



## VENDING MACHINE ENERGY EFFICIENCY PROGRAM

### Frequently Asked Questions

***Q: What is the Vending Machine Energy Efficiency Program?***

A: The Vending Machine Energy Efficiency Program provides Riverside Public Utilities' customers with EnergyMiser® energy savings devices for refrigerated vending machines (VendingMiser®) and glass door coolers (CoolerMiser®). The EnergyMiser® is a proven technology that delivers significant energy and cost savings.

***Q: How Does an EnergyMiser® Work?***

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

Using state-of-the-art electronics, the EnergyMiser® is able to automatically determine whether or not the compressor of the machine is operating. If the compressor is running, the power down command is delayed until the current cycle is completed and the compressor turns off, which eliminates the potential for short-cycling the compressor.

The EnergyMiser® maintains the temperature of the 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.



***Q: How much energy and cost savings are expected?***

For refrigerated vending machines, the VendingMiser® delivers and average of 1,610 kilowatt-hours per machine per year, which could be as much as \$300 in energy cost savings per machine per year. For glass door coolers, the CoolerMiser® delivers and average of 1,205 kilowatt-hours per machine per year, or about \$200 in energy cost savings per machine per year.

***Q: Are the EnergyMisers® a proven technology?***

Yes. There are over 200,000 EnergyMisers in use in the USA, Canada, Mexico, United Kingdom, Germany and Australia. Customers include thousands of schools, cities, counties and many Fortune 500 companies, including Wal-Mart, Qualcomm and Kroger.

Over 65 utilities nationwide have or are currently offering programs to promote the use of the vending machine controls including Pacific Gas & Electric, Southern California Edison, Sempra Energy (San Diego Gas & Electric), Arizona Public Service, Austin Energy, Gainesville Regional Utilities, Idaho Power, Lakeland Electricity, MidAmerican Energy of Iowa, Puget Sound Energy, Tacoma Public Utilities and the Western Electricity Coordinating Council.

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

A: Yes. Both The Coca-Cola Company and The Pepsi-Cola Company have tested EnergyMiser® and approve its use.

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

A: Yes. Dixie-Narco, one of the largest machine manufacturers has tested EnergyMiser® and duplicated USA Technologies' findings.

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

A: No. Bottlers' acceptance of our product is based on extensive testing performed by their labs to document that even in very hot locations; EnergyMiser® ensures that the vended product meets their temperature requirements. Additionally, Dixie-Narco tested EnergyMiser® and documented that the vended product temperature actually got colder with EnergyMiser® controlling the machine. USA Technologies own testing has also shown no significant product temperature change.

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

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%.

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

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

***Q: Is the EnergyMiser® safe for my machine?***

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

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

A: EnergyMiser® 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, EnergyMiser® leaves the vending machine powered, and the compressor will operate in the normal fashion. However, when the area around the machine is vacant, EnergyMiser® 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 EnergyMiser® 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 EnergyMiser® affect machine sales?***

A: There is no evidence to suggest that sales will decrease with EnergyMiser® controlling the machine. Some suggest that it may even increase awareness of the machine by turning on when a person comes near the machine. Since product temperature is maintained, customers will not even know that an EnergyMiser® has been installed on the vending machine.

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

A: Yes. 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 EnergyMiser®. Also, EnergyMiser® 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. EnergyMiser® 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 EnergyMiser®?***

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

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 EnergyMiser® 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 EnergyMiser® will always “fail safe” by allowing the vending machine to remain on and operate normally.

EnergyMiser® 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 EnergyMiser®.

***Q: Can EnergyMiser® 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 EnergyMiser® may be exposed to water.

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

A: Yes, but only a few. EnergyMiser® is not designed to be used on any vending machines containing perishable goods. EnergyMiser®'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 an EnergyMiser® have been reported. The steel mounting bracket attaches the control unit behind the vending machine, where it is difficult to access.