ALIMAK ALC II

User's manual

Original instructions

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ALIMAK

Alimak Lift Control, ALC II
User's Manual

Applicable for ALC II software version 3.71 and later versions ONLY!

This manual is only applicable if the manufacturing number indicated below corresponds to the manufacturing number stamped on the identification sign of the equipment. Where there is a conflict contact your ALIMAK representative.

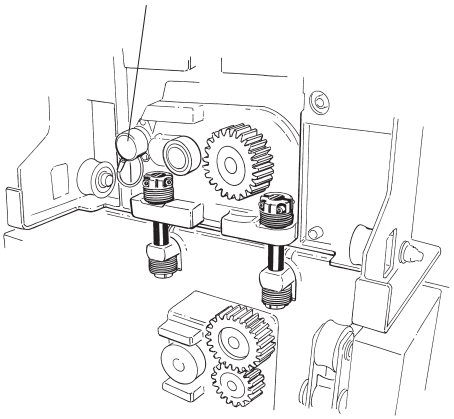
YOUR HOIST HAS:

Manufacturing No.:	**Year:**	Art. No. 9081541 - 010 E 2019 - 06 - 28

Alimak Lift Control, ALC II

Alimak lift control, ALC II, is the name of Alimak's modular controller. The ALC system consists of a microprocessor based controller, equipped with a high speed pulse counter input and a pulse encoder. The position of the lift / hoist is determined by counting impulses generated by the pulse encoder attached to the drive unit.

Pulse encoder



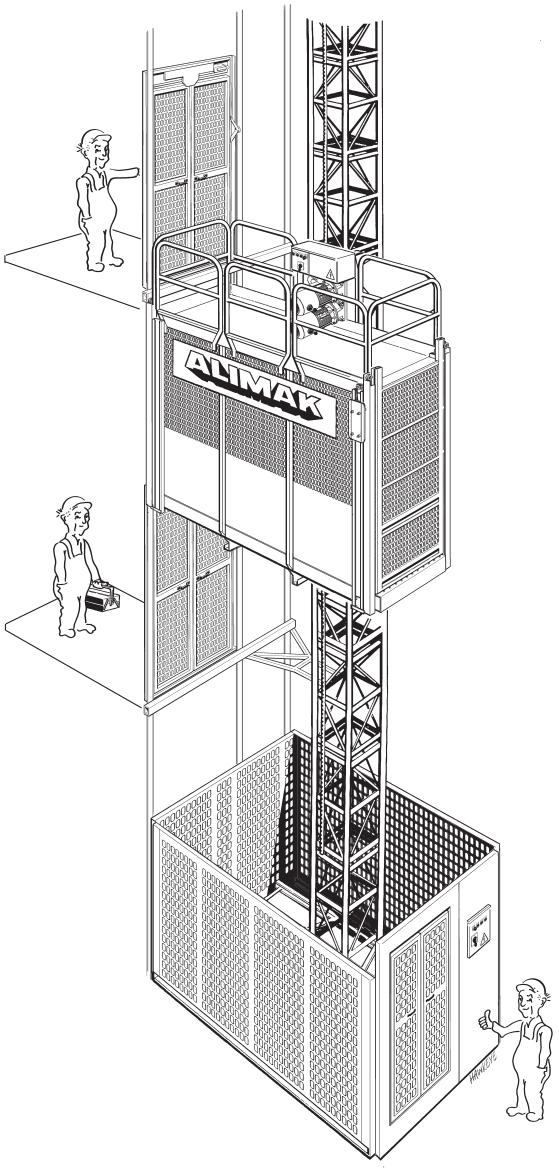
To establish a reference point, a reference cam is attached to the mast. When travelling in the calibration mode, the controller receives the reference points by means of a limit switch attached to the car.

The concept behind this modular system is that the main unit will control the lowest range of lifts. The system can expand in one step by adding an expansion unit and thereby be able to control most of the standard lifts and their equipment.

The prime components of the controller system is one main unit and two expansion units.

The main car unit consists of a CPU card and one I/O card (11 inputs and 7 outputs, X11 – X14) in a common enclosure.
The CPU card is equipped with the following:

- A high-speed pulse encoder input (terminals X4:1 to X4:5).
- Two wire communication for communication with the Base CPU unit (X8:2 and X8:3).
- Six wire communication with push-buttons/keypad and displays (X3:1 to X3:6).
- Power inputs and outputs (X1 and X2).
- Three different communication interfaces: One RS232, a two channel CAN-bus (X6 and X7) and a TCP/IP interface.
- A battery charger.
- 4 push-buttons for programming (Up, Down, SNL and Prog).



One I/O card, same as the one in the main unit, is placed in a separate enclosure to be used as expansion unit (maximum one).

The Base unit consists of a CPU card (same as the one in the Car-CPU) in a separate enclosure. The CPU card is equipped with the following:

- Two wire communication for communication with the Car CPU unit (X8:2 and X8:3).
- Six wire communication with the landing equipment (X3:1 to X3:6).
- Power inputs and outputs (X1 and X2).
- Three different communication interfaces: One RS232, a two channel CAN-bus (X6 and X7) and a TCP/IP interface.

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Battery charger

The Car-CPU is equipped with a built-in battery charger.

The charger is charging the 7Ah battery with 700mA up to the voltage level of 14.9V. When the charging current is less than 70mA, then a timer starts and keeps the charging phase on for one hour before it goes into trickle charging.

If the battery voltage level goes down to 11V, then the charger disconnects the battery from the load in order to protect the battery.

Fuses

There are 4 fuses on the CPU-unit:
2 fuses (3.15A) are for the 2 x 19VAC input to the ALC II.
1 fuse (4A) is for the 24VDC output.
1 fuse (1.25A) is for the 12VDC output.

Control systems

In the main software there are two different control systems available:

- semi automatic
- collective

The ALC II system automatically selects the control system.

Note that cage and base units should have the same software version.

For trained technical personnel there is an expanded technical maunal, part no 9081645-sub.

Semi-automatic control system: (Stop Next Landing)

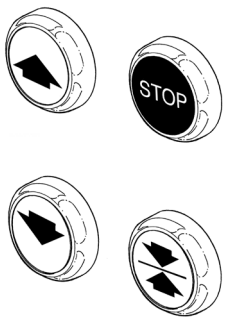
This is the least complex used control system available in the ALC controller and operates without any landing cams. The position of the lift is determined by counting impulses generated by the pulse encoder attached to the gear box.

The lift can be operated push-buttons or with joystick from inside the car and if chosen, also from the landings by using Up, Down and Stop Next Landing push-buttons.

With the joystick, or by pressing a button for Up or Down, the car starts travelling in the chosen direction. When the car approaches the desired landing, the button Stop Next Landing is pressed. The car will then stop automatically at the landing.

Calls / destinations from a landing box unit with Up, Down and Stop Next Landing push-buttons operate on 230 VAC control wires between the car and the landings via the base panel.
A destination order from the car has three seconds' priority over landing calls.

Push buttons on
landing control station



Note:
When running the 1.7 m/sec. high speed hoist to the next upper or lower landing — ***ALWAYS*** depress the Stop Next Landing button immediately ***before*** the hoist starts, to achieve normal operation speed.

Collective control system:

This is the most advanced control system available in the ALC controller. The lift can be operated from inside the car and if chosen, also from the landings. Each landing is provided with two call buttons, one for each travel direction.
There are two means of operating the lift from inside the car:
By destination push-buttons – one for each landing (perm. lifts).

By keypad (construction hoists).

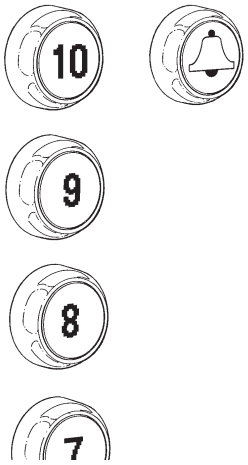
This system receives all destination orders from inside the car, as well as calls from the landings. The information is memo-rized and processed within the system.

During the travel the lift will automatically stop at all floors, which have been addressed.

If operation from inside the car is done by means of the keypad, access to the Stop Next Landing control system is automatic.

The keypad is consisting of 15 push-buttons. 12 of them are for the collective system: 0 – 9, ENT and CLR. The other three push-buttons are for the Stop Next Landing system: Up, Down and Stop Next Landing, which operates in parallel with the collective system.

Keypad panel inside the car appl. for construction hoists

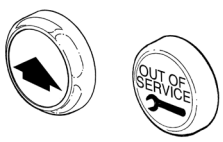


Push button panel inside the car applicable for permanent lifts

On every landing there is one I / O-card with two external illuminated call buttons: one for each travel direction and one indicator lamp: Out of service.

The I / O-cards are connected to a six wire communication circuit that terminates in a base CPU inside the base panel. The information is transmitted from the base CPU to the car CPU (main unit) on a two wire communication circuit in the trailing cable.

For permanent lifts only optional display at each landing



Indication lamp
”Out of service” for
construction hoists only

ALC II additional features

Auto return, Authorized drive, Flood alarm and High wind speed are examples of features available in the ALC II system. These functions can be chosen with the system's normal set-up procedures (page A 12 – A 15).

Auto return
Auto return means that the lift returns to its base location after a certain delay in time. (1 – 7 min. possible to be set). If value is set to 7 optional time can be set in VirtualPanel service tool. This function is set in GROUP 8 – and will be activated when time is chosen and set. Base location is normally the base landing (0) and this does not need any further setting. This can, however be changed in GROUP 10 – 13 to another landing level, if desired.
Example: Base location on landing level 3.
Set Group 10. VALUE V1 + V2 = landing level 3.

Permission to drive
Permission to drive means for example that a crane operator via a signal to the I/O-card Input 4:4 at the base landing can address the lift to the base location and also delete all other calls and destinations – until the same person unlocks the lift. Set this funtcion in GROUP 5, VALUE 1. Base location is normally the base landing (0) and this does not need any further setting. This can, however be changed in GROUP 10 – 13 to another landing level, if desired.

Fire and gas alarm
A detector signal to the I/O-card Input 4:3 at the base landing will send the lift to the next landing (Stop Next Landing), delete all other calls and destinations and remains at this landing until the alarm input goes off. Set this function in GROUP 5, VALUE 1.

Flood alarm
Flood alarm means that a signal from a trottle device automatically addresses the lift to a level where the water cannot reach. Set this function in GROUP 5, VALUE 4. Decide suitable level and set this in GROUP 10 – 13. Special function for flood alarm is GROUP 5, VALUE 2 which makes it possible to drive above set level in GROUP 10 – 13.

High wind speed / Low temperature
High wind speed means that the I/O-card in the base can receive a signal from a wind speed meter and then automatically address the lift to the base location and then also delete all calls and destinations – until the wind speed will decrease. Set this function in GROUP 7, VALUE 1
Base location is normally the base landing (0) and this does not need any further setting. This can, however be changed in GROUP 10 – 13 to another landing level.
Low temperature = corresponding function as High wind speed.
Special function for high wind is GROUP 5, VALUE 2 which makes it possible to drive below set level in GROUP 10 – 13.

Digital function can be set in Base. Group 7 V4-V1

Analog
V1 This value is sent to Modbus Cage. (0-1000 = 0-10V.)

Digital	On	Off
V2	17,5 m/s	16,5 m/s
V1+V2	20,0 m/s	19,0 m/s
V4	22,5 m/s	21,5 m/s
V1+V4	25,0 m/s	23,5 m/s
V2+V4	27,5 m/s	26,0 m/s
V1+V2+V4	30,0 m/s	28,5 m/s

Slipforming
Slipforming means that the lift will stop on temporarily installed cams located on the moveable slipform.
The system receives continuously information where the lift is located on the mast via input to the car CPU's expansion unit. The temp. installed cams are monitored by the ordinary normal and final limit cams on the mast.
See page A 38 for programming of the movable top landing for slipforming.

1 instead of 0 at the base landing
This means that the system counts levels, starting from 1, 2, 3 instead of 0,1, 2. (Preferably for constructions hoists equipped with keypad). If this function is chosen all former programmed levels in the system must be deleted.
Set this in GROUP 6, VALUE 1.

Base location in top
Base location in top means that the base CPU is connected to the top landing instead of the bottom landing.
This is preferable for offshore lifts installed inside the oil rig's support leg. Set this in GROUP 6, VALUE 2.

Explosion proof lifts
Explosion proof lifts require an extra ordinary configuration with I/O-card containing push-buttons. Refer to separate publ. No. 9081648 Set this in GROUP 15, VALUE 2.
To set and clear the Value the system must have the correct I/O boards.

High speed monitoring
High speed monitoring (according to demands in North America) means that the lift will stop as soon as the preset value for normal operation exceeds. The display inside the car will then show F8. Value for maximum speed is preset and cannot be changed. Set this in GROUP 9, VALUE 2.

Fire alarm
Fire alarm means that a fire detecting device via a signal to the I/O-card at the base landing can address the lift to the base location and also delete all other calls and destinations – until fire fighting personnel unlocks the lift. Refer to separate publ. No. 9081 647.

Set this in GROUP 4, VALUE 1 or 2 depending on applicable regulations.
The lift will return to desired level chosen in GROUP 10 – 13.
Set special function for fire alarm in GROUP 4, VALUE 5. This give phase 1 without reset function.

Floating landing level
Floating landing level can detect via a signal to the I/O-card at the base landing where the landing is located – even if the landing level is changed. This feature is preferable for boiler installed lifts where the whole structure can expand and move compared with the entire lift installation.

Top landing calibration
Calibration drive at the top landing means that the factory calibration drive and the regular calibration drive (CD) against the ref./ret. cam is done in the mast top. All remaining landing levels are programmed starting with the bottom landing – 0 at the base landing as usual. Set this in GROUP 9, VALUE 1.

More than 32 landings
Set this in GROUP 14, VALUE 1.
For a fully collective control system a booster unit must be added to the ALC-systemfor landing levels more than 32 pcs.

EN 81 approved lift
Emergency lightning operation time and function must fulfil particular demands for countries under jurisdiction of EN 81 directives. Set this in GROUP 14, VALUE 2.
DOL brake supervision: If an error of more than 30 occurs three times, an F6 alarm will be activated. If an error of more than 100 mm occurs, an F6 alarm will be activated.

64 – 128 landing levels for car operator
For buildings higher than 64 and more calls from landings and group control are not accessible why car operator contol must apply. Set this in GROUP 14, VALUE 4.

GPS on car
This function is chosen if the lift is to be equipped with GPS and there is a car CPU only.
Set this in GROUP 14, VALUE 8.

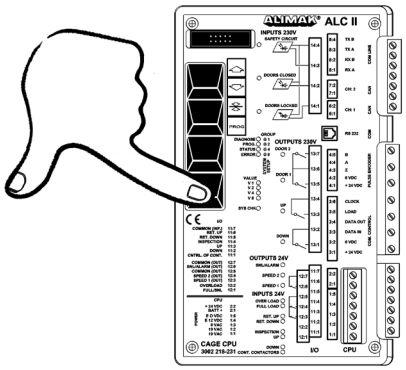
ID06
To meet this demand in order to prevent unauthorized persons to drive Alimak products. A external function with only a digital input on ALCII this prevents personnel to be able to call or run the lift. It is controlled from Input 12:1 at Car Exp. (3002218-233) and at Input 4:4 at Base I/O. See wiring diagram for more information. If input 12:1 is affected, the car cannot be sent to a destination, but calling is possible. At Input 4:4, the car cannot be called.

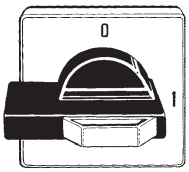
EN Ramp
Set this function in GROUP 1−2, VALUE 8. This for door 1-3. See instruction in separate manual for more information.

Hydraulic locking device
Set this function in GROUP 1-3, VALUE 4. This for door 1−3. See instruction in separate manual for more information.

Automatic doors
Set this function in GROUP 1-3, VALUE 2 This for door 1-3. See instruction in separate manual 9081650 for more information. If Cage Only function is used the door is left open if not used.

Open/close doors
This function is to have a separated relay contact for open and close. Default time of the relay is 6 seconds.





Factory calibration
(Normally done at the factory before delivery)

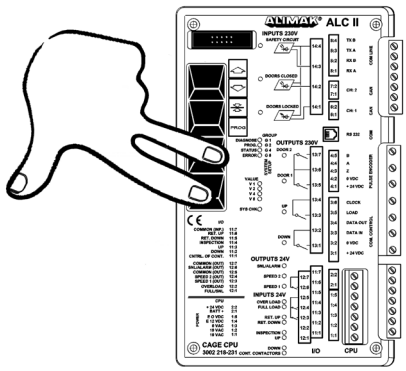
This system calibration drive is normally done at the factory at delivery, but must be done once again if the car CPU is to be replaced.

During the system calibration drive the lift is running automatically up and down 4 times to measure speed and then by itself calculate the stopping distances.

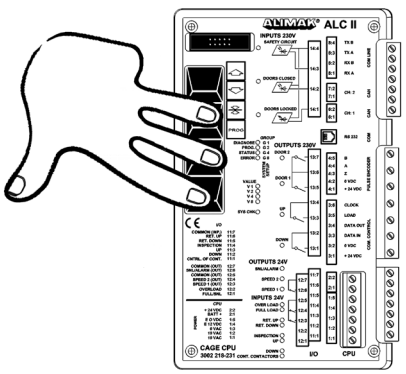
IMPORTANT! Lifting height needed for this purpose is minimum 15 – 20 m at a speed of 0.70 – 1.1 m/s (50 – 65 ft. at a speed of 135 – 215 fpm.). Or min. 30 m (100 ft.) when higher speed occurs.

The system calibaration drive is done from inside the car and starting from the bottom landing.

To put the system in system set-up / calibration mode is done according to the following

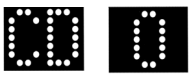


- Turn the main power switch to OFF position.
- Disconnect the battery.
- Keep the Prog. button on the car CPU depressed and then turn main power switch to ON position.
- Keep the Prog. button depressed until the LED SYS CHK lights up (after 2 sec.).
  Then continue pushing the Stop Next Landing button, Down button and finally
  the Up button.
  Keep all 4 buttons depressed whereupon all 8 LEDs for GROUP and VALUE start flashing.



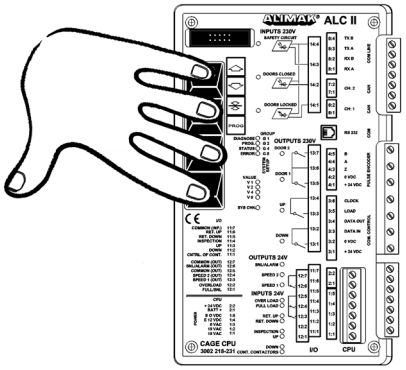
- Release all buttons when the LEDs start flashing with shorter intervals. The system is in calibration mode and all parameters established in a basic set-up when the LEDs go out.

The display shows:



System with dual display.

System with single display.



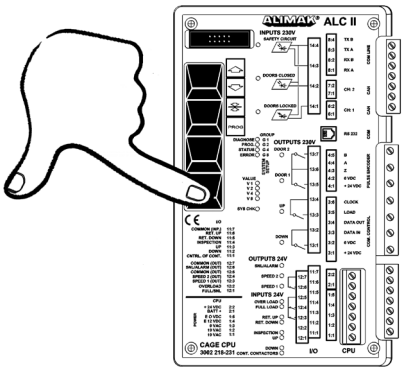
- The LEDs V1 and V2 are flashing rapidly indicating that the system is lack of speed information.
- Reconnect the battery.
- In case of DOL system go to page A10, and for VFC system go to A11.

If the base configuration is changed after the delivery from factory due to more added landing stations, the LED V8 on the car CPU starts lighting. This is fully normal and the intention is only to indicate that there is a change made to the equipment.

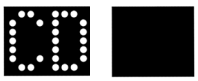
If the reason is other than just more added landing stations a new base configuration must be performed.

To replace the present base configuration proceed according to the following:

- Disconnect the battery.
- Switch off the car main electrical panel.
- Switch off the base main electrical panel.
- Reset the base main electrical switch in ON position.
- Keep the Prog. button on the car CPU depressed and put the main electrical switch in ON position.
- Continue keeping the Prog. button depressed and then push the Stop Next Landing 2 (two) times.
- Finally release the Prog. button.

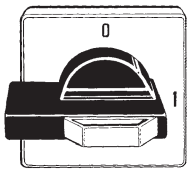


The display shows:
(no landings are programmed into the system):



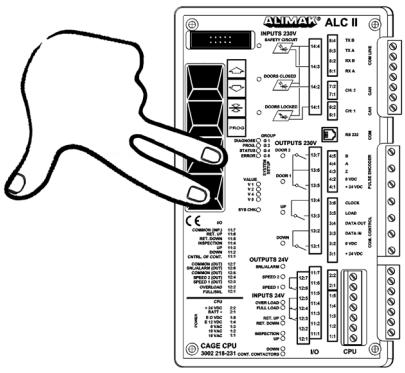
System with dual display.

System with single display.



- Reconnect the battery.

Calibration drive is performed from inside the car, starting from the bottom landing.



Stop / retardation distances

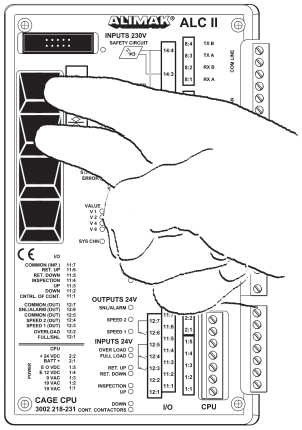
The stopping distance (DOL lift) or retardation distance (VFC lift), is automatically set during the calibration drive up and down against the Reference / Retardation down cam.

NOTE!

The down limit cam shall always be adjusted so that the up / down limit switch is approximately 10 mm **(1/2 in.)** above the cam when the lift is level with the bottom landing. Deviations can occur. Please see the manuals delivered with the lift.

Stop distances (DOL lift)

The ALC controller automatically sets the stopping distances, automatically during system calibration drive, in the following manner:



- Push the Up and Down buttons on the car ALC CPU. The lift moves in an upward direction and stops a short distance above the Reference / Retardation cam. The lift is now located above the Reference / Retardation cam and is still in calibration mode.
- The lift moves automatically upwards to measure speed and brake distance in the upward direction. After that the lift moves automatically downwards to measure speed and brake distance in the opposite direction. The system does this procedure 4 times. If the speeds are equal for 4 different starts the system itself makes the conclusion that the lift is intended for DOL opeartion.
- The lift moves once more – this time downwards to stop on the Reference / Retardation cam.

The ALC-system returns to normal mode with door zone, the stop distances and speed automatically programmed into the system.

NOTE!

- The Reference / Retardation cam shall be located approximately 240 mm **(9 1/2 in.)** above the down limit cam. Deviations can occur. Please see the manuals delivered with the lift.

New system set-up and system calibration must be done if car CPU is replaced.

Keep the Up/Down button depressed during the entire drive sequence – if the hold to run feature is chosen.

Retardation distances (VFC lift)

The ALC controller sets the retardation distances automatically during system calibration drive, in the following manner:

– Push the Up and Down buttons on the car ALC CPU. The lift accelerates to nominal speed upwards.

  When the Reference / Retardation switch leaves the cam, the ALC controller removes the high speed signal and the lift decelerates and stops.

  The lift is now located above the Reference / Retardation cam and is still in calibration mode.

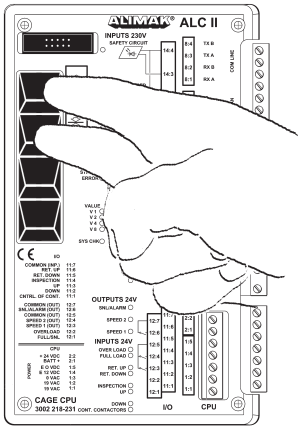
– The lift accelerates automatically upwards to high speed, retards and stops. Speed and retardation distance, from high to low speed in upwards direction are now stored into the system. The lift accelerates once more automatically downwards to high speed, retards and stops. Speed and retardation distance, from high to low speed in downwards direction are now stored into the system.

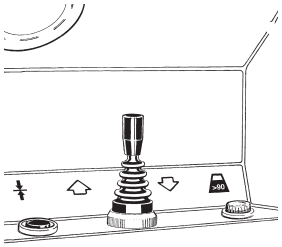
– The system does this procedure 3 more times to measure 2 intermediate speeds and 1 low speed with corresponding retardation distances.

  The lift will stop on the reference cam after 4 times up and down.

  Retardation distances for 4 different speeds and the door zone are now programmed into the ALC-system. This system calibration is normally done at the factory

  If the lift is moving on crawling speed for approximately 2 to 10 cm (1 – 4 in.) before it stops, then the retardation distance is Ok.





Note! If joystick with one or two speeds: Press and hold the joystick up and hold the joystick the total time for the factory calibration.

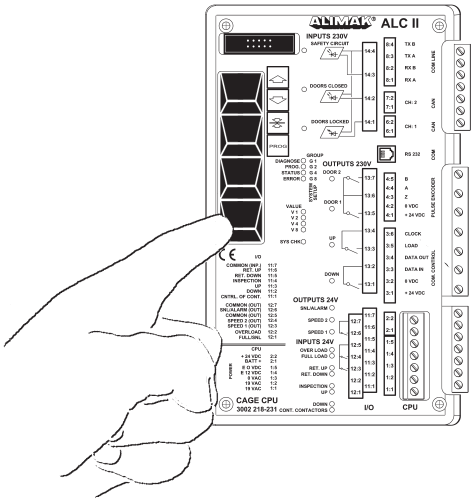
NOTE!

– The Reference / Retardation cam shall be located approximately 1.1 x Y m above the down limit cam. (Y= the lift speed in m/sec.). Deviations can occur. Please see the manuals delivered with the lift.
  The lift should move on crawling speed for only approximately 2 to 10 cm **(1 – 4 in.)** when stopping at landing.

– If location of the reference cam is changed all landing levels must be changed the corresponding way.

  New system set-up and system calibration must be done if car CPU is replaced.

  Keep the Up/Down button depressed during the entire drive sequence – if the hold to run feature is chosen.



System set-up

A system set-up has to be performed in order to prepare the controller for the actual lift and its functions. Set-up is performed in the following manner:

- Switch off the main power.
- Disconnect the battery.
- Press on and hold Prog. button.

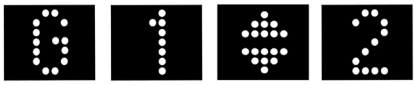
  Note: The button must be kept depressed during the entire set-up procedure.
- Switch on the main power. The system is now in set-up mode.

  On the main unit there are 2 locations with 4 LED indicators in a row close to the push-buttons.
  In system set-up mode the 4 LEDs indicate VALUE, V1, V2, V4 and V8 in binary code. (LED ”sys. check” is flashing).

  The 4 LEDs above indicate GROUP, G1, G2, G4 and G8 in binary code. (LED ”SYS. CHECK” is illuminated).

  When programming system parameters on the ALCII, the GROUP and VALUE information shown on the ALCII indicate the Group and Group Values.

  For permanent lifts, there are also symbols shown in sequence on the display, for group, number, and value respectively.



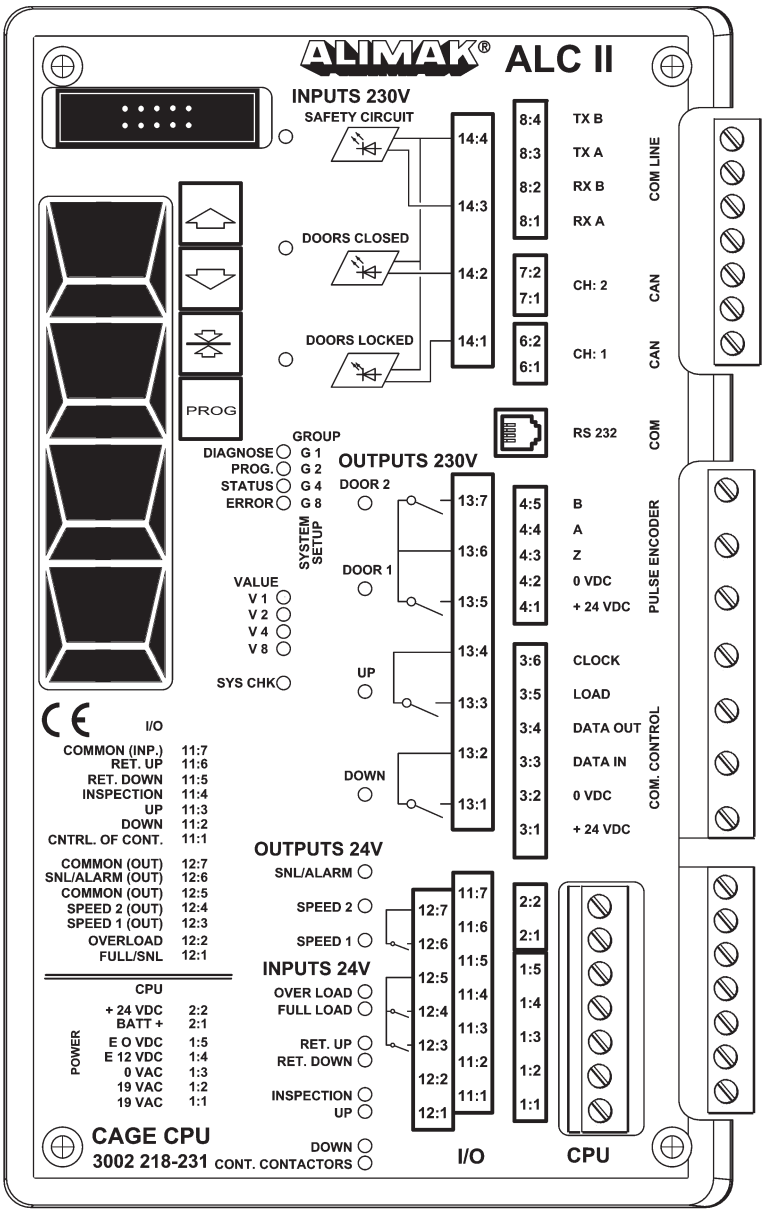
Example of display symbols in sequence:
Group 1, value 2.

  The Up or Down buttons are used to select GROUP level.

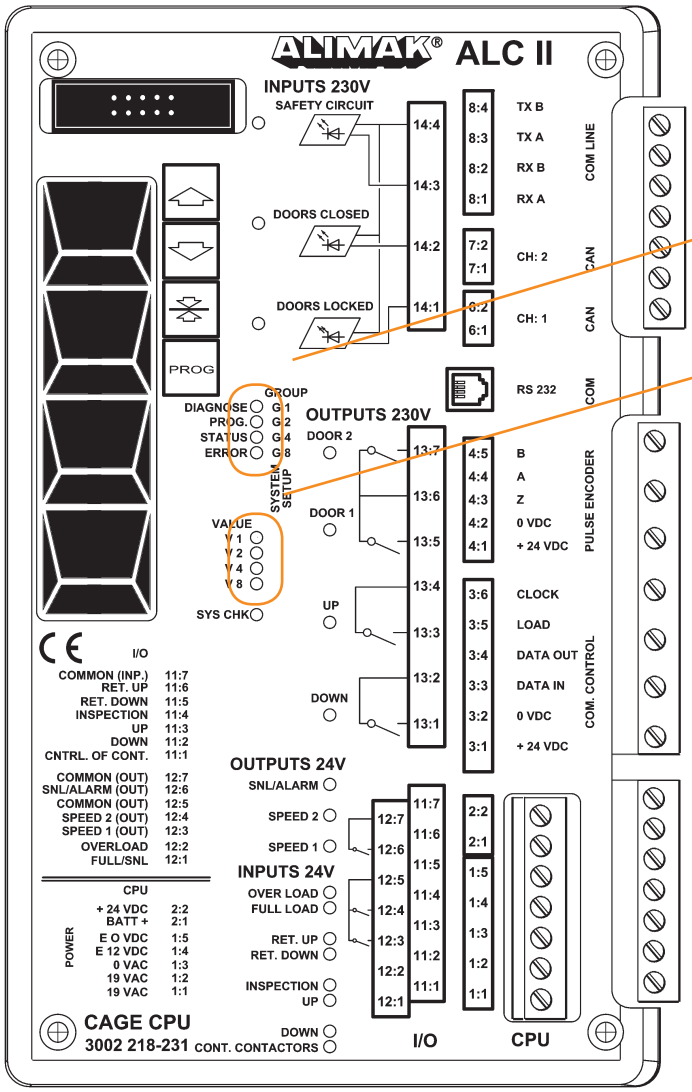
  The Stop Next Landing button is used to open and select VALUE level.

  Select VALUE with Up / Down buttons.
  Depress the Stop Next Landing button to store VALUE level and the system then will switch to GROUP.
- Set the binary code in accordance with the lift and its functions, using the table on page A13.
- The value will be stored every time Stop Next Landing push-button is depressed.
- Release Prog. button.
- Connect the battery. The system set-up is now completed.

See collection of illustrative examples at the end of this manual.
NOTE! All values in GROUP 15 must be preset before the factory calibration drive is performed. After running the factory calibration drive the GROUP 15 will be locked for further changes.



Car CPU (main unit)



● = means LED ON
o = means LED OFF

Example 1:

Door close sequence set to nom, 6 sec.

GROUP 0	o	VALUE 9	o	
	o		●	V2 + V4 = 6 sec.
	o		●	V4
	o		o	

Example 2:

Car to be addressed to landing A (level 3) when high wind speed occurs.

GROUP 7	●	VALUE 1	●	High wind speed
	●		o	
	●		o	
	o		o	
GROUP 10	o	VALUE 3	●	V1 + V2 = 3
	●		●	(level 3 chosen)
	o		o	
	●		o	

Example 3:

Car to be addressed to landing B (level 18) automatically with 5 min. delay.

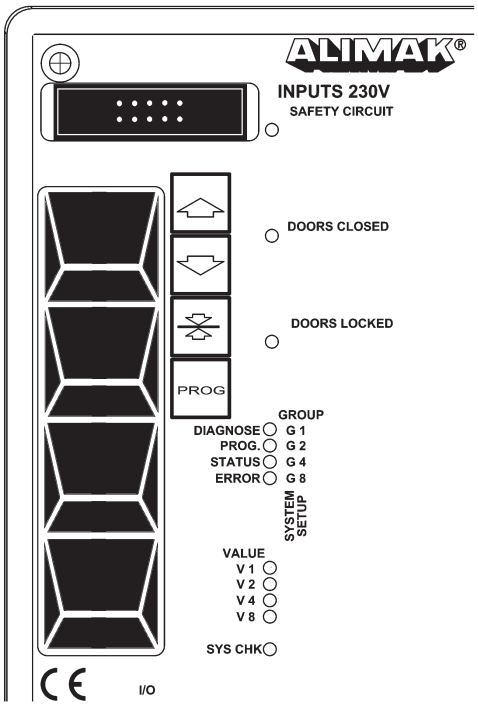
GROUP 8	o	VALUE 5	●	V1 + V4 = 5 min.
	o		o	
	o		●	
	●		●	addressed to landing B
GROUP 12	o	VALUE 2	o	
	o		●	level 2
	●		o	
	●		o	
GROUP 13	●	VALUE 1	●	level 16 to be added
	o		o	to level 2 (previous
	●		o	group 12 above)
	●		o	= level 18

GRP. code	Binary value	Decsription	DEFAULT	V8	V4	V2	V1
0	o o o o	Door close sequence	● ● = 1 – 15 sec. o ● o ● o ●	o o o ● = 8 sec.	o o ● = 4 sec. o	o ● = 2 sec. o o	● = 1 sec. o o o
1	● o o o	Door A	o Solenoid / Actuator o o o	o o o ● EN load ramp	o o ● Hydr. lock device o	o ● Automatic door o o	● Mec. interlock o o o
2	o ● o o	Door B	o Solenoid / Actuator o o o	o o o ● EN load ramp	o o ● Hydr. lock device o	o ● Automatic door o o	● Mec. interlock o o o
3	● ● o o	Door C	o Solenoid / Actuator o o o	o o o ● Open/Close A&B	o o ● Hydr. lock device o	o ● Automatic door o o	● Mec. interlock o o o
4	o o ● o	Fire alarm	o o o o	* * * ● Landing. level B	* * ● Special function * fire alarm	* ● US requirem. * *	● EU requirem. * * *
5	● o ● o	Larm function	o o o o	* * * ● Landing. level B	* * ● Flood alarm *	* ● HW/Flood alarm * special function *	● Permission to drive / * Gas alarm * *
6	o ● ● o	Functions	o o o o	* * * *	* * ● Movable top * landing	* ● Base landing * in Top *	● 1 instead of 0 at base * landing. For keypad * only. (Construction hoists) *
7	● ● ● o	Wind speed	o o o o	* * * ● Landing. level B	o o ● HW B4 o	o ● HW B2 o o	● High windspeed * See page A 6 for more info * *
8	o o o ●	Autoreturn	● ● = 1 – 6 min.** o ● o ● o o	* * * ● Landing. level B	o o ● = 4 min. o	o ● = 2 min. o o	● = 1 min. o o o
9	● o o ●		o o o o	o o o ● CAN-interface communication guard, VFC only	o o ● Extended temp. o	o High speed ● monitoring o o	● Calibration o ref. up. o o
10	o ● o ●	Landing A part1 Prog. 0 – 15	o o o o	o o o ● Level 8	o o ● Level 4 o	o ● Level 2 o o	● Level 1 o o o
11	● ● o ●	Landing A part 2 Prog. 16 – 127	o o o o	o o o ● Top level	o o ● Level 64 o	o ● Level 32 o o	● Level 16 o o o
12	o o ● ●	Landing B part1 Prog. 0 – 15	o o o o	o o o ● Level 8	o o ● Level 4 o	o ● Level 2 o o	● Level 1 o o o
13	● o ● ●	Landing B part 2 Prog. 16 – 127	o o o o	o o o ● Top level	o o ● Level 64 o	o ● Level 32 o o	● Level 16 o o o
14	o ● ● ●		● o o o	o o o ● GPS in car (X3) and NO base unit	o Landing 64-128 o Car operator ● 128 landings o	o ● EN 81 approval o o	● More than 32 levels o or extra pictogram o functions o
15	● ● ● ●	Authorized personnel only	● Configuration for base ● CPU ● ●	* * * ● SYS.CAL OK.	o o o o	o ● Ex. proof lift o o	● Hold to run feature o o o

* = means varaible, LED ON or LED OFF.

** If 7 is choosen – desired time can be selected by the VirutualPanal service tool.

Information and fault indications on the car CPU



Group Normal mode

VALUE	V1	●			busy, car in operation
	V2		●		base OK (flashing)
	V4			●	car/base OK (flashing)
	V8				● base configuration fault

Group Normal & Status mode (push the Prog. button once)

VALUE	V1	●			movement
	V2		●		z-pulse
	V4			●	direction upwards
	V8				● occupied

Error mode (push the Prog. button once)

VALUE	V1	●			car configuration fault F8:3
	V2		●		motor alarm F6
	V4			●	temperature fault F8:5
	V8				● calibration fault F8:4

Error & Status mode (push the Prog. button once more)

VALUE	V1	●			speed error F8:2
	V2		●		EN load ramp fault F3:1
	V4			●	stopping accuracy error F8:1
	V8				● interlock fault F3:2

Diagnose mode – flashing, (Norm./Insp. switch in Insp. position)

VALUE	V1	●			GPRS modem (Or in Ex. mode out of door zone)
	V2		●		IP adress choosen
	V4			●	TxIP (transmit)
	V8				● RxIP (receive)

Diagnose mode – led G1 flashing, (Norm./Insp. switch in Insp. pos. and SNL button depressed)

VALUE	V1	●			GPS
	V2		●		GPS position valid
	V4			●	CAN2 rx
	V8				● CAN1 rx

Note 1

If V1 + V2 flash rapidly out of syn, the system calibration has not been performed.

Note 2

If internal voltage drops under 20VDC, an f8 alarm will be shown as indication, but it will not stop the lift/hoist.

ALC II Diagnose mode

To enter diagnose mode:

- Disconnect the battery.
- Turn main power switch in OFF position.
- Push and hold the SNL button.
- Turn main power switch in ON position.
- When DIAGNOSE is on – release the SNL button.
- Reconnect battery.

To exit DIAGNOSE mode: Push the SNL button.

Changing VALUE, use UP or DOWN push button. (Value 16 – 31 = flashing value).

VALUE:	Floor indicator		
0	–		
1	Floor	Number of floor.	
2	Speed	Number of speed.	
3	Car S1 type	(0=None, 1=I/O, 2=Call, 3=Keyboard, 4=Car I/O)	
4	Car S2 type	(0=None, 1=I/O, 2=Call, 3=Keyboard, 4=Car I/O)	
5	Car #S1	Number of card installed on expander bus (X15=10 ribbon-cable).	
6	Car #S2	Number of card installed on Comm. Control Bus (X3=6-pole).	
7	Base S1 type	Same as above but for Base.	
8	Base S2 type		
9	Base #S1		
10	Base #S2		
11	DC voltage	Internal voltage.	(The integer part)
12	DC voltage	Internal voltage.	(The decimal)
13	Battery voltage	Internal battery voltage.	(The integer part)
14	Battery voltage	Internal battery voltage.	(The decimal)
15	Base-Car error	Number of Base-Car error.	(0–31)
16	–		
17	System temperature	Internal temperature.	(The denary part)
18	System temperature	Internal temperature.	(The unit part)
19	Temperature stop	If the unit have reached temperature max (65°C) counter.	
20	CAN2 rx	Can communication line 2.	
21	CAN1 rx	Can communication line 1.	
22	Pulse decoder cnt.	Decoder pulse count.	(0–31)
23	Z-Pulse decoder cnt.	Decoder pulse count.	(0–31)
24	Number of Z error	Decoder error count.	(0–31)
25	Second	Second counter.	(0–31)
26	Car Input	Input in hex value.	(230VAC X14:1–4)
27	Car Input	Input in hex value.	(X11.1–X11.6)
28	Car Exp. Input		(230VAC X14:1–4)
29	Car Exp. Input		(X11.1–X11.6)
30	Base Input	1:st connected card in loop with 10-part connector connection.	(X0)
31	Base Input	1:st connected card in loop with 6-part wire connection.	(X3)

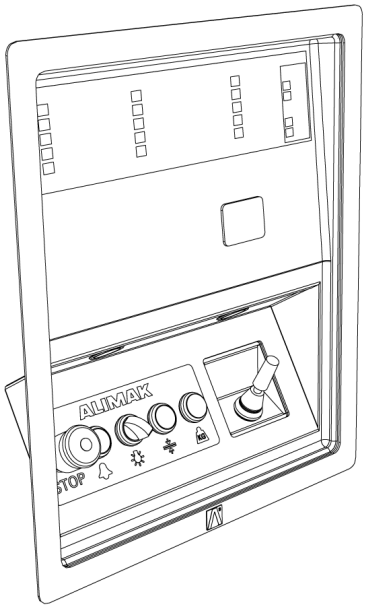
On landing indication lamp ”Out of service”

Ordinary feature for the construction hoist’s ALC system

Solid light = Fault according to fault display in car.
Flashing light = Door open.

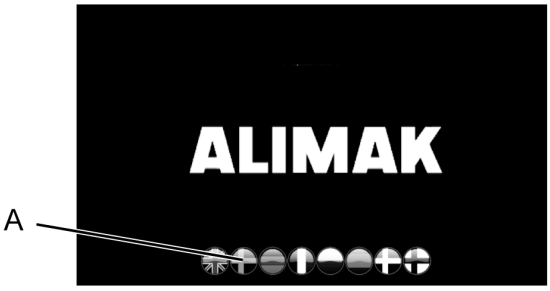
Optional equipment for permanent installed Ex. proof lifts

Solid light = Fault according to fault display or flood, fire, gas or high wind alarm, etc.
Flashing light = Door open.

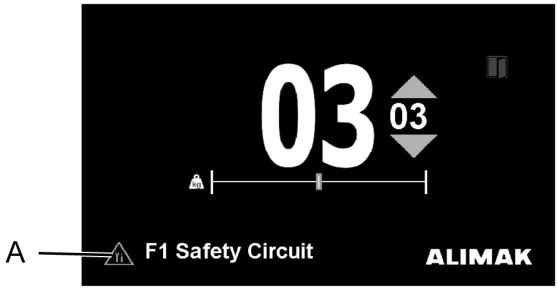


LCD Display (optional)

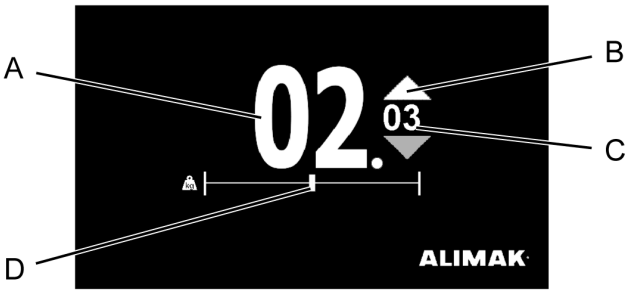
The lift can be equipped with a touch-screen LCD display that can show information and messages. See examples below.



A Language selection



A ALC Error Message



A Current landing
B Direction
C Destinated landing
D Weight

A ALC Error Message
B Open door
C Error symbol (Overload)

Information and fault indications on displays

Fault indications

A hoist / lift equipped with the ALIMAK ALC control system and landing level display on the lift electrical panel has access to a fault indication system. Faults indicated at the display are the following:

Symbol	Text in display	Explanation
	I/O Error	Error in I/O boards. Card/s missing or broken.
	Safety circuit.	Safety circuit broken.
	Door error	Door circuit open with hoist between landings
	EN ramp fault Lock fault	Fault in door closing sequence, or EN ramp/ Hydraulic lock device
	Overload	Overload
	Inspection drive Programming	Hoist in Inspection or in Programming mode. To reset after inspection drive, break the safety circuit.
	Motor Error	Hoist does not start within start time/ fault on pulse encoder. Error in CAN-interface with VFC drive. Must be set set in parameters.
	Emergency Stop in Base	Emergency push button at base activated (construction hoists only)
	Adaptive fault Speed fault Config error Calibration fault Temperature fault	See page A16 for specification of F8 errors.
	Ctrl Circuit fault	Fault in the control circuit of the contactors.
	Door open	Door(s) open
	Calibration drive	The system is in position for calibration drive. Carry out the calibration drive
	Blocked lift	Inside the car: closed landing. At the base: No communication with car CPU.
	Car Only	At the base: ”Car only”. Lift can only be addressed from inside the car. (Car only)
	Fire / Fire2 / Flood	Fire / flood alarm
	High wind	High wind speed / Low temperature (Hard winter)
	Permission to drive	Permission to drive

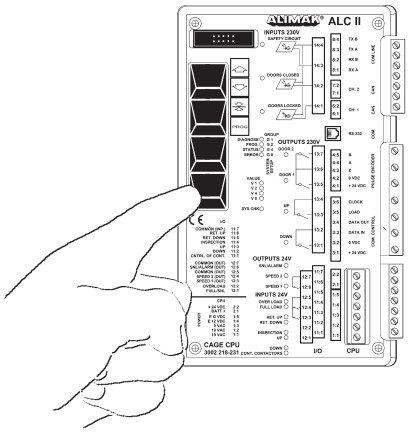
DOL

Programming of DOL operated lifts

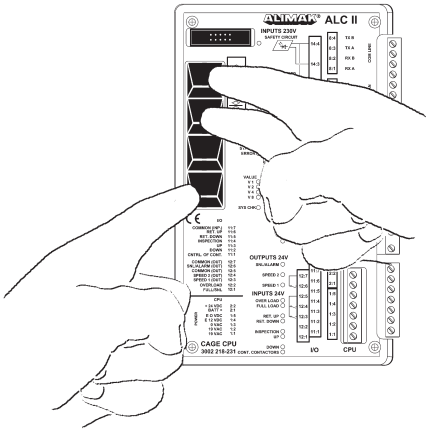
Calibration drive (CD) and deletion of all landings.

Before the programming of landings can start, the reference point has to be established and since the lift could have been used before, all previous landings that might be programmed into the system, must be deleted.

In order to delete all landings the lift must be positioned at the bottom level located on the reference cam and must be in the calibration mode.



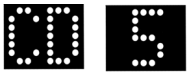
+

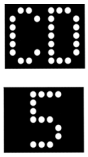


Activating calibration mode:

The lift is to be positioned at the bottom level located on the reference cam with safety circuit in order and doors closed. Press the Prog. button on the car CPU and keep it depressed. The Prog. LED will be illuminated after approximately 3 seconds. Keep the Prog. button depressed and also press the Up and Down button ***at the same time***. Then release all buttons and the Prog. LED goes out.

The display shows:
(if 5 landings are programmed into the system)





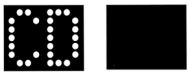
CD and 5 flash alternately on the display for the single system.

The lift is now in calibration mode.

Delete all landings:

The lift must be in calibration mode (see above) and positioned at the lowest landing.
In order to delete all landings: press the Prog. button on the car CPU and keep it depressed. The Prog. LED will be illuminated after approximately 3 seconds. Keep the Prog. button depressed and also press the Up and Down button ***at the same time.*** Then release all buttons and the Prog. LED goes out.

The display shows:



CD flashes on the display for the single system.

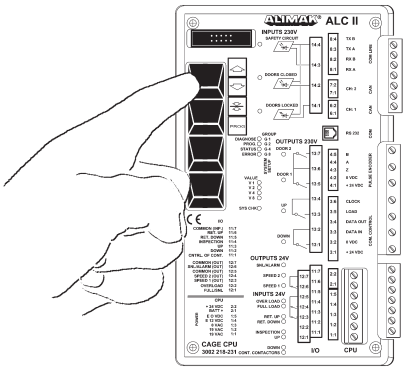
All the landings have now been deleted and the lift returns to the calibration mode.

Calibration drive, CD

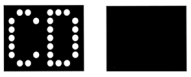
The intention with the calibration drive is to pick up reference level.

Landings are NOT stored into system

Calibration drive from inside of the car when lift is located at bottom landing:



The display shows:
(no landings are programmed into the system):



CD flashes on the display for the single system.

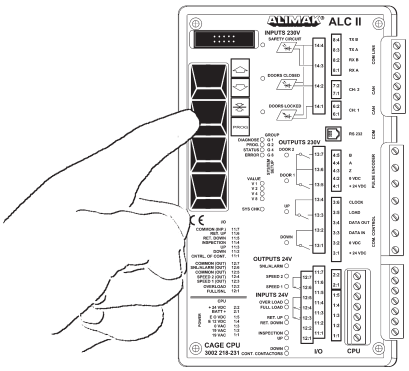
– Press Up button and the lift will automatically start upwards until it has left the reference cam and then it stops.
– The lift now automatically moves back down to the bottom landing and stops on the reference cam.

The display shows:

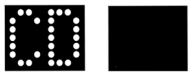
The reference level is now programmed into the system.

The lift is now back into normal mode but no landings are programmed into the system.
See page Programming of landings.

Calibration drive from inside of the car when lift is located somewhere above the bottom landing:



The display shows:
(no landings are programmed into the system):



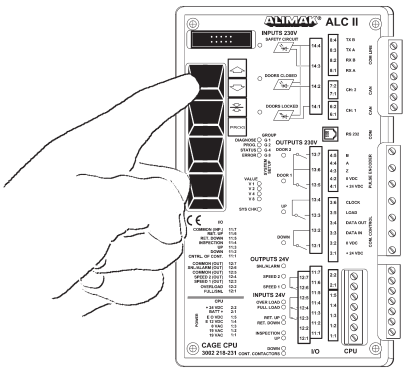
CD flashes on the display for the single system.

– Press Down button and the lift will automatically start downwards to the bottom landing and stops on the reference cam. (”Ref. down” LED goes out).

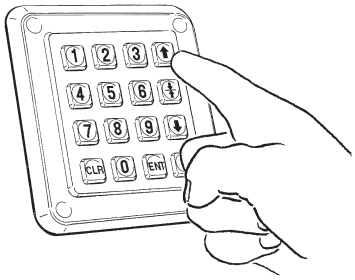
The display shows:

The reference level is now programmed into the system.

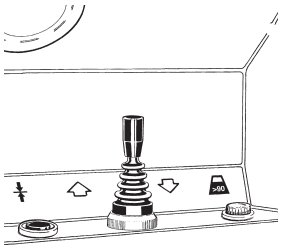
The system is now back into normal mode, but no landings are programmed into the system.
See page Programming of landings.



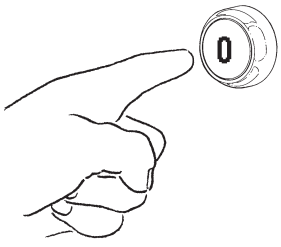
alternatively . . .



. . . or with joystick . . .



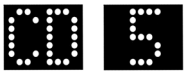
. . . or ”0” for permanent lifts

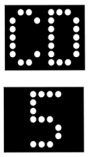


Landings ARE stored into the system

Calibration drive from inside of the car when lift is located at bottom landing:

The displays show:
(if 5 landings are programmed into the system).





CD and 5 flash alternately on the display for the single system.

– Press Up button and the lift will move upwards until it has left the reference cam and then it stops.

– The lift now automatically moves down to the bottom and stops.

The reference level is now programmed into the system.

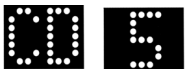
The system is now back into normal mode.
Direct the lift to the desired landing.

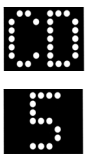
The display shows:

0 lights up on the display for the single system.

Calibration drive from inside of the car when lift is located somewhere above the bottom landing:

The displays show:
(if the number of programmed landings is 5).

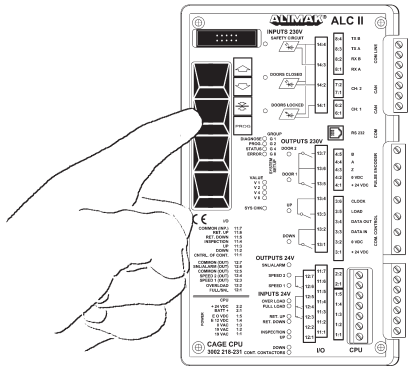




CD and 5 flash alternately on the display for the single system.

– Press the Down button and the lift will go down to the bottom and stop.
The reference level is now programmed into the system.

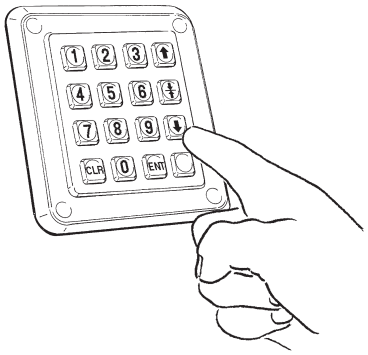
The lift is now back into normal mode.
Direct the lift to the desired landing.



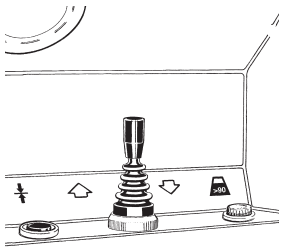
The display shows:

0 lights up on the display for the single system.

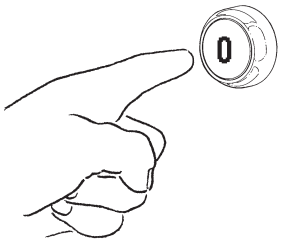
alternatively . . .



. . . or with joystick . . .



. . . or ”0” for permanent lifts



Calibration drive from landing or B-panel when car is located at bottom landing:

– Press Call button and the lift will move upwards until it has left the reference cam and then it stops.
– The lift now automatically moves down to the bottom and stops.

The reference level is now programmed into the system.

The system is now back into normal mode.
Direct the lift to the desired landing.

Calibration drive from landing or B-panel when car is located somewhere above the bottom landing:

– Press the Call button and the lift will go down to the bottom and stop.
The reference level is now programmed into the system.

The system is now back into normal mode.
Direct the lift to the desired landing.

VFC

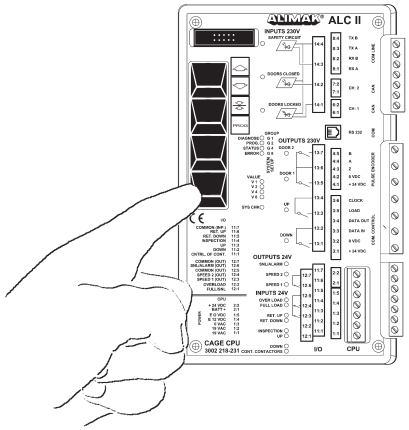
Programming of VFC operated lifts

Calibration drive (CD) and deletion of all landings.

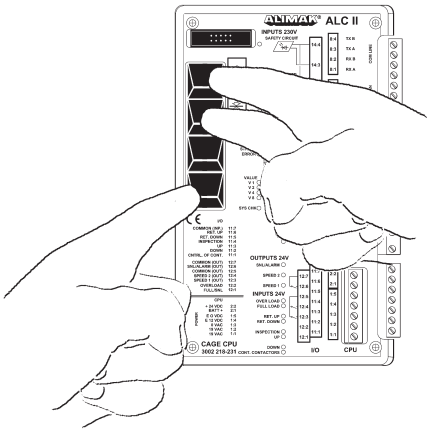
Before the programming of landings can start, the reference point has to be established and since the lift could have been used before, all previous landings that might be programmed into the system, must be deleted.

In order to delete all landings the lift must be positioned at the bottom level located on the reference cam and must be in the calibration mode.

Activating calibration mode:

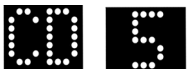


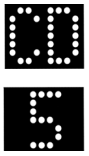
+



The lift must be positioned at the bottom level located on the reference cam with safety circuit in order and doors closed. Press the Prog. button on the car CPU and keep it depressed. The Prog. LED will be illuminated after approximately 3 seconds. Keep the Prog. button depressed and also press the Up and Down button ***at the same time***. Then release all buttons and the Prog. LED goes out.

The display shows:
(if 5 landings are programmed into the system).





CD and 5 flash alternately on the display for the single system.

The lift is now in calibration mode.

Delete all landings:

The lift must be in calibration mode (see above) and positioned at the lowest landing.
In order to delete all landings: press the Prog. button on the car CPU and keep it depressed. The Prog. LED will be illuminated after approximately 3 seconds. Keep the Prog. button depressed and also press the Up and Down button ***at the same time.*** Then release all buttons and the Prog. LED goes out.

The display shows:

CD flashes on the display for the single system.

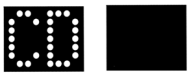
All the landings have now been deleted and the lift returns to the calibration mode.

Calibration drive, CD
The intention with the calibration drive is to pick up reference level.

Landings are NOT stored into system

Calibration drive from inside of the car when lift is located at bottom landing:

The display shows:
(no landings are programmed into the system):



CD flashes on the display for the single system.

– Press Up button and the lift will accelerate upwards until it has left the reference cam, then it decelerates and stops.
– The lift will automatically move down in slow speed and just before it reaches the reference cam it will reduce the speed to crawling speed. The lift continues in crawling speed down until it reaches the reference cam and then the lift will stop.

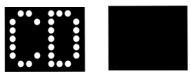
The display shows:

The reference level is now programmed into the system.
The lift is now back into normal mode but no landings are programmed into the system.
See page Programming of landings.

Calibration drive from inside of the car when lift is located somewhere above the bottom landing:

The display shows:

(no landings are programmed into the system):

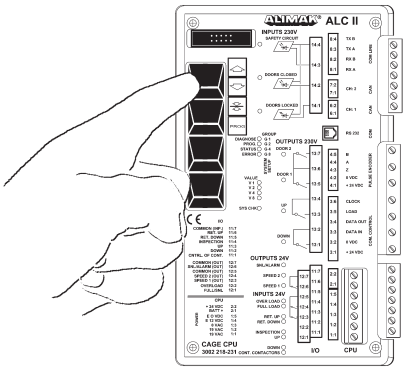


CD flashes on the display for the single system.

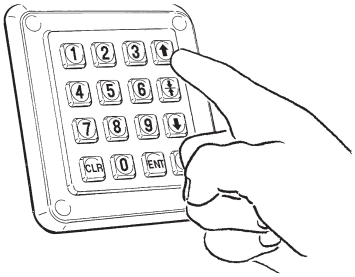
– Press Down button and the lift will move downwards until it reaches the reference cam, then it decelerates and stops.
– The lift will automatically accelerate upwards until it has left the reference cam, then it decelerates and stops.
– The lift will once again automatically start and move down in slow speed and just before it reaches the reference cam it will reduce the speed to crawling speed. The lift continues in crawling speed down until it reaches the reference cam and then the lift will stop.

The display shows:

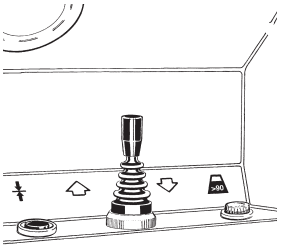
The reference level is now programmed into the system.
The system is now back into normal mode, but no landings are programmed into the system.
See page Programming of landings.



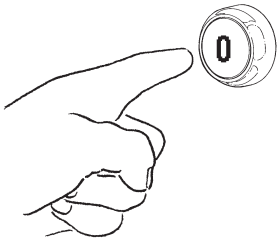
alternatively . . .

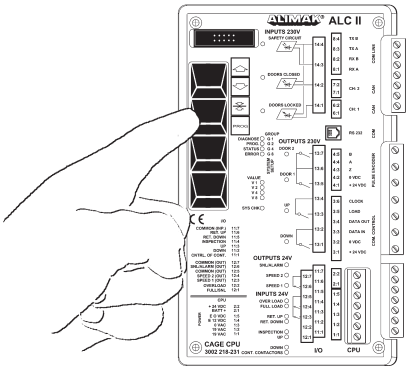


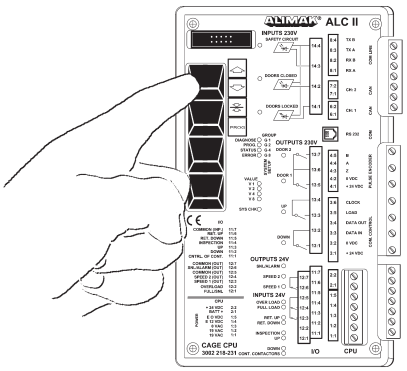
. . . or with joystick . . .



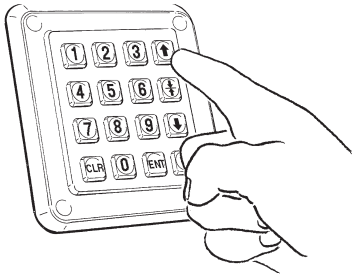
. . . or ”0” for permanent lifts



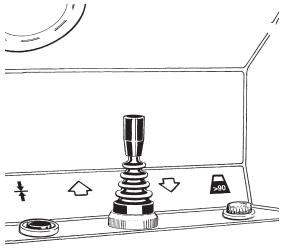




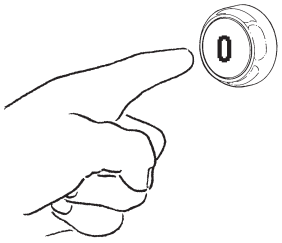
alternatively . . .

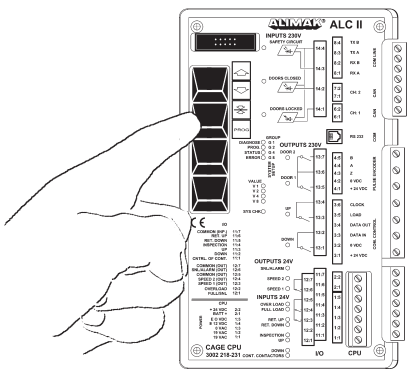


. . . or with joystick . . .



. . . or ”0” for permanent lifts

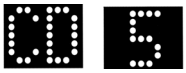


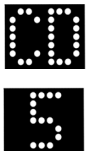


Landings ARE stored into the system

Calibration drive from inside of the car when lift is located at bottom landing:

The displays show:
(if 5 landings are programmed into the system).





CD and 5 flash alternately on the display for the single system.

– Press Up button and the lift will accelerate upward until it has left the reference cam, then it decelerates and stops.

– The lift will automatically move down in slow speed and just before it reaches the reference cam it will reduce the speed to crawling speed. The lift continues in crawling speed down to the bottom landing.

The reference level is now programmed into the system.

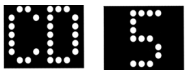
The system is now back into normal mode.
Direct the lift to the desired landing.

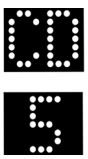
The display shows:

0 lights up on the display for the single system.

Calibration drive from inside of the car when lift is located somewhere above the bottom landing:

The displays show:
(if the number of programmed landings is 5).





CD and 5 flash alternately on the display for the single system.

– Press Down button and the lift will move downwards until it reaches the reference cam, then it decelerates and stops.

– The lift will automatically accelerate upwards until it has left the reference cam, then it decelerate and stops.

– The lift will once again automatically start and move down in slow speed and just before it reaches the reference cam it will reduce the speed to crawling speed. The lift continues in crawling speed down to the bottom landing.

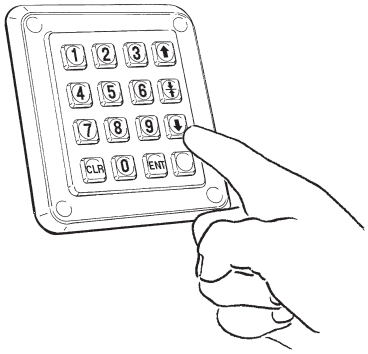
The reference level is now programmed into the system.

The lift is now back into normal mode.
Direct the lift to the desired landing.

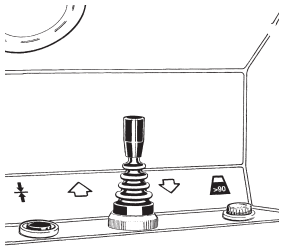
The display shows:

0 lights up on the display for the single system.

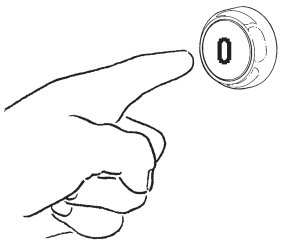
alternatively . . .



. . . or with joystick . . .



. . . or ”0” for permanent lifts



Calibration drive from landing or B-panel when car is located at bottom landing:

– Press Call button and the lift will accelerate upward until it has left the reference cam, then it decelerates and stops.

– The lift will automatically move down in slow speed and just before it reaches the reference cam it will reduce the speed to crawling speed. The lift continues in crawling speed down to the bottom landing.

The reference level is now programmed into the system.

The system is now back into normal mode.
Direct the lift to the desired landing.

Calibration drive from landing or B-panel when car is located somewhere above the bottom landing:

– Press Call button and the lift will move downwards until it reaches the reference cam, then it decelerates and stops.

– The lift will automatically accelerate upwards until it has left the reference cam, then it decelerate and stops.

– The lift will once again automatically start and move down in slow speed and just before it reaches the reference cam it will reduce the speed to crawling speed. The lift continues in crawling speed down to the bottom landing.

The reference level is now programmed into the system.

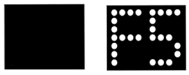
The system is now back into normal mode.
Direct the lift to the desired landing.

Programming of landings

The lift shall be in normal operation mode.

– Press the Prog. button inside the car electrical panel until the PROG. LED is illuminated. The lift is now in programming mode.

The displays show (if no landings are programmed into the system):



F5 lights up on the display for the single system.

– Run the lift with the Up and Down button inside the car to the bottom landing level. Check that the lift has not actuated the down limit switch when it is level with the bottom landing. (The same goes for the top landing).

– Press the Stop Next Landing button.
The system will unlock the doors one by one.
Open suitable door for the landing in question. ***(If not, the landing will be stored as a closed landing).***
The Prog. LED goes out.

The first landing level is then programmed into the system and the system returns to normal operation.

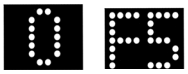
The display shows:

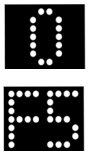
0 lights up on the display for the single system.

To program the next landing, proceed in the following manner:

– Press the Prog. button on the car CPU until the Prog. LED is illuminated. The lift is now in programming mode.

The display shows:





0 and F5 flash alternately on the display for the single system.

– Run the lift with the Up and Down button inside the car to the second landing level.

– Press the Stop Next Landing button.
The system will unlock the doors one by one.
Open suitable door for the landing in question. ***(If not, the landing will be stored as a closed landing).***
The Prog. LED goes out.

The second landing level is then programmed into the system and the systemt returns to normal operation.

The display shows:

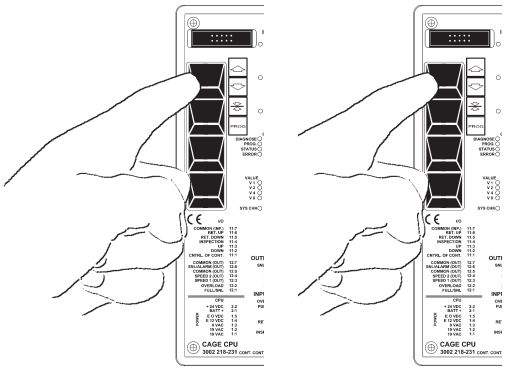
1 lights up on the display for the single system.

Program additional landings into the system in the same manner.

NOTE!

- As soon as a landing is programmed into the controller it unlocks intended door(s) on corresponding landings.
- If a VFC lift is in programming mode, then the driving speed is very low in order to facilitate stopping at the landing level intended to be programmed.
  Should there be a longer distance between the landings it is always possible to drive to the next landing in a higher speed according to the following: Press the Up button and wait until the car has left the landing door zone – then press the Up button once again. The system will then automatically change to higher speed when running to the next landing. Release the Up button and press the Stop Next Landing button at the next landing level and the landing level will be stored.
  If the landing level needs to be adjusted, this must be done in low speed mode.
- ***It is not possible to program a new landing in-between two existing landings.***

Press Up-button once again to achieve increased speed.

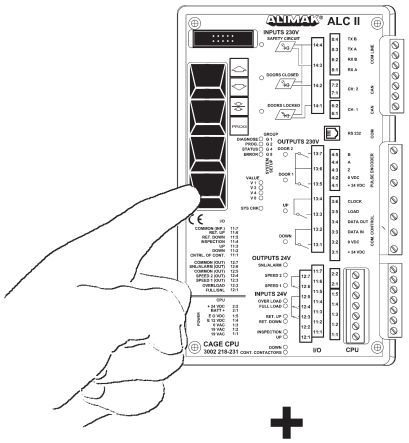


Delete the top landing:

Run the lift to the top landing in Normal operation mode.

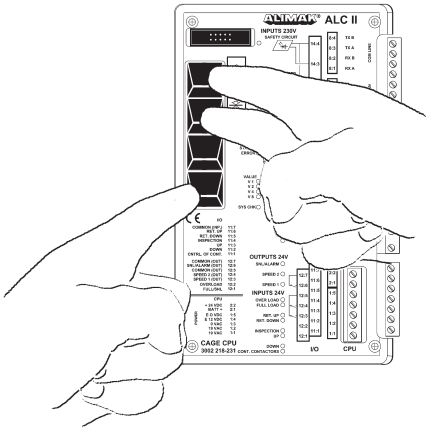
The display shows:
(if the top landing is No. 5).

5 lights up on the display for the single system.

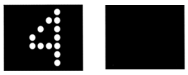


- Press the Prog. button on the car CPU and keep it depressed.
  After approximately 3 seconds the Prog. LED will illuminate. Then press Up and Down button at the same time. Then release all buttons and the Prog. LED goes out.

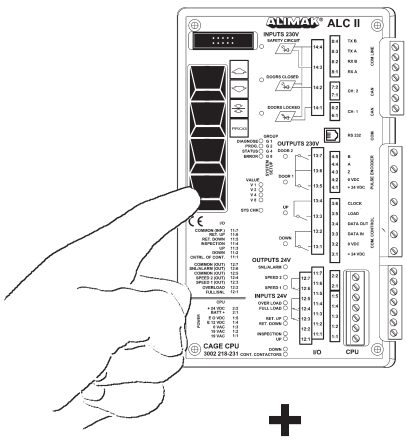
  The top landing level is now deleted and the system returns to normal operation.



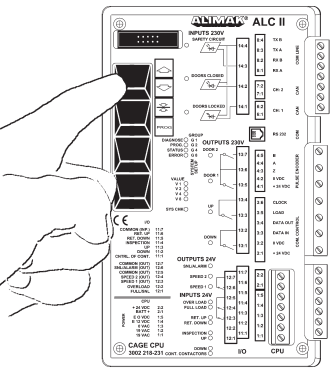
The display shows:

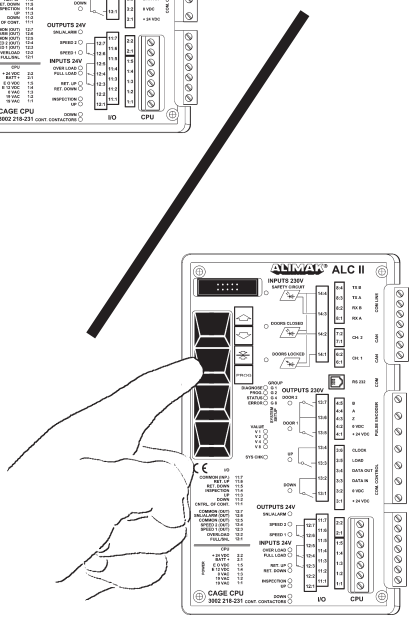


4 lights up on the display for the single system.

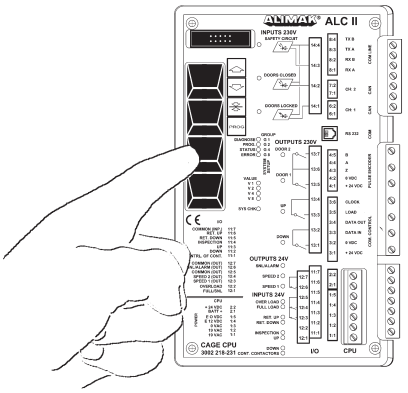


+





+



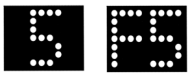
Move / adjust a landing:

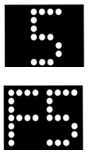
It is possible to move / adjust any landing level as long as the adjustment stays within the original door zone. This is performed in the following manner:

– Move the lift to the actual landing in normal operation.

– Press the Prog. button on the car CPU inside the main panel until the Prog. LED is illuminated. The lift is now in programming mode.

The displays show (if the lift is on landing 5):





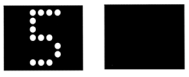
5 and F5 flash alternately on the display for the single system.

– Run the lift with the up and down button inside the car to the ”new” landing level.

– Press the Stop Next Landing button.
The system will unlock the doors one by one.
Open suitable door for the landing in question. ***(If not, the landing will be stored as a closed landing).***
The Prog. LED goes out.

The moved / adjusted landing level is then programmed into the system and the system returns to normal operation.

The display shows:



5 lights up on the display for the single system.

Change floor level indication

The floor level indication can be changed from digit to a letter. For instance B, E, G, P or T.

This is performed in the following manner:

– Run the lift to the actual landing in normal operation.

– Press the Prog. button on the car CPU inside the main panel until the Prog. LED is illuminated. The lift is now in programming mode.

– Press the Stop Next Landing button.
The system will unlock the doors one by one. Open suitable door for the landing in question and leave it open.

– Use the Up and Down buttons to change the floor level indication.
When intended floor level indication is achieved – close the door and the new floor level indication will be stored.

– Press the Prog. button on the car CPU inside the main panel to change Image bank.

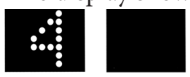
Close intermediate landings:

On a construction site intermediate landings can be made inac-cessible, if desired. Instead of deleting those landings and reprogramming the landings above, the landings can be locked out in the control system.

This is performed in the following manner:

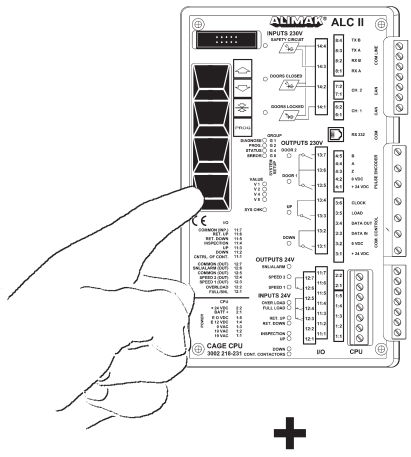
– Drive to the landing in normal mode (for example landing 4 of totally 8).

The display shows:



4 lights up on the display for the single system.

– Press the Prog. button on the car CPU and keep it depressed After approximately 3 seconds the Prog. LED will illuminate. Then release the Prog. button and depress the Stop Next Landing button.
Do not touch the doors when the system starts unlock the doors.



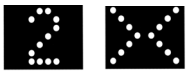
The display shows:

4 lights up on the display for the single system.

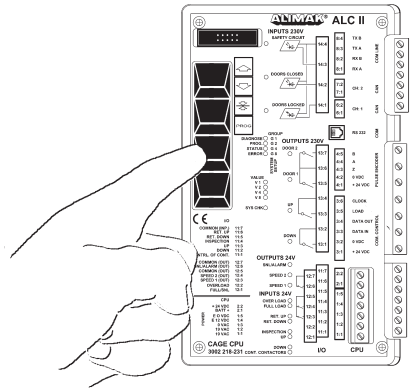
The 4th landing is now closed, all doors are locked and the lift has returned to normal operation. Move the lift to an open landing – for example landing 2.

2 lights up on the display for the single system.

The permanent lift does not attempt to start if you try to desti-nate it to a ”closed” landing. The display for the construction hoist will show an ”X” in this situation.



2 lights up on the display for the single system.



Programming of minus floor (floors below the 0 ground floor):

This is performed in the following manner:

– All floors erased and standing on ref. breaker.

– Press the Prog. button on the car CPU inside the main panel until the Prog. LED is illuminated.
The lift is now in programming mode.

– Run with up/down to the lowest floor, then press the Stop Next Landing button.

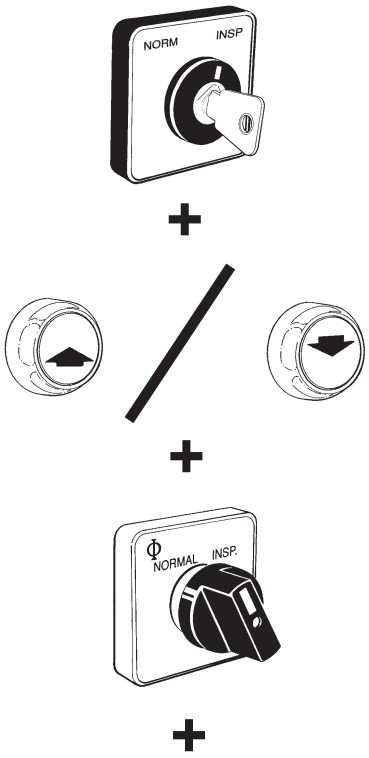
The system will unlock the doors one by one. Open suitable door for the landing in question and leave it open.

– When the door is open there are 4 banks of indication to choose from.
To change banks press Prog. and step with Up/Down buttons.

– Choose for example –4 and close the door.

– Go up to the next floor. The system will automatically choose the correct indication, if not step to the correct indication.

Remarks:
If running with joystick for up or down, the lift stops as normal on 0. Press again for top or bottom.
On HW the lift by default goes to the lowest floor if nothing else is programmed.
After the CD travel the lift stops on floor 0.
When erasing all floors you must be on lowest floor.
Remember that programming of minus floor is not the same as changing floor indication.
To set minus 2 (–2) with keyboard, press 0 and 2.

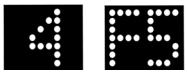


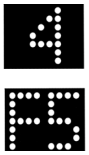
Activating a closed landing:

Opening a closed landing is performed in the following manner:

- Run the lift in normal mode to the nearest landing, which is open.
- Place the lift in Inspection mode or Prog. mode and move to the closed landing level. Ensure that the car is located within the door zone.
- Return it to Normal operation.
- Press the Prog. button on the car CPU inside the main panel until the Prog. LED is illuminated. The lift is now in programming mode.

The displays show (if the lift is on landing 4):

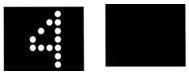




4 and F5 flash alternately on the display for the single system.

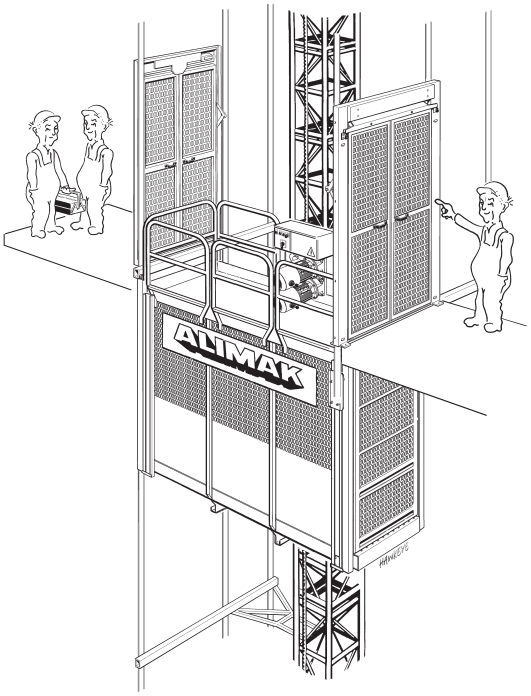
- Press the Stop Next Landing button. Open up and close the car door where the intended landing is located. The Prog. LED goes out. The closed landing is opened and the system returns to normal operation.

The displays show (if the lift is on landing 4):



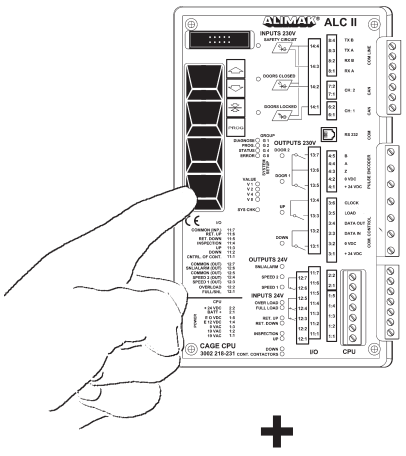
4 lights up on the display for the single system.

Programming of passing through landings
Two push-button boxes at the same landing

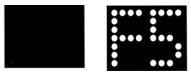


The lift shall be in normal operation mode.

– Press the Prog. button on the car CPU inside the main panel until the Prog. LED is illuminated. The lift is now in programming mode.



The display shows
(if no landings are programmed into the system):



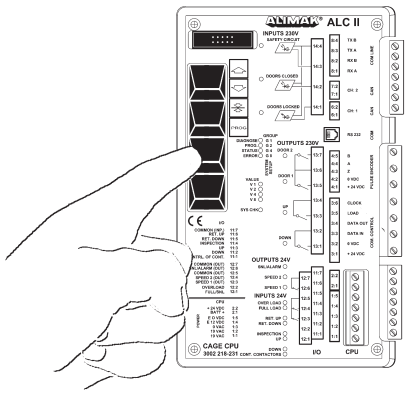
F5 flashes on the display for the single system

– Run the lift with the Up and Down button inside the car to the bottom landing level. Check that the lift has not actuated the down limit switch when it is level with the bottom landing. (The same goes for the top landing).

– Press the Stop Next Landing button.
The system will unlock the doors one by one.
Open suitable door for the landing in question. ***(If not, the landing will be stored as a closed landing).***
The Prog. LED goes out.

The first landing level is then programmed into the system and the system returns to normal operation.
Adjust the 1st landing level before the 2nd push-button box is programmed.

Note: do not operate the lift from this position.



The display shows:

0 lights up on the display for the single system.

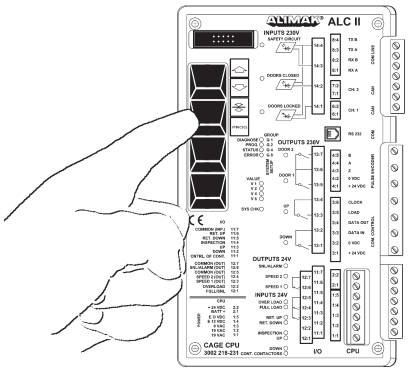
To program next door and push-button box proceed in the following manner:

– Press the Prog. button on the car CPU until the Prog. LED is illuminated. The lift is now in programming mode.

– Press the Stop Next Landing button and keep it depressed while the Down button is pressed.

– Release the Stop Next Landing button and after that the Down button.

The system will unlock the doors one by one.
Open suitable doors for the landings in question.



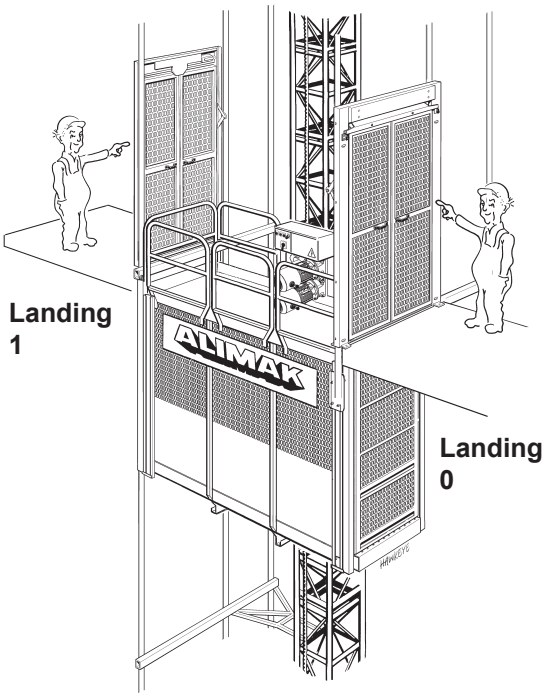
The display shows:

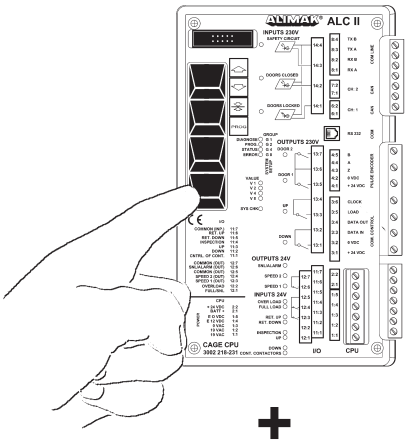
0 lights up on the display for the single system.

NOTE!

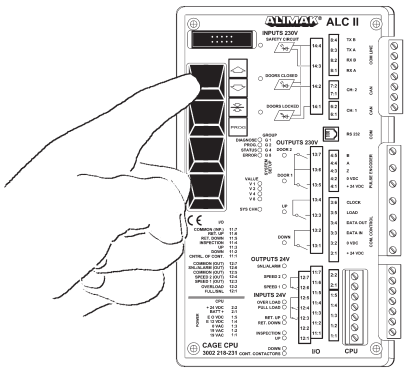
If you have to adjust the landing levels the entire procedure must be repeated.

Programming of two separate landings at the same level with a landing push-button each

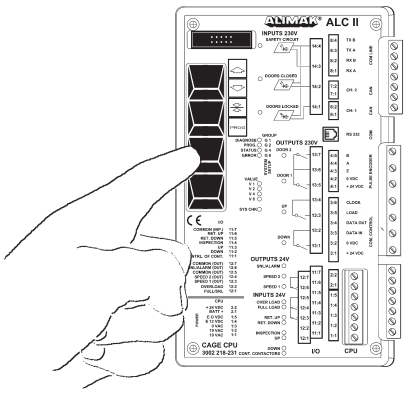




+



+



The lift shall be in normal operation mode.

– Press the Prog. button on the car CPU inside the main panel until the Prog. LED is illuminated. The lift is now in programming mode.

The display shows F5 = programming mode (if no landings are programmed into the system):

F5 flash on the display for the single system.

– Run the lift with the Up and Down button inside the car to the bottom landing level. Check that the lift has not actuated the down limit switch when it is level with the bottom landing. (The same goes for the top landing).

– Press the Stop Next Landing button.
The system will unlock the doors one by one.
Open suitable door for the landing in question. ***(If not, the landing will be stored as a closed landing).***

The Prog. LED goes out.

The first landing level is then programmed into the system and the system returns to normal operation.

Note: do not operate the lift from this position.

The display shows:

0 lights up on the display for the single system.

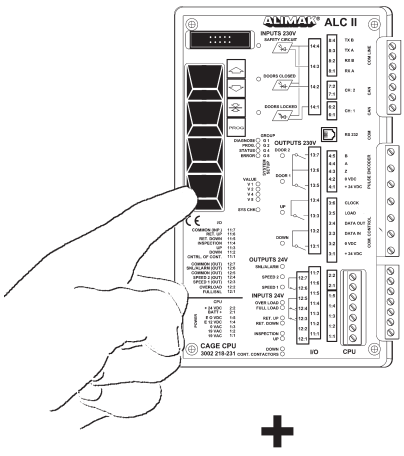
To program the next landing, proceed in the following manner:

– Press the Prog. button on the car CPU until the Prog. LED is illuminated.

– Press the Stop Next Landing button and keep it depressed while the Up button is pressed.

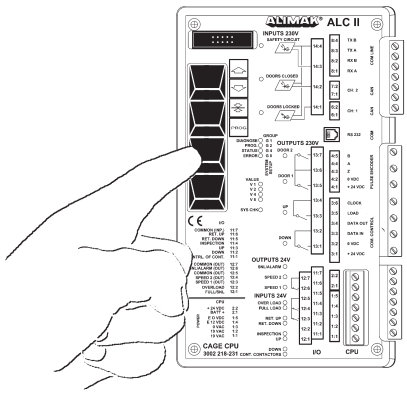
– Release the Stop Next Landing button and after that the Up button.

The system will unlock the doors one by one.
Open suitable door for the landing in question.



The display shows:

1 lights up on the display for the single system.



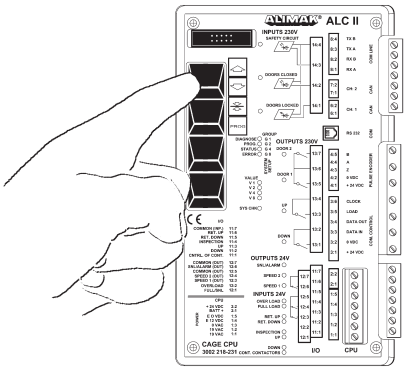
TEST!

Construction Hoist

Press 0 + ENT. The 1st car door will be unlocked. No car movement will appear.

The display shows:

Press 1 + ENT. The 1st car door will be unlocked. No car movement will appear.



The display shows:

Permanent Lift

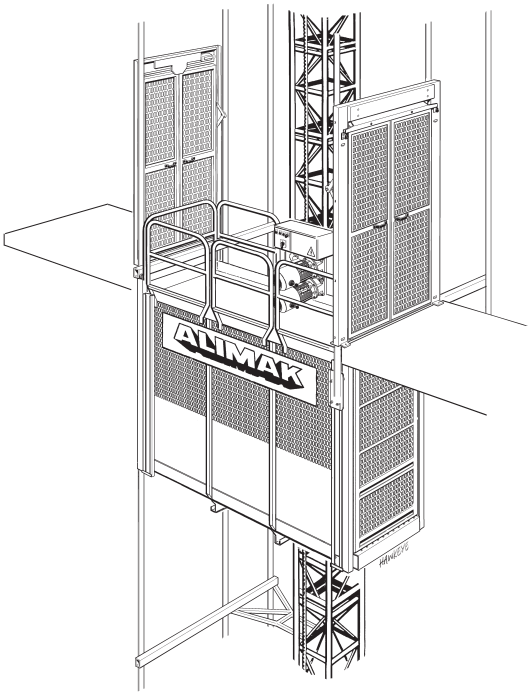
Press 0. The 1st car door will be unlocked. No car movement will appear.

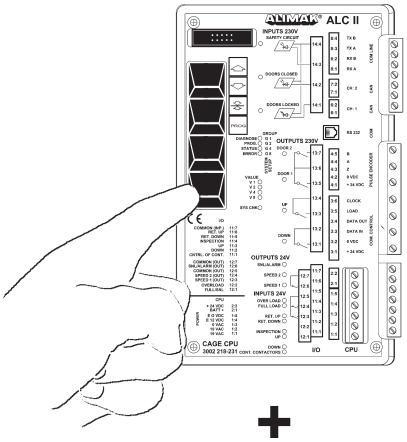
The display shows:

Press 1. The 2nd car door will be unlocked. No car movement will appear.

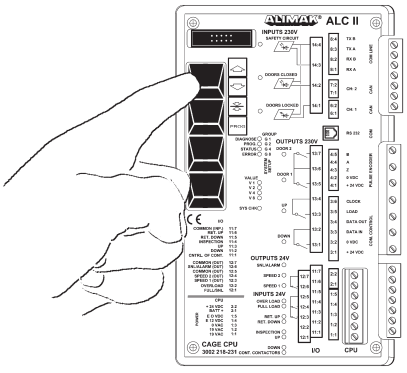
The display shows:

Programming of landings where NO push-button box can be found at the landing level

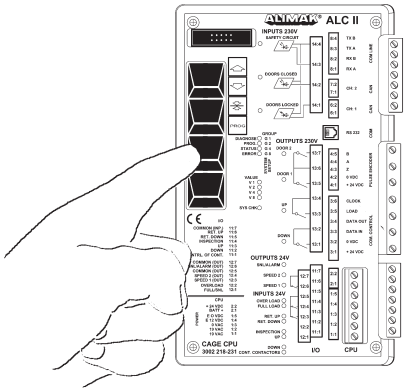




+



+



The lift shall be in normal operation mode.

– Press the Prog. button on the car CPU inside the main panel until the Prog. LED is illuminated. The lift is now in programming mode.

The display shows F5 = programming mode (if no landings are programmed into the system):

F5 flashes on the display for the single system.

– Run the lift with the Up and Down button inside the car to the bottom landing level. Check that the lift has not actuated the down limit switch when it is level with the bottom landing. (The same goes for the top landing).

– Press the Stop Next Landing button.
The system will unlock the doors one by one.
Open suitable door for the landing in question. ***(If not the landing will be stored as a closed landing).***
The Prog. LED goes out.
The first landing level is then programmed into the system and the system returns to normal operation.
Note: do not operate the lift from this position.

The display shows:

0 lights up on the display for the single system.

To delete function for push-button box proceed in the following manner:

– Press the Prog. button on the car CPUl until the Prog. LED is illuminated.

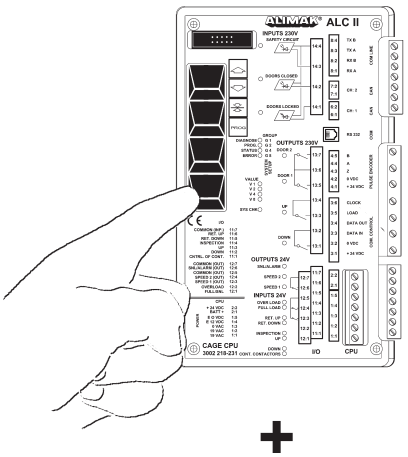
– Press the Stop Next Landing button and keep it depressed while the Up and Down buttons are pressed.

– Release the Stop Next Landing button and after that the Up and Down buttons.

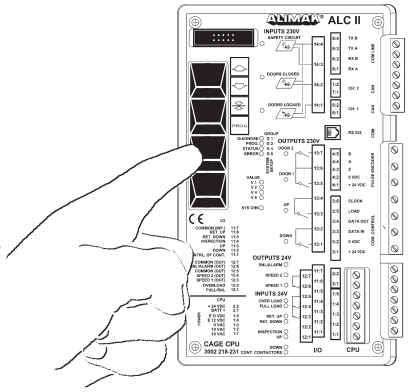
  The system will pull the door lock solenoids one by one. Open suitable door for the landing in question.

The display shows:

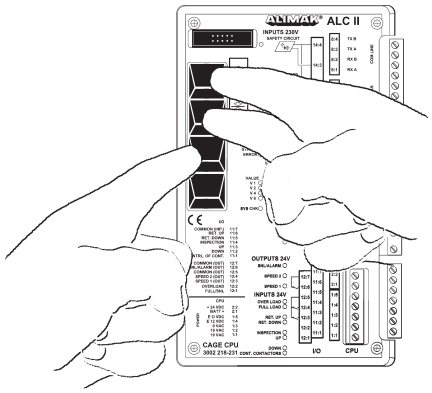
0 lights up on the display for the single system.



+



+



NOTE!

If you have to adjust the landing levels the entire procedure must be repeated.

Programming ot the movable top landing for a slipform installation

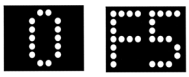
First check if GROUP 6, VALUE V4 (page A12 – A15) is chosen before starting the programming of the landings.

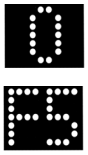
Then check that all programmed landings from previous installations are deleted. Make a new CD drive at this stage.

Program the bottom landing and possible intermediate landings according to instructions on page A 20 – A 25, after the completed CD drive.

Program the movable top landing according to the following. Press the Prog. button inside the car electrical panel until the Prog. LED is illuminated. The lift is now in programming mode.

The display show 0 and F5 (if the bottom landing only is programmed into the system).





0 and F5 flash alternately on the display for the single system.

DOL operated lifts

– Run the lift with the Up-button inside the car to the movable landing at the slipform. Check that the car electrical switch is actuated by the landing cam at the slipform (input LED D12:11.4 off).

– Push the Stop Next Landing button on the car CPU. The system will unlock the doors one by one. Open suitable door for the landing in question (if not, the landing will be stored as a closed landing).

  The Prog. Led goes out.

VFC operated lifts

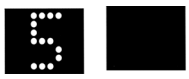
– Run the lift with the Up-button inside the car to the movable landing at the slipform. Check that the car electrical switch (Ret. and Stop movable top landing) is actuated by the landing cam at the slipform (input LED D12:11.4:11:5 off).

– Push the Stop Next Landing button on the car CPU. The system will unlock the doors one by one. Open suitable door for the landing in question (if not, the landing will be stored as a closed landing).

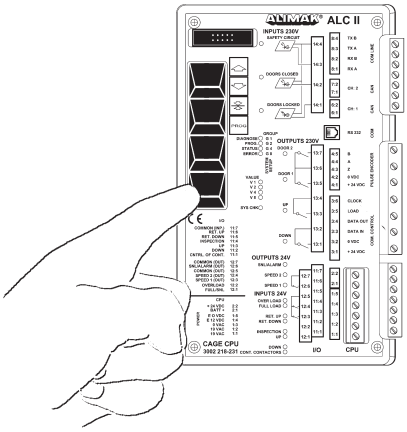
The Prog. Led goes out.

Delete the movable top landing:

Run the lift to the top landing in Normal operation mode.
The display shows: (if the top landing is No. 5)



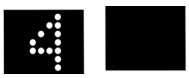
5 lights up on the display for the single system.



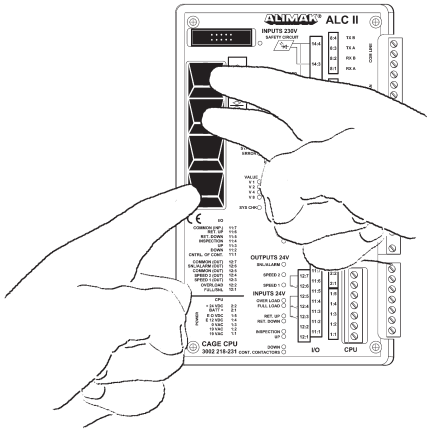
– Press the Prog. button on the car CPU and keep it depressed.
  After approximately 3 seconds the Prog. LED will illuminate. Then press the Up and Down button at the same time. Then release all buttons and the Prog. LED goes out.

  The top landing level is now deleted and the system returns to normal operation.

The display shows:



4 lights up on the display for the single system.



NOTE!

– The car electrical switch for the movable top landing/ slipform must be actuated. If not – the actual landing will not be stored as a movable lnding.
– It is not possible to program additional landings above the movable top landing.
– ***Ensure that the normal and final limit cams are properly installed above he top landing before leaving the machine to the end user.***

ALC II for Construction Hoists

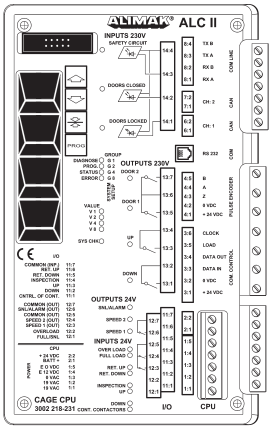
Control station in the car

Semi-automatic control:

The control station front includes as standard:

- Joystick for Up and Down and an additional Stop Next Landing push-button (The Stop Next Landing button is illuminated).
- A 2-digit display, showing current landing, fault indication and information.
- Emergency stop push-button.
- An alarm push-button.
- A switch for light in car.

As an option overload indication lamp can be furnished.



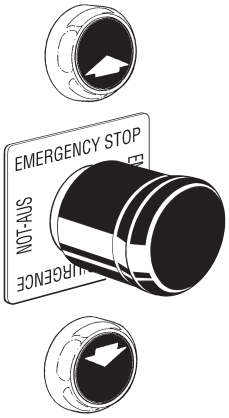
On the inside of the control panel:

- Push-button on the car CPU
- Norm. / Insp. selector switch.

Top of car control:

Top of car control consists of:

- Up and Down push-button.
- An Emergency stop push-button.



Collective control:

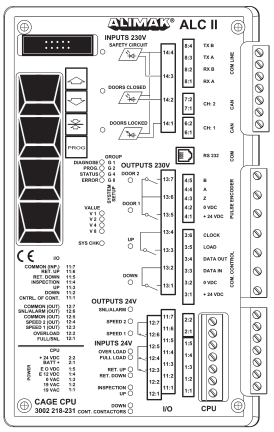
The control station includes as standard on the front:

- A keypad with 15 push-buttons: 0 – 9, ENT, CLR, Up, Down, Stop Next Landing.
- Two 2-digit displays, one showing current landing and the other showing next stop, fault indication and information.
- Emergency stop push-button.
- An alarm push-button.
- A switch for light in car.

As an option overload indication lamp can be furnished.

On the inside of the control panel:

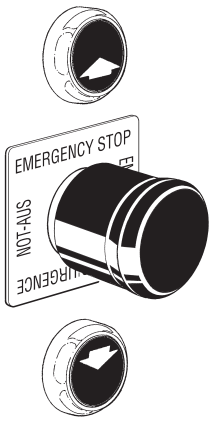
- Push-button on the car CPU.
- Norm. / Insp. selector switch.

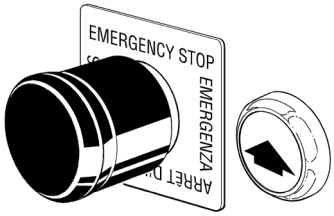


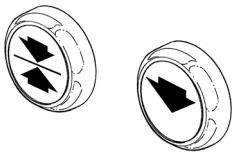
Top of car control:

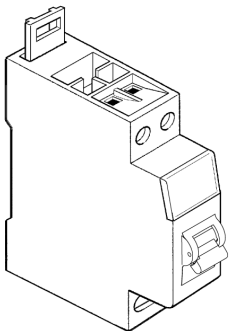
Top of car control consists of:

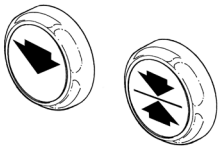
- Up and Down push-button.
- An Emergency stop push-button.



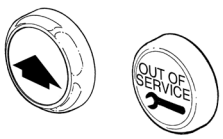








Push buttons on
landing control station



B-panels

Car operated hoist:

The B panel is not equipped with any control push-buttons. It can be combined with both Semi-automatic or collective car control.

Semi-automatic control system:

This B panel is equipped with Up, Down and Stop Next Landing push-buttons.
The signals from the push buttons transmit through 230 VAC control wires between the main panel and the base panel and also to the landing control boxes.

Collective control system:

This B panel is equipped with one I/O-card, one ”Car only” selector switch and one externally illuminated call button.

On the front of the B panel a 2-digit display is available showing the actual position of the hoist, but also information / fault indications.
The I / O-cards are connected to a six wire communication circuit that connects to a base CPU inside the base panel out to the landing control boxes.

The selector switch ”Car only” (marked -S 107) disconnects all signals from the landings, which means that the lift can only be operated from inside the car.

From the base CPU to the car CPU (main unit) the information transmits through a two wire communication circuit in the trailing- (hybrid) cable.

Landing control equipment

Semi-automatic control system:

A landing box unit with Up, Down, and Stop Next Landing push-buttons.

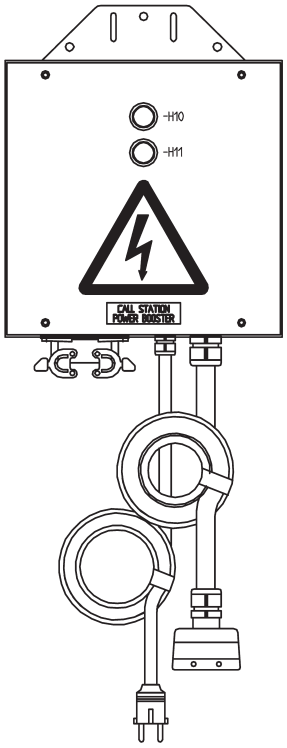
The signals from the push-buttons transmit through 230 VAC control wires between the landings and the main panel via the base panel.

Collective control system:

A landing box unit containing one I / O-card with two external illuminated call buttons: one for each travel direction and one indication lamp: ”Out of service”.
The I / O-cards are connected to a six wire communication circuit that connects to a base CPU inside the base panel.

The information transmits from the base CPU to the car CPU (main unit) on a two wire communication circuit in the trailing- (hybrid) cable.

Power box for collective control between landing level 20 and 21 and landing level 52 and 53 (P/N 9070751-000)



On a construction hoist installation where the number of collective landing control boxes are more than *20 units, a Power box is needed to boost up the 24VDC power to the landing control cards. This box is added between landing no 20 and 21 and also between landing no 52 and 53 by connecting the plugs to the landing boxes above and below.

The Power box is fed by a separate power supply: 1 phase, 110 – 240 VAC, 50/60 Hz.

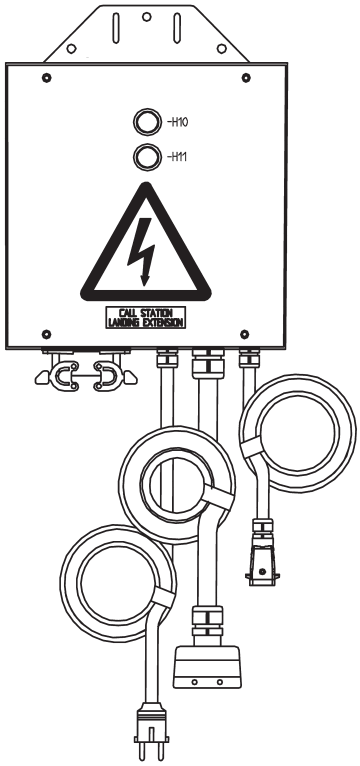
The box is equipped with two indication lamps:

– The white lamp (-H10) indicates that the separate power is on.

– The yellow lamp (–H11) indicates that the 24 VDC power is on at the Base-panel (Base-CPU).

* **B-panel + 19 Landing boxes or if the total landing cable length, without any Power box, is exceeding 175 m (575 ft.).**

Landing extension box for collective control from 33 – 64 landings (P/N 9070750-000)



On a construction hoist installation where the number of collective landing control boxes are more than **32 units, a Landing extension box must be added between landing no 32 and 33 (the box also includes power boost function for the 24 VDC).
The Landing extension box is connected to the landing boxes above and below by plugs.

A CAN-bus communication cable with a plug (attached to the box) must be connected to the Base-panel CAN-bus contact.
The Landing extension box is fed by a separate power supply: 1 phase, 230 VAC, 50/60 Hz (110 VAC can be used if control transformer inside the box is re-connected).

The box is equipped with two indication lamps:

_ The white lamp (-H10) indicates that the separate power is on.

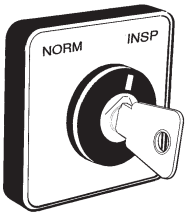
– The yellow lamp (–H11) indicates the following:

Fixed light:	Everything OK
No light:	Base-panel switched off
Flashing (slow):	CAN-communication to B-panel not working.
Flashing (fast):	No landing call boxes connected to the Extension box or malfunction on landing call boxes.

** **B-panel + 31 Landing boxes.**

Installation

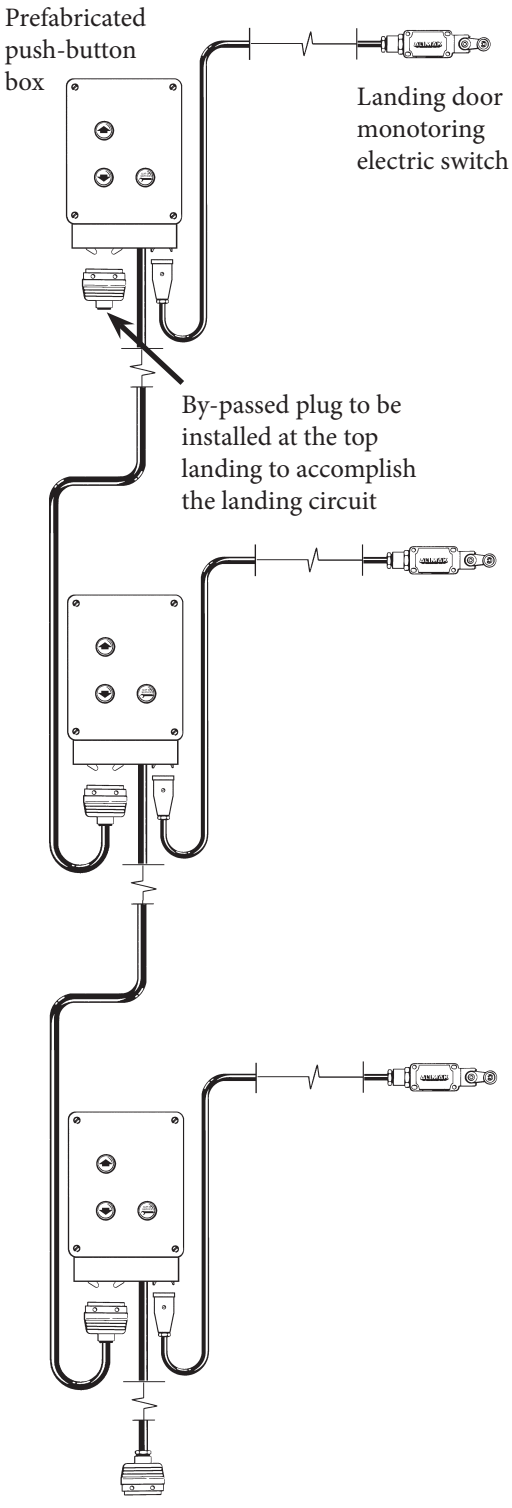
During erection of the lift – assembling mast sections, mast ties, landing enclosures etc, turn the Norm. / Insp. switch to position ”Insp”. The lift is then manually controlled from the Inspection push-buttons on the car roof.



Commissioning

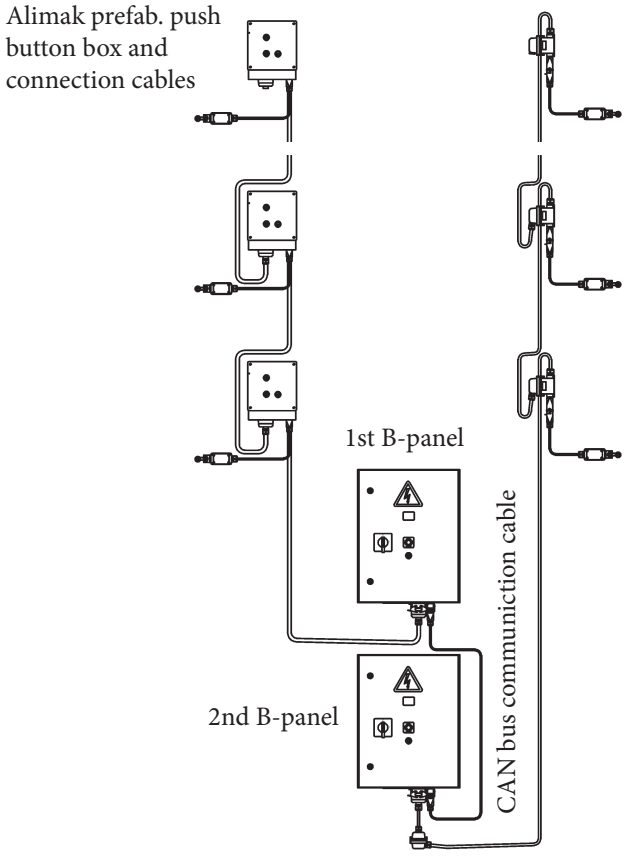
All electrical equipment in the car is installed and wired at the factory. It's a ”ready to use package” requiring no further assembly. The remaining installation of the system is performed at the job site according to the following:

1. Install incoming power cable to the B panel in accordance with the wiring diagram.
2. Install cable(s) between B panel and the car in accordance with the wiring diagram.
3. Adjust the reference (retardation down) cam on the mast.
4. Check that all cams are correctly installed on the mast, both on top and bottom, by travelling manually in the Inspection mode.
5. Connect the landing control cable to the base panel and to each landing unit in accordance with the wiring diagram.
6. The system is now ready for programming.

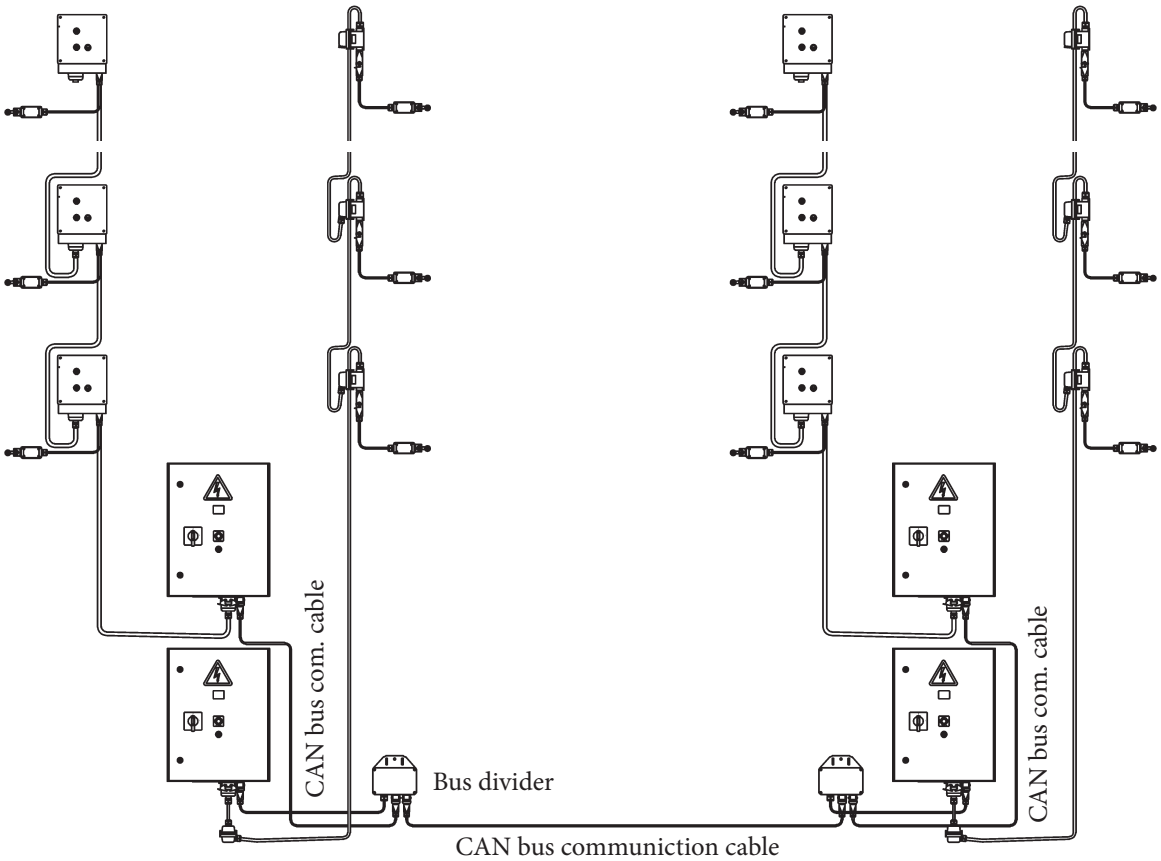


Group control for less than 20 pcs. landings

Single tower with a dual car installation

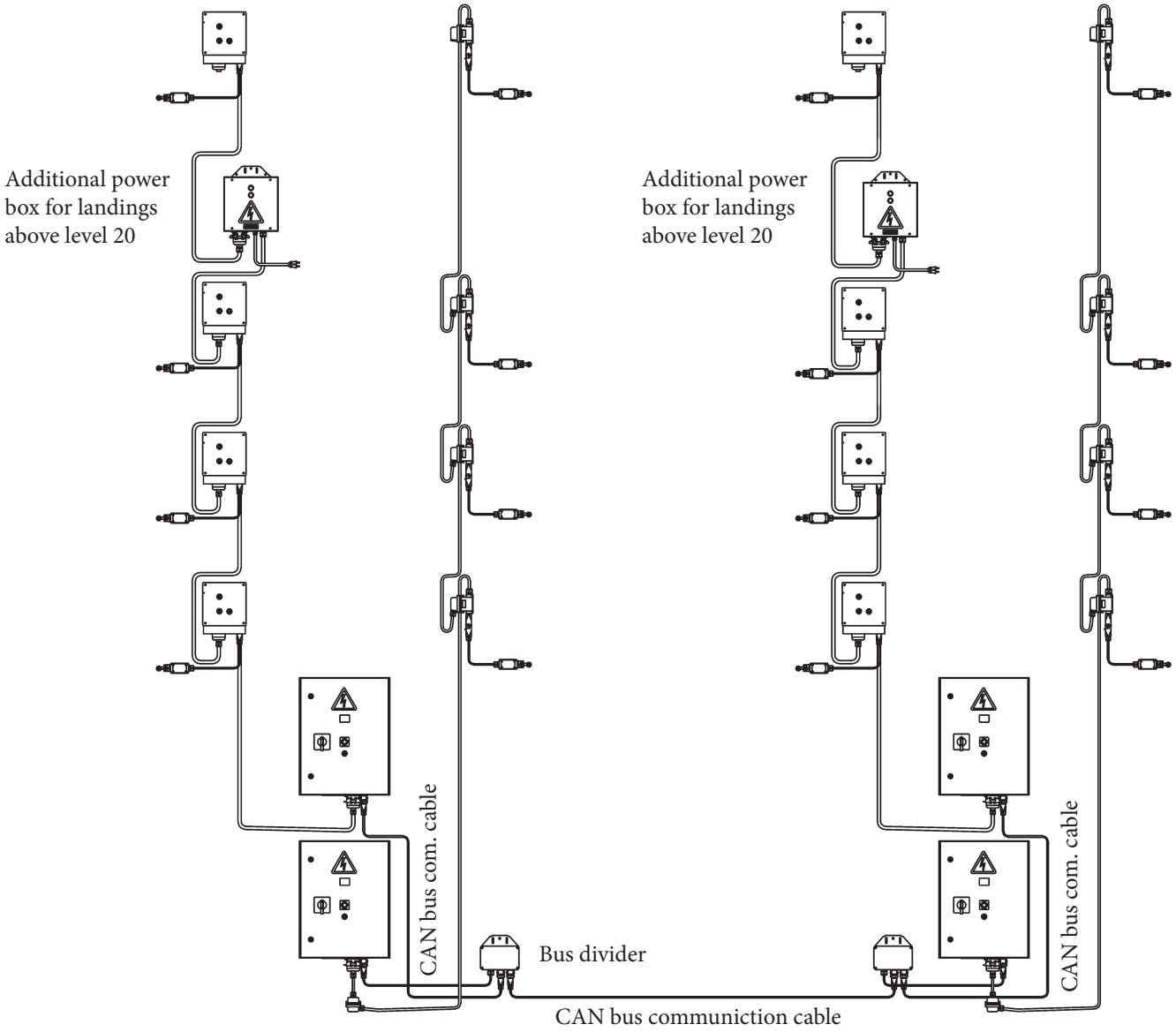


Twin towers with a dual car installation each



Group control for more than 20 up to 32 pcs. landings

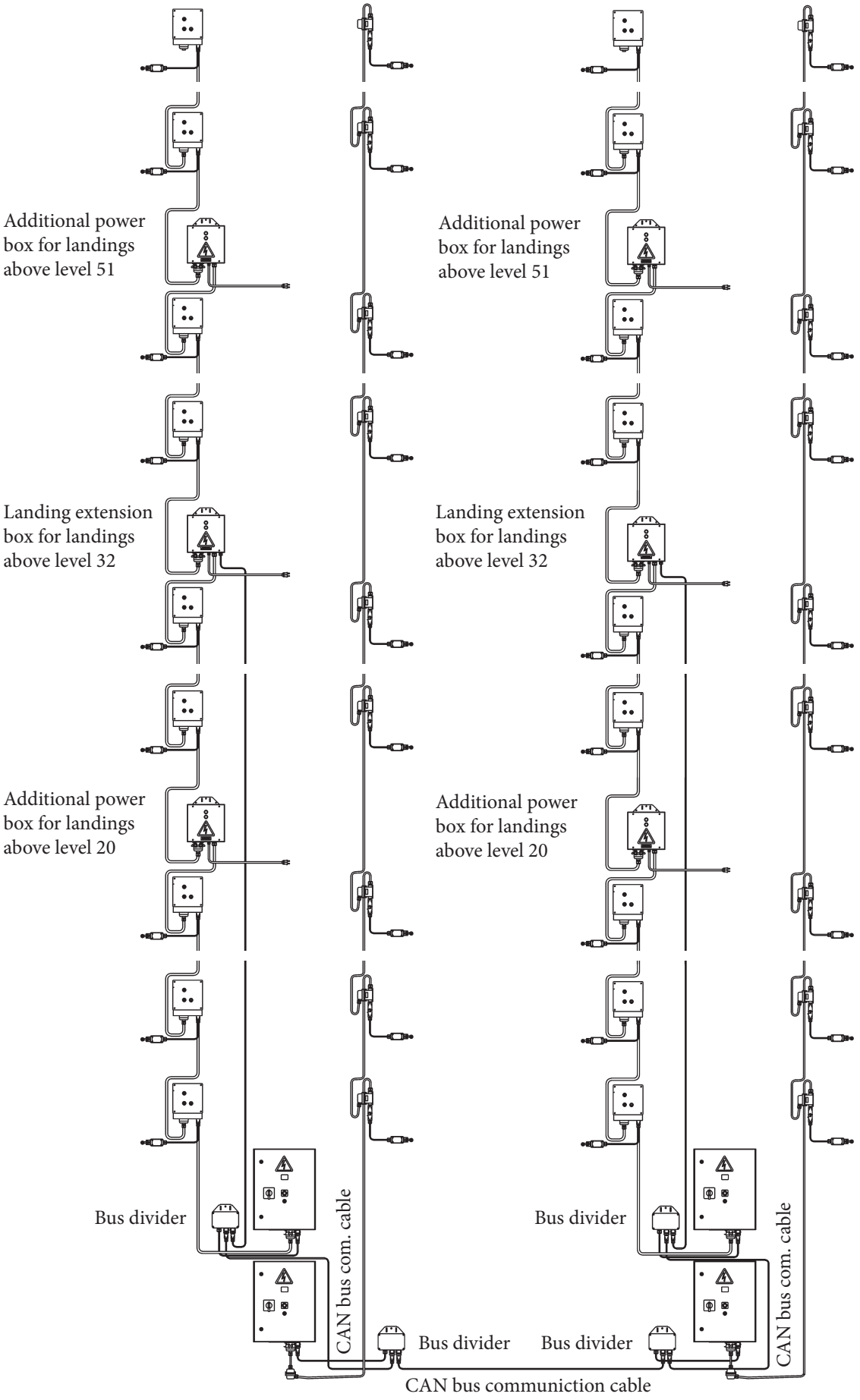
Twin towers with a dual car installation each



Accessories		**Part No.**
Power box		P/N 9070751-000
Landing extension box		P/N 9070750-000
Bus divider		P/N 9070745-601
CAN bus communiction cable	length 2.0 m **(6.5 ft.)**	P/N 9070745-702
– " –	length 7.0 m **(23 ft.)**	P/N 9070745-707
– " –	length 15.0 m **(49 ft.)**	P/N 9070745-715

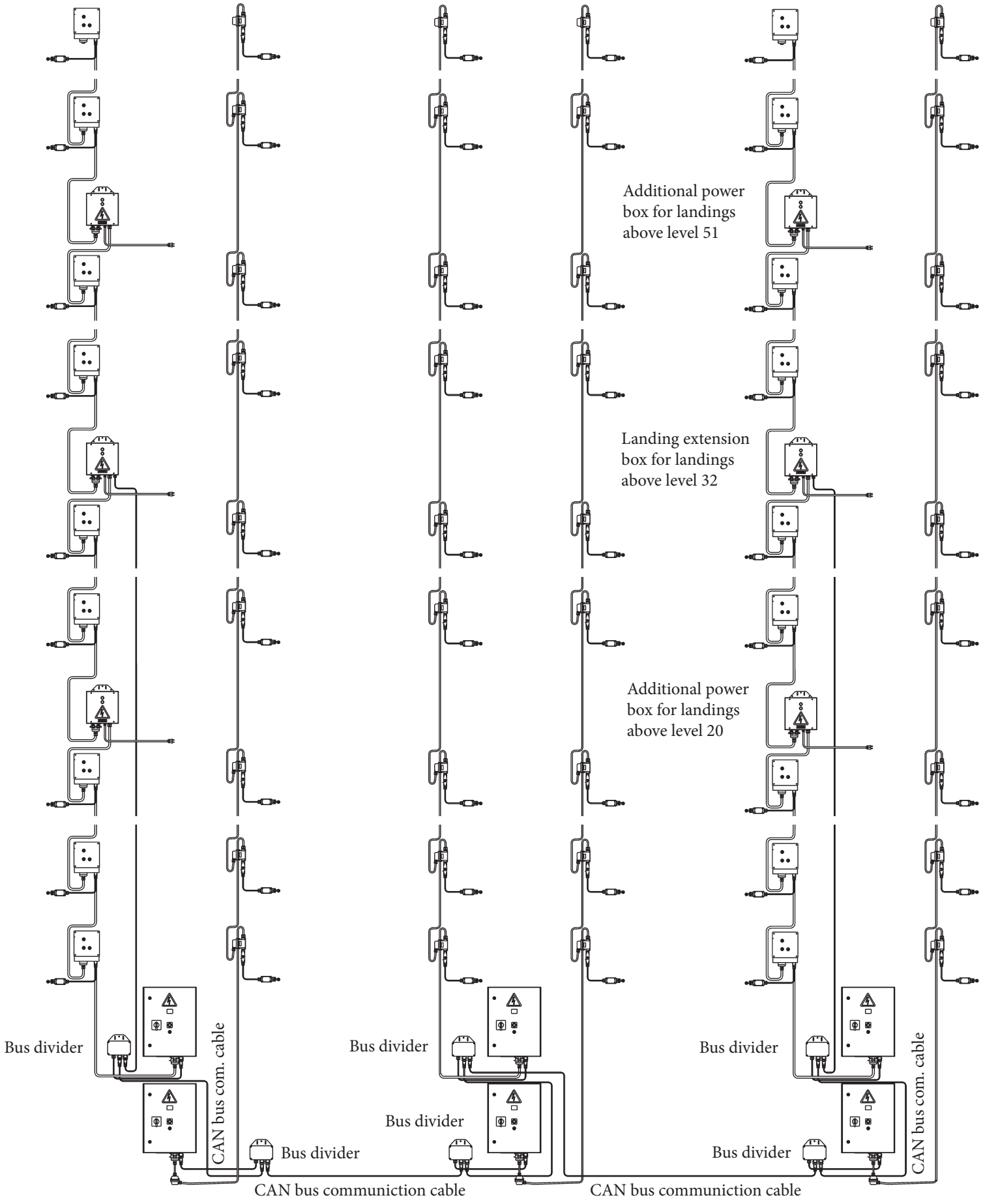
Group control for more than 20 up to 64 pcs. landings

Twin towers with a dual car installation each



Group control for more than 20 up to 64 pcs. landings

Triple towers with a dual car installation each



Operation

Displayer:

Above the keypad there are two 2-digit displays. The left one always shows the actual landing. Its also shows if the hoist is above, below or inside the landing zone.

If the left display shows:

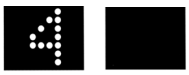
 this means that the hoist is inside landing 5.

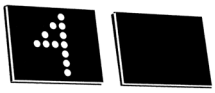
The right display shows what landing the hoist will stop next, but also shows the destination values that are put into the system and information/fault indications.

It also shows the travel direction of the hoist in the shape of two red dots, continuously going upwards or downwards depending on the direction.

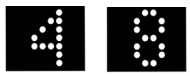
Destination, with keypad:

A destination order is placed in the following manner:
The hoist is located on the 4th landing and the displays show:

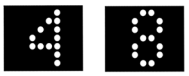




Landing 8 is desired, press key 8 and the displays show:



Confirm choice by pressing the ENT key and the displays show:

 and the hoist starts to move up.

Additional destinations can be added in a similar manner:

In addition the Stop Next Landing key can be pressed in order to stop at the next landing. For example: the hoist is going upwards to landing 8 just passing landing 5 and a stop at landing 6 is desired.

The display shows:

Press the Stop Next Landing key and the display shows:

The hoist will now first stop at landing 6 and then on landing 8.

The Up and Down keys can also be used to direct the hoist to the top or bottom landing.

If the wrong key is pressed (for example 7) and it is discovered before the ENT key is pressed, just delete that by pressing key CLR and then try again.

If a landing that is closed is addressed the right display will indicate a large ”X”, but as soon as the CLR key is pressed the system will ignore the call and clear the display. Immediately after this, the system is ready to take a new call.

Destination, with semi automatic control:

By pressing a key for ”Up” or ”Down”, the car starts travelling in the chosen direction.

When the car approaches the desired landing, press the key ”Stop Next Landing” and the car will then stop automatically at the landing. After approximately 8 seconds on a landing the system is ready for a new destination.

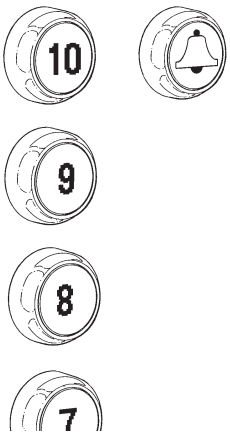
ALC II for Permanent Lifts

Push-buttons and display inside car

Collective control:

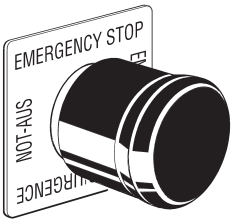
The control station front includes as standard:

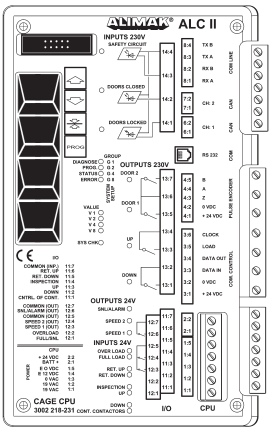
- Push-buttons for up to 16 landing levels.
- One 2-digit display showing current landing and fault indication and information.
- An alarm push-button.
- A switch for light in car.

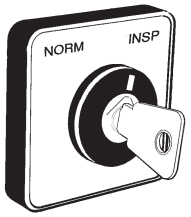


As an option the following is provided:

- Emergency stop push-button (option).
- Overload indication lamp.

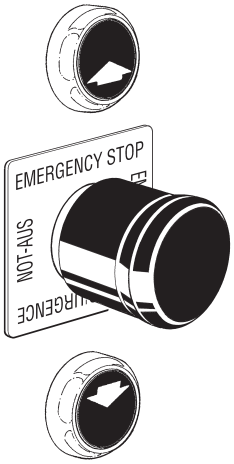






On the inside of the control panel:

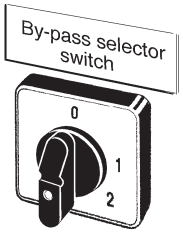
- Norm. / Insp. selector switch.
- A Prog. push button (illuminated)
- Up, Down and Stop Next Landing buttons for programming functions.



Top of car control:

Top of car control consists of:

- Up and Down push-button.
- An Emergency stop push-button.
- BY PASS selector switch.



Landing control station

Collective control system:

A landing box unit containing one I / O-card with two external illuminated call buttons: one for each travel direction.

The I / O-cards are connected to a six wire communication circuit that connects to a base CPU inside the base panel. Floor level indication display can be supplied as an option.

The information transmits from the base CPU to the car CPU (main unit) on a two wire communication circuit in the trailing-(hybrid or separate control cable) cable.

Operation

Display:

Above the destination buttons there is one 2-digit display. This always shows the actual landing. It also shows if the lift is above, below or inside the landing zone.

If display shows:

this means that the lift is above landing 5.

If display shows:

this means that the lift is inside landing 5. (within the landing zone).

If display shows:

this means that the lift is below landing 5.

Destination, with push-buttons

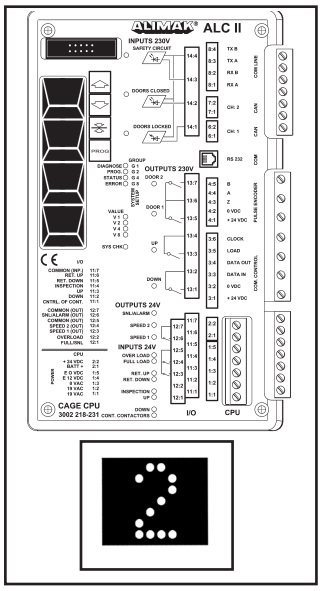
A destination order is placed in the following manner:
The lift is located on the 4th landing and the display shows:

Landing 8 is desired, press button 8 and the display shows:

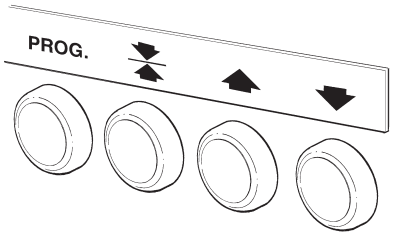
When the lift arrives to the landing.

Whenever additional destinations are required, press the desired buttons.

ALC for Ex proof lifts
The car CPU and display are built-into the el-panel on the car roof but visible behind an unbreakable and heat proof piece of glass . . .



. . . and can be operated with external push-buttons located outside the el-panel.



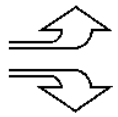
A0 ALC II TROUBLE SHOOTING

Switch on the main switch on the hoist's base panel. Usually built on the safety enclosure. → Step into the hoist car and close the gates. → Go to the desired landing.

The hoist does not start. See code of error below.

FROM LANDING:

Up
Down



The hoist starts and drives to the designated landing.

Symbol	Text in display	Action
	I/O Error	Error in I/O boards. Card/s missing or broken.
	Safety circuit	Emergency stop button on the lift roof or in the car is pressed. Alternatively an open trap door or a thermic relay has released due to overload.
	Door error	Door circuit is cut when lift is travelling between the landings because someone has tried to open a door at a landing or in the car.
	EN ramp fault Lock fault	The lock cylinder "jams", or a mechanical fault occurs. Check that doors are closed. Press Emergency Stop button. If the fault remains, contact Service.
	Overload	
	Inspection drive Programming	The system is in position for Inspection or Programming. To reset after inspection drive, break the safety circuit.
	Motor Error	Delayed start. Check for possible phase failure. Press CLR. If the fault remains, contact Service.
	Emergency Stop in Base	Emergency push button at base activated (construction hoists only)
	Adaptive fault Speed fault Config error Calibration fault Temperature fault	Contact Service.
	Ctrl Circuit fault	Contact Service.
	Door open	Gates/doors are not correctly closed. Close the doors properly and try again.
	Calibration drive	The system is in position for calibration drive. Carry out the calibration drive.
	Blocked lift	Inside the car: closed landing. At the base: No communication with car CPU.
	Car Only	At the base: "Car only". Lift can only be addressed from inside the car.
		The driving order is ignored. Try again. For example, the lift could be located at the landing it is being addressed to.

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