



TCR-Mini Operating Manual

OHM (Chongqing) Electronics Technology CO., LTD.

Quality Assurance

OHM (Chongqing) Electronics Technology CO., LTD. (hereinafter referred to as OHM) warrants that the product completely conforms to various technical parameters listed in the instructions at delivery and that it can be able to normally function as long as it is correctly installed and operated as required.

Warranty Commitment

This product has a one -year warranty period from the date of delivery. The company promises to make repairs when any damage or fault that is not caused by human factors occurs during the warranty period. The product needing repair must be sent to a maintenance station designated by the company.

The foregoing warranty scope does not include consumable parts like relays, fuses, batteries, and so on, or system damages caused by installation error, as well as faults that are caused by improper use or unauthorized changes by the customer.

Remark

This manual describes the basic principle, operation and application, installation and system maintenance of TCR-Mini series. Before installation and operation, carefully read this manual and properly keep it for future reference. This manual may be updated at any time as needed. If needed, contact the dealer or manufacturer to obtain the latest version.

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Pictographs



Danger due to electrical voltage. Touching live parts inside the unit can be fatal or cause serious injuries.



Instructions for occupational health and safety. Not following these instructions can cause accidents, which can cause damage, serious injuries or even death.



Important information about the operation of the radio system.

1、 Safety instructions

- Read through these operating instructions carefully before working with the radio control system.
- As an integral part of the radio control system, the operating instructions shall be always kept by specially-assigned personnel.
- The term “machine” used in the operating instructions refers to various equipment controlled by the radio control system in general;

1.1 Purpose

- The radio control system is used to control machines and for data transfer. Observe the job safety and accident prevention regulations applicable to each application.
- The use also includes reading the operating instructions and adhering to all safety information contained therein.
- The radio control system must not be used in areas where there is a risk of explosion, nor for the control of machines used to convey persons, unless it is explicitly approved by the manufacturer for these uses.
- Modifications to the radio control system must only be carried out by specialist personnel who have been trained and authorized by OHM. All modifications must be documented at the factory in the form of documents.
- The safety devices of radio control system must not be modified, removed or bypassed. It is absolutely forbidden to make modifications to any part of complete emergency stop link of the radio control system.

1.2 Safety instructions for installation and operation

- Power connection for the receiver can only be made by professional electricians. The Power line shall be connected as per bundled output wire diagram.
- The receiver can only be opened by trained personnel. Some parts inside the system may have life-threatening voltage. Make sure to cut off the power supply to the machine before opening it.
- Note the presence of persons in the danger zone. In particular, beneath the load of cranes is prohibited in every instance.

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- Select a safe operation location for the radio control system, from which you have a good and complete view of the working movements of the machine, the load movements, and..... the surrounding working conditions.
 - Do not leave the radio remote control transmitter system switched on unattended. Always switch the radio transmitter off when it is not required. This applies in particular if you change location, when working without radio control, during breaks and at the end of work. Always safeguard the radio transmitter against use by unauthorized persons, for example by locking it away.
 - In the event of an emergency or a fault of the crane or machine, make sure to immediately press the emergency stop switch on the transmitter.
 - Only operate the radio system when it is in perfect working order. Faults and defects that could influence safety must be rectified before the system is put back into operation, by specialists who have been trained and authorized by OHM company.
 - Note that the operational directions of the machine may appear inverted depending on operating location and viewing angle to the machine. This will apply in particular to rotary cranes, if your location changes from inside to outside the radius of the crane. The operator must make himself familiar with directional markings on the machine before the start of work.
 - Repairs to the radio control system may only be carried out by specialist personnel who have been trained and authorized by OHM. Use OEM replacement parts and accessories; otherwise, the safety of the radio control system can no longer be guaranteed and our extended warranty will be avoided.
 - Remain vigilant when working with the radio system and familiarize yourself with its functions. This applies in particular if you are working with it for the first time or if you work with it only occasionally.
 - Check the function of the Emergency Stop switch before starting work each time. If you start the transmitter with the emergency stop switch pressed, the status indicator lamp will go out. If the status indicator lamp does not go out, you have to disable the radio control system immediately by removing the battery from the transmitter and contact the radio control system service engineer.

1.3 Precautions

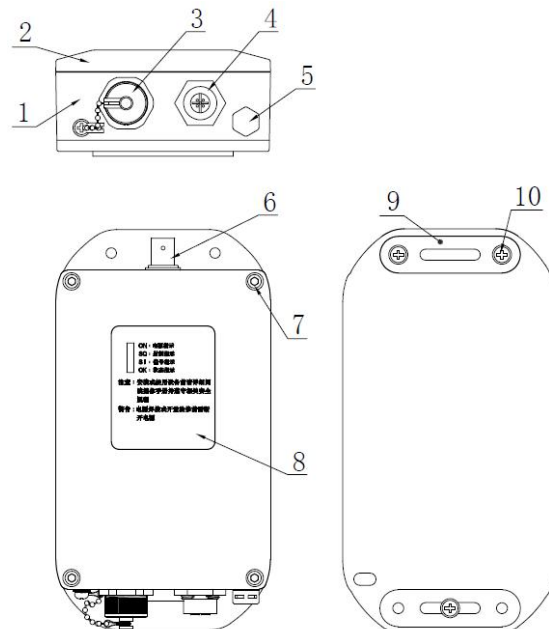
- Always check the housing and push-buttons of the transmitter. In case of damage is found, immediately replace it.
- Always pay attention to and check voltage of the transmitter; in case of no power or insufficient the voltage, immediately replace the battery.
- In case of any abnormal condition, immediately press the emergency stop switch.
- In case of temporary disuse or end of the operation, press the emergency stop switch.
- Do not use 2 (or more) transmitters to operate the same equipment at the same time.
- Do not use the same frequency within the same actory area (or 300m scope) to avoid mutual interference.

2. Introduction

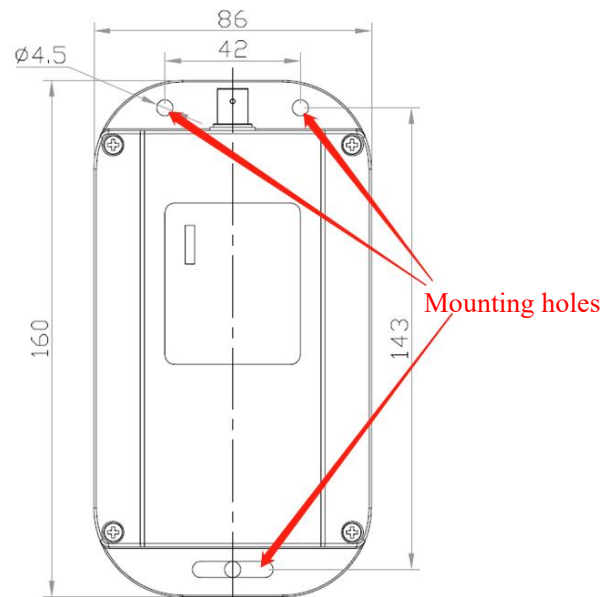
TCR-Mini is a compact and lightweight bus control receiver developed by Ohm Corporation. It operates on direct current power and features 1 group of emergency stop outputs, 1 wired control interface, and 1 CAN bus output interface.

2.1 Overview

- 1: Upper shell of the receiver
- 2: Lower shell of the receiver
- 3: Wired control connector
- 4: Bus connector
- 5: Waterproof breather valve
- 6: Antenna interface
- 7: Upper and lower shell fastening screws
- 8: Receiver surface label
- 9: Receiver shock absorber pad
- 10: Assembly screw for the receiver



2.2 Installation Dimensions



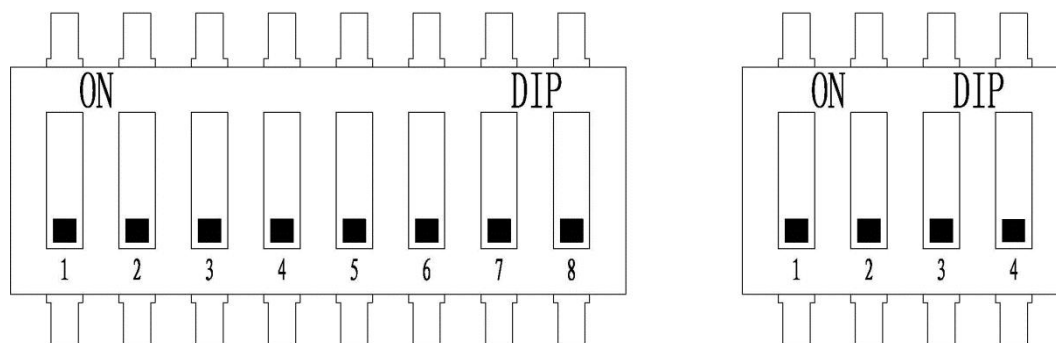
3. System Settings

3.1 Frequency and Address Code Settings

The frequency and address codes are stored in the system's ADCON and need to be set by professionals using special tools.

3.2 Bus Communication Settings

The DIP switch in the left image below shows the address setting switch, while the switch in the right image displays the baud rate setting switch. For details, refer to the bus information table.



4. Receiver Operation

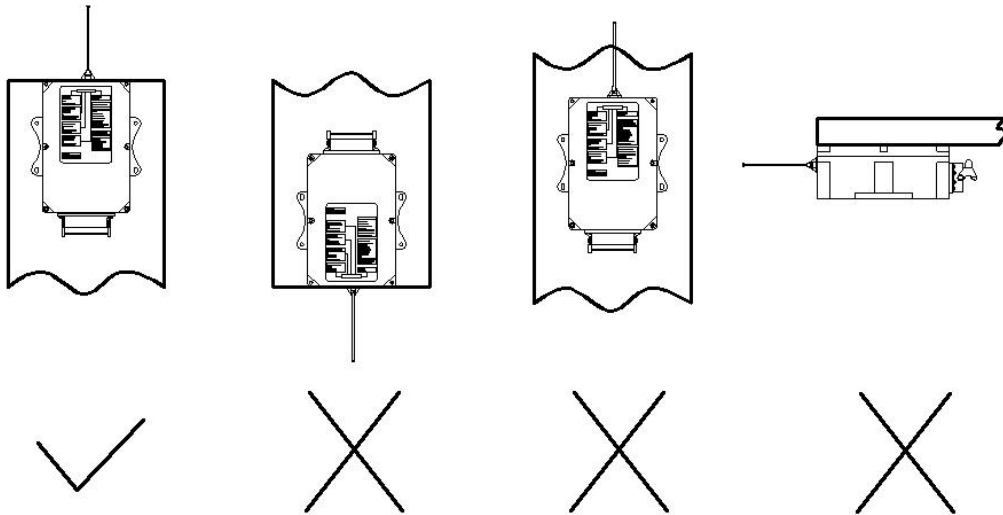
4.1 Receiver Installation



4.1.1 Precautions

- Ensure that no other remote controllers are operating at the same frequency within a 300-meter radius.
- Verify the proper functioning of the controlled equipment.
- Ensure that the voltage at the installation site matches that of the receiver before turning off the main power.

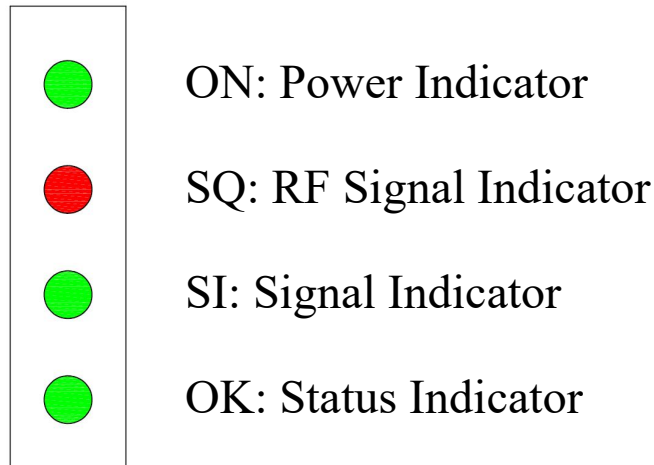
4.1.2 Installation Steps



- Determine the wiring method according to the provided diagrams. If cable glands are used, plug any unused ones securely.
- Select a suitable location for installation:
 - ✧ Choose a position that allows the receiver or antenna to be within the line of sight during ground-level operation.
 - ✧ Select a location away from high-voltage lines or equipment, such as motors or relays.
 - ✧ Choose a location without any obstructions around to avoid interfering with the transmission of electromagnetic waves.
- Drill holes according to the installation diagram.
- Mount the receiver and tighten the three nuts.
- Connect the receiver to the controlled equipment.

4.2 Receiver Status Indicator Lights

Through the receiver's status indicator light window, the working status of the receiver can be observed.



- Power Indicator Light (ON): A steady green LED light indicates that the receiver is powered on and functioning correctly.
- RF Signal Indicator Light (SQ): A steady red LED light indicates that the transmitter is not connected to the receiver, while the off state of the red light indicates a successful connection.
- Signal Indicator Light (SI): A flashing green LED light indicates that the system is connected and the first-level protective function is available, while a steady green light indicates that the second-level protective function is available.
- Status Indicator Light (OK): A steady green LED light indicates that the system has been self-tested successfully.

5. Basic Troubleshooting

Fault	Analysis	Action
The "ON" indicator light does not respond.	- Poor contact of the receiver's power plug or the receiver is not powered on. - Receiver power failure.	- Check for loose connectors and proper wiring. - Contact our maintenance department for assistance as necessary.
After turning on the transmitter, the receiver's indicator lights do not change accordingly.	- The receiver and the transmitter are not compatible - The receiver's mainboard malfunctioned.	- Check if the receiver's product number matches that of the transmitter. - Contact our maintenance department for assistance as necessary.
Upon communication between the transmitter and the receiver, the receiver does not provide any output when the transmitter is operating, even though the signal indicator light appears OK.	- Incorrect bus baud rate and address setting of DIP switches. - Incorrect use of a 120-ohm resistor. - The receiver's bus malfunctioned.	- Set the DIP switches correctly as per the corresponding diagram. - Use a 120-ohm resistor properly as per the corresponding diagram. - Contact our maintenance department for assistance as necessary.

6.Maintenance

- Regularly check the function of the emergency stop switch to ensure that the emergency stop switch is kept in normal working status.
- Keep the battery contacts clean.
- When a rechargeable battery is used, ensure the battery is fully charged for the first use; the battery not used for a long time shall be stored under normal temperature and shall be charged regularly, to prevent battery damages caused by self-discharge (it is recommended that the battery is charged once per 6 months)
- If the radio control system is not used for a long time, take its battery out.
- Do not clean the transmitter with a high-pressure air gun and the like.
- Wipe the system with a fine wool brush or soft dry cloth; do not wash it with water.
- Periodically check the integrity and airtightness of system covers and rubber protective cover.
- Whenever welding the machine or the system fails:
 - ✧ Switch off the radio system.
 - ✧ Switch off the controlled machine.
 - ✧ Disconnect all electrical connection to the receiver.
- Under harsh environments, exposed elements can be damaged; make sure to duly repair them.

Warning: Never operate a machine with a faulty or defective radio control system!

- If none of the measures mentioned resolve the problem, then please contact your service technician, dealer , or OHM company.
- For maintenance by mailing, confirm the address by phone; make an appointment on the phone in advance for maintenance by mailing.
- Hotline for after-sales service: 400 9209 120

7. Technical Data

Model:	TCR - Mini
Dimensions:	162 x 87 x 41 mm
Weight:	250 g
Antenna:	External
Communication Range:	≥100 m
Shell Material:	High-strength engineering plastic
IP Rating:	IP66
Installation Type:	Built-in shock absorber pad for mounting
Interface Type:	Aviation connector
Power Supply:	6-30VDC
Power Consumption:	≤ 2W
LED Indicators:	Operating status, RF signal
Receiver Output Configuration:	CAN bus output
Relay Capacity:	3A/250VAC; 3A/30VDC
Compatible Transmitter:	TCT-A12, TCT-C_ _, and so on
Accessories:	Operating Manual

8. Accessories (Standard):

Packing List:	1 copy
Operating Manual:	1 copy
Factory Certificate of Conformity:	1 copy
Output Diagram:	1 copy
Installation Kit:	1 set
Antenna:	1 piece