SWIMMING POOL AUTOMATION SYSTEM

~klereo





# Instruction manual



## Kompact and Kompact+ M5

Read carefully and keep for future reference. Please study the manual closely, before bringing the system into service(version 4)

1 - The content of this booklet may be modified without prior notice.

2 - Printing restrictions mean that the displays shown in this booklet may vary from those actually appearing on the product.

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### KOMPACT USER GUIDE

Thu.09h10 Regul. If you press the button(-)the filtration enters the рH=7.3 Off maintenance mode (forced ON or OFF (used to Hater: +20.9 Adiust back wash the filter for example). tering To return to the programmed filtration mode,  $\square$ go to the filtration menu or press and hold the button < f**(\_\_)**s. С II – Navigation in the Klereo menus  $\widehat{\ }$ definition Key Screen selection keys: each OK С display defines the function of these keys. Their functions vary Klereo Messages from menu to menu. Sensors Filtering Browse key: for browsing and Water treatment\* sometimes for changing values displayed.. Lighting Auxiliary A Confirm key: for accessing a (ok) Maintenance sub-menu or confirming an Control modes action Back or Cancel key: for System status ´c` cancelling an action or Parameters returning to the previous menu Software

#### III – Maintenance

• The pH and ORP sensors must be calibrated at least at the beginning of each swimming season (follow the instructions in the Maintenance/Calibration menu).

- The Santoprene tubes of the dosing pumps must be replaced in case of wear.
- pH and chlorine injectors must be cleaned or replaced in case of wear.
- For a better regulation please adjust at least once a year:
  - The alkalinity of the water TAC: The value must be between 100 and 200 mg/l. Use the Taylor balance in the Water Treatment/balance pH menu to enter the TAC and TH (water hardness) values and determine the balance pH of the water. This should ideally be between 7.2 and 7.4 (7.6 if bromine treatment).
  - The stabilizer: The value must be between 15 and 30 mg/l.

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#### 1. Description

You have just purchased your Klereo Kompact/Kompact+ M5 system. It regulates the filtering cycles depending on the water temperature and the pool characteristics (volume in m<sup>3</sup>, power and flow rate of the filter pump). It regulates also the pH and disinfectant

The Kompact M5 kit is composed of a pH regulation. For disinfectant you can choose liquid chlorine, bromine , or active oxygen .

Kompact+ M5 includes the electrical box and light transformer.

Klereo Kompact M5 allows remote control of 2 more outputs: pool lighting, cleaning robot, spa, counter current system, garden lighting, fountain, and other pool auxiliary.

The default set-up of Kompact is as follows:

- Filtering regulation
- pH regulation
- Disinfectant regulation
- Lighting
- An auxiliary function (Aux A): cleaning robot, spa, counter current system, garden lighting, fountain, and so on.

This set-up is adjustable. According to your wish, you can modify the following functions:

- Lighting can be replaced by a second auxiliary function (Aux B) or a dosing pump to add flocculant
- Auxiliary A can be replaced by the heating function (please refer to installation notice)

To modify functions, refer to the installation manual

#### 2. Klereo Interface



*Figure 1. Klereo Kompact/Kompact + M5 display and navigation buttons* 

The ON and fault indicator LED is:

- Steady green when the Kompact control box unit is power supplied and when filtering, pH and disinfectant regulation is possible.
- Flashing green when the Kompact control box unit is power supplied and there is a fault. Refer to the menu « message » to know the fault.

The filtration indicator light is :

- Steady green when the filtering is permanently on (manual ON)
- Flashing green when the filtering is on for a cycle (regulated / time slots or external command)
- Flashing red when filtering is not possible because of a security or a fault.
- OFF when filtering is stopped.

#### Navigation :

KEY	Definition		
••••	Screen selection key: a display on the lower part of the LCD screen defines the function of these keys. The functions vary according to the menu shown.		
	Browse key: for browsing and sometimes for changing values displayed.		
ОК	Confirm key: for accessing a sub-menu or confirming an action.		
С	) Back or Cancel key: for cancelling an action or returning to the previous menu		

The browse key



Quick access to the « system status »

When pressing the browse key on the right, you will get a screen with the Klereo system status. It will provide a summary of filtering, heating and water treatment (pH + disinfectant) settings.

#### The switch:

The switch located on the right side of your klereo kompact + allows you to control the filtration. It must be in the " auto " position so that klereo can control the filtration according to the mode you have programmed (regulated mode, ranges...).

The "forcé" and "Arrêt" positions can be used to force ON or OFF filtration respectively. These functions then take over whatever the filtration mode and the priorities/safety mode configured.

Figure 2. "Filtration" Switch



Forcé

#### 3. HOME SCREEN

Once the display is switched ON, It displays the following home screen:



- 1. Date and time. Alternately with messages if any.
- 2. Water pH and temperature values
- 3. filtration area
- 4. Programmed mode and filtration status
- 5. Access to the Klereo menu
- 6. Manual start or stop of the filtration (maintenance mode)

An alternative home display is available. To use it just go to :

Klereo Configuration Interface	Home screen	Simple filtration
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The other display mode of the home screen is as follows:





- 1. Date and time. Alternately with "messages" if any.
- 2. pH and water temperature values
- 3. Display area for status functions\*.
- 4. Function symbols\*
- 5. Programmed modes and status of functions\*
- 6. Shortcut to selected function\*

\*equipment connected to Klereo Kompact control box (lighting, Filtering, heating if installed auxiliary

Navigation :

Touche	Désignation
	Klereo menu access key
<ul> <li>Shortcut key for direct access to the programming menu of the function</li> </ul>	
	Browse key: selecting lighting, filtering, heating (if installed) or Auxiliary.
ОК	For accessing a sub-menu or confirming an action
С	No function on this screen

The values of the pH, air and water temperature sensors flash when filtering is stopped. Their display is steady when filtering is running for at least 10 min. Wait for 30 to 90 min with ORP.

#### 4. Main Menu

Press screen selection key (\_\_\_) to access main menu, use the browse key to select the required sub-menu and press OK to enter.

The main menu is used to access the pool functions and other sub-menus:

- **Messages:** to read the pool alerts.
- Sensor value: list of sensors value
- Filtering, Lighting, Heating, Auxiliary: to parameter the different pool equipments.
- **Maintenance:** to indicate the different elements consumptions.
- **Pool regulation Modes**: to select between "comfort" and "eco" mode
- **System Status**: shows the operational status of the Klereo system
- Parameters: to access system parameters
- Software: to know the installed software version and do the updating.

Klereo	Messages
	Sensors
	Filtration
	Heating (if installed)
	Lighting
	Auxiliary A
	Consumption
	Control modes
	System status
	Parameters
	Software



In case of message, the symbol « MESSAGES » flashes on the top right end of the display alternately with the date and time. A sub-menu « messages » is then added in the main menu listing.

#### 5. Sensor values

To view the measured values of the sensors, go to the menu :

Klereo Sensors

Values are transmitted by the Kompact control box unit

The pH and ORP values shown are only used for regulation after a filtration period of 10 min (pH) and 30 to 90 min (ORP).

#### 6. Programming of Filtration, Lighting and Auxiliaries

You can access these functions by going through the main menu or using the shortcut selection key on the home screen.

Function	Programming mode	Operating mode
	Regulated	Filtration Regulated according to water temperature
Filtering	Time slots	Operation programmed in time slots
	Manual	Always ON or OFF
	Force Filt.	Filtering is ON when lighting is ON
Lighting	Timer	Automatically turned OFF at the end of the setup time.
Lighting	Time slots	Operation programmed in time slots
	Manual	Always ON or OFF
	Force Filt.	Filtration is switched ON when the auxiliary is switched ON.
Auxiliary	Timer Frequency Aux A	Automatic shutdown at the end of the programmed time period In the case of Aux A, it is possible to set a recurring timer trip.
	Time slots	Operation programmed in time slots
	Manual	Always ON or OFF
	Filtering Sync	Auxiliary is ON when filtering is ON.

#### 6.1 Available programming modes

**The option: Force filtration,** is available for the lighting and auxiliary functions. It enables filtering to be started up at the same time as the operating periods defined for lighting and/or auxiliary systems outside the filtering periods calculated or planned for treatment. Essential when using a booster pump for a cleaning robot. The auxiliaries can also be operated at the same time as the filtration by selecting the "filtration synchronization" mode.

If another auxiliary (B, 1 or 2) is set up, a corresponding menu will appear with the same available programming modes as for auxiliary A.







Figure 4. Programming screen

Browse:

Key	Definition		
-	<b>On</b> in manual mode (On/Color for lighting) and <b>On/Off</b> in timer mode		
For confirming the change of programming mode and performing the fol actions: <b>Stop</b> in manual mode, <b>Modify</b> in timer or time slots mode and l regulated mode			
	Browse key to select the programming mode.		
ОК	For accessing a sub-menu or confirming an action		
С	Cancel or return to previous menu		

#### 6.2 Manual mode

The manual mode is for setting the function ON or OFF.

If filtering is on OFF manual mode, Klereo system will not regulate water treatment and heating. A message «filt. manual off» will appear on the display.

#### 6.3 Regulated mode (filtering)

This mode allows the regulation of the filtration according to the water temperature.



Figure 5. Filtering programming screens in regulated mode

By pressing the display selection key (--) under "info" you can view the calculated filter range for the day. To get this information, the filtration must have been running for at least 10 minutes.

By pressing the screen selection button (-) under "advanced" you can access the settings for two advanced functions:

**Daily max**: this function allows you setting up the number of maximum daily hours that you want filtering to be ON. Set up by 15 min time slot, minimum 8h, maximum 24 h.

**Prohibited filtering time**: this function allows you setting up one or more time slots during which you do not wish filtering to be ON. Time slots are adjustable by 15 minutes slot.

For example: you can forbid the filtration from 2pm to 3pm, the time to take a nap by the pool without being **disturbed by the noise of the filtration**.

#### 6.4 Time slots mode

With this mode you can decide the filtering time slots that you wish to program.

For filtering, lighting and the auxiliaries you can define time slots with a 15 min minimum duration time. For filtering, time slots must be at minimum 2 hours in a row. Indeed, to guarantee a good treatment regulation (pH and disinfectant), filtering programming must include 2 consecutive hours minimum time slots.



Figure 6. Time slots mode adjustment screen

Browse:

Key	Definition
	<ul> <li>A Change of status: On / Off</li> <li></li></ul>
	♦ Change of time slot. Time slot is adjustable with 15min.time step*
ОК	confirm
С	Cancel or return to previous menu

\*Programming time is indicated above the programming slots bar.

#### 6.5 Maintenance Mode

When the home screen is displayed and the button (-) is pressed, the filter enters the maintenance mode on or forced off (mode used for washing the filter for example). To return to the programmed filtration mode, access the filtration menu or press and hold the button (-) for 5s.

In this operating mode the flow safety is suspended for 10 minutes.

#### 6.6 Timer Mode

With this mode, lighting and auxiliaries will automatically turn off at the end of the programmed time. This mode works with lighting and auxiliaries. You can adjust the timer with1 minute time slot, the minimum duration being 2 minutes with a maximum of 4 hours.



#### *Figure 7. Timer mode adjustment screen*

Browse:

Key Definition		
	For changing duration time	
ОК	Confirm	
С	Cancel or return to previous menu	

The timer mode of the auxiliary outputs can be programmed with a recurrence of every hour, every 2 hours, daily, 2 times a week (every Wednesday and Sunday), weekly (every Sunday), 2 times a month (every 1st and 15th of the month) or monthly (every 1st of the month).

When the timer mode is checked, you must exit the menu and re-enter to select Frequency line then Settings



*Figure 8. Recurrence programming screens* 

#### NOTE :

KLEREO central units are compatible with Klereo Valve backwash systems which operate with filtration ON.

Klereo valve is 230V power supplied via an available auxiliary output.

In the corresponding auxiliary menu, you select the "timer" mode which we recommend setting to 2 to 4 minutes (minimum duration).

You can then manually trigger the backwash after cheking that there is enough water in the pool to carry out the operation.

<u>If you have an automatic leveling water feedersystem for your pool,</u> you can program backwashes by selecting the "frequency" sub-menu in the corresponding auxiliary menu. You then choose the recurrence. We recommend "monthly", or even 2 times a month in case of high use of the pool.

#### 6.7 Synchronized mode

With this mode, lighting or an auxiliary will work at the same time as filtering does. The auxiliary output will be activated 10s after filtering starts.

#### 6.8 Filtering tracking:

This function will start filtering in order to control water parameters (temperature, pH and ORP) and activate heating and/or water treatment if necessary (for example during the night).

You need to set the recurrence of filtering start (from 1 to 12 hours –default value is every 4hours) in order to control water temperature and/or water quality.

Filtering will start for 10 to 15 min. If water temperature or water parameters are below the target values, filtering will carry on and heating and/or water treatment will start as well.

**Make sure that heating and/or water treatment priority have been selected** (refer to : Configuration of priorities and safety devices in the installation manual)



When filtering tracking is selected, this function has the priority over all the other filtering modes (regulated, time slots, manual) including manual OFF.

#### 7. Heating

The heating menu is displayed when a heating system is installed. If this is not the case, refer to the installation manual: Output assignment,: to set up P-Q ouput in heating mode.

You can access the heating menu by going through either the main menu or the shortcut selection key on the home screen:

Klereo Heating

#### 7.1 Heating target value adjustment

Go to the menu :



The heating can be programmed in OFF mode or in AUTO(self-regulated) mode. In self-regulated mode, enter the desired temperature target value and the heating system will stay ON until the water reaches the temperature target value. Heating regulation is not possible when filtering is OFF

If there is no heating system, set the heating on 'OFF' position.



*Figure 9. Heating target value setting screen* 

Browse:

Key Definition	
()	Typical value: matches the default value set in the factory
- Auto/Off: to stop heating or set heating in self-regulated mode	
	Change of target value
OK	Confirm
С	Cancel or return to previous menu

#### 7.2 Prohibit heating

Klereo	Heating	Prevent heating
--------	---------	-----------------

This function allows you setting up one or more time slots during which you do not wish heating to be ON. For example, this allows you to stop the operation of a heat pump from 2pm to 3pm while you take a nap near the pool.

	Set the time slots
	Prevent Heating
US TO	AGE FOR 24H:D4K45 HE-Status:19k15-Forbidden
01	ب <b>+</b>
	0 6 12 18 24

Figure 10. Prohibit heating setting up

#### 8.Consumption

This menu displays the pH and disinfectant consumptions as well as filtering, heating, lighting and auxiliaries outputs operating times according to set up equipment. Press any selection key to access to the list of parameters.

Klereo Maintenance Consumption

#### 9.Clear messages

This menu allow to delete displayed messages.

Klereo Maintenance	Clear messages
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#### 10. Maintenance

Check regularly the pool water level as well as water chemical parameters using a chemical analysis test kit.

Use regularly the cleaning robot or brush the pool walls.

Before conducting any operation on Klereo Kompact control box unit, turn off the power supply.

#### 1.1 Changing water treatment product feeder

When you see an empty tank message, it means that you must replace the corresponding water treatment product feeder. Change the tank, using adapted protective wear (gloves, glasses, closed shoes...) in order to avoid chemicals projections on the skin:

#### 9.2 Wintering

When wintering the pool, we advise to store pH and ORP probes as follows:

- remove the probe from the probe holder
- rinse the probe with tap water
- fill the protective cap with tap water
- put back the probe head into the protective cap
- or let the probes heads into a glass of tap water checking regularly that the heads are always into water.

#### IMPORTANT

The pH and ORP probe heads must never remain dry but should be stored in tap water. Do not use distilled water.

Regularly check that the probe heads are well immersed.

WARNING: If your technical room is outside (in the garden...) and the temperature of the water or air falls below 0°C, it is essential to winterize the probes (pH and ORP probes) as well as the pressure sensor in order to avoid any deterioration in the event of frost.

Use the plugs (supplied in the kit depending on the model or available as an option) and install them on sensors connectors.

Store them in a room temperate.

In this case, remember to deactivate the pH and disinfectant regulation and disactivate the pressure sensor.

#### 9.3 Swimming pool Re-opening

At the start of every season, we advise to proceed as follows:

- Measure the water chemical parameters (TAC, TH, pH, Chlorine and stabilizer) and modify pH and ORP target values if necessary.
- Check the pH and ORP probes head
- Calibrate the pH probe;.

- check of the O.R.P. probe;.
- Check the dosing pumps santoprene tubes (to be changed every year)
- Check pH and Chlorine suction and feed tubes of the peristaltic pumps and remove any impurities or crystalized chlorine .
- Check the pH and ORP target values.

#### 10. CONTROL Modes

Klereo	Control modes
--------	---------------

With this menu, you can choose between the comfort and the eco mode:

- **Comfort mode** will always care of water quality. Indeed, when filtering time is coming to the end of its daily cycle, it will continue if one of the 2 parameters (pH and disinfectant) has not reached its target value. Filtering will stop when the target value is reached. This control mode is ideal during the season to guarantee the best water quality. Filtering will also continue till target heating temperature is achieved.
- Eco mode for energy savings. When filtering time is coming to the end of its daily cycle, filtering will stop even though one of the 3 parameters (temperature, pH and disinfectant) has not reached its target value. Regulation will restart the following day after the new filtering cycle has been initiated. This control mode can be used at the beginning and at the end of the season.

#### 11. System Status

Klereo System Status

This menu provides information on the states of the inputs and outputs.

#### Shortcut: the browse key

Quick access to the "system status" report

When pressing the arrow on the right, you will get a screen with the Klereo system status. It will provide a summary of filtering, heating and water treatment (pH + disinfectant) settings.

#### 12 .PARAMETRES

Some functions are not detailed into this manual but are available for consultation inside the installation manual as they have to be set up during installation: sensors set-up, equipments set-up, inputs set-up and installation tests.

We present and explain below the sub-menus that might be useful to you using your klereo kompact/Kompact+ during the season or when putting it back into service.

#### The interface

The **« Interface »** menu is used to set date and time, select language and adjust brightness and contrast on the screen. The date and time are set in the factory. This information should be modified when time periods are changed (summer-winter time).

Klereo	Parameters	Interface	Adjust the date
			Adjust the time
			Language
			Display settings

Contrast

Browse:

Key	Definition
	Typical value in the backlight and contrast menu: matches the default value set in the factory
	<ul> <li>A change of values</li> <li>⊲ &gt; selecting active field</li> </ul>
ОК	For accessing a sub-menu or confirming an action
С	Cancel or return to previous menu

#### 13. SOFTWARE

This menu indicates your Klereo software version and enables to decide if you need an updating or not.

#### 14. Activation of the klereo connection

Refer to the Klereo Connect manual.

#### **15. PROBLEMS SOLVING**

The following table shows the list of possible messages, their definition and how to resolve it.

For some messages, we have not detailed all possibilities but indicated a crossreference number to additional tables at the end.

<u>Example:</u> «Sensor broken», the message will also tell you which sensor is broken. For instance, « pH sensor broken » meaning that the pH probe is defective: you should check the probe wiring connexion or calibration. If it still does not work after checking, change the probe. Proceed the same way when the message is « ORP sensor broken », « water temp. sensor broken », …

MESSAGES	DEFINITION	RESOLUTIONS
Sensor broken +"sensor designation (3)	The sensor is defective	Check the probe wiring connection / calibration. If negative, change the probe.
Invert pH/ORP	pH and ORP probes are inverted	Invert the probes
Low battery + " Device name (1)"	The battery needs to be changed.	Change the batteries without delay
Minimum +" sensor designation (3))	The value measured by the probe is below the minimum set level.	Check the treatment product injections <b>or</b> Check the set values and modify them if necessary
Maximum +" sensor designation (3)	The value measured by the probe is above the maximum set level	Check the treatment product injections <b>or</b> Check the set values and modify them if necessary
Not transmitted +" sensor designation (3)	The probe has not transmitted for over 1 hour	Check the probe wiring connection / calibration. If negative, change the probe.
Calibration/checking +" sensor designation (3)	The probe is not calibrated or must be re-calibrated	Make calibration (installation mode)

"flow water analysis"	No water flow in the chamber of analysis	Check the flow switch and its set-up
Pool cover set-up	The pool cover set-up is wrong	Check the set-up
Water flow problem	The water flow is incorrect	Check the flow switch wiring connection Check the flow switch operation in the menu: Klereo/ Parameters/ Tests-Install. / Inputs status (installation mode)
Insuf. filt. T.Slots	Minimum of 2 hours is necessary	Set up again the filtering time slot
pH>8 Ineff.disinfect	Disinfectant is inefficient as long as pH is that high	Check pH probe, the water treatment regulations and the injector valve condition.
Uncontrolled filtration	Kompact + does not control filtration. Filtration is forced or prohibited by an external device. → Terminal 1-2 -3-4 → Side push button (switch)	
Low filter pump flow	Filter pump undersized compared to the pool volume	Change the filtration pump
Regul. stopped	pH or disinfectant regulation has been stopped manually	Set up again pH and disinfectant treatments in regulated mode (installation mode)

Filt Manu. Off	Filtering is in manual mode « OFF »	Select with OK « regulated» or « time slots » or « manual» mode
Boost treatment	Filtering is forced for 24H	Filtration must be « ON »
Day limit injection + " Treatment probe designation (2)"	Daily maximum quantity has been injected	Check probes, pool volume Chemicals injections.
Bromine Problem	The ORP value does not increase	Check if there are tablets in the brominator and the valve operation in the menu: Klereo / Parameters / Tests-Install. / Regulation tests (installation mode)
Sensor set-up problem	Selected sensors do not match the selected water treatment	Check the selected treatment mode
Link problem + "Equipment name (1)"	The Klereo treatment (1) is not matched with the Kompact	For matching go to menu: Klereo / Parameters / Set-up / Radio match
Sensor. ORP Very low	O.R.P. less than 50mv or more than 2200 mV	Check probe connection/calibration/change probe

Air temperature sensor

Treatment probe designation (2)	
рН	
ORP	

Sensor designation (3)	
ORP Kompact	
Water Kompact	
pH Kompact	
Pool cover	
Treat . tank	
pH tank	

#### **16. SECURITY INSTRUCTIONS**



The Klereo Kompact electrical installation must be made by the approriate sate of the art professional respecting the local electrical standards.



Before conducting any operation on Klereo Kompact control box unit, turn off the power supply.



The water treatment products must not be placed directly on the floor. Install them on a waterproof rack. By using a drip tub to put each tank in, you avoid mixing chemical products in case of leaks. When handling chemical products, use protective wear: gloves and glasses.

It is also important to work in a sufficiently ventilated room to avoid fumes built-up.



Avoid any contact between liquid Chlorine, Bromine and pH- or pH+. Mixing the water treatment products is extremely dangerous. Klereo disclaim all responsibility.

#### 17. BATTERIES AND ELECTRONIC EQUIPMENTS DISPOSAL

#### **IMPORTANT**:



This equipment carries the 'waste separation' symbol for electric and electronic equipments recycling purposes. It means that this equipment must be taken care by a waste collecting system according to the 2002/96/CE EEC guideline in order to be either recycled or dismantled to eliminate any environmental damage. For more information, please contact your local governing administration.



Electronic products not going through a waste separation process are potentially dangerous to the environment and human health because of potential harmful substances.



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