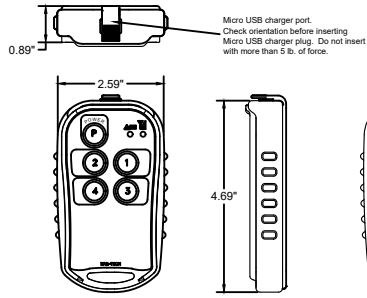


KIT, MACRO PROGRAMMABLE, 4 FUNCTION INCLUDING:

- 1 EA : TRANSMITTER
- 1 EA RECEIVER

Only use approved chargers
 MICRO WALL CHARGER/ 110-240VAC (B20172A)
 MICRO CAR CHARGER/ 12-24VDC (B20173A)



TRANSMITTER, MACRO, 4 BUTTON

ERROR CODES

| RECEIVER ERROR CODES CHART | | TRANSMITTER ERROR CODES CHART | |
|----------------------------|----------------------------|-------------------------------|----------------------------|
| CODE | PROBABLE CAUSE | CODE | PROBABLE CAUSE |
| 1 | RF COMMUNICATION PROBLEM | 1 | LOW BATTERY |
| 2 | FAULTY CIRCUIT TO OUTPUT 1 | 2 | FAULTY CIRCUIT TO OUTPUT 1 |
| 3 | FAULTY CIRCUIT TO OUTPUT 2 | 3 | FAULTY CIRCUIT TO OUTPUT 2 |
| 4 | FAULTY CIRCUIT TO OUTPUT 3 | 4 | FAULTY CIRCUIT TO OUTPUT 3 |
| 5 | FAULTY CIRCUIT TO OUTPUT 4 | 5 | FAULTY CIRCUIT TO OUTPUT 4 |

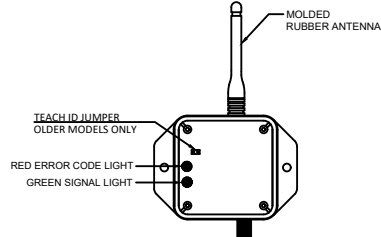
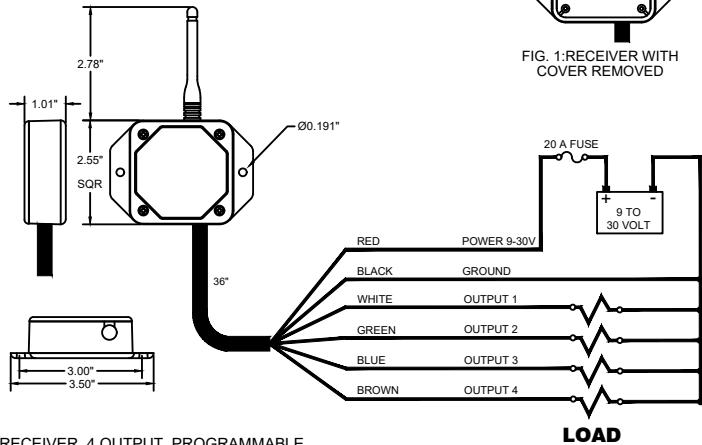


FIG. 1-RECEIVER WITH COVER REMOVED

NOTE:
 TO ELIMINATE ERROR CODES FOR UNUSED OUTPUTS, SEE OUTPUT CONFIGURATION MANUAL OR INSTALL A 1K OHM 1/4 WATT RESISTOR (P/N: 210-003-1001) AS LOAD TO GROUND.



RECEIVER, 4 OUTPUT, PROGRAMMABLE

NOTE: The output control circuit is designed with open load diagnostics. Disable unused outputs using programming feature. For high input impedance applications like a PLC, add a 1K resistor to ground for each output to eliminate the error code and leakage voltage

OPERATION

- Press and hold the POWER button for at least 2 seconds and release
- The transmitter is designed with a power saving feature which turns the transmitter off after 15 minutes if no buttons are pressed.
- There are red and green LEDs both on the keypad of the transmitter and inside the receiver case. The green LED will blink 2 times per second when the transmitter and receiver are communicating. It will blink 1 time per second if there is no communication (i.e. - no power to the receiver)
- The red LED on the transmitter and in the receiver will blink if there is a shorted or open output. Refer to the ERROR CODE CHART tables and count the number of blinks to determine the output with the fault
- The transmitter's red LED blinks 1 time per second if the batteries are low and need to be charged. To confirm a low battery condition, 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, there is a fault with one or more outputs, as stated above
- The red LED will stay on while charging and when the charge is completed the green LED will stay on.
- It will take longer to charge if the transmitter is on during charging.

SYNCHRONIZING TRANSMITTER AND RECEIVER

There are over 64000 different addresses (ID codes) available for each transmitter and receiver pair. Each transmitter and receiver pair is synchronized together at the factory. If a new transmitter is needed, synchronizing is required use the following procedure:

1. Turn both transmitter and receiver off
2. With the transmitter off, press and hold the POWER button for more than 10 seconds. 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, 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, 3, and 4 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, 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
- Power Button = sleep disabled (continuous on, use power switch to turn off)
4. Sleep time programming complete

SPECIFICATIONS

- RF: 902-928MHz FHSS 10mW
- Temperature: Receiver: -40 to +85°C Transmitter: -20 to 60°C
- Output Rating: 5A each (sourcing) 20A system maximum
- Encapsulated electronics inside receiver
- Power: 3.7V LiPo battery
- Battery life: 30-40 hours continuous

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.

| SCALE | | DATE | | CHECKED | | APPROVED | | DRAWING NO. | |
|--|----|----------|--|---------|--|----------|--|--------------|---|
| FULL | BF | 11-24-20 | | | | | | 3A-241-A-C-3 | |
| <p>4 FUNCTION MACRO SYSTEM</p> | | | | | | | | | <p>IMPLIED TOLERANCE</p> <p>XX .1</p> <p>XXX .06</p> <p>XXXX .015</p> <p>FRACTIONAL .01</p> <p>ANGULAR .05 deg.</p> |
| <p>CAD DRAWINGS DO NOT REVISE MANUALLY</p> | | | | | | | | | |