

*Energy solutions that increase your bottom line*

## Opportunity Brief: Controlling Vending Machine Energy Costs

It is estimated that there are over 480,000 refrigerated vending machines in the State of California that consume over 1.7 billion kilowatt-hours (kWh)<sup>1</sup> of electricity each year. The estimated cost to power these machines is over \$268 million<sup>2</sup>. Unfortunately, these machines operate 24 hours a day, 365 days a year. Most schools, cities and businesses that “host” these machines do not realize the costs they bear to power these machines, but many are now taking advantage of a proven technology to help reduce their energy costs.

The VendingMiser<sup>®</sup> is designed to power-down a vending machine when there is no foot traffic in front of the machine for 15 minutes. If someone walks by the machine, the motion sensor will sense the movement and send power back to the machine. The VendingMiser<sup>®</sup> is guaranteed to keep the product cold while significantly reducing energy use and costs.

The VendingMiser<sup>®</sup> produces an average energy savings of 46%, or about \$250 per machine per year. Most California utilities have rebates to reduce the costs of the devices. As a result, the cost to deploy the technology is usually recovered in less than 4 months.

KJK&A is a strategic partner with USA Technologies, Inc. As such, we make available the VendingMiser<sup>®</sup> to government agencies and school districts at pre-negotiated discount pricing based on General Services Administration (GSA) Schedule 70 (GS-35F-0031R).

If you are interested in saving energy and money and helping improve the environment, please call us toll free **(877) 663-9442** or email [info@smartenergyoptions.com](mailto:info@smartenergyoptions.com) and we will send you a detailed estimate of your potential savings.



Money Isn't All You're Saving

*The VendingMiser can help California save over 770 billion kilowatt-hours (kWh) of energy and over \$123 million in energy costs while reducing carbon dioxide emissions by over 580,000 tons.*

<sup>1</sup> Assumes average energy consumption for a refrigerated vending machine of 3,500 kWh per year.

<sup>2</sup> Assuming electricity costs of \$0.16 per kWh.

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## ***Frequently Asked Questions***

**Q: *What is VendingMiser®?***

A: VendingMiser® is a proven power control technology for refrigerated beverage machines that delivers 46% (on average) of annual electricity consumption and costs. It is a simple plug-and-play external device. More than 150,000 units have been installed in corporations, school districts, colleges and universities, government offices, retail stores, and hospitality properties throughout the U.S.

**Q: *How Does VendingMiser® Work?***

A: VendingMiser® uses a Passive Infrared (PIR) sensor (similar to an occupancy sensor to control lighting in a room) to power off the vending machine when the area surrounding it is vacant for 15 minutes. If a customer approaches the vending machine (the sensor will detect a person within 15 feet of the machine) while powered down, VendingMiser® will sense the person's presence and power up the machine immediately without interrupting a sale.

Using state-of-the-art electronics, VendingMiser® is able to automatically determine whether or not the compressor of the vending machine is operating. If the compressor is running, power down command is delayed until the current cycle is completed. Because VendingMiser® will never turn off power to the machine while the compressor is running, VendingMiser® will never short cycle the compressor.

The device maintains the temperature of the vended product by monitoring the outside temperature. Based on this measurement, the machines will automatically be repowered at intervals as short as one hour, but never longer than three hours (for temperatures above 105° F, VendingMiser® will not turn off power to the vending machine.)

**Q: *Have the Major Bottlers Tested VendingMiser®?***

A: Yes. Both The Coca-Cola Company and The Pepsi-Cola Company have tested VendingMiser® and approve its use. If you need additional information, please read the [Bottlers' Perspectives page](#) at USA Technologies website.

**Q: *Have the Vending Machine Manufacturers Tested VendingMiser®?***

A: Yes. Dixie-Narco, one of the largest machine manufacturers has tested VendingMiser® and duplicated USA Technologies' findings. Other manufacturers are being encouraged to test VendingMiser® as well. For more information, please see the [Testimonials Page](#) on USA Technology's website.



## ***Energy solutions that increase your bottom line***

**Q: *Does VendingMiser® Have Any Impact on Product Temperature?***

A: Absolutely not! Bottlers' acceptance of our product is based on extensive testing performed by their labs to document that even in very hot locations; VendingMiser® ensures that the vended product meets their temperature requirements. Additionally, Dixie-Narco tested VendingMiser® and documented that the vended product temperature actually got colder with VendingMiser® controlling the machine. USA Technologies own testing has also shown no significant product temperature change.

**Q: *Have other Independent third parties have tested VendingMiser®?***

A: Hundreds of documented tests have been performed by independent parties (including Southern California Edison and other major California utilities) and verified an average savings of 46%. Letters documenting some of these are posted on the [Testimonials Page](#).

**Q: *Will VendingMiser® save energy when installed on an ENERGY STAR beverage vending machine?***

A: Yes. Working together, an ENERGY STAR certified vending machine and a VendingMiser® can use up to 65% less energy than a standard vending machine.



**Q: *Is VendingMiser® safe for my machine?***

A: Yes. VendingMiser® is compatible with all types of cold drink vending machines. VendingMiser® will not damage your vending machine. This has been validated by VendingMiser® acceptance by bottlers and machine manufacturer testing. In addition to being safe, VendingMiser® tests have shown that it may even extend the machine's life and reduce its maintenance costs.

**Q: *Does VendingMiser® have any impact on vending machine maintenance costs?***

A: VendingMiser® has been shown to reduce overall vending machine maintenance costs. How? During standard operation, the machine's compressor typically cycles three to four times per hour, running each time for about 10 to 15 minutes. In a two-hour period, a compressor will run through as many as eight short duration cycles. While the vending machine area is occupied, VendingMiser® leaves the vending machine powered, and the compressor will operate in the normal fashion. However, when the area around the machine is vacant, VendingMiser® will typically cycle the compressor only once every two hours for a longer cycle, usually about 20 to 30 minutes in length. Running fewer but longer cycles will extend the life of the compressor.

In addition, the replacement frequency of the fluorescent lamps will be reduced. While it is true that power cycling fluorescent lamps may shorten their life, the reduction in time that the lamps are lighted while the machine is powered down produces a net effect that results in the need to replace the lamps less often.

A recent study by Foster-Miller, a third-party independent engineering and analysis firm serving the vending industry, concludes that VendingMiser® creates an annual savings of \$45-\$86 per machine in operation and maintenance costs. The study finds that the controller technology reduces vending machine operating costs by decreasing the frequency and direct expense of component failures, and thus the number of service calls.

**Q: *Does VendingMiser® affect machine sales?***

A: There is no evidence to suggest that sales will decrease with VendingMiser® controlling the machine. Some suggest that it may even increase awareness of the machine by turning on when you come near the

## ***Energy solutions that increase your bottom line***

machine. Since product temperature is maintained, customers will not even know that a VendingMiser® has been installed on the vending machine.

**Q: *Is using VendingMiser® preferable to de-Lamping?***

A: Absolutely! Some customers have de-lamping their vending machines as an alternative way to reduce their operating costs. However, most operators feel that de-lamping does have a negative impact on machine sales. This problem is eliminated with VendingMiser®. Also, VendingMiser® will save much more energy than de-lamping alone since it reduces the operation of the compressor, which consumes much more energy than the lights. VendingMiser® can be used on a de-lamped vending machine, as up to 46% in energy savings will still accrue.

**Q: *What does it take to install a VendingMiser®?***

A: Installing VendingMiser® is very simple. It is a plug-and-play device so no settings or adjustments are needed. Using the Easy-Install VendingMiser® allows for a 5-minute installation without tools. Simply attach the Easy-Install bracket (which holds VendingMiser® unit and the PIR Sensor) to the machine with the supplied Velcro (see top image at right). VendingMiser® is self testing, and has LEDs that will immediately tell you the status of the unit and the vending machine. Additional installation instructions can be found on our [website](#).



For applications not suitable for the Easy-Install, a different model is available that allows you to unplug the vending machine and plug it into the control unit, then plug the control unit back into the wall outlet. The control unit is mounted on either the wall behind the machine or ceiling using two screws and a metal bracket, both supplied with the unit (see bottom image at right). Mount the occupancy sensor above the machine with two screws. Plug the sensor cord into the control unit. Cover the cord with an attractive piece of non-metallic raceway. Apply the raceway to the wall with two screws and you are done! Installation should take only a few minutes.



**Q: *What happens if a VendingMiser® fails?***

A: In the unlikely event that any component in the sensor or the control unit fails, there is an indicator lamp on the sensor that tells you the device is not operable. More importantly, the VendingMiser® will always “fail safe” by allowing the vending machine to remain on and operate normally.

VendingMiser® is a member of USA Technologies' extensive EnergyMiser family, a product line of occupancy-based control technologies with over 150,000 units installed in the field. Our nearly perfect field record allows us to provide a five-year, no quibble warranty on VendingMiser®.

**Q: *Can VendingMiser® be used on machines that are outside?***

A: Yes. There are models that are weatherproof that can be used in any outdoor locations or where VendingMiser® may be exposed to water.

## ***Energy solutions that increase your bottom line***

**Q: *Are there any applications that are not suitable for VendingMiser®?***

A: Yes, but only a few. VendingMiser® is not designed to be used on any vending machines containing perishable goods. VendingMiser®'s savings mode assumes that its location is not occupied around the clock. In addition, if your machine is equipped with a “cashless” payment system, there is an internally installed device that is more appropriate.

**Q: *Is vandalism a problem?***

A: Very few cases of vandalism to a VendingMiser® have been reported. The steel mounting bracket attaches the control unit behind the vending machine, where it is difficult to access. Some customers have commented that vandalism is likely to be decreased since vandals are concerned that the sensor is part of a security system. A wire gage is available for protecting the sensor if necessary. Note that if the vending machine is already located inside a cage, VendingMiser® is also protected by this enclosure.

**Q: *What if our machines are moved or we change vendors?***

A: The machine can easily be moved without removing the VendingMiser®. If you are changing vendors, we recommend the VendingMiser® be removed before the old machines are removed, and simply reinstalled on the new machines while they are being put in place and there is ready access to the rear of the machine.