

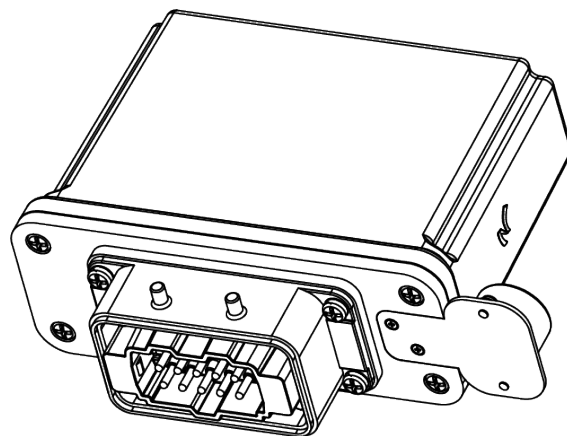
END USER INSTRUCTIONS

*Receivers:
R10-01, R10-02*

safe

smart

strong



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CHAPTER 1: INTRODUCTION

Thank you for using a Tele Radio AB product



READ ALL INSTRUCTIONS AND WARNINGS CAREFULLY BEFORE OPERATING THE PRODUCTS.

These End user instructions have been published by Tele Radio AB and are not subject to any warranty. The End user instructions may be withdrawn or revised by Tele Radio AB at any time and without further notice. Corrections and updates will be added to the latest version of the manual. Always download the End user instructions from our website, www.tele-radio.com, for the latest available version. Keep the safety instructions for future reference.

IMPORTANT! These instructions are intended for end users. The instructions can be printed and handed to end user.

Tele Radio AB remote controls are often built into wider applications. This documentation is not intended to replace the determination of suitability or reliability of the product for specific user applications and should not be used for this purpose. It is the responsibility of any such users or integrators to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use. Tele Radio AB shall not be responsible or liable for misuse of the information contained herein.

Always refer to the applicable local regulations for installation and safety requirements relating to cranes, hoists, material handling applications, lifting equipment, industrial machinery, and/or mobile hydraulic applications using Tele Radio AB products, e.g.:

- applicable local and industrial standards and requirements,
- applicable occupational health and safety regulations,
- applicable safety rules and procedures for the factory where the equipment is being used,
- user and safety manuals or instructions of the manufacturer of the equipment where Tele Radio AB remote control systems are installed.

Tele Radio AB End user instructions do not include or address the specific instructions and safety warnings of the end product manufacturer.

Tele Radio AB products are covered by a warranty against material, construction, or manufacturing faults. See "Chapter 7: Warranty, service, repairs, and maintenance".

1.1 About this document

Before installing or operating the product, read the corresponding documentation carefully.

Tele Radio AB's product range is composed of transmitters, receivers, and accessories intended for use together as a system.

These End user instructions cover general safety issues, main technical specifications, and standard operating instructions. Images shown in this document are for illustrative purposes only.

Please report any error or omission in this document, as well as any improvement or amendment suggestion to td@tele-radio.com.

1.1.1 COPYRIGHT

Information in this document is subject to change without notice. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, photographic, mechanical (including photocopying), recording or otherwise for any purpose other than the purchaser's personal use without the written permission of Tele Radio AB.

1.1.2 TERM AND SYMBOL DEFINITIONS

The capitalized terms and symbol used herein shall have the following meaning:

- **WARNING:** indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION:** indicates a hazardous situation which, if not avoided, will result in minor or moderate injury.
- **IMPORTANT:** is used for information that requires special consideration.
- **NOTE:** is used to address practices not related to physical injury.



This symbol is used to call attention to safety messages that would be assigned the signal words "WARNING" or "CAUTION".

1.2 About Tiger TG2 systems

The Tiger TG2 product range is composed of transmitters and receivers intended for use together as a system in complex lifting applications such as cranes, OHT cranes and electric hoists or mobile applications.

1.2.1 ABOUT R10 RECEIVERS

R10 receivers have simplex communication with support for duplex.

R10 receivers are compatible with all T9, T11, T12, T14 and T15 transmitters within the same frequency range.

Overview of available models

- 433 MHz frequency range

	Main board	Expansion board
	7 relays	Low voltage
R10-01	●	-
R10-02	●	●

● Standard - Not available

CHAPTER 2: SAFETY

2.1 Warnings & restrictions



Carefully read through the following safety instructions before proceeding with the installation, configuration, operation, or maintenance of the product. Failure to follow these warnings could result in death or serious injury.

This product must not be operated without having read and understood the End user instructions and having received the appropriate training. The purchaser of this product has been instructed how to handle the system safely. The following information is intended for use as a complement to applicable local regulations and standards.

IMPORTANT! Tele Radio AB remote controls are often built into wider applications. These systems should be equipped with:

- a wired emergency stop where necessary
- a brake
- an audible or visual warning signal

2.1.1 OPERATION



This radio system must not be used in areas where there is a risk of explosion.



Only qualified personnel should be permitted to access the transmitter and operate the equipment.



- **Always follow operating and maintenance instructions as well as all applicable safety procedures and requirements.**
- **Do not open the receiver encapsulation unless you are qualified.**
- **You must satisfy the age requirements in your country for operating the equipment.**
- **It is strictly prohibited to operate the equipment under the influence of drugs, alcohol and/or medications.**
- **Always test the transmitter stop button before operating it. Press the stop button then twist and pull it out. This test should be done on each shift, without a load.**
- **Never use a transmitter if the stop button is mechanically damaged. Contact your supervisor or representative for service immediately.**
- **Never leave the transmitter unattended.**
- **Always switch the transmitter off when not in use. Store in a safe place.**
- **Keep a clear view of the work area at all times.**

2.1.2 MAINTENANCE



Before maintenance intervention on any remote controlled equipments:

- **always remove all electrical power from the equipment.**
- **always follow lockout procedures.**

- Keep the safety information for future reference. Always download the End user instructions from our website, www.tele-radio.com, for the latest available version.
- If error messages are shown, it is very important to find out what caused them. Contact your representative for help.
- The functionality of the stop button should be tested at least after every 200 hours' use.
- If the stop button is mechanically damaged, do not use the transmitter. Contact your supervisor or representative for service immediately.
- Do not try to open the encapsulation.
- Always contact your representative for service and maintenance work on the product.
- Keep contacts and antennas clean.

- Wipe off dust using a clean, slightly damp cloth.
- Never use cleaning solutions.
- Check the encapsulation, foils and cable for damages every day. If you use the product although the encapsulation or foil is damaged, moisture can cause serious damage to the electronics.

CHAPTER 3: TECHNICAL DATA

NOTE: The information below may differ in customized systems, please refer to the corresponding technical documentation provided with each system.

3.1 Receiver specifications

	R10-01	R10-02
Input power	48–230 V AC, 50–60 Hz, max. 0.5 A	12–24 V AC/DC, max. 0.5 A
Number of stop relays	2 (potential free*, 10 A)	
Number of relays	7 (potential free*, 10 A) ¹	
Relay functionality		
Number of digital inputs	2	
Number of transistor outputs	1	
Bus system	–	
Connector		
Radio communication	Simplex (default), support for duplex	
Radio frequency band	433.075–434.775 MHz	
Number of channels	69 (channels 1–69)	
Max. number of registered transmitters	15	
Radio frequency output power	EIRP ² : < 10 dBm (10 mW)	
IP code	IP66	
Safety level	EN 61508 SIL3 and EN ISO 13849 PLe (Stop function)	
Dimensions	152 x 137 x 58 mm / 6 x 5.4 x 2.3 in	
Weight (typical)	650 g / 1.4 lbs	
Operating temperature	-20...+55 °C / -4...+130 °F	
Antenna	Internal antenna	

¹Maximum load is indicated for resistive load only.

²Equivalent isotropic radiated power

* Potential free means that a supply voltage is needed to get voltage out of a relay (e.g. via the included connection comb).

3.2 Current consumption

Input power	R10-01		R10-02	
	Min.*	Max.**	Min.*	Max.**
12 V AC	–	–	0.05 A	0.3 A
24 V AC	–	–	0.03 A	0.2 A
48 V AC	0.02 A	0.09 A	–	–
115 V AC	0.01 A	0.04 A	–	–
230 V AC	0.01 A	0.03 A	–	–
12 V DC	–	–	0.06 A	0.4 A
24 V DC	–	–	0.03 A	0.2 A

*Minimum current consumption = Receiver powered, no active relays, no radio session established.

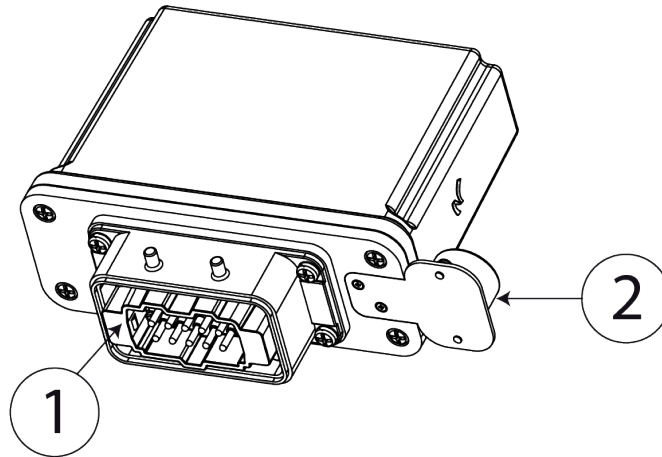
**Maximum current consumption = Receiver powered, all relays on the receiver active, radio session established.

CHAPTER 4: PRODUCT GENERAL DESCRIPTION

The pictures shown in this chapter are for illustrative purposes only.

4.1 Receiver description

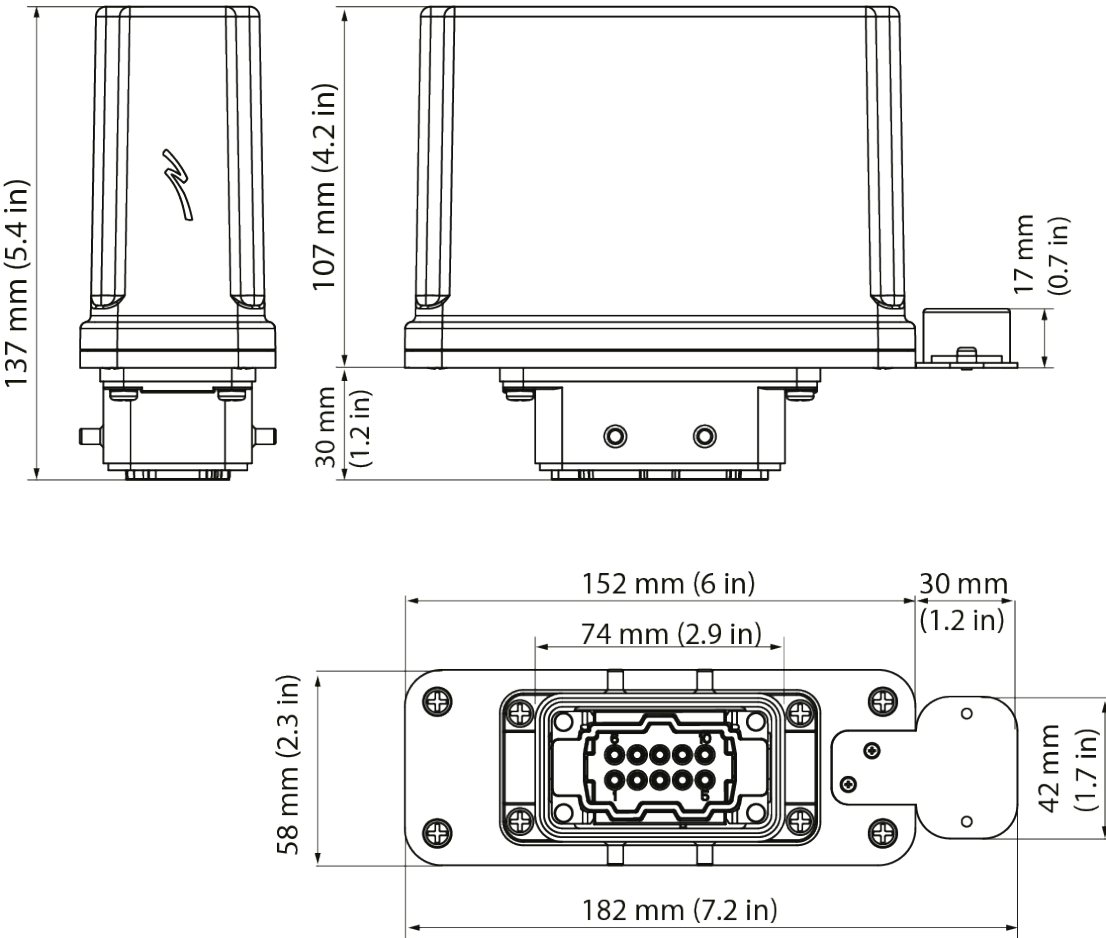
4.1.1 R10-01, R10-02



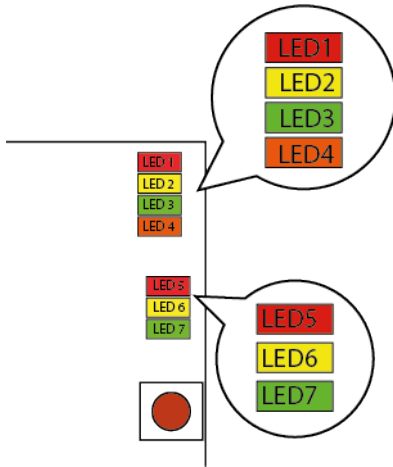
1. 10-pin connector

2. External buzzer

4.2 Mechanical installation



CHAPTER 5: STATUS AND ERROR INDICATIONS



5.1 Function LEDs indication in normal operation

LED	Color	Off	On	Flashing	Indicates
1	Red	○			No transmitter is registered.
			●		One or more transmitters are registered.
2	Yellow	○			No transmitter is logged in.
			●		One transmitter is logged in.
3	Green		●		Receiving valid RS485 data.
4	Orange	○			SIL conformity (settings in the safety CPUs are conform with SIL3).
			●		SIL error (settings in the safety CPUs are not conform with SIL3).
5	Red	○			Automatic frequency control processing. Signal is not locked on the transmitter.
			●		Automatic frequency control fine-tuned. Signal is locked on the transmitter.
				●	The receiver is scanning frequency
6	Yellow		●		Receiving valid sync word.
7	Green		●		Receiving valid radio packet.

5.2 Fatal error indications and error code messages

Fatal errors are indicated by function LEDs 1–7, which are all flashing at the same time. Each fatal error is identified by a code indicated by relay LEDs 1–5. Contact your representative for assistance.

●: LED is lit. ○: LED is off.

Relay LED					Description
Relay LED1 (red)	Relay LED2 (red)	Relay LED3 (red)	Relay LED4 (red)	Relay LED5 (red)	
●	○	○	○	○	Invalid/ missing production data in the CPUs
○	●	○	○	○	Incompatible software in the CPUs
●	●	○	○	○	Bad settings data
○	○	●	○	○	No reply from CPU1 or CPU2
●	○	●	○	○	Receiver in test mode (no error)
○	●	●	○	○	Initialization of the radio module failed
●	●	●	○	○	Incompatible expansion board*
○	○	○	●	○	No CAN expansion board found**
●	○	○	●	○	SIL error reported from CPU1 or CPU2
○	●	○	●	○	Incompatible radio module
●	●	○	●	○	LML fatal error
○	○	●	●	○	Missing or bad binDat
●	○	●	●	○	No binDat ID in binDat
○	●	●	●	○	Wrong target software ID in binDat
●	●	●	●	○	Wrong target software version in binDat
○	○	○	○	●	Wrong cclml version in binDat
●	○	○	○	●	Buffer is full

* R10-02 only

** N/A

5.3 Show digital input status on the transmitter

NOTE: This function requires duplex communication to be activated. Contact your representative for assistance.

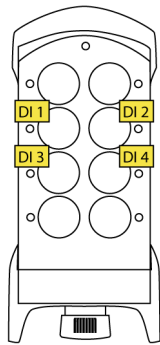
NOTE: Only with push button transmitters (T9, T11, T14, T15).

The status of the receiver's digital inputs can be indicated by the LEDs on the transmitter. Up to eight of the receiver's digital inputs can be mapped to transmitter LEDs 3–10, and depending on the transmitter, the number of digital inputs displayed can vary from two to eight.

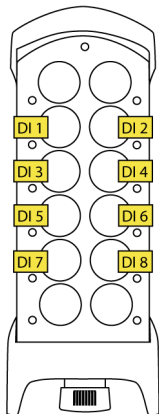
5.3.1 SUITABLE TRANSMITTERS

NOTE: The digital inputs displayed on the transmitter always correspond to those of the first receiver that has been logged in to. For other settings of the digital inputs indication on the transmitter, contact your representative for assistance.

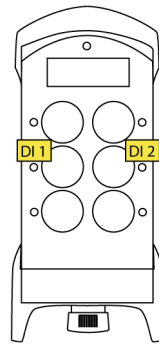
T9-01, T9-11



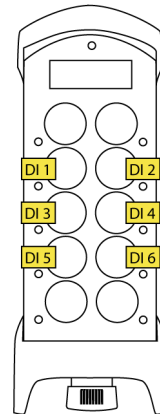
T11-05, T11-15



T9-02, T9-12



T11-01, T11-14



NOTE: LED_{number} = DI_{number} + 2

CHAPTER 6: OPERATION

6.1 General information

To control a receiver, the transmitter must be registered and logged in to the receiver. If another transmitter is already logged in to the receiver, it must be logged out before a different transmitter can be logged in.

More than one transmitter can be registered in the receiver, but only one transmitter can be logged in at a time.

6.2 Relay functions

The receiver is set to momentary relay function by default. The relay remains active while a button is pressed on the transmitter. When the button is released the relay deactivates. Setting a relay to latching means that the relay becomes active when a button is pressed and remains active until the button is pressed again. To switch between momentary and latching relay functionality, contact your representative for assistance.

CHAPTER 7: WARRANTY, SERVICE, REPAIRS, AND MAINTENANCE

Tele Radio AB products are covered by a warranty against material, construction and manufacturing faults. During the warranty period, Tele Radio AB may replace the product or faulty parts. Work under warranty must be performed by Tele Radio AB or by an authorized service center specified by Tele Radio AB.

The following 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 and use
- Damp and water damage

Maintenance

Repairs and maintenance must be performed by qualified personnel

Only use spare parts from Tele Radio AB

Contact your representative for service or any other assistance

Keep the product in a clean, dry place

Keep contacts and antennas clean

Wipe off dust using a slightly damp, clean cloth

NOTE: Never use cleaning solutions or high-pressure washer.

CHAPTER 8: REGULATORY INFORMATION

NOTE: Models including additional naming conventions:

Model	Article names	Additional naming conventions
R10	R10-01	R00010-01, R10-1, TG-R10-1, TG-R10-01
	R10-02	R00010-02, R10-2, TG-R10-2, TG-R10-02

8.1 Europe

Applies to:

- R10-01, R10-02

8.1.1 CE MARKING

Hereby, Tele Radio AB, declares that the radio equipment type(s) listed above is/ are in compliance with the Radio Equipment Directive 2014/53/EU.

The latest version of the complete EU Declaration of Conformity is available on the Tele Radio AB website, www.tele-radio.com.

8.1.2 WEEE DIRECTIVE



This symbol means that inoperative electrical and electronic products must not be mixed with household waste. The European Union has implemented a collection and recycling system for which producers are responsible. For proper treatment, recovery and recycling, please take this product to a designated collection point.

Tele Radio AB strives to minimize the use of hazardous materials, promotes reuse and recycling, and reduces emissions to air, soil and water. When a commercially viable alternative is available, Tele Radio AB strives to restrict or eliminate substances and materials that pose an environmental, health or safety risk.

8.2 AEC

Applies to:

- R10-01, R10-02

8.2.1 AEC STATEMENT (ДЕКЛАРАЦИЯ ЕАС)

This product is declared as compliant within Eurasian Economic Union (EAC). EAC declaration is available on request.

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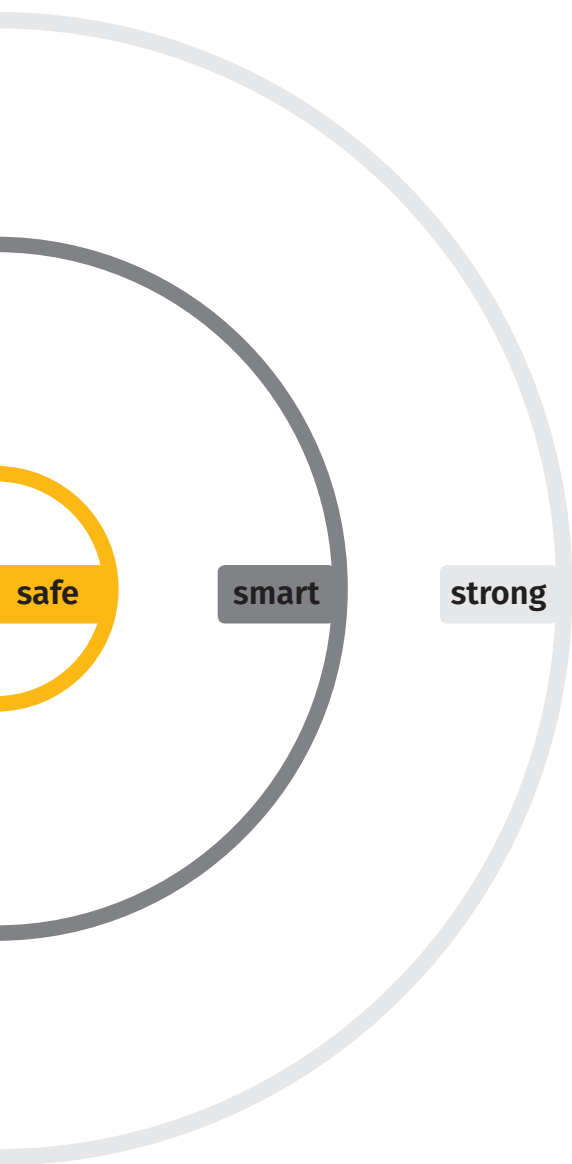
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