



**Copeland Scroll
F-Line Condensing Units**

F-Line



Features

- Scroll Compressors
- Air & Water Cooled Condensers
- Flat Metal & Copevap™ Bases
- 1 to 13 HP
- 1, 2 & 4 Fans
- 14" to 44" Wide

Applications

- **Walk-Ins**
- **Reach-Ins**
- **Display Cases**

Multi-Ref Chassis Explanation

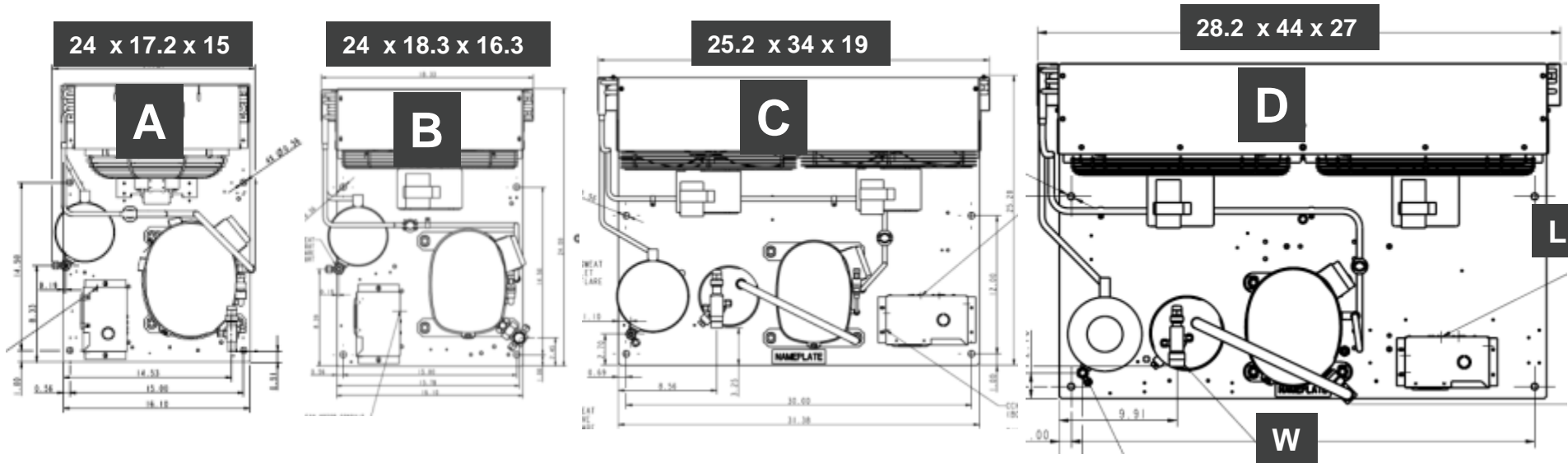
A multi-ref unit can be operated with any refrigerant and application listed for that unit in OPI.

There are capacity differences between refrigerants and applications so it is important that you review electrical, mechanical and performance specs prior to selecting a unit.

Example:
FFAP-020Z With ZS13KAE Compressor

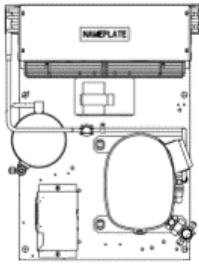
	Refrigerant	Capacity
Condition: -10 / 120	R404A	6310
	R404A	12150
Condition: 20 / 120	R134a	8250
	R22	13050
	R407A	12400
	R407C	12100
Condition: 45 / 130	R404A	18050
	R134a	13200
	R22	20100
	R407A	19200
	R407C	18650

Condenser Sized For Largest Capacity = Chassis C
404A LT And R134a Have Significantly Less Capacity = Chassis B



Horsepower Does Not Guarantee An Accurate Cross

Old Model



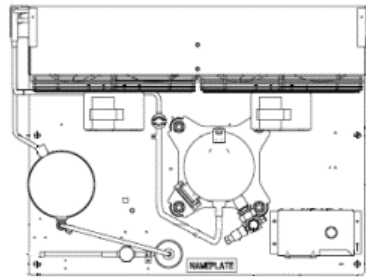
FJAL-B200

Capacity

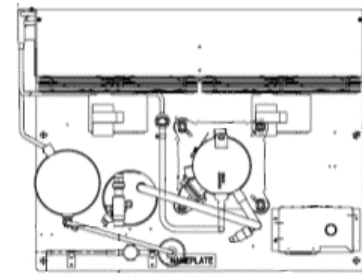
Size

Cost

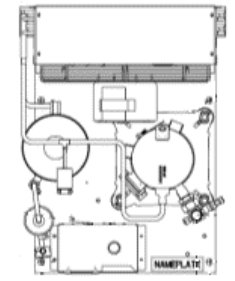
Cross Options



FPAK-020Z



FFAP-020Z



FPAK-013Z



Cross References Must Be Made By Capacity At The Operating Conditions

Multi-Ref Electrical Explanation

Compressors are run at a UL specified condition and then the voltage is dropped in steps until the protector trips

The current where the protector trips is the MCC.

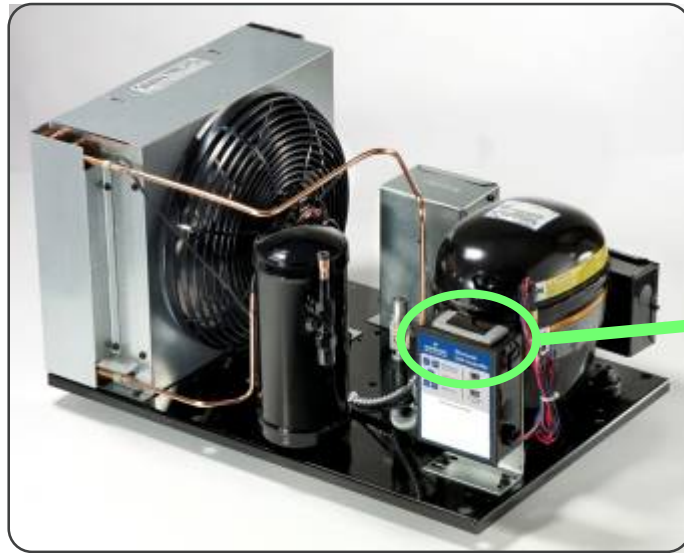
$$RLA = mcc / 1.4$$

$$MCA = 1.25 \times (RLA + (\text{fan amps} + .3))$$

Each refrigerant will trip at a different current but multi-ref units must use the highest of all the refrigerants

In some cases, the new models will have higher MCA and fuse size requirements because of this

Electronic Unit Controller



Key Functions

- Controls Unit Based On Suction Pressure
- Fan Cycling With Mid Coil Temperature*
- Discharge Line Protection*

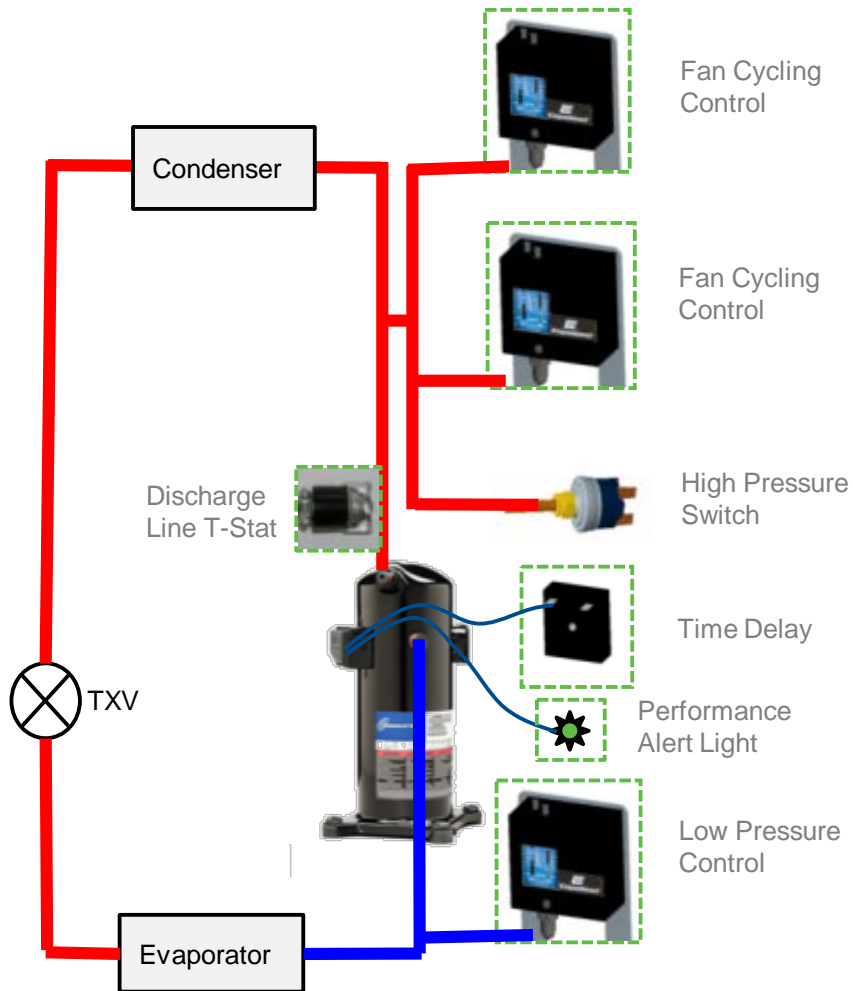
* Feature Dependent On System Design

Key Benefits

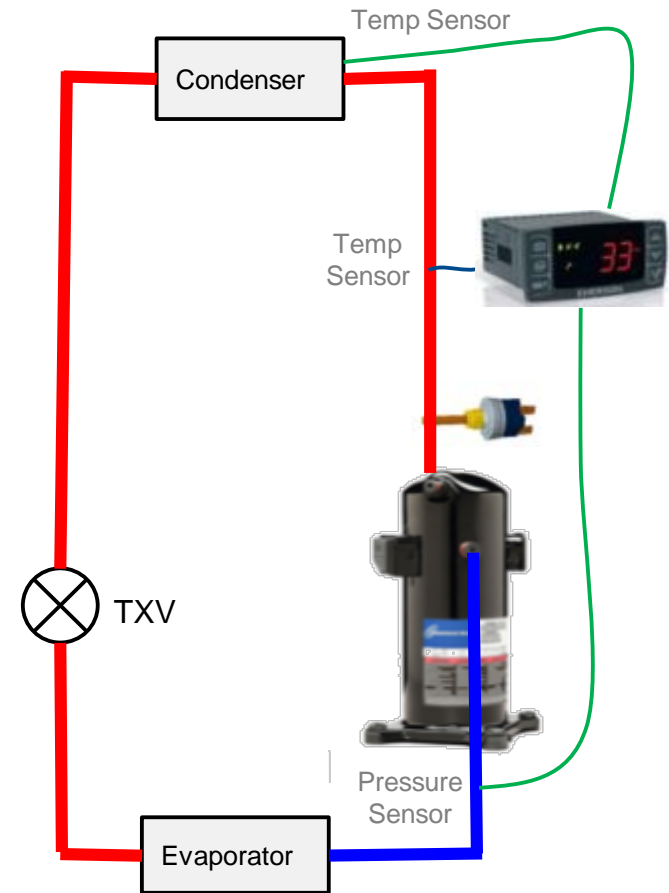
- Quick & Easy Set-Up
- Improved Set-Point Accuracy
- Enables Multi-Refrigerant Product
- Trouble Shooting Diagnostics
- Added System Safeguards

Unit Simplification

Mechanical Controls



Electronic Control



Mechanical Vs Electronics

Ease Of Use – Adjusting Pressure Controls

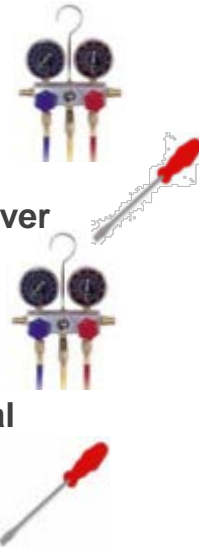
Mechanical



- Coarse Adjustments
- Drift Over Time

Steps For Adjusting Mech. Low Pressure Control

1. Hook Up Gage Set
2. Read System Pressure
3. Adjust The Mechanical Pressure Control With A Wrench Or Screwdriver
4. Allow System Pressures To Settle
5. Read System Pressures
6. Final Adjustment To The Mechanical Pressure Control
7. Remove The Gage Set



Up To 25 Minutes!

Electronics



- Fine Adjustments
- 1.5% Accuracy Over Life

Steps For Adjusting Electronic Low Pressure Control

1. Hold 3 Seconds To Enter Menu (PSI Light Flashing)
2. Cycle Through Menu Options
3. Select Value
4. Adjust Value
5. Store Value



Less Than 1 Minute!



Digital Temperature Display



- Press The Up Arrow Button To Display The Current Condenser Temperature.
- Press The Down Arrow Button To Display The Current Discharge Line Temperature.

Electronic Unit Control Service Parts

- **Controllers:**
 - 115V Without Fan Cycling (943-0152-00)
 - 115V With Fan Cycling (943-0154-00)
 - 230V Without Fan Cycling (943-0153-00)
 - 230V With Fan Cycling (943-0155-00)
- **Sensors:**
 - Low Pressure Transducer / Cable (929-0114-00)
 - Discharge Line Temperature Sensor (929-0113-00)
 - Mid Coil Temperature Sensor (929-0114-01)

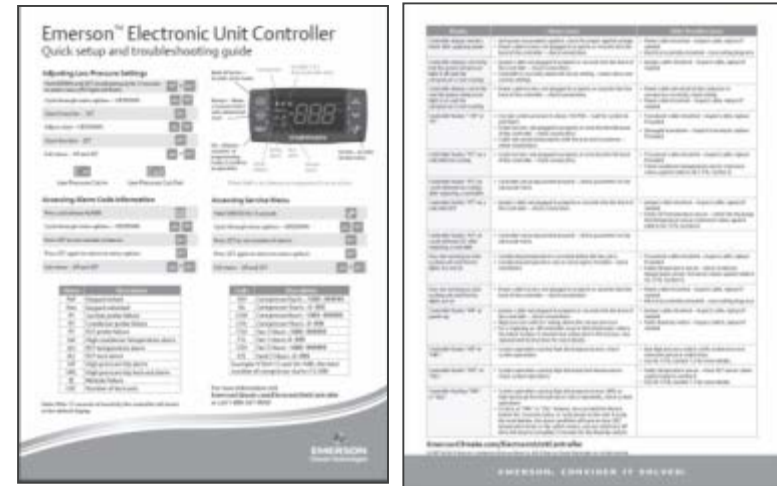
Important:
Replacement Control Set Points Must Be Set to Match Settings Listed On Unit Label.

Information Is At Your Finger Tips

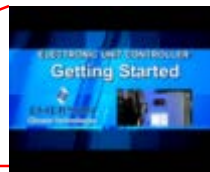
On The Box



In The Box



On The Unit



In The Unit

BUTTON	DESCRIPTION
SET	Displays set point In programming mode it confirms a condition.
RESTART	Allows a manual restart and a fixed band reset.
SERVICE	To enter the service menu.
Alarm menu	To enter the Alarm menu.

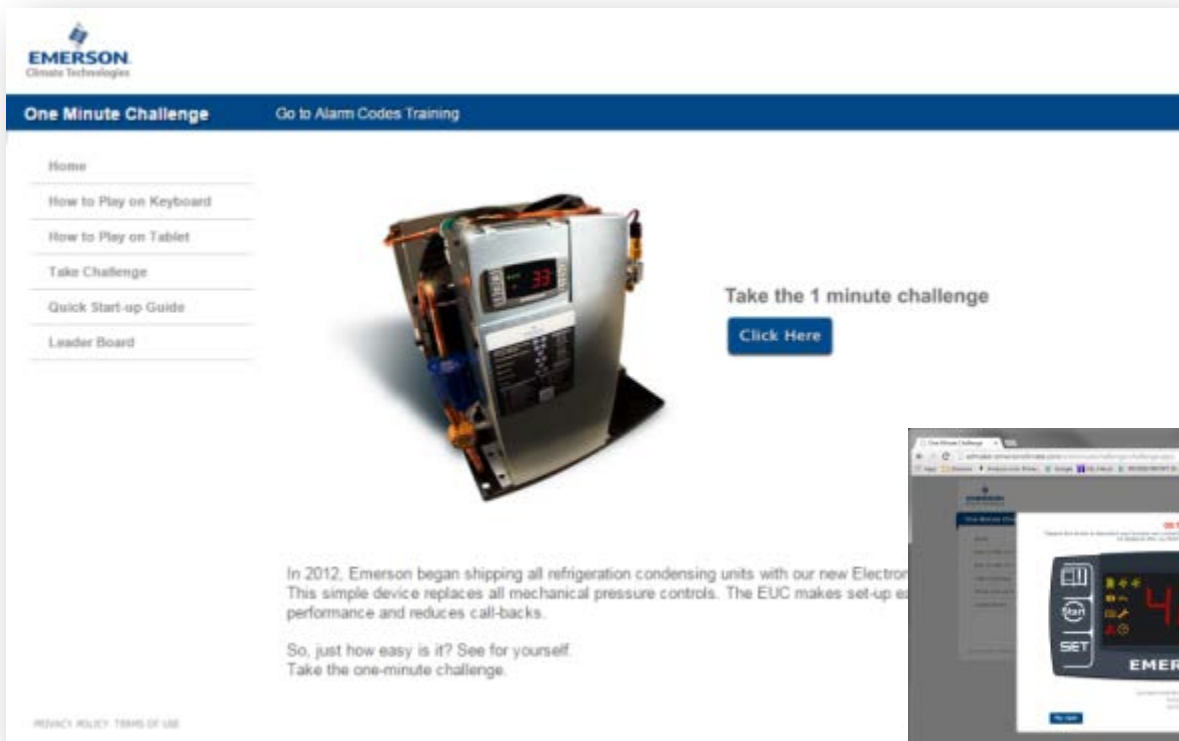
Note: Fan Cycling (If Present) is controlled by the Saturated Condenser Temperature for equal runtime

Default Factory Settings For Replacement Controller
 On = 25 AC = 6 P15 = 135 dLy = 0 D6n = 4 SP1 = 34 dA3 = Fan
 COU = 15 dno = 0 P15 = 15 SAMP = no DA3 = YES H1 = 11 dA2 = Fr2
 LS = 7 Con = 5 Unit = PSI On = 2 IJP = CL SP2 = 94 P3P = YES
 US = 135 CoF = 5 Cf = F dFF = 5 dL2 = no HF2 = 15 P2C = rnC
 ods = 2 P1I = -15 rES = in Nub = 3 I2P = CL rFA = 2 P3C = CPA

Controller Part Number: 543-0135-00
 Program Part Number: 300-0084-00
 Call 1-888-367-9950 or
 see www.EmersonClimate.com/EUC for more details

EUC One Minute Challenge

- <http://emersonclimate.com/oneminutechallenge/>



The screenshot shows the landing page for the Emerson One Minute Challenge. At the top left is the Emerson Climate Technologies logo. Below it is a navigation menu with links: Home, How to Play on Keyboard, How to Play on Tablet, Take Challenge, Quick Start-up Guide, and Leader Board. The main content area features a large image of a refrigeration condensing unit with a digital display showing '33'. To the right of the image is the text 'Take the 1 minute challenge' with a blue 'Click Here' button. Below the image, there is a paragraph of text: 'In 2012, Emerson began shipping all refrigeration condensing units with our new Electron... This simple device replaces all mechanical pressure controls. The EUC makes set-up eas... performance and reduces call-backs. So, just how easy is it? See for yourself. Take the one-minute challenge.'



This screenshot shows a close-up of the simulator interface. It features a digital display with the number '42.0' in red. The display is framed by a black border with 'EMERSON' at the bottom. On the left side of the display, there are buttons for 'SET' and 'STOP'. On the right side, there are up and down arrow buttons and a power button. The background is a light gray with some faint text and icons.



This screenshot shows another view of the simulator interface. The digital display shows 'P3' in red. The layout is similar to the previous screenshot, with 'EMERSON' at the bottom of the display frame and control buttons on the sides. The background is white with some text and icons.

On-Line Simulator For Set Point And Troubleshooting Training.