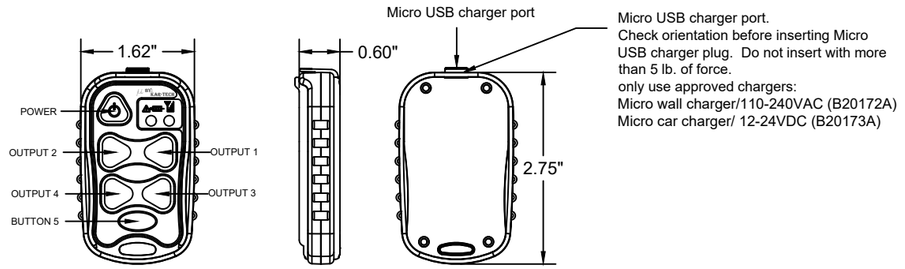
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.
Changes or modifications not expressly approved by Kar-Tech will void the user's authority to operate the equipment.



Micro USB charger port.
Check orientation before inserting Micro USB charger plug. Do not insert with more than 5 lb. of force.
only use approved chargers:
Micro wall charger/110-240VAC (B20172A)
Micro car charger/ 12-24VDC (B20173A)

TRANSMITTER, MICRO, 5 BUTTON

ERROR CODES

RECEIVER ERROR CODE CHART

ERROR CODE	PROBABLE CAUSE
1	RF COMMUNICATION PROBLEM
2	FAULTY CIRCUIT TO OUTPUT 1
3	FAULTY CIRCUIT TO OUTPUT 2
4	FAULTY CIRCUIT TO OUTPUT 3
5	FAULTY CIRCUIT TO OUTPUT 4

ERROR CODE NUMBER IS THE NUMBER OF RED LIGHT BLINKS BETWEEN EVERY PAUSE.

TRANSMITTER ERROR CODE CHART

ERROR CODE	PROBABLE CAUSE
1	LOW BATTERY
2	FAULTY CIRCUIT TO OUTPUT 1
3	FAULTY CIRCUIT TO OUTPUT 2
4	FAULTY CIRCUIT TO OUTPUT 3
5	FAULTY CIRCUIT TO OUTPUT 4

ERROR CODE NUMBER IS THE NUMBER OF RED LIGHT BLINKS BETWEEN EVERY PAUSE.

KIT, MICRO PROGRAMMABLE, 4 FUNCTION
INCLUDING:
TRANSMITTER
RECEIVER

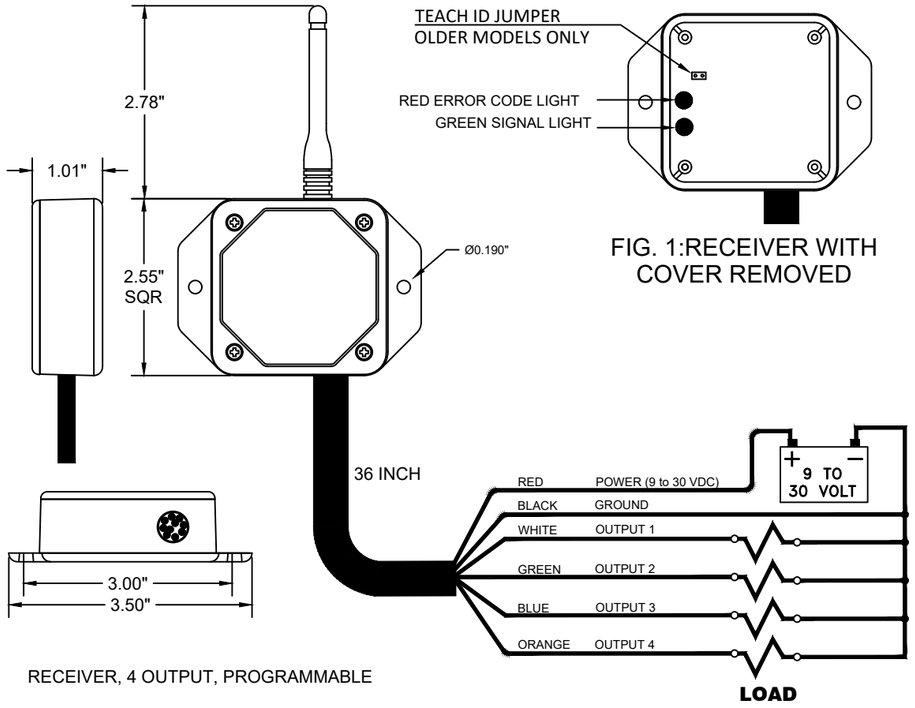


FIG. 1:RECEIVER WITH COVER REMOVED

RECEIVER, 4 OUTPUT, PROGRAMMABLE

NOTE: The output control circuit is designed with open load diagnostics. For unused outputs or high input impedance applications like a PLC, add a 1K resistor (P/N: 210-003-1001) to ground for each. This will eliminate the error code and leakage voltage

OPERATION:
Press and hold the power button on the transmitter until both LEDs turn on, then release. The green LED will flash rapidly when communication has been established with the receiver. The LED flashes slowly if the receiver is off or there is no communication between the transmitter and receiver. Turn the receiver on and press the corresponding buttons on the transmitter keypad to turn on and off each of the outputs.

RECHARGING:
Plug the charging connector into the port at the top of the transmitter. Observe orientation and do not use force. A solid red LED indicates battery is charging. Once the internal battery is fully charged, the red LED will turn off and the green LED will turn on. A fully discharged unit will take up to 3 hours to recharge. Use only approved chargers.

INDICATOR LIGHTS:
The transmitter has two LED indicators, the red **BATTERY/DIAGNOSTIC** indicator and the green **TRANSMIT** indicator.
The green **TRANSMIT** indicator flashes rapidly whenever there is communication between the transmitter and the receiver.
The red **BATTERY/DIAGNOSTIC** indicator starts blinking once every second when the battery voltage is low and requires charging. It also blinks when there is a problem with the system in the form of an error code. Refer to the **ERROR CODE CHART** tables for more information.
Note: To check for low battery, turn the receiver off and leave the transmitter on. If the transmitter red LED continues to blink, the battery is low and requires charging. If the red LED blinks only when the receiver is on, count the number of blinks and refer to the ERROR CODE CHART tables for additional information.
Note: The red LED will stay on while charging and when the charge is completed the green LED will stay on.
Note: It will take longer to charge if the transmitter is on during charging.

TEACH ID CODE:
To synchronize a new transmitter and receiver together, use the following procedure:
1. Turn both transmitter and receiver off
2. To get the transmitter into TEACH ID mode, press and hold the POWER button for 10 seconds. Both LEDs start blinking.
3. Turn on the receiver
   On older models, Place a jumper across the TEACH ID jumper inside the receiver. The green LED will go from blinking to steady. Remove the jumper and store it on one pin
4. Teach complete

CLONING TRANSMITTERS
WARNING! - ONLY ONE TRANSMITTER CAN BE ON AT A TIME, THEY CANNOT BE USED SIMULTANEOUSLY - use with CAUTION!
Occasionally, it is desirable to have more than one transmitter work with a single receiver. This is accomplished by a process called cloning. Cloning allows an additional transmitter (B) to have the same ID code as the original transmitter (A). If this feature is desired, use the following procedure:
1. Make sure both transmitters and the receiver are off
2. On Transmitter A, press and hold POWER buttons for more than 10 seconds until both LEDs start blinking then release POWER button.
3. On Transmitter B, press and hold buttons 1, 2 and POWER button simultaneously until both LEDs start toggling then release buttons
4. Wait for ~1 seconds until both LEDs stop blinking on both units.
5. Cloning complete

If the cloning feature has been invoked and is no longer desired, the ID code of one of the transmitters needs to be changed. This will unclone the transmitters. If this is desired, use the following procedure:
1. Make sure the receiver and transmitter are OFF
2. Press and hold buttons 2, 3 ,5 and POWER simultaneously until both LEDs start toggling then release buttons
3. Press any button again to select a new ID
4. uncloning complete
5. Follow the SYNCHRONIZING TRANSMITTER AND RECEIVER procedure above to link the uncloned transmitter to a new receiver

OUTPUT CONFIGURATION PROGRAMMING:
1. Turn the receiver off. Turn the transmitter on (press and hold POWER until both LEDs turn on, then release)
2. Press and hold 1, 4, and 5 and release. Red LED should be blinking on the transmitter
3. Turn the receiver on. Be sure all outputs are connected to a load and that there are no error codes present (NOTE: outputs may cycle on and off while programming)
4. Are any outputs to be latched (push on/push off)? If yes, continue. If no, skip to step 6
5. One at a time, press and hold each button 1-4 corresponding to output 1-4 that is to be latched, until the green LED goes on, then off
6. Press POWER briefly. The receiver red LED should blink 4 times, indicating acceptance
7. Are any outputs to be disabled (no output and no error code)? If yes, continue, if no, skip to step 9
8. One at a time, press and hold each button 1-4 corresponding to output 1-4 that is to be disabled, until the green LED goes on, then off
9. Press POWER briefly. The receiver red LED should blink 4 times, indicating acceptance
10 Is it desired to use the pump or e-stop functionality (see descriptions below)? If yes, continue, if no, skip to step 15
11. To engage the pump functionality, press button 1 until the green LED goes on, then off. Alternatively, to engage the e-stop functionality, press button 2 until the green LED goes on, then off
12. Press POWER briefly. The receiver red LED should blink 4 times, indicating acceptance
13. If e-stop functionality was chosen, skip to step 16. If pump functionality was chosen, continue
14. One at a time, press and hold each button 1-3 corresponding to output 1-3 that is to be associated with the pump output, until the green LED goes on, then off
15. Press POWER briefly. The receiver red LED should blink 4 times, indicating acceptance
16. Turn receiver off, then on again. Programming complete

NOTES

1. When using Pump or E-Stop functionality, do not disable output 4
2. Pump functionality: output 4 will turn on with any outputs that have been associated with it
3. E-stop functionality: output 4 will be on as long as the transmitter is on. If the transmitter is turned off, POWER is pressed, or it goes out of range, output 4 will go off along with all latched outputs. Turn the transmitter back on and re-engage outputs to continue
4. If pump or e-stop functionality is chosen, output 4 will be used for this. Button 4 on the transmitter will then have no function. A maximum of 3 outputs can be controlled with the transmitter buttons
5. If 4 blinks after each sequence is not seen as described above, the programming was not accepted for that section. Start from the beginning and go slowly. Keep a distance of 2-3 feet from the receiver when programming

TRANSMITTER SLEEP TIME PROGRAMING
The transmitter is factory set to turn off (sleep) after 15 minutes. To change the time the transmitter waits before going to sleep, use the following procedure:
1. Press and hold buttons 3, 4, 5 and POWER simultaneously.
2. Release the buttons. At this point, both lights will blink once per second
3. Next, press one of the following buttons to adjust the sleep time:
   Button 1 = 15 min
   Button 2 = 30 min
   Button 3 = 1 hr
   Button 4 = 2 hr
   Button 5 = sleep disabled (continuous on, use power switch to turn off)
4. Sleep time programming complete

SPECIFICATIONS:
Electrical:
RF Transmit power (EIRP): 10 mW
RF Frequency: 902-928 MHz
Transmitter:
Power: Rechargeable 3.7V Lithium Polymer battery
Operation time with full charge: 30 to 40 hours continuous
Receiver:
Power: 9 to 30 Volts DC
Outputs: 5A max each (20A system max)
Environmental:
Transmitter: -20C to +60C
Receiver: -40C to +85C
Vibration: 3G to 200Hz

IMPLIED TOLERANCE	
X.X	± .1
X.XX	± .06
X.XXX	± .015
FRACTIONAL	± 1/8
ANGULAR	± 0.5 deg.

TITLE: SALES KIT, MICRO, PROGRAMMABLE, 4 FUNCTION
CAD DRAWING DO NOT REVISE MANUALLY

SCALE	DRAWN	DATE	CHECKED	APPROVED	DRAWING NO.	
FULL	BG	11-03-23				B