

# HUSSMANN®

## CoreLink™

### Defrost Sync Setup



## IMPORTANT

Keep with controller for future reference!

## Application Manual

### Application Version 2.3.0 – 3.0.0

# TCP/IP Defrost Synchronization

## Introduction

CoreLink has the ability to synchronize defrost with other CoreLink case controllers. This coordination can be beneficial in low temperature case setups that operate below freezing.

A single CoreLink case controller can manage up to 8 adjacent controllers in the system. This communication occurs over TCP/IP protocol. Each controller must be configured with a specific IP address identifier compatible with the preferred network.

This system has the benefit of being completely isolated as a small system group, up to 9 controllers, and with the option to expand to a large store network operation.

## Hardware Requirements

- CoreLink Case Controller
- Ethernet Cable
- 16 Port Network Switch
- USB to Ethernet 2.0 Adaptor

Note:

USB to Ethernet adaptor must be Hussmann approved USB 2.0 unit. Generic adaptors could have compatibility issues.

## Optional

- Wireless Network Switch Router
- Wireless Miniature Router

## Software Requirements

- Application Version 2.3.0-3.0.0
- Web UI 1.4.0+

## System Setup

Defrost Sync Settings can be accessed within the CoreLink Web UI under *Config>Defrost*.

To access CoreLink Web UI, enter controller IP in open browser address bar. Click enter to launch the CoreLink sign-in page. Enter username/password credentials to enter site.

Check application version information in the system tab. Make sure the current application and Web UI are compatible before you continue.

## Assigning Controllers

Access the defrost menu for defrost sync settings. **ONLY** one CoreLink controller can be set to MASTER, all other controllers set to **SLAVE**.

## Defrost Sync Mode

To enable this mode, look for **Defrost Sync Mode** in the defrost menu.



DEFAULT = Disabled

Here users can set the controller as either DISABLE / MASTER / SLAVE.

During setup, the user will have to access each controller one at a time to set the defrost sync mode setting.

# TCP/IP Defrost Synchronization (cont.)

## Description of Operation

The master controller will establish connection with the slave controllers.

The defrost settings between all controllers should be similar as configured from Husmann factory. The only difference typically should be enabling this mode.

Should a user decide to use different settings, make sure all changes are applied equally across all controllers within the defrost sync group.

## Refrigeration

During normal running the master controller will communicate with the configured slave controllers.

## Defrost Sequence

Delay  
Defrost  
Drip  
Wait

Change defrost sequence timing in the Web UI under *Config>Defrost>Defrost Sequence*

When the master controller defrost countdown reaches 0:00 TIME, the master controller will begin the defrost sync operation. Defrost count can be viewed from the status page of the Web UI.

The master controller will enter defrost delay. The compressors will turn off and valves will move to 0%. A command is sent to the slave controllers to enter defrost delay. The master controller checks the status of all slave controllers until defrost delay is accomplished.

Each controller will independently manage itself for most of the defrost cycle.

Defrost Delay – Pump down, time before defrost outputs turn on.

Defrost – The main defrost period when defrost outputs are ON depending on controller configuration.

Drip – Time period that defrost output is OFF and coil is allowed to drip moisture.

Wait – Controller is in a wait status for the duration of its timer. During this state, the controller is waiting for the master controller to send END WAIT command.

When the master controller enters the wait period, it begins to check the status of the other slave controllers in the system.

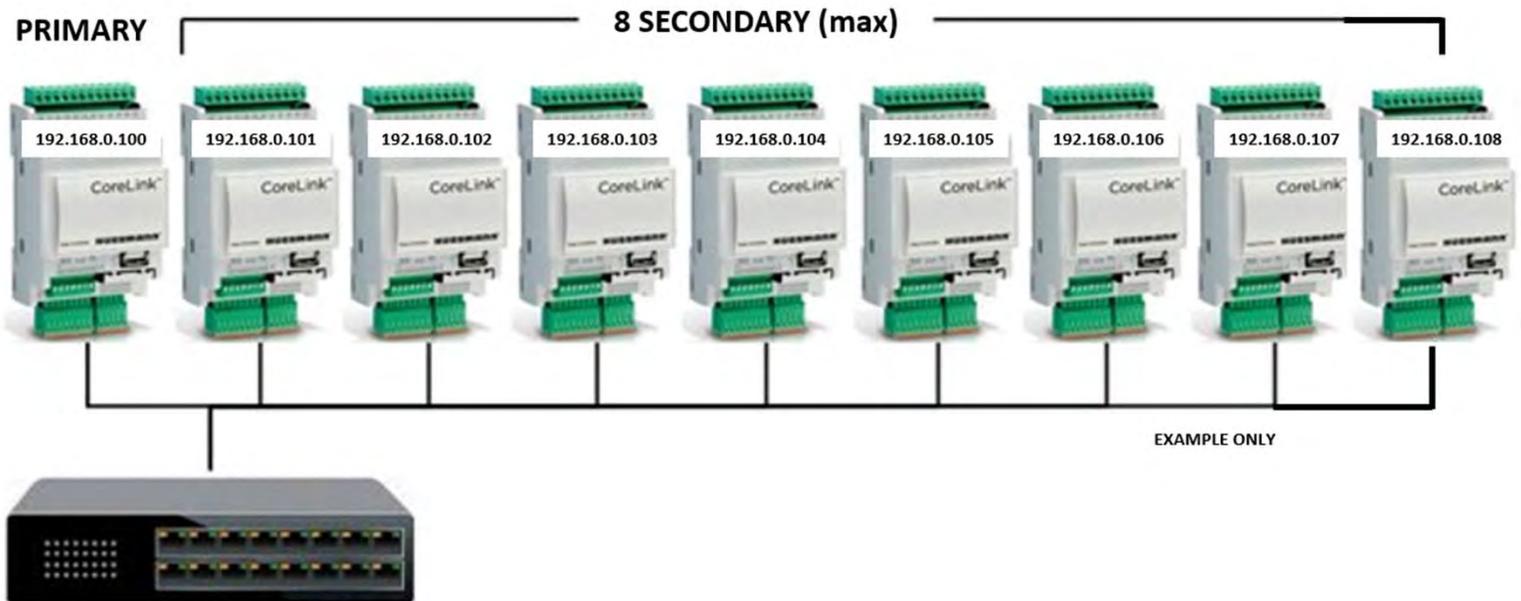
When all other controllers reach a wait status, the master controller will send out the END WAIT command. During this time period the master controller will end its own WAIT and the slave controllers. All controllers will enter refrigeration simultaneously.

In case of ERROR the SLAVE controllers will failsafe defrost on their own after one hour if a defrost command is not received from MASTER.

# CoreLink Network Setup

## 1. Determine network scheme

1.1 Preview store network legend to determine the CoreLink IP addresses and master/slave controller defrost scheme



## 2. Connecting to CoreLink and modifying the IP address

2.1 Log into CoreLink and navigate to System menu

2.1.1 Select the pencil icon to modify IP address

The screenshot shows the CoreLink web interface. The top navigation bar includes 'HUSMANN', 'Status', 'Config', 'Alarms', 'Commands', 'I/O', and 'System'. The 'System' menu item is highlighted with a red box. Below the navigation bar, the 'System Status' page is displayed. The status information is as follows:

Status: REFR	
Case Model Family: RL4W	Case Name:
Date: October 22, 2020	Time: 9:22:27 AM
Bios Version: 2019050800	Web UI Version: 1.8.0
Application Version: 2.6.0	Application Date Code: 61819
MAC Address: 00:50:b6:bf:6f:1c	IP Address: 192.168.0.250

# CoreLink Network Setup (cont.)

## 2.2 From the CoreLink network settings menu

2.2.1 Modify the IP address last 3 digits per network scheme

2.2.2 Select [Apply]

2.2.3 Return to System menu

**HUSSMANN** Status Config Alarms Commands I/O System Analysis Energy Diagnosis commission

**TCP/IP**

IP address: 192.168.0.100

Netmask: 255.255.255.0

Network: 192.168.0.0

Gateway: 192.168.0.2

DNS: 192.168.0.254

Secondary DNS: 8.8.8.8

**Port**

HTTP port: 80

HTTPS port: 443

Modbus slave port: 502

Isa WB port: 1131

Isa Binding port: 1113

Visoprog port: 6666

SSH port: 22

**Modbus RTU**

Modbus slave: Enabled

Address: 9

Baud Rate, Parity, Data Bits, Stop Bits: 9600,N,8,1

**Other**

VisoGraph Baud Rate: 38400

Timezone: DEFAULT

Clock synchronization: Disabled

NTP server: 193.204.114.232

**Apply** Restore Default Configuration

EXAMPLE ONLY

## 2.3 From the System menu

2.3.1 Reboot CoreLink to accept the new IP address

Reboot Controller **Reboot**

## 2.4 Log into CoreLink with new IP address

CoreLink x +

Not secure 192.168.0.100/level\_3/#/status

**HUSSMANN** Status

# Master CoreLink RLW Defrost Settings

## 1. Confirm the system clock is up to date

1.1 See Appendix A if system clock is out of sync

## 2. Modify RLW defrost parameters

2.1 Navigate to Defrost menu

2.1.1 Modify Defrost Time Mode to **Specific Time**

2.1.2 Modify the Defrost Start Time to **desired defrost time** for lineup and select [Apply]

2.1.2.1 User can [Cancel] the controller reboot

2.1.3 Modify Defrost Delay to **2 minutes**

2.1.4 Modify Max Wait equal to **(max duration - min duration + 1)** and select [Apply]

2.1.4.1 User can [Cancel] the controller reboot

2.1.5 Modify the Defrost Sync Mode to **Master**

2.1.6 Modify the Number of Slaves to **number of slave controllers**

2.1.7 Add the IP addresses of **slave controllers** from network scheme

2.1.8 Select [Apply] and select [OK] to reboot for new defrost settings to apply

**HUSSMANN** Status Config Alarms Commands I/O System Analysis Energy Diagnosis commission

Refrigeration  
Thermostat  
Defrost  
Fans  
Alarm Settings  
Anti-Sweat  
Water Management  
Auxiliary Sensors

### Defrost

Defrost Mode:	Electric
Defrost Termination Mode:	Temperature
Termination Temperature Sensor:	Defrost Terminate
Termination Temperature Setpoint:	48.0 (0 to 90) °F
Temperature Combination:	Min
Defrost Time Mode:	Specific Start Time
Defrost Interval:	24 (1 to 24) hours
Defrost Start Time:	12:00 AM
Defrosts Per Day:	1
Dual Temp Defrost Output:	Disable

Apply

### Defrost Sync

Defrost Sync Mode:	Master
Number of Slaves:	8
Slave IP 1:	192.168.0.101
Slave IP 2:	192.168.0.102
Slave IP 3:	192.168.0.103
Slave IP 4:	192.168.0.104
Slave IP 5:	192.168.0.105
Slave IP 6:	192.168.0.106
Slave IP 7:	192.168.0.107
Slave IP 8:	192.168.0.108

Apply

### Defrost Sequence

1. Defrost Delay:	2 (0 to 30) min
2. Min Defrost Duration:	15 (1 to 360) min
2. Max Defrost Duration:	45 (1 to 360) min
3. Drip Time:	0 (0 to 30) min
4. Max Wait:	31 (0 to 60) min

Apply

# Master CoreLink Insight Defrost Settings

## 1. Confirm the system clock is up to date

1.1 See Appendix A if system clock is out of sync

## 2. Modify Insight defrost parameters

2.1 Navigate to Defrost menu

2.1.1 Modify Defrost Time Mode to **Specific Time**

2.1.2 Modify the Defrost Start Time to **desired defrost time** for lineup and select [Apply]

2.1.2.1 User can [Cancel] the controller reboot

2.1.3 Modify Max Wait to **1 minute** and select [Apply]

2.1.3.1 User can [Cancel] the controller reboot

2.1.4 Modify the Defrost Sync Mode to **Master**

2.1.5 Modify the Number of Slaves to **number of slave controllers**

2.1.6 Add the IP addresses of **slave controllers** from network scheme

2.1.7 Select [Apply] and select [OK] to reboot for new defrost settings to apply

**HUSSMANN** Status Config Alarms Commands I/O System Analysis Energy Diagnosis commission

Refrigeration  
Sand Heat  
Defrost  
Fans  
Alarm Settings  
Anti-Sweat  
Wire Transmitters  
Auxiliary Sensors

### Defrost

Defrost Mode:	Electric
Defrost Termination Mode:	Digital
Termination Temperature Setpoint:	48.0 (0 to 90) °F
Temperature Combination:	Min
Defrost Time Mode:	Specific Start Time
Defrost Interval:	4 (1 to 24) hours
Defrost Start Time:	12:00 AM
Defrosts Per Day:	6
Dual Temp Defrost Output:	Disable

Apply

### Defrost Sync

Defrost Sync Mode:	Master
Number of Slaves:	8
Slave IP 1:	192.168.0.101
Slave IP 2:	192.168.0.102
Slave IP 3:	192.168.0.103
Slave IP 4:	192.168.0.104
Slave IP 5:	192.168.0.105
Slave IP 6:	192.168.0.106
Slave IP 7:	192.168.0.107
Slave IP 8:	192.168.0.108

Apply

### Defrost Sequence

1. Defrost Delay:	0 (0 to 30) min
2. Max Defrost Duration:	20 (1 to 360) min
3. Drip Time:	0 (0 to 30) min
4. Max Wait:	1 (0 to 60) min

Apply

# Slave CoreLink RLW Defrost Settings

## 1. Confirm the system clock is up to date

1.1 See Appendix A if system clock is out of sync

## 2. Modify RL4W defrost parameters

2.1 Navigate to Defrost menu

2.1.1 Modify Defrost Time Mode to **Interval**

2.1.2 Confirm the Interval & Defrost Per Day match the **master controller** and select [Apply]

2.1.2.1 User can [Cancel] the controller reboot

2.1.3 Modify Defrost Delay to **2 minutes**

2.1.4 Modify Max Wait equal to **(max duration - min duration + 1)** and select [Apply]

2.1.4.1 User can [Cancel] the controller reboot

2.1.5 Modify the Defrost Sync Mode to **Slave**

2.1.6 Select [Apply] and select [OK] to reboot for new defrost settings to apply

The screenshot displays the HUSSMANN control interface with the following settings:

- Defrost Mode:** Electric
- Defrost Termination Mode:** Temperature
- Termination Temperature Sensor:** Defrost Terminate
- Termination Temperature Setpoint:** 48.0 (0 to 90) °F
- Temperature Combination:** Min
- Defrost Time Mode:** Interval
- Defrost Interval:** 24 (1 to 24) hours
- Defrost Start Time:** 12:00 AM
- Defrosts Per Day:** 1
- Dual Temp Defrost Output:** Disable
- Defrost Sync Mode:** Slave
- Number of Slaves:** 1
- Slave IP 1-8:** (Empty fields)

**Defrost Sequence:**

1. Defrost Delay:	2	(0 to 30) min
2. Min Defrost Duration:	15	(1 to 360) min
2. Max Defrost Duration:	45	(1 to 360) min
3. Drip Time:	0	(0 to 30) min
4. Max Wait:	31	(0 to 60) min

# Slave CoreLink Insight Defrost Settings

## 1. Confirm the system clock is up to date

1.1 See Appendix A if system clock is out of sync

## 2. Modify Insight defrost parameters

2.1 Navigate to Defrost menu

2.1.1 Modify Defrost Time Mode to **Interval**

2.1.2 Confirm the Interval & Defrost Per Day match the **master controller** and select [Apply]

2.1.2.1 User can [Cancel] the controller reboot

2.1.3 Modify Max Wait to **1 minute** and select [Apply]

2.1.3.1 User can [Cancel] the controller reboot

2.1.4 Modify the Defrost Sync Mode to **Slave**

2.1.5 Select [Apply] and select [OK] to reboot for new defrost settings to apply

**HUSSMANN** Status Config Alarms Commands I/O System Analysis Energy Diagnosis commission

Refrigeration  
Superheat  
Defrost  
Fans  
Alarm Settings  
Anti-Sweat  
Valve Parameters  
Auxiliary Sensors

### Defrost

Defrost Mode:	Electric
Defrost Termination Mode:	Digital
Termination Temperature Setpoint:	48.0 (0 to 90) °F
Temperature Combination:	Min
Defrost Time Mode:	Interval
Defrost Interval:	4 (1 to 24) hours
Defrost Start Time:	12:00 AM
Defrosts Per Day:	6
Dual Temp Defrost Output:	Disable

Apply

### Defrost Sync

Defrost Sync Mode:	Slave
Number of Slaves:	1
Slave IP 1:	
Slave IP 2:	
Slave IP 3:	
Slave IP 4:	
Slave IP 5:	
Slave IP 6:	
Slave IP 7:	
Slave IP 8:	

Apply

### Defrost Sequence

1. Defrost Delay:	0 (0 to 30) min
2. Max Defrost Duration:	20 (1 to 360) min
3. Drip Time:	0 (0 to 30) min
4. Max Wait:	1 (0 to 60) min

Apply

# Validate Defrost Sync Group

## 1. Validate defrost group network configuration

1.1 Log into defrost group's master CoreLink controller

1.1.1 Navigate to Commands menu

1.1.2 Select **Defrost Sync Initiate** [Start]

The screenshot shows the HUSSMANN CoreLink controller interface. The top navigation bar includes 'Status', 'Config', 'Alarms', 'Commands', 'I/O', 'System', 'Analysis', 'Energy', and 'Diagnosis'. The 'Commands' menu is active, displaying a grid of control options. On the left, there are four rows for 'Controller Enable', 'Evap Fan', 'Cond Fan', and 'Exhaust Fan', each with a dropdown menu and an 'Apply' button. On the right, there are four rows for 'Defrost Initiate', 'Defrost Terminate', 'Defrost Sync Initiate', and 'Defrost Sync Terminate', each with a button. The 'Defrost Sync Initiate' button is highlighted with a red rectangular box.

1.2 All CoreLink configured within the defrost group should activate defrost and perform the configured defrost sequence

Date: May 4, 2021	Time: 11:15:16 AM
Status: DEFROST DELAY	Defrost Countdown: 24:00
Control Mode: Standard	Alarm: <span style="color: green;">OK</span>
BAS Status: <span style="color: red;">Offline</span>	Defrost Sync Mode: Master
<hr/>	
Date: May 4, 2021	Time: 11:16:04 AM
Status: DEFROST DELAY	Defrost Countdown: 24:00
Control Mode: Standard	Alarm: <span style="color: green;">OK</span>
BAS Status: <span style="color: red;">Offline</span>	Defrost Sync Mode: Slave

# Appendix A- Syncing System Clock

There are situations in which the user finds that the CoreLink controller does not display the correct time. This Appendix Section will detail two methods of setting the time on the CoreLink.

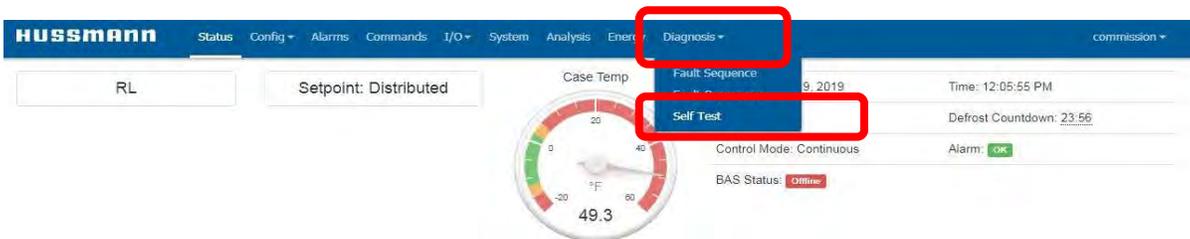
## 1. Connect to CoreLink

1.1 Connect to the CoreLink controller following the steps outlined in Appendix A – 1. CoreLink Quick Connection Guide.

## 2. Self Test Function

2.1 Select the “Diagnosis” tab.

2.2 Select “Self Test” tab



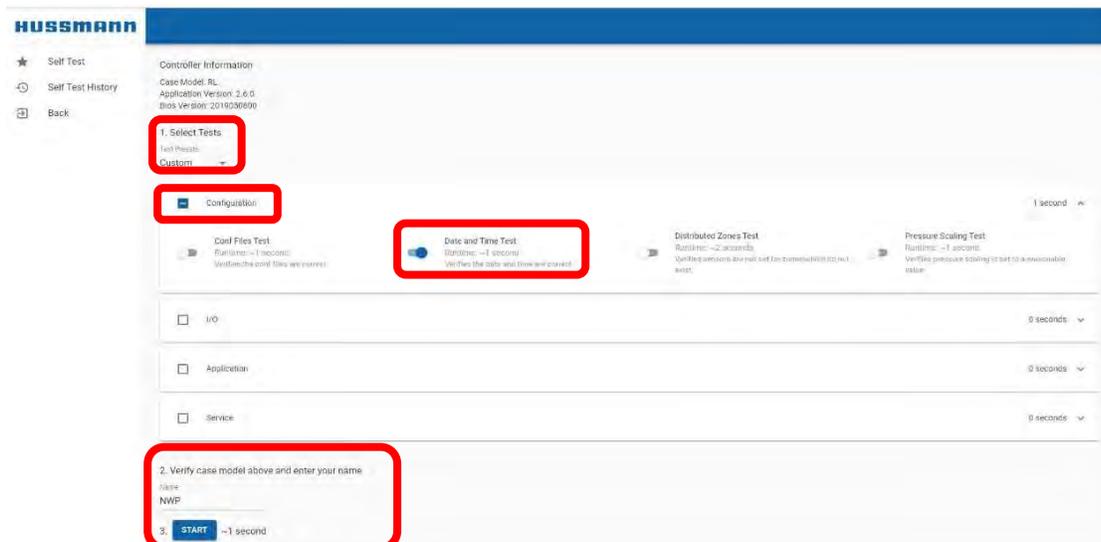
## 3. Configure and perform “Date and Time” test

3.1 Select “Custom” from “1. Select Tests”

3.2 Check “Configuration” then “Date and Time Test”. All other tests should not be selected automatically

3.3 Enter Name “2. Verify case model above and enter your name”

3.4 Select “Start”

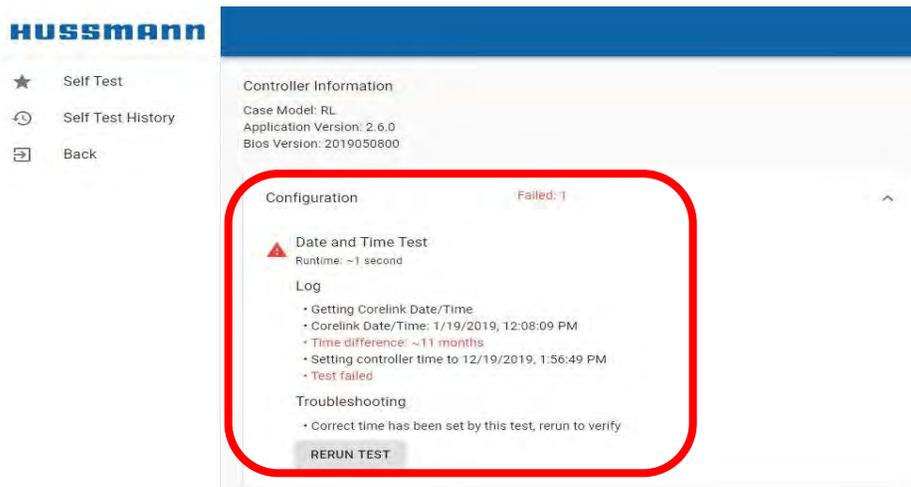


# Appendix A- Syncing System Clock (cont)

This section continues the Setting Time steps

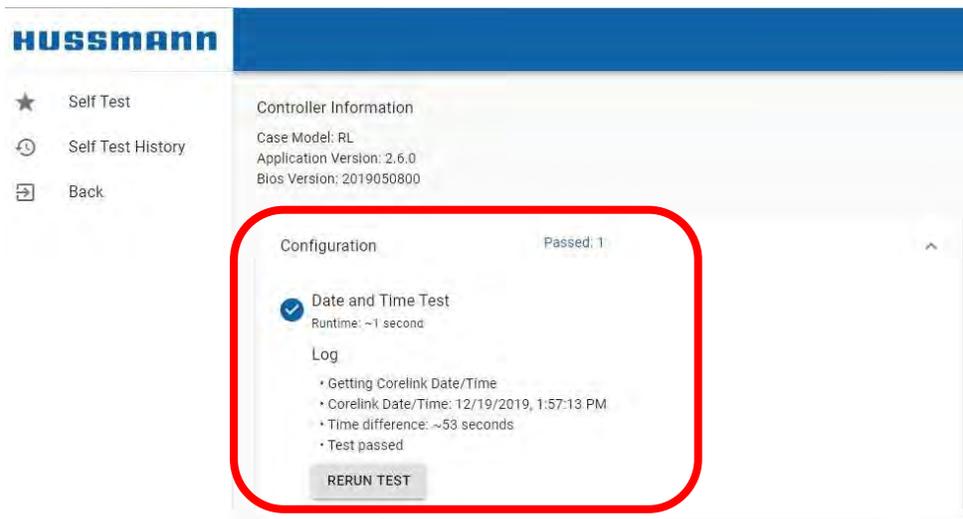
## 4. Test results

- 4.1 Setting time test should fail
- 4.2 Results will display log showing results of test
- 4.3 Correct time will automatically be set



## 5. Alternate method

- 5.1 Select "SYNC TIME" to sync time with smart device
- 5.2 Rerun test
- 5.3 Test should pass



# Appendix B- IP Recovery

This Appendix Section details the process of accessing the CoreLink controller when the IP address of the controller is unknown. This method is similar to programming a CoreLink controller via the USB stick method detailed in **Section 4. Insert USB Flash Drive.**

## 1. Obtain Software Package

Contact Hussmann for specific software package for **IP Address Recovery**. This file is "**TempIP.zip**". You will need to provide Hussmann with the following:

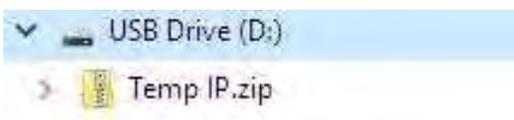
- Customer (site) Information
- Model and Serial number of case
- Case is endcap or center case
- Type of expansion device
- Refrigerant type

Based on this information, you will be emailed the "**TempIP.zip**" file ready to place on a Flash Drive.

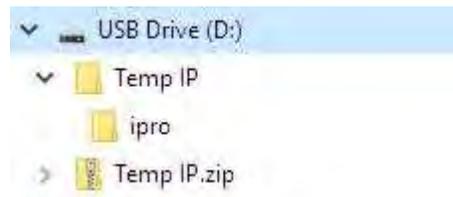
## 2. Copy/Extract TempIP.zip File

**READ AND PERFORM THE FOLLOWING STEPS CAREFULLY. FAILURE TO DO SO WILL RESULT IN THE CONTROLLER NOT RECOVERING PROPERLY.**

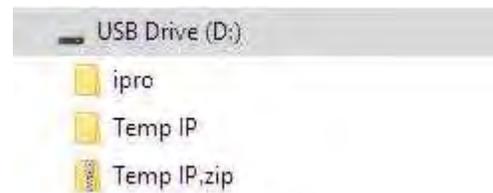
Copy the "**TempIP.zip**" file onto your flash drive. No other files should be on this drive. Below is what this will look like on the flash drive when using Windows:



Extract the folders/files. This is done by right-clicking the file and selecting the option from a pop-up menu. The files on the flash drive will now look like this:



Next, move the **ipro** folder out of the parent folder by dragging and dropping the file directly into the USB Drive folder:



Finally, delete all files EXCEPT the **ipro** folder. The files in the flash drive will look like this:



*See next page for further steps*

# Appendix B- IP Recovery (cont)

This Appendix Section continues to detail the process of accessing the CoreLink controller when the IP address of the controller is unknown. This method is similar to programming a CoreLink controller via the USB stick method detailed in **Section 4. Insert USB Flash Drive**.

## 3. Configure IP

While the CoreLink is powered, insert USB drive into USB port on controller. Allow 1 minute for the IP Address update to take place. Remove drive and connect laptop. One of the following methods can now be used to recover and set the controller IP Address.

### Method 1. CoreLink WebUI

#### Method

- Open your browser and type **192.168.0.250** into the navigation bar at the top of the window
- Navigate to the SYSTEM tab
- Click the "PENCIL" icon next to the IP Address
- Select "Restore Default Configuration" to set the default IP Address of 192.168.0.250 **OR** enter the IP Address desired.
- Reboot controller

### Method 2. Dixell Panel

#### Method

- Open your browser and type **192.168.0.250/panel** into the navigation bar at the top of the window
- Navigate to the CONFIGURE tab
- Select "Restore Default Configuration" to set the default IP Address of 192.168.0.250 **OR** enter the IP Address desired.
- Reboot controller