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# TRS 05 / PATB3 (A2B only)



## **INSTALLATION / SETUP MANUAL**

P/N 190203 Revision - 03/09/2006

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### MANUAL REVISIONS

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### **TABLE OF CONTENTS**

1	INSTALLATION	. 2
	1.1 A2b switch mounting	. 2
	1.2 Receiver mounting.	. 3
	1.3 Antenna mounting	. 3
2	SYSTEM DESCRIPTION	. 4
	2.1 Receiver Module	. 4
	2.1.1 LEDs	4
	2.1.2 Control Identification	5
3	OPERATION	. 6
-	3.1 Receiver	. 6
4	SETUP A SENSOR/MENU OPTIONS	. 7
	4.1 Install Sensor / Transmitter	. 7
	4.2 Uninstall Sensor / Transmitter	. 8
5	SPARE PART NUMBERS	. 9

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### 1 INSTALLATION

### 1.1 A2B SWITCH MOUNTING

Replace the existing switch at the boom tip with the new 608125 Radio A2B switch/transmitter, PATB3 with the spread spectrum technology.

Install the standoff to the boom head using 2 5/16x3/4" HEX bolts. The hole pattern for the standoff is the same as that of conventional PAT A2B switches. In most cases the standoff can be mounted in the same location as the conventional switch.



If not replacing an existing switch, the proper location would be one that allows the switch to rotate freely without being obstructed by any part of the boom head. It should be mounted close to the dead end mounting gusset. The switch should normally be mounted on the cab side of the crane.



For jib installations, locate the switch close to the jib head.

Remove the lynch pin from the standoff. Slide the A2B switch onto the standoff. Replace the lynch pin into the standoff. Install the weight and chain onto the A2B switch.

### 1.2 RECEIVER MOUNTING

The receiver module should be mounted so the operator can view the LEDs and setup the system for operation. The location of the receiver should be in direct line of site of the transmitter and blocked by as little metal as possible between the transmitter and receiver. However, in some cases the receiver has been installed surrounded by metal and worked well. The location needs to be tested before mounting the hardware. If the signal is lost, the box/receiver indicates a link error.

Securely attach the receiver onto a solid surface using the mounting holes.



The TRS 05 receiver will mount in the same place as the A2B receiver. Attach the 13ft long antenna base and whip to the TRS 05; and mount the magnetic antenna parallel to the ground, as shown



below.

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# 2 SYSTEM DESCRIPTION

### 2.1 RECEIVER MODULE

The receiver module has the following functions:

- Visual indication of receiver power, radio links (sensor on line), sensors low battery, and alarm conditions.
- Installs/uninstalls a sensor
- Allows a zero point and output adjustment of a load sensor.



### 2.1.1 LEDs

Red Power LED	Power is applied to the circuit board.	
Red alarm LED	An installed sensor is indicating an alarm, or communication as been	
	lost to an installed sensor.	
Green LED 1 ON	Sensor on channel #1 is installed and communicating correctly.	
Green LED 1 FLASHING	Sensor #1 is not communicating correctly.	
Green LED 1 OFF	No sensor is installed on channel #1.	
Yellow LED 1 ON	Sensor #1 batteries are low and need replaced. Note that the sensor	
	is still operating correctly.	
Green LED 2 ON	Sensor on channel #2 is installed and communicating correctly.	
Green LED 2 FLASHING	Sensor #2 is not communicating correctly.	
Green LED 2 OFF	No sensor is installed on channel #2.	
Yellow LED 2 ON	Sensor #2 batteries are low and need replaced. Note that the sensor	
	is still operating correctly.	
Green Heartbeat LED	This will flash during normal operation. If it is a solid or off, the	
	receiver has a software error or the board has a component failure.	

### 2.1.2 Control Identification



Heartbeat LED: When blinking, this small surface board mounted green LED indicates the system is operation properly.

ID button: The red ID button, located below the software chip on the receiver board, is used to setup the sensor transmitter to the receiver.

### **OPERATION**

### 2.2 RECEIVER

Upon switching on crane ignition switch, the system starts with an automatic test of the receiver board, LEDs and electronic components. The red power LED should be on and the green LEDs that sensors have been linked to should also be on.

If an alarm condition exists investigate and clear the condition before operation and using the system. During the normal operation of the system, the POWER and SENSOR ON LINE (if linked to a sensor) LEDs should be on.

### POWER LED

The POWER LED shows that the receiver is getting power from the crane. The receiver is on any time the crane is operating and supplying power to the system.

### SENSOR ON LINE LED

The SENSOR ON LINE LED indicates the status of communication of the transmitter(s). During normal operation of the system, the LED will be on. The LED will flash if communication or transmission between the sensor transmitter and the receiver is interrupted or lost. The system should not be operated if the SENSOR ON LINE LED is flashing. If the LED is off no sensor is linked to this channel.

#### LOW BATTERY LED

The low battery indicator (yellow LED) will light indicating that you have a limited time to operate before the sensor battery life ends. When a low battery condition occurs, the follow 2 conditions will exist:

- 1. The yellow LED will come on the TRS 05 for the sensor.
- 2. The signal for that sensor will cycle between input signal and max signal, which causes a system fault and alarm for 25 seconds. The intent is to warn the operator that something is not correct with the system. If the receiver is powered off/on and the low battery condition exists, the signal will again cycle for another 25 seconds.

When the battery level is to the point that it is too low to operate, the system will display a loss of communication and alarm. Use any off-the-shelf alkaline C-cells; Duracell, Eveready, etc. After replacing the transmitter batteries, the receiver should clear the low battery indication.

### ALARM LED

This LED will light simultaneously with the engaging of the lock out solenoids (if installed).

#### Test the electronics

Cycle the power to the system, each LED on the receiver will light for 2 seconds when the system is powered. All of the indicator lights must come on or the system is not functioning properly. If any light does not function, do not use the system until it has been repaired.

Refer to receiver operating manual for pre-operational inspection.

If a green sensor on line LED starts to flash, this means a sensor is installed and the communication link has been lost. When communication has been lost to a load cell, the receiver will output the maximum voltage signal for the output sensor (9VDC).

If a low battery LED is on, replace the batteries in the linked transmitter, refer to Battery Replacement.

The TRS 05 setup/calibration procedure allows the operator to input the type of sensors being used, and adjust the zero point and output adjustment of a load sensor. The operator must complete the setup procedure for each sensor.

### **3 SETUP A SENSOR/MENU OPTIONS**

While the ID button is held or in the calibration process, the sensor outputs will not correctly indicate the status of other installed sensors. Correct operation will return when the menu is exited or calibration process is complete or system is powered off/on.

The sensor setup and calibration is completed with the one ID button, pressing it starts the menu and releasing the button selects the menu or action the operator want to complete. If an incorrect menu is activated or the button is released accidentally, simply cycle the power and start over.

### 3.1 INSTALL SENSOR / TRANSMITTER

Press and hold the ID button for 3-5 second the 1<sup>st</sup> green LEDs will begin blinking. When the LED is blinking, indicating the channel to be installed, release the ID button, and the receiver begins to search for a transmitter ID code. The green LED will become solid when the transmitter is linked.

As the ID button is held and released at the blinking LED, the following actions will occur: Green LED 1 Blinking: Search for / Install sensor 1. LED will turn solid when the sensor is found.

NOTE: A new sensor or transmitter maybe install over an existing link, when this occurs the previous link and code are removed from memory and the new one stored.

### 3.2 UNINSTALL SENSOR / TRANSMITTER

If a sensor is setup on the channel the LED will be on, press and hold the ID button (9-15 seconds) through the Install Sensor mode (blinking LEDs1-2) until the correct 1-2 LED is solid. When the correct LED is solid, channel to be uninstalled, release the ID button. The sensor for the selected channel/LED 1-2 will be uninstalled and the system will be in normal operating mode.

As the ID button is held (9-15 seconds) through the Install Sensor mode (blinking LEDs1-2) and released at the solid LED, the following actions will occur:

Green LED 1 solid: Uninstall sensor 1. Green LED 2 solid: Uninstall sensor 2.

This is a basic overview table of the menu selections fro the TRS 05. Press and hold ID button, release the button at the desired indication (or the number seconds) defined in the following table.

NOTE: If an incorrect menu is activated or the button is released accidentally, simply cycle the power and start over.

Menu Selection Release ID Button	Indication	Indication Starts (Sec)	Indication Ends (Sec)
Install/setup sensor on channel 1	blinking green LED 1	3	6
Install/setup sensor on channel 2	blinking green LED 2	6	9
Uninstall a sensor on channel 1	solid LED 1	9	12
Uninstall a sensor on channel 2	solid LED 2	12	15
Exit/No action	LEDs off no action	16	

Spare Part Numbers

### 4 SPARE PART NUMBERS



6608124 RADIO, RECEIVER, TRS05-2 SPREAD SPECTRUM



6600918 CABLE ASSY, 10' 4-COND.



Antenna spare parts reiteration

6608125 A2B Switch