

Programming instructions



Reference : EVA0000

Parts of the general documentation

- Part 1 : Installation and starting instructions
- ▶ Part 2 : Programming instructions
 - Part 3 : Programming communication instructions

General information:

SYCLOPE Electronique 2014[®] Notice of the 07/05/2014 Rev 4

Professional Analyzers/Controllers for public swimming pools. **Product line EVASION**[®]

Part 2 : Programming instructions (Ref : DOC0172)

Editor :



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I. Use of the document

Please read this entire document before starting to install, adjust or commission your controller device, in order to ensure the safety of swimmers, users and equipment.

The information provided in this document must be strictly observed. SYCLOPE Electronique S.A.S. declines all responsibility in cases where failure to comply with the instructions of this documents is observed.

The following symbols and pictograms will be used to facilitate reading and understanding of these instructions.

- Information
- Action to be taken
- Item of a list or catalogue
 - 1) Symbols and signs
- **Identification of a continue voltage or current**
- ✓ Identification of an alternative voltage or current



Protective ground



Functional ground

Risk of injury or accident. Identify a warning concerning a potentially dangerous risk. Documentation must be consulted by the user with each time the symbol is notified. If the instructions are not respected, that presents a risk of death, physical injuries or property damages.



Electric hazard. Identify a warning statement relative to a mortal electric danger. If the instructions are not strictly respected, that implies an inevitable risk of physical injuries or death.



Risk of incorrect operation or damage for the device.



Comment or particular information.



Recyclable element

2) <u>FCC conformity</u>

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) this device must accept any interference received including interference that may cause undesired operation.

Instructions to Users: This equipment complies with the requirements of FCC (Federal Communication Commission) equipment provided that the following conditions are met.



This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate receiving antenna,
- Increase the separation between the device and receiver,
- Connect the device into an outlet on a circuit different from that to which the receiver is connected,
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Remark : In order to maintain compliance with the limits of a Class B digital device, use a recommended shielded cable when connected to this device as describe in the present notice. Using a bad cable or a cable not connected to the ground voids the user's authority, which is granted by the Federal Communications Commission, to operate this equipment.

II. Safety and environmental instructions

Please :

- Read conscientiously the present notice before unpacking, installing and servicing the present controller.
- > Take care of all risks and servicing before any use.

No respect of these instructions can cause damages to the users, the technical personal and the integrity of the controller.

1) Use of the controller

The **SYCLOPE EVASION**[®] system has been designed to measure and regulate temperature, pH, Redox potential, chlorine (or bromine), Ozone, PHMB, flow, Turbidity and Conductivity by means of sensors and controls of suitable actuators in the context of the possible uses described in this manual.



All other uses are considered to be not conforming and must therefore be forbidden. SYCLOPE Electronique S.A.S. will not be responsible in any case for any damages that result from such uses.

Any use of sensors or interfaces not in conformity to the features defined in this manual must also be proscribed.

2) User obligations

The user undertakes not to allow its employees to work with the **SYCLOPE EVASION**[®] equipment described in this manual unless they:

- > Are aware of the fundamental instructions relating to work safety and prevention of accidents
- > Are trained in the use of the device and its environment
- > Have read and understood these instructions, warnings and manipulation rules.
 - 3) <u>Risk prevention</u>



The installation and connection of the **SYCLOPE EVASION**[®] equipment should only be performed by personnel specialized and qualified for this task. The installation must comply with current safety standards and instructions!



Before switching the controller on or manipulating the relay outputs, remember always to cut off the primary power supply!

Never open the controller when it is powered on!

Maintenance operations and repairs should only be performed by trained, specialized personnel!



Take care when choosing the location for installing the equipment according to the environment!

The **SYCLOPE EVASION**[®] electronic box should not be installed in a hazardous environment and should be protected against splashing with water or chemical products. It should be installed in a dry, well-ventilated location, isolated



Except for the relay outputs, all connections inputs/outputs must be connected to very low safety voltages. In general, these voltages are provided by the controller and does not exceed 15V continuous.



Make sure that the chemical sensors used with this device correspond well to the chemicals used. Refer to the individual technical note of each sensor. Chemistry of water is very complex, in case of doubt, contact immediately our engineering service or your approved installer/reseller.



Chemical sensors are sensitive elements using consumable parts. They must be supervised, maintained and calibrated regularly using specific calibrator systems not-provided with this equipment. In the event of defect, a surplus possible hazard of chemical injections can be noted. In the doubt, a service contract must be taken near your reseller/installer or failing this near our engineering services. Contact your approved installer/reseller or our business service for more information.

4) Labelling and localization of the identification plate



1 Label of the manufacturer	9 Particular risks. Read the notice
2 Model of the product	10 Product which can be recycled
3 Reference of the product	(11) Limitation of dangerous substances
4 Range of power supply	(12) EC compliance
5 Values of the maximum current	(13) Country of the manufacturer
6 Class of protection	(14) Manufacturer square code
Identification of the manufacturer	(15) Conformity with the FCC part 15 Class B
8 Serial number	



5) Disposal and conformity

The recyclable packaging of the **SYCLOPE EVASION**[®] equipment must be disposed of according to current regulations.



Elements such as paper, cardboard, plastic or any other recyclable elements must be taken to a suitable sorting centre



According to European directive 2002/96/EC, this symbol means that as of 12 August 2005 electrical appliances cannot be thrown out together with household or industrial waste. According to current regulations, consumers within the European Union are required, as of this date, to return their used devices to the manufacturer, who will take care of disposing them at no extra expense.

Collecting and recycling of the internal batteries: According to the European directive 2006/66/CE, this symbol indicate that until September, 26th 2006, used batteries, accumulators and waste materials using dangerous heavy metals as lead (pb), cadmium(Cd) or mercury (Hg) must be collected separately by the manufacturer or by an accredited agency.

RoHS COMPLIANT

According to European directive 2002/95/EC, this symbol means that the **SYCLOPE EVASION**[®] controller is designed in compliance with the restrictions on hazardous substances

According to low-voltage directive (2006/95/EC) and the electromagnetic compatibility directive (2004/108/EC), this symbol means that the device has been designed in compliance with the previously cited directives



In accordance with part 15 of the FCC regulation (Federal communications commission), this symbol indicates that the device was tested and approved under the respect and the conditions of the limits for a Class B digital.

III. Recall to the human-machine interface of the SYCLOPE EVASION®

1) Display and control keypad 2 1 STOP Calib 1) Backlight 240x128 display with white writing on blue backplane 2 Infrared receptor (IRC) for remote control unit Menu button : provides access to the programming menu (yellow LED) Meni Calibration button: enables the sensors to be directly calibrated)≁ Calib. <u>STOP</u> STOP/START button: switches the regulators off (red LED) TART <u>STOP</u> STOP/START button: switches the regulators on (green LED) Clear button: deletes the settings or moves back in the programming menus Enter button: confirms the settings or moves forward in the programming menus Up and down buttons: can be used to scroll through the menus and increase or reduce a value.



- 1 General protection fuse (glass 5x20 315 mA time-lag fuse) 2 3 4 5 6 7 Connection terminal blocks (see diagram at the bottom of the page) Modem connector
- Location for modem socket (optional)
 - Printer connector
 - 12V Battery
 - Terminal and wiring for the battery (+ : Red wire ; : Black wire)

3) <u>Connection terminal boards</u>



IV. Structure and index of the menus

1) Structure of the menus

The **SYCLOPE EVASION**[®] controller uses 3 levels of menu with possibilities to protect by an access code each level against modifications. From the very simple level to the high technology level, the controller gives a gradually access to the fundamentals functions with the respect of safety for the chemical treatments and for the users.

- > User Menu : Simple access to calibrations and a standard use.
- > Technician Menu : Technical menu for setting points, alarms, ... and technical use.
- > Specialist Menu : High level to configure the system and to modify his structure.

Level	Function	Page
User	Technician menu access Select language Setting real time clock Interface management Printing management Maintenance (After activation in the specialist menu) Version of the internal software (Activated with the maintenance)	15 15 16 17 19 -
Technician	Specialist menu access Technician code Working timers Sensors calibration Setting points Technical alarms Analogue outputs Recording management	22 22 23 24 25 26 27 27 27
Specialist	Specialist code Analogue inputs definition Chemical computations Numerical inputs Conditioned functions Relays definition Analogue outputs definition Displaying parameters Communications Initializations Maintenance	29 30 31 32 33 35 37 38 40 44 44

2) Tree structure and index of programming

V. Display modes and types

The $\ensuremath{\texttt{SYCLOPE EVASION}}\xspace^{\ensuremath{\texttt{e}}\xspace}$ controller offers you any possibilities to display data according to your needs.

> Display modes and types



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> Horizontal type : Standard display

	10H49 @ © T1 T2	Page	[≜ Up ↓ Down]]
	E01:Temp. =	> 21.9 ° c	>•<: 0.0°C]
	E02:pH =	> 7.49 рн	>•<: 0.00 pH	
	E03:Free C1. =	> <u>1.24 ppm</u>	>•<: 0.00 ppm	
Entry number				Setting point
Parameter type				Measurement
If you want to disp mode press on	and on	parameter	rs in simple n	node or 5 parameters in multi-pool
 <i>Mosaic type</i> To access at this mode, press 	ss on	key from	the "Horizon	tal" mode.
Parameter type	10H49 @ Temp. 21.9 °c 11 #:0.0 E02	Раде 9 рн #:7.40 Е02	ppm #:7.40 € [1 Up ↓ Down]	
Entry number			Settin	g point
			Μραςιι	rement
If you have more t scroll over more pa	han 12 paramet arameters.	ers, press o	on provide the second sec	key and on keys to
Vertical 3 parame	eters mode			
To access at this mode, pres	ss on	key from	the "Mosaic"	mode.
Parameter type			Free (]	7
Massurement	21.9	7.49	2.20	
Statut of regulation	>•<: 0.0 >	•<: 7.40	>•<: 1.50	Setting point
	T: OFF ↓: OFF	: 7.90 : <u>6.80</u>	T: OFF T: OFF T: OFF	
<u>Al</u>	arm thresholds			
If you have more scrolling and press	the 3 parameter on	rs program eys to shifi	med, press of the display	on key to validate the of the others parameters.



Press again the press again th

1) Symbols and statutes of working

> Icons of the statutes bar

- @ \rightarrow Internet communication line activated.
- \bigcirc \rightarrow Active timer status. The controller is in « Pause » mode.

T $_1$ \rightarrow CAD 1 status. The selected conditioned parameters are in « Pause » mode.

T2 \rightarrow CAD 2 status. The selected conditioned parameters are in « Pause » mode.

> Statutes of an analogue parameter channel



> Statutes of an analog level channel (Flow detection)



> Statutes of a measuring flow chanel





The two CAD inputs can be set in measuring flow channel. The "setting point" value is considered as the "On/Off" CAD threshold. The others channels conditioned to these CAD inputs will follow the Start/Pause statue regarding the flow level

VI. User menu

To enter in the user menu, press the

key. Now you have access to the user menu.

1) <u>Technician menu access</u>

This function allows you to access to the technician menu...



4) Interface management

a) Contrast / Light



c) Beep keypad

This function allows you to have a sound when pressing the key.





Beep keypad ...: Inactive



Beep keypad ...: active



5) Printing management

This menu allows you to select the printed parameters, the interval of printing and to read the histories.

a) Timing of printing (interval)

This function allows you to choose the interval of printing with selected parameters.



b) Selecting printed parameters

This function allows you to choose the printed parameters with chronology.



► Do the same procedure for other parameters.

c) Histories

This function allows you to read the data recordings of the internal memories and to send them to the printer port or to a PC. The report will be written in a specific form.



6) <u>Maintenance of the controller</u>

This function allows you to control and to test the good working of the controller interfaces. When activated, it is possible to test relays, to generate an analogue signal or to test the infrared port for example.



It is strongly recommended to use this function when starting the controller to ensure all systems work normally. Do not let this function programmed! Remove it when tests are done.



Be careful! These utilities can drive the relays or analogue outputs. Ensure that no chemical product will be injected during these tests.



After using maintenance functions, all the manipulations done will be cancelled and reinitiated by the controller.



The maintenance function is displayed and authorized only after his activation in the specialist menu. When it is activated, you will appear the internal software version.



► Verify that all LEDs lit successfully.

b) Relays test



Activation or inactivation of the relays will start or stop the dosing systems. Take all disposition to prevent any risk of damage.



Impulse signal function cannot be simulated. Only, one impulse could be generated by the selected relay.



The 3 ways valves will be activated as opened or closed function. After the test, a complete initialization procedure will be engaged by the controller to reset the actuator in the normal stop position.



(In this example, the relays 1, 2, 4 and 6 are activated and the relays 3 and 5 are stopped).

Case when relay external modules are in use :

If only one module is activated... MENU UTILISATEUR TESTS DU SYSTEM Voyants Test des relais Relais Relais int... : 12-4-6 Sorties analogiques Relais ext. 1 : -23-5-78 Infrarouge Imprimante Modem Use the keys and for testing corresponding relay.

(In this example, the internal relays 1, 2, 4 and 6 are activated... the external relays 2, 3, 5, 7 and 8 are also activated and the other ones are not activated.)

▶ If all external modules are activated...





(In this example, the internal relays 1, 2, 4 and 6 are activated... the external relays 2, 3, 5, 7 and 8 of the first module are activated.... the external relays 1, 3, and 8 of the second module are also activated and the other ones are not activated).

c) Analogue outputs



The activation of an analogical output can engage a dosing actuator or can generate an analogical signal to a PLC or to a local recording system. Take all dispositions to prevent risks during testing!



After the test, all analogical outputs will be reset into the initial programmed type. (That means "0mA" for the 0...20mA outputs, "4mA" for the 4...20mA outputs and "20mA" for the others!



► Verify the analogue output with a measuring equipment.

Case when analogical external modules are activated:

► If only one module is activated...



- Adjust an analogical value by using
- ► Verify the analogue output with a measuring equipment.
- ▶ If all external modules are activated...



and validate by pressing

- Verify the analogue output with a measuring equipment.
- d) Infrared detection

A universal infra-red remote control can be used to control the device without action on the keyboard. The orders generated by the IR remote control must be compatible with the key codes of the keyboard.

The IR remote control can be checked into the "Infra-red" menu. The common codes to be generated are:

- Enter key : Code 16
- > 🦻 Clear key : Code 17
- The second se
- > 📣 Down key : Code 33
- > Image: Menu key : Code 13
- Start/Stop key : Code 12
- > 🔶 Calibration key : Code 62



USER MENU Technician menu access Select language Setting real time clock Interface management Printing management Controller maintenance Software :2.46a - Sn:144800010



USER MENU Technician menu access Select language Setting real time clock Interface management Printing management Controller maintenance Software :2.46a - Sn:144800010

Example of universal remote control





	USER MENU TESTS OF THE DEVICE		Test in progress
Enter	Light effect diodes Relays Analogical outputs Therayad concor	Char Enter	Modem OK !
	Printer > Modem		Fault Modem !

► Verify you have a correct communication with the internal modem.

If the Modem is recognized, the following messages appear according the type of modem:

f).1 Case of phone line Modem

The phone line modem doesn't give more information

f).2 Case of the GSM Modem

As soon as the GSM modem activated and recognized, following informations appear:

If the GSM modem doesn't connect the network...



GSM Modem PIN code: Network status:	test Error Error
Niveau signal :	Error

▶ If the modem is connected to the network ...

GSM Modem test PIN code: In progress Network status: In progress Signal level .: In progress	



f).3 Cas of the GPRS Modem

As soon as the GPRS modem activated and recognized, following informations appear:

▶ If the GPRS modem doesn't connect the network...

GSM Modem test PIN code: In progress Network status: In progress Signal level .: In progress	GSM Modem test PIN code: Error Network status: Error Signal level .: Error

▶ If the modem is connected to the network ...

GSM Modem	test
PIN code:	OK
Network status:	OK
Signal level .:	OK

f).4 Case of the Ethernet Modem

As soon as the Ethernet modem activated and recognized, following informations appear:

If the Ethernet modem cannot connect the network...



If the modem is connected to the network ...



f).5 Case of the Wifi Modem

As soon as the Ethernet modem activated and recognized, following informations appear:

If the Ethernet modem cannot connect the network...

WIFI Modem test	WIFI Modem test
Status: In progress	Status: INITIALIZING
IP In progress	IP Error
Signal level .: In progress	Level signal .: Error
) [

If the modem is connected to the network ...

WIFI Modem test	
Status: In progress	
Signal level .: In progress	

WIFI Modem test
Status: CONNECTED
IP 192.168.1.3
Signal level .: Bon

VII. Technician menu

This menu allows to modify all the basic configurations authorized to a confirmed technician. These configurations doesn't modify the technical structure of the controller.



The access to the « Technician Menu » doesn't stop the dosing processes!



If the access is protected by an unknown code, please call an agreed reseller!

1) Access to the specialist menu

This function allows you to access to the specialist menu...



2) <u>Technician code</u>

To modify or to delete the code used to protect this menu level.

a) Modify the access code

This procedure allows you to modify the access code.





b) Cancellation of the technician code

This procedure allows you to cancel the technician code and to free the access of this menu.



► Enter the value « 0000 » to cancel or to delete the present code.

3) Working timers

This procedure allows you to define the normal working times of your controller. Out off these working times, the green LED flashes and a clock indicator appear in the main bar to inform the user of the status.

Timer « off » status

		10H49 @ <u>©</u>		Page	[≜ Up ↓ Down])
		E01:Temp.	=>	21.9 °c	>•<: 0.0°C	
		E02:pH	=>	7.49 рн	>•<: 0.00 pH	
		E03:Free Cl.	=>	1.24 ppm	>•<: 0.00 ppm	
Menu	USER MEN > Technician menu a Select language Setting real time Interface manageme Printing manageme	W ccess clock ent nt			TEG > Specialis Technicia Working t Sensors c Setting p Technical Analogue	CNICIAN MENU ot menu access n code :imers :alibration points . alarms outputs
	TECNICIAN M Specialist menu a Technician code > Working timers Sensors calibrati Setting points Technical alarms Analogue outputs	1ENU ccess on				



4) Calibration of the sensors

This procedure allows you to calibrate each sensor. It can perform 3 operations :

- Slope (Gain) : To adjust the slope of the sensor.
- > Zero : To make the zero of the sensor (if necessary)
- > Clearing : To clear the slope and the zero programmed and to return to the factory values.



To calibrate the slope (Gain)



 Select the channel to be calibrated with values (Channel E4 in our example).





Calibration of the slope must not be performed with a value near zero. Proceed to the slope calibration with a highest possible value.

> To make the zero (or pH=7) of the sensor.





To realize a perfect "zero point", ensure you have water without chemical product or a reference value at pH=7 for pH calibration.

To delete calibrations



To ensure the user of the calibration sensors without technician access code, a special key named on the front face of the controller is usable. These accesses to the slope only.

alib.	DIRECT CA Sensors ca E1:Temp. E2:pH E3:Not used E4:Free C1. E5:Level	LIBRATIONS libration E6:Not used E7:Not used E8:Not used E9:Not used E10:Not used			Calibration:(E1) Standard: 28.2°C	
-------	--	---	--	--	--------------------------------------	--

5) Setting points

This procedure allows you to fix the setting points of each regulation processes.







The process is identical for the 8 measured parameters, the 8 computed parameters and for the 2 numerical parameters.

Particular case for the settings points of the flow measurements. In the case of the flow meter, the setting point is a control compensated setting point. It is necessary to set the flow settings corresponding to 0 % and 100 % of the control ratio



TECHNICIAN MENU Setting points > Measured parameters Computed parameters Numerical parameters Flow parameters







6) Technical alarms

This procedure allows you to define the usual technical thresholds of each parameter.

Menu	USER MENU > Technician menu access Select language Setting real time clock Interface management Printing management	Char Entry	TECNICIAN MENU > Specialist menu access Technician code Working timers Sensors calibration Setting points Technical alarms Analogue outputs
	TECNICIAN MENU Specialist menu access Technician code Working timers Sensors calibration Setting points > Technical alarms Analogue outputs	Chart Enter	TECHNICIAN MENU Technical alarms > Measured parameters Computed parameters Numerical parameters Flow parameters
	Technical alarms E1:Temp. E6:Not used E2:pH E7:Not used E3:Not used E8:Not used E4:Free C1. E9:Not used E5:Level E10:Not used		Alarm channel:(E2) Thre. Min.: 6.80pH Thre. Max.: 7.90pH



The process is identical for the 8 measured parameters, the 8 computed parameters and for the 2 numerical parameters.

7) Analogue outputs

This procedure allows you to define the ranges of the analogue outputs.





If the analogue output has been programmed as a « regulation output », the selection of the parameter is not possible.

8) Data recording

The **SYCLOPE EVASION**[®] controller has internal memories used to record measurements, calculated parameters and events. These data are read and sent to a printer or transferred with a PC software.



a) Interval of records

This procedure allows you to define the interval of each recorded parameters.



b) Erasing events

This procedure allows you to clear events in the internal memories.



c) Erasing data

This procedure allows you to clear data in the internal memories.

TECHNICIAN MENU Data recording		
Interval of records Erasing events > Erasing data	Silver Enter	Erasing memories ?
	S	

VIII. Specialist menu

This menu allows to the specialist to modify the complete configurations as:

- > Using new analogue entry or erasing entry
- Realizing computation between parameters
- > Definition of the conditional working of the regulations
- Using the relays
- > Using the analogical outputs
- > Displaying parameters on printer or screen or remote displays
- Define communications types and modes
- > Initialize the controller as a standard configuration or a personal configuration.
- > Maintenance mode of the controller
 - 1) Specialist code

Pour modifier le code Spécialiste existant ou annuler la fonction de blocage par code de ce niveau.

a) Modification du code

Permet de changer le code existant.



a) Cancellation of the specialist code

This procedure allows you to cancel the specialist code and to free the access of this menu.



▶ Enter the value « 0000 » to cancel or to delete the present code.

2) Analogical inputs

This procedure allows you to add or to remove an analogical parameter. (8 programmable)

(E _{Me}	USER MENU > Technician menu access Select language Setting real time clock Interface management Printing management		TECNICIAN MENU > Specialist menu access Technician code Working timers Sensors calibration Setting points Technical alarms Analogue outputs
	SPECIALIST MENU > Specialist code Analogue inputs definition Chemical computations Numerical inputs Conditioned functions Relays definition Analogue outputs definition		SPECIALIST MENU Specialist code > Analog. inputs definition Chemical computations Numerical inputs Conditioned functions Relays definition Analogue outputs definition
	Analog inputs definition E1:Temp. E6:Not used E2:pH E7:Not used E3:Not used E8:Not used E4:Free C1. E9:Not used E5:Level E10:Not used		Use the arrow keys to select the channel and the type of parameter.
	E03:Not used		E03: <mark>Total Cl.</mark> ±:0 à 10ppm
	E03:Total Cl. ⊉:0 to 10ppm		E03:Total Cl. 北:0 to 5ppm
	► Use the key to validate	your selection	
	The entries E1 and E2 are fixed and r E1 => Temperature	not programm Range : -5 à	able. 45°C

E2 => pH

Special entry : Level flow switch :

If you decide to use one analogical entry as a « level flow switch » entry, you must select one of the 3 types of function :

Range : 0 à 14pH

- > (Open) : For a detection with an opened active switch (Normally open)
 - High threshold : 13 mA
 - low threshold : 8 mA
- > (Closed) : For a detection with a closed active switch (Normally closed)
 - High threshold : 8 mA
 - Low threshold : 13 mA
- > (Analog) : For a detection with a special analogical sensor with 4-20 mA output current.
 - High threshold : 13 mA
 - Low threshold : 8 mA

3) Chemical computations

This procedure allows you to define a computation or a calculation between two analogical or computed parameters.

&

&

&

&

&

The possible computations you can execute are :

E11:Active Cl. E02) (E04)

8,

Free Cl.

(E02)

pН

- pH/T°C pН \triangleright
- \geqslant Active chlorine pН
- Free chlorine \triangleright pН
- Chloramines ≻ Total Cl. &
- Active bromine \triangleright pН pН
- \triangleright

Free chlorine Active chlorine Free chlorine Free bromine

Temperature

- Free bromine
- Active bromine
- USER MENU TECNICIAN MENU Technician menu access Specialist menu access Select language Setting real time clock Interface management Technician code Working timers Sensors calibration Meni Setting points Technical alarms Printing management Analogue outputs SPECIALIST MENU SPECIALIST MENU Specialist code Analog. inputs definition Chemical computations Specialist code Analogue inputs definition Chemical computations Numerical inputs Numerical inputs Conditioned functions Conditioned functions Relays definition **Relays definition** Analogue outputs definition Analogue outputs definition Chemical computations E11:Not used E15:Not E12:Not used E16:Not E15:Not used E11:Not Used E16:Not used & Not used Not used E13:Not used E17:Not used E14:Not used E18:Not used E11:Active Cl. E11:Active Cl. Not used & 8, Not used Not used Not used E11:Active Cl. E11:Active Cl. (E02) 8, 8. Not used pH Not used bН



- The computed parameters are numbered after the analogical entries from E11 to E18.
- Don't forget to program the controller for displaying the new parameter on the screen (See chapter VIII § 7).

Chemical computations E11:Active Cl. E15:Not used E12:Not used E16:Not used

E17:Not used

E18:Not used

E13:Not used

E14:Not used

4) Numerical inputs

This function allows you to connect numeric sensors as « cyanuric acid » or turbidity through the RS485 communication port and with the « MODBUS » protocol.

Menu	USER MENU > Technician menu access Select language Setting real time clock Interface management Printing management		TECNICIAN MENU > Specialist menu access Technician code Working timers Sensors calibration Setting points Technical alarms Analogue outputs
	SPECIALIST MENU > Specialist code Analogue inputs definition Chemical computations Numerical inputs Conditioned functions Relays definition Analogue outputs definition	Olesy P	SPECIALIST MENU Specialist code Analog. inputs definition Chemical computations > Numerical inputs Conditioned functions Relays definition Analogue outputs definition
	Numerical inputs E19: <mark>Not used</mark> E20:Not used		E19 => Not used
	E19 => Stab.	Creat Enter	Configuration:(E19) Modbus Adr. : 0 pH Channel : Cl Channel :
	Configuration:(E19) Modbus Adr. : 10 pH Channel : Cl Channel :		Configuration:(E19) Modbus Adr. : 10 pH Channel : Cl Channel :
	Configuration:(E19) Modbus Adr. : 10 pH Channel : E02 Cl Channel :		Configuration:(E19) Modbus Adr. : 10 pH Channel : E02 Cl Channel :
	Configuration:(E19) Modbus Adr. : 10 pH Channel : E02 C1 Channel : E04	Char B	Numerical inputs E19: <mark>Stab.</mark> E20:Not used

- The protocol use the standard MODBUS bus (See. chapter VIII § 9)
- In this example, the additional parameters pH and Chlorine are optional. If they are not sent to the probe, the default values will be taken.



In this configuration, The controller became « Master » on the MODBUS protocol and establishes a communication with the probe. In this case, only one controller must be configured as a "master".



In the case where more controllers were connected together, the controller using the modem must receive the probe.

5) <u>Conditioned functions</u>

This option allows you to select the regulation of parameters were conditioned by each conditional entry. In case of use a "flow switch level" who's condition the pH and chlorine entries, the regulations associated to these parameters will be stopped when no flow is detected.

For the remote switches control CAD1 and CAD2, a little logo appears on the screen according to the switch control fault.

Logo control C		Lo	go contro	ol cae	2	
ſ	101140 0				F A U	•• •
l	10H49 @	T <u>1</u> T <u>2</u>		Page	Ltup	↓ Down]
ĺ	E01:Temp.		=>	21.9 °c	>•<:	0.0°C
	E02:pH		=>	7.49 рн	>•<:	0.00 рн
	E03:Free	C1.	=>	1.24 ppm	>•<:	0.00 ppm
						ļ

a) Remote control configurations

This procedure allows you to program the remote control process :

- > Inactive : Inactive the remote control function
- Closed : Remote control activated when switch on (Normally closed)
- Open : Remote control activated when switch off (Normally opened)
- > Impulse : Remote control driven by a pulsed signal
- Flow (I/h) : input working in flow meter from 0 to 9999 liter/hour
- > Flow (m^3/h) : input working in flow meter from de 0 à 999.9 m³/hour







External control CAD1 :(Flow m3/h) Coef. CAD1 m3/pulse.: 0.0005 Thre. On/Off (m3/h).: 0.0



External control CAD1 :(Flow m3/h) Coef. CAD1 m3/pulse.: 0.0005 Thre. On/Off (m3/h).: 202

• Le "Threshold On/Off" is the flow value which drive the Start/Stop control of the conditioned chanel set for this CAD entry (0 = No On/Off control)

• The "Coef. CAD" is the weight of the pulse. This value is calculated with the K factor of the flow meter cell.

Example : if K = 91.30744 then Coef. = 1/K = 0,0109

b) Water level entries

This procedure allows you to define an analogical entry as a 'water level' function.



c) Conditioned functions (Resume)

This procedure allows you to determine which parameters and their regulations will be conditioned and how.







Use the arrow keys

to select or deselect the conditioning.





In the case the CAD input is set in flow meter mode, the conditioned control is done following the On/Off threshold value set in the CAD configuration part (see VIII-5.a)

6) Definition of the relays

This procedure allows you to define the function of the relay and to select parameters to realize this function.



Impulse type	Direction: ♥ Type:Imp. Mode:P Nb cps/mn .:120 Prop. Band.: 10 Compens:CAD1	Direction.: ↓ Type:Imp. Mode:PI Nb cps/mn .:120 Prop. Band.: 10 Ti (s): 20 Compens:CAD1	Direction: ↓ Type:PID Mode:PID Nb cps/mn .:120 Prop. Band.: 10 Ti (s): 20 Td (s): 5 Compens:CAD1	Direction: ♥ Type:Imp. Mode:Auto Nb cps/mn .:120 Compens:CAD1
3 pts type	Direction.: ↓ Type:3pts Mode:P T(on) (s).:120 Prop. Band.: 10 Compens:CAD1	Direction: ↓ Type:3pts Mode:PI T(on) (s):120 Prop. Band.: 10 Ti (s): 20 Compens:CAD1	Direction: ↓ Type:3pts Mode:PID T(on) (s):120 Prop. Band.: 10 Ti (s): 20 Td (s): 5 Compens:CAD1	Direction: ↓ Type:3pts Mode:Auto T(on) (s):120 Compens:CAD1

Direction : To define if the process will increase or decrease around setting point.

Mode: To define the mode of regulation (P; PI; PID; Auto)

Hyst. : To define inverted thresholds around the setting point. (Hysteresis).

Cycle (s) : To define the repetitive time of a cycle.

Bande prop. : To define the linear action according to the range of the senor.

Ti (s) : to define the integral calculation by adding the difference around the setting point.

Td(s): To define the derivative calculation in a short time between value and setting point.

Nb cps/mn : To indicate the maximum number of pulses per minute for a dosing pumps.

T(on) (s) : To indicate the maximum time needed by a 3 points actuator to be completely open.

Compens. : To compensate with a CAD input in flow meter configuration (Only if a CAD input is set as a flow meter input

To realize a 3 points actuation, the controller uses automatically the next relay to perform the closing action. By selecting this operation, you cause immediately the reserve of the next relay and the deleting of his old function.



The values given in the last examples are subject to change according your needs. These values must be entered by a confirmed technician.



In the particular case where CAD entry is configured as a flowmeter, therefore, it is possible to compensate the dosing actuators.

For linear, impulse and 3pts control methods, an added option allows to select a link condition or not. This link is executed according the programmed values entered into the setting point menu (Cf. Chapter VII-5).

Alarm function

This function allows to select the alarm function according to the need and with the functions below:

Alarm(s):	No alarm
Alarm(s): ¥ Delay(s):Off	Alarm only with the low threshold
Alarm(s): ↑ Delay(s):Off	Alarm only with the high threshold
Alarm(s): 业 Delay(s):Off	Alarm the with the low/high thresholds
Alarm(s): ? Delay(s):Off	Alarm with a problem on the sensor.
Alarm(s): ¥? Delay(s):Off	Alarm with the low threshold and with a problem on the sensor.
Alarm(s): ᡯ? Delay(s):Off	Alarm with the high threshold and with a problem on the sensor.
Alarm(s): 业乔? Delay(s): Off	Alarm with the low/high thresholds and with a problem on the sensor.

The active alarm can be delayed if you select « yes » on the second line. T(on) and T(off) must be written according to your need.

Alarm(s):	±7?
Delav(s):	On
T(on) (s):	20
T(off) (s).:	ె

General function

This option allows you to program a general alarm or a copy of state or a mirror of the working timers.



This table indicates the general alarms used by each function.

Technical alarm	Fault on sensor
	Primary power line off
General alarm	All the alarms
Timer	Relay engaged when the working timer is on.
	Relay engaged when the working timer is off.

7) Analog outputs definition

This procedure allows you to define an analog output as a regulation actuator or as a transfer of the value of a measured or a computed parameter.



Regulation function

This option allows you to define the regulation processes.



Direction : To define if the process will increase or decrease around setting point.

Type : To define the type of the analogical current (0-20 ; 4-20 ; 20-0 ; 20-4)

Mode : To define the mode of regulation (P; PI; PID; Auto)

Bande prop. : To define the linear action according to the range of the senor.

Ti (s) : to define the integral calculation by adding the difference around the setting point.

Td(s): To define the derivative calculation in a short time between value and setting point.



In the special case a CAD input is set as a flow meter, it is possible to compensate the control of a parameter with this CAD input.

For the linear, impuls and 3 pts controls, an new option appears and allows to set or not the CAD input to compensate the control of a parameter. This control is done with the values set in the setting points part of the flow chanels (See. chapitre VII-5)

Transfer function

This option allows you to define a transfer of the value of the parameter.

Туре:0-20	Туре:4-20	Туре:20-0	Туре:20-4
-----------	-----------	-----------	-----------

Type : To define the type of analog output current.

8) Displaying parameters

This procedure allows you to select the parameters you want to display on the screen. You must define the chronology of displaying.

It is possible to organize this display in two modes :

- **General** : Displaying only in chronologic mode.
- **By circuits :** Displaying by identified circuits.





After programming a new analog entry or a new computation, you must define the display of the new parameter in the list of display if you want to see it on the screen.

 \land

If you have selected the « Group » mode or « By circuit » mode, the general mode will be automatically ignored.

➢ Group or circuit mode

Menu	USER MENU > Technician menu access Select language Setting real time clock Interface management Printing management		TECNICIAN MENU > Specialist menu access Technician code Working timers Sensors calibration Setting points Technical alarms Analogue outputs
	SPECIALIST MENU > Specialist code Analogue inputs definition Chemical computations Numerical inputs Conditioned functions Relays definition Analogue outputs definition		SPECIALIST MENU Analog. inputs definition Chemical computations Numerical inputs Conditioned functions Relays definition Analogue outputs definition > Displaying parameters
Over B	SPECIALIST MENU Using displays General suite > By group of parameters	Char B	Circuit n° Name: Circuit n° 01:E01 => Temp. 02:E02 => pH 03:E04 => Free Cl. 04:E00 => Not used

Circuit n°2 Name: 01:E01 => Not used 02:E02 => Not used 03:E04 => Not used 04:E00 => Not used	Clear Const Clear	Circuit n°2 Name: 01:E01 => Not used 02:E02 => Not used 03:E04 => Not used 04:E00 => Not used
Circuit n°2 Name: Ciru 01:E01 => Not used 02:E02 => Not used 03:E04 => Not used 04:E00 => Not used		Circuit n°2 Name: Circuit n°2 01:E01 => Not used 02:E02 => Not used 03:E04 => Not used 04:E00 => Not used
E00 => Not used		E06 => Temp.
Circuit n°2 Name: Circuit n°2 01:E01 => Temp. 02:E02 => Not used 03:E04 => Not used 04:E00 => Not used		



It is possible to define 8 different circuits and to program 20 parameters by circuit. Each parameter can be defined more than one time. Each name of circuit has 20 caracts.



If you have selected the \ll Group \gg mode or \ll By circuit \gg mode, the general mode will be automatically ignored.



To erase the « circuit » or « group » mode, you must erase all names of circuits defined by using blank caract.

9) Communications

This procedure allows you to define the external communications with the SYCLOPE EVASION®.



a) Printer communication port speed

This procedure allows you to define the speed of the serial printer port (in Baud).

SPECIALIST MENU Communications > Speed of printing RS232/RS485 mode Remote displays External modules Infrared sensor Modem	Charles and the second se	Speed (Baud): 1200
Speed (Baud): 600	Speed (Baud):	2400
Speed (Baud): 1200	Speed (Baud):	4800

b) RS232/RS485 mode

This procedure allows you to define the external communication with a PC or another intelligent unit. You must define the type of communication (RS232 or RS485) and if you use the RS485 type, the number of the controller for identification on the bus.



Selecting the type of the communication port.



Selecting the speed of the communication port.



Selecting the parity of the communication port.



RS232/RS485 mode Without Transfer mode:RS485 Device number: Odd Selecting the address of the controller. RS232/RS485 mode RS232/RS485 mode Transfer mode:RS485 Transfer mode:RS485 Device number: 0 Device number: 1



All controllers connected on the same RS485 bus must have the same speed, same parity and each controller must have a different address to ensure a good communication.

c) Remotes displays

This procedure allows you to define remotes displays. You must identify each remote display unit and for each unit, you must define the parameters you want to screen.



SPECIALIST MENU Communications Speed of printing RS232/RS485 mode > Remote displays External modules Infrared sensor Modem



SPECIALIST MENU Remote displays >Old generation New generation

i

The remote displays « Old generation » follow the COMPACT displays range made before 2011. It is possible to set 3 displays :

- Temperature pH Chlorine A
- Temperature pH Chlorine B
- pH Chlorine A Chlorine B



The remote displays « New generation » follow the EVASION displays range made until 2011. It is possible to set 6 displays from adress 0 to 5. For every chanel sent, it is possible or not to see if the chanel is in alarm.

► Use the arrows keys



to change the display number and validate.

► Select the parameter you want to screen on each line and



d) External additional modules

Permet l'activation des quatre modules externes. Deux modules additionnels de huit relais contacts secs libre de potentiel et deux modules additionnels de huit sorties analogiques. Suite à l'activation de ces différents modules, vous pourrez les programmer comme des relais ou des sorties analogiques internes. La machine vous demandera alors si il s'agit des organes internes ou des organes externes.



e) Infrared remote control unit port

Permet l'activation de la fonction infrarouge pour piloter la centrale **SYCLOPE EVASION**[®] à l'aide d'une télécommande.



f) Modem

This procedure allows to activate modem function and to define the telephone number who is called.



For the GSM Modem, the SIM Card should not use a PIN code to communicate
Use the key to validate the type of modem and to access to the parameters if necessary.

► Use the arrows keys to write phone number, APN, etc ...

10) Initializations

This procedure allows you to program the controller with a standard configuration or with a personal use.



SPECIALIST MENU Numerical inputs Conditioned functions Relays definition Analogue outputs definition Displaying parameters Communications > Initializations



> For one circuit with one or more swimming pools

Turna	Entries	Damaaa	Wiring		Delava	Mada	Analog	CAD
туре		Ranges	+	-	Relays	Mode	outputs	CAD
	E1 : T°C	-5 à 45	White / Yellow	White / Blue	Relay1 : T°C			
Ecopac2	E2 : pH	0 à 14	Green	Blue	Relay2 : pH	Regulation	NP	CAD1: NF
	E4 : Free Cl.	0 à 10	White	Black	Relay3 : Free Cl.			
	E1 : T°C	-5 à 45	White / Yellow	White / Blue	Relay1 : T°C			
European	E2 : pH	0 à 14	Green	Blue	Relay2 : pH	Regulation	ND	
	E3 : ORP	0 à 1000	Yellow	Orange			INF	CADI. NI
	E4 : Free Cl.	0 à 10	White	Black	Relay3 : Free Cl.			
	E1 : T°C	-5 à 45	White / Yellow	White / Blue	Relay1 : T°C			
Dual	E2 : pH	0 à 14	Green	Blue	Relay2 : pH	Population	ND	
Duai	E4 : Free Cl.	0 à 10	White	Black	Relay3 : Free Cl.	Regulation	INF	CADI . NI
	E6 : Free Cl.	0 à 10	White	Black	Relay4 : Free Cl.			
	E1 : T°C	-5 à 45	White / Yellow	White / Blue	Relay1 : T°C			
Combi	E2 : pH	0 à 14	Green	Blue	Relay2 : pH			
	E4 : Active Cl.	0 à 10	White	Black		Population	ND	
	E6 : Total Cl.	0 à 10	White	Black		Regulation	INF	CADI . NF
	E11 : Free Cl. (CC)	0 à 10	-	-	Relay3 : Free Cl.			
	E12 : Combi (CC)	0 à 10	-	-	Relay4 : Combi			

*NP : not programmed

**CC : Computation or Combination value

Initializations

> Two separate circuits with one or more swimming pools

Trune	Entries	Ranges	Wiring		Dalaus	Mada	Analog	CAD.
туре			+	-	Relays	моае	outputs	CAD
	E1 : T°C	-5 à 45	White / Yellow	White / Blue	Relay1 : T°C			
	E2 : pH	0 à 14	Green	Blue	Relay2 : pH			
Ecopac2	E4 : Free Cl.	0 à 10	White	Black	Relay3 : Free Cl.	Dogulation	ND	CAD1: NF
double	E6 : T°C	-5 à 45	White / Yellow	White / Blue	Relay4 : T°C	Regulation	INF	CAD2: NF
	E7 : pH	0 à 14	Green	Blue	Relay5 : pH			
	E9 : Free Cl.	0 à 10	White	Black	Relay6 : Free Cl.			
	E1 : T°C	-5 à 45	White / Yellow	White / Blue	Relay1 : T°C			
	E2 : pH	0 à 14	Green	Blue	Relay2 : pH			
	E3 : ORP	0 à 1000	Yellow	Orange				
European	E4 : Free Cl.	0 à 10	White	Black	Relay3 : Free Cl.	Dogulation	ND	CAD1: NF CAD2: NF
double	E6 : T°C	-5 à 45	White / Yellow	White / Blue	Relay4 : T°C	Regulation	INP	
	E7 : pH	0 à 14	Green	Blue	Relay5 : pH			
	E8 : ORP	0 à 1000	Yellow	Orange				
	E9 : Free Cl.	0 à 10	White	Black	Relay6 : Free Cl.			
	E1 : T°C	-5 à 45	White / Yellow	White / Blue				
	E2 : pH	0 à 14	Green	Blue	Relay1 : pH			
	E3 : Free Cl.	0 à 10	White	Black	Relay2 : Free Cl.			
Dual daubla	E4 : Free Cl.	0 à 10	White	Black	Relay3 : Free Cl.	Degulation	ND	CAD1: NF
Dual uouble	E6 : T°C	-5 à 45	White / Yellow	White / Blue		Regulation	INP	CAD2: NF
	E7 : pH	0 à 14	Green	Blue	Relay4 : pH			
	E8 : Free Cl.	0 à 10	White	Black	Relay5 : Free Cl.			
	E9 : Free Cl.	0 à 10	White	Black	Relay6 : Free Cl.			
	E1 : T°C	-5 à 45	White / Yellow	White / Blue				
	E2 : pH	0 à 14	Green	Blue	Relay1 : pH			
	E3 : Active Cl.	0 à 10	White	Black				
	E4 : Total Cl.	0 à 10	White	Black				
Combi double	E11 : Free Cl. (CC)	0 à 10	-	-	Relay2 : Free Cl.			
	E12 : Combi (CC)	0 à 10	-	-	Relay3 : Combi	Pequilation	ND	CAD1: NF CAD2: NF
	E6 : T°C	-5 à 45	White / Yellow	White / Blue		Regulation	INF	
	E7 : pH	0 à 14	Green	Blue	Relay4 : pH			
	E8 : Active Cl.	0 à 10	White	Black				
	E9 : Total Cl.	0 à 10	White	Black				
	E13 : Free Cl. (CC)	0 à 10	-	-	Relay5 : Free Cl.			
	E14 : Combi (CC)	0 à 10	-	-	Relay6 : Combi			

*NP : not programmed **CC : Computation or Combination value

11) Maintenance of the controller

This procedure allows you to activate the maintenance menu you will found in the \ll USER MENU ». To use the maintenance option, refer to §6 Chapter VI.





NOTES



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