



FCT Water Treatment

Instrumentation and Control Systems

Instrumentation and Control Systems

As the industry continues to demand more efficient processes, shorter lead times, and consolidated work operations, the value of instrumentation and control systems has increased dramatically. An instrumentation and control system offers monitoring, evaluation and control measures for existing operations that require upgrading, or to improve the development of a new operation. FCT Water has the ability to customize instrumentation and control system solutions to compliment our customers unique needs and performance requirements:

Cooling Water Performance Monitoring Station

This system controls cooling water chemistry to optimize water use, mitigates loss of heat transfer and protects tower/fill components. Treatment chemistries and water balance management are designed to match plant make-up sources including well, surfaced, produced and reclaimed. Some features include an automated chemical feed system for performance bench marking and an integrated data logging for wireless on-line access.

Options include:

Little Dipper In-Line Fluorometer

Turner Designs' Little Dipper is an accurate, single channel, light industrial fluorometer which installs directly into industrial process streams. It provides a 4-20 mA signal output proportional to the concentration of the fluorophore being measured. It can be used with data collection systems to monitor and control the level of treatment chemicals for industrial applications.



Single Channel CORRATER® Instrument

The SCA-1/1L is a single range field mountable CORRATER instrument for continuous corrosion monitoring of water systems.

- Single Range, 0-2 MPY, 0-20 MPY
- Selectable Multipliers for Different Alloys
- Internal Data Logger with PC Interface (SCA-1L)



FCT Water Treatment

1309 North 17th Avenue · Greeley, CO 80631
Main (970) 346.8002 · Fax (970) 346.8331 · National (800) 686.6504
www.fctwater.com



FCT Water Treatment

Instrumentation and Control Systems continued...

Cooling Water Performance Monitoring Station

Options continued:

Neosense Continuous Fouling Monitoring

This sensor continuously monitors the thickness of fouling within the water process enabling the optimization of treatments and confirmation of treatments effectiveness.

- Triggers alerts in case of biofilm
- Optimizes and Reduces chemical discharges
- Mitigates legionella risk



PRO-series pH/ORP Transmitter

The PRO-P3 transmitter can be selected to measure pH or ORP (oxidation reduction potential). Measured pH and temperature values can be displayed separately or together. The corresponding 4-20 mA analog output can also be shown.

- Compact size and NEMA 4X universal mounting
- Versatile Sensor Capability
- Simple Interactive Diagnostics



Walchem EHE Series Metering Pumps

The EHE is the workhorse of the E-Class metering pumps. EHE Series pumps have outputs up to 20 GPH and pressure capabilities to 150 PSI. Combining the EHE performance with a turndown ratio of 1800:1 yields one of the most versatile pumps in the water treatment industry today.

- High Speed Performance (360 strokes-per-minute)
- Engineered Longevity (Features dual bearing support)
- High Compression Ratio



FCT Water Treatment

1309 North 17th Avenue · Greeley, CO 80631
Main (970) 346.8002 · Fax (970) 346.8331 · National (800) 686.6504
www.fctwater.com



FCT Water Treatment

Instrumentation and Control Systems continued...

FCT Dust Suppression Systems

This system is part of an engineered system approach to control fugitive dust. An engineered foam is directed under pressure to capture dust not normally captured by other methods such as water or water/surfactant spray.

FCT Dust Abatement Systems are designed for easy integration into any existing plant control loop. A powerful programmable logic-controller allows the operation of the system to be tailored to exact facility conditions. This allows the foam to be directed and applied as needed to provide superior dust control.

Specifications	
Air Requirement:	5 to 200 CFPM 60 to 100psig
Water Requirement:	1 to 40 gpm 10 to 150 psig
Electrical Requirement:	120 VAC/60/20 A
Enclosure:	Generator: NEMA 12 Cabinet NEMA 4X Stainless Steel Cabinet Fiberglass Environment Shelter Electrical: Explosion proof, NEMA 4, 7, 9 Group D,II Stand alone Group E, F, G
Control:	PLC, Networkable Remote, CRT
Switches:	NEMA Type 4/13 Water tight/Oil tight
Chemical Metering Pump:	Heavy Industrial Hydraulic diaphragm type +/- 1% volume under CTP

FCT Water Treatment

1309 North 17th Avenue · Greeley, CO 80631
Main (970) 346.8002 · Fax (970) 346.8331 · National (800) 686.6504
www.fctwater.com



FCT Water Treatment

Instrumentation and Control Systems continued...

Production of Dust-Control Foam

Foam is produced by the turbulent mixing of chemical solution (foaming agent plus water) and air. If the foam production process was 100% efficient then:

$$\text{SOLUTION} + \text{AIR} = \text{FOAM}$$

Because foam production is not 100% efficient, not all of the air supplied contributes to the production of foam:

$$\text{SOLUTION} + \text{AIR} = \text{FOAM} + \text{AIR}$$

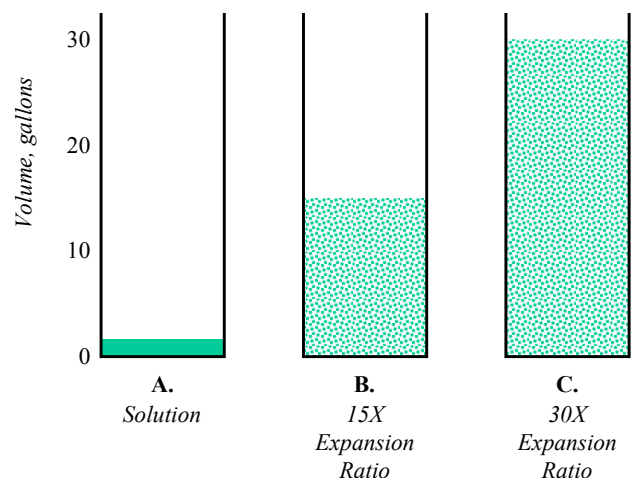
Some amount of air is always wasted in the foam production process. The quantity of wasted air depends on many variables, such as foam-generating equipment, foaming agents, etc. The ratio of the volume of air in foam (foam volume minus solution volume used to generate foam) compared to the volume of air supplied multiplied by 100% is defined as the air efficiency (E_{au})

$$E_{au} = \frac{\text{Air in foam}}{\text{Air Input}} * 100\%$$

The expansion ratio of foam is the ratio of foam produced per unit volume of solution (foaming agent plus water) **see Figure 2.**

Expansion ratio must be measured since air efficiency is never 100%. The measured expansion ratio is always lower than the theoretical expansion ratio.

Figure 2: The expansion of a chemical solution



FCT Water Treatment

1309 North 17th Avenue · Greeley, CO 80631
Main (970) 346.8002 · Fax (970) 346.8331 · National (800) 686.6504
www.fctwater.com



FCT Water Treatment