

World Pulp & Paper

THE INTERNATIONAL REVIEW FOR THE PULP AND PAPER INDUSTRY



2015

Improving online monitoring and alert systems

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INTRODUCTION

Modern pulp and paper manufacturers require online monitoring and alert systems to support their operations. Automation allows for the quick and reliable control of processes and chemical dosing. Having a web-based customer portal and data dashboard interface not only gives customers access to vital information regarding operations, it also enables chemical-supplier field-based personnel to identify operational gaps and provide potential solutions. Buckman has introduced its OnSite unit in more than one hundred customer sites. This interface along with EZe Monitor® was created to meet specific customer needs for up-to-date operational insight. The level of control and automation provided is site specific, dependent upon the process conditions of the customer, and system variability. The following article outlines the features and benefits of the OnSite technology and how it, when integrated with Buckman's EZe Monitor, can deliver value for the customer.

EZe Monitor – Overview:

Manual and frequent operator testing was the best way to monitor and maintain process water quality and control in the past. Buckman introduced EZe Monitor to automate process monitoring to keep it in optimal condition at all times. EZe Monitor is offered in a variety of configurations and customised to track multiple chemical treatment levels, to help

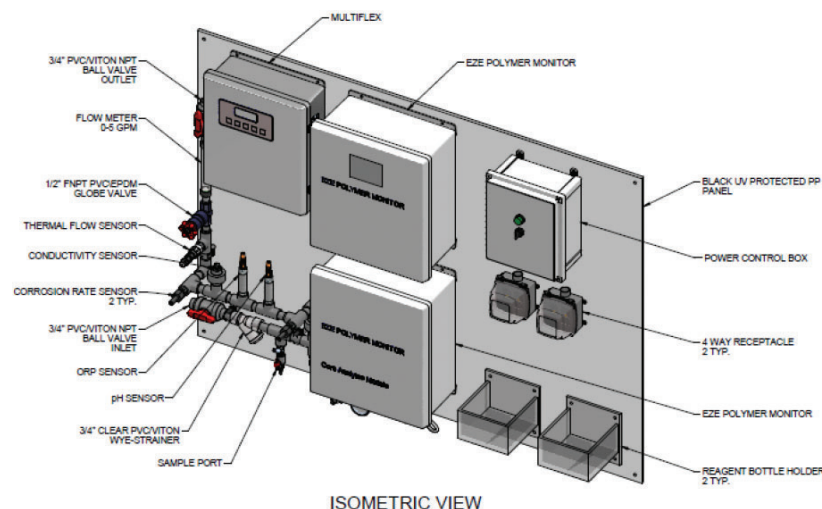


Figure 1. Isometric view of EZe Monitor® and its components

Compared to conventional corrosion monitoring techniques, EZe Monitor's advanced design uses electrochemical technique, such as linear polarisation resistance (or LPR).

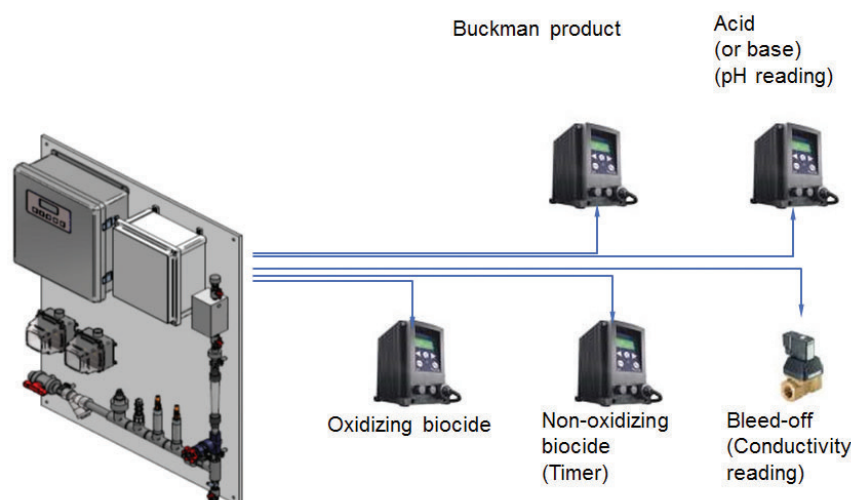


Figure 2. Control relay outputs in EZe Monitor

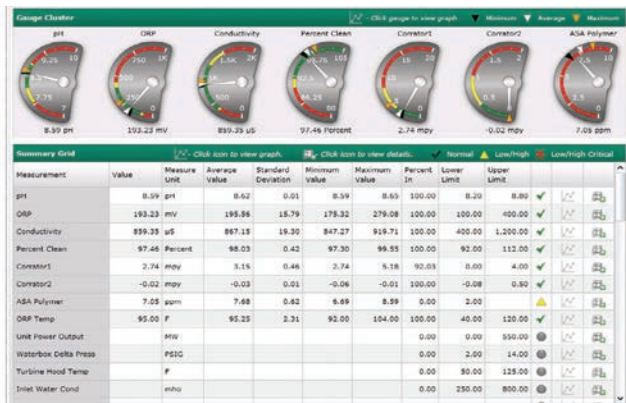
maintain complete control over the process. Customers have been using EZe Monitor to control basic water quality parameters, such as pH, ORP and conductivity, in addition to

adjusting levels of treatment chemicals remotely. Accessible via Web or LAN, EZe Monitor allows remote access to historic microbiological, scale and corrosion control data.

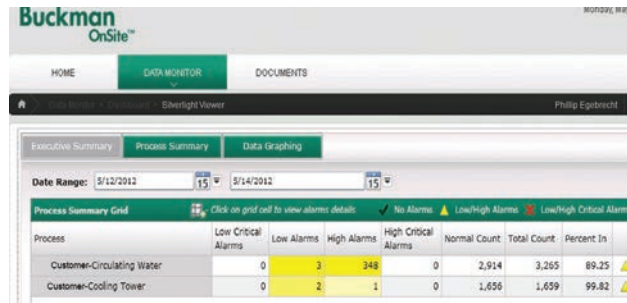
The level of control and automation provided is site specific, dependent upon the process conditions of the customer, and system variability

BUCKMAN ONSITE® – AN OVERVIEW

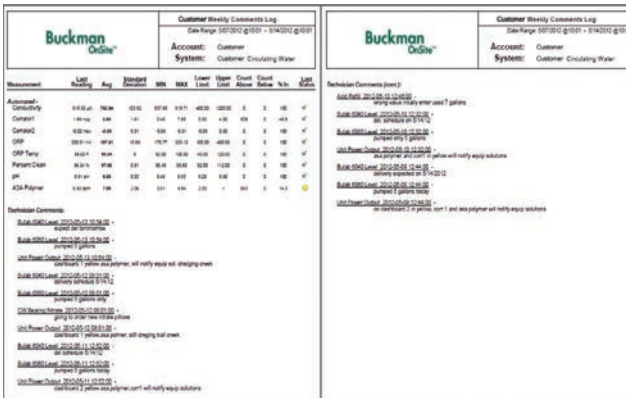
A breakthrough in customer reporting, Buckman OnSite's web-based customer portal and data dashboard interface give customers and their service reps access to vital information. It provides daily summary reports, exception reports, document management, data comparison and monitoring of key parameters.



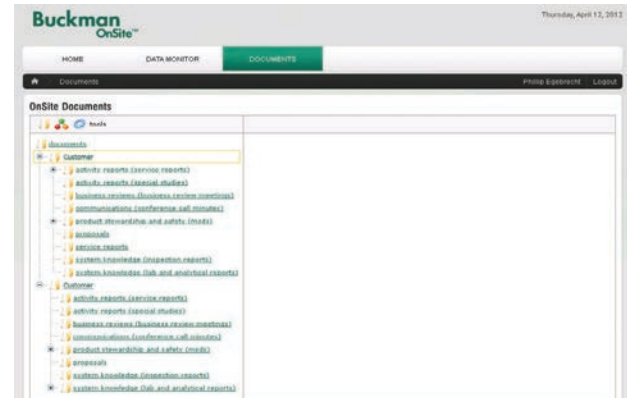
(3a).



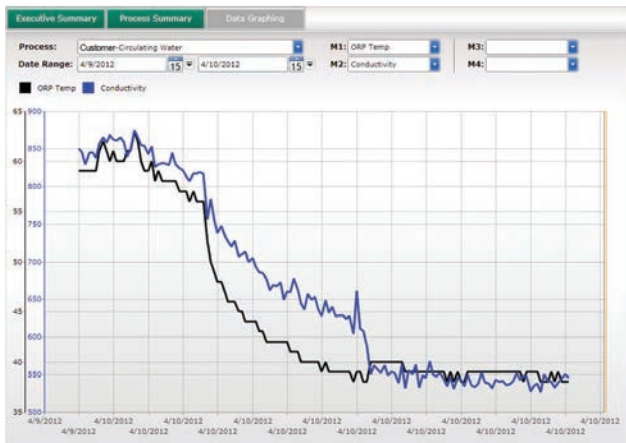
(3b).



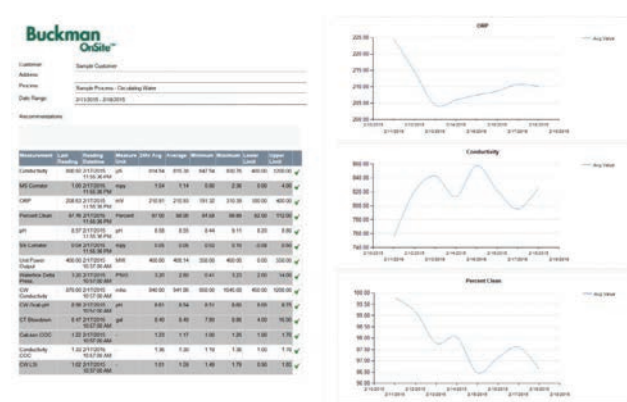
(3c).



(3d).



(3e).



(3f).

Image 3a & 3b. Dashboard and Executive Summary, 3c: Reports, 3d: Data management 3e: Graphing and data comparison, 3f: Service reports.

Customers have been using EZe Monitor to control basic water quality parameters, such as pH, ORP and conductivity, in addition to adjusting levels of treatment chemicals remotely

INTEGRATING EZE MONITOR® AND BUCKMAN ONSITE®

EZe Monitor can be equipped with several different types of online process controllers (data collection devices). The devices are typically connected via cellular modem, or in some cases may be connected to the customer's network. It couples a powerful multi-I/O platform with analytical sensors and extensive communications technologies. These flexible configuration options make setup and configuration easy and fast.

Automation System Layout

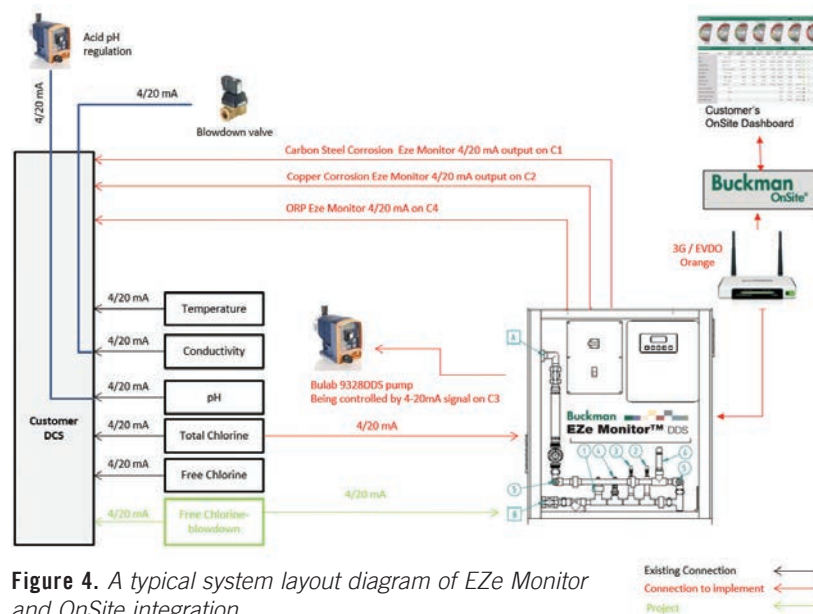


Figure 4. A typical system layout diagram of EZe Monitor and OnSite integration

Controllers and their configurations:

- The ModemMille will provide an Internet routable static IP Address.
- The Buckman OnSite utility server at Buckman headquarters in Memphis will use this IP address to interrogate the Aquatrac controller and retrieve the appropriate data using the telnet protocol on port 23.
- Once the data is retrieved, it is formatted and stored in the OnSite database for use by the dashboard interface.
- Each Aquatrac controller will need a ModemMille device to provide Internet connectivity.

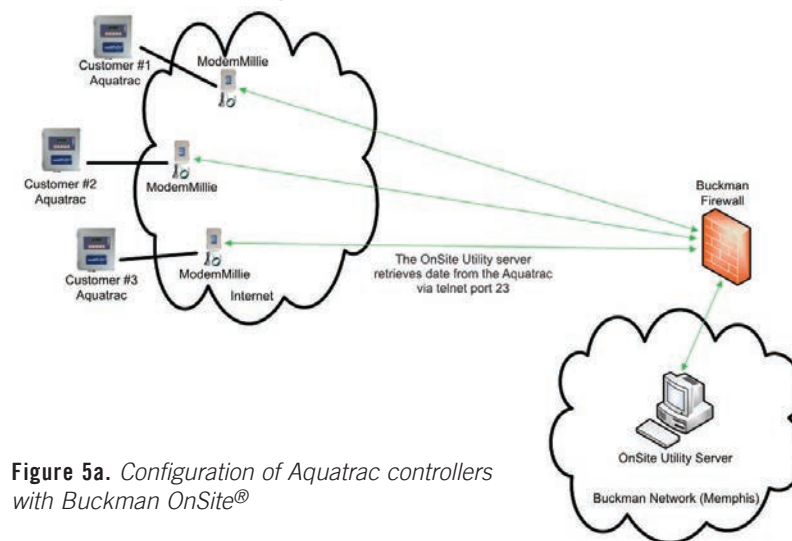


Figure 5a. Configuration of Aquatrac controllers with Buckman OnSite®

- The ModemMille or other cellular device will provide an Internet routable static IP Address.
- The Walchem controllers are configured to send an email with a .csv attachment every hour to the OnSite SMTP server.
- The OnSite utility server will retrieve the attachment, format it and store the data in the OnSite database for use by the dashboard interface.
- Because the Walchem initiates the data transfer, it can either use a cellular connection or be connected to the customer's network.

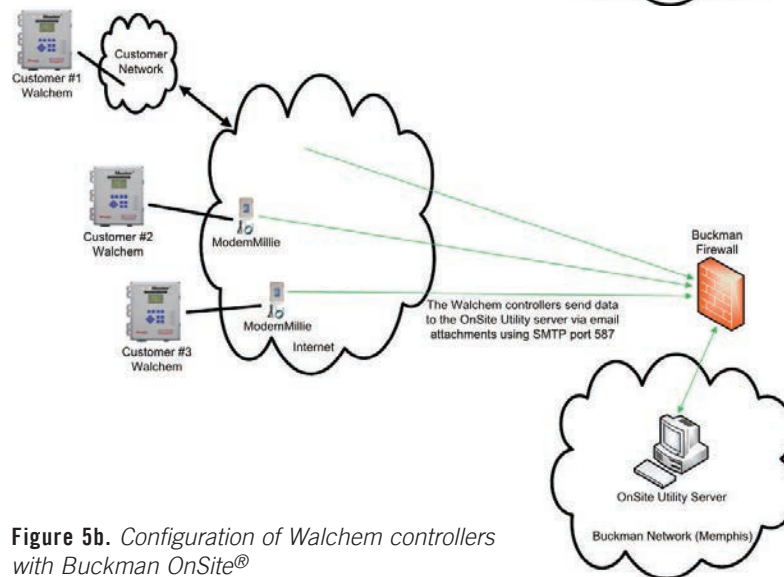


Figure 5b. Configuration of Walchem controllers with Buckman OnSite®

Flexible configuration options make setup and configuration easy and fast

CASE STUDY

Customer: An international tissue manufacturer

Application: DAF turbidity level monitor and control in the mill

Situation: Buckman was asked to design a chemical feed system to maintain the lower turbidity level in the mill DAF system, so that DAF process water can be reused in other parts of the mill.

Value Delivered: Buckman implemented a new DAF control and monitoring system by integrating Buckman EZe Monitor® DAF controller with Buckman OnSite®. This allows the Buckman account manager and customer to remotely monitor and control the process and provide access to real-time and historical process data, auto reporting, etc.

CONCLUSION

As industrial markets focus more on safety, automation, and/or improving operational efficiencies, the demand for more intensive monitoring, measurement and process control has naturally followed. Integrating EZe Monitor with Buckman OnSite meets specific customer needs for up-to-date operational insight by transforming data into useful information.

Incorporating these two monitoring systems can help mills reduce energy and water consumption, predict equipment failure, enhance plant reliability and achieve their sustainability goals.

Acknowledgements

Many thanks to the following Buckman associates: Andre Colangelo, Global Market Development Manager – DWT; Gary Jones, Lead Software Developer; Todd Teems, Computer Systems Engineer; and Bill Soutar, Technical Specialist – Automation, Water Technologies.



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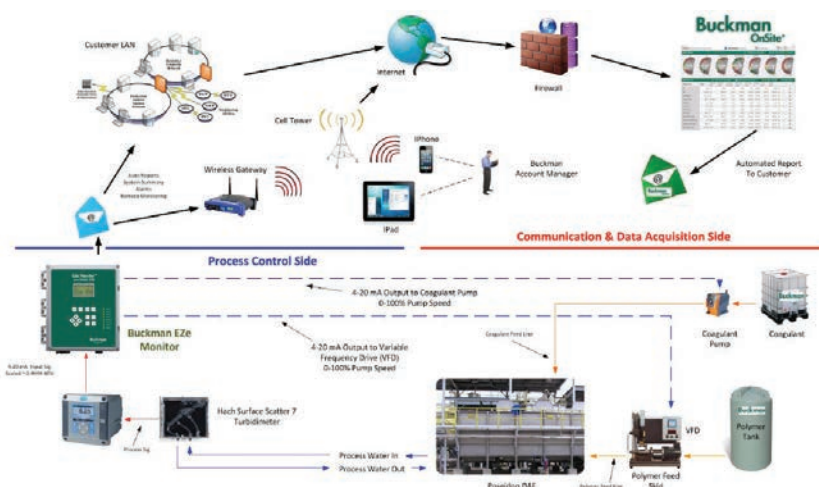


Figure 6. Other references are available for installations of this system around the globe