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By: Engineering Dept.

INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR PF-1210 POSITION SENSOR

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I. General Description

The Jordan PF-1210 Position Sensor is designed to receive a mechanical rotational input and send out an electrical signal proportional to the input shaft position. Limit switches may be specified to actuate within the rotational range of the sensor.

II. Specifications

Standard:

Potentiometer - 1 turn

1K ohms for use with Jordan amplifier

15K ohms for use with Jordan remote indicator

Input shaft rotational ranges available:

$\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, 3, or 5 turns

Optional

Limit Switches - Two adjustable cam actuated, SPDT isolated contact, 10 A (non-inductive) Precision Potentiometer, 1 turn, 1000 or 10K ohms input shaft rotational ranges, up to 60 turns.

III. Storage

If the actuator will not be installed, it should be stored in a clean, dry area where the ambient temperature is not less than -20° F. The actuator should not be stored in a corrosive environment.

IV. Operation

The PF-1210 Position Sensor converts shaft rotation to an electrical signal by means of a potentiometer which is geared to the input shaft. Various gear ratios are available to give full range rotation of the potentiometer. The electrical signal from the potentiometer may be used to indicate position on a remote meter. It may also be used as a feedback signal into a servo amplifier in a closed loop control system.

The optional limit switches are cam actuated and are generally set to operate at the limits of potentiometer travel. The actuating cams can be adjusted to operate the switch at any point within the range of travel.

V. Installation

A. Mounting

The outline dimensions of the sensor are shown on last page. Allow clearance above the sensor to remove the cover. The standard internal wiring is shown on drawing 95B-030706. If a special shaft or special wiring is specified, the appropriate drawings will be supplied with the unit.

B. Start Up & Calibration

The potentiometer and limit switches in the sensor must be aligned with the driving shaft so that the range of the potentiometer coincides with that of the driving shaft.

CAUTION:

The potentiometer may have internal stops which will be damaged if the unit is not properly aligned.

VI. Maintenance

A. Lubrication

The sensor has been lubricated at the factory and should not require additional lubrication.

VII. Adjustments

1. Potentiometer Alignment - sensor supplied only

- a. Remove the sensor cover.
- b. Remove the three (3) screws holding the disc under the potentiometer and lift the disc out.
- c. Replace the potentiometer if necessary and re-assemble on the disc.

Note: The gear must be replaced in the same position to mesh properly with the mating gear. **DO NOT** replace the disc in the sensor yet.

- d. Couple the sensor to the driving shaft and turn it in such a way that the sensor shaft turns in a CCW direction, looking at the end of the shaft. Continue to do this until the limit of travel is reached.

VII. Adjustments cont.

- e. Rotate the loose potentiometer until the resistance between terminals 1 and 2 (for standard wiring) is 10 to 20 ohms.
- f. Replace the potentiometer and disc in the sensor. Rotate disc if necessary to read just resistance. Replace the three (3) mounting screws.
- g. Turn driving shaft towards the other limit of travel. Check the resistance between terminals 2 and 3 (standard wiring).

Note: Do not allow the resistance to go below 10 ohms or the potentiometer will be damaged. The driving shaft must not be turned beyond this point.

B. Limit Switch Adjustment

- a. Couple the sensor to the driving shaft and turn it such that the sensor shaft turns in a CCW direction looking at the end of the shaft. Continue turning to the limit of travel.

- b. Loosen the set screw of limit switch No. 2 cam and rotate the cam until the switch just falls off on-to the flat of the cam. Tighten cam.
- c. Turn the sensor shaft in the CW direction and notice if the switch immediately climbs back up onto the round portion. If not, repeat steps a. and b. above, except that the cam must be rotated to the other side of the flat.
- d. Turn the driving shaft to the other limit (CW on the sensor) and repeated step b. for limit switch No. 1 Note that limit switch No. 2 must not actuate during this movement.

C. Potentiometer and Limit Switches - sensor supplied

Proceed as in section "A" and "B" above with exception in paragraph 1, step f. Here, instead of rotating the potentiometer on the disc, the potentiometer can be rotated on the small bracket by loosening the nut.