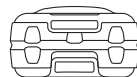
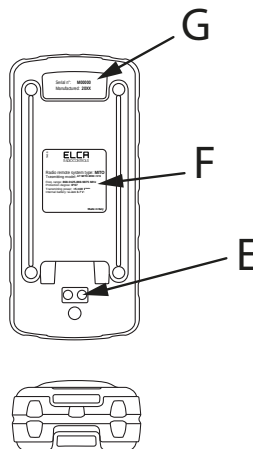
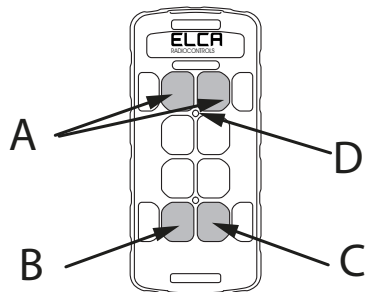
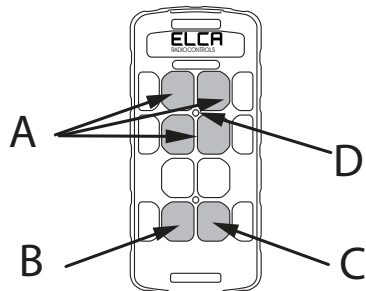
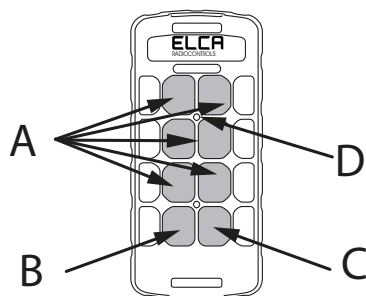


10 Description of the Transmitting Unit



	CONTINUOUS TRANSMISSION	TEMPORARY TRANSMISSION
	8 keys, 6 keys or 4 keys	8 keys, 6 keys or 4 keys
A	Command devices	Command devices
B	START button	Command devices
C	STOP button	Command devices
D	LED Check	LED Check
E	Contacts for charging	Contacts for charging
F	Technical data plate	Technical data plate
G	Serial number	Serial number



Some personalised models may have extra functions in addition to those shown in this manual. These details are described in the command layout or in the connection diagram attached to this manual.

10.1 Technical data

Radio transceiver module	SWE-U
Antenna	incorporated
Power supply	Li-poly 3.7 V 1100 mAh battery
Current draw	<25 mA
Absorbed power	<0,1 W
RF effective radiated power	< 3 mW ERP
Run time with fully charged battery at 20 °C (emissions power 10mW)	50 hours
Autonomy after "low battery" warning	10 min
Protection degree	IP67
Dimensions	137x62x35 mm
Weight	200 g

10.2 The Position of the controls and Connection diagram

The documentation supplied with the Radio Remote Control consists of:

- "Arrangement of Controls" that contains the configuration of the Transmitting Unit and the names of the commands sent to the Receiving Unit;
- "Connection diagram" that indicates the correspondence of the commands sent by the Transmitting Unit and those available in the Receiving Unit .

The Connection diagram should be checked, filled out and signed by the Installer who is responsible for carrying out the wiring correctly.

The Position of the controls and the Connection diagram should always remain attached to this Manual: if you have to use one or more of these documents for administrative purposes (controls, tests, etc.) a copy should be made.



The wiring of the outputs of the Receiving Unit should always correspond to what is indicated in the Position of the controls and the Connection diagram.

10.3 Transmitting Unit data plate

There is just one Data plate on the Transmitting Unit

AT MITO-MINI+ 915. Its position and the information contained in it can be found in the table below.

Table	Position	Information
Transmitting Unit plate	Back of the transmitting unit	Serial number (Serial Num.), year of manufacture and the main technical information of the Transmitting Unit, the marking and any trademarks of the Radio Remote Control.

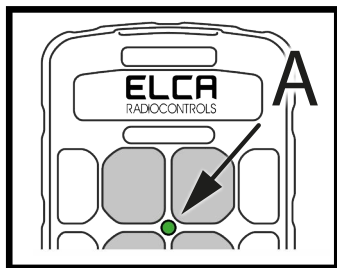


The meanings of the LED lights cannot be altered.

SIGNAL	MEANING
The LED [A] flashes quickly (1 flash/second).	The radio remote control is working correctly and the transmitting unit battery is charged.
The LED [A] flashes slowly (1 flash every 2 seconds).	The radio remote control is working correctly but the transmitting unit battery is low (10 minutes of run time).
LED [A] is off.	The battery is low or the radio remote control indicates the presence of an error (see par. 14.1).

10.4 Indicator lights

10.4.1 LED Check [A]



The LED [A] turns green to provide information about the radio remote control.

Refer to the following table for the meaning of the LED lights.

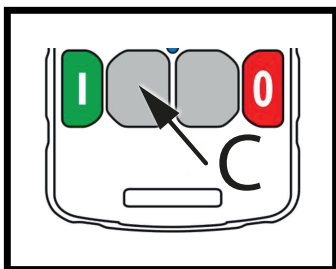
To know what to do in response to a light signal, refer to the table in paragraph 14.1.

11 General operating instructions

11.1 START button

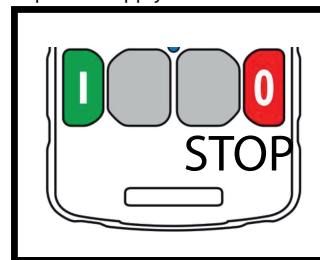
The START key (in continuous transmission mode only) is used to switch on the transmitting unit when it is off, and simultaneously activate radio transmission.

This command is on the selector [C] of the Transmitting Unit dedicated to this purpose.



11.2 STOP button

With the transmitting unit active, the STOP button (in continuous transmission mode only) immediately disables all the active commands and disconnects the power supply to the unit.



To restart working after the STOP button was pressed, proceed as follows:

- check that the operating conditions are safe;
- press START.

if a dangerous situation arises press the STOP button to immediately stop the Machine.



It is necessary to check that the Manufacturer of the Machine and / or the Installer provide suitable instructions and warnings in relation to any risks that derive from the stoppage of the Machine. These risks could, for example, come from inertial movements or from the swinging of the load.

11.3 Keys

For the functions of the various keys on the unit, refer to the command layout attached to the unit itself.

11.4 Hold commands

In continuous transmission mode only, a hold can be programmed on any command apart from the START command and the STOP button. When a command is programmed to be held at the first impulse, it is activated and remains active until the next impulse or until the transmitting unit is switched off.

11.5 Starting the Radio Remote Control

Starting the Radio Remote Control consists of establishing the radio link between the Transmitting Unit and the Receiving Unit.



In continuous mode only, a sequence of 3 commands (PIN CODE) can be programmed to release the START key for use. The PIN code is needed to prevent the Radio Remote Control being used by unauthorised persons.

11.6 Activating the controls

Once the Radio Remote Control has been started it is possible to start the buttons for the controls of the Machine.

It is the responsibility of the Installer and/or the Manufacturer of the Machine to choose the functions and the symbols of the buttons of the Transmitting Unit and it is always their duty to provide these instructions with the Machine so that the User is well informed on this matter.

11.7 Interruption of the radio link

If for any reason the radio link is incorrect or interrupted, use the automatic stop function (see paragraph 7.3).

11.8 Automatic switching off of the Transmitting Unit

If the Transmitting Unit stays on for a pre-set time without receiving any movement commands, the automatic switch-off intervenes.

The automatic switch off intervenes even when the Unit battery is low. Pressing any button on the Transmitting Unit the pre-set auto switch-off time is reset.



It remains the responsibility of the Manufacturer of the Machine or the Installer to decide the auto switch-off time or its eventual modification.

This setting should be established based on the operation and performance of the Machine.

The following table lists the typical auto switch-off times in relation to the radio transmission mode.

CONTINUOUS TRANSMISSION	TEMPORARY TRANSMISSION
3 or 10 minutes	10 or 180 seconds

11.9 Charging the Transmitting Unit

To charge the Transmitting Unit see chapter 12.

11.10 Switching off of the Transmitting Unit

If you have to switch off the Transmitting Unit just press the STOP button (see paragraph 11.2).



If the Radio Remote Control is not used to control the Machine, the Transmitting Unit should be switched off. Switch off is necessary also when the work is interrupted also for brief periods.

Do not leave the load suspended or the Machine in a dangerous condition (also when charging the Unit or changing the battery).

FAILURE TO COMPLY WITH THESE INSTRUCTION CAN CAUSE SERIOUS INJURIES OR DEATH AND / OR DAMAGE TO PROPERTY.

11.11 Replacing the Transmitting Unit

If the Transmitting Unit is no longer usable, it can be replaced with a new identical Transmitting Unit, which can be requested from Elca.



The replacement operations should only be carried out by qualified personnel and only in the maintenance phase with the machine stopped in safety conditions.

The replacement procedure allows you to uniquely connect a new Transmitting Unit with a Receiving Unit.

At the end of the replacement procedure always check that the new Unit is operating correctly, making sure that all the movements are executed correctly and in particular the STOP function.



Remove the data plate from the transmitter that is no longer used and fix it to the new one. If this is not possible because it is lost, destroyed or illegible, contact an ELCA Assistance Centre for a new one.

11.12 Programming the frequency group

You can access the frequency group programming function to alter the values if necessary.

11.12.1 Automatic increase of the frequency group

This procedure allows you to set the frequency group that comes after the one currently active on the radio remote control.

1. With the transmitting unit switched off, press key T12 and then, within 1 second, key T1. The LED will flash for 5 seconds and then remain ON.
2. Press key T2 to access the frequency group programming menu.
3. Press key T1 to pass to the frequency group after the one currently active. The LED flashes once, then the transmitting unit switches off. If you need to pass to the next group after the one just set, simply repeat the procedure.



During the programming phase, no command is sent from the transmitting unit to the receiving unit.

11.12.2 Specific selection of the frequency group

You can select a specific group of frequencies that the radio remote control will use.

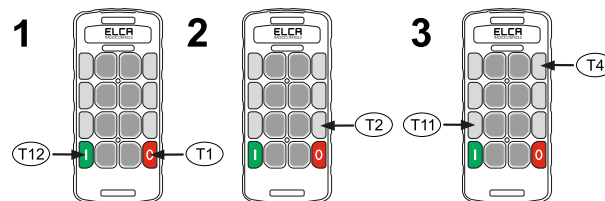
To select a specific group:

1. With the transmitting unit switched off, press key T12 and then, within 1 second, key T1. The LED will flash for 5 seconds and then remain ON.
2. Press key T2 to access the frequency group programming menu.
3. In sequence, press the keys corresponding to the required frequency group, as indicated in the table below.

GROUP	KEY SEQUENCE	FREQUENCIES
Group 1	T3, then T4	920.000 - 920.400 - 920.800 MHz
Group 2	T3, then T9	920.050 - 920.450 - 920.850 MHz
Group 3	T3, then T10	920.100 - 920.500 - 920.900 MHz
Group 4	T3, then T11	920.150 - 920.550 - 920.950 MHz
Group 5	T4, then T9	920.200 - 920.600 - 921.000 MHz
Group 6	T4, then T10	920.250 - 920.650 - 921.050 MHz
Group 7	T4, then T11	920.300 - 920.700 - 921.100 MHz
Group 8	T9, then T11	920.350 - 920.750 - 921.150 MHz

The LED will flash 3 times.

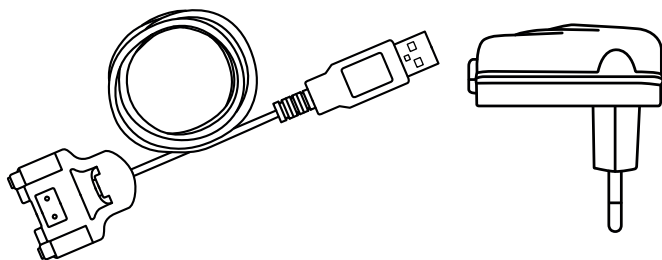
After 10 seconds, the system quits the programming menu.



12 Charging system of the Transmitting Unit

Inside the Transmitting Unit there is a rechargeable battery that cannot be removed from the Radio Remote Control.

To charge the battery, the charging device (Elca-Clip) supplied with the Elca Radio Remote Control must be used.



The transmitting unit should be charged in a place where the temperature is between 0°C and 45°C; this will provide the best performance in terms of battery capacity and useful life.

The charging process stops outside this temperature range. Recharging will automatically resume when the temperature is within the above mentioned temperature range.

12.1 Instructions for use

Use only original Elca batteries and recharge them only with the Elca charging system.

Do not use batteries showing external damage.

Do not short circuit the battery contacts.

Do not tamper with or attempt to modify, open, perforate or repair the battery in any way.

Do not wet the battery with any liquid.

Do not put the battery in high pressure containers.

Do not knock or drop the battery.

Do not put the battery in your mouth.

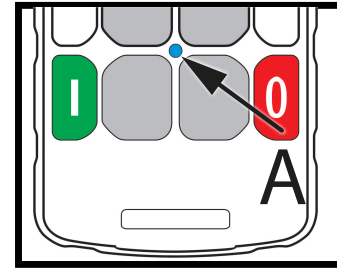
Do not store the battery in bags or pockets containing metal objects that could cause short circuits with the risk of burns.

Do not expose the battery to long periods of heat or sunlight.

Pay attention to the high temperatures that may be generated inside vehicles exposed to the sun.



12.2 Charging indicator lights



These are the red light signals from the recharging system LED [C] during charging:

SIGNAL	MEANING
Red LED on.	The Transmitting Unit is charging.
Red LED off.	The transmitting unit is charged, or it cannot be charged because the temperature is outside the permitted range.

The full charging process lasts about 4 hours.

The lithium polymer batteries allow a rapid charging process in the initial part of charging.

Two hours charging provides 75% of a full charge, the equivalent of about 15 hours run time, while a charge of just 20 minutes provides about 2 hours of run time.

It is advisable to always keep the batteries fully charged to be able to ensure full effectiveness.

Avoid leaving the batteries discharged for long periods.

Charge the batteries at least once a year.

The charging system is for professional use, therefore it can only be used by competent personnel or by suitably trained persons.

The charging system cannot be used by a Person with limited physical, sensory and mental abilities and by children.

The charging system should not be used with wet or damp hands or feet. The use of the charging system does not require any special tools. In any case, do not for any reason use objects and/or tools that are not insulated since they could conduct electricity.



Before charging the Transmitting Unit always make sure it is undamaged and the contacts are clean both on the Unit and also on the charger.

If cleaning is required, the Transmitting Unit should be switched off and/or the charging system disconnected from the power supply.

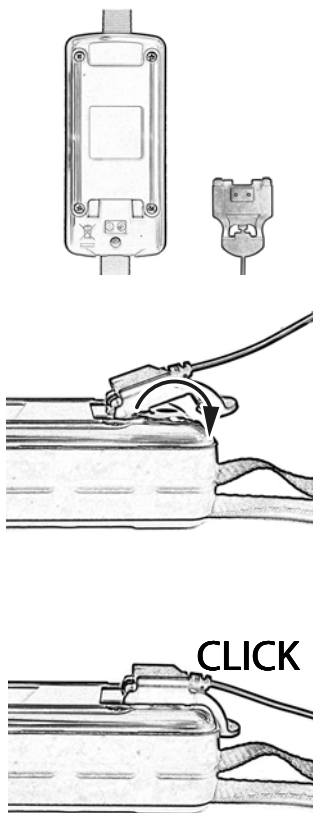
Use a damp cloth with a cleaner for the electric contacts or a non-abrasive brush.

Protect the charging system from dust and material like lime, sand, concrete or other substances.

Be very careful when using the charging system, since it can be a source of fire, overheating and other dangers.

12.3 Connecting the charging system

Check that the electrical connection poles are clean and dry before connecting the charging system.



12.4 Removing the charging system



To remove the charging system after charging, carry out the procedure indicated in paragraph 12.3 in reverse order.

13 Maintenance

13.1 Maintenance of the Radio Remote Control - general instructions

It is the responsibility of the Maintenance Technician:

- keep the Transmitting Unit safe so that it cannot be used by unauthorised or unqualified personnel;
- use the Machine on which the Elca Radio Remote Control is installed only in safe conditions and only if it is possible to get a good view of the working area of the Machine;
- use the Machine on which the Elca Radio Remote Control is installed only in accordance with the measures and instructions provided by the Manufacturer of the Machine and in compliance all applicable Laws, Regulations and Standards, also local;
- immediately notify superiors and/or managers of the workplace and/or the Machine of any faults, subsidence, deterioration of any other fault that could cause the Radio Remote Control and/or the Machine to malfunction or that could injure Persons and/or damage property;
- respect all the instructions and warnings provided by the Manufacturer of the Machine and/or the Installer;
- respect all the instructions and warnings provided by the person responsible for starting up the Machine for work;
- respect all the instructions and warnings contained in the Manual of the Radio Remote Control;
- all applicable Laws, Regulations and Standards, also local, must be respected;
- use the Radio Remote Control only as described in this Manual, as explained in all the warnings and instructions provided by Elca and in any event not contrary to all the applicable Laws, Regulations and Standards, also local;

All set up, control and maintenance operations of the Radio Remote Control must be recorded. The person responsible for the Maintenance of the Machine should record them.



Before carrying out any maintenance, it is necessary that:

- **the Receiving Unit is NOT powered;**
- **the Transmitting Unit is off;**
- **the STOP button is pressed.**

In the event of a malfunction the Transmitting Unit should be switched off and the Receiving Unit disconnected from the power supply. The Radio Remote Control must remain disabled until the problem is solved with the necessary technical interventions.



After each maintenance operation, it is necessary to:

- **check that the gasket is undamaged and correctly positioned;**
- **check that the parts of the casing are properly connected so that they overlap;**
- **screw in the screws.**

After each maintenance operation, always check that all the commands sent by the Transmitting Unit activate only the movements expected.

13.2 Routine maintenance

By routine maintenance is meant all those actions that have the single aim of maintaining the normal operating conditions of the Radio Remote Control.

Routine maintenance takes place through set up and control interventions, and the scheduled replacement of parts, required by a normal use of the product.

Each time that the Radio Remote Control is fitted or installed on the Machine, each time that the Machine is moved or placed in a new position or else after special maintenance, it is necessary to carry out all the instructions below.

The routine maintenance contained in this Manual is crucial for the safe operation of the Radio Remote Control.



In order for the Radio Remote Control to operate safely, the routine maintenance described in this Manual must be carried out.



Before carrying out any maintenance on the Machine, the Receiving Unit must be disconnected from the power supply.

13.2.1 Daily routine maintenance

What to do every day before using the Radio Remote Control:

- check that the STOP button is working correctly;
- make sure that the plastic case of the Transmitting Unit is undamaged. It should not have cracks;
- check the integrity of the rubber of the keyboard buttons. It should not have cracks or holes;
- make sure that the data plates of the Transmitting Unit are undamaged and legible. They should be undamaged and legible.

What to do during normal use:

- prevent materials depositing on the Transmitting Unit that could compromise its safe use (for example: dust, grease, concrete, lime, sand, etc.);
- avoid any action that could damage the Transmitting Unit (contact with water, fluids and liquids, falls, bumps, etc.);
- protect the Transmitting Unit from jets of water or heavy rain.
- do not leave the Transmitting Unit unnecessarily exposed to direct sunlight or heat sources.

What to do after its use:

- clean the Transmitting Unit without using solvents or corrosive or flammable products. Do not use steam cleaners, pressure washers or high pressure appliances;
- put the Transmitting Unit in a clean and dry place, sheltered from rain, the sun and heat sources.

13.2.2 Monthly routine maintenance

At least once a month:

- clean the Transmitting Unit with a damp cloth and make sure it is undamaged.
- clean the battery contacts and the unit's power contacts;
- clean the contacts of the charging system's power supply.
- check that the symbols on the transmitting unit panel are undamaged. They should be clearly visible.

13.2.3 Quarterly routine maintenance

At least every three months:

- check that the commands sent and movements carried out by the Machine correspond;
- check that the STOP contact is open when the STOP button is active. After carrying out the maintenance the work must be recorded (date, signature, comments) as evidence that the control was duly carried out. Keep the record together with the other installation documents, since it is an important maintenance intervention concerning safety.

13.3 Special maintenance

By special maintenance is meant the operation and the entirety of repair operations that have to be carried out following breakages, faults or malfunctions of the Radio Remote Control.

Special maintenance brings the Radio Remote Control back to its original conditions of use and operation.



Special maintenance should only be carried out by a qualified Elca person.



The qualified Elca person is a specialised technician who has the specific skills and competences with regard to the Radio Remote Control.

No specialised technician can carry out special maintenance operations on the Radio Remote Control if he does not belong to the Elca assistance network or who is not expressly authorised by Elca.

For the special maintenance operations only original Elca parts and materials should be used.



The instructions and maintenance Manual should be available for the specialised technician entrusted with the special maintenance operations.

When requesting assistance and/or spare parts from Elca, you must provide the serial number of the Radio Remote Control, the date of purchase, and the problem encountered.

To enable the request to be met it is also helpful to know the address of the place where the Radio Remote Control is used, the name and telephone number of the person to contact, as well as the company supplying the Radio Remote Control.

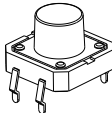
13.4 Actuators



Each actuator of the Transmitting Unit has been constructed to support a maximum number of movements, beyond which it is not possible to guarantee it operates correctly.

This information is normally reported in the technical specifications of the Manufacturer of each actuator.

The “maximum number of movements” can in no way be understood as a warranty period.

Actuator	Max. number of movements
	200.000



The actuators of the transmitting unit (keys, buttons) must be replaced before the “maximum number of movements” is reached.

Replacement is necessary even when these are working.

This type of maintenance can prevent possible dangerous situations caused by faults with the actuators.

14 Guide to solving problems

If the Radio Remote Control is not working correctly, carry out the following preliminary controls:

- move all the Transmitting Units in the work area away from the Elca Transmitting Unit used, in order to avoid possible radio disturbance and interference;
- move the Elca Transmitting Unit closer to the corresponding Elca Receiving Unit, in order to avoid possible radio disturbance and interference, positioning it always in a safe place with a complete view of the Machine, the work area and the load, if present;
- check to see if the problem is with the Radio Remote Control or the Machine: to this end, it is necessary to do a control test of the Machine using a different control station to the Radio Remote Control, if present. If the problem persists after this test, you need to work on the Machine following the Manufacturer's instructions. Otherwise the problem is with the Elca Radio Remote Control, so further controls will be needed.

14.1 Solutions in the event of malfunctions

The following table shows the malfunctions that may occur on the transmitting unit, along with the relative solutions. If the problem persists after implementing the solution indicated, contact the assistance service of the Machine Manufacturer.

SIGNAL	POSSIBLE CAUSE	SUGGESTED REMEDY
The Check LED is off.	The battery is low.	Recharge the battery.
	The Radio Remote Control, is outside the operating range.	Make sure that the operating distance is within the work range and that the Radio Remote Control, has been installed correctly.
	The system has not been installed correctly.	Check the system has been installed correctly (Receiving Unit position, metal obstacles, etc.).
	The Receiving unit is off or not working.	Supply power to the Receiving Unit. Remember that switching off the Receiving Unit also causes the Transmitting Unit to switch off.

SIGNAL	POSSIBLE CAUSE	SUGGESTED REMEDY
The Check LED is off.	The access sequence is incorrect.	Insert the correct access sequence of the Transmitting Unit.
	There is radio disturbance.	Ensure there are no other similar systems or sources of interference such as radio relay systems or transmitters. Switch off the Transmitting Unit and then switch it back on.

OPERATING ERROR	POSSIBLE CAUSE	SUGGESTED REMEDY
The transmitting unit switches off, and only restores the radio connection when the START command is enabled.	The frequencies may be disturbed.	Perform a frequency change.
	The receiving unit is switched off.	Make sure the receiving unit is switched on; if it is off, the transmitting unit will also switch off.
	The external antenna (if present) is not working.	Check that position and the connection of the external antenna are correct.
	The system has not been installed correctly.	Check that the system has been installed correctly (for example: the position of the Receiving Unit, the presence of metal obstacles, etc.).

One or more commands do not activate the corresponding movement.	A fuse is damaged.	Check the condition of the fuses inside the Receiving Unit.
	The command was not transmitted.	On the Receiving Unit check that the LED comes on of the relay corresponding to the command activated on the Transmitting Unit.
	The wiring is incorrect.	Check the wiring in the Receiving Unit.

15 Decommissioning and disposal

15.1 Decommissioning

After its decommissioning the Radio Remote Control should be transported and kept in accordance to what is in paragraph 8.5.

15.2 Disposal

If disposing of all the parts of the Transmitting Unit and its charging system, they all should be treated as separated waste. Disposal should comply with the legal provisions and regulations in force in the country of use.