M05D *PH-CL (SCM)*

User Manual

Lasithiou 77, Glyfada Athens, Greece 16674

M: 6947 810 227 • 6906 185 915 / E: grakanidis@alliguard.gr

www.alliguard.gr

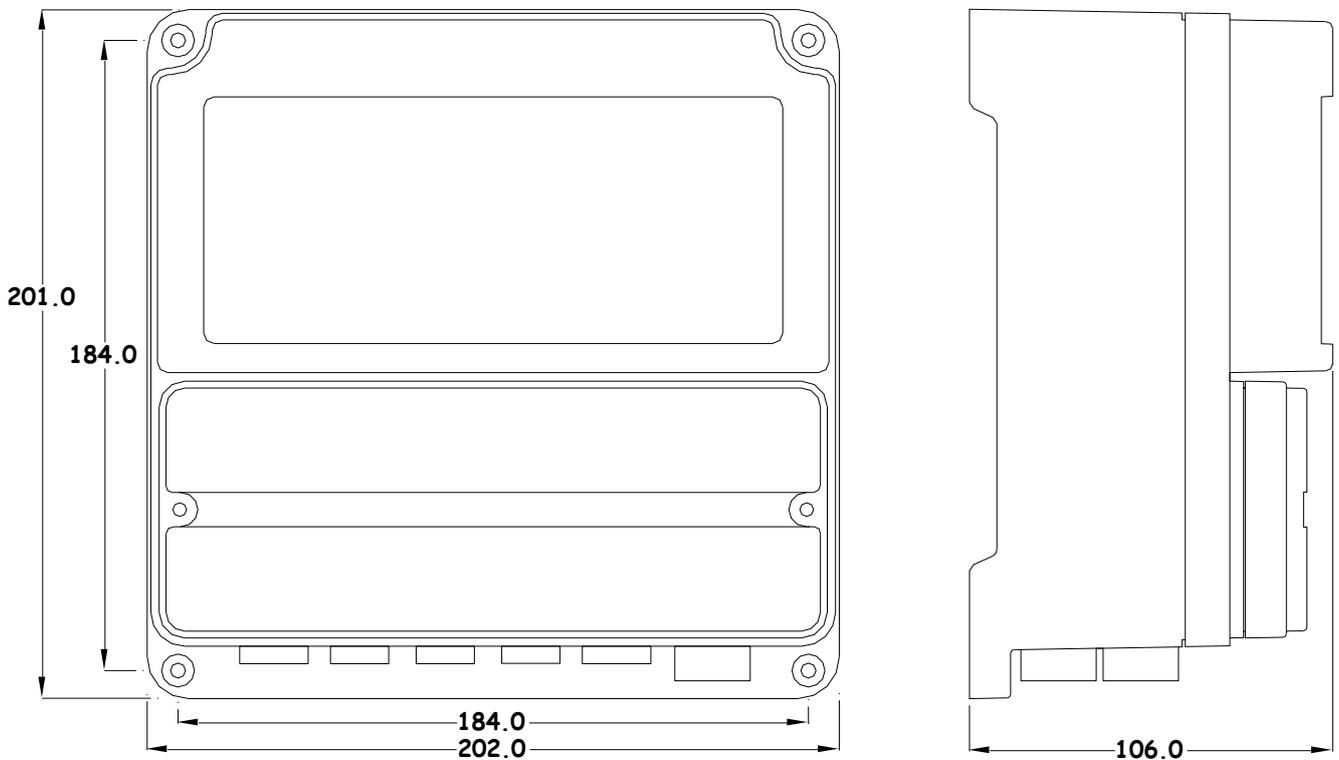Thank you for purchasing a **M IC O N** product.

The box contains
Controller, user manual, mounting accessories, fuse.
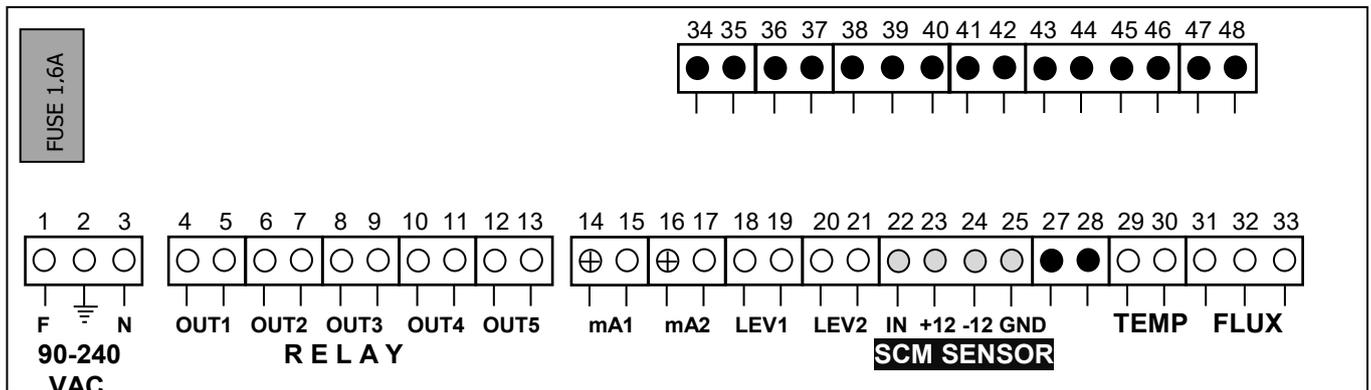
General features

Measure Range	0-14.00 pH 0-20.00ppmCl2
Functions	Measure, control and regulation of pH and Free Chlorine
Resolution	±0.01 pH – 0.01ppmCl2
Display	TFT colour 320x240 display
Accuarcy	± 0.2% E.S.
Controls	Keypad (4 keys)
Temperature Compensation	Manual or automatic (0-100 °C) NTC **10K**⊠
Set-point	2 **free contact** relays (5 A max) pH Parameters control: treshold , isteresys, delay, Hi ad Low Alarm Mode: ON/OFF o proportional to time 2 free **contact relays** (5 A max) Chlorine Parameters control: treshold , isteresys, delay, Hi ad Low Alarm Mode: ON/OFF o proportional to time
Alarm	1 **free contact** relays (5 A max)
Analogue Output mA1	pH Programmable output 4-20mA (400 　 max), with galvanic separation
Analogue Output mA2	Chlorine Programmable output 4-20mA (400 　 max), with galvanic separation
Flow Sensor	Designed for relay lock
Wifi module	Wifi module 2.4GHz
Power supply	100-240 Vac
Case	ABV V0 material - IP65
Dimensions	202 x 184 x 106 mm
Weight	1150 gr

Dimensions (mm)

Check that the electric system voltage matches the value on the instrument label

Electrical connection to mainboard

Connections

Power supply	Pin n.1 (PHASE) Pin n.2 (GROUND) Pin n.3 (NEUTRAL)
OUT 1	Set-point 1 pH (Pin 4-5) **free contact**
OUT 2	Set-point 2 pH (Pin 6-7) **free contact**
OUT 3	Set-point 3 Chlorine (Pin 8-9) **free contact**
OUT 4	Set-point 4 Chlorine (Pin 10-11) **free contact**
OUT 5	Alarm Relay (Pin 12-13) **free contact**
mA 1	4-20 mA pH output (Pin 14+ / 15-)
mA 2	4-20 mA Chlorine (Pin 16+ / 17-)
LEV 1	pH level control (Pin 18-19)
LEV 2	Chlorine level control (Pin 20-21)
SCM Chlorine Probe	Pin n.22 (SCM probe **input**) Pin n.23 (SCM probe **+12V**) Pin n.24 (SCM probe **- 12V**) Pin n.25 (SCM probe **GND**)

Temperature probe (option)	Pin n.29 Pin n.30	Before connect the temperature probe remove **10KΩ** resistor. *(As of 01/July/2024 the resistance has been changed from 1kΩ to 10kΩ*
Stand-by fluximeter switch	Pin n.31 = Flux IN (black) Pin n.32 = + 12 (brown) Pin n.33 = GND (blue)	

Colours chlorine probes (**SCM**) cable connections

Pin n.22	BROWN
Pin n.23	WHITE
Pin n.24	BLUE
Pin n.25	BLACK

Power Supply

⚠️ **Attention! It is necessary to make a connection to the 230Vac electrical network**

Connect the power supply wires and power up the instrument. The display will show the software version and then switch to standard operating mode.
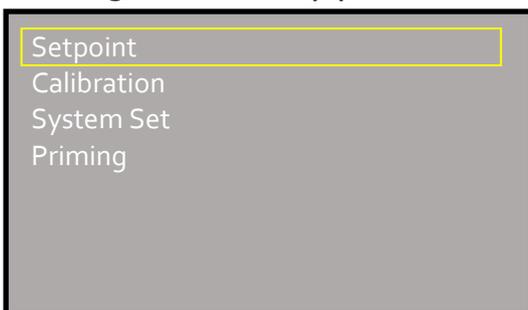
Display

The main display shows the pH and the chlorine measures. Then it shows the status of relays, the time, the temperature and the error conditions (in this case it is the Fluximeter).
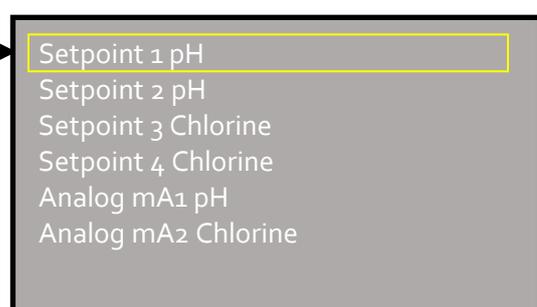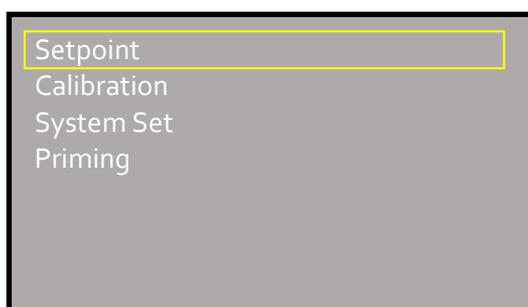
Main menu

Pressing MENU hotkey you enter the navigation menu:

The navigation menu scrolls from top to bottom, by enter key you access to the submenu, which is yellow surrounded.
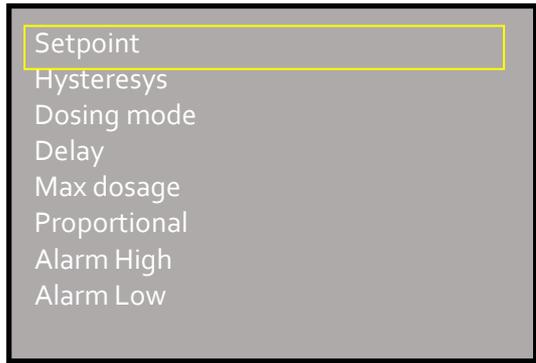
Setpoint
Relay 1 – Relay2 – Relay 3 – Relay3 - Analog Out 1 – Analog Out 2

Set Point Menu and structure of the various submenu items

```
Setpoint
Hysteresys
Dosing mode
Delay
Max dosage
Proportional
Alarm High
Alarm Low
```

Use the arrow keys UP-DOWN to select menus and press ENTER.

Submenu items descriptions and Relay 1 pH and Relay 2 pH parameters setpoint setting.

	Submenu	Description	Range	Default value
Set Relay 1 Set Relay 2	Setpoint	Sets the relay treshold activation.	0.00 – 14.00pH	7.00pH
	Hysteresis	Sets a "dead zone" value to be added to the set-point. During this interval the relay dosn't perform any ON OFF status change	0.00 – 14.00pH	0.20pH
	Delay	Sets a time delay of relay activation-deactivation, after it has reached the set point value	0-255 seconds	0 seconds
	Dosing Mode	Sets the direction of setpoint adjustment. Relay activation under the setpoint value (Minus) or over (Plus)	Acid - Alkaline	Acid
	Proportional	Sets the setpoint from On-Off mode to PWM mode. The output relay is activated with a time proportional between the measurement and the setpoint value. The greater the distance between the two values, the more the relay will stay in ON position. When the adjustment process brings the two values close to each other, the OFF time increases until it stops when the two values matches. The histeresys value added to the set point defines the scope of regulation.	OFF/ON	OFF
	Alarm Point HI	Sets Hi alarm value. Above this value the Relay 3 alarm output will activate.	0.00 – 14.00pH	0.00 pH
	Alarm Point LO	Sets Hi alarm value. Below this value the Relay 3 alarm output will activate.	0.00 – 14.00pH	14.00 pH

Analogic output parameters setting

|	Submenu	Description	Range	Default value
Analog Out mA1	Upper line on the display	Sets the pH value to which correspond the minimum mA1 output value	0.00 – 14.00 pH 04 – 20 mA	0.00 pH 04 mA
	Lower line on the display	Sets the pH value to which correspond the maximum mA1 output value	0.00 – 14.00 pH 04 – 20 mA	14.00 pH 20 mA

Submenu items descriptions and Relay 3 Chlorine and Relay 4 Chlorine setpoint.

	Submenu	Description	Range	Default value
Set Relay 3 Set Relay 4	Setpoint	Sets the relay treshold activation.	0.00 – 20.00ppm	1.00 ppm
	Hysteresis	Sets a "dead zone" value to be added to the set-point. During this interval the relay doesn't perform any ON OFF status change.	0.00 – 20.00 ppm	0.20 ppm
	Delay	Sets a time delay of relay activation-deactivation, after it has reached the set point value.	0-255 seconds	0 second
	Dosing Mode	Sets the direction of set-point adjustment. Relay activation under the set-point value (Minus) or over (Plus).	Plus - Minus	Plus
	Pwm ON/Off	Sets the set-point from On-Off mode to PWM mode. The output relay is activated with a time proportional to the measurement and the set-point value. The greater the distance between the two values, the more the relay will stay in ON position. When the adjustment process brings the two values close to each other, the OFF time increases until it stops when the two values matches. The hysteresis value added to the set point defines the scope of regulation.	OFF/ON	OFF
	Alarm Point HI	Sets Hi alarm value. Above this value the Relay 3 alarm output will activate.	0.00 – 20.00 ppm	0.00 ppm
	Alarm Point LO	Sets Hi alarm value. Below this value the Relay 3 alarm output will activate.	0.00 – 20.00 ppm	2.00 ppm

Analogue output parameters setting

	Submenu	Description	Range	Default value
Analogue Out 2	Upper line on the display	Sets the ppm value to which correspond the minimum mA1 output value.	0.00 – 20.00ppm 04mA – 20mA	00.00ppm 04mA
	Lower line on the display	Sets the ppm value to which corresponds the maximum mA1 output value.	0.00 – 20.00ppm 04mA – 20mA	20.00ppm 20mA

Calibration
- pH – Chlorine

```
Setpoint
Calibration
System Set
Priming
```

```
pH
Chlorine
```
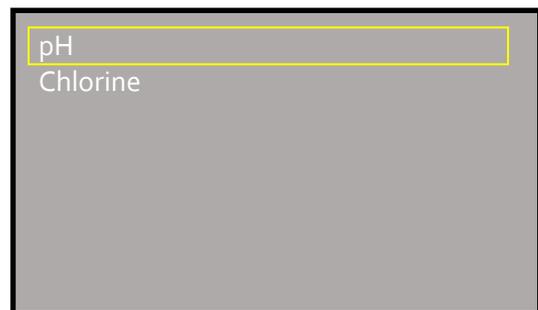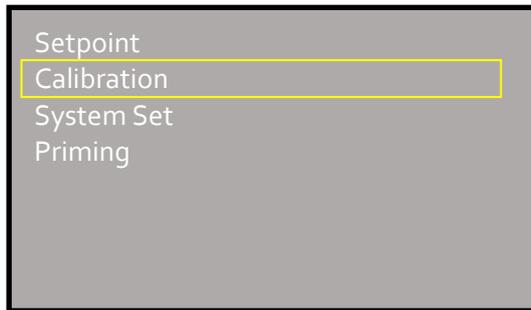
pH) Zero Calibration

Put the probe in the sample solution 7.00pH and wait about 30 seconds to stabilize the measure. Change the Zero value on the display until 7.00pH. Press ENTER to confirm and move to the calibration of the slope (gain).

Slope Calibration

Put the probe in the sample solution 4.00pH and wait about 30 seconds to stabilize the measure. Change the value on the display until 4.00pH. Press ENTER to confirm and save the calibration.

Is possible to calibrate the slope with other values of the sample solutions.

If press ESC during the Zero or Slope procedure abort the calibration.

Chlorine) Zero point calibration (Advanced menu → Chlorine Zero → Enabled)

In order to calibrate the SCLO chlorine sensor, chlorine-free water must pass through the probe holder then wait 5 minutes for the measure to stabilize. In the menu Calibration-Chlorine-Zero, adjust the displasie value until 0.00ppmCl2 using HI-LOW arrow keys, press ENTER to confirm and move to the SLOPE calibration.
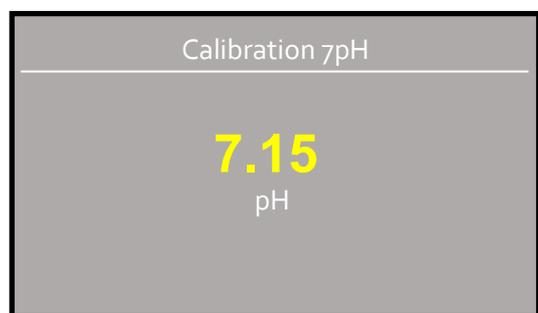
Slope calibration

Flush water with chlorine value previously measured with test kit DPD1, wait about 1 minute for probe to stabilize, using HI-LOW arrow keys adjust the value on the display until it matches the DPD1 value, press ENTER to confirm and complete the procedure.

The calibration will be interrupted if ESC key is pressed.

NOTE: for a good calibration procedure it is recommended to calibrate the slope point with less than 0.50 ppm of chlorine.
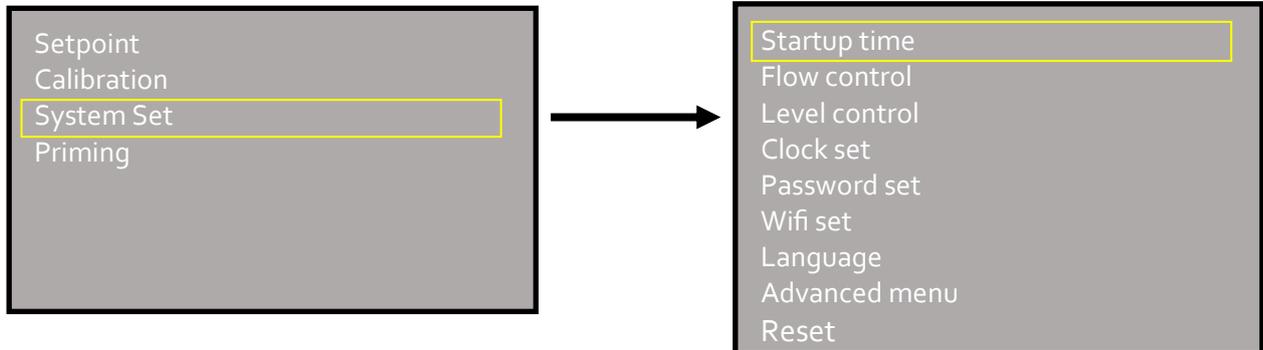
pH

```
Calibration 7pH
─────────────────

7.15
pH
```

```
Calibration 4pH
─────────────────

4.35
pH
```

Chlorine

```
Calibration DPD1
─────────────────

1.20
ppm
```

System Set

System Set Menu and structure of the various submenu items

| Setpoint |
| Calibration |
| **System Set** |
| Priming |

→

| **Startup time** |
| Flow control |
| Level control |
| Clock set |
| Password set |
| Wifi set |
| Language |
| Advanced menu |
| Reset |

Priming

Priming menu enables the setpoint output manually for precharge pumps chemical products

| **Setpoint 1 pH** |
| Setpoint 2 pH |
| Setpoint 3 Redox |
| Setpoint 4 Redox |

Priming

OFF
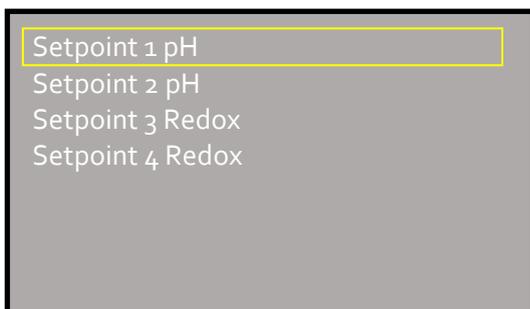
Select num of setpoint and press ENTER.
Press UP to switch relay ON
Press DOWN to switch OFF

Priming

ON
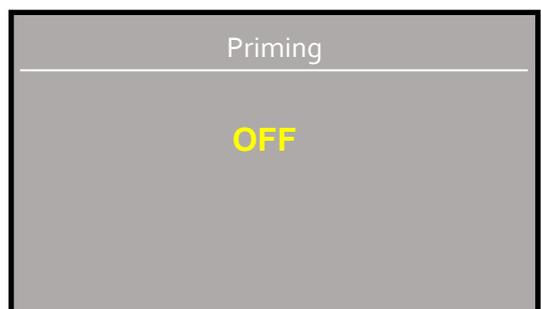
System Set Parameters.

	Submenu	Description	Range	Default value
System Set	Start-up Delay	Sets a delay for relay set point activation when the instrument is turned on	0-30min.	0 min.
	Flow Control	Sets the flow sensor control. It's possible to enable or disable.	Enabled/Disabled	Enabled
	Level Control	Sets the level sensor control. It's possible to enable or disable.	Enabled/Disabled	Enabled
	Clock	Sets internal clock date and time HH:MM:SS DD/MM/YY		
	Password	Sets main menu access password Type 0000 to disable the password.	0000-9999	0000
	Wifi set	See wifi menu		
	Language	Set the current language	English Italiano Francaise	English
	Advanced menu	See advanced menu		
	Reset	Perform reset values to manufactory default	ENTER or ESC	

The M05 use the Wifi local network (only M05 with wifimodule) to connect the regulators to the server. The user can connect the regulator with the smatphone application (Android-Ios). Micon Mremote APP is downloadable on Google play store and Apple Store.

Wifi set

	Menu	Description
Wifi set	WifiScan	Scan the wifi network: wait a few seconds to complete scan wifi networks. Select the network and press ENTER. The menu switches automatically in Wifi Password, use the UP and DOWN keys to select the CHAR and press ENTER to continuos entry word. When the password is ready, select the SPACE char (press UP until space char appear), now press ENTER to finish and store wifi network. *The power off doesn't lose the wifi network and the connection is ready on power on.*
	WifiAPmode	Sets the intrument on access point mode. Only for future use.

Advanced Menu

	Menu	Description	Range	Default
Advanced menu	Chlorine offset	Enables or disable the Chlorine probe Zero Calibration menu. Normally the zero calibration is not request, the user can be enable this menu for adjust the zero value during the probe calibration.	Enabled/Disabled	Disabled
	Fluximeter NO/NC	This menu changes the fluximeter sensor type from normal open to normal close and viceversa.	Normal Open - Normal Close	Normal Close
	Fluximeter NO/NC	This menu changes the level sensor type from normal open to normal close and viceversa.	Normal Open - Normal Close	Normal Open
	HI-LO Set lock	This function enables or disables the setpoints alarm lock. When the function is enabled the Setpoints outputs are locked outside of the Alarm HI – LO limit (see the Setpoint menu). When the function is disabled the alarm setpoints not have effect on outputs.	Enabled/Disabled	Enabled
	Water meter set	This menu has effect only with the water meter intstrument model. The menu sets the constant of the water meter Pulses/Litres.		

ALLIGUARD
WATER TREATMENT SOLUTIONS

Lasithiou 77, Glyfada Athens, Greece 16674

M: 6947 810 227 • 6906 185 915 / E: grakanidis@alliguard.gr

www.alliguard.gr

M IC O N SRL

Via Benito Graziani, 16
02015 Cittaducale (RI) ITALY
Tel.: +39.0746.601222

Web site: **www.micon.it**
Email: **info@micon.it**