MSM

USER MANUAL

WIRELESS INFRARED
PROGRAMMER

USER MANUAL

REF: PROG-COMMANDER

Rv.	FECHA	REVISION
01	21/09/2020	Revision general 2020

Rv. 1

INDEX

WIRELESS INFRARED PROGRAMMER

The PROG-IR wireless infrared (IR) programmer allows remote setting and testing of MSM LED flashing lanterns, without the need to open the beacons.

1.
The different settings of the lantern are:

NUMBER	DESCRIPTION
01	Change of flashing rhythms.
02	Remote Switch On/Off testing.
03 [1]	Test of battery charge.
04 [1]	Change to LVD mode (disconnection for low level of charge).
05	Change of password.
06	Recover values of factory configuration.
07 [1]	Change of solar radiation (only for self-powered lanterns, MCL serie).
08 [1]	Change to lantern hibernation (only for self-powered lanterns, MCL serie).
09	Adjust the power of LEDs.
10	Adjust the sensitivity of the photocell Day / Night.
11	Edit user rhythms.
12	Optical Test at nominal power for 20 minutes.

(1) **Available just for MCL series self-contained torches only.**

INITIAL ACTIVATION (ONLY SELF-POWERED LANTERNS)

The beacon is supplied with the battery disconnected, following the transport safety and Civil Aviation Security Rules. In this equipment, the opening of the beacon is required to connect the battery connector to the flasher according to the instructions in the **beacon manual**.

1.1. ACTIVATION OF INFRARED COMMUNICATION

IMPORTANT
The beacon does NOT maintain active the infrared receptor for communication for safety measures and to reduce the power consumption.
In order to start the settings with the IR programmer, this communication must be activated.
In order to activate the communication, a night-day step has to be made.

LANTERN STATE	DAY	NIGHT	DAY	
COMMUNICATION	NO	NO	YES	NO

The solar panel has to be hidden from the sun during at least 10 seconds until the lantern starts flashing in the night mode.

- To come back to DAY mode, uncover the solar panel in order to give it sunlight.
- In DAY mode, we have 60 seconds available to start the communication with the IT programmer.
- To check the communication, press and hold on the red key of the IR programmer, and the lantern will respond by switching on with fixed light. It indicates that the communication is working.
- The communication will be active until stopping the activity during 30 seconds or finalizing a valid setting.
- Once the communication is activated the lantern remains expecting a command.

1.2. PASSWORD

The IR Programmer is protected with a password. This password can be modified by the user, being the code set from factory 123.

1.3. KEYS OF IR PROGRAMMER

✓	**CHECK BUTTON**
▲	**TECLA CHANNEL UP**
i	**TECLA INFO**
⏻	**TECLA POWER**
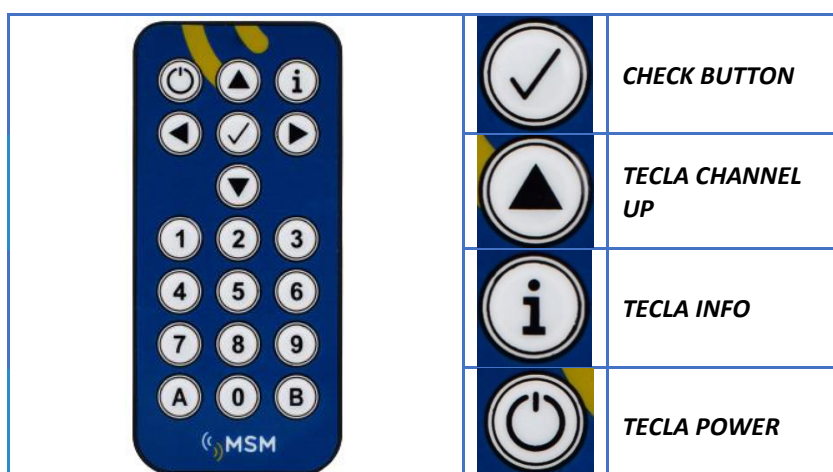
The IR programmer has to be used for the initial programming in the workshop, as the infrared communication can result very hard in the outside under sun action, due to the high level of existing IR. Also avoid intense fluorescent lights. The normal range is 2 to 3 metres, depending on environmental conditions.

> **IMPORTANT**
> Pressing the keys has to be done in a slow and deliberate manner. When pressing a key, the beacon will switch on as confirmation of the order from the lantern.
> The key must be held down until the beacon turns on, thus confirming that it has received the command.
> *The lantern produces two fast flashes, when it accepts a valid setting. Otherwise press again the "Power" key and repeat the setting.*

Programming commands

2.1. CHANGE OF FLASHES RHYTHMS

It permits the change of flash rhythms to predetermined flashes from the table of 256 rhythms:

1		POWER key.
2	Password (3 digits)	Password (123).
3		Channel up key. **CHANNEL+**
4	"0"	Setting 01.
5	"1"	Change of rhythm.
6		**Check** button.
7	Hundreds	Flashes rhythms.
8	Tens	e.g. 023
9	Units	According to table of rhythms.

When finalized the introduction of the setting, the lantern will reply with two flashes to confirm the acceptation of the order from the IR programmer.

> **IMPORTANT**
> *See lantern manual "Table of luminous intensities" with different flashes rhythms, to determinate the performance of the lantern under different sun radiations.*

2.2. REMOTE SWITCH ON/OFF ON TEST

It is used to check the lantern and permits the lantern switch on / switch off.

1		POWER key.
2	Password (3 digits)	Password (123).
3		Channel up key. **CHANNEL+**
4	"0"	Setting 02.
5	"2"	Remote On/Off.
6		**Check** button.
7	0,1	Options: 0: OFF 1: ON

This test lasts for 3 minutes, during which the lantern will remain in the selected status. When the time is completed, the lantern will indicate with 4 short flashes that the test has finalized.

2.3. BATTERY TEST SETTING

It is used to check the level of Battery Charge of the lantern.

1		**POWER** key.
2	Password (3 digits)	Password (123).
3		Channel up key. **CHANNEL+**
4	"0"	Setting 03.
5	"3"	BATTERY TEST.
6		**Check** button.

During the test of the battery the LED switches on to 100% with fixed light during 30 seconds to check the voltage with the maximum consumption.
The lantern will inform us at the end of the test, of the level of charge in the battery with an answer by flashes:
-   1 flash =>   20 % (Vbat<11V).
-   2 flashes =>   40% (11V<=Vbat<12V).
-   3 flashes =>   60% (12V<=Vbat<13V).
-   4 flashes =>   80% (13V<=Vbat<14V).
-   5 flashes =>   100% (14V<Vbat).

For lanterns supplied with 6V batteries, the voltage values have to be divided by 2.

2.4. CONFIGURATION OF BATTERY DISCONNECTION

In case of battery low voltage, the lantern generates an alarm. The flasher can respond in 4 modes:

-   Switch off the light to prevent the battery from flashing (LVD 0%).
-   Reduce the consumption to 30% (reducing LVD 30%).
-   Reduce the consumption to 60% (reducing LVD 60%).
-   Continue working to 100% of consumption (LVD 100%).
-

When finalized the alarm situation of low battery charge, the LVD mode ends and the normal operation of the lantern will be re-established up to 100%.

(*)The reduction of consumption involves the reduction of luminous intensity in the same proportion. Check the lantern is still providing an adequate range.

Rv01 MSM

The setting of the battery alarm is made with the following command:

1		POWER key.
2	Password (3 digits)	Password (123).
3		Channel up key. **CHANNEL+**
4	"0"	Setting 04.
5	"4"	Change in LVD.
6		**Check** button.
7	0.1.2.3 LVD mode	Configuration: 0 --> 0% 1 --> 30% 2 --> 60% 3 --> 100%

2.5.   CHANGE OF PASSWORD

The setting commands to the lantern are protected by a password for security.
The password is set from factory as "123" which can be changed by any other one of three digits.

1		POWER key.
2	Password (3 digits)	Password (123).
3		Channel up key. **CHANNEL+**
4	"0"	Setting 05.
5	"5"	Change of password.
6		**Check** button.
7	Hundreds	New password.
8	Tens	e.g. 222
9	Units	123 factory setting.

The password value can be set between 000 and 999. If an incorrect password is introduced, the beacon will answer with 4 fast flashes to inform that the password has been rejected.

Rv01

((·))MSM

2.6.   RESTORE VALUES OF FACTORY CONFIGURATION

This setting re-establishes the factory values to recover the original values.

1		POWER key.
2	Password (3 digits)	Password (123).
3		Channel up key. **CHANNEL+**
4	"0"	Setting 06.
5	"6"	Change to factory values.
6		**Check** button.

2.7.   SELF-POWERED BEACONS-ADJUSTMENT OF SOLAR RADIATION

The MCL solar lanterns have an <u>automatic</u> system of solar energy management, which allows obtaining the maximum luminous performance possible in any location of the planet.

For that, the microprocessor of the lantern estimates the maximum performance of the LEDs without the lantern switching off during the winter due to lack of energy. This ensures to always have the maximum luminous range available.

For this calculation, two variables should be taken into account:
-   <u>The theoretical solar</u> radiation for the location where the lantern will be placed.
-   <u>The energy consumption</u> of the flash characters selected from the table.

The consumption is calculated automatically, but the solar radiation is a data which needs to be configured by the user.The solar radiation will be programmed in peak hours / day and the minimum solar radiation for the worst month of the year for a solar module in a horizontal position will be considered.

1		POWER key.
2	Password (3 digits)	Password (123).
3		Channel up key. **CHANNEL+**
4	"0"	Setting 07.
5	"7"	Adjust of solar radiation.
6		**Check** button.
7	Units	New data of solar radiation.
8	Tens	In Hours / day (e.g. 2,5h).

Rv01

((•))MSM

2.8. DEEP HIBERNATION OF THE LANTERN

The MSM MCL self-powered lanterns have a system of protection against battery discharge which makes them hibernate in a low consumption mode.

This state is used for transport and storage of the lanterns, to avoid the battery discharge. The lantern can automatically move to that mode after a 24 hours continuous operation in night mode and will return to normal operation mode with a Night/Day step.

The deep hibernation of the lantern command induces the lantern to hibernate without a delay of 24 hours, and do not permit a step to the normal mode before 24 hours unless using the reset of the lantern with battery disconnection.

1			**POWER** key.
2	Password (3 digits)		Password (123).
3			**INFO** key.
4			**Check** button.

2.9. SETTING THE LEDS POWER

It allows reducing the power of the LEDs on a scale of 1 to 10, 1 being 10% and 10 being 100%, with which it is possible to adjust the energy consumption and the luminous range:

1			*POWER* key.
2	Password (3 digits)		Password (123).
3			Channel up key *CHANNEL+*
4	"0"		Command **09**.
5	"9"		Power adjustment
6			**Check** button.
7	Tens		e.g. 01 - minimum power equal to 10%
8	Units		e.g. 10 - maximum power equal to 100% Power adjustable between 10 and 100%.

After the introduction of a command, the beacon will answer with two flashes to confirm acceptance of the order from the IR programmer.

2.10. SENSITIVITY ADJUSTMENT PHOTOCELL DAY/NIGHT

The sensitivity of the photocell can be adjusted in 10 different levels so that the beacon is switched on / off at different levels of ambient lighting:

1			**POWER** key.
2	Password (3 digits)		Password (123).
3			Channel up key **CHANNEL+**
4	"1"		Command **10.**
5	"0"		Photocell setting
6			**Check** button.
7	Photocell level		Level adjust 0 to 9

After the introduction of a command, the beacon will answer to us with two flashes to confirm acceptance of the order from the IR programmer.

LEVEL	0	1	2	3	4	5	6	7	8	9	NF
TURN ON	80	70	60	50	40	30	25	20	15	10	Lx
TURN OFF	100	90	80	70	60	50	45	40	35	30	Lx

Two levels of activation are employed to achieve a hysteresis which prevents false activation.

The beacon is supplied programmed with level-4 (On = Off = 40 lx 60 lx) WITH FACTORY SETTING

- A level under 4, will advance the activation and delays the shutdown of the lantern.
- A level over 4, will delay the shutdown and advance the activation of the lantern.

2.11.   EDITING USER RHYTHMS

Using this command allows you to edit the flash rate chosen by the user (rhythms of 1 to 6):

1		**POWER** key.	
2	Password (3 digits)	Password (123).	
3		Channel up key *CHANNEL+*	
4	"1"	Command **11**.	
5	"1"	Editing user rhythms	
6		**Check** button.	
9	Nº Flash user	Selection of rhythm, from 1 to 6. For example if you want to edit the rhythm 1, press 1	
10		**Check** button.	
11	Tens sec LIGHT	Flash cycle time, example 10 seconds: Tens 1 Units 0, Decimal 0 hundredths 0	**CYCLE 1 LIGHT**
12	Units sec LIGHT		
13	Decimal sec LIGHT		
14	Hundredths sec LIGHT		
Wait for the beacon's confirmation of the command with: 2 FLASHES			
15	Tens sec DARKNESS	Flash cycle time, example 1 seconds: Tens 0 Units 1, Decimal 0 hundredths 0	**CYCLE 1 DARKNESS**
16	Units sec DARKNESS		
17	Decimal sec DARKNESS		
18	Hundredths sec DARKNESS		
Wait for the beacon's confirmation of the command with: 2 FLASHES			
11	Tens sec LIGHT	Flash cycle time, example 0,1 seconds: Tens 0 Units 0, Decimal 1 hundredths 0	**CYCLE 'n' LIGHT**
12	Units sec LIGHT		
13	Decimal sec LIGHT		
14	Hundredths sec LIGHT		
Wait for the beacon's confirmation of the command with: 2 FLASHES			
15	Tens sec DARKNESS	Flash cycle time, example 0,01 seconds: Tens 0 Units 0, Decimal 0 hundredths 1	**CYCLE 'n' DARKNESS**
16	Units sec DARKNESS		
17	Decimal sec DARKNESS		
18	Hundredths sec DARKNESS		
Wait for the beacon's confirmation of the command with: 2 FLASHES			
10		**Check** button.	

As indicated in the table rhythms manual beacon, you can edit up to n = 12 **CYCLES** light / dark.

Once you edited the rhythms, if you wish to select it, follow the instructions marked on the point **2.1.Change of flash rhythms** of this manual.

Example of editing a user rhythm.

Define the user rhythm you want to edit, in this example, we will edit the user rhythm 4:
Cycle 1 light 0.3 sec dark 0.3, **Cycle 2** light 0.3 sec dark 0.3 **Cycle 3** light 0.3 sec dark 0.3 **Cycle 4** light 2.9 sec dark 0.3

1		**POWER** key.	
2	Password (3 digits)	Password (123).	
3		Channel up key **CHANNEL+**	
4	"1"	Command 11	
5	"1"	Editing user rhythms	
6		**Check** button.	
7	Selection of the user rhythm to edit	Press **4**	
8		**Check** button.	
9	0.3 Seconds FLASH	Press **0,0,3,0**	CYCLE 1 FLASH
	Wait for the beacon's confirmation of the command with: 2 FLASHES		
10	0.3 Seconds DARK	Press **0,0,3,0**	CYCLE 1 DARK
	Wait for the beacon's confirmation of the command with: 2 FLASHES		
11	0.3 Seconds FLASH	Press **0,0,3,0**	CYCLE 2 FLASH
	Wait for the beacon's confirmation of the command with: 2 FLASHES		
12	0.3 Seconds DARK	Press **0,0,3,0**	CYCLE 2 DARK
	Wait for the beacon's confirmation of the command with: 2 FLASHES		
13	0.3 Seconds FLASH	Press **0,0,3,0**	CYCLE 3 FLASH
	Wait for the beacon's confirmation of the command with: 2 FLASHES		
14	0.3 Seconds DARK	Press **0,0,3,0**	CYCLE 3 DARK
	Wait for the beacon's confirmation of the command with: 2 FLASHES		
15	0.3 Seconds FLASH	Press **0,0,3,0**	CYCLE 4 FLASH
	Wait for the beacon's confirmation of the command with: 2 FLASHES		
16	2.9 Seconds DARK	Press **0,2,9,0**	CYCLE 4 FALSH
	Wait for the beacon's confirmation of the command with: 2 FLASHES		
17		**Check** button.	

IMPORTANT
See lantern manual "Table of luminous intensities" with different flashes rhythms, to determinate the performance of the lantern under different sun radiations.

Rv01

MSM

Once edited the **rhythm 4** with our specifications in each light / dark cycle, we must select this rhythm:

1		**POWER** key..
2	Password (3 digits)	Password (123).
3		Channel up key *CHANNEL+*
4	"0"	Command 01.
5	"1"	Change of rhythm.
6		**Check** button.
7	0 Hundreths	
8	0 Tens	Flashes selected rhythm: Rhythm 4
9	4 Units	

After the introduction of a command, the beacon will answer to us with **two flashes** to confirm acceptance of the order from the IR programmer.

2.12. OPTICAL TEST AT NOMINAL POWER FOR 20 MINUTES

It is used to test the optical level of the beacon:

1		*POWER* key.
2	Password (3 digits)	Password (123).
3		Channel up key. *CHANNEL+*
4	"1"	Command 12.
5	"2"	Optical test
6		**Check** button.

During the optical test the LED lights at nominal power with light fixed for 20 minutes in order to check the light intensity.

To abort the test at any time from the start and before the 20 minutes set for the completion of the test, you can ABORT the test by PRESSING ANY KEY on IR programmer.
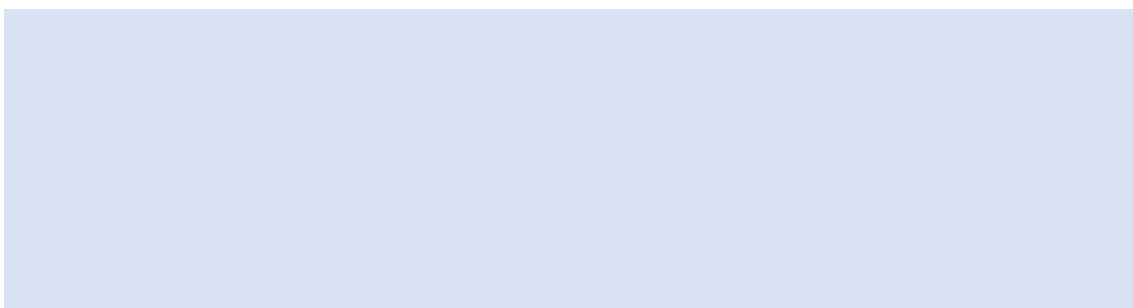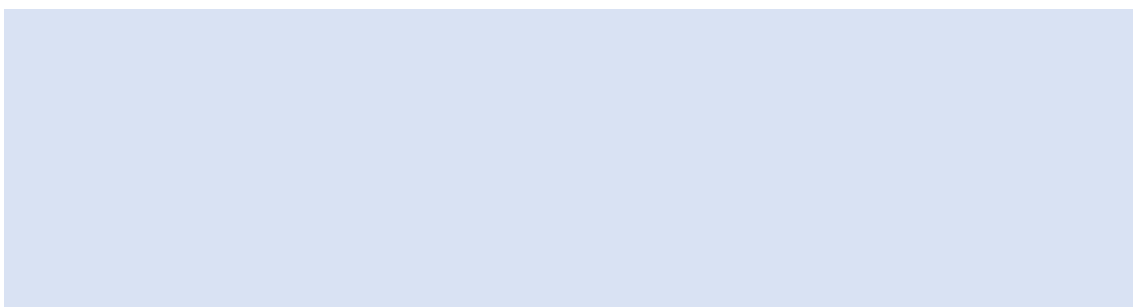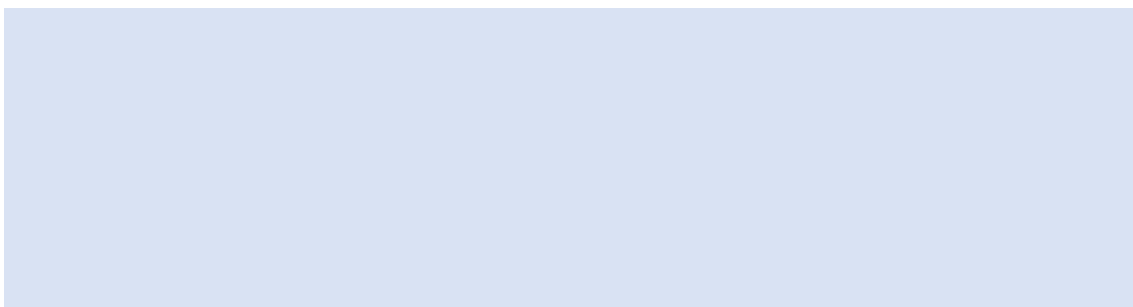
Product support

To access the support website where you can find our updated manuals, please go to the following address:

https://msm-data.com

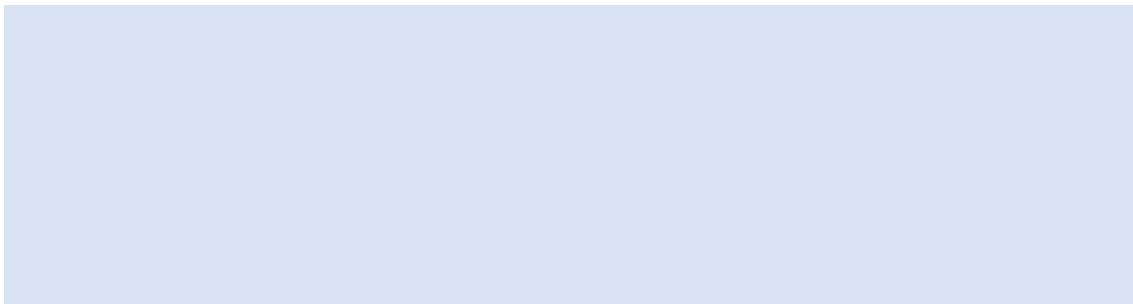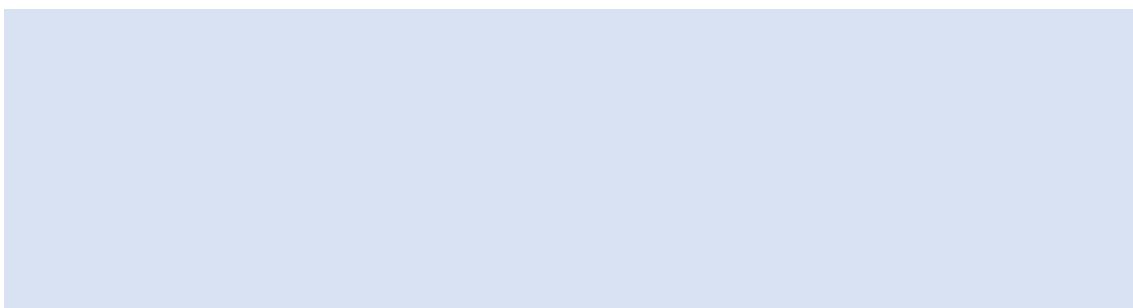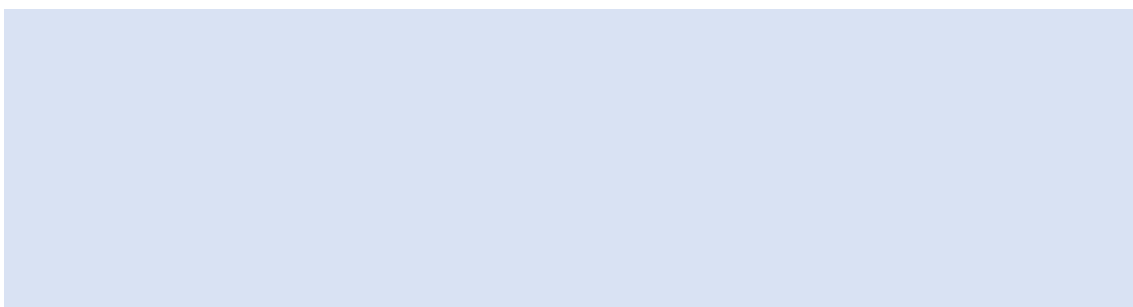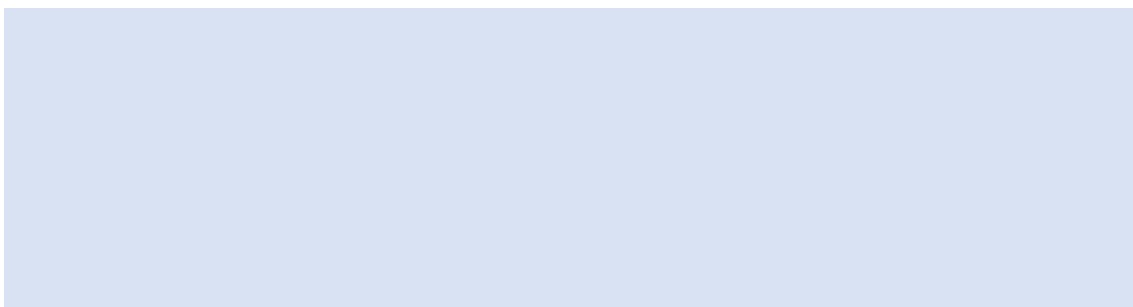To access information about our products and news:

https://mesemar.com
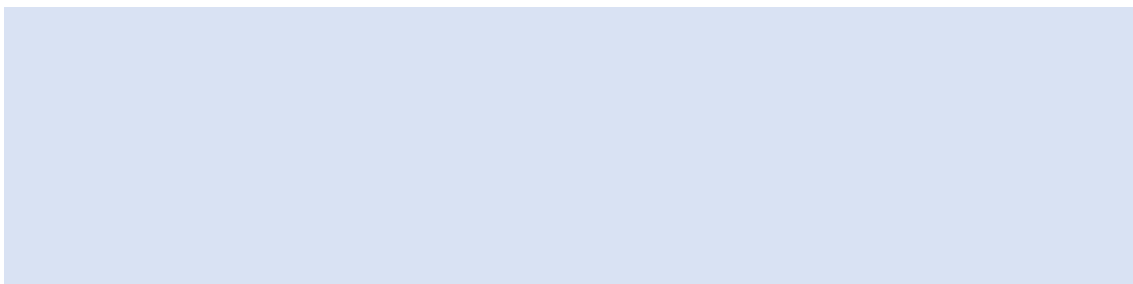
Mediterráneo Señales Marítimas, S.L. / ☎ +34 96 276 10 22 / ✉ msm@mesemar.com / **www.mesemar.com**