



# Partnership

A sound business partnership will inspire, drive and enable the partners to do better. The collaboration between Star Cool and Danfoss has without question lead to smarter, more cost effective and energy efficient solutions.

A fine example is the co-operation in controlling the cooling compressors built into Star Cool reefer machines.

The reefer machines are designed to maintain a constant internal temperature in the box irrespective of the ambient conditions and the carrier on which the container is shipped. The large number of reefer containers requiring the same ideal conditions and the unique demands for control makes it an obvious choice for Star Cool to contact Danfoss Drives; collaborating with their experts within the field of customer and application specific solutions.

In this case, the Danfoss Drives motor-mounted frequency converter solution was used to find an answer. It's a solution where the speed control electronics are mounted directly on the compressor motor, saving space and eliminating any problem with motor cables. This has the advantage that the fan of the AC motor provides forced air cooling for the drive.

Thinking a step further and looking at the system as a whole brought the idea to have the cooling compressor itself remove excess heat from the electronics. This concept means that an even smaller drive can be utilised to provide the necessary cooling capacity without overheating, in turn saving space within the reefer machine – and money!

Star Cool recognises the importance of the close working relationship with Danfoss Drives. Using the Frequency Converter to control the cooling compressors gives first priority to energy optimization. Stability, Quality and a competitive price were contributing advantages when Star Cool elected to work with Danfoss VLT® drives.

For Star Cool it is an advantage to cooperate with Danfoss Drives because it is a conglomerate which ensures the maximum security you get from an economically solid partner. Working with Danfoss Drives allows Star Cool to utilize its large staff of dedicated drives specialists for future developments or problem solving. A further important aspect of the collaboration is that both companies have the same concept of quality.

Special business unit  
Danfoss Drives has a strong focus on its ability to meet the specific demands of large-scale clients. Special so-



*Despite its inconspicuous exterior, the Frequency Converter greatly contributes to the Star Cool reefer machines low energy consumption*

lutions are based on parts from its huge production of frequency converters, benefiting thereby from the very extensive drives expertise within Danfoss Drives.

40 years ago, back in 1968, Danfoss Drives was the first to produce frequency converters in serial production, and it is now the leading provider globally for drives up to 90 kW. Lately there has been an increase in legislation demanding energy efficiency at the same time the world has experienced volatile energy prices. This has resulted in an increased trend to use energy intelligently, controlling the capacity thereby fuelling the demand for the utilization of Frequency Converters.

As a result the production of large scale customised solutions has doubled every year since 2004. And there is room for further growth. "I estimate the share of motors with variable speed control to be only 10 – 15 % globally for now, so there is a huge potential", says Jørn Schulz, Danfoss' product manager for the Star Cool solution.

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