Stannah Lifts News

Stannah Lifts Newsletter for Site Personnel. Issue 3 April 1999

The New Printed Circuit Board Controller For The Homelift

Introduction

The new Homelift controller has been principally developed to improve ease of manufacture over the existing hardwired control panel. The unit will improve ease of fault finding and open up future options on the product. The PCB also implements important electrical noise suppression components to help the product comply with mandatory EMC (electrical magnetic compatibility) regulations.

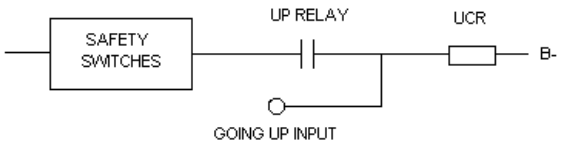
Overview of the PCB

The PCB forms a whole control system for the lift. Contactors are still being used to switch power in and out but are now PCB mounted versions. The rectifier circuit and fuses have all been brought onto the board to reduce external wiring and a separate switch mode circuit supplies the 5V needed for the processor components. All the connections to the board are now made through 'plug in' wago connectors so that the assembly can be easily removed. Indicator leds have been placed in series with the important inputs to the board so that a quick reference to their status can be made before a meter has to be used.
At the heart of the controller is a microprocessor that contains the software program for the lift. The processor makes all the decisions and operates the lift accordingly. It is isolated from the 24Vdc circuit via opto-isolators and transistors and incorporates an internal 'watchdog' function to ensure that it doesn't lock up during operation.
An electrical journey timer relay has been incorporated into the circuit to override the processor should the journey lapse its expected time. The number of journeys completed are displayed on the electronic counter situated just below it on the PCB.

Operation of the PCB

The operation of the Homelift from the users point of view has not changed at all from the original hardwired control panel. The switches still have the same operation and the lift operates as before. The fundamental difference from the original system is that the buttons are now removed from inside the circuit and become straight inputs to the controller. i.e originally, when a button was pressed, it would physically complete a circuit to latch itself in and drive the lift in the desired direction. On the new controller the switches have one side connected to the 24V and when pressed, they give an input to the processor, it then decides what action it will perform. This method helps to reduce wiring and increases the flexibility of the operation. Because of this flexibility, the button operation can be changed from latching to constant pressure by moving a small shorting link on the board.
When the processor sees an input, i.e user pressing a button, it takes a number of steps to move the lift if at all.

Here is an example;



1.The MP (micro processor) sees a 'USER UP' input.
2.The MP then closes the up circuit relay.
3.The MP then checks to see that the 'going up' input is on, i.e that a feed has passed through the safety circuit.
4.If it doesn't have a 'going up' input present then the relay is turned off again.
5. If the 'going up' input is present then the MP keeps the up relay on until 'going up' is lost. i.e a safety edge is pressed or the top floor is reached.

This process is carried out for all the functions up, down, open and close.
All of the controller circuits are fed via the safety circuit such that if a contactor or relay did weld in, safety circuits would still prevent a feed reaching the drive contactors in an emergency. All opposing circuits are still electrically interlocked.
The processor replaces 2 timers originally fitted to the panel, the pause timer and the door close timer. Both times are pre-set in the software prior to being dispatched and cannot be adjusted on site. If a different time is needed for a particular customer the processor will have to be replaced with a different version.

Wiring loom changes

Because of the different manner that the user switches operate there have been some changes to the wiring within the Homelift. The new PCB control panel will not operate correctly on existing wiring looms.

Manufacture

The PCB's are fully tested before being fitted within the control panels. The panels are then wired and tested again here at our Stannah premises before leaving for site.

Product Introduction

We are about to start installing a small pre-production batch of Homelifts using the new controller that will be closely monitored by our engineers. When we are satisfied with the benefits of the new controller we will introduce the product fully into our production, it is proposed that this will take place in June. If you should have any problems or questions about the new unit please don't hesitate to contact the electrical department at Stannah Lifts Ltd 01264 339090.

Small ramp goes a long way

A small ramp has been added to the underpan as standard. This will aid access to the cabin particularly for those customers who are very frail or use an electric wheelchair.
The ramp is an integral part of the underpan assembly which eliminates the initial step into the cabin.

A cover for the rear coupling at the base of the ramp has been designed and fitted as standard production. The cover is designed to protect the coupling from unauthorised tampering and damage.

An oil specification label is now issued with every job and should be attached to the hydraulic tank. This will help to ensure correct oil is being used when the reservoir is filled or topped up.

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