CRANEMATIC

Radio Decoder –

Analog Replacement Unit

Installation & Operation Manual

Version 1.0

CRANEMATIC

CONTENTS

1. INTRODUCTION

This document describes the installation and operation of the **Analog Radio Decoder**, designed as a replacement for the original decoder used in crane control system.

The set consists of two main components:

- A decoder unit installed on the crane
- A replacement PCB installed inside the remote controller

The decoder replaces the original crane-side decoder, while the new PCB enables communication between the remote controller and the decoder.

The analog decoder operates by emulating a wired (cable) connection between the remote controller and the crane system. Communication between the remote controller and the decoder is performed via Bluetooth, while the crane system interprets the signals as if a physical cable connection were present.

Because the decoder imitates a cable connection, certain information normally available in radio mode is not displayed on the remote controller screen. In particular, the battery level and radio signal strength are not shown. This behavior is normal and does not indicate a malfunction.

To compensate for this, the system provides battery level indication via the remote controller buzzer. Audible warning signals alert the user when the battery voltage drops below defined thresholds, allowing the battery to be replaced in time.

2. INSTALLATION INSTRUCTIONS

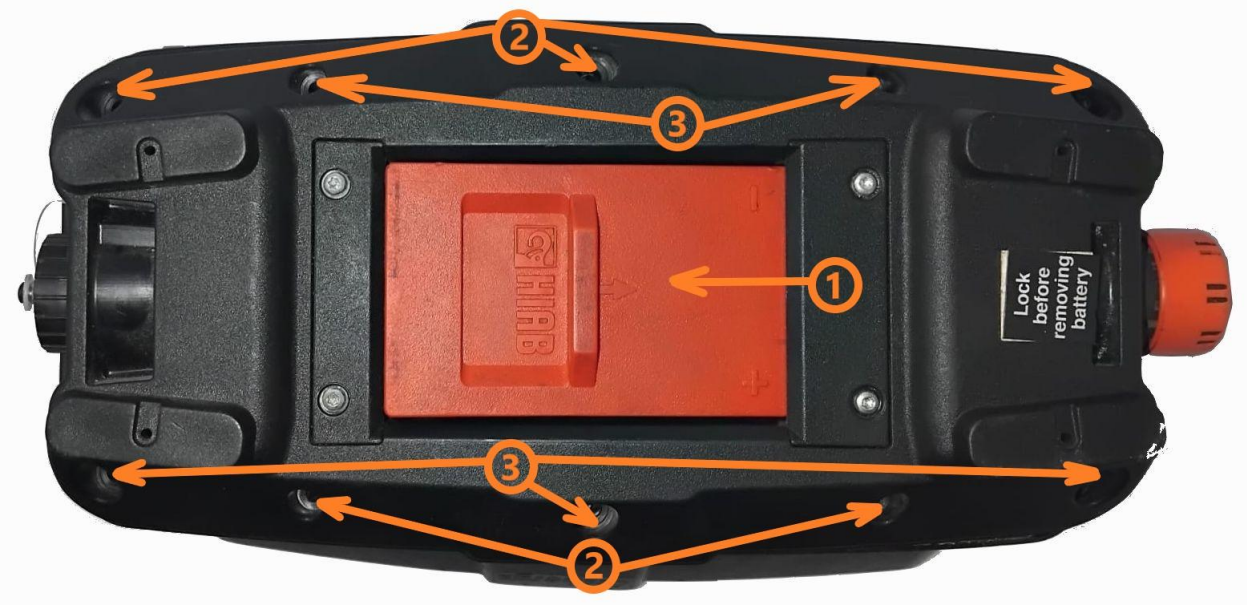
The following instructions describe the correct procedure for installing the analog decoder and replacing the remote controller PCB.
All installation steps must be performed in the order given.

Before starting the installation:

- Ensure the system is **powered off.**
- Disconnect all power sources.

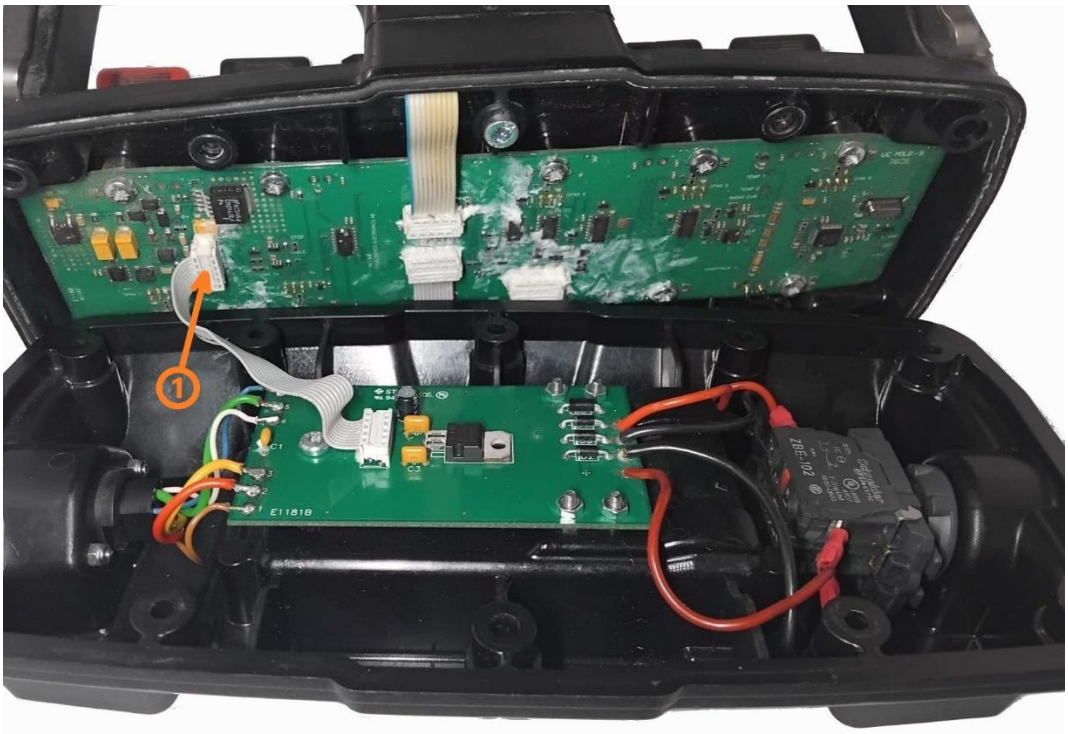
Follow each step carefully to avoid damage to the equipment.

2.1 Remote controller disassembly (Step 1)



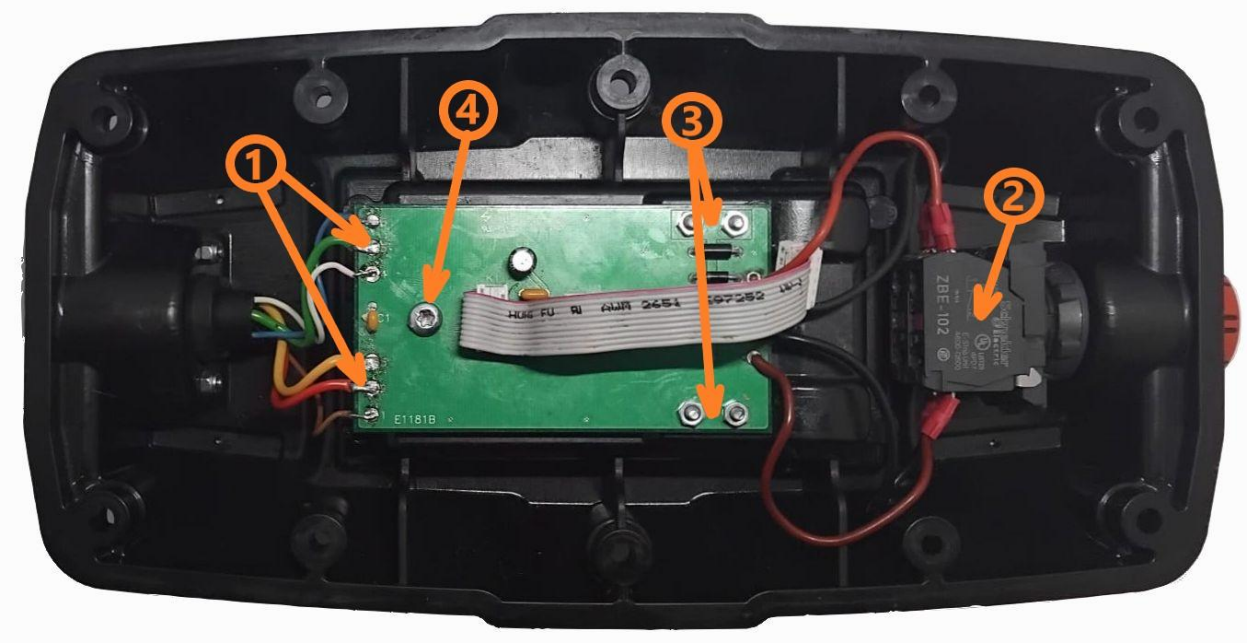
- Remove the battery (①) from the remote controller.
- Unscrew (②) the Torx screws (TX20)
- Unscrew (③) the internal hex screws (4 mm)

2.2 Separating the remote controller housing (Step 2)



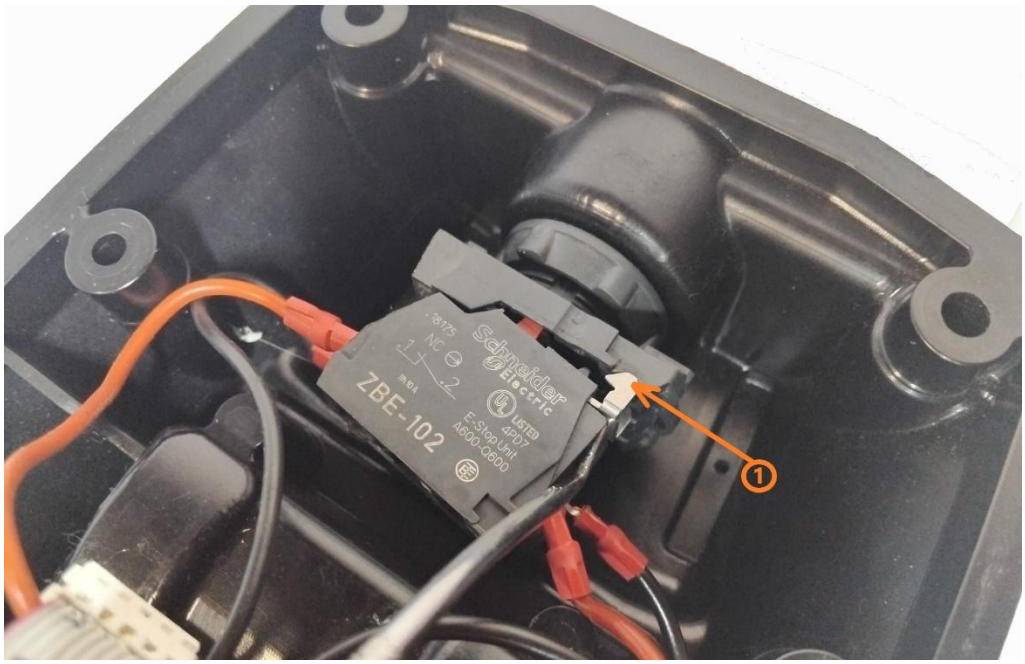
- Disconnect the internal connector (①) by pulling it straight out.
  - Do not pull sideways.
  - The connector **has no locking mechanism.**
- The upper and lower part of the remote controller is separated.
- Move the upper part of the remote controller away and keep the lower part in place for further work.

2.3 Remove the Existing PCB (Step 3)



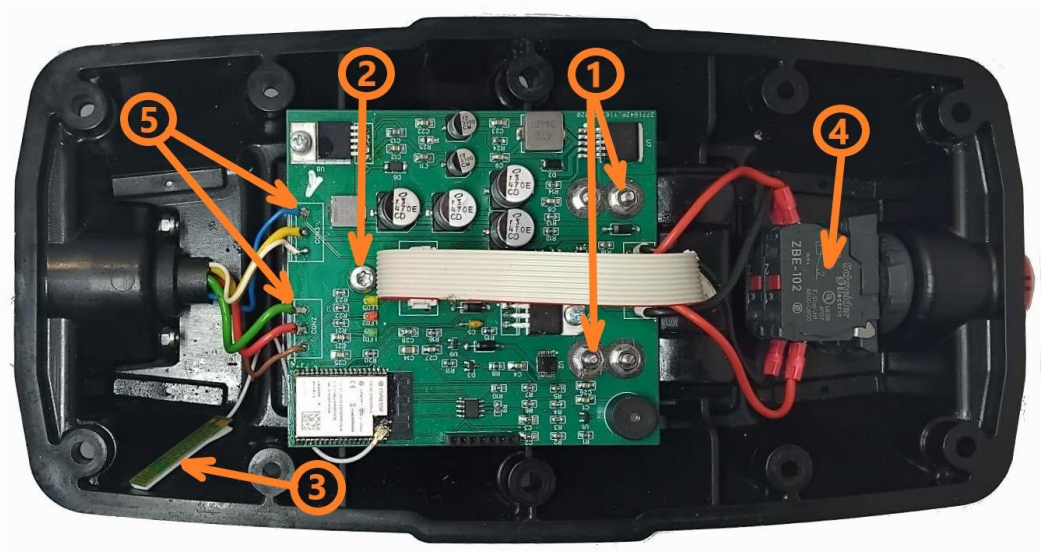
- Desolder all six wires **(①)** from the PCB.
- Remove the two contactors **(②)**.
  → See **Section 2.4** for detailed contactor removal instructions.
- Unscrew the four hex nuts **(③)** using a 5.5 mm socket.
- Unscrew the Torx screws **(④)** using a TX20 screwdriver.
- Remove the old PCB from the lower part of the remote controller.

2.4 Removing the Contactors (Step 4)



- The emergency stop button does not need to be removed.
- Using a small pointed tool, carefully release the locking clip **(①)** from the contactor.
- Once the locking clip is released, the contactor will pop out of its socket.

2.5 Installing the New PCB (Step 5)



- Place the new PCB into its designated position in the lower part of the remote controller.
- Secure the PCB by tightening the hex nuts **(①)** using a 5.5 mm socket.
- Secure the PCB by tightening the Torx screws **(②)** using a TX20 screwdriver.
- Remove the protective film from the antenna **(③)**.
- Attach the antenna to the side of the lower part of the remote controller as shown.
- Install the contactors **(④)** back into their sockets.
- Solder the wires **(⑤)** back to the PCB if cable operation is required.

- The wires are only required when the remote controller is used with a cable connection.

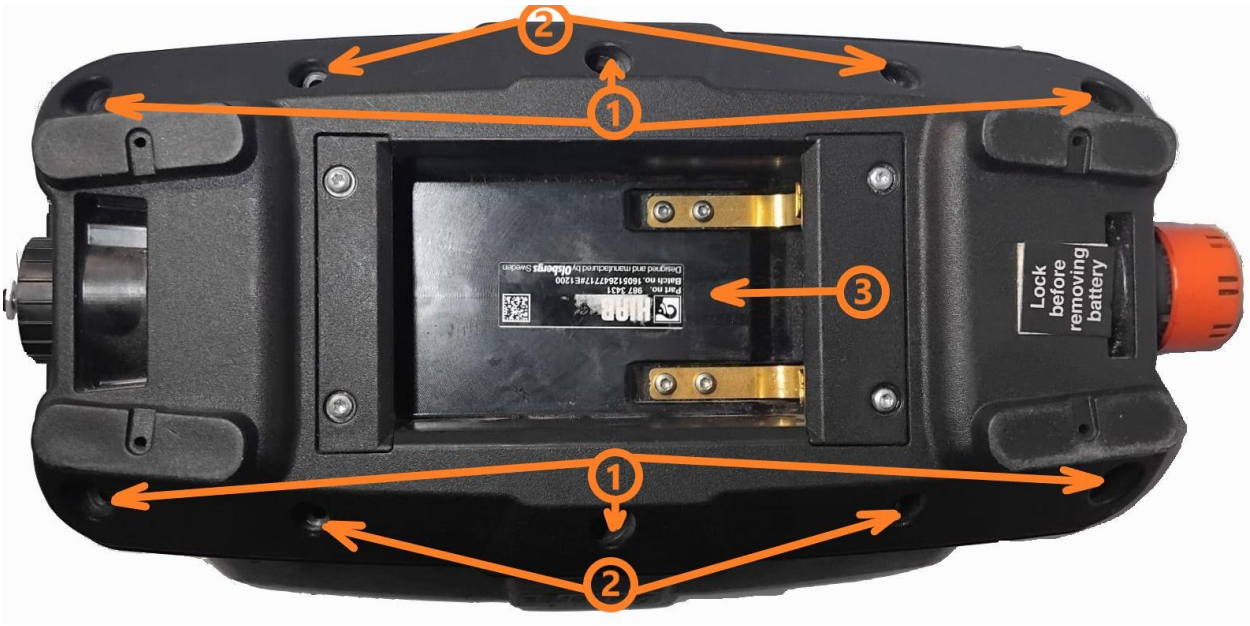
⚠ **IMPORTANT**

- The wire order has changed. From top to bottom, connect the wires in the following order:
- **Blue**
- **Yellow**
- **White**
- **Green**
- **Red**
- **Brown**

2.6 Reassembling the Remote Controller (Step 6)

- Position the upper part of the remote controller near the lower part.
- Reconnect the internal connector **(①)** by pushing it straight down until fully seated
- Ensure the connector is aligned correctly and not under tension.

2.7 Final Assembly of the Remote Controller (Step 7)



- Join the upper and lower part of the remote controller.
- Tighten the six internal hex screws **(①)** using a 4 mm hex key.
- Tighten the four Torx screws **(②)** using a TX20 screwdriver.
- Reinstall the battery **(③)**.

- **The remote controller assembly is now complete!**

3. OPERATION

3.1 Connectors

The decoder is equipped with two connectors used for system integration and operation.

Connector (①)
This connector provides the interface between the decoder and the crane system.
It connects the decoder to the **Power Display Box** and carries power supply and control signals required for normal operation.

Connector (②)

During wireless operation, a plug must be installed.

To use the remote controller in cable operation, remove the plug and connect the remote controller cable.

3.2 LED Indicators

LED	Color	Name	Description
③	Green	Power	ON when the system power is present.
④	Blue	Connection	**Blinking**: searching for a connection with the remote controller. **Steady ON**: connection established. The remote controller maintains the connection for up to 30 minutes after the emergency stop button is pressed.
⑤	Amber	Data	Flickering indicates active data transfer between the decoder and the remote controller.

3.3 Battery Level Indication (Buzzer)

The remote controller monitors battery voltage and provides audible warnings.

Buzzer pattern	Battery voltage	Description
No beeping	Over 7.5 V	Battery level full
Beep every 10 seconds	7.0 – 7.5 V	Battery level low
Beep every 5 seconds	6.5 – 7.0 V	Battery level critical
Continuous 3-second beep	Below 6.5 V	Battery level empty

- When the battery voltage becomes too low, the remote controller will automatically shut down.
- Before shutting down, the remote controller emits a continuous 3-second beep, then powers off.
- Replace the battery with a fully charged battery before further operation.