

Tele Radio 860 LION

JOYSTICK TRANSMITTER TX4-A, TX4-B

MODEL NO: TX4A=T00004-38,T00004-40. TX4B=T00004-39T00004-41



INSTALLATION MANUAL

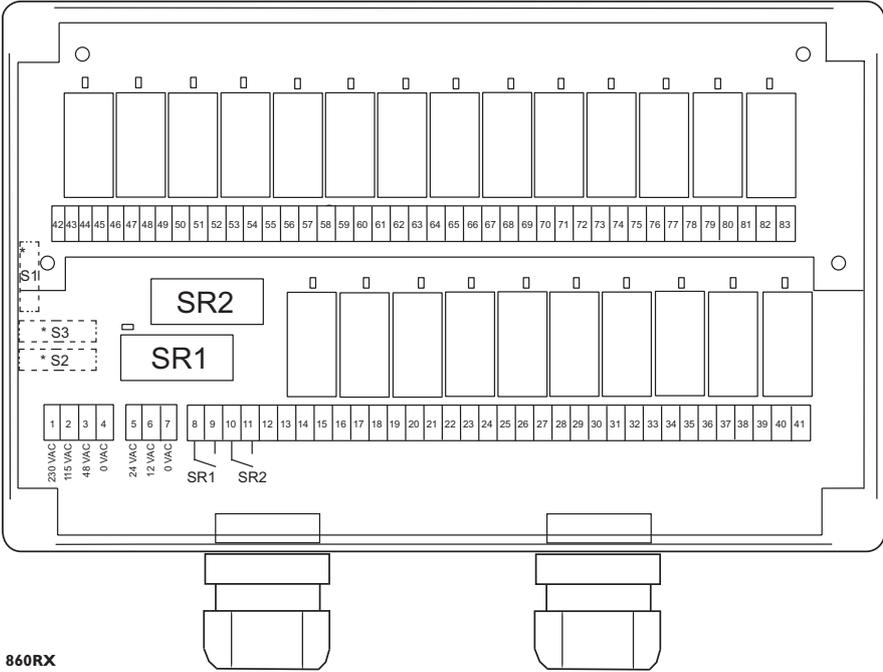
IM-860-014-A4



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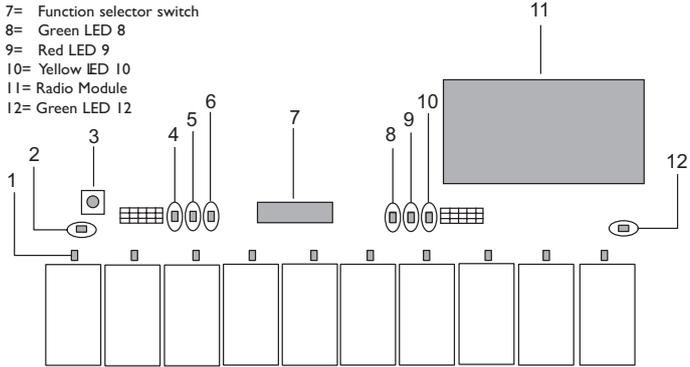
RECEIVER



860RX

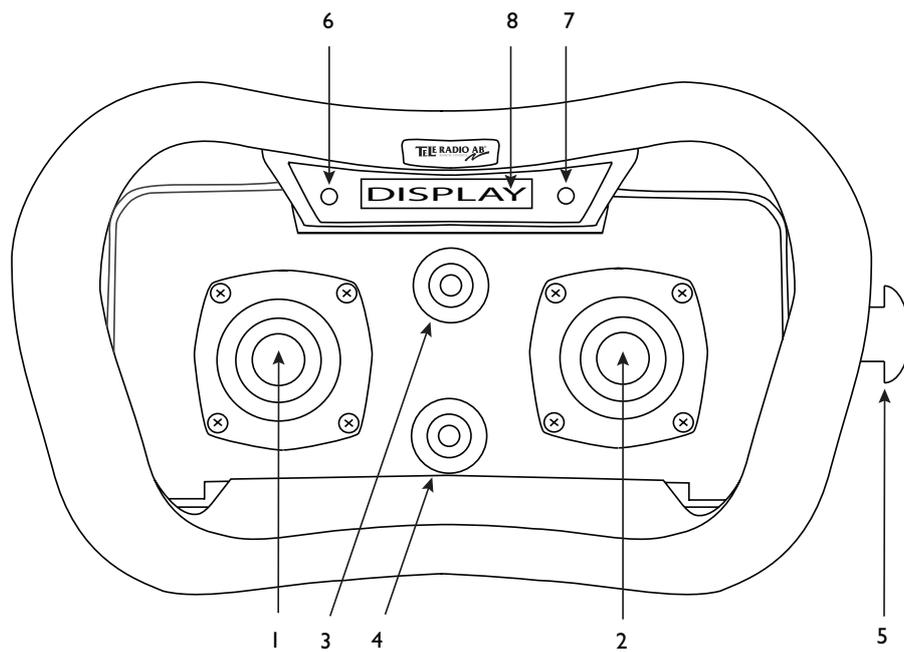
- 1= Red LED 1
- 2= Yellow LED 2
- 3= Reset button
- 4= Green LED 4
- 5= Red LED 5
- 6= Yellow LED 6
- 7= Function selector switch
- 8= Green LED 8
- 9= Red LED 9
- 10= Yellow LED 10
- 11= Radio Module
- 12= Green LED 12

* Fuse S1, S2 and S3 ceramic slow.
 S1 200 mA
 S2 300-315 mA
 S3 500 mA



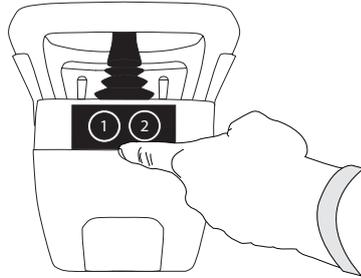
JOYSTICK

FRONT SIDE



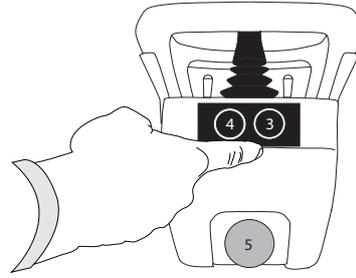
- | | | | |
|-------------------|--------------------|---------------------|---------------------|
| 1. Left joystick | 3. Front switch | 5. STOP button | 7. Red/ green LED 2 |
| 2. Right joystick | 4. Function switch | 6. Red/ green LED 1 | 8. Display |

LEFT SIDE



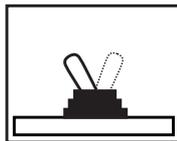
1. Side button 1
2. Side button 2

RIGHT SIDE



3. Button 3
4. Button 4
5. STOP button

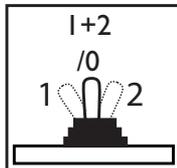
FUNCTIONALITY OF THE 2 JOYSTICK SWITCHES



FRONT SWITCH

2 steps (OFF/ON)

Toggling/latching relay function (i. e. spring loaded 2 step switch)
Starts up in OFF mode



FUNCTION SWITCH

3 steps switch

Selects functionality 1, 1+2, 2

OR 1,(NO FUNCTION), 2.

The switch function is toggling/ latching (i. e. the functionality remains until the switch is being moved again).The position of the function switch shows what receiver; which group of relays or what lift on an overhead crane that is currently under control (not in joystick function selector mode 0).

FREQUENCY TABLE (69 CHANNELS)

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
01	433,075 MHz	36	433,950 MHz
02	433,100 MHz	37	433,975 MHz
03	433,125 MHz	38	434,000 MHz
04	433,150 MHz	39	434,025 MHz
05	433,175 MHz	40	434,050 MHz
06	433,200 MHz	41	434,075 MHz
07	433,225 MHz	42	434,100 MHz
08	433,250 MHz	43	434,125 MHz
09	433,275 MHz	44	434,150 MHz
10	433,300 MHz	45	434,175 MHz
11	433,325 MHz	46	434,200 MHz
12	433,350 MHz	47	434,225 MHz
13	433,375 MHz	48	434,250 MHz
14	433,400 MHz	49	434,275 MHz
15	433,425 MHz	50	434,300 MHz
16	433,450 MHz	51	434,325 MHz
17	433,475 MHz	52	434,350 MHz
18	433,500 MHz	53	434,375 MHz
19	433,525 MHz	54	434,400 MHz
20	433,550 MHz	55	434,425 MHz
21	433,575 MHz	56	434,450 MHz
22	433,600 MHz	57	434,475 MHz
23	433,625 MHz	58	434,500 MHz
24	433,650 MHz	59	434,525 MHz
25	433,675 MHz	60	434,550 MHz
26	433,700 MHz	61	434,575 MHz
27	433,725 MHz	62	434,600 MHz
28	433,750 MHz	63	434,625 MHz
29	433,775 MHz	64	434,650 MHz
30	433,800 MHz	65	434,675 MHz
31	433,825 MHz	66	434,700 MHz
32	433,850 MHz	67	434,725 MHz
33	433,875 MHz	68	434,750 MHz
34	433,900 MHz	69	434,775 MHz
35	433,925 MHz		

IMPORTANT INFORMATION

READ THIS INFORMATION AND THE INSTRUCTIONS CAREFULLY BEFORE ASSEMBLING, INSTALLING AND PROGRAMMING TELE RADIO PRODUCTS.

Tele Radio cannot be held responsible for any damage or other fault caused by a failure to follow the instructions. Failure to do so may invalidate the warranty. These instructions contain information on the installation and configuration of the remote radio control unit on the machine and are not intended to be passed on to the end-user. The machine manufacturer is obliged to produce an operating guide for the machine, which also describes the safe and appropriate operation by remote radio control. Only such information that the end-user needs to operate the machine by remote control should be passed on.

**IT IS YOUR RESPONSIBILITY TO FIND OUT ABOUT
THE LAWS AND REGULATIONS
THAT APPLY IN YOUR
COUNTRY / STATE / CITY AND COUNTY!**

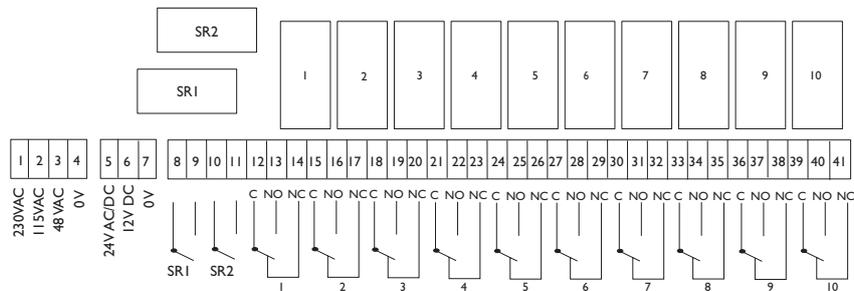
SAFETY INSTRUCTIONS

- This product should only be installed by licensed or qualified personnel.
- Switch the power supply to the receiver off before connecting the equipment.
- Turn off the transmitter when not in use.
- Keep a clear view of the work area.
- Make sure to use undamaged cables. Make sure that cables do not hang loose.
- Avoid installing the product in areas affected by strong vibrations.
- Allow only qualified and trained personnel to operate or have access to transmitter.
- Do not leave the transmitter unsupervised.
- Contact your dealer for repair and maintenance work on the product.
- Retain instructions for future reference and re-programming of the system.

Visit our website for FAQ & the latest information:

www.tele-radio.com

THE RECEIVER 860RX



IMPORTANT! To utilize the safety, relays SR1 and SR2 shall be used as stop relays in the safety circuitry of the object to be controlled.

TECHNICAL DATA

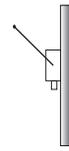
RELAY OUTPUTS:	MIDI: 10 + 2 for STOP function MAXI: 24 + 2 for STOP function
STOP RELAYS:	Potential free*, makes/ breaks 16A ACI
FUNCTION RELAY:	Potential free*, makes/ breaks 16A ACI
OPERATING FREQUENCY:	433.075-434.775 MHz.
CHANNELS:	69
SIZE:	256 x 217 x 85 mm.
WEIGHT:	1900 - 2100 g.
DEGREE OF PROTECTION:	IP65

*potential-free means that you need to supply voltage to get power out of a relay (e.g. via a connection comb).

SUPPLY VOLTAGE	MIN. POWER CONSUMPTION:	MAX. POWER CONSUMPTION:
12V DC	150 mA.	1 A.
24V DC	60 mA.	600 mA.
24V AC	80 mA.	800 mA.
48V AC	100 mA.	400 mA.
115V AC	70 mA.	200 mA.
230V AC	25 mA.	100 mA.

PLACE THE RECEIVER

- Well away from wind, damp and water.
- Cable holders and vent plugs must face down to prevent water from seeping in.
- If the receiver is to be placed in a a hard-to-reach place, it is advisable to complete the settings in the receiver before mounting it.
- Place receiver as high as possible off the ground.
- Place receiver in as free position as possible.
- Well away from metal objects, such as metal girders, high-voltage cables and other antennas.



1/2

PLACE THE ANTENNA

- Check that there is a good connection between the antenna and the material on which it has been installed, e.g. after repainting of the chassis.
- Check that the antenna aerial and any coaxial cables are undamaged.
- Check that the antenna is directed upwards.
- The 1/2-wave antenna is ground plane independent. If the receiver is installed on a wall, the antenna should be angled out from the wall
- The 1/4-433K antenna with a 3 metres coaxial cable for high and unobstructed placement. For optimum range, install on a flat roof, free from other metal objects and antennas. When installing the antenna on a vehicle, use a vehicle bracket (F1).
- The 5/8-wave antenna with a 3 metres coaxial cable for high and unobstructed placement. For optimum range, install on a flat roof, free from other metal objects and antennas. When installing the antenna on a wall, use a wall bracket (VM1).



1/4-433K



5/8

JOYSTICK TRANSMITTER

TECHNICAL DATA

860TX4-A

JOYSTICK FUNCTIONS:	Left 4x4, right 0x4
DEGREE OF PROTECTION:	IP 65
OPERATING FREQUENCY:	433.075-434.775 MHz
CHANNELS:	69
SIZE:	145 mm. x 210 mm. x 130 mm.
WEIGHT:	1200 g.
BATTERY:	1 external, rechargeable battery (li-ion)

860TX4-B

JOYSTICK FUNCTIONS:	Left 2x2, right 0x2
DEGREE OF PROTECTION:	IP 65
OPERATING FREQUENCY:	433.075-434.775 MHz
CHANNELS:	69
SIZE:	145 mm. x 210 mm. x 130 mm.
WEIGHT:	1200 g.
BATTERY:	1 external, rechargeable battery (li-ion)

HOW TO START UP IN OPERATING MODE

1. Pull out the STOP button.

The green/red LEDs 1+2 light up. Green when battery capacity is good, red when the battery needs to be charged. See how to charge the battery in "Battery- how to charge".

2. Press the side buttons 3+4 for about 0.30 seconds until LEDs 1+2 go out.

The buzzer sounds.

HOW TO TURN OFF

1. Press the STOP button. The joystick is now turned off.

LED 1 + LED 2 light red for approx. 3 seconds.

NOTE! All relays disconnect when the STOP button is pressed.

HOW TO REGISTER THE JOYSTICK IN THE RECEIVER

- The receiver can store up to 3 different transmitters.
- Each transmitter has a unique code.
- Receiver-LEDs 6 and 10 indicate the number of transmitters that are registered in the receiver.

Not flashing = No transmitter/ joystick is registered

1 flash = 1 transmitter/joystick is registered

2 flashes = 2 transmitter/joysticks are registered

3 flashes = 3 transmitter/joysticks are registered

1. Turn the receiver Function selector switch 2 to ON position.

2. Press the receiver Reset button.

Receiver LEDs 4,5, 6, 8, 9 and 10 light up.

3. Release the receiver Reset button.

Receiver LEDs 4, 8, 5 and 9 go out. Yellow receiver LEDs 6 and 10 light up when the receiver is ready to register.

NOTE! If the yellow and red receiver LEDs flash alternating, the maximum number of transmitters/ joysticks have already been registered in the receiver.

4. Start up the joystick in operating mode.
5. Press the joystick side buttons 2+4 at the same time. Keep pressed until the yellow receiver LEDs 6 and 10 start to flash.
6. Turn the receiver Function selector switch 2 to OFF position.
The joystick is now registered in the receiver.
7. Write down the new settings in the Settings document (download and print from the Tele Radio website)

IMPORTANT! For safety reasons, avoid storing transmitters in receivers, where you don't intend to use it.

HOW TO ERASE ALL JOYSTICKS FROM THE RECEIVER

NOTE! You have to erase all registered transmitters when erasing one.

1. Turn the receiver Function selector switch 2 to ON position.
2. Press the receiver Reset button.
The receiver LEDs 4, 5, 6, 8, 9 and 10 light continuously.
3. Release the receiver Reset button.
All LEDs go out, except for the receiver LEDs 6, and 10.
4. Turn the receiver Function selector switch 2 to OFF position. **PERFORM THE NEXT STEP WITHIN 2 SECONDS:**
5. Turn the receiver Function selector switch 2 to ON position.
The receiver LEDs 6, and 10 flash.
6. Turn the receiver Function selector switch 2 to OFF position.
All registered transmitters are now erased from the receiver.

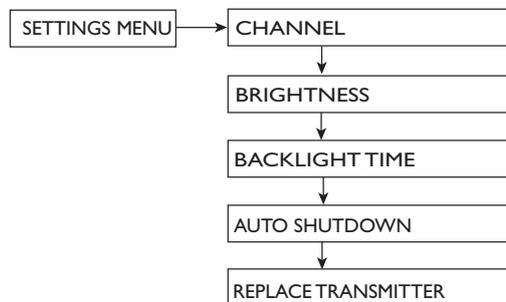
HOW TO LOG IN/ LOGOUT THE JOYSTICK

When you start up a registered transmitter, it logs in to the receiver. The receiver will only accept this transmitter (even though other transmitters may be registered in the receiver) until it's being logged out. If you want to use another transmitter, you have to log out the transmitter from the receiver.

1. The joystick, that is logged in, must be in operating mode.
2. Press button 4.
3. Without releasing button 4, press the STOP button.
4. The display shows the text "Log out" and the transmitter turns itself off. The transmitter is now logged out. When you start a registered transmitter, it will now automatically log in to the receiver.

SETTINGS MENU

SETTINGS MENU MAP



HOW TO NAVIGATE IN THE SETTINGS MENU

- TO MOVE UP AND DOWN: Use the left joystick.
- TO SELECT: Use button 4.
- TO GO BACK: Use the left joystick.
- TO EXIT: Press button 3 or pull out the STOP button. The transmitter will turn off.

HOW TO START UP IN MENU MODE

1. Pull out the STOP button.

The LEDs 1+2 light green when battery capacity is good, red when battery needs to be charged. See how to charge the battery in the section Battery- how to charge.

2. Press button 3 and keep pressed.

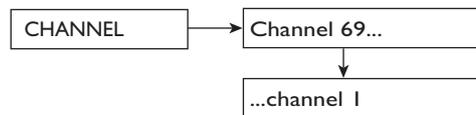
3. Press the STOP button while still pressing button 3.

LED 1 starts flashing.

4. Release button 3.

LED 1 goes out and the Settings menu shows in the display.

HOW TO SWITCH CHANNEL



Go to the frequency table in the beginning of the installation instruction. The joysticks are pre-programmed to transmit at various frequencies.

1. Pull the STOP button. Enter the Settings menu by pressing button 3. Keep it pressed.

2. Without releasing button 3, press the STOP button until LED 1 starts to flash.

The Setting menu shows in the display.

3. Select *Channel* in the Settings menu by pressing button 4.

4. Move up and down with the left joystick. Keep pressed to move several steps.

5. Select by pressing button 4.

You will get back to the menu after selecting.

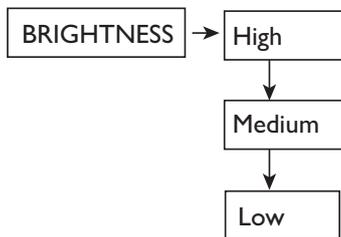
6. To leave the Settings menu, press button 3.

The transmitter turns itself off.

When you re-start the joystick, it will transmit at the new frequency. The receiver will automatically detect and switch to the new frequency.

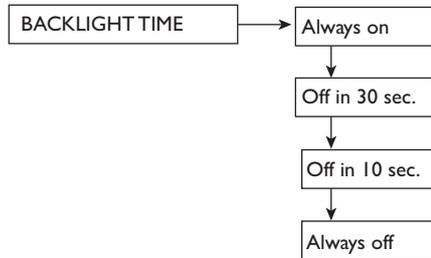
7. Write down the new settings in the Settings document (download and print from the Downloads page at the Tele Radio website).

HOW TO CHANGE THE BACKLIGHT BRIGHTNESS



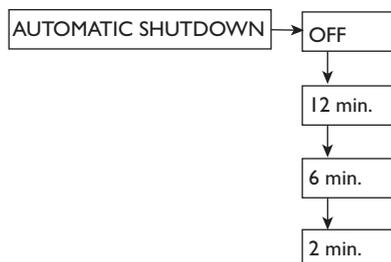
1. Pull the STOP button. Enter the Settings menu by pressing button 3. Keep it pressed.
2. Without releasing button 3, press the STOP button until LED 1 starts to flash.
The Setting menu shows in the display.
3. Navigate to *Brightness* with the left joystick. Select by pressing button 4.
4. Move up and down with the left joystick. Select by pressing button 4.
You will get back to the menu after selecting.
5. To leave the Settings menu, press button 3.
The joystick turns itself off.
6. When you re-start the joystick, the new settings will be activated.

HOW TO CHANGE THE BACKLIGHT TIME



1. Pull the STOP button. Enter the Settings menu by pressing button 3. Keep it pressed.
2. Without releasing button 3, press the STOP button until LED 1 starts to flash.
The Setting menu shows in the display.
3. Navigate to *Backlight Time* with the left joystick. Select by pressing button 4.
4. Move up and down with the left joystick. Select by pressing button 4.
You will get back to the menu after selecting.
5. To leave the Settings menu, press button 3.
The joystick turns itself off.
6. When you re-start the joystick, the new settings will be activated.

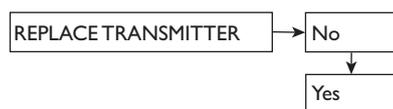
HOW TO CHANGE THE AUTOMATIC SHUTDOWN SETTINGS



Automatic shut down helps preserving the battery capacity. The joystick will shut down at a given time after the last command has been sent.

1. Pull the STOP button. Enter the Settings menu by pressing button 3. Keep it pressed.
2. Without releasing button 3, press the STOP button until LED 1 starts to flash.
The Setting menu shows in the display.
3. Navigate to *Automatic Shutdown* with the left joystick. Select by pressing button 4.
4. Move up and down with the left joystick. Select by pressing button 4.
You will get back to the menu after selecting.
5. To leave the Settings menu, press button 3.
The joystick turns itself off.
6. When you re-start the joystick, the new settings will be activated.
7. Write down the new settings in the Settings document (download and print from the Downloads page at the Tele Radio website).

HOW TO REPLACE A TRANSMITTER



Use the transmitter that you want to register in the receiver. You will need the ID code (serial no) for the transmitter that you want to replace. The ID code (serial no) is found on a label behind the battery.

1. Pull the STOP button. Enter the Settings menu by pressing button 3. Keep it pressed.
2. Without releasing button 3, press the STOP button until LED 1 starts to flash.

SETTINGS DOCUMENT

Download for print at: www.tele-radio.com

JOYSTICK 1

Article no: _____ Series no: _____ ID

code : _____

Automatic shutoff: _____

Function selector: _____

Frequency: _____

Latching relays: _____

Interlocking relays: _____

PIN-position PIN-code/Name

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

0 _____

JOYSTICK 2

Article no: _____ Series no: _____ ID

code : _____

Automatic shutoff: _____

Function selector: _____

Frequency: _____

Latching relays: _____

Interlocking relays: _____

PIN-position PIN-code/Name

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

0 _____

RADIO TRANSMISSION

THE JOYSTICK 1

The left joystick (JD1) can be moved in all directions. It transmits radio continuously at the selected channel when being pressed. When released, the radio stops transmitting within 5 seconds.

THE JOYSTICK 2

The right joystick (JD2) can be moved upwards and downwards. It transmits radio continuously at the selected channel when being pressed. When released, the radio stops transmitting within 5 seconds.

THE FRONT SWITCH



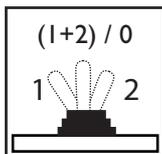
The Front switch can be placed in 2 positions:

LEFT: OFF

RIGHT: ON

The switch is toggling and will keep the position until being switched again, but it always starts up in OFF position. It transmits radio continuously when being pressed. When released, the radio stops transmitting within 5 seconds. The Front switch activates relay 24 in some receiver Function selections. The relay will be activated until the switch is being moved again.

THE FUNCTION SWITCH



The Function switch is used for selecting what receiver(s) to control. It can be placed in 3 positions:

LEFT: 1

MID: 1+2 (or 0)

RIGHT: 2

What positions that are available, depends on what joystick function selection that has been chosen. The switch does not transmit radio at any position. The switch is toggling, and will keep the position until being switched again.

Function selection 0

In this Function selection you can only control 1 receiver. The Function switch is not used and can be put in any position.

Function selection 1

Note that this Function selection lets you control up to 2 receivers at the same time.

Put the Function switch in position 1 when you want to control the 1st receiver.

Put the Function switch in position 1+2 when you want to control 2 receivers at the same time.

Put the Function switch in position 2 when you want to control the 2nd receiver.

Function selection 2

Note that this Function selection lets you control up to 2 receivers, but NOT at the same time.

Put the Function switch in position 1 when you want to control the 1st receiver.

Put the Function switch in position 0 if you don't want to control any receiver.

Put the Function switch in position 2 when you want to control the 2nd receiver.

BATTERY

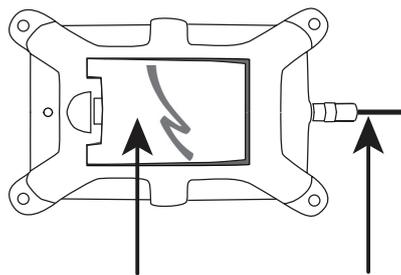
PRECAUTIONS

Observe the following warnings.
As batteries contains flammable substances such as lithium or other organic solvents, they may cause heating, rupture or ignition.



- Risk of explosion if battery is replaced with a battery of an incorrect type.
- Do not short circuit, disassemble, deform or heat batteries.
- Never try to charge a visibly damaged or frozen battery.
- Do not charge rechargeable batteries with a higher voltage than specified.
- Keep batteries out of reach of small children. Should a child swallow a battery, consult a physician immediately.
- Avoid direct soldering to batteries.
- When discarding batteries, insulate the + and - terminals of batteries with insulating/masking tape. Do not put multiple batteries in the same plastic bag.
- When improperly disposed, lithium batteries may short circuit, causing them to become hot, burst or ignite.
- Store in a cool location. Keep batteries away from direct sunlight, high temperature, and high humidity.
- Do not throw batteries into fire.

HOW TO CHARGE



BATTERY TYPE:	External and rechargeable lithium-ion
CHARGE:	In the charger unit 5V DC \pm 10% (1A)
CHARGING TEMPERATURE:	0°C to 45°C/ 32°F to 113°
OPERATING TIME:	Approx. 15 h. with continuous usage

- Before using the transmitter for the first 3-4 times, make sure that the battery is fully charged.
- When it's time to charge the battery, the internal buzzer beeps 3 times, and LED 1 + 2 turn red.
- The battery can not be overcharged.
- The display monitors the battery status.
- We recommend that you use your battery at least once a month. If you for some reason won't use it for a longer period, store in a cool, dry and clean place. Before starting to use the battery again, make sure that it is fully charged.

NOTE! The transmitter must be on to check the battery status.

PLACEMENT OF BATTERIES

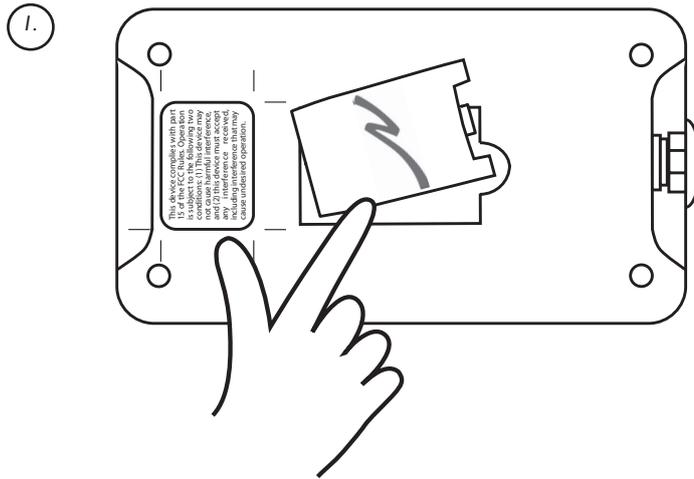
The battery is placed on the bottom of the joystick.

DISPOSAL OF BATTERIES

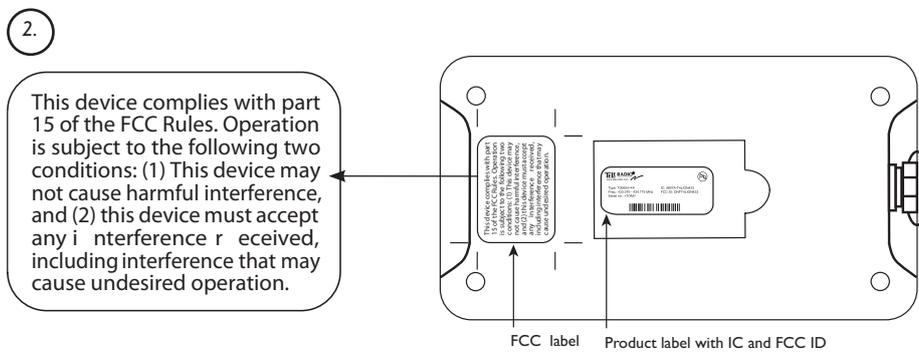
A lithium-ion battery does not contain mercury, cadmium or lead and is better for the environment than older types of batteries. Rechargeable batteries last considerably longer than single-use batteries, so using them means fewer batteries for disposal. Even rechargeable batteries have a finite life span and shall be recycled. Contact your local government's recycling or solid waste department for more information on proper recycling of lithium-ion batteries in your region.



PLACEMENT OF LABELS WITH IC AND FCC INFORMATION



Remove the battery from the bottom of the joystick.



The FCC statement is placed to the left. The product label is placed behind the battery in the battery compartment on the bottom of the joystick transmitter.

GUARANTEE

Tele Radio's products are covered by a guarantee against material, construction or manufacturing faults. During the guarantee period Tele Radio may replace the product or faulty parts with new ones. Work under guarantee must be carried out by Tele Radio or by an authorized service centre specified by Tele Radio. The following faults are not covered by the warranty:

- Faults resulting from normal wear and tear.
- Parts of a consumable nature.
- Products that have been subject to unauthorized modifications.
- Faults resulting from incorrect installation or use.
- Damp or water damage.

SERVICING & REPAIRS

Make sure that repairs and maintenance are only carried out by qualified personnel. Only use spare parts from Tele Radio. Contact your dealer if you want to make a complaint about a product or require other service. Always have the following details to hand when you contact a dealer about a complaint or service issue: Name of the system, model and a description of the problem. If you need to return a product, the invoice number and delivery date should be included.

OPERATING GUIDELINES

Keep the product in a dry, clean place. Make sure that contacts and antennas are kept clean. Wipe off dust using a slightly damp, clean cloth. Never use cleaning solutions or high-pressure water.

FCC STATEMENTS

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
2. THIS DEVICE MUST ACCEPT ANY INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

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