

TYC Remote Control User Manual V1.4



— TYC Series Product Manual

TY (Shanghai) Technology Co., LTD

- Improper operation may lead to serious safety accidents.
- Before using the remote control device, the operator shall carefully read this manual to ensure full understanding of its contents and intentions.
- Unauthorized modification or maintenance of the remote control device will automatically invalidate the quality guarantee. The user equipment controlled by the remote control shall be equipped with safety devices, such as emergency stop switches, main switches, and safety limit switches for cranes.
- If the user equipment has both local control and wireless remote control functions, an interlock switching measure must be set to prohibit simultaneous use.
- The remote control device must be operated by professionally trained personnel and shall not be arbitrarily used by untrained personnel.
- Before operating the remote control device, please confirm that the environment is safe without potential hazards and that the operated equipment is within the operator's visual range.
- The remote control device is prohibited from being operated in rain or explosive gas environments.
- Before operating the equipment, please confirm that the transmitter is matched with the receiver and check if the transmitter is damaged.

Transmitter Specifications

This instruction manual takes the TYCS236 as an example for illustration. The TYCS186 and TYCS336 only differ in overall dimensions and the number of installable components.



Category	Details
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Dual-band communication	Low frequency: 433~434MHz
	High frequency: 2400~2480MHz
Transmit Power	≤10mW (for users); ≤100mW (built-in)
Transmitting Antenna	Built-in
Remote Control Distance	≥100m (for users); up to 3000m (optional)
Wireless Transmission Rate	≤100kb/s
Communication Delay	≤200ns
Receiver Response Time	≤15ms
Operation Device	Joysticks, buttons, knobs, rocker switches, jog shuttle
Indicator Configuration	12-channel indicator lights, 1-channel buzzers, 1-channel jog shuttles
Control Configuration	60-channel switching signals, 12-channel analog signals
Shell Material	PA66+30%GF
Protection Class	IP65
Storage Temperature	-40°C~80°C
Operating Temperature	-30°C~75°C
Dimensions	270×190×152mm
Weight	1.7kg (excluding battery)
Power Supply	7.4VDC 5200mAh (standard)
Battery Life	24h (with standard battery)
Charging Time	About 4.5h
3.5-inch Color Screen	For displaying remote control status and system

	information
Smart Key	For authorized use of the remote control
Vibration Motor	For prompting users during operation (e.g., abnormal status)
Jog Shuttle	For precise operation in complex working conditions
Features	Adopts dual-band wireless communication; features stable signal, long control distance, fast response, and emergency stop function

Power On/Off Instructions

1. Transmitter type used: TYCS series.
2. Installing the receiver: Take out the receiver and fix it with 4 M4 screws, then connect the receiver to the power supply according to the drawing.
3. Installing the antenna: The antenna can be optional with single-mode or dual-mode, including two sets of antennas (433M and 2.4G). The interfaces of the two sets of antennas are different to prevent incorrect connection.
4. Preparing the transmitter: Take out the transmitter, insert a fully charged battery into it, reset all buttons, potentiometers, toggle

switches, and joysticks to the neutral position, and pull up the mushroom-shaped emergency stop button.

5. Power on: Press and hold the power button at the upper right corner; the transmitter will vibrate internally to indicate that the power is turned on. Release the power button, and the battery level indicator will light up to show successful power-on.
6. The transmitter's signal indicator lights green when the wireless communication is connected, and red when not connected.

Turning Off the Transmitter System

Press and hold the power button for 3 seconds or actively press the emergency stop button to turn off the remote control system.

The transmitter's power indicator lights red when the battery is low; please replace the battery in a timely manner.

Auto Power-Off Function

- The remote control system is equipped with an APO (Auto Power Off) function. The transmitter will automatically turn off if there is no operation for 30 minutes. This function can save battery power. To continue using it, please turn it on again.
- If the transmitter is not used temporarily, the operator must actively press the emergency stop button to shut it down or press and hold the power button to turn it off.

Power-On Failure

If the toggle switch or joystick is not returned to the neutral position, the display screen will show that the power-on check has failed. In this case, turn off the transmitter power, reset all toggle switches or joysticks to the neutral position, and then turn it on again.

Shutdown Operation

- Press the emergency stop switch; the transmitter will immediately send an emergency stop signal to the receiver and cut off the transmitter power at the same time.
- Press and hold the power button for 3 seconds; the transmitter will vibrate internally to indicate that the power is turned off, and then release the power button.
- In case of danger, please press the emergency stop switch immediately.

The emergency stop switch is located at the lower right of the transmitter. Press the red mushroom head to cut off the power of the remote control transmitter, and the receiver will remain in the emergency stop state.

Transmitter Indicator Status

Indicator Type	Light Color	Status Description
Signal Indicator	Green	Wireless connected

Indicator Type	Light Color	Status Description
	Red	Wireless not connected
	Off	Fault or not powered on
Battery Level Indicator	Green	Battery level > 20%
	Red	Battery level ≤ 20%
	Off	Fault or not powered on

Display Screen Description

The content of the display screen can be customized according to customer requirements.

After power-on, the screen lights up and automatically displays the startup logo, signal strength, and battery level. Short-press the "Power" button once to switch the display interface.

The display screen will automatically turn off after 5 minutes (customizable) to save power; short-press the "Power" button once to re-light the display screen.

Receiver Specifications

TYCR135



Item	Description
Dual-mode Communication	Low frequency: 433~434MHz
	High frequency: 2400~2480MHz
Power Supply	10~30VDC
Rated Power	<1W
Status Indication	LED light
Bus Output Type	CAN, RS485 (protocol can be customized per user)
Safety Control Mode	Active emergency stop control & passive power-off control
Emergency Stop (STOP) Relay Specification	10A/250VAC (or 10A/30VDC)
Protection Class	IP65
Storage Temperature	-40°C~85°C
Operating Temperature	-30°C~75°C
Dimensions	134×118×36mm
Weight	0.25Kg
Receiver Antenna	External sucker antenna (internal antenna optional)
Electrical Connection Interface	12-pin plug (DTM06—12SA)

TYCR180



Item	Description
Dual-mode Communication	Low frequency: 433~434MHz
	High frequency: 2400~2480MHz
Power Supply	10~30VDC
Receiver Rated Power	8W
Receiver Status Indication	LED Indicator
Output Specification	16-channel PWM output (output voltage: max 3.7A, max 3.7V)
	32-channel DO output (output current: max 3.7A, max 3.7V)
	2-channel AO output (output voltage: 0~10V adjustable)
Relay Output	1-channel emergency stop relay (10A/30VDC, 10A/250VAC)
	32-channel general-purpose relays (10A/250VAC, 10A/30VDC)
Input Expansion	4-channel AI (0~30V)
	5-channel DI
Bus Communication Protocol	CANopen, Profibus

Protection Class	IP65
Storage Temperature	-40℃~85℃
Operating Temperature	-30℃~75℃
Dimensions	182×212×80mm
Weight	1.0kg
Receiver Antenna	External sucker antenna(optional internal antenna)

TYCR235



Item	Description
Dual-mode Communication	Low frequency: 433~434MHz
	High frequency: 2400~2480MHz
Power Supply	10~30VDC
Receiver Rated Power	16W
Receiver Status Indication	LED Indicator

Output Specification	16-channel PWM output (max 3.7A current, max 3.7V voltage per channel)
	64-channel DO output (max 3.7A current, max 3.7V voltage per channel)
	4-channel AO output (0~10V adjustable voltage)
Relay Output	1-channel emergency stop relay (10A/30VDC, 10A/250VAC)
	64-channel general-purpose relays (10A/250VAC, 10A/30VDC)
Input Expansion	8-channel AI (0~30V)
	10-channel DI (0~30V)
Bus Communication Protocol	CANopen, Profibus
Protection Class	IP65
Storage Temperature	-40°C~85°C
Operating Temperature	-30°C~75°C
Dimensions	217×236×113mm
Weight	1.3kg
Receiver Antenna	External sucker antenna (optional built-in antenna)

Charger and Rechargeable Battery

Charger TY-C10

- The charger can be equipped with an AC220V AC charging plug and a car DC charging plug (DC12V or DC24V).
- This charger is compatible with the TY-B7452 battery, and the full charging time is generally 4-6 hours.
- Please use the original standard charging plug for charging.
- Do not charge in dangerous areas.
- Charge in a normal temperature environment, away from combustible environments such as dust, humidity, and high temperature.
- Unplug the charging plug after charging is completed.
- Do not use in combustible environments.
- Do not modify the charger without permission for charging.
- In case of failure, please cut off the power immediately and do not use it.
- If damaged, please ask professional personnel for repair.

Rechargeable Battery TY-B7452

- The battery must be charged before the first use.
- The battery capacity will be affected by the number of charging cycles and ambient temperature. The battery capacity will decrease slowly with more charge-discharge cycles, and the battery will be consumed too quickly in a low-temperature environment of 0°C.

- Charge the battery in a normal temperature environment.
- The number of charge-discharge cycles of the battery is about 500 times.
- Charge the battery before it is fully discharged to avoid damaging the battery.
- If the battery is not used for a long time, perform a charge-discharge cycle every three months to prevent battery depletion.
- Store the battery properly to avoid short circuits.
- Unplug the plug after full charging to prevent overcharging.

Charger Parameters

Name	Model	Parameters
Charger	TY-C10	AC plug voltage: 220VAC DC plug: DC12V or DC24V
Rechargeable Battery	TY-B7452	Voltage: 7.4VDC Capacity: 5200mAh

Charger Indicator Description

- Orange LED on: Charging in progress
- Green LED on: Charging completed
- LED blinking alternately: Charging abnormal





After-Sales Service

The company guarantees that this product fully complies with its published specifications when leaving the factory and can be used normally with proper installation. However, the company does not guarantee uninterrupted operation of this product.

This product enjoys a one-year warranty period from the date of factory shipment. We guarantee that customers will not encounter any product quality problems within one year. If there is a quality problem during the warranty period, the company is willing to repair it. For any product requiring repair, the fault phenomenon and receiving address must be written in the packaging box to avoid unnecessary troubles. Send it to the designated service center; the customer must bear the one-way shipping cost of sending the product to the service center, and the company's service center will bear the return shipping cost during the warranty period to send the product back.

1. Excluded Items

The aforementioned warranty scope does not include damage caused by water and oil ingress, component damage, etc., nor does it include faults caused by improper use by the customer, force majeure, lightning strikes, natural factors, insufficient maintenance, neglect of operating environment specifications, unauthorized modifications, or incorrect use.

2. Notes

General Notes

- Unauthorized personnel without professional training shall not disassemble this machine at will, otherwise, it may damage the remote control and cause personal injury.
- After use, turn off the main power supply of the equipment, cut off the power supply of the receiver, and turn off the transmitter.
- The equipment shall be equipped with a main power relay, limit switch, and other safety facilities.
- The transmitter shall be protected from water; after work, place the transmitter in a place not exposed to rain.

Installation Notes

- (1) The installation position of the receiver must be more than 1.5 meters away from the inverter, motor, and their connecting cables to avoid the receiver being interfered by noise.

- (2) The receiver can be installed in the electrical control box, and then the receiver's antenna feeder can be threaded into the electrical control box and screwed onto the receiver.
- (3) This series of remote controls has 4 billion groups of codes, and each code setting is different when leaving the factory. During installation, it must be confirmed that there are no remote controls with the same code in the same working area to avoid mutual interference and false operations.

3. Handling of Emergencies

In case of an emergency, please handle it according to the following steps and immediately notify the distributor:

1. Press the emergency stop (STOP) button.
2. Pull out the key switch of the transmitter.
3. Turn off the main power supply of the equipment.
4. Notify the distributor to find out the cause.

4. Normal Operation

1. Insert a fully charged 7.4V battery into the transmitter in the correct direction.
2. First press the power button to turn it on, and wait for the communication indicator to light green.

3. Operate correctly according to the functions set by each switch on the transmitter.
4. After operation, handle it in the following order:
 - (1) Press the emergency stop button.
 - (2) Turn the rotary key switch counterclockwise to the OFF position and pull out the key for proper storage.
5. If not used for a long time, take out the battery from the battery compartment.

5. Use of Transmitter Battery

The transmitter uses one 7.4V battery. When the battery voltage is full, the transmitter's battery level indicator is green after starting; on the contrary, when the battery is used for a period of time and the power is low, the transmitter's battery level indicator is red (or the battery level indicator is off). At this time, the transmitter cannot continue to operate, and the battery must be replaced with a fully charged one immediately.

6. Simple Troubleshooting Steps (Methods)

1. If the transmitter cannot be turned on normally, check if the emergency stop button is pulled up and if the battery has power.
2. Insert a fully charged battery into the transmitter and turn it on again.

3. Replace with a new battery (it is recommended to measure the battery voltage) and reinstall the battery. Poor contact or corrosion/rust of the battery probes may also cause faults.
4. If the remote control communication is abnormal, confirm whether the receiver power supply is reliable.

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FCC Caution:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.