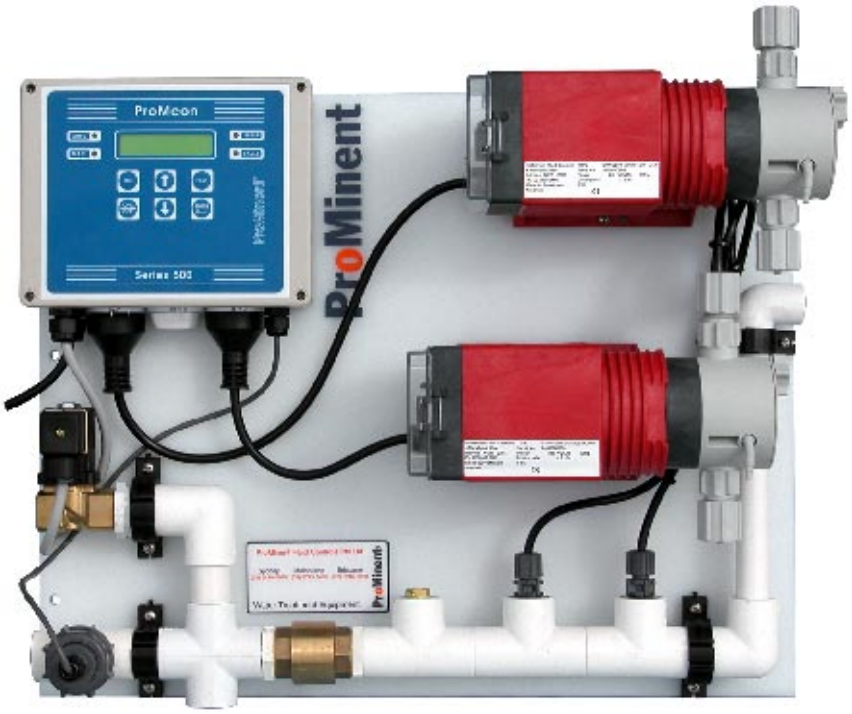
Operation Manual

ProMinent ProMcon 500 series Cooling Tower Treatment Package

Model 510



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ProMcon
Series 500
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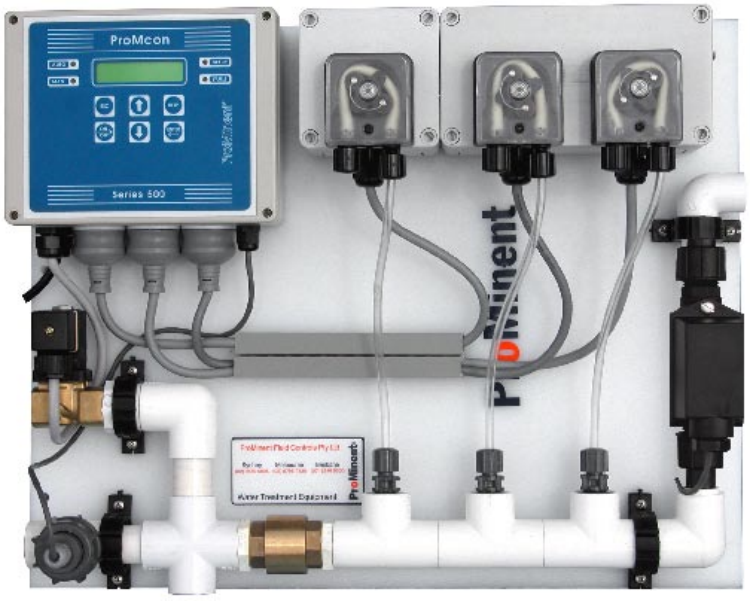
ProMcon
Series 500
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Operation Manual for Model 510

The ProMinent ProMcon series 500 conductivity control package model 510 is a fully integrated backboard mounted package with ProFlex, DulcoFlex peristaltic pumps, or Concept Dosing pumps.

The package provides conductivity control via solenoid blow down and comes complete with:

- Probe
- Pumps
- Solenoid valve
- Conductivity controller
- Sample pipework
- Flow switch ..... sample valves and other accessories are optional.

When your controller is set into operation, a scrolling menu keeps you informed.
For details see section 2.1

Section 1 describes the keys, display and the LEDs and should be read before proceeding.

Which menu you start in will depend on how your controller was pre-set when ordered.
We will assume no settings have been prepared and go first to the **Advanced** menu.

Advanced *See menu screen details section 2.1*

Hold the enter key for 2 seconds
With the up down arrows select **Advanced.** *See menu screen details section 2.5*
You will be asked to enter a pass number.
Your number is *500* (until you change your passcode in the Advanced Menu)

> **Note:** *As standard a passcode of 500 is required to enter the Advanced menu. If this passcode, and or the general menu passcode, is altered or lost you will not be able to access the menus.*
> *A break-in number is available from ProMinent, but you must provide the serial number of the controller. To find the serial number, switch on the instrument, watch the scrolling menu until* <AUTO OPERATION> *appears, then press the* HELP *key.*

Serial No 510
201 5101

will appear, 5101 is the Serial No

Advanced has 5 sections (to be selected with the up/down arrows)

1. **Inhibitor**
2. **Biocide**
3. **Flow Input**
4. **Fault LEDs**
5. **Clock**
6. **Calibration Cell**
7. **Change Passcodes**

When you arrive in the section required, press the enter key.

Inhibitor

% of Bleed

The Inhibitor pump can be set to any percentage from 1 to 100. If on 100% the inhibitor will be dosed all the time the bleed solenoid is open. On 50% it will be dosed for only half the time the bleed solenoid is open. This allows an adjustment of the amount dosed with fixed capacity pumps like the ProFlex and DulcoFlex peristaltic.

Continuous

If continuous the inhibitor pump is powered up all the time. The dosing capacity is adjusted with an on-off time adjustment from 1 to 100%.

Water Meter

When ‘Water Meter’ is selected, the controller receives a volt free pulse signal from a water meter. A selection is made to accept a number of pulses, from 1 to 100, and operate the inhibitor pump from 1 to 100 seconds.

Biocide

There are 10 on-off time settings for Biocide (A) and 10 on-off time settings for Biocide (B). If prebleed and or bleed lockout is selected in the Advanced menu, they still have to be activated for each individual time setting in the ‘Change Setup’ menu. Prebleed is to 15% lower than set-point, bleed lockout is up to 8 hours.

Flow Input

Enable ‘Flow Input or leave as off.

Fault LEDs

The fault LED can be made inactive for high or low conductivity, and for loss of sample flow.

Clock

Set the time and day. *See menu screen details section 2.5*

Calibrate Cell

Your new conductivity controller will be factory calibrated. You can however carry out your own calibration with known solutions or after your manual check tower check. *See menu screen details section 2.5.2*

Change Pcodes

Here you can change the passcode for the Advanced menu, and enter a passcode for the general menu.

Change Setup

Inhibitor

If the inhibitor is set for water meter control you will be asked to set the number of pulses received (1-100) for an inhibitor pump on-time of 1-100 seconds. If on % of bleed select the percent of time you require the inhibitor pump to be on from 1 to 100%. If on continuous adjust on-time from 1 to 100 seconds on in every 100 seconds.

Biocide

See menu screen details section 2.5.1
You are asked to select the timers required for Biocide A and Biocide B, Their on and off times and the day or days of the week they are to operate.

Bleed

Here you can adjust your set-point in microsiemens per centimetre.

Specifications

Bleed Setpoint Deadband: 5%

Prebleed:	Down to 85% of setpoint with a 3% deadband.
Alarms:	High Conductivity + 20% of setpoint Low Conductivity - 20% of setpoint
Biocide Timers:	10 off timers for Biocide A 10 off timers for Biocide B

SECTION 1 – USING THE KEYS, DISPLAY AND INDICATING LEDS

1.1 Keys

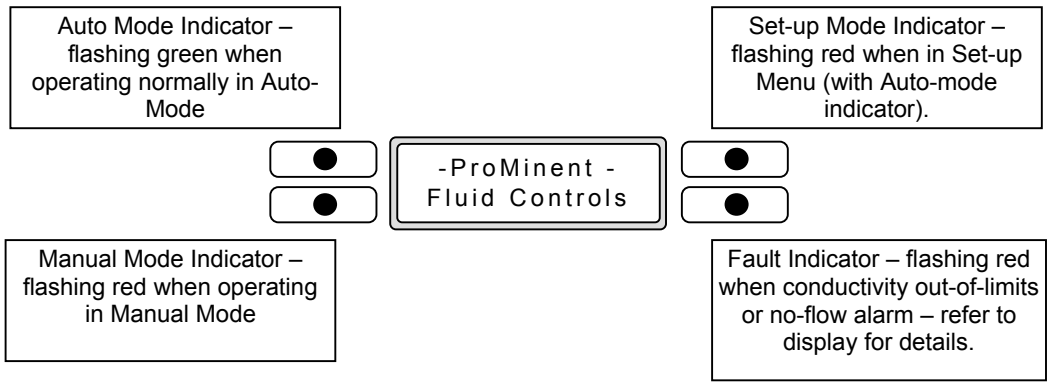
		Menus	Numeric and Time	Switching and Enable/Disable
↓	Down Arrow	Move up or down to the next menu item in this Menu.	Increase or decrease the value of the number (time) displayed on the screen. A single arrow is displayed when the limit is reached.	In Manual Operation Mode – selects solenoid/pump to switch on/off without changing status of the other devices. Other Modes – Not applicable.
↑	Up Arrow			
↵	Enter Key	Go to this menu item.	Accept the value (time) displayed and go to the next screen.	Accept the state displayed and go to the next screen.
→	ON/OFF Key	Not applicable	Not applicable	Toggle setting ON or OFF or enable/disable a feature
ESC	Escape Key	Go to the previous level menu.	Exit this screen without retaining the value if changed.	
HELP	Help Key	Display context-sensitive Help messages. Press ESC to return to the operational screen.		

1.2 Display

The following key characters are shown in the display to indicate the following:

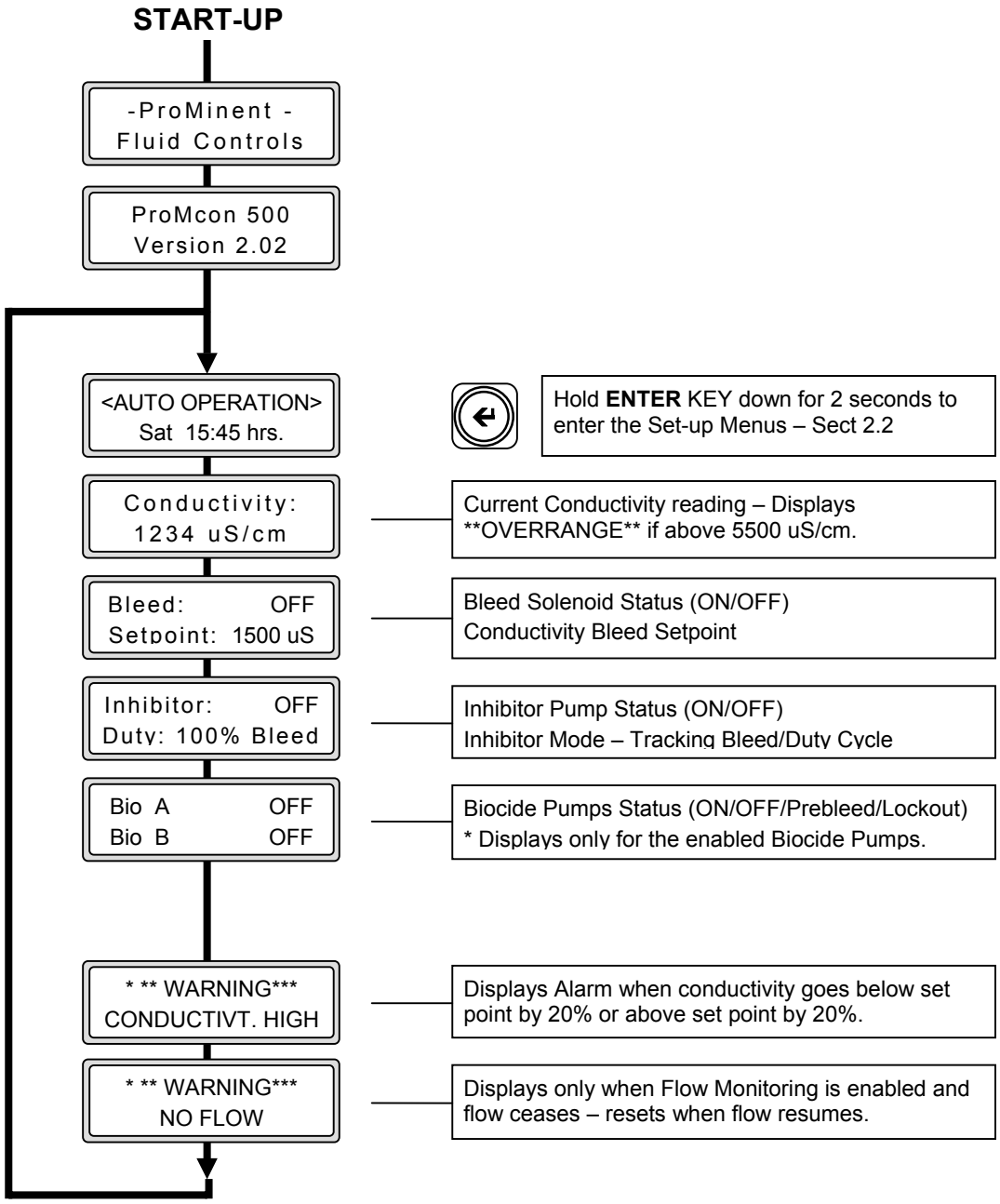
- ↑ Up-arrow only – at lower limit or bottom menu – Press up-arrow key to increase value or move up to previous menu item.
- ↓ Down-arrow only – at upper limit or bottom menu – Press down-arrow key to decrease value or move down to next menu item.
- ↑↓ Both arrows – Press up or down-arrow keys to increase/decrease value or move up/down to previous/next menu item.
- → On/Off arrow – In Manual Mode, press ON/OFF key to switch solenoid/pumps. Elsewhere press ON/OFF key to enable/disable feature.
- ↵ Enter arrow – Press Enter key to go to the displayed menu item or to accept the displayed value/status and advance to the next screen.

1.3 Indicating LEDs

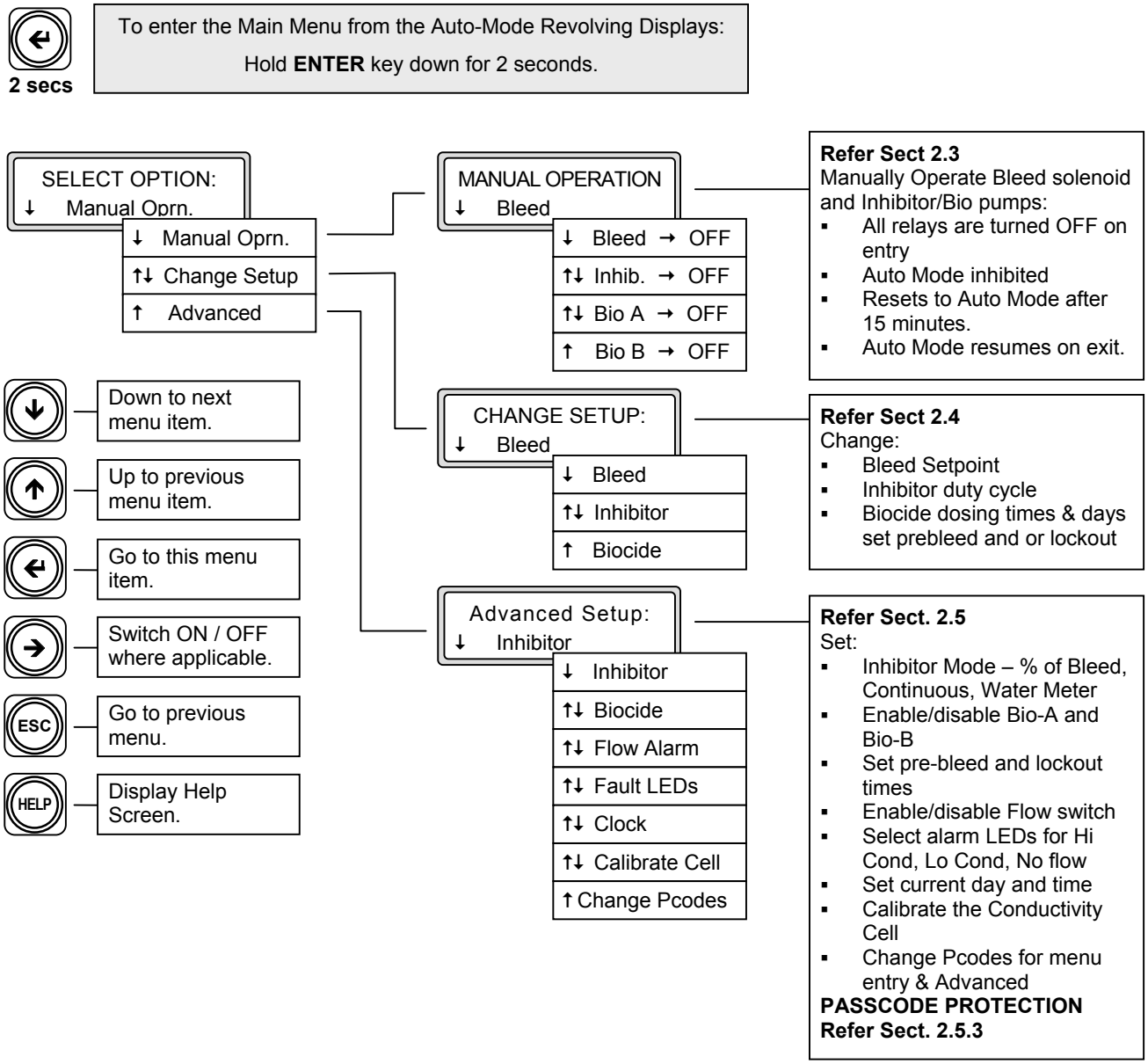


SECTION 2 – SCREEN MENUS AND SETUP SCREENS

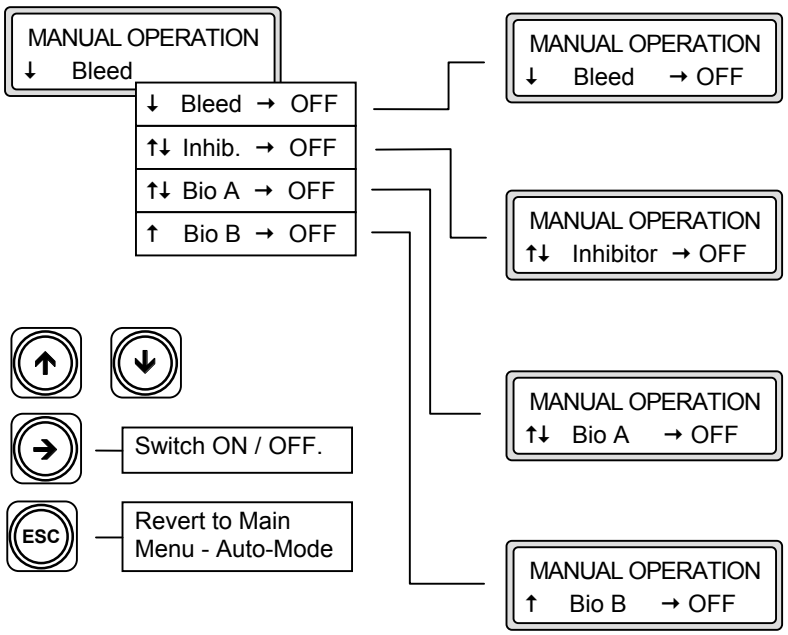
2.1 Start-up Screens and Auto-Mode Displays



2.2 Main Menu


2 secs
To enter the Main Menu from the Auto-Mode Revolving Displays:
Hold ENTER key down for 2 seconds.
SELECT OPTION:
↓ Manual Oprn.
↓ Manual Oprn.
↑↓ Change Setup
↑ Advanced
MANUAL OPERATION
↓ Bleed
↓ Bleed → OFF
↑↓ Inhib. → OFF
↑↓ Bio A → OFF
↑ Bio B → OFF
Refer Sect 2.3
Manually Operate Bleed solenoid and Inhibitor/Bio pumps:
▪ All relays are turned OFF on entry
▪ Auto Mode inhibited
▪ Resets to Auto Mode after 15 minutes.
▪ Auto Mode resumes on exit.
CHANGE SETUP:
↓ Bleed
↓ Bleed
↑↓ Inhibitor
↑ Biocide
Refer Sect 2.4
Change:
▪ Bleed Setpoint
▪ Inhibitor duty cycle
▪ Biocide dosing times & days set prebleed and or lockout
Advanced Setup:
↓ Inhibitor
↓ Inhibitor
↑↓ Biocide
↑↓ Flow Alarm
↑↓ Fault LEDs
↑↓ Clock
↑↓ Calibrate Cell
↑ Change Pcodes
Refer Sect. 2.5
Set:
▪ Inhibitor Mode – % of Bleed, Continuous, Water Meter
▪ Enable/disable Bio-A and Bio-B
▪ Set pre-bleed and lockout times
▪ Enable/disable Flow switch
▪ Select alarm LEDs for Hi Cond, Lo Cond, No flow
▪ Set current day and time
▪ Calibrate the Conductivity Cell
▪ Change Pcodes for menu entry & Advanced
PASSCODE PROTECTION
Refer Sect. 2.5.3
Down to next menu item.
Up to previous menu item.
Go to this menu item.
Switch ON / OFF where applicable.
ESC
Go to previous menu.
HELP
Display Help Screen.

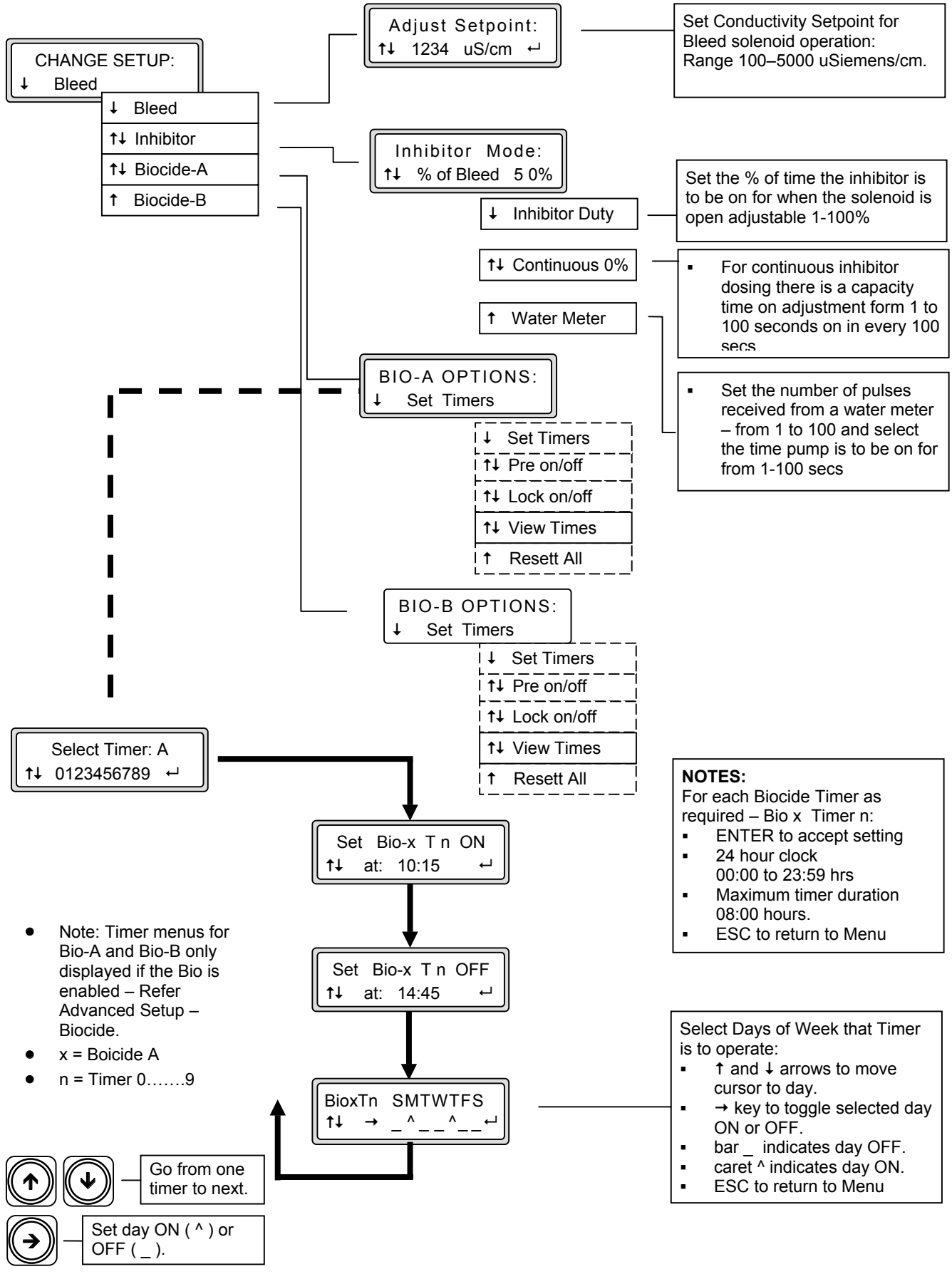
2.3 Main Menu – Manual Operation



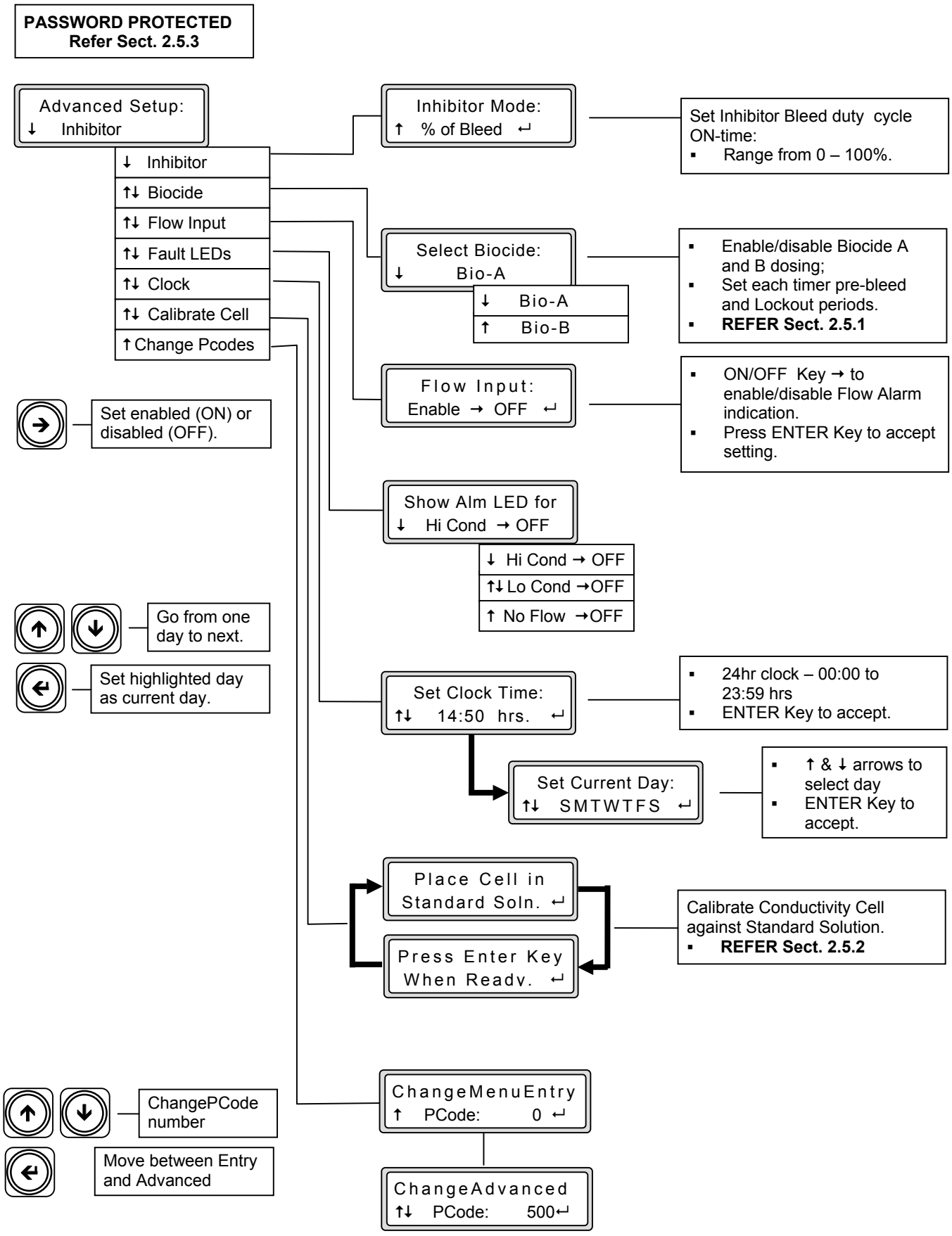
NOTES:

- Bleed Solenoid, Inhibitor Pump and Biocide Dosing Pumps are switched OFF when the Manual Operation menu is selected.
- Manual Operation will revert to Auto-Mode after 15 minutes.
- All relays are switched OFF on exiting to Auto-Mode. Programmed settings will resume after 1 minute or less.
- Bio-A and Bio-B screens will only appear if these are enabled (see Advanced Settings).

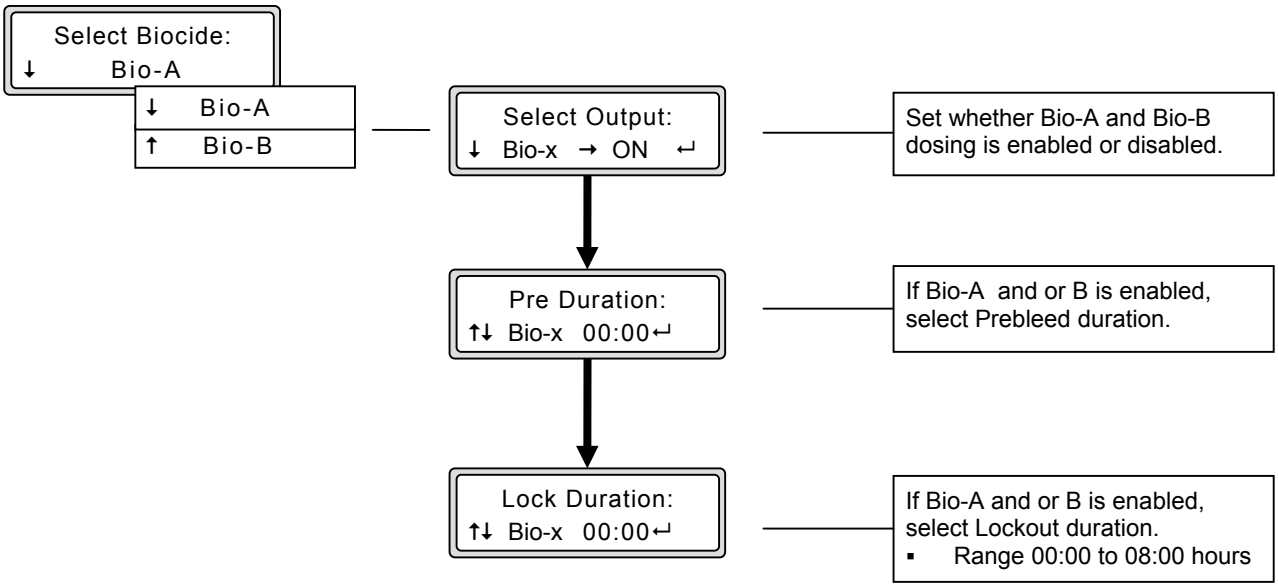
2.4 Main Menu – Change Setup - Basic



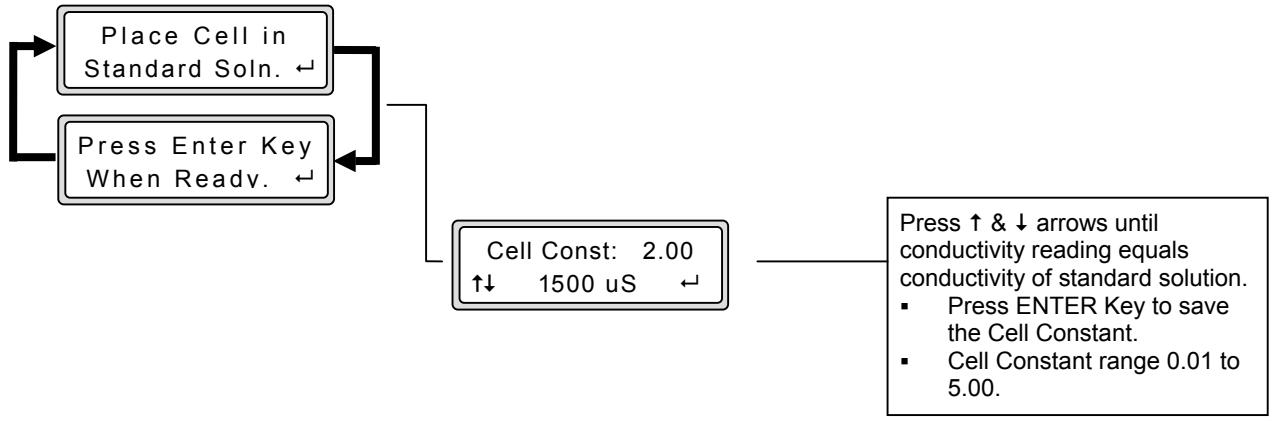
2.5 Main Menu – Change Setup - Advanced



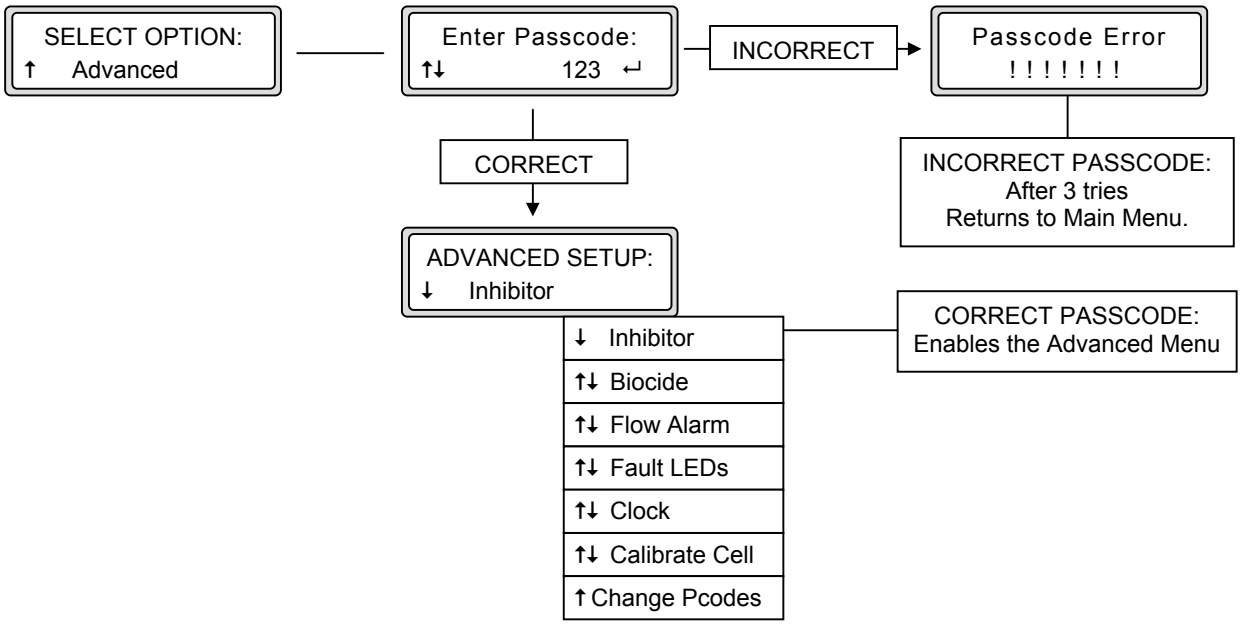
2.5.1 Advanced Menu – Change Setup - Biocide

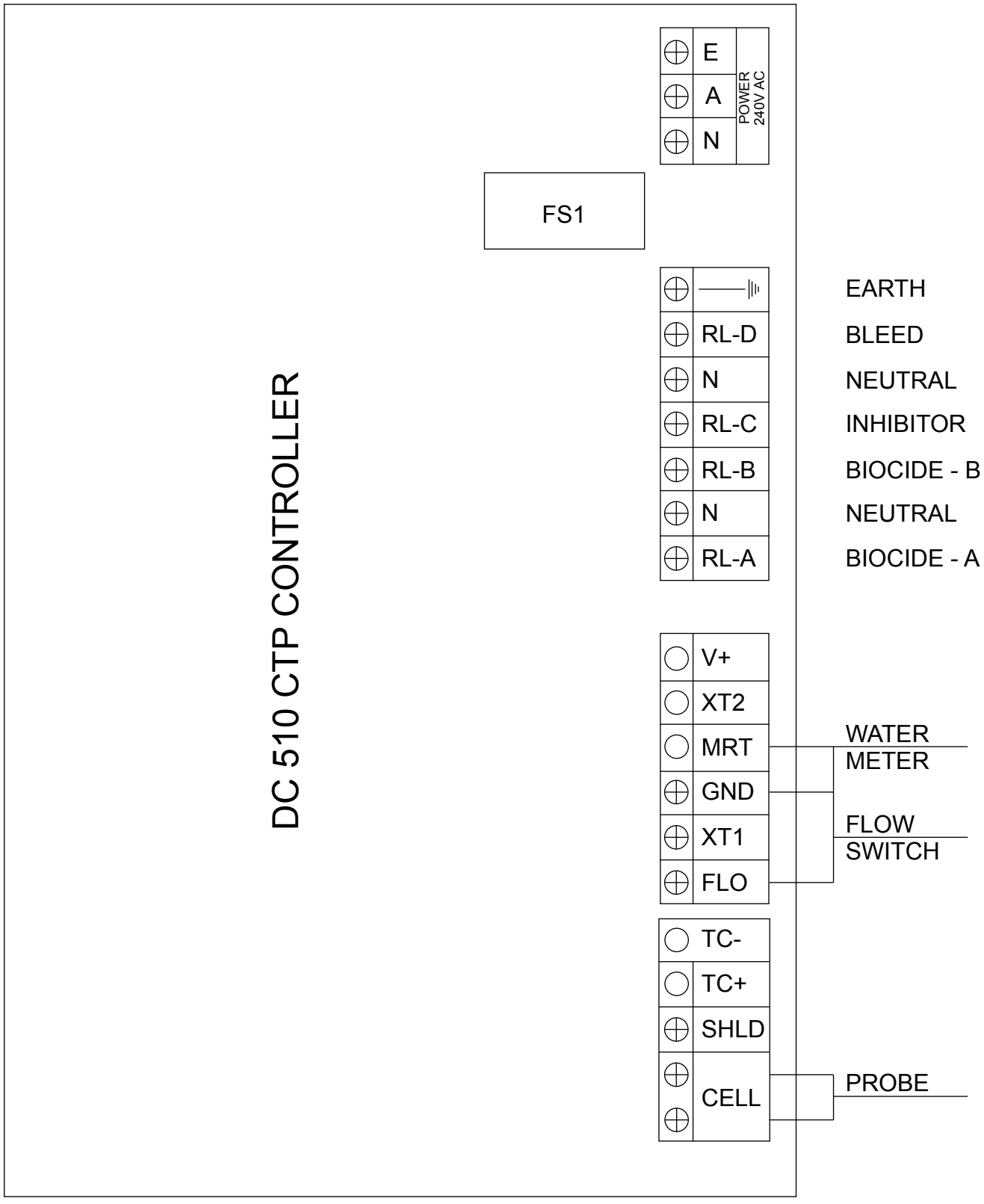


2.5.2 Advanced Menu – Change Setup - Calibrate



2.5.3 Advanced Menu – Passcode Protection




DC 510 CTP CONTROLLER
E
A
N
POWER 240V AC
FS1
EARTH
RL-D
BLEED
N
NEUTRAL
RL-C
INHIBITOR
RL-B
BIOCIDE - B
N
NEUTRAL
RL-A
BIOCIDE - A
V+
XT2
MRT
WATER METER
GND
XT1
FLOW SWITCH
FLO
TC-
TC+
SHLD
CELL
PROBE

ProMinent® ProMcon 500 series

Description

C 510 - **Conductivity 0-5000 millisiemens**

Power Supply:
- 1 240 V
- 2 110 V
- X Other

Output:
- 0 Nil
- X Other

Input:
- 0 Nil
- X Other

Temp Comp:
- 0 Nil
- X Other

Sockets:
- 0 Hard Wired
- 2 Two
- 3 Three

Sensor:
- 0 Nil
- 1 Sensor

Code:
- 0 Nil

HDPE Backboard with Sample Pipework:
- 0 Nil
- B 500 x 325 c/w Pipework, solenoid valve & conductivity cell
- C 500 x 400 as per B, for 1 x pump with 1 x dosing point
- D 500 x 400 as per B for 2 x pumps with 2 x dosing points
- E 500 x 400 as per B for 3 x ProFlex with 3 x dosing points
- F 600 x 500 as per B for 3 x Concept/Beta with 3 x dosing points
- G 600 x 500 as per B for 3 x Dulcoflex with 3 x dosing points
- H 500 x 325 c/w Pipework, & conductivity cell w/hosetails

Sample Flow Switch:
- 0 Nil
- 1 With
- 2 With Flow Switch & Regulating Valve

Inhibitor Pump:
- 0 Nil
- 1 2.4 l/h ProFlex (In PVC Enclosure)
- 2 0.8 l/h ProFlex (In PVC Enclosure)
- 3 1.6 l/h ProFlex (In PVC Enclosure)
- 4 1.0 l/h Concept
- 5 2.0 l/h Concept
- 6 3.0 l/h Concept
- 7 2.4 l/h Dulcoflex
- 8 0.8 l/h Dulcoflex
- 9 1.6 l/h Dulcoflex

Biocide Pump(s):

Select 1 or 2 Biocide Pumps

0	0	Nil ***** add price for each pump *****
1	1	2.4 l/h ProFlex (In PVC Enclosure)
2	2	0.8 l/h ProFlex (In PVC Enclosure)
3	3	1.6 l/h ProFlex (In PVC Enclosure)
4	4	1.0 l/h Concept
5	5	2.0 l/h Concept
6	6	3.0 l/h Concept
7	7	2.4 l/h Dulcoflex
8	8	0.8 l/h Dulcoflex
9	9	1.6 l/h Dulcoflex

C510 - 1 0 0 0 3 1 0 D 1 4 4 4