



Reduce Your Energy Costs with Cold Storage Efficiency

FRIGITEK EVAPORATOR FAN CONTROLLERS

Evaporator Fan Savings

By slowing the fans when the compressor is off, energy consumed by the fans is dramatically reduced.

Compressor Savings

Reduced heat from fans means compressors run less, saving more energy and extending compressor life.

Dehydration Savings

Reduced air movement minimizes dehydration of perishables, thus extending their shelf life.

Frigitek is a patented, solid state energy savings technology, designed for walk-in refrigerators and freezers.

Dramatic energy savings from Frigitek have been proven by 7 years of extensive testing and over 3,000 customer installations.

Rebates for Frigitek are available from all major California public utilities.

Frigitek is being brought to you by:



LESS POWER TO YOU

Efficient Energy Co. is dedicated to helping businesses cut energy costs and improve operations through energy efficiency. We provide smart products, consulting, and engineering.

Please call to receive a survey of your facilities and a complete analysis of your potential savings with Frigitek.



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What is “Frigitek?”	<p>Frigitek is an “Evaporator Fan Controller” that provides dramatic energy savings.</p> <p>It is an excellent way to reduce energy usage in commercial refrigeration systems, including walk-in refrigerators, freezers or cold storage warehouses.</p>
What does Frigitek do to save energy?	<p>Frigitek slows evaporator fans to a reduced speed when active refrigerant flow to the evaporator has stopped.</p>
How does Frigitek work?	<p>Frigitek is installed on or near the evaporator fan compartment inside a refrigerated room, and senses when the room thermostat is satisfied and active refrigerant flow to the evaporator has stopped.</p> <p>Frigitek then slows the evaporator fans to a speed that ensures even temperature distribution, but avoids excessive room air velocity.</p> <p>In this mode, fan energy is reduced by 75% to 80%. When the thermostat eventually calls for cooling again and refrigerant begins to flow, the fans return to full speed.</p> <p>Reducing fan energy decreases the heat load that must be removed from the refrigerated room, so energy for compressor operation is also saved.</p>
How much will Frigitek save?	<p>Energy and cost savings range between 25% and 35% of total refrigeration system energy.</p> <p>Frigitek engineers have a spreadsheet for calculating estimated energy and cost savings that is accepted by all major utilities in California.</p> <p>To find out how much Frigitek can save in your system, request a no-charge, no-obligation site equipment survey from Efficient Energy Co.</p>
What return on investment can I expect?	<p>Frigitek investments have typical payback periods between 8 and 18 months, after utility incentives. Your installation size, your electric rates, and your utility incentive programs will affect your return on investment.</p>
What is Frigitek’s track record?	<p>There are now over 3000 Frigitek installations. Frigitek has been on the market since the year 2000. All the major utilities in California have accepted Frigitek as a valid product, and now provide incentives that typically pay for 30% to 50% of installed cost. Use of Frigitek outside of California is also growing.</p>
Where can I use Frigitek?	<p>Frigitek is specifically designed for retrofit control of evaporator fans for refrigerated rooms, in all of the following situations:</p> <ul style="list-style-type: none">• Evaporators may be newly manufactured, or in service for many years.• Evaporators with single-phase power or three-phase power, and a wide range of voltages and amperages.• Both refrigerators and freezers.

<p>Where can I use Frigitek? (cont'd)</p>	<ul style="list-style-type: none"> • Any type of refrigerant and compressor systems. • Smaller walk-in units like in restaurants, florists, groceries and convenience stores. • Large cold storage warehouses like in distribution centers and institutions. • Frigitek is not for use in smaller reach-in-only refrigerators, nor in air conditioning systems.
<p>Is Frigitek easy to install?</p>	<p>Frigitek may be installed by any qualified refrigeration technician or electrician. Each unit comes with clear installation instructions, and a bag of connectors and fasteners to simplify installation.</p> <p>No invasion of the refrigerant-filled loop is required, so installation goes quickly, and does not require any business interruption.</p> <p>Frigitek engineers are also readily available should installation questions arise.</p> <p>Efficient Energy Company can provide an installation technician if you desire.</p>
<p>Is there any situation where Frigitek will not save energy?</p>	<p>Since Frigitek saves energy when the room thermostat is satisfied, Frigitek will not save energy in rooms that never reach control temperature. This is very unusual, since the vast majority of systems are designed and operated to maintain a constant temperature. If you think one of your systems is always actively cooling and never satisfies the thermostat, please inform the Efficient Energy representative during your site survey. If needed, operation time can be measured with a “duty-cycle analyzer” to determine savings more accurately.</p>
<p>How long will Frigitek last?</p>	<p>The Frigitek should outlast your refrigeration system.</p> <p>The single-phase Frigitek is an all solid-state device, with no moving mechanical parts or relays.</p> <p>The three-phase Frigitek system has been tested over 750,000 cycles, equivalent to 40 years of operation, with no failures to controllers or fans.</p> <p>Frigitek’s circuitry includes built-in safeguards. Properly installed, there is no reason for it to fail under normal operation. The first Frigitek units installed in 2000 are still working fine.</p>
<p>Will Frigitek interfere with other refrigeration components?</p>	<p>The Frigitek controls the speed of the evaporator fans only, and does not directly affect any other portion of the refrigeration system. The refrigeration system, including any defrost system, continues to function normally.</p>
<p>Is Frigitek Safe?</p>	<p>Because Frigitek does not interfere with the refrigeration cycle nor directly involve the compressor, it cannot harm the compressor, the condenser or any other equipment. Because the compressor duty cycle is reduced, it can only have a beneficial effect on the equipment and will extend its life.</p>

FRIGITEK
FREQUENTLY ASKED QUESTIONS
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<p>Is Frigitek a Variable Frequency Drive?</p>	<p>Frigitek is NOT a variable frequency drive product. Frigitek engineers learned early on that VFD's can damage evaporator fans. Frigitek's patented, gentle method of slowing fan motors is ideally suited to one special task: retrofit control of evaporator fans for refrigerated rooms. For this purpose there are no better methods available than Frigitek.</p>
<p>Are there any types of evaporator motors where Frigitek should not be used?</p>	<p>Frigitek works with all known types of three-phase motors found in evaporators. Nearly all single-phase motors found in evaporators are shaded-pole motors or permanent split capacitor (PSC) motors. Frigitek works great with both. In rare single-phase cases, a motor with a centrifugal switch, like a capacitor-start or split-phase motor is found. These motors cannot be safely slowed by any means, including Frigitek. ECM motors, also rare, may not be used with Frigitek.</p>
<p>What is Frigitek's warranty?</p>	<p>Frigitek Evaporator Fan Controllers are warranted for five (5) years from the date of purchase against defects in materials and workmanship. The manufacturer will repair or replace any defective unit with a new or refurbished unit, free of charge, subject to conditions indicated in the owner's manual.</p>
<p>Will Frigitek cause icing?</p>	<p>Frigitek will not contribute to any tendency for the evaporator coils to ice up. Because it operates the fans at high speed whenever the system is in cooling mode, the evaporator heat transfer characteristics are unchanged. For extra protection Frigitek also has an "Ice Sensor" feature, which will continue to operate the fans at high speed if ice is detected in a refrigerator coil. This prevents ice from accumulating long before it would be noticed by facility personnel.</p>
<p>Will room temperature distribution remain even?</p>	<p>Frigitek ensures sufficient airflow to keep temperatures evenly distributed while the fans run at low speed. This has been confirmed by both testing and customer experience.</p>
<p>Does Frigitek require any compromise of refrigerated room performance?</p>	<p>No. Properly installed, Frigitek will not diminish refrigerated room performance at all. Frigitek requires no routine maintenance, and requires no new employee activity. It just quietly saves energy. Your business continues as before, only with improved efficiency.</p>
<p>Are there additional benefits to Frigitek?</p>	<p>For certain applications, other benefits can equal or exceed the benefits of energy savings. The reduced air movement extends the shelf life of perishables such as meat, fish, produce, pizza dough, and flowers by slowing the dehydration process. In addition, the reduced running of the compressor, condenser and evaporator will extend their life.</p>
<p>Where does Frigitek come from?</p>	<p>Frigitek was developed and is manufactured in Watsonville, California.</p>
<p>How can I implement Frigitek?</p>	<p>Contact: David McKinley, P.E. President, Efficient Energy Co. (619) 857-3172 david@efficientco.com www.efficientco.com</p>