www.abexo.tech

MADE IN ITALY

AB-00030.UK - rev.1/22

4CH DECODER

# MARCONI LINK R4

cod.
**APE-519/0020**

**AB Tecno Srl**
Via Cicogna 95 - 40068 San Lazzaro di Savena (BO)
Tel: +39 051 6259580 - fax: +39 051 6259600
info@abtecno.com - **www.abexo.tech**



## Assembly and use instructions



**LINK R4** is a device that integrates a transceiver operating at 868.3MHz with LoRaTM modulation and is capable of ensuring communications at very long distance, high immunity to interference, high sensitivity and low power consumption.
The device, combined with the MARCONI LINK T4 decoder board or the MARCONI XTR-8LR-4ZN remote control, allows remote loads to be activated and is ideal for very long distance (8km at sight) activation and control applications such as irrigation systems, alarms.
Below are the connections:

| TERMINAL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| NAME | CH4 | CH4 | CH3 | CH3 | CH2 | CH2 | CH1 | CH1 | -V | +V |

**Functioning**
The LINK R4 device, in order to limit the average consumption <1mA, autonomously manages an on/off cycle with appropriate duty-cycle. During the period when it is receiving, it checks whether a valid transmission is in progress and if so, it remains in continuous reception for the time required for decoding.
LINK R4 must always be paired with one or more LINK T4 or LINK T4 TELECOMMAND via the learning procedure described below. The decoder can learn up to 48 encoders. When a valid packet transmitted by a learned encoder with a greater counter value (see encoder manual) is decoded, within a window of 512, than the last one received, the corresponding output CH1-4 is activated (relay closed). To select the operating mode of the outputs, it's necessary to set the dip switch as the table below:

| SET 1 | SET 2 | OUT 1 | OUT 2 | OUT 3 | OUT 4 |
|---|---|---|---|---|---|
| HIGH | HIGH | MONO | MONO | MONO | MONO |
| HIGH | LOW | MONO | MONO | LATCH | LATCH |
| LOW | HIGH | MONO ½ sec | MONO ½ sec | LATCH | LATCH |
| LOW | LOW | LATCH | LATCH | LATCH | LATCH |

MONO = the output is active for the duration of the pressing of the transmitter button
LATCH = the output changes state (active/disabled) to every pressing of the transmitter button
MONO ½ = the output is active for ½ sec from the moment the transmitter button is pressed

To limit consumption it is possible to turn off the led POWER ON by switching the jumper J1 to the OFF position.

**Self learning for transmitters**
1. Press the button on the RF module and then release it.
2. The led on the RF module flashes for 10 sec: within this amount of time press any button of the transmitter. Once the learning is complete the led lights steady for 1 sec.
3. The outputs are automatically associated to the buttons of the transmitters (ex. key 1 TX with output 1 RX, etc…)

**Manual learning for transmitters**
**(possible only if all the outputs are set as impulsive i.e. SET 1 = SET 2 = HIGH)**
1. Press the button on the RF module and then release it.
2. The led on the RF module flashes for 10 sec.
3. Press again within 10 sec. the button on the RF module. The led lights steadily.
4. Press again the button on the RF module to select the output 1 (the led flashes once), press again the button to select the output 2 (the led flashes twice) and so on.
5. Once chosen the desired output, press the button of the remote to associate. The led flashes a number of times as the output number.

From this moment the selected output works as impulsive. Repeat the described procedure for further associations.

**Memory reset**

1. Press and then release the button on the RF module.
2. The led on the RF module flashes for 10 sec.
3. Within this amount of time press the button again for about 5 sec., as long as the led stops flashing.
4. Release the button and check that the led flashes for times to confirm that the memory deletion happened.

After the deletion no transmitter will be recognised and the outputs will work according to the setting of the dip SET1 and SET2.

**Technical characteristics**

| | Min. | Typ | Max | Unità |
|---|---|---|---|---|
| DC Voltage | 9 | 12 | 26 | V |
| AC Voltage | 12 | 24 | 26 | V |
| Average consumption at rest with all the contacts open | | 0,8 | 1 | mA |
| Maximum consumption (Tx RF) with all the contacts open | | 45 | | mA |
| Max Power relays contacts | | | 5A @ 220 VAC<br>5A @ 30 VDC | |
| Frequency RF TX | | 868,30 | | MHz |
| RF power | | 13 | 14 | dBm |
| RF Modulation | | LORA™ | | |
| RX sensitivity @ 125kHz , SF 8 | | -126 | | dBm |
| Operating Temperature | -20 | | +70 | °C |
| Storage Temperature | -40 | | +100 | °C |

NB: The consumption of every single relay varies in the light of the voltage of power (example 9mA with VDC = 24V and 24mA with VDC = 9V)

**Reference Standards**

The device complies with the harmonized standards
- EN 62479
- EN 60950-1
- EN 301 489-3
- EN 300 220-2
- Receiver class: 2

With respect to the electrical safety standard EN 60950-1, the device is considered as a subassembly. It is the responsibility of the assembler to incorporate the device as a component to ensure that the entire equipment is safe. The device is intended to be electrically connected to other circuits SELV and must be powered from a power source (battery or power supply) that ensures SELV-type voltages (very low voltage of safety) conforming to EN 60950-1 and provided with short-circuit protection. The protection must be tested throughout the equipment.

**Example of protection against short circuits.**

Consider also EN 60950-1 requires that portable cells and batteries secondary sealed (other than button cells) containing an electrolyte alkaline or other nonacidic type must comply with IEC 62133.

**Manufacturer's Declaration for EU Compliance**

The manufacturer hereby declares that the type of LINK T4E radio equipment is in conformity Directive 2014/53/EU. The device operates at 868.3MHz (in the ISM band 868 - 868.6 MHz) with maximum radiated power 10dBm. The device is an equipment "Class 1" radio equipment as denoted in Article 1(1) of Decision of the European Commission No. 2000/299/EC dated 06/04/2000. The Class 1 Radio Equipment may be placed on the market and used without any restriction in all EU member states.

**CEPT Recommendation 70-03**

The device operates in a harmonized frequency band and therefore, in order to comply with current regulations, it must be used on a time scale with a maximum hourly duty-cycle of 1% (equivalent to 36 seconds of use out of 60).

---

**As required by the Directive 2012/19/CE concerning the Waste of Electronic and Electrical Equipment (WEEE) it is necessary: to not dispose of WEEE as municipal mixed waste and make a separate collection of such WEEE; contact your municipality of residence for information about the separate collection centers for WEEE. This symbol on the electronic device indicates the separate collection of electrical and electronic equipment (Ref. Directive 2012/19/CE). Appropriate separate waste collection for the subsequent start-up of the disposed appliance to environmentally compatible recycling and treatment and helps to avoid possible negative effects on the environment and on health and favors the recycling of the materials to which the product is composed.**

## DECLARATION OF EU CONFORMITY

Product: MARCONI LINK-R4
Manufacturer: AB TECNO S.r.L. - Via Cicogna, 95 - 40068 San Lazzaro di Savena (BO)
The Manufacturer declares under its own responsibility that the product covered by the declaration meets all the provisions applicable in the following Directives:
**2014/35/EU** - on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment intended for use within certain voltage limits.
**2014/30/EU** - for the harmonization of the laws of the Member States relating to electro-magnetic compatibility and complies with the relevant harmonization legislation of the Union: **CEI EN 60947-1: 2008/A1: 2012/A2: 2015, CEI EN 60947-5-1: 2005/A1: 2010**

Bologna, lì 01/02/2018

AB TECNO's CEO
Ulisse Pagani