



## Saving money with Electronic TX Valves

**Allfrige Solutions is focussed on providing energy efficient refrigeration solutions for its customers. Established in 2009, the company offers sales, installation, service and maintenance to a large customer base ranging from small commercial systems to large scale industrial refrigeration plants. The company also specialises in air conditioning solutions for all applications.**

Lago Cold Stores, in Hemmant QLD, is one site currently being serviced by Allfrige Solutions. The company engaged the services of Allfrige to help curb escalating power costs brought on by inefficient, aging refrigeration equipment and rising energy prices. The company was also at risk of peak power demand tariffs from their QLD energy supplier.

Existing equipment on one of the less efficient plants consisted of 6 refrigeration systems with 12 x 30hp Copeland tandem compressors running direct expansion freezers to 6 forced draft evaporator systems.

### **The Solution**

A pioneer in energy efficient practices, Allfrige Solutions were engaged to customise an equipment and software solution that would reduce power usage and operating costs. Allfrige Solutions' David Wilson worked together with Heatcraft Australia to improve the efficiency of the plant, taking into consideration cost and equipment payback.

David arranged meetings on site with Heatcraft Field Sales Engineers so he could explain how he wanted to run & maintain the extensive refrigeration plant to maximise energy savings. The site had many different operating systems but the selection was made in favour of Danfoss Electronic Expansion Valves as the particular plant being reviewed had existing Danfoss control equipment installed. 12 Danfoss ETS 25 Valves with ETS Controller Kits were installed across the site.

Removal of the mechanical valves & fitting of Electronic Danfoss ETX Danfoss electronic TX valve ETS 50 1 1/8 ODS with associated controls valves was completed by David.

With the monitoring & recording equipment fitted to the systems by Allfrige Solutions, a third party was engaged to verify the results of the energy savings.

## At a glance...

### **The Business Need:**

Improved energy efficiency and a reduction in power consumption.

### **The Solution:**

Allfrige Solutions and Heatcraft Australia worked together to supply and install 12 Danfoss ETS 25 Valves with ETC Controller Kits across the site.

### **Why Heatcraft?**

Heatcraft is your HVAC&R Business Partner working with you to provide solutions to grow your business.

### **Published:**

July 2016



Lago Cold Stores, one of Queensland's leading cold storage organisations. Lago pride themselves on innovative and efficient cold stores using the latest technologies.

# Studies in success



David Wilson commented;

*"We measured the energy reduction on two identical systems with two different energy meters. Both systems and both meters recorded the same results."*

*"Each of the twin 30hp low temperature systems recorded an average power consumption of 45kW with the mechanical TX valves. After installing the Danfoss electronic TX valves each system recorded an average power consumption of 30kW, resulting in an average saving of 15kW per system."*

A payback analysis was also prepared by Allfrige Solutions to demonstrate the benefits of the investment to the client. The analysis used an average run time of 16hr per day for 365 days at \$0.10 per kw hour.

**Original mechanical TX valves fitted;**

5840hrs x 45kW = 262,800 kWh x \$0.10 per kWh = \$26,280p.a.

**Electronic TX valves fitted;**

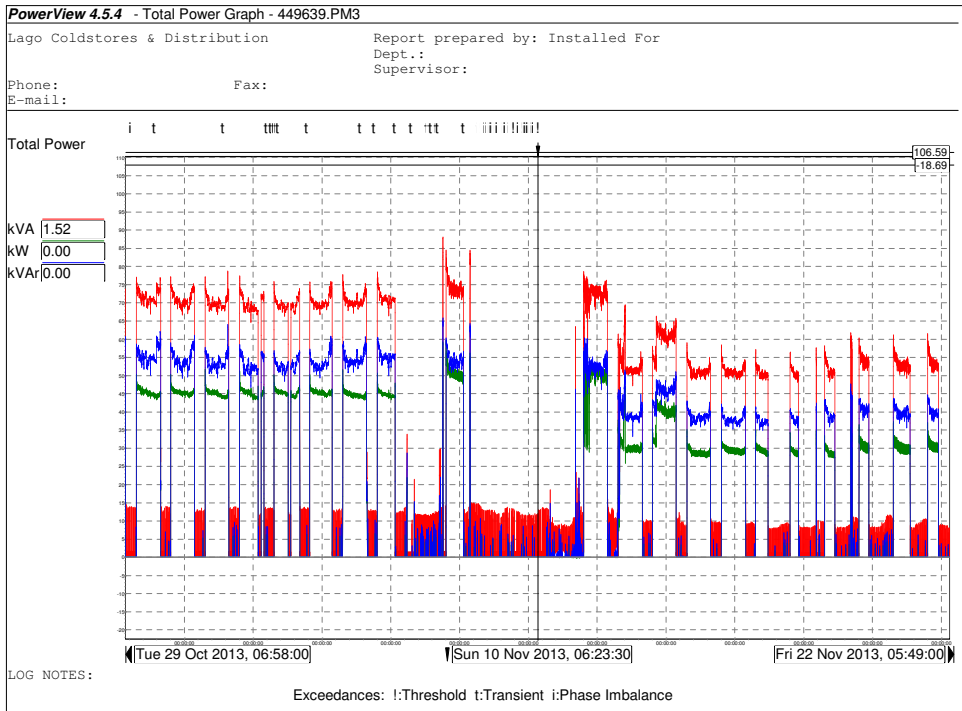
5840hrs x 30kW = 175,200 kWh x \$0.10 per kWh = \$17,520p.a.

**Savings;** The total savings per annum, equated to \$8,760. The approximate cost for the upgrade was \$3,500 equating to a payback period of just 5 months.

***"Electronic expansion valves reduce energy consumption by providing a much more accurate and steady control of the refrigeration system."***

If you would like more information about saving money with electronic expansion valves, contact your Heatcraft Account Manager on 13 23 50.

For more information on Allfrige Solutions, contact David Wilson on (07) 3907 0986 or visit [www.allfrigesolutions.com](http://www.allfrigesolutions.com)



The actual energy reduction (shown in green) is a true reflection on how the facility is operated. On average there is a 15.7 kW energy reduction during the 16 hour operation per day, which calculates to a \$8760 p.a. saving based on electricity prices at the time of the study.



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