Edstrom

PulseCMC®—Monitoring and protecting your critical research

PulseCMC increases vivarium efficiencies by automating many time-consuming daily tasks that your team performs, such as data collection of environmental conditions, water treatment and delivery, and alarming and reporting (**Fig. 1**). With Pulse, daily operations are improved as the system consistently provides variable free animal water, environmental monitoring, light control, alarm notification, and automated reporting. Pulse monitors and controls the automated water delivery system and ensures the delivery of clean water around the clock. Pulse protects animal health, research integrity and gives you peace of mind.

Pulse and the automated watering system

The water that animals drink must be free from particulates, bacteria, organics and other micro-organisms that could affect their health and negatively impact research. As with other sources of variability in the vivarium environment, such as light cycles, types and quality of feed or temperature shifts, animal drinking water quality is susceptible to variability if left unchecked. Therefore, controlling water quality is as important as controlling lighting, feed and air.

The Pulse solution seamlessly integrates Edstrom's automated watering system, offering users a powerful tool for use in their quest for scientific discovery. The automated watering system starts with superior water purification and treatment, and continues through to the delivery of that water right to the animal, ensuring every drink is clean and fresh. The use of the Pulse automated watering system eliminates repetitive, time-consuming tasks and reduces ergonomic injuries through automation.

A system designed for purity—quality water delivery

There are different methods for purifying and treating animal drinking water. Deciding what approach to take is dependent on your current water conditions, and is best evaluated based on quality water analysis. By testing for water quality, insightful decisions can be made when selecting purification and treatment methods, such as filtration, reverse osmosis and chemical injection.

The physical delivery of drinking water includes transportation through stainless steel piping from the storage point to the individual drinking valves inside each animal cage. Pulse automatically flushes the water in the piping in order to continuously present the animals with variable free water. User-defined flushing schedules are set within the Pulse system so there is no need for staff to remember to perform a flush—it is done automatically.

The frequency of flushing is dependent on the needs of the research. Pulse offers flexible scheduling of flushes to help accommodate those needs. Pulse records the details of flushing events and makes them available in a report.

Alarming

Pulse sends out notifications if a set parameter falls out of range (**Fig. 2**), allowing users to take action before the event negatively impacts the study. Pulse provides real-time data, giving users the ability to make informed decisions about what is happening in the vivarium. Alarm notifications coupled with real-time data provide confidence that the research is being performed in a stable and consistent environment.

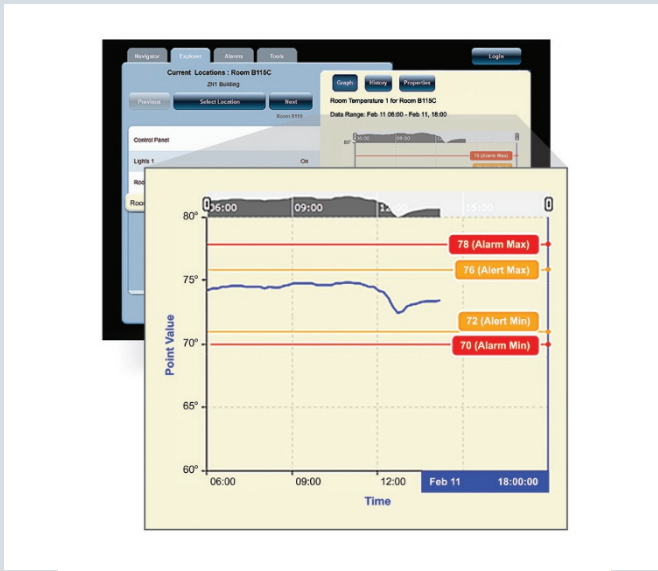**FIGURE 1** | Profile of the PulseCMC application.

FIGURE 2 | Example of Pulse alarm range assignments and notification points.

With the ability of Pulse to provide data and notifications from any web-enabled device, users can always be in touch with the critical points that they are monitoring. Alarm settings can be programmed so that staff can prioritize any deviations that occur and be mindful of their level of urgency. Furthermore, Pulse provides historical trending data that can aid in the prediction of problems before they occur through the Alarm Reporting function.

Reporting

The Pulse system can automatically generate several types of reports, including: High/Low/Average, Trend, Alarm, Event, Audit, Users, and Settings. Reports can be set up to be run automatically, and the team members who receive report emails can be specified. Reports can be used to provide an unbiased audit trail that aids you in meeting the requirements of regulatory bodies and maintaining annotated compliance. All report types can be run on demand.

Pulse—monitoring and control of the automated watering system

With Pulse automated watering system control and monitoring, animals have constant access to clean, fresh water that assures their welfare. Vivarium staff will receive tailored and relevant data that is pertinent to their role, and enjoy greater productivity thanks to the automation of many routine tasks. Pulse empowers staff to make informed decisions based on real-time data and provides the confidence that critical parameters are under constant watch. The Pulse solution increases the visibility of your vivarium and improves team communication, promoting a laboratory workplace that is efficient and worry free.

Company profile / contact

Edstrom Industries, LLC is the recognized leader in providing automated animal watering systems, water purification and environmental monitoring and control solutions to the world's top animal laboratories. Since 1969, leading universities, government labs, pharmaceuticals and biotech firms have relied on the Edstrom range of products, services and expertise to ensure the efficiency of their facility and the elimination of variables in their studies. For more information on PulseCMC or other Edstrom products, call us at 800-558-5913 or visit us on the web at http://www.edstrom.com.

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