Serie Idegis PR-300

Idegis PR-300 Series

Vers. 20062014

EN

Instruction Manual

PR-320 pH ORP Cl_2 (ppm)
T(ºC) mS/cm

pH

ORP

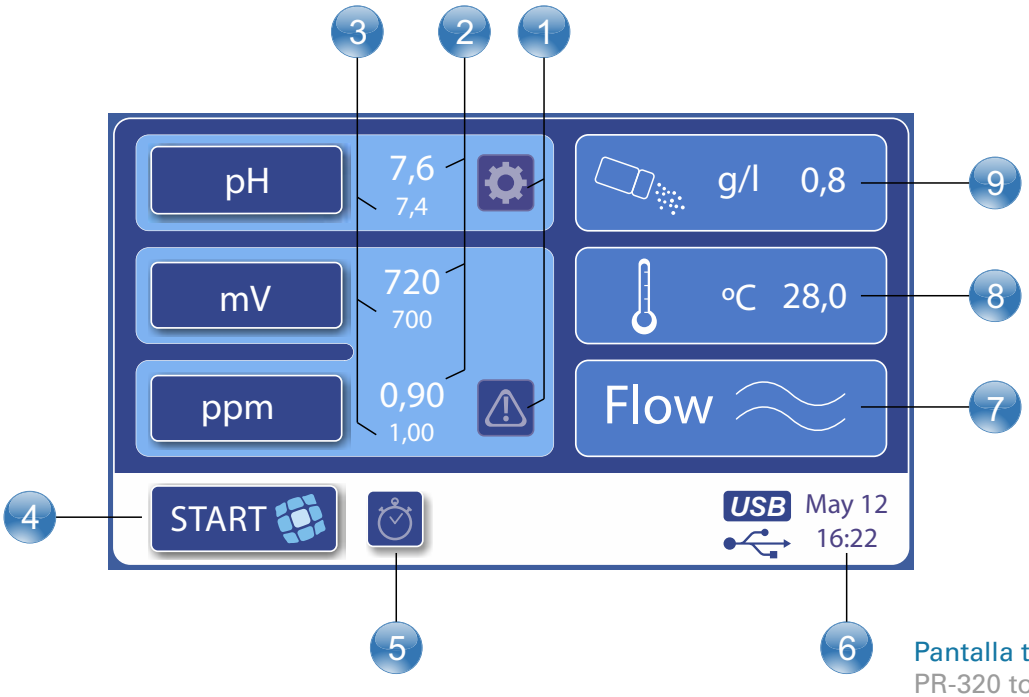
ppm Cl_2

mS/cm

USB

PoolStation® compatible

Modbus



Pantalla táctil PR-320
PR-320 touch screen

PANEL DESCRIPTIVO / PANEL DESCRIPTION

1.Iconos informativos (bomba, nivel, alarmas...).
Informative icons (pump, level, alarms...).

2.Valor de lectura / Water Values:
pH / ORP / Cl2 (ppm)

3.Valor de consigna / Setpoint values:
pH / ORP / Cl2 (ppm)

4.Menú de configuración / información (6 idiomas).
Setup menu / setup information menu (6 languages).

5.Seis temporizadores diarios programable (bombas, foco, riego, ...)
Six pool progammable timers (pumps, light, irrigation, ...)

6.Hora / día / mes / año. Calendario.
Hour / day / month / year. Calendar.

7.Sensor inductivo (flujo).
Inductive sensor (flow).

8.Valor de temperatura (ºC/ºF).
Temperature value

9.Valor de conductividad (gr/L, mS/cm).
Conductivity value.

Idegis PR-300 Series

Referencia-Reference

PR-300
pH ORP
ºC mS/cm

PR-310
pH Cl2 (ppm)
ºC mS/cm

PR-320
pH ORP Cl2 (ppm)
ºC mS/cm

Smart Control pH / ORP (mV)

Smart Control pH / Cl (ppm)

Smart Control pH / ORP / Cl (ppm)

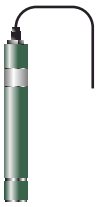
Serie Idegis PR-300

Series Idegis PR-300

Panel de Control / Control Panel

Descripción / Description	Modelo / Model PR-300	PR-310	PR-320
Alimentación (ac) - Consumo / Input (ac) - Consumption	230 V 50/60 Hz - 27 W		
Parámetros / Parameters	pH, ORP mS/cm, T(ºC)	pH, Cl_2 (ppm) mS/cm, T(ºC)	pH, ORP, Cl_2 (ppm) mS/cm, T(ºC)
Salidas control / Control outputs	pH: rele (NO, 0.5A max) & 4-20mA & pulsos / relay (NO, 0.5A max) & 4-20mA & pulse ORP, Cl_2: rele (NO, 0.5A max) & 4-20mA & pulsos / relay (NO, 0.5A max) & 4-20mA & pulse 5 Temporizados / 5 Timers: 5 x (salida rele / relay output (NO, 0.5A max)) Alarm: salida rele / relay output (NO, 0.5A max)		
Entradas control / Control Inputs	6 libres de potencial (nivel liquido: pH / ORP o Cl_2 (ppm) / +4) 6 free potential (solutions levels: pH / ORP or Cl_2 (ppm) / +4)		
Rango / Control / Precisión Range / Control / Precission	pH: 0.0 - 9.9 / 7.0-7.8 / 0.1pH ORP: 0 - 999 / 650-850 / 1mV Cl_2 (ppm): 0.0 - 5.0 / 0.0-3.0 / 0.1 ppm Conduct. mS/cm: 0.0-20.0 / 0.0-20.0 / 0.1 Temp. T(ºC): 6-45ºC / 6-45º / 0.1ºC		
Calibración / Calibration	Automática (fácil calibración mediante menús pantalla táctil) Automatic (easy calibration using touch screen menus)		
Bomba integrada / Integrated pump	No		
Pantalla táctil color / Color Touch Screen	Si / Yes		
Adquisición datos / Data acquisition	pH, ORP, Cl2 (ppm), Conductivity, Temperature (14 días/days)		
Puerto USB / USB Port	Exportación de ficheros de registro / USB log files export		
Portasondas retroiluminado / Backlighted sensor holder	Si (azul OK, rojo alarma) / Yes (blue OK, red alarm)		
Mod-Bus & Poolstation	Si / Yes		

Sensores / Sensors

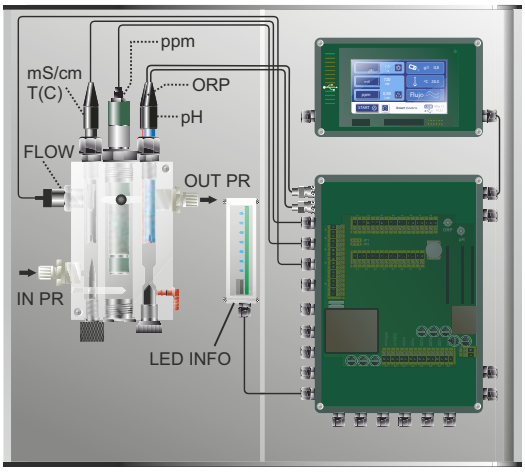


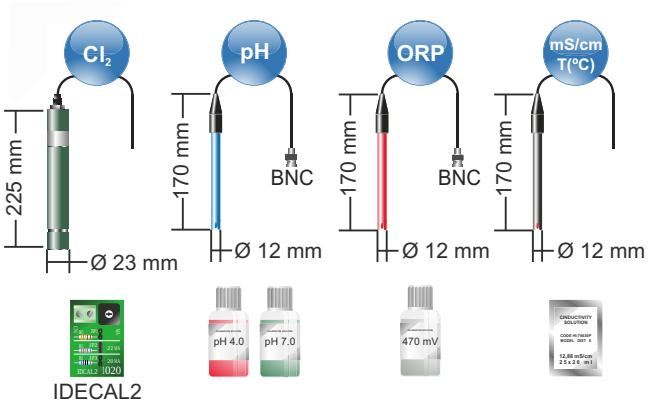
Descripción/Description		
pH: PR-300, PR-310, PR-320	Sonda de pH, H-035 cuerpo epoxy 12x150 mm, rango 0-14 pH, 0-80ºC, unión sencilla Ag/AgCl sellada, cable 3 mts., conector BNC, electrolito gelificado, protector de sonda fijo. Disoluciones de calibración (pH 7.0 y 4.0).	H-035, pH electrode, epoxy body 12x150 mm, range 0-14 pH, 0-80ºC, sealed union Ag/AgCl, 3 mts., cable with BNC connector, gelified electrolyte, fixed sensor protector. Calibration solutions (pH 7.0 y 4.0).
ORP: PR-300, PR-320	Sonda de ORP, RX-1/RX-2, cuerpo epoxy 12x150 mm, 0-80ºC, unión sencilla Ag/AgCl sellada, cable 3 mts., conector BNC, electrolito gelificado, protector de sonda fijo. Disoluciones de calibración (ORP 470 mV).	RX-1/RX-2 ORP electrode, epoxy body 12x150 mm, 0-80ºC, sealed union Ag/AgCl, 3 mts., cable with BNC conector, gelified electrolyte, fixed sensor protector. Calibration solutions (ORP 470 mV).
Cl_2 (ppm): PR-310, PR-320	0-5.0 ppm, 4-20mA. Sensor 3 electrodos potenciostático: cloro libre inorganico & organico. 2-cables de conexión, 0-45C, <1bar, cuerpo PVC. Baja dependencia con el pH, isocianúrico compatible. Compensación automática de temperatura.	0-5.0 ppm, 4-20mA. Potentiostatic 3-electrode-sensor for free inorganic & organic Chlorine, 2-wire connection, 0-45C, <1bar, PVC body. Low pH dependence, isocyanuric compatible. Automatic temperature compensation.
mS/cm - T(ºC): PR-300, PR-310, PR-320	Electrodo de conductividad, cuerpo ABS 12x120mm, grafito K=1. NTC 10K, elemento de temperatura en tubo de inoxidable 316. Conexión cable.	Conductivity electrode , ABS body 12x120mm, Grafite, K=1. NTC 10K temperature element in 316 SS tube. Cable tinned leads.

Kit PR-300

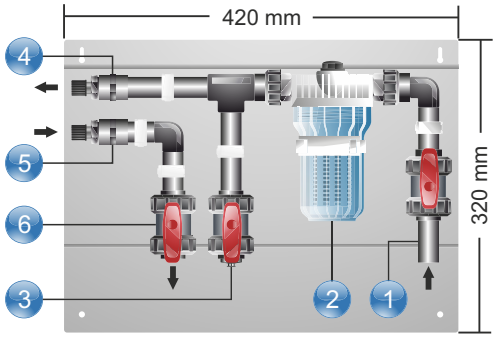
Incluido / Included (PR-300 / PR-310/ PR-320)	
Toma de muestras, pre-filtro (80 micras), entrada y salida a PR.	Sample valve, pre-filter (80microns), in & out PR.

Dimensiones / Dimensions



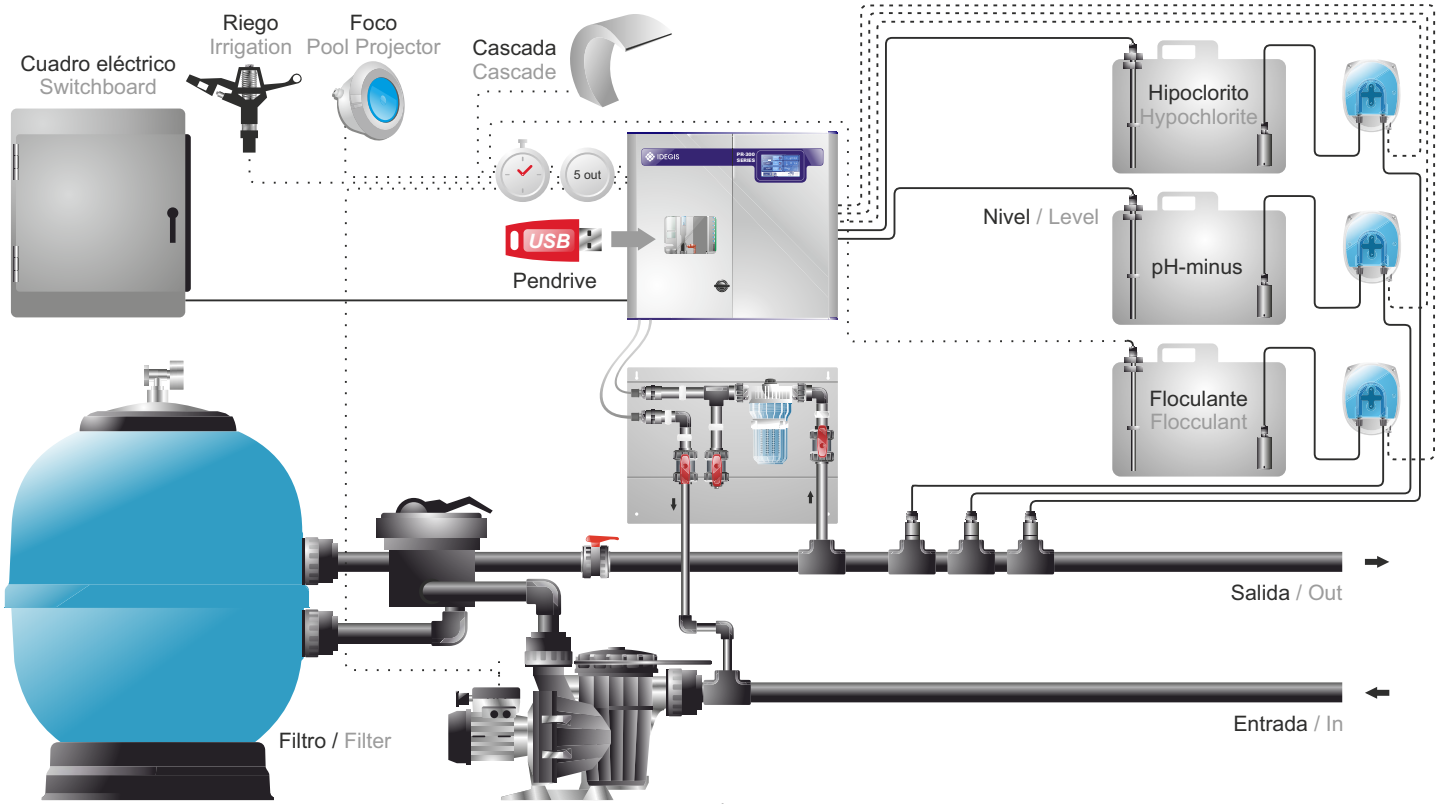


IDECAL2

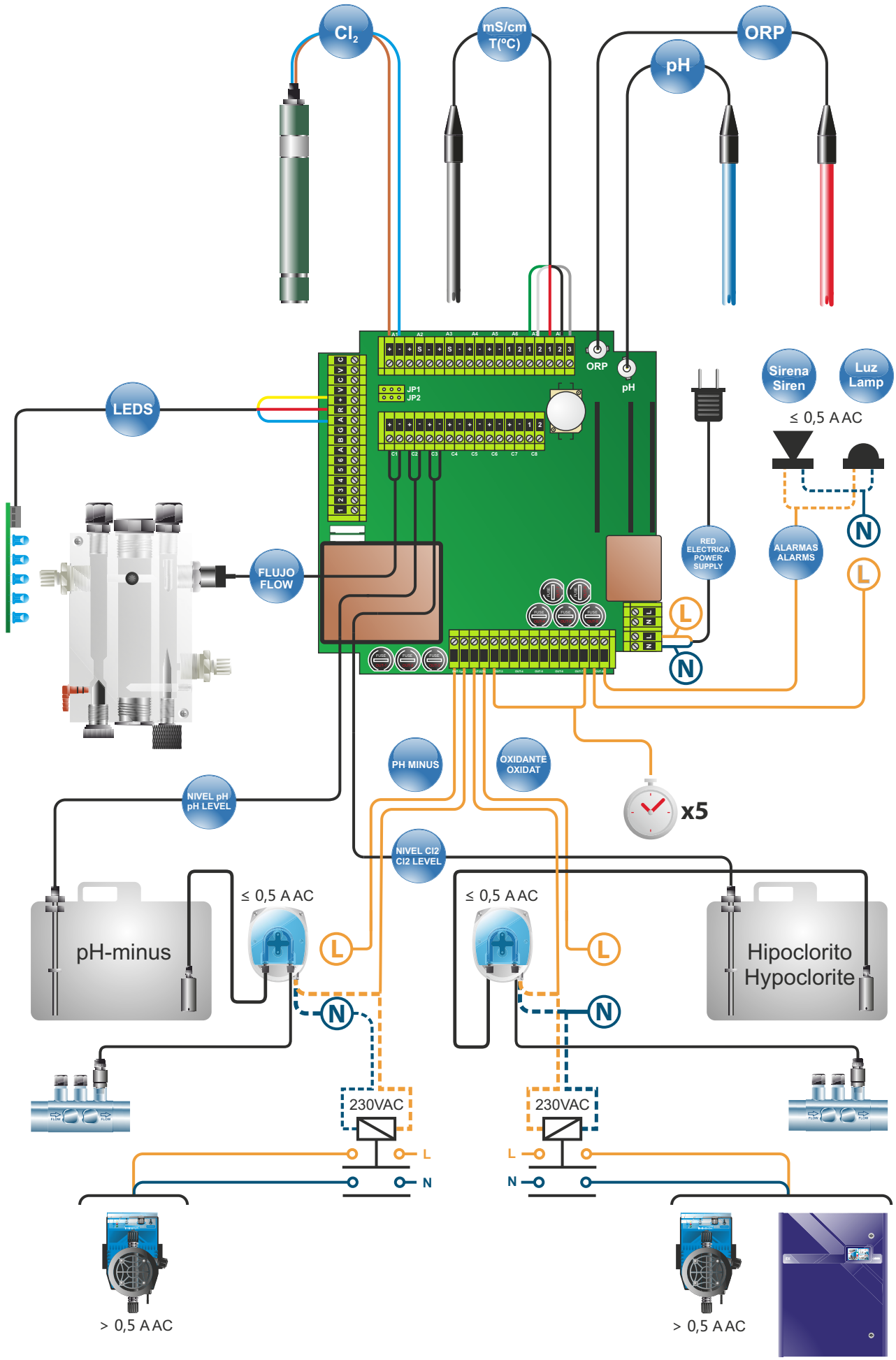


1) Entrada / Inlet
2) Pre-filtro / Pre-filter
3) Muestra / Sample
4) IN PR
5) OUT PR
6) Salida / Output

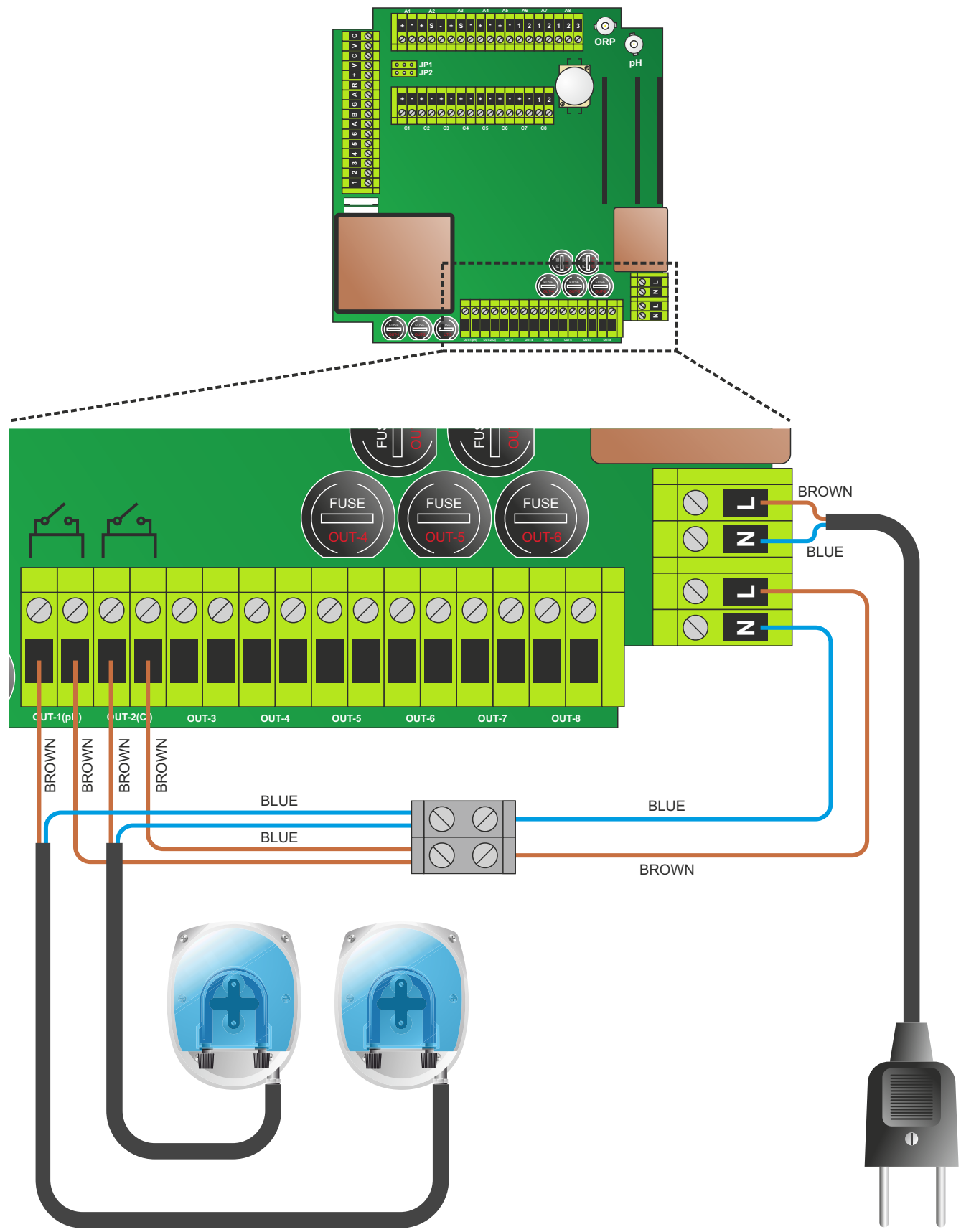
Diagrama de instalación / Installation Diagram



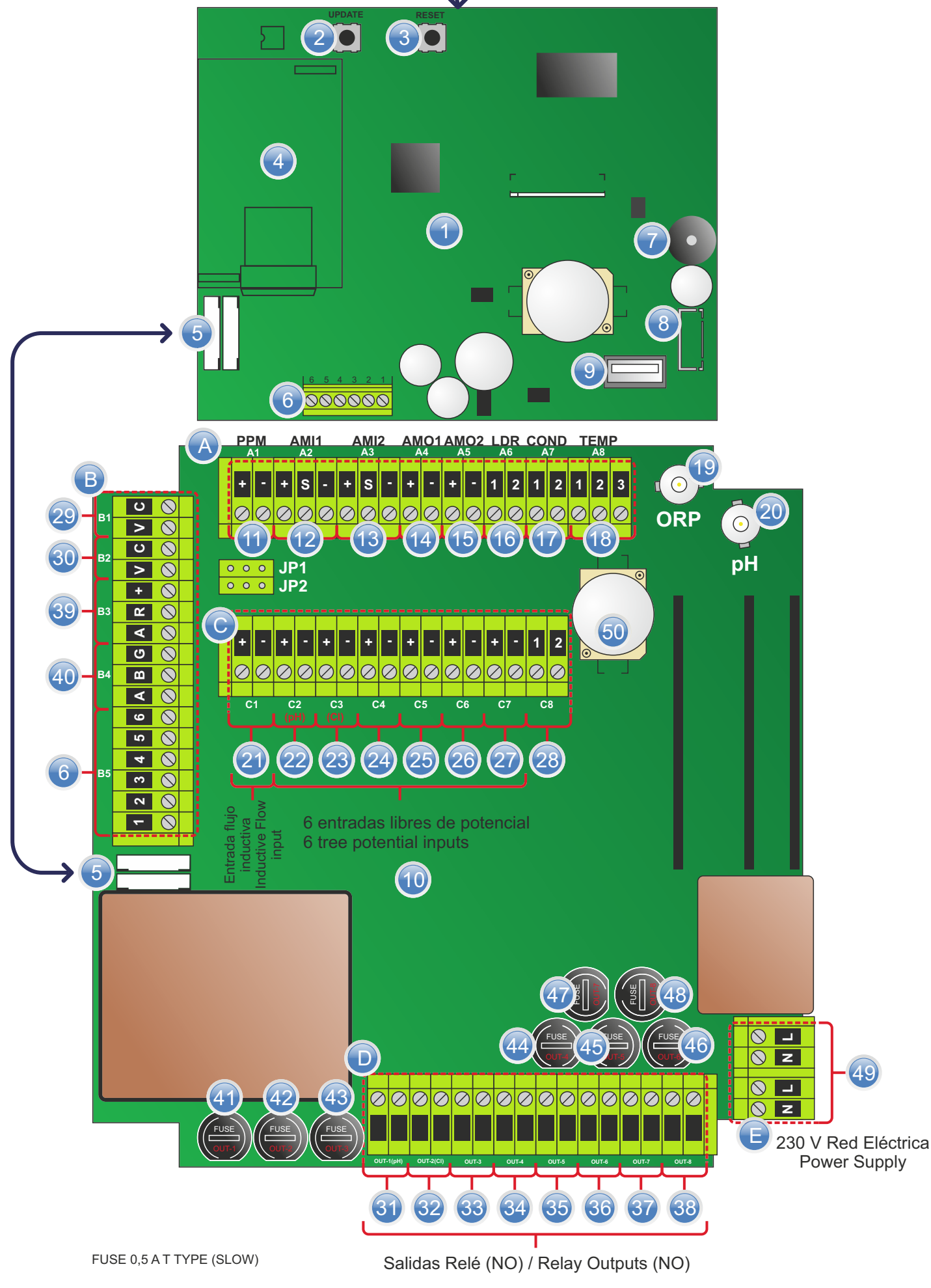
Installation schematic:



Installation detail:



Installation chapter:



FUSE 0,5 A T TYPE (SLOW)

1 IDTFT board (back).

2 Update button. Never touch it. Reserved for factory service procedures.

3 Reset button.

4 IDINT bay. Optional slot for enable Ethernet communication capabilities.

5 IDBUS connector. Used for transmit power and communications between IDTFT and IDPR3 boards.

6 Alternate IDBUS connector. 6 wire, terminal version.

7 Buzzer.

8 Wired USB connector.

9 On board Female Type A USB connector.

10 IDPR3 board (front).

11 PPM, 4-20 mA input. ATTENTION!, terminal is polarized. Input loop is always powered to 24V DC.

12 13

AMI1 & AMI2, 4-20 mA inputs. ATTENTION!, terminals are polarized.
Loop power is optional with [+] or [s].

[+] - 24V DC loop power.
[s] - Not power source. Power must be externally provided.
[-] - Return loop to shunt and ground.

14 15

AMO1 & AMO2, 4-20 mA output. ATTENTION!, terminal is polarized

16 CdS Photocell 5.4-12.6 KΩ. No polarized terminals. Connect to [1] and [2] as your preference.

17 Conductivity input. No polarized terminals. Connect to [1] and [2] as your preference.

18 Temperature input. NTC type sensor. No polarized terminals. Connect to [1] and [2] as your preference. [3] is N/C.

19 ORP (mV) BNC connector.

20 pH BNC connector.

21 Inductive flow sensor input. WARNING!, install only inductive type flow sensors. Not flow switch type.

22 23 24 25 26 27

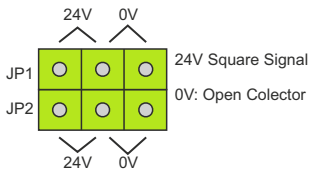
(C2)(C3)(C4)(C5)(C6)(C7)

22-27: Free potential input. Install switch type level detectors.
22: (C2)Level for pH regulator tank.
23: (C3)Level for Hypochlorite regulator tank.

28 (C8) Bipolar isolated digital input. +- 5V tolerant. Ultraviolet status lamp.

29 30 (B1)(B2)

TTL impulse outs. 24V DC or open collector output. ATTENTION!, Set (B1)JP1 and (B2)JP2 properly.
Terminals are polarized.
[C] - Connect target ground.
[V] - Connect to target input channel.



31 32 33 34 35 36 37 38

(D1)(D2)(D3)(D4)(D5)(D6)(D7)(D8)

31-38: Fused 230V outputs.
31: pH regulator pump output.
32: Hypochlorite regulator pump output.
33-37: Out-3 to Out-7 programmable timers.
38: Alarm Output.

39 Probe holder LED illumination board.
[+] - Yellow
[R] - Red
[A] - Blue

40 MODBUS communications port.
[A]- Positive data.
[B]- Negative data.
[G]- Common.

41 42 43 44 45 46 47 48

41-48: Fuse holders for fused 230V outputs.

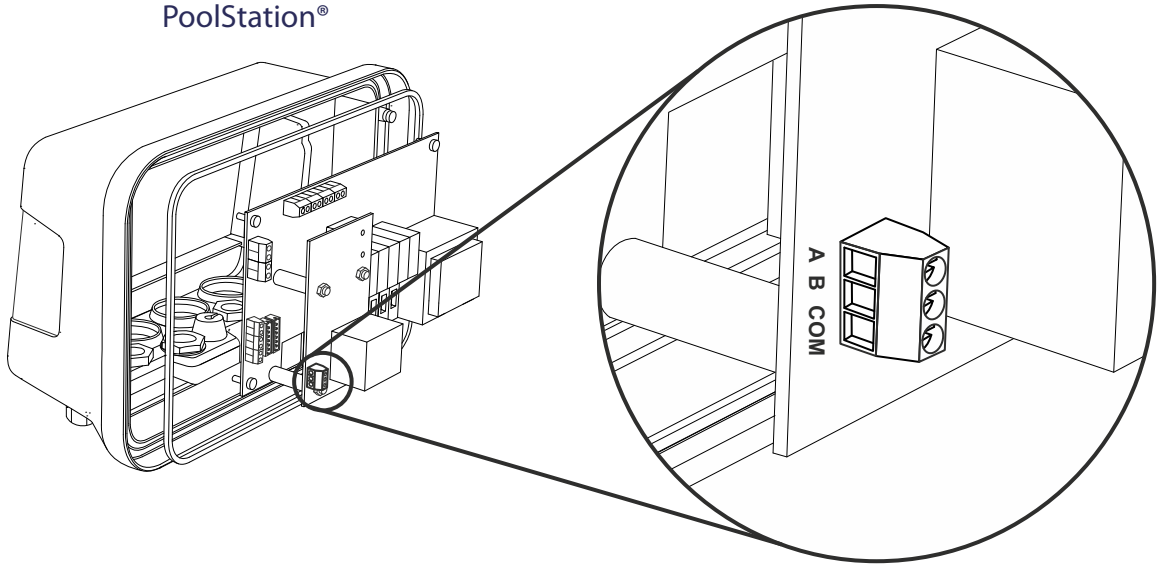
41 is fuse holder for 31 fused output.
47 is fuse holder for 37 fused output.
48 is fuse holder for 38 alarm output.

49 230Vac Mains power input.

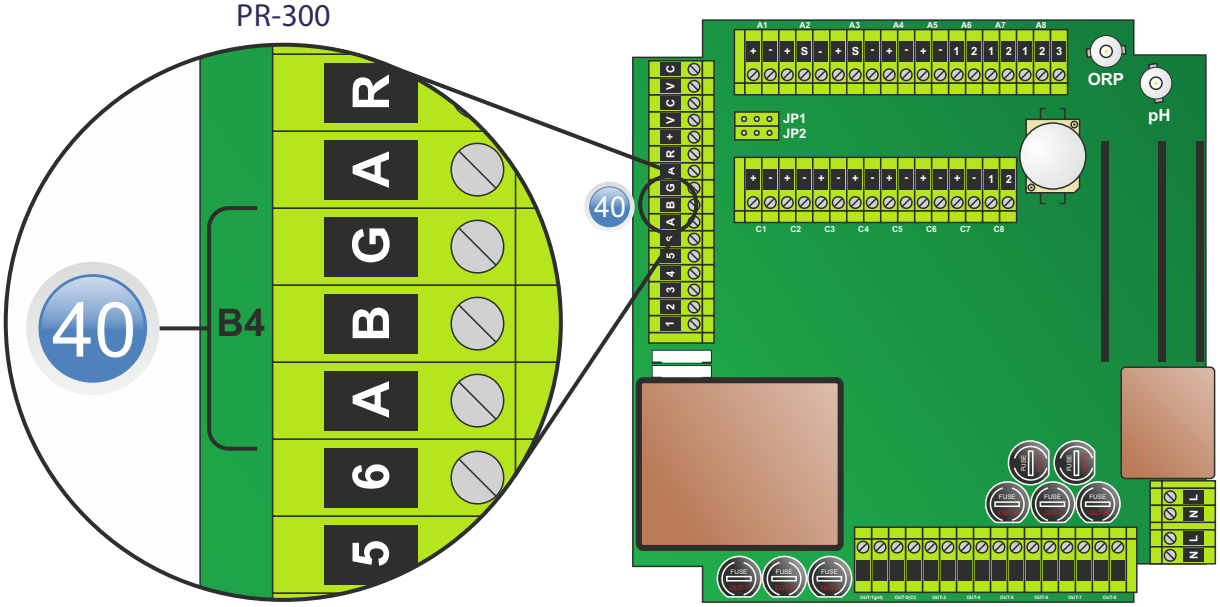
50 3V Lithium coin cell for real-time / calendar clock.
Recommended replacement time is 1 year or when depleted.
Ref.: CR2032 battery.

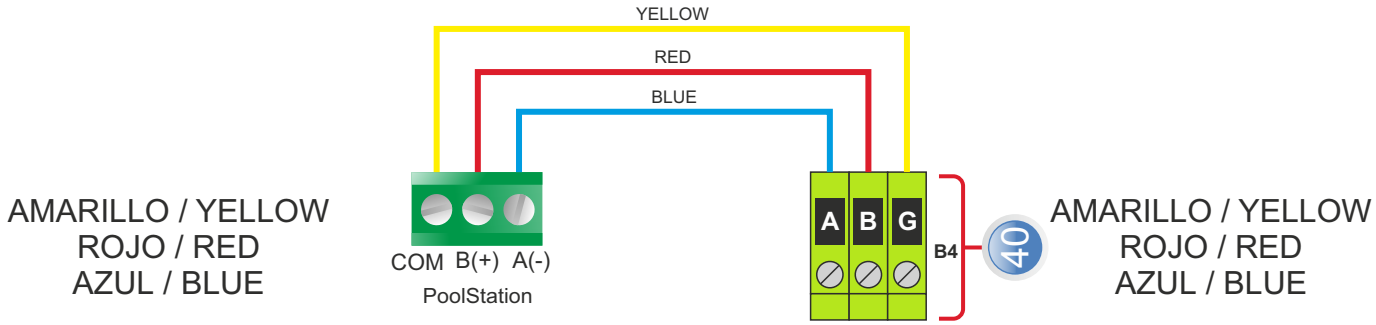
PoolStation® and PR-300 ModBus wiring diagram:

PoolStation®



PR-300





A: Datos Neg (AZUL)
B: Datos Pos (ROJO)
COM: Común (AMARILLO)

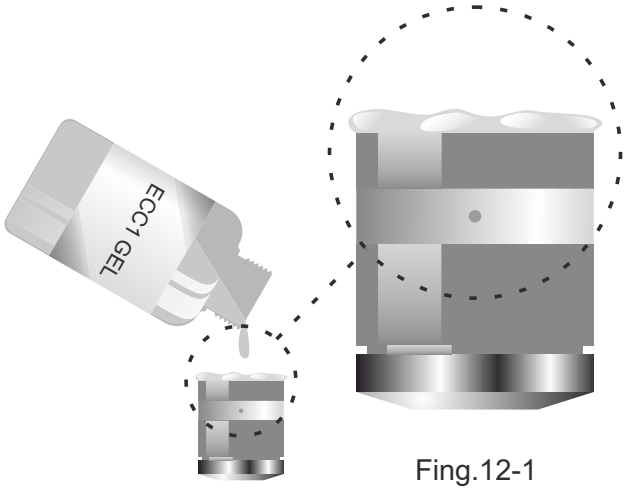
A: Neg data (BLUE)
B: Pos data (RED)
COM: Common (YELL)

Cable de uso general con 3 hilos.
La caja PoolStation incluye un cable de 2 metros con 6 hilos

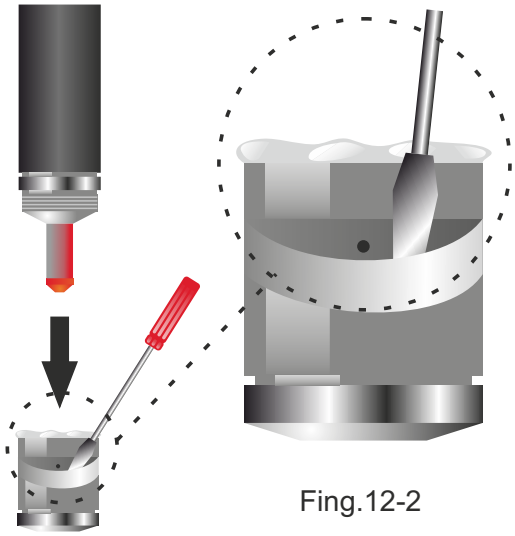
General use cable with 3 wires.
PoolStation box includes a 2 meter cable with 6 wires

Chlorine sensor assembly:

The chlorine sensor is a sensor for measuring the concentration of free chlorine in the water containing isocyanuric acid. This sensor also has low water pH dependence.



Fing.12-1



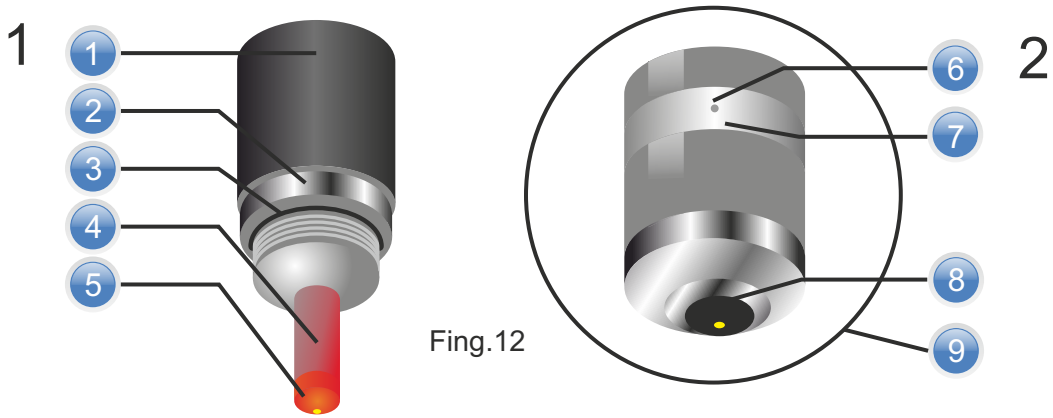
Fing.12-2

The electrolyte can exit through the bleed hole [6] when handling the membrane cap [9]. Being an aggressive liquid is recommended to wear gloves and goggles. In case of contact with skin or eyes, rinse thoroughly with water to the affected area.

1. Unscrew the membrane cap [9] sensor. Place the head on a clean membrane. Completely fill the head of the electrolyte membrane with EEC1/GEL preventing bubbles (Fig. 12-1).

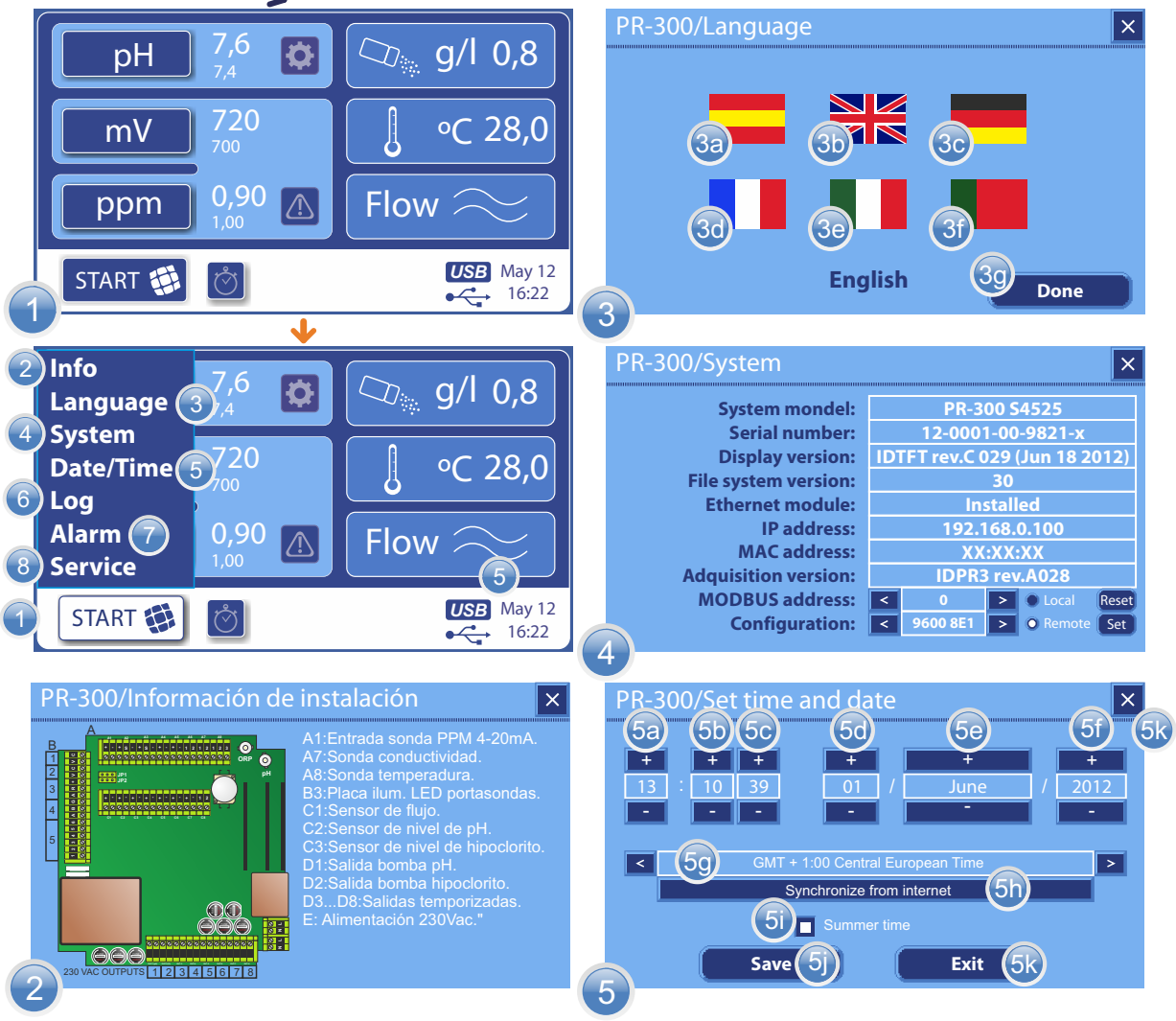
2. Lift the transparent cover (Fig. 12-2) [7] the bleed hole [6] using a small screwdriver or similar tool and move it aside. This leaves the vent hole [6] air. Hold head vertically and screw firmly and completely over the sensor body, being careful with excess electrolyte that could come out of the bleed hole [6]. Replace the transparent cover [7] in place, covering the vent hole [6].

3. The board [3] causes an initial resistance to start screwing which ensures the seal. The head of the membrane [9] needs to curl, until it meets with the body of the sensor [1]. When the head [9] is completely screwed, the electrode [5] can not hit the membrane [8]. This damages the membrane and make it unusable.



Fing.12

START chapter:



1 START button. Press it to show start menu. Press again to hide start menu.

2 INFO menu selection. Access to on screen installation information screen.

3 LANGUAJE menu selection. Access to system language selection screen.

- 3a Spanish language.
- 3b English language.
- 3c German language.
- 3d French language.
- 3e Italian language.
- 3f Portuguese language.
- 3g Done button. Sets selected language to system.

4 SYSTEM menu selection. Access to system information screen. It shows hardware status, serials, firmware versions and Modbus communication configuration. For detailed Modbus table see Modbus chapter.

5 DATE/TIME menu selection. Access to date and time set screen

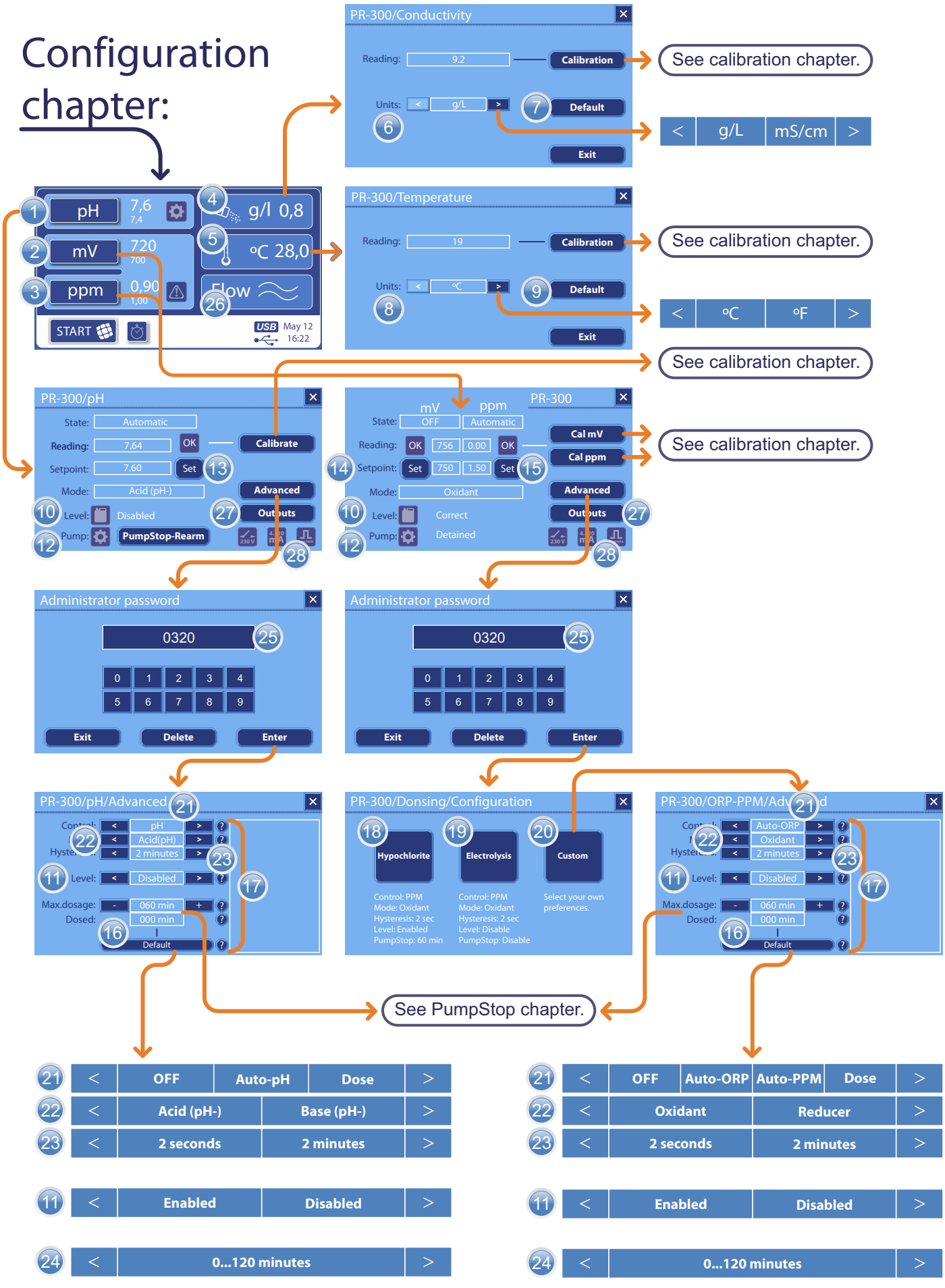
- 5a Hour set [+] and [-] buttons.
- 5b Minute set [+] and [-] buttons.
- 5c Seconds set [+] and [-] buttons.
- 5d Month day set [+] and [-] buttons.
- 5e Month set [+] and [-] buttons.
- 5f Year set [+] and [-] buttons.
- 5g Time Zone. IDINT must be installed.
- 5h Synchronize button. Forces date and time SNTP synchronization. IDINT must be installed.
- 5i Summer time check. Check it for summer time (+1 hour).
- 5j Save button. Sets current time and date being edited to system.
- 5k Exit to main menu.

6 LOG menu selection. Access to historical information.

7 ALARM source selection menu.

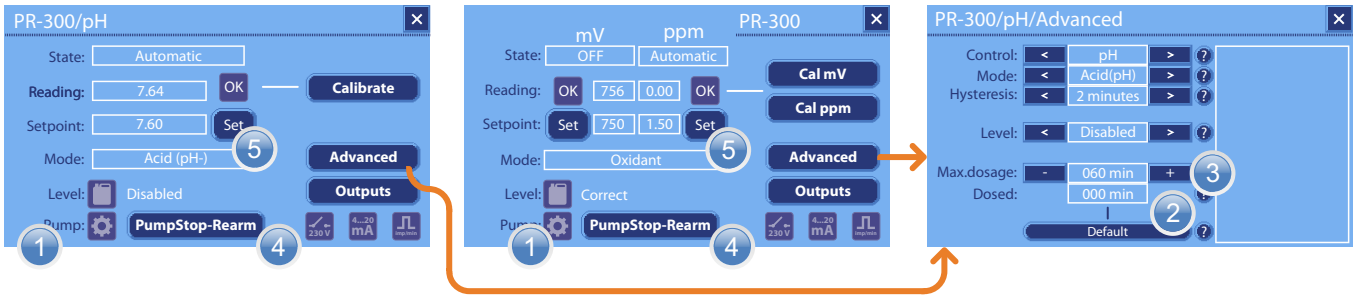
8 SERVICE menu selection. Section reserved for manufacturer and upgrades.

Configuration chapter:



1. Access to pH configuration.
2. Access to mV configuration.
3. Access to ppm configuration.
4. Access to conductivity configuration.
5. Access to temperature configuration.
6. Conductivity units. **g/L:** NaCl grams per liter of water (TDS).
   mS/cm: milisiemens per centimeter.
7. Default calibration: resets conductivity calibration to factory defaults.
8. Conductivity units. **ºC:** Celsius degrees.
   ºF: Fahrenheit degrees.
9. Default calibration: resets temperature calibration to factory defaults.
10. Level indicator. **Disabled:** Level input logic is disabled. No sensor level is installed.
    Correct: Level input logic is enabled and level is correct.
    Empty: Level input logic is enabled and level is low.
11. Level configuration. **Enabled:** Sensor level is installed. Level logic is enabled.
    Disabled: Sensor level is not installed. Level logic is disabled.
12. Pumpstop indicator. **Dosing:** Pump is dosing.
    Detained: Pump is detained.
    Pump-Stop-Rearm: Press to pumpstop rearm.
13. pH Setpoint Set: Cycle setpoint in range 7.00 to 7.80 (7.00-7.20-7.40-7.60-7.80).
14. mV Setpoint Set: Cycle setpoint in range 600 to 850 (600-625-650-675-700-725-750-775-800-825-850).
15. Ppm Setpoint Set: Cycle setpoint in range 0.00 to 3.50 (increments in 0.10 units per touch).
16. Default settings: Resets configuration to factory defaults.
17. [?] Buttons: On screen contextual help.
18. Hypochlorite: Predefined configuration profile for hypochlorite dosage.
    Control: PPM.
    Mode: Oxidant.
    Hysteresis: 2 seconds.
    Level: Enabled.
    PumpStop: 60min.
19. Electrolysis: Predefined configuration profile for electrolysis control.
    Control: PPM.
    Mode: Oxidant.
    Hysteresis: 2 minutes.
    Level: Disabled.
    PumpStop: Disabled.
20. Custom dosing configuration: Allows user to customize settings.
21. Control configuration: **AUTO-xxx:** Recommended operation mode, regulator drives output for reach xxx setpoint.
    OFF: regulator is disabled. No action over output.
    Dose: Starts manual 15 minutes dose (900 seconds) ignoring probe measures during this period. Ideal for setup and maintenance pool routines.
22. Type of regulator agent inside bottle:
    Acid (pH-): H_2SO_4, HCl, $NaHSO_4$.
    Base (pH+): NaOH, $CaCO_3$.
    Oxidant: Hypochlorite, Cl_2, Br_2…
    Reducer: $NaHSO_3$.
23. Output ON ←→ OFF time.
24. Maximum continued dosage time. For security reasons, output operation time is limited.
25. Sensitive settings are protected by administrator password that is always: 0320
    Please reserve knowledge of this password to authorized personal only.
26. Flow indicator. When picture is animated flow is OK. When static, flow is absent.
27. Outputs
28. Outputs status icons. Show icon name, mode, and actual output value for each associated output.

PumpStop chapter:



1. Pump state. It shows actual pump state. It should be “Stop” or “Dosing”.
2. Dosed time. Is the continued time that the pump is being at Dosing state.

   This time is clear in the following cases:
   - Reading reaches Setpoint.
   - Manual action to stop pump.
3. Max. dosage time. It is the maximum time allowed for continued operation of pump at Dosing state. It is a security measure for prevent accidental depletion of tank into the pool, caused by malfunction of probes, setpoint or incorrect system installation.

   Default value is 60 minutes for 80m^3 pool.

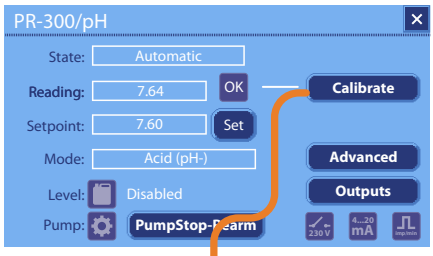
   Different pool volumes need different Max. dosage time. User must adjust it manually.

   Set zero for value disable pumstop feature.
4. PumpStop "Reset". Button that appears when you exceed the maximum dosage. At this point, the pump stops dosage until you press the button "Reset".

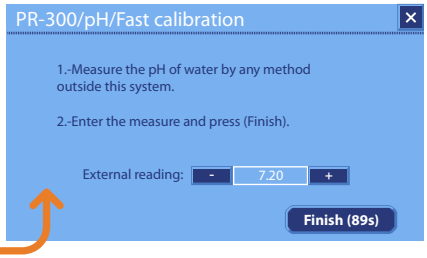
   If the alert appears frequently "PumpStop" please increase the maximum dosing time.

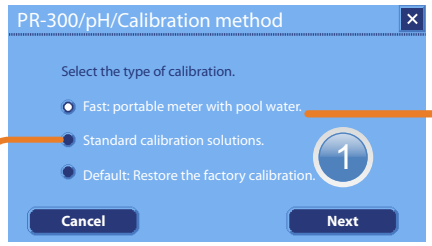
   When the maximum dosage is properly configured, "PumpStop" should never appear.
5. Regulation Mode

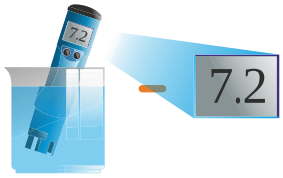
Calibration pH chapter:

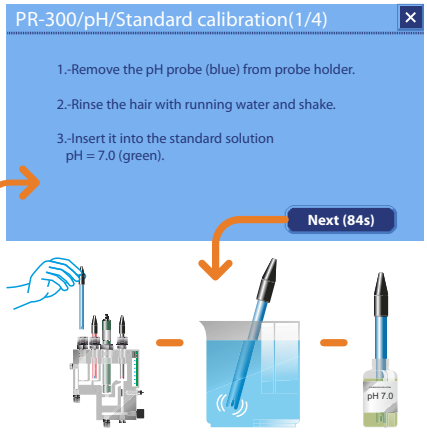


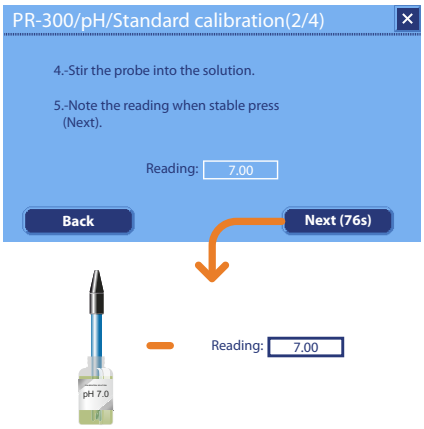
Fast calibration



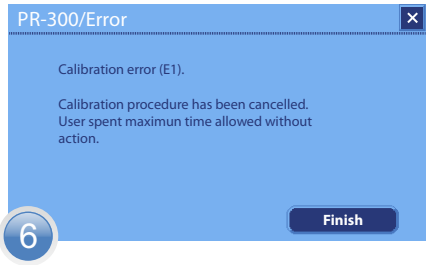


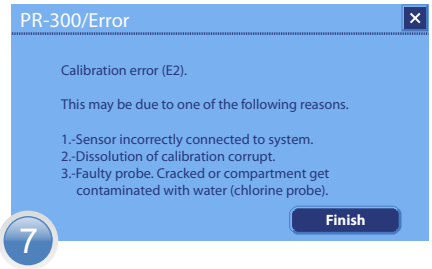


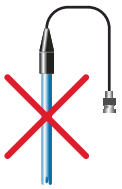


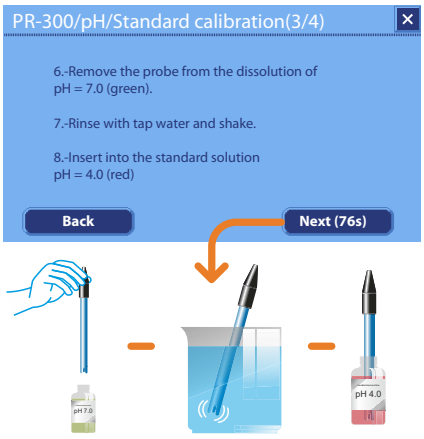


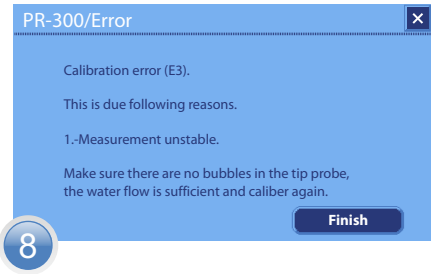
Errors

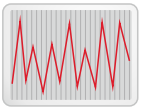


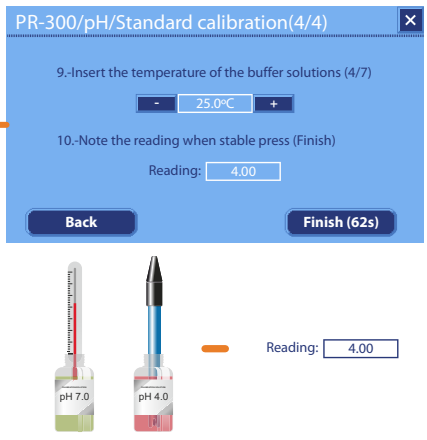




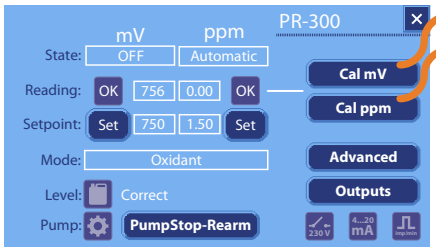




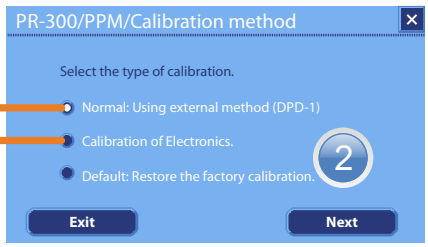




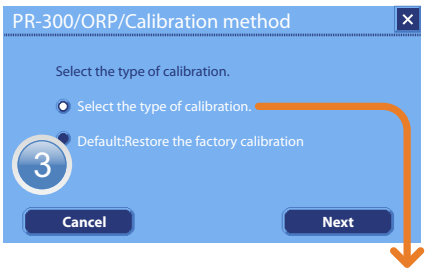
Calibration PPM/ORP chapter:



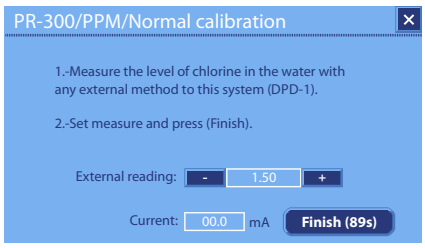
PPM calibration

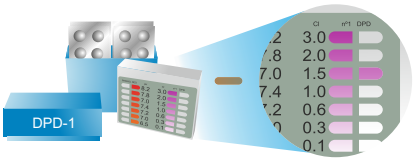


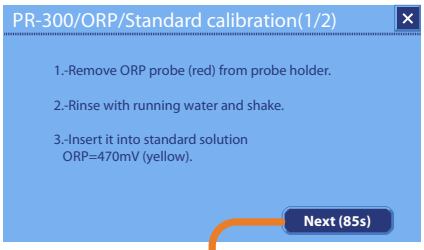
ORP calibration

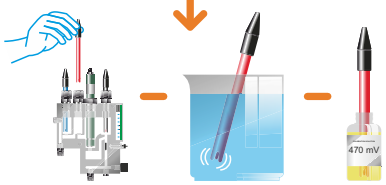


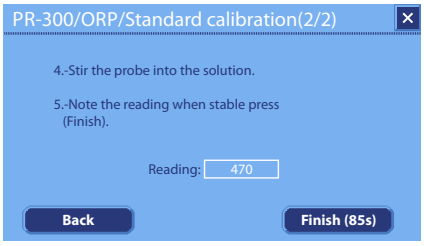
Normal calibration



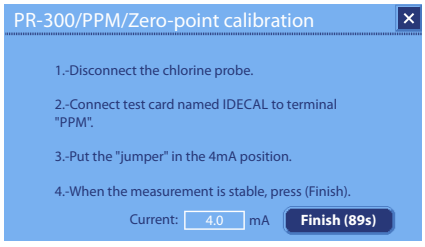


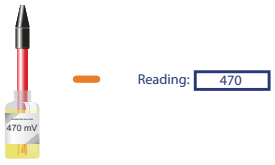


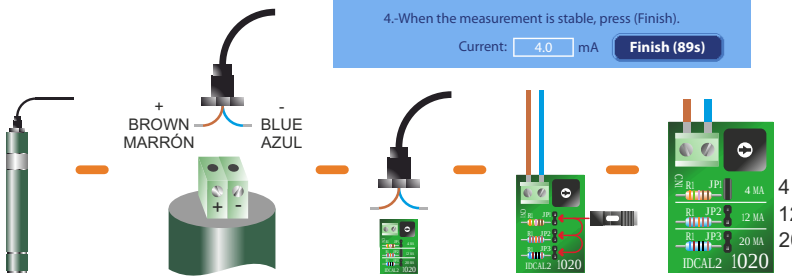




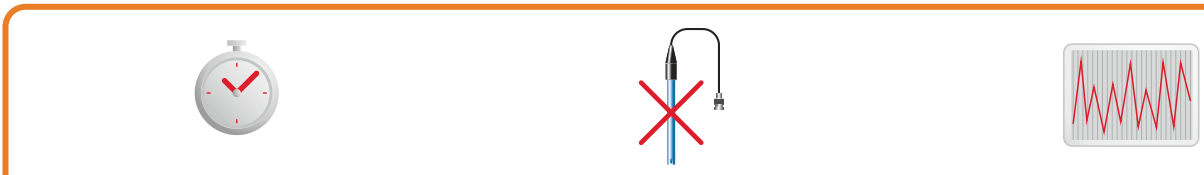
Calibration of electronics

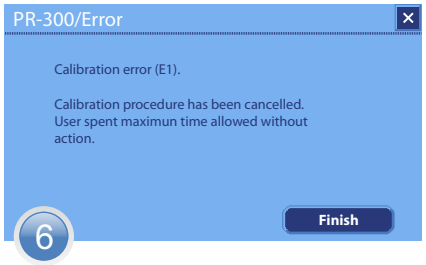


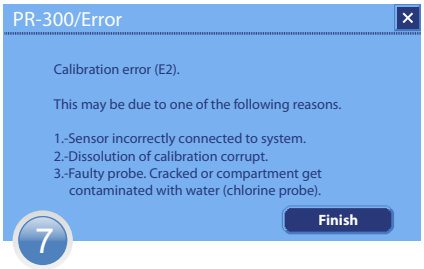


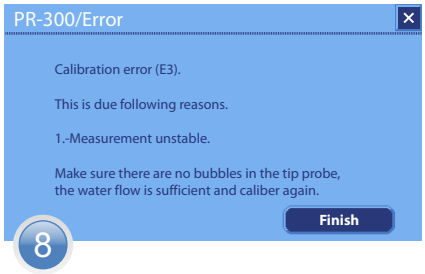


Errors

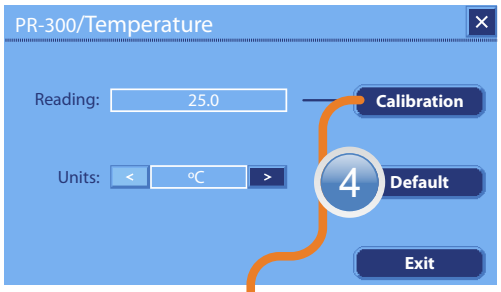


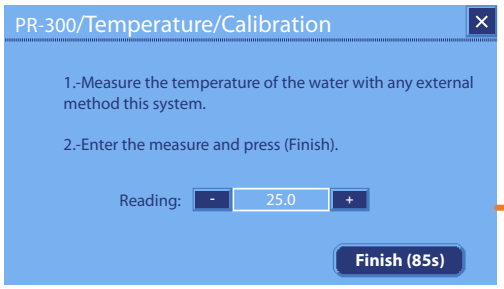


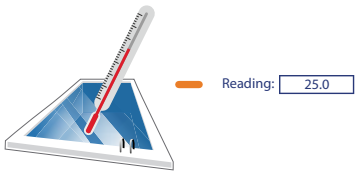




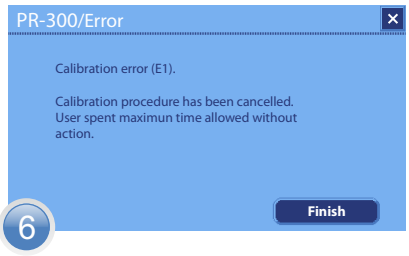
Calibration Temperature chapter:

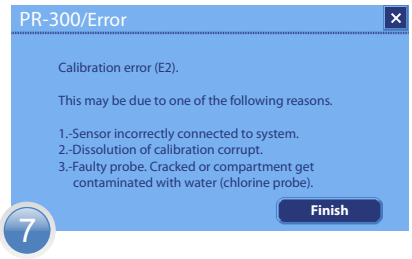


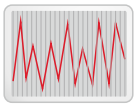


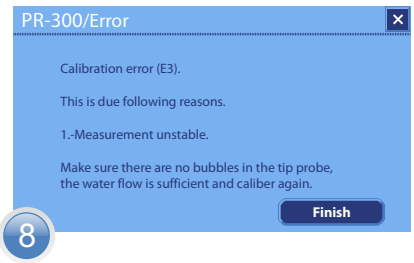


Errors

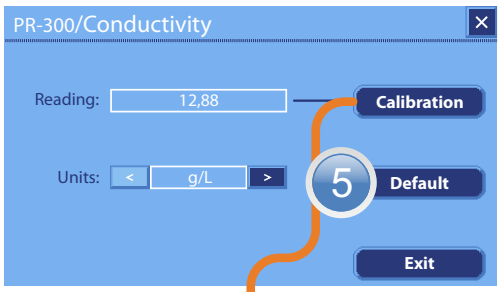


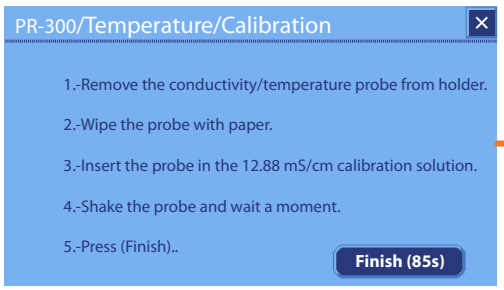


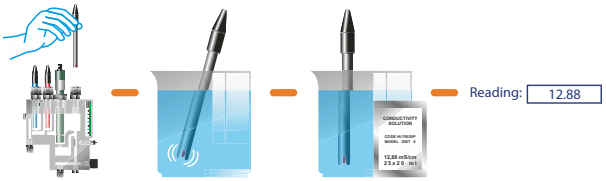




Calibration Conductivity chapter:

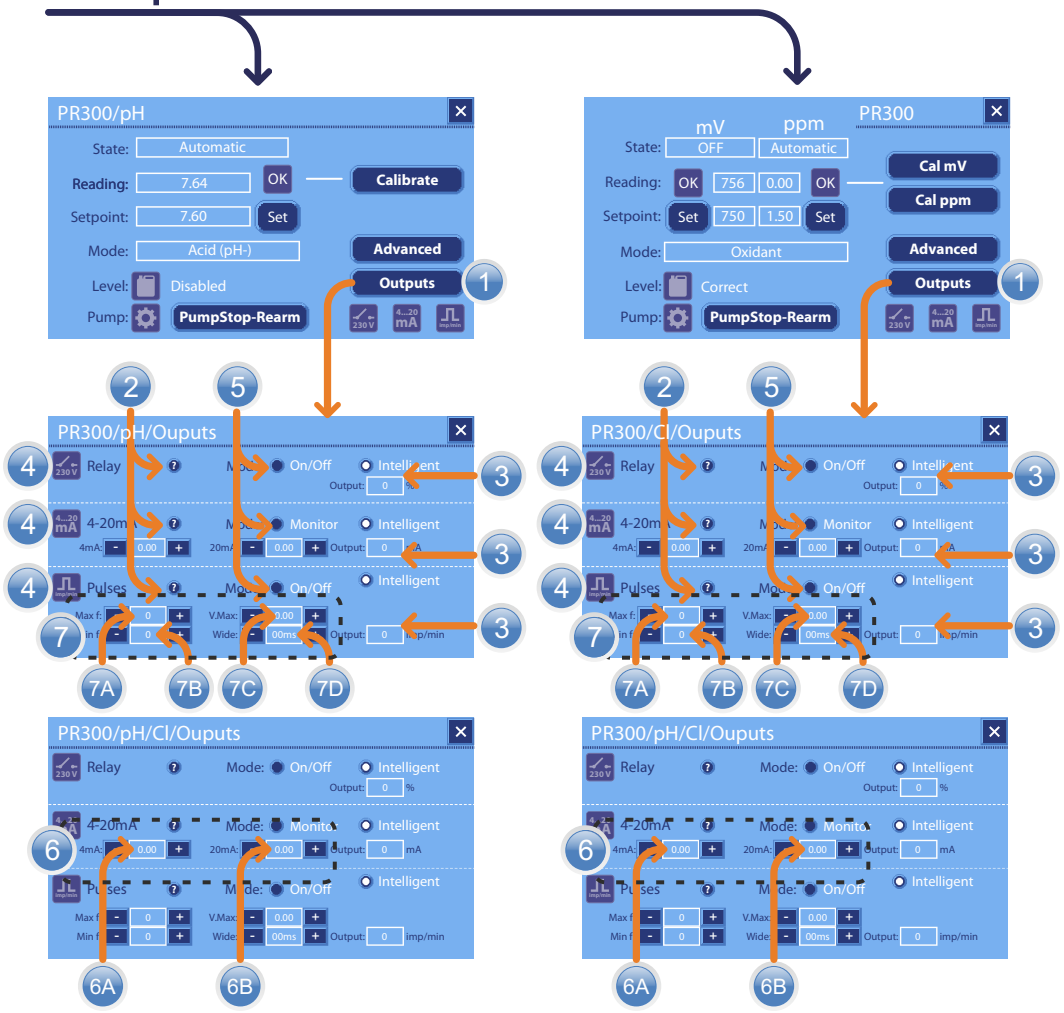




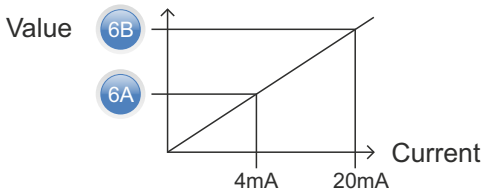


1. Default calibration: resets pH calibration to factory defaults.
2. Default calibration: resets ORP calibration to factory defaults.
3. Default calibration: resets PPM calibration to factory defaults.
4. Default calibration: resets temperature calibration to factory defaults.
5. Default calibration: resets conductivity calibration to factory defaults.
6. E1 calibration error: Timeout.
7. E2 calibration error: measure is highly skewed.
8. E3 calibration error: measure is unstable.

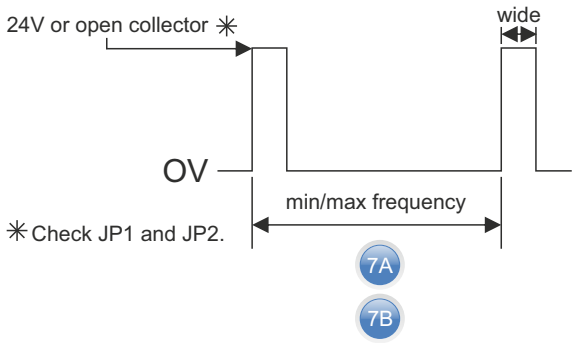
Outputs:

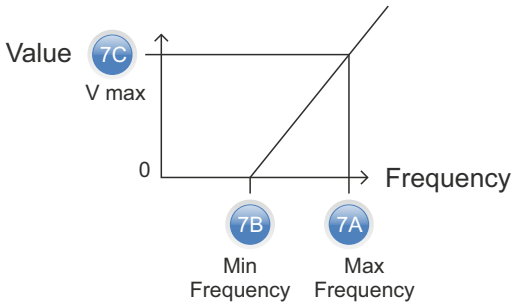


1. Access Outputs menu screen.
2. Show an screem legend to tocate output in hardware.
3. Output value.
4. Output icon and more indicators.
5. Output mode:
   - **On/Off:** Control is all/none.
   - **Intelligent:** Control is proportional to setpoint distance.
   - **Monitor:** Output value is a reading mirror.
6. 4-20mA output slope live:

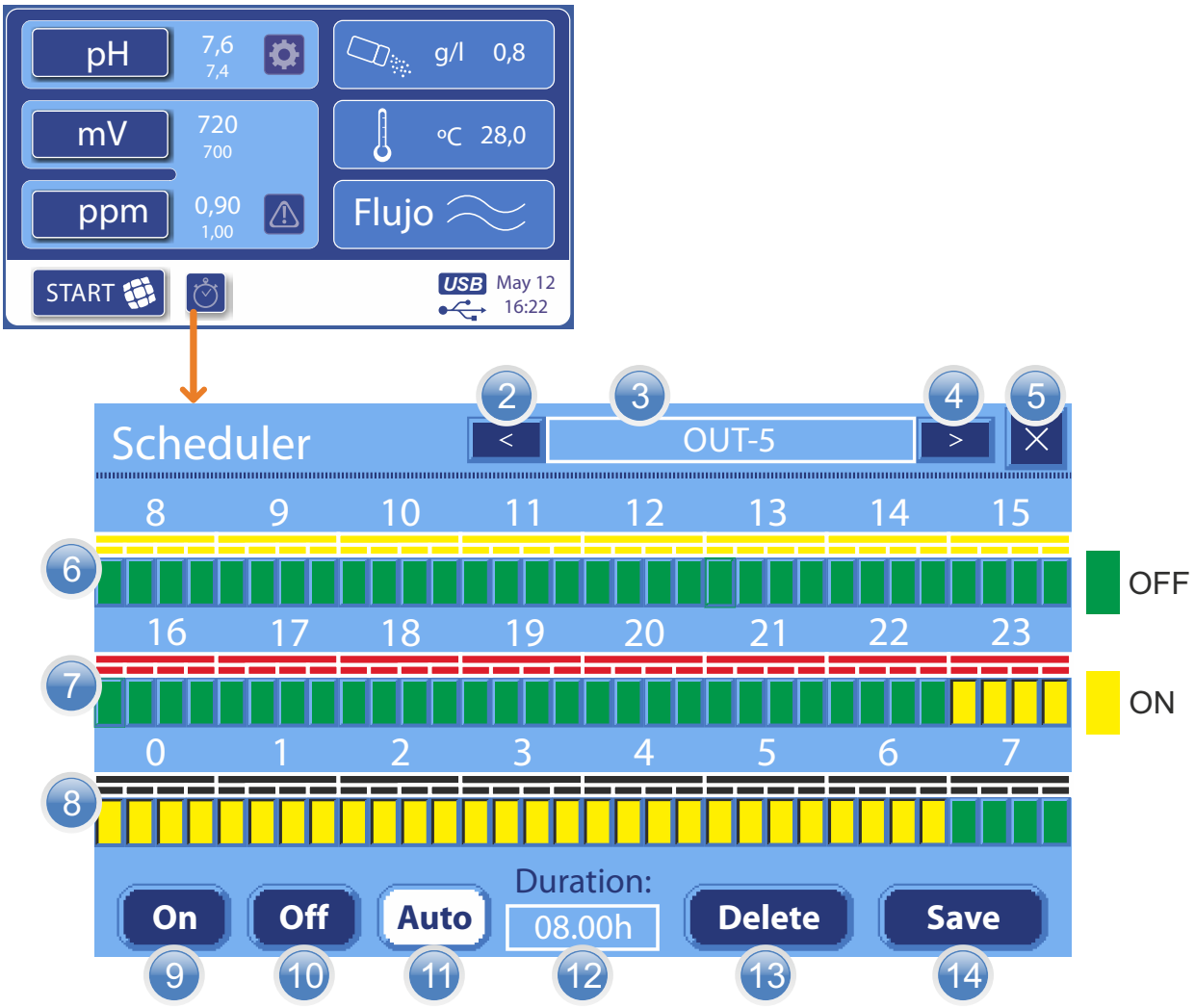


7. Impulse output config:



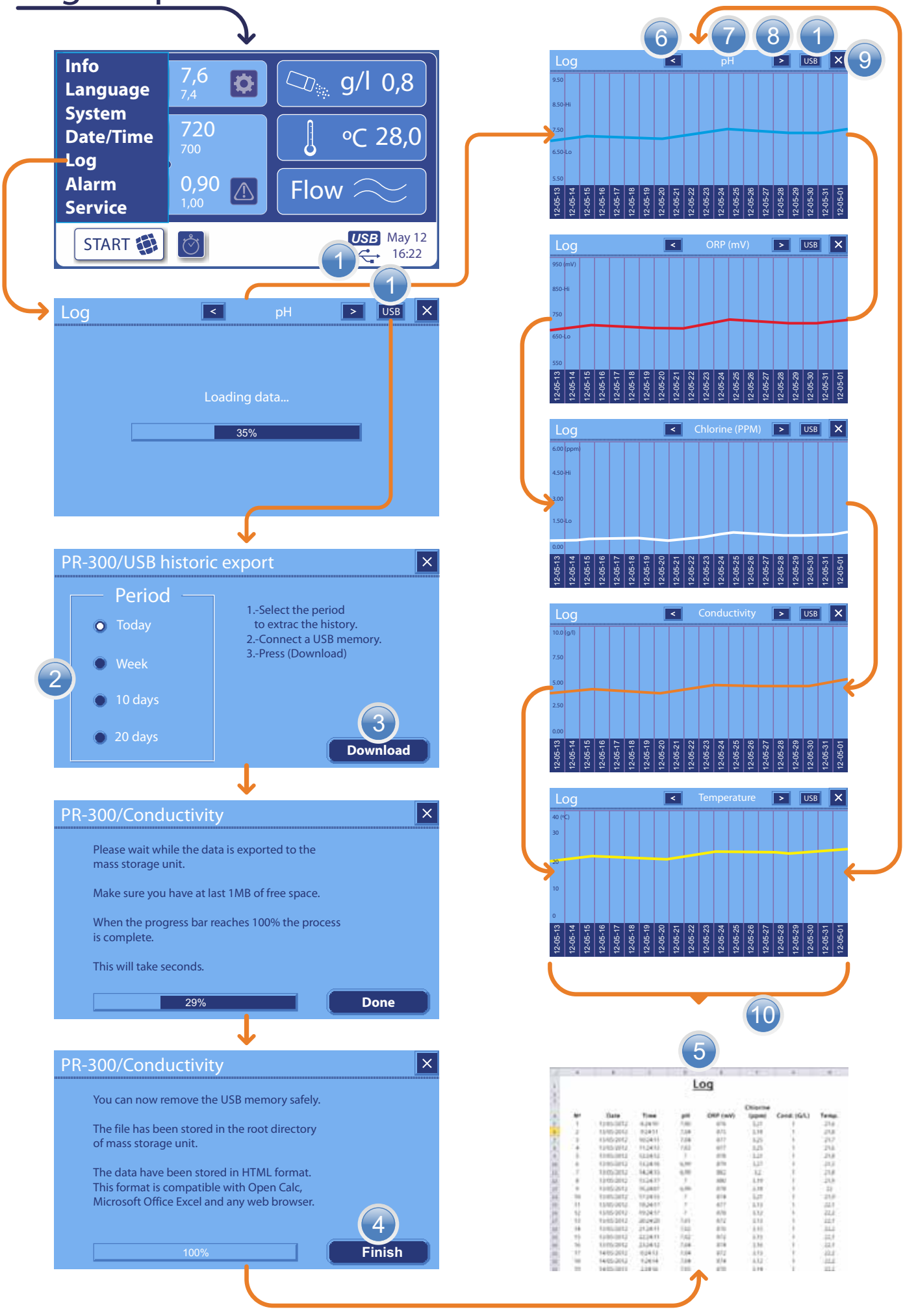


Scheduler chapter:



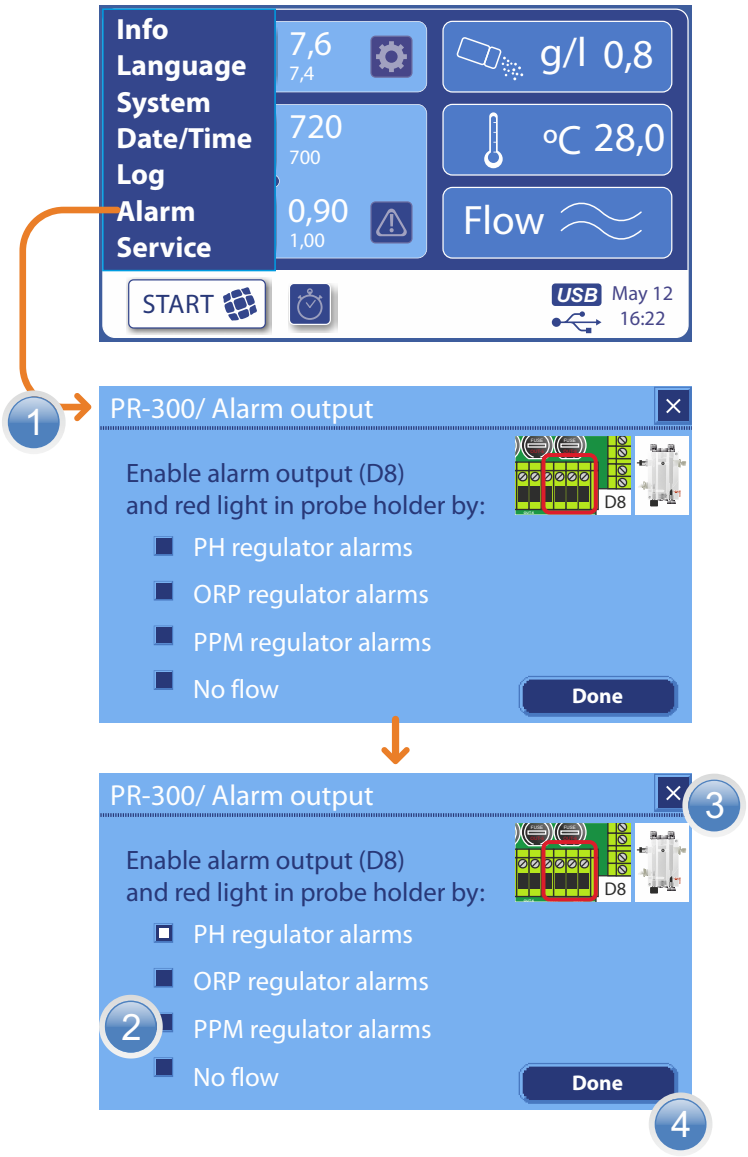
1. Access to Scheduler screen.
2. Left button for programmable output selection.
3. Name of selected programmable output being edited.
4. Right button for programmable output selection.
5. Quit button. Back to main menu. Changes will be lost.
6. Morning program. From 8:00 to 15:00h. Each button represents 15 minutes. Bright yellow means ON state.
7. Evening program. From 16:00 to 23:00h. Each button represents 15 minutes. Bright yellow means ON state.
8. Night program. From 0:00 to 7:00h. Each button represents 15 minutes. Bright yellow means ON state.
9. Manual Output activation. Overrides programing. Output is always ON.
10. Manual Output deactivation. Overrides programing. Output is always OFF.
11. Automatic operation. Output follows programming (ON Yellow / OFF Green). Please check it system time is OK for proper operation.
12. Program duration indicator. Sums ON time in program being edited.
13. Program delete. Sets all buttons to disable state.
14. Program save. Press it after program edit for save changes.

Log chapter:


Info
Language
System
Date/Time
Log
Alarm
Service
7,6
7,4
g/l 0,8
720
700
ºC 28,0
0,90
1,00
Flow
START
USB
May 12
16:22
Log
pH
USB
Loading data...
35%
PR-300/USB historic export
Period
Today
Week
10 days
20 days
1.-Select the period
to extrac the history.
2.-Connect a USB memory.
3.-Press (Download)
Download
PR-300/Conductivity
Please wait while the data is exported to the
mass storage unit.
Make sure you have at last 1MB of free space.
When the progress bar reaches 100% the process
is complete.
This will take seconds.
29%
Done
PR-300/Conductivity
You can now remove the USB memory safely.
The file has been stored in the root directory
of mass storage unit.
The data have been stored in HTML format.
This format is compatible with Open Calc,
Microsoft Office Excel and any web browser.
100%
Finish
Log
pH
ORP (mV)
Chlorine (PPM)
Conductivity
Temperature
Log

1. Access USB log export menu screen.
2. Length of log file selection.
3. Download button. It is only active when valid FAT32 partitioned USB thumb drive is attached to system.
   Audible “beep” sounds when USB thumb drive is attached or removed.
4. Finish button. You can now remove thumb drive.
5. Log file look opened with Office Excel® in PC.
   Log file could be renamed from .xls to .html for open it with any internet browser.
   Log file is coded in HTML format.
6. Left button. Switch plot system variables in a closed loop.
7. Name of current plot.
8. Right button. Switch plot system variables in a closed loop.
9. Exit button. Return to main menu.
10. X axis 20 day plot. At Right, present day. At left 20 day before today. Date is coded as YY/MM/DD in vertical.

Alarm chapter:



1. Access Alarm menu screen.
2. Alarms sources. Check each you want to enable.
3. Exit button. Return to main menu.
4. Finish button.