



## What is the Articmaster $\mu$ Plug Power Saver?



**Product Overview:** The  $\mu$ Plug (Micro Plug) Power Saver is a solid-state motor efficiency controller that improves the efficiency of a single-phase electric motor. Depending on the application, the  $\mu$ Plug can reduce power consumption by 8 to 15% or more. The  $\mu$ Plug especially saves electricity in applications where the motor is not under full load. In constant-speed, variable-load applications, the patented technology provides precisely the right amount of power to meet the demands of the application.

### How does it save energy?

The  $\mu$ Plug Motor Controller's patented energy saving technology uses a microprocessor and circuitry to sense the energy requirements of a motor. By monitoring both voltage and current being fed to the motor, it can precisely calculate the power that is instantaneously required by the motor. The high-speed response circuits continuously monitor the current and voltage to instantly provide the exact amount of energy the motor needs. This reduces unnecessary energy use. As a result, the motor maintains its rated speed and torque under variable loads, while reducing the energy consumption of the motor.

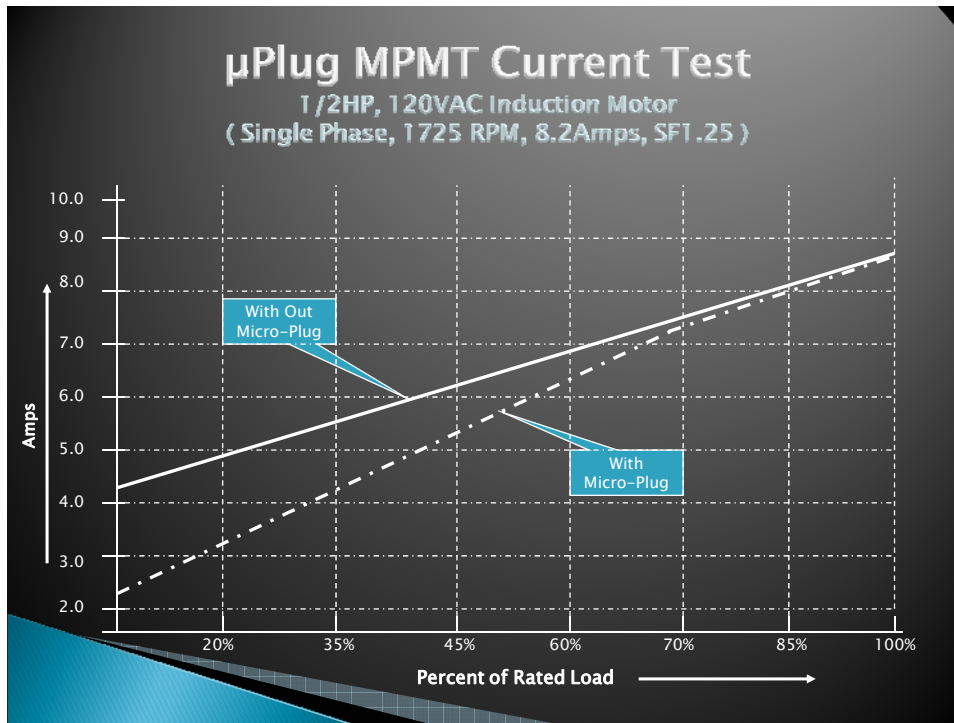
## Benefits:

- **Reduce electricity consumption:** The  $\mu$ Plug has been demonstrated to reduce electricity consumption by 8 to 15%.
- **May qualify for a rebate:** The  $\mu$ Plug has recently qualified for an energy efficiency rebate in one California city. More rebate qualifications are soon to follow.
- **Soft Start Functionality:** The  $\mu$ Plug provides soft start functionality to provide a smooth acceleration of the motor to normal operating speed.
- **Electronic overload protection:** Electronic overload protection will avoid potential motor failures.
- **Quieter motor operation:** When the  $\mu$ Plug is installed on a pool pump or air-conditioner unit, one of the repeat comments that we receive is that the units run noticeably quieter. "When our air conditioner cycles on, it is much quieter now."
- **Less heat generation:** Studies show that a motor with  $\mu$ Plug generates far less heat than one without. If the motor is in an air conditioned space it adds to the heat load and wastes energy to cool that load. A hotter motor is more likely to have a shorter lifetime.
- **Easy installation:** Designed for simple installation and operation, the  $\mu$ Plug Motor Controller is easily configured for your application.
- **Additional benefits** include reduction of peak-demand charges, increased motor life, increased protection to prevent motor burnouts, and reduced maintenance costs.

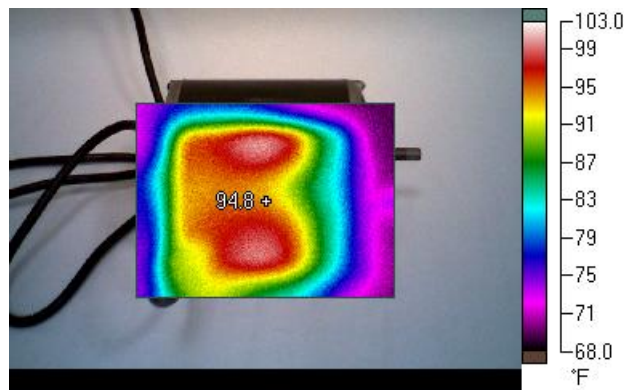
## Features:

- Patent-Pending Motor Power Management Technology (MPMT)
- High-speed Feedback Control: The high-speed feedback control uses control signal from natural rotor-slip in stator current, not artificial references like error or phase-lag signals. It achieves optimum motor efficiency by rapidly matching motor torque to workload
- Over-current protection
- Surge protection
- Available in single phase, in multiple sizes:
  - PS-1B  $\mu$ Plug Model** (120VAC 6A: plug-in model, indoor use)
    - Household: 2<sup>nd</sup> refrigerators (models earlier than 05')
    - Grocery: Refrigerator, Freezer, Vending Machines
    - Motels: Mid-size Air-Conditioners, Etc.
    - Restaurants: Cooler, Merchandiser, Prep-Tables
    - Warehouses/Manufacturers: Conveyor motors, Drills, tools, etc
    - Coin Laundromats: Gas Dryers
  - MPM-30A  $\mu$ Plug Model** (208/220/240VAC: outdoor use)
    - Home/Office: Roof mounted Air conditioners (max 4 ton)
    - Motors: Drill machines, Grinders, Swimming pool pumps
    - Grocery: Refrigerators
    - Farms: Down-hole pumps

Data:



**Thermal Test Data:** A motor was run for 10 minutes without μPlug, and it heated up, from room temperature to 103 degrees F. Then, the μPlug was installed, and, in another 10 minutes, the motor cooled down by 10 degrees F, even while running. The conclusion is that wasted energy is given off as heat, and the μPlug reduces the amount of wasted energy and wasted heat. The thermal image below shows white spots which indicate a temperature of 103 degrees F.



Thermal Image of a motor reaching 103°F