



Press release

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## **Daikin reduces power consumption for refrigerated transport containers with innovative Temperature Management System**

Daikin, the Japanese-headquartered manufacturer of air conditioning and refrigeration systems, has introduced an innovative new product that reduces the power consumption of its refrigeration machinery for transport containers, while simultaneously improving carrying conditions for chilled cargo.

The Daikin Temperature Management System (DTMS) was officially launched on 8 November at the ITL2005 Conference & Exhibition in Bilbao. Developed for use with Daikin's LXE10E scroll compressor machine, DTMS is a new type of control logic that significantly improves refrigeration performance by continually monitoring both supply-air and return-air temperatures, together with their rate of change. According to Daikin, DTMS is the only product on the market to monitor all three of these parameters.

DTMS works by automatically adjusting the operation of the refrigeration unit based on varying ambient conditions and cargo respiration rates while the container is in transit. This continual fine tuning enables temperature and airflow inside the container to be controlled with much greater accuracy, as the system responds to real time conditions.

The real time monitoring and adjustment ensures that the refrigeration unit operates at optimum efficiency, using the minimum amount of power. Tests conducted at three separate research sites demonstrate that DTMS reduces power consumption by a massive 25-50% compared to a standard refrigeration unit

As a result, says Daikin, DTMS will further reduce the life cycle operating costs for container shipping lines using its LXE10E scroll machine. Using the new system, carriers can expect to save between US\$100 and US\$400 per year in fuel costs.

DTMS also has benefits for chilled cargo condition, particularly in reducing produce dehydration. The continual monitoring of supply-air and return-air gives a clear picture of



cargo respiration rates, with fan speeds adjusted automatically based on real conditions. As a result, less air is blown across the cargo, thereby reducing moisture loss. This benefit of DTMS is particularly valuable for perishable produce with high water content, such as bananas, peaches and melons.

Users can manually activate the system during configuration of the refrigeration unit. Alternatively, DTMS can be activated automatically when a chilled set point is selected by the operator, or when a set-point in a specific chilled temperature range is selected.

Following extensive in-house tests, DTMS is currently undergoing pilot trials with major global container shipping lines. The new control system will be an optional extra for users of Daikin's LX10E scroll compressor machine, although Daikin expects the majority of its customers to take up the option. DTMS can also be retrofitted to existing machines, allowing current customers to obtain the benefits with their complete Daikin fleet.

Launched in 2001, the LX10E has helped Daikin to achieve a dramatic increase in global sales and market share. Over the past four years, the number of shipping lines purchasing Daikin reefer machines has increased from 4 to 36, including 14 of the top 22 ocean carriers. In the same period, annual sales have grown from below 5,000 units to an expected figure of more than 20,000 units in 2005.

Daikin is now the second largest supplier of container refrigeration machinery worldwide, with a market share in excess of 25%. It is also the major supplier of scroll compressor units for the reefer container market, with more than 45% of this market.

The company says that the scroll compressor is fast becoming the preferred choice in the market due to its high quality, reliability and performance. In 2005, over half of all reefer machines purchased were fitted with scroll compressors. Scroll compressor units now make up around 19% of the global fleet of container refrigeration machines, and Daikin expects this to rise to nearly 50% by 2009.

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## Notes to editors

Founded in 1934, Daikin has grown into a world-leading producer of air-conditioning and refrigeration systems and fluoro-chemical products. The company employs over 17,000 people worldwide in over 22 different countries, with annual sales of over 6 billion USD.

Daikin's major divisions cover Air Conditioning and Refrigeration, Chemical, Electronics and Hydraulics. The company is one of the world leaders in air conditioning equipment.

Daikin was one of the first major manufacturers to enter the container reefer market back in 1968 and became the largest supplier of reefer machines in the 1980s. Daikin is now re-establishing its position in the container market and is focusing on becoming once more a long-term major global supplier to the industry by providing the best performing machine at realistic, economical prices.

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