



INMOTION Controls Inc.

Industrial Radio Remote Control

INMOTION Series 140

INMOTION Series 160

INMOTION Series 180

User's Manual

Safety/Reliability/User-Friendly

March, 2018

This device complies with part 15 of 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.

FCC ID: SAGA1-L8 IC: 2802A-SAGAL8
CE0470

WARRANTY

INMOTION Controls, Inc. guarantees that this product meets its published specification at the time of shipment from the factory. Under proper installation, it should work as expected. However, INMOTION Controls, Inc. does not guarantee that operation of the 140-160-180 Series Radio Control System is error-free or without interruption.

This equipment is warranted against defects in materials and workmanship for a period of one year from the date of shipment. During the warranty period, INMOTION Controls, Inc. is responsible for necessary repairs, as long as the product can be proved to be defective.

For warranty service or repair, this product must be returned to our factory. Customer is responsible for shipping charges to INMOTION Controls, Inc., while INMOTION Controls, Inc. will pay return shipping charges.

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

- No other warranty is expressed or implied, except for the above mentioned
- The remedies provided herein are the buyers' sole and exclusive remedies.
- INMOTION Controls, Inc. shall not be liable for any direct/indirect, special, incidental or consequential damages.

OPERATING PRECAUTIONS

ATTENTION

- Due to the complex nature of the equipment, it is necessary to read the entire manual before installation.
- Never dismantle equipment by any unauthorized personnel, or equipment may be damaged.
- This Manual is for reference only; please call your distributor if further assistance is required.
- This equipment has been strictly tested for quality before delivery from our factory. However, it must not be used in extremely dangerous situations, or where damage may result.
- After operating, please shut off main power in Crane and the power to Receiver.
- Transmitter should be placed safely when not in use to avoid accidental pressing of buttons.
- The Crane should be equipped with main power Relay, Limit Switch and other required safety devices.
- The GND (ground) of Receiver must be connected with metal part of Crane, or electrical shock will occur.
- Do not use this device during electrical storm, or high electrical interference conditions.
- Ensure Transmitter batteries are in good condition and power for Receiver is normal.
- Installation and maintenance should be done only while the Crane's main power and Receiver's power are OFF, to prevent electrical shock.
- Contents of the Manual may be amended by the manufacturer without notice.

PRECAUTIONS

- After Operating Series 140-160-180, please press the Stop pushbutton to shut off main power in the Crane & Receiver.
- Stop operating when slow-response occurs due to insufficient Transmitter power, beyond the remote control range, or severe interference.
- Remove the batteries when the equipment won't be used for a long period.
- Operators must be in good health and have good judgment in regards to safety.
- Remote Control operator must have adequate training and related license to avoid danger.
- Series 140-160-180 Transmitter is durable and weather-resistant, but care should be taken not to subject it to severe impact or pressure.
- Series 140-160-180 is suitable for use in diverse industrial environments, and adequate operating and maintenance will extend system's life.
- Check EMS mushroom and the other security functions of Series 140-160-180 system before daily operation.
- Press EMS mushroom when malfunctions or abnormal conditions occur.
- Operator must be familiar with the following Emergency Procedures before operating.

EMERGENCY PROCEDURES

In case of emergency, please follow the steps below and ask the distributor for service immediately.

- Press the Stop pushbutton.
- Remove the batteries.
- Shut off the main power of the Crane and discontinue the operation.

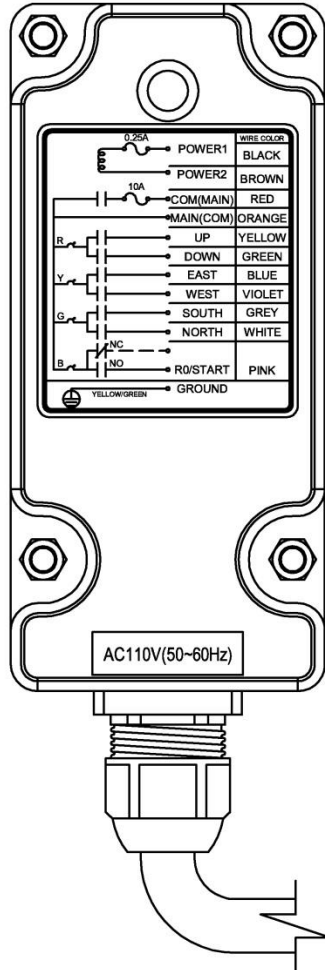
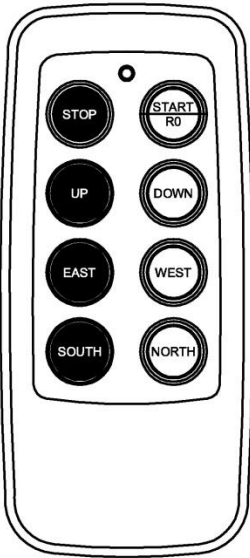
Contact the distributor to find out possible causes.

STANDARD ACCESSORIES

A standard INMOTION Series 140-160-180 System consists of:

(1) Transmitter, 2 units

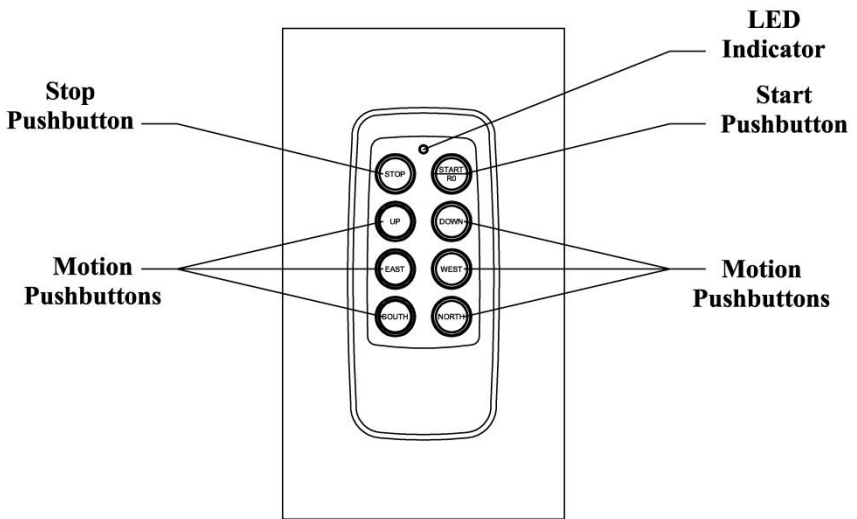
(2) Receiver, 1 unit



Note:
INMOTION Series 180 shown.

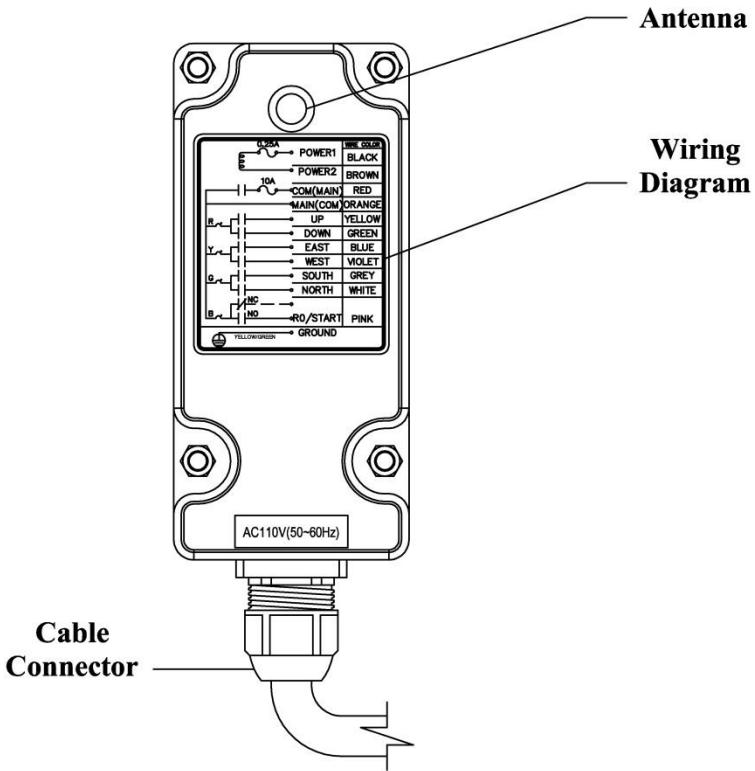
OPERATION

TRANSMITTER CONFIGURATION



Note:
Inmotion Series 180 Shown.

RECEIVER CONFIGURATION



Note:
Inmotion Series 180 Shown. Models vary depending on options.

GENERAL OPERATION

- Turn on the main power switch of the equipment (Crane).
- Install 2 AA batteries in the battery box in the Transmitter. Make sure the polarity is correct.
- Attach Transmitter battery door with screws.
- Press the “Start/R0” Button.
Note: LED indicator will flash with red color if proper procedures are not followed.
- Operate Transmitter by pressing each pushbutton.
- After operation, perform the following procedures in sequence:
 - (1) Press the Stop pushbutton.
 - (2) Keep the transmitter in a safe place.
 - (3) Switch main power off to the equipment (Crane).
 - (4) Remove batteries if not used for a long period of time.**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 OPTIONS

There are two types of power voltages (DC and AC) available for the 140-160-180 Series.

1) DC Type:

Input Voltage: 12~24 VDC

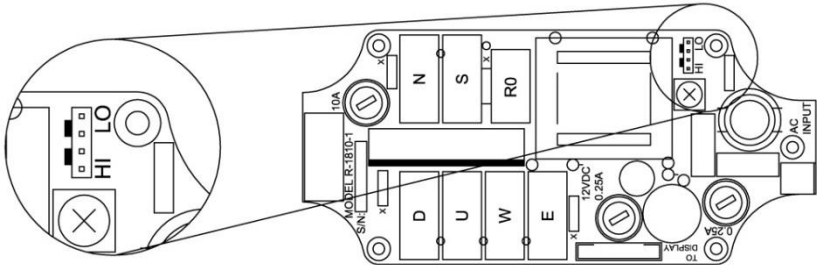
Relay Contact: 10A-36 VDC

2) AC Type:

Three different AC transformers: 24/48V, 48/110V, 110/220V.

Set the jumper to either Hi or Lo depending on which voltage is required. See the chart and diagram below.

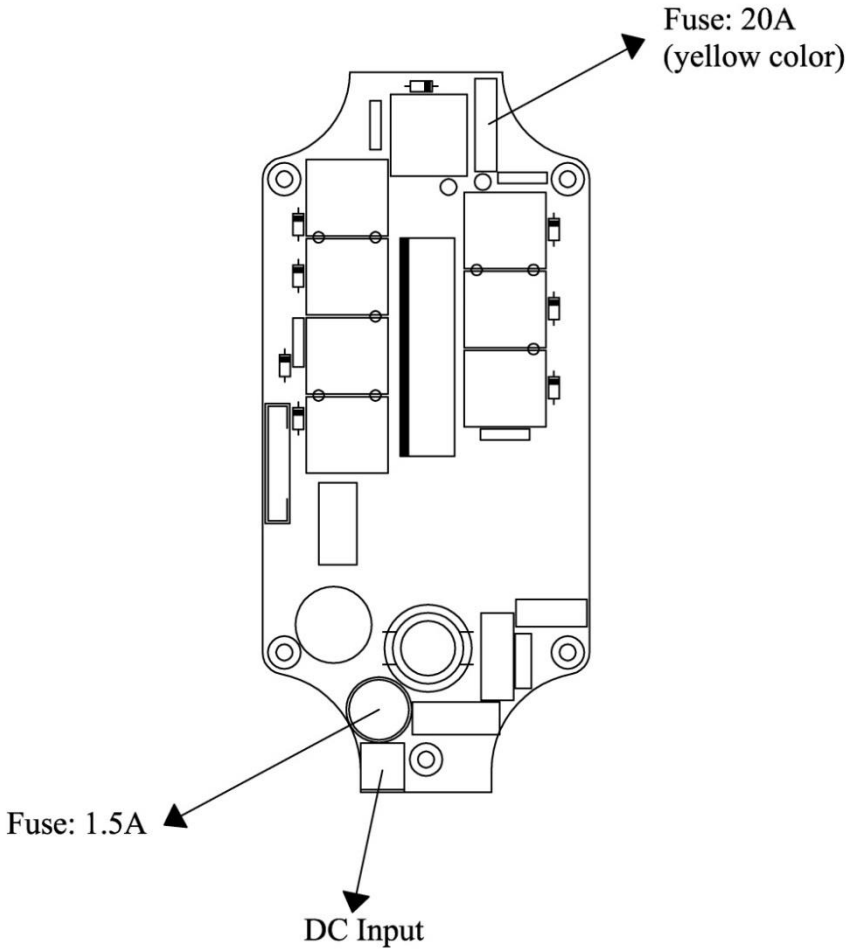
| | LO | HI |
|------------------------------|------------|------------|
| AC24/48 Transformer | 24 | 48 |
| AC48/110 Transformer | 48 | 110 |
| AC110/220 Transformer | 110 | 220 |



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

DC TYPE RELAY P.C. BOARD LAYOUT

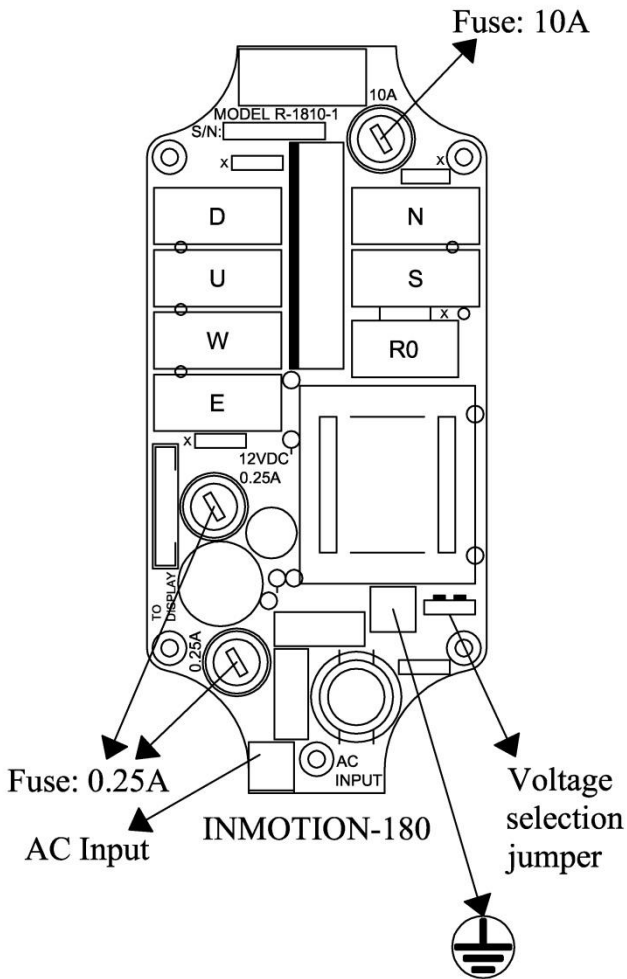
For INMOTION 140-160-180



Note: The Polarity of DC Input is not required when plugging in the power.

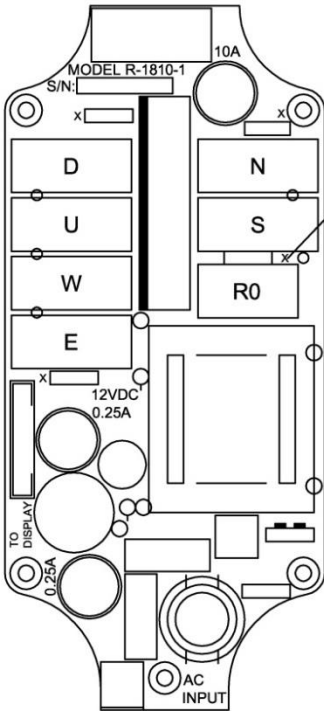
AC TYPE RELAY P.C. BOARD LAYOUT

INMOTION 180 Shown



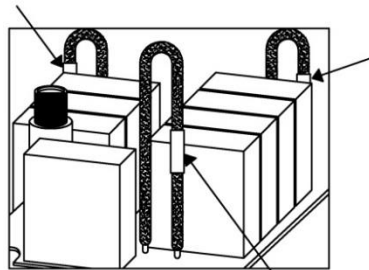
Note: The Ground of the receiver must be connected with metal Part of equipment, or electrical shock may occur.

INDEPENDENT COMMONS



INMOTION-180

If an independent COM line is required then cut the wire labeled with a white "X" as shown below. The longer part of the wire will become the new COM Line.



Cut the wire here.

INMOTION Series 140-160-180 offer optional independent COM lines as:

| | | |
|--------------|-------------------------|---------------------|
| INMOTION-180 | 4 Independent COM Lines | Up/Dn, E/W, S/N, R0 |
| INMOTION-160 | 3 Independent COM Lines | Up/Down, E/W, R0 |
| INMOTION-140 | 2 Independent COM Lines | Up/Down, R0 |

Please refer to the figure of the relay board above. If any independent COM line is required then cut the wire labeled with a white "X". The longer part of the wire will become the new COM line. Then you may connect this new COM wire with an existing spare output wire. If no spares are available the customer must supply extra wire.

BATTERIES

Two AA size alkaline batteries are required for the Transmitter.

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

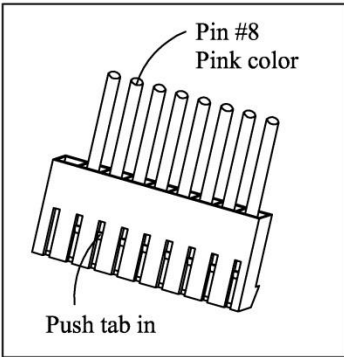
The LED will flash red when the battery power is low.

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

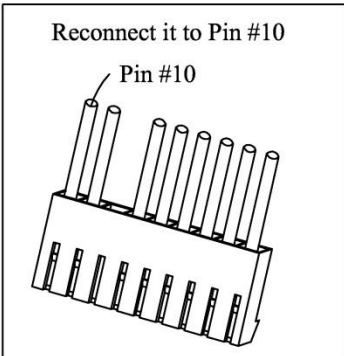
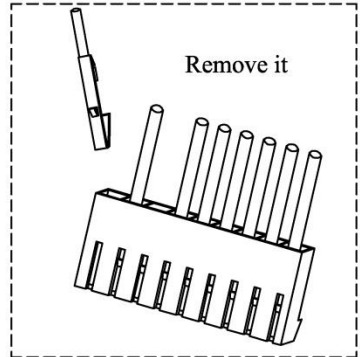
! DO NOT USE RECHARGEABLE BATTERIES !

CHANGING R0/START N.O. (normally open) to N.C. (normally closed)

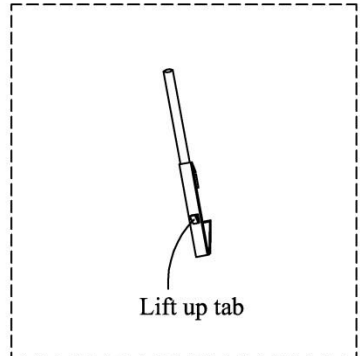
Instructions:



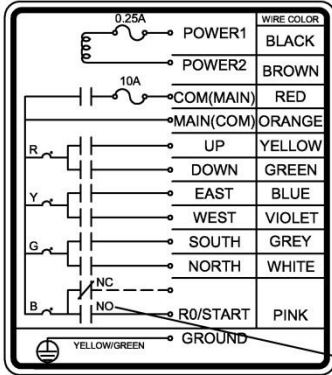
The R0/START is N.O.



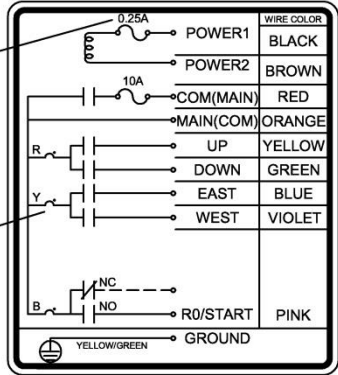
The R0/START is N.C.



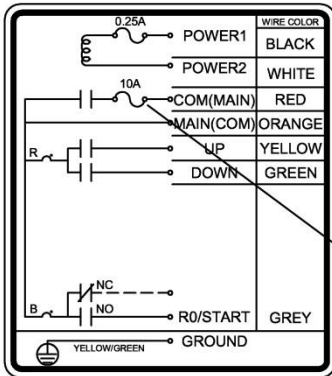
WIRING DIAGRAMS



INMOTION-180



INMOTION-160



INMOTION-140

Note: Polarity for 12-24VDC systems is not required when wiring the power for the receiver.

Notes:

- (1) The R0/Start can be N.O. or N.C. See page 16.
- (2) The fuse for the power AC 48/110/220 is 0.25A.
The fuse for the power DC 12/24V is 1.5A.
- (3) The fuse for the AC type at the COM(MAIN) is 10A.
The fuse for the DC type at the COM(MAIN) is 20A.
- (4) The COM lines have been arranged prior to shipment,
If an independent COM line is required, please refer to
Page 14.

NOTES

TROUBLESHOOTING

| Item | Problem | Cause | Action Required |
|-------------|--|---|--|
| 1 | Red LED flashing quickly (every 0.2 sec.) when any motion pushbutton is pressed. | a) One of the pushbutton is jammed. b) The system is not properly powered according to the instructions. | a) Replace the Pushbutton. b) Power on again according to the instructions. |
| 2 | TX LED flashes red and yellow reciprocally and slowly (every 0.5 sec.) | The memory of the TX is defective. | Send back to the manufacturer. |
| 3 | TX LED flashes red every 2 sec., when any motion pushbutton is pressed. | The transmitter batteries are at low power. | Replace the 2 AA size Alkaline Batteries at once. |
| 4 | RX Error LED flashes red slowly (every 0.5sec.) | The memory of the RX is defective. | Send back to the Manufacturer. |
| 5 | The operating distance is shorter or an intermittent operation is happening. | It was interfered by other Radio Remote Controller /or unknown signal with the same frequency. | Replace the crystal of both TX and RX to change the frequency. |

Remark: The memory of the TX and RX has Anti-copy function design, any inadequate action on decoding the firmware of the memory will cause the trouble as the above items 2 and 4.

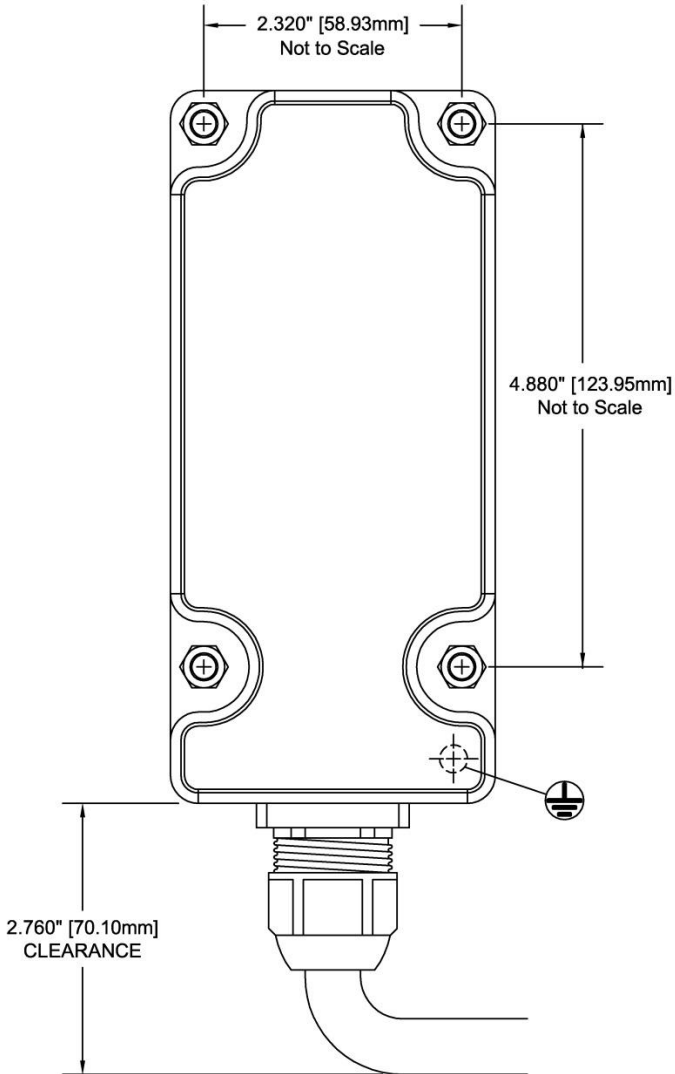
If any problem cannot be solved or if you have any comments or suggestions please call 888-501-2220.

MOUNTING THE RECEIVER

Please note that the drawing below is not to scale.

INSTALLATION INSTRUCTIONS:

1. Attach this template in a proper location allowing 1.18" [29.97mm] clearance on all sides.
2. Drill the .256" [6.5mm] holes for 6mm vibration resistant screw bolts. Install and fix the receiver with 6mm screw nut (provided).



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Harsh Environment?
Are Your Operators
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