RENKEI Control in:

Store Display Cases and Chillers

- Demand and Supply RENKEI Control -

■Overview

Japan's Energy Conservation Law, as revised in April 2009, has a larger scope of target businesses and requires franchises, such as supermarkets and convenience stores, to follow its requirements. The following information focuses on the best method of controlling refrigeration/freezer display cases, which are the highest energy-consuming elements in these stores.

The aim of control in this case is to maintain the appropriate refrigeration capacity by controlling refrigerant pressure. This can be achieved by means of inverters responding to on-off information from the solenoid valves which are used to control the load of the display cases. This method provides the optimal approach for maintaining constant balanced refrigeration capacity, resulting in the most energy-efficient answer to the varying load demand of display cases.

Title: **Shop Display Case and Chiller** *(File name: 2012_AR4E_JEITA_RENKEI)*

Fig. 1 System Overview

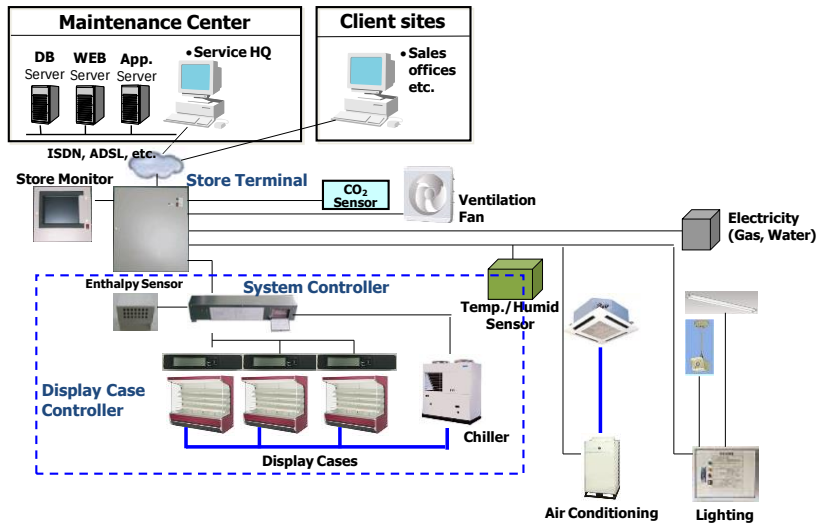

Fig. 1. System Overview

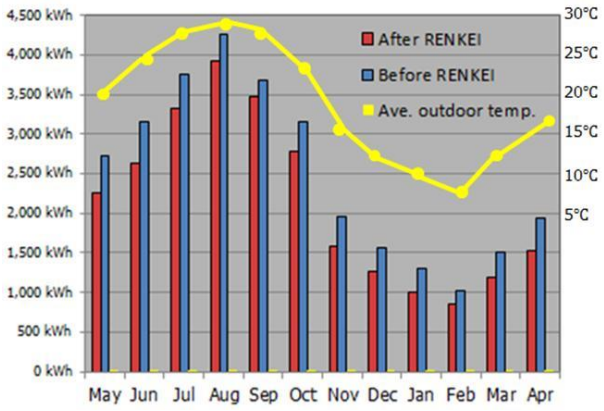

Fig. 2. Proof of Savings for Display Cases

■Savings

Average annual savings: 13.6 %
Investment: ¥75,000 ($750 US) or more
Payback period: Approx. 2.2 years

■Who can benefit

Business type: Retail (convenience stores)
Coverage: Nationwide
Description: Small stores handling mainly food and beverages for convenience
Business size: Avg. ¥190,000,000 ($1,900,000 US) in 2011
Electricity use: Avg. 180,000 kWh in 2010
Savings target: 23 % (avg. approx. 0.12 kWh/m^2/h) savings between 2008 and 2012 against the baseline year 1990

Reference: Kazuhiro Sakai in *Energy Conservation Monthly* vol. 64 No. 10 (JEITA, October 2012; in Japanese)

Renkei in Japanese means "cooperation, coordination or harmonization."
"**RENKEI** control" pursues energy efficiency optimization in which two or more elements interact with one another to provide the most efficient and effective results.