Procedure, Field Replacement, Pol Aux Relay Kit, XX04

Approval:

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Revision History

Rev.	ECO	Description of Change	Date
A	8791	Initial release	08-05-2011
B	9041	Clerical revisions	10-03-2011

1. Brief Summary:

Troubleshooting document for diagnosing a fault with and replacing the XX04 series pol aux relay assembly.

2. Checklist:

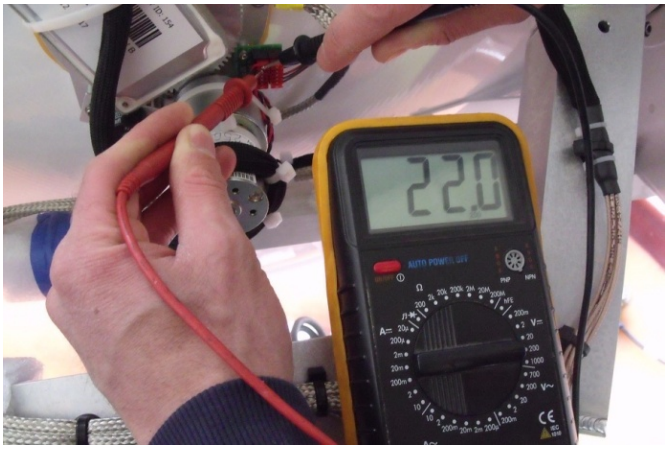
- Test Motor Drive
- Verify Harness

3. Theory of Operation:

The Pol Aux relay sets the pol scale of the feed assembly and acts as a driver for the pol motor. The DAC calculates the pol position based on the vessels GPS location for targeting commands, changes in GPS position and operator inputs. The DAC then sends the command to the PCU, which in turn sends the command to the pol aux relay which outputs 24VDC to drive the pol motor. The motor then drives the feed assembly which turns the pol pot, once the DAC receives the desired feedback from the pot the feed will be in the correct reception position (provided it's calibrated and functioning correctly) and the pol motor drive will stop.

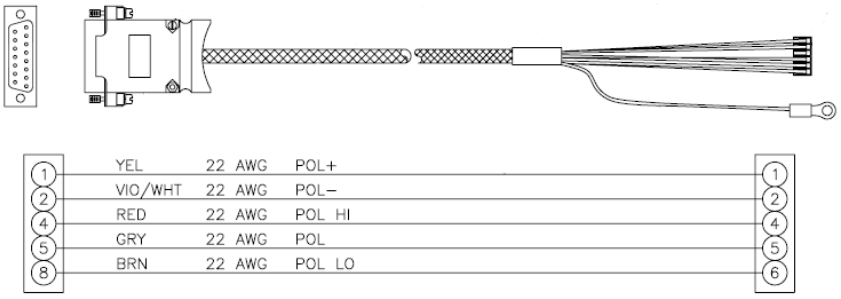
4. Troubleshooting:

If pol drive is being issued on the DAC but the motor isn't moving measure the voltage on the Motors IDC connector. If no voltage is issued whilst drive is being applied the 24VDC isn't being issued from the POL Aux relay. (If the voltage is present but the motor isn't driving the motor is defective).



5. Verify the Harness:

Next check continuity on the harness pins to verify it's not damaged. If the harness is good then the pol aux relay isn't outputting the voltage to drive the motor and needs replacing.



As long as the pol range is within the pot limits the DAC will issue the pol drive command to the PCU motherboard, based on the antenna targeting, a change in the vessels GPS position or operator inputs. The PCU motherboard will then issue the command to switch the pol aux relay to drive the pol motor. The motor will then drive the feed until the correct output from the pot has been received, at which point the feed will be in the correct reception position (providing the system is functioning and calibrated correctly). Therefore there is also the possibility for a pol drive fault to be caused by the PCU motherboard.

6. Replacement Procedure:

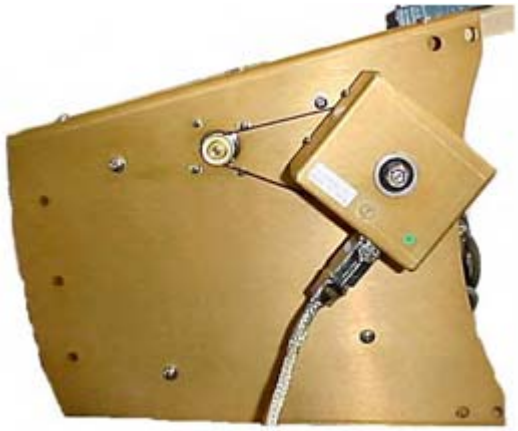
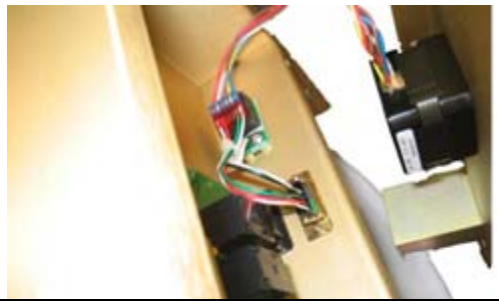
6.1. Tools.

- ½" Wrench/Spanner
- #2 Phillips Screwdriver
- 2mm Flat Blade (terminal) Screwdriver
- 3/8" Socket/Nut Driver
- Loctite 242 and 2760

6.2. Procedure.

Procedure for replacing the xx04 series Pol Aux Relay assembly, Sea Tel kit part number: 135339 (pol aux relay assembly part number: 122202).

***CAUTION:** Power down the pedestal before following this procedure. 1. Using a ½" wrench, remove the bolt securing the EL pan bottom to the level cage spindle plate.	

2. Using a 2mm flat blade screwdriver loosen the retaining screws from the D-sub connector and remove the reference harness from the level cage. 3. Using a #2 Phillips screwdriver remove the ten 10/32 x 3/8" screws attaching EL pan cover to the polang relay assembly, rotate the level cage clock wise to remove the screw behind it. Removing the level cage and belt assembly is not required. Save the hardware for future use.	
4. Carefully pull the EL Pan cover away to expose the level cage motor wiring harness and disconnect the IDC connector from the motor termination PCB.	
5. Using a 3/8" socket/nut driver, remove the three hex nuts and washers and then remove the polang relay assembly. 6. Replace the polang relay assembly and secure with Loctite 242. Re-Install the connections and re-Install the right EL pan and secure using Loctite 242 on the smaller hardware and Loctite 2760 on the bolt securing the EL pan bottom to the level cage spindle plate. (Reverse the procedure from the images provided).