

BAMU Project Description

Overview

There are millions of aquariums in the world. The industry in North America is valued in the 100's of millions of dollars.

In general most aquarium owners "manage" their aquariums manually. They check the tank levels, feed the fish on some time scale, and occasionally look at the temperature.

The problem is that fish can't talk and if there are any problems, there is no communication other than discovering unhealthy or dead fish in the tank.

Haphazard management can lead to high levels of stress for the fish resulting in early death.

Many tanks in professional establishments (such as dentists' offices) can often go for three or more days without any care. Any equipment failure during this time can result in the loss of an entire fish collection.

A device to help aquarium owners manage their tanks in an integrated manner would be a boon to the owners as well as the health and welfare of the fish.

The BAMU

The Beachcraft Aquarium Management Unit is a device that incorporates all the elements necessary for the proper management of an aquarium. These include:

- Digital clock control for precise control of lighting
- Digital clock control for multiple feed times utilizing an automated fish feeder.
- Electronic Heater control incorporating high accuracy temperature sensors
- Solid state advanced monitoring of air pressure pump

The BAMU has advanced error and alarm detection for the system. In addition to the alarms, a suggestion towards the solution to the alarm is presented to the user. Most of the alarm settings can be set to alarm on automated criteria or the user can set levels manually. These include:

- Low, High and Trip conditions for the tank temperature. Detects defective heaters (failed on / off)
- Detection of light level which can detect dead bulbs or dim levels from defective ballasts or aging bulbs or low power line voltage
- Failure or weakening of the air pressure pump or associated tubing or valves
- Detection of low water tank level

In addition to local alarms, the BAMU has the ability to trigger an auto-dialer to phone for help if desired.

The BAMU also has a scheduler that will remind the user to either clean the tank, add water or test the tank chemistry on a regular basis.