



MINI RADIO REMOTE CONTROL



INSTALLATION OPERATION MAINTENANCE USER MANUAL

THIS MANUAL MUST BE KEPT ON BOARD AT ALL TIMES

Via Philips 5, 20900 Monza (MI), Italy
Tel: +39 039 2001973-936 - Fax: +39 039 2004299
Email: contact@lofrans.com - www.lofrans.com

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It is strongly advised that only qualified marine electricians should install this equipment. For any boat requiring official classification, bodies of approval should also be consulted at the earliest opportunity. In any case, all other bodies, governmental or otherwise, should be contacted to ensure conformity with legal regulations relating to the boat in question.

**IT IS ESSENTIAL TO READ THE FOLLOWING MANUAL CAREFULLY
BEFORE INSTALLING THIS EQUIPMENT**

1- DESCRIPTION

The Lofrans' mini radio remote control is designed to work with Lofrans' and Max Power's entire product lines. The mini remote control can also be used to operate any other onboard equipment for which it may be useful.

2 - TECHNICAL SPECIFICATIONS

	TRANSMITTER	RECEIVER
Power supply	1 lithium battery 3V (CR2032)	Up to 36V DC
Power consumption in standby	0mA	9mA @ (12V DC)
Power consumption when in use	7mA @ 3V DC max	160mA @ 12V DC max
Operating temperature (°C)	-15° / +55°	-15° / +55° C
Dimensions (mm)	71.8 x 37.9 x 17.7	100 x 65 x 26
Weight (g)	31 g (w/ battery)	95 g
Frequency (MHz)	433 (EU/US regulation)	433 (EU/US regulation)

This product is in compliance with the following regulations:

ETSI EN 300 220-1 V3.1.1:2017	EN 60950-1:2016+A11:2009+A1:2010+A12:201
ETSI EN 300 220-2 V3.2.1:2019	1+A3:2013
ETSI EN 301 489-1 V2.2.3:2019	EN62479:2010
ETSI EN 301 489-3 V2.1.1:2019	FCC ID:2AUL7-03736

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.

Federal Communication Commission Interference Statement

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 of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment 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.

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 an interference received, including interference that may cause undesired operation.


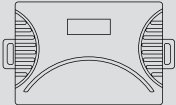
FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE / FCC Radiation Exposure Statement: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. To maintain compliance with FCC RF exposure compliance requirements, please follow operation instruction as documented in this manual.

3 - PRODUCT REFERENCES

The mini remote control is available as a kit including both the transmitter and the receiver.

- The mini remote control transmitter is floating on the water.
- Each transmitter includes its batteries (1 x CR2032)

433 MHz (EU/US regulation)	 	636305
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4 - PACKAGING CONTENTS

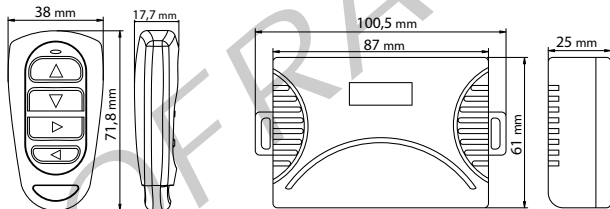
The Remote Control packaging includes:

636305 (EU/US) MINI REMOTE CONTROL

- ✓ 1 Transmitter
- ✓ 1 Receiver
- ✓ 1 String
- ✓ 1 User manual
- ✓ Dual lock tape

Please contact Lofrans' customer support at www.lofrans.com for any assistance

5 - GENERAL DIMENSIONS



All dimensions are in mm

6 - INSTALLATION AND CONNECTIONS

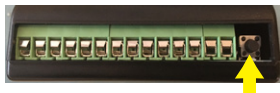
1. Turn OFF the power supply to the thruster or the equipment being connected.
2. Fit the receiver in a dry and accessible area (preferably not in the bilge). For mounting, use the dual lock tape provided. If necessary, you can also use the 2 receiver's bracket with 2 screws. In case of thruster installation, an ideal location is behind one of its control panels.
3. Connect the receiver to the power supply (12Vdc or 24Vdc).

4. **⚠ CAUTION: ENSURE THE POLARITIES ARE RESPECTED.**
5. **Protect the positive supply cable of the receiver by means of a 1A fuse.**
6. **The receiver already has an integrated protection.**
7. To access the outputs of the receiver in order to make the wiring, you must remove with a cross screwdriver the two screws at the bottom of the box.
8. Connect the 4 outputs of the receiver's terminal blocks (channels 1, 2, 3 & 4) to the equipment that is to be operated. In the case of a bow thruster or windlass, see the annexed diagrams for precise instructions.
9. The outputs (channels 1, 2, 3 & 4) are isolated volt free contacts with a load switching capacity of up to 30V and 10A
10. Follow the set up instructions (cf. chapter 7)

⚠ CAUTION:

Fit the receiver as far as possible from large metallic objects, electric motors or high current cables. Please connect the radio receiver's power supply to the yacht's main service battery bank. The battery pack powering the receiver must be sufficiently charged (refer to the battery supplier's recommendations).

7 - SET UP INSTRUCTIONS



**Learning Key
LED indicator**

In order to set up the receiver press the learning key button depicted in the above picture (yellow arrow). The different functional mode can be selected by pressing this button.

Working Modes:

1. Momentary:

- Keep pressing one button on the remote control to turn ON the corresponding channel of the receiver.
- Release your finger to turn OFF the receiver's channel.

2. Toggle/Self-Locking:

- Press one button on the remote control for one time to turn ON the corresponding channel of the receiver.
- Press again the same button to turn OFF the receiver's channel.

3. Latched/Interlocking outputs:

- Press one button on the remote control for one time to turn ON the corresponding channel of the receiver.
- Press another button on the remote control to turn OFF the receiver's output.



Figure A



Figure B

Setting of Working Modes:

1. Momentary Mode:

Pressing the learning key button on the receiver board once (fig.A) and the LED indicator on receiver board will signaling simultaneously. Then press any of the remote control button (fig.B) as a result the LED on the control board flashes 3 times in succession meaning that the setting of the Momentary Mode is successfully. The corresponding output is ON by pressing a remote control button and only when you release the remote control button the output turns off. If the remote button key is not released, the relay is always on.

2. Toggle Mode (Self-locking):

Pressing the learning key button on the receiver board twice (fig.A) and the LED indicator on receiver board will signaling simultaneously. Then press any of the remote control button (fig.B) as a result the LED on the control board flashes 3 times in succession meaning that the setting of the Toggle Mode is successfully. All outputs work as self-locking. Pressing a remote control button once, the relay is on and the corresponding output is activated. By pressing the same button again, the output turns off.

3. Latched Mode (Interlocking):

Pressing the learning key button on the receiver board three times (fig.A) and the LED indicator on receiver board will signaling simultaneously. Then press any of the remote control button (fig.B) as a result the LED on the control board flashes 3 times in succession meaning that the setting of the Latched Mode is successfully. All outputs work as interlocking. Press the "Down" button on the remote control button to activate the first output which stays on. By pressing the "Up" button on the remote control button, the first output is off and the second output is activated, the relay of which remains on and so on.

4. 2CH Momentary + 2CH Toggle:

Pressing the learning key button on the receiver board four times (fig.A) and the LED indicator on receiver board will signaling simultaneously. Then press any of the remote control button (fig.B) as a result the LED on the control board flashes 3 times in succession meaning that this setting is successfully. Up and down outputs work as momentary and left and right work as self-locking outputs.

5. 2CH Momentary + 2CH Latched:

Pressing the learning key button on the receiver board five times (fig.A) and the LED indicator on receiver board will signaling simultaneously. Then press any of the remote control button (fig.B) as a result the LED on the control board flashes 3 times in succession meaning that this setting is successfully. Up and down outputs work as momentary while left and right work as interlocking outputs.

6. 2CH Toggle + 2CH Latched:

Pressing the learning key button on the receiver board six times (fig.A) and the LED indicator on receiver board will signaling simultaneously. Then press any of the remote control button (fig.B) as a result the LED on the control board flashes 3 times in succession meaning that this setting is successfully. Up and down outputs work as self-locking while left and right work as interlocking outputs.

7. 2CH Latching + 2CH Latched:

Pressing the learning key button on the receiver board seven times (fig.A) and the LED indicator on receiver board will signaling simultaneously. Then press any of the remote control button (fig.B) as a result the LED on the control board flashes 3 times in succession meaning that this setting is successfully. Up and down outputs work as inverted interlocking while left and right work as interlocking outputs. Press the "Up" button on the remote control to activate the down output the relay of which remains on. By pressing the "Up" button on the remote control the down output is off and the up output is activated, the relay of which stays on.

 **CAUTION: WHEN USING THE PRODUCT ON A THRUSTER OR A WINDLASS, INTERLOCKING MODE MUST BE AVOIDED IN ORDER TO AVOID DAMAGING YOUR EQUIPMENT OR CAUSING INJURY.**

8 - RESETTING

In order to reset all the previous setups, press the learning key button on the receiver board (fig.A) eight times in a row. At this time, the LED indicator on receiver board will flash 8 times. It means that the existing remote controls are deleted successfully and the reset has now completed. Turn the receiver's power supply OFF, wait 5 seconds and then return to step 2 (Chapter 7 Set-up instructions).

9 - WIRING EXAMPLES

- "NO" terminals stand for Normally Open.
In the corresponding terminal, connect a load that needs to be turned on when the button is pressed.
- "NC" terminals stand for Normally Close.
In the corresponding terminal, connect a load that needs to be turned off when the button is pressed.
- "COM" terminals stand for Common
In the corresponding terminal, connect the voltage supply for the corresponding load.

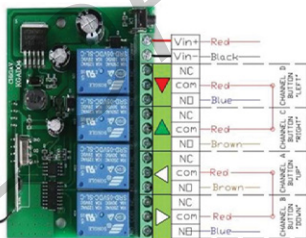
The table below with the matching figure shows the correspondence of the mini remote control buttons with the corresponding outputs on the receiver.



1	DC 12V Positive power supply input (V+)	
2	Negative power supply input (V-)	
3	Channel D - Normal Closed of relay (NC)	◀
4	Channel D - Common of relay (COM)	◀
5	Channel D - Normal Open of relay (NO)	◀
6	Channel C - Normal Closed of relay (NC)	▶
7	Channel C - Common of relay (COM)	▶
8	Channel C - Normal Open of relay (NO)	▶
9	Channel A - Normal Closed of relay (NC)	△
10	Channel A - Common of relay (COM)	△
11	Channel A - Normal Open of relay (NO)	△
12	Channel B - Normal Closed of relay (NC)	▽
13	Channel B - Common of relay (COM)	▽
14	Channel B - Normal Open of relay (NO)	▽

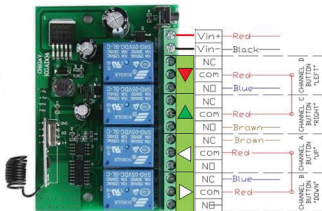
Example 1 (fig.1):

A thruster and a windlass need to be operated through the mini remote. The logic of the configuration is that a product operates when the circuit is closed.



(fig.1)

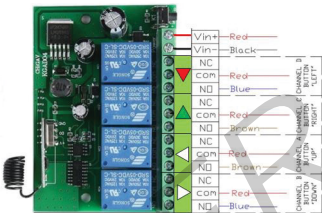
In such a case, the machine should be wired into the "NO" terminals because the machine operates when the button of the mini remote is pressed. The voltage supply for operating the load should be connected on the common terminal.



(fig.2)

Example 2 (fig.2):

Four products with single commands need to be operated through the mini remote control. The logic of the configuration is the same as in the above example. The products will operate when the button of the mini remote is pressed. The voltage supply for operating the load should be connected at the common terminal.



(fig.3)

Example 3 (fig.3):

Two products with inverse logic are needed to be operated from the mini remote control. The product should always operate, and by the pressing the appropriate button should make the corresponding output stop working. The voltage supply for operating the load should be connected at the common terminal.

10 - REPLACING THE BATTERIES

⚠ CAUTION: ENSURE THAT THE EQUIPMENT'S POWER SUPPLY IS SWITCHED OFF BEFORE REPLACING THE BATTERIES IN ORDER TO AVOID ACCIDENTAL ACTIVATION OF THE EQUIPMENT.

⚠ CAUTION: THERE IS A RISK OF EXPLOSION IF A BATTERY IS REPLACED WITH AN INCORRECT TYPE. DISPOSE OF THE USED BATTERIES ACCORDING TO THEIR INSTRUCTIONS.

1. Remove the silicon protection case from the transmitter.
2. Use a flat screwdriver on the edge of the remote on the top and twist it in order to remove the back part of the transmitter.

3. Remove the battery from the electronic control card.
4. Replace the battery with a new CR2032 battery. Ensure the polarities are correct.
5. Replace the back part of the transmitter and GENTLY TIGHTEN THE CAP while ensuring that the rubber seal is correctly positioned so that the product remains waterproof.

11 - TROUBLE SHOOTING

Before contacting Lofrans, please consult the following trouble shooting guide.

Problem	Check
The receiver's LED doesn't light up	Check the power supply of the receiver
The transmitter's LEDs do not light up	Check the transmitter's battery and the polarity
The remote control doesn't work	Check the connections of the receiver's relay outputs
The remote control works intermittently	Check the voltage of the battery pack powering the receiver

12 - PRECAUTIONS

1. Operate the product only with the recommended voltage and wiring.
2. When the remote control voltage is insufficient, please change the battery in time (when the remote control battery voltage is insufficient, the general remote control distance becomes shorter).
3. When using wireless electronic products, care should be taken to avoid metal masks, large electronic equipment, electromagnetic fields, etc., which strongly interfere with the remote control. The RF communication distance of the transmitter and receiver might shorten or not work properly.
4. Do not use this electronic product abnormally. Abnormal use will reduce the product's performance and longevity.
5. In the process of using the product, if you have any questions, please contact us any time.

14 - WORLDWIDE DISTRIBUTION

To locate the nearest Lofrans distributor, please consult the section "Worldwide Distribution" on our website: www.lofrans.com

13 - WARRANTY

Warranty coverage

The equipment is guaranteed to be free of manufacturing and operation defects under normal usage conditions for a period of **2 years** from the date of purchase by the end user (upon production of sales receipt or other proof of purchase). This warranty is transferable to subsequent owners of this equipment during the period of coverage. If the remote control is used for any purpose other than leisure boat equipment, the warranty is limited to **6 months**.

ANY MODIFICATION OF THE PRODUCT WILL RESULT IN THE ANNULMENT OF THE WARRANTY

Warranty Exclusions

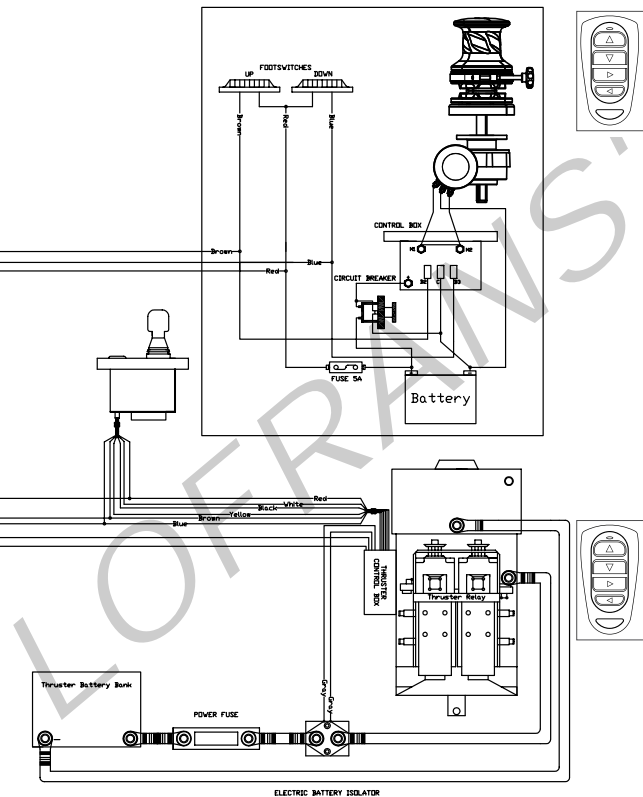
The manufacturer's warranty does not cover:

- Damage caused by modifications or an installation contrary to published specifications
 - Damage due to repairs performed by an unauthorized service centre
 - Damage due to lack of normal maintenance
 - Damage due to water
 - Cost of hauling the boat
 - Parts replaced due to normal wear and tear
 - Repairs performed without the knowledge of the manufacturer (please contact dealer to receive Repair Authorization Number)
 - Cost of travel to and from the job site
 - Repairs due to an incorrect installation
 - Repairs carried out by the end user on the equipment
 - Tampering of equipment by the end user
 - Cost of economic loss, including injury to any person, damage to property, loss of income or profit, communication, lodging, inconvenience
 - Consequential damage due to failure, including those arising from collision with other vessels or objects
- Consequential damage due to failure, including those arising from collision with other vessels or objects



NOTIFICATIONS

**UNSCREWING THE RECEIVER IN ORDER TO COMPLETE THE WIRING,
WILL NOT VOID THE WARRANTY**





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