

MiniWarden & PoolWarden Chemical Feed Set-Up

These instructions are for liquid acid and chlorine

Note: The controller, when properly set up, will enable tight control of pH within +/- .1 pH. The PoolWarden can be set up for a variable pH set point of as much as +/- .3 based on LSI. pH relay setup will depend on the following:

1. Feeder Output
2. Acid Dilution, (we recommend 1 part acid to 4 parts water)
3. Volume of Water
4. Distance From Equipment to Pool or Spa

Relay Setup - pH

Manual On Time: Programs the amount of time relay remains on when relay is turned on in service menu.

Proportional: Used to fine tune chemical feed and will use whatever percentage of On Time you program when water falls out of set point.

On If pH> or< : Depending on acid or base feed. Choose where you would like to keep pH

On Delay: Amount of time feed cycle will wait before turning on. Prevents ON Off cycling (Default is 20 seconds)

On Time: Amount of time relay will feed chemicals. Typically around 1-2 minutes for spas and 3-6 minutes for pools.

MinTimeOff: Amount of time relay will wait after feeding chemical (Mix Time). Try 4:00 to 6:00.

Off if RLY On: Feed can be disabled if another Relay is on. This is not used for liquid chlorine feed. *(Required for suction feed Cal Hypo)*

Off if Flow Off: Prevents chemical feed if pool flow is off. Cannot be disabled.

SetOvrfeed: Amount of time allowed for condition to be corrected at one time. *(Example: The chlorine has 1 hour to feed and reach set point before being disabled)* Has to be manually reset when overfeed time is reached. Use 00:00:00 to disable. This feature is to help mitigate problems caused by a broken or disconnected acid feed line.

Overfeed: Amount of cumulative time in a day relay is allowed to feed. This resets every day at midnight. Use 00:00:00 to disable. It is best to calculate the maximum amount of acid a pool or spa will need in a 24 hour period. *Example would be a 30 gallon per day pump will dispense 1.25 gallons per hour, a 50 gallon per day pump will dispense 2.08 gallons per hour.* Typically, it takes approximately .25 gallons of acid to neutralize 1 gallon of chlorine when total alkalinity is

in the 80-120 range. Also, take into account acid dilution ratio if any. Properly set up, this will prevent overfeeding of acid in the event of a sensor failure.

Note: The controller, when properly set up, will enable tight control of ORP within +/- 10 mV. Please note that PPM levels are not directly dependent on ORP levels as there are many variables to ORP including pH, cyanuric acid, combined chlorine levels and sunshine. The PoolWarden has an ORP offset that will offer compensation for day and night ORP fluctuation.

ORP relay setup will depend on the following:

1. Chemical Feeder Output
2. Chlorine Dilution (*We recommend straight chlorine to minimize calcification of chlorine injector and switching Chlorine & acid feed lines at injectors monthly to keep chlorine injector clean and keep chlorine feed rates consistent*)
3. Volume of Water
4. Distance From Equipment to Pool or Spa

Relay Setup - ORP (Liquid Chlorine)

Manual On Time programs the amount of time relay remains on when relay is activated in the service menu.

LockOn Time: Used in conjunction with ORP control and pH lockout. If chlorine feed is disabled due to high pH, this feature will allow for chlorine to be dispensed on a time basis until pH can be corrected. Set to amount of time desired along with a waiting time (LockOff)

LockOff Time: This is the amount of time the controller will wait before adding more chlorine in the LockOn time.

Proportional: Used to fine tune chemical feed and will use whatever percentage of On Time you program when water falls out of set point.

On If ORP<: Choose where you would like to keep your ORP. Determine by adjusting pH, alkalinity and sanitizer PPM to desired levels and see what ORP level is at. If using CYA, it is recommended to use 20-30 PPM, 50 PPM MAX.

On Delay: Amount of time feed cycle will wait before turning on. Prevents ON Off cycling Default is 20 seconds and is a must for chlorine generators or using AUX Relay for heater control

On Time Amount of time relay will feed chemical. Typically around 1- 2 minutes for spas and 3-5 minutes for pools, depending on size and feed rate. MinTimeOff Amount of time relay will wait after feequipment to the pool or spa.

Off if pH>: (ORP Relay Only) Used to prevent extreme chlorine levels if pH level too high

Off if RLY On Feed: can be disabled if another Relay is on.

Off if Flow Off: Prevents chemical feed if pool flow is off Set

Overfeed: Amount of time allowed for conditions to be corrected at one time. (Example: The chlorine has 1 hour to feed and reach set point before being disabled) Has to be manually reset when overfeed time is reached. Use 00:00:00 to disable. This feature is to help mitigate edging chemical (Mix Time) Try 4:00 to 6:00 This time is dependent on volume of water and distance of problems caused by a broken or disconnected chlorine feed line. Overfeed Amount of cumulative time in a day relay is allowed to feed. This resets every day at midnight. Use 00:00:00 to disable. It is best to calculate the maximum amount of acid a pool or spa will need in a 24 hour period.

Example would be a 30 gallon per day pump will dispense 1.25 gallons per hour, a 50 gallon per day pump will dispense 2.08 gallons per hour. Also take into account chlorine dilution if any, which is not recommended. Properly set up, this will prevent overfeeding of chlorine due to ORP sensor failure.