

1. OBJECTIVE

Details the installation of fail-safe hardware for acid & oxidant feeds.

Overview:

Bleach and Acid may be gravity fed by ON/OFF solenoids.

Controller feed limit timers will turn OFF the feed solenoid if a sensor fails to respond but limit timers cannot protect against solenoids failing ON, controller failure or controllers with incorrect setpoints and/or bypassed limit timer alarms.

A redundant control solenoid may be added, controlled by an independent feed limit timer to protect the cooling water system against acid or oxidant overfeeds. This technique is equally applicable to critical chemical pump feeds.

2. Parts List

Description	Vendor Part #	Nominal Cost
Redundant feed solenoid 120VAC coil rated for Acid or Oxidant service		
Macromatic, Interval ON, Time Ranger Programmable Relay Mfg Part# TR60522	819-0522	\$53.00
Source: www.alliedelec.com 800.433.5700	Requires Socket 819-7061	\$5.00

3. Installation

Install the redundant solenoid upstream of the gravity feed solenoid, wiring the solenoid coil 120 CAC Line through the NO contact set of the programmable relay (Refer to following table). Power the redundant solenoid from the controller terminal which powers the original gravity feed solenoid (Refer to following table).

Set the programmable relay ON time to greater than the maximum expected run time to meet controller ON/OFF setpoints.

Set the controller setpoint deadband to 0.02pH on Acid feed or <5mV on Oxidant feed.

Typical wiring for control by Controller Relay No.3

Controller Terminal	Programmable Relay	Redundant Solenoid
NO3	No.1, No.2	120 VAC, Line to Programmable Relay No.3
N3- Neutral	No.7 - Neutral	Neutral to any unused Controller neutral terminal N1, N4, N5... OR Programmable Relay No.7