Lester Control Systems Ltd.

A3 Presentation 26-11-2014

Allianz

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Lester CONTROLS

Background – EN 81-1/2

- **EN 81-1/2:1998**

- **EN 81-1/2:1998 + A1:2005**
  Covering Programmable Electronic System in Safety Related Applications for Lifts ([ESSRAL)

- **EN 81-1/2:1998 +A2:2004**
  Covering Machine Room-Less (MRL) lifts

- **EN 81-1.2:1998 + A3:2009**
  -- Covering
  - Unintended Car Movement (UCM)
  - Stopping & levelling accuracy
  - Exclusion of speed of ≤ 0.15 m/s
  - Requirements for fixing Systems for the removable guards
  - Incorporating A1 and A2 into the body of EN 81 – ½ standards
- Decision to make a comprehensive revision was taken in 2005

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BS EN 81-1:1998+A3:2009 (Page 63,64)

- **9.11 Protection against unintended car movement**

- **9.11.1** Lifts shall be provided with a means to stop unintended car movement away from the landing with the landing door not in the locked position and the car door in the closed position, as a result of failure in any single component of the lift machine or drive control system upon which the safe movement of the car depends, except failure of the suspension ropes or chains and the traction sheave or drum or sprockets of the machine.
- **9.11.2** The means shall detect unintended movement of the car, shall cause the car to stop & keep it stopped.
- **9.11.3** The means shall be capable of performing as required without assistance from any lift component, stopping of the car & keeping it stopped.
  SELF MONITORING is subject to TYPE EXAMINATION

Current Standards – EN 81- 20

- **EN 81 – 20** to incorporate EN81 – 1-2 for Hydraulic & Traction lifts
- **Run In Period** – 3 years from June 2014
- **3 Common UCM Monitor Units**

  Traction lift brake switch monitoring

  Traction & Hydraulic using solenoid on the Overspeed Govenor to engage the Safety Gear

  Hydraulic using a 2nd Down Valve. Monitoring problems (Refer 9.13.3)

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TECHNICAL MANUAL for BRAKE SWITCH MONITORING

ON TRACTION DRIVE LIFTS

STANDARD COMPLIANCE EN81-1:1998+A3:2009 clause 9.11.3, 9.11.7 and 9.11.9.

BRAKE & SWITCH TYPE

The motor / gear must have at least 2 brakes, and each brake shall have a normally closed electrical contact which breaks when the brake energises, and the contacts re make when the brake de-energises.

OPERATION

With the lift car stationary, all primary safety circuits made, and both brakes de energised, the normally closed brake switches will feed 110VAC inputs BS1 and BS2 to the Almega processor at I10 and I11 on slot 2. The corresponding LED's will illuminate to indicate the status of the switches and both LED's must be on when the lift is stationary.

On the start of travel power is applied to the brake solenoids simultaneously and if both brakes operate successfully both brake switches will break and both inputs BS1 and BS2 to the Almega slot 2 will be off.

If one or both inputs BS1 and BS2 fail to go off then a brake fault is deemed to have occurred and the Almega will log a " UMD FAULT". In order to prevent nuisance tripping this start fault can occur up to a maximum of 4 consecutive attempts (programmable, default 3*) before the Almega will stop any further lift operations, park with doors open, and require a competent person to reset the fault using the Almega keypad.

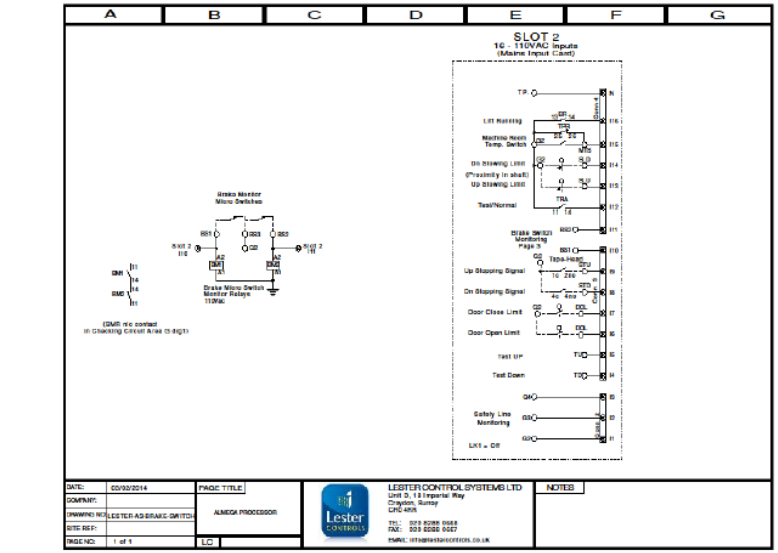
If the brake switch inputs BS1 or BS2 fail to turn on after the lift has stopped (time delay to see inputs at stop programmable, default 4 secs.*) then a "UMD FAULT" will be logged and no further operations are allowed.

In addition to the Almega monitoring of the inputs BS1 and BS2, two relays BM1 and BM2 are included to prevent the next start of the lift if the brake switches fail to make when the lift has stopped with power disconnected from the brake solenoid.

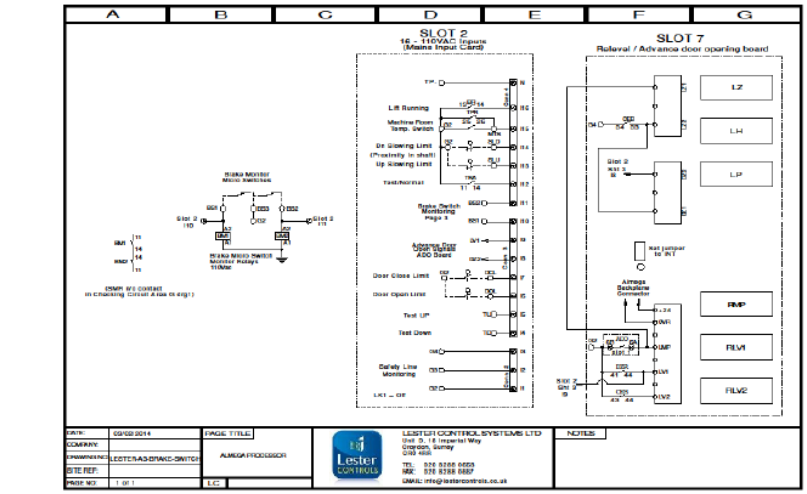
TESTING

Remove each of the wires BS1 and BS2 from the terminal rail, one at a time, and try and run the lift. On each occasion of operation the lift will not run and "UMD FAULT" will be displayed in the event logger and stored in the memory, and resetting of the Almega is required as detailed earlier.

1


A
B
C
D
E
F
G
SLOT 2
16 - 110VAC Inputs
(Mains Input Card)
Brake Monitor
Micro Switches
Brake Micro Switch
Monitor Relays
110Vac
(BMR n/c contact
in Checking Circuit Area (5 digit)
Lift Running
Machine Room
Temp. Switch
On Slowing Limit
(Proximity in shaft)
Up Slowing Limit
Test/Normal
Brake Switch
Monitoring
Page 3
Up Stopping Signal
On Stopping Signal
Door Close Limit
Door Open Limit
Test UP
Test Down
Safety Line
Monitoring
LK1 = Off
DATE:
COMPANY:
DRAWING NO:
SITE REF:
PAGE NO:
1 of 1
PAGE TITLE
ALMEGA PROCESSOR
LC
LESTER CONTROL SYSTEMS LTD
Unit 3, 18 Imperial Way
Croydon, Surrey
CR0 4RR
TEL: 020 8288 0668
FAX: 020 8288 0667
EMAIL: info@lestercontrols.co.uk
NOTES

2


A
B
C
D
E
F
G
SLOT 2
16 - 110VAC Inputs
(Mains Input Card)
SLOT 7
Relevel / Advance door opening board
Brake Monitor
Micro Switches
Brake Micro Switch
Monitor Relays
110Vac
(BMR n/c contact
in Checking Circuit Area (5 digit)
Lift Running
Machine Room
Temp. Switch
On Slowing Limit
(Proximity in shaft)
Up Slowing Limit
Test/Normal
Brake Switch
Monitoring
Page 3
Advance Door
Relevel
ADO Board
Door Close Limit
Door Open Limit
Test UP
Test Down
Safety Line
Monitoring
LK1 = Off
LZ
LH
LP
RMP
RLV1
RLV2
Link jumper
to INT
Almega
Backplane
Connector
DATE:
COMPANY:
DRAWING NO:
SITE REF:
PAGE NO:
1 of 1
PAGE TITLE
ALMEGA PROCESSOR
LC
LESTER CONTROL SYSTEMS LTD
Unit 3, 18 Imperial Way
Croydon, Surrey
CR0 4RR
TEL: 020 8288 0668
FAX: 020 8288 0667
EMAIL: info@lestercontrols.co.uk
NOTES

Contents

1) Uncontrolled Movement General

Unintended Car movement was introduced into the EN81 standards in 2009 (EN81-1-1998+A3) and became mandatory from 1st January 2012.

Lester Control systems are able to offer solutions for **Brake Monitoring** and **Overspeed Governor Solenoid Monitoring**, which are approved by a notified body. For a **3rd party device** a fault detection input is provided for error detection/ fault reporting. Approvals (from a notified body) are the responsibility of the 3rd party supplier.

The main principle for all devices in conjunction with the control system is to:

a) Detect unintended car movement.
b) Prevent further movement.
c) Latch the fault (even in the event of power failure) until a manual reset is carried out.

9.11.1 Lifts shall be provided with a means to stop unintended car movement away from the landing with the **landing door not in the locked position** and the **car door not in the closed position**, as a result of failure in any single component of the **lift machine** or **drive control system** upon which the safe movement of the car depends, except failure of the suspension ropes or chains and the traction sheave or drum or sprockets of the machine.

The maximum distances for each direction are shown below:

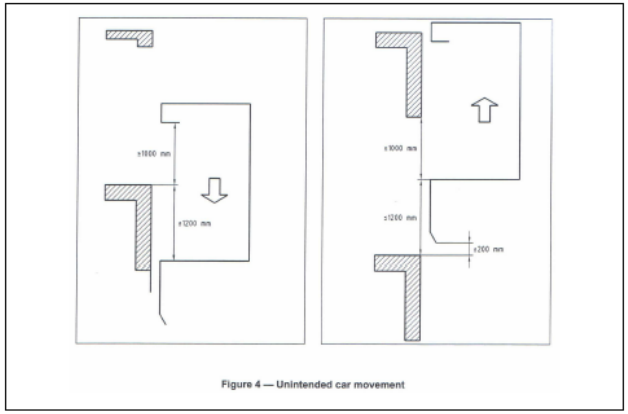


Figure 4 — Unintended car movement

9.11.5 The means shall stop the car in a distance:

--- not exceeding 1,20 m from the landing where the unintended movement has been detected.

--- the vertical distance between the landing sill and the lowest part of the car apron shall not exceed 200 mm, and

--- the free distance from car sill to landing door lintel, or from landing sill to car door lintel shall not be less than 1,00 m (see Figure 4).

These values shall be obtained with any load in the car, up to 100% of rated load.

2) ALMEGA Parameter Configuration

TRAVEL SETUP

	Units	Min	Max	Default
UMD BRAKE MONITORING	YES/NO	NO	YES	NO
UMD OSG SOL MONITOR	YES/NO	NO	YES	NO
UMD FAULT IP MONITOR	YES/NO	NO	YES	NO
UMD MON FAILURE	**YES/NO**	**NO**	**YES**	**NO**
UMD START FAIL COUNT	1-4	1	4	3
UMD STOP FAIL TIME	Seconds	0	10	4

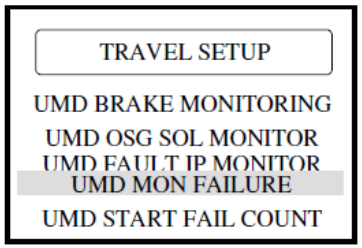
3) Resetting the UMD Fault

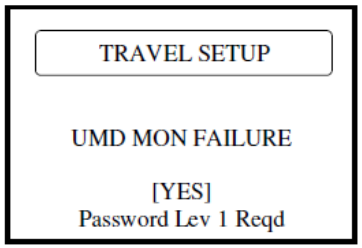
To reset the UMD fault requires re-setting the UMD MON FAILURE parameter back to NO as below:

i) Press **F3** on the keypad.

ii) The keypad keys (↑ and ↓) can be used to scroll through the menu list as below:

iii) Pressing ENTER will display the Position System Setup as below:





iv) To gain password level 1, press and hold **MODE** then press **ENTER**, the text "Password Lev 1 Reqd" will then disappear.

v) The parameter may then be changed back to [NO].

vi) Press Enter to confirm.

4) ALMEGA Uncontrolled Movement Error Codes

Brake Monitoring:

UMD_BRAKE_MON_INPUTS_NOT_CONFIGURED = 1,

UMD_BRAKE_MON_INPUT_1_START_FAILURE = 2,
UMD_BRAKE_MON_INPUT_2_START_FAILURE = 3,
UMD_BRAKE_MON_INPUTS_BOTH_START_FAILURE = 4,

UMD_BRAKE_MON_INPUT_1_STUCK = 5,
UMD_BRAKE_MON_INPUT_2_STUCK = 6,

Overspeed Governor Solenoid Monitoring:

UMD_SOL_MON_IP_NOT_CONFIGURED = 7,
UMD_CANCEL_SOL_DLY_FBACK_IP_NOT_CONFIG = 8,
UMD_SOL_MON_INPUT_START_FAILURE = 9,
UMD_SOL_MON_INPUT_STUCK = 10,

UMD_SOL_CANCEL_DLY_OP_ENERGISE_FAIL = 11,
UMD_SOL_CANCEL_DLY_OP_RELEASE_FAIL = 12,

External Device Fault Input:

UMD_FAULT_INPUT_NOT_CONFIGURED = 13,
UMD_FAULT_INPUT_ERROR = 14,

Parameter Corruption Check:

UMD_START_FAIL_COUNT_PARAM_CORRUPT = 91,
UMD_STOP_FAIL_TIME_PARAM_CORRUPT = 92

Type Test Examination – EN 81- 2(9:11)

Brake Switch Monitoring

TYPE-EXAMINATION CERTIFICATE
FOR LIFTCOMPONENTS

Issued by Liftinstituut B.V.

Certificate nr.	:	NL14-400-1002-189-01 Revision nr.:
Description of the product	:	Brake switch monitoring as part of protection against unintended car movement
Trademark, type	:	Lester Almega-A3 Brake Switch Monitoring
Name and address of the manufacturer	:	Lester Control Systems Ltd Unit D, 18 Imperial Way Croydon, Surrey, CR0 4RR United Kingdom
Name and address of the certificate holder	:	Lester Control Systems Ltd Unit D, 18 Imperial Way Croydon, Surrey, CR0 4RR United Kingdom
Certificate issued on the following requirements	:	Lifts Directive 95/16/EC
Certificate based on the following standards	:	EN 81-1:1998+A3:2009, clause 9.11.3, 9.11.7 and 9.11.9
Test laboratory	:	None
Date and number of the laboratory report	:	None
Date of type-examination	:	January - March 2014
Annexes with this certificate	:	Report belonging to the type-examination certificate nr.: NL14-400-1002-189-01
Additional remarks	:	None
Conclusion	:	The lift component meets the requirements referred to in this certificate taking into account any additional remarks mentioned above.

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Lester CONTROLS

Report type-examination

Report belonging to type-examination certificate no.	:	NL14-400-1002-189-01
Date of issue of original certificate	:	March 5, 2014
Concerns	:	Component
No. and date of revision	:	-
Requirements	:	Lifts Directive 95/16/EC, EN 81-1:1998+A3:2009, clause 9.11.3, 9.11.7 and 9.11.9
Project no.	:	P130322-01

1. General specifications

Name and address manufacturer	:	Lester Control Systems Ltd Unit D, 18 Imperial Way Croydon, Surrey, CR0 4RR United Kingdom
Description of component	:	Brake switch monitoring as part of protection against unintended car movement
Type	:	Lester Almega-A3 Brake Switch Monitoring
Laboratory	:	-
Address of examined lift component	:	Lester Control Systems Ltd
Date of examination	:	January – March 2014
Examination performed by	:	P.J. Schaareman / J.C. Kooij

2. Description component

The brake monitoring functionality of the Almega described in this report shall be used in combination with a suitable detection system and a suitable brake to build an unintended car movement protection for lifts.
The unintended movement of the car is normally prevented directly by the safety circuit, when the car door(s) are open. In case of the application of the ADO board the unintended movement of the car is detected as soon as the car moves out of the door zone.

The monitoring function becomes effective after activation in the Almega menu. When the function is activated the Almega control expects the brake switches to be

connected on the dedicated inputs. If the option brake monitoring is activated in the lift control, the software detects if the switches are not connected and the lift will not operate.

The activated system will stop the lift when the programmed monitoring function detects the not correct functioning of the brake.
The monitoring function needs to see a change of status of the monitoring input every run of the lift and also the correct dropping of the brake (closing of the brake switch(es)) when stopped.

If one or both inputs of the brake switches fail to go off on the start of travel, a brake fault is deemed to have occurred. The control will try (programmable) 1-4 times if the brake failure is recovered. If not the lift remains out of service, even after switching off- and on the supply power.
If one or both inputs of the brake switches fail to turn "On" after the lift has stopped, a brake failure is recognized and an "UMD fault" will be logged after a programmable time delay of 1-10 sec..
Resetting of the system is only possible via the intervention of a competent person.

When the ADO board is applied the lift is able to move while the car door is open. This allows the lift to move away from the landing. In this case the unintended movement of the car is detected just at the moment the car leaves the door zone. To make sure the lift stops within the maximum allowed distance the detection distance and the delays should be as small as possible to allow the brake to stop the lift in time.

The detection distance is reliant to the door zone length of the magnets used for the pre-opening of the doors. Normally this length will be about 16cm. In case a door zone is required to be less to decrease the reaction distance, the door zone can be shortened (this will lower the functional distance for pre-opening of the doors).

3. Examinations and tests

The examination covered a check whether compliance with the Lift Directive 95/16/EC is met, based on the harmonized product standards EN81-1:1998 + A3:2009. Issues not covered by or not complying these Standards are directly related to the essential requirements of the Lift Directive.

The examination included:

- Examination of the technical file (See annex 2),
- Examination of the representative model in order to establish conformity with the technical file and
- Inspections and tests to check compliance with the requirements.

The software version of the Almega control providing the monitoring functions at the moment of examination was V6.16.

The Almega control has direct connections with the safety circuit, no further examination according Annex H of EN 81-1 is performed.

The examination of the brake switch monitoring functionality took place at Lester Controls premises. For the tests a controller and lift machine were available.

The examination also included tests and inspections to check, register and report the relevant key interface parameters of the component to be used for UCM detection.

The ADO board itself is already certified by Liftinstituut regarding the compliance of the PCB with EN 81-1/2 article 14.1.1, 14.1.2.1.3 and annex H (Type examination certificate number NL14-400-1002-189-03). This means that the safety circuit on board, the creepage and clearance distances and the relevant components used are approved to be in accordance with the harmonised standard.
The safety circuit on board can be used for the purpose of UCM detection.

4. Results

After the final examination the brake switch monitoring functions and the relevant parts of the technical file were found in accordance with the requirements. The functional tests passed without remarks.

Brake switch monitoring and UCM detection functionality are available in the Almega control.

In case ADO is applied the detection distance is 16cm ("LV1 / ADO" switching point) but can be made smaller if required.
The max. response time of the Almega control between detecting and de-activating the power to the brake is 35ms.

5. Conditions

- The installer of the lift needs to define the final complete UCMP solution taken into account the key-parameters of the Almega control, the detecting distance, accelerations, other delays and the applied stopping UCMP stopping means.
- If ADO is used, the maximum detection distance will standard be around 16cm. This might be too much for the application and needs then to be shortened to fit into the total system and finally stop the lift within the required distances of EN 81-1+A3 clause 9.11.5.
- It shall be verified that for the lift the correct UCM protection means is applied, activated and operates as intended.

- Before taking the lift into service and after each change in the software of the Almega control, the proper functioning of the brake monitoring must be checked. The checking shall be done by disconnecting and short circuiting the brake monitoring switches one by one. Each time after a command is given, the manipulation shall be detected by the system and a manual reset shall be necessary to bring the lift back into operation.
- After detecting UCM the lift is kept out of service, also when the main power is switched off.
- The User Manual shall be provided, to allow correct installation, maintenance and to be able to perform the correct tests during the final inspection.

6. Conclusions

The monitoring functions of the Almega control are fulfilling the requirements of EN 81-1 + A3.
Based upon the results of the type-examination Liftinstituut B.V. issues a type-examination certificate.

The type-examination certificate is only valid for products which are in conformity with the same specifications as the type certified product. The type-examination certificate is issued based on the requirements that are valid at the date of issue. In case of changes of the product specifications, changes in the requirements or changes in the state of the art the certificate holder shall request Liftinstituut B.V. to reconsider the validity of the type-examination certificate.

TECHNICAL MANUAL for GOVERNOR ANTI-SLIDE SOLENOID MONITORING

ON TRACTION AND HYDRAULIC LIFTS

STANDARD COMPLIANCE EN81-1:1998+A3:2009 clause 9.11.3, 9.11.7 and 9.11.9.
EN81-2:1998+A3:2009 clause 9.11.3, 9.11.7 and 9.11.9.

ANTISLIDE OVER-SPEED GOVERNOR TYPE

The governor can be any type which incorporates an electro-magnetic solenoid which is coupled to a mechanical pin which rests on the safety gear operating rope. The electro-magnetic solenoids function is to pull the pin clear of the safety gear rope during normal lift movement. If the pin is left in the rest position and lift movement occurs, the safety gear will engage and prevent further movement.
For monitoring purposes the solenoid must have a contact which makes when the solenoid is in the lifted or energised position.

OPERATION

With the lift car stationary the governor solenoid will be de-energised and in position to engage the lift safety gear. On the start of travel power is applied to the anti-slide governor solenoid, and the normally open contact which monitors the solenoid position will make when the solenoid has moved the mechanical pin clear of the safety gear operating rope and lift movement can occur.
During normal high speed movement the anti-slide solenoid is time delayed (true off delay timer CEBT) in order to overcome any emergency stop operation or loss of mains power supply from de-energising the anti-slide solenoid and engaging the lift safety gear. This time delay is removed when in the target door zone in order to reduce the amount of lift movement should uncontrolled movement occur.
In order to identify the target door zone an output SDZ (stop in door zone) is used from the Almega. This output will energise when the lift has stopped correctly at the target floor and this output will turn power off to the anti-slide solenoid instantaneously (using relay PCR) and without the time delay.
Relay PCR status is monitored using Almega input I9 on slot 2 to ensure that the relay is operating correctly.
The normally open monitoring contact of the anti-slide solenoid will operate relay SMR and a normally open contact of relay SMR is input into the Almega slot 2 I8 so that the position status of the solenoid can be monitored.

In order to prevent nuisance tripping on start up, the failure of the input from relay SMR can occur up to a maximum of 4 consecutive times (programmable, default 3) before the Almega will stop operating and displays " UMD FAULT ".
If the SMR input at I8 slot 2 remains on with the lift stationary then a further " UMD FAULT " will be recorded and the lift will again be out of service and in need of resetting by a competent person.
In addition the operating status of relay SMR is monitored using a normally closed contact of this relay in the starting circuit. A failure of this relay to de-energise when the lift has stopped will prevent any further operations.

TESTING

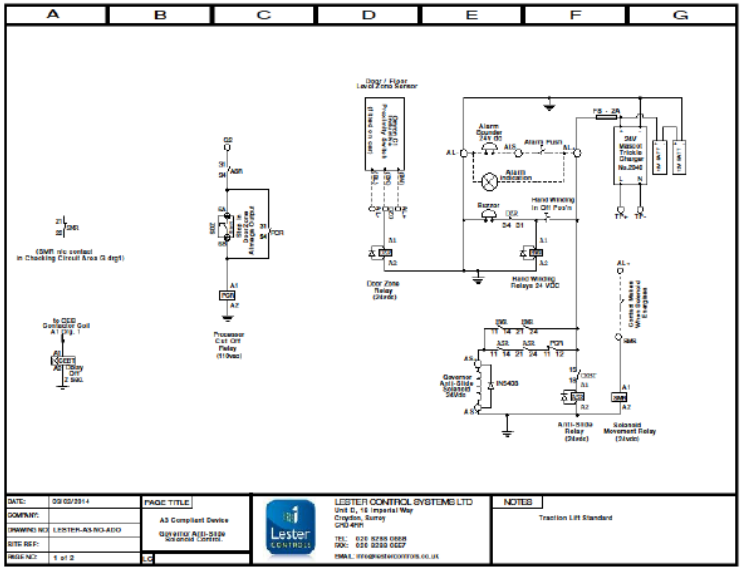
In order to test the system for correct operation, disconnect the normally open anti-slide monitoring contact from the controller simulating that the anti-slide solenoid has failed to move to the release position. After the preset number of start attempts the lift will stop operating due to a " UMD FAULT ".

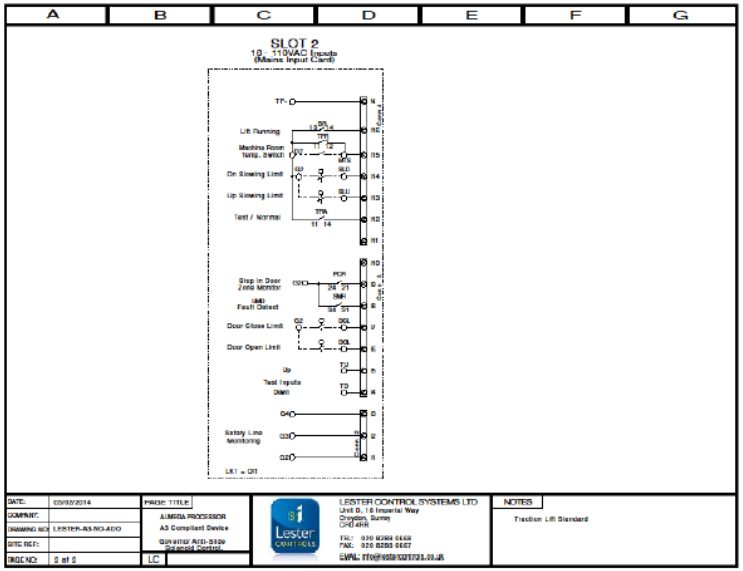
DOCUMENTS BELOW AS FOLLOWS:

Drawings 1 and 2 refer to anti-slide governor control using the Almega microprocessor where there is no advance door opening.

Drawings 3 and 4 refer to anti-slide governor control using the Almega microprocessor where advance door opening is included.

The remaining documents refer to the Almega microprocessor instruction manual for the UCM settings.


A
B
C
D
E
F
G
Door / Floor Level Zone Sensor
Alarm Buzzer 24v DC
Alarm Fuse
Alarm Indication
Buzzer
Hand Winding In Off Push
Hand Winding Relay 24 VDC
Door Zone Relay (24vdc)
Processor Cut Off Relay (110vac)
Governor Anti-Slide Solenoid 24Vdc
IN5408
Anti-Slide Relay (24vdc)
Solenoid Movement Relay (24vdc)
DATE: 03/02/2014
COMPANY:
DRAWING NO: LESTER-ASNO-AEO
SITE REF:
REQ NO: 1 of 2
PAGE TITLE
A3 Compliant Device
Gavazzi Anti-Slide Solenoid Control
LC
LESTER CONTROL SYSTEMS LTD
Unit D, 16 Imperial Way
Croydon, Surrey
CR0 4RR
TEL: 020 8288 0668
FAX: 020 8288 0667
EMAIL: info@lestercontrols.co.uk
NOTES
Traction Lift Standard


A
B
C
D
E
F
G
SLOT 2
18 - 110VAC Inputs
(Mains Input Card)
TF-
Lift Running
Machine Room Temp. Switch
On Slowing Limit
Up Slowing Limit
Test / Normal
Stop In Door Zone Monitor
Fault Detect
Door Close Limit
Door Open Limit
Up
Test Inputs
Down
Relay Line Monitoring
LR1 = Off
DATE: 03/02/2014
COMPANY:
DRAWING NO: LESTER-ASNO-AEO
SITE REF:
REQ NO: 2 of 2
PAGE TITLE
ALMEGA PROCESSOR
A3 Compliant Device
Gavazzi Anti-Slide Solenoid Control
LC
LESTER CONTROL SYSTEMS LTD
Unit D, 16 Imperial Way
Croydon, Surrey
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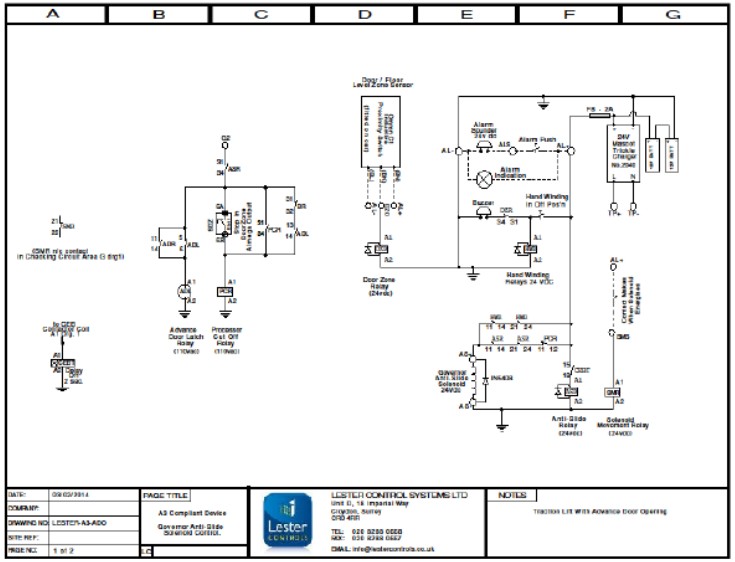
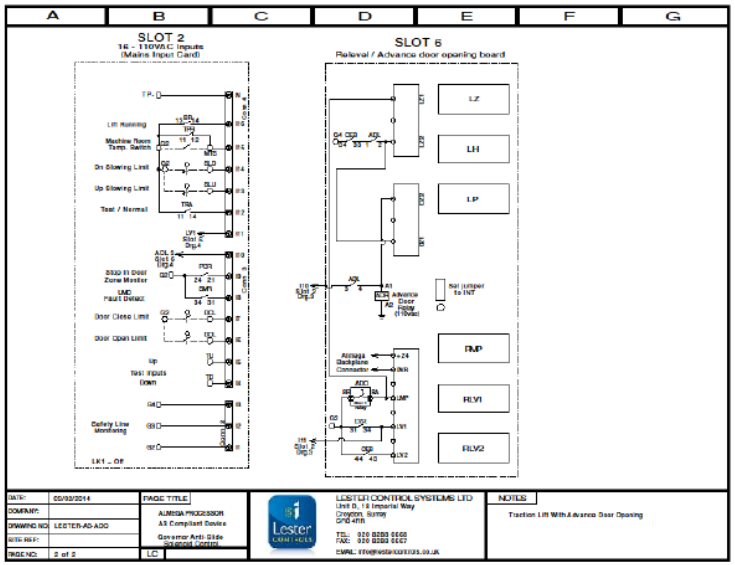
Traction Lift Standard


A
B
C
D
E
F
G
Door / Floor Level Zone Sensor
Alarm Sounder 24V dc
Alarm Room
Alarm Indicator
Buzzer
Hand Winding In Off Point
Hand Winding Relays 24 VDC
Door Zone Relay (24vdc)
Advance Door Latch Relay
Processor Cut Off Relay
Governor Anti Slide Solenoid 24VDC
Anti Slide Relay
Solenoid Monitored Relay
Control Valves When Solenoid Energised
DMV Manual Trouble Charger No.7040
PAGE TITLE
A3 Compliant Device
Governor Anti-Slide Solenoid Control.
LESTER CONTROL SYSTEMS LTD
Unit D, 16 Imperial Way
Croydon, Surrey
CR0 4RR
TEL: 020 8288 0668
FAX: 020 8288 0667
EMAIL: info@lestercontrols.co.uk
NOTES
Traction Lift With Advance Door Opening


A
B
C
D
E
F
G
SLOT 2
16 - 110VA.C Inputs
(Mains Input Card)
TP
Lift Running
Machine Room Temp. Switch
Up Slowing Limit
Down Slowing Limit
Test / Normal
Door Close Limit
Door Open Limit
Up
Test Inputs
Down
Safety Line Monitoring
LK1 - Off
SLOT 6
Relevel / Advance door opening board
LZ
LH
LP
RMP
RLV1
RLV2
Advance Door Relay
Test Jumper to TNT
PAGE TITLE
AUMEGA PROCESSOR
A3 Compliant Device
Governor Anti-Slide Solenoid Control.
LESTER CONTROL SYSTEMS LTD
Unit D, 16 Imperial Way
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NOTES
Traction Lift With Advance Door Opening

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1) Uncontrolled Movement General

Unintended Car movement was introduced into the EN81 standards in 2009 (EN81-1-1998+A3) and became mandatory from 1st January 2012.

Lester Control systems are able to offer solutions for **Brake Monitoring** and **Overspeed Governor Solenoid Monitoring**, which are approved by a notified body. For a **3rd party device** a fault detection input is provided for error detection/ fault reporting. Approvals (from a notified body) are the responsibility of the 3rd party supplier.

The main principle for all devices in conjunction with the control system is to:

a) Detect unintended car movement.
b) Prevent further movement.
c) Latch the fault (even in the event of power failure) until a manual reset is carried out.

9.11.1 Lifts shall be provided with a means to stop unintended car movement away from the landing with the **landing door not in the locked position** and the **car door not in the closed position**, as a result of failure in any single component of the **lift machine** or **drive control system** upon which the safe movement of the car depends, except failure of the suspension ropes or chains and the traction sheave or drum or sprockets of the machine.

The maximum distances for each direction are shown below:

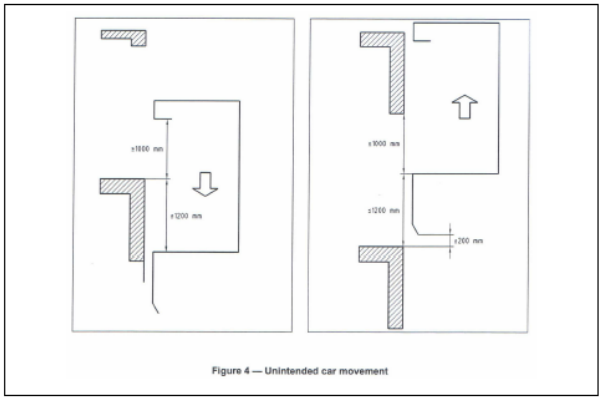


Figure 4 — Unintended car movement

9.11.5 The means shall stop the car in a distance:

--- not exceeding 1,20 m from the landing where the unintended movement has been detected.

--- the vertical distance between the landing sill and the lowest part of the car apron shall not exceed 200 mm, and

--- the free distance from car sill to landing door lintel, or from landing sill to car door lintel shall not be less than 1,00 m (see Figure 4).

These values shall be obtained with any load in the car, up to 100% of rated load.

2) ALMEGA Parameter Configuration

TRAVEL SETUP

	Units	Min	Max	Default
UMD BRAKE MONITORING	YES/NO	NO	YES	NO
UMD OSG SOL MONITOR	YES/NO	NO	YES	NO
UMD FAULT IP MONITOR	YES/NO	NO	YES	NO
UMD MON FAILURE	**YES/NO**	**NO**	**YES**	**NO**
UMD START FAIL COUNT	1-4	1	4	3
UMD STOP FAIL TIME	Seconds	0	10	4

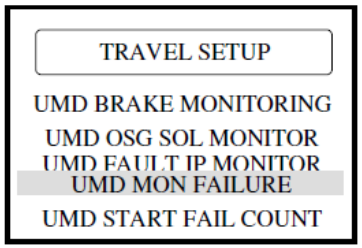
3) Resetting the UMD Fault

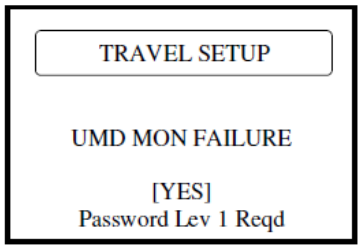
To reset the UMD fault requires re-setting the UMD MON FAILURE parameter back to NO as below:

i) Press **F3** on the keypad.

ii) The keypad keys (↑ and ↓) can be used to scroll through the menu list as below:

iii) Pressing ENTER will display the Position System Setup as below:





iv) To gain password level 1, press and hold **MODE** then press **ENTER**, the text "Password Lev 1 Reqd" will then disappear.

v) The parameter may then be changed back to [NO].

vi) Press Enter to confirm.

4) ALMEGA Uncontrolled Movement Error Codes

Brake Monitoring:

UMD_BRAKE_MON_INPUTS_NOT_CONFIGURED = 1,

UMD_BRAKE_MON_INPUT_1_START_FAILURE = 2,
UMD_BRAKE_MON_INPUT_2_START_FAILURE = 3,
UMD_BRAKE_MON_INPUTS_BOTH_START_FAILURE = 4,

UMD_BRAKE_MON_INPUT_1_STUCK = 5,
UMD_BRAKE_MON_INPUT_2_STUCK = 6,

Overspeed Governor Solenoid Monitoring:

UMD_SOL_MON_IP_NOT_CONFIGURED = 7,
UMD_CANCEL_SOL_DLY_FBACK_IP_NOT_CONFIG = 8,
UMD_SOL_MON_INPUT_START_FAILURE = 9,
UMD_SOL_MON_INPUT_STUCK = 10,

UMD_SOL_CANCEL_DLY_OP_ENERGISE_FAIL = 11,
UMD_SOL_CANCEL_DLY_OP_RELEASE_FAIL = 12,

External Device Fault Input:

UMD_FAULT_INPUT_NOT_CONFIGURED = 13,
UMD_FAULT_INPUT_ERROR = 14,

Parameter Corruption Check:

UMD_START_FAIL_COUNT_PARAM_CORRUPT = 91,
UMD_STOP_FAIL_TIME_PARAM_CORRUPT = 92

Type Test Examination – EN 81- 2(9:13)

Govenor Anti-Slide Solenoid

TYPE-EXAMINATION CERTIFICATE
FOR LIFTCOMPONENTS

Issued by Liftinstituut B.V.

Certificate nr.	:	NL14-400-1002-189-02 Revision nr.:
Description of the product	:	Governor Anti-Slide Solenoid as part of protection against unintended car movement
Trademark, type	:	Lester Almega-A3 Governor Anti-Slide Solenoid
Name and address of the manufacturer	:	Lester Control Systems Ltd Unit D, 18 Imperial Way Croydon, Surrey, CR0 4RR United Kingdom
Name and address of the certificate holder	:	Lester Control Systems Ltd Unit D, 18 Imperial Way Croydon, Surrey, CR0 4RR United Kingdom
Certificate issued on the following requirements	:	Lifts Directive 95/16/EC
Certificate based on the following standards	:	EN 81-1:1998+A3:2009, clause 9.11.3, 9.11.7 and 9.11.9 EN 81-2:1998+A3:2009, clause 9.13.3, 9.11.7 and 9.11.9
Test laboratory	:	None
Date and number of the laboratory report	:	None
Date of type-examination	:	January - March 2014
Annexes with this certificate	:	Report belonging to the type-examination certificate nr.: NL14-400-1002-189-02
Additional remarks	:	None
Conclusion	:	The lift component meets the requirements referred to in this certificate taking into account any additional remarks mentioned above.

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Lester CONTROLS

Report type-examination

Report belonging to type-examination certificate no.	:	NL14-400-1002-189-02
Date of issue of original certificate	:	March 5, 2014
Concerns	:	Component
No. and date of revision	:	-
Requirements	:	Lifts Directive 95/16/EC, EN 81-1:1998+A3:2009, clause 9.11.3, 9.11.7 and 9.11.9 and EN 81-2:1998+A3:2009, clause 9.13.3, 9.11.7 and 9.11.9
Project no.	:	P130322-01

1. General specifications

Name and address manufacturer	:	Lester Control Systems Ltd Unit D, 18 Imperial Way Croydon, Surrey, CR0 4RR United Kingdom
Description of component	:	Governor Anti-Slide Solenoid as part of protection against unintended car movement
Type	:	Lester Almega-A3 Governor Anti-Slide Solenoid
Laboratory	:	-
Address of examined lift component	:	Lester Control Systems Ltd
Date of examination	:	January - March 2014
Examination performed by	:	P.J. Schaareman / J.C. Kooij

2. Description component

To fulfill the requirements for UCMP the Almega control has UCM detection and monitoring functions for contactors / relays and the speed governor solenoid. The control also provides the out of service control when an UCM event has occurred. Optional the control can be equipped with the ADO board which allows the car and landing door(s) to be opened while the lift is still moving.

The UCMP function provided is the application of an overspeed governor fitted with a solenoid. This allows the control to activate the safety gear to be operated in case an UCM event takes place.
A safety switch is provided for the solenoid, the design of the control is made such that the type of overspeed governor is not relevant for the proper working of the system.

The control is foreseen with a special (de-)activation circuit for the solenoid. To avoid unwanted activation of the overspeed governor e.g. during an emergency stop, the solenoid will drop with a delay allowing the lift to brake and stop before the safety gear is activated.
The special circuit makes sure that this delay is cancelled when the car stops normal in the landing door zone and the (car) door(s) are opened, also in case of ADO.

3. Examinations and tests

The examination covered a check whether compliance with the Lift Directive 95/16/EC is met, based on the harmonized product standards EN81-1/2:1998 + A3:2009. Issues not covered by or not complying these Standards are directly related to the essential requirements of the Lift Directive.

The examination included:

- Examination of the technical file (See annex 2),
- Examination of the representative model in order to establish conformity with the technical file and
- Inspections and tests to check compliance with the requirements.

The software version of the Almega control providing the monitoring functions at the moment of examination was V6.16.
The Almega control has direct connections with the safety circuit, no further examination according Annex H of EN 81-1 is performed.

The examination of the Anti Slide Solenoid functionality took place at Lester Controls premises. For the tests a controller and lift machine were available. The overspeed governor solenoid was simulated.

The examination also included tests and inspections to check, register and report the relevant key interface parameters of the component to be used for UCM detection.

The ADO board itself is already certified by Liftinstituut regarding the compliance of the PCB with EN 81-1/2 article 14.1.1, 14.1.2.1.3 and annex H (Type examination certificate number NL14-400-1002-189-03). This means that the safety circuit on board, the creepage and clearance distances and the relevant components used are approved to be in accordance with the harmonised standard. The safety circuit on board can be used for the purpose of UCM detection.

4. Results

After the final examination the Anti Slide Solenoid functions and the relevant parts of the technical file were found in accordance with the requirements.
The functional tests passed without remarks.

Solenoid switch monitoring and UCM detection functionality are available in the Almega control.

In case ADO is applied the detection distance is 16cm ("LV1 / ADO" switching point) but can be made smaller if required. The max. response time of the Almega control between detecting and de-activating the power to the solenoid is 40ms.

5. Conditions

- The installer of the lift needs to define the final complete UCMP solution taken into account the key-parameters of the Almega control, the detecting distance, accelerations, other delays (solenoid / overspeed governor / safety gear) and the applied stopping UCMP stopping means.
- If ADO is used, the maximum detection distance will standard be around 16cm. This might be too much for the application and needs then to be shortened to fit into the total system and finally stop the lift within the required distances of EN 81-1+A3 clause 9.11.5 respectively EN 81-1+A3 clause 9.13.5.
- It shall be verified that for the lift the correct UCM protection means is applied, activated and operates as intended.
- Before taking the lift into service and after each change in the software of the Almega control, the proper functioning of the solenoid monitoring must be checked. The checking shall be done by keeping the solenoid up and off. Each time after a command is given, the manipulation shall be detected by the system and a manual reset shall be necessary to bring the lift back into operation.
- After detecting UCM the lift is kept out of service, also when the main power is switched off.
- The User Manual shall be provided, to allow correct installation, maintenance and to be able to perform the correct tests during the final inspection.

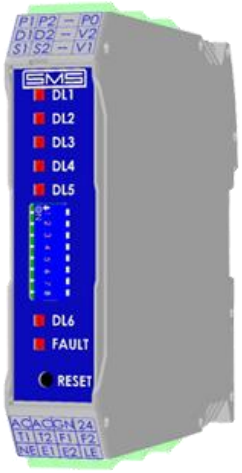
6. Conclusions

The monitoring functions of the Almega control are fulfilling the requirements of EN 81-1/2 + A3.
Based upon the results of the type-examination Liftinstituut B.V. issues a type-examination certificate.

The type-examination certificate is only valid for products which are in conformity with the same specifications as the type certified product. The type-examination certificate is issued based on the requirements that are valid at the date of issue. In case of changes of the product specifications, changes in the requirements or changes in the state of the art the certificate holder shall request Liftinstituut B.V. to reconsider the validity of the type-examination certificate.

INDEPENDENT A3 Certified Components

Variotech REA3



SMS Box A3 Test

Stem NCBM01

Gervall UCM100

Allianz