FRENIC INVERTER POLE TUNING PROCEDURE

STEP1

Pole tuning is the most important procedure in order to properly control a permanent magnet synchronous motor. If the pole tuning is not properly performed the motor will never be controlled.

Before performing pole tuning procedure it's convenient to make sure that the inverter is getting signals coming from the controller and encoder. In order to achieve this, follow the procedure below;

NB; FUNC/DATA button is for selection and saving of any changes.

RESET button is for going back to the previous menu and resetting inverter faults.

REM/LOC button is for turning the inverter into remote or local mode.

PRG button is for accessing various menus like parameters etc.

1. Put the lift on Maintenance/Inspection mode.
2. Press the REM/LOC button to change the inverter from remote to local mode to make sure it doesn't react when receiving commands from the controller.
3. Press the PRG button to access the menu.
4. Scroll down to menu 3 {**Inverter info**}
5. Scroll down to submenu 2 {**I/O check**}
6. Test the EN, X1, X2 & X3 {**speeds**}, FWD & REV {**run**}.
7. On menu 3 scroll down to submenu 5 {**incremental and absolute signal**}. Signals coming from the encoder are shown here.
8. Try to move the motor clockwise and anticlockwise to see if the value changes.
   Clockwise – value decreases.
   Anticlockwise - value increases.

   If no change, check the encoder wiring.

9. Press RESET button to go back to the main menu.
10. Press the REM/LOC button to go back to remote mode.

STEP2

POLE TUNING PROCEDURE

1. Press the PRG button to access the menu.
2. Scroll down to menu 2 {**function code}**
3. Scroll down to submenu 2 {**data check}**
4. Scroll down to parameter L.
5. Go to L03
6. Change it from 0 to 4.
7. Press the up button on the inspection box.
8. The motor will start producing a whirring sound {**pole tuning sound**}
9. Long press the button until the sound stops.
10. The tuning result will be shown on L04_1.
11. Write down the value for future reference.
12. Move the lift a few millimeters checking the incremental and absolute signal from the encoder in the I/O check menu{ **refer to step 1 procedure 7 }.**
13. Repeat the pole tuning procedure.
14. The second value will be shown on L04_2.
15. Check if the value difference is within -20 degrees and +20 degrees. If it's within that range, then the pole tuning is correct. If the difference is more than the above mentioned value, swap the motor phases and repeat the procedure.