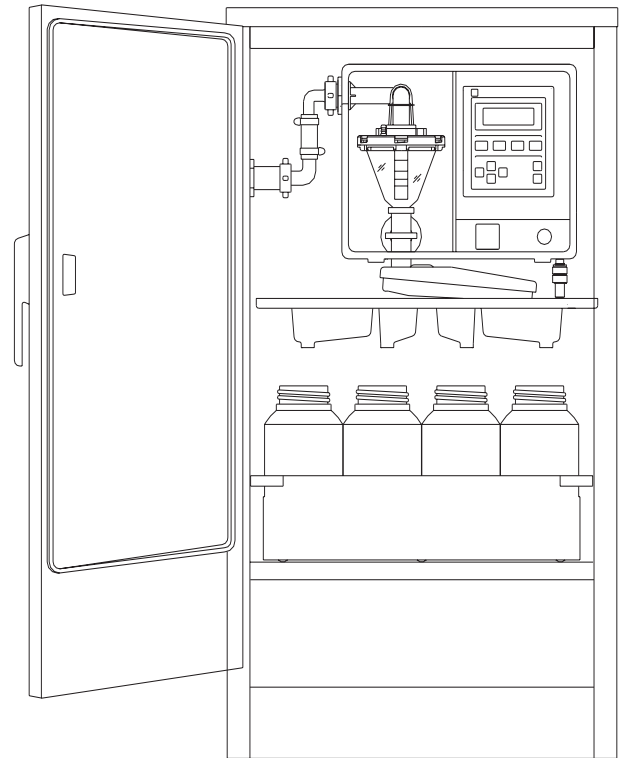
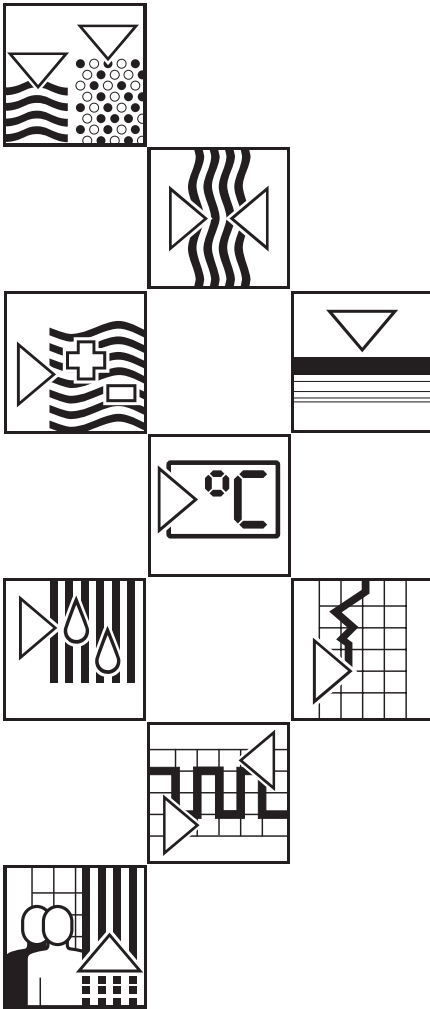


Multi-function water sampler

asp-station d 2

Installation and operating instructions



- Check: That the delivery note and delivery contents correspond!
Check the package and contents for external damage.

Complete delivery

Should there be any visible damage you should immediately inform both the transport agency as well as your supplier. If this is not done any later claims cannot be handled under the guarantee.

Transport insurance

Please take note of the following characters:

Hint: Hints for better installation.



Attention: Ignoring this note can lead to damage of the device or faulty operation.



Danger: Ignoring this warning can lead to personal injury.



Should the "asp-station d 2" be in storage for more than 6 months please take note of the storage details in chapter "**Maintenance, general**".



Please enter details here:

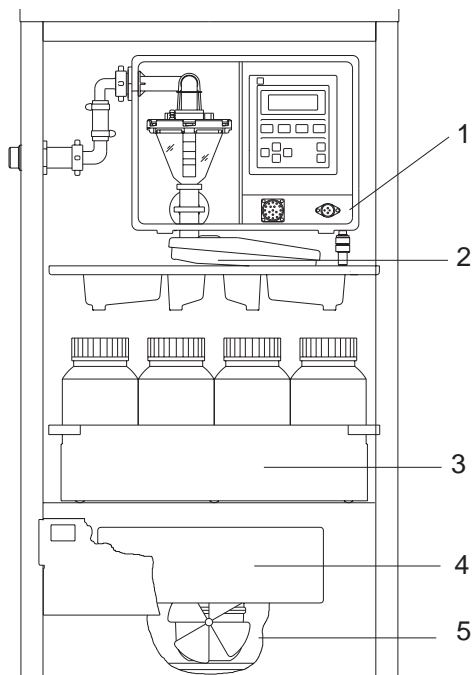
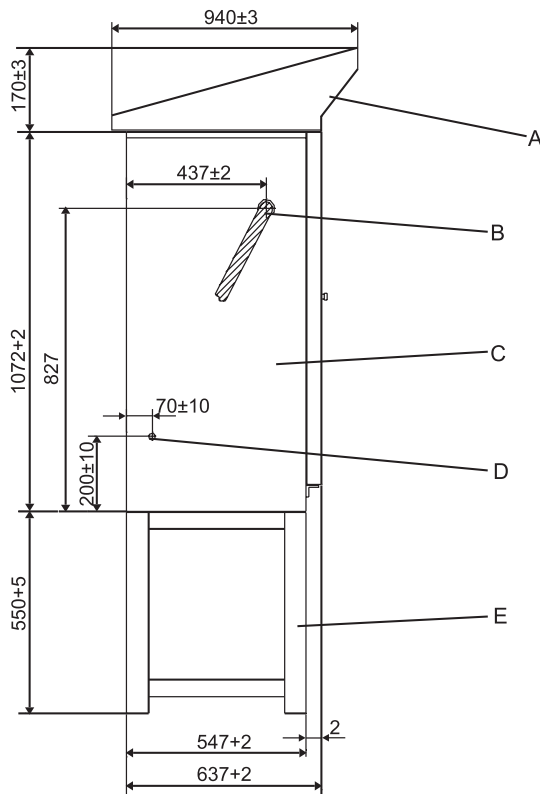
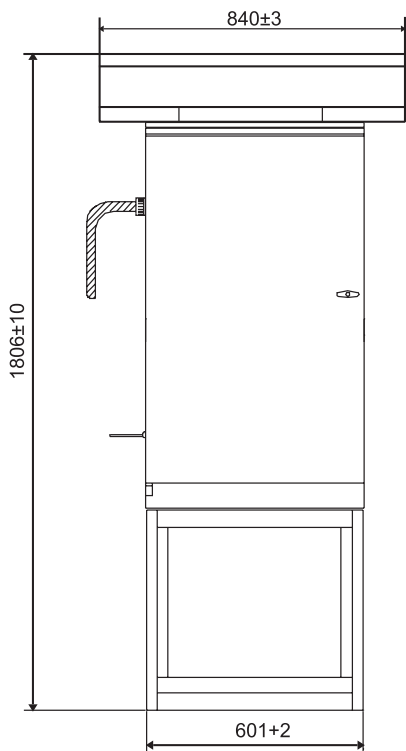
Unit number: _____

Software version: _____

Door key number: _____

.... Always give these details when reordering or on any queries.

**Dimensional drawing,
complete unit**



**Dimensional drawing, complete unit with all options
(above).**

- A = Roof (option)
- B = Suction hose (accessories)
- C = Sampler *asp - station d 2*
- D = Power cable
- E = Base (option, also available as a completely enclosed base, eg. for mounting external pumps or electrode armatures))

Note: All dimensions shown are for the "standard housing".
For "wide housing" dimensions see technical data.

Sampler *asp-station a* (left):

- 1 = Controller *liqui-box d 2*
 - 2 = Distribution tray (tap and tray)
 - 3 = Bottle tray with bottles and lids
 - 4 = Terminal box (behind cover plate)
 - 5 = Refrigeration unit (inside lower part of housing)
- Extra: Flow through armature if needed is fitted in the lower right part of the sampler.

Contents	Page
Please note:	1
- Complete delivery	1
- Transport insurance	1
- Enter unit information	1
asp-station d 2	2
- Dimension drawing, complete construction	2
Contents	3
General notes	5
- Safety	5
Mechanical installation	6
- General	6
- Installation	6
- Hose connection / installation	6
- Sampling point recommendations	7
- Foundation recommendations	8
Electrical installation	9
- Power supply	9
- Terminal box	9
- Terminal connections	10
- Outputs	10
- Inputs	10
- Control input	10
- Connection examples	11
- Input	11
- Output	11
- What happens on power up ?	12
- Power failures	12
- Switching on and off (ON/OFF push buttons)	12
Sampling principle	13
For first installation	14
Setting up sample volume	16
- Setting up steps (1 to 8)	16
Maintenance	19
- General	19
- Repairs	19

	Page
Operating and display components	20
- General	20
- Operating components	21
- Setting up principle	21
- Short form instructions	22
- Programme selection and information	24
- Base settings	26
- Programmes: Creating and changeover	28
- Start/stop operation	30
- Service level	32
- Operator settings	34
Changing analogue input	36
Sample distribution conversion	37
- Changing number of containers/bottles	37
Problems and solutions	38
- Fault messages	38
- Spare parts	39
Technical data	40

This unit is constructed and tested according to EN 61010-1 / VDE 0411 Part 1 and left our works in perfect and safe condition. In order to maintain this condition and operate safely the user must take note of the following safety information and warnings contained in these instructions.

Safety

First check that the power supply to be used corresponds with that on the unit legend plate.

This unit is supplied with a loose power cable including plug and socket arrangement and is therefore classified to protection class I.

The power supply plug must only be connected to a socket with an earth protection connection. This protection must be continued when using extension leads. Any breakage of the earth conductor within or outside the unit or loosening the earth connections can make the unit potentially dangerous. Intentional disconnection or an open circuit of this earth connection is not permissible.

There are no components in the unit that can be repaired by the user. All repairs must be made by trained service personnel.

Removing covers or components, except where this can be done by hand, must only be carried out by skilled personnel.

If it is assumed that the unit cannot be safely operated it must be immediately taken out of operation and secured against unintentional use.

It can be assumed that the unit cannot be safely operated,

- if the unit is visibly damaged
- if the unit no longer operates
- if the unit has been in storage under adverse conditions for a longer period of time
- after long transport under adverse conditions.

The manufacturer does not accept liability for any damage that has been made due to the unit not having been used in accordance with these safety instructions.

General

Remove the external protection film as soon as possible as this can stick due to sun rays. The water sampler must be installed so that it stands higher than the sampling point. It can be installed outside and mounted on a concrete foundation or solid level ground. The unit can be levelled by using the four levelling screws fitted in the bottom of the sampler. All components are mounted in a lockable, thermostatically controlled stainless steel cabinet.



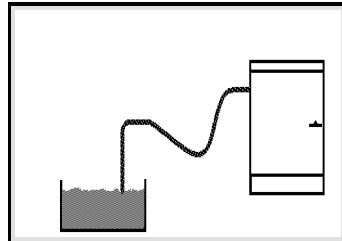
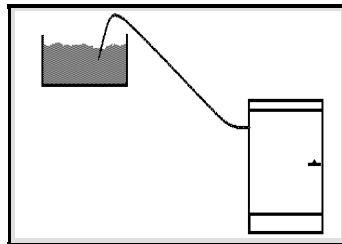
The cabinet must be installed in an area where an additional heating effect from external sources (eg. radiators, etc.) is avoided. In order to ventilate the built in refrigeration system the sampler, when mounting next to a wall, must be fitted with the 50mm long spacers supplied in the accessory pack.

Do not install the sampler close to large magnetic fields (eg. motors, transformers, large contactors, etc). Do not install the sampler in areas where it can be subject to high mechanical vibration. Avoid shocks when transporting the sampler.

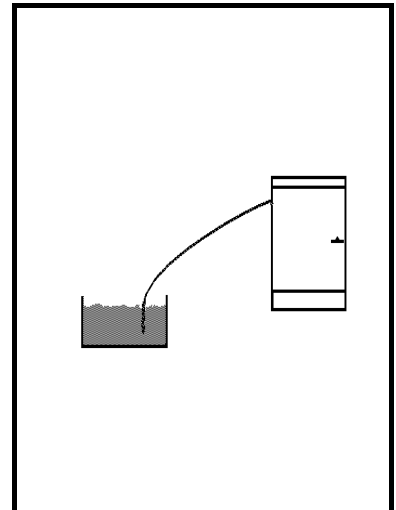
Hose connection / installation

The suction hose must be installed so that it always **rises** from the sampling point to the hose connection on the sampler !

Syphons must be avoided between the sampling point and sampler !



Wrong



Right

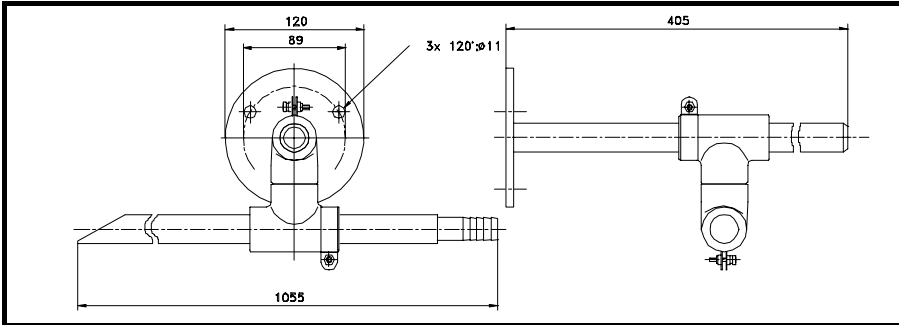


The sampler must not be connected to a **pressurised system !**
 For sample lift less than 2 m we recommend using a 15 mm suction hose. Both 13 mm and 15 mm connections are delivered.
 The minimum conductivity of the sample liquid must not be less than **30 microsiemens !**

- The 13 mm internal Ø hose must be of a spirally reinforced type.
- The hose can be connected to the connector on the top left hand side of the cabinet.
- Maximum height difference: **6m** from sampling point to sampler.
- Maximum hose length: **30m**

The suction hose must always be submerged in liquid at the sampling point. Suitable measures for this are:
 Weight the end of the hose using a short length of V2A tubing or fixing the hose to the channel (tank) wall using a hose saddle or the submersion armature (can be ordered as an accessory).

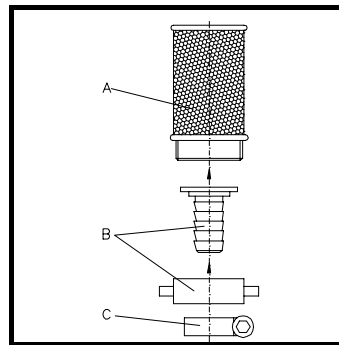
Sampling point recommendations



Submersion armature: PVC. is pivoted to move in all directions. Order No. 50038168

A suction filter can be used in applications where large solids particles are not required in the sample.

- A= Filter
- B= Connector
- C= Jubilee clip



Filter order No. 50038327

Recommendation:
 Never submerge the hose against the flow direction !

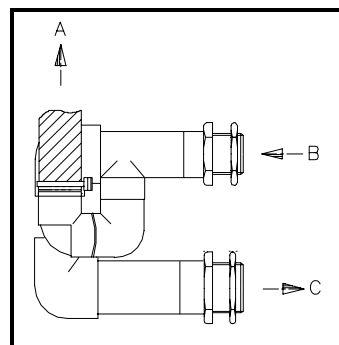


If possible sample with the flow.

Flow rate min.200l/h max.1500l/h
 Vacuum sampling from **A**
 Inlet **B** 3/4"
 Outlet **C** 1 1/4"

Attention: It must be guaranteed that liquid flow at the outlet C is free to atmosphere. Should the system come under pressure the water head at A will rise and can lead to flooding the sampler.

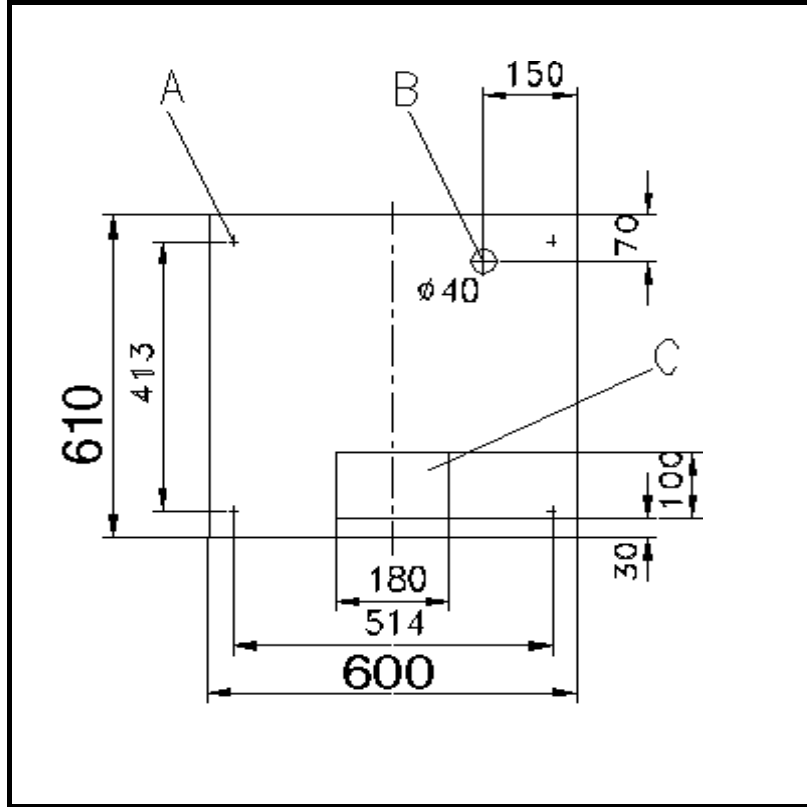
We accept no liability for damage caused by ignoring this information !



Sampler with flow through armature

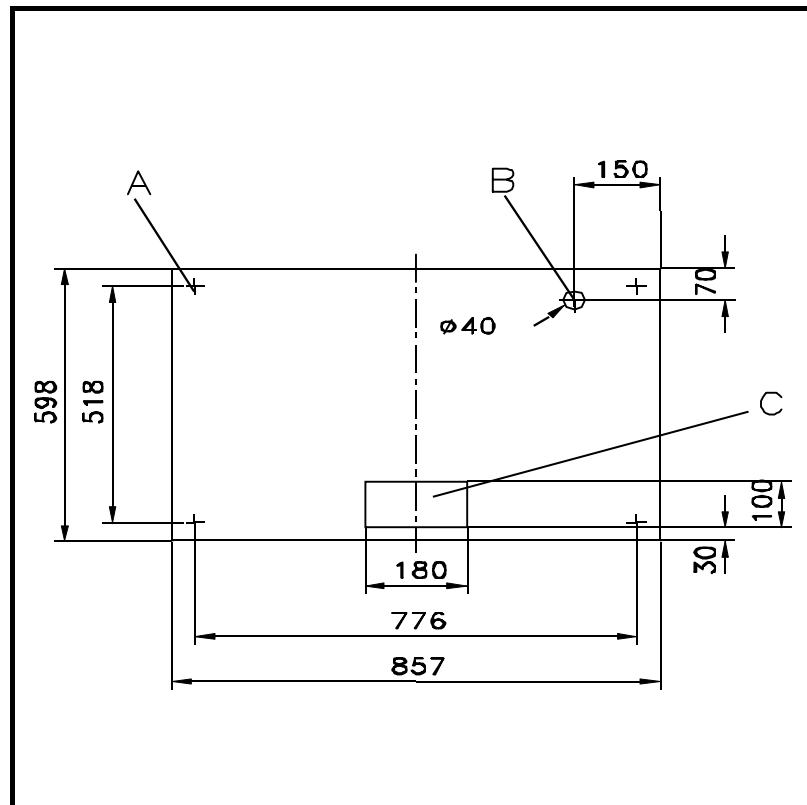


Foundation recommendation
(For standard units)



A = Fixing dimensions (There are four 10 mm dia holes in the base of the cabinet)
B = Defrost water drain.
C = Possible cable entries.

Foundation recommendation on option



For special version (wide housing) eg. 24 x 2.5 l bottle distribution

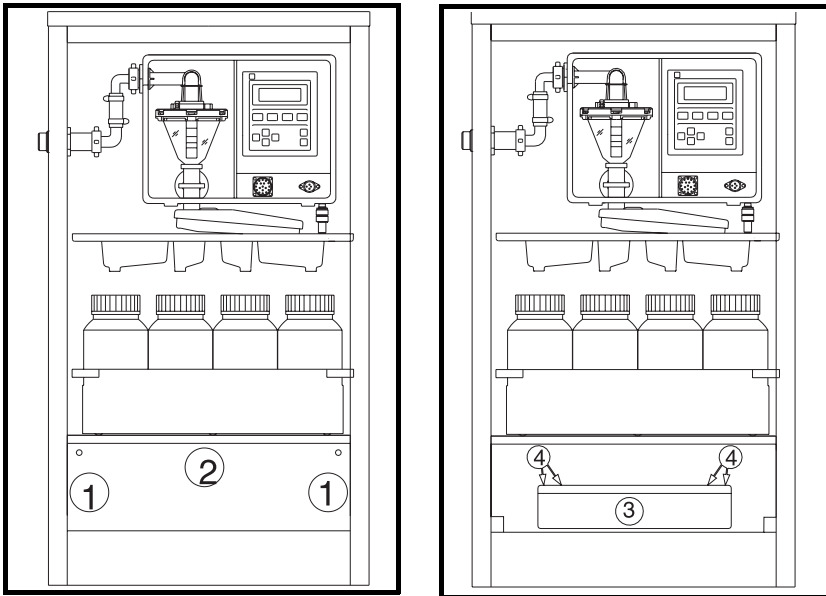
The sampler is delivered with a **3core mains cable** (length approx. 1.4m) connected to a 2 pin plug with **earth contact**. This cable is fed through the sampler left side panel and is already connected to the mains terminals (**KL1/1, KL/2 and PE**) in the terminal box.

Power supply

Open the cabinet door.

Terminal box

The terminal box is situated behind the hinged blanking plate (2) at the base of the sampler.



Remove the mains plug from the power supply (the system must be without power).

Push both snap locks (1) inwards and hinge the blanking plate (2) downwards. The terminal box (3) can now be seen.

Undo screws (4) and remove the terminal box lid.

There is a terminal connection diagram stuck to the inside of the lid.

The terminal box contains all in/output terminals, TTY interface for direct connection to the *Primo-Bit* sample protocol printer, internally connected cables to the functional module, alarm and sample sequence end relay outputs (for retransmission), heating and cooling relays (internal) as well as the mains fuse SI1 (6,3AT).

1 control input (KL8/ terminal 7 via optocoupler).
 Presetable as programme change or event input.

Condition: Address 270 is set to "ext. signal".
 A voltage of +7 to +27 Volt stops the actual programme (Adr.010) and changes to the target programme (as preset in address 271).
 0V (or open circuit) to +3 Volt returns system to the initial programme.

Each positive signal edge initiates an immediate sample cycle. The condition for this is that the selected active programme (as preset in address 010) is set to "**Event**", (Setting up for programmes 1 to 6 is done in addresses 210, 220, 230, up to 260).

To record sampling sequences and preset parameters.
 Connect KL8/ terminal 8 (TXD) to pin 24 on the *Primo-Bit*.
 Connect KL8/ terminal 12 (+UTTY) to pin 17 on the *Primo-Bit*.
 Set up addresses 160 to 169.

Do not connect any terminals (KL...) not mentioned in these instructions !

Control input

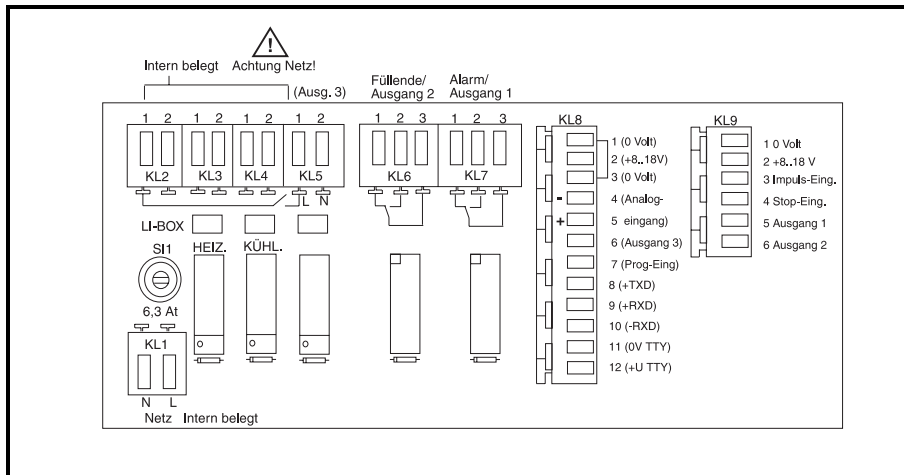
... for programme change

... as event input

Interface (TTY *Primo-Bit*)



Connection sticker inside terminal box lid

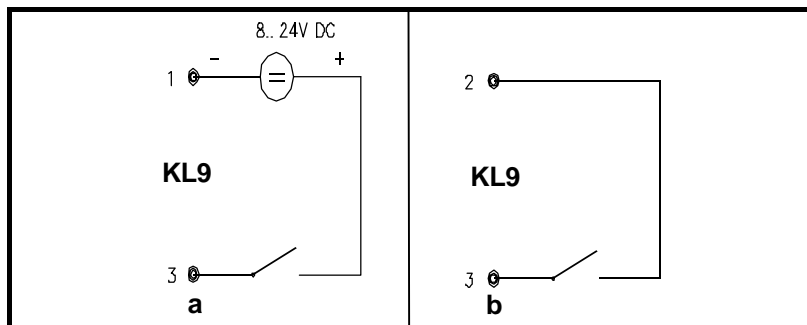


Attention! Details without brackets are valid for both "**A2 and D2 controllers**". Details within brackets are additionally valid for the "**D2 controller**". Whether an "**A2**" or "**D2**" controller is installed can be seen on the controller legend plate.



Alternatives: In example "**Impulse input for flow input**"

Connection examples



a: Using external aux. voltage

b: Using internal aux. voltage eg. for potential free contacts

Output

Outputs 1 and 2 (KL6/KL7) are individual potential free changeover contacts and can be directly connected to either DC or AC sources.



Output 3 (KL5/1 - KL5/2) is connected to mains power and is therefore dangerous.

What happens on power up ?**Power failures**

a) The unit runs a self check (start up). Display shows "**OFF**" and whether it is in a heating or refrigeration phase.

b) **Short term** power failures (<24 hrs) during automatic operation
No samples are taken, the inputs are not interrogated, however, the internal clock continues to run during power failure.

On return of power the unit initiates a self check, any bottle changes required are caught up. The sampler now continues to operate as normally. If the power failure occurred during a sample cycle the water in the dosing glass is then released into a bottle.

c) **Long term** power failures (>24 hrs) during automatic operation:
No samples are taken, the inputs are not interrogated, however, the internal clock continues to run during power failure.

On return of power the unit initiates a self check, any bottle changes required are not caught up. The sampler now continues to operate as normally.

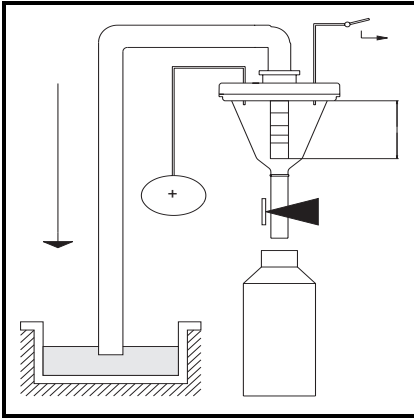
d) **Long term** power failures (500 hrs) have the following effect:
Internal buffer accumulator is discharged. An error message is displayed (for message acknowledgement please see chapter "Problems and solutions").

Reset operational data again. The unit must then be connected to mains power for at least 1 week (accumulator recharge). The sampler will operate normally during this time.

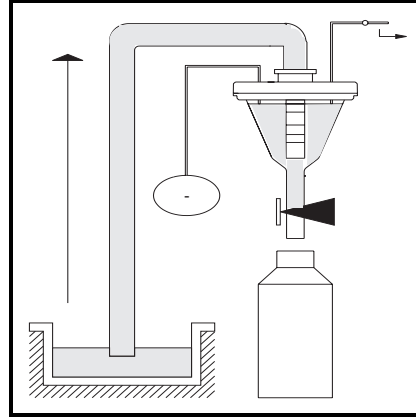
On/off switching using the ON and OFF push buttons

Switch off (operate **OFF**): This aborts the automatic cycle. Display shows "**OFF**". The unit should not be switched off during a sample cycle, always wait until the unit has completed the cycle. The sampler is switched off but still connected to the mains supply therefore heating and refrigeration continue to operate.

Switch on (operate **ON**): Display shows "**ON**". The unit can be restarted (from first bottle) by operating the "AUT" button.

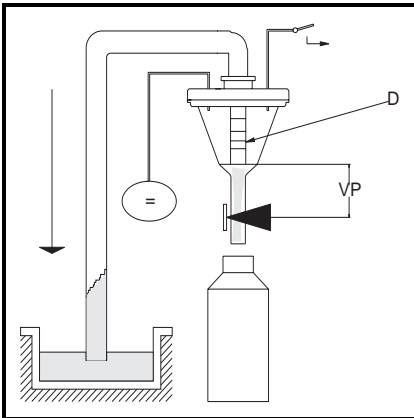


1 The dosing system is pneumatically sealed at the beginning of each sample cycle. The diaphragm pump then blows the suction hose free of obstructions via the dosing chamber

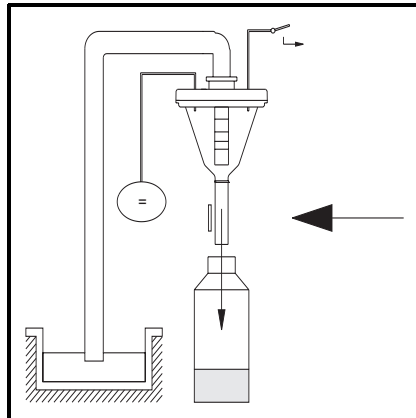


2 A fresh sample is then sucked into the dosing chamber until the conductivity level switch is activated (sensors in the dosing chamber flange)

Vacuum principle



3 The sample is now dosed to the preset volume (VP). This is dependent on the dosing tube position (D). Excess liquid flows back to the sampling point due to a syphonic effect.



4 The hose clamp is released and the sample flows into the composite container or bottles if operating using sample distribution.

General

The sampler is constructed for practical operation and can be applied virtually everywhere.

In addition to the versatile setting up the operator also has the possibility to preset six individual programmes. These can be accessed at any time. These programmes save time when changing from one application to another and can be done by unskilled personnel.

Presetting: The sampler leaves the factory preset with basic data. After switching on and operating the “**AUT**” push button it automatically operates using programme 1. This programme is preset to operate as time proportional sampling with a sample taken every 15 minutes and time proportional sample distribution with a bottle/container change every 2 hours. The sampling sequence is automatically stopped after the last bottle has been filled.

Restart by operating the “**AUT**” push button (do not forget to remove and empty or replace the filled bottles/containers).

Over fill security: Setting up addresses 110 and 111 are very important. These are used for setting up the automatic bottle/container overflow security.

Addr. 110 = Set up dosing volume (Dosing tube position in the dosing chamber) in ml (factory setting 200ml).

Addr. 111 = Set up bottle/container volume (factory setting 0,6l).



Always reset the dosing and bottle/container volume values on initial installation and when either of these criteria are changed (different dosing volume).

Programmes: There are 6 individual programmes available. Programmes can be selected in address 010 without the use of a security code.

For programme **2** functions see setting up addresses **220** to **225**

For programme **3** functions see setting up addresses **230** to **235**

For programme **4** functions see setting up addresses **240** to **245**

and so on up to **6** programmes

The programme parameters can be easily changed by the user.

Automatic programme change (eg. Q-T or Q-q) can also be defined in addresses 270 to 276.

Time synchronisation Sampling and bottle/container change can be synchronised to a particular time. Setting up addresses 126, 127 and 128 are used for this purpose. These settings are only valid at the start of a programme using time proportional sample distribution.

Addr	Description	Works setting
126	Synchronisation mode: Time for automatic start (Aut push button) or preset time (addr. 127) operate as synchronisation time base	AUT push button
127	Synchronisation time for sample cycle and bottle/container change	00:00
128	Switch on/off fixed time base of bottles/containers	off

"**asp-station d 2**" with 12 bottles and 2 hour filling time per bottle.
On synchronisation time of 00:00 (addr. 127) and switched on bottle synchronisation (addr. 128) each bottle is allocated a fixed filling time independently from the time of the automatic sequence start

Time synchronisation example:

Bottle	Fill time
1	0 to 2 Uhr
2	2 to 4 Uhr
3	4 to 6 Uhr

If bottle synchronisation is set to "**OFF**" in address 128 the automatic sequence starts with bottle 1. Bottle change takes place at the preset time (addr. 127). This is only valid if the actual programme runs with time proportional distribution.

In order to become familiar with the uses of this multi function programme it is recommended that the user should work through each individual setting up level and address.

It is also recommended that new settings be noted in the empty charts ("**Operator settings**").



Varying sample volume

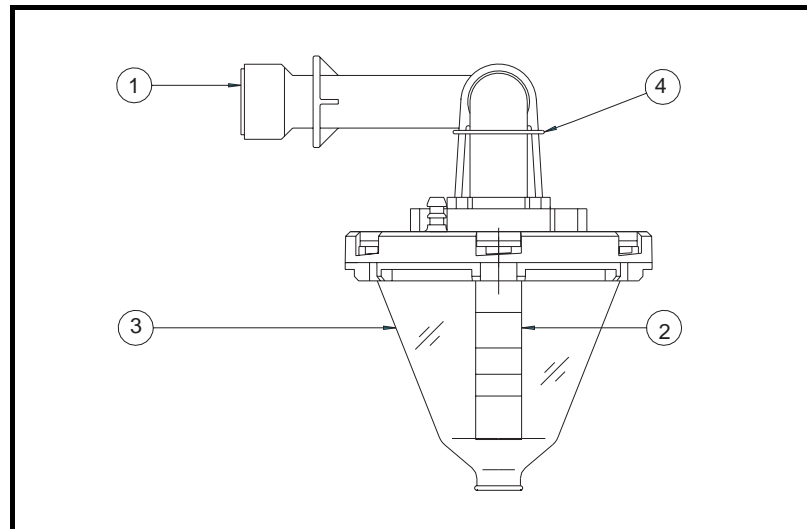
Follow the next steps.

1. Open cabinet door

2. Switch unit off

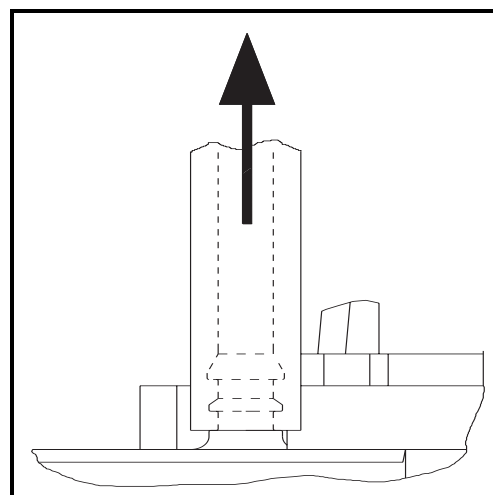
Operate the **- OFF- (4)** push button at the "liqui-box d 2".

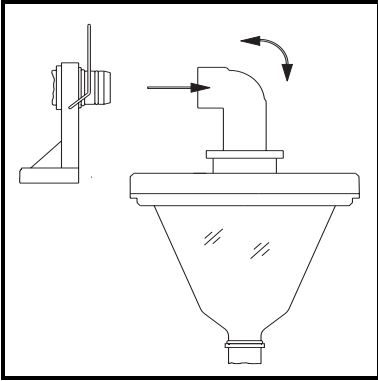
Dosing system:



- ① = Elbow
- ② = Dosing tube
- ③ = Dosing chamber
- ④ = Piping clamp

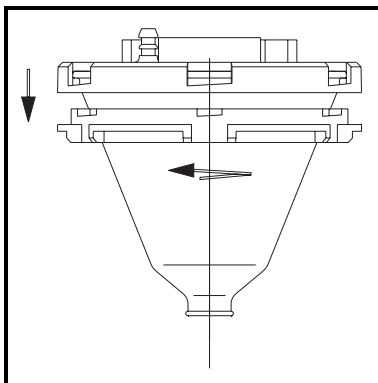
3. Remove air hose





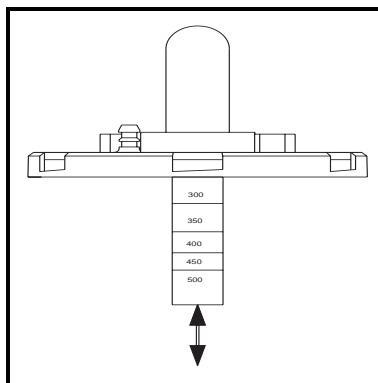
Lift clamp from pipe elbow.
Pull dosing system forwards and
remove from controller.

4. Remove dosing system



Release the bayonet fitting by turning
the lower part of the flange as shown.
Remove the flange from the dosing
chamber.

5. Remove flange



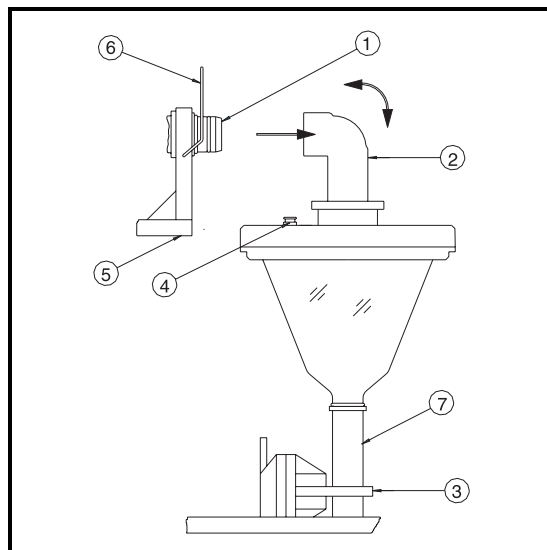
Set the dosing tube to the required
sample volume by pushing it in or out.
Take note of the engraved quantities
on the tube. (The further the tube is
pulled out of its retainer the smaller
the sample volume)

6. Set sample volume

(Only move the dosing tube. **NEVER**
loosen the nut and **NEVER** move the
upper elbow.)

7. Replace dosing system

- ① = Nipple
- ② = Suction pipe elbow
- ③ = Hose clamp
- ④ = Contacts
- ⑤ = Spring contacts
- ⑥ = Fixing clamp
- ⑦ = Silicon hose

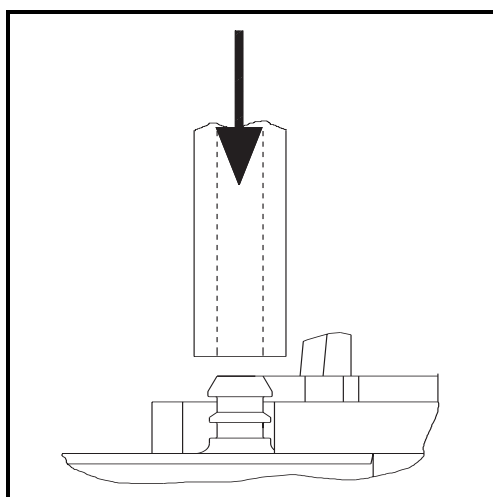


- Push silicon hose ⑦ into the hose clamp ③.
- Push suction pipe elbow ② onto the nipple ①. (Make sure that the spring contacts and flange contacts are made).
- Push fixing bracket ⑥ downwards.



"The contacts ④ and contact springs ⑤ must be made (otherwise faults can occur)."

We cannot be held responsible for damage caused by not complying with these instructions !

8. Replace air hose

Maintain your **asp-station d 2** regularly. Clean and protect the outside cabinet using a stainless steel cleaning agent. Regularly oil the door hinges.

Clean the distribution tray and tap with soap and water (do not use solvents, spirits, etc.). In order to clean the distribution system: disconnect the plug from the controller; remove the distribution tray; pull the distribution tap off the tray; undo the side clamps; split the tap and clean both halves. To reassemble reverse these instructions.

Regularly clean the dosing chamber if possible before the unit indicates the need by a message. Clean this with soap and water (do not use solvents, spirits, etc.). Make sure the system is dry before reassembly. Ensure the system is assembled correctly.

Hint: Treat the contacts on the upper flange as well as the spring contacts with contact grease.

Check for visible damage and replace if needed.

Always keep covered using the protective covers when not in use.

Always connect and switch the unit on for at least 48 hours if the unit has been out of operation for 6 months (protects the internal accumulator from total discharge).

If this is not possible the accumulator isolation switch must be opened (only by skilled personnel).

This switch can be found on the CPU board next to the "data security accumulator" behind the controller front keypad and display plate.

Should you need to return an **asp-station a 2** or part of it to your Endress+Hauser service department for repair please take note of the following:

Remove all deposits.

This is most important if the unit has been used in areas containing health hazardous waste or substances, eg. corrosive, poisonous, carcinogenic, radioactive etc. We must ask you not to return the unit if it is impossible to totally remove these substances from the unit, eg. if they have seeped into cracks or have been diffused into the plastics used on the sampler.

Please include a small description of the application conditions, installation area and medium properties. Also include a fault description as this will make fault finding simpler and faster and will, in the long run, save you money.

Many thanks for your assistance.

General

Sample distribution

Dosing system

Power cable

Plugs and sockets

Storage

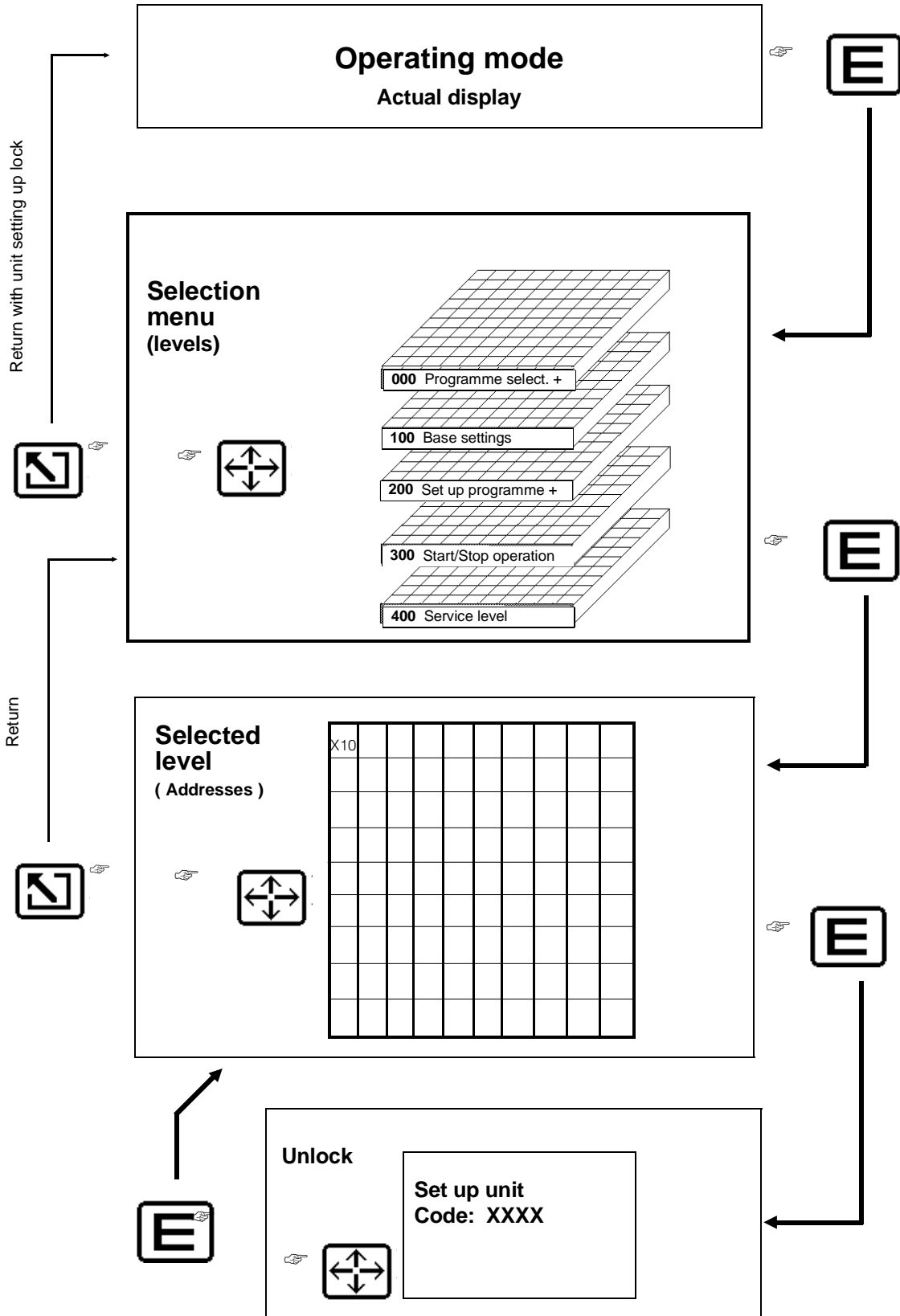
Repairs

Cleaning the asp-station a 2



Information about application area and fault

General



- "ON" Key** activates the controller (liqui-box d 2).
Display indicates ON with date and time.
- "OFF" Key** switches the controller (liqui-box d 2) off. Display indicates OFF with date and time. An already started sample cycle is aborted (or completed if the suction phase has been reached).
Controlled cooling and heating remains switched on.
Automatic operation is aborted.
- "AUT" Key** starts the automatic mode (new sequence).
- "MAN" Key** initiates an immediate sample cycle (blow-out, suction...).

Operation is as shown on the page opposite. All values in all levels can be accessed following this format, displayed, but not changed (coded access lock). Level 0 is the exception, here the user can select and activate the programme required from the 6 programmes available. Data input in all other levels must first be unlocked using an access code (see technical data for details). Once unlocked a return to the previously selected address is made by operating the ENTER push button. The service level can only be accessed by using a separate access code known only to E+H service personnel.

"Operating mode/Actual display", In this display the sampler indicates its actual situation. This display is shown as soon as the ENTER push button has been operated once the controller is switched on (using the ON push button). It is also displayed once input has been finished by operating the HOME push button (2x) or if any push button has not been operated inside 5 minutes. If this happens the unit is immediately access locked.

Access the selection menu using ENTER. Using the arrow push buttons select the required level. Access the first address by operating ENTER. View the various addresses using the arrow push buttons.

Changing values: Operate ENTER, set up code, operate ENTER, change values using arrow push buttons, operate ENTER. If further values are to be changed this is done without using the access code. The addresses can be scrolled upwards using the arrow right push button (arrow left = downward scroll)

Access to selection menu.

Access to first address in selected menu.

Accept preset or changed data value..

Return to selection menu.

Return to operating mode (with access code lock).

Abort setting up within an address (value is not accepted. old value remains so long as ENTER was not operated).

Level selection when in selection menu.

Selecting addresses when in a setting up level.

Selecting individual values within an address and changing these if required.

In order to document user specific setting up data please use the empty tables available after "Service level" (fold out) .

Operating components

Important:



Note



Setting up principle

Enter push button:



Home push button:



Arrow push buttons:



Short form instructions

The following addresses are important when changing the factory settings in a sample sequence programme:

1. Select level "**Base settings**", unlock security code (code 6051)
Addr. 110: select and set up
Addr. 111: select and set up
2. Select level "**Programmes and changeover**"
Addr. 210: select and set up
Addr. 211 or 212: select and set up
Addr. 213: select and set up
Addr. 214 or 215: select and set up
3. Select level "**Programme selection and information**"
Addr. 010: select and set up
4. Operate "**Home**" push button
5. Start unit with "**AUT**" push button



Condition: The factory setting are valid for the remaining addresses.

This page was left empty for notes:

Programme selection and information

<p>010 Programme select A</p> <p>One, from programme 1 to 6 since: date/time</p>	<p>011 Print parameters</p> <p>Yes or No</p>								
<p>020 Power failures</p> <p>Number and minutes</p>	<p>021 Power failure time, last:</p> <p>from Date/time to Date time</p>	<p>022 External stops</p> <p>Number: 4 digit counter</p>	<p>023 External stop time, last:</p> <p>from date/time to date/time</p>	<p>024 Control input active</p> <p>Number: 4 digit counter</p>	<p>025 Control input last:</p> <p>from date/time to date/time</p>				
<p>030 Sample counter</p> <p>Number: 6 digit counter</p>	<p>031 Not taken samples</p> <p>Number and last on date/time</p>	<p>032 No flow</p> <p>Number: 4 digit counter and last: on date/time</p>	<p>033 Info counter per container</p> <p>Container XX Sample No. No.sam start. No flow</p>						
<p>040 Actual flow</p> <p>in l/sec or m³/h 4 digit</p>	<p>041 Temperature display</p> <p>Target: °C Act: °C Heat/cool</p>	<p>042 Battery voltage</p> <p>Only on 12 Volt DC lead acid battery operation</p>							

Adr.	Description	Works setting
010	Sampling: 6 programmes are in memory. One out of six can be selected in this address. This programme will become active in automatic operating mode (after AUT has been operated). Display and storage of selection time.	1 -
011	Condition: A protocol printer type Primo-Bit is connected. No: No printout Yes: The most important sampler operating data is printed out. Thereafter the display returns to No.	no
020	Number off and length of time of power failures - during automatic operation. (The counters are reset on new automatic operation start.)	0000 -
021	Length of time of last power failure (reset on new automatic start).	-
022	Automatic operation stop using an external signal (the ext.-stop input must be used and closed). All sample cycles are frozen whilst the signal is active only date, time, cooling and heating continue to operate. (The stop counter is reset on new automatic operation start)	0000
023	Length of time of last external stop signal (reset on new automatic operation start).	-
024	The positive edge of the signal at the "control input" (event or programme change) increase the counter by one (The counter is reset on new automatic operation start)	0000
025	Length of time of last event or programme change.	-
030	Sample counter during automatic operation (counter value minus "no flow" value, address 032, gives the actual number of samples taken) (This counter is reset on new automatic operation start)	0000
031	This counter is increased by one and the time noted if a sample start occurs during an already active sample cycle or when the overflow security is active. This sample is not taken.. Reasons: Time interval selection was too short. Flow quantity selection was too small. Overflow security active. or very fast event sequences. (This counter is reset on new automatic operation start)	0000 -
032	This counter is increased by one and the time noted if the dosing chamber is not totally filled during the sample suction time. A fault message appears in the display, this message is deleted at the start of the next sample cycle. Reasons: Sampling point dry. Hose blocked or not properly sealed. Or suction time selection too short. (This counter is reset on new automatic operation start)	0000 -
033	Data in addresses 030 to 032 set as single line information per bottle /container: Bottle/container number, number of samples, number of sample starts, how often a no flow was recorded Individual bottle data can be selected by operating ENTER until the bottle data required is in the display. This is valid for all forms of distribution, eg. 1 to 12 bottles.	XX 0000 0000 0000
040	Condition: That the flow measurement analogue signal is connected to the "analogue input" of the sampler.	xxxx m ³ /h
041	Target and actual temperature in the sample bottle surroundings. Display whether heating or cooling is active..	xx°C
042	Voltage measured at the 12 VDC input (Only valid for samplers operating with 12 volt direct current supply.	xx,x V

Base settings

110 Sample volume Set up range: 0...500 ml	111 Bottle volume Set up range: 00,0...99,9 l								
120 Self optimising sample phases ON / OFF	121 Blow out time (Phase 1) Set up range: 0...15 sec.	122 Suction time (Phase 2) Set up range: 10...360sec	123 Dosing time (Phase 3) Set up range: 5...150 sec.	124 Sample delay Set up range: 0...100 sec.	125 Conductivity sensitivity low middle high	126 Synchronisation AUT / time	127 Synchronisation time Hours 00 .. 24 Minutes 00 ... 60	128 Synchronisation bottle/container ON / OFF	
130 Thermostat On / Off	131 Preset temperature 0...30 °Cels.	132 Automatic defrost Yes / No	132 Defrost time Range 1 ... 999 min. Cycle range 2 ... 999 min.						
140 Select signal input type Analogue Impulse None	141 Select analogue input 0...20mA 4...20mA 0...1 V 0...10V	142 Set analogue input values l/Sec or m³/h Range: 1...9999	143 Set analogue input value decimal point Without, after 1. to 3. points	144 Set impulse input values l/Impulse or m³/Impulse 1...9999	145 Set impulse input values decimal point Without, after 1. to 3. points				
150 Set up output 1 One from eight pos. see description	151 Set up output 2 One from eight pos. see description	152 Set up output 3 One from eight pos. see description							
160 Select interface Primo-Bit or Option	161 Print sample report On or Off	162 Print parameter report on start On or Off	163 Installation name (unit identifier) 10 digit selectable	164 Serial unit address Selectable: 00...99	165 Select interface type TTY / (V24)	166 Set Baudrate Selection 300 / 600 / 1200 / 2400	167 Select parity Selection odd / even / mark / space	168 Select Stop-Bit Selection 1 / 2	169 Display of number of data Bits 7
170 Date 2 digits each Day, month, year	171 Time Hours 00...24 minutes 00...60	172 Summer/normal time changeover automatic/ manual/ switched off	173 Advance (1h) NT → ST Selection: Day, month, year; hour, minute	174 Reverse (1h) ST → NT Selection: Day, month, year; hour, minute					

Addr.	Description	Works settings
110	Set up the same dosing volume as on the filling tube in the dosing chamber	300 ml
111	Set up single bottle / container volume (-10% for safety) (Addr. 110/111 operate as bottle overflow security).	00,6 l
120	The total sample time is dependent on the hose length suction height and liquid. ON= self optimising. OFF= set up by user (Addr.121...123).	ON
121	The three phase times can be timed by taking manual samples (MAN push button). Blow out time = time from pushing Man button until air bubbles come out of the hose at the sampling point.	-
122	Suction time = Time from when bubbles no longer appear at the sampling point until the dosing chamber is filled.	-
123	Dosing time = Time after dosing chamber is filled until the liquid has reached its preset dosing volume (bottom of filling tube).	-
124	Target time XXX seconds by which each sample is to be delayed. Function: Sampling signal (output, see addr.150/151/152) is active XXX seconds before sample start and remains until sample has been dosed.	000 Sec.
125	Conductivity switch setting; can be set to suit the liquid being sampled. Should only be used under special conditions, normal operation set to middle.	middle
126	Time synchronised sampling	AUT button
127	Synchronisation time to which the sample cycles operate	00:00
128	Fixed allocation of bottle / container change selection (ON / OFF)	OFF
130	Activate or switch off cooling and heating automatic cycle.	ON
131	Set required sample preservation compartment temperature.	5 °C
132	Automatic refrigeration and heating phase (hourly defrost until internal temperature has increased by 2°C or a max 10 min.) or manual settings	Yes
133	Defrost time = Time in which the refrigeration fins are heated Cycle = Refrigeration running time until next defrost phase. Input only accepted when cycle > time.	10 60
140	For quantity proportional sampling. Selection is dependent on the transmitter.	analogue
141	For analogue input. Selection is dependent on the transmitter output. 4..20mA has cable open circuit monitoring (fault display and message). Note: Change switch in unit when using 0..1/10 V (see section "Change analogue input).	0...20 mA
142	For analogue input. Value and range is dependent on transmitter and flow rate. Setting: Maximum flowrate, eg. 20 mA = 1000 m ³ /h	1000 m ³ /h
143	For analogue input. Set decimal point for the above value.	None
144	For impulse input. Set up litre or m ³ per impulse (dependent on transmitter).	-
145	For impulse input. Set decimal point for the above value.	-
150	Relay output 1 selection: ☛Signal during container change (Distribution tap running) ☛Signal during sampling (see Addr. 124) ☛Acknowledgement of external stop input ☛Automatic sequence end (last bottle/container is full). Signal active until next automatic start sequence. ☛Error signal "No flow". Signal active until next sample cycle. ☛Error signal "Electrodes 1/" (conductivity electrodes) dirty. Signal active until (cleaned) acknowledged. ☛All error signals and faults = cumulative alarm. ☛Not used.	Probe 1/2 Soiled
151	Relay output 2 selection as above (Addr. 150)	Sample
152	Relay output 3, mains power connected. Selection as above (Addr. 150). Switch function selectable as "Standard" or "Inverse".	Cumulat. alarm "Standard"
160	Used for sample report printout using the serial printer type Primo-Bit.	Primo-Bit
161	Complete sample sequence report on paper (Primo-Bit), ON or OFF.	ON
162	Parameter report printed out on each automatic sample sequence start, ON or OFF	ON
163	For identification - Must be individually set up.	Liqui-box
164	Set up varying identifier addresses if multiple samples are connected in a TTY series link. Only available as an OPTION.	01
165	Set up TTY for Primo-Bit TTY (V24 =Option).	TTY
166	Set up 300 for Primo-Bit.	300 Baud
167	Set up "even" for Primo-Bit.	Parity even
168	Set up 1 for Primo-Bit.	1 Stop bit
169	Set up 7 for Primo-Bit. Set up the following at the Primo-Bit: Code 6051, A1, Mod 010, B42, Code 9999.	7 Data bit -
170/171	Change date / time.	actual
172	Automatic = Repeated yearly: Last Sunday in March at 2 o'clock: advance to 3 o'clock. Last Sunday in September at 3 o'clock: reverse to 2 o'clock. (Off = no changeover)	Automatic
173/174	Manual (Addr.172): Set up advance and reverse switch times individually. Note: Same values as in addr.173/174 stops changeover.	-

**Programmes:
Creating and changeover**

210 <i>Sampling</i> Progr. 1 Time/ Quantity/ Event	211 <i>Time interval</i> Progr. 1 Range: 00h 01min. ...99h 59 min.	212 <i>Sampling quantity</i> Progr. 1 Litre or m ³ 0001...9999	213 <i>Sample distribution</i> Progr. 1 Change on Time or Samples	214 <i>Fill time per bottle</i> Progr. 1 Range: 00h 01min. ...99h 59min	215 <i>Samples per bottle</i> Progr. 1 0001...9999				
220 Progr. 2 Works setting: Time	221 Progr. 2 Works setting: 10 min	222 Progr. 2 Works setting: -	223 Progr. 2 Works setting: To time	224 Progr. 2 Works setting: 1 hour	225 Progr. 2 Works setting: -				
230 Progr. 3 Works setting: Time	231 Progr. 3 Works setting: 1 hour	232 Progr. 3 Works setting: -	233 Progr. 3 Works setting: To time	234 Progr. 3 Works setting: 24 hours	235 Progr. 3 Works setting: -				
240 Progr. 4 Works setting: Quantity	241 Progr. 4 Works setting: -	242 Progr. 4 Works setting: 10 m ³	243 Progr. 4 Works setting: To time	244 Progr. 4 Works setting: 2 hours	245 Progr. 4 Works setting: -				
250 Progr. 5 Works setting: Quantity	251 Progr. 5 Works setting: -	252 Progr. 5 Works setting: 10 m ³	253 Progr. 5 Works setting: To time	254 Progr. 5 Works setting: 2 hours	255 Progr. 5 Works setting: -				
260 Progr. 6 Works setting: Event	261 Progr. 6 Works setting: -	262 Progr. 6 Works setting: 10 m ³	263 Progr. 6 Works setting: To samples	264 Progr. 6 Works setting: -	265 Progr. 6 Works setting: 1				
270 <i>Programme change criteria</i> Time Quantity: Too much/little. Ext.Signal. Not active	271 <i>Programme change from A to B</i> Act.Progr.#X to Target progr. #1...6	272 <i>Programme change, Switch times</i> Times: Change to. change back.	273 <i>Programme change</i> Day selection Daily the same To:Mo...Sun Back:Mo...Sun	274 <i>Programme change</i> Changeover value l/Sec or m ³ /h 1...999	275 <i>Change to next bottle on:</i> Change to. change back.	276 <i>Sample after programme change</i> Yes / No			
280 <i>Overfill security</i> Yes / No									

Address	Description	Works settings
210	Programme 1: (Select one from three possibilities) - Time proportional sampling: Samples are taken in even time cycles. - Quantity proportional sampling: High flow = Many samples Low flow = Few samples Condition: That a flow meter is connected to the sampler. - Event controlled sampling: So long as address 270 is not set to "Ext.Signal" an external signal (positive edge) at the control input initiates an immediate sample.	Timed
211	Time proportional sampling: Set up time between each sample cycle.	15 min.
212	Quantity proportional sampling: Set up the quantity at which the sampler is to initiate a sample cycle.	-
213	Distribution tap changeover: Select if timed or number of samples released initiates a change to next bottle.	Timed
214	Set up time for distribution tap change to next bottle.	2 hours
215	Set up number of samples to be taken before distribution tap change to next bottle.	-
220-225	Set up programme 2 (see Addresses 210-215).	See matrix
230-235	Set up programme 3 "	"
240-245	Set up programme 4 "	"
250-255	Set up programm 5 "	"
260-265	Set up programme 6 "	"
270	Programme change (Select one from four possibilities) Not active: No programme change. Time: Programme change at preset times. Quantity: An external flow meter must be connected to the sampler. Programme change is dependent on preset high and/or low flow limits Return (reset) hysteresis is 1% of preset value. Ext.Signal: Programme change is initiated by an external signal at the "control input" Return (reset) when signal is no longer active. Condition: That addresses 210/220 and so on up to 260 are not set to "Event".	Not active
271	A = Selected active programme (addr. 010). B = Changeover target programme.	-
272	Programme change Set times for changeover and return (reset).	-
273	...The same every day or select: Changeover day (select one day from Monday to Sunday) and return (reset) day (select one day from Monday to Sunday).	-
274	Programme change dependent on flow. Set up limit for programme change.	-
275	Bottle change on programme change: Select yes or no Bottle change on programme return: Select yes or no.	-
276	Immediate sample cycle on programme change: Select yes or no	
280	Yes = Sample sequence end after filling last bottle. This is indicated with a sequence end message No = Continuous operation (distribution tap continues to turn. Plan bottle change as these may overflow !!!).	Yes

Start / stop operation

310 Start/Stop mode Continuous Once Daily Mo/Tue.. Sat/Sun	311 Start/Stop- Reset to zero Yes / no								
320 Start date Not active Active = Day, month, year	321 Stop date Not active Active = Day, month, year								
330 Start time once Not active Active = Time Hr. min.	331 Stop time once Not active Active = Time Hr. min.								
340 Start time #1 daily Not active Active = Time Hr. min.	341 Stop time #1 daily Not active Active = Time Hr. min.	342 Start time #2 daily Not active Active = Time Hr. min.	343 Stop time #2 daily Not active Active = Time Hr. min.	344 Start time #3 daily Not active Active = Time Hr. min.	345 Stop time #3 daily Not active Active = Time Hr. min.	346 Start time #4 daily Not active Active = Time Hr. min.	347 Stop time #4 daily Not active Active = Time Hr. min.	348 Start time #5 daily Not active Active = Time Hr. min.	349 Stop time #5 daily Not active Active = Time Hr. min.
350 Start time #1 week day Not active or 1 day from Mo...Sun time	351 Stop time #1 Week day Not active or 1 day from Mo...Sun time	352 Start time #2 Week day Not active or 1 day from Mo...Sun time	353 Stop time #2 Week day Not active or 1 day from Mo...Sun time	354 Start time #3 Week day Not active or 1 day from Mo...Sun time	355 Stop time #3 Week day Not active or 1 day from Mo...Sun time	356 Start time #4 Week day Not active or 1 day from Mo...Sun time	357 Stop time #4 Week day Not active or 1 day from Mo...Sun time	358 Start time#5 Week day Not active or 1 day from Mo...Sun time	359 Stop time #5 Week day Not active or 1 day from Mo...Sun time
360 Start time #6 Week day Not active or 1 day from Mo...Sun time	361 Stop time #6 Week day Not active or 1 day from Mo...Sun time	362 Start time #7 Week day Not active or 1 day from Mo...Sun time	363 Stop time #7 Week day Not active or 1 day from Mo...Sun time	364 Start time #8 Week day Not active or 1 day from Mo...Sun time	365 Stop time #8 Week day Not active or 1 day from Mo...Sun time	366 Start time #9 Week day Not active or 1 day from Mo...Sun time	367 Stop time #9 Week day Not active or 1 day from Mo...Sun time	368 Start time#10 Week day Not active or 1 day from Mo...Sun time	369 Stop time#10 Week day Not active or 1 day from Mo...Sun time

Address	Description	Works settings
310	<p>Select one from six possibilities:</p> <p>Continuous operation: Once the AUT push button has been operated the unit operates continuously with the preset programme (addresses 320 - 369 not active). No start / stop function !</p> <p>Once: 1 start and stop time including date. (set up in addresses 320/321 and 330/331).</p> <p>Daily: A maximum of 5 start and stop times can be set up and are valid for each day (addresses 340 to 349).</p> <p>Daily with date: Each can have 5 start and stop times set up and is valid daily between the preset start and stop dates. (Set up in addresses 320/321 and 340/349).</p> <p>Week day: A maximum of 10 independent start and stop times can be set up. These include weekdays (Monday to Sunday). This data is set up in addresses 350 to 369. This function is repeated weekly.</p> <p>Week day with date: Set up start date (addr.320) and stop date (addr.321). Now set up a maximum of 10 independent start and stop times Each with a weekday, ie. Monday to Sunday (addr.350 to 369). The sampler operates from the start date to the stop date. Within these two dates it operates using the preset start and stop times. Note: The start and stop times are repeated weekly if the start and stop dates are far enough apart.</p>	Continuous
311	<p>Yes: All start/stop times are reset to zero.</p> <p>No: The start/stop times remain unchanged.</p>	-
320 bis 369	See address 310	Not active

The start stop operation mode is linked to the automatic mode (operation of the "AUT" push button). Date/time as well as the heating and cooling cycles continue to operate.

General information to the start/stop operation mode.

The automatic sequence starts or restarts on reaching the start time (or continues to operate). The times of sample cycle start and distribution bottle change, if set to timed, are always referred to the start time.

For example: Start time Monday 00:00, time cycle 15 min.
Distribution 2 hours.

This means that: Sampling occurs on Monday at 00:15, 00:30, 00:45 etc.,
Distribution at 02:00, 04:00, 06:00 etc..

The automatic sequence is stopped once the stop time is reached.

On the next start time (at timed sampling and distribution) the sample cycle timer (eg. 15 min.) restarts at zero, the distribution timer continues to operate as normal (from distribution time at stop time).

The conditions set for the "Time proportional sampling" are valid for the sample cycle counter when set to "Quantity proportional sampling". Also the same conditions are valid for the distribution counter whether set to "Timed bottle change" or "Number of samples bottle change".

Set stop times to correspond with distribution bottle change.



Service level

<p>410 Update Service date</p> <p>Yes / no</p>	<p>411 Software</p> <p>Name and version number</p>	<p>412 Processor report</p> <p>Abort counter 3 digit last fault 4 digit</p>							
<p>420 Sampler running time</p> <p>Hours 6 digit</p>	<p>421 Pump running time</p> <p>Hours each 6 digit resettable and totaliser</p>	<p>422 Cooler running time</p> <p>Hours each 6 digit resettable and totaliser</p>	<p>423 Sample counter</p> <p>Each 6 digit resettable and totaliser</p>	<p>424 Electrode 2 errors</p> <p>Each 4 digit resettable</p>	<p>425 Ack. without cleaning</p> <p>Each 4 digit resettable and totaliser</p>				
<p>430 Sample test</p> <p>Function in steps</p>	<p>431 Distribution tap test</p> <p>Change in steps or on 1 container</p>								
<p>440 Select analogue calib. range</p> <p>0...20 mA 4...20 mA 0...1V 0...10V</p>	<p>441 Connect 0% value</p> <p>0 mA or 4 mA or 0 V</p>	<p>442 Connect 100% value</p> <p>20 mA or 1 V or 10 V</p>	<p>443 Accept calibrated values</p>						
<p>450 Calibrate temperature input</p> <p>active or not active</p>	<p>451 Calibrate 0°C</p> <p>Connect 1615 Ω reference resistor</p>	<p>452 Calibrate 50°C</p> <p>Connect 2372 Ω reference resistor</p>	<p>453 Accept calibrated values</p>						
<p>460 Unit test</p> <p>active or not active</p>	<p>461 Test outputs</p> <p>In/out: output 1...3 heating cooling pump</p>	<p>462 Test inputs</p> <p>Off, impulse input, stop input, programme change</p>	<p>463 Test serial channel</p> <p>TTY: Connect input with output</p>	<p>464 Test analogue input</p> <p>0% value 100% value Result: XXX.X %</p>	<p>465 Test temperature input</p> <p>Connect 1615 Ω 2372 Ω</p>				
<p>470 Activate RESET</p> <p>Yes / no</p> <p>Last on...</p>	<p>471 Activate PRESET</p> <p>Yes / no</p> <p>Last on...</p>								

Address	Description
410	Date of last service. Must be set to "Yes" and initiated by service technician !
411	Please always indicate this value on any queries !
412	Sum of all faults that led to an abort. Last fault is indicated with an error code number.
420	Total unit running time (time connected to mains power).
421	Pump running time (pump running time ÷ unit running time = use ratio) This counter should be reset to zero by the service technician when changing the pump.
422	Cooler running time (cooler running time ÷ unit running time = use ratio) This counter should be reset to zero by the service technician when changing the cooler.
423	Number of sample cycles.
424	Number of times the safety electrode (electrode 2) switched the unit off.
425	Number of times this was acknowledged without cleaning the electrode. (Note: We the manufacturer cannot accept any liability, this includes guarantee claims for any damage occurring).
430	Test phases: Start, go to zero point, close hose clamp, blow out, suck, dose, open hose clamp, zero point.
431	Display of actual distribution tap position. Change tap position by operating the ENTER push button.
440 bis 443	Calibrate analogue input see matrix.
450 bis 453	Calibrate temperature input see matrix.
460 bis 465	Unit test (quick check) see matrix.
470	RESET means: All dynamic data (eg. counter values) are reset.
471	PRESET means: All programme settings, data and counter values are deleted and reset to works settings. Therefore BE SURE !

User settings

010	168	254	352
110	169	255	353
111	172	260	354
120	173	261	355
121	174	262	356
122	210	263	357
123	211	264	358
124	212	265	359
125	213	270	360
126	214	271	361
127	215	272	362
128	220	273	363
130	221	274	364
131	222	275	365
132	223	280	366
133	224	310	367
140	225	311	368
141	230	320	369
142	231	321	
143	232	330	
144	233	331	
145	234	340	
150	235	341	
151	240	342	
152	241	343	
160	242	344	
161	243	345	
162	244	346	
163	245	347	
164	250	348	
165	251	349	
166	252	350	
167	253	351	Date Name

User settings

(Reserve table (can be copied for multiple use))

010	168	254	352
110	169	255	353
111	172	260	354
120	173	261	355
121	174	262	356
122	210	263	357
123	211	264	358
124	212	265	359
125	213	270	360
126	214	271	361
127	215	272	362
128	220	273	363
130	221	274	364
131	222	275	365
132	223	280	366
133	224	310	367
140	225	311	368
141	230	320	369
142	231	321	
143	232	330	
144	233	331	
145	234	340	
150	235	341	
151	240	342	
152	241	343	
160	242	344	
161	243	345	
162	244	346	
163	245	347	
164	250	348	
165	251	349	
166	252	350	
167	253	351	Date Name

Works setting: current input

The sampler is always delivered set on current input.

Selection of 0 ...+20mA or +4 ...+20mA is done in address 141. There is no need to open the controller.

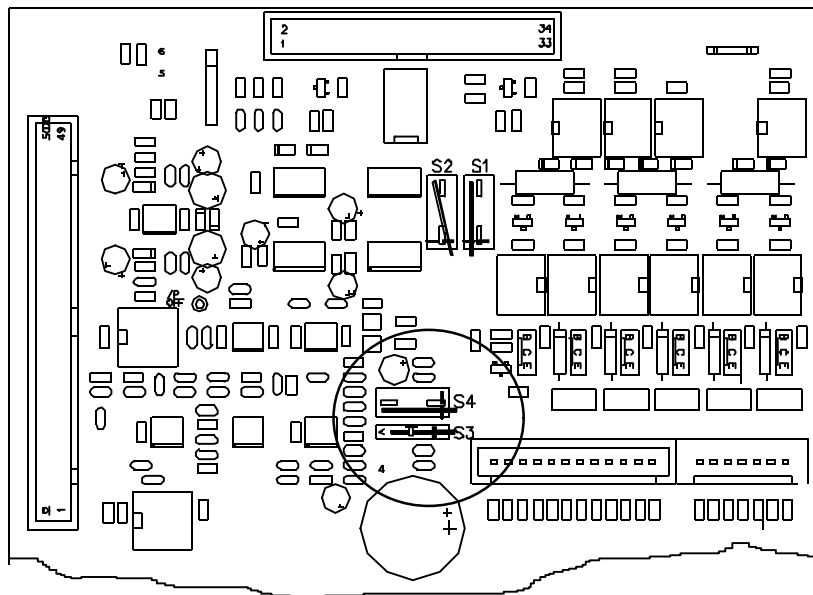
...change to voltage input:

For special applications the controller can be set to a **voltage input** of 0 ...+1 Volt or 0 ...+10 Volt.
This change should only be done by skilled personnel.

Follow the following steps:

Pull mains power, the sampler should not be connected to power !
Undo and remove the eight black Philips screws from the front plate of the controller. Pull the front plate forward and remove the ribbon cable connector if need be.

Set switches S3 / S4 on the motherboard to suit the connection required:



0...1V	= S3 open	and	S4 in position 1	
0...10V	= S3 open	and	S4 in position 2	
0/4...20mA	= S3 closed		S4 in position 1	

Reassembly is exactly the reverse. Now set up the input required using addresses 140 to 143.



Base board:

TTY signal:

TxD 20 mA	S1 in position 1*
TxD 0 mA	S1 in position 2
TxD 20 mA	S2 in position 2*
TxD 0 mA	S2 in position 1

CPU board

Option V24 (RS232) signal:

TxD +12V	LBR1 on	LBR2 off*
TxD -12V	LBR1 off	LBR2 on
TxD +12V	LBR4 on	LBR3 off
TxD -12V	LBR4 off	LBR3 on*

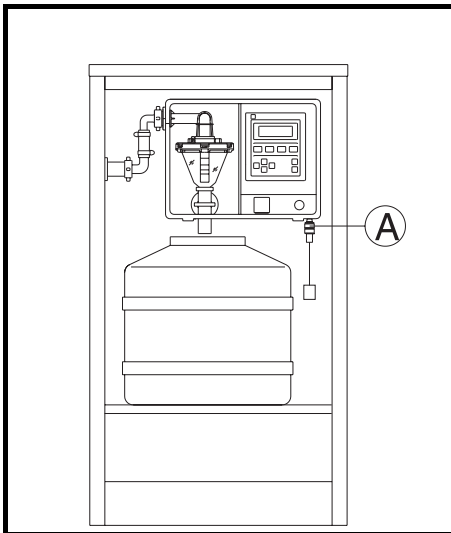
AC-DC version:

AC version LBR5 off*
DC version LBR5 on

* = Normal delivery without option

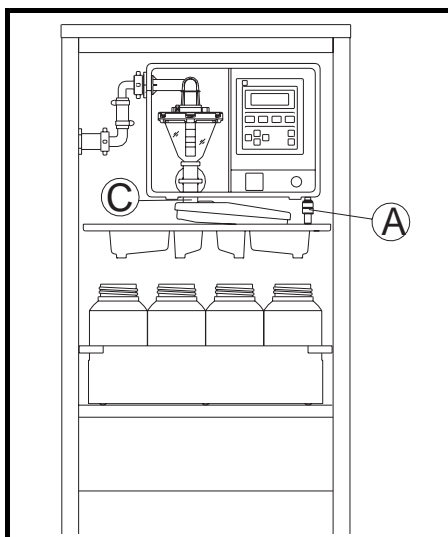
The sampler can operate using a composite container or can distribute the samples into a number of discrete bottles using a sample distribution system. Changing from one form of distribution to another can be done by simply exchanging one form for another.

Changing number of bottles



1. Disconnect temperature sensor from **A**.
(Reason: there is a temperature sensor built into the distribution tray).
2. Remove the composite container and replace with new bottle tray (first remove the bottle lids).
3. Push distribution tray in using the guides and plug in cable **A**.
4. Make sure that the sample outlet hose fits into the distribution tap **C** (lower picture).

Changing from composite container to distribution



1. Remove bottle tray.
2. Unplug distribution tray cable from **A** and replace tray with the composite container
3. Plug in temperature sensor into **A**. This can be purchased as an accessory. (order No. 50069496).

Changing from sample distribution system to composite container

1. Unplug distribution tray cable from **A**.
2. Remove bottle tray and distribution system and replace with new system. Then connect cable to **A**.
4. Make sure that the sample outlet hose **B** is placed inside the distribution tap **C**.

Changing to other distribution types

- a) Only use "bottles/bottle tray/distribution" that belong to each other.
- b) 4x10l system operates with single bottles and no distribution tray.
- c) Do not forget to remove the bottle lids.



Fault messages

The sampler contains a self monitoring function system. Faults occurring are displayed including a fault number as well as a hint as to how to remove the fault. Once the fault has been removed acknowledge this by operating the ON push button.

Fault- No. #	Display	Cause and cure
01	Composite fault See operating instructions	Follow all steps as in # 03 to # 09 in order to cure. If no cure: contact E+H Service.
03	Electrode 1 short circuit Clean dosing system	Remove dosing chamber, flange and Electrodes (underside of flange) clean thoroughly.
04	Electrode 2 active Clean electrodes	As # 03 Careful: = Safety switch, must be cleaned !

The manufacturer does not accept any liability for any damage (flooding on sampling) occurring to the unit if this fault has been acknowledged without first cleaning the dosing system and electrodes !

05	Air manager see operating instructions	Edge connector loose or pneumatic controller defective.
06	Distribution tap zero point	Distribution system defective, Exchange distribution system or have unit repaired by E+H service.
07	Distribution tap manipulated see operating instructions	Distribution tap mechanically blocked or manually moved (>7,5°) Distribution tap is self-positioning.
08	Distribution tap connector Check connection	Connection from distribution system to controller must be solid.
09	Input current <3mA Check connection	Cable open circuit on 4..20 mA. Check cable and meter.
10	Battery low voltage Charge battery	Only on 12VDC version.
11	Temperature Check sensor	Temperature sensor not plugged in or defective.

System error

Preset done	EEPROM + RAM data loss. fatal error, E+H Service.
Reset done	RAM data loss. Unit too long without power; Set up user data new. Internal accumulator (empty or), defective, E+H Service.
Calibration missing	Recalibrate analogue or temperature input, E+H Service.
Unit fault	Check power supply and that the ambient temperature range is not exceeded. If fault reoccurs: E+H Service.



Faults # 03 and # 04 are meant as maintenance displays.
The four digit fault number, in brackets, is for the decoding of multiple and system errors by E+H service personnel.

Description	Order code	Spare parts
liqui-box 2 control module...		
Complete control module (standard)	RPF1A-2H1	
Cabinet and external components:		
External elbow fitting 13 mm	50062334 + 50042066	
External elbow fitting 15 mm	50042066	
Jubilee clip 13 mm	50031883	
Jubilee clip 15 mm	50031887	
Suction hose 13 mm	50074496	
Suction hose 15 mm	50031904	
O ring for elbow fitting	50031700	
Dosing system and pneumatic:		
Dosing chamber 200 ml	50072149	
Dosing chamber 350 ml	50038228	
Outlet silicon hose 6,5 cm	50037923	
Clip for silicon hose	50031087	
Hose clamp	50042508	
Hose clamp diaphragm	50031633	
350 ml volume dosing kit	UE-LD4	
200 ml dosing chamber flange	50072151	
200 ml dosing chamber bayonet ring	50072150	
O ring set	UE-LDB	
Vacuum pump 230 V AC	UE-LPK	
Pump spare parts set	50076467	
Distribution systems / bottle trays:		
12 bottle distribution system	UE-SVB	
24 bottle distribution system	UE-SVC	
4 bottle distribution system	UE-SVA	
12 x 2,5 l PE bottle tray	FLKORB-P	
24 x 1 l PE bottle tray	FLKORB-D	
24 x 2 l glass bottle tray	FLKORB-Q	
Others:		
Temperature sensor for composite container	50069496	

Please give order code when requesting prices or ordering components !

Cabinet:	Stainless steel cavity wall insulated cabinet, materials: 1.4301 (V2A), 30mm Styropor insulation. Cabinet internal temperature thermostat controlled. H x W x D approx. 1072 x 601 x 637 mm (Wide cabinet) approx. 1072 x 868 x 665 mm Weight approx. 100 kg
Protection class	Controller (Keypad): IP 55 to DIN 40050
Allowable ambient temperature:	-20...+50°C
Allowable medium temperature:	>0°C ... +50°C
Minimum liquid conductivity:	≥ 30 µS/cm (others optional)
Power supply:	230 V AC + 10% -15%, 50/60 Hz
Power consumption:	max. 265 VA, wide cabinet max. 250 VA
Safety:	To VDE 0411 Teil1/EN 61010-1, protection class I Over voltage category II
RF:	To EN 55011 class A (Industrial surroundings)
EMC/immunity:	To EN 50082-1
Data security:	>500h during power failure (condition: powered for at least 7 days previously)
Security code number	All entries and data protected against unauthorised tampering by means of a security code number. The code number to unlock the programme for setting up is " 6051 "
Feed system:	Built in diaphragm pump
Feed conditions:	Feed height : max. 6m at 1013 hPa Feed distance : max. 30m at 1013 hPa Suction velocity : 0,6m/sec, 13 mm diameter hose
Sample volume:	20 ml to 200 ml presettable (option 350ml)

**Material used
(partial)**

liqui-box d 2:	Housing:	ABS
	Dosing chamber:	PMMA
	- Flange:	PP/PPN
	- Sensors:	1.4305
	Dosing tube:	PVC
	Connection tube:	PP
	Outlet hose:	Silicon
	Pneumatic controller:	
	- Block:	Polycarbonate
	- Gasket:	Silicon
	Distribution system:	Polystyrol
Sample bottles:	Polyethelene or glass	
Bottle tray:	1.4301 (st. st.)	

Technical modifications reserved!

Europe

Austria

□ Endress+Hauser Ges.m.b.H.
Wien
Tel. (0222) 8 8056-0, Fax (0222) 8 8056-35

Belarus

Belorgsintez
Minsk
Tel. (01 72) 26 31 66, Fax (01 72) 26 31 11

Belgium

□ Endress+Hauser S.A./N.V.
Brussels
Tel. (02) 248 0600, Fax (02) 248 0553

Bulgaria

INTERTECH-AUTOMATION
Sofia
Tel. (02) 65 28 09, Fax (02) 65 28 09

Croatia

□ Endress+Hauser GmbH+Co.
Zagreb
Tel. (01) 41 58 12, Fax (01) 44 78 59

Cyprus

I+G Electrical Services Co. Ltd.
Nicosia
Tel. (02) 48 47 88, Fax (02) 48 46 90

Czech Republic

□ Endress+Hauser GmbH+Co.
Ostrava
Tel. (0 69) 6 61 19 48, Fax (0 69) 6 61 28 69

Denmark

□ Endress+Hauser A/S
Soborg
Tel. (31) 67 31 22, Fax (31) 67 30 45

Estonia

Elvi-Aqua-Teh
Tartu
Tel. (7) 42 27 26, Fax (7) 42 27 26

Finland

□ Endress+Hauser Oy
Espoo
Tel. (90) 8 59 61 55, Fax (90) 8 59 60 55

France

□ Endress+Hauser
Huningue
Tel. 89 69 67 68, Fax 89 69 48 02

Germany

□ Endress+Hauser Meßtechnik GmbH+Co.
Weil am Rhein
Tel. (0 76 21) 9 75-01, Fax (0 76 21) 9 75-555

Great Britain

□ Endress+Hauser Ltd.
Manchester
Tel. (01 61) 2 86 50 00, Fax (01 61) 9 98 18 41

Greece

I & G Building Services Automation S.A.
Athens
Tel. (01) 9 24 15 00, Fax (01) 9 22 17 14

Hungary

Mile Ipari-Elektro
Budapest
Tel. (01) 2 61 55 35, Fax (01) 2 61 55 35

Iceland

Vatnshreinsun HF
Reykjavik
Tel. (05) 8 89 16, Fax (05) 3 320 22

Ireland

Flomeaco Company Ltd.
Kildare
Tel. (045) 8 68 15, Fax (045) 8 68 18 2

Italy

□ Endress+Hauser Italia S.p.A.
Cernusco s/N Milano
Tel. (02) 92 10 64 21, Fax (02) 92 10 71 53

Latvia

Raita Ltd.
Riga
Tel. (02) 25 47 95, Fax (02) 7 25 89 33

Lithuania

Agava Ltd.
Kaunas
Tel. (07) 20 24 10, Fax (07) 20 74 14

Luxembourg

□ Endress+Hauser S.A./N.V.
Brussels
Tel. (02) 248 0600, Fax (02) 248 0553

Netherlands

□ Endress+Hauser B.V.
Naarden
Tel. (0 35) 6 95 86 11, Fax (0 35) 6 95 88 25

Norway

□ Endress+Hauser A/S
Tranby
Tel. (0 32) 85 10 85, Fax (0 32) 85 11 12

Poland

Endress+Hauser Polska Sp. z o.o.
Warsaw
Tel. (0 22) 6 51 01 74, Fax (0 22) 6 51 01 78

Portugal

Tecnisis - Tecnica de Sistemas Industriais
Linda-a-Velha
Tel. (01) 4 17 26 37, Fax (01) 4 18 52 78

Romania

Romconseng SRL
Bucharest
Tel. (01) 4 10 16 34, Fax (01) 4 10 16 34

Russia

Avtomatika-Sever Ltd.
St. Petersburg
Tel. (08 12) 5 55 07 00, Fax (08 12) 5 56 13 21

Slovak Republic

Transcom technik s.r.o.
Bratislava
Tel. (7) 5 21 31 61, Fax (7) 5 21 31 81

Slovenia

Endress+Hauser D.O.O.
Ljubljana
Tel. (0 61) 1 59 22 17, Fax (0 61) 1 59 22 98

Spain

□ Endress+Hauser S.A.
Barcelona
Tel. (93) 4 73 46 44, Fax (93) 4 73 38 39

Sweden

□ Endress+Hauser AB
Sollentuna
Tel. (08) 6 26 16 00, Fax (08) 6 26 94 77

Switzerland

□ Endress+Hauser AG
Reinach/BL 1
Tel. (0 61) 7 15 62 22, Fax (0 61) 7 11 16 50

Turkey

Intek Endüstriyel Ölçü ve Kontrol Sistemleri
Istanbul
Tel. (02 12) 2 75 13 55, Fax (02 12) 2 66 27 75

Ukraine

Industria Ukraïna
Kyiv
Tel. (44) 2 68 52 13, Fax (44) 2 68 52 13

Africa

Egypt

IAB Office
Et Cairo
Tel. (02) 3 61 61 17, Fax (02) 3 60 96 76

Morocco

Oussama S.A.
Casablanca
Tel. (02) 24 13 38, Fax (02) 40 56 02

Nigeria

J F Technical Invest. Nig. Ltd.
Lagos
Tel. (1) 6 22 34 54, Fax (1) 6 23 45 48

South Africa

□ Endress+Hauser Pty. Ltd.
Sandton
Tel. (0 11) 4 44 13 86, Fax (0 11) 4 44 19 77

Tunisia

Contrôle, Maintenance et Régulation
Tunis
Tel. (01) 79 30 77, Fax (01) 78 85 95

America

Argentina

Servotron SACIFI
Buenos Aires
Tel. (01) 3 31 01 68, Fax (01) 3 34 01 04

Bolivia

Tritec S.R.L.
Cochabamba
Tel. (042) 5 09 81, Fax (042) 5 09 81

Brazil

Servotek
Sao Paulo
Tel. (0 11) 5 36 34 55, Fax (0 11) 5 36 34 57

Canada

□ Endress+Hauser Ltd.
Burlington, Ontario
Tel. (905) 6 81 92 92, Fax (905) 6 81 94 44

Chile

DIN Instrumentos Ltda.
Santiago
Tel. (02) 2 05 01 00, Fax (02) 2 25 81 39

Colombia

Colsein Ltd.
Linda-a-Velha
Tel. (01) 2 36 76 59, Fax (01) 6 10 78 68

Costa Rica

EURO-TEC S.A.
San Jose
Tel. 2 96 15 42, Fax 2 96 15 42

Ecuador

Insetec Cia. Ltda.
Quito
Tel. (02) 46 18 33, Fax (02) 46 18 33

El Salvador

ACISA
San Salvador, C.A.
Tel. (02) 84 07 48

Guatemala

ACISA Automatizaci3n Y Control
Ciudad de Guatemala, C.A.
Tel. (02) 32 74 32, Fax (02) 32 74 31

Mexico

Maquinaria y Accesorios S.A. de C.V.
Mexico D.F.
Tel. (5) 5 63 81 88, Fax (5) 3 93 29 37

Paraguay

Incoel S.R.L.
Asuncion
Tel. (021) 20 34 65, Fax (021) 2 65 83

Peru

Esim S.A.
Lima
Tel. (01) 4 71 46 61, Fax (01) 4 71 09 93

Uruguay

Circular S.A.
Montevideo
Tel. (02) 92 57 85, Fax (02) 92 91 51

USA

□ Endress+Hauser Inc.
Greenwood, Indiana
Tel. (317) 5 35-71 38, Fax (317) 5 35-14 89

Venezuela

H. Z. Instrumentos C.A.
Caracas
Tel. (02) 9 79 88 13, Fax (02) 9 79 96 08

Asia

China

Endress+Hauser Beijing
Beijing
Tel. (010) 4 07 21 20, Fax (010) 4 03 45 36

Hong Kong

□ Endress+Hauser (H.K.) Ltd.
Hong Kong
Tel. 25 28 31 20, Fax 28 65 41 71

India

□ Endress+Hauser India Branch Office
Bombay
Tel. (022) 6 04 55 78, Fax (022) 6 04 02 11

Indonesia

PT Grama Bazita
Jakarta
Tel. (21) 7 97 50 83, Fax (21) 7 97 50 89

Japan

□ Sakura Endress Co., Ltd.
Tokyo
Tel. (04 22) 54 06 11, Fax (04 22) 55 02 75

Malaysia

□ Endress+Hauser (M) Sdn. Bhd.
Petaling Jaya, Selangor Darul Ehsan
Tel. (03) 7 33 48 48, Fax (03) 7 33 88 00

Philippines

Brenton Industries Inc.
Makati Metro Manila
Tel. (2) 8 43 06 61, Fax (2) 8 17 57 39

Singapore

□ Endress+Hauser (S.E.A.) Pte., Ltd.
Singapore
Tel. 4 68 82 22, Fax 4 66 68 48

South Korea

Hitrol Co. Ltd.
Kyung Gi-Do
Tel. (032) 6 72 31 31, Fax (32) 6 72 00 90

Taiwan

Kingjarl Corporation
Taipei R.O.C.
Tel. (02) 7 18 39 38, Fax (02) 7 13 41 90

Thailand

□ Endress+Hauser Ltd.
Bangkok
Tel. (2) 2 72 36 74, Fax (2) 2 72 36 73

Vietnam

Tan Viet Bao Co. Ltd.
Ho Chi Minh City
Tel. (08) 8 33 52 25, Fax (08) 8 33 52 27

Iran

Telephone Technical Services Co. Ltd.
Tehran
Tel. (021) 8 82 74 26, Fax (021) 8 82 73 36

Israel

Instrumetrics Industrial Control Ltd.
Tel-Aviv
Tel. (03) 6 48 02 05, Fax (03) 6 47 19 92

Jordan

A.P. Parpas Engineering S.A.
Amman
Tel. (06) 8 39 82 83, Fax (06) 8 39 82 05

Kingdom of Saudi Arabia

Intrah
Dammam
Tel. (03) 8 34 78 79, Fax (03) 8 34 48 32

Kuwait

Kuwait Maritime & Mercantile Co. K.S.C.
Safat
Tel. 2 43 47 52, Fax 2 44 14 86

Lebanon

Network Engineering Co.
Jbel
Tel. (3) 25 40 52, Fax (9) 94 40 80

Sultanate of Oman

Mustafa & Jawad Sience & Industry Co.
L.L.C.
Ruwi
Tel. 60 20 09, Fax 60 70 66

United Arab Emirates

Descon Trading EST.
Dubai
Tel. (04) 35 95 22, Fax (04) 35 96 17

Yemen

Yemen Company for Ghee and Soap Industry
Taiz
Tel. (04) 23 06 65, Fax (04) 21 23 38

Australia + New Zealand

Australia

GEC Alsthom LTD.
Sydney
Tel. (02) 6 45 07 77, Fax (02) 7 43 70 35

New Zealand

EMC Industrial Instrumentation
Auckland
Tel. (09) 4 44 92 29, Fax (09) 4 44 11 45

All other countries

□ Endress+Hauser GmbH+Co.
Instruments International
Weil am Rhein
Tel. (076 21) 9 75-02, Fax (076 21) 9 75 34 45

