

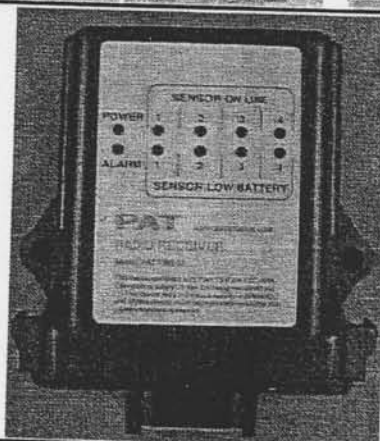
www.hirschmann.com



HIRSCHMANN

PAT

TRS 05



OPERATOR'S / SERVICE MANUAL

P/N 031-300-190-188 Revision B 08/30/2005

3 FEATURES

The PAT TRS 05 has the following features:

- Can be hardwired to most PAT systems, and certain crane systems.
- Wireless operation of 4 sensors.
- Minimum of 500 feet LOS.
- Easily and clearly shows the operator required information for the radio sensor.
 - Power LED (red)
 - Link condition LED (green), LED on sensor installed and linked, LED flashing installed but link or communication has been lost, and LED off sensor not installed.
 - Low battery indication LED (yellow)
 - Warning of Error LED (red)

4 SYSTEM DESCRIPTION

4.1 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.

Red Power LED

Red Alarm LED

Sensor On Line

Green LED 1

Green LED 2

Green LED 3

Green LED 4

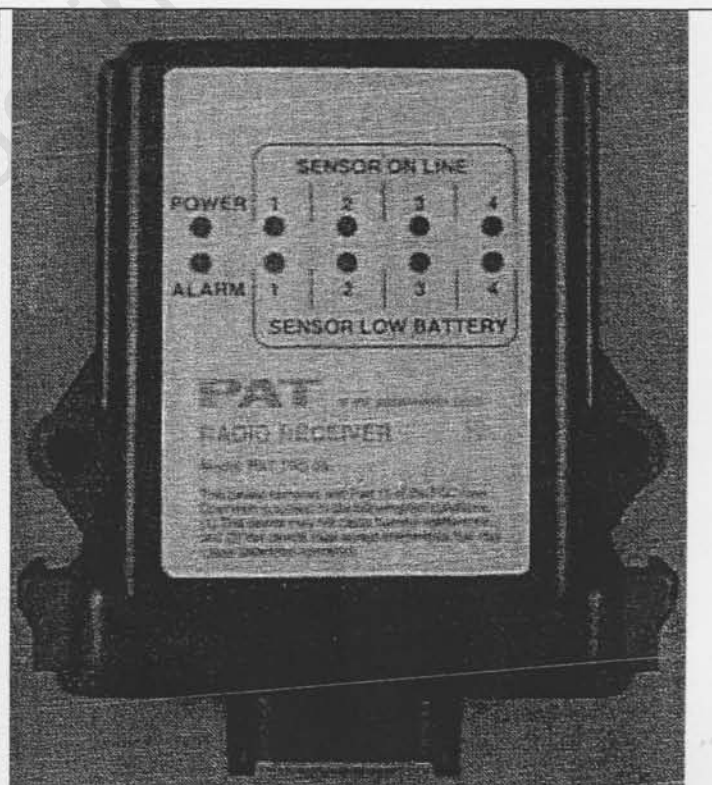
Sensor Low Battery

Yellow LED 1

Yellow LED 2

Yellow LED 3

Yellow LED 4



6.2 REPEATER

The repeater module is mounted on the boom tip in line of sight to the receiver and the load cell. The main purpose of the repeater is to receive and transmit the load cell ID code of the load cell during operation. If the load cell line of sight is obstructed by a barrier (i.e. wall or building), the repeater should prevent and signal loss.

Power cable connections: PIN 1 - +UB (9 to 30VDC), PIN 2 - GND

6.3 CENTRAL UNIT INSTALLATION

The power supply will be from 10- 30 volt DC. The signal output of the TRS 05 is dependent on the placement of red bridges installed on the channel jumpers: 1 (for signal #1), 2 (signal #2), 3(signal #3), and 4(signal #4). Each jumper has 4 bridge positions as follows:

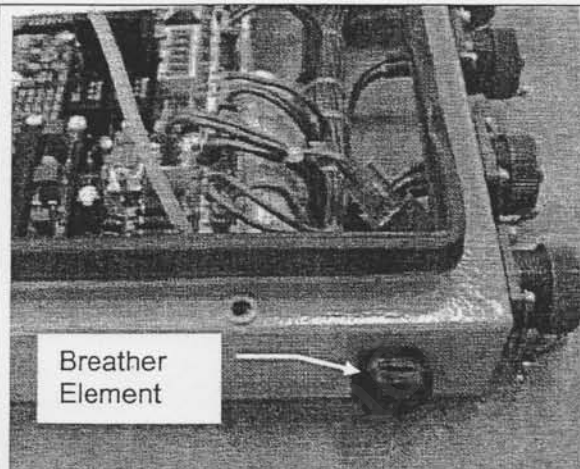
1-2 voltage output 0..5V (required for the standard DS350 system)

3-4 amperage output 4..20mA (required for the modular DS350 system)

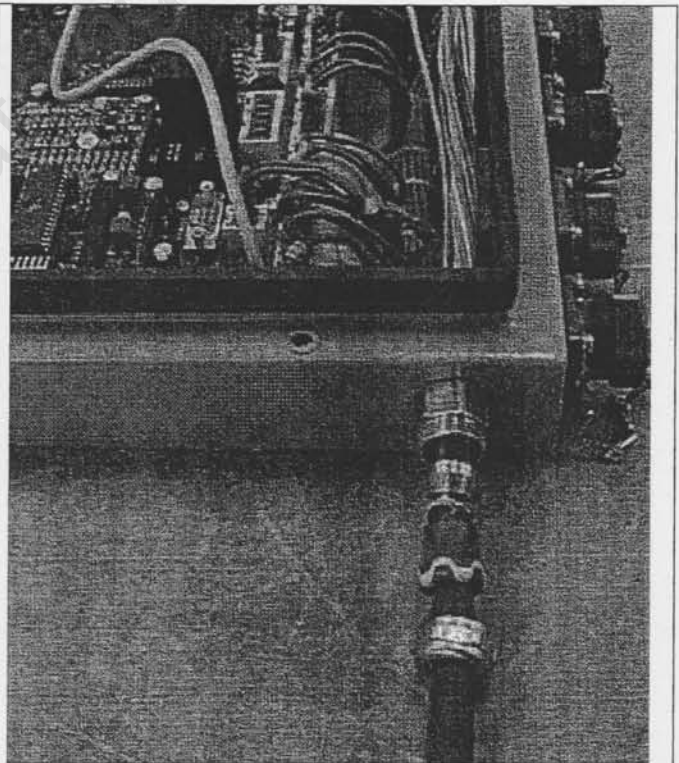
5-6 digital output

7-8 A2B switch output

6.3.1 TRS 05 Installation on the DS350 modular system central unit.



1. Remove breather element, use a M21 wrench to hold the PG11 nut inside the central unit.
2. Insert PG11 strain relief and tighten nut.
3. Insert cable as shown, so the shield will ground on the strain relief cone. There should be about 12 inches of cable inside the central unit to make the proper connections.
4. Connect to the central unit as shown below. Refer to system wiring below



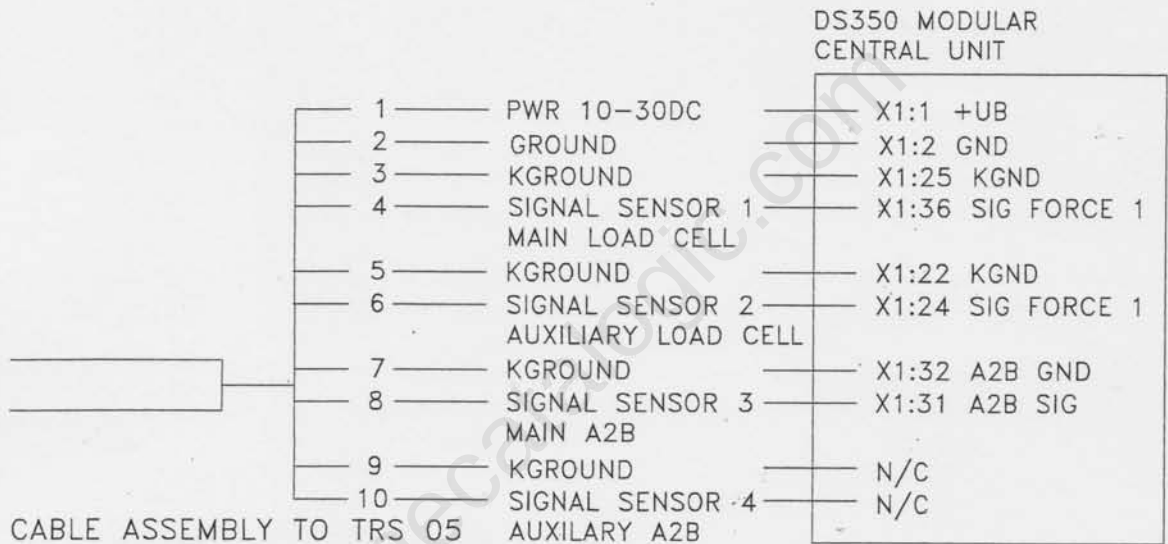
Wiring information:

Power: the TRS 05 wires on X1:1 and X1:2 will need to be added to the existing wiring. Do not remove the existing wire on these terminals.

Radio Load Cell wires on signal sensor 1 and 2: Remove the existing wires from terminal X1:25, X1:36, X1:22, and X1:24 and add the TRS 05 wire as shown.

Hardwired Anti Two-Block Switch: If the hardwired A2B switch is being used; do NOT remove the existing wires from X1:31 and X1:32. Do NOT wire # 7 and 8 from the TRS 05.

Radio Anti Two-Block Switch: If one or two radio A2B switch(es) are being used; remove the existing wires from X1:31 and X1:32 and add the TRS 05 wire as shown. The second switch on signal sensor 4 does not need to be wired. The TRS 05 software recognizes an A2B switch is connected to signal sensor channel 3 and 4; therefore, if either switch is opened the signal is sent to the central unit.



7 TRS 05 SENSOR INSTALLATION

7.1 INSTALL SENSOR / TRANSMITTER

Setup the sensors on the 4 channels with the sensor as described below and mark the sensors, i.e. CH1, MAIN, or LOAD 1. Note: The following list corresponds with the installation wiring in this manual. Tip: bring the sensor close to the TRS 05 receiver/cab, not necessary but will simplify the procedure. Remove the battery covers from the sensors to be installed.

Main load cell - channel 1; Press and hold the ID button for 3-6 seconds until the 1st green LED's will begin blinking and release the ID button. The receiver begins to search for a transmitter ID code. On the load sensor/transmitter, remove the card from the batteries or remove two batteries for 10 seconds and replace them. In less than 10 seconds, the 1st green LED will become solid when the transmitter is linked.

Auxiliary load cell - channel 2; Press and hold the ID button for 6-9 seconds until the 2nd green LED's will begin blinking and release the ID button. The receiver begins to search for a transmitter ID code. On the load sensor/transmitter, remove the card from the batteries or remove two batteries for 10 seconds and replace them. In less than 10 seconds, the 2nd green LED will become solid when the transmitter is linked.

Main A2B switch - channel 3 (If included as system option); Press and hold the ID button for 9-12 seconds until the 3rd green LED's will begin blinking and release the ID button. The receiver begins to search for a transmitter ID code. On the A2B switch/transmitter, remove the card from the batteries or remove two batteries for 10 seconds and replace them. In less than 10 seconds, the 3rd green LED will become solid when the transmitter is linked.

Auxiliary A2B switch - channel 4 (If included as system option); Press and hold the ID button for 12-15 seconds until the 4th green LED's will begin blinking and release the ID button. The receiver begins to search for a transmitter ID code. On the A2B switch/transmitter, remove the card from the batteries or remove two batteries for 10 seconds and replace them. In less than 10 seconds, the 4th green LED will become solid when the transmitter is linked.

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

7.2 UNINSTALL SENSOR / TRANSMITTER

If a sensor is setup on the channel the LED will be ON, press and hold the ID button (16-28 seconds) through the Install Sensor mode (blinking LEDs1-4) until the correct 1-4 LED is solid. When the correct LED is solid, channel to be uninstalled, release the ID button. The sensor for the selected channel/LED 1-4 will be uninstalled and the system will be in normal operating mode.

As the ID button is held (16-28 seconds) through the Install Sensor mode (blinking LEDs1-4) 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.
- Green LED 3 solid: Uninstall sensor 3.
- Green LED 4 solid: Uninstall sensor 4.

Fixed Anchor (Deadman)

Test load to be applied by hoisting against a fixed anchor or deadman equipped with a means for measuring loads accurate to $\pm 1\%$. If the weights of all additional equipment such as blocks, slings, sensors, etc., are included in the test load, the total load is to be known to an accuracy of $\pm 1\%$.

The system accuracy is to be determined from the following formula:

$$\frac{\text{Indicated Load}}{\text{Actual Load}} \times 100 = \% \text{ of Load}$$

10 SERVICE AND TROUBLESHOOTING

10.1 SERVICE

Daily maintenance of the system consists of inspecting:

1. The electrical wiring connecting the various parts of the system.
2. If electrical wiring is damaged, it shall be replaced immediately.
3. If the insulation is worn on the electrical wiring or antennas are damaged, these parts shall be replaced.
4. A damaged or punctured housing or cover must be replaced immediately to prevent ingress of water and damage to the internal circuitry.

Other than correcting the problems identified in the Malfunctions Table and replacing faulty mechanical parts and cables, no other repairs shall be made.

Receiver LED	Definition
LED Sensor On Line 1 through 4 (Green)	Indicates the status of the communication link between sensor 1-4 transmitter and the receiver. Failure of the communication link will cause the Green LED to flash and the signal output will change to the following condition: • 4..20mA output will be 0mA • 0..5V output will be 5VDC
Alarm LED (Red)	Indicates a lock out condition. This LED will light simultaneously with the engaging of the lock-out solenoids (if installed).
LED Sensor Low Battery 1 through 4 (yellow)	When the light goes off, it indicates that the battery of the sensor 1-4 transmitter needs to be replaced.

10.2.2 Repeater

The red power LED should be on after switching on the repeater from the crane ignition switch, the system starts with an automatic test of the repeater board, LEDs, and electronic components. The other red LED blinks when the repeater is transmitting a signal. This can be compare to the load cell transmitter when sitting side by side; the repeater module should transmit immediately after the load cell.

10.3 TROUBLESHOOTING MOISTURE

The receiver and repeater contain electronic components and have an IP65 protection rating. These electronic components cannot be designed to withstand exposure to moisture over a longer period of time. If you find water or moisture inside any of the housings, the source for the water ingress has to be detected and corrected to ensure proper operation.

There are two major possibilities for the occurrence of excessive moisture inside an enclosure:

- 1) Water ingress; caused by a cracked or broken housing or lid, or a defective gasket.
- 2) Condensation

This outline gives instructions for detecting the cause for excessive moisture by using simple troubleshooting methods and how to prevent the moisture ingress from happening again.

Full Version Available

PAT TRS 05 Load Moment Indicator Service Manual

PAT TRS 05 load moment indicator service manual, covering sensor install, calibration and troubleshooting. 29-page searchable PDF. Instant PDF download.

VIEW THE FULL MANUAL

<https://machinecatalogic.com/pat-trs-05-load-moment-indicator-service-manual/>

Book No: 031-300-100-188 · File Pages: 29 · File Count: 1 · File Language: English