

# COLD CHAIN TRANSPORTATION

*An extensive portfolio that offers solutions for any trailer fleet*



*We pioneered transport refrigeration more than 80 years*

# INNOVATION

We continue to build on our legacy of leadership through innovative and sustainable solutions that help our customers deliver temperature-critical products to people around the world safely and efficiently.

Utilizing the latest breakthroughs to drive efficiency, safety and sustainability while saving money, Thermo King is bringing concepts from the test lab to the highway.





Our trailer portfolio is the culmination of decades of product innovations designed to help our customers enhance fleet efficiencies. Whether you haul dairy products, fresh produce, frozen meat, or pharmaceuticals, we have the solution for any application.



Multiple products for multiple fleets

# CHOICE IS POWER



## Precedent® S and C-Series

Precedent units offer superior temperature control, double-digit fuel savings and enhanced durability. The S-Series meets current and future **California emission requirements**, while C-Series is for fleets not operating in California.



## SLXi Local™

Urban distribution just got lighter, greener, and quieter. This unit is optimized to deliver in the PUP and full-length trailer **urban food distribution** markets. It's slim profile allows you to tighten the tractor-trailer gap, which reduces draft and saves on fuel.



Whether you're hauling fresh or frozen loads or pharmaceuticals, our complete lineup of cooling and heating solutions for trailers offer more choice, greater efficiency and precise temperature control for any environment.



### Heat King®

Dependable **freeze protection** for temperature-sensitive cargo. Whether you transport beverages, paint, plants, chemicals or pharmaceuticals, you can protect them from freezing by using a Heat King.



### Truck Undermount

This unit is designed for applications that require the transport refrigeration unit to be mounted below a trailer—common for redundant reefer installations used to support **pharmaceutical** or other **highly sensitive cargo**.

*Maximize uptime by using high-quality products and service*

## ASSET UTILIZATION

We're here to help you keep your assets on the road generating revenue or providing critical operational support.

### Quality and reliable design

Experience counts and at Thermo King we have decades of it in designing leading transport refrigeration products for road, rail and marine applications. Our trailer platform engineering teams located in Galway, Ireland and Minneapolis, Minnesota collaborate on design and supplier qualification processes to assure dependable and consistent material flow to our factories.

### Repeatable operational process control

Our dedicated Puerto Rico team produces all Precedent models within the Arecibo manufacturing campus and does so to the highest quality standards for our trailer refrigeration units.

### Parts availability where and when you need them

We stock 1,583,047 parts in our shared national dealer inventory and an additional 11,517 parts in our North American distribution center. Our distribution center has met 98% of the dealer requested ship dates since 2017.



**25K+** hours

are dedicated each year to enhancing the quality and reliability of Thermo King products.

**85M+** in parts inventory

within our aftermarket warehouse.

**200+** dealer locations

across North America.





## DEALER NETWORK



We strive to implement standardized work among all dealers in our network so that customers receive a consistent and reliable level of service no matter where they go around the country.

Our dealers are passionate about transport refrigeration and leverage their expertise to deliver the highest quality service.

- 200+ locations
- 900+ factory certified technicians
- \$85M+ parts stocked in the network

**800+** service bays  
across North America.

**500+** mobile trucks  
across North America.

**52** dealer families  
many run by third and fourth generations.

**19K+** hours  
of technician training each year.

**70+** years of training  
from experienced service professionals  
at the Thermo King Education Center,  
created in 1948.

## Performance Advantage™ Service Offerings

Looking to cut costs and maximize your fleet uptime? Our range of service plans help you choose the right maintenance investment to keep you on the road and running strong. Get the highest equipment reliability and return on your maintenance budget.

Choose the program that best fits your business needs to:

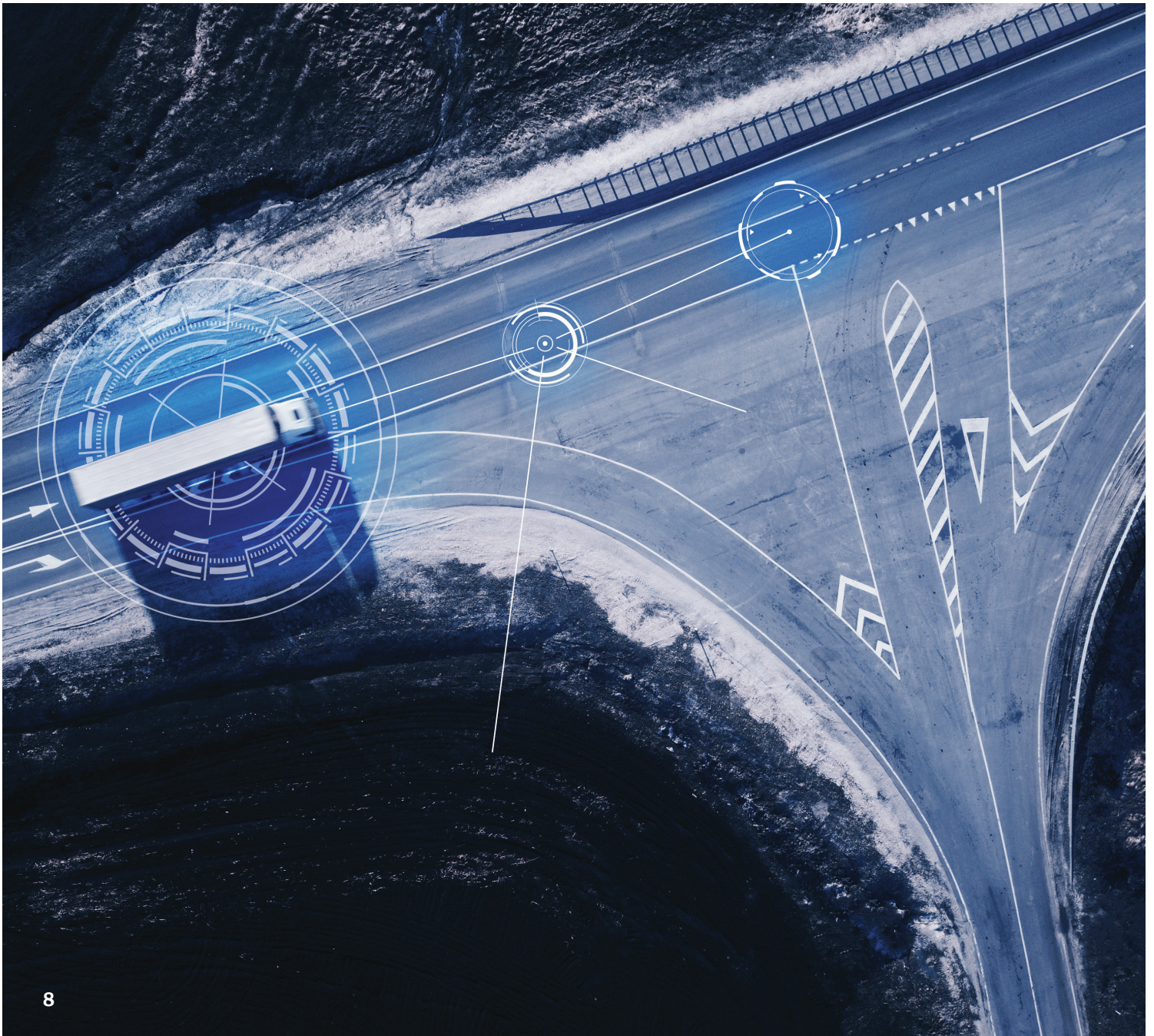
- Increase uptime
- Access key performance indicators
- Predict maintenance costs
- Improve workforce efficiency
- Maximize fleet utilization
- Eliminate new technology uncertainties



## **DATA IS POWER**

Every time a vehicle is off the road, it costs you money. Did you know the data is there to give you advance warning of some potential problems?

With ConnectedSuite™ and its fleet management tracking system, this information is available in real-time on the TrackKing® platform. TrackKing offers 4G technology that gives you end-to-end visibility on different platforms.





## REAL-TIME CONNECTIVITY

- *Reefer status* – Is your unit on? What's the temperature set-point?
- *Load condition* – What's the real temperature of the load?
- *Asset location* – Where is my reefer?

## COMPLIANCE AND SECURITY

- *Temperature compliance* – Prove that sensitive cargo temperatures were maintained.
- *Asset security* – Record all door openings.
- *Cargo traceability* – Track shipment location.

## LOWER COSTS

- *Vehicle uptime* – Eliminate unscheduled breakdowns and improve maintenance.
- *Fuel usage* – Ensure the most fuel-efficient mode is consistently used.

**40,000+** units

active on TrackKing.

**110,000+** units

shipped with telematics hardware installed and ready to turn on at any time.



 **CONNECTEDSUITE™**  
powered by THERMO KING



*Our commitment to sustainability extends to the environmental impacts of our people, operations, products and services*

## **SUSTAINABILITY**

We're focused on creating a more energy-efficient cold chain that gets temperature-critical goods to the people who need them.





The Precedent S-Series engine was developed to meet both **CARB and EPA emissions compliance** starting in 2013. It also fulfills all of the newly proposed emissions concepts by CARB.

R452a refrigerant is an available option on select Precedent units. R452a provides a **lower Global Warming Potential** (GWP). SLXi utilizes R452a to operate at 45% lower GWP.

Precedent offers **returnable packaging pallets** to reuse and save wood.



Since Precedent launched, we've helped save

**32M+** kilograms

of Nitrous Oxide.

This equates to **9.6M metric tons** of carbon dioxide savings or

the energy usage of **1.1M homes** for one year.

## ThermoLite® Solar Panels Offer Another Green Option

ThermoLite® solar panels deliver clean, reliable performance in a wide variety of applications, resulting in **longer battery life**, **lower fuel consumption** and **reduced emissions**. Given these potential benefits, ThermoLite solar panels can be an important part of a comprehensive sustainability program for your business.

### Annual **SAVINGS**

of fleets currently operating with ThermoLite solar panels is

**1.3M lbs**

of lead,

**nearly 3M gallons**

of fuel, and

**over 6M lbs**

of carbon dioxide.

*Take action to mitigate risk  
in your cold chain*

## TEMPERATURE CONTROL

Other considerations for temperature control can include:

### **Air Chutes and Return Air Bulkheads**

Proper airflow from the refrigeration unit in a trailer is critical to ensure that temperature is evenly distributed. The use of air chutes is critical to prevent top-freeze while hauling produce, and using a return air bulkhead helps reduce the risk of short-cycling. Chutes, return air bulkheads, and insulated bulkheads can be used to ensure optimal airflow and even temperature distribution. This will reduce hot spots in a trailer that can negatively impact the quality of the product being transported.

### **OptiSet® Plus**

Featured in the single-temperature unit models, OptiSet Plus ensures that temperatures are optimized and personalized with pre-set profiles for your cargo. OptiSet Plus has over 500 cargo profiles.

### **Door Switches**

It's best practice to turn off the trailer before the doors are opened and cargo is loaded. With door switches, the unit can be configured to turn the unit off when doors are opened. This process will help ensure the integrity of your cargo.

### **Solar Panels**

Adding solar to your refrigeration unit will provide fuel efficiency from reduced runtime in cycle sentry mode and engine offloading as a healthier battery demands less from the charging system.



### **Importance of Sensors**

Our temperature sensors are calibrated and graded during manufacture to one of twenty seven grades and accuracy can be expected within  $\pm 0.47F$ .

Our Precedent unit was designed with two return air sensors for constant verification between two sensors. If return air temperature is not read accurately, then accurate temperature can not be achieved. The sensors are located to most accurately represent trailer compartment temperatures.

We test our sensors and controllers using industry standard tests (mechanical shock, vibration, humidity, etc.) as well as Thermo King proprietary tests to ensure it's up to our standards—and yours.

**Accuracy is within  $\pm 0.47F$**   
on sensors.





*Improve fuel efficiency on the road and save money*

## FUEL EFFICIENCY

To help you save money, Thermo King trailer products provide optimal fuel efficiency.

Adjustments can be made to fan speeds, timers, temperature range settings and more, to gain more fuel efficiency.

You can reduce risk of wasting fuel or losing your cargo by locking out certain parameters to prevent driver error.

Every Precedent and SLXi unit can be customized to work as efficiently as possible with its default features for hundreds of cargo profiles. And if you don't find the one you need, contact a Thermo King dealer to help you customize your unit for your operations.

Manage your fleet and temperature control down to the smallest detail with OptiSet Plus, resulting in more consistent product quality, fewer shipper and driver errors, and improved efficiency of your reefer unit.

### In the 1980s, Thermo King invented **CYCLE SENTRY** operation

which dramatically reduces fuel usage and saves customers operational costs.





*Sustainability is the answer*

## **TRANE TECHNOLOGIES**

As part of Trane Technologies, sustainability is at the core of our business—it's part of our business strategy and greater purpose.

As a world leader in creating comfortable, sustainable, and efficient environments, it's our responsibility to put the planet first. We're leading our industry in sustainability practices, and it's already having a positive effect.





# LEADING BY EXAMPLE

## We're changing the way we do business

We're reworking and converting our supply chain and operations to have a restorative impact on the environment.

**23%** total operational energy efficiency increase over the past five years.

### Gigaton Challenge

*We're making landmark promises*

We're reducing one gigaton of carbon emissions (CO<sub>2</sub>e) from our customers' footprint by 2030 through our Gigaton Challenge.

**21M** metric tons

of CO<sub>2</sub>e avoided over the past six years through the use of energy efficient and low emitting technologies.

### Opportunity for All

*We're committed to brighter futures*

Education and economic mobility, diversity and gender parity, access to food, housing and comfort cooling — it's just a few of the ways we're committed to our people and communities.

**2030** is the date we will achieve gender parity in leadership roles.





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 more information, visit [thermoking.com](http://thermoking.com) or [tranetechnologies.com](http://tranetechnologies.com).

