



# HOW TO MAKE THE LOW- GWP TRANSITION EASY

Tim Orr | 06-05-2024





# LOW-GWP TRANSITION

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## Agenda

- EPA Requirements
- A2L Requirements
- ADP's Solution
- Myths and Misinformation
- Q & A
- Key Take Aways

# LOW-GWP TRANSITION

## EPA Requirements

### Compliance Dates – US CFR

- May not install systems using  $\geq 700$  GWP refrigerant beginning Jan. 1, 2025
- May sell components using  $\geq 700$  GWP indefinitely
  - E.g. condensing units, compressors, evaporators
- **Latest from EPA:**  
**EPA issued an interim final rule to allow inventory of higher-GWP HFC equipment manufactured or imported before January 1, 2025, to be installed until January 1, 2026.**



Final Rule: <https://www.federalregister.gov/d/2023-22529>

Interim Final Rule: <https://www.federalregister.gov/documents/2023/12/26/2023-28500/phasedown-of-hydrofluorocarbons-technology-transitions-program-residential-and-light-commercial-air>

EPA FAQ: <https://www.epa.gov/climate-hfcs-reduction/frequent-questions-phasedown-hydrofluorocarbons#technology-transitions-program>

EPA Fact Sheet: <https://www.epa.gov/system/files/documents/2023-10/technology-transitions-final-rule-fact-sheet-2023.pdf>



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## EPA Requirements

### Industry Trends

- Majority of residential split systems expected to use R-454B or R-32
- Announcements from manufacturers seem to be favoring R-454B
- Ductless manufacturers may favor R-32

	Ozone Depletion Potential (ODP)	100 Year Global Warming Potential of Different Refrigerants
<b>R12</b> (CFC)	<b>1.0</b>	<b>10,900</b>
<b>R22</b> (HCFC)	<b>0.055</b>	<b>1,810</b>
<b>R410A</b> (HFC)	<b>0</b>	<b>2,090</b>
<b>R32</b> (HFC)	<b>0</b>	<b>675</b>
<b>R454B</b> (HFC/HFO)	<b>0</b>	<b>466</b>

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## A2L Requirements

### UL 60335-2-40 4<sup>th</sup> Ed.

- Updated safety standard for systems using A2L refrigerants
- Design/testing requirements
- Leak mitigation requirements

ASHRAE Standard 34 Safety Classes

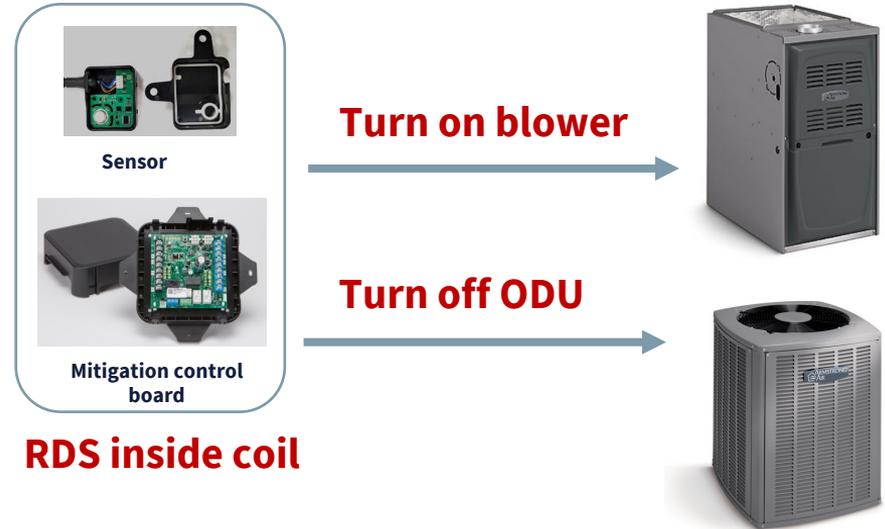
Higher Flammability	<b>A3</b> Propane, Butane	<b>B3</b>	Increasing Flammability ↑
Flammable	<b>A2</b> Methylene Flouride	<b>B2</b> Methyl Chloride	
Lower Flammability	<b>A2L</b> R-454B R-32	<b>B2L</b> Ammonia	
No Flame Propogation at 60° C	<b>A1</b> R-410A	<b>B1</b> Sulfur Dioxide	
	Lower Toxicity (OEL of 400 ppm or greater)	Higher Toxicity (OEL of less than 400 ppm)	
	Increasing Toxicity →		

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## A2L Requirements

### Refrigerant Detection System (RDS)

- Sensor mounted inside coil
- Before concentration of refrigerant reaches 25% of lower flammability limit (LFL):
  - 1) Turns on blower to dilute (and turns off heat)
  - 2) Turns off ODU to reduce additional leakage
  - 3) After minimum of 7 minutes of mitigation, automatically resets when concentration drops below trigger point
- ADP's RDS will utilize 24V thermostat controls





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ADP's Solution

# FLEX COIL

One coil, any refrigerant.\*  
The flexibility you need in 2024 and beyond.  
**Only from ADP.**

\* Factory or field configurable for R-22, R-410A, R-454B, or R-32

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## ADP's Solution



### Key Differentiators

Dual listed for A1 and A2L

- Permanently marked with refrigerant at time of install

Field or factory installed RDS

- Single RDS with dual-calibrated sensor for both R-32 and R-454B

Maximize flexibility for dealers & distributors

- Future proof inventory while maintaining backward compatibility

### Offerings

All coil and AHU lines with options for factory or field configurations:

Factory Refrigerant	Factory RDS
R-410A	No
R-32	Yes
R-32	No
R-454B	Yes
R-454B	No

Field TXVs
R-410A
R-32
R-454B
Field RDS
Dual: R-32 & R-454B



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Transition

FLEX  COIL

Q4'23

Q1'24

Q2'24

Q3'24

Q4'24

Q1'25

*Current R-410a Models*

Low-GWP  
Outdoor Units

FlexCoil R-410a

FlexCoil w/Field Kit

FlexCoil w/Factory Kit

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Service Coils



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## Nomenclature



H	G30	9	24	D	145	B	12	05	N
Cabinet Color	Slab Number	Refrigerant Type & Metering Device (Field Configurable)	Nominal MBTUH	Cabinet Depth	Width	Cabinet Upper Notch	Cabinet Height	Configuration	Refrigerant Detection System (Field Configurable)
		<b>1 = Piston</b> 7 = R-410A Bleed HP-A/C TXV 9 = R-410A Non-bleed HP-A/C TXV <b>A = R-454B Non-bleed HP-A/C TXV</b> <b>B = R-32 Non-bleed HP-A/C TXV</b>							<b>R = Included (Factory Installed)</b> <b>N = Not Included (Field Installed)</b>



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## Labeling



“FlexCoil” will also be in the description on the carton label



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## RDS Kit

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## Sensor



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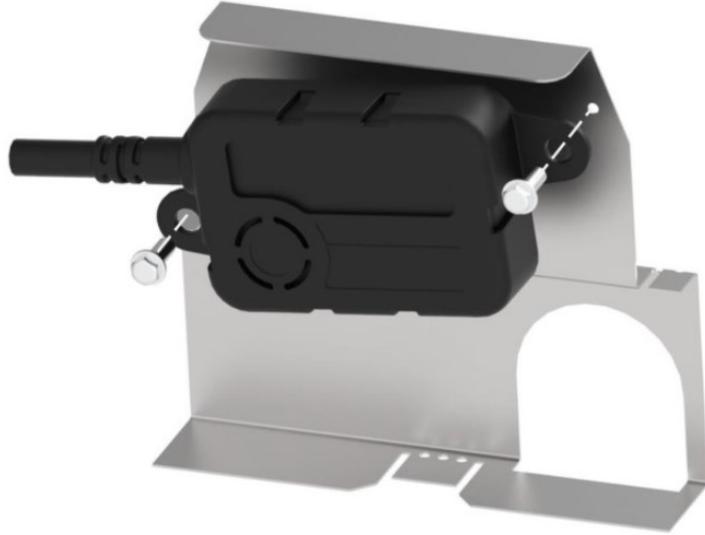
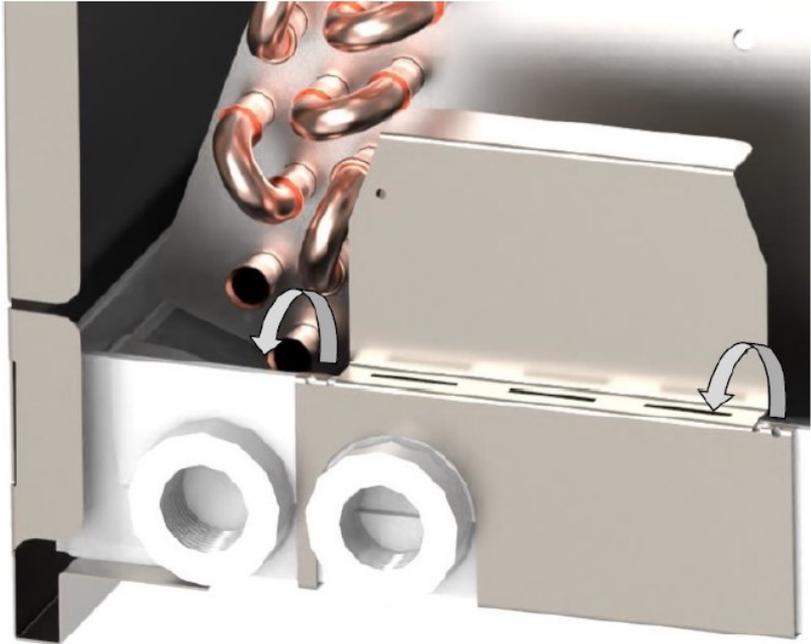


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## Bracket

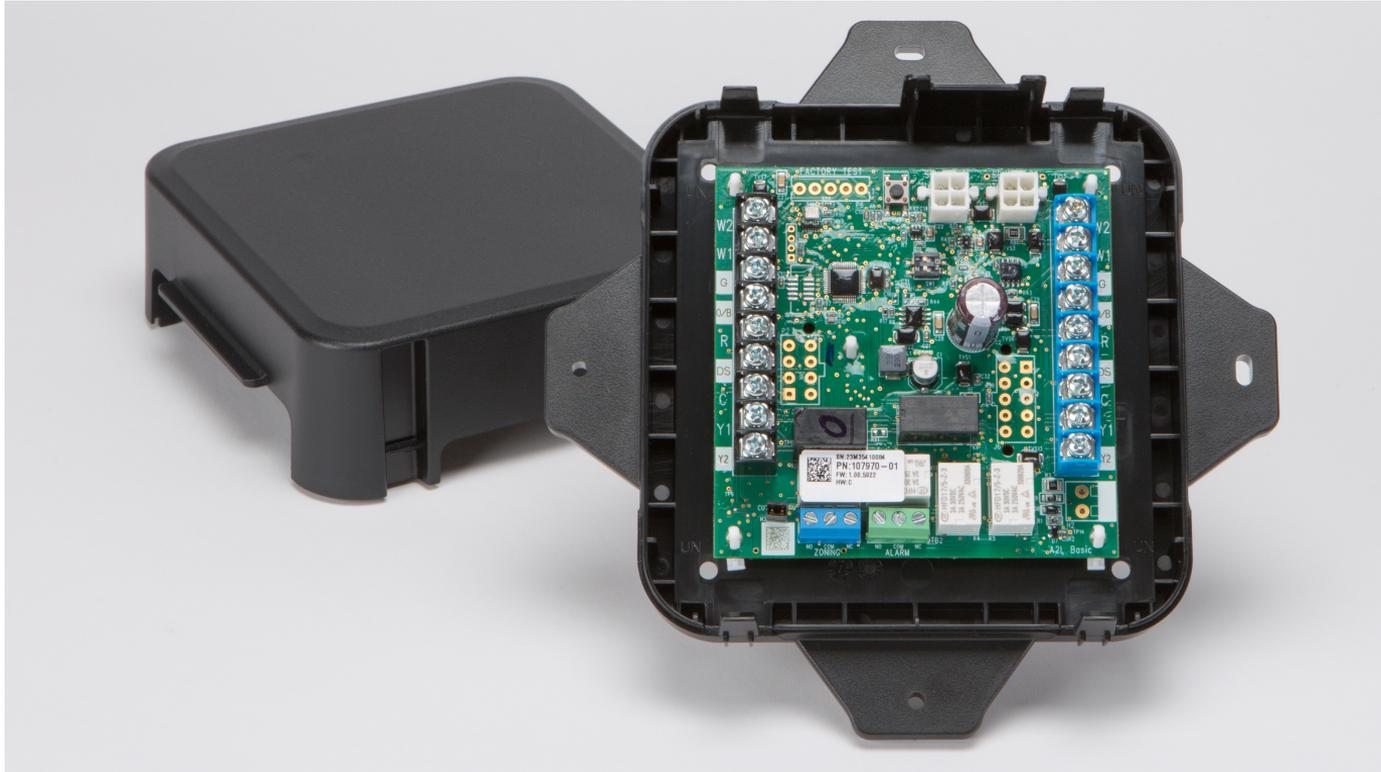


FLEX  COIL



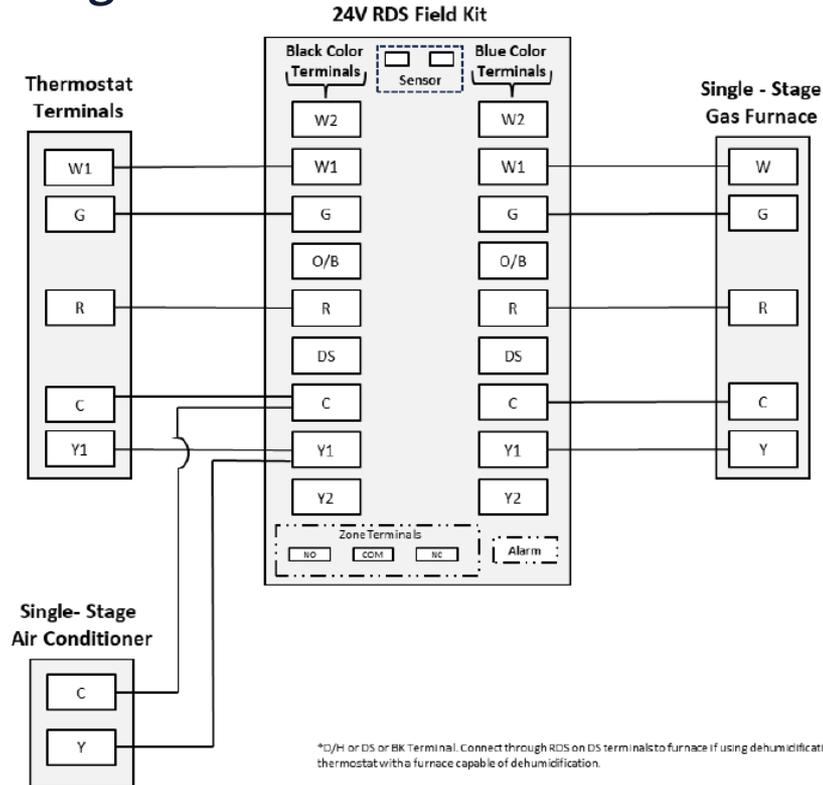
# LOW-GWP TRANSITION

## Control Board



# LOW-GWP TRANSITION

## Control Board – Wiring





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## Control Board – LED Flash Codes



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Flash	Status	Action
Green Flashing	Initializing	None
Green/Blue Flashing	Monitoring	None
Blue Flashing	Mitigating	Locate and repair leak
Blue w/ code	Fault / Service	Troubleshoot code



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## Control Board – Test Button



Mode	Press the Test Button to ...
Normal	Test leak detection response
Leak Detected	Reset to normal operation
Fault	Reset to normal operation



# MYTHS AND MISINFORMATION





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## Myths and Misinformation

- “You can’t use 3<sup>rd</sup> party coils.”
  - UL 60335-2-40 specifically allows for 3<sup>rd</sup> party coils/AHU (referred to as “partial units”)
  - ADP’s coils and AHUs are certified to the UL 60335-2-40 standard and have met the exact same requirements as the OEM coils/AHUs
  - Nothing has changed relative to mix-match systems
  
- “Trane sued the EPA to stop FlexCoil.”
  - Trane asked the UL technical committee for an interpretation of the standard as allowed for by the standards development process (not a lawsuit and not involving EPA or DOE or any governmental agency)
  - The interpretation that was issued was included in the evaluation of our product to the standard by Intertek
  - Intertek certified our coils to the standard after the interpretation was issued

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## Myths and Misinformation

- “UL is changing the standard and you will have to replace any FlexCoils you installed.”
  - UL standard changes are not retroactive. Already manufactured units would not be affected.
  - If the standard changes, generally there is a 1-year period to comply for newly manufactured units.
- “You can’t sell coil-only systems because you have to use an OEM furnace certified to UL 60335-2-40.”
  - Furnaces are not certified to UL 60335-2-40, they are certified to a different ANSI standard. UL 60335-2-40 is agnostic to the air mover used.
  - Coil-only ratings and installations continue to be allowed.

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## Certification

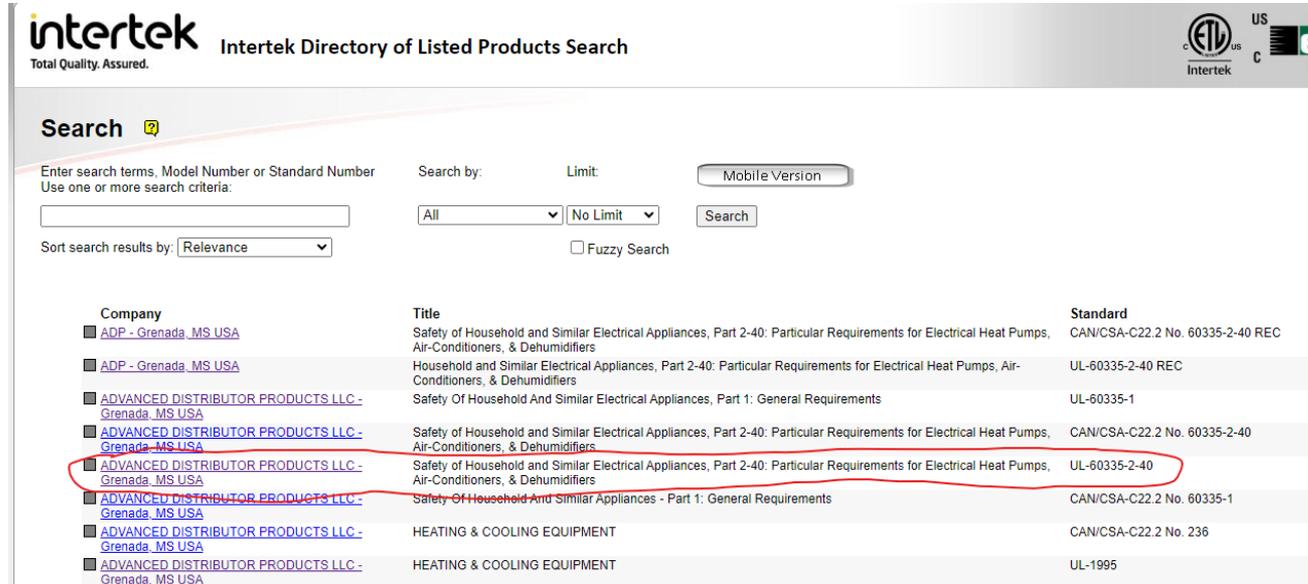
- How can I show ADP coils/AHUs are approve to the UL standard?
  - Go to: Intertek.com
  - Click on “Resources” then “Product Directories” then “ETL Listed Mark”

The screenshot shows the Intertek website interface. At the top, there is a navigation bar with links for Responsibility, Investors, Media, Careers, and Global. Below this is a main navigation bar with links for Industries & Services, About Us, Resources (circled in red), and Locations & Contacts. A search bar is also present. The main content area is divided into three columns. The left column contains links for Expertise & Training, Product Directories (circled in red), Regulatory Resources, and Client Portals. The middle column is titled 'Product Directories' and contains text about safety and performance certification, and a note about reporting non-compliant products. The right column is titled 'PRODUCT DIRECTORIES' and lists various certification marks, including ETL Verified Mark, GS Mark, LED Traffic Signal Modules Certified Products, Quality and Performance Marks, S Marks, Sustainability Certification Directory, Warnock Hersey UK Mark, and Wind Certification Program. The 'ETL Listed Mark' link is circled in red.

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## Certification – Page 2

- How can I show ADP coils/AHUs are approve to the UL standard?
  - Search for “Advanced Distributor Products”
  - Look for the “UL 60335-2-40” listing



The screenshot shows the Intertek Directory of Listed Products Search interface. The search results table is as follows:

Company	Title	Standard
<a href="#">ADP - Grenada_MS USA</a>	Safety of Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners, & Dehumidifiers	CAN/CSA-C22.2 No. 60335-2-40 REC
<a href="#">ADP - Grenada_MS USA</a>	Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners, & Dehumidifiers	UL-60335-2-40 REC
<a href="#">ADVANCED DISTRIBUTOR PRODUCTS LLC - Grenada_MS USA</a>	Safety Of Household And Similar Electrical Appliances, Part 1: General Requirements	UL-60335-1
<a href="#">ADVANCED DISTRIBUTOR PRODUCTS LLC - Grenada_MS USA</a>	Safety of Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners, & Dehumidifiers	CAN/CSA-C22.2 No. 60335-2-40
<a href="#">ADVANCED DISTRIBUTOR PRODUCTS LLC - Grenada_MS USA</a>	Safety of Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners, & Dehumidifiers	UL-60335-2-40
<a href="#">ADVANCED DISTRIBUTOR PRODUCTS LLC - Grenada_MS USA</a>	Safety Of Household And Similar Appliances - Part 1: General Requirements	CAN/CSA-C22.2 No. 60335-1
<a href="#">ADVANCED DISTRIBUTOR PRODUCTS LLC - Grenada_MS USA</a>	HEATING & COOLING EQUIPMENT	CAN/CSA-C22.2 No. 236
<a href="#">ADVANCED DISTRIBUTOR PRODUCTS LLC - Grenada_MS USA</a>	HEATING & COOLING EQUIPMENT	UL-1995

8 results found

[<- Back](#)

## Product Description

**Title:** Safety of Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners, & Dehumidifiers  
**Company:** ADVANCED DISTRIBUTOR PRODUCTS LLC - Grenada, MS USA  
**Product Information:** Trade Name(s): ADP.

Evaporator Coil, ADP, Model Nos. PL, followed by 18, 24, 30, 36, 42, 48 or 60; followed by H; followed by 145, 175, 210, or 245; followed by three characters; followed by 1-9 or A-Z; followed by 35 or 40; followed by R or N. H, A, G, J, N, P, R, T, or Y, followed by three characters; followed by 1-9 or A-Z; followed by 18, 24, 30, 36, 42, 48 or 60; followed by A, C, D, or E; followed by three numbers; followed by A, or B; followed by two numbers; followed by 00, 01, 04, 05, 20, or 22; followed by R or N. V, A, C, G, J, N, H, P, R, T, or Y, followed by 18, 24, 30, 36, 42, 48 or 60; followed by H; followed by 145, 175, 210, 245, or 252; followed by three characters; followed by 1-9 or A-Z; followed by R or N. A followed by 18, 24, 30, 36, 42, 48 or 60; followed by three characters; followed by 1-9 or A-Z; followed by X; followed by R; followed by 14, 17, 21, or 24; followed by D; followed by R or N. M followed by 18, 24, 30, 36, 42, 48 or 60; followed by three characters; followed by 1-9. H, A, D, G, J, N, P, R, T, or Y, followed by three characters; followed by 1-9; followed by 18, 24, 30, 36, 42, 48 or 60; followed by E; followed by 145, 175, 210, or 245; followed by B; followed by 21, 26, or 31; followed by 47; followed by AP. H followed by three characters; followed by 1-9; followed by 18, 24, 30, 36, 42, 48 or 60; followed by A; followed by 185, 225, 265, 305, 365, or 425; followed by A; followed by 21; followed by 02; followed by AP. S followed by 18, 24, 30, 36, 42, 48 or 60; followed by R, L, H, or S; followed by 130, 140, 145, 155, 170, 175, 187, 200, 210, 227, or 245. F, followed by three characters; followed by 1-9 or A-Z; followed by 18, 24, 30, 36, 42, 48 or 60; followed by A, C, D, or E; followed by three numbers; followed by A, or B; followed by two numbers; followed by 04, 05, or 22; followed by R or N. TA followed by C, M, or U; followed by 17-61; followed by A, B, C, or D; followed by 1-9 or A-Z; followed by R or N. CDP followed by 17-61; followed by A-Z or 0-9; followed by 13, 14, 15, 17, 21, or 24; followed by P; followed by C, M, or U; followed by 1-9 or A-Z; followed by R or N. C or E followed by 17-61; followed by A; followed by 142, 175, 210, or 245; followed by three characters; followed by 1-9 or A-Z; followed by R or N; maybe followed by 2T, or 4T. CE followed by H, P, or V; followed by 17-61; followed by 14, 17, 21, or 24; followed by three characters; followed by 1-9 or A-Z; followed by R or N. AD followed by 17-61; followed by P, U, H, or M, followed by 130-245; followed by UP, UD, or HZ; followed by 1-9 or A-Z; followed by R or N. 17-61 followed by A, B, C, or D; followed by P, X or A; followed by C or M; followed by A or D; followed by R or N, maybe followed by a dash and number. C followed by V, or H; followed by 17-61; followed by 0-9 or A-Z; followed by A-J; followed by 1-9 or A-Z; followed by A or C; followed by R or N. G followed by V; followed by 0-9; followed by 17-61; followed by P; followed by 14, 17, 21, or 24; followed by -1-9 or A-Z; followed by R or N. G followed by H; followed by 0-9; followed by 17-61; followed by 14, 17, 21, or 24; followed by 1-9 or A-Z; followed by R or N. C followed by X; followed by 17-61; followed by 0-9 or A-Z; followed by A, B, C, or D; followed by 1-9 or AZ; followed by 35 or 40; followed by R or N. C or M followed by A, or C; followed by G; followed by 18, 1824, 24, 2430, 30, 3036, 36, 42, 4248, 48, 4860, 60; followed by A-Z; followed by A, B, C, D, E, F; followed by 0-9 or A-Z, followed by P; followed by R or N. L followed by C, M, or U; followed by 17-61; followed by /; followed by 17-61; followed by A-Z; followed by 1-9 or A-Z; followed by A, B, C, D, E, F, M, V, or X; followed by R or N; may be followed by G. L followed by H, or P; followed by 17-61; followed by /; followed by 17-61; followed by A-Z; followed by 1-9 or A-Z; followed by A, B, C, or D; followed by R or N; may be followed by C or D. L followed by D; followed by 17-61; followed by /; followed by 17-61; followed by Y or Z; followed by 1-9 or A-Z; followed by A, B, C, or D; followed by R or N. C followed by MH; followed by 18, 1824, 24, 2430, 30, 3036, 36, 42, 4248, 48, 4860, 60; followed by P or T; followed by M; followed by 0-9 or A-Z, followed by M.

**Evaluated to the following:** A representative sample of the listed devices have been tested, investigated and found to comply with the requirements of the Standard(s) for Safety of Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners, & Dehumidifiers (UL-60335-2-40) and is identified with the ETL Listed Mark.



**QUESTIONS?**





# LOW-GWP TRANSITION

## Key Take Aways

# FLEX COIL

- FlexCoil is future proof while maintaining backward compatibility
- FlexCoil is certified to UL 60335-2-40 and ETL Listed
- We will introduce FlexCoil across our entire product line of coils and air handlers
- Easy to install RDS with dual-calibrated sensor and pre-installed bracket
- [www.ADPnow.com/FlexCoil](http://www.ADPnow.com/FlexCoil)



*Advanced Distributor Products®*

