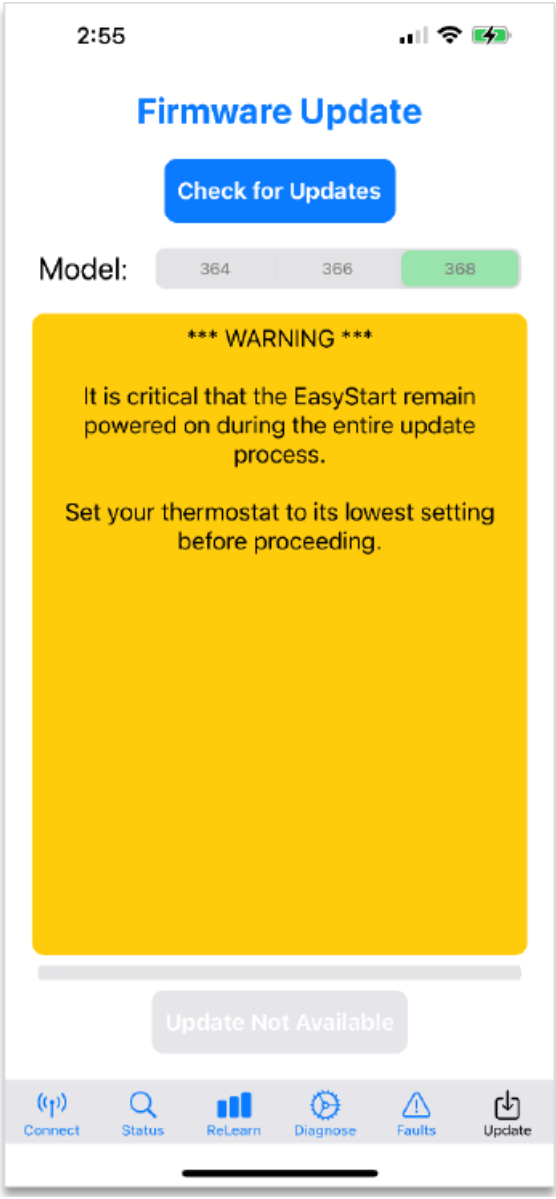
- Once connected, tap the Faults tab along the bottom to switch to the Fault Control page .



- A green switch means the fault detection for that fault is active.
- These faults should never be disabled unless expressly directed to by a Micro-Air service technician.
- Disabling these faults can damage the connected motor or Easy Start under some circumstances.

Update Tab

Once connected, tap the Update tab along the bottom to switch to the Firmware Update page. This page is used to get any updates that may become available over time. Tap the “Check for Updates” button at the top and follow the prompts to see if your Easy Start is the latest revision or to update Easy Start.
Easy Start is a mature product so there will not be many updates. Updates that may become available will likely be small tweaks really intended for newly produced units. Should any updates be recommended or required they will be posted to our social media and website pages, or as a notification within the app. Minor updates will not have public release notes associated with them.



Re-Learn (Factory Reset) Procedure

Easy Start is ready to learn out of the box and is completed on the first 5 successful cycles after installation. The learned data is then locked in for the life of Easy Start. Typically, there is no reason to re-learn (factory reset) this data, however some circumstances will call for it. This section provides step-by-step instructions on how to perform a re-learn on your Easy Start.

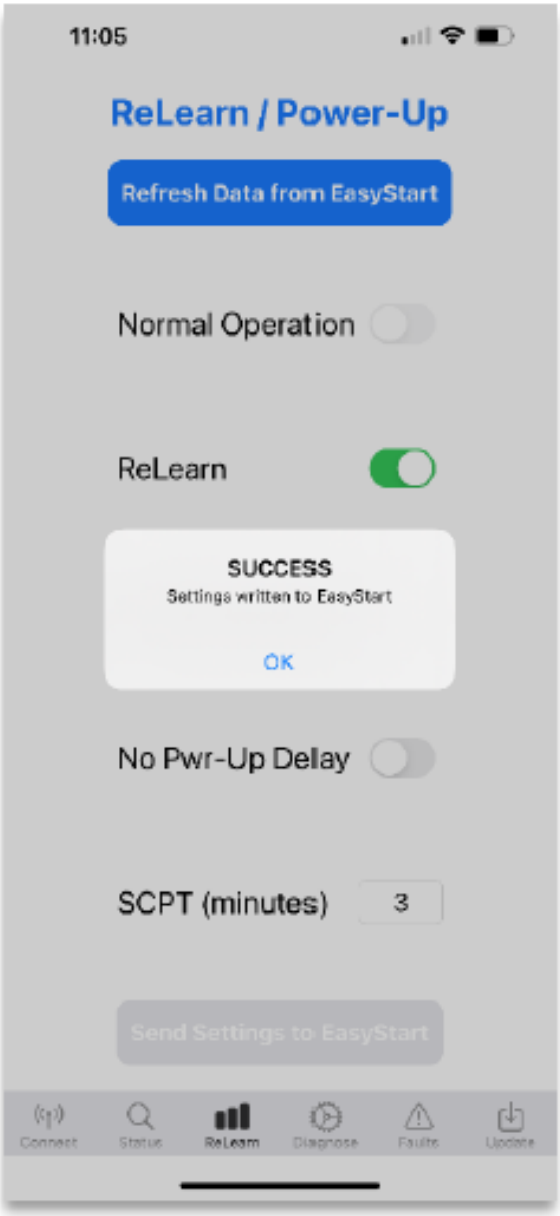
Mandatory cause for a re-learn

- Compressor run capacitor has been replaced
- Easy Start is going to be connected to a different motor than originally learned on
- Easy Start was at one-point miswired, then fixed, and is now throwing faults
- Initial learning was done on a power source that could not provide a good learning environment
- Contact Micro-Air if you are not sure using the Micro-Air Contact Us Page

Warning: There is no need at any point for any reason to remove the Easy Start lid for Bluetooth models. Doing so without instruction may void the warranty. If your system is non-Bluetooth, then you should navigate to the non-Bluetooth re-learn instructions in our Easy Start Knowledge Bank.

Apply the Re-Learn Setting

- First, apply power to Easy Start and connect to it using the app.
- Use section Connecting to Easy Start to do so if you are not familiar with this process.
- Heat pump or cooling operation can be used to learn but the same operation should be used throughout the process.
- Next, navigate to the Re-learn Tab. Tap the “Re-Learn” switch to green. Tap the “Send Settings to Easy Start” button. A successful change.



You can then disconnect from Easy Start or close the app.

Complete the 5 Learning Starts

NOTE: We recommend learning be done on shore or utility power with a circuit that would normally run the compressor without Easy Start. A generator or inverter may be used if that is all that is available. Be sure any generator economy mode is off during learning.
Power down the system after saving the change. The next power cycle will be the first learning start. Restore power and let the compressor run (not just the fan!) for at least 30 seconds. This learning cycle is then complete. Power the unit down and repeat this process four more times to complete the learning process. Easy Start is then ready for your limited power source.
If the first learning start is successful then very likely the rest will be as well. After the first start it is fine to walk away and let the unit cycle on and off naturally to complete learning. A fault in the first 15 seconds will discard the learning data for that start and not increment the Learned Starts counter.

Setting No Power Up Delay

Easy Start delays the start for several reasons, including faults and pressure equalization. However, some applications need to have the compressor immediately start so Easy Start can be integrated into the system. These systems must manage the start and fault delays if the Easy Start delays are disabled. This section provides step-by-step instructions for bypassing the Easy Start start delays.

Compressor Monitoring Systems (CMS)

Some home A/C units may have a compressor monitoring system (CMS). A CMS is part of the A/C control system and wants to see that the compressor immediately starts when told to. Easy Start interferes with this operation and so both Easy Start timers should be bypassed for CMS integration as described below.
NOTE: Part of CMS operation is that the A/C will shut down as a fault when it detects the Easy Start delays, removing power to Easy Start. This is typically not enough time to establish an Easy Start connection and make the changes. You will have to temporarily connect the Easy Start black and white wires to active line voltage so you can make these changes. This document does not describe other considerations such as identifying a CMS or special CMS wiring instructions during installation. These are described in our Easy Start Generic Home Installation Guide on our Easy Start Knowledge Bank.

Apply the Timer Bypass Settings

Warning: These changes should never be performed unless required to do so by your application. Removing these delays inappropriately can damage the motor or Easy Start. Use the Easy Start Generic Home Installation Guide or Micro-Air Contact Us Page to be sure.
First, apply power to Easy Start and connect to it using the app. Use section Connecting to Easy Start to do so if you are not familiar.

Setting to Bypass the Fan Delay

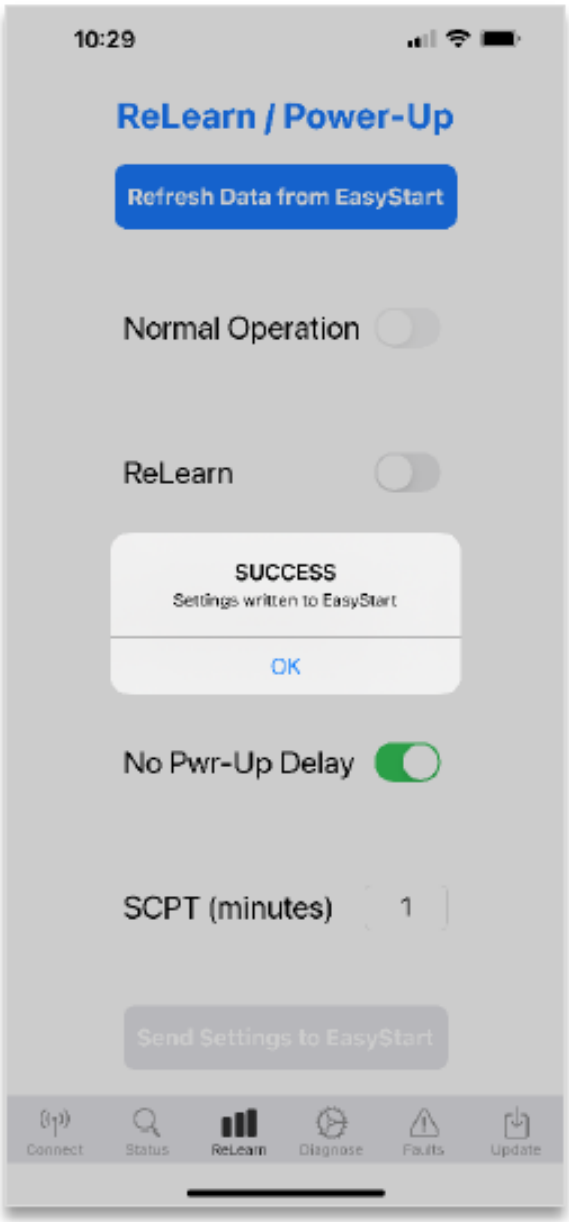
Easy Start will have a 5 second or so delay between when it is powered and when it starts the compressor to allow a fan to power up first. Navigate to the Re-learn Tab. Tap the “No-Pwr-Up Delay” switch to green. This will start the compressor as soon as Easy Start is powered.

Setting to Bypass the Short-Cycle Timer Delay

Easy Start will not allow a new cycle to occur for the entered number of minutes after a previous cycle has ended. Tap the SCPT (minutes) field and modify it to the number “1”. This is as short as allowed a delay but is short enough to prevent interference.

Save the Changes to Easy Start

Tap the “Send Settings to Easy Start” button. A successful change.



Easy Start will use these settings for each new cycle.
If you had to make temporary wiring changes to power Easy Start, return them now to the appropriate permanent wiring configuration.

Additional Resources

This document references various other Micro-Air resources and are listed here.
Easy Start Knowledge Bank
Where all Easy Start resources are saved, including FAQs, articles, procedures, and troubleshooting guides.
http://www.micro-air.com/kb_easystart.cfm
Easy Start Generic Home Installation Guide
A guide for installing in any home system with notes on adapting to a compressor monitoring system.
http://www.micro-air.com/kbeasystart/articles_installation/easystart_Home_AC_Wiring_Guide.cfm
Micro-Air Contact Us Page
Use this page for sending specific inquiries about any of our products https://www.micro-air.com/contact_microair.cfm
Micro-Air Main Website
https://micro-air.com/

Documents / Resources

	micro-Air ASY-364-X20-IP EasyStart Advanced Soft Starters [pdf] User Manual ASY-364-X20-IP, EasyStart Advanced Soft Starters, ASY-364-X20-IP EasyStart Advanced Soft Starters, Advanced Soft Starters

References

- EasyStart Soft Starters Knowledge Bank - Micro-Air, Inc.
- EasyStart Home AC Wiring Guide - Micro-Air, Inc.
- Micro-Air - Come Chill With Us | Marine and RV AC Controls and Displays - Electronic Soft Starters
- Micro-Air, Inc. - Contact Us