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PCS 30.5

P_{AT} C_{ontrol} S_{ystem}

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PAT America, Inc.



OPERATOR'S / SERVICE MANUAL

P/N 031-300-190-174 Revision A 10/10/2003

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MANUAL REVISIONS

REV	DATE	NAME	DESCRIPTION
-	09/12/03	CSH	Create operator's manual ECN 03-063
A	10/10/03	SB	ECN 03-063

1 GENERAL INFORMATION

The PAT PCS 30.5 System has been designed to provide indication from various types of sensors, i.e. pressure, length, angle, and anti-two block. The purpose of the system is to lock out compare the boom geometry and pressure in lifting cylinder to the pressure and radius tables entered into the system memory by the crane manufacture. When the maximum pressure for a given boom length and angle is met as defined by the pressure and radius tables, the system.

Angle limits can be set by the user. When these limits are exceeded the system will warn the operator by sounding an audible alarm, flashing the backlit LCD and de-energize the lockout relay.

The A2B system will warn the crane operator of a two-blocking condition of the crane. If a two-blocking condition is approached, the system will warn the operator by sounding an audible alarm, flashing the backlit LCD and locking out those functions which may aggravate the crane's condition, whenever applicable.

NOTE: The term "two-block" is a crane term that refers to a condition when the load handling device comes in contact with the boom head. This condition, if not prevented, may cause the wire rope to break, allowing the load to fall. Either raising the load into the boom head, or telescoping the boom out without paying attention to the hoist line can cause a "two- block" condition.

2 WARNINGS

The PAT PCS 30.5 System is an operational aid, which warns a crane operator of approaching two-block conditions, which could cause damage to equipment and personal injury.

This device is not, and must not be a substitute for good, sound operator judgment, experience and use of accepted safe crane operating procedures.

The responsibility for the safe operation of the crane remains with the crane operator who must ensure that all warnings and instructions supplied are fully understood and observed.

Prior to operating the crane, the operator must carefully and thoroughly read and understand the information in this manual to ensure that the operation and limitations of the system and the crane are known.



WARNING

The system can only work correctly, if all sensors/transmitters have been properly set. For correct setup, the operator has to answer thoroughly and correctly all questions asked during the setup procedure in accordance with the real rigging state of the crane. To prevent material damage and serious or even fatal accidents, the correct adjustment of the system has to be ensured before starting the crane operation.

Always refer to operational instructions and load charts provided by the crane manufacturer for specific crane operation and load limits.

4.2 OPTIONS SETUP

Under the OPTIONS menu the operator can view or change the following features.

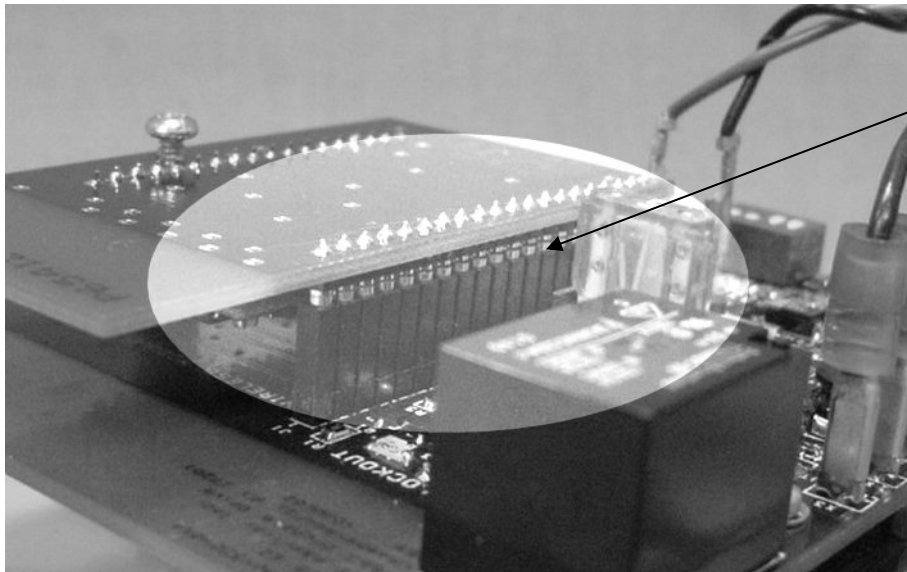
TEST SEQUENCE: will perform the start up test function on the console without operation mode confirmation selection.

LANGUAGE: The system can be setup to display text in both English and Spanish.

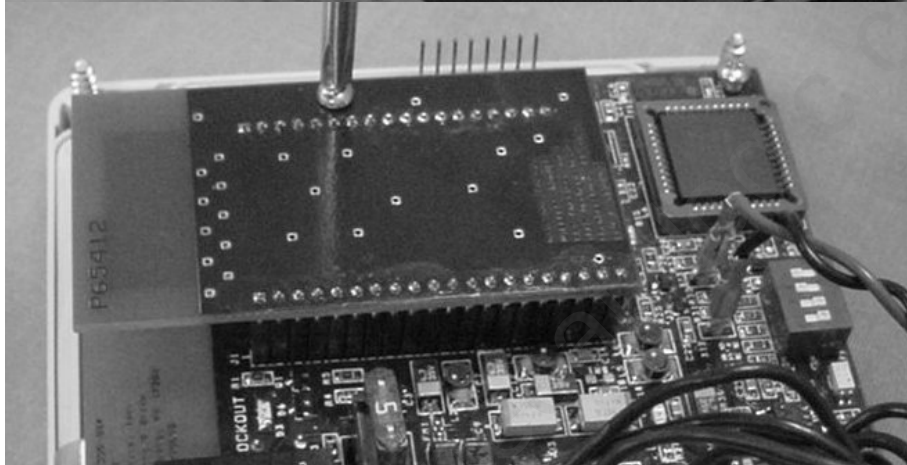
CONTRAST: Change the contrast of the display.

INPUTS: View the sensor output values in milliamps for the piston transducer, rod transducer, and length sensor, and the angle sensor output in bits. Refer to the troubleshooting section for further information.

The options are selected by using the select button  and the arrow keys  or  to display and select OPTIONS function.



Align the pins and press the radio module into place. Make sure that they are correctly aligned and that they are firmly seated.



Tighten the screw.

Reassemble the console. Make sure that the console lid is completely seated and properly tightened.

8.5 RADIO A2B SETUP

In order to use the A2B, the A2B transmitter must first be set up to with the console.
Add the first A2B sensor to the console by pressing



SENSORS/A2B 1/ RADIO. The console will show "SEARCHING". Pull and release the cord of the A2B switch. The switch setup is now complete.

8.6 BATTERY REPLACEMENT

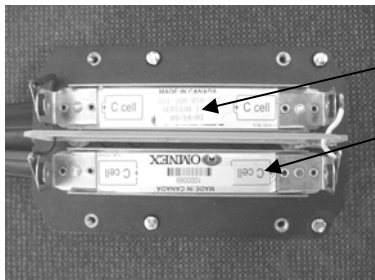
The only maintenance required is to change the batteries when required. Also, check the mounting hardware daily to ensure that there is no damage. Replace any damaged parts before operating the crane.

To replace the batteries, remove the 4 screws from the transmitter housing. Install 4 fresh batteries into the proper location and direction as indicated on the battery holder.

Make sure that the cardboard tube is installed as shown.



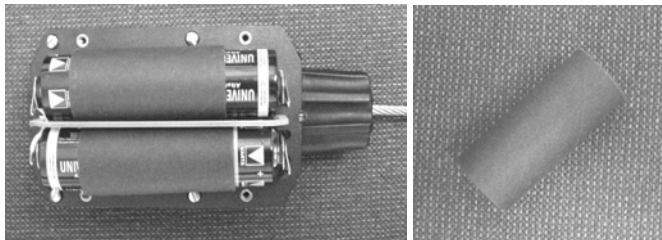
LOOSEN 4 SCREWS



Software version

Battery direction

BATTERY DIRECTION LABEL



INSTALLED BATTERIES IN CARDBOARD TUBE

9.3 ERROR CODES

E05	Indicated Boom length is beyond limit.	- Indicated Boom length is beyond limit. - The length sensor adjustment was modified, e.g. cable slid off the length sensor reel. - Clutch between length sensor pot and drive is defective - Length potentiometer defective.	- Reset length zero point - Reset length zero point - Replace length pot - Replace length pot
E11	Below lower limit for the boom Length.	- Length sensor potentiometer defective. - Electronic board in the measuring channel defective.	- Replace length sensor potentiometer. - Replace board.
E21	Above Upper limit for boom length.	- Length sensor potentiometer defective. - Electronic part in the measuring channel defective.	- Replace length sensor potentiometer. - Replace board.
E12	Below the lower limit for pressure piston side	- Cable between the central unit and pressure transducers defective - Pressure transducer is defective. - Electronic component in the measuring channel is defective.	- Check cable as well as plugs, replace, if need be. - Replace pressure transducer - Replace board.
E22	Above Upper limit for pressure piston side .	refer to E12	refer to E12
E13	Below the lower limit for pressure rod side	refer to E12	refer to E12
E23	Above Upper limit for pressure rod side .	refer to E12	refer to E12
E30	No signal or incorrect signal from angle sensor	- wiring fault - Angle sensor defective. - Electronic part in the measuring channel defective.	- Check wiring for damage. - Replace angle sensor. - Replace board.
E19	Reference and/or supply voltage defective	- The supply voltage is falsified by one of the sensors (DAV, LWG) - Electronic component is defective	- Check the voltages on the LMI main board (AGND = MP0). Check sensors, plugs and cable, replace, if need be. - Replace board
E31	Faulty "C" button sensed	- Button forced on always. - Button failure - faulty electronics	- Remove any external clamping device. - Replace face plate - Replace board.

Full Version Available

PAT PCS 30.5 Load Moment Indicator Service Manual

PAT PCS 30.5 load moment indicator service manual with calibration, radio module and service sections. Searchable PDF, 31 pages. Instant PDF download.

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