

GUIDER

RADIO/CAN REMOTE CONTROL SYSTEM

INSTALLATION AND OPERATION MANUAL

KAR-TECH
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BG

GUIDER REMOTE

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GUIDER REMOTE

DESCRIPTION

The GUIDER 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 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 modules: the radio transmitter, receiver module, and associated optional equipment such as wiring harnesses.

The transmitter is equipped with a trigger, a pushbutton, and toggle switches for the various

functions. It includes a port for wired control via the built-in Controller Area Network (CAN) system. This unit runs on a 3.7V rechargeable battery 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.

The system's radio receiver has both current-regulated proportional outputs and ON/OFF outputs to accommodate the functions available on the transmitter. All outputs are current-sourcing. It also includes a port for wired (CAN) communication for tethered control.

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OPERATION

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

Releasing the E-STOP until the red and green LEDs appear will turn on the transmitter. Pressing the E-STOP button will turn off the transmitter. Pressing the E-STOP will turn off all outputs as a safety feature. If the transmitter goes out of range for more than 2 seconds, all outputs will turn off as a safety feature.

To operate a proportional output, toggle the switch of the desired function and pull the trigger to the level desired.

***Please note that if the trigger is pulled before the function is selected, the proportional output will not work as a safety feature.** Release the trigger and

begin again in the proper sequence.

To save battery life, the transmitter will turn off after 15 minutes if the receiver is off. The user must press and release the E-STOP at this point to restore transmitter operation. To change the sleep time, use the following procedure:

1. With the transmitter and receiver off, press and hold POWER and switches BOOM UP, WINCH UP, ROTATE CCW, and EXTEND OUT
2. Release the E-STOP button. Keep holding the switches until the green and red LEDs start blinking together slowly. Release switches
3. Press one of the following switches for desired sleep time:
 - a. BOOM DOWN - 15

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- minutes
- b. WINCH DOWN - 30 minutes
- c. ROTATE CW - 60 minutes
- d. EXTEND IN- 120 minutes
- e. HORN - sleep time disabled

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 indicator. See BATTERY CHARGING below.

If the **ATB Input** is off (ATB error is present), the red and green LEDs on the transmitter will *toggle* while using a switch.

If the **PRESSURE Input** is over the set pressure (overload error is present), the red and green LEDs on the transmitter will *blink together* while using a switch.

The receiver module can identify problems with the system in the form of an error code. Check the display window on the receiver to diagnose system

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problems. Then, refer to the ERROR CODE CHART in this manual for explanation of the error codes.

TRANSMITTER AND RECEIVER SYNCHRONIZATION

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

1. Plug the CAN cable into the CAN port on both the receiver and transmitter and operate a function on the transmitter until the LEDs on the front panel go from steady to flashing for at least 5 seconds. The units will be synchronized at this point

TEACH BY RF

1. Turn the transmitter and receiver off
2. Press and hold EXTEND IN and BOOM UP then release the E-STOP
3. Hold for a few seconds then release the switches.

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LEDs should blink at this point

4. Apply power to the receiver. Only green LED should start to blink on transmitter

5. Teach complete

CLONING

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 transmitters and receivers are off

6. On transmitter A, press and hold EXTEND IN and BOOM UP then release the E-STOP. Hold for a few seconds then release the switches. LEDs should blink at this point

2. On transmitter B, press and hold EXTEND IN, ROTATE CCW, and WINCH UP then release the E-STOP. Hold for a few seconds then release the switches. LEDs should blink at this point

3. Wait for a few seconds until the green LED only starts to blink on transmitter A and transmitter B.

4. Turn off both transmitters

5. Synchronize one of the transmitters to the receivers

If cloning feature has been invoked and is no longer

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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 transmitters are OFF
2. Press and hold switches BOOM DOWN, WINCH DOWN, ROATE CW, and EXTEND IN the release the E-STOP. Keep holding until the LEDs start to toggle. Release switches
3. Press any switch again to select a new ID
4. Uncloning complete
5. 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 into the port. Red and green LED indicators near the charging port or on the underside of the transmitter indicate the status of the 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.

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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)

OUTPUTS

Each of the outputs from the receiver module is designed with built-in short circuit and overload protection. The outputs can also detect a no-load or broken wire condition.

These error conditions are evident by the display on the receiver module *or* the HISTOGRAM page on the on board Gate.

The ON/OFF outputs will indicate an error under no load or broken wire status if NOT activated, and will detect a short IF activated. The proportional outputs will detect a no-load or short condition WHEN activated.

INPUTS

The receiver module is designed with 4 digital inputs: CW switch, CCW switch, ATB switch, and Boom up switch and one analog input for boom Pressure. When CW or CCW input are High (12 volts) the swing CW and CCW outputs are enabled respectively. These inputs are used for cranes with swing rotation switches. If swing has mechanical stops, hardwire both inputs to power.

The ATB switch inputs must be high for boom down, winch up and extend out to work with

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factory settings applied. Boom up switch is used to limit boom up travel so boom up does not bottom up and create a false overload which limits boom down. If the ATB input is a sinking input (ground will be applied to this input), use a 1K resistor from the signal power to this input. Note: this is already installed in 3B2889A and 3B288CA harnesses. Remove this resistor if the input is sourcing (signal power is applied to this input).

The pressure input is a voltage input (factory set to 0 to 5 volts). If a 4 to 20 mA pressure transducer is on the crane, use a 220 ohm ½ watt resistor from signal to ground to convert current to voltage. Note: this is already installed in 3B2889A and 3B288CA harnesses. If using the input as a pressure switch

(P-S) or 0-5V input, then remove this resistor. Overload pressure and maximum pressure can be calibrated using Gate.

RECEIVER DISPLAY

The receiver's graphical display is used to report the status of outputs, radio communication, truck battery voltage, and boom status to the operator. For additional information on error codes refer to the ERROR CODES section of this manual.

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.

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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 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.

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.

SYSTEM TROUBLESHOOTING 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. The receiver's graphical display will show "WiFi" when Gate is connected and in use.

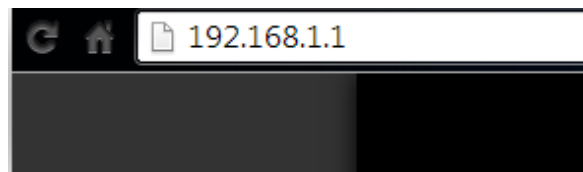
ACCESSING THE CONTROL PANEL

1. Turn on the power to the receiver.
2. Use your device and look for the available Wi-Fi networks. A network

under the name of "KARTECH3B288" should be available at this point. Connect to the network, the password is 3B2883X1.

Please note: If Gate is not used for 5 minutes after power up it will automatically turn off. Recycle power to the receiver to turn it back on.

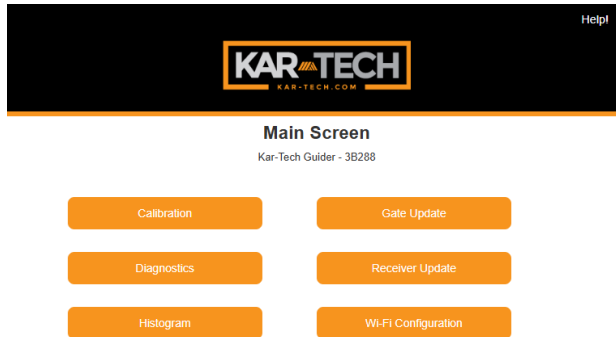
3. Once the connection is established, open a web browser on your device. Kar-Tech recommends using Chrome browser.
4. Enter the address `http://192.168.1.1` in the address bar



Address Bar

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



Main Page

proportional output, the transmitter battery level, the receiver operating voltage and the value of the pressure in PSI when operated.

It also shows the information of the current transmitter and receiver ID they both are currently communicating on.

DIAGNOSTICS

Tap the `Diagnostic` 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.

It shows the info of the

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CALIBRATION

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

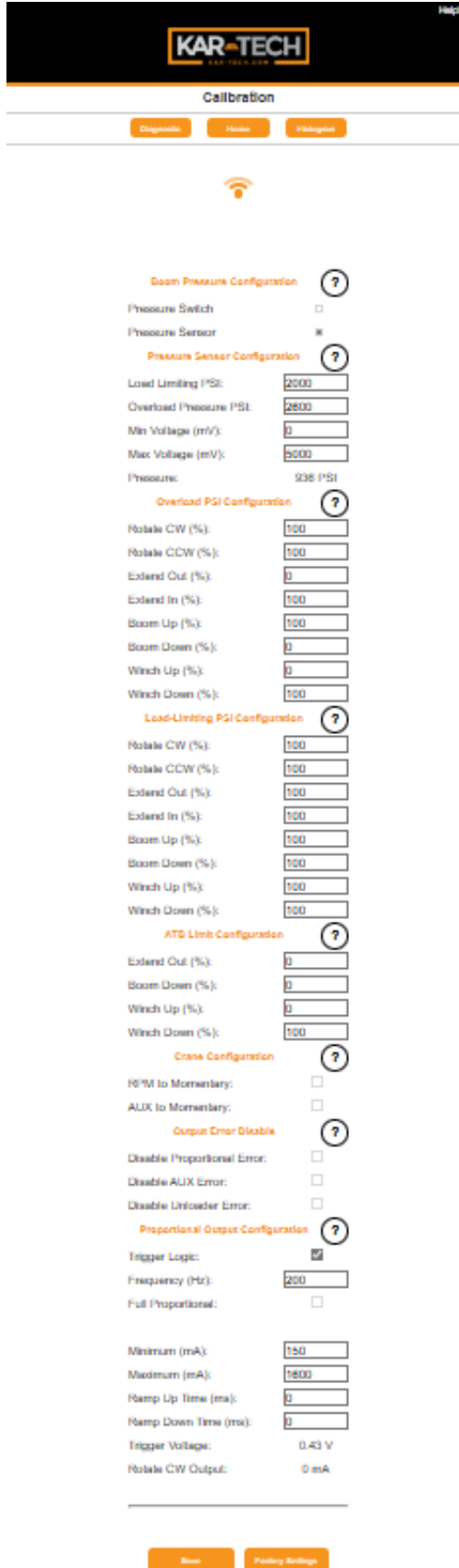
RF Quality		RF LINK	
<div><div></div></div>		RF ID:	36513
RF Power		Gate channel:	6
<div><div></div></div>		Crane battery:	13.5V
Transmitter Digital Inputs			
<input type="radio"/> RPM	<input type="radio"/> Rotate CW		
<input type="radio"/> AUX	<input checked="" type="radio"/> Extend Out		
<input type="radio"/> Boom Up	<input type="radio"/> Extend In		
<input type="radio"/> Boom Down	<input type="radio"/> Engine Start		
<input type="radio"/> Winch Up	<input type="radio"/> Engine Stop		
<input type="radio"/> Winch Down	<input type="radio"/> Horn		
<input type="radio"/> Rotate CCW			
Transmitter Analog Inputs			
Transmitter Battery:		4.1 V	
Trigger Voltage:		1.74 V	
Receiver Digital Inputs			
<input checked="" type="radio"/> Anti Two Block Switch	<input checked="" type="radio"/> Rotate CW Switch		
<input type="radio"/> Boom Up Limit Switch	<input checked="" type="radio"/> Rotate CCW Switch		
<input type="radio"/> Pressure Switch			
Receiver Analog Inputs			
Pressure Sensor:		766 PSI	
Pressure Input:		1.17 V	
Proportional Outputs			
Rotate CW Output:		0 mA	
Rotate CCW Output:		0 mA	
Extend Out Output:		160 mA	
Extend In Output:		0 mA	
Boom Up Output:		0 mA	
Boom Down Output:		0 mA	
Winch Up Output:		0 mA	
Winch Down Output:		0 mA	
Proportional Output:		N/A	
On/Off Outputs			
<input type="radio"/> RPM	<input type="radio"/> Extend Out		
<input type="radio"/> AUX	<input type="radio"/> Extend In		
<input type="radio"/> Boom Up	<input type="radio"/> Engine Start		
<input type="radio"/> Boom Down	<input type="radio"/> Engine Stop		
<input type="radio"/> Winch Up	<input type="radio"/> Horn		
<input type="radio"/> Winch Down	<input checked="" type="radio"/> Unloader		
<input type="radio"/> Rotate CCW	<input checked="" type="radio"/> Pump (Proportional)		
<input type="radio"/> Rotate CW			

Receiver: 32862CA Date: 2/20/2025 Rev: 0

Gate: 32862BA Date: 5/20/2022 Rev: 0

Diagnostics Page

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The screenshot shows the 'Calibration' page of the KAR-TECH GUI. At the top, there's a header with the 'KAR-TECH' logo and a 'Help' link. Below the header, there are three tabs: 'Diagnose', 'Home', and 'Calibration', with 'Calibration' being the active tab. A wireless signal icon is displayed below the tabs. The main content area is divided into several sections, each with a title and a help icon (a circle with a question mark):

- Boom Pressure Configuration**: Includes 'Pressure Switch' (checkbox) and 'Pressure Sensor' (radio button).
- Pressure Sensor Configuration**: Includes 'Load Limiting (PSI)' (2500), 'Overload Pressure (PSI)' (2800), 'Min Voltage (mV)' (0), 'Max Voltage (mV)' (5000), and 'Pressure' (938 PSI).
- Overload PSI Configuration**: Includes 'Rotate CW (%)' (100), 'Rotate CCW (%)' (100), 'Extend Out (%)' (0), 'Extend In (%)' (100), 'Boom Up (%)' (100), 'Boom Down (%)' (0), 'Winch Up (%)' (0), and 'Winch Down (%)' (100).
- Load-Limiting PSI Configuration**: Includes 'Rotate CW (%)' (100), 'Rotate CCW (%)' (100), 'Extend Out (%)' (100), 'Extend In (%)' (100), 'Boom Up (%)' (100), 'Boom Down (%)' (100), 'Winch Up (%)' (100), and 'Winch Down (%)' (100).
- ATD Limit Configuration**: Includes 'Extend Out (%)' (0), 'Boom Down (%)' (0), 'Winch Up (%)' (0), and 'Winch Down (%)' (100).
- Crane Configuration**: Includes 'RPM to Momentary' (checkbox) and 'ALUX to Momentary' (checkbox).
- Output Error Disable**: Includes 'Disable Proportional Error' (checkbox), 'Disable ALUX Error' (checkbox), and 'Disable Unloader Error' (checkbox).
- Proportional Output Configuration**: Includes 'Trigger Logic' (checkbox), 'Frequency (Hz)' (200), 'Full Proportional' (checkbox), 'Minimum (mA)' (150), 'Maximum (mA)' (1800), 'Ramp Up Time (ms)' (0), 'Ramp Down Time (ms)' (0), 'Trigger Voltage' (0.43 V), and 'Rotate CW Output' (0 mA).

At the bottom of the page, there are two buttons: 'Save' and 'Factory Settings'.

Calibration Page

The password to gain access to the calibration page is 1262.

This page provides the user with the ability to adjust key system parameters, including pump output settings and safety limits. The lines Output, Trigger, and Pressure will show the present value of the current on the proportional output, the input trigger voltage, and pressure on the transducer (if selected).

Boom Pressure Configuration

Boom Pressure Configuration

Pressure Switch

Pressure Sensor

Checking the Pressure Switch circle allows the OVERLOAD safety to be functional with a

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digital input (battery voltage). When the system senses the OVERLOAD input is off, the BOOM DOWN, WINCH UP, and EXTEND OUT functions are disabled under factory settings (input should be ON under normal conditions). Selecting this option will automatically de-select the Pressure Sensor option. Press save to save this setting.

Checking the Pressure Sensor circle allows the OVERLOAD safety to be functional with an analog input (0-5VDC). When the system senses the OVERLOAD input is beyond the set value, the BOOM DOWN, WINCH UP, and EXTEND OUT functions are disabled under factory settings. Selecting this option will automatically de-select the Pressure Switch option.

The monitor line for Pressure will appear. When this checkbox is selected, it will invoke a list with the following sensor calibration parameters. Press save to save this setting.

Pressure Sensor Configuration

Pressure Sensor Configuration ?	
Load Limiting PSI:	<input type="text" value="2000"/>
Overload Pressure PSI:	<input type="text" value="2600"/>
Min Voltage (mV):	<input type="text" value="0"/>
Max Voltage (mV):	<input type="text" value="5000"/>
Max PSI:	<input type="text" value="4000"/>
Pressure:	3996 PSI

To set parameters when Pressure Sensor is checked:

1. Load Limiting PSI- set this to match the load limiting pressure for your sensor.
2. Overload Pressure PSI- set this to match the overload pressure for your sensor.

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3. Min Voltage (mV) -

The minimum voltage the receiver will see from the sensor when pressure is at 0 PSI.

4. Max Voltage (mV) -

The maximum voltage the receiver will see from the sensor when pressure is at maximum PSI.

For example: for a 4000 PSI 0 to 5 volt sensor, the Min out is 0 and Max Out is 5000 mV. For a 4-20mA sensor with 220 ohm resistor in harness (see wiring diagrams), Min out is 880. And Max Out is 4400.

5. Max PSI - The maximum PSI the receiver will see from the sensor when sensor is at maximum

voltage.

6. Press save to save selected setting(s).

Overload PSI Configuration

Overload PSI Configuration

?

Rotate CW (%):	<input type="text" value="100"/>
Rotate CCW (%):	<input type="text" value="100"/>
Extend Out (%):	<input type="text" value="0"/>
Extend In (%):	<input type="text" value="100"/>
Boom Up (%):	<input type="text" value="100"/>
Boom Down (%):	<input type="text" value="0"/>
Winch Up (%):	<input type="text" value="0"/>
Winch Down (%):	<input type="text" value="100"/>

This menu appears for you to select outputs that respond to this condition (Overload PSI) by reducing or eliminating the output chosen. Enter a percentage of maximum (or 0% to shut off the output) for each output desired when this condition exists. Press save to save selected setting(s).

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Load-Limiting PSI Configuration

Load-Limiting PSI Configuration

?

Rotate CW (%):	<input type="text" value="100"/>
Rotate CCW (%):	<input type="text" value="100"/>
Extend Out (%):	<input type="text" value="100"/>
Extend In (%):	<input type="text" value="100"/>
Boom Up (%):	<input type="text" value="100"/>
Boom Down (%):	<input type="text" value="100"/>
Winch Up (%):	<input type="text" value="100"/>
Winch Down (%):	<input type="text" value="100"/>

This menu appears for you to select outputs that respond to this condition (Load Limiting PSI) by reducing or eliminating the output chosen. Enter a percentage of maximum (or 0% to shut off the output) for each output desired when this condition exists. Press save to save selected setting(s).

ATB Limit Configuration

ATB Limit Configuration

?

Extend Out (%):	<input type="text" value="0"/>
Boom Down (%):	<input type="text" value="0"/>
Winch Up (%):	<input type="text" value="0"/>
Winch Down (%):	<input type="text" value="100"/>

This menu is for you to select outputs that respond to this condition (ATB input going low – 0V) by reducing or eliminating the output chosen. Enter a percentage of maximum (or 0% to shut off the output) for each output desired when this condition exists. Press save to save selected setting(s).

Crane Configuration

Crane Configuration

?

RPM to Momentary:	<input type="checkbox"/>
AUX to Momentary:	<input type="checkbox"/>

In the middle of the page there are additional settings:

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1. RPM to Momentary – if this check box is selected the ENGINE SPEED output will be momentary instead of maintained.

2. Aux (Compressor) to Momentary – if this check box is selected, the behavior of the AUX output will be momentary instead of maintained.

3. Press save to save selected setting(s).

Output Error Disable

Output Error Disable

Disable Proportional Error: ☐

Disable AUX Error: ☐

Disable Unloader Error: ☐

The user can also disable the error codes for the unloader, proportional, and aux output if wanted. Check all, two, or

one of the boxes above then press save to disable the error codes. Press save to save selected setting(s).

Proportional Output Configuration

Proportional Output Configuration

Trigger Logic: ☒

Frequency (Hz):

Full Proportional: ☐

Minimum (mA):

Maximum (mA):

Ramp Up Time (ms):

Ramp Down Time (ms):

Trigger Voltage: 0.43 V

Rotate CW Output: 0 mA

To change the functionality of the proportional outputs, use the following procedure:

1. Proportional – the selected output (Proportional - Pump) will have current regulated proportional

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functionality based on the position of the trigger. This is the default setting (full proportional not checked).

2. Full Proportional - if checked then WINCH UP, WINCH DN, BOOM UP, BOOM DOWN, ROTATE CW, ROTATE CCW, EXTEND OUT, and EXTEND IN outputs are all current regulated outputs. To operate a function toggle the desired function then pull the trigger. The proportional output will act as a pump output and turn on with each crane function.

3. Trigger Logic - if checked then a switch

must first be pressed then the trigger pulled for an output to work. If not checked the trigger will work regardless of a switch being pressed or not.

To adjust a proportional output's configuration, use the following procedure.

1. Select the output to change from the first drop-down menu: WINCH UP, WINCH DN, BOOM UP, BOOM DOWN, ROTATE CW, ROTATE CCW, EXTEND OUT, OR EXTEND IN if Full Proportional is checked. Just change a parameter if full proportional is not checked.
4. Select the parameter of the output to change from the second drop-down menu. Proportional must be

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selected for these to be used.

- a. `Min` - Minimum amount of current to valve in mA
- b. `Max` - Maximum amount of current to valve in mA
- c. `Ramp Up` - Time in seconds to go from `Min` current to `Max` current
- d. `Ramp Down` - Time in seconds to go from `Max` current to no current
- e. `Frequency` - Dither frequency to valves in Hz (Change affects all outputs)

5. Enter the new value in the box

6. Tap the `Save` button to send the setting to memory

Tap the `Factory Setting` button to return all outputs to standard values. Tap `Save` to send these settings to memory. Tap `Done` to quit configuration and return to the main menu.

HISTOGRAM

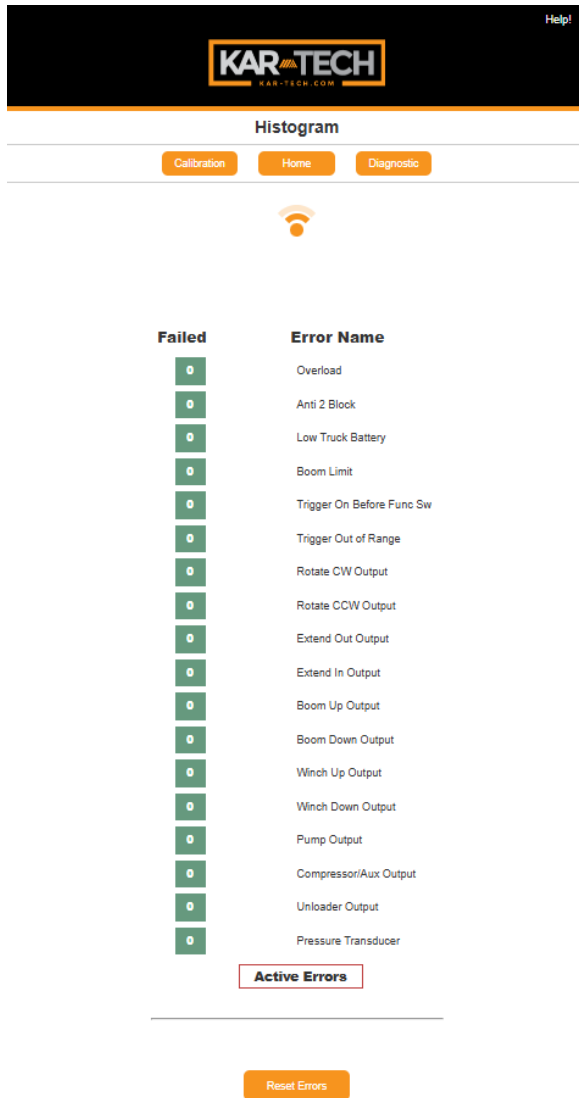
Tap the `Histogram` icon to see which error codes are active and how many times the specific error code has been active.

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

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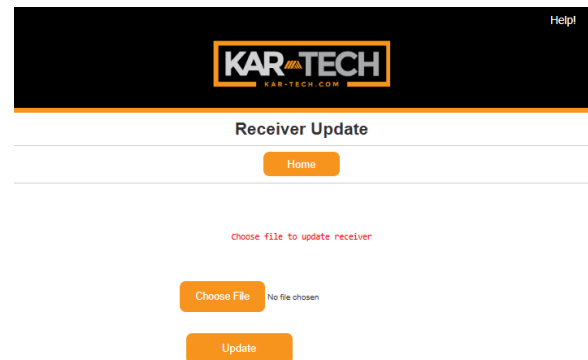
delays.



Histogram Page

to select new software on your device with which to program the receiver. Kar-Tech will have provided software in the .kar format. Once the file is selected, press the UPDATE button to upload the file.

Note: Do not turn the receiver or the GATE off during the upload process.



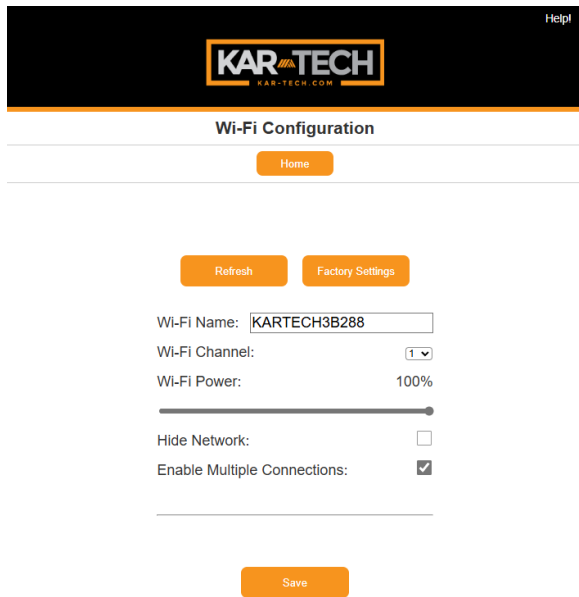
Receiver Update Page

RECEIVER UPDATE

The password to gain access to the receiver update page is 1262.

Use the Choose File button

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KAR-TECH

Wi-Fi Configuration

Home

Refresh Factory Settings

Wi-Fi Name: KARTECH3B288

Wi-Fi Channel: 1

Wi-Fi Power: 100%

Hide Network: ☐

Enable Multiple Connections: ☒

Save

Wi-Fi Configuration Page

WI-FI CONFIGURATION

The password to gain access to the gate configuration page is 1262.

This page allows you to change the name (SSID) of the Wi-Fi network you are connecting to. Factory settings will rename the Wi-Fi to its original name.

If Broadcast SSID option is selected, the Wi-Fi name

(SSID) is public and it will be visible to any other Wi-Fi devices. Otherwise, the Wi-Fi name (SSID) is hidden and it would require manual connection to the network.

If Enable Multiple Connections is selected, multiple connections up to 4 devices could be connected to the GATE. However, only one of the connected devices can use the GATE. If Single connection is enabled, only one device can be connected to the GATE.

NOTE: A reconnect to the new Wi-Fi connection is needed after each change. It is advised to keep a note of the Wi-Fi name in case if Not Broadcast SSID option is selected. Forgetting the Wi-Fi name after selecting this

GUIDER REMOTE

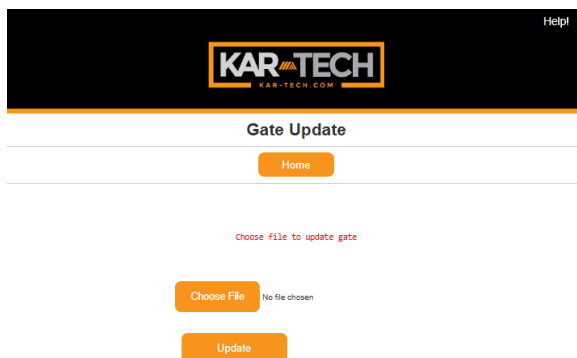
option will require the GATE to be sent to KAR-TECH for factory reprogramming.

GATE UPDATE

The password to gain access to the gate update page is 1262.

This page was designed to upload software that changes the product that the GATE interface works with.

Once the LOAD button is pressed the application on the GATE will be **deleted**.



Gate Update Page

1. Using Choose File select

proper .gat file

2. Press Update

3. File will upload and say Success! When complete

4. Disconnect then reconnect to "KARTECH3B288" network

5. Press HOME button

6. Update complete

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

GUIDER REMOTE

WIRING

3B2883C

P1 - DEUTSCH DTM13-12PA, GRAY

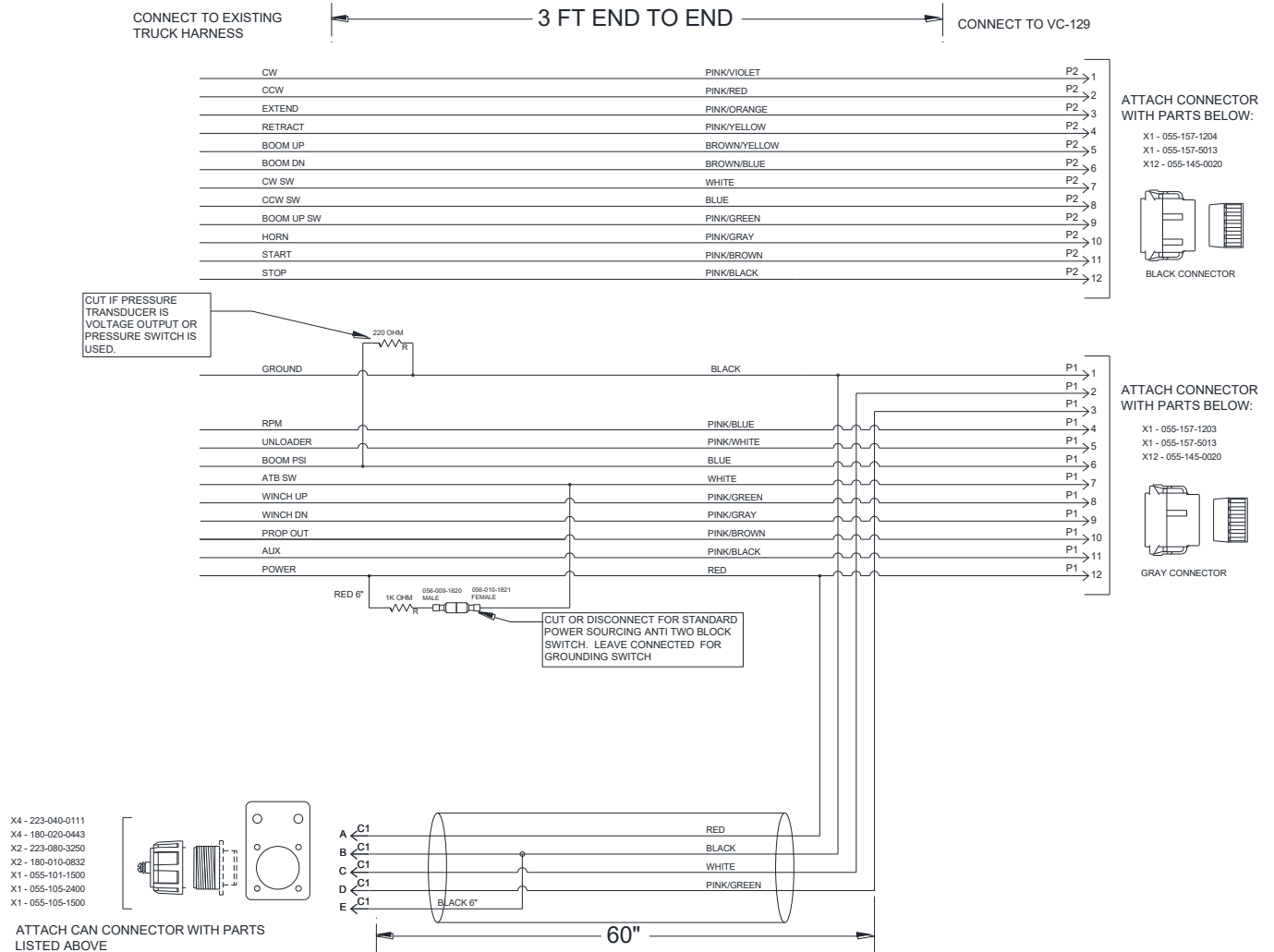
PIN	DESCRIPTION
1	GROUND
2	CANH
3	CANL
4	ENGINE THROTTLE OUTPUT
5	UNLOADER OUTPUT
6	PRESSURE SENSOR/SWITCH INPUT
7	ATB SWITCH INPUT
8	WINCH UP CR OUTPUT
9	WINCH DOWN CR OUTPUT
10	PROPORTIONAL (PUMP) CR OUTPUT
11	COMPRESSOR (AUX) OUTPUT
12	POWER (9-30V)

P2 - DEUTSCH DTM13-12PB, BLACK

PIN	DESCRIPTION
1	ROTATION CW CR OUTPUT
2	ROTATION CCW CR OUTPUT
3	EXTEND OUT CR OUTPUT
4	EXTEND IN CR OUTPUT
5	BOOM UP CR OUTPUT
6	BOOM DOWN CR OUTPUT
7	CW SW INPUT
8	CCW SW INPUT
9	BOOM UP LIMIT SWITCH
10	HORN OUTPUT
11	ENGINE START OUTPUT
12	ENGINE STOP OUTPUT

GUIDER REMOTE

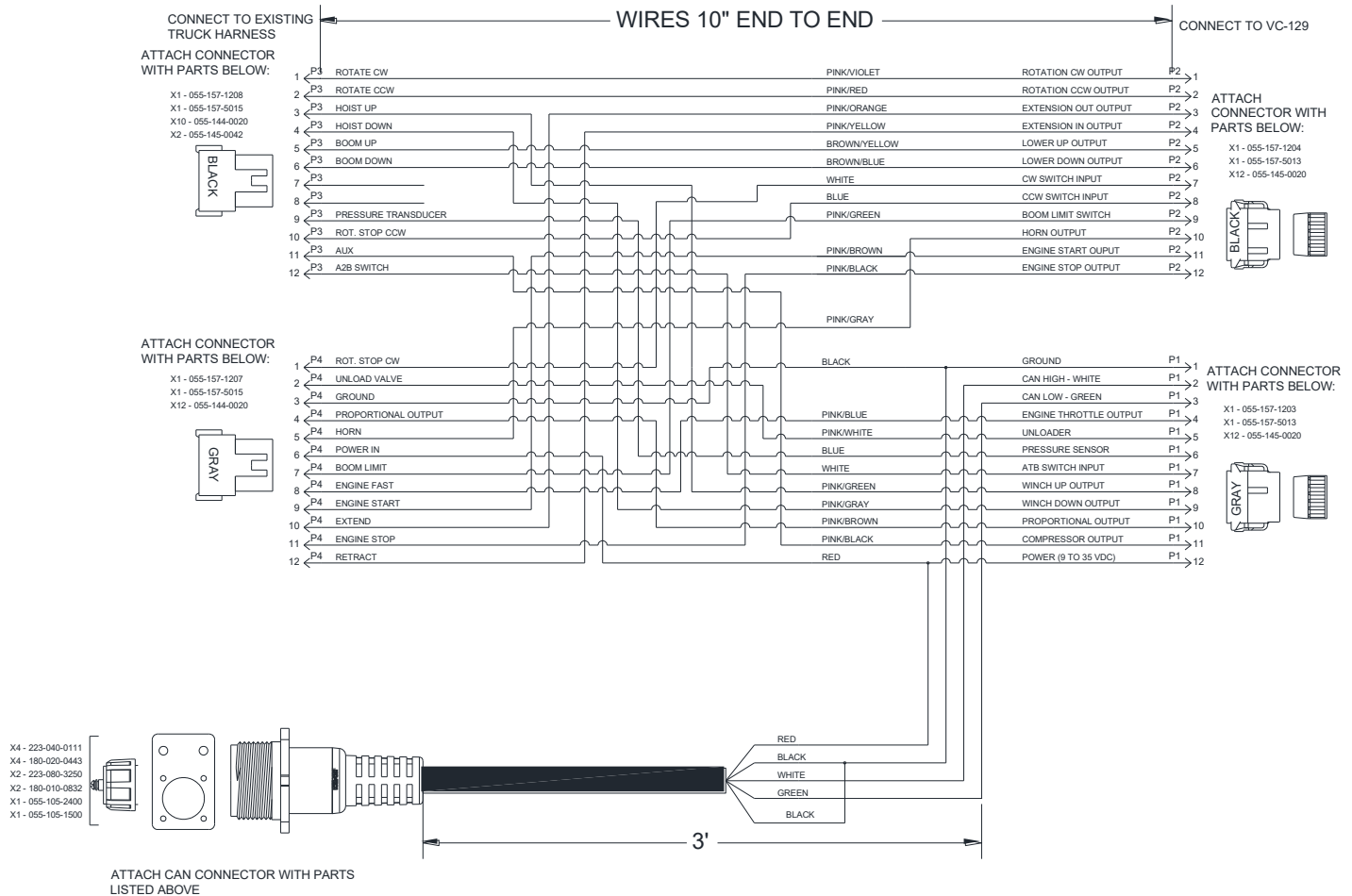
GENERIC HARNESS 3B288CB



All wires are labeled. Color code may change with revision.

GUIDER REMOTE

AUTOCRANE OMNEX CONVERSION HARNESS 3B2884B



Note:

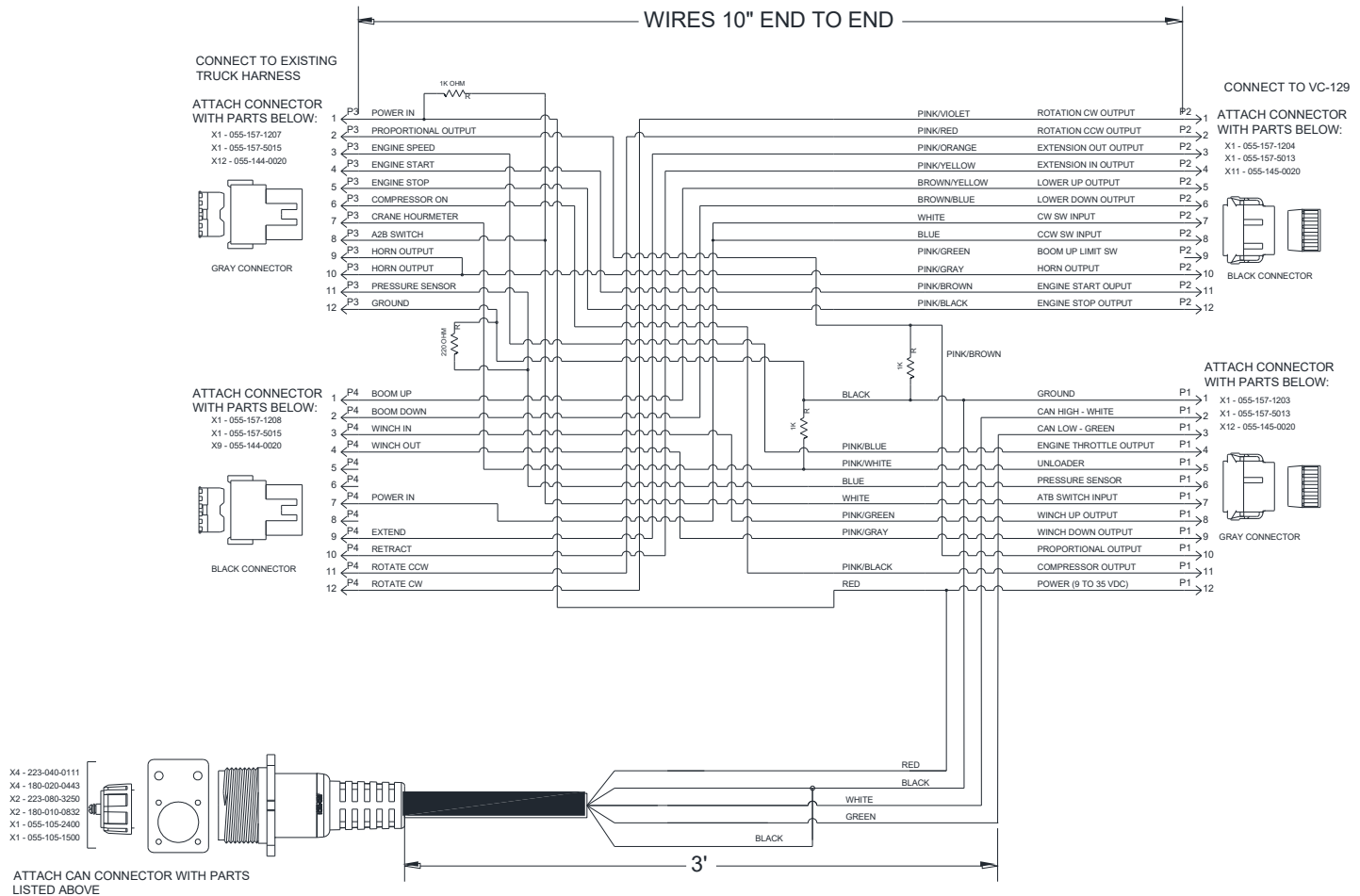
- NOTE:**

- For cranes with mechanical stop (without swing rotation switch), connect P3-10 (ROT. STOP CCW) and P4-1 (ROT. STOP CW) to POWER IN. If using the HORN output, make sure to connect the output to a relay coil not directly to the load.
- All wires are labeled. Color code may change with revision.

GUIDER REMOTE

IMT 7,500-10,000 OMNEX CONVERSION HARNESS 3B2889B

**For the crane models: 6000, 7500, 8600, 9500, 10000, 12000 and 14000.
Mates with 77111481, 77441537-1 crane harnesses**



Note:

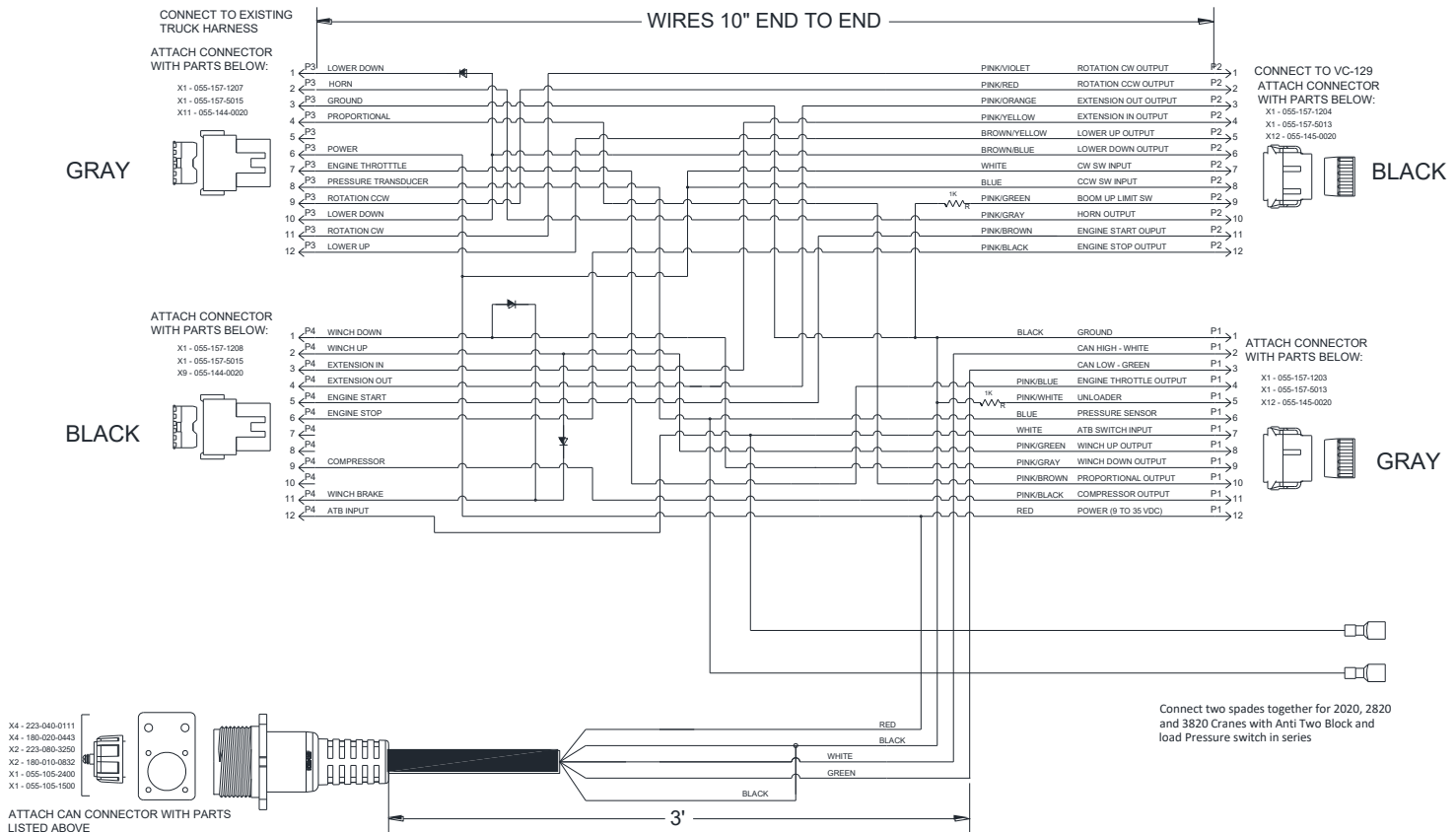
1. Anti-Two Block switch on these series of IMT cranes are pulled to ground when switch is closed,
2. Pressure sensor: 4-20 mA 5000 PSI
3. All wires are labeled. Color code may change with revisions.

GUIDER REMOTE

IMT OMNEX2020 - 6625 CONVERSION HARNESS 3B288DB

For the crane models: 2020, 2820, 3820, 5525, 6025, and 6625. Mates with 77441101 or 77441131 crane harnesses

Mates with IMT Harness 77441101, 77441131 for crane models: 2020, 2820, 3820, 5525, 6025, 6625



All wires are labeled. Color code may change with revision.

GUIDER REMOTE

MAINTAINER CONVERSION HARNESS 3B288FB

CONNECT TO EXISTING
TRUCK HARNESS

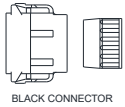
3 FT END TO END

CONNECT TO VC-129

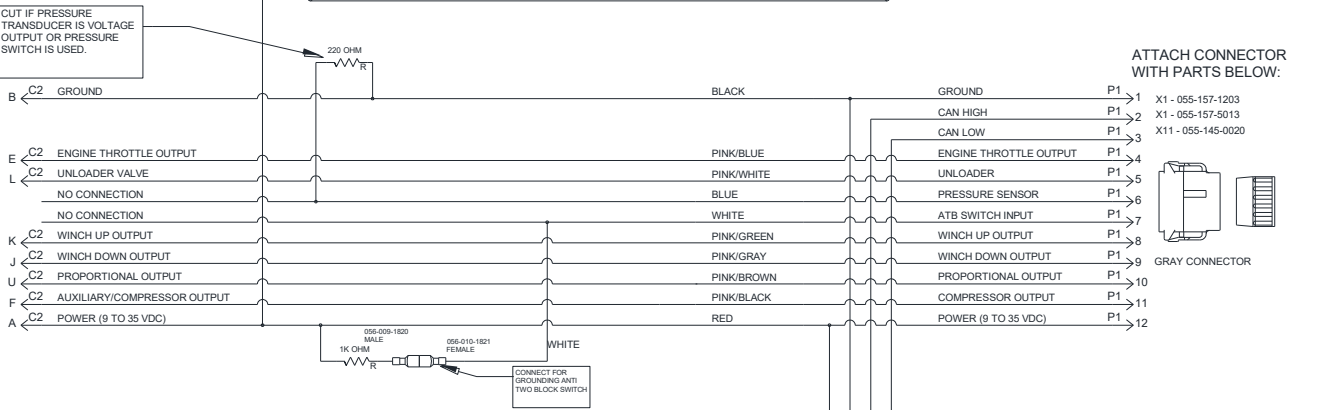


ATTACH CONNECTOR
WITH PARTS BELOW:

X1 - 055-157-1204
X1 - 055-157-5013
X12 - 055-145-0020

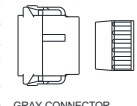


BLACK CONNECTOR



ATTACH CONNECTOR
WITH PARTS BELOW:

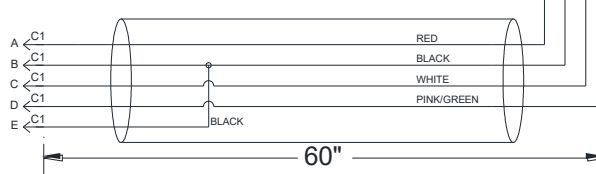
X1 - 055-157-1203
X1 - 055-157-5013
X11 - 055-145-0020



GRAY CONNECTOR

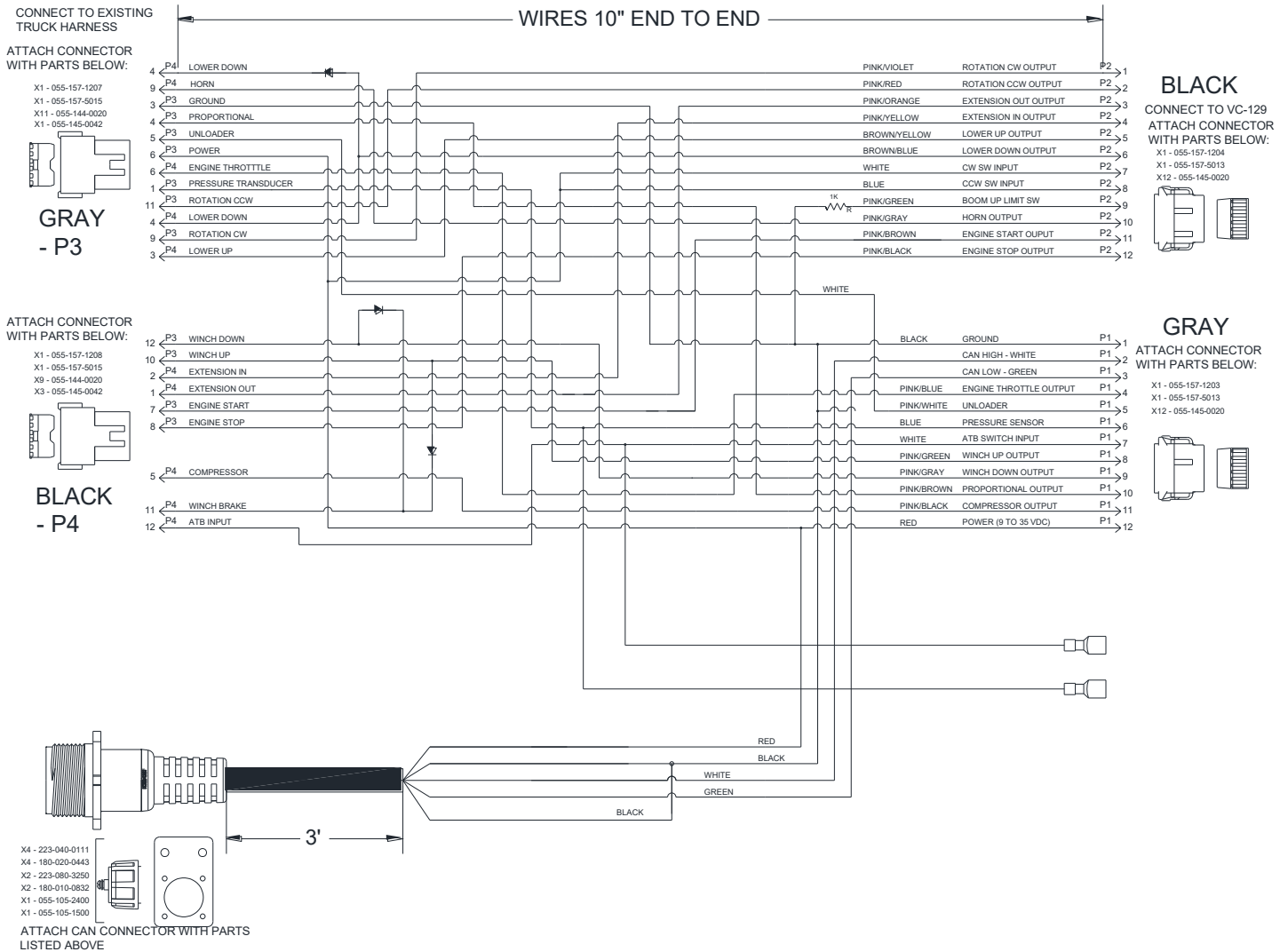
X4 - 223-040-0111
X4 - 180-020-0443
X2 - 223-080-3250
X2 - 180-010-0632
X1 - 055-101-1500
X1 - 055-105-2400
X1 - 055-105-1500

ATTACH CAN CONNECTOR WITH PARTS
LISTED ABOVE



GUIDER REMOTE

MAINTAINER 6000 CONVERSION HARNESS 3B288ZA



GUIDER 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.

Guider pendants that include a trigger control should be cleaned periodically by blowing air around the trigger area to remove any debris that would prevent proper operation. Apply a light machine oil to the point of rotation when clean.

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 GUIDER REMOTE system. If, after following these instructions, the system still does not function, contact your KAR-TECH representative for further instructions or servicing.

GUIDER REMOTE

TROUBLESHOOTING CHART

<i>PROBLEM</i>	<i>SOLUTION</i>
No functions work	<ol style="list-style-type: none">1. Verify transmitter power source – battery, CAN cable, external supply, etc2. Verify that receiver control module power source is present at its input connector3. Check for proper system ground4. Check the receiver control module LED status display for functionality or errors5. Check the hydraulic system
Certain functions do not work	<ol style="list-style-type: none">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 work2. Check the receiver control module LED status display for possible fault or error indication3. Check the hydraulic system4. Check the electrical system
Functions operate intermittently	<ol style="list-style-type: none">1. Check for loose connections at the valve coil2. Check the receiver control module LED status display for functionality or errors3. Check the receiver antenna for damage and possible obstructions4. Check the hydraulic system

GUIDER REMOTE

ERROR CODES

ERROR	PROBABLE CAUSE
ESTP	E-STOP
OVR	OVERLOAD ERROR
ATB	ANTI-2 BLOCK ERROR
LBV	LOW TRUCK BATTERY VOLTAGE
EC04	BOOM LIMIT ERROR
EC05	TRIGGER PULLED BEFORE SWITCH
EC06	TRIGGER ERROR
EC07	ROTATE CW OUTPUT ERROR
EC08	ROTATE CCW OUTPUT ERROR
EC09	EXTEND OUT OUTPUT ERROR
EC10	EXTEND IN OUTPUT ERROR
EC11	BOOM UP OUTPUT ERROR
EC12	BOOM DOWN OUTPUT ERROR
EC13	WINCH UP OUTPUT ERROR
EC14	WINCH DOWN OUTPUT ERROR
EC15	PROPORTIONAL (PUMP) OUTPUT ERROR
EC16	COMPRESSOR (AUX) OUTPUT ERROR
EC17	UNLOADER OUTPUT ERROR
EC18	PRESSURE TRANSDUCER ERROR

Error code explanations:

ESTP E-STOP mode

OVERLOAD System pressure exceeded limits

ATB Anti-2 Block condition present

LBV Battery level is below 11V (12V system)

EC04 Boom limit reached

EC05 Trigger has been operated before a function is pressed

EC06 Trigger level is out of range or not present

EC07-17 Short or open load/coil on output

EC18 Input level out of range or not present

UART Display issue

GUIDER REMOTE

PARTS LIST

<i>PART NUMBER</i>	<i>DESCRIPTION</i>
3B2882B	RADIO TRANSMITTER
3B2883C	RADIO RECEIVER
020-506-0250	CAN ADAPTOR CABLE 25'
B20032B	FAST CHARGER SUPPLY, 12 VDC CAR
B20072A	FAST CHARGER SUPPLY, 110VAC WALL
3B2884B	EXTERNAL WIRING HARNESS, AUTOCRANE OMNEX CONVERSION HARNESS
3B2889B	EXTERNAL WIRING HARNESS, IMT 7500-10000 OMNEX CONVERSION HARNESS
3B288CB	EXTERNAL WIRING HARNESS, GENERIC
3B288DB	EXTERNAL WIRING HARNESS, IMT 2020, 2820,3820, 5525, 6025, and 6625 OMNEX CONVERSION HARNESS
3B288FB	EXTERNAL WIRING HARNESS, MAINTAINER
3B288ZA	EXTERNAL WIRING HARNESS, MAINTAINER 6000 TT

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.

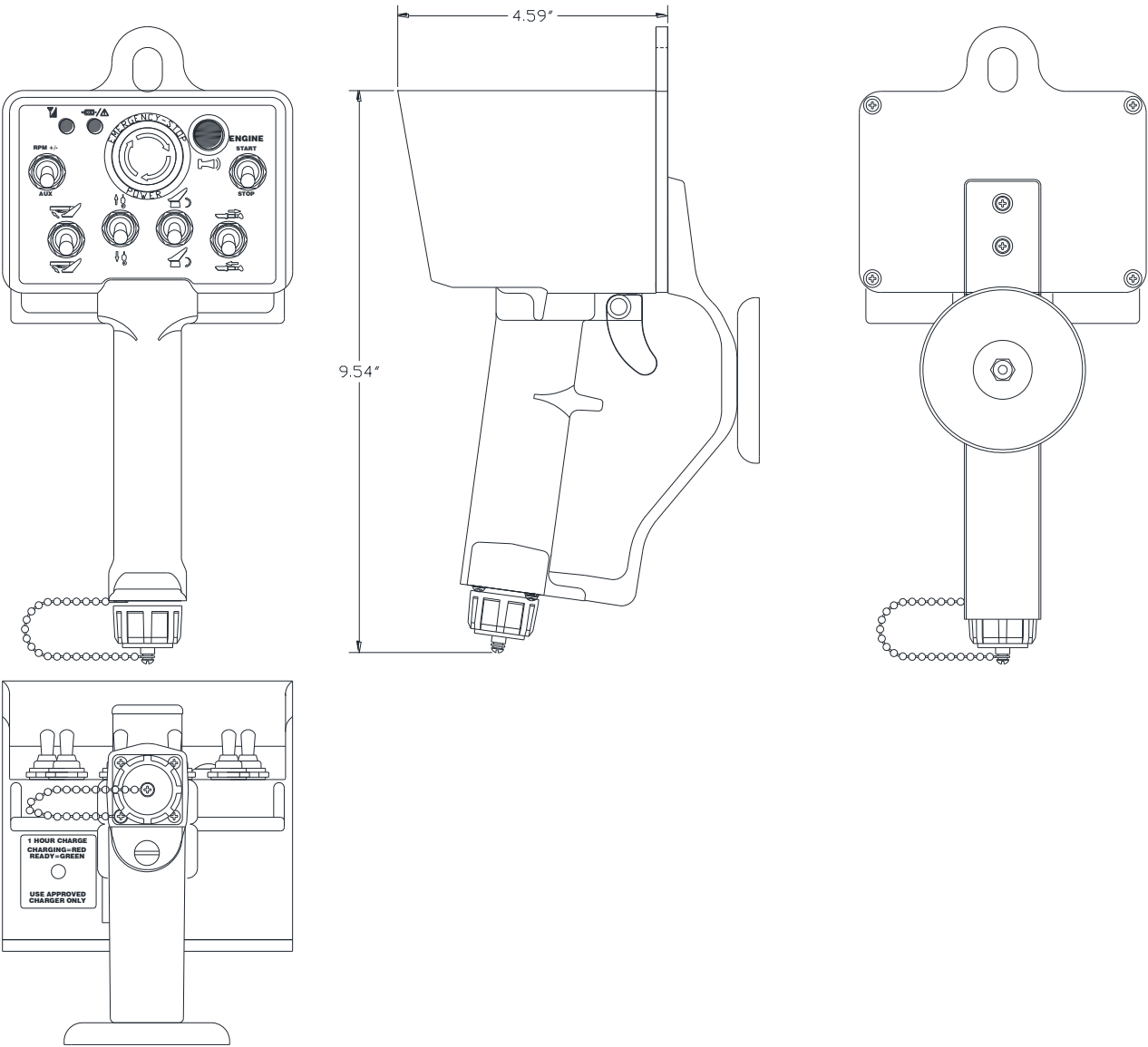
WARNING:

The GUIDER 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.

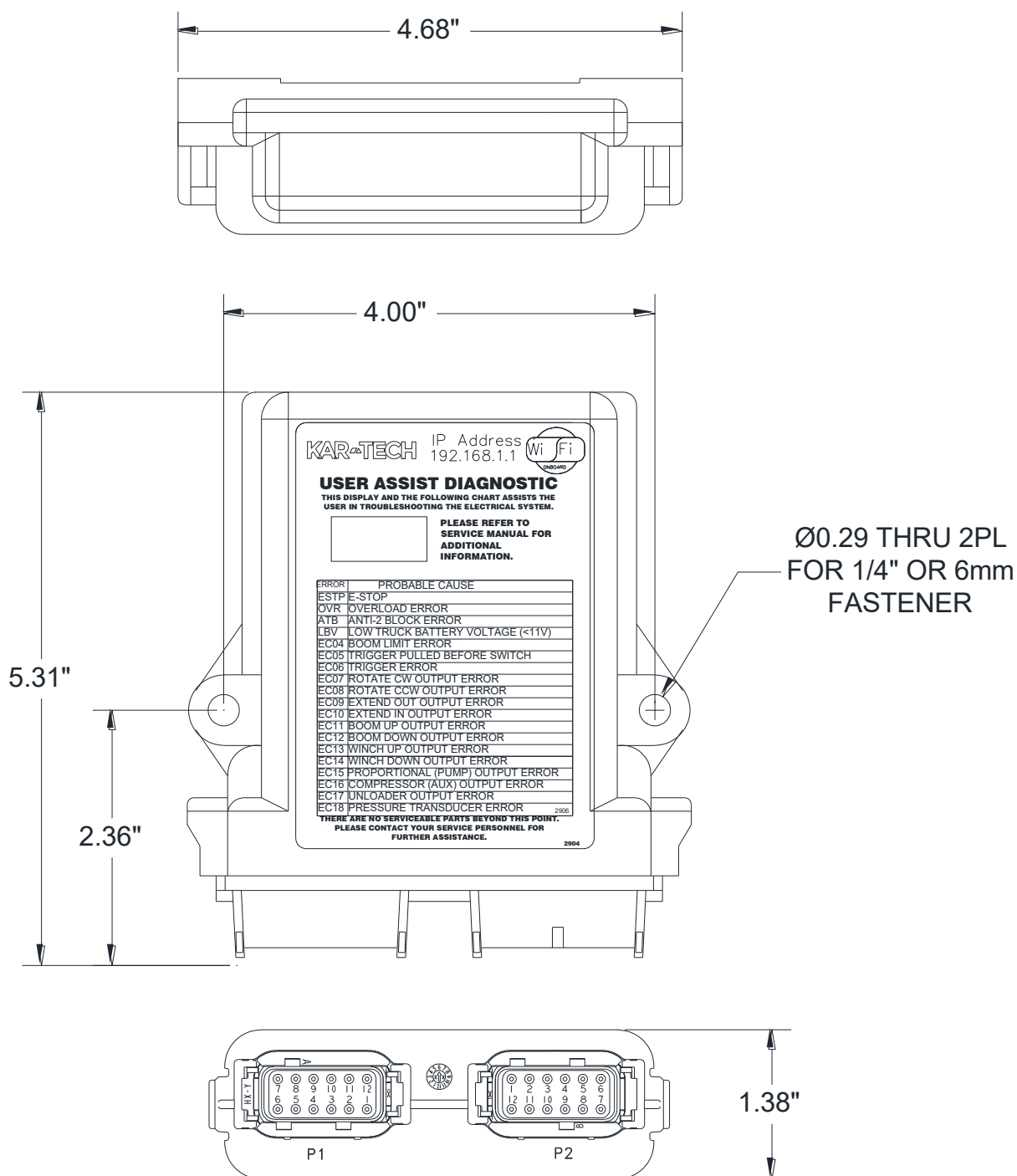
GUIDER REMOTE

TRANSMITTER PICTORIAL



GUIDER REMOTE

RECEIVER PICTORIAL



GUIDER REMOTE

SPECIFICATIONS

FCC ID: P4U-MOD164

Industry Canada Certification Number: 4534A-MOD164

EQUIPMENT CLASS: PART 15 SPREAD SPECTRUM TRANSMITTER

TRANSMITTER

Power supply 3.7V Li-Ion Rechargeable Battery
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

Power supply voltage 9-30VDC
Operating temperature -40°C to +85°C
Storage temperature..... -40°C to +100°C
Outputs 5.0A max each, sourcing, 20A system max
Digital Inputs (when equipped) supply voltage
Analog Inputs (when equipped) 0-5VDC/4-20mA
RF Frequency 902-928 MHz
Vibration 3G to 200Hz
Shock..... 100G
NEMA 4X

GUIDER 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.