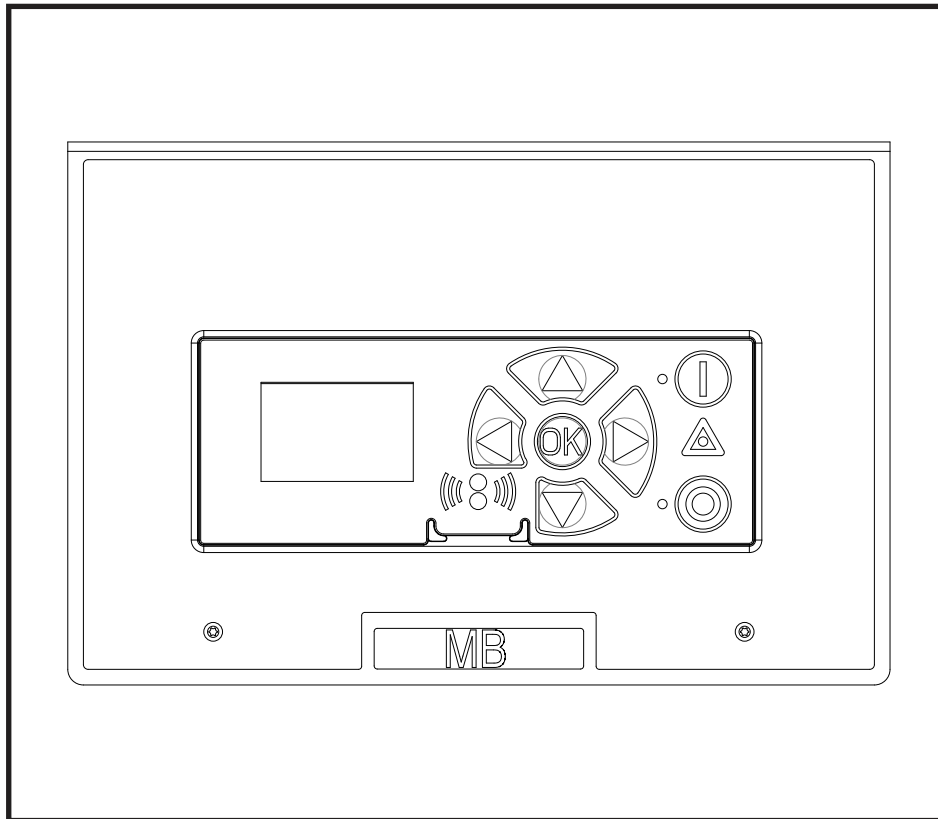


Software Manual

Control Panel for Multi Booster Units

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



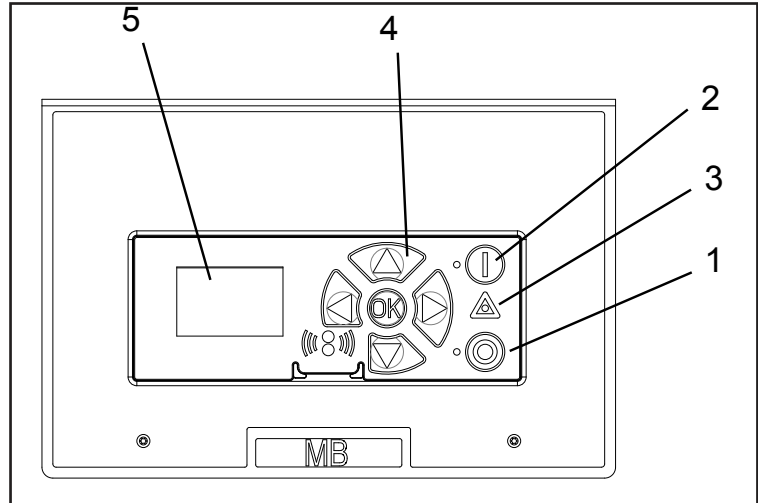
1. DESCRIPTION	3
2. DISPLAY LAYOUT	4
3. MODES	5
3.1 Power On	5
3.2 Standby	5
3.3 Run Mode	6
3.3.1 Multi Booster with high and low pressure	6
3.4 Power Off	7
3.5 Error / Warning	7
4. CONTENT OF MAIN- AND SUBMENUS	8
5. OVERVIEW OF MAIN- AND SUBMENUS	9
5.1 Content of the Info menu	10
5.2 Content of the Errors menu – CAUSE & REMEDY	11
5.2.1 Error List	11
5.3 Content of the Setup sub menu Settings	13
5.4 Content of Setup menu	14
5.4.1 Submenu Language & Units	16
5.4.3 Submenu Supply tank	16
5.4.4 Submenu Communication	16
5.4.5 Submenu Settings	17
5.4.6 Submenu Installation	17
5.4.7 Submenu Reset	18
5.5 Content of Readings	18

1. Description

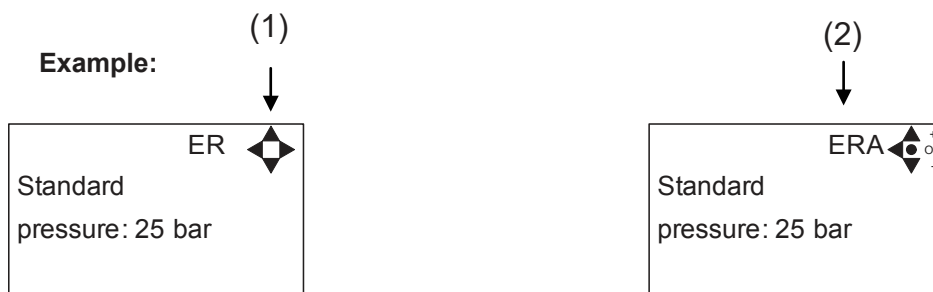
This software manual describes the operation of the control panel of the Multi Booster unit.

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.

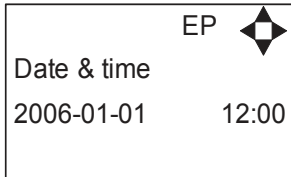
(2)

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).



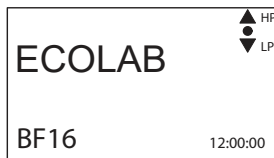
Set date and time using navigation buttons.



Confirm by pressing OK button.

3.2 Standby

The start up display will look as below.

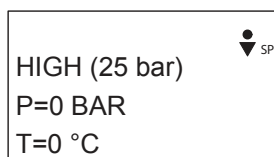


The unit is ready for operation and will start up either by means of flow or by pressure loss depending on settings (For further information on how to start up, see "settings" sub-menu "EY").

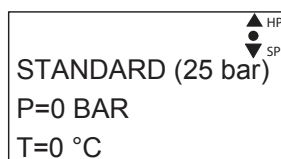
3.3 Run Mode

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).



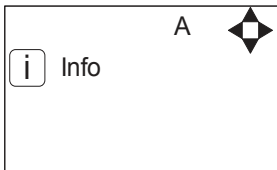
To see further error/warning list and possible cause and remedy go to section 5.2.

4. Content of Main- and Submenus

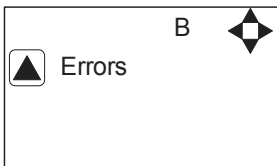
The control panel contains the below main menu screen displays.

Scroll between the menus using the navigation buttons.

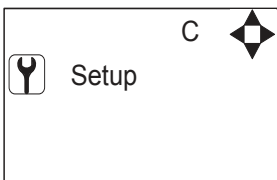
Each main menu contains submenus which will be described subsequently.



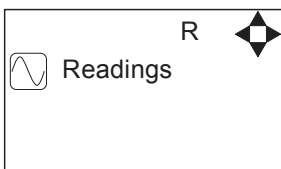
In the "info" menu, you will be able to see information like eg. SW version, contact information on service (require that this is setup), counters etc.



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 Σ Counters total (AA)
- 2 Σ 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 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. Supply Tank (H)

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

5. Communication (I)

- Firmware Upgrade by cable (IC)
- Firmware Upgrade by infrared (ID)

6. I/O Settings (J)

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

7. Installation (K)

- Install password (KA)

8. Resets (D)

- Reset trip counters(DA)

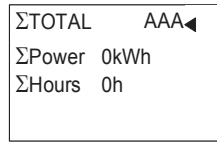
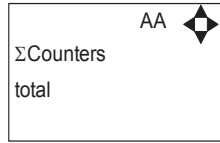
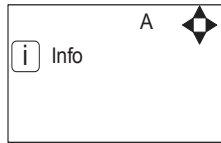
4. Readings (R)

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

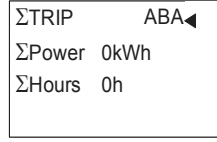
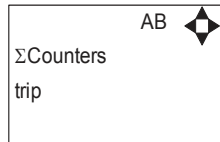
* Depending of other menus

5.1 Content of the Info menu

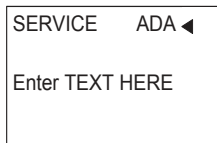
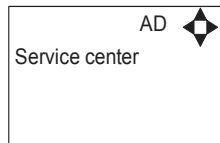
Please note that the Info menu is only for display – all data must be typed in via the setup menu!



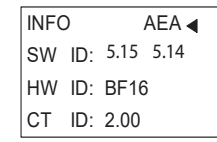
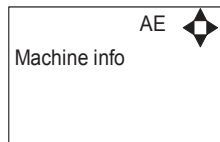
Displays accumulated consumption of power and operation hours.



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.

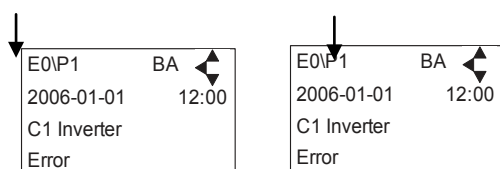
This display view is only ment as an example, SW ID and CT ID shows the current SW version.

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.

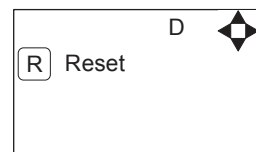
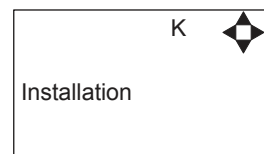
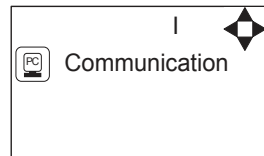
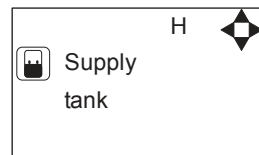
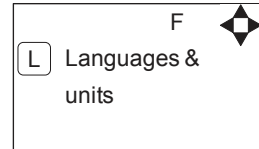
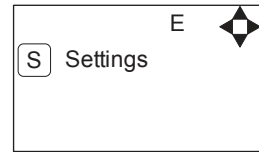
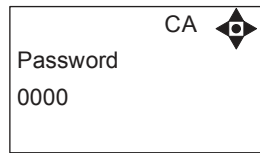
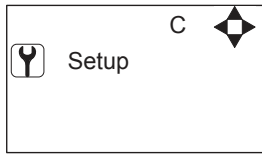
5.2.1 Error List

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 Service 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 Service 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 Service 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 Service technician
C6 Low Sensor Supply Voltage	1. Voltage supply for sensors too low	1. Press "off" button 2. If error reoccurs, contact our Service 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 Service 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 Service technician
C9 High Tank Level	1. Water supply valve not closed	1. Secure sufficient air supply to the valve. 2. Contact Service technician
C10 Tank comm. Error	1. Communication failure on tank control board	1. Contact Service 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 Service 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 Service 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 inelt 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 Service 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 Service technician.
C20 Low Sensor Signal P-Pumptop	1. Pressure signal from pumptop sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Service technician
C21 Low Sensor Signal T-Pumptop	1. Temperature signal from pumptop, sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Service technician
C22 Low Sensor Signal P-Inlet	1. Pressure signal form inlet sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Service 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 Service technician
C24 Low Sensor Signal block	1. Signal from block sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Service technician
C25 Low Sensor Signal flow	1. Signal from flow sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Service technician
C30 High Sensor Signal P-Puump-top	1. Pressure signal from pumptop sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Service technician
C31 High Sensor Signal T-Pumptop	1. Temperature signal from pumptop sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Service 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 Service 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 Service technician
C34 High Sensor Signal block	1. Signal from block sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your technician
C35 High Sensor Signal flow	1. Signal from flow sensor, out of range	1. Press "off" button 2. If error reoccurs, contact your Service technician
C40 Sensor Load Pumptop Sensor	1. Supply voltage for pumptop sensor too low. 2. Pumptop sensor using too much current	1. Press "off" button 2. If error reoccurs, contact your Service 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 Service 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 Service 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 Service technician
C45 Inverter Module temp.	1. Water consumption too high 2. Ambient temperature too high	1. Lower the load for inverter 2. Lower the ambient temperature
C46 Inverter Board temp.	1. Water consumption too high 2. Ambient temperature too high 3. Load at board high	1. Lower the load for inverter 2. Lower the ambient temperature 3. Lower the load at board


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 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 

Acceleration
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


SERVICE EJ 

Enter TEXT HERE


SERVICE EJA 

Enter TEXT HERE

Enter name and tel. no of 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 

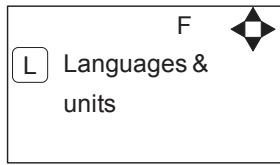
Standard
settings

EKA 

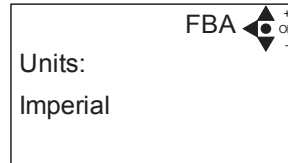
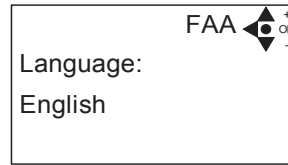
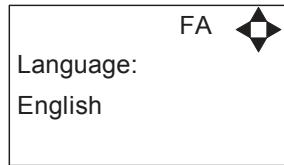
Reset?

Reset to standard factory settings.

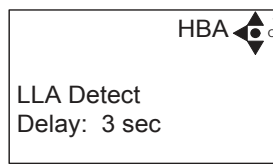
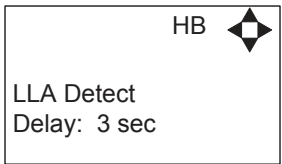
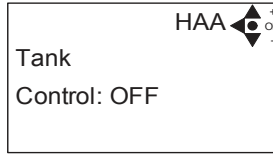
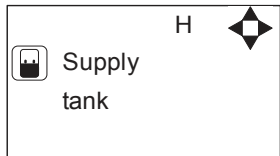
5.4.1 Submenu Language & Units



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

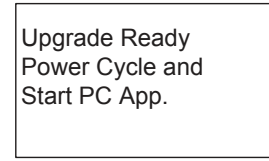
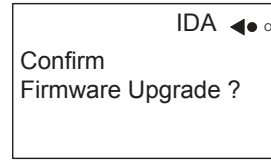
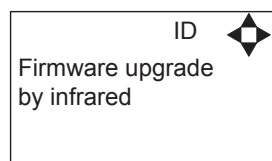
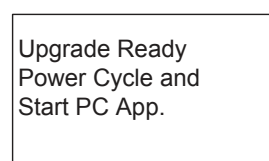
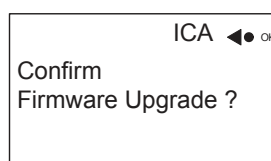
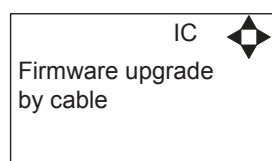
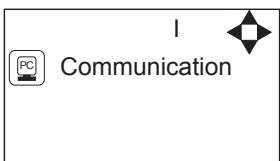


5.4.3 Submenu Supply tank



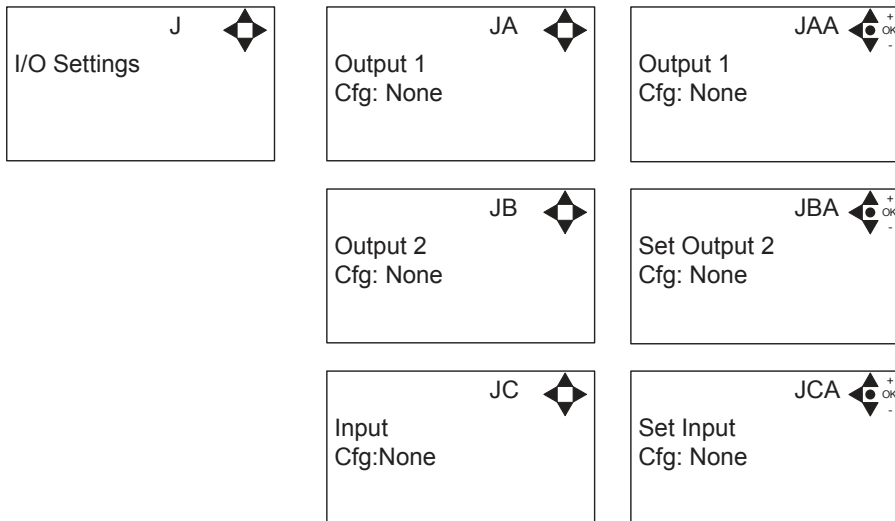
LLA=Low Level Alarm
Adjustable - 5 seconds.

5.4.4 Submenu Communication*



*For the use of authorized 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
- Standby/off - active if booster is running or in standby

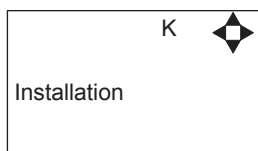
Output 2 options:

- 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

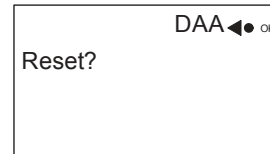
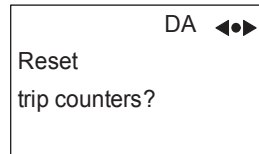
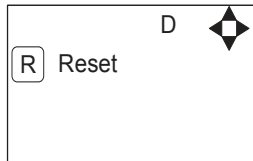
- None – No function
- Release – unit unable to start before this signal is present.
- Setpoint – Output pressure is controlled by external voltage source.

5.4.6 Submenu Installation

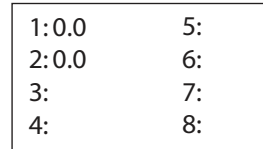
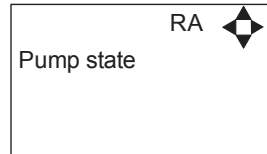
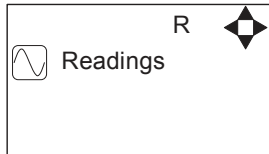


* For the use of authorised technician only

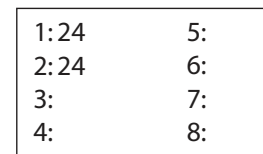
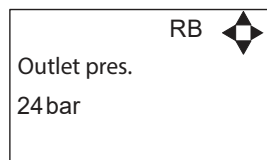
5.4.7 Submenu Reset



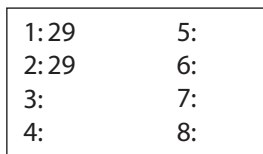
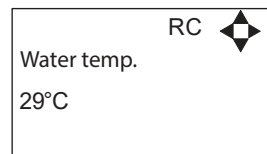
5.5 Content of Readings



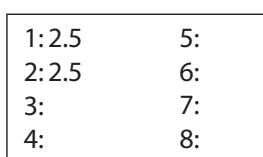
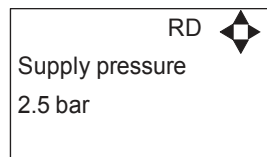
Individual output frequency of each frequency inverter



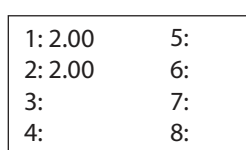
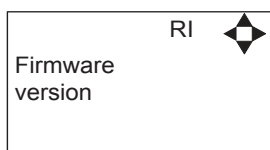
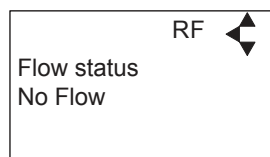
Shows outlet pressure of regulating pump. Press right to see the individual pump top pressure.



Shows water temperature of regulating pump. Press right to see the individual pump top pressure.



Shows supply pressure of regulating pump. Press right to see the individual supply pressures.



Shows firmware version for each inverter.

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

