



AFAM - advanced fresh air management

Microprocessor controlled fresh air exchange delivers superior temperature control and cargo protection.



- Industry's most advanced fresh air exchange system
- Up to 50% faster temperature pull down
- Microprocessor precisely controls rate of fresh air exchange
- Records and documents air exchange rate and events

AFAM takes the guesswork out of fresh air exchange.

“Every product has an optimal shipping environment. Maintaining those conditions will allow it to be delivered in its freshest most desirable state.”

Injurious levels of oxygen and carbon dioxide, due to respiration of perishable product, may develop in a container. Managing these gases is considered essential to delivering quality product by providing:

- Superior cargo protection
- More consistent product quality
- Precise fresh air settings
- Longer shelf life
- Energy savings, fuel savings
- Less cargo weight loss

Managing the fresh air exchange on refrigerated containers has been a manual operation involving some guesswork. With Thermo King's AFAM, that process is now a breeze.



Microprocessor controls the fresh air exchange rate

Setting the desired exchange rate couldn't be easier. Instead of a manual operation, the rate is programmed through the refrigerated container's microprocessor in either cfm or m³/hr. Once set, the microprocessor positions the vent opening to provide the desired airflow rate.

Programmable delayed vent opening

The microprocessor also allows you to delay opening of the fresh air vent for up to 72 hours. This helps the container's interior temperature get to the proper set point, before initiating an exchange of fresh air.

Up to 50% faster pull down

Because the vent can be programmed to remain closed for up to 72 hours, product temperature pull down to the desired set point can be reached in half the time it would otherwise require with the vent open. The hours saved pulling down will equate to days gained in shelf life.

Auto lockout for frozen

When the set point is programmed for frozen cargo, the microprocessor automatically locks out the fresh air exchange by closing the vent.

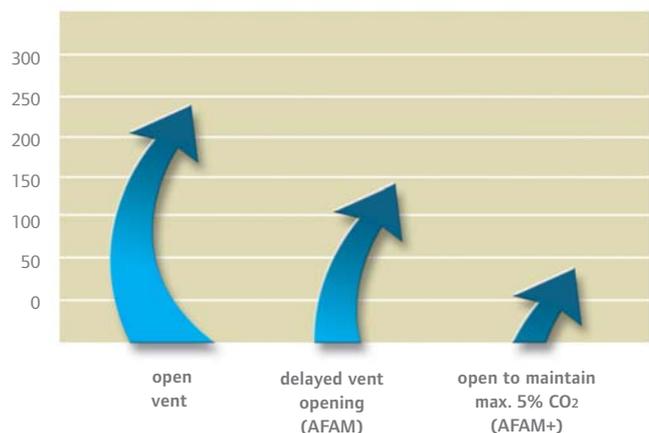
Prevents injury from chilling

The AFAM also features built-in frost protection. Should the ambient temperature fall far below the selected set point, the AFAM will automatically close the air exchange vent to prevent product injury due to chilling.

Record of fresh air exchange data

User-selected air exchange rates, time-delay intervals and any changes made to these settings are automatically stored in the microprocessor's memory where it can be retrieved for analysis along with pertinent temperature and unit operation data.

Fresh air ventilation
Hours needed for pulp temperature of bananas to reach desired carrying temperature



* Source scientifically monitored actual trial shipment



AFAM+ responds to individual product respiration.

Sensors measure the O₂ and CO₂ levels allowing the microprocessor to adjust to changing conditions.

When pre-tripping the container, or setting temperature parameters, desired oxygen and carbon dioxide levels are determined. When the levels exceed the programmed range, the microprocessor will automatically adjust the fresh air exchange rate to manage pre-set levels of oxygen and carbon dioxide. Thermo King's AFAM+ provides "ventilation on demand" and is the ultimate protection afforded perishable cargo because it provides venting in response to continuing changes in respiratory gases. When either limit (O₂ or CO₂) is reached, the vent automatically opens to allow fresh air in and closes again when desired gas levels are reached.



AFAM+ advanced protection is easy, safe and cost effective.

- ✓ Maximizes refrigeration system's efficiency through intelligent monitoring and control
- ✓ Continuously ventilates on demand (as required by product respiration) to maintain safe O₂ and CO₂ levels
- ✓ Protects product against high, damaging CO₂ levels
- ✓ Protects product against low, dangerous levels of O₂
- ✓ Helps assure consistent product quality
- ✓ Responds through the useful life of a container (even an older one) as leak rates vary

Roses/Cut Flowers

Suppress leaf discoloration
Suppress bronzing of leaves

Honeydew

Prevent off-flavors
Prevent off-odors
Control ripening

Pears

Suppress flesh browning
Prevent cavitation
Prevent off-flavors

Celery

Suppress off-odors
Prevent off-flavors
Prevent browning

Cantaloupe

Prevent off-flavors
Prevent off-odors
Control ripening

Pineapple

Lessen chilling injury
Slow down degreening

Oranges

Prevent off-flavors
Prevent chilling injury

Apples

Prevent flesh browning
Prevent off-flavors

Grapes

Delay browning of pedicels
Suppress shatter Prevent stem browning

Tomatoes

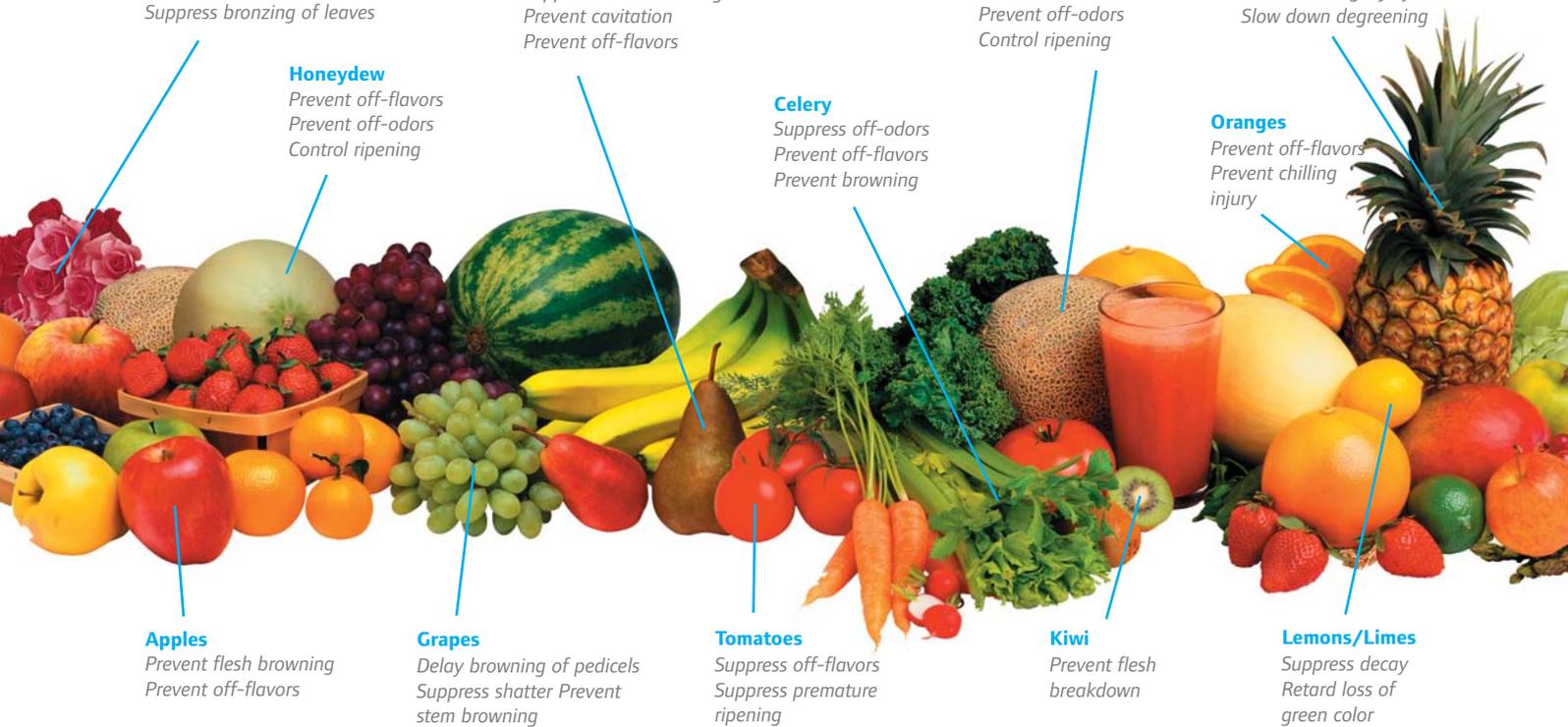
Suppress off-flavors
Suppress premature ripening

Kiwi

Prevent flesh breakdown

Lemons/Limes

Suppress decay
Retard loss of green color





Providing equipment and services to manage controlled-temperature environments for food and other perishables, our Climate Control Technologies sector encompasses both transport and stationary refrigeration solutions. Our product brands include Thermo King®, a world leader in transport temperature control system and Hussmann®, a manufacturer of refrigeration and food merchandising equipment.

www.thermoking.com www.hussmann.com www.ingersollrand.com

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