



DUCT-O-WIRE

INSTALLATION & OPERATION

MANUAL

**RC-3M2 SERIES
RC-3M2 A/B SERIES
RC-3M2-A SERIES
RC-4M2 SERIES**

SEPTEMBER, 2018

FCC ID: NCT148L10(RC-3M2)

IC: 2802A-048L10

CE 0678

FCC ID: NCT048L12(RC-4M2)

IC: 2802A-048L12

CE 0678

This device complies with part 15 of FCC rules. Operations 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.

ATTENTION:

PLEASE BE SURE TO VERIFY THAT YOU HAVE PURCHASED THE CORRECT SYSTEM FOR YOUR APPLICATION.

ANY MODIFICATION OF THE SYSTEM WILL RESULT IN ADDITIONAL RESTOCKING FEES OR DENIAL OF RETURN.

Limited Warranty

Duct-O-Wire guarantees that this product meets its published specification at the time of shipment from the factory. This equipment will perform as described if properly installed. However, Duct-O-Wire cannot guarantee that the operation of these units is absolutely error-free, or without interruption.

This equipment is warranted against defects in materials and workmanship for a period of 2 years from the date of shipment. During the warranty period, Duct-O-Wire is responsible for necessary repairs, as long as the product can be proved to be defective.

For warranty service, this product must be returned to our factory. Customer is responsible for shipping charges to Duct-O-Wire., while Duct-O-Wire will pay return shipping charges.

This warranty does NOT include consumable parts, such as batteries, fuses, buttons, and relays or damage from normal wear and tear. Also this warranty does NOT cover defects caused by misuse, neglect, accident, unauthorized modification, failure to follow instructions, improper installation, improper or insufficient maintenance, unsuitable operating environments, acts of God, improper operation, ignorance of environmental specifications, fire, or improper software settings.

If your Duct-O-Wire product fails to work as warranted above, Duct-O-Wires maximum liability under this limited warranty is expressly limited to the lesser of the price you have paid for the product. Duct-O-Wire disclaims any liability as a result of any direct/indirect, special, incidental or consequential damages.

No other warranty is expressed or implied, except for the above mentioned.

Operating Precautions

- ◇ Read this manual carefully before operating and in stalling the RC-3M2 OR RC-4M2 systems.
(This Manual is for reference only.)
- ◇ This equipment has been tested at the factory under normal operating conditions.
- ◇ After operation please turn off main power to crane and the power to Receiver.
- ◇ The Crane should be equipped with main power Relay, Limit Switch and other required safety devices.
- ◇ The GND (ground) of Receiver must be correctly grounded to the crane.
- ◇ Never use this device during an electrical storm, or high electrical interference conditions.
- ◇ Do not use rechargeable batteries in transmitters.
- ◇ Always turn off power when installing or providing maintenance on unit.
- ◇ Contents of the Manual may be amended by Duct-O-Wire without notice.
- ◇ Duct-O-Wire may change functions or new functions may come available and as a result description of units may change.
- ◇ Never operate these systems under extremely hazardous conditions/situations or where damage may occur.

Precautions

- ◇ After Operating the RC-3M2 or RC-4M2 series, please press EMS mushroom to shut off main power to the Crane & Receiver and remove Transmitter key. (RC-3M2/RC-3M2 A/B SERIES)
- ◇ Never continue operating the crane when slow-response occurs.
- ◇ Only qualified personal should operate this equipment.
- ◇ The RC-3M2,RC-3M2 A/B, RC-3M2-A and RC-4M2 are rated IP65. Only use under these conditions/rating.
- ◇ Always inspect transmitters before operation.
- ◇ Incase of emergency press the EMS button.
- ◇ Remove batteries when crane is not in use for an extended period of time.
- ◇ Operator must be familiar with the following Emergency Procedures before operating.

EMERGENCY PROCEDURES

In case of emergency, please follow the steps below:

- ◇ Press EMS mushroom
- ◇ Turn the security key to the “OFF” position (RC-3M2 SERIES)
- ◇ Remove the batteries and key (RC-3M2, RC-3M2 A/B SERIES)
- ◇ Shut off the main power of the Crane and discontinue the operation
- ◇ Contact the distributor to find out possible causes



Standard Accessories

The standard RC-3M2 and RC-4M2 System consists of:

2 Transmitters

1 Receiver



Operation

TRANSMITTER CONFIGURATION

Auxiliary Pushbutton Emergency Stop

Motion Pushbutton

****Labels may need to be relocated to reflect the actual direction of the motion****



RC-4M2TX

8



RC-3M2TX-A

Pushbutton On/
Off



RC-3M2TX

*Removable Rotary
Key Switch*

Receiver configuration

Wiring Diagram



Cable Connector

General Operation

- Turn on the main power switch of the equipment (Crane).
- Install 2 AA batteries in the battery box in the Transmitter
- Insert security key in the “OFF” position. **(RC-3M2,RC-3M2 A/B SERIES)**
- Turn the keyswitch **(RC-3M2,RC-3M2 A/B SERIES)** clockwise to the “ON” position, then continue to turn it to the “START” position to power-on. On RC-3M2-A series press green start button.

Note: LED indicator will flash with red color if proper procedures are not followed.

- Operate Transmitter by pressing each pushbutton.
- Proceed with the following proceeded after operation:
 - (1) Press EMS mushroom
 - (2) Turn rotary key switch counter-clockwise to the “OFF” position
 - (3) Remove key and keep it in a safe place
 - (4) Switch main power off to the equipment (Crane)
 - (5) Remove batteries if not used for a long period of timeNote: RC-3M2-A series does not have Key switch.

Note: Transmitter has power indicating functions with LED display.

“Green Color” – The LED will flash green when battery power is sufficient.

“Red Color” – The LED will flash red when the power is low.

- The operating distance will become shorter and intermittent when the batteries are low.
- Replace with new batteries when battery power is low.

*******DO NOT USE RECHARGEABLE BATTERIES*******

Receiver Voltage Selection

There are two types of power voltages (DC and AC) available for the RC-3M2, RC-3M2 A/B, RC-3M2-A and RC-4M2 Series.

1) DC Type:

Input Voltage: 12~24 VDC

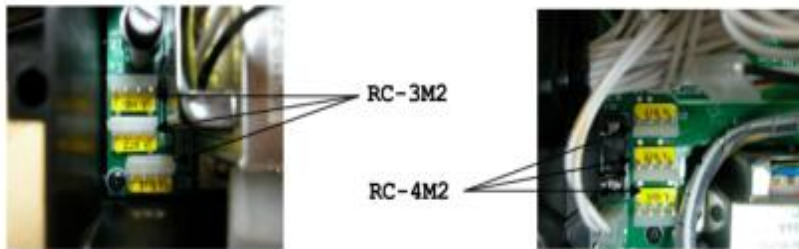
Relay Contact: 10A-36 VDC

2) AC Type:

Three different AC transformers: **48/110/220V**,
48/220/380V, 110/220/380V.

Please disconnect the Receiver's power, select the proper voltage, and plug in the connector.

Note: Standard Systems are 48/110/220 VAC. If any others are required, please specify when ordering.



Switch the plug to choose the correct voltage.

ID-Code Remote Setting

ID-Code remote setting allows the user to pair the new Transmitter or Receiver if one of them is damaged. Using ID-Code remote setting will make both the Transmitter and Receiver have the same ID-Code.

1) Please make sure of the following conditions before ID-Code remote setting:

- Both Transmitter and Receiver are of the SAME model and frequency.
- Place the Transmitter as close as possible to the Receiver to avoid interference.
- Turn off the Receiver power more than 10 seconds and turn it on again.

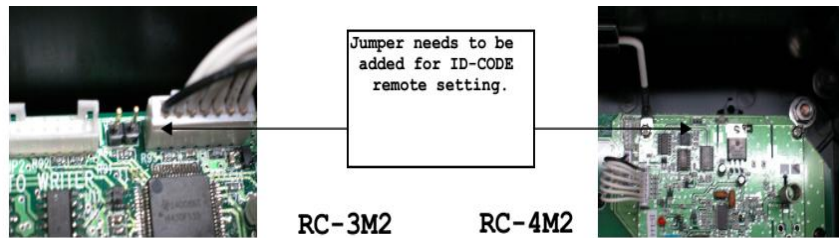
2) ID-Code remote setting Instructions:

- Press and hold the Transmitter EMS button.
- Press UP pushbutton and hold it.
- Press DOWN pushbutton 4 times and release “EMS & UP” pushbuttons when the red light on the Transmitter is flashing.
- Start the system as usual.

! ATTENTION!

- **In case ID-Code remote setting fails, repeat the instructions above within 4 minutes.**
- **ID-Code remote setting is available for ID Code only. It will not change function settings.**
- **Within the operating distance, all same model systems on the same frequency will be paired with the Transmitter’s ID Code.**
- **A jumper added inside the receiver is necessary to enable ID-Code remote setting function. Call factory for any questions.**

ID-Code Remote Setting (Cont)



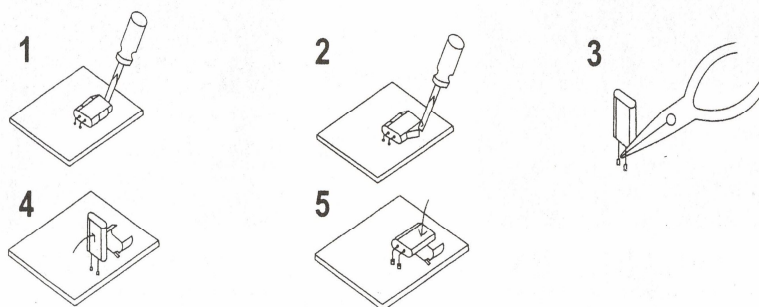
Changing the Frequency

It is easy to change the frequency on these units simply by replacing corresponding frequency crystals in both the Transmitter and the Receiver.

• **Note: To replace a new crystal, please note that there are two kinds of frequencies (VHF and UHF) available. The indication of VHF or UHF is shown on the PC board with a check mark “V”. Please make sure not to replace a VHF crystal unit into a UHF PC board, or vice versa**

Instructions:

1. Pry up the crystal unit with a flathead screwdriver.
2. Remove the crystal unit from the system.
3. Use needle nose pliers to straighten both pins of the new crystal unit.
4. Insert the new crystal unit vertically into the PC board.
5. Press the new crystal unit down into the socket.



! ATTENTION!

The Transmitter frequency will be different from the Receiver frequency. The transmitter crystals are labeled T01 thru T45 and the receiver crystals are labeled R01 thru R45

Frequency Chart

CH NO.	CH-FREQ (Mhz)	CH NO.	CH-FREQ (Mhz)	CH NO.	CH-FREQ (Mhz)	CH NO.	CH-FREQ (Mhz)
1	310.0325	12	312.9750	23	315.9175	34	318.8600
2	310.3000	13	313.2424	24	316.1850	35	319.1275
3	310.5675	14	313.5100	25	316.4525	36	319.3950
4	310.8350	15	313.7775	26	316.7200	37	319.6625
5	311.1025	16	314.0450	27	316.9875	38	319.9300
6	311.3700	17	314.3125	28	317.2550	39	320.1975
7	311.6375	18	314.5800	29	317.5225	40	320.4650
8	311.9050	19	314.8475	30	317.7900	41	320.7325
9	312.1725	20	315.1150	31	318.0575	42	321.0000
10	312.4400	21	315.3825	32	318.3250	43	321.2675
11	312.7075	22	315.6500	33	318.5925	44	321.5350
						45	321.8025

Batteries

Two AA size alkaline batteries are required for the Transmitter.

The LED will flash green when the battery power is sufficient.

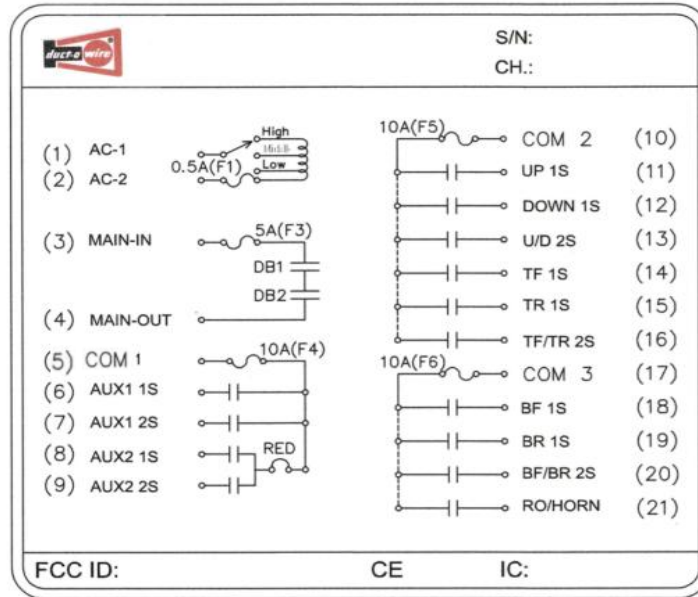
The LED will flash red when the battery power is low.

- The operating distance will become shorter and intermittent when the battery is low.
- Replace with new battery when battery power is low.

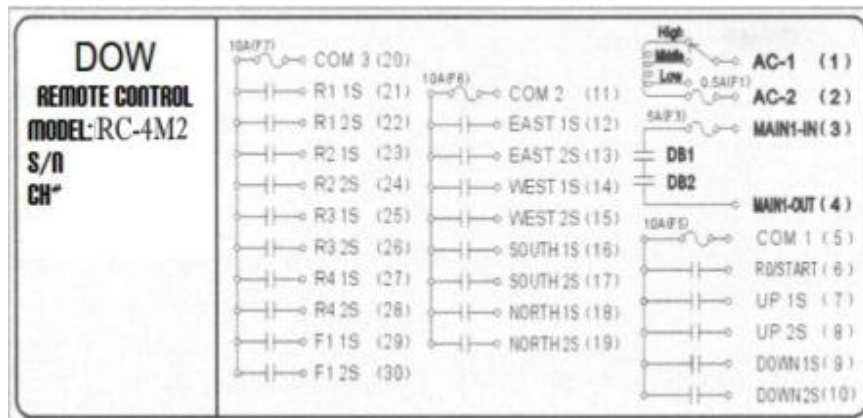
! DO NOT USE RECHARGEABLE BATTERIES

Wiring Diagram

RC-3M2 SERIES



RC-4M2 SERIES



Notes:

Notes:



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