



## StoreConnect's Faulty Contactor Detection Feature

Helps Solve Common Issues  
with Commercial Refrigeration Systems

### THE MARKET CHALLENGE

The electrical system and its components play a critical role in retailer's commercial refrigeration operations, such as supermarkets, wholesale clubs and organic markets. Understanding what is happening at all times with key components of that system gives service providers an edge, helping the retailer execute their goals of providing fresh food to shoppers. Preventative maintenance activities, such as visual inspections of electrical systems, are not adequate enough to provide the highest level of up time and reduce significant risk of system failures over time.

StoreConnect has developed a Faulty Contactor Detection feature to help address issues surrounding commercial refrigeration system maintenance and reduce the risk of large device failures, like compressors and motors. This feature also helps solve relative industry problems:

#### Data Based Decision Making

- StoreConnect gives an inside look into the data of how contactors are designed to operate. Comparatives and calculations with our algorithms provide advanced measurements of potential risk in these components.

#### Lack of Time and Resources

- Retailers have tight schedules and operating hours along with limited resources that do not leave room for commercial refrigeration equipment failure. Technicians being pro-active vs. reactive could mean the difference between a commercial refrigeration rack down and simple contactor replacement.

### THE STORECONNECT SOLUTION

The StoreConnect's Faulty Contactor Detection feature.

StoreConnect implemented a Faulty Contactor Detection feature to monitor and diagnose a wide range of refrigeration systems problems as it relates to the design and operation of contactors for large mechanical devices, like compressors and motors. The feature can reveal where worn contactors are present through surge transient signature and current draw of compressors.

*More information on back.*

## FAULTY CONTACTOR DETECTION EXAMPLE

Below is an example of the Faulty Contactor Detection feature at work:

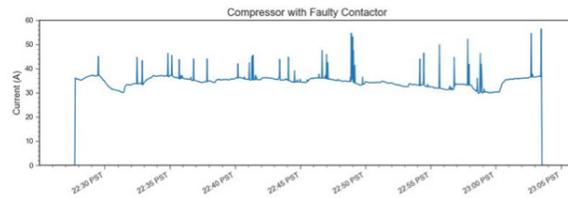
### PROBLEM:

While powered, two compressors at a store were experiencing intermittent power interruptions. After each power interruption, the compressor undergoes an additional startup power surge.

### ANALYTICS FINDING AND SOLUTION:

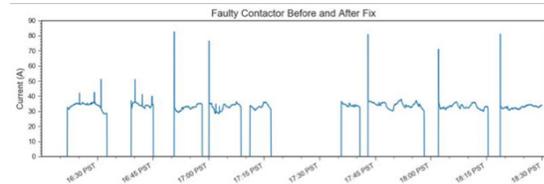
Once notified by StoreConnect, store technicians investigated the two compressors and found that they had faulty contactors, which explained the power interruptions. Upon discovery, the faulty contactors were replaced, and the compressors returned to their expected behavior. This solved the problem of the faulty equipment, while simultaneously streamlining the repair process by sending technicians who knew the exact issue to investigate and could therefore make a quick repair, avoiding costly downtime.

Figure 1



One of the compressors with a faulty contactor over a 35 minute on-cycle. Every spike during this on-cycle follows a power interruption. During this 35 minute window, there were 36 interruptions..

Figure 2



One of the compressors with a faulty contactor before and after a contactor replacement. Between 16:20 and 17:20 there were eight power interruptions. After the fix that started at 17:20, there were no interruptions and the compressor returned to expected behavior at 17:35.

## THE RESULTS

**THE FAULTY CONTACTOR DETECTION FEATURE COULD POTENTIALLY EXPAND THE LIFE OF COMPRESSORS THROUGH EARLY DETECTION, SAVING RETAILERS AND CONTRACTORS TIME AND MONEY BY AVOIDING FUTURE LARGE FAILURES.**

The feature also saves technicians valuable time by performing the issue identification for them so they can focus on swiftly fixing the issue. Retailers no longer experience long periods of downtime on refrigeration cases affected by compressor failure and power interruptions, subjecting them to expensive product loss.

**TO LEARN MORE ABOUT STORECONNECT'S FAULTY CONTACTOR DETECTION AND CLOUD SERVICES, CONTACT US!**

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