



This manual contains safety information that if ignored can endanger life or result in serious injury. They are indicated by this icon.



Keep the instrument protected from sun and water. Avoid water splashes.



OPERATING INSTRUCTIONS FOR "LDSPN" PLUS INSTRUMENT SERIES



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Read Carefully !



ENGLISH Version

R4-03-18



NORME CE
EC RULES(STANDARD EC)
NORMAS DE LA CE

Direttiva Bassa Tensione
Low Voltage Directive
Directiva de baja tensión } 2014/35/UE

Direttiva EMC Compatibilità Elettromagnetica
EMC electromagnetic compatibility directive
EMC directiva de compatibilidad electromagnética } 2014/30/UE



GENERAL SAFETY GUIDELINES

Danger!

In emergencies the instrument should be switched off immediately! Disconnect the power cable from the power supply!

When installing always observe local regulations!

Manufacturer is not liable for any unauthorized use or misuse of this product that may cause injury, damage to persons and / or materials.

Caution!

Instrument must be accessible at all times for both operating and servicing. Access must not be obstructed in any way!

Feeder should be interlocked with a no-flow protection device to automatically shut-off the pumps when there is no flow!

Pumps and accessories must be serviced and repaired by qualified and authorized personnel only!

Always discharge the liquid end before servicing the instrument!

Empty and rinse the liquid end before work on a pump which has been used with hazardous or unknown chemicals!

Always read chemical safety datasheet!

Always wear protective clothing when handling hazardous or unknown chemicals!

Instrument must be operated / serviced by trained technicians only!

All connection operations must be performed while the instrument is not connected to main supply!

Missed activation for Min/Max alarm and Maximum Dosing Alarm may cause to hazardous overdosing!

1. Introduction

pH neutral water should be within the 7.0 to 7.8 range. The easiest and most common way to resolve low or high pH problems is with the use of this Neutralizer system. The "LDSPN" operates to neutralize pH value into a tank using two dosing pumps and a mixer.

Operating steps are:

- Tank's water level check
- Tank's water loading (load valve is on)
- Water level check
- pH value analysis (pH probe)
- Acid or Alkali dosing activity (pump and mixer on) to neutralize pH
- Waiting time
- Water bleeding (bleed valve is on)
- End cycle

All information are provided through a large backlit LCD display. Using a revolutionary wheel control the instrument can be easily programmed. Controller is housed in a IP65 plastic box.

INPUTS:

- Low Level tank
- High Level tank
- Pump Acid
- Pump Alkali

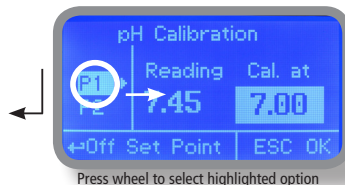
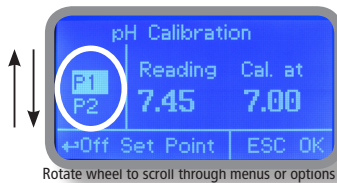
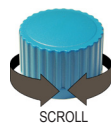
OUTPUTS:

- 4 relay outputs (loading, mixer, bleed, alarm)
- 2 pulses outputs (Acid and Alkali pumps)

2. The wheel

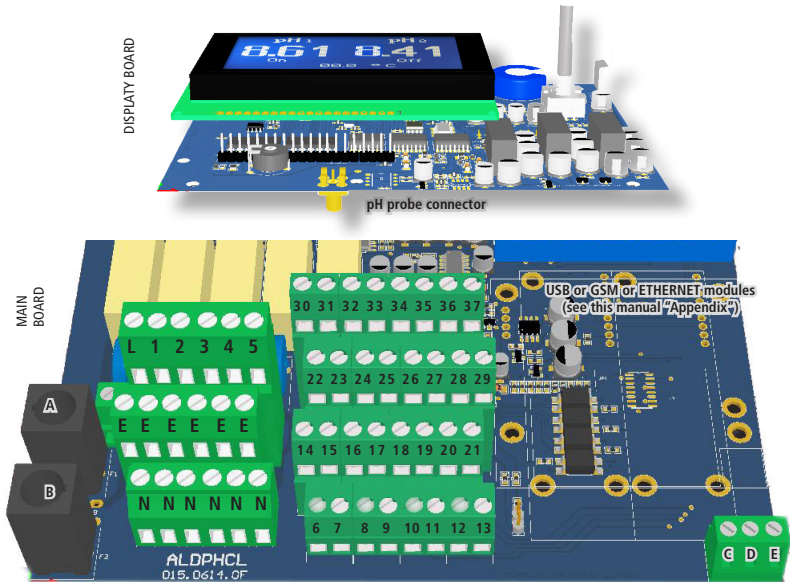
Located in the upper right side of Controller there is a wheel that must be used to control the instrument. Wheel can be rotated in both directions to scroll over the menus and / or pressed to confirm highlighted selection / value.

NOTE: Once changes are made press "OK" to save and exit from submenu. Press "ESC" to exit without saving.



3. Mainboard Connections

Unplug instrument from main power supply then perform connections by following the above picture.



A: Main Fuse (6A T)

B: Instrument Fuse (3.15A T)

C - D : Factory reserved +5V ; E: GND

L(Live) - E(Earth) - N(Neutral): 85÷264VAC* or 18÷36VAC* 50/60 Hz *see instrument's label

1(Live) - E(Earth) - N(Neutral): 85÷264VAC - 5A 50/60 Hz Relay Output "EVF". (Filling electrovalve)

2(Live) - E(Earth) - N(Neutral): 85÷264VAC - 5A 50/60 Hz Relay Output "EVB". (Bleed electrovalve)

3(Live) - E(Earth) - N(Neutral): 85÷264VAC alarm output (levels)

4(Live) - E(Earth) - N(Neutral): 85÷264VAC "MIXER" output

6(Green) - 7(Brown) - 8(White) - 9(Yellow): PT100 temperature probe (remove jumper / resistor prior to install probe)

11(-) - 10(+): Standby contact

11(-) - 12(+): Acid level contact

19(-) - 18(+): Alkali level contact

19(-) - 20(+): "LLS" (low level) contact

36(+)- 37(-): "HLS" (high level) contact

14(+)- 15(-): "CDC" external common for cycle manual start

31(-) - 32(+): mA Current Output pH

34(-) - 35(+): mA Current Output Temperature

}

Max resistive load: 500 Ohm

21(GND) - 28(+RS485) - 29(-RS485): RS485 (no MODBUS)

24(-) - 25(+): Opto coupled output "AKALI Pulse". To use with "IS", "MF", "PLUS" series dosing pumps

26(-) - 27(+): Opto coupled output "ACID Pulse". To use with "IS", "MF", "PLUS" series dosing pumps

Warning: Connections must be performed by qualified and trained personnel only.

4. Main Screen

When into normal operating mode, the controller shows the following main screen:



Main screen zones:

(1) UNITS

“pH” is the measuring unit for pH probe.

(2) VALUE

These numbers are values read by the probe.

(3) OPERATIVE STATUS

These fields are related to current outputs status and instrument activity. For more information rotate the wheel when into main screen. (see next page) During critical situations a warning / alarm message may appear. To in-depth explanation **completely rotate clockwise** the wheel to review main instrument parameters and current outputs status.

MAN. ON / OFF / AUTO / BLEED ON

These are the working modes. Configure them within “output manager” menu.

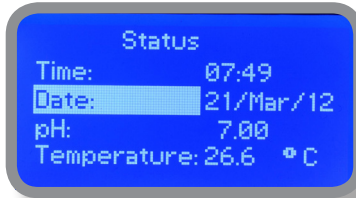
When into “Manual Mode” and system shows “Man. OFF” move on it and press wheel to start water loading (“Man.ON”). Once the low level is reached (LLS) system will show “ABORT”. Move on it and press wheel to start neutralization procedure. If not pressed system will restore water loading up to “high level storage”(HLS).

Message	Explanation
Feeding Electrovalve (EVF)	On or Off for water loading activity
Bleeding Electrovalve (EVB)	On or Off for water purging activity
pH Acid or Alkali pump	On or Off for related pump activity
Wait (waiting for Bleed)	System is waiting (timer) for bleeding activity
MIXER	On or Off for mixer activity

Note: the word “PUMP” as shown into this manual refers to a “dosing device” connected to the instrument!

5. Quick status check

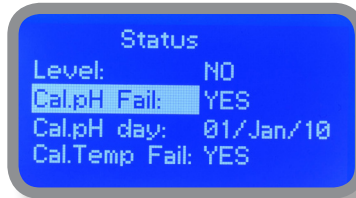
From main screen **completely rotate clockwise** the wheel to review main instrument parameters and current outputs status.



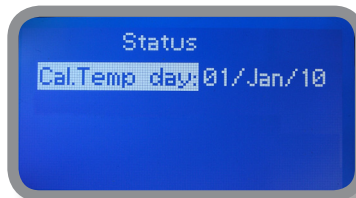
Local Time
Local Date
pH probe reading
Temperature probe reading



Dosing alarm condition
Probe failure status
Alarm contact status
Flow contact status



Tank Level status
Last pH calibration result
Last pH calibration date
Last Temp. calibration result



Last Temp. calibration date

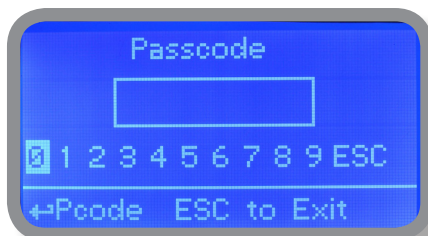
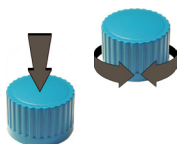


Outputs Status
See mainboard (page 4) for related connections.

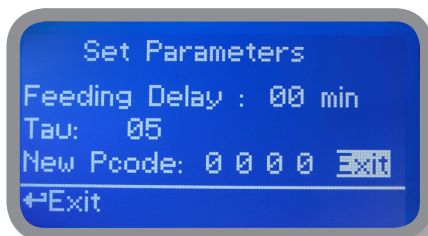
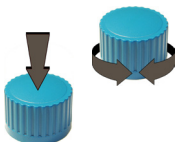
6. Password

To grant access into "Main Menu" press the wheel from main screen and enter the passcode.

If this is the first time here then the passcode is 0000 (factory preset). Press wheel 5 times to enter into "Main Menu". Otherwise press the wheel 1 time and enter the passcode. Numbers can be selected rotating the wheel.



To set a new passcode choose "PARAMETERS" from "Main Menu", move on "New Pcode", click on wheel and enter a four numbers code. Click on "EXIT" and choose "YES" to save request. The new passcode is now ready.

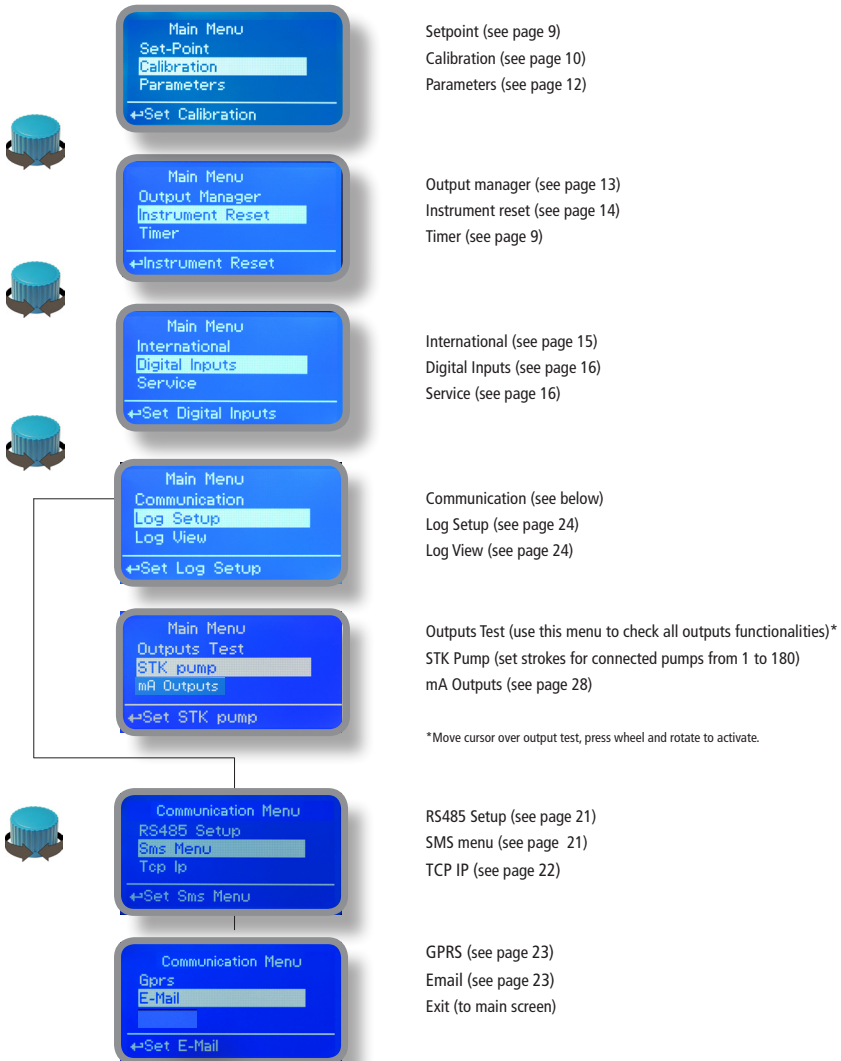


Lost passcode ?

Please don't forget the passcode (if changed). In the unfortunate event, please call your local distributor for unlocking procedure. There is no way for you to recover lost passcode.

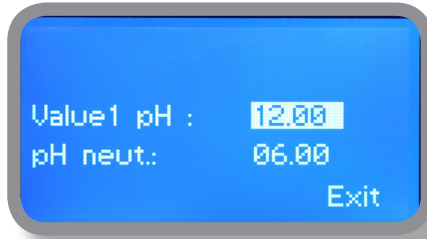
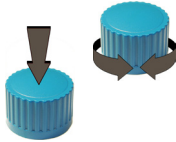
7. "Main Menu" list

To grant access into "Main Menu" enter the passcode (as described in previous chapter). Once into "Main Menu" rotate the wheel to scroll through all the options available.

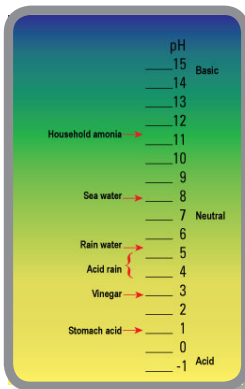


8. "Setpoint" and "Timer" menus

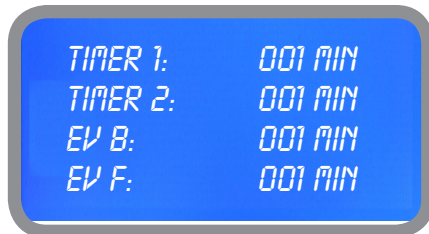
The "pH neut.:" is the pH target point. Instrument will operate the pumps to proportionally achieve this value. Usually a value between 6.9 and 7.0 pH is a chemical solution that is neither acidic nor alkaline. The "Value 1 pH:" is the value to reach when tank is full (HLS). During this time the ALKALI chemical (NaOH) is dosed and the mixer started. Once the pH value is reached the timer1 starts (Timer Menu, see below) then the pH is neutralized and a second timer start (timer 2). At the end of this time the bleed valve (EVB) is started until the tank is empty (LLS). Set Value 1 pH to 0 to bypass procedure.



A pH of seven is neutral. Values below seven are increasingly acidic and values above seven are increasingly basic, or alkaline. Human blood has a pH of ~7.5 and seawater has a pH around 8.2. Rainwater is naturally acidic with a pH of about 5.6. Acid rain can be as low as 4.2. A lower pH increases the erosive capability of the water.



pH of sea water and familiar liquids



Timer Menu

Timer1: time before pH neutralization
 Timer2: time before bleed valve activity
 EV B (bleed) waiting time for bleeding
 EV F (feed) waiting time for feeding

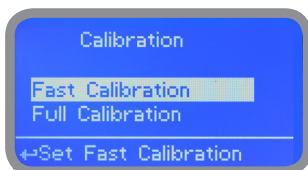
Max time: 999minutes

Did you know ?

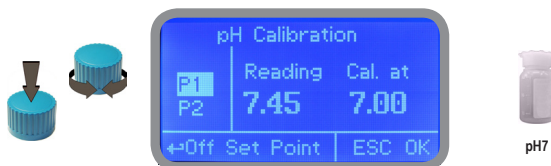
In chemistry, an alkali is a basic, ionic salt of an alkali metal or alkaline earth metal element. Alkalis are best known for being bases (compounds with pH greater than 7) that dissolve in water. The adjective alkaline is commonly used in English as a synonym for base, especially for soluble bases. This broad use of the term is likely to have come about because alkalis were the first bases known to obey the Arrhenius definition of a base and are still among the more common bases. Since Brønsted-Lowry acid-base theory, the term alkali in chemistry is normally restricted to those salts containing alkali and alkaline earth metal elements. An acid (often represented by the generic formula HA [H+A-]) is traditionally considered any chemical compound that, when dissolved in water, gives a solution with a hydrogen ion activity greater than in pure water, i.e. a pH less than 7.0. That approximates the modern definition of Johannes Nicolaus Brønsted and Martin Lowry, who independently defined an acid as a compound which donates a hydrogen ion (H+) to another compound (called a base). Common examples include acetic acid (in vinegar) and sulfuric acid (used in car batteries). Acid/base systems are different from redox reactions in that there is no change in oxidation state.

9. "Probe Calibration", pH

Full pH calibration procedure involves two calibration points and it requires two buffer solutions. Default buffer solutions are pH 4.00 and pH 7.00. pH reading value can be also compensated from "pH compensation" menu. From "Menu Calibration" choose "pH probe". Fast Calibration procedure involves one point calibration (choose value closest to real field application).

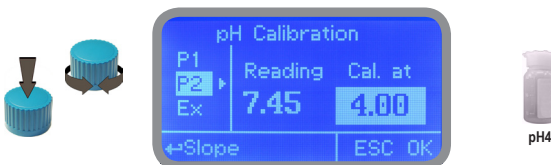


In the following example instrument will calibrate pH using default buffer solutions values. **Note: this procedure assumes that instrument is correctly configured and a working pH probe connected. Otherwise unattended results may occur. When changing pH compensation option, calibration must be repeated.**



Calib 1st Point.

Once into "pH Calibration" menu move wheel on "P1" then press wheel to enter into first point calibration submenu. Prepare 7.00pH buffer solution and dip probe's sensor on it. Wait until reading value is stable and according to buffer solution value move wheel until it is the same on display ("Cal. at" field). Default value is 7.00pH. To end procedure move cursor on "OK" and press wheel to proceed to next step. **Note: buffer solution value may change if environment temperature it's different than 20°C. Read solution's label for more information. According to this occurrence "pH Default" must be changed.**



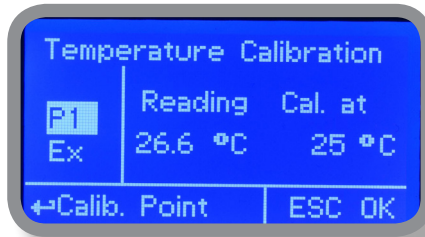
Calib 2nd Point.

Move wheel on "P2" then press wheel to enter into second point calibration submenu. Prepare 4.00pH buffer solution and dip probe's sensor on it. Wait until reading value is stable and according to buffer solution value move wheel until it is the same on display ("Cal. at" field). Default value is 4.00pH.

To end procedure move cursor on "OK" and press wheel to proceed to "Save" request screen. Move wheel on "YES" to save or "NO" to discard changes. **Note: buffer solution value may change if environment temperature it's different than 20°C. Read solution's label for more information. According to this occurrence "pH Default" must be changed.**

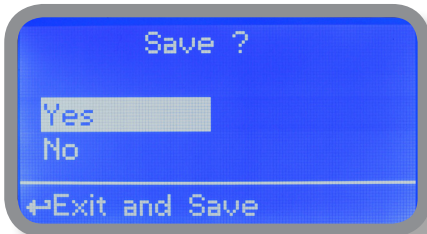
10. "Probe Calibration", °C - Temperature

A professional thermometer is required to obtain a reliable calibration. From "Menu Calibration" choose "Temp probe".



Note: This procedure assumes that instrument is correctly installed and configured, connected to a working PT100.. Calibrate using plant's temperature otherwise unattended results may occur.

Using an external thermometer read actual temperature and edit related field "Cal. at". Confirm by pressing wheel.



To end procedure move cursor on "OK" and press wheel to proceed to "Save" request screen. Move wheel on "YES" to save or "NO" to discard changes. If an error occurred during calibration procedure then the instrument will show an error message and will ask to proceed to a new calibration, cancel current operation or restore default settings.

11. "Parameters"

From "Menu Calibration" choose "Parameters". This menu allows to set a delay (max 60 minutes) before pumps begin to feed. Furthermore use this menu to set pH pump startup priority and to change default passcode.



Mode.

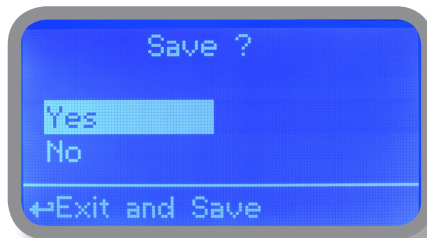
Move on "Mode" then press wheel. If both pumps need to operate, a startup priority can be set to allow the pH pump to begin to feed prior to Cl pump. Choose "pH priority" to enable this function. Cl pump will begin to dose when pH pump has stopped.

Tau.

If probes reading values are changing too fast increase TAU value to stabilize them. Default value is 05. Maximum value is 30.

New Pcode.

See page 10.



To end procedure move cursor on "OK" and press wheel to proceed to "Save" request screen. Move wheel on "YES" to save or "NO" to discard changes.

12. "Output Manager"

From main menu choose "Output Manager". This menu allows to manually operate all outputs for a settable time. Set to "AUTO" for normal operating mode. Set to "OFF" to permanently disable outputs.



Options are:

AUTO & START TIME

This option enables, once per day, the whole neutralizer procedure starting at selected time

MANUAL

While in main screen move wheel on start and press it to enable manual mode. Exit to return to standard working mode.

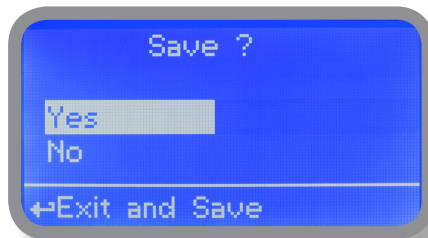
BLEED

This option enables the complete tank discharge. While it's active, both levels are not checked.

CDC

This option enables, once per day, the whole neutralizer procedure starts when "CDC" contact changes its status.

Press wheel to move cursor on "TIME" field. Once here, choose a working time between 0 (disabled) or 199 minutes. Move on "EXIT", then press wheel.



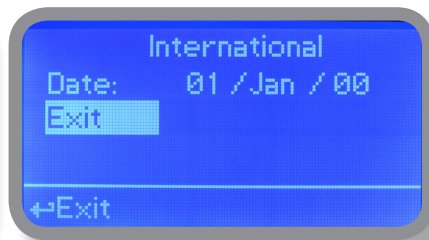
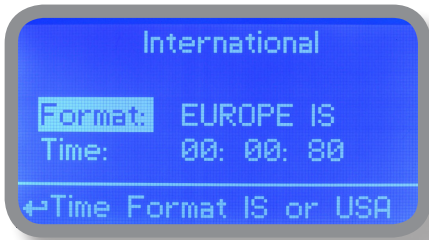
13. "Instrument Reset"

To restore instrument to its default values (including password) once into "Instrument Reset" menu, press wheel then change value to "ON", press wheel again, move on "OK" then finally press wheel. The instrument display will show "CHECKSUM ERROR". Press wheel to return into "Main Menu". Move on "EXIT", then press wheel. The instrument is now restored to factory default. Please repeat all calibration procedures and programming parameters.



14. "International"

Use this menu to set international parameters as UNIT FORMAT (Europe IS or USA), Local Time and Date.



Format.

Use this option to use European or USA units format. See table for differences.

EUROPE IS (International Standard)	USA
Date (DD/MMM/YY)	Date (MMM/DD/YY)
Time 24h	Time AM / PM
°C	°F

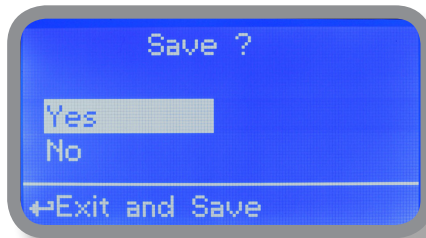
Time.

Use this option to set local time.

Date.

Use this option to set date.

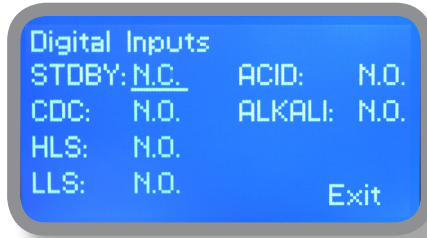
Move on exit to end changes.



To end procedure move cursor on "OK" and press wheel to proceed to "Save" request screen. Move wheel on "YES" to save or "NO" to discard changes.

15. "Digital Inputs"

The function of this menu is to set contacts working mode between N.C. (normally closed contact) or N.O. (normally open contact).

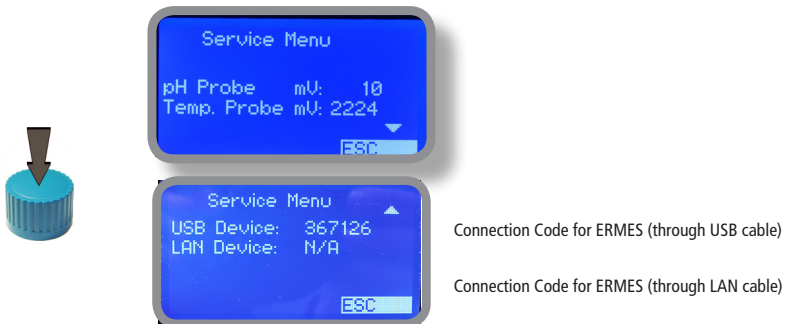


See board connections at page 4 for contact full description.

To end procedure move cursor on "OK" and press wheel to proceed to "Save" request screen. Move wheel on "YES" to save or "NO" to discard changes.

16. "Service"

This "view only" menu shows probes reading live and instrument ID for USB LOG connection (if device's connected). Press "ESC" to exit.



17. Technical information.

Power supply: 85÷264 VAC
 pH Range: 0÷14 pH
 Environment Temperature: -10 ÷ 45°C (14 ÷ 113°F)
 Chemical Temperature: 0 ÷ 50°C (32 ÷ 122°F)
 Installation Class: II
 Pollution Level: 2
 Packaging and Transporting Temperature: -10 ÷ 50°C (14 ÷ 122°F)
 Protection degree: IP 65

Product	Formula	Ceram.	PVDF	PP	PVC	SS 316	PMMA	Hastel.	PTFE	FPM	EPDM	NBR	PE
Acetic Acid, Max 75%	CH3COOH	2	1	1	1	1	3	1	1	3	1	3	1
Hydrochloric Acid, Concentrate	HCl	1	1	1	1	3	1	1	1	1	3	3	1
Hydrofluoric Acid 40%	H2F2	3	1	3	2	3	3	2	1	1	3	3	1
pHosphoric Acid, 50%	H3PO4	1	1	1	1	2	1	1	1	1	1	3	1
Nitric Acid, 65%	HNO3	1	1	2	3	2	3	1	1	1	3	3	2
SulpHuric Acid, 85%	H2SO4	1	1	1	1	2	3	1	1	1	3	3	1
SulpHuric Acid, 98.5%	H2SO4	1	1	3	3	3	3	1	1	1	3	3	3
Amines	R-NH2	1	2	1	3	1	-	1	1	3	2	3	1
Sodium Bisulphite	NaHSO3	1	1	1	1	2	1	1	1	1	1	1	1
Sodium Carbonate (Soda)	Na2CO3	2	1	1	1	1	1	1	1	2	1	1	1
Ferric Chloride	FeCl3	1	1	1	1	3	1	1	1	1	1	1	1
Calcium Hydroxide (Slaked Lime)	Ca(OH)2	1	1	1	1	1	1	1	1	1	1	1	1
Sodium Hydroxide (Caustic Soda)	NaOH	2	1	1	1	1	1	1	1	2	1	2	1
Calcium Hypochlorite (Chlor. ted Lime)	Ca(OCl)2	1	1	1	1	3	1	1	1	1	1	3	1
Sodium Hypochlorite, 12.5%	NaOCl + NaCl	1	1	2	1	3	1	1	1	1	1	2	2
Potassium Permanganate, 10%	KMnO4	1	1	1	1	1	1	1	1	1	1	3	1
Hydrogen Peroxide, 30% (Perydrol)	H2O2	1	1	1	1	1	3	1	1	1	2	3	1
Aluminium Sulphate	Al2(SO4)3	1	1	1	1	1	1	1	1	1	1	1	1
Copper-II-Sulphate (Roman Vitriol)	CuSO4	1	1	1	1	1	1	1	1	1	1	1	1

Resistance rating: (1: Resistant) ; (2: Fairly resistant) ; (3: Not resistant)

Polyvinylidene fluoride (PVDF) Pump Heads, valves, fitting, tubing

Polypropylene (PP) Pump Heads, valves, fitting, level floater

PVC Pump Heads

Stainless steel (SS 316) Pump Heads, valves

Polymethyl Metacrilate (Acrylic) PMMA Pump Heads

Hastelloy C-276 Injection valve spring

Polytetrafluoroethylene (PTFE) Diaphragm

Fluorocarbon (Viton® B) Sealings

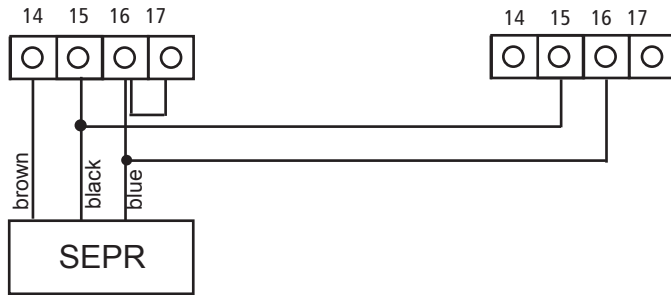
Ethylene propylene (EPDM) Sealings

Nitrile (NBR) Sealings

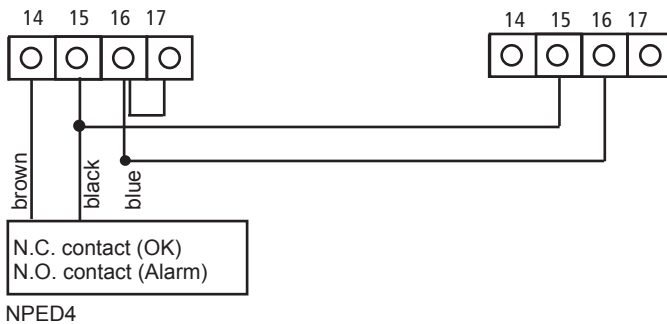
Polyethylene (PE) Tubing

18. SEPR configuration

SEPR "Flow Sensor" configuration for two instruments

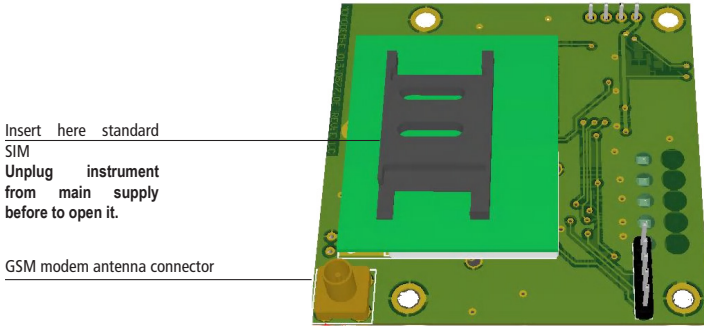


Configuration of a Flow Switch with a voltage free contact and two instruments



Appendix Communication HARDWARE - "SMS/GSM" Module

Located under mainboard cover there is a four pins connector that can be used to install USB, ETHERNET or MODEM modules. Modules come pre-installed upon request and may appear different as shown (different configurations). **"SMS/GMS module" can be configured to send SMS messages containing critical instrument information.**



Insert here standard
SIM
Unplug instrument
from main supply
before to open it.

GSM modem antenna connector

To obtain reliable results with this feature please check the following list:

- Make certain the antenna location is not shielded by metal objects or near sources of electrical 'noise'.
- Do not route the cable where it could be pinched in doors, windows etc.
- Secure the antenna cable
- Ensure that SIM into "SMS/GSM module" is properly inserted, activated and within operator range.
- Set instrument ID / NAME from "RS485 Setup" menu and configure "Out of Range Alarm" menu.

Within "Main menu" select "SMS MENU" to enable SMS service and enter SMS receiver phone numbers.



Up to three numbers for sending SMS can be stored into LDSPN memory. SMS recipient will receive an SMS containing instrument ID, NAME and status. Number formats can be stored using international prefix "+", international "00" or local.

To enable warning message for related alarm condition choose "ON", to disable choose "OFF". Then move wheel on Exit and SAVE configuration. **SMS will be sent when one or more ("ON") fields will change.**

- Msg Flow: flow alarm
- Msg Lev pH: level alarm
- Msg Al pH: Reading alarm
- Msg Dos. pH: Dosing alarm

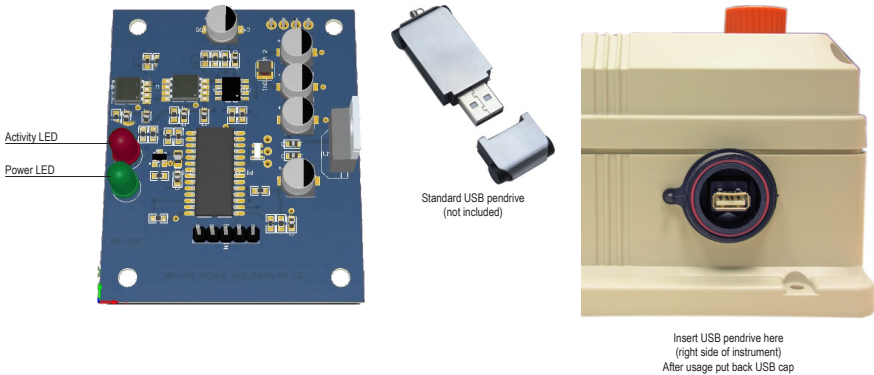
WARNING: TO AVOID UNDESIRED MESSAGES USE CAREFULLY THIS SETUP!

WARNING: THIS FUNCTION COULD NOT BE FREE OF CHARGE. DEPENDING ON YOUR OPERATOR CONTRACT IT COULD GENERATE PAYING SMS TRAFFIC !

Appendix Communication HARDWARE - "LOG USB" Module

Located under mainboard cover there is a four pins connector that can be used to install "USB data log module" or "SMS module". Modules come pre-installed upon request and may appear different as shown (different configurations).

"USB data log module" records instrument activities. These information can be permanently stored into a standard USB pendrive. Pendrive can be connected to a PC using "ERMES" web www.ermes-server.com to review and print instrument's activities. To obtain reliable results with this feature please set instrument ID and NAME from "RS485 Setup" menu and activate log recording from "LOG SETUP" menu.



HOW TO RECORD INSTRUMENT'S ACTIVITIES INTO USB PENDRIVE ?

Insert USB pendrive into USB connector (located on the right side of instrument). Instrument will save data log on USB pendrive. After succeeded in saving data it will ask if delete instrument's log or not (anyway USB pendrive will not be formatted). Move wheel on "YES" to delete log info from instrument and return to main screen or "NO" to leave log info on instrument and return to main screen. **Wait about 30 seconds to safety remove the USB pendrive.**



HOW TO REVIEW INSTRUMENT'S ACTIVITIES RECORDED INTO USB PENDRIVE ?

It's necessary to connect to web "ERMES" www.ermes-server.com to review USB pendrive info on a PC.

Appendix Communication - Software

“RS485” menu.

Prior to install the instrument into an RS485 local system a unique ID NUMBER (from 1 to 30) and ID NAME (station name) must be set. Rotate wheel and edit fields. If ID number has already assigned an error message will follow after ID Check (move cursor on CHECK and press wheel). In this event try using another number.



“SMS” menu.

Instrument may remotely send SMS alarm messages using its own modem (sold as option). It can be configured as follows:

SMS1 / SMS2 /SMS3.

Using the wheel enter a mobile pPhone that will receive alert SMS messages if something wrong occurs. SMS number must be set using local number format. For example : 3391349134 will send an SMS message to mobile pPhone. Log level (and SMS frequency alert) may be set using options in “ACTIVE MSG” within “GSM menu”.



- TO AVOID UNDESIRED MESSAGES USE CAREFULLY LOG SETUP -

- WARNING: THIS FUNCTION COULD NOT BE FREE OF CHARGE. DEPENDING ON YOUR OPERATOR CONTRACT IT COULD GENERATE PAYING SMS TRAFFIC !

Appendix Communication - Software

“TCP/IP” menu.

The instrument may be remotely operated using a standard ethernet connection (sold as option). A static or dynamic IP address and a CAT5 ethernet cable is required. According to your network capacity connection speed is 10/100Mbps. To obtain a valid IP address and subnet mask contact your net administrator. Enter parameters and move cursor on “SAVE” to store parameters then move on “OK” and press wheel to save and activate configuration.

Based on your network configuration choose to obtain network parameters automatically (DYNAMIC) or manually (STATIC).



See “ERMES Communication Software” manual for proper PC software configuration.

What is a static IP address/dynamic IP address?

A static IP address is a number (in the form of a dotted quad) that is assigned to a computer by an Internet service provider (ISP) to be its permanent address on the Internet. Computers use IP addresses to locate and talk to each other on the Internet, much the same way people use pPhone numbers to locate and talk to one another on the telepPhone. When you want to visit whatis.com, your computer asks a domain name system (DNS) server (think telepPhone information operator) for the correct dotted quad number (think pPhone number) for whatis.com and your computer uses the answer it receives to connect to the whatis.com server. It would be simple if every computer that connects to the Internet could have its own static IP number, but when the Internet was first conceived, the architects didn't foresee the need for an unlimited number of IP addresses. Consequently, there are not enough IP numbers to go around. To get around that problem, many Internet service providers limit the number of static IP addresses they allocate, and economize on the remaining number of IP addresses they possess by temporarily assigning an IP address to a requesting Dynamic Host Configuration Protocol (DHCP) computer from a tank of IP addresses. The temporary IP address is called a dynamic IP address.

Requesting DHCP computers receive a dynamic IP address (think temporary pPhone number) for the duration of that Internet session or for some other specified amount of time. Once the user disconnects from the Internet, their dynamic IP address goes back into the IP address tank so it can be assigned to another user. Even if the user reconnects immediately, odds are they will not be assigned the same IP address from the tank. To keep our telepPhone analogy going, using a dynamic IP address is similar to using a pay pPhone. Unless there is a reason to receive a call, the user does not care what number he or she is calling from.

There are times, however, when users who connect to the Internet using dynamic IP wish to allow other computers to locate them. Perhaps they want to use CU-SeeMe or use a VoIP application to make long distance pPhone calls using their IP connection. In that case, they would need a static IP address. The user has two choices; they can contact their ISP and request a static IP address, or they can use a dynamic DNS service. Either choice will probably involve an additional monthly fee.

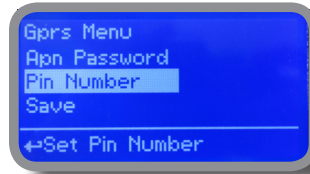
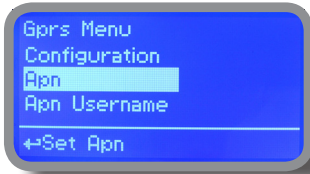
Using a dynamic DNS service works as if there was an old-fashioned telepPhone message service at your computer's disposal. When a user registers with a DNS service and connects to the Internet with a dynamic IP address, the user's computer contacts the DNS service and lets them know what IP address it has been assigned from the tank; the service works with the DNS server to forward the correct address to the requesting DHCP computer. (Think of calling the message service and saying "Hi. I can be reached at 435.44.32.111 right now. Please tell anyone who tries to reach me to call that number.") Using a dynamic DNS service to arrange for computers to find you even though you are using a dynamic IP address is the next-best thing to having a static IP.

Appendix Communication - Software

“GPRS” menu.

Instrument may be remotely operated using an embedded standard GPRS modem (sold as option). In order to activate this service please ensure that the following steps are correctly completed:

- Make certain the antenna location is not shielded by metal objects or near sources of electrical 'noise'.
- Make certain the distance from the antenna to the “Instrument” unit is within cable length.
- Do not route the cable where it could be pinched in doors, windows etc.
- Ensure that SIM into “Instrument” modem is correctly inserted, activated and within operator range.



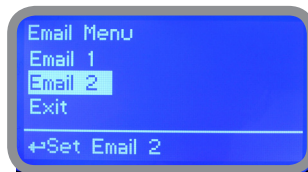
Instrument can be set for ERMES services enabled (Configuration option set to “ERMES YES”) or messages only (Configuration option set to “ERMES NO”) based on your SIM data access parameters. For manual configuration option enter APN (access point name) and SIM phone number. Move wheel on “OK” to save and move on “ESC” to go back to main menu.

Don't forget to enter SIM CODE into PIN NUMBER menu to unlock SIM.

WARNING: THIS FUNCTION COULD NOT BE FREE OF CHARGE. DEPENDING ON YOUR OPERATOR CONTRACT IT COULD GENERATE PAYING DATA TRAFFIC !

“Email” menu.

If Ethernet module or GPRS module is installed (sold as option) the instrument can be configured to send email alarm messages up to two recipients. Click on “Email 1” or “Email 2” and enter email address.



Access point name (APN) identifies an IP packet data network (PDN), that a mobile data user wants to communicate with. In addition to identifying a PDN, an APN may also be used to define the type of service, (eg connection to wireless application protocol (WAP) server, multimedia messaging service (MMS)), that is provided by the PDN. APN is used in 3GPP data access networks, eg general packet radio service (GPRS), evolved packet core (EPC).

Appendix Communication - Software

“LOG” menu.

This function records instrument activity (date, hour, temperature, uS, totalizer I/O, alarms, outputs). It starts for selected frequency period (every) at requested time (time). SET DATE & TIME BEFORE TO ENABLE LOG. IF NOT POWERED FOR ABOUT 30 DAYS THE INSTRUMENT WILL LOOSE DATE/TIME



Set ACTIVE to “enabled” to activate log recording.

TIME: recording start time (time format 23h e 59min)

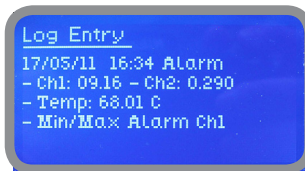
EVERY: recording frequency (time format 23h e 59min)

Note: advanced log control (graph, printing, comparison tables, event filtering, etc) is available through “ERMES Communication Software” for PC.

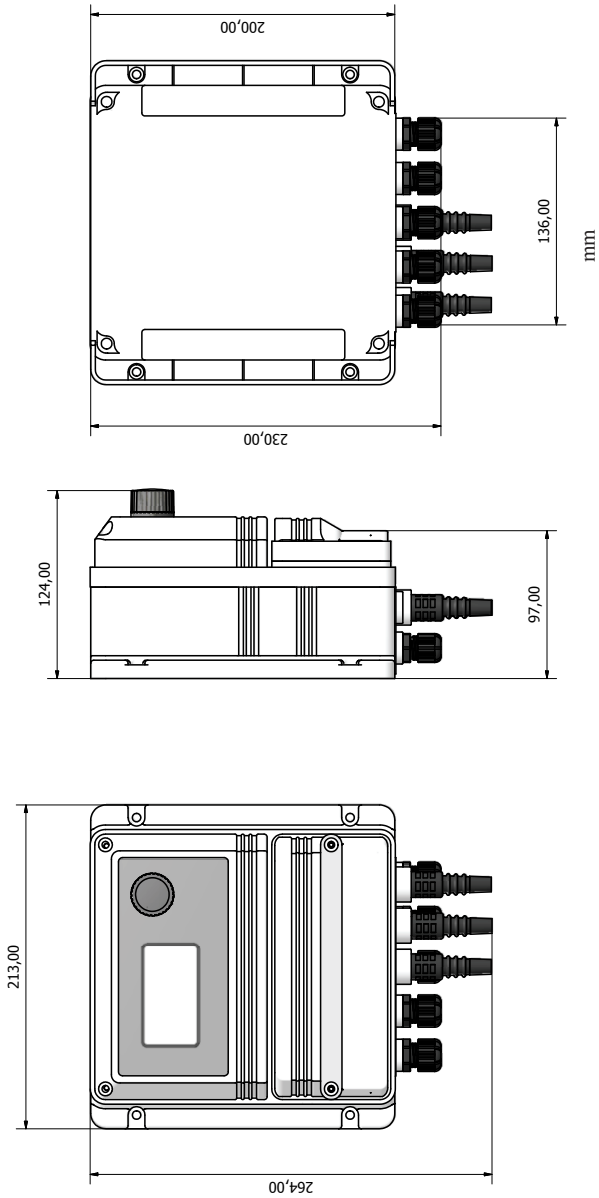
See “ERMES Communication Software” manual for proper PC software configuration.

“LOG VIEW” menu.

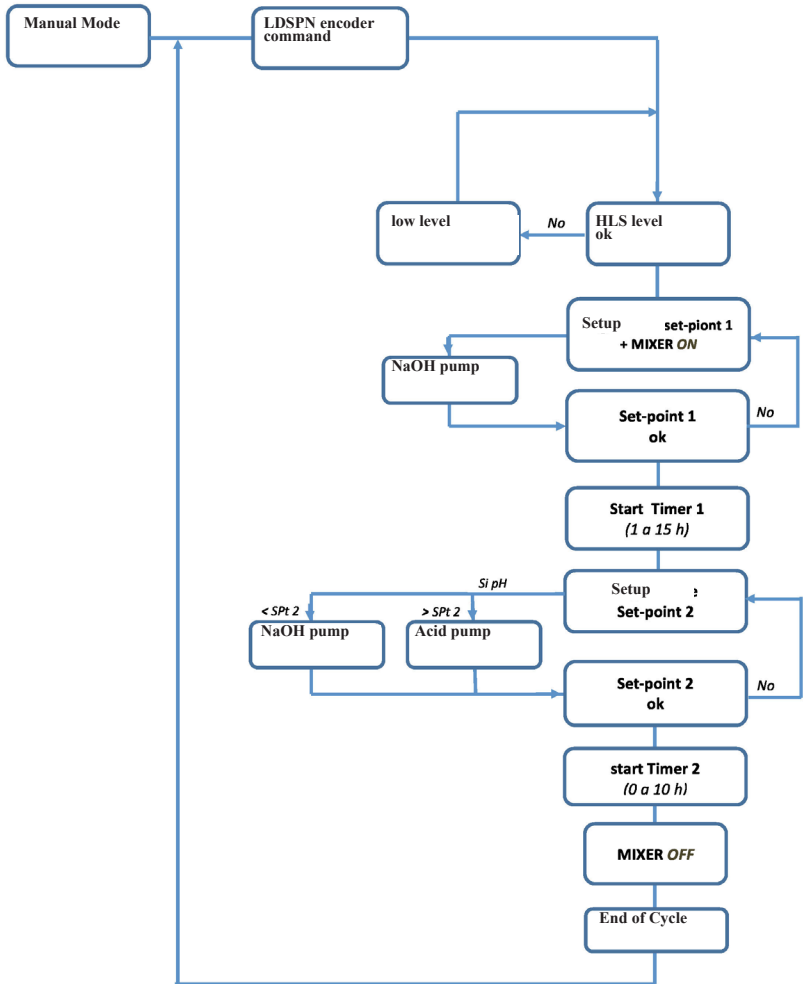
To see alarm log entries as set on log menu choose “log view” on main menu.



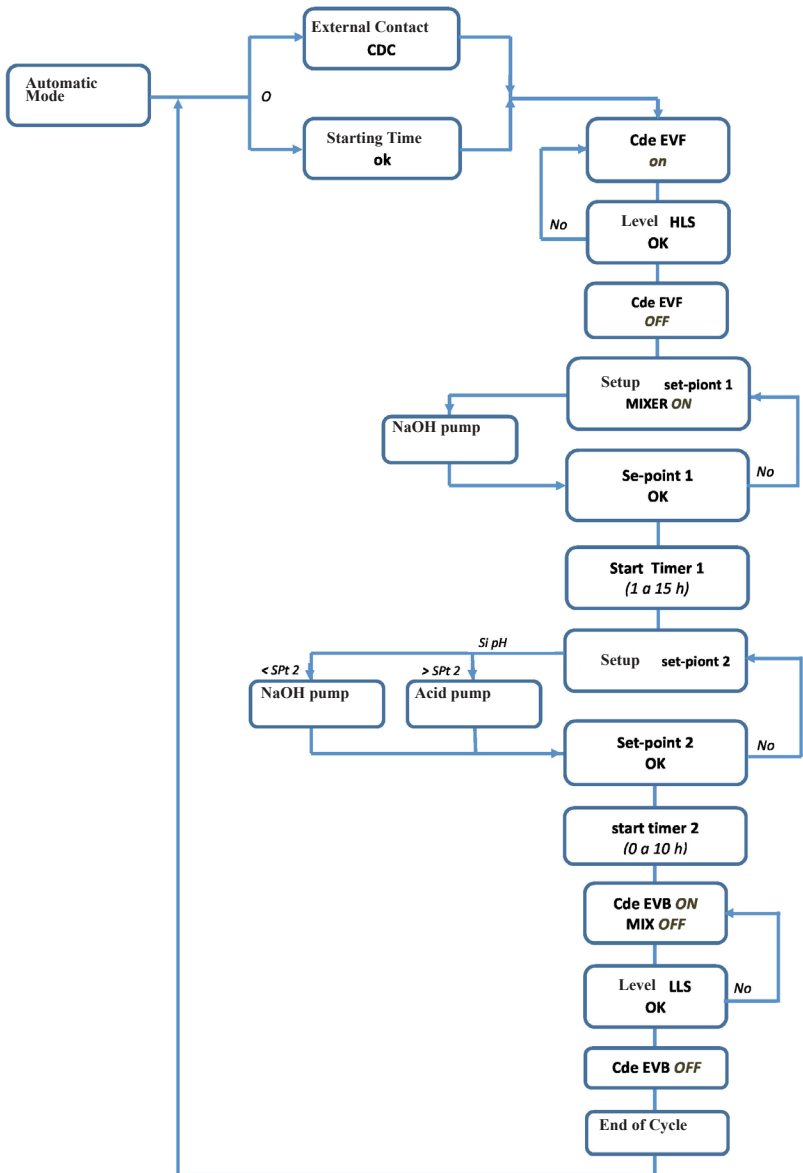
Appendix - Dimensions



Appendix - Working mode



Appendix - Working mode



Appendix "mA Outputs"

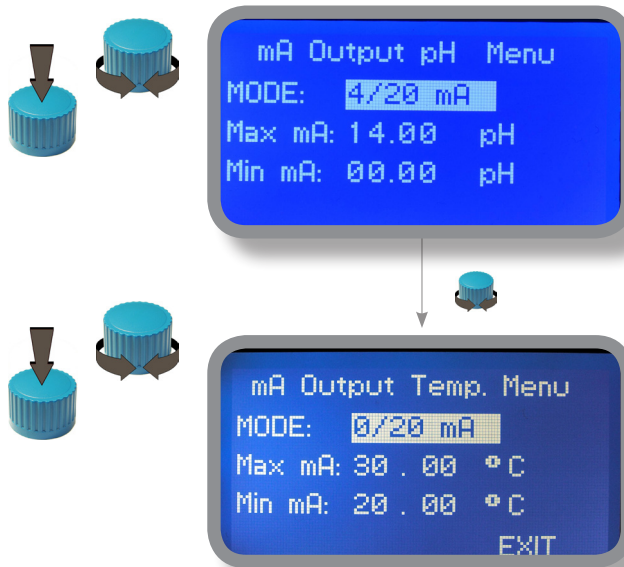
This menu allows to configure mA current outputs for pH, Temperature channels. Options to set are:

MODE (selectable between 0-20 or 4-20 mA current output)

Max mA: maximum probe's reading value at 20 mA current

Min mA: minimum probe's reading value at 0 or 4 mA current

Disable / Enable on alarm: enable or disable output on alarm condition (flow, level, probe failure, dosage, out of range)



Rotate wheel to move within all 3 channels. Click wheel to select parameter and rotate wheel to change it. Click wheel again and rotate wheel to move cursor on next parameter. To end procedure move cursor on "EXIT" and press wheel to proceed to "Save" request screen. Move wheel on "YES" to save or "NO" to discard changes.

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Information on this manual may contain technical inaccuracies or typographical errors.
The information contained may be changed at any time without prior notification or obligation.



When dismantling this instrument please separate material types and send them according to local recycling disposal requirements.
We appreciate your efforts in supporting your local Recycle Environmental Program.
Working together we'll form an active union to assure the world's invaluable resources are conserved.