

# **UNIVERSAL REMOTE WITH CAN ONLY RECEIVER**

**RADIO/CAN REMOTE CONTROL SYSTEM**

**INSTALLATION AND OPERATION MANUAL**

## UNIVERSAL REMOTE

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## UNIVERSAL REMOTE

### DESCRIPTION

The IMPACT, COMPACT, QUANTUM, OR PACKER REMOTE is a state of the art microprocessor based Radio Frequency (RF) control system. It will provide the operator the ability to wirelessly operate equipment. The operator is required to follow all OSHA [www.osha.gov](http://www.osha.gov) and other applicable safety standards when operating the equipment. Do not use high power radio devices in close proximity of this product.

The remote control system consists of two major modules: the transmitter and the radio receiver.

The transmitter has capability of supporting up to 8 single-axis proportional joysticks and up to

17 on/off functions. It also includes a side-mounted OFF/ON/START key switch or E-stop button for power. It includes a port for wired control via the built-in Controller Area Network (CAN) system. This unit runs on a 3.7V rechargeable batteries when in wireless mode. When in wired mode, the transmitter runs with power supplied by the CAN cable. This is useful if the battery power gets too low to operate the transmitter but continued operation is needed. The port is also used to charge the internal battery.

In addition, there is provision for a twist to release E-STOP switch for emergency conditions. This is digital input 1.

The system's radio receiver has CAN communication to

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accommodate the functions available on the transmitter. It also includes a port for wired operation.

### OPERATION

Power must be applied to the receiver module for the system to work.

Turning the key switch to the ON position will turn on the transmitter. Turning the key switch to the OFF position until the LEDs stop toggling will turn off the transmitter. If the E-stop button is power, releasing this will turn on the transmitter and pressing the E-stop until the LEDs stop toggling will turn off the transmitter. If the transmitter goes out of range for more than 2 seconds, the digital inputs will go to 0 and the analog inputs will go to 100

(center) over CAN as a safety feature.

To save battery life, the transmitter will turn off after 15 minutes if no switches or joysticks are operated. The user must turn the key switch to the OFF then ON position at this point to restore transmitter operation or press and release the E-stop button if this is power. To change the sleep time, use the following procedure:

1. With the transmitter off and E-stop pushed, press digital input 8 and analog inputs 2 and 3 at 4.5 Volts (DI8 and holding the second and third paddle on the left side forward, AI2 & AI3)
2. Turn on the transmitter and wait for few seconds

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3. Release the inputs and the E-Stop (if E-stop is not power as well)

4. The green and red LEDs will start blinking together

5. Press on of the following buttons for desired sleep time:

- a. DI2-15 MINUTES
- b. DI3-30 MINUTES
- c. DI4-60 MINUTES
- d. DI5-120 MINUTES
- e. DI9-DISABLED

For the Quantum (3B302):

1. With the transmitter off, press digital inputs 3, 4, and analog input 1 at 0.5 Volts (DI3, DI4, and holding joystick 1 backward, AI1)
2. Turn on the transmitter by releasing the E-stop and wait for few seconds
3. Release the inputs
4. The green and red LEDs will start blinking together

6. Press on of the following buttons for desired sleep time:

- a. DI2-15 MINUTES
- b. DI3-30 MINUTES
- c. DI4-60 MINUTES
- d. DI5-120 MINUTES
- e. JOYSTICK 1  
FORWARD-DISABLED

For the Mega (3B270):

1. With the transmitter off, press and hold digital inputs 18, 13, and 9
2. Turn on the transmitter by pressing the POWER button and wait for few seconds
3. Release the inputs
4. The green and red LEDs will start blinking together
7. Press on of the following buttons for desired sleep time:
  - a. DI14-15 MINUTES
  - b. DI13-30 MINUTES
  - c. DI9-60 MINUTES

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- d. DI10-120 MINUTES indicator. See BATTERY
- e. DI6-DISABLED CHARGING below.

**The transmitter will NOT go to sleep as long as the receiver has power applied to it.**

### INDICATOR LEDs

The transmitter has two indicators, the red BATTERY indicator and the green TRANSMIT indicator. The green TRANSMIT indicator blinks rapidly (2x/second in RADIO mode, 5x/second in CAN mode) whenever there is communication between the transmitter and the receiver. It will double-blink when no functions are used.

The red BATTERY indicator starts blinking once every second when the battery voltage is low and requires charging. Plug in the transmitter as soon as possible after seeing the low battery

The receiver module can identify problems with the system in the form of an error code. Check the red indicator or display window on the receiver to diagnose system problems. Then, refer to the ERROR CODE CHART in this manual for explanation of the error codes. The green LED indicator will blink on the receiver during active operation. If Wi-Fi is connected and the user is accessing webpages, the red LED will be on solid.

### TRANSMITTER AND RECEIVER SYNCHRONIZATION

Each radio remote system is designed to operate with a unique radio ID code and RF channel sequence. Each receiver

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is programmed to respond *only* to the transmitter with the correct ID code/RF channel sequence for which it is set. This feature allows multiple systems to work in close proximity to one another without interference.

In the event that a transmitter becomes damaged and a new one is needed, the receiver can be reprogrammed to respond to the new transmitter. To teach the ID code to the receiver, use the following procedure. **\*Please note that if this procedure is interrupted before it has completed, the system may have intermittent operation:**

### TEACH BY CAN CABLE

Plug the CAN cable into the CAN port on both the receiver and transmitter and operate a function on the transmitter for 5 seconds until the green LED

goes from solid to blinking. The units will be synchronized at this point.

### TEACH BY RF

1. Turn transmitter and receiver off
2. Transmitter's digital inputs must be inactive and E-stop switch pushed.
3. Press and hold AI1 at 4.5 Volts (Holding the first paddle on the left side forward)
4. Turn on the transmitter while holding the paddle for 10 seconds. Release the paddle and the E-stop (if E-stop is not power as well)
5. The LEDs will start to blink.
6. Turn on the receiver
7. The LEDs will stop blinking
8. Teach complete

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For the Mega (3B270):

1. Turn the transmitter and receiver off
2. With the transmitter off, press and hold the POWER button for greater than 10 seconds then release. The LEDs will be blinking together on the transmitter
3. Apply power to the receiver
4. The LEDs will stop blinking
5. Teach complete

## CLONING

**Warning! This feature can pose a safety hazard for operators if both transmitters are 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 transmitters and receivers are off
2. On transmitter A, press and hold digital input 3, 5, and joystick 2 forward (DI3, DI5, & AI2 – 4.5V). Press E-stop. Turn on the transmitter. Hold inputs for three seconds then release inputs and E-stop (if E-stop is not power as well). LEDs should blink at this point.
3. On transmitter B, press and hold digital input 3, 5, and joystick 2 backward (DI3, DI5, & AI2 – 0.5V). Press the E-stop. Turn on the transmitter. Hold inputs for three seconds then release inputs and E-stop (if E-stop

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is not power as well). LEDs should blink at this point.

4. Wait for a few seconds until the green LED only starts to blink on both transmitter A and B.
5. Turn off both transmitters
6. Synchronize one of the transmitters to the receivers

For the Mega (3B270):

1. Make sure transmitters and receivers are off
2. On transmitter A, press and hold digital inputs 13, 9, and 15. Turn on the transmitter. Hold inputs for three seconds then release inputs. LEDs should blink at this point.
3. On transmitter B, press and hold digital inputs 13, 9, and 5. Turn on the transmitter. Hold inputs for three seconds then release

inputs. LEDs should blink at this point.

4. Wait for a few seconds until the green LED only starts to blink on both transmitter A and B.
5. Turn off both transmitters
6. Synchronize one of the transmitters to the receivers

If 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. Turn transmitter and receiver off
2. Transmitter's digital inputs must be inactive and E-stop switch pushed.
3. Press and hold digital input 2 and 4 (DI2 & DI4)
4. Turn on the transmitter

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while holding the switches for 5 seconds

5. Release the switches and the E-stop (if E-stop is not power as well) at this point. LEDs will toggle at this point.
6. User MUST Press any switch at this point
7. The LEDs will stop toggling. Turn the transmitter off.
8. Uncloning complete
9. Use transmitter and receiver synchronization procedure above to link the uncloned transmitter to new receivers

For the Mega (3B270):

1. Turn transmitter and receiver off
2. Press and hold digital input 2 and 7 (DI2 & DI7)
3. Turn on the transmitter while holding the switches for 5 seconds

4. Release the switches at this point. LEDs will toggle at this point.

5. User MUST Press any switch at this point
6. The LEDs will stop toggling
7. Uncloning complete
8. Use transmitter and receiver synchronization procedure above to link the uncloned transmitter to new receivers

## BATTERY CHARGING

The transmitter is designed with a smart battery charger. The battery can be charged by connecting the CAN cable from the receiver module (powered on) to the port on the transmitter, or by plugging the AC wall charger or DC cigarette charger into the port. Red and green LED indicators near the charging port of the transmitter indicate the status of the

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charger: A red LED indicates that the battery is charging and a green LED indicates that the battery is fully charged.

### *IMPORTANT BATTERY INFO*

When the battery is new, the run-time of the transmitter will be shorter until it has gone through the drain/charge cycle several times. After this point, the unit's current drain should allow at least 20 hours of run-time before a recharge is needed.

The temperature that the transmitter battery is exposed to affects performance and useful life. It is strongly recommended you keep within the following limits:

- A. Charging: -4 to +86°F
- B. Operating: -20 to +122°F
- C. Storing: -4 to +86°F  
(lower is better)

## INSTALLATION

Refer to the WIRING CHART in this manual for hookup of the harness.

To install the receiver module, use the two mounting holes provided on the enclosure to attach it in a vertical manner with the connectors facing down. Please take extra caution not to damage internal components while installing. For high vibration applications, use shock absorbing mounts. It is advised to mount the unit as high as possible, keeping clear of metal obstructions around the antenna which might affect RF performance. Antenna extension cables are available from Kar-Tech to aid in this, if needed.

The main power to the receiver should be connected through a

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switched, fused line capable of a minimum of 20 amps. For best results, connect power (+) to the receiver via an auxiliary terminal of the ignition switch, PTO switch, or ignition relay. Be sure that the ground (-) is connected securely to the chassis or battery with a star washer which digs into the base metal to insure good contact.

All connections must be properly insulated to protect against shorts.

Seal all connections with a non-conductive silicone grease to prevent corrosion.

Make sure your CAN bus has the proper terminating resistors installed. These are two 150 ohm resistors across CANH and CANL, one at either end of the CAN bus.

## BEFORE APPLYING POWER!

- Check power and ground for proper polarity.
- Check the wiring harness for possible shorts before connecting to output devices (i.e., valves and relays) by checking each mating pin terminal.
- Verify that the transmitter battery is fully charged.
- Read the rest of this manual.

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### SYSTEM TROUBLESHOOTING USING ON BOARD GATE:

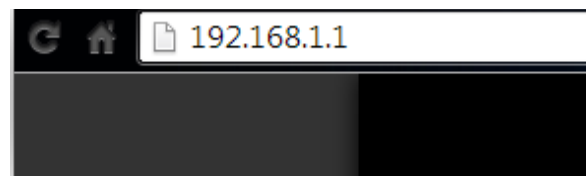
The GATE creates a Wi-Fi access point which allows you to connect to any device with Wi-Fi and web browser such as smart phones, pads or personal computers. It supports Google Chrome, Internet Explorer, Firefox and IOS Safari and allows user to configure, diagnose and troubleshoot the system.

#### ACCESSING THE CONTROL PANEL

1. Turn on the power to the receiver.
2. Use your device and look for the available WiFi networks. A network under the name of "KTUnivCAN" should be available at this point. Connect to the network,

the password is 23456789.

3. Once the connection is established, open a web browser on your device. Kar-Tech recommends using the Firefox browser.
4. Enter the address `http://192.168.1.1` in the address bar. The receiver's red LED will turn on solid when pages are operated for WiFi connected indication.



*Address Bar*

5. The following options are available from the main screen.

# UNIVERSAL REMOTE

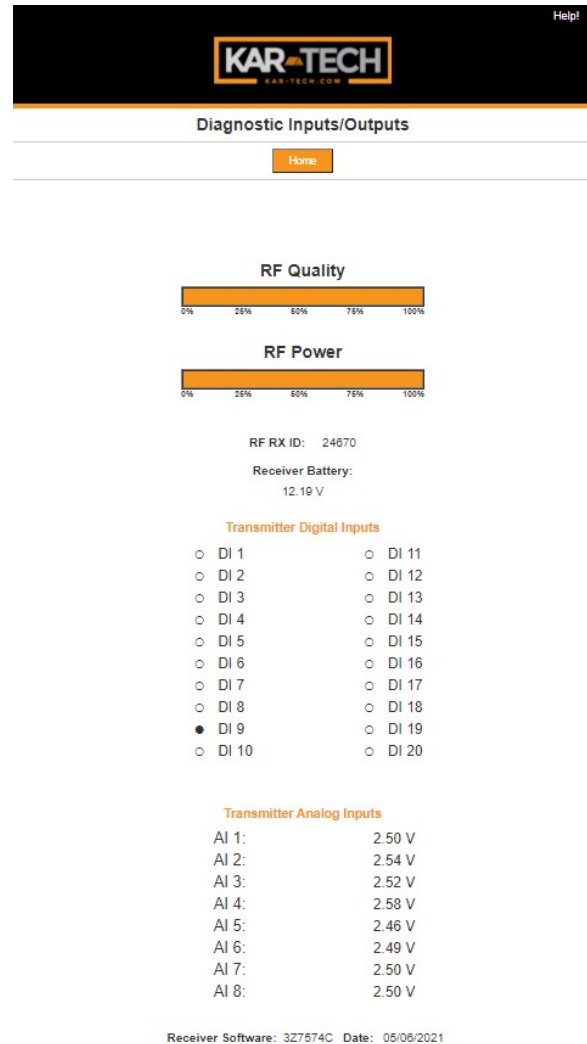


*Main Screen*

## DIAGNOSTICS

Tap the `Diagnostics` button to see the diagnostic screens, which shows the present state of remote communications, and system I/O.

When the round circle next to a label is dark, the corresponding ON/OFF input or output is sensed to be active or ON.



*Diagnostics*

## CALIBRATION

To change the configuration of the unit, tap the `Calibration` icon.

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Help!

KAR TECH  
KAR-TECH.COM

Calibration

Home

CAN Packet 1 PGN

Current Value: 65280  
New Value:

CAN Packet 1 419364871

Select CAN Baud Rate:

☐ 125 kbit/s  
☒ 250 kbit/s  
☐ 500 kbit/s  
☐ 1000 kbit/s

Select System Voltage:

☒ 12V System  
☐ 24V System

Enable/Disable Analog Inputs:

☒ Enable AI 1 ☒ Enable AI 5  
☒ Enable AI 2 ☒ Enable AI 6  
☒ Enable AI 3 ☒ Enable AI 7  
☒ Enable AI 4 ☒ Enable AI 8

Enable/Disable TX Not Started Neutral:

☐ Enable TX NOT STARTED NEUTRAL

Enable Quiet CAN Report Mode:  
Don't send CAN messages with every new RF Packet

☐ Enable Quiet CAN Reporting

Save Factory Settings

### Calibration

The password to gain access to the calibration screens is 1262. In this screen, configuration for CAN communication is available.

To adjust CAN communications, use the

following procedure:

1. Select the packet to change from the first drop-down menu

- a. CAN PACKET 1 – Select to adjust CAN packet structure<sup>1</sup> and timing for packet 1

- b. CAN PACKET 2 – Select to adjust CAN packet structure and timing for packet 2

- c. CAN PACKET 3 – Select to adjust CAN packet structure and timing for packet 3

2. Select the parameter to change from the second drop-down menu

- a. PGN – The address number of the device to

---

<sup>1</sup> Refer to CAN chart for reference to packets later in this manual

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communicate with  
on the bus  
(decimal). Default  
is 65280 (0xFF00),  
65281 (0xFF01),  
and 65282  
(0xFF02)

b. SOURCE ADDRESS -  
The address of the  
receiver. Default is  
7 (0x07)

c. PRIORITY - The  
level of importance  
for the packet  
(0=highest).

Default is 6

d. PERIOD - The time  
interval between  
packets sent on the  
bus (5-10000ms).  
Default is 100ms  
and 500ms

3. Enter the new value in  
the New Value box by  
clicking on the box and  
entering a value

4. Tap the Save button to  
send the setting to  
memory

The lines to the right of the  
Current Value: text indicates  
the present value. The value  
below the box indicates the  
current packet ID in decimal.

Additional flexibility on the  
system is provided by the  
series of checkboxes below  
the drop down box. They will  
change the system  
functionality as follows:

1. Select CAN Baud Rate  
- Check one of the four  
circles below this  
heading to change the  
CAN baud rate. Default  
baud rate is 250 kbit/s.  
Press save to save this  
value.

2. Select System Voltage  
- Check 12V if receiver  
power is 12V and check

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24V if receiver power is 24V. This will ensure error code for low battery will blink at the correct voltage. Press save to save this value.

3. ENABLE/DISABLE ANALOG INPUTS: Check box next to ENABLE AI 1-8 to enable the error code for that input. If one or more of these inputs are not populated, make sure corresponding box is unchecked. Press save to save these parameters.

4. ENABLE/DISABLE TX NOT STARTED NEUTRAL – If it is desired to have this error code keep box checked. Then if an input is high (or activated) when the receiver is powered on the receiver's red LED

will blink for the TX NOT IN NEUTRAL ERROR (11 blinks) and histogram will display error. Uncheck the box to disable this error. Press save to save this parameter.

5. ENABLE QUIET CAN REPORT MODE: DON'T SEND CAN MESSAGES WITH EVERY NEW RF PACKET – If it is desired to have CAN messages sent by the receiver based on period set in this page check this box (for example 100ms). Otherwise by default the CAN messages will be sent every time an RF packet is received by the transmitter or period time whichever comes first. Press save to save this parameter.

## UNIVERSAL REMOTE

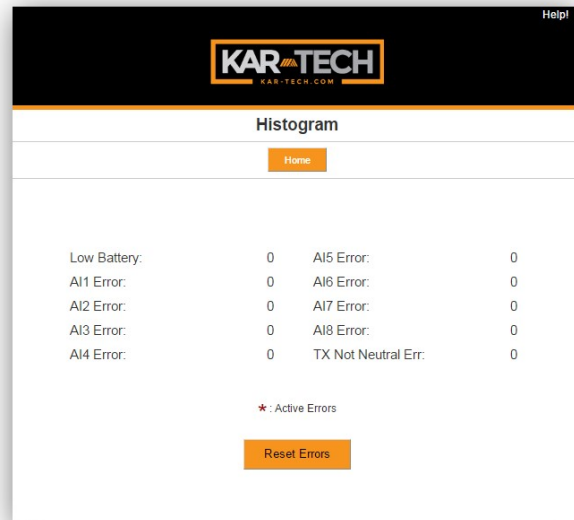
Tap the Factory Settings button to return everything to standard values. Tap HOME to quit calibration and return to the main menu.

### HISTOGRAM

Tap the Histogram icon to see a set of screens that show which error codes are active and how many times the specific error code has been active.

This feature can be used to troubleshoot machine wiring and other problems. Tapping the Reset button resets the error code counts. The password to reset error codes is 1262. Tap the Home button to return to the main menu.

Note: the GATE is not a precision measurement instrument. There may be delays.



*Histogram Page*

### GATE CONFIGURATION

This page allows you to change the name (SSID) of the WiFi network you are connecting to. It will also allow you to hide the name (SSID) instead of broadcasting it, when 'Not Broadcast SSID' is selected and SAVE is pressed. To return gate to broadcasting SSID select 'Broadcast SSID' and press SAVE. Factory settings will rename the Wi-Fi

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to its original name.

The user can also enable and disable multiple connections to the Gate using the multiple connections checkboxes.

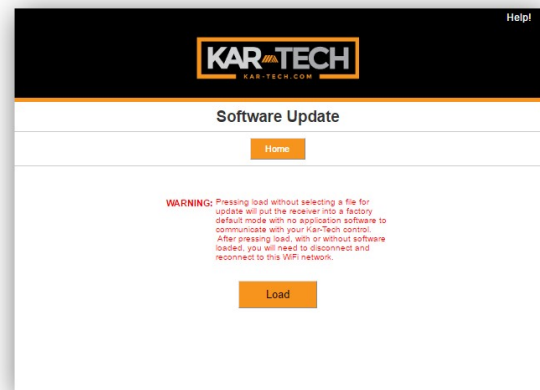
Note: After changing the name, the user needs to disconnect and reconnect to the new WiFi network.

### SOFTWARE UPDATE

This page was designed so the receiver software can be updated.

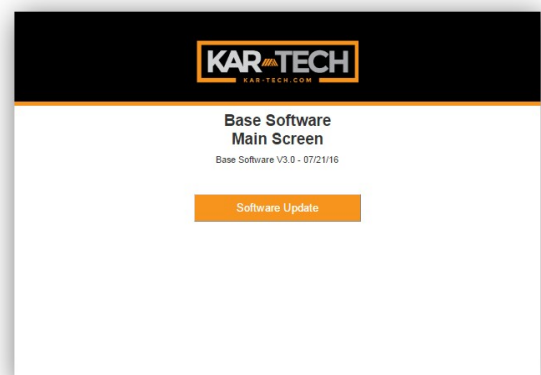
Once the LOAD button is pressed the receiver's software will be **deleted**.

Note: This feature does not work on Apple mobile or tablet products.



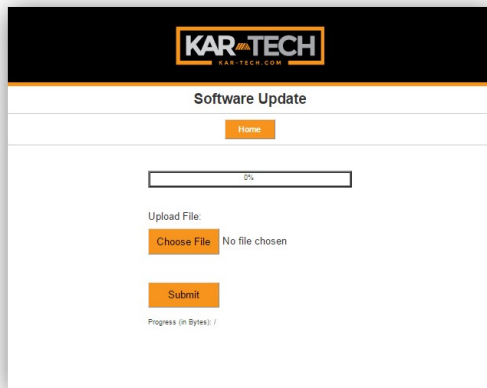
### *Gate Update Page*

1. Select LOAD
2. Disconnect then reconnect to "KTUnivCAN" network
3. Press HOME button
4. Screen below should be shown:



5. Press Software Update
6. Using Choose File select proper .kar file

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7. Press Submit
8. File will upload and say  
Success! When complete
9. Disconnect then  
reconnect to  
"KTUnivCAN" network
10. Press HOME button
11. Update complete

Note: the GATE is not a precision measurement instrument. There may be some delays.

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### 3B256NB RECEIVER WIRING

#### WIRES:

COLOR	DESCRIPTION
RED	POWER (9-30V)
BLACK	GROUND
WHITE	CAN HIGH 2
GREEN	CAN LOW 2

**NOTE: CAN INFORMATION ON THE FOLLOWING PAGE IS RECEIVED  
OVER CAN USING CAN HIGH 2 AND CAN LOW 2**

#### CAN CONNECTOR:

CONNECTOR, RECEPTACLE, PLASTIC, CAN	
PIN	DESCRIPTION
A	POWER
B	GROUND
C	CAN HIGH 1
D	CAN LOW 1
E	SHIELD

# UNIVERSAL REMOTE

## CAN INFORMATION

CAN PACKET 1 FROM RECEIVER TO CONTROLLER								
PGN	FF00				SRC ADDR	7		
PRIORITY	6				PACKET ID	0x18FF0007		
TIMING	100 ms or every time new RF packet is received							
	DATA 0	DATA 1	DATA 2	DATA 3	DATA 4	DATA 5	DATA 6	DATA 7
BIT 1	0-1 TOGGLE	-	DI 1 (E-STOP)	DI 9	DI 17	-	-	-
BIT 2	RF/CAN LINK	-	DI 2	DI 10	DI 18	-	-	-
BIT 3	NEW RF PACKET*	-	DI 3	DI 11	DI 19	-	-	-
BIT 4	-	-	DI 4	DI 12	DI 20	-	-	-
BIT 5	-	-	DI 5	DI 13	-	-	-	-
BIT 6	-	-	DI 6	DI 14	-	-	-	-
BIT 7	-	-	DI 7	DI 15	-	-	-	-
BIT 8	-	-	DI 8	DI 16	-	-	-	-
CAN PACKET 2 FROM RECEIVER TO CONTROLLER								
PGN	FF01				SRC ADDR	7		
PRIORITY	6				PACKET ID	0x18FF0107		
TIMING	100 ms or every time new RF packet is received							
	DATA 0	DATA 1	DATA 2	DATA 3	DATA 4	DATA 5	DATA 6	DATA 7
BIT 1	AI1 0-200 100=CENTER <100=REV/LEFT >100=FWD/RIGHT	AI2 0-200 100=CENTER <100=REV/LEFT >100=FWD/RIGHT	AI3 0-200 100=CENTER <100=REV/LEFT >100=FWD/RIGHT	AI4 0-200 100=CENTER <100=REV/LEFT >100=FWD/RIGHT	AI5 0-200 100=CENTER <100=REV/LEFT >100=FWD/RIGHT	AI6 0-200 100=CENTER <100=REV/LEFT >100=FWD/RIGHT	AI7 0-200 100=CENTER <100=REV/LEFT >100=FWD/RIGHT	AI8 0-200 100=CENTER <100=REV/LEFT >100=FWD/RIGHT
BIT 2								
BIT 3								
BIT 4								
BIT 5								
BIT 6								
BIT 7								
BIT 8								
CAN PACKET 3 FROM RECEIVER TO CONTROLLER								
PGN	FF02				SRC ADDR	7		
PRIORITY	6				PACKET ID	0x18FF0207		
TIMING	500 ms or every time new RF packet is received							
	DATA 0	DATA 1	DATA 2	DATA 3	DATA 4	DATA 5	DATA 6	DATA 7
BIT 1	BATTERY VOLTAGE 0.05V/BIT		LOW VOLTAGE	ANALOG INPUT 8 ERR	-	-	-	-
BIT 2			ANALOG INPUT 1 ERR	TX NOT IN NEUTRAL	-	-	-	-
BIT 3			ANALOG INPUT 2 ERR	-	-	-	-	-
BIT 4			ANALOG INPUT 3 ERR	-	-	-	-	-
BIT 5			ANALOG INPUT 4 ERR	-	-	-	-	-
BIT 6			ANALOG INPUT 5 ERR	-	-	-	-	-
BIT 7			ANALOG INPUT 6 ERR	-	-	-	-	-
BIT 8			ANALOG INPUT 7 ERR	-	-	-	-	-

*NOTE: With CAN systems, Kar-Tech is providing raw output from the radio control transmitter. It is the integrator's responsibility to verify the total system design with respect to integrity and safety. Deadbands from analog control devices, timeouts, and other safety and control related considerations **must** be implemented external to the radio receiver.*

*\*NEW RF PACKET – this bit will be high (1) when new RF packet/data is received from the transmitter*

## **UNIVERSAL REMOTE**

### **ROUTINE MAINTENANCE**

Clean transmitter regularly with a damp cloth and mild detergent.

Inspect electrical wiring for wear points or other damage. Repair as required.

Inspect all connections for looseness or corrosion. Tighten and/or "seal" as necessary.

### **MAINTENANCE PRECAUTIONS**

When performing any inspection or maintenance work on the remote system, always exercise care to prevent injury to yourself and others or damage to the equipment. The following are general precautions, which should be closely followed in carrying out any maintenance work.

Do not have hydraulic power available to the valves when performing electrical tests.

Never operate or test any function if any person is in an area where they could be hurt by being hit or squeezed by the hydraulic equipment.

Turn power off before connecting or disconnecting valve coils or other electrical loads.

### **TROUBLESHOOTING**

This next section provides basic operator level troubleshooting for the IMPACT, COMPACT, OR PACKER REMOTE system. If, after following these instructions, the system still does not function, contact your KAR-TECH representative for further instructions or servicing.

## UNIVERSAL REMOTE

### TROUBLESHOOTING CHART

<b><i>PROBLEM</i></b>	<b><i>SOLUTION</i></b>
No functions work	<ol style="list-style-type: none"><li>1. Verify transmitter power source – battery, CAN cable, external supply, etc</li><li>2. Verify that receiver control module power source is present at its input connector</li><li>3. Check for proper system ground</li><li>4. Check the receiver or control module LED status display for functionality or errors</li><li>5. Check the hydraulic system</li></ol>
Certain functions do not work	<ol style="list-style-type: none"><li>1. Check the wiring and connections from the receiver control module to the control module to the valve coil for the particular function that does not work</li><li>2. Check the receiver control module LED status display for possible fault or error indication</li><li>3. Check the hydraulic system</li><li>4. Check the electrical system</li></ol>
Functions operate intermittently	<ol style="list-style-type: none"><li>1. Check for loose connections at the valve coil</li><li>2. Check the receiver control module LED status display for functionality or errors</li><li>3. Check the receiver antenna for damage and possible obstructions</li><li>4. Check the hydraulic system</li></ol>

## UNIVERSAL REMOTE

### ERROR CODES

ERROR	PROBABLE CAUSE
1	RF COMMUNICATION ERROR
2	LOW VOLTAGE
3	ANALOG INPUT 1 ERROR
4	ANALOG INPUT 2 ERROR
5	ANALOG INPUT 3 ERROR
6	ANALOG INPUT 4 ERROR
7	ANALOG INPUT 5 ERROR
8	ANALOG INPUT 6 ERROR
9	ANALOG INPUT 7 ERROR
10	ANALOG INPUT 8 ERROR
11	TRANSMITTER NOT IN NEUTRAL ERROR
12	WI-FI ERROR
SOLID RED LED - WI-FI LINKED	

#### Error code explanations:

- 1** Transmitter is off  
Transmitter went to sleep mode  
Interference in RF communication link
- 2** System voltage is below 11V (12V system) 21V (24V system)
- 3-10** No voltage present on joystick/paddle in transmitter
- 11** Switch or joystick on transmitter is not in its rest or off position when turning the transmitter on
- 12** WI-FI module error

## UNIVERSAL REMOTE

### PARTS LIST

<b><i>PART NUMBER</i></b>	<b><i>DESCRIPTION</i></b>
<b>3B2562C</b>	RADIO TRANSMITTER, 4 PADDLE IMPACT
<b>3B2563C</b>	RADIO TRANSMITTER, 6 PADDLE IMPACT
<b>3B2567C</b>	RADIO TRANSMITTER, 4 JOYSTICK IMPACT
<b>3B256FC</b>	RADIO TRANSMITTER, 8 PADDLE IMPACT
<b>3B256KC</b>	RADIO TRANSMITTER, 2 JOYSITCK, 4 PADDLE IMPACT
<b>3B2242D</b>	RADIO TRANSMITTER, 4 PADDLE PACKER
<b>3B2243D</b>	RADIO TRANSMITTER, 6 PADDLE PACKER
<b>3B2247D</b>	RADIO TRANSMITTER, 2 JOYSTICK PACKER
<b>3B224ED</b>	RADIO TRANSMITTER, 2 PADDLE, 2 POTENTIOMETER PACKER
<b>3B2572B</b>	RADIO TRANSMITTER, 4 SINGLE AXIS JOYSTICK COMPACT
<b>3B2573B</b>	RADIO TRANSMITTER, 5 SINGLE AXIS JOYSTICK COMPACT
<b>3B2577B</b>	RADIO TRANSMITTER, 4 DUAL AXIS JOYSTICK COMPACT
<b>3B257GB</b>	RADIO TRANSMITTER, 2 SINGLE AXIS JOYSTICK, 1 POTENTIOMETER COMPACT
<b>3B257MB</b>	RADIO TRANSMITTER, 2 JOYSTICK, 4 POTENTIOMETER COMPACT
<b>3B3022A</b>	RADIO TRANSMITTER, 2 DUAL-AXIS JOYSTICK QUANTUM
<b>3B3023A</b>	RADIO TRANSMITTER, 2 SINGLE-AXIS JOYSTICK QUANTUM
<b>3B2702C</b>	RADIO TRANSMITTER, 2 DUAL-AXIS JOYSTICK MEGA
<b>3B2703C</b>	RADIO TRANSMITTER, 2 SINGLE-AXIS

## UNIVERSAL REMOTE

	JOYSTICK MEGA
<b>3B3162A</b>	RADIO TRANSMITTER, 2 DUAL-AXIS JOYSTICK MAGNUM
<b>3B3163A</b>	RADIO TRANSMITTER, 2 SINGLE-AXIS JOYSTICK MAGNUM
<b>020-506-0250</b>	CAN ADAPTOR CABLE 25'
<b>B20032B</b>	FAST CHARGER SUPPLY, 12 VDC CAR
<b>B20072A</b>	FAST CHARGER SUPPLY, 110VAC WALL

There are no user-serviceable parts inside the transmitter or the receiver. Return the units for service.

Note: For operation with negative ground systems only.

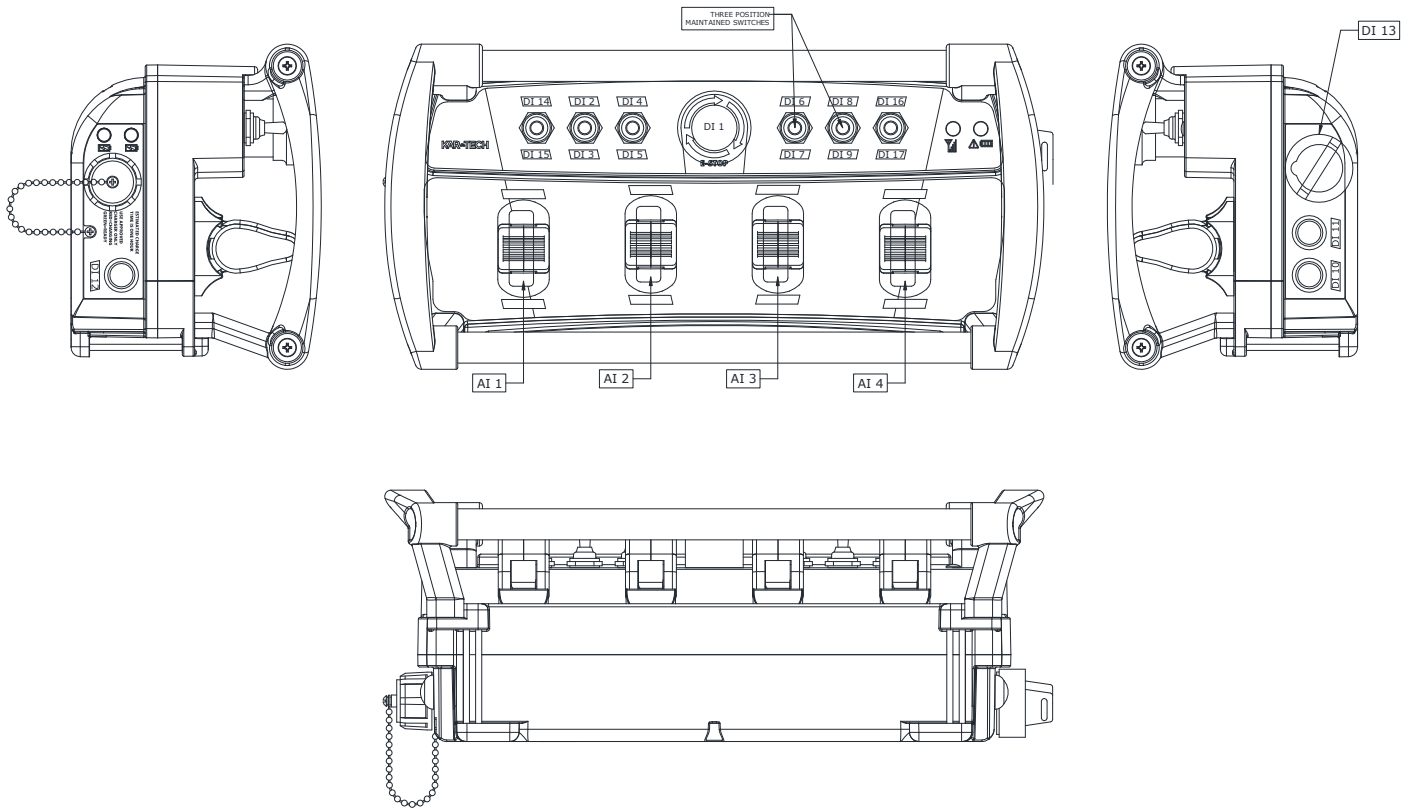
### **WARNING:**

The REMOTE must be operated in compliance with all applicable safety regulations, rules, and practices. Failure to follow required safety practices may result in death or serious injury.

The information, specifications, and illustrations in this manual are those in effect at the time of printing. We reserve the right to change specifications or design at any time without notice.

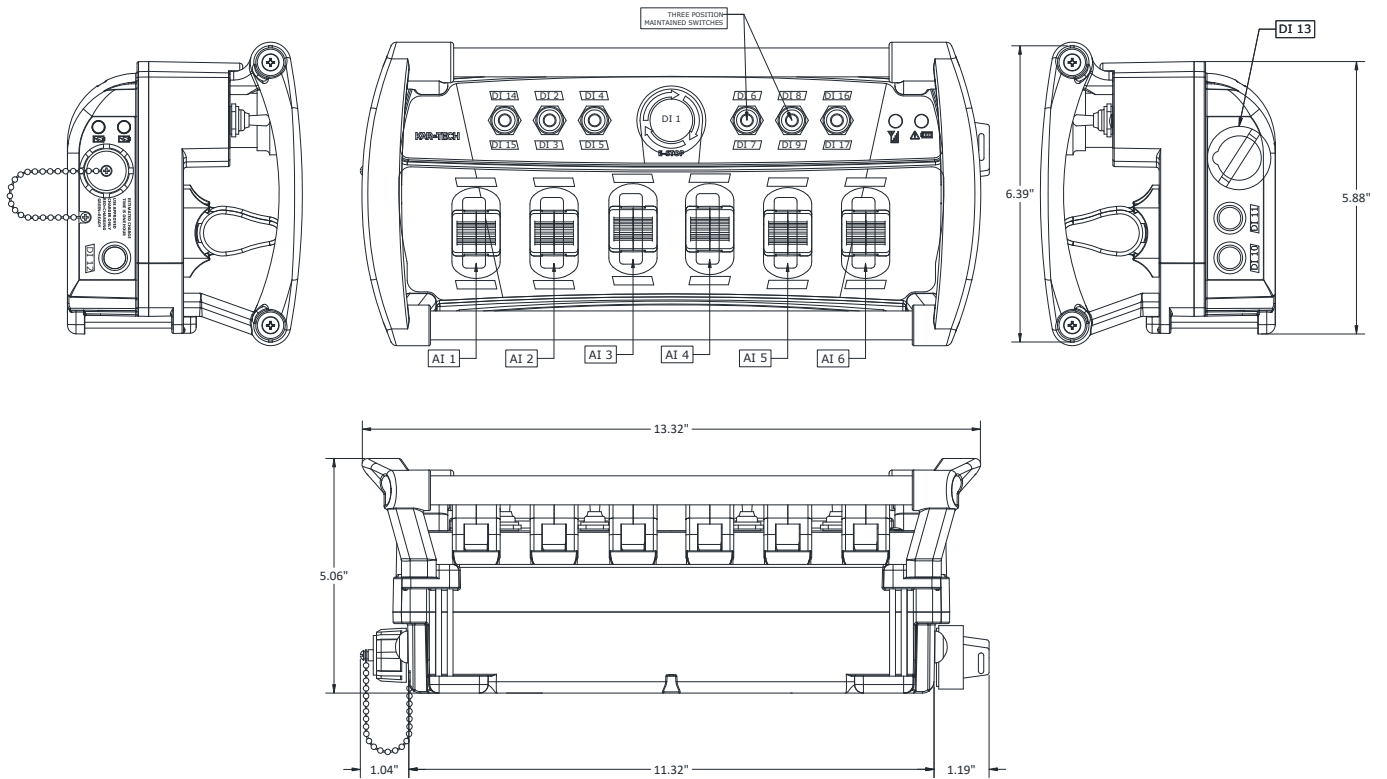
## UNIVERSAL REMOTE

# TRANSMITTER PICTORIALS 3B2562C



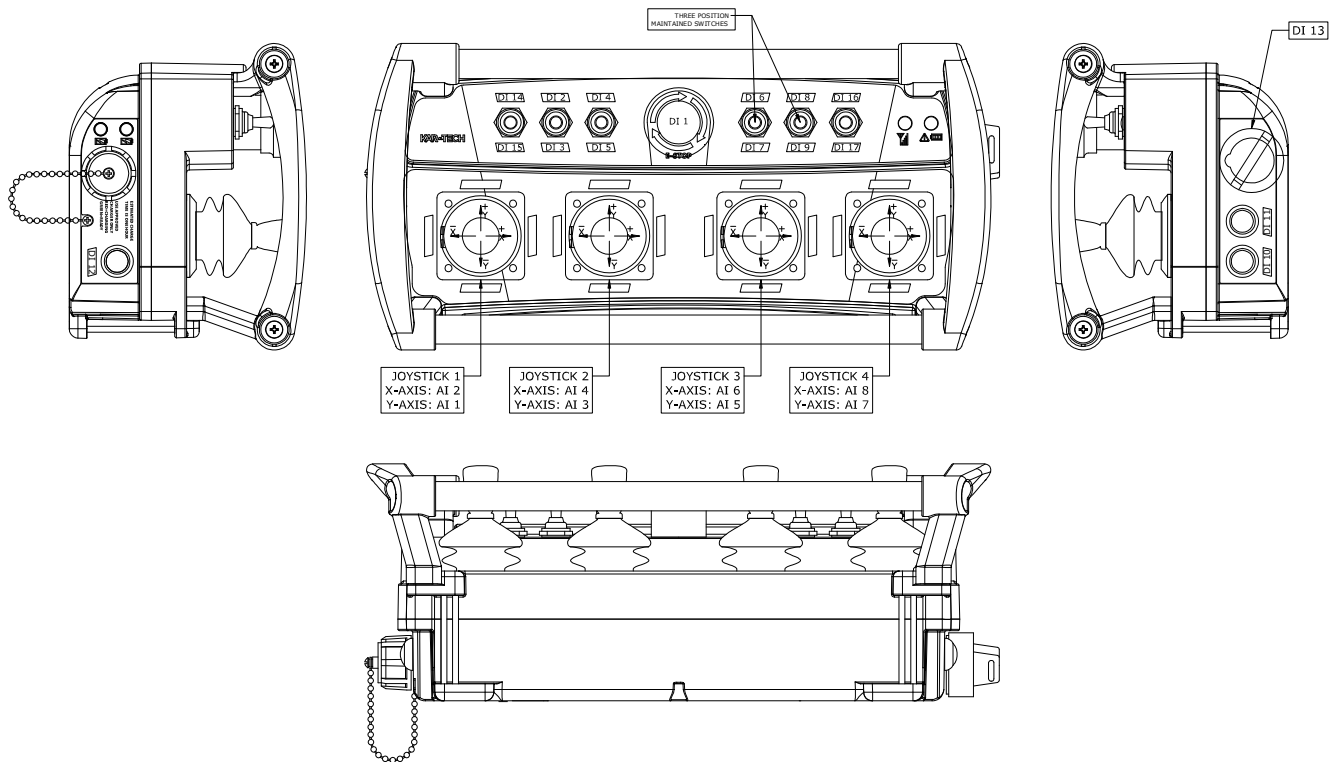
# UNIVERSAL REMOTE

## 3B2563C



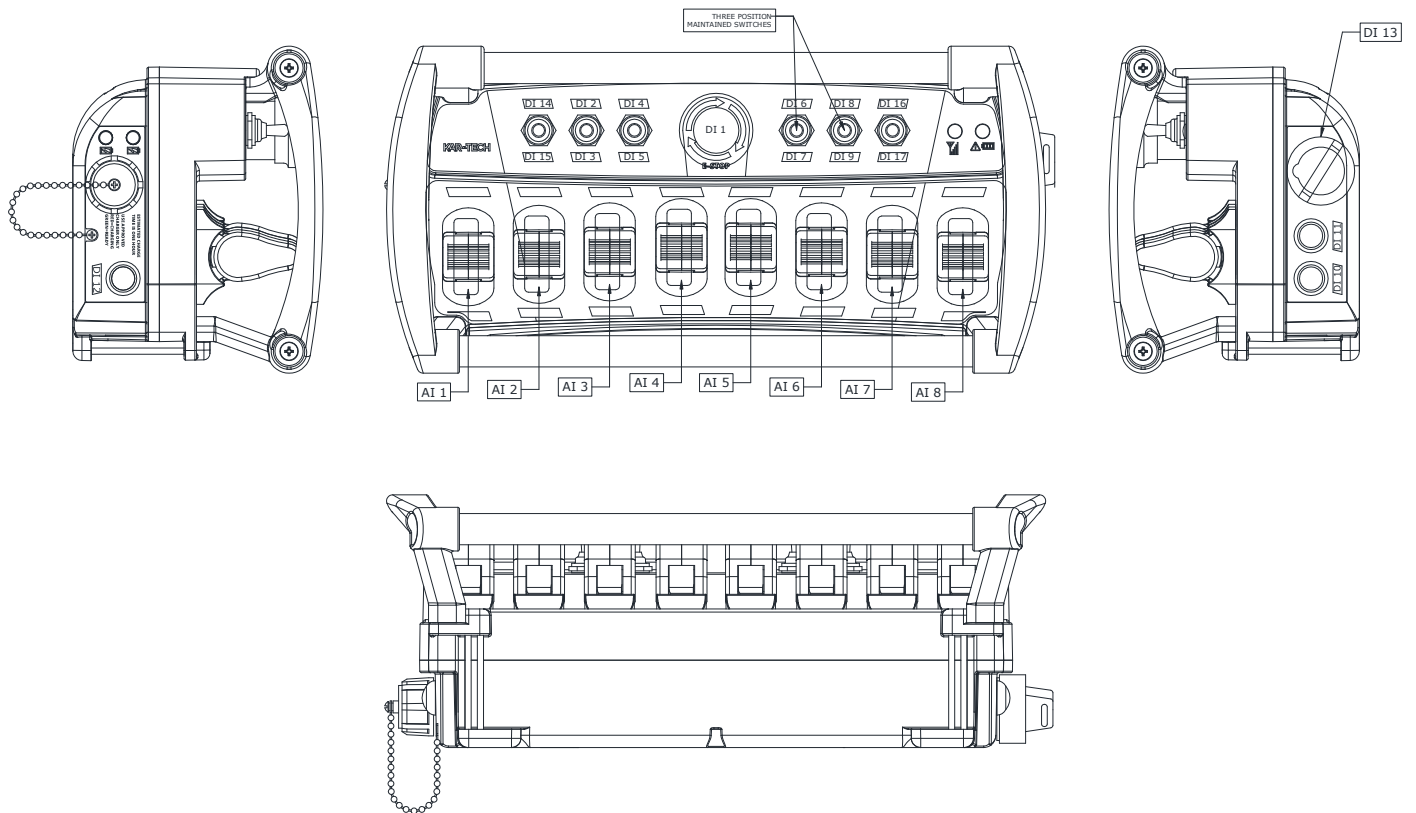
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## 3B2567C



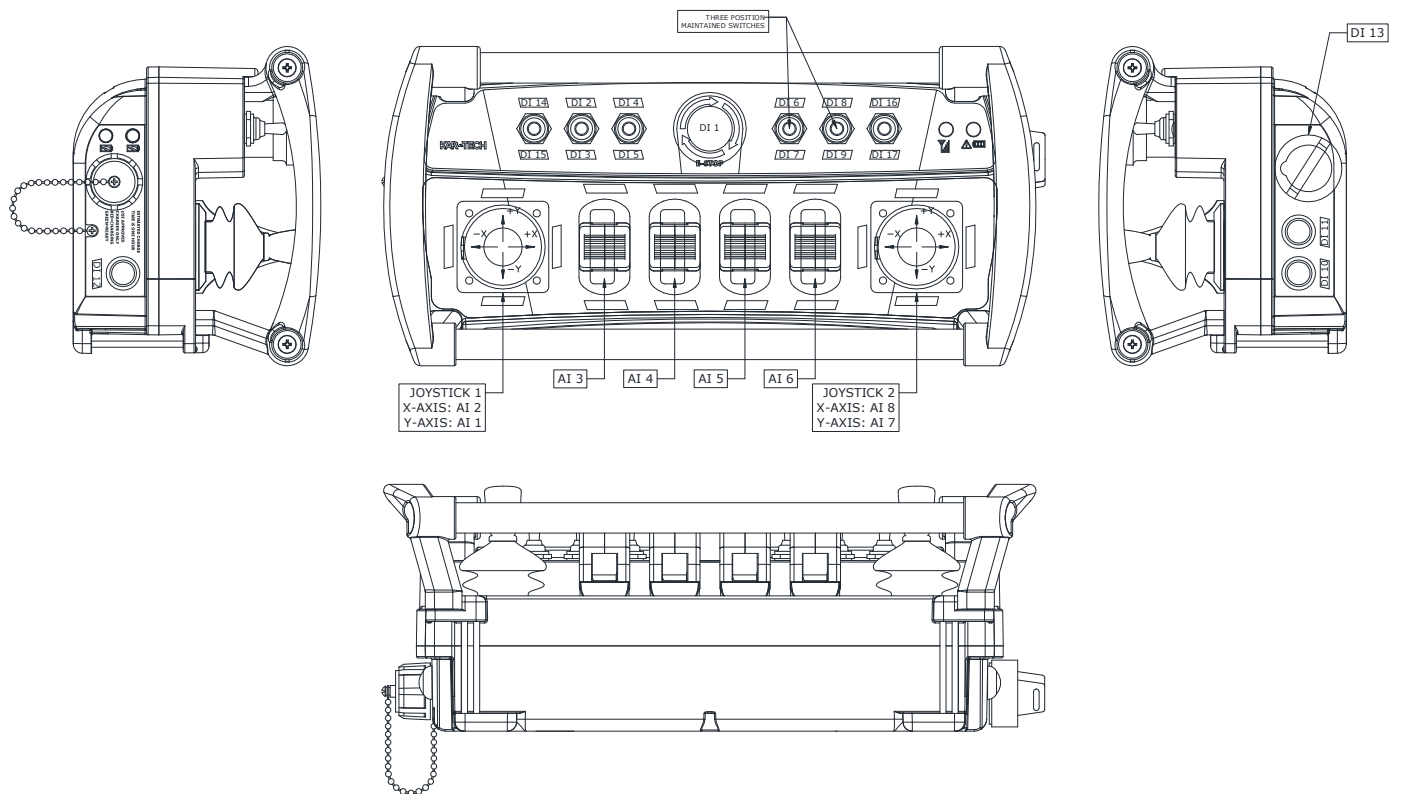
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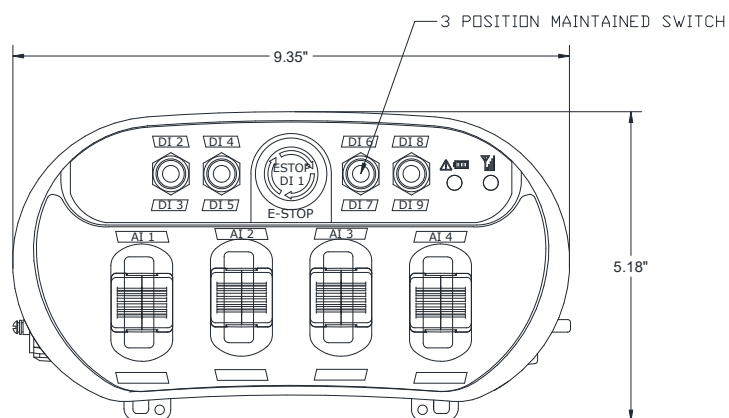
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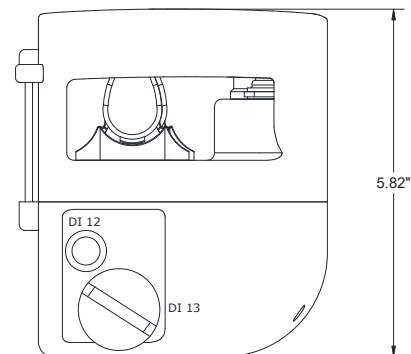
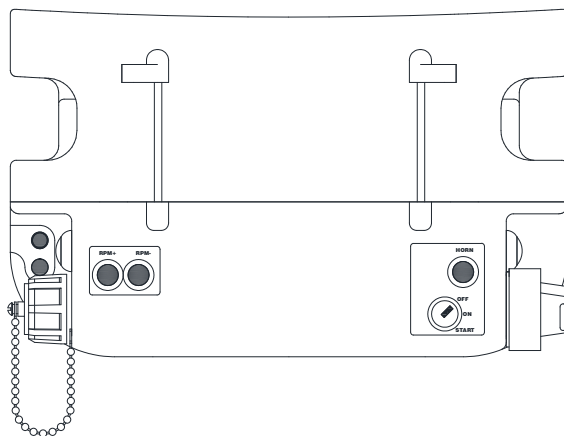
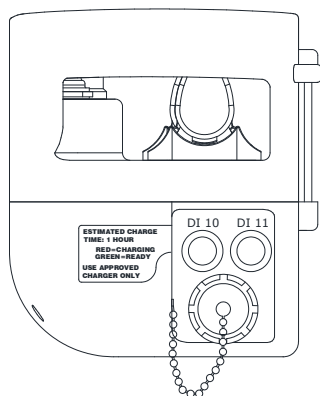
# UNIVERSAL REMOTE

## 3B2242D



CONNECTOR P1: MS-3102E14S-5P

- A POWER (12 VDC)
- B GROUND
- C CAN HIGH
- D CAN LOW

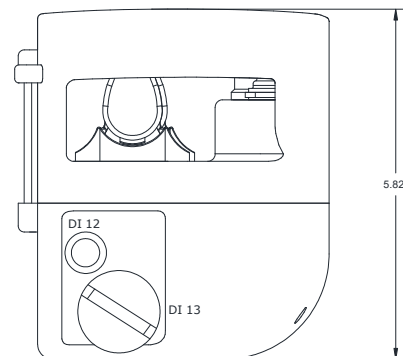
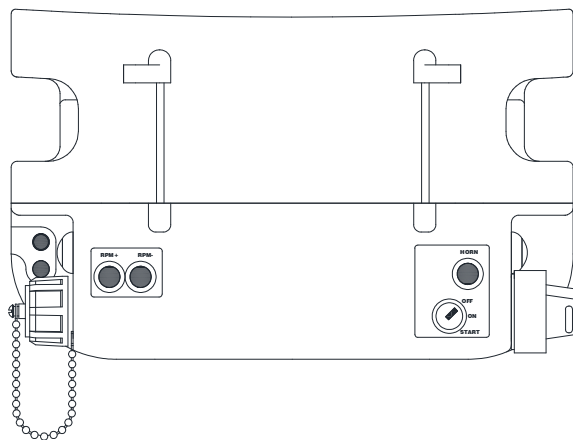
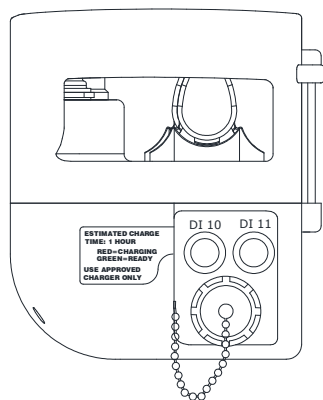
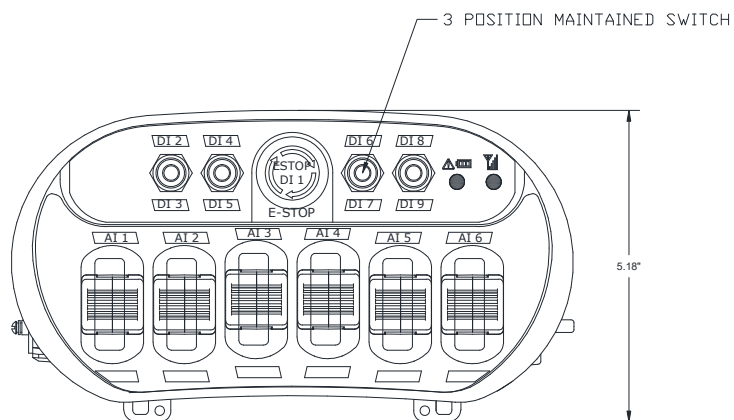


# UNIVERSAL REMOTE

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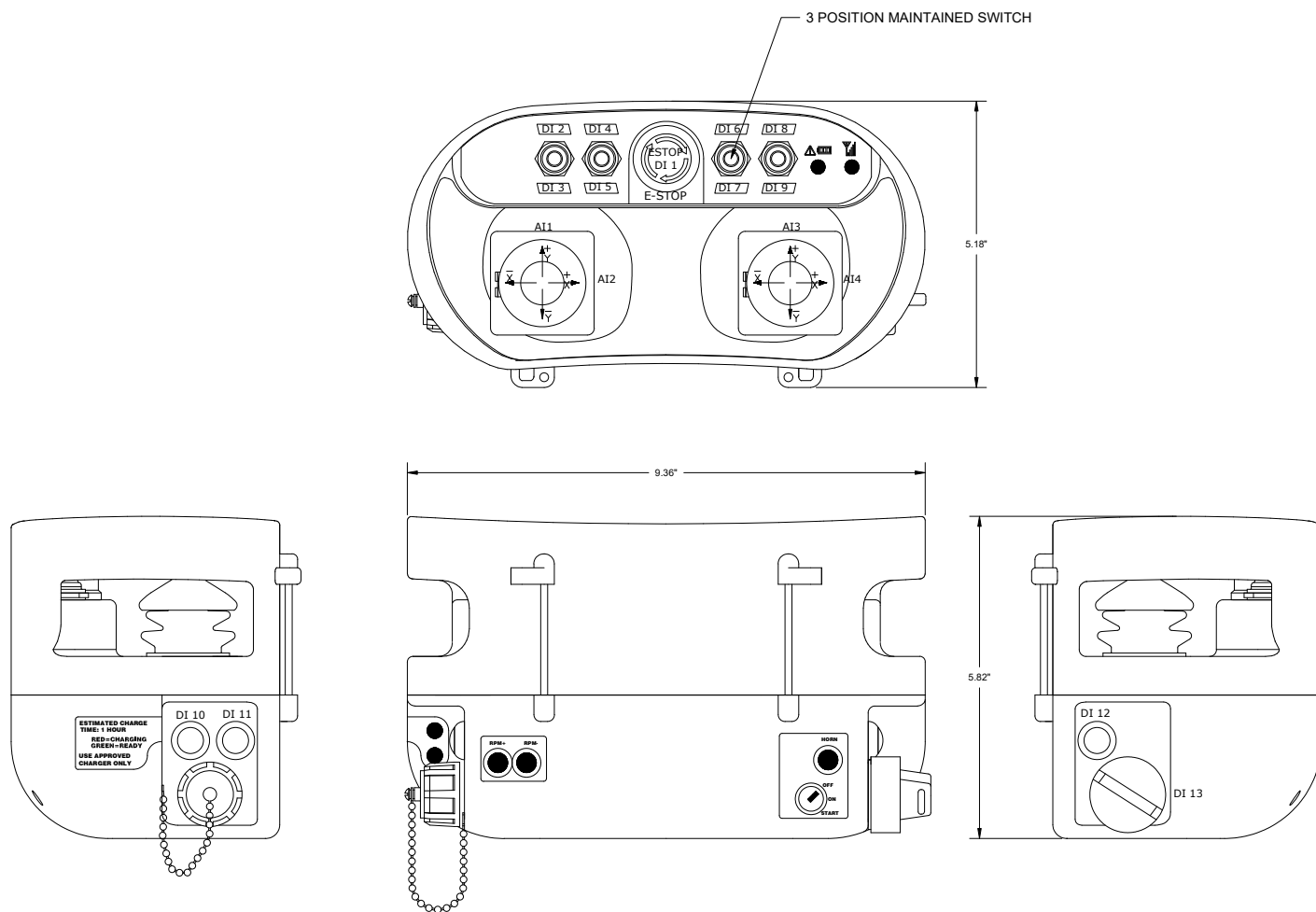
CONNECTOR P1: MS-3102E14S-5P

- A POWER (12 VDC)
- B GROUND
- C CAN HIGH
- D CAN LOW



# UNIVERSAL REMOTE

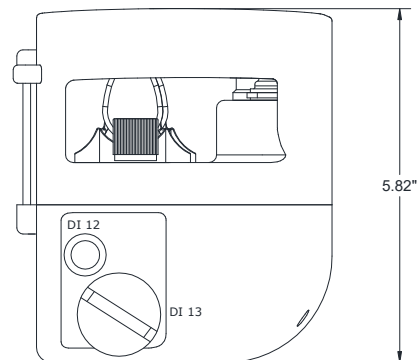
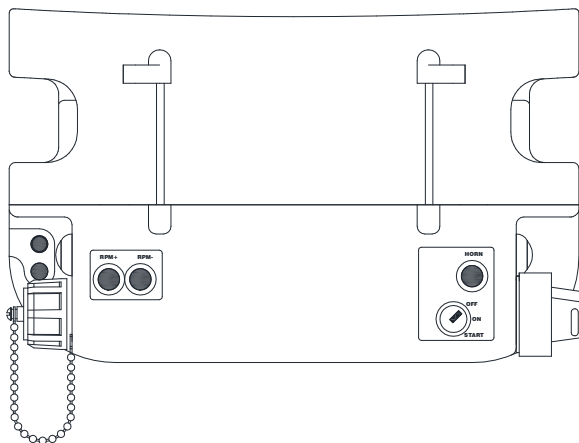
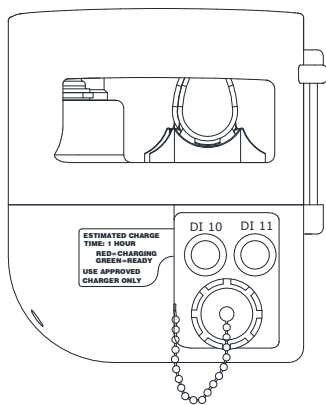
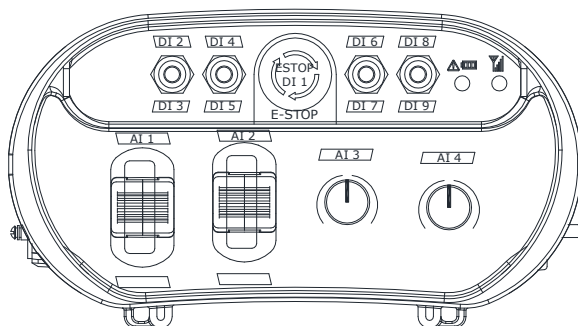
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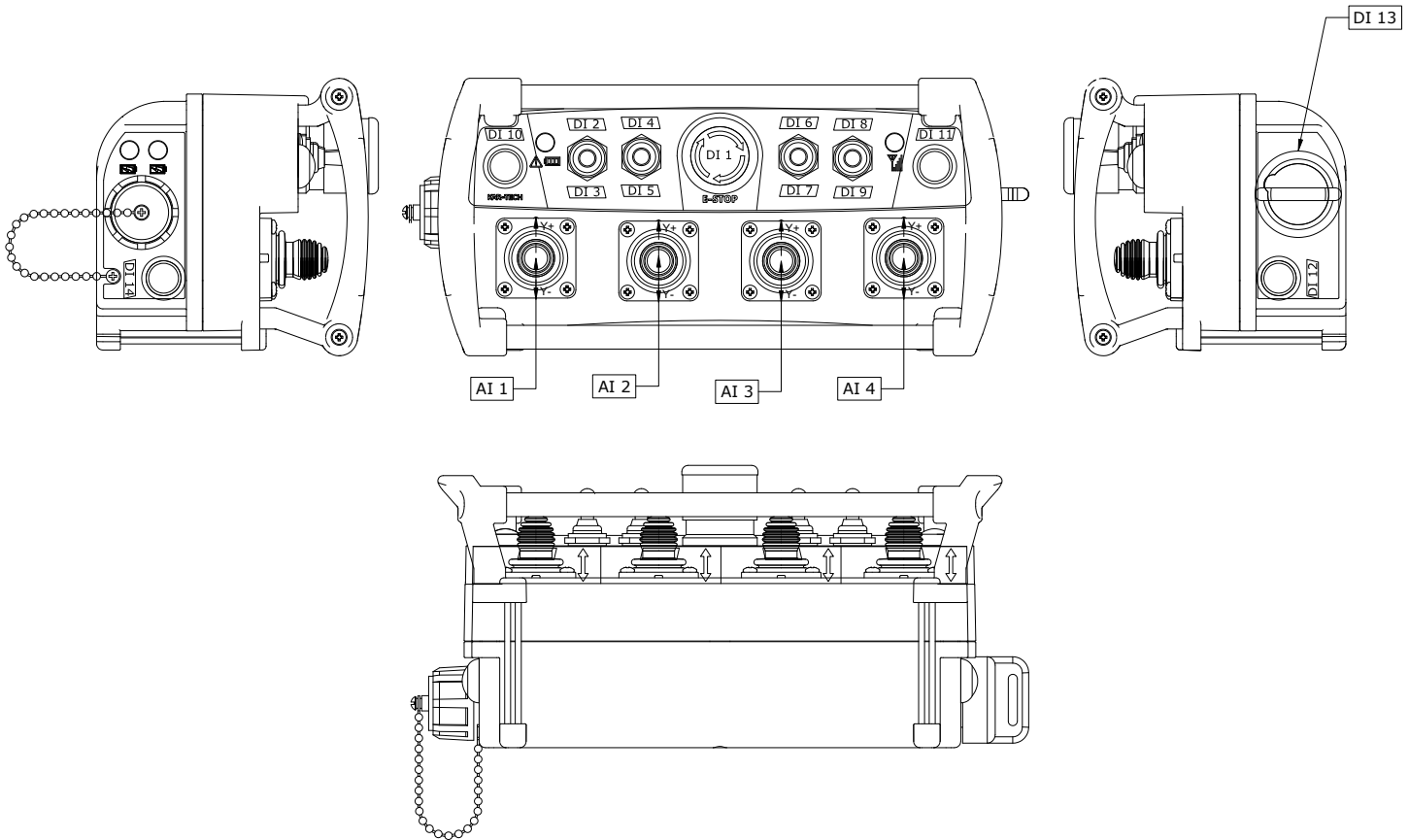
## 3B224ED

CONNECTOR P1: MS-3102E14S-5P  
POWER (12 VDC)  
GROUND  
CAN HIGH  
CAN LOW



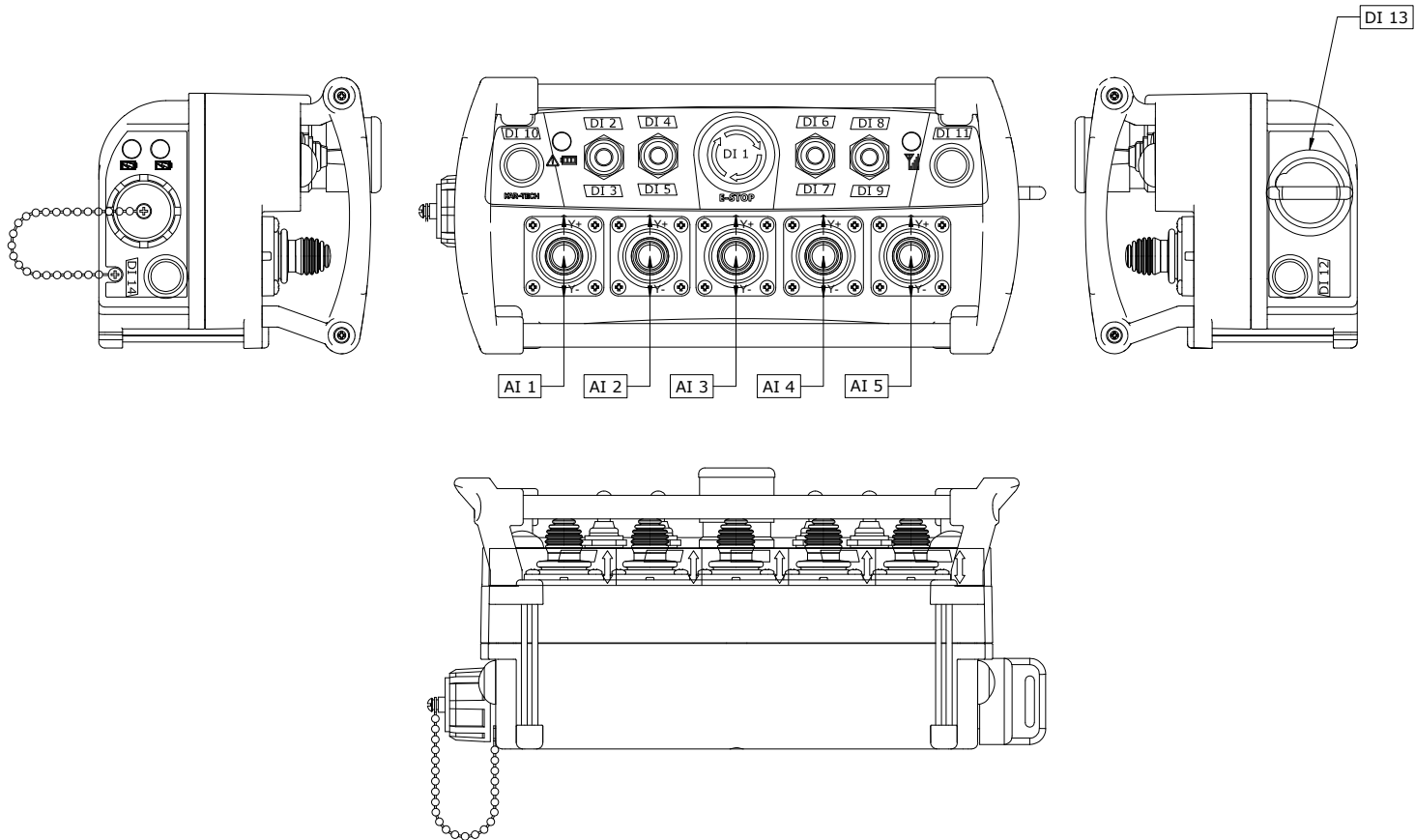
# UNIVERSAL REMOTE

## 3B2572B



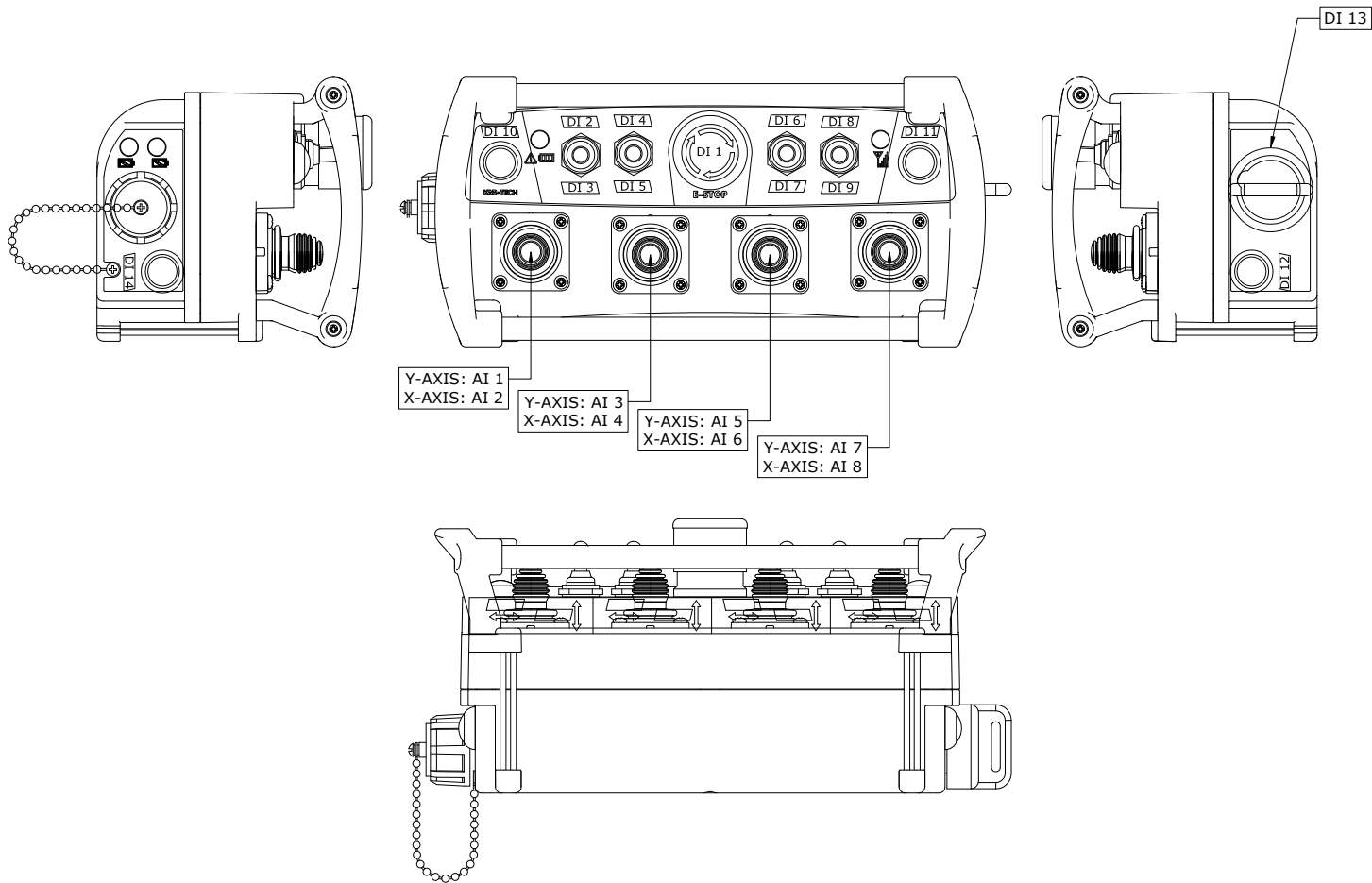
# UNIVERSAL REMOTE

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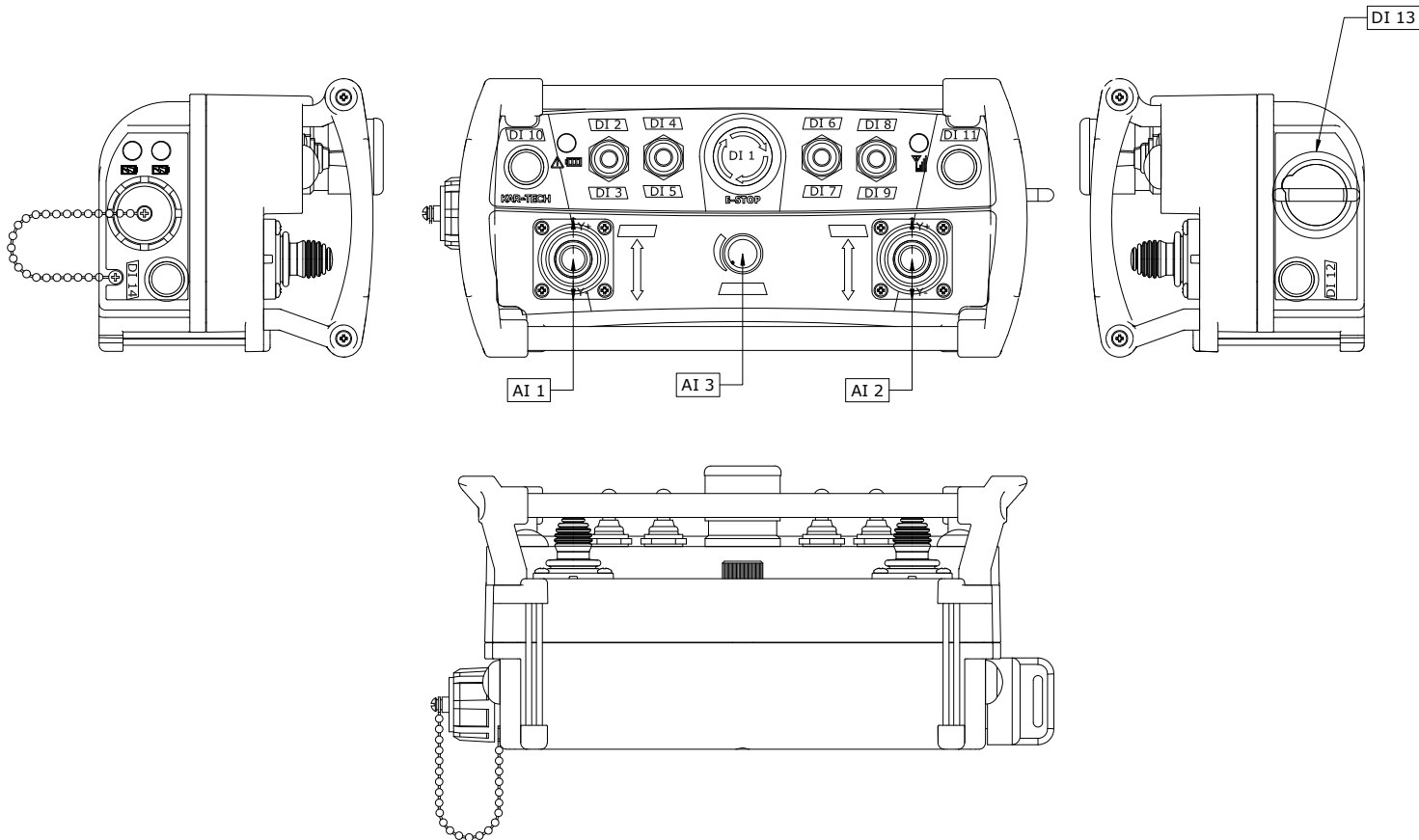
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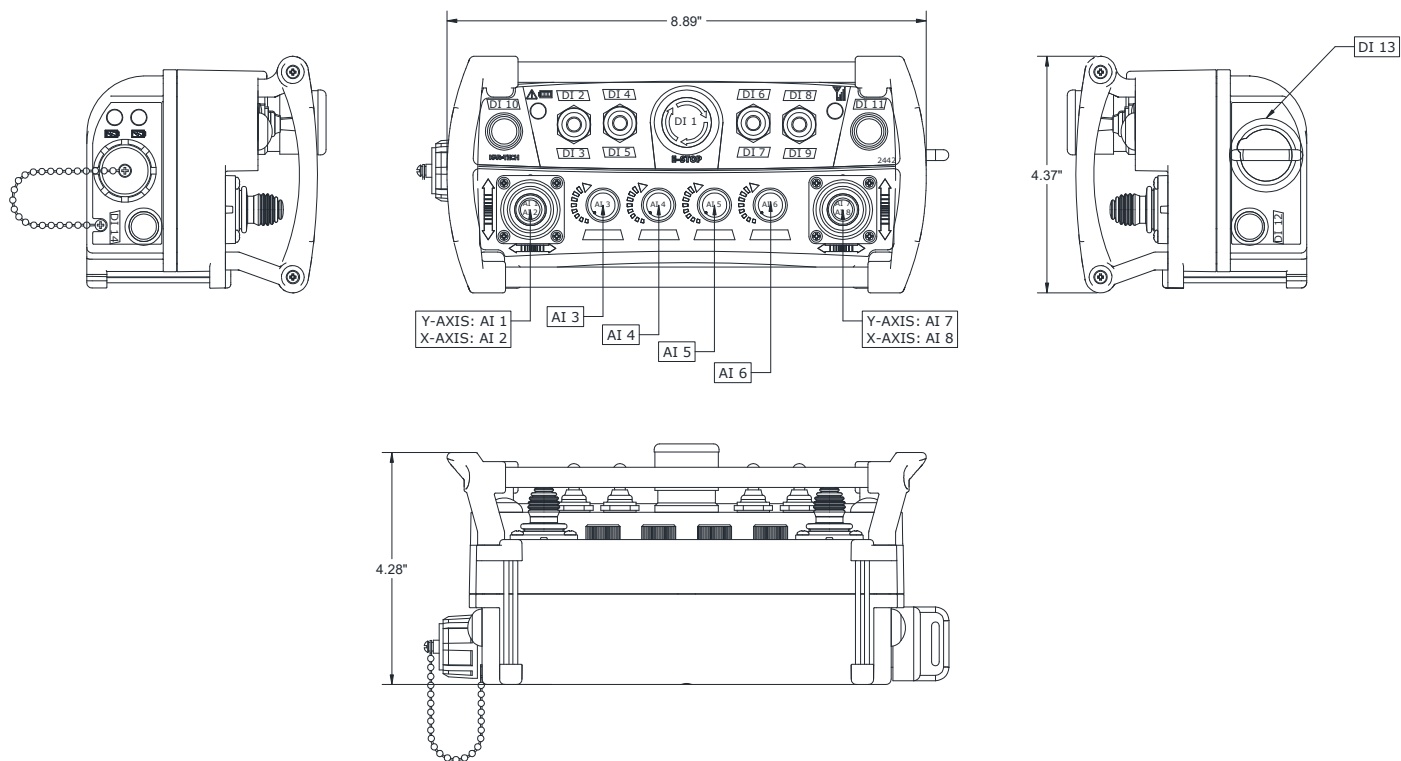
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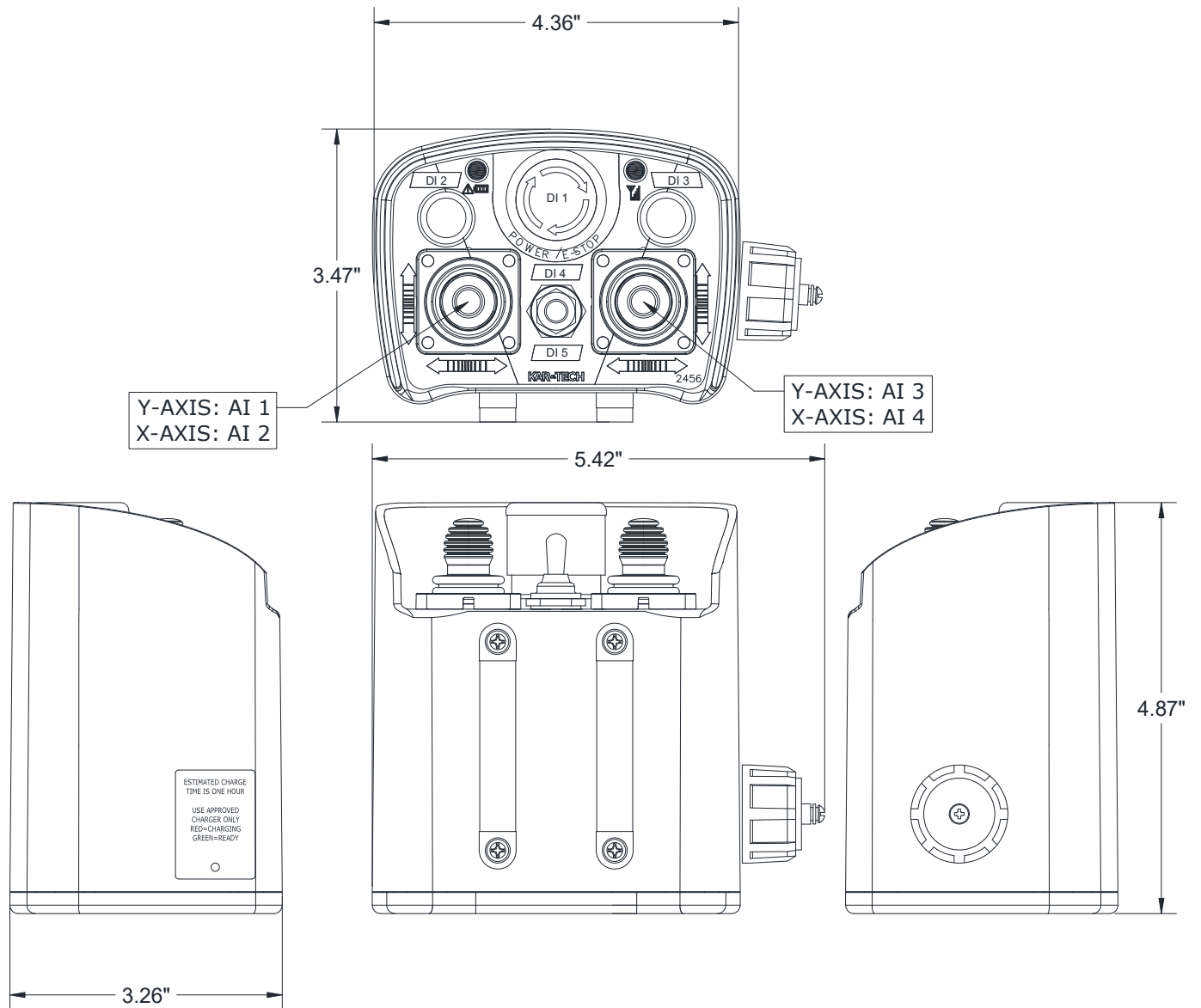
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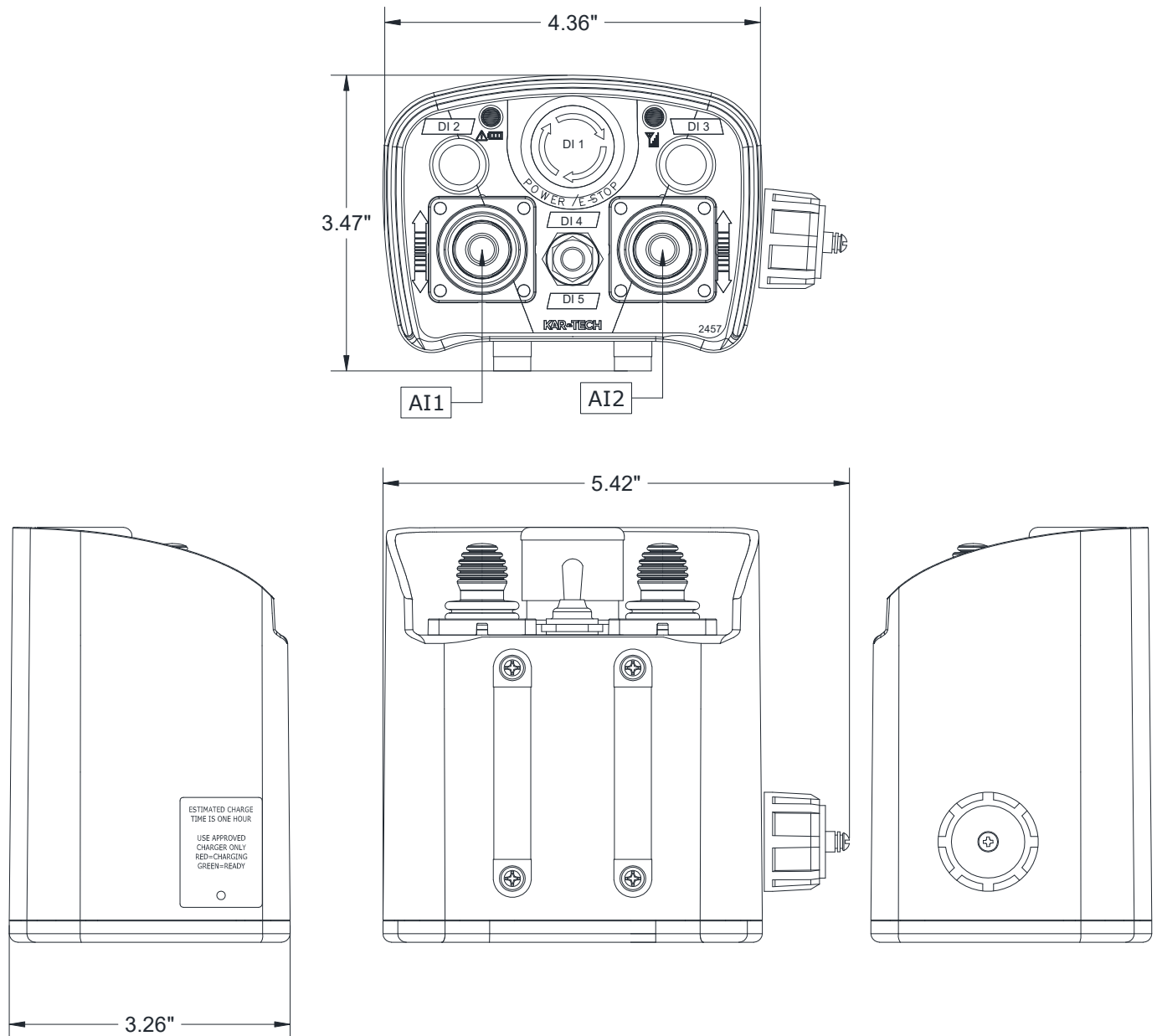
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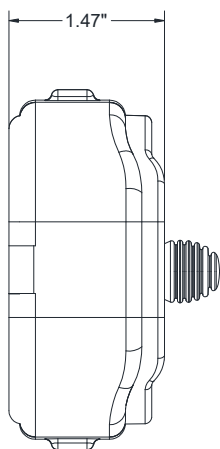
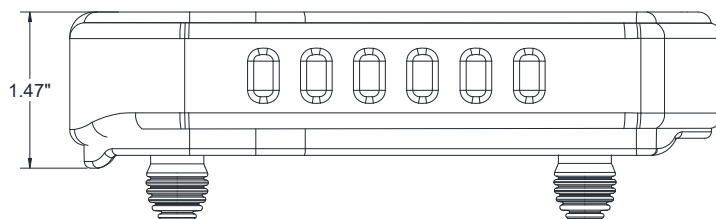
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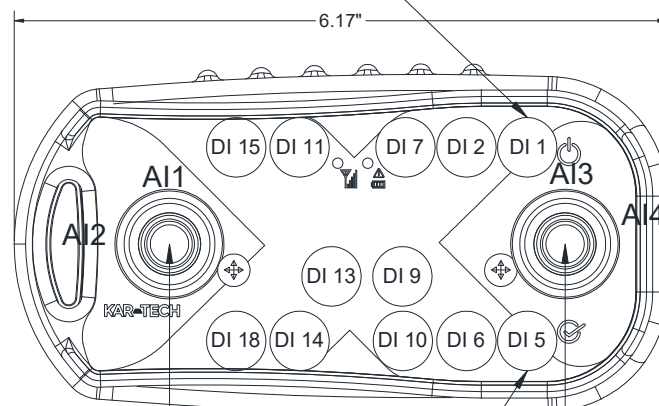


# UNIVERSAL REMOTE

## 3B2702C



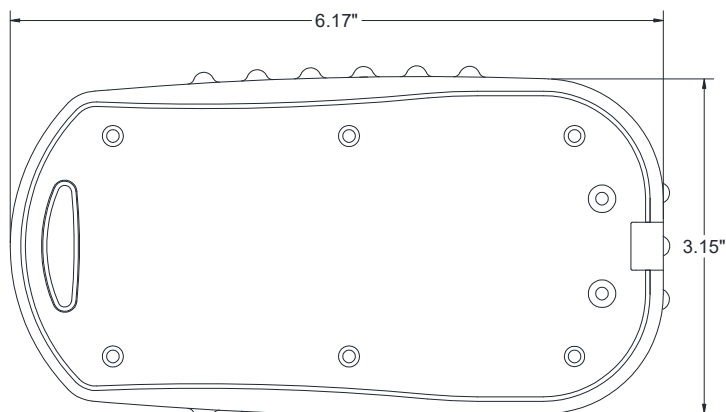
POWER/E-STOP BUTTON



JOYSTICK 1  
Y-AXIS: AI 1  
X-AXIS: AI 2

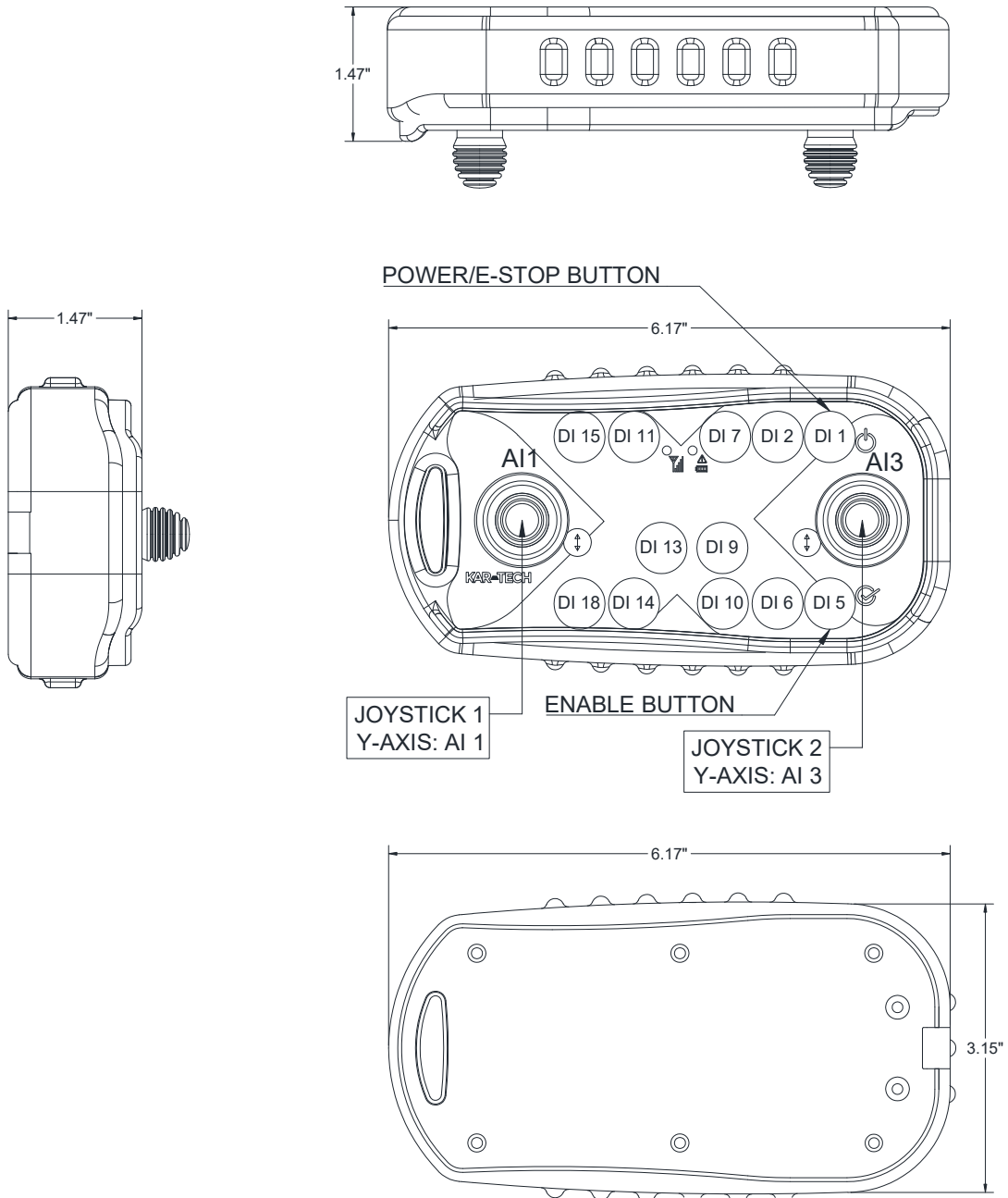
ENABLE BUTTON

JOYSTICK 2  
Y-AXIS: AI 3  
X-AXIS: AI 4



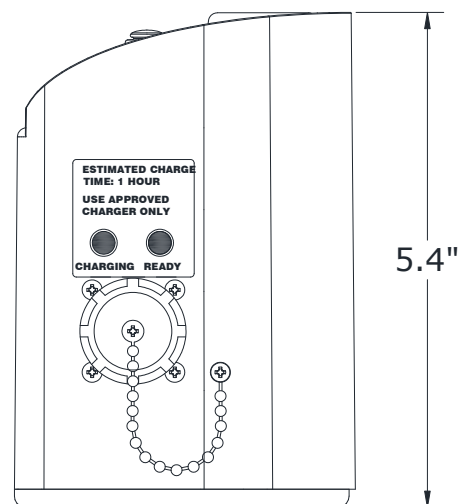
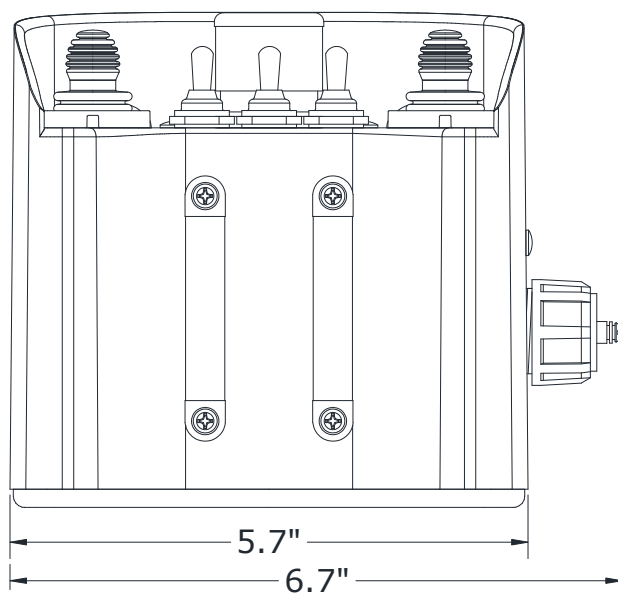
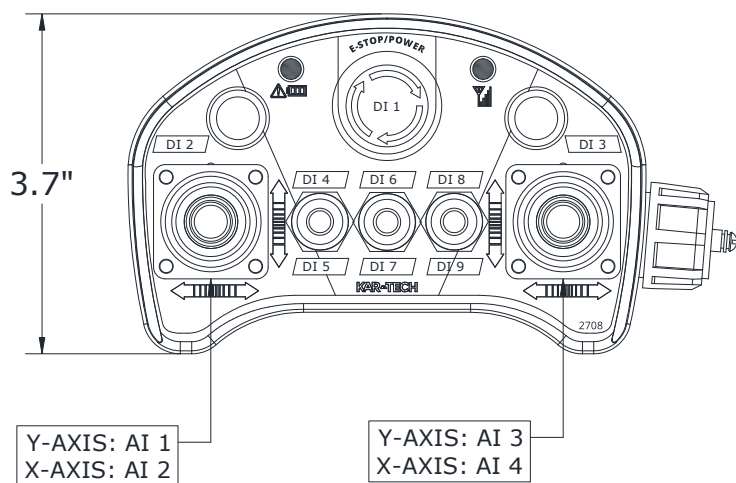
# UNIVERSAL REMOTE

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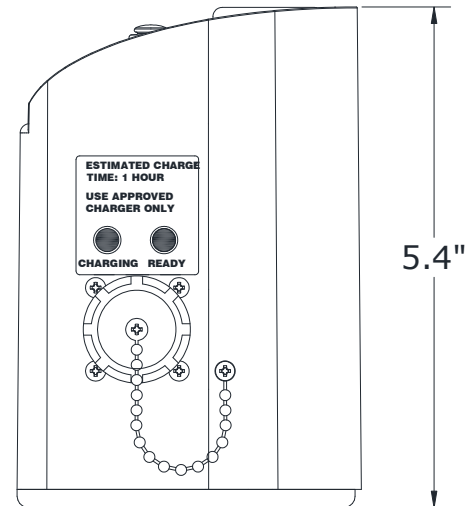
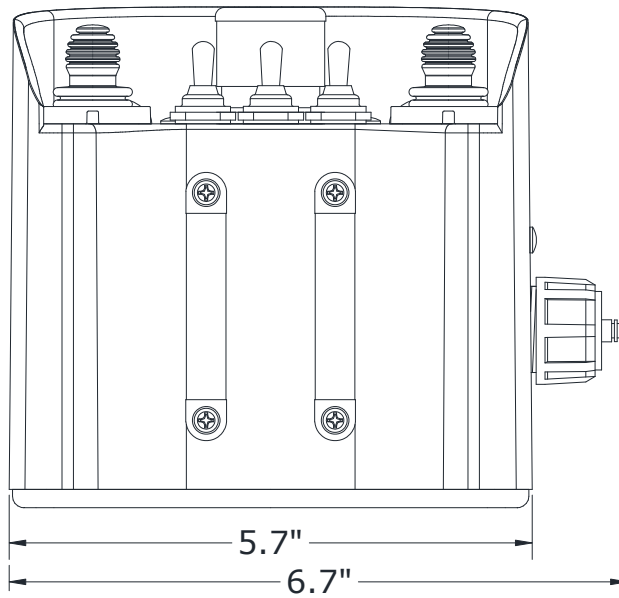
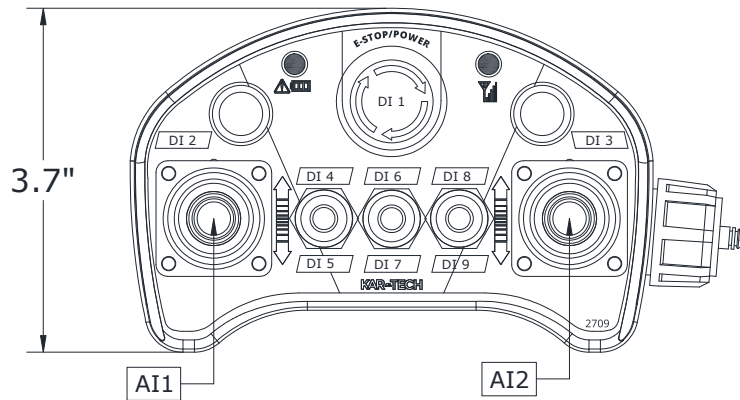
# UNIVERSAL REMOTE

## 3B3162A



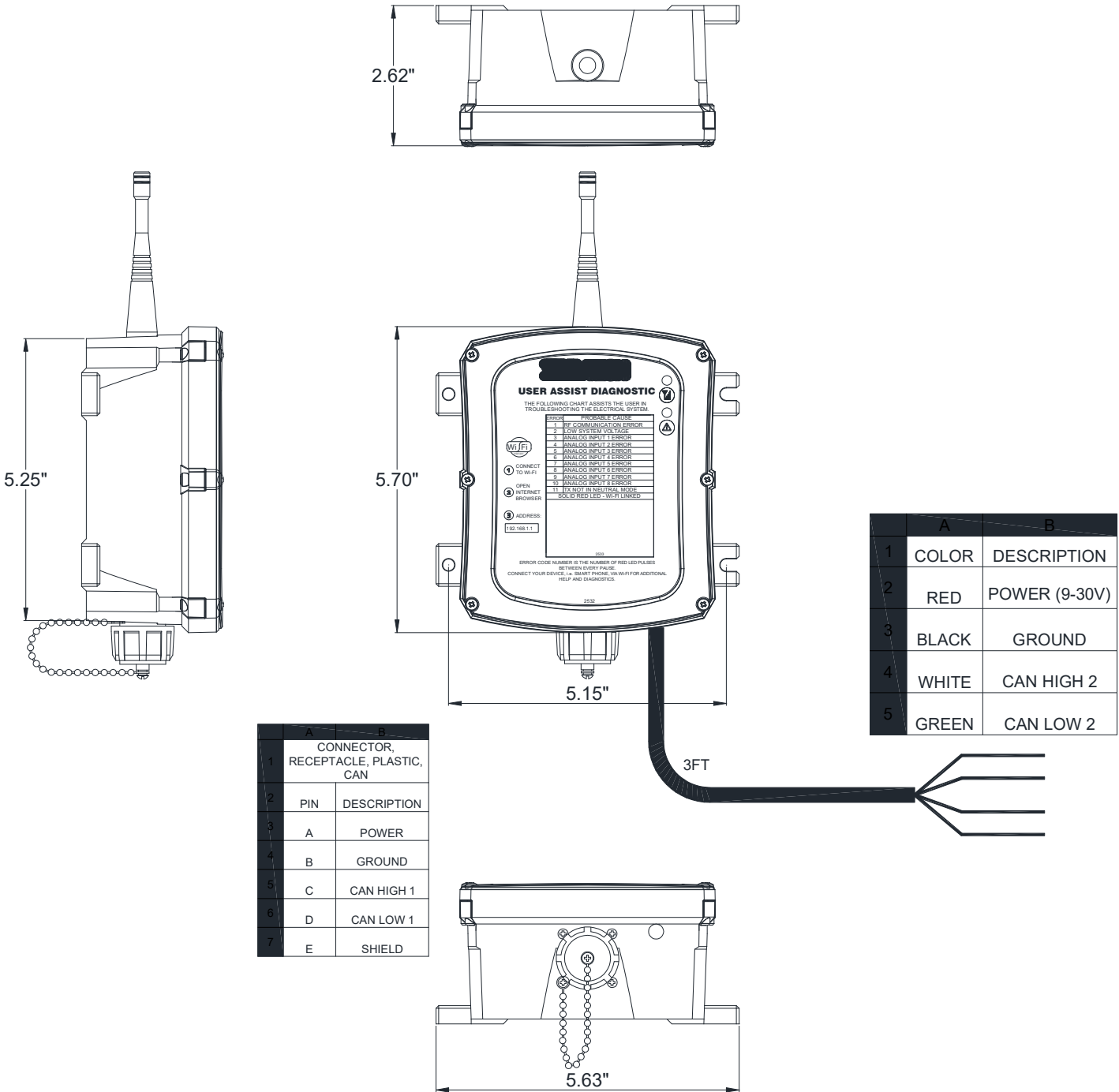
## UNIVERSAL REMOTE

### 3B3163A



# UNIVERSAL REMOTE

## 3B256NB RECEIVER



## UNIVERSAL REMOTE

### SPECIFICATIONS

**FCC ID:** P4U-MOD164

Industry Canada Certification Number: 4534A-MOD164

EQUIPMENT CLASS: PART 15 SPREAD SPECTRUM TRANSMITTER

#### **TRANSMITTER**

Power supply .....	3.7V LiPo or Li-Ion
Fast charger temperature range .....	+5°C to +60°C
Operating temperature - Radio .....	-40°C to +85°C
Storage temperature.....	-40°C to +100°C
RF Frequency .....	902-928 MHz
RF Transmit power (EIRP).....	100 mW
LCD display operating range (if equipped) .....	-20°C to +70°C
Vibration .....	3G to 200Hz
Shock.....	50G
NEMA.....	12

#### **RECEIVER**

Voltage .....	9-30VDC
Current (Transmitter not connected via CAN) .....	~75mA
Operating temperature .....	-40°C to +85°C
Storage temperature.....	-40°C to +100°C
RF Frequency .....	902-928 MHz
Vibration .....	3G to 200Hz
Shock.....	100G
NEMA.....	4X
CAN BAUD RATE.....	250K

## **UNIVERSAL REMOTE**

### **INSTRUCTION TO THE USER**

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- \* Reorient or relocate the receiving antenna.
- \* Increase the separation between the equipment and receiver.
- \* Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- \* Consult the dealer or an experienced radio/TV technician for help.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.