USER INSTRUCTIONS FOR THE WL RECEIVER-TRANSMITTER

CODE 101-050-80125
101-050-80170

WireLess

Codice fascicolo: 997-101-50380
Data: Venerdì 08 novembre 2019
Codice foglio:997-101-50376 Rev: AA

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GB

O.M.F.B. S.p.A. Hydraulic Components

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IMPORTANT

"It is the responsibility of the installation technician to ensure the power supply of the remote control system and hydraulic mini powerpack is protected with a fuse and disconnector switch."

"It is the responsibility of the user to ensure the remote control system and hydraulic mini powerpack are disconnected from the power supply at the disconnector switch when the vehicle is in motion."

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MANUFACTURER: *O.M.F.B. S.p.A. Hydraulic Components*
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Codified radio frequency transceiver, multichannel and operating at ISM 2400 Mhz band, composed by a mobile unit powered by battery and a fixed one to be installed in the automotive field. The present instruction sheet refers to radio remote controls **2CH WL** and specifically to the types **2 WL RX - 2 WL TX.**

Codice fascicolo: 997-101-50380

1. GENERAL DATA

The control system for the WL unit consists of 2 units, both of which receive and transmit:

1.1 THE RECEIVER (2 WL RX)

It receives commands from the TRANSMITTER and send information back to the transmitter regarding the state of control unit.

1.2 THE TRANSMITTER (2 WL TX)

As well as transmit commands, it can receive information from the receiver.

REMOTE CONTROL – CONTROL UNIT COMMUNICATONS

- **START-UP**
- **CONTAINER ASCENT**
- **CONTAINER DESCENT**
- **EMERGENCY**

RECEIVER RX

CONTROL UNIT – REMOTE CONTROL COMMUNICATIONS

- **CONNECTION/COMUNICATION STATE**
- **CONTAINER ASCENT STATE**
- **GLUED CONTACTOR STATE**
- **EMERGENCY STATE**

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• THE WL POWER-PRO CONTROL UNIT MANAGES:

- ON/OFF key
- Remote control for raising and lowering the tip-up
- Battery charge led on transmitter
- Functions blocked due to failure through SOS key

2. TECHNICAL SPECIFICATIONS

2.1 WL TRANSMITTER DEVICE

- GFSK modulation
- Operating frequency: 2.4 GHz
- ERP RF power 1 - 3 mW
- 2 x 1.5V AAA LR03 batteries
- Receiver sensitivity - 93 dBm
- Current consumption 21 mA
- IP protection: IP 54

WARNING:

- **If batteries are replaced with wrong models it might explode.**
- **Dispose of used batteries according to applicable regulations.**

WARNING:

If the transmitter is used for remote control of a vehicle with a tipper body, the operator must not walk or stay close to the vehicle when using the equipment truck, also including the entire descent phase

2.2 RECEIVER DEVICE

VOLTAGE SUPPLY	*min 9 V, max 28 V*
MAXIMUM CURRENT CONSUMPTION	*370 mA a 10 V* *563 mA a 28 V*
MAX SWITCHING CURRENT	*8 A*
OPERATING FREQUENCY	*2.4 GHz*
RF SENSITIVITY	*- 93 dBm*
BAND	*2400 ÷ 2483 MHz*
ANTENNA RF EMISSIONS	*- 65 dBm*
IP PROTECTION (EN 60529)	*The box and buttons guarantee IP65 protection of the casing. The cabling is excluded.*
OUTPUTS	*N° 2 Relè*
CONTACT CAPACITY	*max 8 A*
OPERATING TEMPERATURE	*- 30 / + 80 °C*

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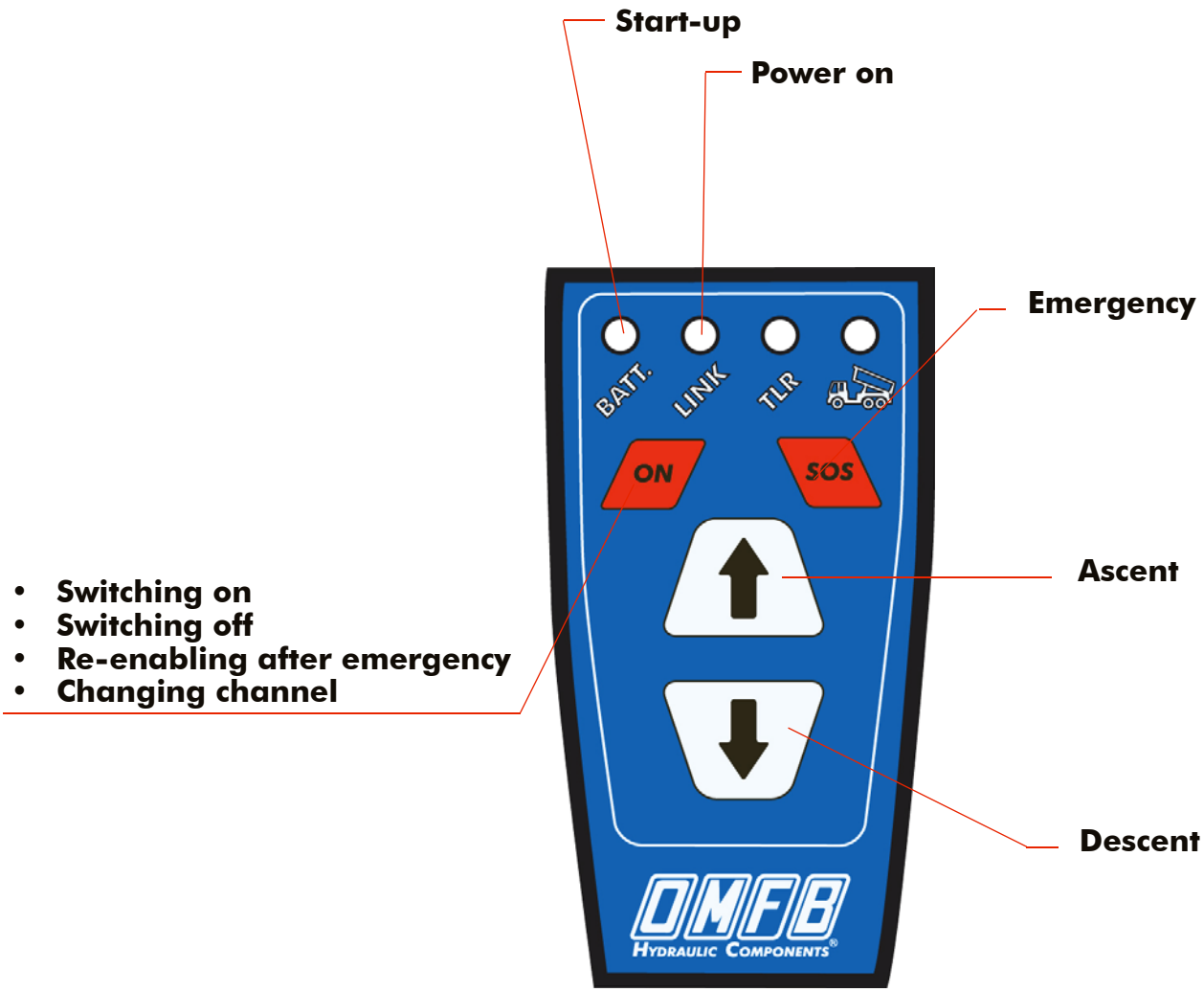
OMFB HYDRAULIC COMPONENTS

3. GENERAL DESCRIPTION OF CONTROLS AND INDICATIONS



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3.1 GENERAL OPERATION

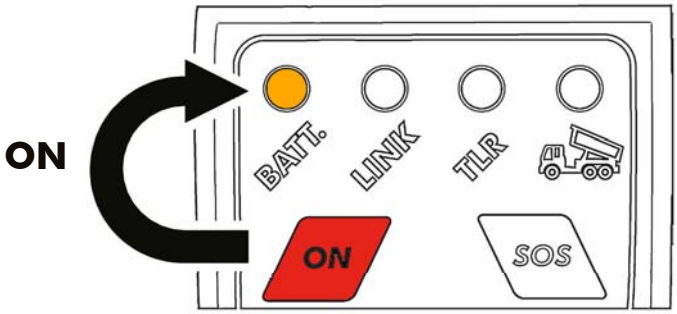
Turning on the TX the system checks receiver presence and once identified and communicating the yellow "Link" led comes on. If the yellow "Link" key led does not come on when the transmitter is turned on, check that the transmitter is powered (in particular, check that the battery disconnector on the tip-up container with mini powerpack is inserted and on). **If the yellow "Link" led should go off and flash during operation, this means it is not within the max working distance allowed between the transmitter and the receiver, which is 5 metres. (For needs/applications requiring greater distances check other OMFB catalogue products).** On pressing the Up key (in the picture) the following occurs: in "man present" mode (that is, output on for as long as the key is pressed) of the corresponding Up outlet which in wiring corresponds to the violet wire tension level being taken to the power voltage level. On pressing the Down key (in the picture) the following occurs: in "man present" mode (that is output on for as long as the key is pressed) of the corresponding down outlet which in wiring corresponds to the solenoid valve connector Blue wire tension level being taken to the power voltage level.

N.B. To better understand operation, refer also to the COMPLETE FUNCTIONAL DIAGRAM on page 34 of this manual.

4. SPECIFIC DESCRIPTION OF CONTROLS

The TRANSMITTER has four function led lights.

4.1 ON



• **ON**
Pressing the red ON key, the TRANSMITTER comes on and the battery led flashes continuously for 1 second to indicate it is on. It will then flash every 3 seconds to indicate that it is working.

• **OFF**
Pressing the ON key for longer than 2 seconds the device turns off. The "BATT" led switches off, confirming the device is no longer on.

• **AUTOMATIC POWER OFF**
The TRANSMITTER turns off automatically after the keyboard has not been used for 3 minutes. Power off will be preceded by 3 to 5 consecutive flashes close to each other. This also happens when the battery is flat and, in that case, after pressing ON, the led will issue 2 long flashes and then go off.

4.2 Indications of TRANSMITTER BATTERY STATE

The battery led also indicates general battery state and is read before each transmission:

• BATTERY CHARGED: led flashes every 3 seconds

• BATTERY PARTIALLY FLAT: if the battery charge is under 2.2 Volts, the battery led will keep on flashing every second for as long as the TRANSMITTER stays on.

• BATTERY COMPLETELY FLAT: if the battery charge is under 1.9 Volts, the battery led will issue 2 long flashes and then go off.

• The two AAA LR03 batteries last for at least 1 year with normal use of the tip-up container. To replace these, open the transmitter by undoing the screw at the back.

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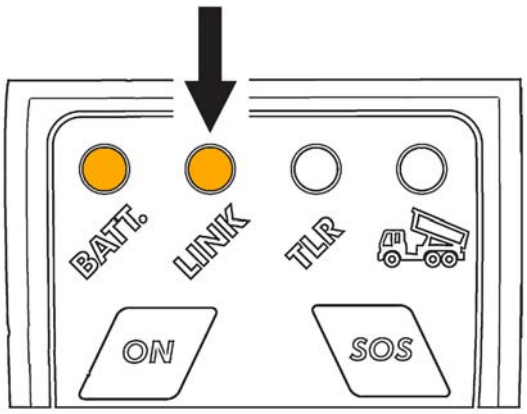
4.3 CONNECTED

Connected



The LINK led only signals radio connection. It comes on when a TRANSMITTER –RECEIVER connection is established. If the connection should be terminated, for various reasons, the led goes off and the RECEIVER automatically places itself on emergency LINK.

4.4 CHANGE CHANNEL

When turned on the transmitter transmits on a pre-defined channel.
If that channel is not disturbed the link is made, the receiver stays on that channel and the remote control's Link led comes on.
If the channel is disturbed the Link led does not come on and the operator has to press and release the ON key which moves to a new channel.
When the ON key is released the Link led flashes fast to indicate that pressure took place and if the link is on the Link led stays on.
Before proceeding to a further channel change is necessary to wait at least 10 seconds to allow complete channel scan receiver.
The system allows you to choose between 6 different work channels by repeatedly pressing the ON button. If the mobile unit has two remote controls, it links to the first one received so, even if the second remote control is present at the same time, the latter's packages are ignored by the fixed unit.

4.5 Capacity and several systems co-existing

The system is gauged to guarantee a maximum 5 metre range of action between mobile unit (transmitter) and fixed unit (receiver).
The system was designed to guarantee, where necessary, co-existence and use of 6 systems at the same time in a 5 metre range.
Where required, the system can be supplied with a second coded transmitter.

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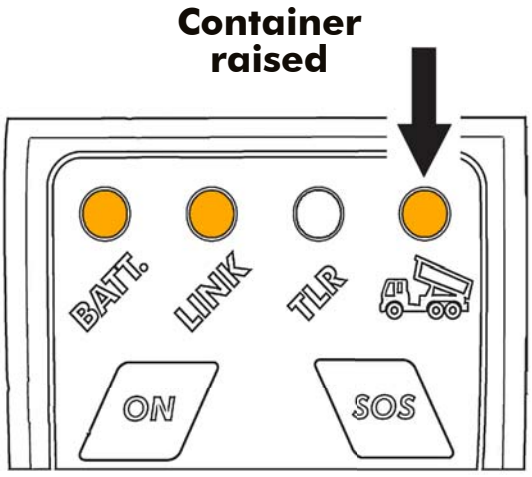
4.6 CONTAINER RAISED



The led with the vehicle icon communicates container state. If this is raised the TRANSMITTER cannot be turned off.

ATTENTION: SIGNALLING IS INDIRECT!
The led is activated by the control unit's pressure gauge when there is pressure in the hydraulic circuit.

4.7 RE-ENABLING AFTER EMERGENCY

You re-enable after emergency by pressing the ON key for longer than 2 seconds and then releasing it. Once re-enabled, indications return to the pre-emergency state. At this point the system updates and resets automatically.
If the SOS key is pressed at the same time as other keys the SOS key has priority.

4.8 TO SUM UP

- A single quick press starts the TRANSMITTER
- Pressed for longer than 2 seconds, the TRANSMITTER goes off
- Pressed for longer than 2 seconds after an emergency, the TRANSMITTER is reenabled.
- Pressed and released quickly with the TX switched on, the radio transmission channel is changed (max 6 channels).

- It disables any output function when all 4 TRANSMITTER leds are flashing.
- You exit emergency conditions by pressing ON for more than 2 seconds.

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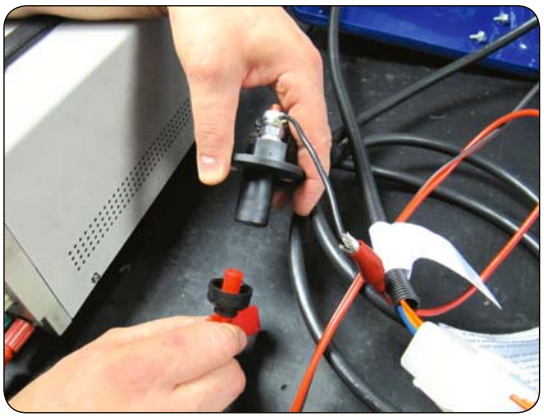
INSTRUCTIONS FOR PROGRAMMING RADIO WL 2CH

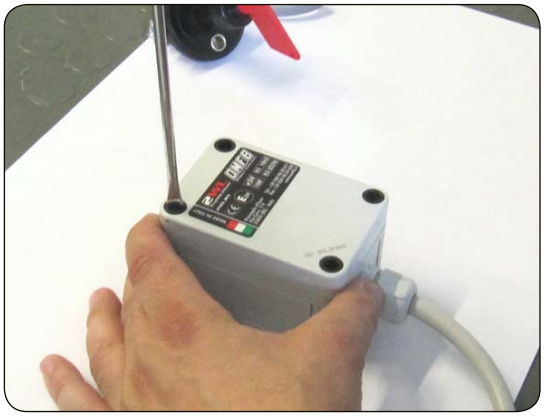
CODE 101-050-80125

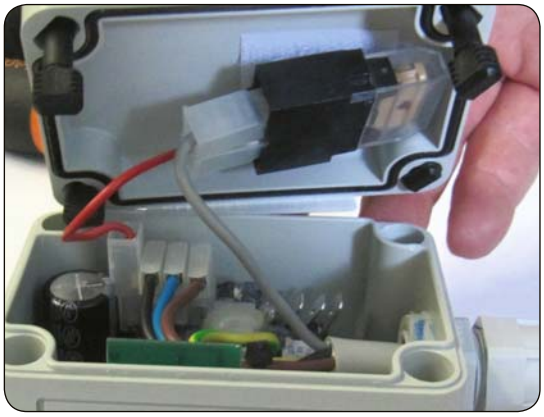
WireLess

1. Cut-off the power and remove the battery isolator.



2. Search for the receiver unit and open the cover unscrewing the 4 screws.





3. With an electrical conductor connect the terminal on receiver board position 1 (see details picture 1) to the positive pole on the starter switch of battery isolator (see detail picture 2).

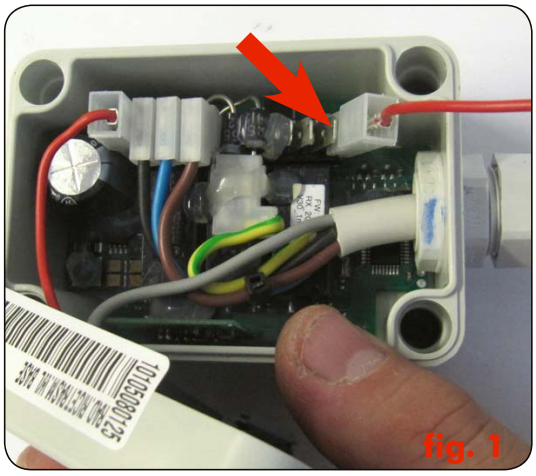


fig. 1

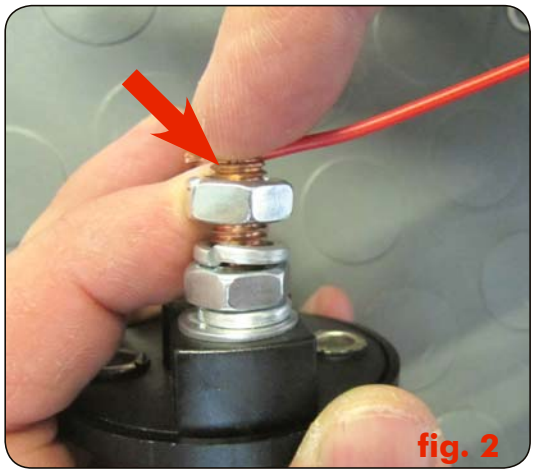


fig. 2

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4. Activate the transmitter by pressing the button ON and connect the power by switching–on the isolator switch (picture 3). The programming is done when the yellow led named LINK on the transmitter unit is ON.

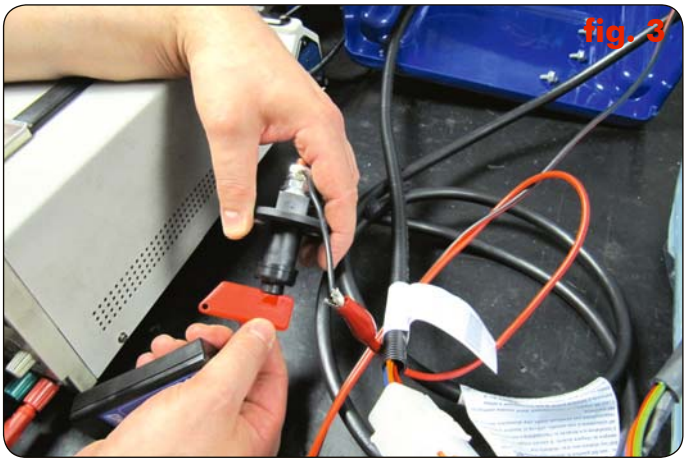


fig. 3

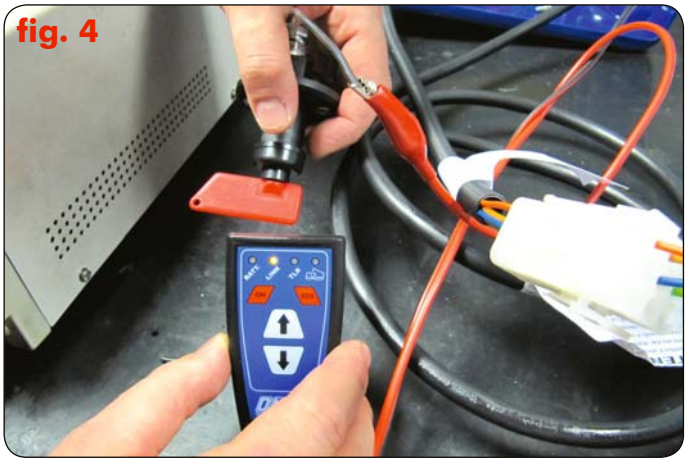
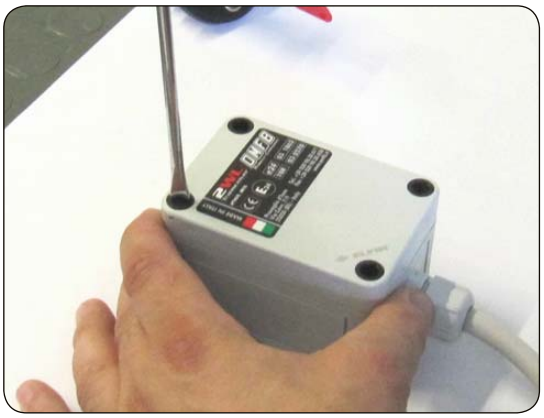


fig. 4

5. Remove the electrical conductor of the terminal 1 (see details on picture 1) from the receiver unit and from the positive pole of the motor starter switch.

6. Fit the cover of receiver unit paying attention to the gasket is properly fitted and tight the screws fully.



ATTENTION: The receiver stores up to two transmitters. The last code entered deletes the oldest.

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INSTRUCTIONS FOR PROGRAMMING RADIO WL 2CH + EMERGENCY

CODE 101-050-80170

WireLess

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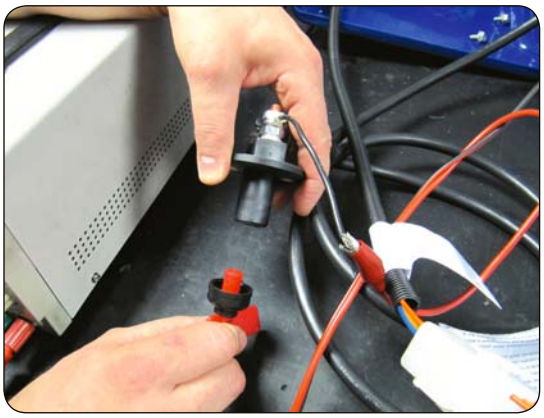

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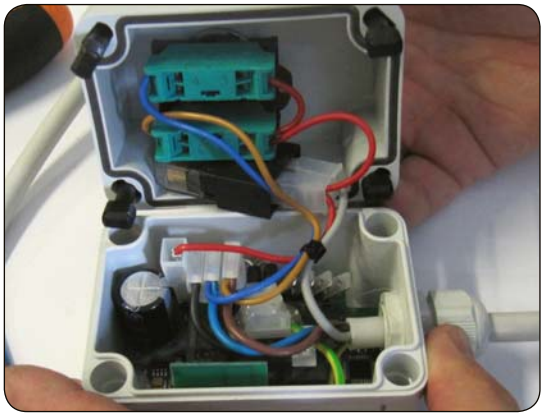

3. With an electrical conductor connect the terminal on receiver board position 1 (see details picture 1) to the positive pole on the starter switch of battery isolator (see detail picture 2).

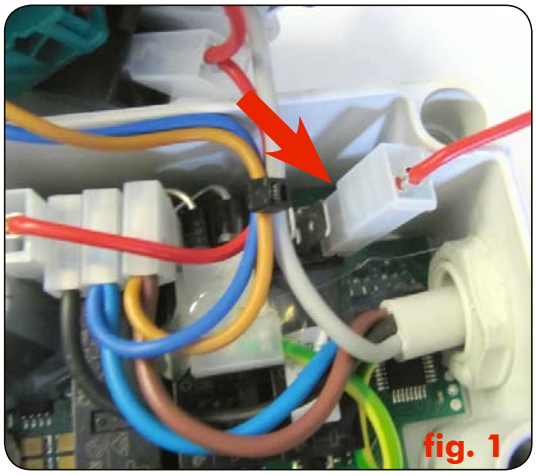

fig. 1

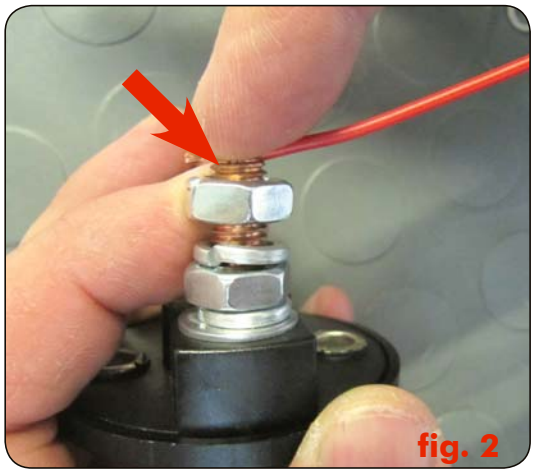

fig. 2

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4. Activate the transmitter by pressing the button ON and connect the power by switching–on the isolator switch (picture 3). The programming is done when the yellow led named LINK on the transmitter unit is ON.

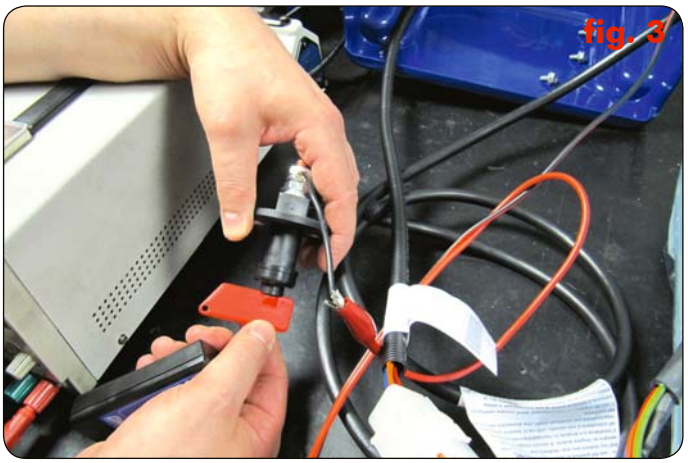


fig. 3

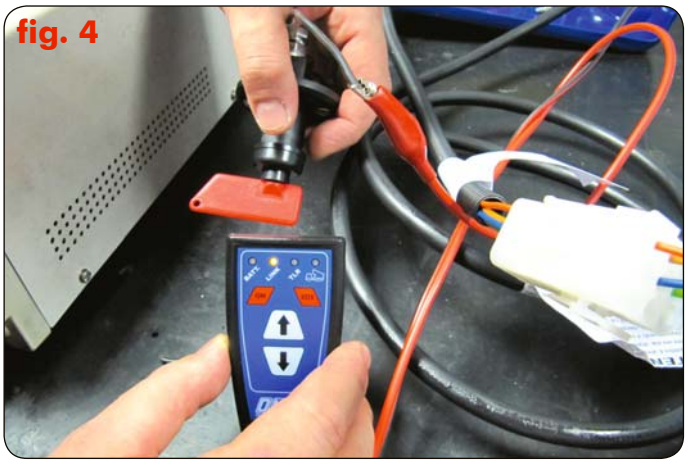
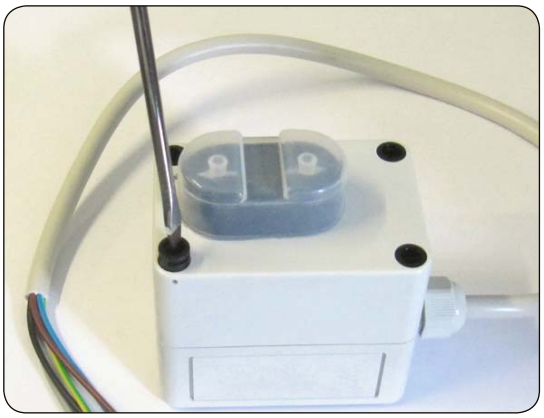


fig. 4

5. Remove the electrical conductor of the terminal 1 (see details on picture 1) from the receiver unit and from the positive pole of the motor starter switch.

6. Fit the cover of receiver unit paying attention to the gasket is properly fitted and tight the screws fully.



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6. Optional configuration for fitting a double contactor

The system can, on request, be fitted with a second contactor or an electronic disconnector, to be connected as standard to the one in the control unit. Refer to the functional diagram for "OPTIONAL CONFIGURATION OF A DOUBLE EMERGENCY CONTACTOR" (page 35) and contact O.M.F.B. for further information and/or order codes.

7. Spare parts

101-051-41356	TX
509-000-01215	Holder

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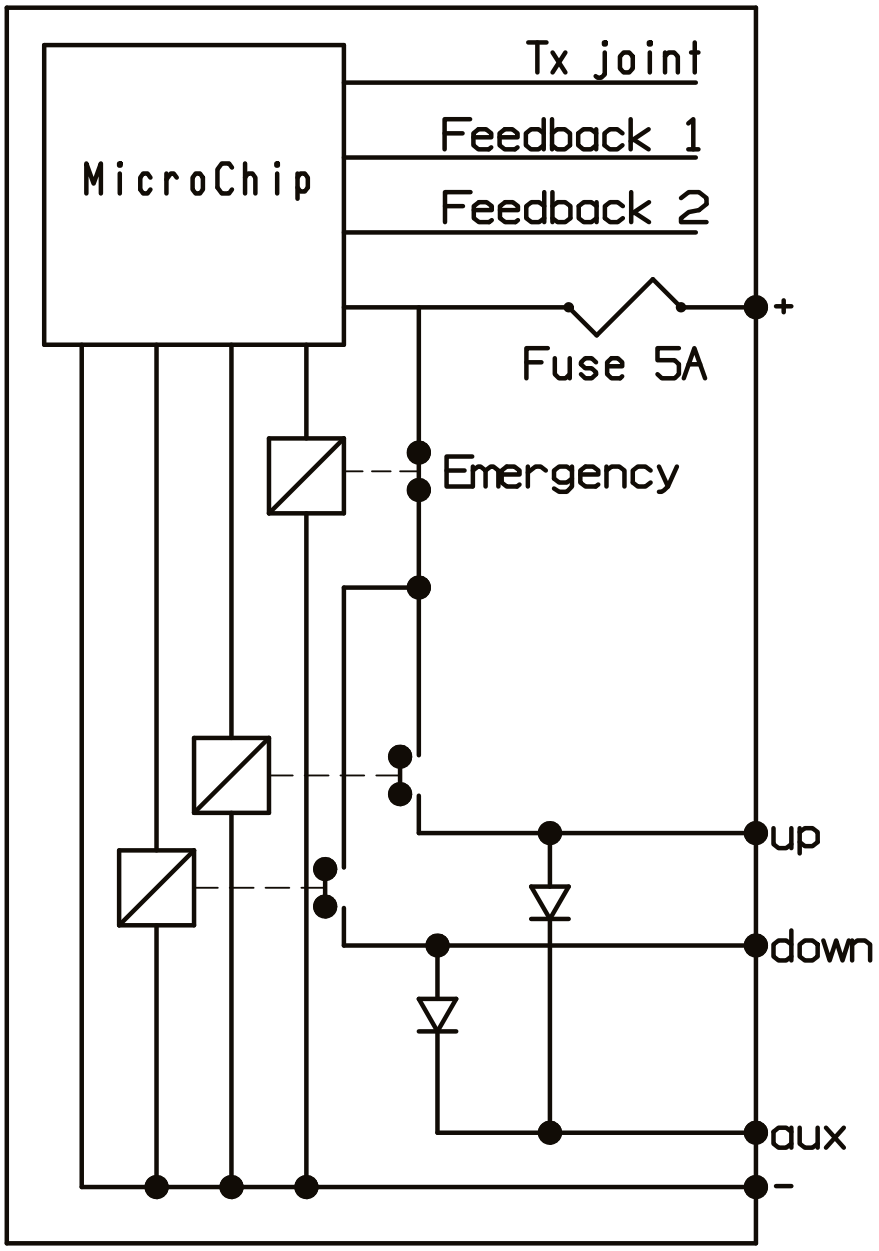
8. STRUCTURAL AND FUNCTIONAL DIAGRAMS

8.1 COMPLETE FUNCTIONAL DIAGRAM

(10105080125)



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8.2 CONFIGURATION DIAGRAM EMERGENCY CONTACTOR
(10105080170)

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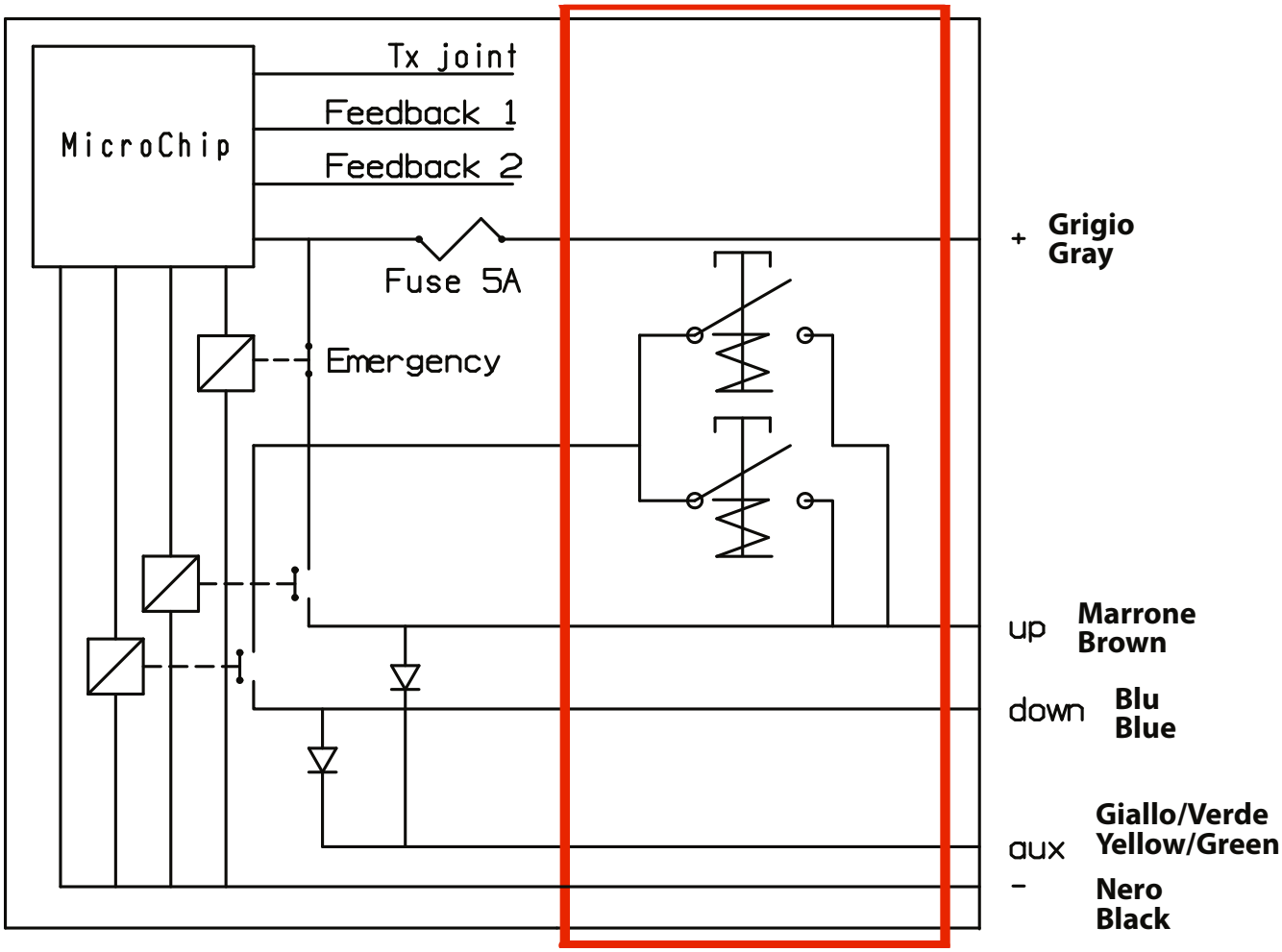

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1. GENERAL COMMENTS

1.1 Product Markings and certification

WL radio remote controls meets the rules set forth in the following harmonised technical standards:

2014/53/EU Regulation concerning the unification of member countries' legislation regarding the presence of radio devices on market and revoking the regulation 1999/05/CE

• Art. 3.1 (a) - SALUTE - EN 62479: 2010 Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10MHz - 300GHz).
• Art. 3.1 (a) - SICUREZZA - EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011+ AC:2011+ A2:2013 Information technology equipment - Safety
Part 1: General requirements.
• Art. 3.1 (b) - COMPATIBILITA' ELETTROMAGNETICA - EN 301 489-17: v3.2.0 (2017-03) ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU.
• Art 3.2 - SPETTRO RADIO - EN 300 328 : v2.1.1 (2016-11) Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU.

Compliance with pertinent directives is certified by the presence of the **CE Marking** on the product:

CE

The compliance of **WL** radio remote controls with essential requirements of Directive 99/05/EC **allows them to be placed on the market, put into service and have the right to be connected in every European country,** as well as all countries belonging to CEPT, **without the need for homologation by the relevant Postal and Telecommunications Administration.**
According to an indicative and non-exhaustive list of equipment that falls within the classification established by **European Commission Decision 2000/299/EC, WL** are not subject to any restrictions for installation and connection, since they belong to a class of S.R.D. (Short Range Devices) without specific uses and operating within a radio frequency band (433.050 – 434.790 MHz) harmonized within the European Community. The **WL** radio remote control **receiver** also **complies with the essential requirements and other provisions set forth in European Directive 95/54/EC and in ECE/ ONU** Regulation No 10 Addendum 2, relating to "Suppression of radio interference (Electromagnetic Compatibility) produced by spark-ignition engines fitted to motor vehicles".

Codice fascicolo: 997-101-50380
Data: Venerdì 08 novembre 2019
Codice foglio:997-101-50376 Rev: AA

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OMFB HYDRAULIC COMPONENTS

The provisions of 95/54/EC must be satisfied, concerning Electromagnetic Compatibility, by all vehicles as defined in Directive **70/156/EC** relating to the **type-approval of motor vehicles and their trailers**, as emended by 92/53/EC, as well as their **components or separate technical units** that are exempt from the compliance with the rules of 89/336/EC.

Conformity tests prescribed by Directive 95/54/CE and ECE/ONU Reg. No 10 Add. 2 were carried out at the laboratory **PRIMA RICERCA & SVILUPPO** (via Campagna, 58 - 22020 Gaggino Faloppio (CO)).

Compliance of **WL** radio remote controls with Dir. 95/54/EC requirements is **certified by the Notified Body NSAI** (National Standards Authority of Ireland-Glasnevin, Dublin 9, Ireland (+353-1-80703910)) by releasing the approval number for the product marking:

e24*72/245*2009/19*1862*00

Compliance is shown by product marking:

e24 **031862**

Compliance of **WL** radio remote controls with the ECE/ONU Reg. No 10 Add. 2 requirements is **certified by the Notified Body NSAI** by releasing the approval number for the product marking:

E24 10R-030578

Compliance is shown by product marking:

E24 **10R** **03 0578**

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O.M.F.B. S.p.A. Hydraulic Components

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