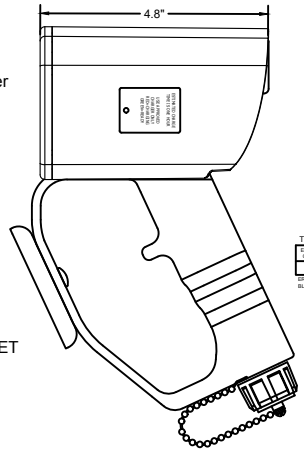
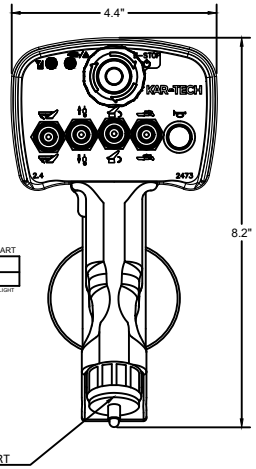
P/N: A3A5491A
KIT, Programmable CADET

Including:
A3A5492A Transmitter
A3A5493A Receiver
AB20032C Car Charger



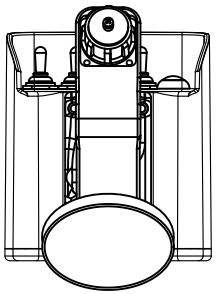
P/N: A3A5492A
Transmitter, CADET



TRANSMITTER ERROR CODE CHART

ERROR CODE	PROBABLE CAUSE
1	LOW BATTERY

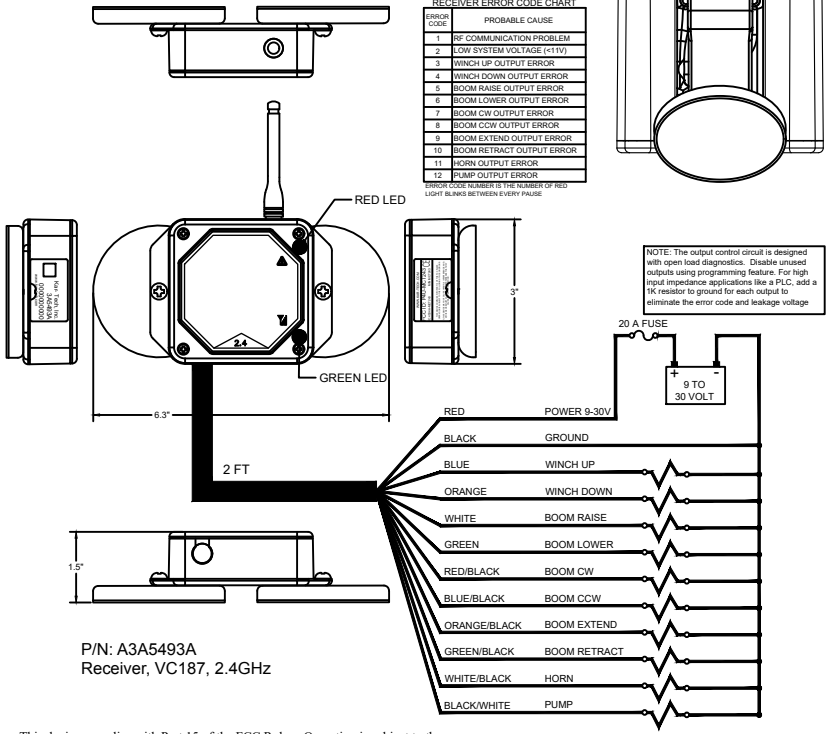
ERROR CODE NUMBER IS THE NUMBER OF RED LIGHT BLINKS BETWEEN EVERY PAUSE



RECEIVER ERROR CODE CHART

ERROR CODE	PROBABLE CAUSE
1	RF COMMUNICATION PROBLEM
2	LOW SYSTEM VOLTAGE (<11V)
3	WINCH UP OUTPUT ERROR
4	WINCH DOWN OUTPUT ERROR
5	BOOM RAISE OUTPUT ERROR
6	BOOM LOWER OUTPUT ERROR
7	BOOM CW OUTPUT ERROR
8	BOOM CCW OUTPUT ERROR
9	BOOM EXTEND OUTPUT ERROR
10	BOOM RETRACT OUTPUT ERROR
11	HORN OUTPUT ERROR
12	PUMP OUTPUT ERROR

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



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

P/N: A3A5493A
Receiver, VC187, 2.4GHz

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.

OPERATION

- To turn on the transmitter, release the E-STOP.
- To turn the transmitter off, press the E-STOP.
- 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 rapidly when the transmitter and receiver are communicating, will blink slowly if there is no communication (i.e. - no power to the receiver), and will double blink when connected but transmitter remains idle (when no switch is held on transmitter).
- The red LED on 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 battery is low and needs to be charged.
- The charging LED will be red, will stay on while charging, and when the charge is completed the charging LED will turn green and stay on.
- It will take longer to charge if the transmitter is on during charging.

SYNCHRONIZING TRANSMITTER AND RECEIVER

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. Make sure both the transmitter and receiver are off.
2. Press and hold the BOOM RAISE and BOOM RETRACT switches on the transmitter and release E-STOP, wait a few seconds till the red and green LED start to blink. Release the switches.
3. Apply power to the receiver and wait for a few seconds until only the green LED begins to blink on the transmitter
4. Teach complete

PROGRAMMABILITY

The user can determine output functionality and program the system to respond as desired. This is determined by the following procedure:

1. Turn the receiver off. Turn the transmitter on (Release E-STOP switch)
2. Press and hold BOOM RAISE, WINCH DOWN, and BOOM EXTEND switches. The red LED should be blinking on the transmitter then release the switches.
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. If you are connecting the receiver to a crane with a Hydraulic winch, press and release WINCH DOWN (PUMP output will turn on with WINCH outputs) otherwise press and release WINCH UP.
5. If the HORN output is to be latched (push on/push off) for using as Auxiliary/Compressor, press and release Horn switch until green LED goes on, then off.
6. Press and release the E-STOP before transmitter shuts down. The receiver's red LED should blink indicating that the settings were accepted and then the green LED should start to only blink.

NOTES:

- If the receiver does not blink the red LED, the programming was not accepted. Start from the beginning and go slowly. Keep a distance of 2-3 feet from the receiver when programming.
- Factory settings are: no PUMP output with WINCH outputs and HORN is not latched

SLEEP TIME

All transmitters have the ability to change the sleep time from the default to user's preference. 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. With the transmitter off, hold switches BOOM RAISE, WINCH UP, BOOM CCW, and BOOM EXTEND, release E-STOP and still hold others for greater than 2 seconds.
2. Release the switches when both LED's blink once per second
3. On the transmitter, hold and release these switches to adjust the sleep time:
   - A. BOOM LOWER = 15 minutes
   - B. WINCH DOWN = 30 minutes
   - C. BOOM CW = 60 minutes
   - D. BOOM RETRACT = 120 minutes
   - E. HORN = DISABLED.
4. Sleep time programming 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, hold BOOM RAISE and HORN switches then release E-STOP, keep holding until the green and red LEDs start blinking together. Then release the switches
3. On Transmitter B, hold BOOM EXTEND and HORN switches then release E-STOP, keep holding until the green and red LEDs start blinking together. Then release the switches
4. Wait for few seconds until the green LED starts to only blink on transmitter A and transmitter B.
5. Turn both the transmitters off
6. Synchronize one of the transmitters to the receiver using SYNCHRONIZING TRANSMITTER AND RECEIVER instructions above

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 transmitter is off.
2. Hold switches BOOM LOWER, WINCH DOWN, BOOM CW, and BOOM RETRACT then release E-STOP, keep holding others.
3. Release all the switches when the green and red LEDs started toggling.
4. Hold any switch and release, green LED should only be blinking
5. ID change Sequence complete.

SPECIFICATIONS:

Electrical: RF Transmit power (EIRP): 100 mW, RF Frequency: 2.4GHz
Transmitter:
Power: Rechargeable 3.7V Li-Ion 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: -20ºC to +60ºC, Receiver: -40ºC to +85ºC

						UNLESS OTHERWISE SPECIFIED: X.X ± .3, X.XX ± .03, X.XXX ± .005, FRACTIONAL ± 1/64, ANGULAR ± 0.5 deg.
TITLE: SALES KIT, 2.4 MINI CRANE CADET SYSTEM						
COMPANY NAME: KAR-TECH						
DO DRAWING DO NOT REVISE MANUALLY						
SCALE: FULL	DRAWN: BG	DATE: 02-23-22	CHECKED	APPROVED	DRAWING NO.: 3A-549-1-A-3A	