

Potable Water controllers - User Manual

Appendix 1. Functionalities of PF100 and PF200 controllers

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1. Start-up procedure:

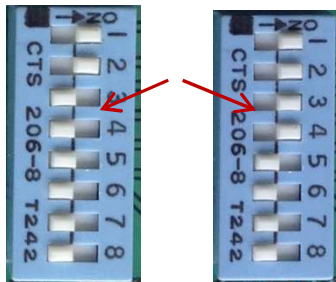
- Ensure all pumps and probes are connected/plugged in correctly. Sockets are labelled for your convenience.
- If a relay is used, make sure relay is plugged in
- Switch the controller on by plugging into a power point. Turn the inlet and outlet valves on to allow flow through the manifold.

1.a. Adjusting the correction factor for your water

In order to adjust the CF (Correction Factor) for your water, it is important to firstly calibrate the FAC probe. (Please see point 2 below for FAC calibration procedure). The CF should be between 0.5 – 1.5 when Calibrating the FAC probe. IF not, follow the instructions below for adjustment. It is advisable to start with a free chlorine level of around 0.5 ppm to ensure a smooth transition.

```
CAL FAC=0.50PPM
CF=9.564
DPD=0.50
Enter To Continue
CAL FAC=0.50PPM
Error Check Probe
Enter To Continue
```

If CF is out of the accepted range, the system may or may not be able to calibrate. For efficient operation it is important to adjust the CF to between 0.5-1.5



In order to adjust the system:

- Open the door of the controller panel.
- Locate the dip switches on FAC board.
- Turn the switches ON, from left to right until CF is in range between 0.5 – 1.5

2. FAC Calibration

It is important to keep the FAC probe calibrated. A DPD1 test can be used to calibrate the FAC probe.

```
CAL FAC=2.98PPM
CF=1.201
DPD=3.31
Enter To Continue
CAL FAC=3.31PPM
FAC 3.31 CAL OK
Enter To Continue
```

Press  and then  until **facCtrl ?**

Input the DPD1 result and press



No Calibration is required if controller FAC measurement is within 20% of your DPD1 test results.

3. Set Sanitize

```
SANITIZE CONTROL=FAC
RLY=HYPO
```

When on SANITIZE page press SET to change settings

```
SET SANITIZE CTR=ORP
RLY=CELL
```

Use  followed by  or  to change the Control Method (CTR) and Relay. The available options are:

CTR:

FAC: to control disinfection via direct measure of chlorine

ORP: to control disinfection via ORP measurement

Relay:

CELL: for salt chlorinators

HYPO: for dosing sodium hypochlorite

4-20mA (option): to control Salt Chlorinators /chlorine dosing via 4-20mA outputs


Set 0-100% or 100-0% according to your equipment.

```
SANITIZE CONTROL=ORP
RLY=4-20
4-20mA=0 TO 100%
```

4. Set FAC / ORP

```
FAC RL=OFF
FAC=0.55 SET=0.50
DUTY=50% FLOW=ON
ALM=+/-00.5 LOCK=OFF
```

When on FAC/ORP page press SET to change settings

Use  followed by  or  to change set point, Duty, Mode, Alarm criteria and Lock out time.

Note:

Either FAC or ORP can be set

When FAC is set as sanitize control, ORP will be read only

When ORP is set as sanitize control, FAC will be read only

```
SET FAC
FAC=0.55 SET=0.50
DUTY=50% MODE=FLW
ALM=+/-00.5 LOCK=OFF
```




5. Set Pre-Chlorination

This function is used when it is desirable to pre-chlorinate the water before water tank by either continual chlorine dosing or adding a water meter on the inlet line.

```
Pre-Chlor      RL=OFF
MODE=OFF
PUMP=1.00 l/hr
DOSE=50 ml/hr
```

When on Pre-Chlor page press SET to change settings

```
Pre-Chlor      RL=OFF
MODE=CONT
PUMP=1.00 l/hr
DOSE=50 ml/hr
```

Use  followed by  or  to Mode from OFF to "CONT" for continuous dosing or "WM" for dosing proportional to Water Meter measurements.

```
Pre-Chlor      RL=OFF
MODE=WM        PPM=10
PUMP=1.00 l/hr
WUM1 DISABLED
```

For CONT mode:

- Input the Hypo pump size
- Input the required dosing rate

```
SET Pre-Chlor
MODE=WM        PPM =10
PUMP= 1.00 L/h
WUM1 1 Pulse=5.00L
```

For WM mode:

- Input the Hypo pump size
- Enable WUM1 (a water meter must be already installed)
- Define the Water Meter for controller (1 Pulse = ? L)
- Set the required ppm of chemical. In order to get 0.5ppm chlorine from a 10% chlorine solution, set ppm to 5.

6. Switch from Logo Page to Data Page

```
Calibration Mode
Choose Cal. Mode ?
Up/Down Select
Press Enter To Exit
```

Press  and then  until **System ?**



```
Calibration Mode
system ?
Up/Down Select
Enter To Confirm
```

Press  and then  until **Panel Selection**


```
System Control
Panel Selection
Up/Down To Change
Enter To Continue
```

Press 

```
Panel Selection Menu
Display Logo Pg
Up/Dn Chg Entr to C
```

Press  or  to Select

```
Panel Selection Menu
Display Data Pg
Up/Dn Chg Entr to C
```


Press  to Confirm and  to exit

7. Timer for Outputs

7a. Check Output Relays for 5 sec



```
IDS =570 FAC=0.45
mS/cm=1.04 ORP=501
TEMP =26.0 pH =7.10
ALARM=ON FLOW=ON

Test RL MAN 5 secs
RL1-pH OFF
ON: NONE
Press Read To Exit
```

When on Logo/Data Page press  and hold for 5 sec

Press  and then  to Change from MAN to RUN


Each Output will RUN automatically for 5 seconds

Press  to Exit and  to main menu

7b. Run Multiple Outputs by Timer

```
IDS =570 FAC=0.45
mS/cm=1.04 ORP=501
TEMP =26.0 pH =7.10
ALARM=ON FLOW=ON

Test RL MAN 5 secs
RL1-pH OFF
ON: NONE
Press Read To Exit
```


When on Logo/Data Page press  and hold for 5 sec

Press  twice and then  or  to set the time


```
Test RL MAN 15 secs
RL1-pH OFF
ON: NONE
Press Read To Exit
```

Press  then  or  to select time unit "mins/secs"


```
Test RL MAN 15 secs
RL4-Pre-Chlor ON
ON: 1 2 4 00:11
Press Read To Exit
```

Press  then  or  to select Output

```
Test RL RUN
RL4-Pre-Chlor ON
ON: 4 00:05
```

Press  then  or  to turn it On/Off

Repeat the above two steps to select more outputs


System automatically **Exits** to normal operations 10 minutes after the timer finishes. Press  if you want to **Exit** earlier.

8. Set Points Sneak Peek

```
TDS =570 FAC=0.45
mS/cm=1.04 ORP=501
TEMP =26.0 pH =7.10
ALARM=ON FLOW=ON
```

```
mS/cm=1.00 FAC=0.50
ORP=500
pH =7.25
**SET-POINTS**
```

When on **Data Page** press  and hold it down

Set points are displayed as long as  button is down

Release  and Press  to return to **Data Page**

9. Set Conductivity/ TDS Conversion Factor

```
Calibration Mode
Choose Cal. Mode ?
Up/Down Select
Press Enter To Exit
```

Press  and then  until **System ?**




```
Calibration Mode
system ?
Up/Down Select
Enter To Confirm
```

Press  then  until **TDS Conv Factor**

```
System Control
TDS Conv Factor
Up/Down To Change
Enter To Continue
```

Press 

```
TDS Conversion
1 uS/cm=0.65 ppm
Up/Down To Change
Enter To Continue
```

Press  or  to change and  to Save

10. Clear Data Log

The following procedure is used to clear data log:

```
Calibration Mode
Choose Cal. Mode ?
Up/Down Select
Press Enter To Exit
```

Press  and then  until **System ?**

```
Calibration Mode
system ?
Up/Down Select
Enter To Confirm
```

Press  and then  until **Clear Datalog**

```
System Control
Clear Datalog
Up/Down To Change
Enter To Continue
```

Press 

```
Clear Data log?
No?
```

Press  or  to change

```
Clear Data log?
Yes?
```

Press  to Continue

11. Set time

Procedure to set time when there is no modem installed on the controller:

```

Calibration Mode
Choose Cal. Mode ?
Up/Down Select
Press Enter To Exit
  
```

Press  and then  until **System ?**

```

Calibration Mode
system ?
Up/Down Select
Enter To Confirm
  
```

Press  and then  until **Set Time**




```

System Control
Set Time
Up/Down To Change
Enter To Continue
  
```

Press 

```

Controller Time:
1/07/12 16:54:18
Press Enter to Save
  
```

Press  or  to change and  to Save

Press  to exit without saving!

NOTE! When a modem is installed the following message appears informing that time zone should be set from AquaReporter website:

```

Controller Time:
Set timezone
on website
Enter To Continue
  
```

Use AquaReporter website to set time zone

12. Activate Common Alarm Port

The Common Alarm port of “WEB READY” controllers is programmed to restart modems when they stop communicating with Aquarius Clouds Server.

As long as there is no modem installed, this port can be activated to send alarms to an external alarm system (e.g., BMS, Siren, flashing light). The relevant steps are described here:

```

Calibration Mode
Choose Cal. Mode ?
Up/Down Select
Press Enter To Exit
  
```

Press  and then  until **System ?**

```

Calibration Mode
system ?
Up/Down Select
Enter To Confirm
  
```

Press  and then  until **Relay Select**



```

System Control
Relay Select
Up/Down To Change
Enter To Continue
  
```

Press 

```

ALARM O/P Controls:
Modem
Up/Down To Change
Enter To Continue
  
```

Press  or  to change to **Common Alarm**

```

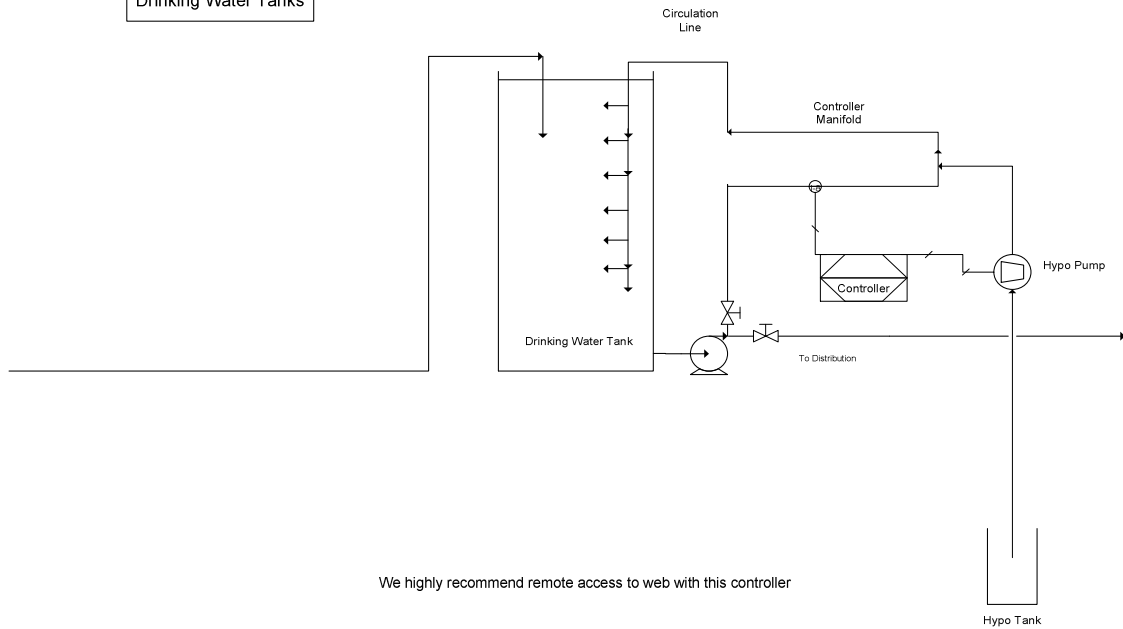
ALARM O/P Controls:
Common Alarm
Up/Down To Change
Enter To Continue
  
```

Press  to Continue

NOTE! This port should not be connected to an external alarm system when a modem is connected.

12. Schematic of Recommended Plumbing Diagrams

Chlorination of Small Drinking Water Tanks



Chlorination of Large Drinking Water Tanks

