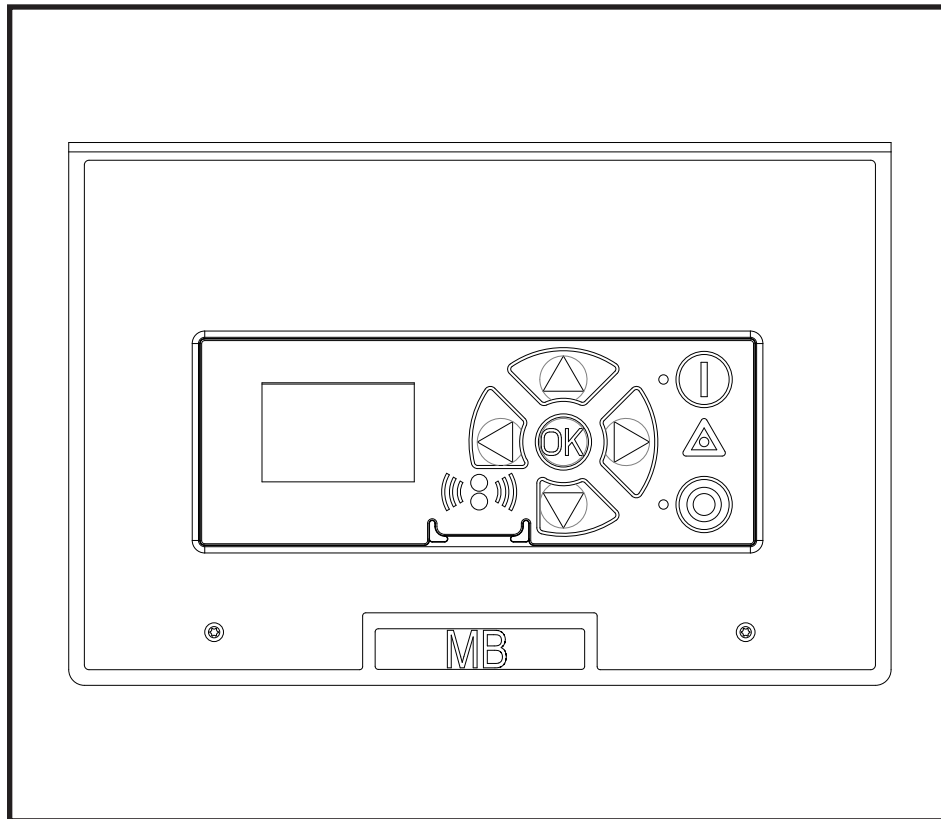


# Software Manual

## Control Panel for Multi Booster Units

Models: BF 16-2  
BF 24-3  
BF 32-4  
BF 40-5  
BF 48-6



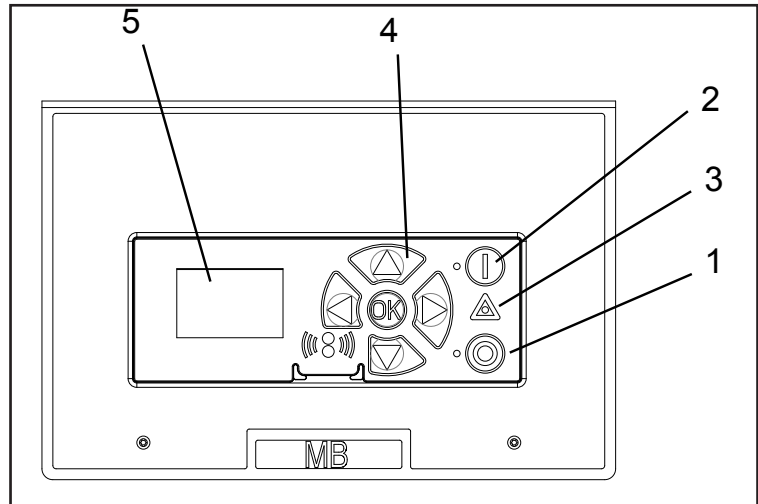
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## 1. Description

This software manual describes the operation of the control panel of the Multi Booster unit.

The Multi Booster unit is operated via the control panel (see below illustration).

1. OFF  
Button (1) switches OFF the unit.
2. ON/STANDBY  
Button (2) switches ON the unit.
3. ERROR  
Error light indicator (3).
4. NAVIGATION BUTTONS  
The four "arrow" navigation buttons (4) are used for navigation in the display menu. Pressing the "OK" button activates the menu and confirms any activity displayed.
5. DISPLAY



## 2. Display layout



(1)

When switched on the display will show an arrow symbol in the top right corner equivalent to the active navigation buttons on the control board.

The arrows illustrate that it is possible to scroll up and down between the menus. Scrolling to the right makes it possible to enter a value. Set the value scrolling up (+) or down (-) to set the value higher or lower accordingly. Confirm by pressing ok.

(2)

A letter combination for easy reference in connection with service work will appear in the top right corner of the display.

## 3. Modes

### 3.1 Power On

The very first time the unit is switched on, we recommend setting date and time in the Setup menu, settings, display EP. If date and time is not set, date and time will count from the pre-set default date and time. Note: Battery back up (time and date is saved).



Set date and time using navigation buttons.



Confirm by pressing OK button.

### 3.2 Standby

The start up display will look as below.

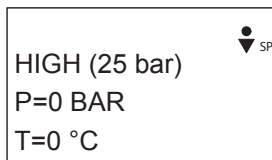


The unit is ready for operation and will start up either by means of flow or by pressure loss depending on settings (For further information on how to start up, see “settings” sub-menu “EY”).

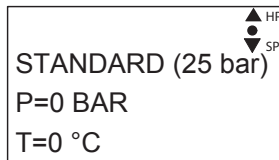
## 3.3 Run Mode

### 3.3.1 High and low pressure

The following screen displays will appear when the unit is in Run Mode.



Screen display for High pressure unit in Run Mode.  
Scroll down to return to STANDARD pressure.



Screen display STANDARD pressure.  
Scroll up to choose HP and scroll down to choose LP.



Screen display for Low Pressure unit in Run Mode.  
Scroll up to return to STANDARD pressure.

Please note that the Booster will remain in HIGH or LOW pressure Run Mode until otherwise is selected.

The outlet pressure is set by means of the 3 predefined pressures “High”, “Standard” and “Low”. This feature allows fast change of pressure, without having to enter the “settings” menu. For setting of the “high and low pressure” see “settings” menu E2, EA,ES.

### 3.4 Power Off



When the unit is off, the display will only show a small dot in the top right corner.

In Off mode it is possible to access all menus without the pump running by pressing the OK button on the panel.

Dot is equivalent to the OK confirm button on the panel.

System will not start up, when in “power off” mode.

### 3.5 Error/Warning

In case of an error, the red triangle will flash, and the unit will automatically switch to a new pump. Press the OFF button to switch of unit and reset the error. If the error remains when the unit is switched ON again, please scroll right to see current error. If all pumps is in error, the display will show “ERROR”



In case of a warning, “WARNING” will appear on the display screen. When a warning is detected the machine will either stop or run with limited performance until the cause of the warning has been improved (eg. inlet pressure).



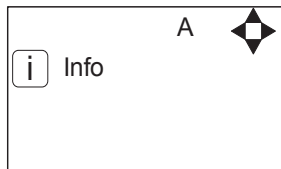
To see further error/warning list and possible cause and remedy go to section 5.2.

## 4. Content of Main- and Submenus

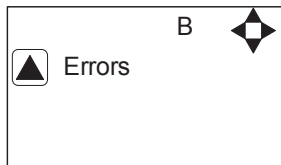
The control panel contains the below main menu screen displays.

Scroll between the menus using the navigation buttons.

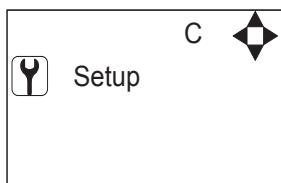
Each main menu contains submenus which will be described subsequently.



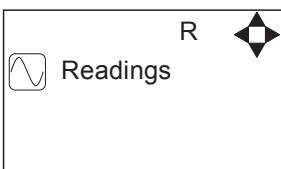
In the "info" menu, you will be able to see information like eg. SW version, contact information on service (require that this is setup), counters etc.



The Error menu allows you to see all saved errors, covering the last 999 incidents.



The Setup menu is password protected. In the Setup menu you can change basic settings, which influences on the systems performance. (this should only be done by authorized personnel)



In the "Readings" menu, real time data, like pump output pressure, water temperature, inlet pressure etc. can be displayed.



## 5. Overview of Main- and Submenus

### **1. Info (A)**

- 1  $\Sigma$  Counters total (AA)
- 2  $\Sigma$  Counters trip (AB)
- 3 Service center(AD)
- 4 Machine info (AE)

### **2. Errors (B)**

### **3. Setup (C) (default password 6802)**

#### **1 Password (CA)**

#### **2 Settings (E)**

- Post run time (ED)
- Dry run level (EE)
- Standard pressure (ER)
- High pressure (EA)
- Low pressure (EB)
- Startup method (EY)
- Pressure start level(EX) \*
- Startup delay (EW) \*
- Quick Start level (EC)
- Auto block trig level (EN)
- Auto off delay (EZ)
- Acceleration ramp (EU)
- Date & Time (EP)
- Service text (EJ)
- Inverter power (EO)
- Backlight intensity (EI)
- Display contrast (EV)
- User password (EL)
- Standard settings (EK)

#### **3. Languages & units (F)**

- Language (FA)
- Units (FB)

#### **4. Multipump (G)**

- Available pumps (GB)
- Configure network (GD)
- Upgrade controllers (GE)

#### **5. Supply Tank (H)**

- Tank control OFF (HA)
- LLA Detect Delay (HB)

#### **6. Communication (I)**

- Get Errorlog by cable (IA)
- Get Errorlog by infrared (IB)
- Firmware Upgrade by cable (IC)
- Firmware Upgrade by infrared (ID)

#### **7. I/O Settings (J)**

- Output 1 (JA)
- Output 2 (JB)
- Input (JC)

#### **8. Installation (K)**

- Install password (KA)

#### **9. Resets (D)**

- Reset trip counters(DA)

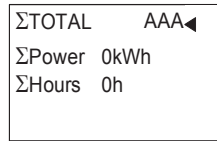
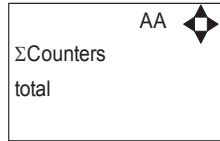
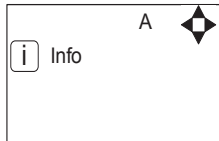
### **4. Readings (R)**

- Pump state (RA)
- Pump-top pres. (RB)
- Pump-top temp (RC)
- Supply pressure (RD)
- Supply temp. (RE)
- Flow Status (RF)
- Firmware Version (RI)

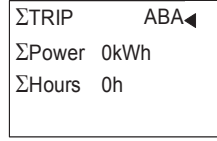
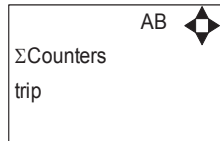
\* Depending of other menus

## 5.1 Content of the Info menu

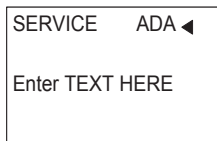
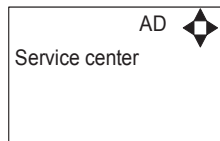
Please note that the Info menu is only for display – all data must be typed in via the setup menu!



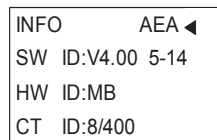
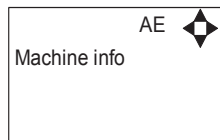
Displays accumulated consumption of power and operation hours.



Displays accumulated consumption of power and operation hours. To reset the trip counter go to the setup menu.



Displays name and tel. no. of service technician.



Displays Software version and Pump size, machine configuration and controller software version /ID.

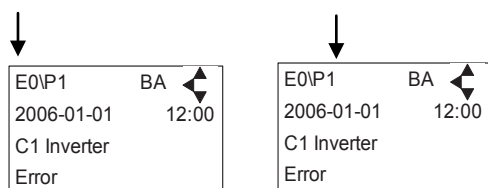
This display view is only ment as an example, SW ID and CT ID shows the current SW version.

## 5.2 Content of the Errors menu – CAUSE & REMEDY

### Example of Error log screen display:

All error occurrences will be stamped with date and time.

E indicates Error number. P indicates Pump number.



The error log stores up to 1000 occurrences. When max. memory is reached, the errors will be deleted according to "First in First out" principle.

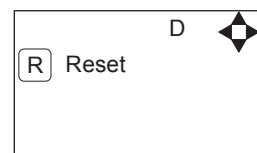
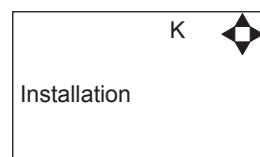
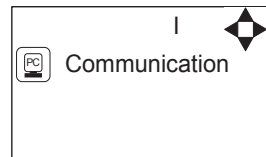
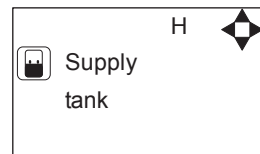
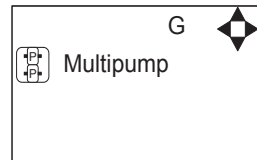
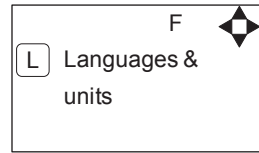
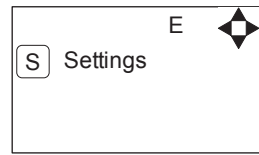
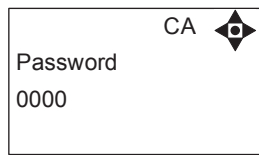
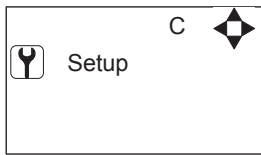
### 5.2.1 Error List

Error	Cause	Remedy
C1 Inverter Error	1. Frequency inverter in error state	1. Switch off the power on the service switch. Wait 180 sec. Switch on the unit again. If error still occurs, please contact your Ecolab technician.
C2 Low Supply Pressure	1. Insufficient water supply	1. Secure sufficient water supply pressure. 2. Check inlet filter for impurities/rinse filter 3. Contact your Ecolab technician
C3 High Water Temp.	1. Water pump top temperature is above 80° 2. Water consumption is too low (pump column has been overheated)	1. Lower the inlet water temp. (max 70°C) 2. Secure sufficient water consumption 3. Contact your Ecolab technician
C4 High Motor Temp.	1. Insufficient cooling of motor 2. The ambient temperature is above 40°	1. Secure that all air channels are open and not blocked by impurities 2. Lower ambient temperature
C5 High Supply Temp.	1. Water inlet temperature is above 70°	1. Lower the water temp. (max 70°C) 2. Contact your Ecolab technician
C6 Low Sensor Supply Voltage	1. Voltage supply for sensors too low	1. Press "off" button 2. If error reoccurs, contact our Ecolab technician
C7 No Response Error ctrl	1. No communication between display and control board	1. Switch off the power on the service switch. Wait 180 sec. Switch on the unit again. If error still occurs, please contact your Ecolab technician.
C8 Low Tank Level	1. Insufficient water supply 2. Water supply valve not open	1. Check correct water supply 2. Secure sufficient air supply to valve 3. Contact your Ecolab technician
C9 High Tank Level	1. Water supply valve not closed	1. Secure sufficient air supply to the valve. 2. Contact Ecolab technician
C10 Tank comm. Error	1. Communication failure on tank control board	1. Contact Ecolab technician
C11 Warning Cri. Inlet press.	1. Insufficient water supply 2. Booster will return to standby mode after 20 sec. If this error occurs 3 times within 20 min. Error C2 occurs.	1. Secure sufficient water supply or reduce consumption 2. Check inlet filter for impurities/rinse filter 3. Contact your Ecolab technician
C12 No response Error lenze	1. No communication between display and frequency inverter	1. Switch off the power on the service switch. Wait 180 sec. Switch on the unit again. If error still occurs, please contact your Ecolab technician.


C13 Warning Low inlet press.	1. Insufficient water supply. The machine will keep on working as always, but the maximum speed of the pump will be reduced until sufficient inlet pressure is present.	1. Secure sufficient water supply or reduce consumption 2. Check inlet filter for impurities/Rinse filter
C14 Warning leakage start	1. Booster start condition changed to flow, due to leakage in pipe	1. Check for leakage in pipe system. 2. Press "off" button 3. If error reoccurs, contact your Ecolab technician
C15 Checksum Mismatch error	1. Software version in display and controller board not the same.	1. Switch off the power on the service switch. Wait 180 sec. Switch on the unit again. If error still occurs, please contact your Ecolab technician.
C20 Low Sensor Signal P-Pump- top	1. Pressure signal from pumptop sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C21 Low Sensor Signal T-Pump- top	1. Temperature signal from pumptop, sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C22 Low Sensor Signal P-Inlet	1. Pressure signal from inlet sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C23 Low Sensor Signal T-Inlet	1. Temperature signal from inlet sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C24 Low Sensor Signal block	1. Signal from block sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C25 Low Sensor Signal flow	1. Signal from flow sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C30 High Sensor Signal P-Pump- top	1. Pressure signal from pumptop sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C31 High Sensor Signal T-Pump- top	1. Temperature signal from pumptop sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C32 High Sensor Signal P-Inlet	1. Pressure signal from inlet sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C33 High Sensor Signal T-Inlet	1. Temperature signal from inlet sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C34 High Sensor Signal block	1. Signal from block sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C35 High Sensor Signal flow	1. Signal from flow sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C40 Sensor Load Pumptop Sensor	1. Supply voltage for pumptop sensor too low. 2. Pumtop sensor using too much current	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C41 Sensor Load Inlet sensor	1. Supply voltage for inlet sensor too low 2. Inlet sensor using too much current	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C42 Sensor Load Block sensor	1. Supply voltage for block sensor too low 2. Block sensor using too much current	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician
C43 Sensor Load Flow sensor	1. Supply voltage for flow sensor too low 2. Flow sensor using too much current	1. Press "off" button 2. If error reoccurs, contact your Ecolab technician


### 5.3 Content of the Setup sub menu Settings


The Setup Main menu contains the below submenus, which will be described subsequently.




## 5.4 Content of Setup menu

CA   
 Password  
 0000


E   
 S Settings


ED   
 Post run  
 Time: 20 sec.

EDA   
 Post run  
 Time: 20 sec.


Set Post run time.


**Password Note:** Default user password is 6802. Enter the settings menu to change the default password. To avoid unintended access to the system the Ecolab technician can insert a blocking preventing access to the password controlled menus.


EE   
 Dry run  
 level: 0.5 bar


EEA   
 Dry run  
 level: 0.5 bar

Set dry run level.


ER   
 Standard  
 pressure: 25 bar


ERA   
 Standard  
 pressure: 25 bar

EA   
 High  
 pressure: 25 bar


EAA   
 High  
 pressure: 25 bar


Set high pressure.


EB   
 Low  
 pressure: 12 bar


EBA   
 Low  
 pressure: 12 bar


Set low pressure.


EY   
 Startup  
 Method: Pressure


EYA   
 Set Startup  
 Method: Pressure


EX   
 Pressure Start  
 Level: 8 bar


EXA   
 Set Pres. Start  
 Level: 8 bar


EW   
 Startup  
 Delay: 10 sec

EWA   
 Set Startup  
 Delay: 10 sec.

EC   
 Quick start  
 level: Off


ECA   
 Quick start  
 level: Off

EZ   
Autooff  
Delay:OFF

EZA   
Set auto off  
Delay: OFF

Set standard pressure.


EU   
Accelleration  
Ramp: 3 sec


EUA   
Set Acc.  
Ramp: 3 sec

EP   
Date & time  
2006-01-01 12:00


  
Set date & time  
2006-01-01 12:00


Set date and time

EJ   
SERVICE  
Enter TEXT HERE


EJA   
SERVICE  
Enter TEXT HERE


Enter name and tel. no of Ecolab service techn.

EO   
Inverter  
power: 11000W

EOA   
Inverter  
power: 11000W


Set rated power of frequency inverter


EI   
Backlight  
intensity: 75 %


EIA   
Backlight  
intensity: 75 %

Set the backlight intensity.


EV   
Display  
Contrast:8


EVA   
Set display  
Contrast: 8

EL   
User  
Password: 6802

ELA   
Password  
6802

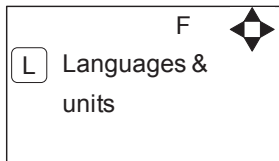
Create new user password (default 6802).

EK   
Standard  
settings

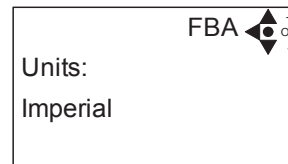
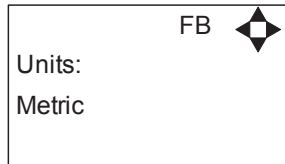
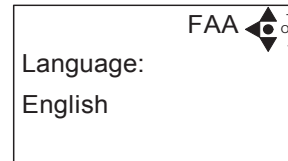
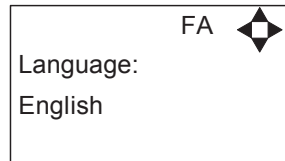
EKA   
Reset?

Reset to standard factory settings.

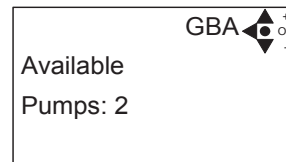
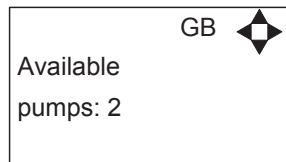
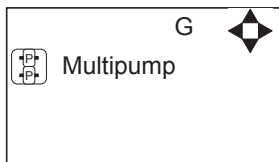
## 5.4.1 Submenu Language & Units



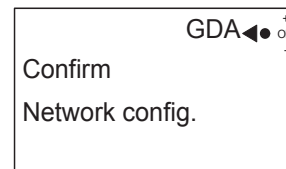
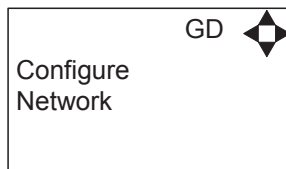
5 language versions available:  
FR-DE-UK-IT-ES



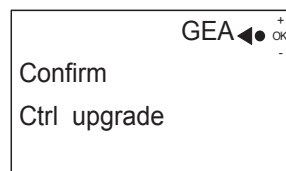
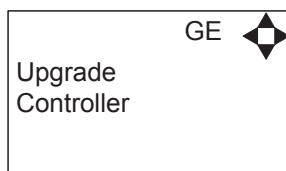
## 5.4.2 Submenu Multi tank



Set number of available pumps.





To be used when controllerboards, display or frequency inverter are replaced.






### 5.4.3 Submenu Supply tank

H 


 Supply tank

HA 


Tank Control: OFF

HAA 

Tank Control: OFF

HB 


LLA Detect Delay: 3 sec


HBA 


LLA Detect Delay: 3 sec

LLA=Low Level Alarm Adjustable - 5 seconds.


### 5.4.4 Submenu Communication\*

I 

 Communication


IA 

Get Errorlog by cable


IAA 

Confirm Cable Transfer ?

Transfer Ready Start PC App.


IB 

Get Errorlog by Infrared


IBA 

Confirm IR Transfer ?

Transfer Ready Start PC App.


IC 

Firmware upgrade by cable

ICA 

Confirm Firmware Upgrade ?

Upgrade Ready Power Cycle and Start PC App.

ID 

Firmware upgrade by infrared

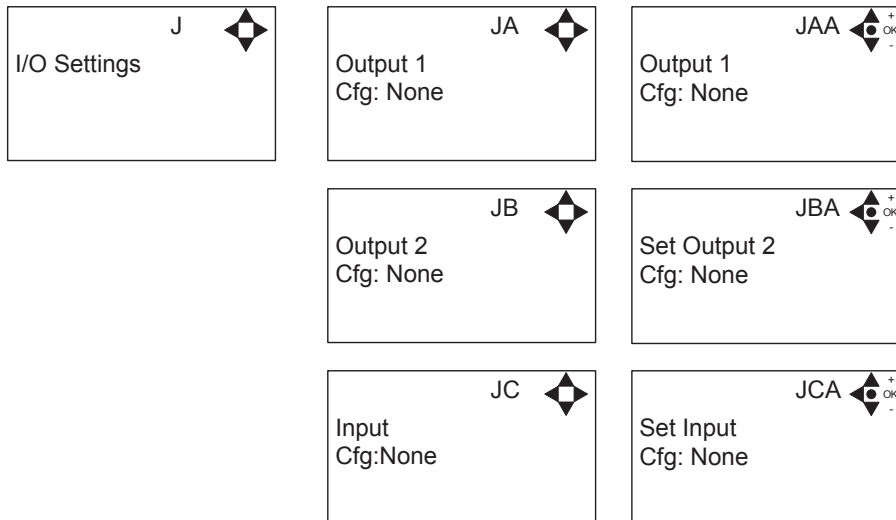
IDA 

Confirm Firmware Upgrade ?

Upgrade Ready Power Cycle and Start PC App.

\*For the use of authorized Ecolab technician only.

## 5.4.5 Submenu I/O Settings



Output 1 options:

- None – No function
- Error – Active if an error are detected
- Run/Stop – Active if booster is running and not active when it is stopped

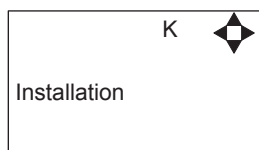
Output 2 options:

- None – No function
- Delay start – Gives a signal at this port, before starting the pump.  
The length of the delay is set in the settings menu, startup delay.  
This function could for instance be used to secure start up of prepressure pump before starting the unit.

Input

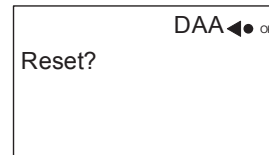
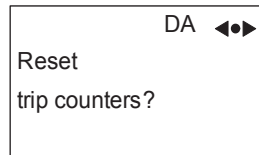
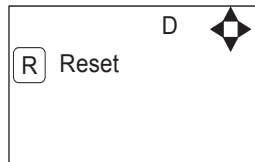
- None – No function
- Release – unit unable to start before this signal is present.
- Setpoint – Output pressure is controlled by external voltage source.

## 5.4.6 Submenu Installation

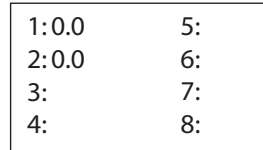
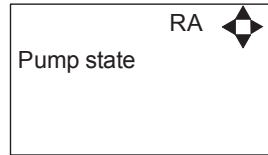
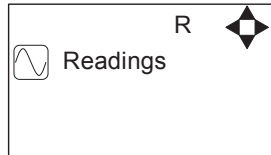


\* For the use of authorised Ecolab technician only

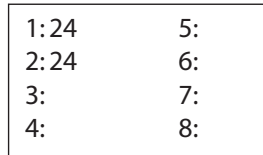
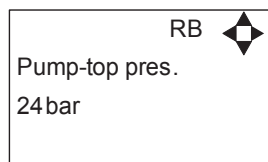
## 5.4.7 Submenu Reset



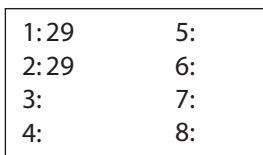
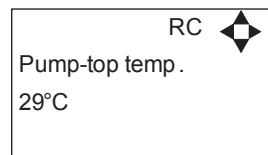
## 5.5 Content of Readings



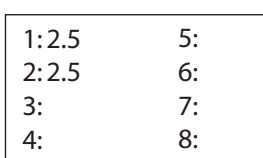
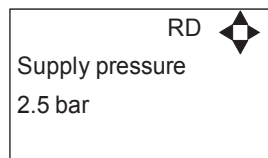
Individual output frequency of each frequency inverter



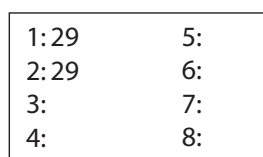
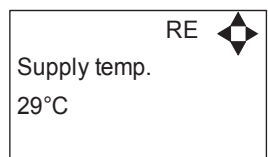
Shows average of pump pressure Scroll to the right to see the individual pump top pressure.



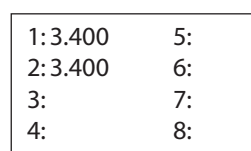
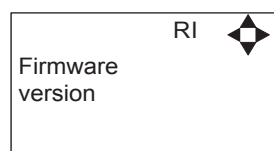
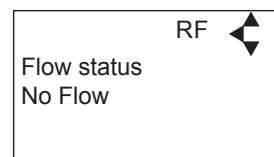
Shows average of pump top temperature. Scroll to the right to see the individual pump top temperatures.



Shows average of supply pressure. Scroll to the right to see the individual supply pressures.



Shows average of supply temp. Scroll to the right to see the individual supply temperatures



Shows firmware version for each controlboard.

It is possible to see readings during operation, standby and stop.

