PAT America, Inc.
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PAT America Motion Alert
Instruction Manual

Description
The Pat Motion Alert System is intended to provide a machine operator with the ability to warn personnel within range of a moving load when motion is imminent calling attention to the dangerous, silent moving load. Attached to the load, the Motion Alert's Beacon is controlled wirelessly by the equipment operator. The system consists of the Beacon, typically attached to a crane hook block or to the actual moving load, and a remote Control Unit that activates the Beacon's alarm and sets the signal mode – audio, visual or both. The system allows a crane operator to signal riggers when the crane hook and load is going to start moving, or a fork truck driver with a large load obstructing his view to warn personnel that a load is coming their way.

Installation Instructions
Beacon: The Beacon is attached to the load with the supplied carabineer or nylon strap or by hardware supplied by the user. **It is critical that the Beacon is attached suitably to avoid accidental detachment allowing the Beacon to possibly injure personnel.** The beacon can be attached either to the machine, a crane hook block or directly to a load. In situations where large loads are being moved such as steel beams, one beacon may be attached to each end and set to trigger from the same Control Unit.

Control Unit: There are two versions of the Control Unit, a battery powered portable unit and a vehicle-powered unit run off a vehicle's power system. Either unit can be permanently mounted. The Control Unit is mounted in the machine cab with the alarm button convenient to the operator using the supplied velcro strips or with optional mounting brackets and hardware. The vehicle-powered unit is wired as shown in the table. (Input Voltage 9-30VDC)

Wire Color	Function
Black	Common
White	Pendant
Red	Power
Green	Auto In 1
Brown	Auto In 2
Blue	Auto In 3
Orange	Auto In 4
Yellow	Auto Disable

In the vehicle-powered unit, up to four machine signals can be connected to cause the Beacon to alarm automatically. The inputs must be continuous signals, 5VDC up to the input voltage. Each signal is separated by a diode, so the input signals are isolated from one another. To enable the automatic feature, connect the disable wire (yellow) to common (black.) If the automatic function is not used, disable it by connecting the disable wire (yellow) to the power wire(red.) The unit is shipped in this disabled configuration.

Optional Pendant Switch
A pendant switch can be used with either Control Unit to remotely position the alarm button for the operator's convenience, such as attaching it to a joystick or a crane control pendant. For use with the portable Control Unit, plug the pendant into the receptacle at the bottom of the Control Unit. For use with the vehicle-powered unit, cut the plug off the pendant and attach the two wires across the pendant (white) and common (black) leads of the multi conductor cable.

Instructions for Use
Beacon: Attach the Beacon to the crane hook, the load being moved or to the machine in the area of personnel danger. **It is critical that the Beacon is attached suitably to avoid accidental detachment allowing the Beacon to possibly injure personnel.** For the best communication between the Beacon and the Control Unit, try to place the Beacon on the side of the load nearest the Control Unit position.

Control Unit: The Control Unit sets the alarm mode and triggers the Beacon. Pressing the Select Mode button scrolls through the options for visible alarm, audible alarm or both. If the unit is wired into the machine for automatic alarm, the auto alarm option can also be selected when scrolling. The Alarm On/Off button on the Control Unit turns the Beacon on or off. Pressing once causes the Beacon to alarm. Pressing the button again will turn off the Beacon. The LED on the Control Unit indicates the status of the Beacon. In automatic mode, signals from the machine automatically trigger the alarm while these functions are in use. In automatic mode, the Alarm On/Off button will still turn on the Beacon, but it cannot turn off the Beacon that is being activated automatically. The LEDs on the vehicly-powered unit are on continuously, and on the portable Control Unit they stay on momentarily.

Replacing the Batteries
Control Unit: Remove 4 screws that hold back and front of unit together. Once open, replace 9V battery.
Beacon: Remove the three screws holding the end of the unit with the light and alarm to the yellow case. Slide the assembly out and replace the three D cells. This also provides access to the learn switch required for teaching the Beacon a new address. (see below)

Setting Address for Motion Alert Systems Used in the Same Area
The Motion Alert system allows you to set the Beacon to respond to any Control Unit. As shipped, the Control Unit and Beacon are addressed to work together. It is possible that you may have received multiple units with the same address so that one Beacon goes off unintentionally when another is activated. The system can be set up so that each Control Unit operates a single Beacon independently, or so that one Control Unit operates multiple Beacons (to have a beacon on each end of a long beam) or so one Beacon is operated by multiple Control Units (such as a vehicle-powered Control Unit in a cab and a portable Control Unit in use by an observer.)

Setting the System Address
To set the address of the Control Unit and beacon, you first set the Control Unit address. The Control Unit then teaches one or multiple Beacons this address.

To change the Control Unit address and place it into teach mode, press and hold the Select Mode and Alarm On/Off buttons for 5 sec until the alarm led starts flashing. The Control Unit is now in teach mode and can be readdressed, if necessary. The visual alarm mode LED blinks from 1-8 times to indicate the current address. To change address, press Select Mode button to increment through each address. When you stop pressing the Select Mode button, the LED will flash the new address. The Control Unit is still in teach mode, so this new address can be taught to the Beacon.

To teach the Beacon the Control Unit address, open Beacon and press learn button for 2 sec. 1 beep from the Beacon indicates learn mode is enabled, 3 beeps indicates the address is learned. 5 beeps indicate an error - repeat process.

To complete the process, press the Alarm On/Off button on the Control Unit or wait 2 min to automatically return to operating mode.

Optional Parts
Permanent Mounting Brackets for mounting the Control Unit
Pendant Switch to provide a remote alarm switch, possibly attached to a joystick.

Warranty
PAT America warrants this product to be free of manufacturing defects for a period of 1 year. PAT will repair or replace the unit at its discretion. The following items are specifically not covered under warranty:

- Misuse or abuse that includes using the product in ways for which it was not intended.
- Damage due to exposure to corrosive materials.
- Damage to the product due to incorrect installation or operation.
- The warranty is void if any physical changes are made to the product by anyone but a PAT authorized service representative.
- PAT is not responsible for any consequential damages.

FCC Statement
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by PAT America could void the user's authority to operate this equipment. No changes of any kind are permitted to the antennas as supplied with the units.
Operating frequency: 916.48MHz, Output power: 1mW

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