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.

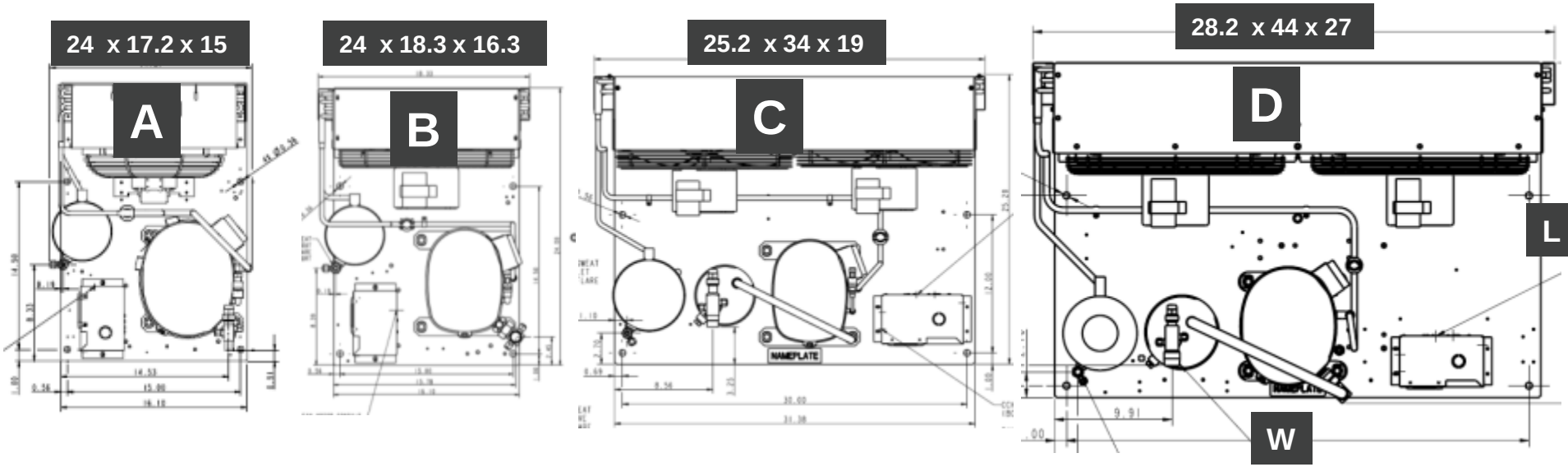
There are capacity differences between refrigerants and applications so it is important that you review electrical, mechanical and performance specs prior to selecting a unit.

Example:
FFAP-020Z With ZS13KAE Compressor

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

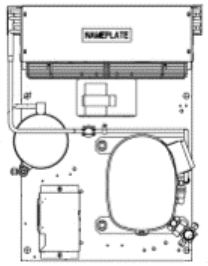
Condenser Sized For Largest Capacity = Chassis C

404A LT And R134a Have Significantly Less Capacity = Chassis B



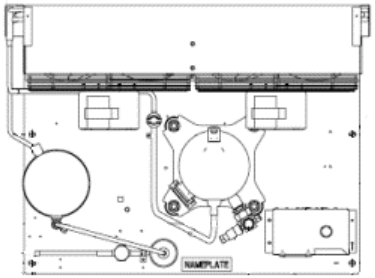
Horsepower Does Not Guarantee An Accurate Cross

Old Model

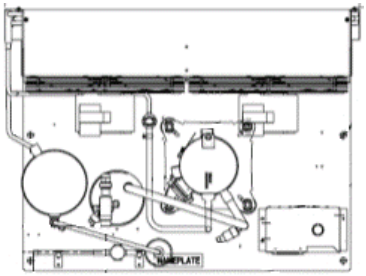


FJAL-B200

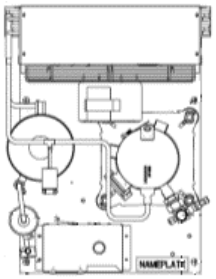
Cross Options



FPAK-020Z



FFAP-020Z



FPAK-013Z

	FPAK-020Z	FFAP-020Z	FPAK-013Z
Capacity	✗	✓	✓
Size	✗	✗	✓
Cost	✗	✗	✓

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.

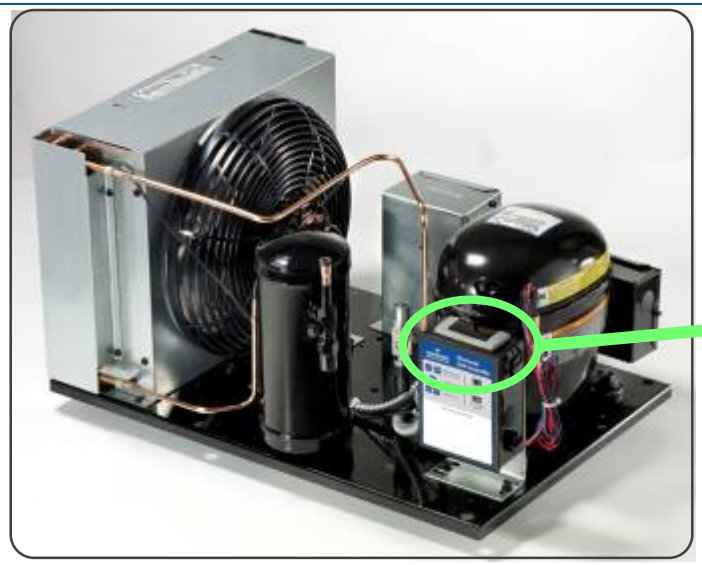
RLA = mcc / 1.4

MCA = 1.25 x (RLA + (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*

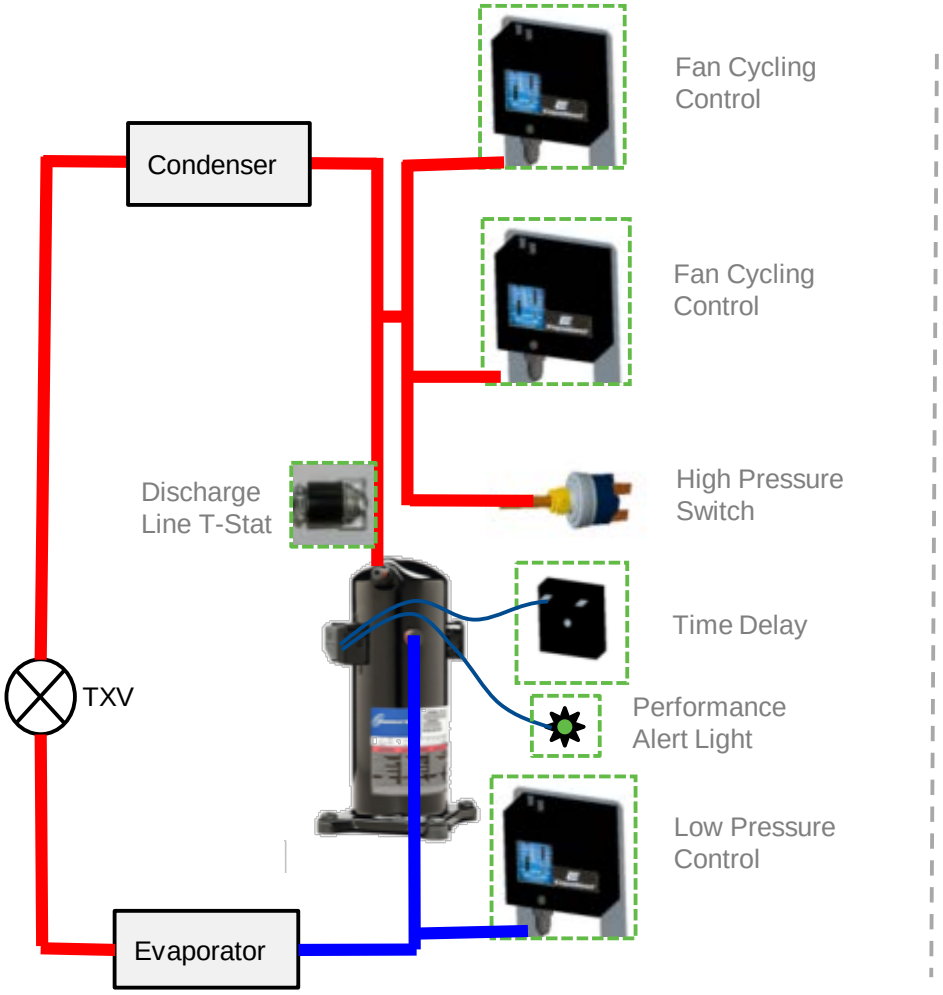
* Feature Dependent On System Design

Key Benefits

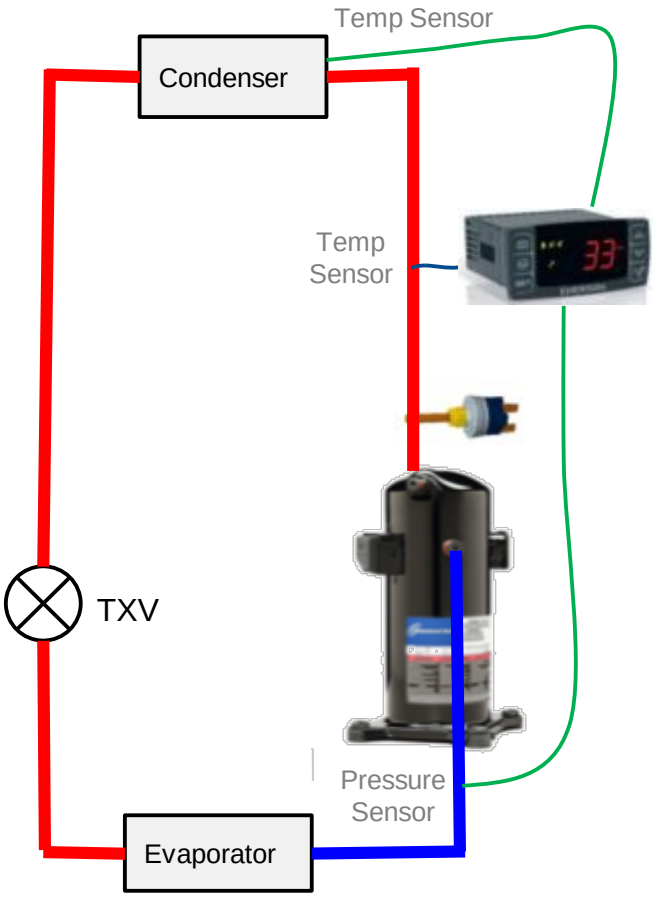
- Quick & Easy Set-Up
- Improved Set-Point Accuracy
- Enables Multi-Refrigerant Product
- Trouble Shooting Diagnostics
- Added System Safeguards

Unit Simplification

Mechanical Controls

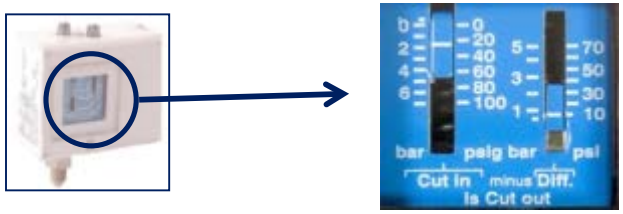


Electronic Control



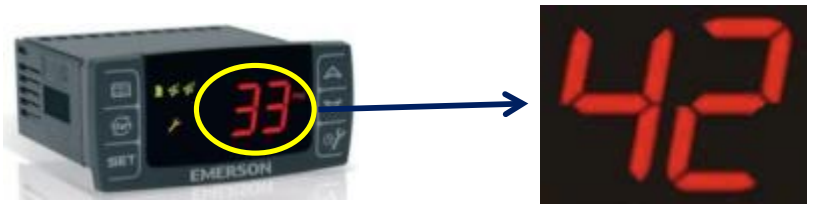
Mechanical Vs Electronics
Ease Of Use – Adjusting Pressure Controls

Mechanical



- Coarse Adjustments
- Drift Over Time

Electronics



- Fine Adjustments
- 1.5% Accuracy Over Life

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!

Steps For Adjusting Electronic Low Pressure Control

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

Less Than 1 Minute!

EMERSON Climate Technologies

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:

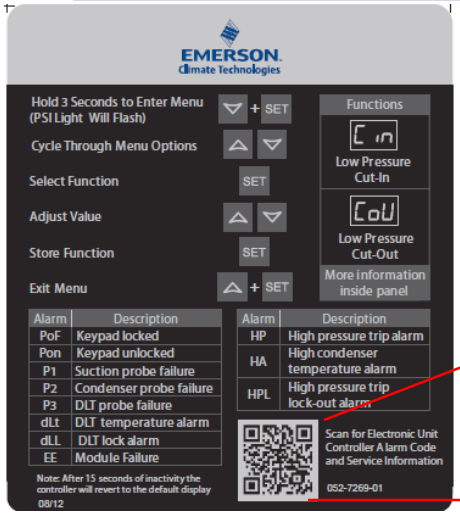
Replacement Control Set Points Must Be Set to Match Settings Listed On Unit Label.

Information Is At Your Finger Tips

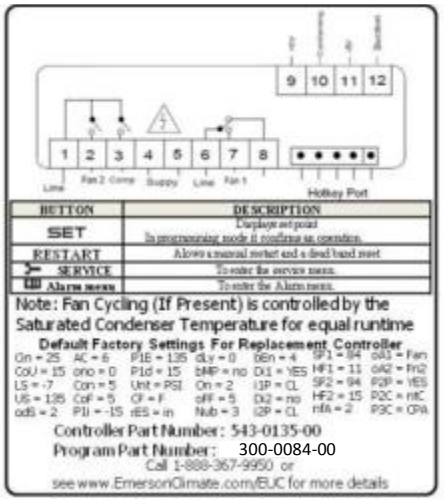
On The Box

In The Box

On The Unit

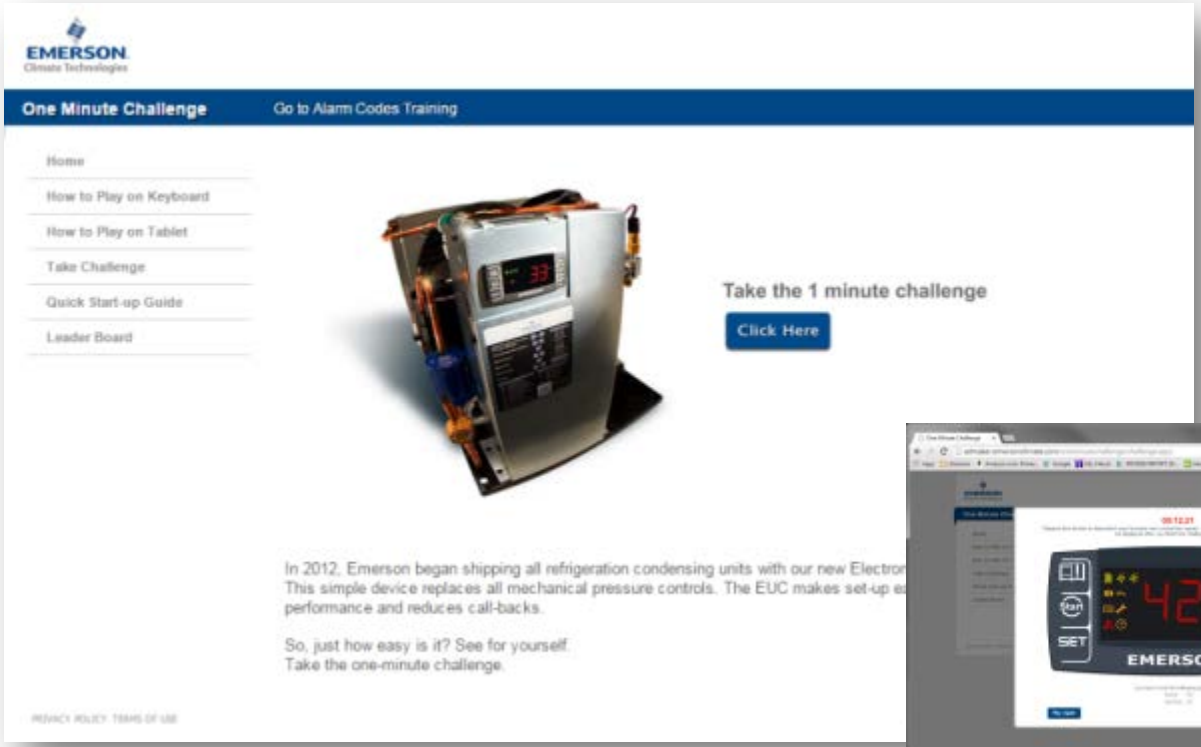


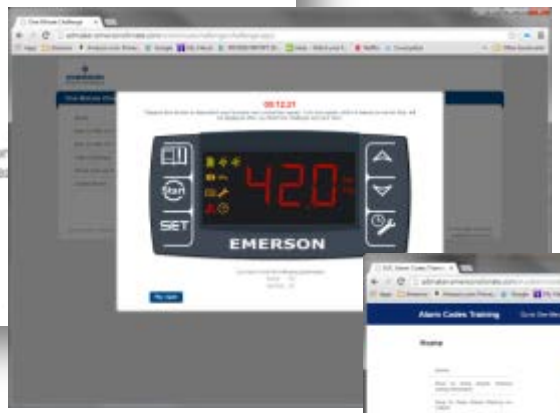
In The Unit



EUC One Minute Challenge

- http://emersonclimate.com/oneminutechallenge/





On-Line Simulator For Set Point And Troubleshooting Training.