

EUTECTIC CONDENSING SYSTEMS

— Flexible, efficient and sustainable system ideal
for home delivery of frozen food —



EUTECTIC REFRIGERATION SOLUTION FOR FROZEN PRODUCTS
FOR SMALL, MEDIUM AND LARGE TRUCKS

Eutectic condensing systems

Eutectic condenser units from Thermo King now offer an affordable alternative for the truck distribution industry where multiple stops occur. The F-Series eutectic condensers, with varying horse power outputs, can be matched to any cold plate end user application. This extensive line provides maximum flexibility for truck owners in virtually any market.

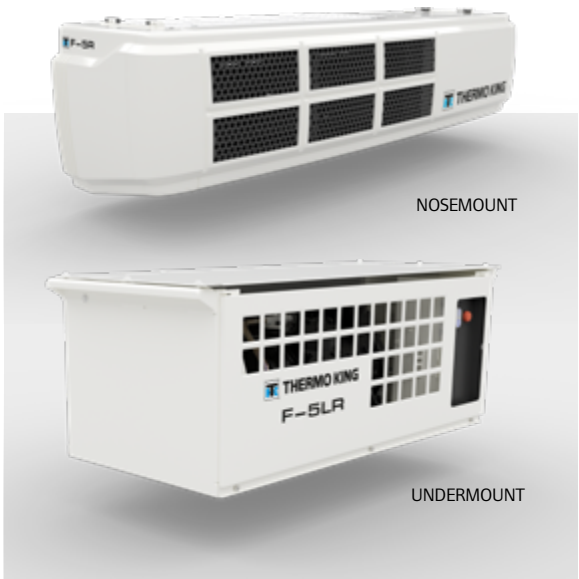


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BENEFITS TO YOU

- **Flexible Design:** Adapts to any truck body, eutectic plate, or beam system.
- **Efficient Cooling:** Quiet, economical condenser with large fan for overnight use.
- **Sustainable Choice:** Available with R-452A refrigerant for zero-emission and low-noise zones.
- **Matched Horsepower:** Options to suit various body lengths.
- **24/7 Support:** Global network of Thermo King dealers for sales and service.



Why choose eutectic condensing systems

PROVEN DESIGN AND CONSTRUCTION IN NOSEMOUNT AND UNDERMOUNT APPLICATIONS.

The proven design and construction of these condenser units feature highly efficient semi-hermetic compressors housed in solid durable steel frames to cool small- to medium-size truck delivery applications. A complete product line works with any eutectic plate or beam systems in any cargo compartment configuration.

A THERMO KING SOLUTION FOR EVERY DELIVERY SITUATION

- The F condenser section units are designed to be over-cab located.
- The FL-condenser section units are designed to be undermount located on the truck or used as “Cool Station”. In this case, the condensing section is connected to the truck (S) by the means of multi-coupling quick connectors and is stationary to save weight and increase payload.

MAX YOUR COOL

Don’t settle for less, when you can take it to the max. With a complete range of smart services and digital solutions, Thermo King helps you maximize uptime, sustainability, savings and control all throughout your operations. **Keep your unit performance up, and your worries down. All day, every day.**



A Thermo King eutectic system for every truck body length.

Because every delivery situation is different, it is important to properly match a eutectic unit to the truck body length and the distribution habits of the vehicle being equipped. The following table is a guide to assist in that process. You will want to determine a selection decision with your O.E.M. or body builder. And, as always, you may want to consult your Thermo King Dealer.

EUTECTIC PLATE (-33°C) SELECTION GUIDE									
+30°C AMBIENT					+38°C AMBIENT				
BOX INTERNAL VOLUME M³	K FACTOR W/M² °C	N° PLATES		SELECTED CONDENSER HP	BOX INTERNAL VOLUME M³	K FACTOR W/M² °C	N° PLATES		SELECTED CONDENSER HP
		3 OP. DR./HR.	4 OP. DR./HR.				3 OP. DR./HR.	4 OP. DR./HR.	
4	0.29	2	2	3	4	0.29	2	3	3
4	0.35	2	2		4	0.35	2	3	
5	0.29	2	2		5	0.29	3	3	
5	0.35	2	3		5	0.35	3	3	
6	0.29	2	3	3	6	0.29	3	4	3
6	0.35	3	3		6	0.35	3	4	
7	0.29	3	3		7	0.29	3	4	
7	0.35	3	3		7	0.35	4	4	
8	0.29	3	4	4	8	0.29	4	5	4
8	0.35	3	4		8	0.35	4	5	
9	0.29	3	4		9	0.29	4	5	
9	0.35	4	4		9	0.35	5	6	
10	0.29	4	4	5	10	0.29	5	6	5
10	0.35	4	5		10	0.35	5	6	
11	0.29	4	5		11	0.29	5	6	
11	0.35	4	5		11	0.35	6	7	
12	0.29	4	5	5	12	0.29	6	7	5
12	0.35	5	5		12	0.35	6	7	
13	0.29	5	5		13	0.29	6	7	
13	0.35	5	6		13	0.35	6	8	
14	0.29	5	6	5	14	0.29	6	8	5
14	0.35	5	6		14	0.35	7	8	
15	0.29	5	6		15	0.29	7	8	
15	0.35	6	7		15	0.35	7	9	
16	0.29	5	7	5	16	0.29	7	9	5
16	0.35	6	7		16	0.35	8	9	
17	0.29	6	7		17	0.29	8	9	
17	0.35	6	7		17	0.35	8	10	
18	0.29	6	7	SPECIAL APPLICATION (TO BE CONSULTED)	18	0.29	8	10	SPECIAL APPLICATION (TO BE CONSULTED)
18	0.35	7	8		18	0.35	9	10	
19	0.29	6	8		19	0.29	8	10	
19	0.35	7	8		19	0.35	9	11	
20	0.29	7	8	SPECIAL APPLICATION (TO BE CONSULTED)	20	0.29	9	11	SPECIAL APPLICATION (TO BE CONSULTED)
20	0.35	7	9		20	0.35	9	11	

REFERENCES A: 1 PLATE (-33°C): 1590 X 690 X 52 MM* B: R-404A REFRIGERANT PLATE SURFACE: 2.55 M² HOLDOVER 2670 KCAL *OR SIMILAR

Eutectics F-Series Specifications

DESCRIPTION

The F and FL condenser units are designed to operate a eutectic system for frozen applications on small and medium size trucks. During standby, the compressor is powered from an external A/C power source to freeze the plates.

MODELS AVAILABLE

Nosemount: F-3R, F-4R, F-5R
Undermount: F-4LR, F-5LR

REFRIGERATION CAPACITY

The rated capacities operating a -33°C eutectic system on a 30°C ambient temperature are:

NOSEMOUNT	UNDERMOUNT	CAPACITY
F-3R	-	1450 W
F-4R	F-4LR	1970 W
F-5R	F-5LR	2140 W

OPERATION

- External On/Off switch
- Automatic unit stop on freezing cycle termination

STANDARD FEATURES

- Compressor overload relay
- Compressor motor thermal protection
- Condenser fan motor overload relay
- Large receiver tank
- Accumulator tank
- Pressure regulator valve for better compressor reliability*
- High pressure cut out switch*
- Low pressure cut out switch to automatically control the unit operation*

*ADJUSTABLE DURING INSTALLATION FOR MAXIMUM UNIT FLEXIBILITY

DIMENSIONS (MM)



NOSEMOUNT F-3R/F-4R/F-5R
Dimensions: 1864 (l) x 588 (w) x 536 (h)



UNDERMOUNT F-4LR/F-5LR
Dimensions: F-4LR & F-5LR: 1170 (l) x 636 (w) x 425 (h)

SYSTEM COMPONENTS

- Condenser
- Installation kit
 - Mounting hardware
 - Power cord and receptacle
 - External thermometer
- Expansion valves available upon request

ELECTRIC MOTORS

Very Long Life electric fans

COMPRESSOR TYPE

Reciprocating, 2 cylinders

NOSEMOUNT	UNDERMOUNT	50 HZ	60 HZ	CP
F-3R	-	17.93 M³	18.43 M³	3 HP
F-4R	F-4LR	23.60 M³	22.94 M³	4 HP
F-5R	F-5LR	25.21 M³	24.86 M³	5 HP

WEIGHTS

- F-3R 172 kg
- F-4R 197 kg
- F-5R 200 kg
- F-4LR 179 kg
- F-5LR 178 kg

REFRIGERANT

R-452A

Cool Station

FLEXIBLE AND ECONOMIC STATIONARY EUTECTIC CONDENSING SYSTEMS

The system offers the following benefits: Economical option, Weight reduction, Lower maintenance costs, Flexibility.

With a Cool Station kit, it is possible to have a stationary eutectic unit simply by combining a quick connector with a eutectic condensing section (Nosemount: F-4LR, F-5LR). This new system has the following features:

ECONOMICAL SOLUTION

One condensing section can be used with one, two or three vehicles sharing the cost between them to provide an economical solution.

WEIGHT REDUCTION

A stationary unit significantly reduces overall vehicle weight. This means an:

- Increase in payload capacity
- Reduction in fuel consumption
- Reduction in vehicle maintenance
- Reduction in driver costs as these are directly related to the weight of the vehicle

MAINTENANCE COSTS AND DOWNTIME

As the unit is not installed on the truck, the unit may be serviced while the truck is working. When one unit is used for more than one vehicle, the maintenance costs are reduced as only one unit needs to be serviced.

SAFETY

- A warning light may be installed in the cabin, linked to the vehicle engine, ensuring that the driver does not start the engine with the connectors attached
- The connector has a cover attached to protect it from dust and dirt when mounted under the truck body

KIT CONTENTS

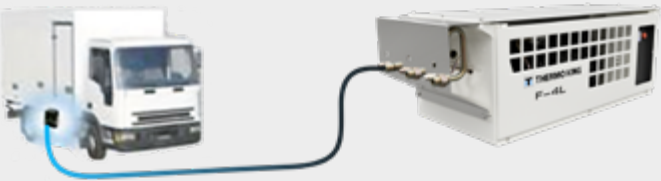
- Quick connectors with refrigeration and electrical connections
- Unit stand
- Supporting bracket for fittings and connections
- Connecting hoses and fittings
- Condenser top grill

FLEXIBILITY

Compatible with two different eutectic condensing systems, customers can freely pick the solution that best suits their needs.

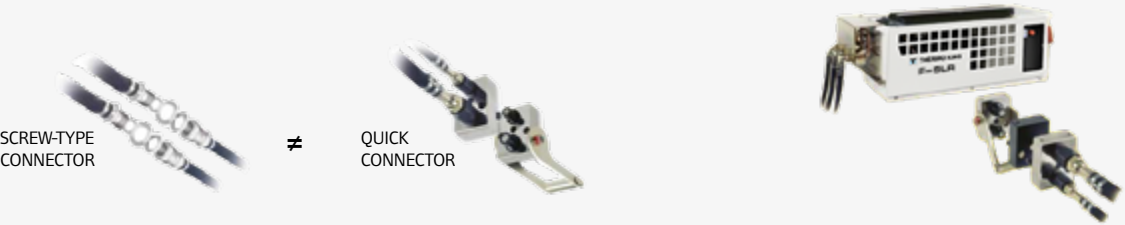
- F-4LR with one quick connector for use with one vehicle

Even if customers select the system designed for three vehicles, it can still operate with just one, two, or all three vehicles connected, as shown in the figure.



LEAK-FREE

- Comparing a screw-type connector with the quick connectors, the leak rate is approximately fifteen times larger.
- The leak rate for the quick connectors is of a similar level accepted for tubes and coils according to Thermo King standards.



A Thermo King Cool Station for every truck length

Because every delivery situation is different, it is important to properly match a eutectic unit to the truck body length and the distribution habits of the vehicle being equipped. The following table is a guide to assist in that process. And, as always, you will want to consult your nearest Thermo King Dealer.

EUTECTIC PLATE (-32°C) SELECTION GUIDE

F-4LR							
30°C AMBIENT					38°C AMBIENT		
BOX INTERNAL VOLUME M³	K FACTOR W/ M² °C	NO. VEHICLES	NO. PLATES PER VEHICLES	KIT	NO. VEHICLES	NO. PLATES PER VEHICLES	KIT
6	0.29	1	3	1 CONNECTOR	1	4	1 CONNECTOR
6	0.35	1	3	1 CONNECTOR	1	4	1 CONNECTOR
7	0.29	1	3	1 CONNECTOR	1	4	1 CONNECTOR
7	0.35	1	3	1 CONNECTOR	1	4	1 CONNECTOR
8	0.29	1	4	1 CONNECTOR	-	-	-
8	0.29	1	4	1 CONNECTOR	-	-	-
9	0.29	1	4	1 CONNECTOR	-	-	-
9	0.35	1	4	1 CONNECTOR	-	-	-
10	0.29	1	4	1 CONNECTOR	-	-	-
10	0.35	1	5	1 CONNECTOR	-	-	-
11	0.29	1	5	1 CONNECTOR	-	-	-
11	0.35	1	5	1 CONNECTOR	-	-	-
11	0.29	1	1	1 CONNECTOR	-	-	-
11	0.35	1	1	1 CONNECTOR	-	-	-
12	0.29	-	1	1 CONNECTOR	-	-	-
12	0.35	-	1	1 CONNECTOR	-	-	-
13	0.29	-	1	1 CONNECTOR	-	-	-
12	0.29	1	5	1 CONNECTOR	-	-	-
12	0.35	1	5	1 CONNECTOR	-	-	-
13	0.29	1	5	1 CONNECTOR	-	-	-



Based on:

- 4 door opening per hour
- 1 plate (-32°C): 1592 x 728 x 45 mm*
- R-404A or R-452A refrigerant
- Plate Surface: 2.543 m² holdover 2394 kcal

*Or similar



Cool Station Specifications

DESCRIPTION

The FL condenser units are designed to operate a eutectic system for frozen applications on small and medium size trucks. The compressor is powered from an external A/C power source to freeze the plates. The condensing section is connected to the plates by the means of the multi-coupling quick connectors.

MODELS AVAILABLE

F-4LR and F-5LR

OPERATION

- External On/OFF Switch
- Automatic unit stop freezing cycle

COOL STATION COMPONENTS
(OPTIONAL CONNECTOR KIT)

UNIT

- Condenser
- Installation kit
- Mounting hardware
- Power cord and receptacle
- External thermometer
- Expansion valves available upon request

KIT CONTENTS

- Unit stand
- Supporting bracket for fittings and connections
- Connecting hoses and fittings
- Condenser top cover
- Quick multi-coupling connector plate(s)

COMPRESSOR TYPE

- Reciprocating, 2 cylinders
- F-4LR: 4 HP
- F-5LR: 5 HP

ELECTRIC MOTORS

	F-4LR	F-5LR
230 V/3 PHASE/50 HZ		21.2 A
400 V/3 PHASE/50 HZ		12.2 A

STANDARD FEATURES

- Compressor overload relay
- Compressor motor thermal protection
- Condenser fan motor overload relay
- Large receiver tank
- Accumulator tank
- Pressure regulator valve for better compressor reliability*
- High pressure cut out switch*
- Low pressure cut out switch to automatically control the unit operation*
- Electric connector
- Each vehicle can be connected at different times
- Connecting vehicles at different times may have an effect on the freezing time for the plates in the other vehicles

*ADJUSTABLE DURING INSTALLATION FOR MAXIMUM UNIT FLEXIBILITY

WEIGHTS (APPROXIMATE)

- F-4LR: 179 kg
- F-5LR: 178 kg

DIMENSIONS (MM)



Undermount F-4LR/F-5LR

- F-4LR & F-5LR: 1170 (l) x 636 (w) x 425 (h)



Controller:

- 105 (w) x 98 (h)



Don’t settle for less, **when you can take it to the max**. With a complete range of smart services and digital solutions, Thermo King helps you maximize uptime, sustainability, savings and control all throughout your operations. Keep your unit performance up, and your worries down. All day, every day:

+ MAX YOUR UPTIME

Uptime is a fleet’s gold standard. Keeping you out on the road, that’s our standard. With increasingly connected systems and maximum dedication from our uptime experts, you’re guaranteed the best and fastest support while out on the road. **Ready to maximize your uptime? Discover our smart services and digital solutions .**

+ MAX YOUR CONTROL

Transporting precious or perishable goods requires constant supervision. We’re here to give you the visibility and protection you need.

From industry-leading telematics with real-time insights to digital platforms and specialized service packages. **We leave nothing to chance to keep your cargo safe, and your journeys smooth.**

GET MAXIMUM SUPPORT FROM OUR GLOBAL DEALER NETWORK

Ready to maximize your uptime? Our authorized and widespread dealer network specializes in keeping you and your fleet on the road. Get in touch and they’ll help you find the right service and solution to match your needs.

+ MAX YOUR SUSTAINABILITY

Customers and regulations demand more conscious and eco-friendly operations, so we’ll help you deliver. From handy emission-saving solutions to fleet-wide integrated systems, **find everything you need to make smarter, more sustainable solutions** -and reach tangible ESG results.

+ MAX YOUR SAVING

Stop wasting, start saving. Explore our smart services and digital solutions that help you optimize profits, improve your bottom line, and increase the residual value of your units.

Also, by increasingly connecting all of our systems and granting you easy digital access, **it’s never been more efficient to spot, and realize concrete savings.**

FIND YOUR NEAREST DEALER ON
DEALERS.THERMOKING.COM

EUTECTICS SERIES

- **Flexible Design:**
Adapts to any truck body, eutectic plate, or beam system.
- **Efficient Cooling:**
Quiet, economical condenser with large fan for overnight use.
- **Sustainable Choice:**
Available with R-452A refrigerant for zero-emission and low-noise zones.
- **Matched Horsepower:**
Options to suit various body lengths.
- **24/7 Support:**
Global network of Thermo King dealers for sales and service.



THERMO KING

Thermo King – by Trane Technologies (NYSE: TT), a global climate innovator – is a worldwide leader in sustainable transport temperature control solutions. Thermo King has been providing transport temperature control solutions for a variety of applications, including trailers, truck bodies, buses, air, shipboard containers and railway cars since 1938.

For further information
europe.thermoking.com

Find your nearest dealer on
dealers.thermoking.com

TRANE
TECHNOLOGIES