



news, products, community - R744.com is the industry platform for CO<sub>2</sub> cooling and heating experts worldwide.

## Everything R744

ADVERTISE ABOUT US CONTACT LOGIN

email

☒ keep logged in [register](#) | [forgot password](#) [Login](#)

HOME NEWS PARTNERS COMPANIES PRODUCTS KNOWLEDGE EVENTS COMMUNITY **BETA**



### NEWS >> EVENTS NEWS

[< back](#)

## UPDATE: At AHR Expo 2015, CO<sub>2</sub> component vendors target U.S. convenience stores

12 February 2015

[0 comment](#) | rating: ★★★★★ votes: 12 [Login](#) or [Register](#) to vote

[ - ] Text [ + ]

forward via community [Tweet](#) [Share](#)

At the 2015 AHR Expo, one of the world's largest HVAC&R trade fairs, component manufacturers showcased small footprint transcritical CO<sub>2</sub> technology; will North American convenience stores opt for these systems? [+PHOTOS](#) [+VIDEOS](#)

In North America, transcritical booster systems using only CO<sub>2</sub> have been implemented largely in conventional supermarkets. By contrast, in Japan the uptake of transcritical systems has been most evident in smaller convenience stores.

*Convenience stores have not gone to transcritical in the U.S. because they are much more expensive," said Andre Patenaude, Director, CO<sub>2</sub> Business Development for Emerson Climate Technologies.*

However, judging by the new components on show at the AHR Expo, this could be about to change.

### All-in-one CO<sub>2</sub> transcritical controller from Danfoss

Danfoss showcased a CO<sub>2</sub> transcritical controller, the AK-PC 772, designed for smaller formats. The all-in-one unit oversees compressors, gas cooler, oil, receiver, electronic expansion valves and heat reclaim.

*Danfoss is trying to reduce the complexity of CO<sub>2</sub>, which is already a complex concept to begin with," said Jae Chon, OEM Key Accounts Manager for Danfoss. "By combining all processes into a single platform, this controller handles medium-temperature and low-temperature compressors, and a cooling algorithm for gas cooler control, including a high-pressure valve and a flash gas bypass valve."*



### Related articles

**UPDATE: AHR Expo Exhibitors Bullish on CO<sub>2</sub> in America**  
12 February 2015

**UPDATE: CO<sub>2</sub> solutions vying to be "king of the hill" in old New York - 2014 AHR EXPO latest - Part 1**  
03 February 2014

**AHR Expo 2013: The year of CO<sub>2</sub> in the USA is yet to come - Part 3**  
07 February 2013

### Gold Partners



### Silver Partners



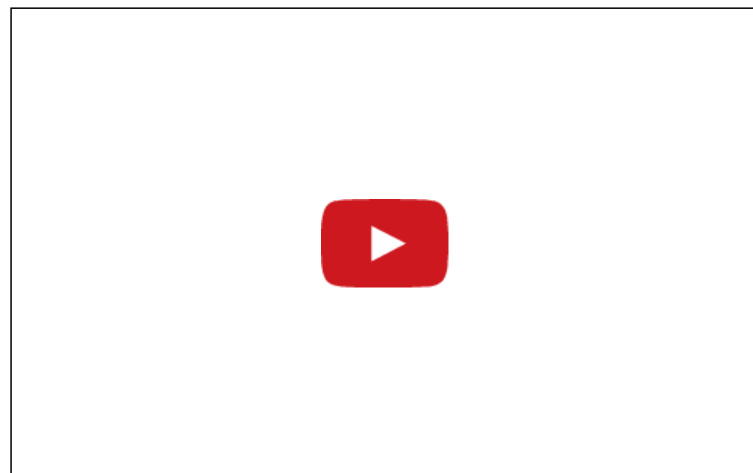
### Activities

**aqib mohammad** | 3 hours ago  
joined in and is looking for: I am looking for the following information: Information on tra...

**Pieter Vereycken** | 3 hours ago  
joined in and is looking for: I am working in the field of NH3 refrigeration.

**Christopher Garcia** | 16 hours ago  
joined in and is looking for: I am looking for the following information: Information on tra...

[login](#) or [Become a member](#)



### CAREL explores the concept of a CO<sub>2</sub> transcritical controller for convenience stores

At the AHR Expo, CAREL introduced its **pRack pR300T controller**, which uses a single electronic board to fully manage a self-contained transcritical system with a triple suction line, heat recovery, gas cooler, high pressure valves, liquid receiver and intercooler. The controller and system are suited for convenience store applications.

CAREL's compact solution for CO<sub>2</sub> compressor rack control and management meets market requirements regarding:

- Control of low- and medium-temperature compressors
- Transcritical valve synchronisation through a directly integrated driver
- A third suction line control for a parallel compressor, which can improve a transcritical system's efficiency in warmer climates
- Management algorithms for energy savings
- Dedicated algorithms for CO<sub>2</sub> systems management
- Integration with heat recovery systems

*In these types of systems, where each individual function is intrinsically linked to the others, the control device needs to independently manage all the operating stages of the unit. The pRack pR300T can manage and synchronise the operation of all fundamental components making up the system through just one individual device," said Nicola Pieretti, Application Specialist - Retail Solution, Marketing Dept. at CAREL.*

#### **Sanden's inverter scroll compressor being tested by 7-Eleven**

Meanwhile, Sanden showed a hermetic inverter scroll compressor for CO<sub>2</sub> transcritical refrigeration in convenience store formats. It contains a compressor, condenser and air-to-air microchannel heat exchanger in a box that typically resides on a store's rooftop, and connects to multiple evaporators in cases.

The unit is being tested by 7-Eleven in Japan in 73 stores, said Larry Hieb, vice president of engineering, Sanden. It has not yet been approved for use in North America.



#### **Emerson launches new semi-hermetic compressor**



Emerson also announced a new compressor designed for smaller retail formats like convenience stores, the Copeland semi-hermetic compressor for transcritical CO<sub>2</sub> with 5-, 7- and 9-horsepower. It has integrated high- and low-pressure valves with low sound and vibration. Previously Emerson offered the system in 12-, 15- and 30-horsepower units.