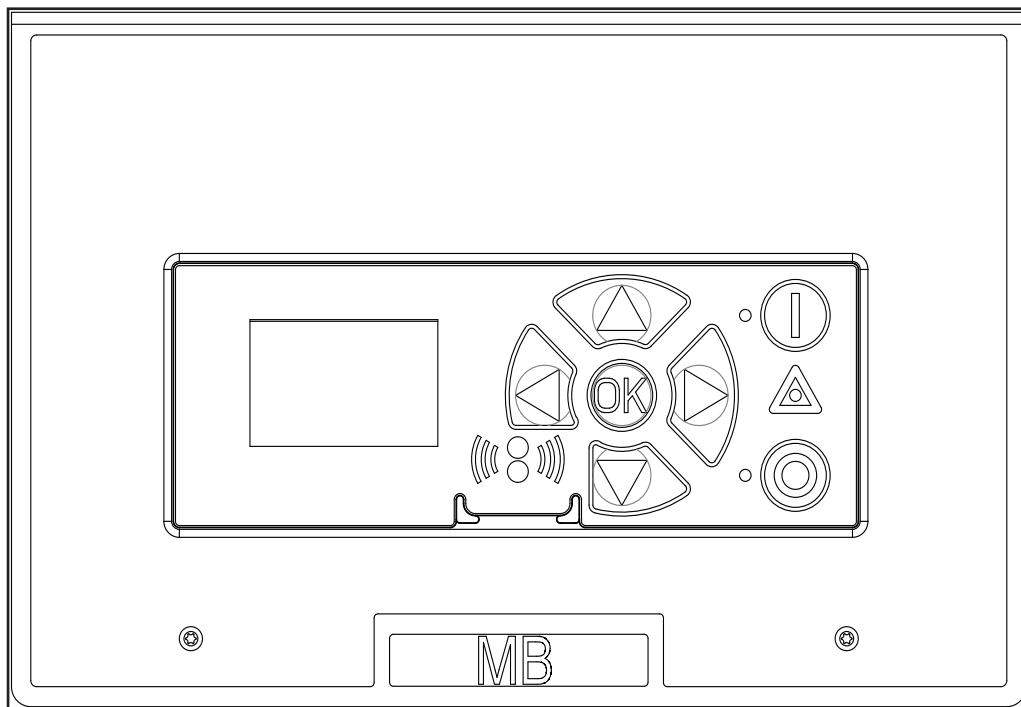


Technical Manual

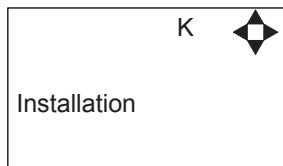
Models: MB



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1. Installation menu



This menu is used for configuration of the booster. It is in this menu the selection of machine type is made, and also a few functions are enabled here. This menu is Only to be used by Ecolab personnel. End User is NOT supposed to access this menu.

Reset All Counters

Reset Total Counters in Info Menu (AAA).

Powered Time

Shows for how many days the controller Board and display board has been used. It is not possible to reset this timer.

Device type

This menu must be set to match the machine type in which the display module is used.

MB: Used for all Multiboosters

I/O Settings



This menu is used for configuration of the 2 outputs sockets and 1 input at the controller board. Both Output and Input Ports are operated in parallel, so there are no difference whether ports at controller 1,2,3,4,5 or 6 is used.

The output sockets are relays, with the following maximum specifications:

OUT1 and OUT2 relays:

Blocking voltage	Volt	28
Load current	mA	100

The input voltage at “IN” port must be within the limits below:

Input Port (IN)

Input voltage	Volt	12
Release signal enable	Volt	>5

Set Output 1 cfg

None:

No function.

Run/Stop:

Relay is on if the booster is running, and off when booster is stopped.

Error:

Relay goes on if the booster detects an error, otherwise relay is “OFF”. Relay will go OFF when error is reset by “OFF” button.

Set Output 2 cfg

None:

No function.

Delayed start:

When the booster detects a start condition (flow or pressure) this relay goes on, and the booster will not start until a preset no. of seconds have passed.

The size of the delay is set in the settings menu, under Startup delay “EW”.

This menu is only visible when output 2 cfg” is set to Delayed start.

Set Input cfg

None:

No function.

Setpoint:

This is used when an external control of the output pressure is wanted.

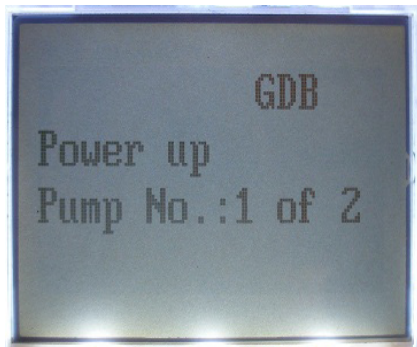
The external voltage source must be in the interval between 4-10V for the machine to run. 4V is equal to 10 bars and 10V is equal to 25 bars (not more than 20bar + inlet pressure).

Release:

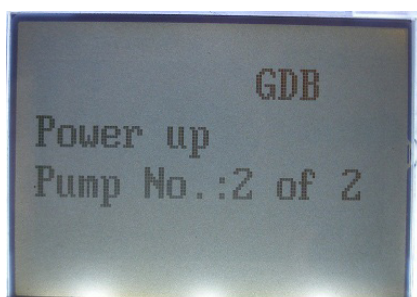
This signal is used for keeping the pump stopped until a signal is present. The signal level must be above 5V for release of the pump (but not more than 12V)

2. Assigning address after replacement of display, control board or frequency inverter

1. Power off all pumps except pump nr 1, typically the pump closest to the display.
2. Wait for power to be completely off pumps (3 min.)
3. In display go to setup → multipump → configure network → confirm configure network.
4. The display will now for a short while be looking like this:



5. After a short while the display will change to "Power up Pump No.: 2 of 2" (if it is a BF16 otherwise it will change to "Power up Pump No.: 2 of x" where x is the total no of pumps).
6. For a BF16 the display will look like this:



7. Turn on power to pump no 2.
8. When this is done for all pumps one after the other, the display will restart and the booster is ready to run.

3. Firmware upgrade procedure

By cable

Requirements

USB Programming cable (NEW CABLE FOR CHAMELEON PLUS) 110001526



PC With windows XP or windows 7 for running upgrade program.

Firmware upgrade program (FWU) installed on pc.

Upgrading the display

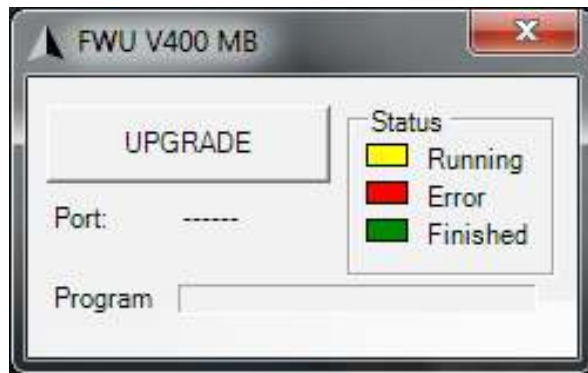
1. Power off the booster.
2. Connect the upgrade cable to the USB port in the PC.
3. Connect the display to the upgrade cable.
4. Go to menu: setup - Communication - Firmware upgrade by cable - Confirm firmware upgrade.
5. Press "OK"
6. The display should now be looking like this:



7. Disconnect the display from the cable.
8. Connect the display to the cable.
9. The display module should now be looking like this, with the red and green LED on.



10. Start up the FWU program.



11. Press the UPGRADE button.
12. After a few seconds port should show which port number the USB is using, and SW ID shows the version of the software. Finally, a taskbar will start at the program line. When this taskbar reaches the end (app. 5 - 15 min), the upgrade will turn green, if everything worked as planned.
13. The FWU program will now be looking like this.



14. The display should restart.
15. Disconnect the display from the upgrade cable.
16. Connect the display to connector no 10 at the controller board.
17. Repower the booster.
18. Go to menu → setup → Multipump → upgrade controllers → confirm controller upgrads.
19. After a few seconds the “Erase” line in the display should start counting to 100%.



20. When Erase reaches 100% it will be changed to “Program” and start counting from 0-100% again.

21. When upgrade is finished the display should be looking like this.



22. Switch off the power to the unit, and wait till power is off.
23. Power on the booster again.
24. The Booster should now be upgraded.
25. Go to the menu info - Machine info and verify that both SW versions for both display and controller are correct.
26. Go to readings - Firmware version. And verify software version is the same for all controllers.

4. Firmware upgrade procedure

By Infrared

Requirements

USB Infrared Programming cable (NEW CABLE FOR CHAMELEON PLUS) 110001558



PC With windows XP or windows 7 for running upgrade program.

Firmware upgrade program (FWU) installed on pc.

Upgrading the display

1. Connect the upgrade cable to USB port in the pc.
2. Go to menu: setup → Communication → Firmware upgrade by cable → confirm firmware upgrade.
3. Press “Ok”.
4. The display should now be looking like this.



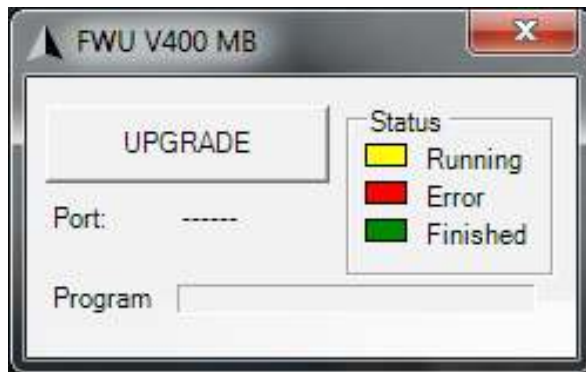
5. Power off the booster (or disconnect the display from controller board).
6. Repower the booster (or connect the display to the controller board).
7. The display module should now be looking like this, with all three LEDs on.



- Place the infrared module over at the display like this:



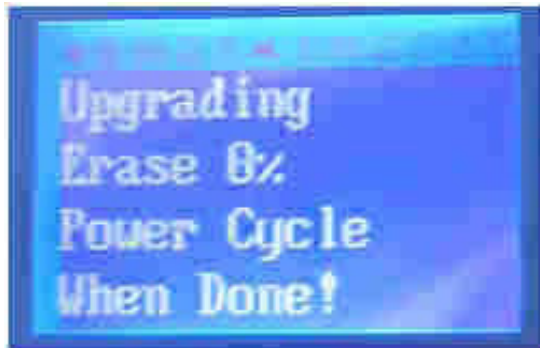
- Start up the FWU program.



- Press at the UPGRADE button.
- After a few seconds port should show which port number the USB is using, and SW ID shows the version of the software. Finally, a taskbar will start at the program line. When this taskbar reaches the end (app. 5 - 15 min), the upgrade will turn green, if everything worked as planned.
- The FWU program will now be looking like this.



13. The display should restart.
14. Now you can remove the infrared module from the display.
15. Connect the display to connector no 10 at the controller board.
16. Repower the booster.
17. Go to menu → setup → Multipump → upgrade controllers → confirm controller upgrads.
18. After a few seconds the “Erase” line in the display should start counting to 100%.



19. When Erase reaches 100% it will be changed to “Program” and start counting from 0-100% again.
20. When upgrade is finished the display should be looking like this.



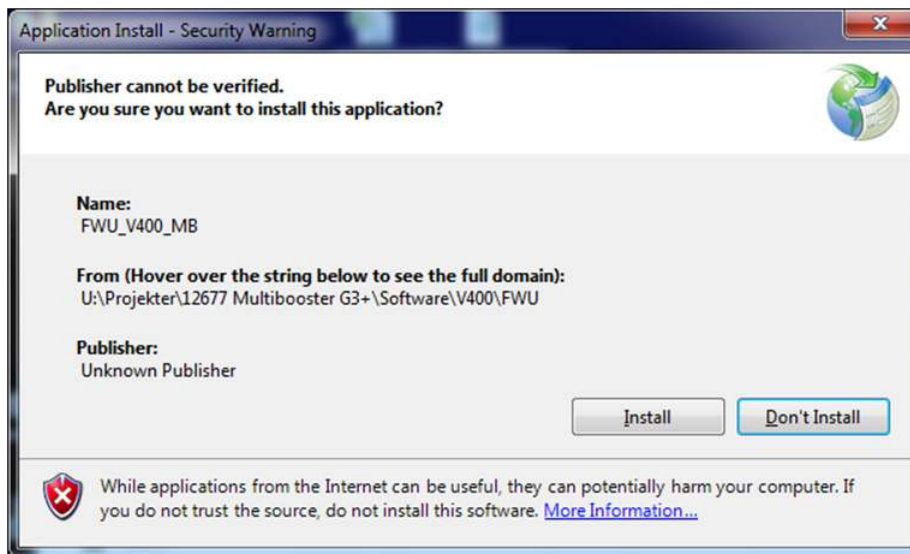
21. Switch off the power to the unit, and wait till power is off.
22. Power on the booster again.
23. The Booster should now be upgraded.
24. Go to the menu info - Machine info and verify that both SW versions for both display and controller are correct.
25. Go to readings - Firmware version. And verify software version is the same for all controllers.

5. Installation of FWU

Complete steps below to install the FWU software. These steps must be repeated each time a new firmware revision is released by Nilfisk-ALTO.

YOU MUST HAVE ADMINISTRATOR RIGHTS FOR PC TO BE ABLE TO INSTALL FWU!

1. Run setup from cd or unzipped directory.
2. The following screen will appear.



3. Press install.
4. Program will install and start up.
5. A link to the program will be placed in start menu under FWU folder.

6. Errorlog reader

From software version 4.00 it will be possible to read out the error log, to a text file. In the errorlog readout it is possible to see the state of all sensors and pump speed, when an error occurred.

To install errorlog reader, run setup from errorlog folder on CD or unzipped directory. Procedure from menu are the same as FWU program.

By cable

1. Power off the booster
2. Connect the USB programming cable to USB port in the PC.
3. Disconnect the display from the controller board.
4. Connect the display to the programming cable.
5. Go to menu: setup → communication → get errorlog by cable → confirm cable transfer.
6. Press “OK”
7. The display should now be looking like this.



8. Start up the errorlog reader program.



9. If it is intended to delete the error log in display module after read out, make a checkmark in the “erase error log after reading” check box. Otherwise leave it unchecked.
10. Press “GET ERROR LOG” BUTTON.
11. If read out is successful the button turns green, and the program will look like this:



12. Disconnect the display from the programming cable.
13. Connect the display to the controller board.
14. Power on the Booster.
15. The errorlog will be kept in a text file placed at c:\, called errlog.txt.

By infrared

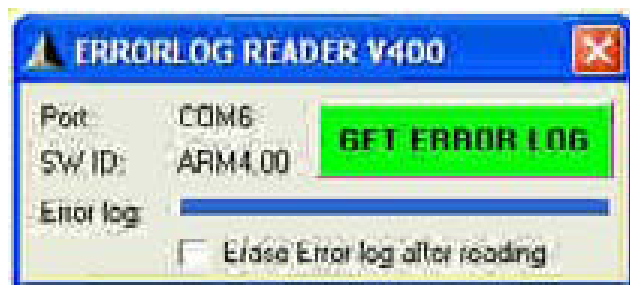
1. Connect the USB Infrared cable to USB port in the PC.
2. Go to menu: setup → communication → get errorlog by infrared → confirm IR transfer.
3. Press "OK".



4. The display should now be looking like this.
5. Place the infrared module on top of the display. With the cable pointing "down".
6. Start up the errorlog reader program.



7. If it is intended to delete the error log in display module after read out, make a checkmark in the "erase error log after reading" check box. Otherwise leave it unchecked.
8. Press "GET ERROR LOG" BUTTON.
9. If read out is successful the button turns green, and be the program will look like this:



10. The infrared cable can now be removed.
11. The errorlog will be kept in a text file placed at C:\ , called erlog.txt

Example of error log reader text file

```
#####  
Date: 05-10-2010  
Time: 15:26:19  
Records: 5  
#####
```

Date; Time; Pumpspeed; Ptoppres; Ptoptemp; Inletpres; Inlettemp; Motortemp; Flow; Blockflow;
Errortext

```
2010-01-02;13:30:03;088.4;18;24;0.7;23;419;77.1;90;C13 Warning  Low inlet Pres.  
2010-01-02;13:28:58;091.8;22;24;0.0;00;426;77.1;90;C23 Low Sensor Signal T-Inlet  
2010-01-02;13:28:31;086.3;17;24;0.7;22;421;77.1;90;C13 Warning  Low inlet Pres.  
2010-01-01;12:48:30;000.0;00;00;9.9;22;421;0.0;90;C21 Low Sensor Signal T-Pumptop  
2010-01-01;12:11:23;085.2;17;24;0.7;21;390;77.1;90;C13 Warning  Low inlet Pres.
```

It shows the date and the time and the readout of all sensors at the time of the error

