

DIGICHEM Plus+

Tips for Remote Setup & Troubleshooting v1.0

Foreword:

This document is intended for a quick analysis of problems that may be encountered with the DIGICHEM Plus+ Controller or systems associated with the controller. It also provides a quick step-by-step guide to ensuring your DIGICHEM Plus+ controller is set up correctly on www.digichemplus.com (if it has an Internet modem).

The normal operation of the controller encompasses many control functions which interact with each other. Therefore, it may sometimes appear that the unit displaying faulty operation, but in fact may be simply reacting correctly to various input states that control the various output states of the controller.

This document is divided into 3 parts:

- PART 1:** Tips for setting up your DIGICHEM Plus+ controller on the Internet
- PART 2:** Action to take if Alarm Notification Received via SMS/e-mail
- PART 3:** General Troubleshooting

PART 1: Tips for Setting up your DIGICHEM Plus+ controller on the Internet

Step 1: Log onto www.digichemplus.com

Check that you have been set up as a user with permission to access to your DIGICHEM Plus+ controller when you log on to www.digichemplus.com.

You require a GROUP name, USER name, and PASSWORD. If you do not have these, please contact CWC or your administrator. If you have them, but have forgotten them, simply click on 'Forgot your password'. You will shortly thereafter receive an e-mail with the details.

Step 2: Confirm DIGICHEM Plus+ controller Settings

1. Check all the SETTINGS are correct and make any changes if necessary
2. Program Alarm Parameters, eg No Flow Alarm, High & Low ORP Alarms
3. Program the Alarm Trip delay. The higher the time, the less nuisance alarms you will receive.
4. Program the ORP & pH Dose Timer alarms. The higher the time, the more time the system has to reach Setpoint when dosing starts. Ensure this time is longer than the regular time to reach Setpoint.
5. Confirm whether pH control should be enabled or not. Disable if not required to control pH.
6. Ensure Biocide Dosing programs are correct
7. Enter the approximate make-up conductivity in the Advanced Setup menu
8. Check the log interval. The higher the interval, the better for graphing longer periods
9. Check that the Time Zone is correct

Step 3: Confirm Alarm Recipients are selected

1. Select contact people on SMS/e-mail Dashboard for alarm notification
2. If person does not exist in drop-down list, please ask your administrator to set them up, if they are not a "one-off" recipient

PART 2: Action to take if Alarm Notification Received via SMS/e-mail

Alarm Notification:	Possible Cause(s):	Recommended Action:
High Conductivity	<ul style="list-style-type: none"> Bleed valve blocked/faulty 	<ul style="list-style-type: none"> Wait to see if alarm cancels. Otherwise check bleed valve
Low Conductivity	<ul style="list-style-type: none"> Tower clean performed. Conductivity probe dirty, faulty or out of calibration 	<ul style="list-style-type: none"> If tower clean performed recently, wait for tower to cycle up. Check and clean conductivity probe, then recalibrate
Bleed Timer Alarm	<ul style="list-style-type: none"> Bleed valve blocked/faulty Incorrect Timer Alarm Settings 	<ul style="list-style-type: none"> Check the bleed valve Ensure the Bleed Timer Alarm time is longer than the time required to bleed to Setpoint
High ORP Alarm	<ul style="list-style-type: none"> High Alarm Set too close to ORP Setpoint Incorrect ORP Control Settings causing overshoot 	<ul style="list-style-type: none"> Wait to see if alarm cancels. If not, increase High ORP Alarm Decrease Dose Cycle ON time (ON/OFF control) or Increase Proportional Band (Proportional control)
Low ORP Alarm	<ul style="list-style-type: none"> No Chlorine in drum / No tablets in brominator ORP Probe faulty 	<ul style="list-style-type: none"> Replenish Chlorine/tablets Check if ORP Dose Timer Alarm has been activated. If it has, then reset ORP dose timer alarm. Check ORP Probe with ORP mV Buffer
ORP Dose Timer Alarm	<ul style="list-style-type: none"> No Chlorine in drum / No tablets in brominator Incorrect ORP Control Settings ORP Probe faulty 	<ul style="list-style-type: none"> Replenish Chlorine/tablets. Reset Timer Alarm. Increase Dose Cycle ON time (ON/OFF control) or Decrease Proportional Band (Proportional control) Check ORP Probe with ORP mV Buffer
Low pH Alarm	<ul style="list-style-type: none"> Incorrect pH Control Settings causing overshoot (assuming Acid dosing) 	<ul style="list-style-type: none"> Wait to see if alarm cancels. Decrease Dose Cycle ON time (ON/OFF control) or Increase Proportional Band (Proportional control)
High pH Alarm	<ul style="list-style-type: none"> No Acid in drum pH Probe faulty 	<ul style="list-style-type: none"> Replenish Acid Check if pH Dose Timer Alarm has been activated. If it has, then reset pH dose timer alarm. Check pH Probe with pH7 and pH10 buffers
pH Dose Timer Alarm	<ul style="list-style-type: none"> No chemical in drum Incorrect pH Control Settings 	<ul style="list-style-type: none"> Replenish Acid. Reset Timer Alarm. Increase Dose Cycle ON time (ON/OFF control) or Decrease Proportional Band (Proportional control)
No Flow Alarm	<ul style="list-style-type: none"> Isolation valve feeding manifold shut Tower shut down Blockage in manifold 	<ul style="list-style-type: none"> Check to see if someone is/has been servicing tower and shut flow to manifold. Check if tower is not running If tower running, check for manifold blockages
Communication Lost Alarm	<ul style="list-style-type: none"> Loss of mobile reception Unit powered down or failed. 	<ul style="list-style-type: none"> Wait a few hours to see if alarm cancels Check if other controllers on www.digichemplus.com are communicating with the DIGICHEM Plus+ webserver If alarm does not cancel, visit site to determine cause.

PART 3: General Troubleshooting:

1. General Controller Function

Fault:	Cause(s):	Fix:
Outputs will not operate, NO FLOW message appears at the bottom of LCD display	<ul style="list-style-type: none">Flow switch faulty, or no flow is passing through the manifold.	<ul style="list-style-type: none">Ensure manifold has sufficient flow through it, check isolation valve.Check float in bowl lifts with flow, clean if necessary, or remove associated nut inside grey tube under float.Disable flow from General Setup Menu if flow switch operation is not required.
Controller does not turn on. Display is blank	<ul style="list-style-type: none">Circuit Fuse blown in controllerMains supply voltage absentRibbon Cable is unplugged or loose	<ul style="list-style-type: none">Check and/or replace controller fuse (240Vac, 2A).Electrician to check mains voltage on site.Securely plug in Ribbon Cable inside controller
Outputs do not operate. No other messages on LCD display	<ul style="list-style-type: none">Control may be halted via programs set in controllerOutput Fuse blown in controller	<ul style="list-style-type: none">Manually test the outputs in the Main Menu, if this works, check controller programs.Replace fuse (240Vac, 4A)
Controller and Site Name are not editable in the controller	<ul style="list-style-type: none">Remote Comms is active for the Web-server interface	<ul style="list-style-type: none">Normal Operation – These can only be edited from the Web-server.
Time and Date Alarm keeps appearing when the controller is powered up	<ul style="list-style-type: none">Clock Battery is flatBattery link is not connected across the two L1 pins	<ul style="list-style-type: none">Replace with CR2032 clock battery from CWCReplace internal jumper for battery link labeled L1, located above the battery on processor board

2. Conductivity / pH / ORP

Fault:	Cause(s):	Fix:
Conductivity / pH or ORP are not reading correctly	<ul style="list-style-type: none">ORP and/or PH BNC connections do not have probes connected.Calibration may be over/under scaled.Ground probe not connected in solution for ORP reading.Probes may be dirty or invisibly coated.	<ul style="list-style-type: none">Check that the pH and ORP BNC connections have probes connected or are terminated.Reset the calibration for the required variable(s).Connect Ground probe to ORP solution.Clean using correct procedure and chemicals.
Conductivity not reading correctly, probe cleaned and tested ok	<ul style="list-style-type: none">An air-bubble may be trapped in the manifold or probe T-piece section.Probe cable or plug corroded due to ingress of water.Unit out of calibration	<ul style="list-style-type: none">Unscrew probe from T-piece, flush manifold, and re-install probe. If possible, let water dribble slowly out the T-piece while screwing the probe in.Check the probe cable & plug for corrosion, and test continuity – replace probe cable.Reset calibration, and re-calibrate
µS/TDS Set-point cannot be set correctly.	<ul style="list-style-type: none">The controller is within a Biocide timer program, and a pre-bleed or bleed-lockout is occurring	<ul style="list-style-type: none">Normal Operation, wait until Biocide program is complete, or cancel the program.

3. Biocide Timers

Fault:	Cause(s):	Fix:
The Biocide timers do not operate after a connection to the Web-server.	<ul style="list-style-type: none"> A settings change has been performed on the Web-server, and downloaded to the controller. 	<ul style="list-style-type: none"> Normal Operation, no fix required
Dosing occurs if there is no flow	<ul style="list-style-type: none"> Dose setting is set to "N" in the Flow Switch menu, with the flow switch enabled for "Normal" 	<ul style="list-style-type: none"> Normal Operation, check flow switch settings.

4. Flow Switch

Fault:	Cause(s):	Fix:
Dosing occurs if there is no flow	<ul style="list-style-type: none"> Dose setting is set to "N" in the Flow Switch menu, with the flow switch enabled for "Normal" 	<ul style="list-style-type: none"> Normal Operation, check flow switch settings.
Controller will not operate, NO FLOW message appears at the bottom of LCD display	<ul style="list-style-type: none"> Flow switch faulty, or no flow is passing through the manifold. 	<ul style="list-style-type: none"> Ensure manifold has sufficient flow through it, check isolation valve. Check float in bowl lifts with flow, clean if necessary, or remove associated nut inside grey tube under float. Disable flow from General Setup Menu if flow switch operation is not required.

5. Remote Comms / Web-Server Interface

Fault:	Cause(s):	Fix:
The Biocide timers do not operate after a connection to the Web-server.	<ul style="list-style-type: none"> A settings change has been performed on the Web-server, and downloaded to the controller. 	<ul style="list-style-type: none"> Normal Operation, no fix required
Controller and Site Name are not editable in the controller	<ul style="list-style-type: none"> Remote Comms is active for the Web-server interface 	<ul style="list-style-type: none"> Normal Operation – These can only be edited from the Web-server.