



Flex Mini System Radio Control Equipment Instruction Manual



MAGNETEK

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SERVICE CONTACT INFORMATION

Your New Radio Remote Control System

Thank you for your purchase of Magnetek's Flex Mini radio remote control system. Without a doubt, our Flex Mini system is the ultimate solution for providing precise, undeterred, and safe control of your material.

If your product ever needs modification or service, please contact one of our representatives at the following locations:

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HOOSIER CRANE
SERVICE COMPANY



1 PREFACE AND SAFETY

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1.1 Product Safety Information

Magnetek, Inc. (Magnetek) offers a broad range of radio remote control products, control products and adjustable frequency drives, and industrial braking systems for material handling applications. This manual has been prepared by Magnetek to provide information and recommendations for the installation, use, operation and service of Magnetek's material handling products and systems (Magnetek Products). Anyone who uses, operates, maintains, services, installs or owns Magnetek Products should know, understand and follow the instructions and safety recommendations in this manual for Magnetek Products.

The recommendations in this manual do not take precedence over any of the following requirements relating to cranes, hoists lifting devices or other material handling equipment which use or include Magnetek Products:

- Instructions, manuals, and safety warnings of the manufacturers of the equipment where the radio system is used,
- Plant safety rules and procedures of the employers and the owners of facilities where the Magnetek Products are being used,
- Regulations issued by the Occupational Health and Safety Administration (OSHA),
- Applicable local, state or federal codes, ordinances, standards and requirements, or
- Safety standards and practices for the industries in which Magnetek Products are used.

This manual does not include or address the specific instructions and safety warnings of these manufacturers or any of the other requirements listed above. It is the responsibility of the owners, users and operators of the Magnetek Products to know, understand and follow all of these requirements. It is the responsibility of the employer to make its employees aware of all of the above listed requirements and to make certain that all operators are properly trained. **No one should use Magnetek Products prior to becoming familiar with and being trained in these requirements and the instructions and safety recommendations in this manual.**

1.2 Product Warranty Information

Magnetek, hereafter referred to as Company, assumes no responsibility for improper programming of a device (such as a drive or radio) by untrained personnel. A device should only be programmed by a trained technician who has read and understands the contents of the relevant manual(s). Improper programming of a device can lead to unexpected, undesirable, or unsafe operation or performance of the device. This may result in damage to equipment or personal injury. Company shall not be liable for economic loss, property damage, or other consequential damages or physical injury sustained by the purchaser or by any third party as a result of such programming. Company neither assumes nor authorizes any other person to assume for Company any other liability in connection with the sale or use of this product.

For information on Magnetek's product warranties by product type, please visit www.magnetek.com.

2 RADIO CONTROLLED SAFETY

WARNINGS and CAUTIONS

Throughout this document WARNING and CAUTION statements have been deliberately placed to highlight items critical to the protection of personnel and equipment.

WARNING – A warning highlights an essential operating or maintenance procedure, practice, etc. which if not strictly observed, could result in injury or death of personnel, or long term physical hazards. Warnings are highlighted as shown below:



CAUTION – A caution highlights an essential operating or maintenance procedure, practice, etc. which, if not strictly observed, could result in damage to or destruction of equipment, or loss of functional effectiveness. Cautions are highlighted as shown below:



WARNINGS and CAUTIONS SHOULD NEVER BE DISREGARDED.

The safety rules in this section are not intended to replace any rules or regulations of any applicable local, state, or federal governing organizations. Always follow your local lockout and tagout procedure when maintaining any radio equipment. The following information is intended to be used in conjunction with other rules or regulations already in existence. It is important to read all of the safety information contained in this section before installing or operating the Radio Control System.



2.1 CRITICAL INSTALLATION CONSIDERATIONS



WARNING

PRIOR TO INSTALLATION AND OPERATION OF THIS EQUIPMENT, READ AND DEVELOP AN UNDERSTANDING OF THE CONTENTS OF THIS MANUAL AND THE OPERATION MANUAL OF THE EQUIPMENT OR DEVICE TO WHICH THIS EQUIPMENT WILL BE INTERFACED. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

FOLLOW YOUR LOCAL LOCKOUT TAGOUT PROCEDURE BEFORE MAINTAINING ANY REMOTE CONTROLLED EQUIPMENT. ALWAYS REMOVE ALL ELECTRICAL POWER FROM THE EQUIPMENT BEFORE ATTEMPTING ANY INSTALLATION PROCEDURES. DE-ENERGIZE AND TAGOUT ALL SOURCES OF ELECTRICAL POWER BEFORE TOUCH-TESTING ANY EQUIPMENT. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

AFTER INSTALLATION BE SURE TO VERIFY THAT THE TRANSMITTER IS NOT INTERFERING WITH OTHER EQUIPMENT IN THE AREA. ALSO VERIFY THAT OTHER EQUIPMENT IS NOT INTERFERING WITH THE TRANSMITTER AND ITS ASSOCIATED EQUIPMENT. FAILURE TO FOLLOW THESE WARNINGS COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

2.2 GENERAL

Radio controlled equipment operates in several directions. Quite frequently, the equipment is operated in areas where people are working in close proximity to the equipment. **The operator must exercise extreme caution at all times.** Workers must constantly be alert to avoid accidents. The following recommendations have been included to indicate how careful and thoughtful actions may prevent injuries, damage to equipment, or even save a life.

2.3 PERSONS AUTHORIZED TO OPERATE RADIO CONTROLLED CRANES

Only properly trained persons designated by management should be permitted to operate radio controlled equipment.

Radio controlled equipment should not be operated by any person who cannot read or understand signs, notices and operating instructions that pertain to the equipment.

Radio controlled equipment should not be operated by any person with insufficient eyesight or hearing or by any person who may be suffering from a disorder or illness, is taking any medication that may cause loss of equipment control, or is under the influence of alcohol or drugs.

2.4 SAFETY INFORMATION AND RECOMMENDED TRAINING FOR RADIO CONTROLLED EQUIPMENT OPERATORS

Anyone being trained to operate radio controlled equipment should possess as a minimum the following knowledge and skills before using the radio controlled equipment.

The operator should:

- have knowledge of hazards pertaining to equipment operation
- have knowledge of safety rules for radio controlled equipment
- have the ability to judge distance of moving objects
- know how to properly test prior to operation
- be trained in the safe operation of the radio transmitter as it pertains to the equipment being operated
- have knowledge of the use of equipment warning lights and alarms

- have knowledge of the proper storage space for a radio control transmitter when not in use
- be trained in transferring a radio control transmitter to another person
- be trained how and when to report unsafe or unusual operating conditions
- test the transmitter emergency stop and all warning devices prior to operation; testing should be done on each shift, without a load
- be thoroughly trained and knowledgeable in proper and safe operation of the equipment that utilizes the radio control
- know how to keep the operator and other people clear of hazardous areas
- know and follow the local lockout and tagout procedures when servicing radio controlled equipment
- know and follow all applicable operating and maintenance manuals, safety procedures, regulatory requirements, and industry standards and codes

The operator shall not:

- operate the equipment if the direction of travel or function engaged does not agree with what is indicated on the controller
- operate any damaged or malfunctioning equipment
- change any settings or controls without authorization and proper training
- remove or obscure any warning or safety labels or tags
- leave power on the radio controlled equipment when the equipment is not in operation
- operate any equipment using a damaged controller because the unit may be unsafe
- operate manual motions with other than manual power
- operate radio controlled equipment when low battery indicator is on



WARNING

THE OPERATOR SHOULD NOT ATTEMPT TO REPAIR ANY RADIO CONTROLLER. IF ANY PRODUCT PERFORMANCE OR SAFETY CONCERNS ARE OBSERVED, THE EQUIPMENT SHOULD IMMEDIATELY BE TAKEN OUT OF SERVICE AND BE REPORTED TO THE SUPERVISOR. DAMAGED AND INOPERABLE RADIO CONTROLLER EQUIPMENT SHOULD BE RETURNED TO MAGNETEK FOR EVALUATION AND REPAIR. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

2.5 TRANSMITTER UNIT

Transmitter switches should never be mechanically blocked ON or OFF. When not in use, the operator should turn the transmitter OFF. A secure storage space should be provided for the transmitter unit, and the transmitter unit should always be placed there when not in use. This precaution will help prevent unauthorized people from operating the material handling equipment.

Spare transmitters should be stored in a secure storage space and only removed from the storage space after the current transmitter in use has been turned OFF, taken out of the service area and secured.

2.6 PRE-OPERATION TEST

At the start of each work shift, or when a new operator takes control of the equipment, operators should do, as a minimum, the following steps before making lifts with any equipment:

Test all warning devices.

Test all functions.

Test the transmitter machine stop.

2.7 HANDLING BATTERIES



WARNING

KNOW AND FOLLOW PROPER BATTERY HANDLING, CHARGING AND DISPOSAL PROCEDURES. IMPROPER BATTERY PROCEDURES CAN CAUSE BATTERIES TO EXPLODE OR DO OTHER SERIOUS DAMAGE. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

Use only batteries approved by Magnetek for the specific product.

Do not dispose of a battery pack in fire; it may explode.

Do not attempt to open the battery pack.

Do not short circuit the battery.

Keep the battery pack environment cool during storage (i.e., not in direct sunlight or close to a heating source).

2.8 OPTIONAL RECHARGEABLE BATTERY CHARGING

For those transmitters equipped with rechargeable batteries and battery chargers, all users shall be familiar with the instructions of the charger before attempting to use.

Do not attempt to charge non-rechargeable battery packs in the charger.

Avoid charging partially discharged rechargeable batteries to help prolong battery cycle life.

Do not charge batteries in a hazardous environment.

Keep the battery pack environment cool during charging (i.e., not in direct sunlight or close to a heating source).

Do not short the charger.

Do not attempt to charge a damaged battery.

Use only Magnetek approved chargers for the appropriate battery pack.

Do not attempt to use a battery that is leaking, swollen or corroded.

Charger units are not intended for outdoor use. Only use charger units indoors.

2.9 BATTERY DISPOSAL

Before disposing of batteries consult local and governmental regulatory requirements for proper disposal procedure.

2.10 CRANE/LIFTING DEVICE SPECIFIC WARNINGS



WARNING

EQUIPMENT MUST HAVE A MAINLINE CONTACTOR INSTALLED AND ALL TRACKED CRANES, HOISTS, LIFTING DEVICES AND SIMILAR EQUIPMENT MUST HAVE A BRAKE INSTALLED. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

AN AUDIBLE AND/OR VISUAL WARNING MEANS MUST BE PROVIDED ON ALL REMOTE CONTROLLED EQUIPMENT AS REQUIRED BY CODE, REGULATION, OR INDUSTRY STANDARD. THESE AUDIBLE AND/OR VISUAL WARNING DEVICES MUST MEET ALL GOVERNMENTAL REQUIREMENTS. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH AND DAMAGE TO EQUIPMENT.

THE DIRECT OUTPUTS OF THIS PRODUCT ARE NOT DESIGNED TO INTERFACE DIRECTLY TO TWO STATE SAFETY CRITICAL MAINTAINED FUNCTIONS, I.E., MAGNETS, VACUUM LIFTS, PUMPS, EMERGENCY EQUIPMENT, ETC. A MECHANICALLY LOCKING INTERMEDIATE RELAY SYSTEM WITH SEPARATE POWER CONSIDERATIONS MUST BE PROVIDED. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH OR DAMAGE TO EQUIPMENT.

Cranes, hoists, lifting devices and other material handling equipment can be large, and operate at high speeds.

The operator should:

- continuously watch and monitor status of lifted loads
- know and follow cable and hook inspection procedures

The operator shall not:

- lift or move more than the rated load
- use the crane, hoist or lifting device to lift, support or transport people
- lift or carry any loads over people
- operate the crane, hoist or lifting device unless all persons, including the operator, are and remain clear of the supported load and any potential pinch points
- operate a crane, hoist or lifting device when the device is not centered over the load
- operate a crane, hoist or lifting device if the chain or wire rope is not seated properly in the sprockets, drum or sheave
- leave any load unattended while lifted

2.11 SPECIFIC SYSTEM WARNINGS

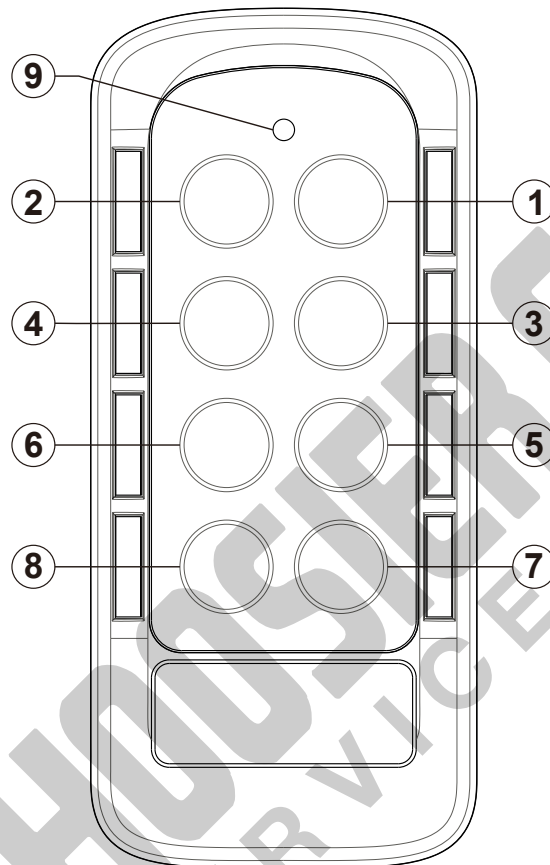
Below are some specific operating safety tips that should be strictly followed when operating a Flex Mini system:

1. Check the Status LED on the transmitter for any signs of low battery power.
2. Check the Status LED on the transmitter for any signs of irregularities.
3. Make sure the system is not set to the same channel as any other Flex Mini systems in use within a distance of 300 meters (900 feet).
4. Never operate equipment with two transmitter handsets at the same time unless they are programmed to do so.

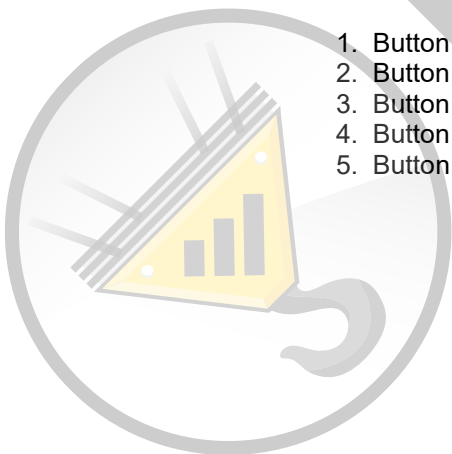
3 GENERAL SYSTEM INFORMATION

3.1 TRANSMITTER

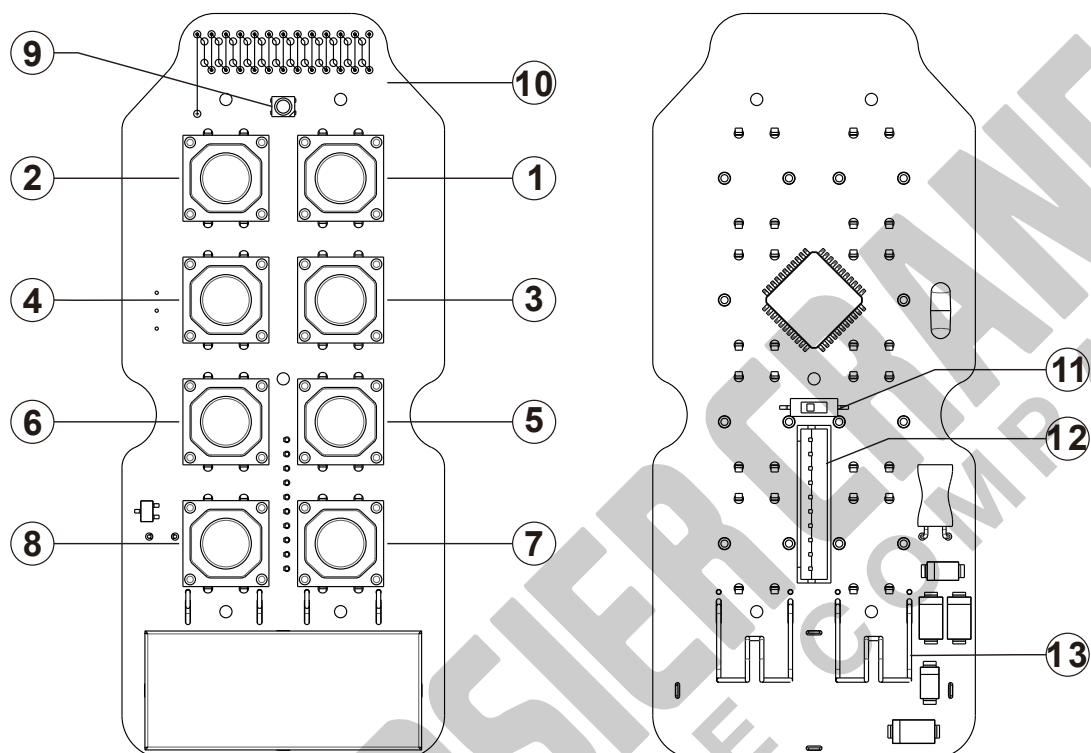
3.1.1 External Illustration



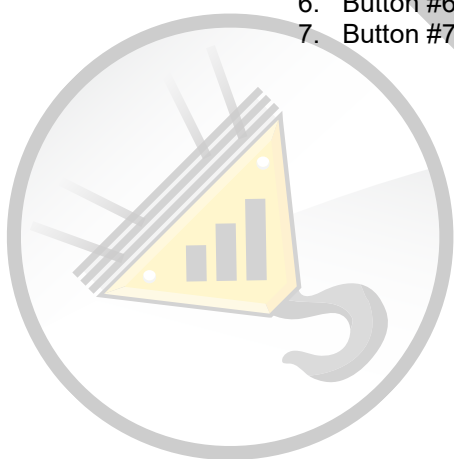
- | | |
|--------------------|--------------------|
| 1. Button #1 (PB1) | 6. Button #6 (PB6) |
| 2. Button #2 (PB2) | 7. Button #7 (PB7) |
| 3. Button #3 (PB3) | 8. Button #8 (PB8) |
| 4. Button #4 (PB4) | 9. Status LED |
| 5. Button #5 (PB5) | |



3.1.2 Internal Illustration

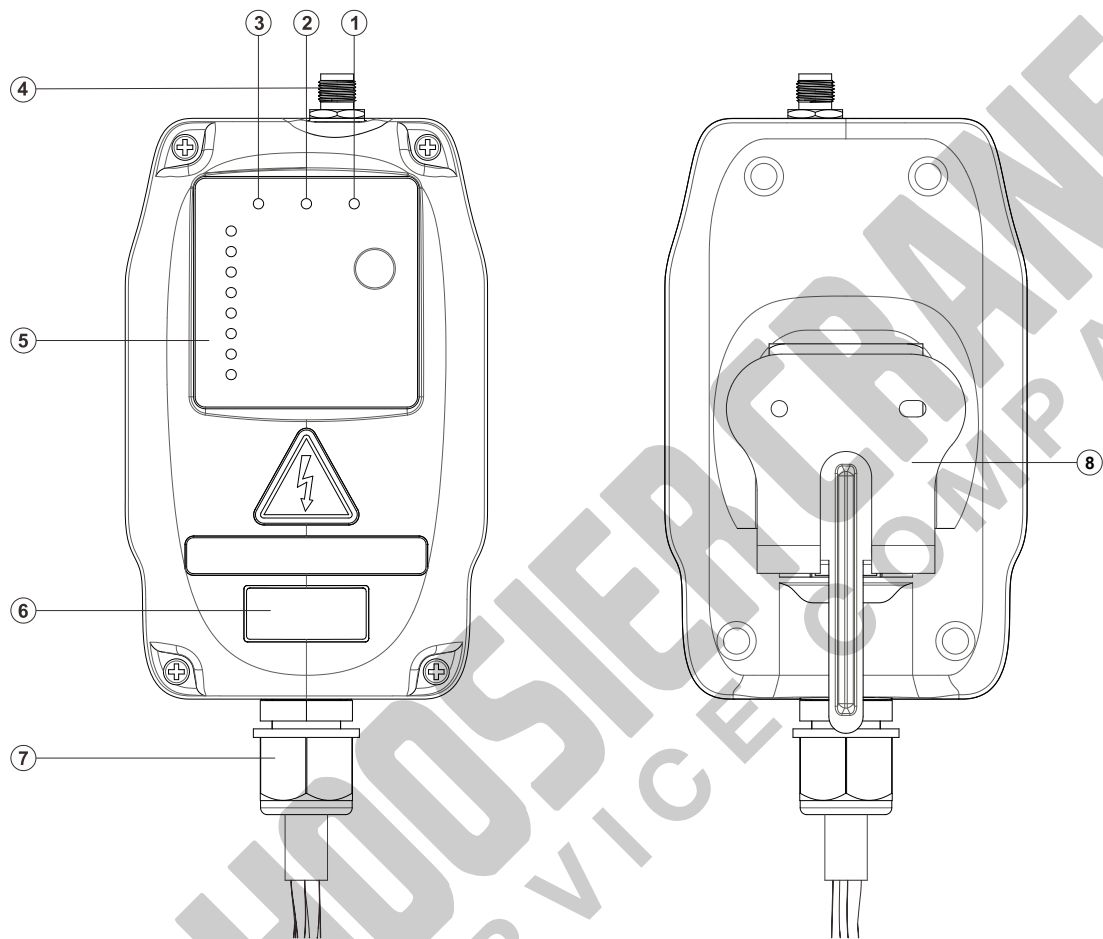


- | | |
|--------------------|-------------------------|
| 1. Button #1 (PB1) | 8. Button #8 (PB8) |
| 2. Button #2 (PB2) | 9. Status LED |
| 3. Button #3 (PB3) | 10. RF + Encoder Board |
| 4. Button #4 (PB4) | 11. Function Dip-switch |
| 5. Button #5 (PB5) | 12. Programming Port |
| 6. Button #6 (PB6) | 13. Battery Contacts |
| 7. Button #7 (PB7) | |



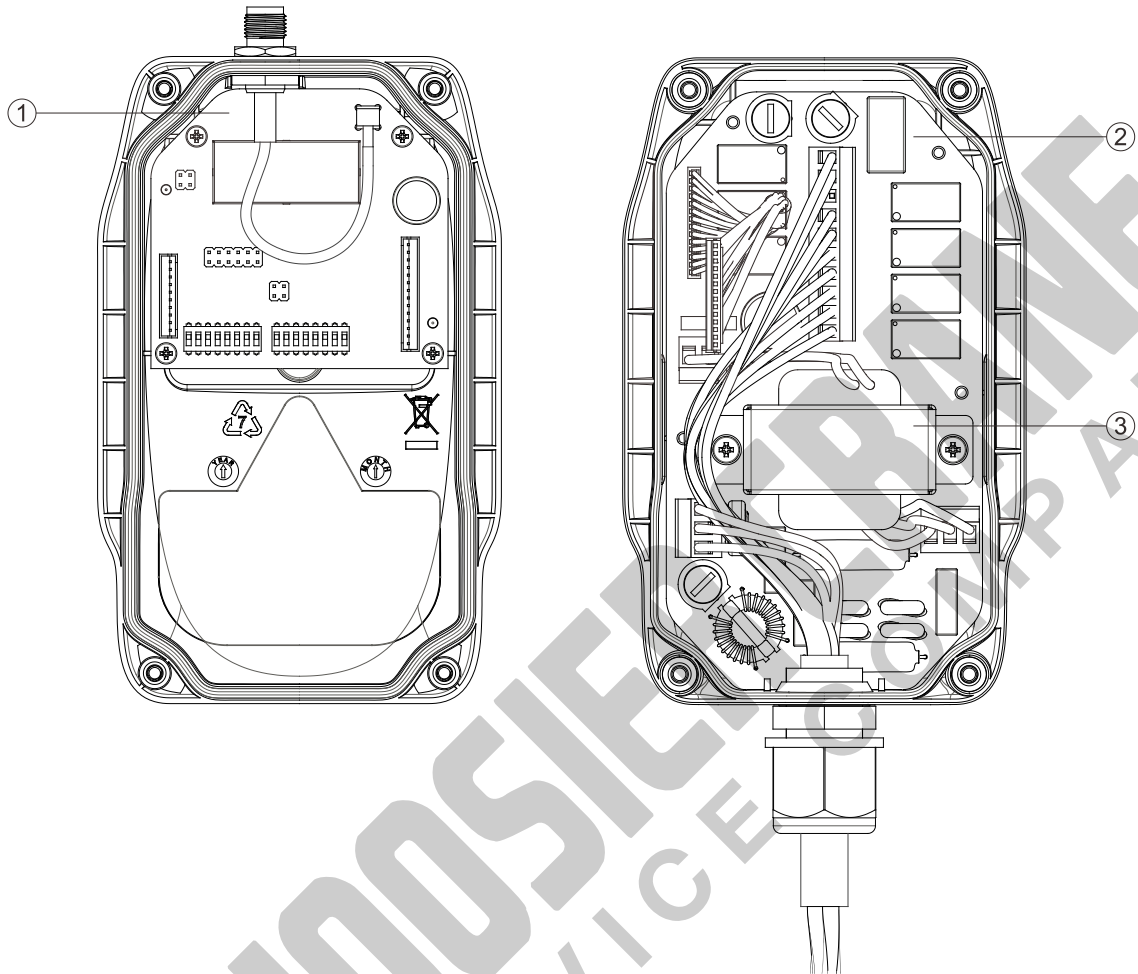
3.2 RECEIVER

3.2.1 External Illustration



- | | |
|--------------------------|-----------------------|
| 1. COM LED | 5. Output Relays LED |
| 2. Status LED | 6. System Information |
| 3. Power LED | 7. Cord Grip |
| 4. External Antenna Jack | 8. Mounting Bracket |

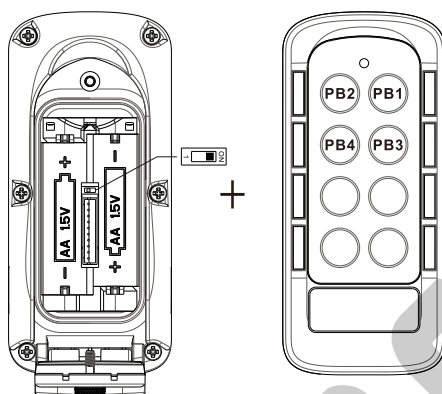
3.2.2 Internal Illustration



4 FUNCTION SETTINGS

4.1 TRANSMITTER

4.1.1 Channel Settings



Enter the transmitter function setting mode by moving the function dip-switch located inside the battery compartment to the “on” position. Reinsert the two batteries and press PB1 to power up the transmitter. At this point the Status LED will display a series of red, green, and orange blinks showing the current software version. Then press and hold PB3 for up to 1.0 second to go into the transmitter channel setting mode. At this point the Status LED will display a series of green and red blinks showing the current system channel. A green blink represents the tens (+10) and a red blink represents the units (+1). For example, one (1) green blink followed by five (5) red blinks is channel 15.

Now select a new channel by pressing PB1 and PB2 on the transmitter. Press PB1 to increment the units (+1) and PB2 to increment the tens (+10). For example, pressing PB2 two times and then PB1 four times will set the transmitter to channel 24.

NOTE: When selecting a new channel, make sure each button press does not exceed 3.0 seconds.

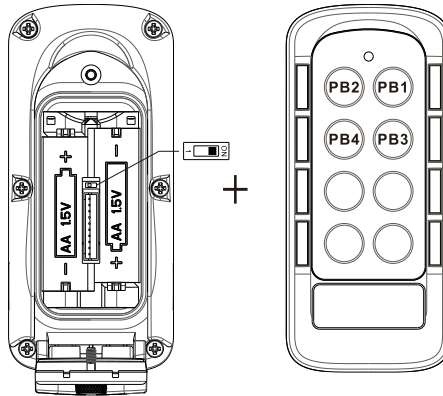
When finished the transmitter Status LED will display the newly selected channel. The newly selected channel must be transferred to the receiver by pressing and holding PB3 for up to 10.0 seconds or until the transmitter Status LED turns off, which indicates that the transferring process is completed. Make sure the receiver power is turned on during the process. Exit the transmitter function setting mode by removing the batteries and moving the function dip-switch back to the “Off” position.

NOTE: When the transmitter keypad is set to type 1 the receiver must be reset (turned off and back on), or the channel setting process must be executed 10 minutes after receiver inactivity.

NOTE: When you are changing the transmitter channel you must also change the receiver channel at the same time prior to exiting the transmitter function setting mode (see the instructions above). If you exit the transmitter function setting mode without pressing PB3 for up to 10.0 seconds to transfer the newly selected channel to the receiver, you will have to change the newly selected transmitter channel back to its previous setting. This can be done by reentering the transmitter function setting mode and then pressing and holding PB1 and PB3 at the same time for up to 2.0 seconds; this will reset the newly selected channel back to the previous setting.

Alternately, perform the remote pairing process (RX to TX) described in Section 4.1.4 Remote Pairing; this will transfer the receiver channel to the transmitter. Repeat the channel setting process again if you would like to reselect a new channel.

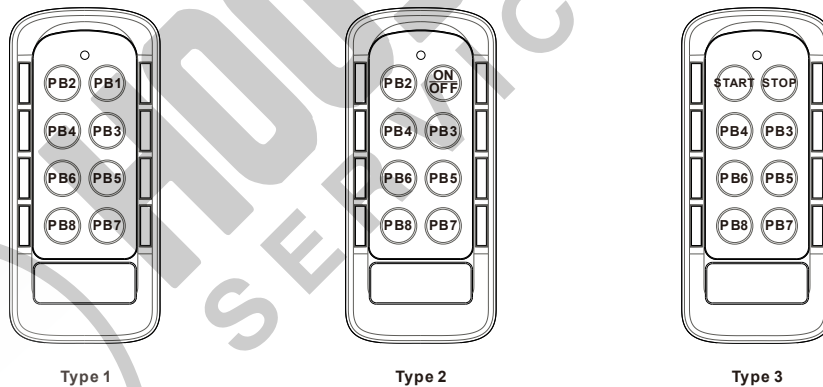
4.1.2 Keypad Type Settings



Enter the transmitter function setting mode by moving the function dip-switch located inside the battery compartment to the “on” position. Reinsert the two batteries and press PB1 to power up the transmitter. At this point the Status LED will display a series of red, green, and orange blinks showing the current software version. Press and hold PB4 for up to 1.0 second to go into the keypad type setting mode. At this point the Status LED will blink red, showing the current keypad type. A green blink represents the tens (+10) and a red blink represents the units (+1). For example, two (2) red blinks is keypad type 2.

Now select the new keypad type by pressing PB1 and PB2 on the transmitter. Press PB1 to increment the units (+1) and PB2 to increment the tens (+10). For example, press PB1 two times for keypad type 2 and three times for keypad type 3. The Status LED will display the newly selected keypad type when finished. Exit transmitter function setting mode by taking out the batteries and moving the function dip-switch back to the “Off” position.

NOTE: When selecting a new keypad type, make sure each button press does not exceed 3.0 seconds.



4.1.2.1 Keypad Overlay

When changing the keypad type setting, it is recommended to change the keypad overlay sticker on the unit as well. This will ensure that the operator knows which buttons are the function buttons and which buttons are used for either ON/OFF or START and STOP. The following procedure should be used to change the keypad overlay. If the unit does not have an overlay, start at step 4.

1. Remove the old overlay.
2. Wipe the unit down with rubbing alcohol to remove any adhesive that is still on the unit.
3. Let the unit dry.
4. Remove the backing from the new overlay.
5. Align the overlay with the bottom of the inset for the keypad.
6. Slowly place the overlay over the buttons ensuring that the overlay makes contact around each of the buttons.
7. Firmly press the entire overlay to ensure that it seals the unit to maintain sealing.

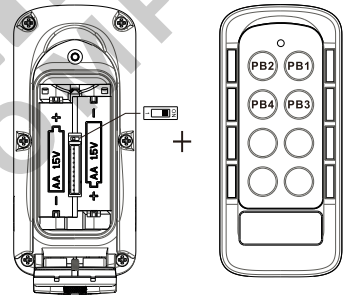
4.1.3 Transmitter Inactivity/Sleep Timer Settings

After entering the transmitter function setting mode, press and hold both PB2 and PB4 at the same time for up to 1 second (Status LED orange) and then let go (Status LED displays current sleep timer setting). A green blink represents the tens (+10), a red blink represents the units (+1) and an orange blink represents constant ON (sleep mode disabled). For example, one (1) green blink followed by five (5) red blinks is 15 minutes. By default the sleep timer is set to 5 minutes.

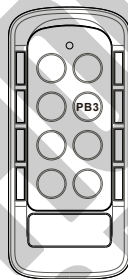
Select new timer value by pressing PB1, PB2, or PB3+PB4 on the transmitter. Press PB1 to increment the units (+1), PB2 to increment the tens (+10), and PB3+PB4 to constant ON (sleep mode disabled). For example, press PB2 two times and then PB1 four times to set the timer value for 24 minutes. Make sure each button press is executed within 3 seconds. The timer value available for programming is 1~60 minutes and constant ON (sleep mode disabled). When finished, the transmitter Status LED will display the newly selected sleep timer value. Exit the transmitter function setting mode by removing the batteries and moving the function dipswitch back to the "Off" position.

4.1.4 Remote Pairing

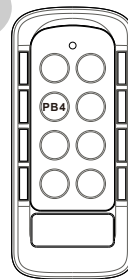
Enter the transmitter function setting mode by moving the function dip-switch located inside the battery compartment to the "On" position. Reinsert the two batteries and press PB1 to power up the transmitter. At this point the Status LED will display a series of red, green, and orange blinks showing the current software version. Then press and hold PB3 and PB4 at the same time for up to 1.0 second to go into the remote pairing mode (Status LED orange and then off).



TX to TX Pairing:



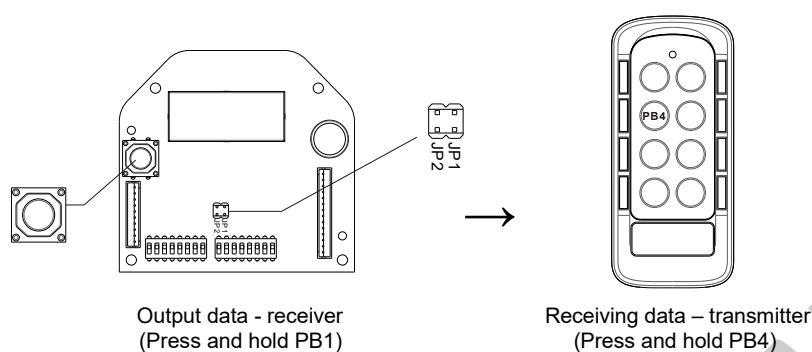
Output data – original transmitter
(Press and hold PB3)



Receiving data – new transmitter
(Press and hold PB4)

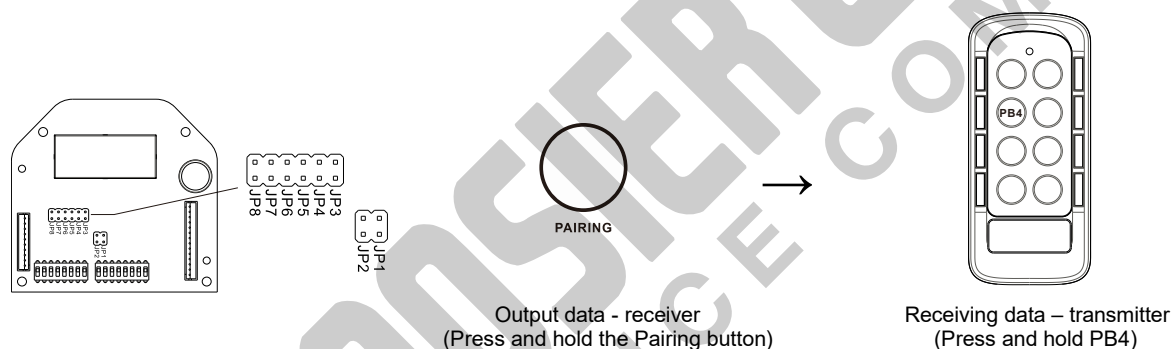
After entering the remote pairing mode, output data by pressing and holding PB3 on the original transmitter and receive data to the new transmitter by pressing and holding PB4 at the same time. The pairing is completed when the Status LED on the new transmitter (the unit receiving the data) turns to constant green while the buttons are still pressed down. Exit the transmitter function setting mode by taking out the batteries and move the function dipswitch on both transmitters back to the "Off" position.

RX to TX Pairing:



Via the Decoder Board

JP1 Open Method (via the decoder board): After entering the remote pairing mode, output receiver data by pressing and holding PB1 located on the decoder board and receive data by pressing and holding PB4 on the transmitter at the same time. The pairing is completed when the transmitter Status LED turns to constant green while both buttons are still pressed down. Exit the transmitter function setting mode by taking the batteries out of the transmitter and move the function dipswitch back to the "Off" position.



Via the External Pairing Button

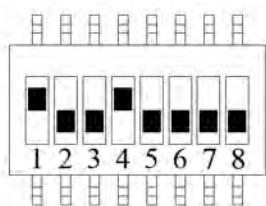
JP1 Open Method (via the external Pairing button): After entering the remote pairing mode, output receiver data by pressing and holding the Pairing button located on the receiver cover and receive data by pressing and holding PB4 on the transmitter at the same time. The pairing is completed when the transmitter Status LED turns to constant green while both buttons are still pressed down. Exit the transmitter function setting mode by taking the batteries out of the transmitter and move the function dipswitch back to the "Off" position.

JP1 Short Method (does not require the decoder board or the external Pairing button): After entering the remote pairing mode, press PB1 on the transmitter and then press and hold PB3 for up to 5.0 seconds to activate receiver data output mode (Status LED green blinks). Then press and hold PB4 on the transmitter until the Status LED turns to constant green (RX to TX pairing complete). Exit the transmitter function setting mode by taking the batteries out of the transmitter and move the function dip-switch back to the "Off" position. Make sure the RX to TX pairing process is executed within a distance of 10 meters from one another.

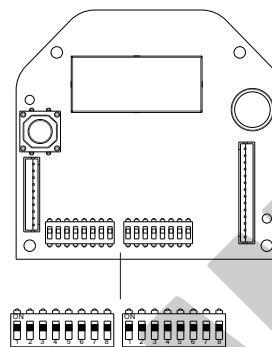
NOTE: When the transmitter keypad is set to type 1 while performing RX to TX remote pairing, the receiver must be reset (turn off and back on) or the RX to TX remote pairing must be executed 5 minutes after receiver inactivity.

4.2 RECEIVER

4.2.1 Dipswitch Settings



Top position → "1"
Bottom position → "0"



Dipswitch #1 (right):

Position	Dip 1	Dip 2	Dip 3	Dip 4	Dip 5	Dip 6	Dip 7	Dip 8
Set to "0"	PB1 Normal	PB2 Normal	PB3 Normal	PB4 Normal	PB5 Normal	PB6 Normal	PB7 Normal	PB8 Normal
Set to "1"	PB1 Toggled	PB2 Toggled	PB3 Toggled	PB4 Toggled	PB5 Toggled	PB6 Toggled	PB7 Toggled	PB8 Toggled

Toggled functions maintain contact when transmitter power is turned off (keypad type 2) or Stop button is pressed (keypad type 3).

Dipswitch #2 (left):

Position	Dip 1	Dip 2	Dip 3	Dip 4	Dip 5	Dip 6	Dip 7	Dip 8
Set to "1"	PB1&2 On & Off	PB3&4 On & Off	PB5&6 On & Off	PB7&8 On & Off	PB1&2 Interlocked	PB3&4 Interlocked	PB5&6 Interlocked	PB7&8 Interlocked

Set to "0": According to dip-switch #1 setting.

Dip 5~8 set to "1": Button pair interlocked. When set to interlocked pair you must reconfigure dip-switch #1 below.

On & Off function turns to "Off" when transmitter power is turned off (keypad type 2) or Stop button is pressed (keypad type 3).

Dipswitch #1 (right) - Normal and Toggled Interlocked Settings:

Position	Dip 1&2	Dip 3&4	Dip 5&6	Dip 7&8
Set to "00"	PB1&2 Normal/Normal Interlocked	PB3&4 Normal/Normal Interlocked	PB5&6 Normal/Normal Interlocked	PB7&8 Normal/Normal Interlocked
Set to "01"	PB1&2 Toggled/Toggled Interlocked	PB3&4 Toggled/Toggled Interlocked	PB5&6 Toggled/Toggled Interlocked	PB7&8 Toggled/Toggled Interlocked

Dipswitch #2 (left) - ID Function Settings (keypad type 3):

Position	Function	Position	Function
Set to "0001001"	K2 output relay closes when PB7 & PB8 is pressed.	Set to "0001101"	K2 output relay closes when PB3 & PB4 or PB7 & PB8 is pressed.
Set to "0001010"	K2 output relay closes when PB5 & PB6 is pressed.	Set to "0001110"	K2 output relay closes when PB3 ~ PB6 is pressed.
Set to "0001011"	K2 output relay closes when PB5 ~ PB8 is pressed.	Set to "0001111"	K2 output relay closes when PB3 ~ PB8 is pressed.
Set to "0001100"	K2 output relay closes when PB3 & PB4 is pressed.		

When a button pair is set to the ID function the corresponding button setting on dipswitch #1 must set to "0".

When set to ID function the START/AUX function on keypad type 3 is disabled (auxiliary function replaced by ID function).

4.2.2 Jumper Settings (for units with the external Pairing button)

JP1 Open → Remote pairing function (press Pairing button required).

JP1 Short → Remote pairing function (press Pairing button not required).

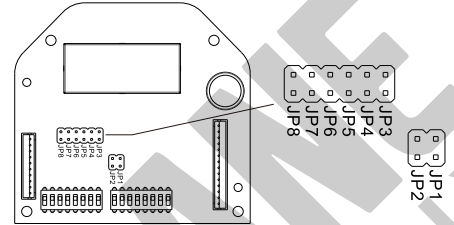
JP2 Open → System normal.

JP2 Short → Display receiver software version.

JP3 Open → Normal toggled function set on the dip-switches.

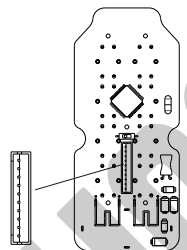
JP3 Short → All toggled functions set on the dip-switches deactivates when shutting off the transmitter power (keypad type 2) and when the Stop button is pressed (keypad type 3).

JP4 ~ JP8 → Reserved for future functions.

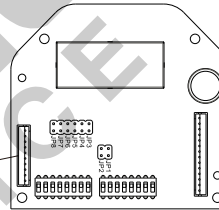


4.2.3 External Programming (for units with the external Pairing button)

Other settings not listed in this manual can be programmed via the external programmer unit. Please contact Magnetek representatives in your area for more details.



Transmitter



Receiver

Other available functions set via external programmer unit:

- 1) On & Off function not affected by the transmitter power On/Off and Stop command.
- 2) On + Start / Off + Start function (keypad type 3 only).

4.2.4 Fuse Ratings

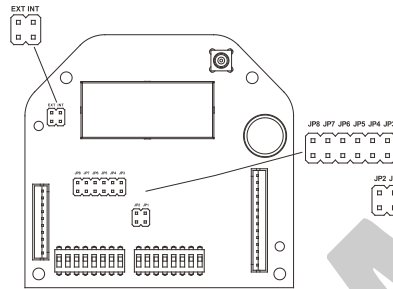
Fuse #	110~120VAC	220~240VAC	380~400VAC	410~460VAC	24VAC	42 & 48VAC	9~36VDC
F2 & F3	5.0A	5.0A	5.0A	5.0A	5.0A	5.0A	5.0A
F1	0.5A	0.5A	0.5A	0.5A	1.0A	1.0A	2.0A

4.2.5 Using External Antenna (optional)

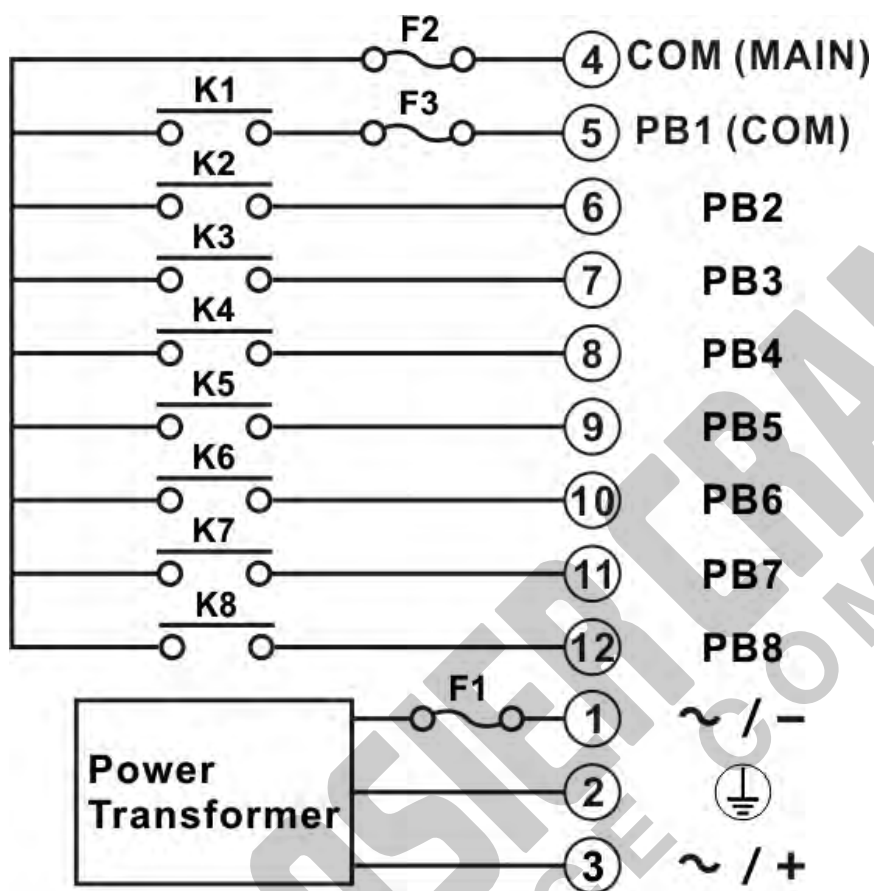
Please make sure to set the jumper to “EXT” when external antenna is connected.

INT → Internal antenna used

EXT → External antenna used



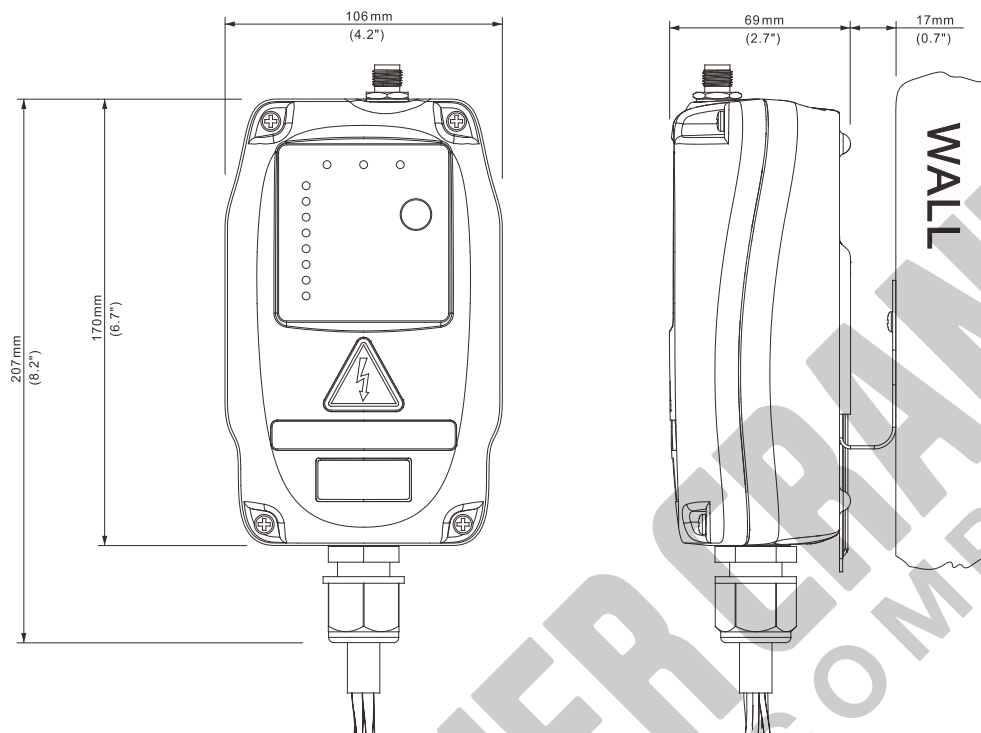
5 RECEIVER INSTALLATION



* () For keypad type #2 and type #3 setups.

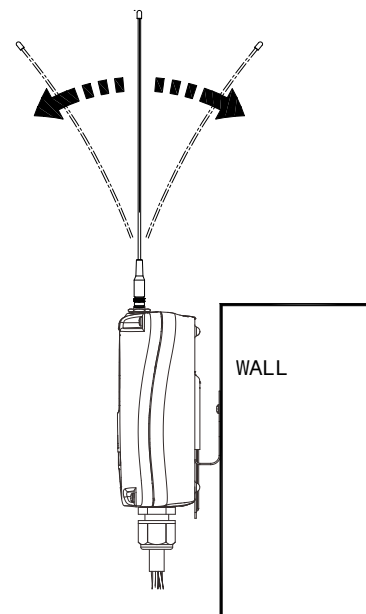
* For 9~36VDC power supply, wire #1 corresponds to the negative charge (-) and wire #3 corresponds to the positive charge (+); wire #2 is for GROUND.



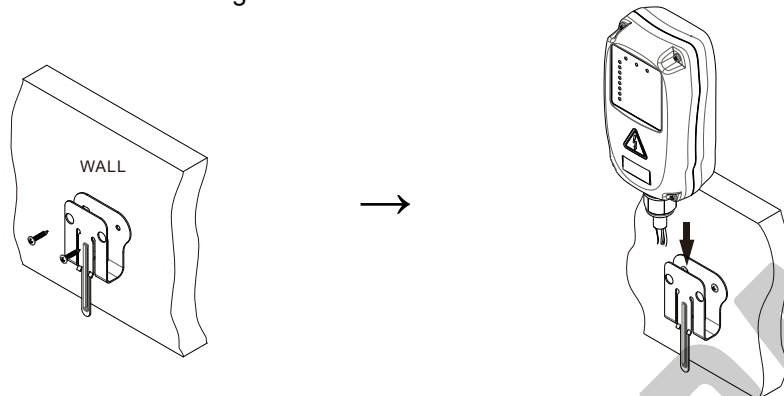


For best reception the location of the receiver should be visible to the operator at all times.

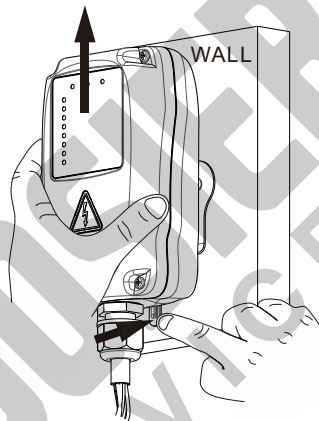
Ensure the selected location has adequate space to accommodate the receiver. If an external antenna is used, always locate the receiver where the antenna is free from obstacles from all directions to avoid the possibility of antenna damage (refer to the diagram at right).



Secure the mounting bracket to the wall or equipment via two screws (not provided with the system). Slide down the receiver along the guided track to secure the receiver to the mounting bracket (see below). Make sure the screws are tightened after installation.



Remove the receiver by pressing down the bracket release and pull the receiver upward until it clears the guided track (see below).

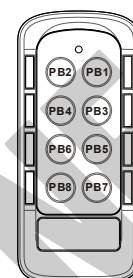


6 OPERATING PROCEDURE

6.1 GENERAL OPERATING PROCEDURE

Keypad Type 1:

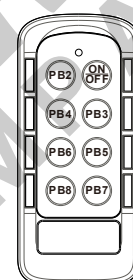
The transmitter is powered on and operated by pressing any button on the keypad (green blinks on Status LED). The transmitter goes into sleep mode after 5 minutes of inactivity (buttons not pressed). Press any button to wake up the transmitter and continue operation.



Type 1

Keypad Type 2:

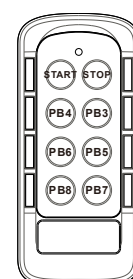
The transmitter is powered on by pressing the On/Off button once for up to 2.0 seconds (green on Status LED); the receiver main is also activated at the same time. The Status LED will blink green every 4 seconds thereafter for up to 5 minutes when no buttons are pressed (transmitter standby). After 5 minutes the transmitter will go into sleep mode. Press the On/Off button for up to 1.0 second to wake up the transmitter and continue operation. Shut off the transmitter power by pressing the On/Off button for up to 2.0 seconds (red on Status LED and then off); the receiver main is deactivated at the same time. The system will not work when pressing any buttons prior to initiating the On/Off command (Status LED blinks 2 red).



Type 2

Keypad Type 3:

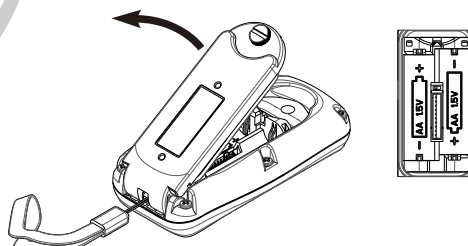
The transmitter is powered on by pressing the Start button once for up to 2.0 seconds (green on Status LED); the receiver main is also activated at the same time. The Start button becomes an auxiliary function thereafter. The Status LED will blink green every 4 seconds thereafter for up to 5 minutes when no buttons are pressed (transmitter standby). After 5 minutes the transmitter will go into sleep mode. Press the Start button again for up to 1.0 second to wake up the transmitter and continue operation. Shut off the transmitter power by pressing the Stop button for up to 2.0 seconds (red on Status LED and then off); the receiver main is deactivated at the same time. The system will not work when pressing any buttons prior to initiating the Start command (Status LED blinks 2 red).



Type 3

6.2 CHANGING TRANSMITTER BATTERIES

Change the transmitter batteries ("AA" alkaline battery x 2) by unscrewing the battery cover located on the backside of the transmitter counterclockwise. During battery installation make sure the batteries are installed correctly, with "+" to "+" charge and "-" to "-" charge. Also make sure the screw is tightened after battery installation to avoid water, moisture, dirt, grease, or other liquid penetration.



7 STATUS AND WARNINGS

7.1 TRANSMITTER STATUS LIGHT INDICATIONS

Type	Display Type	Indication
1	1 red blink	Transmitter low battery Change battery immediately
2	Constant red	Transmitter power off due to low battery condition
3	2 red blinks	Button jammed or defective (for keypad type 2 & type 3 setups only)
4	Green blinks	Transmission in progress
5	1 green blink every 4 seconds	Transmitter on standby (for keypad type 2 & type 3 setups only)

Note on Type 3 above: A jammed or defected button is shown by 2 red blinks on the Status LED when pressed. For example, when 2 red blinks are shown on the Status LED, press each button, one at a time, to see which one is jammed or defective. A good working button will not display any lights on the Status LED when pressed, while a jammed or defective button will blink red twice when pressed.

7.2 RECEIVER STATUS LIGHT INDICATIONS

Type	Display Type	Indication
1	Fast green blinks	Decoding in process
2	Slow green blinks	Decoding on standby
3	Constant red blinks	Incorrect serial Number/ID code received
4	Constant red	Receiver Low voltage

7.3 RECEIVER COM LIGHT INDICATIONS

Type	Display Type	Indication
1	Constant red	Power to the relay board
2	Off	No power to the relay board

7.4 RECEIVER POWER LIGHT INDICATIONS

Type	Display Type	Indication
1	Constant red	Power to the receiver
2	Off	No power to the receiver

8 SYSTEM SPECIFICATIONS

Frequency Range	:	433~434MHz
Frequency Deviation	:	50 KHz
Number of Channels	:	32 channels
Modulation	:	Digital Frequency Modulation based on Manchester Code, 24bit address, and 8bit CRC Parity Check.
Encoder & Decoder	:	Microprocessor-controlled
Transmitting Range	:	>50 Meters / 164 Feet
Frequency Control	:	Synthesized PLL
Receiver Sensitivity	:	-104dBm
Antenna Impedance	:	50ohms
Responding Time	:	50mS
Transmitting Power	:	1mW
Enclosure Type	:	NEMA4
Enclosure Rating	:	IP66
Output Contact Rating	:	250V @ 8 Amps
Transmitter Operating Voltage	:	3.0VDC
Transmitter Power Consumption	:	5~22mA
Receiver Power Consumption	:	40~220mA
Receiver Supply Voltage	:	9~36VDC
		24VAC
		42VAC
		48VAC
		110~120VAC
		220~240VAC
		380~400VAC
		410~460VAC
Operating Temperature	:	-25°C ~ 75°C / -13°F ~ 167°F
Transmitter Dimension	:	120mm (L) x 54mm (W) x 28mm (H)
Receiver Dimension	:	170mm (L) x 106mm (W) x 69mm (H)
Transmitter Weight	:	160g / 5.6oz (includes batteries)
Receiver Weight	:	1.0kg/ 2.2lb (includes output cable)



9 DECLARATION OF CONFORMITY



MAGNETEK

EU Declaration of Conformity Certificate

For the following equipment:

Product : Flex Mini Series Radio Remote Control
Multiple Listee Model No. : Flex Mini
Product Receiver Models : CAN-2, MHR, WIC-2402, Flex 4 RX, Flex 6 RX, Flex 8R X, Flex 12 RX
Transmitter Model Serial Number :
Receiver Model Serial Number :
Manufacturer's Name : Magnetek, Inc.
Manufacturer's Address : N49 W13650 Campbell Drive
Menomonee Falls, WI 53051 USA

The undersigned hereby declares on behalf of Magnetek, that the above-referenced products, to which this declaration relates, is in conformity with the provisions of CE Mark Directive (2006/42/EC), Low Voltage Directive (2006/95/EC), Electromagnetic Compatibility Directive (2004/108/EC), Radio Equipment Directive (RED, 2014/53/EU), EMC Directive (2014/30/EU), and the ROHS2 Directive (2011/65/EU).

The standards relevant for the evaluation of the product referenced above conformity to the directive requirements are as follows:

EN 301 489-1 v1.9.2:2011
EN 301 489-3 v1.4.1:2002
EN 300 220-1 v2.4.1:2012

EN 300 220-2 v2.4.1:2012
EN 60950:2006+A11:2009+A1:2010+A12:2011
EN 60529:1992

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Date of Issuance: 31 January 2019

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