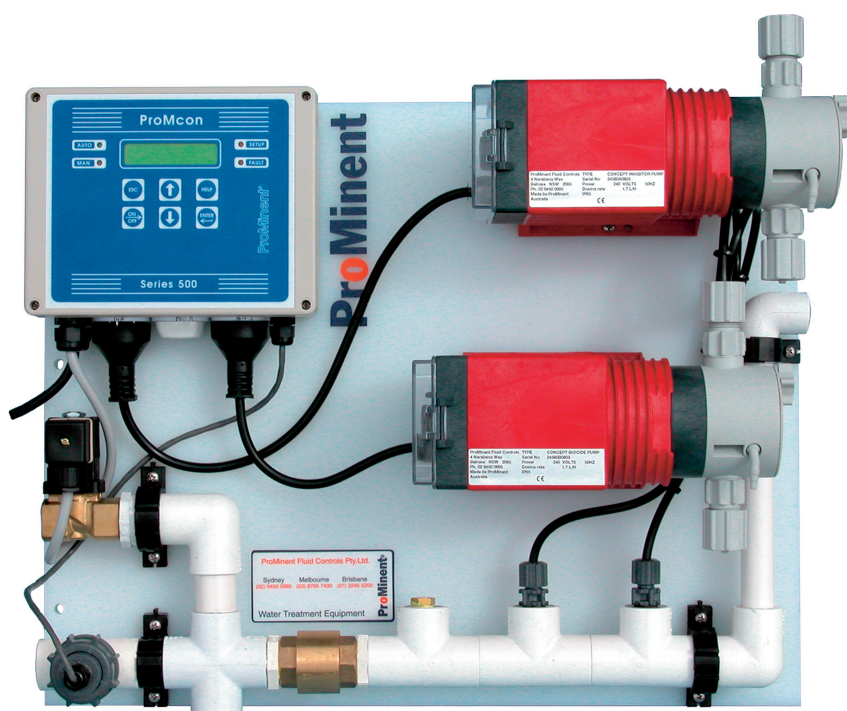


Operation Manual

ProMinent ProMcon 500 series Cooling Tower Treatment Package

Model 520



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Rev A:1st December 2004

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Operation Manual

ProMinent ProMcon 500 series Cooling Tower Treatment Package

Model 520

The ProMinent ProMcon series 500 conductivity control package model 520 is a fully integrated backboard mounted package with 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

Optional accessories include the following:

Flow Switch, Sample Valve, Winter Cycle, 4-20 mA Monitoring and Alarm Relays.

The conductivity controller will control 2 biocide metering pumps each having 10 timer settings per day with pre-bleed and bleed lockout available for each time.

The inhibitor pump can be controlled in different ways. It can be set to run all the time, to run only when the tower is bleeding, controlled from a pulse water meter.

When set to run all the time, or when the tower is bleeding, there is a % on to off time that can be set for varying the capacity of peristaltic fixed capacity pumps.

There are other features of your new conductivity controller that should be understood before proceeding.

The LED alarms on the controller face can be deactivated if preferred. A flow input can be activated if a sample flow switch is provided with the package or if an external no-flow contact is available.

A slug dosing facility can be activated (with bleed lockout) to allow slug dosing of biocide(s) after a tower clean.

Your own passcodes can be set for both the Advanced and Basic menus.

Options

Options available are 'Summer Cycle' or 'Winter Cycle' where different biocide dosing times with or without prebleed and lockout can be set to start the tower bleed and dose chemicals during the winter months when a tower may not be operating. This manual includes instructions for winter cycle but it may not be included in your controller.

By adding another card, a 4-20 mA monitoring signal with alarm contacts is available for building management.

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.

Assuming your controller has not been set-up to your specific requirements go first to the 'Advanced' menu.

Main Menu

By holding the 'enter' key in for 2 seconds, you will enter 5 menus, Manual Operation, Bleed Lockout, Season Mode, Change Set-up and Advanced.

Manual Operation

The Bleed, Inhibitor, Biocide 'A', Biocide 'B', and the tower recirculation pumps can all be manually selected to run.

Bleed Lockout

A lockout time can be manually selected in hours and minutes and started.

Season Mode

Here either the 'Summer' or 'Winter' cycles can be selected, if this option is included.

Change Setup

Bleed

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

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.

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 9 sections (to be selected with the up/down arrows)

1. Inhibitor
2. Biocide
3. Flow Input
4. Fault LEDs
5. Slug Dosing
6. Bleed Lockout
7. Clock
8. Calibration Cell
9. Protect Season
10. 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 Pre-bleed 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. Pre-bleed is to 15% lower than set-point, bleed lockout is up to 8 hours.

Flow Input

Enable 'Flow Input or leave as off. When the optional Flow Switch is included with the package, set the flow input to ON.

Fault LEDs

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

Slug Dosing

This function can be used for manually slug dosing the tower perhaps after a tower clean.

Bleed Lockout

This lockout is to give the slug dosed biocide time to work before bleed can occur.

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

Protect Season

This allows the 'Winter', 'Summer' cycles to be protected.







Change Pcodes

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

-o0o-






Section 1 - Using the keys, Display and Indicating LEDs

1.1 Keys

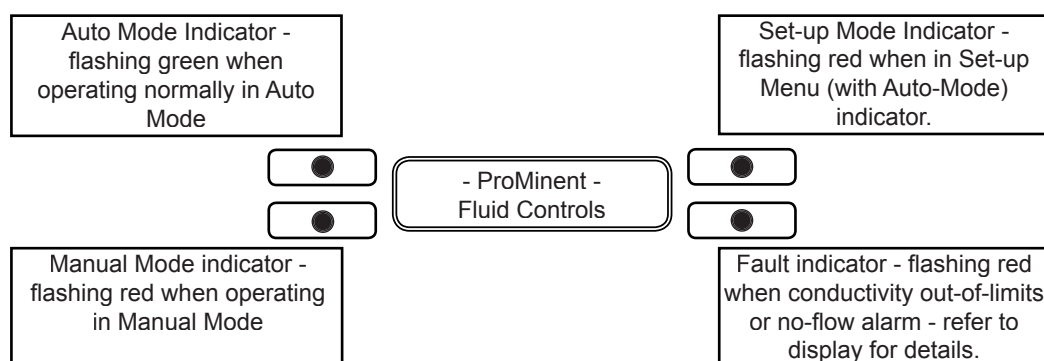
		Menus	Numeric and Time	Switching and Enable/Disable
	Down Arrow	Move up or down to the next menu item in this Menu.	Increase or decrease the value of the number (time) displayed on the screen. A single arrow is displayed when the limit is reached.	In Manual Operation Mode - selects solenoid/Pump to switch 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.	Accept the value (time) displayed and go to the next screen.	Accept the state displayed and go to the next screen.
	Escape key	Go to the previous level menu.	Accept the value (time) displayed and go to the next screen.	Accept the state displayed and go to the next screen.
	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:

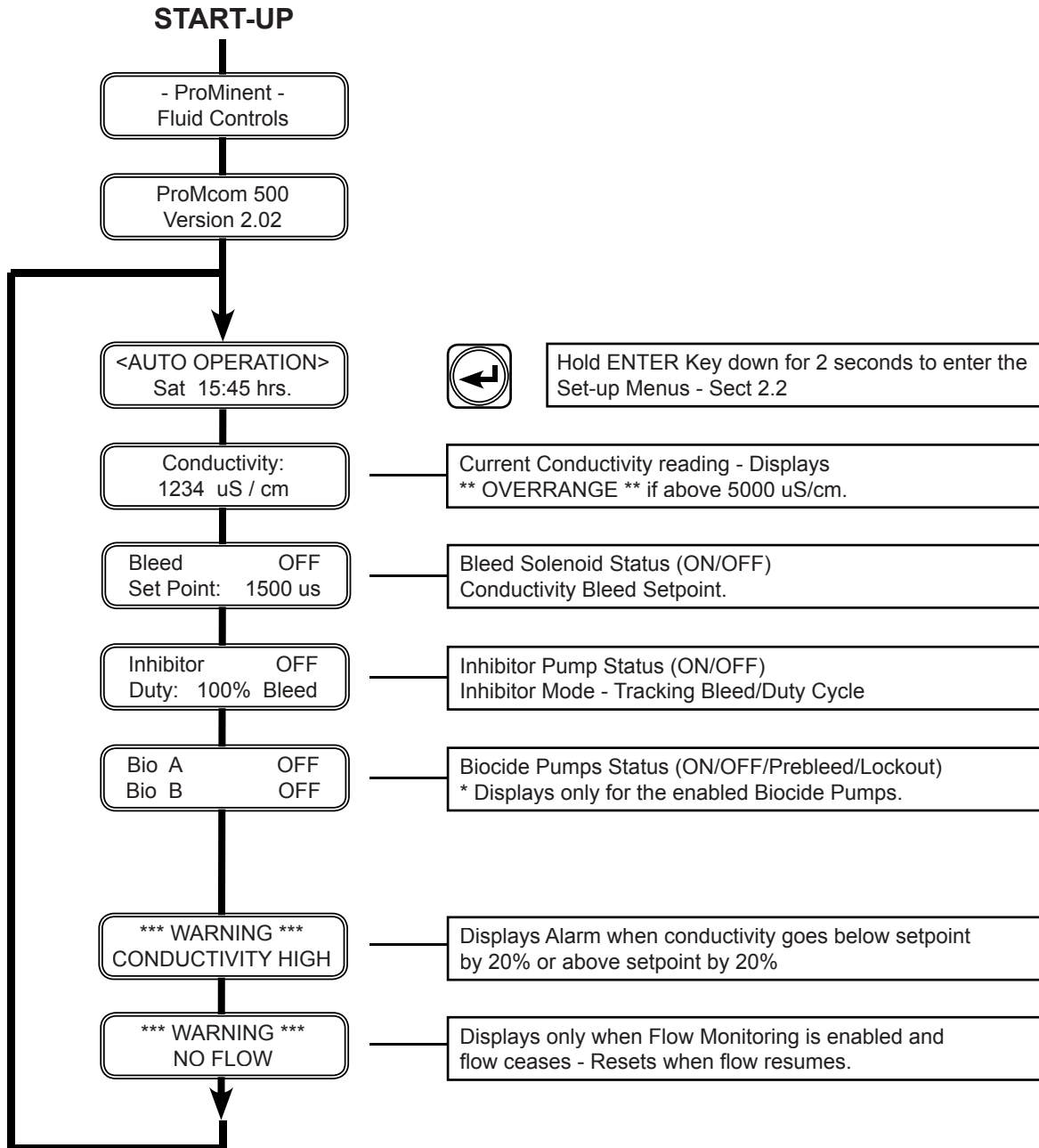
-  Up-arrow only - at lower limit or bottom menu - Press up-arrow key to increase value or move up to previous menu item.
-  Down-arrow only - at upper limit or bottom menu - Press down-arrow key to decrease value or move down to next menu item.
-  Both arrows - Press up or down-arrow keys to increase/decrease 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 the accept the displayed value/status and advance to the next screen.

1.3 Indicating LEDs



Section 2 - Screen menus and set-up screens

2.1 Start-up screens and Auto-Mode Displays

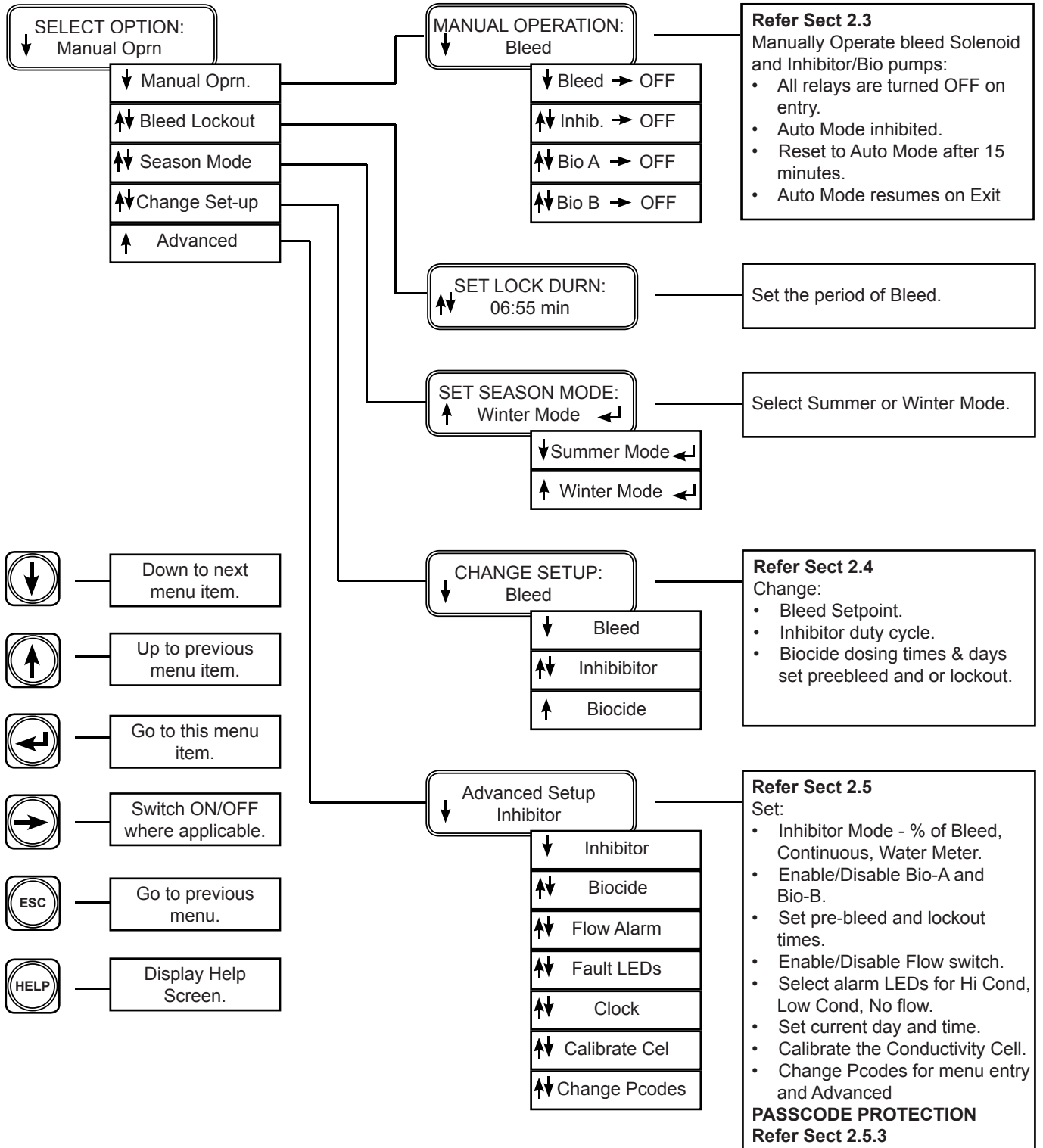


2.2 Main Menu

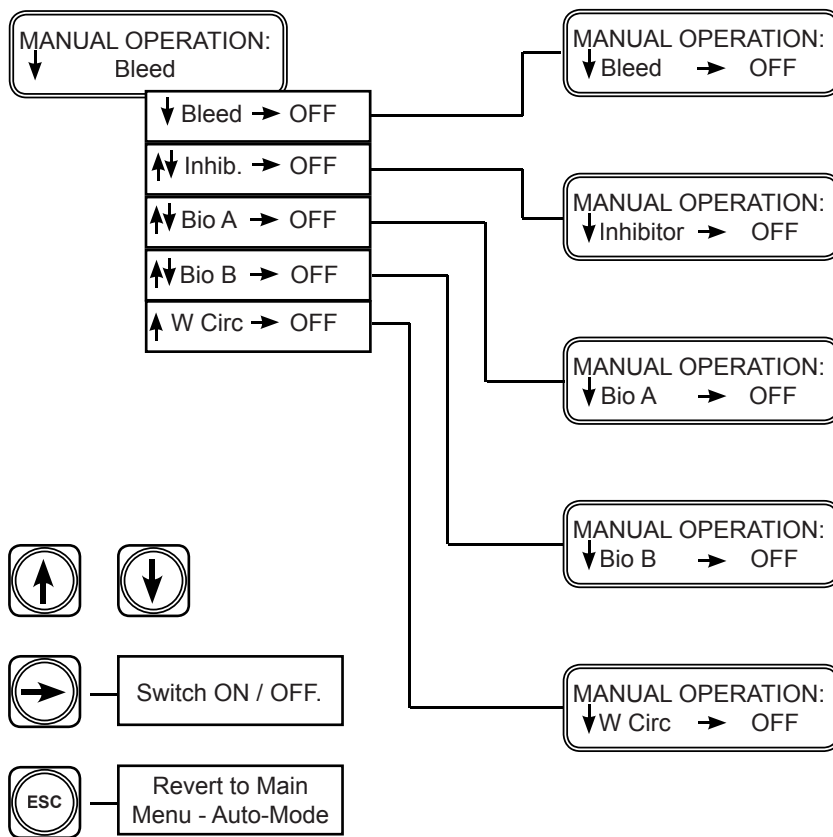


2 secs

To enter the Main Menu from the Auto-mode Revolving Displays:
Hold **ENTER** key down for 2 seconds.



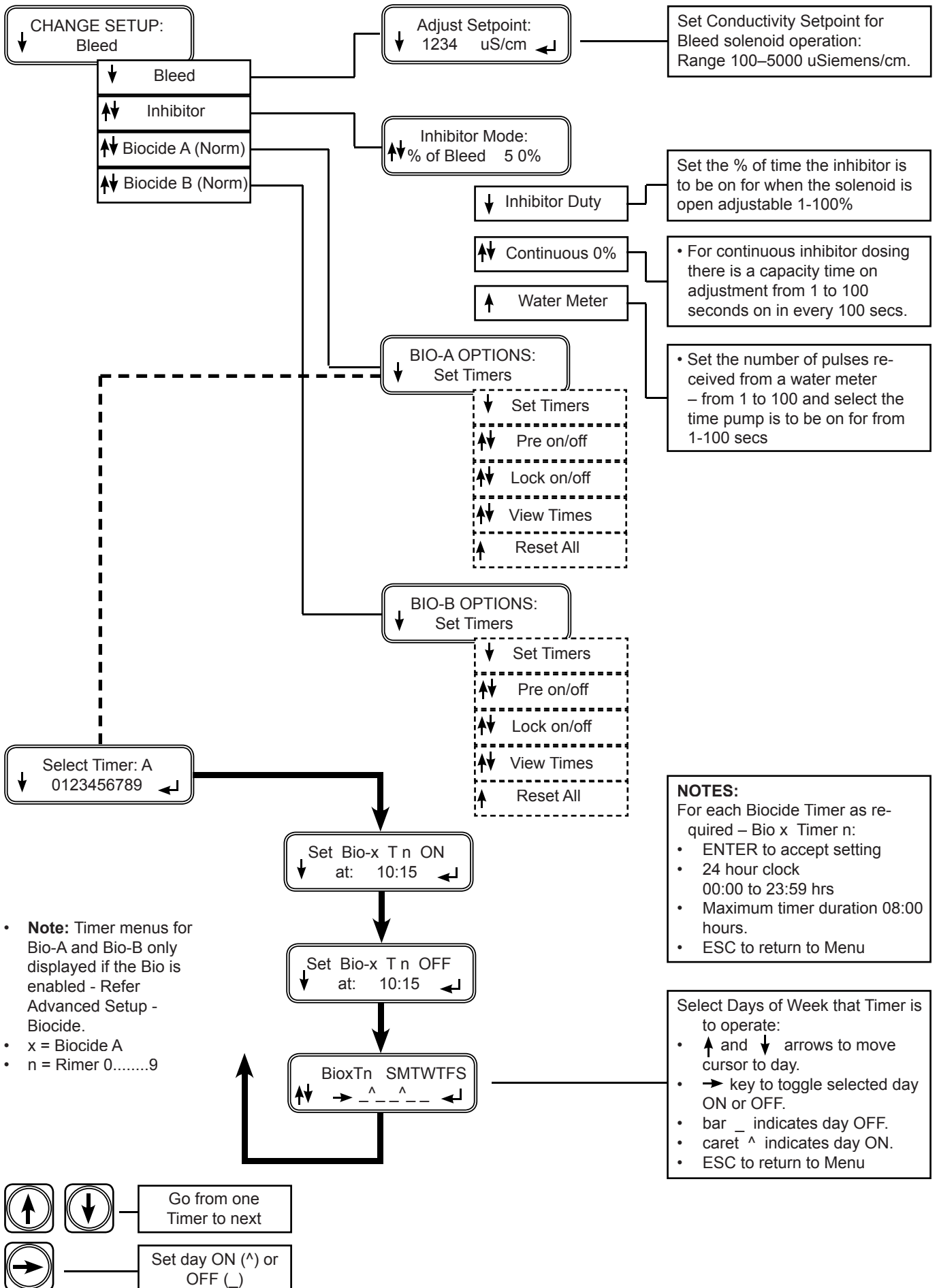
2.3 Main Menu - Manual Operation



Notes:

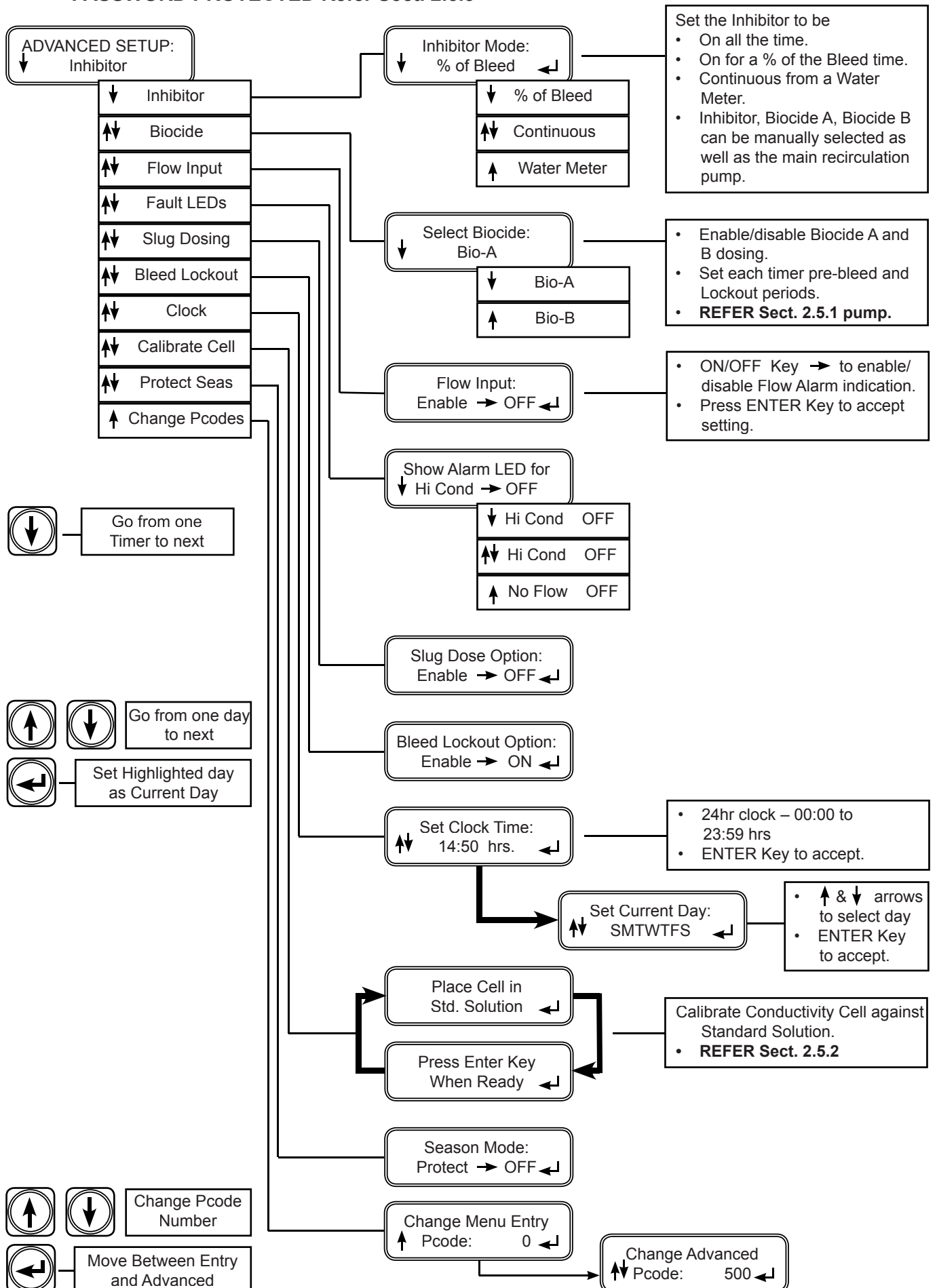
- Bleed Solenoid, Inhibitor Pump and Biocide Dosing Pumps are switched OFF when Manual Operation is selected.
- Manual Operation will revert to Auto-Mode after 15 minutes.
- All relays are switched OFF on exiting to Auto-Mode. programmed settings will resume after 1 minute or less.
- Bio-A and Bio-B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

2.4 Main Menu - Change Set-up - Basic

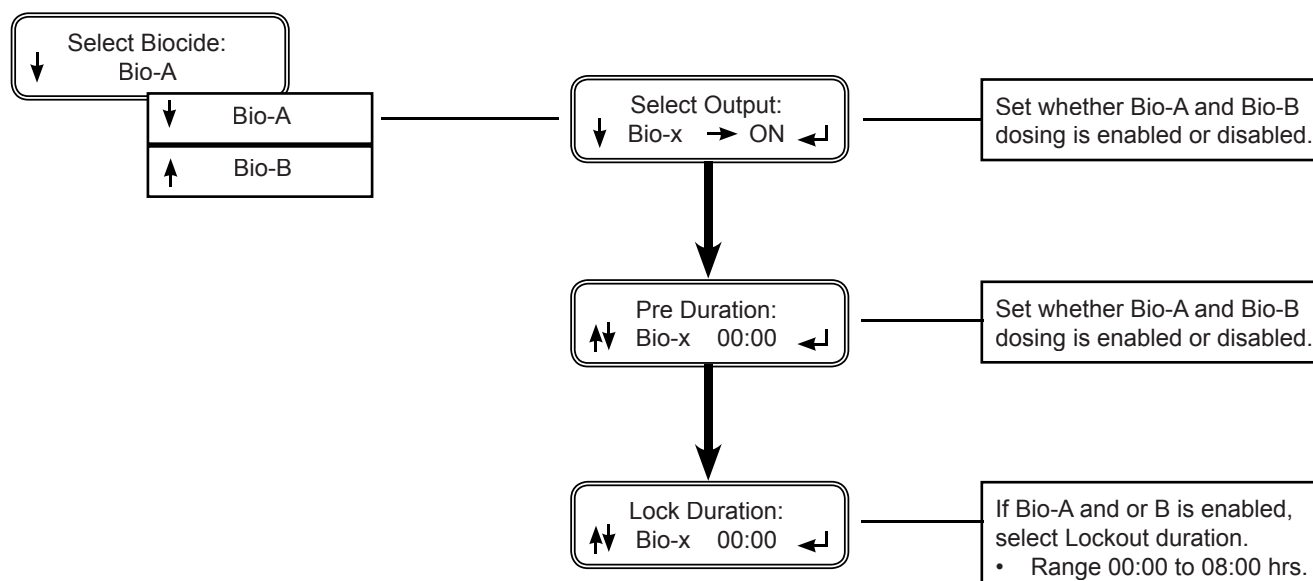


2.4 Main Menu - Change Set-up - Advanced

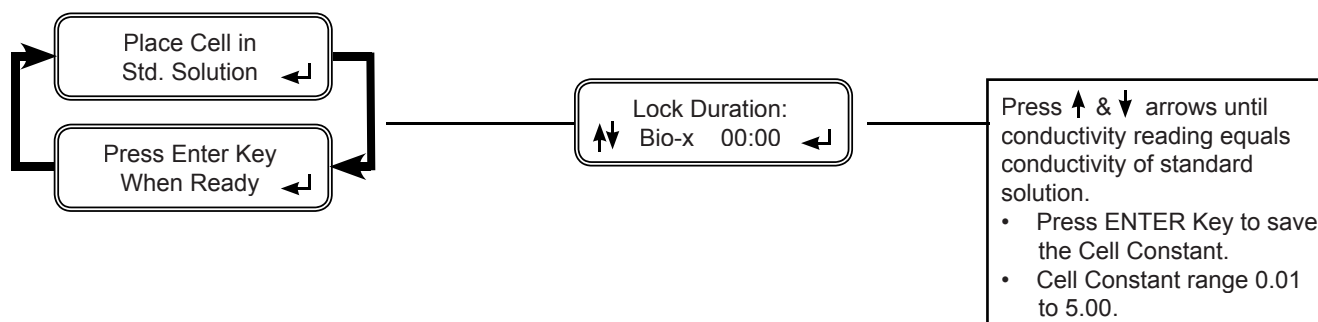
PASSWORD PROTECTED Refer Sect. 2.5.3



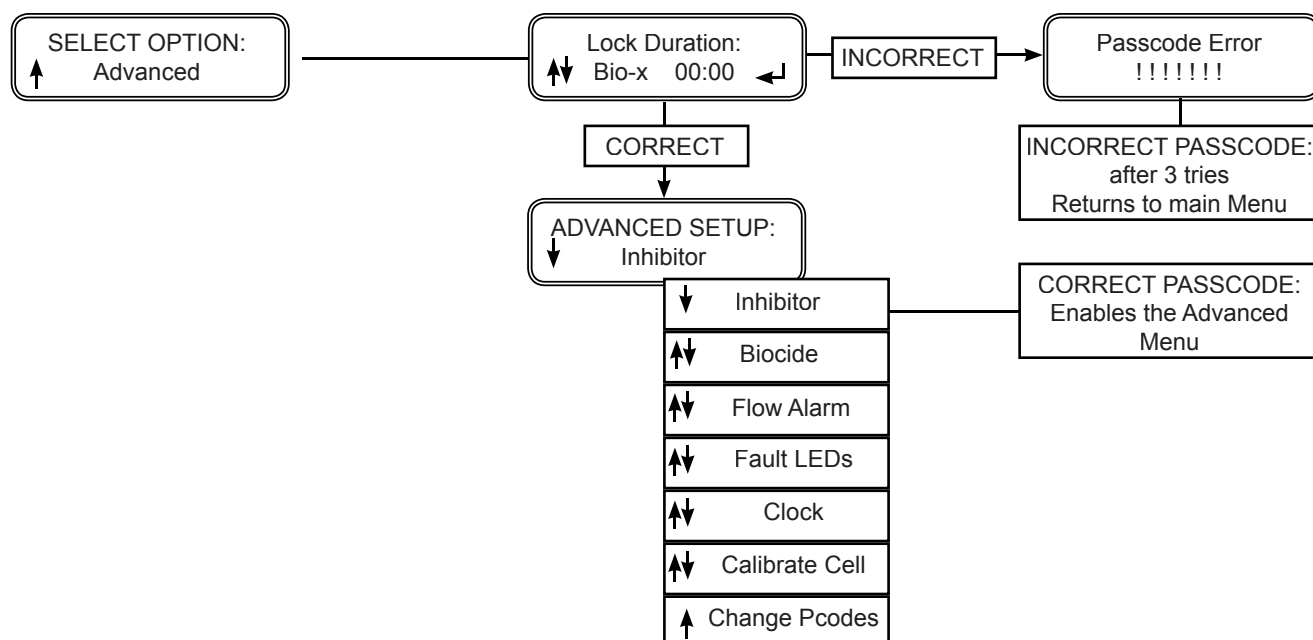
2.5.1 Advanced Menu - Change Setup - Biocide

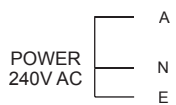


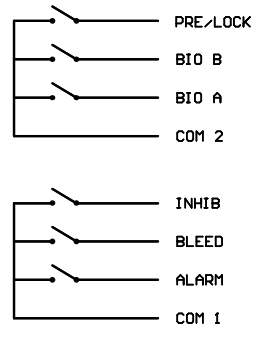
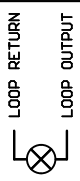
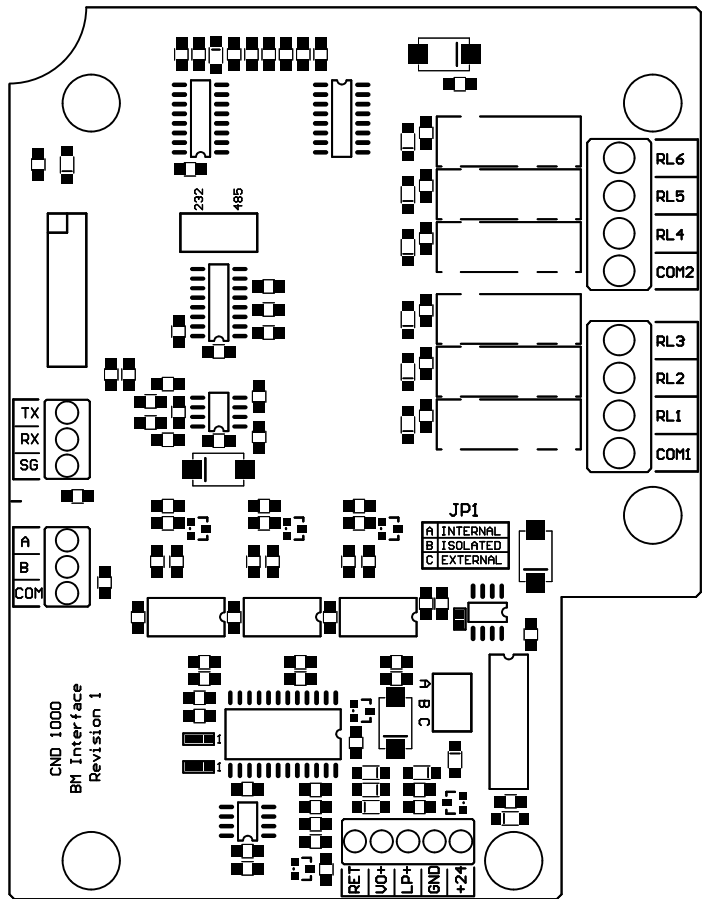
2.5.2 Advanced Menu - Change Setup - Calibrate



2.5.2 Advanced Menu - Passcode Protection







ProMcon 500 series Conductivity Controller

Model	Description												
C 520 -	Conductivity 0-5000 microsiemens												
	1 2 X	Power Supply: 240 V 110 V Other											
		0 1 2 X	Output: Nil Building Management System ... 6 status relays and 4-20 mA current loop output As 1 but relays only no output Other										
			0 X	Input: Nil Other									
				0 X	Temp Comp: Nil Other								
					0 2 3	Sockets: Hard Wired Two Three							
						0 1	Sensor: Nil Sensor						
							0 1	Option: Nil Winter Cycle					
								0 B C D E F G H	HDPE Mounting Board with Sample Pipework: Nil 500 x 325 c/w Pipework, solenoid valve & conductivity cell 500 x 400 as per B, for 1 x pump with 1 x dosing point 500 x 400 as per B for 2 x pumps with 2 x dosing points 500 x 400 as per B for 3 x ProFlex with 3 x dosing points 600 x 500 as per B for 3 x Concept/Beta with 3 x dosing points 600 x 500 as per B for 3 x Dulcoflex with 3 x dosing points 500 x 325 c/w Pipework, & conductivity cell with hosetails				
									0 1 2	Sample Flow Switch: Nil With Flow Switch With Flow Switch & Regulating Valve			
										0 4 5 7 8 9	Inhibitor Pump: Nil 1.0 l/h Concept 2.0 l/h Concept 2.4 l/h Dulcoflex 0.8 l/h Dulcoflex 1.6 l/h Dulcoflex		
											X 0 4 5 7 8 9	X 0 4 5 7 8 9	Biocide Pump(s): Select 1 or 2 Biocide Pumps Ni 1.0 l/h Concept 2.0 l/h Concept 2.4 l/h Dulcoflex 0.8 l/h Dulcoflex 1.6 l/h Dulcoflex
C520 -	1	0	0	0	0	1	0	D	0	4	2	4	