NEXI

TWO FLOOR LIFT CONTROLLER

REFERENCE MANUAL

Issue 01.06.03

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END OF DOCUMENT.

The Nexi Lift Controller is a derivative of the Nexus Lift Controller and has been specifically designed for cost effective two floor installations incorporating an improved lift positioning and limit arrangement.
The Nexi Lift Controller also complies with EN81/2 1998, EN12015 and EN12016 for EMC compliance.
Call handling is limited to two floor Single Button Collective operation.

1.1 Nexi Lift controller Standard features.

- General.
  - Designed using state of the art Microprocessor Technology.
  - Derivative of the Nexus Lift Controller.
  - Complies with the latest lift directive EN81/2.
  - All inputs and outputs are identified.
  - Red input and green output LED status indication.
  - Connection to unit via plug and socket.
  - Communication links; RS232 and two RS485 ports.
  - Self-test and CPU status indication.
  - Stuck button detection.

- Call Handling.
  - 2 Floor operation for Single Button Collective.
  - Call acceptance illumination outputs for all call inputs.

- Door controls.
  - Automatic doors.
  - Door open pushbutton.
  - Switch programmable doors open time.
  - Door protection sensitive edge input.
  - Door control speech trigger outputs.

- Lift control outputs.
  - Automatic re-levelling.
  - Floor position outputs.
  - Direction arrow outputs.
  - Lift in service output.
  - Overload warning output.

- Control options.
  - Goods control. (Landing call buttons disabled).
  - Test control.
  - Shutdown (Lower level, doors park closed).
  - Lift overloaded condition input.
  - Alarm input.
  - Motor over temperature shutdown to EN81/2
  - Switch programmable over journey timer.
  - Built in latching of dangerous fault conditions, such as Ultimate limit and over journey time out.

2 OVERVIEW

2.1 Environment requirements and standards.

See Appendix A for full specification.

The controller has been designed to work in the following environment:

Ambient Temperature (operating): 0 to 40 ºC.

Ambient Temperature (storage): -10 to +70 ºC.

Ambient Humidity: The assembly can be manufactured for environments with high levels of humidity or pollution, such as conductive dust particles. The requirement for the unit to work in a high humidity or polluted environment must be specified when placing the order.

The Nexi Lift Controller has been designed to meet the requirements of the latest Lift and EMC directives:

Lift directive EN 81/2.
EMC standards EN 12015 for emissions.
EMC standards EN 12016 for immunity.

2.2 Unit Construction. Dim: 205 x 185 x 45mm.

The unit is mounted on the control panel using M3 x 6.4mm self-retaining nylon spacers and M3 x 16mm screws.

See Appendix B for template of mounting points.

The controller is made up of two PCBs:

- Processor board (CPU): Mounted on to the Nexi I/O board. The CPU board contains the lift software and controls the unit.

- Nexi I/O board: This board provides the interface to the outside world. Connection to the unit is via plug and socket Wago cage clamp connectors. These enable the removal of the unit without the need to rewire terminals.

2.3 Power supply requirements: 9V ac or dc, 700mA ac.

The Nexi controller can be powered from a 9 Volts ac or dc supply and draws a maximum current of 700mA. A transformer winding with a 20 VA Rating would provide a suitable power source. This transformer or winding should not be used to power any other devices as heavy inductive loads may cause noise problems.

2.4 Input Voltages. 12/24V dc or 110V ac or dc.

See Appendix C for detailed list of Inputs and ratings.

All the inputs with the exception of the Alarm input, of the Nexi Lift Controller are rated for a nominal voltage of 110 V ac or dc. The full range is for 60v to 120v. The Alarm input is rated for 12 or 24 V ac or dc.

Connection to the inputs is via Wago cage clamp plug and socket connectors, supplied with the unit.

2.5 Output Voltages. 12/24V dc or 110V ac or dc.

See Appendix D for detailed list of outputs and ratings.

The outputs of the Nexi Lift Controller source/feed a voltage when in the ON condition.

The call acceptance, position, direction, signal outputs and LIS and OLW outputs, are driven by solid state devices, (Transistors). These outputs are 12 to 24V dc. The voltage is selected by wiring to the feed input marked 12V.

The Run and Door outputs are relay driven outputs with volt free contacts, the feed to relay contacts are grouped by function:
The Run outputs URR, DRR, HSR are fed from the input marked GR, this should be wired to contacts on the safety chain contactor GR.
The re-levelling/anticreep output AC feed is marked AF; this should be wired to the AF terminal, which is before the door lock circuit.

The feed for the outputs AC, ODT and CDT is internally connected to AF.

The Door outputs ODR, CDR, are labelled for the volt free relay contact terminals.

The nominal voltage for these outputs on a Stannah Lifts control panel is 110V ac.

Connection to the outputs of the Nexi Lift Controller is via Wago cage clamp plug and socket connectors.

2.6 Output Short Circuit Protection.

All transistor outputs will current limit at 30mA. If a short circuit occurs the output group will turn OFF. The output group will turn back ON when the fault is cleared.

The 12V/24V dc output circuits are protected from reverse connection by blocking diodes in the output circuit.

2.7 I/O PCB LED indication.

See Appendix C for details of abbreviations and status.

The LEDs on the Nexi I/O PCB are used to indicate the status of the lift. The LEDs are grouped as follows:

Power Supply and Lift Status: 110VAC, ALARM, GR and AF.

Run inputs: UPR, DPR, RSU, RSD, HSC, UC, DC and ULR.

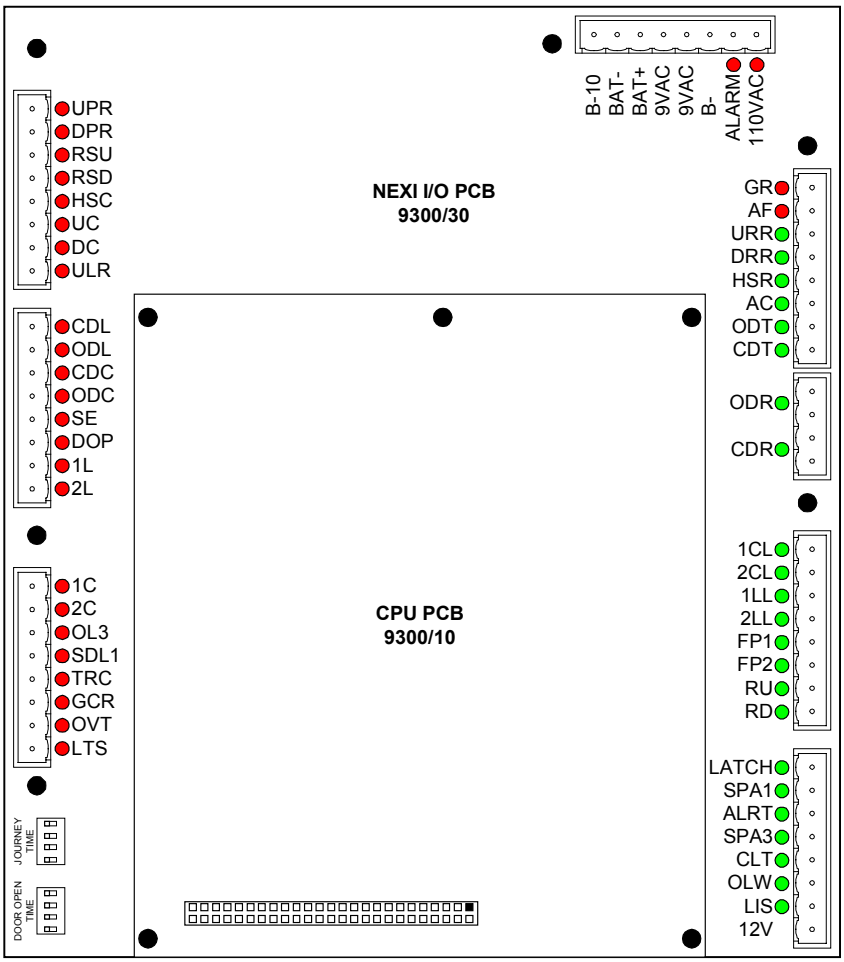
Door and Call inputs: CDL, ODL, CDC, ODC, SE, DOP, 1L and 2L.

Call and Lift Status inputs: 1C, 2C, OL3, SDL1, TRC, GCR, OVT and LTS.

Run and Door Control outputs: URR, DRR, HSR, AC, ODT, CDT, ODR and CDR.

Call Acceptance and Position outputs: 1CL, 2CL, 1LL, 2LL, FP1, FP2, RU and RD.

Lift Status outputs: LATCH, SPA1, ALRT, SPA3, CLT, OLW, LIS and SPA2.



SEE APPENDIX B FOR TEMPLATE OF MOUNTING POINTS.

The manner of operation of the Nexi Lift Controller is the same as the Generation 1 and 2 and Nexus Lift Controllers. If you are familiar with these controllers you will only need to browse through this section.

3.1 Lift Call handling in Normal service.

Single Button Collective (SBC).

The lift will run to, stop and service any landing calls on a two floor system.

3.2 Stuck Button.

Any one of the push button inputs will be ignored if it is continuously ON for more than the fixed 30 second stuck button delay time.

3.3 Call Handling. Out of Normal service.

Landing calls will not be accepted when either the Goods control, Test control, Shutdown, Lift Overloaded or the Over Temperature input is active.

Car calls will not be accepted when Test control, Shutdown, Lift Overloaded or when the Over Temperature input is active.

3.4 Lift Travel / Movement and floor level Controls.

See Appendix F for vane layout.

The outputs URR, DRR, HSR and AC are used to feed the drive
Circuit to the motor circuit and speed control.

URR and DRR: Up Run Relay and Down Run Relay are the low speed run outputs and are active when the lift is in motion in low speed and high speed.

HSR: High speed relay is the High Speed Relay output, when active this output enables the lift to run in high speed.

AC: AntiCreep output will turn ON for re-levelling the lift or for advance door opening. This output is used to enable a lock bypass circuit.

A moving lift car is controlled by the UPR, DPR, RSU and RSD inputs. These are grouped together on Wago terminal plug PL3. They indicate the location of a floor and are used in the following manner.

When UPR, DPR and RSU are all ON, the lift is level at the top floor.
When UPR, DPR and RSD are all ON, the lift is level at the bottom floor.
RSU and RSD act as the ACR signal for the door zones.

When the lift is moving in the up direction, the first occurrence of a UPR signal on its own will cause the controller to increment the floor position. HSR will turn OFF and the lift begins to slow to the floor.

The DPR input on its own is ignored when the lift is travelling in the up direction.

The lift will slow to a floor by dropping HSR and running in slow speed until UPR, DPR and RSU are all seen to be ON. The lift will then stop and open its doors. If Advance door open is selected the doors will begin to open when RSU and DPR are ON.

When the lift is moving in the down direction, the first occurrence of a DPR signal on its own will cause the controller to decrement the floor position. HSR is turned OFF and the lift begins to slow to the floor.

The UPR input on its own is ignored when the lift is travelling in the down direction.

The lift will slow to a floor by dropping HSR and running in slow speed until UPR, DPR and RSD are all seen to be ON. The lift will then stop and open its doors. If Advance door open is selected the doors will begin to open when RSD and UPR are ON.

3.5 Operation of floor levelling.

The presence of UPR, DPR and either RSU or RSD tells the Nexi Lift Controller that the lift car is at floor level and to stop. To enable accurate levelling of the lift car, the controller has a default **STOP DELAY** of 0.1 second. The delay allows for an overlap of UPR and DPR, which means the lift car can drift from floor level by approximately 20mm before the automatic re-levelling occurs if the lift is left stationary for a long period of time. This is due to the expansion or contraction of the hydraulic oil with temperature change, the lift will slightly rise above or sink below floor level. If safety conditions are met the lift is automatically re-levelled by engaging the anticreep circuit.

3.6 Operation of floor re-levelling (Anticreep).

The UPR and DPR inputs are used to indicate the position of floor level. These inputs are monitored by the Nexi Lift Controller so that the lift can maintain its floor level. If UPR or DPR are seen to turn OFF the lift will wait the initial re-level delay (8 seconds), before re-levelling. The delay is to allow for passengers to enter the lift, insert a call and hence close the doors and run the lift. Under this condition there is no need to re-level the lift.

The lift will only re-level if the door zone input is valid; (RSU or RSD energised).

To enable re-levelling, the anticreep (AC) output is turned ON; this bypasses the lock circuit and provides a feed to the RUN contactors. There is an electrical interlock that does not allow the bypassing of the lock circuit if the lift is not in the door zone, i.e. if UPR or DPR and either RSU or RSD inputs are not present.

3.7 Floor Reset.

The RSU and RSD inputs can be found on the RUN group of inputs.

The floor reset inputs RSU (Reset Up) and RSD (Reset Down) are used to reset the lift position. When one of the inputs is seen to be ON the current lift position is dropped and replaced with the RSU or RSD floor. The signals are also used to indicate door zones.

3.8 Lift Ultimate Limit protection.

This can be found on the RUN group of inputs.

Once the Ultimate Limit Input has been energised, the lift will stop immediately and latch the lift out of service. The lift can only be returned to normal service once both the fault and latched condition have been cleared.

To clear a latched fault, Push in the reset link on the control panel, switch the mains power OFF for 10 seconds and then switch the mains power ON.

Caution: **The reset link should not be left pushed in, as this will disable the latched faults and could compromise safety.**

3.9 Lift Over journey protection.

Over journey protection is via an on board, switch programmable over journey timer. The range of the timer is 40 to 190 seconds. If the lift does not complete the journey within the programmed journey time, the lift will immediately stop. This is a latched fault and must be cleared before the lift can be put back into service.

To clear a latched fault, Push in the reset link on the control panel, switch the mains power OFF for 10 seconds and then switch the mains power ON.

Caution: **The reset link should not be left pushed in, as this will disable the latched faults and could compromise safety.**

3.10 Door Operation.

The Doors will only open when in a valid door zone. This is indicated by the RSU or RSD inputs being ON and the presence of one of the floor level inputs: UPR or DPR. The door open time is switch programmable. See section 6 for details on how to set these values.

3.11 Advance Door opening.

Advance Door opening is a programmable option. When selected, the doors will begin to open on the occurrence of RSU or RSD and UPR or DPR. The lift will stop when UPR, DPR and either RSU or RSD are all ON and the Stop Delay has timed out. To enable advance door opening the anticreep (AC) output is turned ON; this bypasses the lock circuit and provides a feed to the RUN contactors. There is an electrical interlock that does not allow the bypassing of the locks if either UPR, DPR and RSU or RSD inputs are not present.

3.12 Door controls.

The door control inputs Door Open Push (DOP) will cause the doors to open when the lift is in the door zone. This input will be ignored if the button is held for longer than the Stuck Button Delay (30 seconds).
The Safety Edge (SE) will cause the doors to re-open if it is seen to be active while the doors are closing. The doors will remain open while the SE input is ON, there is no Stuck Button time out.

4 INPUTS AND FUNCTION

The inputs to the Nexi Lift Controller are grouped together as per function. These groups are: Power Supply, Run, Position/Doors and Lift Status Inputs.
The inputs are situated along the edge of the unit and are clearly labelled.

Terminal numbering is from top to bottom, when viewed from end on. That is, Pin 1 is at the top most end when unit is viewed face on.

A summary list of all the inputs and ratings can be found in Appendix C.

Connection to the unit is via Wago cage clamp plug and socket connectors; these are supplied with the unit.

4.1 Power supply Inputs.

Summary.

110Vac, B-, 9V AC/DC, BAT+, BAT-, B-10.

110V ac Inputs. **110V ac or dc.**

ThIS input IS used to monitor the 110v ac circuit.
The 110Vac input is used to synchronise the reading of the inputs with the mains cycle. If this input is not present the unit is unable to function.

Loss of the 110V ac input will put the lift out of service.

B- Input.

This input is the return point for the 110V ac inputs.

9V AC/DC Inputs. **9V ac or dc.**

These are the power supply inputs to the Nexi Lift Controller. The input is protected by an internal resetable fuse. To reset the fuse the power must be cycled.

The 9V supply draws a maximum current of 700mA. A transformer winding with a 20 VA rating would provide a suitable power source. This supply should not be used to power any other circuits as heavy inductive loads may cause noise problems.

B-10 Input.

This input provides a return point for the suppression devices on the unit. This should be run separate to the power source common return.

4.2 Safety Circuit Inputs.

Summary.

ALRM, B-, GR, AF.

ALRM: Alarm input. (12 to 24V ac/dc).

The Alarm input monitors the Alarm push in the lift car. If the doors are closed and the input is energised for more than 3 seconds, the Alarm acknowledged (ALRT Output) will be activated.

B- Input.

The B- input is the common return point for the inputs circuits.

This terminal should be wired to the 'B-' rail in the control panel.

GR: Gate Locks made. **110V ac or dc.**

The GR input is used to monitor the presence of the gate locks at the GR point. If no voltage is present the lift will not run, but the doors will operate.

AF: Safety Chain made. **110V ac or dc.**

The AF input is used to monitor the presence of the safety chain at the AF point. If no voltage is present the lift will not run and the doors will not open.

4.3 Run Inputs. 110V ac or dc.

Summary.

UPR, DPR, RSU, RSD, HSC, UC, DC, ULR.

UPR: Up Proximity Relay and DPR: Down Proximity Relay.

These inputs are used to increment (UPR) or decrement (DPR) the floor position and to indicate the presence of the floor level (UPR and DPR).

RSU: Reset Up and RSD: Reset Down Inputs.

The RSU and RSD inputs are used to reset the current lift car position to the programmed RSU and RSD values. When one of these inputs is ON the current lift car position will be overridden by the RSU or RSD floor.
RSU and RSD are also used to indicate door zones.

HSC: High Speed Contactor.

The HSC input is used to confirm that the HSC contactor has pulled in and that a fault condition has not occurred.

When the output HSR turns ON, the HSC input must turn ON before the fixed 1 second Contactor delay times out.

If HSC fails to pull in, all calls will be cancelled and the lift will not attempt to run again unless further calls are entered.

UC: Up Contactor and DC: Down Contactor.

The UC and DC inputs are used to confirm that the UC and DC contactors have pulled in and that a fault condition has not occurred.

When the output URR or DRR turns ON the UC or DC input must turn ON before the 1 second Contactor fixed delay times out.

If UC or DC fail to pull in, the Lift will cancel all calls. It will attempt to run again only when new calls are entered.

ULR: Ultimate limit input.

The ULR input is fed from a switch operating in conjunction with the ultimate limit switch in the safety chain. When the Ultimate Limit Input has been energised, the lift will stop immediately and latch the lift out of service. The lift can only be returned to normal service once both the fault and latched condition have been cleared.

To clear a latched fault, Push in the reset link on the control panel, switch the mains power OFF for 10 seconds and then switch the mains power ON.

Caution: **The reset link should not be left pushed in, as this will disable the latched faults and could compromise safety.**

4.4 Position and Door Inputs. 110V ac or dc.

Summary.

CDL, ODL, CDC, ODC, SE, DOP.

CDL: Close Door Limit and ODL: Open Door Limit.

The CDL and ODL inputs are used to determine the state of the doors.
These are as follows:

Doors closed:	ODL = ON,	CDL = OFF.
Doors in motion:	ODL = ON,	CDL = ON.
Doors open:	ODL = OFF,	CDL = ON.

CDC: Close Door Contactor and ODC: Open Door Contactor.

The ODC and CDC inputs are used to confirm that the ODC and CDC contactors have pulled in and that a fault condition has not occurred.

When the output ODR or CDR turns ON, the ODC or CDC input must turn ON before the 1 second Contactor fixed delay times out.

SE: Safety Edge.

The SE input is usually wired to the sensitive edge or photocell device.

For a lift in normal service the SE input, when ON, will cause the doors to remain open or if the doors are closing, to reopen the doors. There is no Stuck Button time out for SE input.

DOP: Door Open Push.

The DOP input will cause the doors to open or remain open under all valid conditions, that is, the Lift is operational and in a door zone.

The DOP input will be ignored if the input is continuously ON for more than the fixed 30 second stuck button delay time.

4.5 Lift Status Inputs. 110V ac or dc.

Summary.

OL3, SDL1, TRC, GCR, OVT, LTS.

OL3: Overload 3.

Overload 3: This input is only effective when the lift is stationary at a floor with the doors open. If OL3 input is energised the lift will remain at floor level with the doors parked open and the OLW output will turn ON.

If the overload condition has not been cleared by the time the call cancel timer elapses, all calls on the system will be cancelled.

SDL1 (normally ON): Shutdown Lift 1.

When Shutdown 1 is active, all calls will be cancelled and no further calls will be registered. The lift will run to the lower floor, open the doors, close the doors after the door open time and park with the doors closed. The doors will only re-open to a DOP input.

Operation of the Shutdown input has priority over GCR.

TRC: Test Control. (Normally ON).

The Nexi Lift Controller is placed in Test Control when this input is OFF. All the RUN and DOOR control outputs are inactive and the lift is controlled by the car top controls. The lift will track the floor position and sound a built in buzzer when the lift reaches a floor level.

GCR: Goods Control Relay input.

This is the car preference input, when this input is ON the lift will be under car preference control. The lift will ignore landing calls and park with the doors open. It will only run to one car call at a time.

OVT: Over Temperature Input. (Normally ON).

The Over Temperature input is used to shut the lift down when an over temperature condition occurs with the motor unit. When the input is seen to turn OFF, the lift will attempt to run to the next floor and stop, open its doors, close its doors and park with it's doors closed. The doors will reopen to a DOP input. If the lift fails to see a floor level within the over journey time it will stop and shutdown.

LTS: Latched fault clear switch.

This input is connected to the normally open push/pull 'latched fault' reset link on the control which is fed from 110V AC/DC.

To clear a latched fault, Push in the reset link on the control panel, switch the mains power OFF for 10 seconds and then switch the mains power ON.

Caution: LTS reset link must not be left pushed in when lift is in normal operation.

5 OUTPUTS AND FUNCTION

The outputs from the Nexi Lift Controller are grouped together as per function. These groups are: Run and Door Control, Call Acceptance, Position and Direction and Lift Status Outputs. The outputs are situated along the edge of the unit and are clearly labelled.

Terminal numbering is from bottom to top, when viewed from end on. That is, Pin 1 is at the bottom most end when unit is viewed face on.

A summary list of all the outputs and ratings can be found in Appendix D.

Connection to the unit is via Wago cage clamp plug and socket connectors; these are supplied with the unit.

5.1 Run and Door Control outputs.

Summary.

GR, AF, URR, DRR, HSR, AC, ODT, CDT, ODR, CDR.

GR: Gatelock Relay. (Feed for the run circuit). **FEED INPUT.**

The run outputs are fed from the GR input, which is connected to the end of the safety chain. This input is only fed when the safety chain is made and the doors are closed.

AF: Anticreep (levelling) Feed. **FEED INPUT.**

The anticreep (AC) output is fed from the AF input, which is connected to the safety chain prior to the lock circuit. This input is only fed when the safety chain is intact.

URR and DRR: Up Run Relay and Down Run Relay. **Relay contact.**

The URR or DRR output turns on when there is a requirement for the lift to run. The output feeds the UR or DR contactor and hence the UC or DC contactor and drive circuit.

If after the 1 second contactor fixed delay time, the UC or DC input to the unit has not been seen to turn ON, the outputs will turn OFF. Any calls on the system will be cancelled.

HSR: Highspeed relay. **Relay contact.**

The Highspeed relay is energised when the lift is running in high speed and is used in conjunction with URR or DRR outputs to make the drive circuit. As the lift approaches a floor the HSR output will be dropped when the slowing vane is seen. The lift will then run in SLOW speed until UPR, DPR and either RSU or RSD are seen to be ON.

If after the 1 second contactor fixed delay time the HSR input to the unit has not been seen to turn ON, the output will turn OFF. Any calls on the system will be cancelled.

AC: Anticreep (levelling) output. Relay contact.

The AC output is energised for re-levelling the lift or for advance door opening. The output is used to enable the lock by pass circuit. See Appendix E for Typical wiring diagram.

ODT: Doors opening speech trigger output. Relay contact.

ODT will trigger a Speech unit 'Door open' phrase, if fitted, when there is a requirement for the doors to open.

CDT: Doors closing speech trigger output. Relay contact.

CDT will turn ON to trigger the 'Door close' phrase 3 seconds before the doors attempt to close, this is to enable passengers to move away from the doors.

ODR and CDR: Open Door Relay and Close Door Relay.

Volt free contacts for opening and closing lift doors. The ODR or CDR is energised to open or close the doors when the lift is in a valid door zone and there is a command to open or close the doors.

5.2 Call Acceptance, Position and Direction outputs. Transistor 12 to 24vdc.

Summary.

1CL, 2CL, 1LL, 2LL, FP1, FP2, RU, RD.

1CL, 2Cl, 1LL, 2LL: Call Acceptance. Transistor 12 to 24vdc.

The call acceptance, position and direction outputs voltage source is the 12v/24v input feed. Therefore the output voltage is dependent upon the feed voltage.

The call acceptance outputs are current limited and have been designed to drive LED or electronic circuit loads. If incandescent lamps are required the control panel will have to be fitted with a relay interface board, Part No: 390016 (PCB 9300/16).

The position and direction outputs are fed from the 12v feed input on plug connector PL4. Therefore the output voltage is dependent upon the feed voltage.

FP1 to FP2: Floor Position. Transistor 12 to 24vdc.

The position outputs are used to indicate the current floor position.

RU and RD: Run Up and Run Down. Transistor 12 to 24vdc.

The RU and RD outputs are used to indicate the direction of travel of the lift. The relevant outputs will be ON all the time that the lift has a direction of travel and will only turn OFF when the lift has no further calls to answer.

5.3 Lift Status outputs.

Summary.

LATCH, ALRT, CLT, OLW, LIS.

LATCH: Latched fault indication. **Transistor 12 to 24vdc.**

This output will latch ON when a latch fault condition occurs, e.g. Over Journey Time exceeded or Ultimate Limit trip.

To clear a latched fault, Push in the reset link on the control panel, switch the mains power OFF for 10 seconds and then switch the mains power ON.
Caution: LTS reset link must not be left pushed in when lift is in normal operation.

ALRT: Alarm Acknowledge. **Transistor 12 to 24vdc.**

This output will latch ON when the alarm input (ALRM) has been ON for 3 seconds. The output is used to acknowledge that the alarm has been reported.

CLT: Car Lighting Control Output. **Transistor 12 to 24vdc.**

This output is used to control the car lighting and will be energised when the lift is in a door zone with the doors closed and the lift has been inactive for 2 minutes.

If the Alarm input has been activated the car light output is disabled: The lights will stay ON.

OLW: Overload Warning. **Transistor 12 to 24vdc.**

The overload warning output will be energised when an overload level 3 condition is detected; OL3 input ON and the doors are open.

LIS: Lift in Service. **Transistor 12 to 24vdc.**

The LIS output will be energised the whole time that the lift is in normal service. The output will turn OFF, when any of the Lift Status inputs are active or if an out of service fault condition has been detected.

The Nexi Lift Controller incorporates two methods for selecting programmable options, DIL switches and jumper links. The DIL switches allow the Door Open Time and Over Journey Time to be adjusted. The DIL switches can be adjusted while the lift is switched ON. The jumper links enable options such as Advance Door Opening to be switched ON or OFF. When jumper link settings are altered, the power must be cycled for the changes to take effect.

6.1 DIL Switch Options.

The Door Open Time and Maximum Journey Time are programmable via the PCB mounted DIL switches. The DIL switches are located in the bottom left corner of the Nexi I/O PCB and are labelled Door Open Time and Journey Time. Each DIL switch has 4 toggle switches using a binary format to allow up to 16 selectable delays. See the table below for the switch configurations and corresponding times.

Switch Configuration	Door Open Time (seconds)	Journey Time (seconds)
1-off, 2-off, 3-off, 4-off	2	40
1-on, 2-off, 3-off, 4-off	4	50
1-off, 2-on, 3-off, 4-off	6	60
1-on, 2-on, 3-off, 4-off	8	70
1-off, 2-off, 3-on, 4-off	10	80
1-on, 2-off, 3-on, 4-off	12	90
1-off, 2-on, 3-on, 4-off	14	100
1-on, 2-on, 3-on, 4-off	16	110
1-off, 2-off, 3-off, 4-on	18	120
1-on, 2-off, 3-off, 4-on	20	130
1-off, 2-on, 3-off, 4-on	22	140
1-on, 2-on, 3-off, 4-on	24	150
1-off, 2-off, 3-on, 4-on	26	160
1-on, 2-off, 3-on, 4-on	28	170
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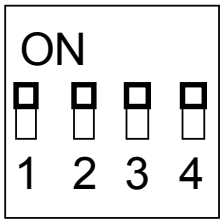
1-on, 2-on, 3-on, 4-on	32	190



6.2 Jumper Link Options.

The jumper links are located under the CPU PCB next to the 50-way connector on the left most side of the Nexi I/O PCB (see Appendix B).
The links are labelled LINK 1 – LINK 5, see the table below for programmable options.

NOTE: The options shown below are set ON when the corresponding LINK is present.

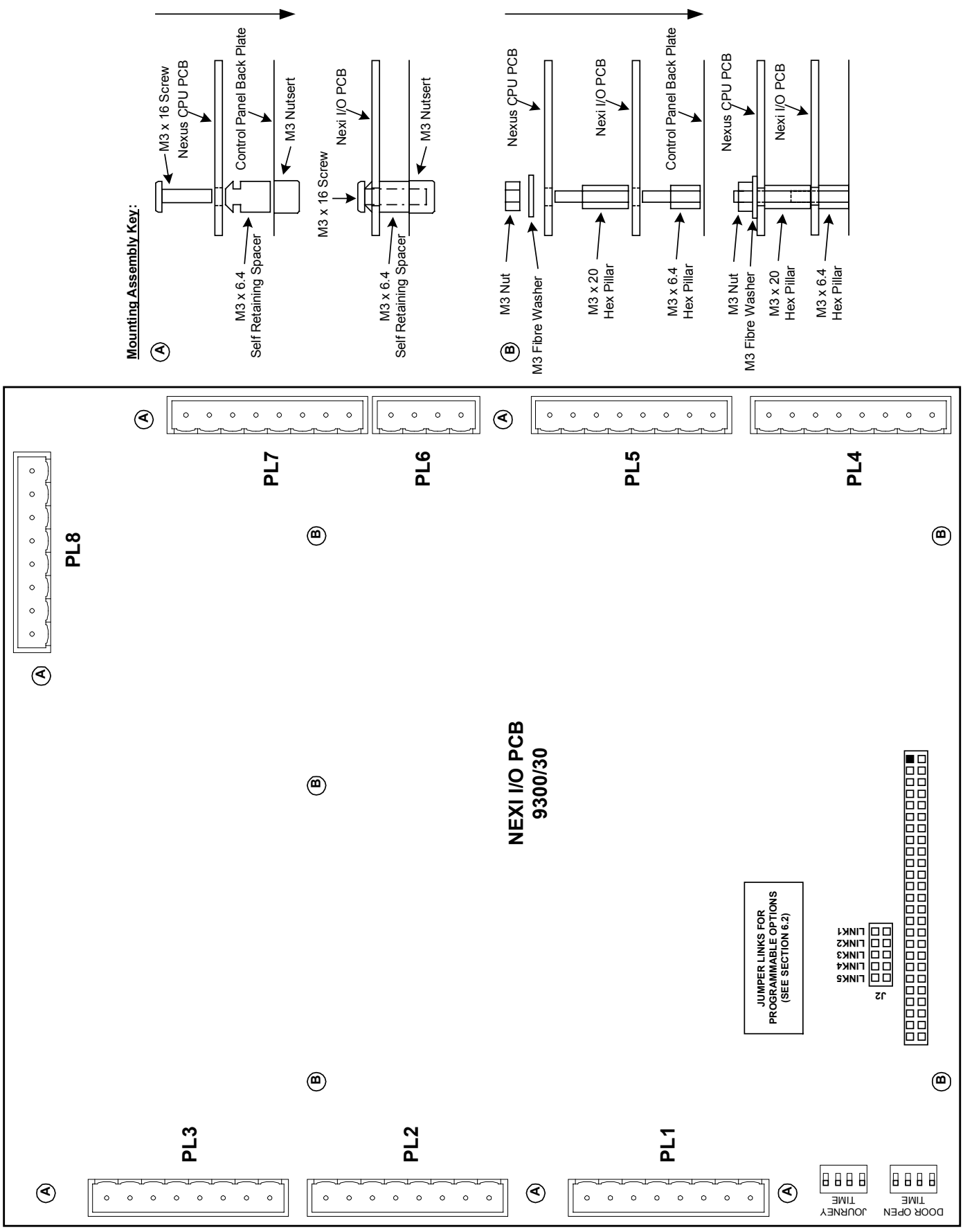
Jumper Link	Option
LINK 1	Advanced Door Opening
LINK 2	Door Nudging
LINK 3	Fire Control
LINK 4	For future use
LINK 5	For future use

TECHNICAL SPECIFICATION

DIMENSIONS	**205 x 105 x 45mm. (8 x 7.3 x 1.8 inches.)**
WEIGHT	0.56 Kg (1lb 4oz)
COLOUR	Green PCB (No enclosure)
POWER SUPPLY	9 V ac or dc, 700mA. (20 VA Transformer winding)
INPUT CIRCUITS	Typically 110 V ac or dc, 1.5 mA.
	For Alarm 12/24V , 1.2/2.4 mA
OUTPUT CIRCUITS	Run and Door Control 110 V ac or dc, 1 A.
	Call and position 12/24 V (smoothed), 0.35 A.
	Lift Status 12/24 V dc (smoothed), 0.35 A.
ENVIRONMENT	Operating ambient Temperature: 0 to +40 ºC.
	Storage ambient Temperature: -10 to + 70 ºC
	Humidity ambient: Manufactured to customer requirements. Please specify.
STANDARDS	Operation complies to Lift Directive EN 81/2 1998.
	EMC Emissions comply to EN 12015.
	EMC Immunity complies to EN 12016.

Specifications are subject to change without prior notification.

Stannah Lifts Ltd, Anton Mill, Andover, Hampshire, SP10 2NX, England.
Tel: (01264) 339090.
Fax: (01264) 337942.
Email: stannah.co.uk.


Mounting Assembly Key:
A
M3 x 16 Screw
Nexus CPU PCB
Control Panel Back Plate
M3 Nutsert
M3 x 6.4
Self Retaining Spacer
M3 x 16 Screw
Nexi I/O PCB
M3 Nutsert
M3 x 6.4
Self Retaining Spacer
B
M3 Nut
Nexus CPU PCB
M3 Fibre Washer
M3 x 20
Hex Pillar
Nexi I/O PCB
M3 x 6.4
Hex Pillar
Control Panel Back Plate
M3 Nut
Nexus CPU PCB
M3 Fibre Washer
M3 x 20
Hex Pillar
Nexi I/O PCB
M3 x 6.4
Hex Pillar
PL8
PL7
PL6
PL5
PL4
NEXI I/O PCB
9300/30
JUMPER LINKS FOR
PROGRAMMABLE OPTIONS
(SEE SECTION 6.2)
J2
LINK5
LINK4
LINK3
LINK2
LINK1
PL3
PL2
PL1
DOOR OPEN
TIME
JOURNEY
TIME

APPENDIX C: Nexi I/O PCB abbreviations, input ratings and description.

NOTE: Terminals are numbered from top to bottom when viewed end on. That is pin 1 at top most end of the connector.

RUN INPUTS (PL3).

No	INPUT	DESCRIPTION	VOLTAGE	NOTES
1	**UPR**	Up Proximity Relay	**110v ac/dc**	Up proximity vane input, ON when lit.
2	**DPR**	Down Proximity Relay	**110v ac/dc**	Down proximity vane input, ON when lit.
3	**RSU**	Reset Floor Position 2	**110v ac/dc**	Floor 2 Door zone/Reset up vane input, ON when lit.
4	**RSD**	Reset Floor Position 1	**110v ac/dc**	Floor 1 Door zone/Reset down vane input, ON when lit.
5	**HSC**	High Speed Contact	**110v ac/dc**	When ON, High speed contactor is energised.
6	**UC**	Up Contactor	**110v ac/dc**	When ON, Up run contactor is energised.
7	**DC**	Down Contactor	**110v ac/dc**	When ON, Down run contactor is energised.
8	**ULR**	Ultimate Limit Relay	**110v ac/dc**	When ON, Ultimate Limit switch is active.

POSITION & DOOR INPUTS (PL2).

No	INPUT	DESCRIPTION	VOLTAGE	NOTES
1	**CDL**	Door Close Limit	**110v ac/dc**	When OFF, Doors are closed.
2	**ODL**	Door Open Limit	**110v ac/dc**	When OFF, Doors are open.
3	**CDC**	Door Close Contactor	**110v ac/dc**	When ON, Door Close contactor is energised.
4	**ODC**	Door Open Contactor	**110v ac/dc**	When ON, Door Open contactor is energised.
5	**SE**	Safety edge	**110v ac/dc**	When ON, Door safety edge beam is energised.
6	**DOP**	Door Open Pushbutton	**110v ac/dc**	When ON, Door Open push button is pressed.
7	**1L**	Floor 1 Landing Call	**110v ac/dc**	When ON, Floor 1 Landing call button is pressed.
8	**2L**	Floor 2 Landing Call	**110v ac/dc**	When ON, Floor 2 Landing call button is pressed.

LIFT STATUS INPUTS (PL1).

No	INPUT	DESCRIPTION	VOLTAGE	NOTES
1	**1C**	Floor 1 Car Call	**110v ac/dc**	When ON, Floor 1 car call button is pressed.
2	**2C**	Floor 2 Car Call	**110v ac/dc**	When ON, Floor 2 car call button is pressed.
3	**OL3**	Overload Warning 3	**110v ac/dc**	When ON, Lift is overloaded.
4	**SDL1**	Shutdown Lift 1	**110v ac/dc**	When OFF, Lift is shutdown by shutdown switch.
5	**TRC**	Test Control Input	**110v ac/dc**	When OFF, Lift is in Test Control mode.
6	**GCR**	Goods Control	**110v ac/dc**	When ON, Lift is in Goods Control mode.
7	**OVT**	Over Temperature input	**110v ac/dc**	When OFF, Lift motor is Over Temperature.
8	**LTS**	Clear latch fault input	**110v ac/dc**	When ON, Latched faults will be cleared when power is cycled.

POWER SUPPLY INPUTS (PL8).

No	INPUT	DESCRIPTION	VOLTAGE	NOTES
1	**110Vac**	110v ac Supply Monitor	**110v ac**	Indication that 110 volts AC is present.
2	**ALARM**	Alarm input	**12v dc**	Indication that Alarm button has been pressed.
3	**B-**	Common Return	**110v ac/dc**	
4	**9Vac/dc**	Nexi Power Supply	**9v ac/dc**	Power supply for Nexi microcontroller
5	**9Vac/dc**	Nexi Power Supply	**9v ac/dc**	Only connect 9v to Nexi
6	**BAT+**	Battery Feed	**12v dc**	Connect to battery backup
7	**BAT-**	Battery Return		Connect to battery backup
8	**B-10**	Varistor Return		Connect direct to B- bus bar

SAFETY CHAIN INPUTS (PL7).

NOTE: Terminals are numbered from bottom to top when viewed end on. That is pin 1 at bottom most end of the connector.

No	INPUT	DESCRIPTION	VOLTAGE	NOTES
7	**AF**	Anticreep Feed	**110v ac/dc**	When ON, safety chain is made.
8	**GR**	Gate Lock Relay	**110v ac/dc**	When ON, landing/car door locks are made.

NOTE: Terminals are numbered from bottom to top when viewed end on. That is pin 1 at bottom most end of the connector.

LIFT STATUS OUTPUTS (PL4).

No	OUTPUT	DESCRIPTION	VOLTAGE	NOTES
1	12v	Feed input.		
2	LIS	Lift in service	12v/24vdc	ON when lift is in Normal Service.
3	OLW	Overload warning output	12v/24vdc	ON when lift is overloaded.
4	CLT	Car light control	12v/24vdc	ON after lift is idle for 2 minutes.
5	SPA3	Spare Output	12v/24vdc	
6	ALRT	Alarm seen trigger	12v/24vdc	ON when ALARM is pressed for 3 seconds and doors are closed.
7	SPA1	Spare Output	12v/24vdc	
8	LATCH	Output signal for latch fault	12v/24vdc	ON when latched fault logged.

POSITION OUTPUTS (PL5).

No	OUTPUT	DESCRIPTION	VOLTAGE	NOTES
1	RD	Up direction arrow	12v/24vdc	ON when lift is running/about to run down.
2	RU	Down direction arrow	12v/24vdc	ON when lift is running/about to run up.
3	FP2	Floor position o/p 2	12v/24vdc	ON when lift is at/slowing to floor 2.
4	FP1	Floor position o/p 1	12v/24vdc	ON when lift is at/slowing to floor 1.
5	2LL	Landing call acceptance 2	12v/24vdc	ON when Floor 2 landing call is accepted.
6	1LL	Landing call acceptance 1	12v/24vdc	ON when Floor 1 landing call is accepted.
7	2CL	Car Call acceptance 2	12v/24vdc	ON when Floor 2 car call is accepted.
8	1CL	Car Call acceptance 1	12v/24vdc	ON when Floor 1 car call is accepted.

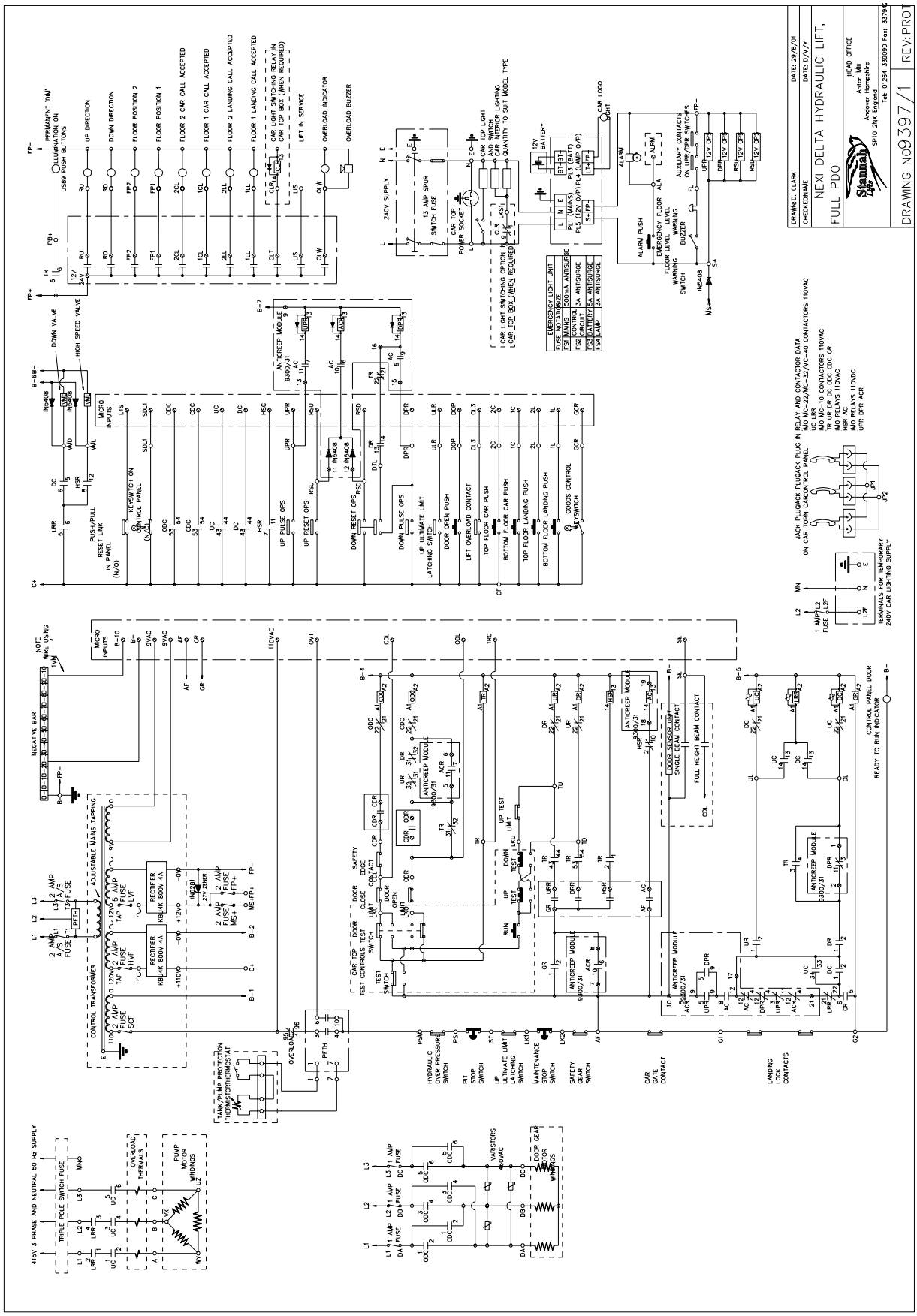
DOOR CONTROL OUTPUTS (PL6).

No	OUTPUT	DESCRIPTION	VOLTAGE	NOTES
1	CDR	Close doors relay	Volt free contact	ON when doors are closing.
2	CDR			
3	ODR	Open doors relay	Volt free contact	ON when doors are opening.
4	ODR			

RUN CONTROL OUTPUTS (PL7).

No	OUTPUT	DESCRIPTION	VOLTAGE	NOTES
1	CDT	Close door speech trigger	110vac	Voice box doors closing signal.
2	ODT	Open door speech trigger	110vac	Voice box doors opening signal.
3	AC	Anticreep output	110vac	ON when lift is to re-level.
4	HSR	High speed relay	110vac	ON when lift is running in high speed.
5	DRR	Down run relay	110vac	ON when lift is running down.
6	URR	Up run relay	110vac	ON when lift is running up.
7	AF	Anticreep Feed	110vac	Common feed for CDT, ODT, AC
8	GR	Gate Lock Relay	110vac	Common feed for HSR, DRR, URR

APPENDIX E: TYPICAL NEXI KEY WIRING DIAGRAM



The Nexi lift controller has been designed such that any input must be present for at least 0.08 seconds before it is registered as a valid input. This time delay is to negate any spurious spikes or blips, which could cause inaccurate signals to be seen by the controller.

The following chart shows the distance travelled into a slowing vane on high speed before the processor registers the input from the opto-switch.

LIFT SPEED	FORMULA	DISTANCE
1.0 M/S	1000 /12.5	80 mm
0.9 M/S	900/12.5	72 mm
0.8 M/S	800/12.5	64 mm
0.63 M/S	630/12.5	51 mm
0.5 M/S	500/12.5	40 mm
0.4 M/S	400/12.5	32 mm
0.3 M/S	300/12.5	24 mm
0.16 M/S	150/12.5	12 mm

The chart shows that the longest distance travelled into the slowing vane on high speed is 80mm at a lift speed of 1.0 M/S.

Based on these calculations all slowing vanes (UPR & DPR) are a standard length of 115mm, which will account for any lift speed up to and including 1.0 M/S.

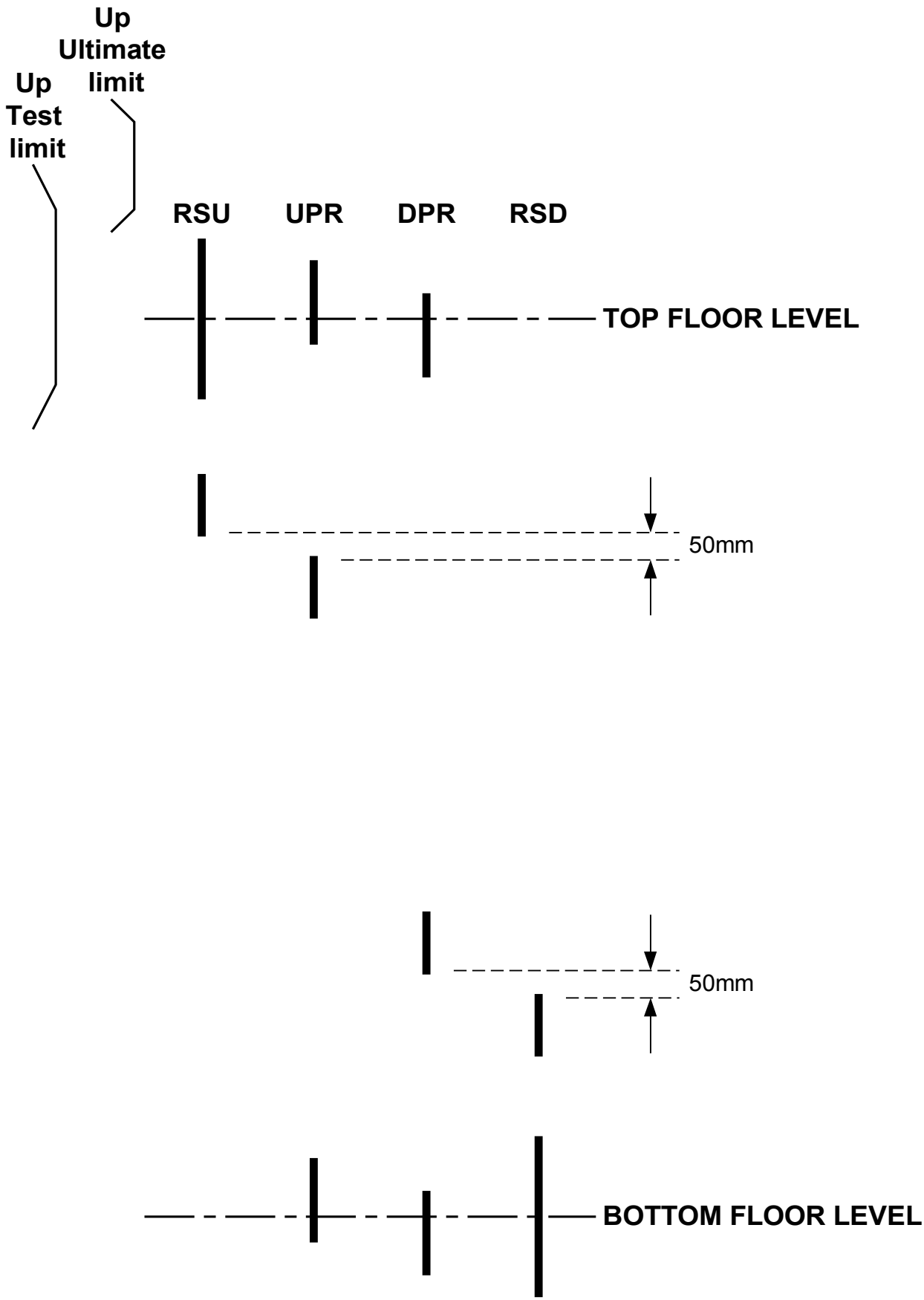
The floor level stopping vanes (UPR & DPR) are a standard length of 115mm long, this allows a nominal levelling speed and advanced door opening, if required.

The reset vanes (RSU and RSD) are a standard length of 115mm long.

The door zone vanes (RSU and RSD) are a standard length of 300mm.

The following table details the optimum distances for setting the slowing vane distance from floor level.
Calculations are based upon optimum settings using our standard floor selection shaft equipment:

Lift Speed (m/s)	0.16	0.3	0.4	0.5	0.63	0.9
Slowing Distance (mm)	300	600	800	1000	1200	1800


Up
Ultimate
limit
Up
Test
limit
RSU
UPR
DPR
RSD
TOP FLOOR LEVEL
50mm
50mm
BOTTOM FLOOR LEVEL

APPENDIX H: INSTRUCTIONS FOR CHANGING PROGRAM MEMORY

Safety first:

1. Set Lift to a safe condition and isolate control panel from all power feeds.

Changing program memory:

1. The program memory chip is mounted in a socket and is labelled ‘NEXI VER 1.01’; the version number may have changed. Note the orientation of the chip. The orientation of the chip is denoted by a NOTCH at one end.

2. Remove the chip by carefully ‘prizing’ it out of the socket. Care must be taken not to damage any adjacent component or the circuit board. Once the chip has been removed it should be kept in a safe place until the lift has been tested.

3. Fit the replacement chip in the correct orientation ensuring that the legs do not bend.

4. Inspect the chip for bent legs.

5. Apply power to the unit.

6. Updating of the Lift software is now complete.

END OF INSTRUCTIONS.