MANUAL
INSTALLATION, USE AND MAINTENANCE
ELECTRICAL SYSTEM AND XLIFT CONTROLLER



Doc: XLMN_HL01_EN_V01R02b

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1 Warnings

NEXUS SRL reserves the right to modify the product and/or this document, in part or in full, without prior notice, should technical, construction or production improvements be introduced.

For all data not included in this document, refer to the system documentation and/or the documentation of each component.

To preserve product safety, we recommend not using non-original parts or spare parts not approved by NEXUS SRL.

NEXUS SRL declines all liability if the instructions in this document and the referenced attachments are not observed.

Compliance with EU Regulation 2023/1230 Annex III points 1.1.9 and 1.2.1

For the scope of the HL Nexus electrical supply, the equipment with firmware V03R01 and later has been designed and manufactured taking into account the requirements of Annex III, points 1.1.9 and 1.2.1, of EU Regulation 2023/1230 relating to protection against tampering, and safety and reliability of control systems.

To ensure the declared traceability, the micro SD memory card in the controller boards must remain installed at all times with the controller powered on, and the data contained in it must be retained for at least 5 (five) years.

Nexus diagrams must always be observed and the independence of the safety chain maintained.

Hardware, software and configuration modifications must be approved in advance by Nexus.

1.1 Identification

Each electrical part is identified by the following data:

1. Serial Number and Year of Manufacture
2. GMV Reference (xxPKxxxxxx)
3. Customer/Installer Reference
4. ...

This data is shown on:

- on a label located in the controller
- on the title page of the schematic.

The programming keypad shows:

- GMV Reference (xxPKxxxxxx)
- Hardware Version
- Software version

In any request for technical and/or commercial support always quote the GMV reference.

1.2 Documentation

The documentation for the XLIFT GMV version electrical parts for hydraulic platform (Home Lift) comprises:

- this manual
  contains information common to all applications
- the schematic diagrams, installation and pre-wiring diagrams
  are specific to each contract.

Follow the indications given for correct installation, use and maintenance of the product.

In this manual the definitions indicated in the standards apply:

UNI EN ISO 14798	Lifting installations (lifts), escalators and moving walks - Risk assessment and reduction methodology
UNI EN ISO 7010	Graphical symbols - Safety colours and safety signs
EN12016 and EN12015	Electromagnetic compatibility
CEI EN 61439-1	Low-voltage switchgear and controlgear assemblies (LV switchgear)

1.3 Storage of Materials

Carry out loading and unloading operations of materials with the utmost care.

Verify, within the time limits and terms required by law, that the materials received correspond to those ordered and that all items are present.

Check the condition of all components and materials upon receipt on site, to verify any damage during transport. Contact after-sales support in case of missing or damaged parts.

Store electrical and electronic components in a cool, dry place, in their original packaging, at a temperature between 3°C and 40°C.

If for any reason it is not possible to install the system immediately, check the stored components periodically to prevent damage caused by prolonged storage under unfavourable conditions.

1.4 Disposal of Materials

Damaged, replaced or unused materials must be disposed of in accordance with current regulations: delivered to authorised collection centres, to the manufacturer or to specialised and certified companies. They must not be released into the environment.

1.5 Reference standards

For anything not specified in this manual, refer to the local standards and laws in force, complying in particular with:

Directive 2006/42/EC	Machinery Directive – relating to machinery and amending Directive 95/16/EC (recast)
Directive 2014/33/EU	Lifts Directive – on the harmonisation of the laws of the Member States relating to lifts and safety components for lifts.
Directive 2014/35/EC	Low Voltage Directive - concerning the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits
Directive 2004/30/EC	Electromagnetic compatibility (EMC) Directive - on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC
EN 81-41	Safety rules for the construction and installation of lifts - Special lifts for the transport of persons and goods Part 41: Vertical lifting platforms intended for use by persons with reduced mobility
EN 81-70	Safety rules for the construction and installation of lifts - Particular applications for passenger and goods lifts. Part 70: Accessibility to lifts for persons, including persons with disabilities
CEI EN 61439-1/2	Low-voltage switchgear and controlgear assemblies Part 1: Type-tested and partially type-tested assemblies
EN 12015	Electromagnetic compatibility - Product family standard for lifts, escalators and moving walks - Emission
EN 12016	Electromagnetic compatibility - Product family standard for lifts, escalators and moving walks - Immunity
EN 12183	Wheelchairs - Manual wheelchairs - Requirements and test methods
EN 12184	Electrically powered wheelchairs, scooters and their chargers - Requirements and test methods
UNI EN 13015	Maintenance of lifts and escalators - Rules for maintenance instructions
UNI EN ISO 7010	Graphical symbols - Safety colours and safety signs - Registered safety signs
UNI EN ISO 13857	Safety of machinery - Safety distances to prevent access to danger zones by upper and lower limbs
UNI EN ISO 14121-1	Safety of machinery - Risk assessment - Part 1: Principles
UNI EN ISO 12100	Safety of machinery - Design principles - Risk assessment and risk reduction
UNI EN ISO 14798	Lifting installations (lifts), escalators and moving walks - Risk assessment and reduction methodology

2 Guards

2.1 Main Switches

Located in the controller for MR and MRC installations, in the switch panel for MRL installations.

A single incoming supply connection is required for the entire electrical installation, which must be protected by a 300mA residual current device.

The single-phase supply used, excluding motor-pump supply, is protected by a 30mA residual current device (QGL).

For correct operation of the protective devices, a proper earth connection must be made.

Switch (designation)	*Description*
QGFM	Main Power (Single-Phase or Three-Phase) . Motor-pump power supply . IV pole emergency
QGL	General Lighting / Boards / Socket outlet with magnetic/30mA residual current protection
QLV	Shaft lighting, downstream of QGL
QLC	Board power supply and oil heater, downstream of QGL
FA	Magnetothermic circuit breaker safety chain

2.1.1 Operating modes

The operating mode of the installation is determined by the state of the various switches.

QFM	*QGL*	*QLV*	*QLC*	*FA*	*Mode*
OFF	OFF	X	X	X	Installation switched off, including battery charger
ON	OFF	X	X	X	Power supply motor power: pump motor only
OFF	ON	X	OFF	X	Shaft lighting activated with QLV Powered socket outlet
OFF	ON	X	ON	X	Standby (Emergency not active) Battery charger and boards powered (lift not in service)
ON	ON	ON	ON	OFF	System on, safety chain not powered
ON	ON	ON	ON	ON	Lift on, safety chain powered (lift in service)

2.2 Fuses

Located on the board in the controller for MR, MRC systems or in the switch panel in MRL systems (controller in shaft).

Code	*Description*
F6	OPERATOR
F5	BATTERY 1
F4	BATTERY 2
F3	24V SUPPLY (MAINS / EMERGENCY)
F2	CONTROLLER AC SUPPLY
F1	AC OUTPUT J20.1

2.3 Motor-pump Thermal Protection

By means of PTC embedded in the motor-pump windings and monitored by the board in the controller.

2.4 Fluid Thermal Protection

Two modes are managed:

- via ON/OFF thermal contact with fixed intervention threshold
- via PTC probe (GMV code 70200310 – 70200311)
  this option allows the intervention threshold to be set and the Oil Heater activation to be controlled.

2.5 Controller Thermal Protection

Sensor on main board with programmable intervention threshold.

3 Main Features

The NEXUS electrical parts for hydraulic platform lift (Home Lift) have the following main features:

- Compact controller dimensions for installation in:
  - Technical cabinet
  - Compact cabinet
  - In the shaft
  - In the machine room
- Controller supply 110-230Vac 50/60Hz
  - Protection with circuit breakers and fuses
- Single-phase and three-phase motor-pump control up to 400Vac with PTC thermal protection
  - Power up to 3KW at 230Vac 50/60Hz
  - Power up to 5.5KW at 400Vac 50/60Hz
- Valve Management:
  - up to 3 pressure switches (overload, minimum and maximum pressure)
  - 24V coils (12V for remote emergency)
  - traditional 2 or 3 coil with/without Door Lock
  - traditional 2CH
  - NGV-A3 electronic
  - EL2 electronic with/without Door Lock, 2CH
- 24V Safety Chain with opto-isolated monitoring DIN EN60747-5-5
- Emergency Descent Device with Integrated Door Opening
- Door Control:
  - Car: without doors, with safety barrier / manual doors / automatic doors with safety barrier
  - Landing: Manual with Mechanical Lock or Electric Lock / Automatic – Electric Lock
- Shaft:
  - magnetic sensors
    - without slowdown strips (speed change on entering door zone)
    - with slowdown strips (required when slowdown distance > 200mm)
  - incremental encoder with close-floor management
    - minimum floor spacing with separate zone 300mm
    - minimum floor spacing with single strip 50mm
- Up to 8 Landings / 24 Services / 3 Entrances
- Operations:
  - Constant Pressure (Call Maintained)
  - Universal
  - Down Collective
- Modular serial pre-wired landing stations and car operating panel on CAN bus, CANopen DS417 protocol
  - 12-core shaft cable + network cable with junction board at each landing
  - 16-core flexible controller-to-car cable

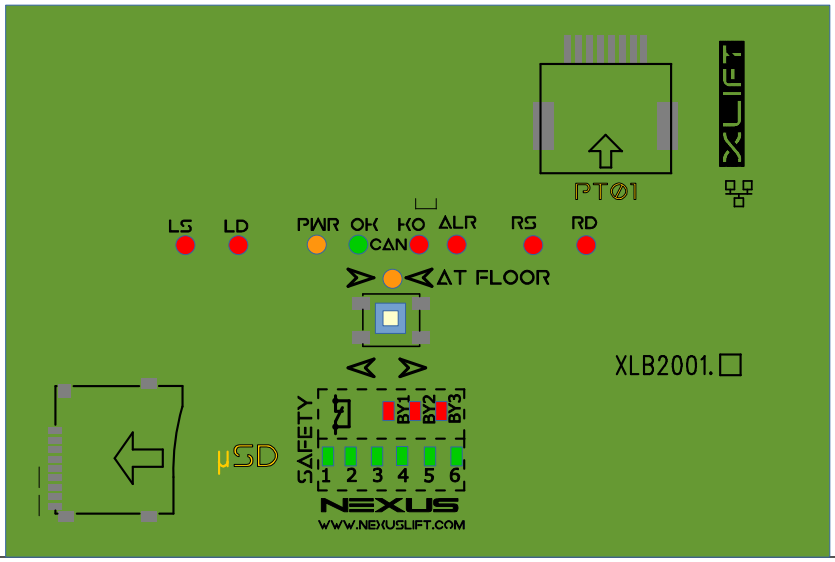
4 Diagnostics

4.1 Indicator LEDs

Present in varying quantities on the various boards, they indicate the status of the main functions identified by the abbreviations alongside them.

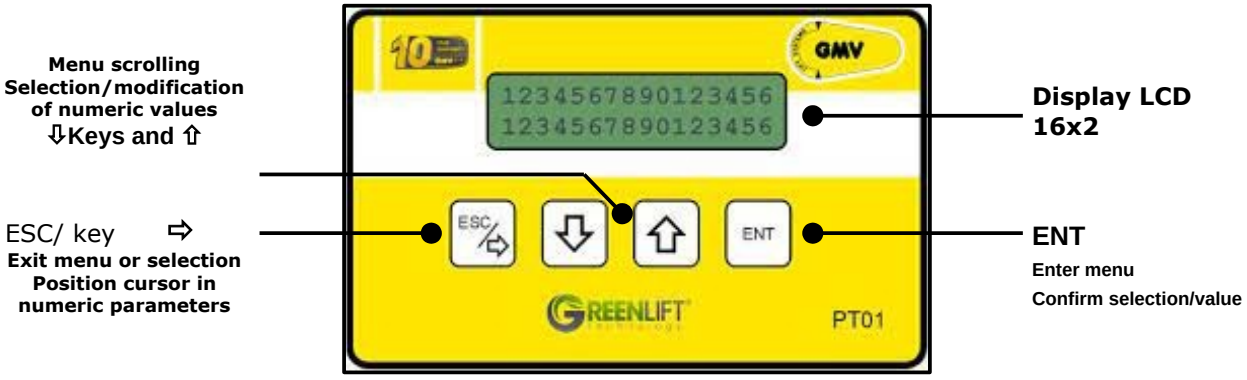
4.1.1 XLB2001 board indicator LEDs

Code	*Description*	
PWR	24 V supply	
CAN OK **CAN KO**	CANopen operating status, indicated by various lighting modes Green on and Red off indicate normal operation	
ALR	Alarm, two signalling modes: • steady flashing (50%): out of service, immediate or at floor • two pulses/pause: entries added to Fault Log (extinguishes upon entering menu 1.6)	
AT FLOOR	Car in floor zone (activated by monostable IZ)	
BY1 **BY2** **BY3**	Door Safety Bypass Status (not used in this version)	
1	M3 Safety Circuits (FA – Pit STOP – Pit Bollard)	Flashing = Pit Post activated Off = Pit STOP activated
2	M4 Safety Chain (Safety Barrier – Car STOP)	Flashing = Car STOP activated Off = Safety Barrier activated
3	M7 Safety Chain (Safety Gear – Trapdoor – Overtravel)	
4	M8 Safety Chain (Landing Door Contacts)	
5	M9 Safety Chain (Landing Door Locks)	
6	M10 Safety Chain (Car Doors)	
	LED on indicates safety chain closed up to that point. When magnetic switch FA is open, all LEDs 1...6 flash.	



4.2 PT01 keypad

Connects to the XLB2001 board in the controller via dedicated RJ45 cable to connector PT01.



KEY	MENU SELECTION	PARAMETER MODIFICATION	
		A LISTA	NUMERIC
⇨ESC/	Return to upper level.	ESC cancel selection or return to upper level menu	⇨ Move cursor to the right
⇧	Scroll the menu upwards. Display the previous item.	Display previous value	Increase value
⇩	Scroll the menu downwards. Display the next item.	Display next value	Decreases the value
ENT	Activates the selected item: If a menu, accesses the submenu or its parameters If a parameter, enters edit mode	Confirms the selected value and returns to the previous menu / parameter	Confirms the set value and exits edit mode

4.2.1 Menu

GMV – NX_HL01 yyPKnnnnnn	Year of manufacture and serial number of the controller [code PK]
GMV – NX_HL01 SW:SnVnnRnnXn	Installed firmware version
GMV – NX_HL01 HW:HVxxRyy	XLB2001 board version and revision
GMV – NX_HL01 SN:XXXXXXXX	XLB2001 board serial number
GMV – NX_HL01 PT01-3L: VxxRyy	3rd language text version required for the currently installed software version
GMV – NX_HL01 yyyy/mm/dd hh:mm	System date and time Year/Month/Day Hour:Minutes
GMV – NX_HL01 PIN: ****	If set to a value other than 0000 (factory preset), it must be entered to be able to modify the parameters; otherwise only viewing without modification of parameters is permitted.

The PIN can be set at menu 12.10 Service\PIN

```
 GMV - NX_HL01
1 Diagnostics
2 Configuration
3 Power Unit
4 Door Operators
5 Shaft info
6 Landings
7 Entrances
8 Hall Stations
9 COP
10 Indicators
11 Timer
12 Service
13 Save Data
```

Menu list

Use buttons and to scroll through menu⇩⇧
Press ENT to activate menu

Pressing ESC several times returns to the initial display, xxPKyyyyyy

- 1 - Diagnostics

```
 GMV - NX_HL01
1 Current Mode
2 Status
3 Car Status
4 Allarms
5 Reset alarms
6 Logged Allarms
7:12BA VBK  24V
8: Vac HZ  24VT
9: Temp. Ctrl
10 Inputs
11 Outputs
12 Counters
13 CAN status
```

List of submenus / parameters in the Diagnostics menu

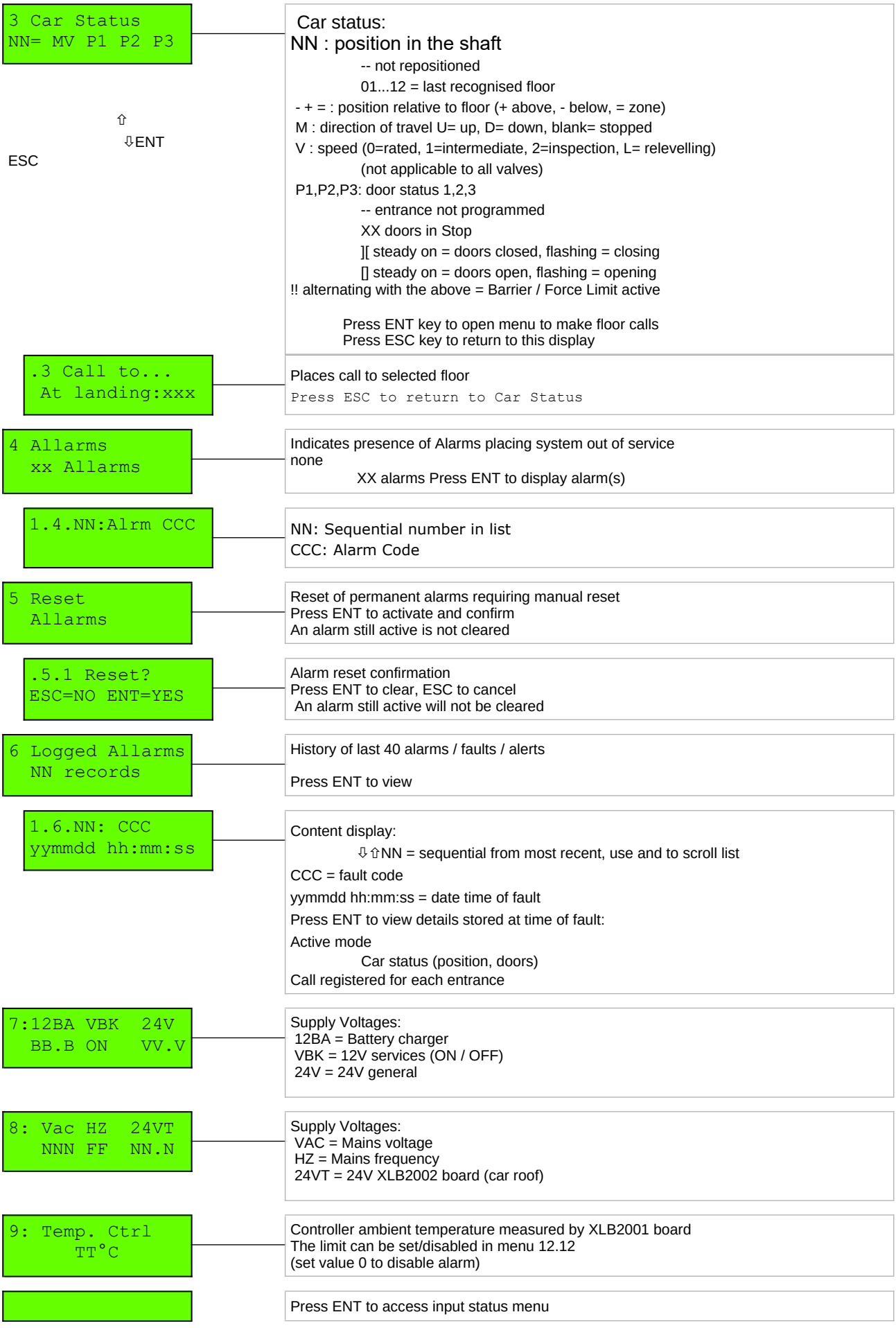
Use the and buttons to scroll and select a menu or parameter ⇩⇧
Press ENT to activate menu

```
1 Current Mode
  Calls
```

Active operating mode display:
Installation
Service
Shaft reading
UP/DOWN mov. cmd
Door commands
Test A3
Test VMD-DLV
Inspection
Emergency
Fire
Reserved
Call Service
Standby

```
2 Status
  In Service
```

Indicates the operating status:
In Service
Out of Service


3 Car Status
NN= MV P1 P2 P3
⇧
⇩ENT
ESC
Car status:
NN : position in the shaft
-- not repositioned
01...12 = last recognised floor
- + = : position relative to floor (+ above, - below, = zone)
M : direction of travel U= up, D= down, blank= stopped
V : speed (0=rated, 1=intermediate, 2=inspection, L= relevelling)
(not applicable to all valves)
P1,P2,P3: door status 1,2,3
-- entrance not programmed
XX doors in Stop
][steady on = doors closed, flashing = closing
[] steady on = doors open, flashing = opening
!! alternating with the above = Barrier / Force Limit active
Press ENT key to open menu to make floor calls
Press ESC key to return to this display
.3 Call to...
At landing:xxx
Places call to selected floor
Press ESC to return to Car Status
4 Allarms
xx Allarms
Indicates presence of Alarms placing system out of service
none
XX alarms Press ENT to display alarm(s)
1.4.NN:Alrm CCC
NN: Sequential number in list
CCC: Alarm Code
5 Reset
Allarms
Reset of permanent alarms requiring manual reset
Press ENT to activate and confirm
An alarm still active is not cleared
.5.1 Reset?
ESC=NO ENT=YES
Alarm reset confirmation
Press ENT to clear, ESC to cancel
An alarm still active will not be cleared
6 Logged Allarms
NN records
History of last 40 alarms / faults / alerts
Press ENT to view
1.6.NN: CCC
yymmdd hh:mm:ss
Content display:
⇩⇧NN = sequential from most recent, use and to scroll list
CCC = fault code
yymmdd hh:mm:ss = date time of fault
Press ENT to view details stored at time of fault:
Active mode
Car status (position, doors)
Call registered for each entrance
7:12BA VBK 24V
BB.B ON VV.V
Supply Voltages:
12BA = Battery charger
VBK = 12V services (ON / OFF)
24V = 24V general
8: Vac HZ 24VT
NNN FF NN.N
Supply Voltages:
VAC = Mains voltage
HZ = Mains frequency
24VT = 24V XLB2002 board (car roof)
9: Temp. Ctrl
TT°C
Controller ambient temperature measured by XLB2001 board
The limit can be set/disabled in menu 12.12
(set value 0 to disable alarm)
Press ENT to access input status menu

10 Inputs	
10 Inputs .1 CONTROLLER	Press ENT to access controller input status menu
1: 123456 CS EM xxxxxx x x	Input status: 0=OFF, 1=ON (active) 123456 : safety devices CS : Safety Circuit bypass EM : Door Emergency Key (if 0/1 alternating, key OFF but Reset not performed)
2:PH EN TA VE FT x x x x xx	Input status: 0=open, 1=closed PH : phase control input / QFM, EN : enable contactor/valve control (NO) TA : Motor Contactor Control (NC) VE : Emergency Solenoid Valve Control Command (NC) F : Pit Post Retracted (NO) T : Recessed Headroom Post (if present)
3:I/O123 ALL RES xxx x x	Input status: 0=OFF, 1=ON (active) 123 : programmable inputs J19.1,2,3 ALL : Alarm button RES : remote alarm reset
4:P123 E12 TM TO xxx x x yy	Input status: 0=OFF, 1=ON (active) 123 : pressure switch inputs 1,2,3 E12 : inputs ES1, ES2 TM : motor thermal protection TO : oil temperature (depends on the installed sensor: PTC or thermocontact
5: IN123 xxx	Input status: 0=OFF, 1=ON (active) 123 : programmable inputs J14.11,12,13
10 Inputs .2 CAR TOP	Press ENT to access the Car-top inputs status menu
[1]:FA FC CM x x x	Operator 1 (NC) input status: 0=OFF, 1=ON FA : open limit switch FC : close limit switch CM : force limit / photocell / light curtain
[2]:FA FC CM x x x	Operator 2 (NC) input status: 0=OFF, 1=ON FA : open limit switch FC : close limit switch CM : force limit / photocell / light curtain
[3]:FA FC CM x x x	Operator 3 (NC) input status: 0=OFF, 1=ON FA : open limit switch FC : close limit switch CM : force limit / photocell / light curtain
4:RD SZD RS CS x xxx x x	Slowdown sensors, pulse generators, safety circuit input status: 0=OFF, 1=ON RD : SRD down slowdown sensor S : up impeller IS Z : zone impeller (I safety circuit channel) D : down impeller ID RS : up slowdown SRS CS : safety circuit status Press ENT key to open menu to make floor calls Press ESC key to return to this display
.3 Call to... At landing:xxx	Places call to selected floor Press ESC to return to Car-Top Inputs Status (4)
11 Outputs	Press ENT to access outputs status menu

11 Outputs .1 CONTROLLER	Press ENT to access the controller outputs status menu
1:VMDLP DL VE T xxx x x x	Valve / contactor output status: 0=OFF, 1=ON D : solenoid valve VMD L : solenoid valve VML P : solenoid valve VMP DL : DLV solenoid valve VE : VMD-EL solenoid valve (remote emergency) T : motor contactors
2:DRV0_012345678 xxxxxxxxx	Internal driver output status_0: 0=OFF, 1=ON 0 : battery test 4 : VML 8 : Emergency 1 : M12 5 : DLV 2 : OUT 4 AC (J20.3) 6 : TA1-2 3 : VMP 7 : VMD
3:DRV1_01234567 xxxxxxxx	Internal driver output status_1: 0=OFF, 1=ON 0 : Red Traffic Light 4 : OUT 3 (J19.3) 1 : Green Traffic Light 5 : Lock A 2 : OUT 1 (J19.1) 6 : Lock B 3 : OUT 2 (J19.2) 7 : Siren
11 Outputs .2 CAR TOP	Press ENT to access the Car Roof outputs status menu
1:DRV0_012345678 xxxxxxxxx	Driver_0 output status: 0=OFF, 1=active 0 : Door Open Operator 1 4 : Door Open Operator 3 1 : Door Close Operator 1 5 : Door Close Operator 3 2 : Door Open Operator 2 6 : Bypass indicator 3 : Door Close Operator 2 7 : Emergency Light 8 : Programmable Output OUT-04 (JT24)
3:FLT0_01234567 xxxxxxxx	Driver_0 output protection status: 0=OFF, 1=active 0 : Door Open Operator 1 4 : Door Open Operator 3 1 : Door Close Operator 1 5 : Door Close Operator 3 2 : Door Open Operator 2 6 : Bypass indicator 3 : Door Close Operator 2 7 : Emergency Light
12 Counters	Press ENT to access the Counters menu
.1 Up starts nnnnnn	Display of number of UP starts, includes relevelling
.2 Down starts nnnnnn	Display number of starts in DOWN direction, includes relevelling
.3 Up relevell. nnnnnn	Display number of revellings in UP direction
.4 Relevel. Y. nnnnnn	Display number of starts in DOWN direction
.5 Emergency nnnnnn	Display number of Emergency operations
13 CAN status	CAN communication diagnostics See §9

4.3 Alarms and Malfunctions

Diagnostic signals are grouped into 5 types:

Type	*Description*	*Notes*
1	Immediate, Permanent Out of Service	Permanent out of service requires manual reset (local or remote) For each alarm, the following are stored: • event date and time • car position (floor) • position relative to floor threshold (above/below/…) • Operation status (stopped, up, down, ...) • current call position and type door status
2	Immediate out of service, Temporary	
3	Out of service with car stopped, Permanent	
4	Out of service with car stopped, Temporary	
5	Malfunction indication without out of service	

The lift out of service status is indicated by the flashing ALR LED and displayed on the PT01 keypad in menu 1. Diagnostics\2 Status

Completed:

- automatically for temporary alarms
- ⮜⮞for permanent alarms via button or PT01 keypad to menu 1. Diagnostics\5 Reset Alarms

Alarms can only be reset with FA switch inserted and:

- for alarm 066 with safety circuit closed at least up to M7
- for alarm 003 with safety circuit closed up to M12 and door emergency key disengaged

For alarms and faults it is possible to see more details of each event in the History.
Pressing ENT displays Operating Status, Car/doors/movement status and Call.

4.3.1 List of Alarms and Faults

Code	*Cat.*	*Description*	*Cause / Remedy*
001	1	Run timer	Verify that the car moves smoothly between extreme floors. If necessary, increase value §3.1.2
002	1	Run timer, low speed	Verify that the car moves smoothly during relevelling. If necessary, increase value §3.1.3
003	1	Door Emergency Key Activation	Opening of a landing door with emergency key (reset only with safeties closed)
004	1	Pump Motor Thermal Protection	Check for actual overheating and motor connections. Disconnect probe and verify that cold value is below 1500 Ohm
005	1	Excessive number of relevellings	Check hydraulic system and/or increase §3.2.3
006	2	Phase Missing / Reversal F.M.	Three-phase supply only: check connections L1,L2,L3
007	1	Generic alarm (from programmable input)	Check associated circuit
008	1	UCM – Unintended Car Movement	Check hydraulic system and/or shaft positioning monostables and/or Safety Circuit Bypass
010	2	Minimum Oil Pressure	Check hydraulic system and/or pressure switch polarity
011	2	Maximum Oil Pressure	Check hydraulic system and/or pressure switch polarity
012	4	Maximum Oil Temperature	ON/OFF probe: check contact PTC probe: check open circuit / short circuit / value (800...1800 Ohm, 1000 Ohm/25°C)
013	4	Maximum Ambient Temperature Controller	Check controller ventilation / increase §12.1
020	2	+24 Low Power	Check supply voltage > 20V If not in Emergency replace power supply
021	2	+24 High Power	Check supply voltage < 27V If not in Emergency replace power supply
022	2	Battery Voltage Low	Check battery charger: disconnect batteries and verify voltage on XLB2001.J3 14V Connect one battery at a time and verify voltage 13.8V

Code	*Cat.*	*Description*	*Cause / Remedy*
023	1	Backup Voltage Low	Check battery charger voltage on XLB2001.J3
024	1	Battery Voltage High	Check battery charger voltage on XLB2001.J3
025	1	Backup Voltage Protection	Overload/short circuit on BA+ supply
026	5	Oil temperature too low	Only with PTC probe: see alarm 012
030	1	Scheduled out of service	Programmed number of trips reached
032	1	NGV-A3-03 Alarm	Refer to the valve manual
033	1	NGV upward travel failure (RUN not received)	Refer to the valve manual
034	1	NGV downward travel failure (RUN not received)	Refer to the valve manual
035	1	EL2 Alarm	Refer to the valve manual
036	1	2CH-1 monitoring	Refer to the valve manual
037	1	2CH-2 monitoring	Refer to the valve manual
038	1	DLV monitoring	Refer to the valve manual
040	1	Welded Run Contactor	Check contactors TA1-TA2
041	1	Welded Safety Chain Relay Repeaters	Contact service
042	4	Run contactors failed to energise	Check contactors TA1-TA2
043	5	Safety chain relay repeaters failed to energise	Check voltage at end of safety chain on XLB2001.J7 Replace board XLB2001
044	5	De-energisation of safety chain relay repeaters	Check voltage at end of safety chain
045	1	Emergency Electric Operation Relay welded	Electric emergency activated with controller on / check BA voltage
050	1	Door Safety Circuit not active after test run	Two consecutive trips to different floors without Safety Circuit activation: check shaft positioning monostables LS-LD-IZ
051	5	Door Safety Circuit not activated at stop	Check Alarm History to determine at which floor it occurred and inspect magnetic strips
052	1	Channel #1 Door Bypass Safety Circuit	If the fault is permanent contact service
053	1	Channel #2 Safety Circuit Door Bypass	If the fault is permanent contact service
059		Connection J18 (PE-0) missing	Insert the connector
060	2	No voltage at start of safety chain (Operation switch FA)	Switch tripped or operated due to earthing of a safety chain contact
061	2	Contact M3A opening (pit STOP or pit/headroom pillars)	Check pit STOP, pillars and related connections
064	2	M4 terminal contacts open (car STOP)	STOP button in car pressed during movement
065	2	M4 terminal contacts open (Safety Barrier during movement)	Door Safety Barrier intervention during movement
066	2	M7 terminal contacts open (Hatch – Arcata – Overtravel)	Safety Trip: Trapdoor / Archway / Overtravel (requires manual alarm reset)
067	5	Door lock contacts failed to close at departure	Check contacts
068	5	Car door contacts failed to close at departure	Check contacts
069	5	Opening of contacts at terminal M9...12 during travel (Door Closers, Door Locks, Car Doors)	Opening of a Door contact when passing floors
070	5	3 consecutive emergency attempts failed	Emergency not carried out due to open safety chain
080	1	Operator 1 opening timeout	The opening limit switch was not recognised within the set time
081	1	Operator 2 opening timeout	The close limit switch was not recognised within the set time.
082	1	Timeout opening operator 3	The close limit switch was not recognised within the set time.
083	1	Timeout closing operator 1	The close limit switch was not recognised within the set time.
084	1	Timeout closing operator 2	The close limit switch was not recognised within the set time.
085	1	Timeout closing operator 3	The close limit switch was not recognised within the set time.
090	1	OPER03 fault #1	Refer to OPER03 manual

Code	*Cat.*	*Description*	*Cause / Remedy*
091	1	OPER03 fault #2	Refer to OPER03 manual
092	1	Fault OPER03 #3	Refer to OPER03 manual
095	2	Out of service at floor by User Key	
096	2	Out of service Water in Pit	Check sensor
097	2	Out of service External Ambient Thermostat	Check sensor
098	1	Seismic Sensor Alarm	Primary/Secondary Wave input(s) activated
099	2	Lift not enabled by Seismic Sensor	Seismic sensor enable signal missing
100	4	Both slowdown sensors open	Movement not permitted Check position of bistable contacts / magnets / connections
101	5	DOWN slowdown sensor opened early in sequence (during travel)	Incorrect magnet position or missing magnetic strip in shaft with Speed Change
102	5	DOWN slowdown sensor not reclosed	Check reclosure magnet
103	5	DOWN slowdown sensor open at departure from upper landings	Check for interference with UP slowdown magnets / connections
104	5	UP slowdown opened early in sequence (during travel)	Incorrect magnet position or missing magnetic strip in shaft with Speed Change
105	5	UP slowdown not reclosed	Check reclosure magnet
106	5	UP slowdown open at departure from lower landings	Check for interference with UP slowdown magnets / connections
110	5	LS sequence incorrect during UP travel, speed change	Check positioning of magnetic strips
111	5	LS sequence incorrect during DOWN travel, speed change	Check positioning of magnetic strips
112	5	LS sequence incorrect at DOWN stop	LD read before LS
113	5	Incorrect LS sequence at up stop (LS not recognised)	LS reading did not occur (floor skip)
120	5	Incorrect LD sequence on up travel, speed change	Check positioning of magnetic strips
121	5	Incorrect LD sequence on down travel, speed change	Check positioning of magnetic strips
122	5	Incorrect LD sequence at up stop	LS read before LD
123	5	Incorrect LD sequence at down stop (LD not recognised)	LD reading failed (floor skipped)
130	5	Encoder count not aligned to pulse generator sequence	Check that the toothed belt is positioned and tensioned correctly / check monostable and IZ magnetic strip
131	2	Encoder channel A open	Encoder connection / Encoder / XLB2002 board faulty
132	2	Encoder channel B open	Encoder connection / Encoder / XLB2002 board faulty
133	4	Encoder shaft not acquired	Before commissioning, the encoder shaft must be acquired
135	5	Shaft Encoder – SRS	Check upper end opening position > +/-200mm from acquisition
136	5	Shaft encoder – SRD	Check lower end opening position > +/-200mm from acquisition
200	1	CANbus Error	General CAN bus error - Check connections
201	2	Bus communication error (Controller–Car Roof)	Board XLB2001 does not communicate with roof board XLB2002 Check connections
202	2	Bus communication error (Controller-NGV)	Board XLB2001 does not communicate with roof board NGV Check NGV power supply / connections

5 Installation

Before proceeding with installation, verify that the enclosed documentation is consistent with the system characteristics and that the delivered material is complete.
If any discrepancies or missing items are found, please contact the after-sales technical service for a solution before proceeding with installation.

5.1 Configuration

The electrical system is supplied configured in all its parts as per customer order and the controller is preset to "Installation" operating mode.

In this mode, operation is limited to verifying the correct functioning of the hydraulic and electrical components during the installation phase of the lift.

In particular:

1. Only connection to the power unit is required
2. A dedicated Command Push-button Station, properly connected to the controller, is used.
3. Alarm management reduced to only the components present (power unit):
    - Motor protection
    - Contactor welding
    - Phase failure/sequence
    - Supply voltage limits
    - Electronic valve alarms

5.2 Controller Installation

Follow the instructions in the assembly diagram.

5.2.1 Batteries

The controller is supplied with the batteries disconnected.

Reconnect them observing the correct connections, avoiding reversing the battery polarity.

5.3 Pre-wiring

The pre-wiring is of modular type where the lengths of the various cables have been defined based on the design drawings.

Before starting assembly operations, verify the compatibility of the components with the installation.

In the event that modifications or errors have occurred resulting in cable lengths that are too short, avoid making improvised extensions but request the component of the appropriate length.



All cables must be secured with cable ties in the designated fixing points to prevent the connectors from bearing the weight of the connection to the boards or from being unable to be inserted correctly.

5.3.1 Shaft

Position the vertical trunking in the shaft in the indicated position to avoid having short branch runs.

Mount the junction boards as indicated.

5.3.2 Car

Position the Roof Box in the indicated position.

The flexible cable must be secured in the dedicated retainer.

Route the cables towards the devices from the nearest side, ensuring they do not cross inside the junction box.

5.4 Shaft Positioning

Follow the indications in the assembly diagram for correct positioning of the sensors, magnetic strips, toothed belt and encoder when fitted.

5.4.1 Contact Shaft

Magnetic sensors fitted:

- SLS = Stop / Speed change UP
- SLD = Stop / Speed change DOWN
- SLZ = Floor Zone (two sensors connected in series to use only two magnetic tracks)
- SRD= Slowdown DOWN / Inspection Limit DOWN
- SRS= Slowdown UP / Inspection Limit UP

Available in two versions:

- Without Speed-Change Strips
  Speed change occurs when the first slowdown sensor SLD (up) or SLS (down) activates upon entering the landing zone
- With Speed-Change Strips
  Speed change occurs when the slowdown sensor SLS (up) and/or SLD (down) activates at the corresponding strip.
  This allows operation of systems where the deceleration distance at high speed is always less than half the minimum inter-floor distance: DRAL < ½ INTER-FLOOR

5.4.2 Shaft with Encoder

Uses an incremental encoder positioned in the upper part of the frame, driven by a toothed belt and with a resolution R > 1000 pulses per metre (where R = [1 m / (π × Pulley Ø)] × pulses/revolution × 4
It is also used as feedback for valve regulation, if required.
Magnetic sensors provided:

- SLZ = Floor Zone, uses a single magnetic track
- SRD= Slowdown DOWN / Inspection Limit DOWN
- SRS= Slowdown UP / Inspection Limit UP

5.5 Commissioning

At the end of installation:

- Change the operating mode (menu 12.1.2) to “Service,” save the parameters, and turn the control panel off and then back on.
- Verify that with the car out of level all safety devices are closed, LEDs 1...6 lit
- If the installation has automatic doors, verify the association of the operators with the entrances set in menu 7.
  - Go to menu 12.2.1 Door Commands and select door 1 or 2 or 3
  - keeping the and buttons pressed opens/closes the selected doors. ⇩⇧
- If the shaft is fitted with encoder:
  - verify settings in menu 5
  - carry out acquisition, menu 12.4
- Change the operating mode (menu 12.1.2) to "Call Service" and save the parameters.
- Verify that there are no active alarms; if there are, resolve the cause.
- Verify that the state of the slowdown sensors SRD and SRS is consistent with the current car position.
  With both slowdown sensors open in the shaft with contacts (Fault 100), the car will not be able to move.
- Landing verification:
  - Go to menu 1.10.2.4, shaft positioning state display
    From this menu, pressing ENT opens the call menu; pressing ESC returns to the input display.
  - Make calls to all floors/entrances and verify the correct sequence of sensors, activation of the Safety Circuit and door opening.
- Car Calls Verification

    - Make a call from PT01 to the bottom landing
    - Verify all car calls, STOP, Door Open and Barrier
- Verify Calls from Landing Stations
    - Verify calls from all landing stations
- Verify Emergency Operation
- Electrical Checks
    - Ponte 0V/terra
    - Insulation tests.

6 Tests

6.1 Insulation tests

Position the car between two floors with doors closed.

Refer to the information shown on Sheet 1 of the electrical schematic

6.2 Verification of relevelling at floor with doors open

This test verifies that with car doors open at the floor the system performs relevelling.

```
The system must be in the Call Service operating state
```

1. Bring the car to the lowest floor.
2. Keep the car doors open by interrupting the photocell beam or the light curtain, or with doors closed by removing connection J7 on board XLB2001.
3. Move the car downwards:
   - by pressing the emergency descent button if the power unit is fitted with NGV / NGVA3 / 3010 2CH A3 / 3100 2CH A3 valve
   - by pressing the two emergency descent buttons if the power unit is fitted with 3010 + DLVA3 valve

   and verify that relevelling occurs.
4. Move the car upwards by operating the hand pump and verify that downward relevelling occurs.

6.3 Unintended Car Movement (UCM) Check

This test verifies the interruption of movement commands when the car moves away from the landing (door zone) with door safety devices not closed via

Interruption occurs by opening the contacts of the safety circuit which bypasses the door safety contacts when the car is in the door unlocking zone at the landing.

The intervention time of the safety circuit in the controller is <= 40ms.

The test is performed safely with landing and car doors closed.

The door safety chain circuit is interrupted by removing the J7 connection on the XLB2001 board.

Refer to the documentation of the specific valve installed for any further precautions to be adopted, considering that if the power unit is equipped with NGV-A3 or 3010+DLVA3 or 3100 EL2+DLVA3 valve, the following upward and downward test procedures cancel and replace the corresponding procedures in the valve manual.

6.3.1 Upward travel test

For safety reasons the test is required to be carried out with doors closed. Proceed as follows:

1. Display the "Out of service" sign at all landings and ensure that the installation is not in out of service due to pre-existing alarms.
2.
```
Move the empty car to the floor below the top landing
12.2.3 Service
.Commands
 .Call
 select the floor and press ENT
the car shall travel to the selected floor
```
3. After the doors close at the end of dwell, set parameter
   12.1.2 Service.
   Mode
   .Operation
   select Service
4. Simulate the opening of the door safety chain by removing the J7 connection on the XLB2001 board.

5. Start the upward test procedure by selecting parameter
   12.3.3 Test
   .UCM (A3)
    movement
   and hold down the button until the operation starts and stops.
   The system starts moving upward at rated speed until it is stopped by the A3 intervention.
   The car stops and the controller enters alarm 8. ⇧
6. Verify that the stop position complies with the applicable standard.
7. Restore the calls operating condition:
   . restore the J7 connection on XLB2001 board.
   . restore the calls operating mode
   . clear the alarm, menu 1.5 Diagnostics
   .Reset alarms
8. Remove the "Out of service" signs from all landings

6.3.2 DOWN test

For safety reasons the test is required to be carried out with doors closed. Proceed as follows:

1. Display the "Out of service" sign at all landings and ensure that the installation is not in out of service due to pre-existing alarms.
2. Move the empty car to the floor below the top landing
   12.2.3 Service
   .Commands
    .Call
    select the floor and press ENT
   the car shall travel to the selected floor
3. After the doors close at the end of dwell, set parameter
   12.1.2 Service.
   Mode
   .Operation
   select Service
4. Simulate the opening of the door safety chain by removing the J7 connection on the XLB2001 board.
5. Start the upward test procedure by selecting parameter
   12.3.3 Test
   .UCM (A3)
    movement
   and hold down the button until the operation starts and stops.
   The system starts moving upward at rated speed until it is stopped by the A3 intervention.
   The car stops and the controller enters alarm 8. ⇧
6. Verify that the stop position complies with the applicable standard.
7. Restore the calls operating condition:
   . restore the J7 connection on XLB2001 board.
   . restore the calls operating mode
   . clear the alarm, menu 1.5 Diagnostics
   .Reset alarms
8. Remove the "Out of service" signs from all landings

6.4 NGV-A3 monitoring verification

Follow the valve instructions for fault simulation modes and verify that the controller raises an alarm with the codes

- 32 for generic alarm
- 33 for missing UP start

- 34 for missing DOWN start

6.5 DLV Monitoring Check

Three test modes are available:

- Normal operation, without fault simulation
  immediately performs the same test that is routinely carried out at the programmed interval, opening the VMD and DLV solenoid valves in sequence.
- VMD fault simulation
  In the test the DLV solenoid valve is commanded
- DLV fault simulation

Execution:

1. Bring the car to the bottom terminal landing
2. Set the Service operating mode:
   12.1.2 Service.
   Mode
   .Operation
   select Service
3. Select the desired mode in menu 12.3.2.1 DLV
4. Advance with the key to menu 12.3.2.2 DLV test… and press the ENT key to start the test⇩
5. The solenoid valves are activated according to the selected mode.
   If two relevelling operations are performed at the floor, an alarm with code 38 is generated.
6. At the end of the test, restore the operating mode to Calls and clear any fault.

6.6 2CH Monitoring Verification

7 Maintenance

7.1 Cleaning

To remove dirt from the car surfaces, doors, push-button stations and generally all visible parts of the lift, wash with a soft sponge using warm water and neutral soap, rinse with clean water and wipe the surface with absorbent paper or a soft, dry, clean cloth.

WARNING
When cleaning the lift, comply with the following:

Plastic buttons and surfaces:
Wash preferably with a cotton cloth and warm water. Avoid using any chemicals. Never use cleaning products containing even trace amounts of ammonia, hydrocarbons, caustic soda, hydrochloric acid, nitric acid, acetic acid, ethyl alcohol or methyl alcohol.

Steel or sheet metal surfaces:
Avoid carbon steel abrasives (e.g. steel wool) and materials containing chlorides. If abrasive treatment is necessary, use proprietary liquid detergents.

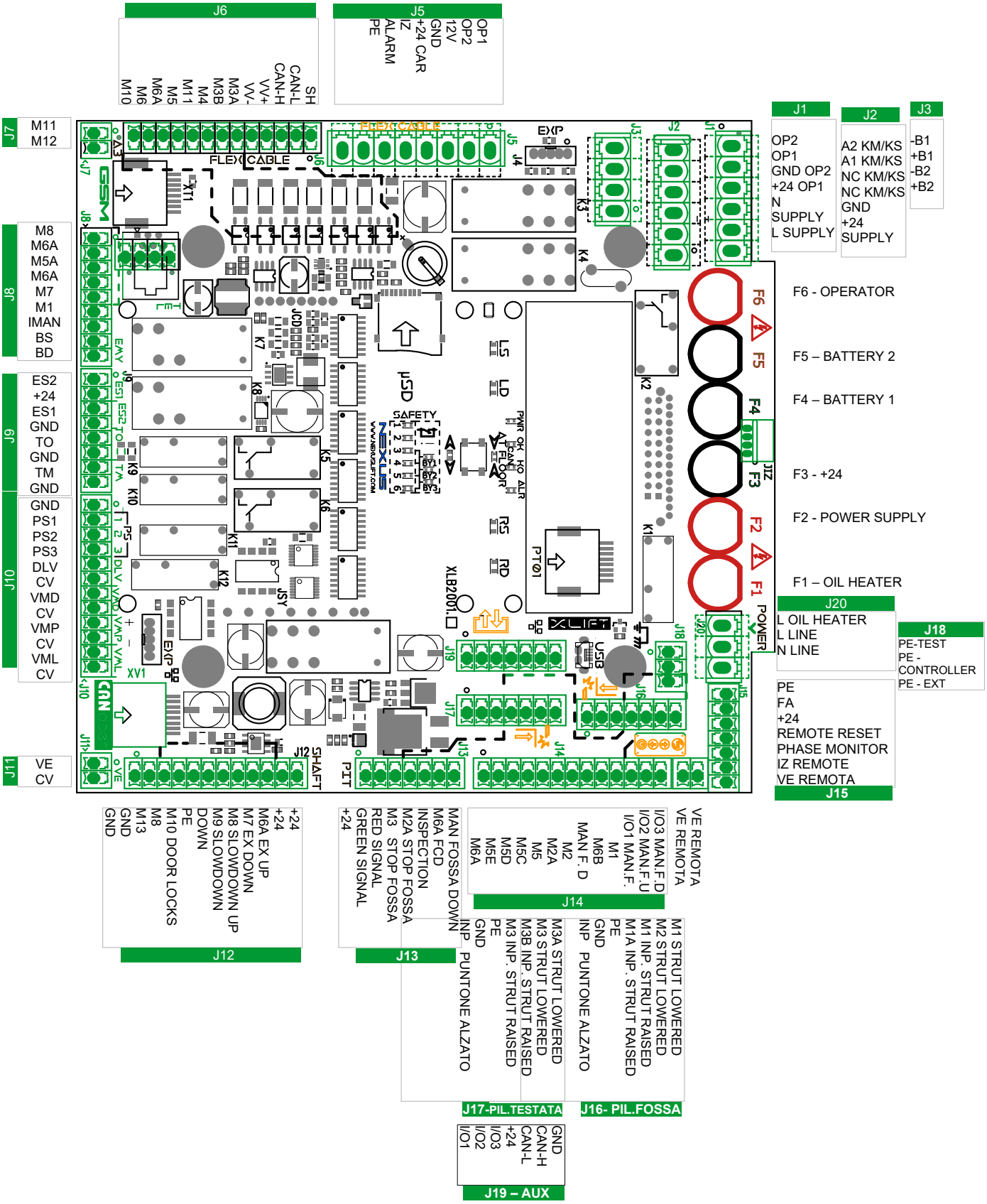
Plastic laminate or plastic-coated sheet metal surfaces:
Do not use abrasive or scratching substances for regular cleaning (abrasive powder, steel wool). Do not use detergents containing strong acids or highly acidic salts, e.g. descaling agents based on formic acid and amino sulphate, drain cleaners, hydrochloric acid, silver cleaning agents, oven cleaners.

7.2 List of data sheets

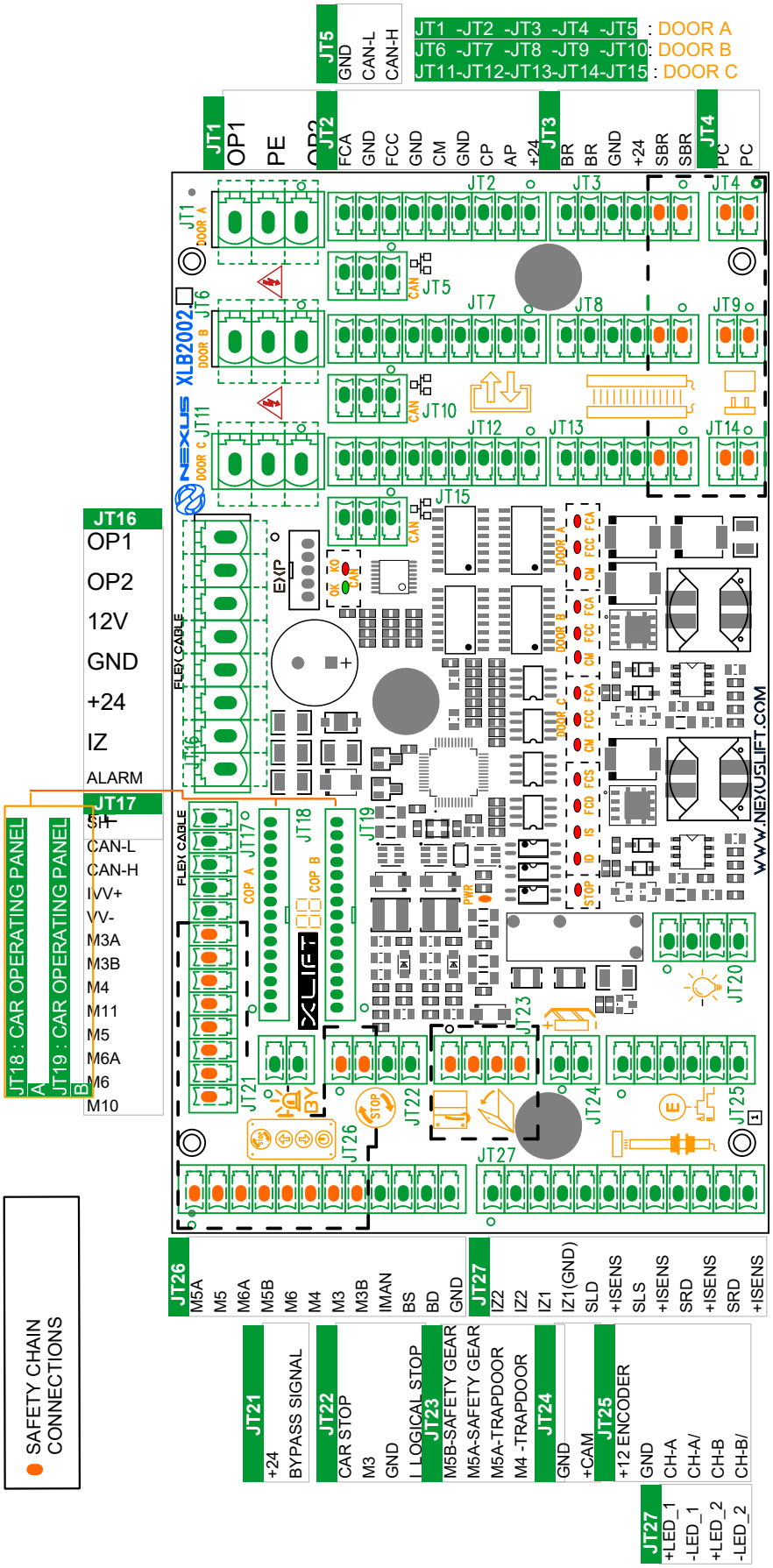
Code	*Description*
XLB2001	Main controller board, integral with XLB20
XLB2002	Car top board
XLB2003.0	Landing junction board 1 entrance for first landing and intermediate landings, not top
XLB2003.1	Landing junction board 2 entrances for first landing and intermediate landings, not top
XLB2003.2	Landing junction board 1 entrance, top landing only
XLB2003.3	Landing derivation 2 entrances, for last landing only
XLB2003.4	Landing derivation 1 entrance, for first landing only inverted shaft (controller at top)
XLB2003.5	Landing derivation 2 entrances, for first landing only inverted shaft (controller at top)
XLB2004	Matrix Architrave Display
XLB2005	Landing Station with Matrix Display
XLB2006	Landing Station with 2.8" TFT Display
XLB2008.0	NFC board paired with XLB2005/XLB2006/XLB2016
XLB2008.1	NFC CAN board (stand alone) for landing station, can manage 2 push-buttons + 2 LEDs
XLB2008.1	NFC landing station, can manage additional 2 push-buttons + 2 standard LEDs
XLB2009	Landing Electric Lock Board
XLB2010	Intelligent landing station button, button and LED Can manage a further 2 buttons + 2 standard LEDs

XLB2013	Zone Impulse Board
XLB2015	Door Safety Circuit Board, integral with XLB2001
XLB2016	Car Operating Panel Board with 7" TFT Display
XLB2017	Car Emergency Light Board (option when Car Light 230Vac)

7.3 XLB2001 layout



7.4 XLB2002 layout



8 Programming and diagnostics

See chapter 4 for Menu 1.Diagnostics

- 2 - Configuration

```
 GMV - NX_HL01
1 System
.2 Machine Room
.3 Overhead
.4 Pit
.5 Start
.6 Set up
.7 Stops
.8 Door side 1
.9 Door side 2
.10 Door side 3
.11 Operation
.12 EN81.70
.13 Shaft
.14 NFC TAGs
15 EXTRA
```

Parameter list / Configuration menu
Scroll with and buttons to view parameter

Press ENT to enter submenu

EXCEPT FOR MENU 14, THE PARAMETERS IN THIS MENU CAN ONLY BE MODIFIED WITH SWITCH FA IN THE DOWN POSITION

```
1 System
  Hyd Home Lift
```

Installation type selection
Only hydraulic home lift permitted.

```
.2 Machine Room
      MR
```

Machine room type selection
MR with machine room
MRL without machine room
MRL-MC with machinery in cabinet

```
.3 Overhead
  Normal
```

Shaft headroom type selection
Normal
Reduced

```
.4 Pit
  Normal
```

Pit shaft space type selection
Normal
Reduced

```
.5 Start
Direct 2 Phase
```

Pump motor type selection
Direct 2 Phase
Direct 3 Phase

```
.6 Set up
    3010
```

Valve type selection

Parameter	Description	Parameter	Description
3010	3010	3100-EL2	3100 EL2 (can bus)
3010/S	3010 Soft Stop	3100-EL2/S	3100 EL2 Soft Stop (CANbus)
3010+DLVA3	3010 + DLV A3	3100-EL2+DLVA3	3100 EL2+DLV A3 (can bus)
3010/S+DLVA3	3010 Soft Stop + DLV A3	3100-EL2/S+DLVA3	3100 EL2 Soft Stop+DLVA3 (CAN bus)
3010-2CH-A3	3100 2CH A3	3100-2CH-A3	3100 2CH A3 (can bus)
3010-2CH/S-A3	3010 2CH A3 Soft Stop	3100-2CH/S-A3	3100 2CH A3 Soft Stop (CAN bus)
NGV-A3 (CAN)	NGV A3 (CAN bus)		

```
.7 Stops
    NN
```

Number of landings: 02...12

.8 Door side 1 Not Installed .9 Door side 2 Not Installed .10 Door side 3 Not Installed	Select door type for each entrance: not present none Automatic with LS automatic landing / car with limit switch Automatic (no FC) automatic landing/car without limit switches Semi-automatic with FC manual landing / automatic car with limit switches Semi-automatic (no FC) manual landing / automatic car without limit switches Manual manual landing / without or manual car
.11 Operation Registered Call	Call management operation type Held call Held call in car / Universal at landings Universal (APB) Single call landings / car Collective Down Collective Down Collective Up/Down Collective Up / Down
.12 EN81.70 NO	EN 81-70 function enable: NO / YES
.13 Shaft Hyd Home Lift	Shaft positioning type selection: Non-C.V. contacts shaft with contacts without speed-change strip C.V. contacts shaft with contacts with speed-change strip Encoder shaft with encoder
.14 NFC TAGs	NFC TAG management, see dedicated paragraph
15 EXTRA	Selection of 12 additional functions
.1:0123456789012 0000000000000	1 = enable function, 0 = disable function Planned functions: 0 = Nudging control Doors 1,2 using outputs AP3, CP3

- 3 - Power unit

3 Power Unit .1 Pump motor	Menu hydraulic power unit settings, pump motor
.1 Soft Stop 0.0s	Soft Stop Time: 0.0 – 2.0s Pump motor stop delay after VMP de-energisation
.2 Travel Timer 000s	Maximum permitted time for a complete run: 000 – 250s
.3 Levell. Timer 000s	Maximum permitted time for relevelling: 000 – 60s
3 Power Unit .2 Valve	Power unit settings menu, Valve Varies depending on the valve type selected

For 3010 valves only

.1 Gap Between two ops.:2.0s	Minimum idle time between two operations: 1.0 – 5.0s
.2 Max. num. Relevel.: 25	Maximum number of revellings to floor permitted
.3 Delay VMP up:x.xs	VMP solenoid valve energisation delay at UP start: 0.0 – 2.0s
.4 Min P.Input -------	Minimum pressure alarm pressure switch input selection (optional) Select input from list and contact type NO/NC
.5 Max P.Input -------	Maximum pressure alarm pressure switch input selection (optional) Select input from list and contact type NO/NC
.6 Overload In. PS1_NO (J10.2)	Overload pressure switch input selection (mandatory) Select input from list and contact type NO/NC
.7 Oil TempProbe ON/OFF	Selection of oil temperature monitoring sensor type: ON/OFF NC thermostat that trips at maximum temperature PTC PTC sensor that measures temperature
.8 Oil Temp. max 70°C	Maximum oil temperature setting (Alarm 012)
.9 Insp. Speed High Speed	Inspection operation speed selection (active only if electrical components provided) Low speed Alta vel.

For NGV valve only

.1 Gap Between two ops.:2.0s	Minimum idle time between two operations: 1.0 – 5.0s
.2 Max. num. Relevel.: 25	Maximum number of revellings to floor permitted
.3 Delay VMP up:x.xs	VMP solenoid valve energisation delay at UP start: 0.0 – 2.0s

- 4 - Doors

4 Door Operators .1 Doors 1	Settings menu Entrance 1 doors
.1 Max. Time closing: xxs	Operators with limit switches: Maximum door closing time Operators without limit switches: Estimated door closing time
.1 Max. Time opening: xxs	Operators with limit switches: Maximum door opening time Operators without limit switches: Estimated door opening time
4 Door Operators .2 Doors 2	Entrance Doors 2 settings menu (as for doors 1)

4 Door Operators .3 Doors 3	Entrance Doors 3 settings menu (as for doors 1)
4 Door Operators .4 Door Cam	Settings menu Door lock
.1 Type Mechanic	Lock Type: Mechanical Door Bypass active when passing floors Electric Activated by Retractable Skate
.2 Delay open/close: x.xs	Door opening command delay after de-energisation Energisation delay after door closure
3. Delay Start:x.xs	Delay for safety monitoring at departure
4 Door Operators .5 Unlock Device	Electric Door Locks settings menu
.1 Mode Temporary	Activation mode: Temporary: energisation for dwell (Occupied) Continuous: until next run
.2 Delay A-B x.xs	Delayed energisation side B with respect to side A when two entrances at the same landing

- 5 - Shaft

GMV - HL01 5 Shaft	Shaft positioning settings menu Depends on the control type activated in configuration

Shaft with encoders (with / without speed change)

.1 LS to stop ascent: x.xs	Delay stopping upward travel after reading encoder LS Useful to increase neutral zone for no-relevelling upward
.2 Delay opening:x.xs	Door opening delay from Safety Circuit activation: 0.1...5s (set 0 for opening at stop)
.3 Distance type between Landings	Only for shaft with magnetic speed-change strips Menu for setting speed-change magnetic strip reading sequence (LS/RS before LD on upward travel, LD/RD before LS on downward travel)
Floor 01 <> 02 Normal	Selection of distance between floors: 01<>02, 02<>03, … Use and buttons to select floor spacing, ENT to modify⇩⇧ normal normal sequence, floor spacing > (2*slowdown) short inverted sequence, floor spacing < (2*slowdown)

Shaft with Encoder

.1 Landings and magn strip.	Menu that sets whether two closely spaced floors have shared or separate magnetic strip for floor zone.
Floor 01 <> 02 Separate	Selection of zone strip between floors: 01<>02, 02<>03, … Use and buttons to select floor spacing, ENT to modify⇩⇧


separate floor spacing > 350mm
shared floor spacing < 350mm
.2 Strip below RD: x
Number of magnetic strips in the slowdown zone at the lower extreme floor (below RD)
.3 Stop Up Travel
Menu for adjustment of UP travel stop command at floor
Stop Sal.:NN 00000:+000
NN = Floor selection: 01, …
Use and buttons to select floor⇩⇧
ENT to activate edit mode
Use ESC, and buttons to decrease / increase position⇩⇧
ENT to confirm
.3 Stop Dn Travel
Menu for adjustment of UP travel stop command at floor
Stop Dis.:NN 00000:+000
NN = Floor selection: 01, …
Use and buttons to select floor⇩⇧
ENT to activate edit mode
Use ESC, and buttons to decrease / increase position⇩⇧
ENT to confirm
.5 Slow Down Up Travel
Menu for adjusting UP slowdown distance relating to:
Nominal speed V0, for all valves
Intermediate speed V1, for NGV and EL2 valves only
Installation and inspection speed, for NGV and EL2 valves only
Up Travel V0 = xxxxmm
V0 slowdown zone
Up Travel V1 = xxxxmm
V1 slowdown zone
Up Travel V2 = xxxxmm
V2 slowdown zone
.6 Slow Down Dn Travel
Menu for DOWN slowdown zone adjustment relating to:
Nominal speed V0, for all valves
Intermediate speed V1, for NGV and EL2 valves only
Installation and inspection speed, for NGV and EL2 valves only
Dn Travel V0 = xxxxmm
V0 slowdown zone
Dn Travel V1 = xxxxmm
V1 slowdown zone
Dn Travel V2 = xxxxmm
V2 slowdown zone
7 Relevelling Ascent: xxmm
Distance from landing threshold for relevelling command at landing on UP travel
8 Relevelling Descent: xxmm
Distance from landing sill threshold for relevelling command at landing in DOWN direction
.9 Adv. doors doors: xxmm
Distance from landing sill threshold for relevelling command at landing in DOWN direction

.10 Resolution Encoder:xxxx	Distance from landing sill threshold for relevelling command at landing in DOWN direction
.11 Count, Speed PP:NNNNN V.VVm/s	PP : landing nearest to current count NNNNN: current count (mm) V.VV : current speed (m/s)

- 6 - Floors

GMV - HL01 6 Landings	Menu miscellaneous floor settings
.1 Main NN	NN = stop corresponding to Main Floor: 01...
.2 Parking	Menu parking floor settings
.1 Floor NN	NN = Floor 01...
.2 Delay xxxs	Wait time before sending car to parking floor 0...255s
.3 Fire Emerg. 1	Menu parking floor settings
.1 Floor NN	NN = Floor 01...
.2 Parking Doors Open	Evacuation floor parking mode
.3 Reset mode Manual	Fire alarm status reset mode Automatic when the contact that activated it recloses Manual via input programmed for the function
.4 Input --------	Input and polarity selection for activation contact
.3 Fire 2	Menu parking floor settings
.1 Floor NN	NN = Floor 01...
.2 Parking Doors Open	Evacuation floor parking mode
.3 Reset mode Manual	Fire alarm status reset mode Automatic when the contact that activated it recloses Manual via input programmed for the function

.4 Input --------	Input and polarity selection for activation contact
.5 Landing Emergency	Settings menu for entrance/s to the Lowest Terminal Landing in case of Electric Emergency.
.1 Enrance xxxx	Entrance setting to open: 1, 2, 3, 1-2, 1-3, 2-3, 1-2-3

- 7 - Entrances

GMV - HL01 7 Entrances	Settings menu for landing entrances, door parking mode and selective/simultaneous opening
Landing ents:NN -1- -2- -3- :S	NN = Floor selection: 01, … Use and buttons to select floor⇩⇧ ENT to activate edit mode Use buttons: ESC to move to the field to be modified, ⇩ and to set entrance / opening mode⇧ ENT to confirm Symbols: --- entrance does not exist [1] [2] [3] entrance n exists and parks with doors open]1[ ]2[ ]3[entrance n exists and parks with doors closed S selective door opening C simultaneous door opening

- 8 - Landing Stations

The landing stations and car operating panel are configured at the factory according to the installation specifications.

Use the functions in this menu only if:

- modifications to the original settings or layout are required
- a board has been replaced or an entrance changed, therefore floor and entrance assignment is required

GMV - HL01 8 Hall Stations	Landing station settings menu
8 Hall Stations .1 Learn	Use this menu to assign a floor and access (door) to one or more call panels. This function can be performed in “Call Service” mode and without any active alarms.
Status Not active	Function status: Not Active function not active Active function active

Landing Stations Learning Procedure

The lift must be in Call Service operation and not in alarm.

When electric operation is activated at menu 8.1, the lift automatically switches to Reserved Operation, i.e. it responds only to car calls and remains stationary with doors open.

Make car calls to the floors to be acquired and at each floor perform the following sequence of operations on the call button:

1. button ON until the LED lights up or at least 1s if already lit (max 3s)

2. Press OFF button for 3s (max 5s), the LED extinguishes on button release
3. Press ON button until the LED lights up again
4. Press OFF button for 3s (max 5s), the LED extinguishes on button release
5. Press ON button until the LED lights up again
6. Press OFF button for 3s (max 5s), the LED switches off when the button is released
   If 3 valid sequences have been recognized, an audible signal is emitted as confirmation.
   The push-button station is assigned to the current floor and door
7. otherwise continue the ON / OFF repetitions (points 5,6)

On completion return to Not Active at menu 8.1, the lift returns to Calls Service

Then carry out configuration at menu 8.3

8 Hall Stations .2 Layout	Defines for each push-button station the functions performed by buttons and LEDs The standard value is 000
.1 landing N LLL	Layout setting, where: NN landing station NN P door of landing NN LLL layout code (sum of the following values): 000= standard (Call + Occupied + Present) 001= EN81.70 002= second input for mechanical Key NO 004= second input for mechanical Key NC
8 Hall Stations .3 Config	Landing station configuration menu
.3 Config .1 selection	Push-button station selection for configuration (NOT ACTIVE, all are always selected)
.3 Config .2 Exec	Press ENT to start configuration
.1 Config... Status	The outcome of the push-button station configuration is displayed one at a time. Always ends with the message Done! If a push-button station is not found, the following message is displayed P-D not found where: P= Floor D= Door

- 9 - Car Operating Panels

GMV - HL01 9 COP	Car Operating Panel Settings Menu
9 COP .1 Layout	Layout setting menu
.1 Layout LLL	Layout setting, where: LLL layout code (sum of the following values): 000= standard

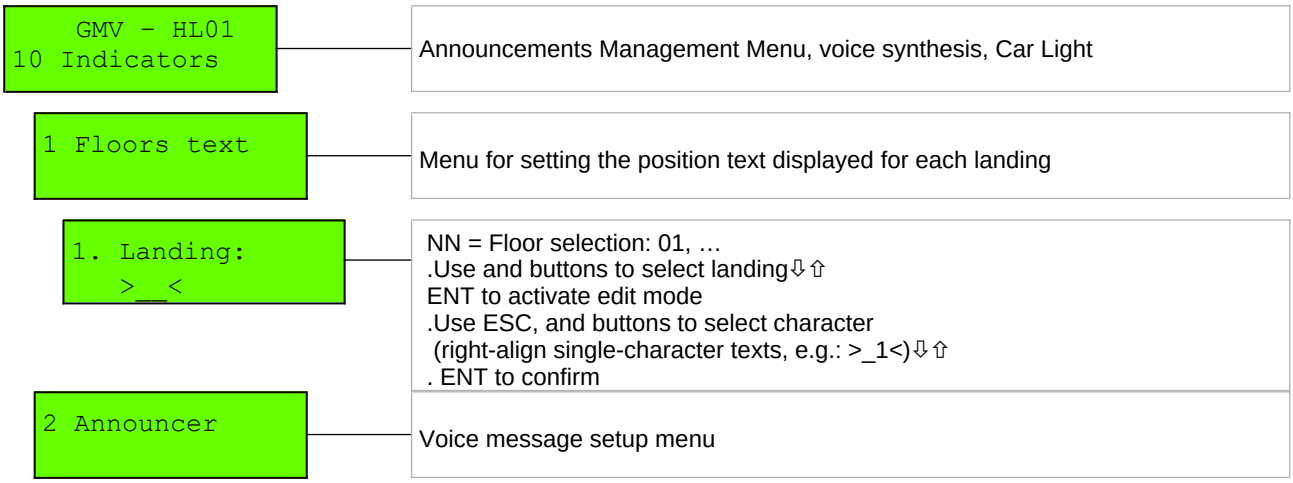


The rating plate data file is a text file created with an unformatted editor, txt format (such as Notepad).
User files are located in the folder ...\USR\LiftData\<ID>.txt
The restore file is located in the folder ...\FACT\LiftData*.txt
Example file:

```
;24PK070161
#1:"5"
#2:"400"
#3:"40424/TORRESSS"
#4:"44444444444444"
#5:"55555555555555"
#6:"66666666666666"
```

where:
; identifies a comment
#1...#6 identify the 6 displayed lines:
1: No. of Persons
2: Load Capacity
3: Lift Reference
4: first scrolling text
5: second scrolling text
6: third scrolling text
Texts are enclosed in double quotation marks ", an empty text must contain a space, " "
The file need not necessarily include all rows.

- 10 - Signals


GMV - HL01
10 Indicators
Announcements Management Menu, voice synthesis, Car Light
1 Floors text
Menu for setting the position text displayed for each landing
1. Landing:
>__<
NN = Floor selection: 01, …
.Use and buttons to select landing⇩⇧
ENT to activate edit mode
.Use ESC, and buttons to select character
(right-align single-character texts, e.g.: >_1<)⇩⇧
. ENT to confirm
2 Announcer
Voice message setup menu

1 Language NNN	Voice message language code Currently only one language can be loaded at a time, set 000 or 004
2 Volume NNN	Audio volume setting
3 Floor message	Selection of audio messages to associate with car position
1. Landing: xxx	Message number associated with each landing, 01...12 Use and buttons to select floor⇩⇧ ENT to activate edit mode Use ESC, and buttons to select number⇩⇧ ENT to confirm
4 Arrival xxx 5 Opening... 6 Closing... 7 Moving Up 8 Moving Down 9 Overload 10 Out of Serv. 11 Emergency 12 Fire	Message association to functions For each function set the desired message code Use ESC, and buttons to select number⇩⇧ ENT to confirm
3 Car Light	24V car light spotlight intensity setting menu for three different operating situations
.1 Moving xx	Intensity in Service Calls 0 = OFF, 10 = MAX
.2 Parking xx	Intensity at end of parking 0 = OFF, 10 = MAX
2 Emergency xx	In Electric Emergency 0 = OFF, 10 = MAX

STANDARD MESSAGE NUMBERING

001 - 010	Door opening	011 - 020	Door closing
021 - 030	UP direction	031 - 040	DOWN direction
041 - 050	Landing arrival sound - gong	051 - 060	Overload
061 - 070	Out of service	071 - 080	Emergency return to landing
081 - 090	-	091 - 100	-
101 - 105	Landing 1	106 - 110	Landing 2
111 - 115	Landing 3	116 - 120	Landing 4
121 - 125	Landing 5	126 - 130	Landing 6
131 - 135	Landing 7	136 - 140	Landing 8
141 - 145	Landing 9	146 - 150	Landing 10
151 - 155	Landing 11	156 - 160	Landing 12
161 - 165	-	166 - 170	-
171 - 175	-	176 - 180	-
181 - 185	-	186 - 190	-

- 11 - Timer

GMV – HL01 11 Timer	Announcements Management Menu, voice synthesis, Car Light
.1 Timer Park.: x.xs	Duration of dwell time at landing, 0 … 9s
.2 Timer Short Park: x.xs	Duration of dwell after photocell/force limit intervention, 0 … 2s
.3 Timer timeout Start.: x.xs	Maximum time waiting for movement start from doors closed, 0 … 9s
.4 Timer Recall 15': xx'	Wait time before return to bottom terminal landing, 0 … 15' (0 = Return disabled)
.5 Timer Aut. Call:xxxs	Pause time between automatic calls to all floors (test), 0 … 255s (0 = function disabled)
.5 Timer Car Light :xxxs	Delay time before car light switches off at end of stop, 0 … 255s (0 = car light always on)

- 12 - Service

Some submenus of the Service menu require Service mode to be set in order to be operational.
Some parameters require the FA switch to be lowered before they can be modified.

GMV – HL01 12 Service	Special functions management menu
12 Service .1 Mode	Settings menu: Language / Operating mode / Date and time
.1 Mode .1 Language	Language menu
.1 Language .1 Set	Current language Press ENT to change
.1 Set English	You can choose between: Italian English xxxxxx loaded optionally from microSD
.2 Load from uSD	**Menu to load third language from uSD among those available** **Operation to be carried out with FA OFF**
.2 Load from uSD .1 Code: xxx	Enter the last three digits of the international dialling code
.2 Load from uSD .2 ENT start	Press ENT to start loading or ESC to cancel Operation result message follows: read error! done! Err: no file Err: uSD missing


.1 Mode
.2 Operation
Operating mode setting
.2 Operation
Calls
Operating mode:
Calls
Installation
Service
.1 Mode
.3 Date & time
Date and Time clock setting
.3 Date & time
.1 Date
Date setting
Press ENT to change
.1 Year
xx
Enter:
last two digits of year
.2 Month
xx
Month
.3 Day
xx
Day
.3 Date & time
.1 Hour
Date setting
Press ENT to change
.1 Hour
xx
Enter:
Hour
.2 Minutes
xx
Minutes
.3 Seconds
xx
Seconds
12 Service
.2 Serv.Commands
Movement commands menu operators / car / calls
.2 Serv.Commands
.1 Doors
Door controls (operators)
Operating mode must be set to: Service
.1 Doors
.1 Doors 1
Door 1 (A)
.1 Doors 1
ESC >|< <|>
Door Commands
ESC ESC key exits menu
>|< button closes doors, hold down ⇩
<|> button opens doors, hold down ⇧
.1 Doors
.2 Doors 2
Door 2 (B) (controls as for Door 1)

.1 Doors .3 Doors 3	Door 3 (C) (controls as for Door 1)
.2 Serv.Commands .2 Move Up/Dn	Car Movement Commands The operating mode must be set to: Service
.2 Move Up/Dn ESC UP DN	Manual UP/DOWN Commands ESC ESC button exits menu DOWN button DOWN Movement, hold down ⇩ UP button UP Movement, hold down ⇧
.2 Serv.Commands .3 Calls	Call Commands The operating mode must be set to: Calls
.3 Call at landing: xxx	Select Floor and Door with the and keys⇩⇧ Press ENT to execute the call Calls are executed one at a time and respecting the dwell time Press ESC to exit **NOTE: This Menu can also be executed when in menus 1.3 and 1.10.2.4 by pressing the ENT button to enter and ESC to exit**
12 Service .3 Test	UCM (A3) and DLV Test Menu The operating mode for the Test menu must be set to: Service
.3 Test .1 UCM (A3)	UCM Test (A3) When performing this test, disconnect connector J7 on board XLB2001
.1 UCM (A3) ESC UP DN	Manual UP/DOWN Commands ESC ESC button exits menu DOWN button DOWN Movement, hold down ⇩ UP button UP Movement, hold down ⇧
.3 Test .2 DLV	DLV solenoid valve test
.2 DLV .1 Mode	Test mode selection: Normal Normal test, without VMD or DLV fault simulation DLV ON Test with DLV ON simulation VMD ON Test with VMD ON simulation
.2 DLV .2 Run Test	Running the Test
12 Service .4 Shaft learn	Shaft Acquisition Menu with Encoder The operating mode must be Service and there must be no alarms
.4 Shaft learn ENT = Start	Press ENT to start the operation: 1. if the car is not already at the lowest floor, it descends until SIZ Off and SRS Off are reached. If already at the lowest floor, it ascends until SDR Off is reached and then returns 2. An UP run is performed to the top landing 3. A DOWN run is performed to the bottom landing 4. If no errors or alarms have been detected, the operation is complete; press ESC and save the data with menu 13. Error codes related to acquisition that may be displayed in this menu: 01 : more than three stops on the strip 02 : number of strips < 2 03 : encoder pulse parameter out of range 04 : no strip between RD(off) and RS(off) on descent 06 : No. of strips counted differs from expected

08...16 : strip length no.(err-6), strip 2...10
33 : RS distance less than menu 5.5.1.1 setting (UP V0)
34 : RD distance less than menu 5.6.1.1 setting (DOWN V0)
97 : distance RD_off / RS_off < 100mm
98 : incorrect rotation direction
99 : doors not closed/locked - interruption during travel

```
12 Service
.5 Prog. Inputs
```

Function management menu for programmable inputs and pit / headroom pillars

```
.5 Prog. Inputs
.1 Functions
```

Menu for setting programmable function inputs

```
 <input>
<function>
```

Scroll through the list of inputs using the and keys⇩⇧
Press ENT and scroll through the list of functions using the and keys. Press ENT to assign the function to the selected input or ⇩⇧
press ESC to cancel the action

Programmable Inputs
I/O1_NC (J19.1)
I/O1_NO (J19.1)
I/O2_NC (J19.2)
I/O2_NO (J19.2)
I/O3_NO (J19.3)
I/O3_NO (J19.3)
PS1_NC (J10.2)
PS1_NO (J10.2)
PS2_NC (J10.3)
PS2_NO (J10.3)
PS3_NC (J10.4)
PS3_NO (J10.4)
SE2_NC (J19.3)
SE2_NO (J19.3)
SE1_NC (J19.1)
SE1_NO (J19.1)
IN1_NC (J14.11)
IN1_NO (J14.11)
IN2_NC (J14.12)
IN2_NO (J14.12)
IN3_NC (J14.13)
IN3_NO (J14.13)

Function	Description
----------	No function assigned to input
P.min NC	Minimum system pressure
P.min NO	Minimum system pressure
P.max NC	Maximum system pressure
P.max NO	Maximum system pressure
Overload NC	Car overload
Overload NO	Car overload
Fire alarm 1 NC	Operation activation with car return to landing #1
Fire alarm 1 NO	Operation activation with car return to landing #1
Fire 2 NC	Operation activation with car return to landing #2
Fire 2 NO	Operation activation with car return to landing #2
Generic NC	Immediate stop with error 057(2)
Generic NO	Immediate stop with error 057(2)
Ext. Enable NC	Enable acceptance of landing calls
Ext. Enable NO	Enable acceptance of landing calls
MON-2CH_1 NC	2CH Monitoring 1
MON-2CH_1 NO	2CH Monitoring 1
MON-2CH_2 NC	2CH Monitoring 1
MON-2CH_2 NO	2CH Monitoring 1
Acq. in Pit NC	Water in Pit
Acq. in Pit NO	Water in Pit
Int. Enable NC	Enable acceptance of car calls
Int. Enable NO	Enable acceptance of car calls
Out of Serv.1NC	Out of service at floor at end of car calls
Out of Serv.1NO	Out of service at floor at end of car calls
Seismic Prim. NC	Seismic Sensor P-Wave
Seismic Prim. NO	Seismic Sensor P-Wave
Seismic Sec. NC	Seismic Sensor S-Wave
Seismic Sec. NO	Seismic Sensor S-Wave
Seismic Enab. NC	Seismic Sensor lift enable
Seismic Enab. NO	Seismic Sensor lift enable

.5 Prog. Inputs .2 Pol. Jumper	Menu for setting the polarity of the inputs for the mechanical stops in the pit and headroom (pillars or struts)
.2 Pol. Jumper NO	NO normally open contact when stop is activated NC normally closed contact when stop is activated
12 Service .6 Progr.Outputs	Programmable outputs setting menu Controller and Car roof
.6 Progr.Outputs .1 LE command	Polarity setting menu for Emergency Light command when Car Light at 230Vac
.1 LE command NO	NO normally open contact NC normally closed contact
.6 Progr.Outputs .2 Controller	Controller programmable outputs setting menu
<output> <function>	Scroll through the list of outputs with the and keys⇩⇧ Press ENT and scroll through the list of functions with the and keys. Press ENT to assign the function to the selected output or ⇩⇧ press ESC to cancel the action

Programmable Outputs
I/O1 (J19.1)
I/O2 (J19.2)
I/O3 (J19.3)
OUT AC (J20.3)

Function	Description
----------	No function assigned to input
01: Car Light	Car Light NC (external relay)
02: In Service	Lift in Service
03: Filter All.	Alarm Filter
04: Ret. Skid	Electric Safety Edge
05: Ventilation	Car Ventilation
06: Oil Heater	Oil Heater
07: Alarm	Alarm Input Repeat
08: Reset SPT	Emergency Door Key Bistable Device Reset
09: AI Alarm	Alarm Repeat Sent by Dialler

.6 Progr.Outputs .3 Car Top	Controller programmable outputs setting menu
<output> <function>	Scroll through the list of outputs with the and keys⇩⇧ Press ENT and scroll through the list of functions with the and keys. Press ENT to assign the function to the selected output or ⇩⇧ press ESC to cancel the action

Programmable Outputs
OUT-04 (JT24)

Function	Description
----------	No function assigned to input
01: Car Light	Car Light NC (external relay)
02: In Service	Lift in Service
03: Filter All.	Alarm Filter
04: Ret. Skid	Electric Safety Edge
05: Ventilation	Car Ventilation
06: Oil Heater	Oil Heater
07: Alarm	Alarm Input Repeat
08: Reset SPT	SPT bistable reset command (0.5/20s)

12 Service .7 uSD Params	Parameter management menu on microSD
.7 uSD Params .1 Save User	Save a copy of the current parameters Press ENT to start saving

.1 Save User	Operation result message follows:
	`write error!`
	`done!`
	`Err: uSD missing`

.7 uSD Params .2 Load User	Selection and loading of a previously saved parameter copy **Operation to be carried out with mains supply OFF**

.2 Load User	If files are present in the USR folder on the microSD, use the and keys to select,
	ENT to start
	ESC to cancel⇩⇧
	Operation result message follows:
	`read error!`
	`done!`
	`Err: uSD missing`

.7 uSD Params .3 Restore Fact.	Selection and loading of a factory parameter backup **Operation to be carried out with mains supply OFF**

.3 Restore Fact.	If files are present in the FACT folder on the microSD, use the and keys to select,
	ENT to start
	ESC to cancel⇩⇧
	Operation result message follows:
	`read error!`
	`done!`
	`Err: uSD missing`
	`Check and if necessary change the operating mode, factory default is normally set to Installation`

12 Service .8 Software upg.	XLB2001 board software update menu **Operation to be carried out with mains supply OFF**
.8 Software upg. .1 selection	Press ENT to select file, ESC to cancel

.3 Restore Fact.	If files are present in the fw_upg folder on the microSD, use the and keys to select,
	ENT to start update
	ESC to cancel⇩⇧
	Operation result message follows:
	`read error!`
	`update, the board restarts at the end (approx. 20s)`
	`Err: uSD missing`

12 Service .10 PIN	PIN modification menu for using PT01 in edit mode, factory value 0000 (always permitted)
.10 PIN .1 Set PIN	Press ENT to modify current value, ESC to cancel
.1 Set PIN xxxx	Use the and ESC keys to set the value press ENT to confirm and exit ⇩⇧

.10 PIN .2 Save PIN	Press ENT to save, confirmation required, ESC to cancel
.2 Save PIN ESC=NO ENT=YES	Press: ENT to save permanently ESC to cancel **WARNING: cannot be reset if forgotten, XLB2001 must be replaced**
12 Service .11 Counters	Counter management menu
.11 Counters .1 Reset	Menu to reset each counter individually
.1 Reset .1 Up starts .2 Down starts .3 Up relevell. .4 Down relevell .5 Emergency .6 Inspection	Use the and ESC keys to select the counter to reset and press ENT to confirm, reset confirmation will be requested ⇩⇧
.1 Reset? ESC=NO ENT=YES	ENT to confirm reset ESC to cancel
.11 Counters .2 Inspection	Scheduled Maintenance counter management menu (Fault 030)
.1 Set 00000	Setting for number of trips / 10, upon reaching which the lift goes out of service at the floor with Fault code 030. Use the and ESC keys to set new value and ENT to confirm (value 0000 = function disabled)⇩⇧
.2 Remaining xxxx	Displays the number of remaining trips / 10
12 Service .12 Contr. Temp.	Controller Temperature Alarm Threshold Setting Menu (Fault 013)
.1 Threshold Alarm: 50°C	Use and ESC keys to set value⇩⇧ Value 00°C deactivates alarm
12 Service .13 Oil Heat	Movement commands menu operators / car / calls
.13 Oil Heat OFF	Programmable output management mode Oil Heater: OFF: always off ON: always on, ON/OFF switching is in the thermistor PTC: output controlled by Oil Temperature Probe activates at Temp. < 16°C, deactivates at Temp. > 24°C Requires Temperature Probe instead of Thermal Switch

9 Identifying CAN connection faults

Nexus CAN

Nexus uses a CAN interface with CANopen DS417 protocol (https://www.can-cia.org) with additional proprietary extensions to the LSS protocol for automatic mapping of its devices.

9.1 CAN lines

The XLB2001 board manages two distinct and separate CAN lines:

- CAN1: Car roof / COP
- CAN2: Landing devices

Both lines are shielded and terminated with a 120Ohm resistor at one end on the XLB2001 board and at the other end on the furthest XLB2002 (CAN1) and XLB2003 (CAN2) board (last or first landing depending on the controller position).

9.2 CANopen LEDs

CANopen LEDs: the LEDs display the connection status from the device perspective, as per CiA DS303.3 specification.

Some boards have separate green (RUN) and red (ERROR) LEDs, others only one LED (STATUS).

The CAN LEDs on the XLB2001 board show the status of both lines with priority to CAN1 line.

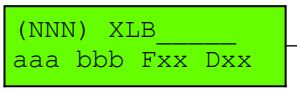
9.2.1 Typical situations

GREEN	*RED*	*Status*
ON	OFF	Bus OK, Normal operation
ON	2 FLASH	Bus OK, A previously connected device is not transmitting heartbeat
2 FLASH	OFF	Bus OK, Waiting for communication
OFF	ON	Bus fault, hardware problem on bus
BLINK	BLINK	Bus OK, LSS protocol active on device

9.3 CAN diagnostics on PT01

Menu 1.13 displays CAN diagnostics:

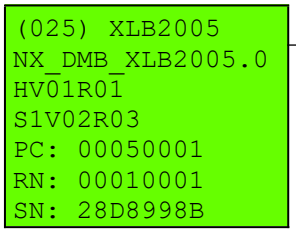
13 CAN status	CAN line diagnostics menu
.1 CAN1 1 ACTIVE	Status can be: • 0 INACTIVE: CAN line not active (e.g. lift in Installation) • 1 ACTIVE: CAN bus active with correct operation. • 2 PASSIVE: CAN bus active with no devices connected • 3 WARNING: Alert, CAN_H and/or CAN_L signals compromised • 4 BUSOFF: Bus not terminated (120Ω) and/or CAN_H / CAN_L interruption or short circuit
.2 CAN2 1 ACTIVE	Status can be: • 0 INACTIVE: CAN line not active (e.g. lift in Installation) • 1 ACTIVE: CAN bus active with correct operation. • 2 PASSIVE: CAN bus active with no devices connected • 3 WARNING: Alert, CAN_H and/or CAN_L signals compromised • 4 BUSOFF: Bus not terminated (120Ω) and/or CAN_H / CAN_L interruption or short circuit
.3 Devices	Menu Display of detected CAN devices and connection status



NNN node address

XLB____ board code
aaa number of heartbeat losses since power-on (temporary interruptions)
bbb connection status
000 = previously mapped but not connected
065 = OK
129 = mapped at power-on but not currently connected
Fxx assigned floor number (if applicable)
Dxx assigned door number (if applicable)

Pressing ENT displays detailed node information:



As above: Node Address and Board Name
Device logical name
Hardware version
Software version
Product Code
Revision Number
Serial Number

9.4 CAN Troubleshooting

When CAN communication problems are encountered during commissioning of the installation, a careful analysis of the situation must be carried out to avoid reaching often incorrect conclusions that waste time.
Note that the functions of menus 8 and 9 can only be executed if the respective CAN line is functioning correctly and are not useful for resolving hardware problems.

9.4.1 CAN1

9.4.1.1 Error 200 / 201

XLB2002 board:

If on PT01 diagnostics the CAN1 status is not stable on ACTIVE or is on PASSIVE or BUS OFF, the connection is not correct.

1. Disconnect COP on XLB2002; if XLB2002 becomes operational, carry out analysis on XLB2016 and connection with XLB2002, otherwise
2. Verify that XLB2002 board is powered:
    1. Yellow LED (PWR) off:
       check 24V supply on flex XLB2002
        1. if present, disconnect all connections except flex; if yellow LED off, possible faulty board
3. XLB2002 CAN LED
    1. Green BLINK or Red ON:
       Check flex cable connection:
        1. Disconnect main power supply
        2. Measure resistance CAN_H – CAN_L on flex cable XLB2001 side: must be approximately 60 Ohm
            1. if 120 Ohm is measured => flex cable interrupted
            2. if 0 Ohm is measured => flex cable short circuit

XLB2016 Board

1. Check that the board is powered:
    1. Yellow LED (PWR) off:
       Check connection cable to XLB2002
2. LED CAN XLB2016
    1. Green BLINK or Red ON:
       Check connection cable

9.4.2 CAN2

The CAN2 line has a variable number of connections depending on the number of stops and extends from board XLB2001 to the furthest XLB2003.
For diagnosis refer to diagnostic menu 1.13.2 and the LED(s) on the devices in the landing stations
The signals and power supplies used by CAN2 are available on connector J19:

- J19.4: +24V
- J19.5: CAN_L
- J19.6: CAN_H
- J19.7: 0V

Case 1: One landing station is not working

If the other landing stations are working properly:

1. check the status of the communication LED(s) on the faulty landing station:
   - Green ON, Red OFF (ON if only one LED)
     CAN connection OK => check push-button station configuration
   - All off:
     Check cable from XLB2003 to device (power supply)
   - Green ON, Red 2 x Flash or Green 2 x Flash, Red OFF:
     Check cable from XLB2003 to device (CAN connections)

Case 2: All landing stations not working

Determine whether the problem is caused by a landing station with its cable blocking the CAN2 line or whether the CAN2 line is compromised in the XLB2001 ↔ XLB2003 connections.
Check CAN LEDs on the landing stations:

- off on XLB2010 and XLB2005:
  - check 24V shaft supply on XLB2001 and that it reaches all XLB2003 boards.
- on:
  - check that all RJ45 cables are securely inserted starting from the XLB2001 board
  - Disconnect all landing stations from their respective XLB2003 boards and reconnect one at a time.
    If one or more faulty landing stations are identified, check the corresponding connection cable to XLB2003
- see following

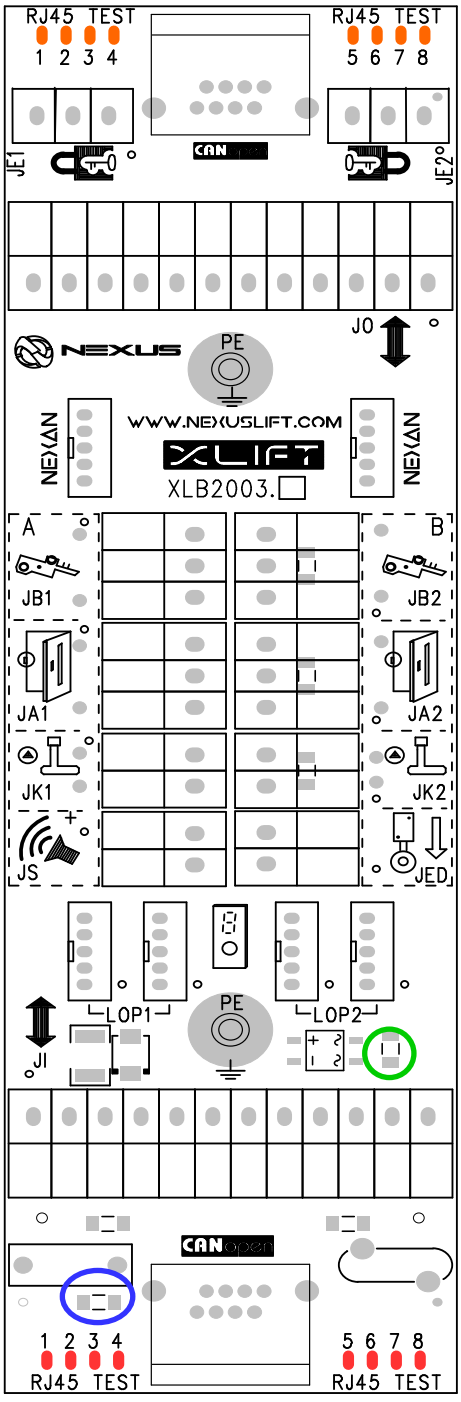
9.4.2.1 CAN2 line test

If the problem persists, verify the status of the main CAN2 line from XLB2001 to all XLB2003 units:

1. Disconnect main power supply
2. All RJ45 cables must be inserted.
   Measure resistance CAN_H – CAN_L on XLB2001.J19.5/6, must be 60 Ohm
   - if 120 Ohm is measured, it means that the line is open; check that all RJ45 cable connections from XLB2001 to all XLB2003 units are properly inserted and not under strain.
   - If values close to 0 Ohm are measured, it means that CAN_H and CAN_L are short-circuited in any branch or device; use the same following procedure for 0V and 24V.
   - if other values are measured, verify that CAN_H and CAN_L are not short-circuited with 0V or 24V supply.
     Perform the measurement between XLB2001.J19.5/6 and XLB2001.J19.7 (0V) and with XLB2001.J19.4 (24V)
     If a short circuit is detected:
     1. extract the RJ45 cable from the XLB2001 board and verify that the short circuit disappears, otherwise XLB2001 board is faulty

2. insert RJ45 cable into XLB2001 and extract RJ45 cable from the output of the first XLB2003
    1. repeat short-circuit test
        - if negative, continue with the next XLB2003
        - if positive, disconnect landing station cable(s) from the XLB2003 and repeat test
            - if positive => the short circuit is on the XLB2003, verify and replace if necessary
            - if negative => verify XLB2003 cable – landing station and device in the landing station

10 Identifying Landing Branch Connection Problems

1 CAN_H 2 CAN_L 3 485_A (not used) 4 Lock 1		5 Lock 2 6 485_B (not used) 7 SPK_IN (from upper) 8 JS.2 (Siren)
120 Ohm CAN only on boards XLB2003.2-3-4-5 (last board)		Emergency Key Bridge 0 Ohm only on boards XLB2003.2-3-4-5 (last board)
1 CAN_H 2 CAN_L 3 485_A (not used) 4 Lock 1		5 Lock 2 6 485_B (not used) 7 SPK_OUT (to lower) 8 JS.2 (Siren)

10.1 SPK Emergency Key Test – JK Connectors

The signal is a 0 Volt originating from the board furthest from the controller (XLB2003.2-3-4-5) and passes through all interconnected boards via the RJ45 cable.

10.1.1 Fault Finding

With controller switched off.

#	Test	Faults / Remedy
1	On the board furthest from the controller (XLB2003.2-3-4-5): Check continuity between SPK_IN and PE or 0V	If missing, verify that all JI and JO connectors on the boards are fully inserted Check that bridge is fitted
2	Check continuity between SPK_OUT and PE	If absent, check JK key/s and wiring for that floor
3	Proceed to card XLB2003 below. Verify continuity between SPK_IN and PE	If absent, check that RJ45 cable is properly inserted
4	Check continuity between SPK_OUT and PE	If absent, check JK key/s and wiring for that floor
5	Repeat steps 3 and 4 until reaching the card nearest to the Controller.	If OK, check RJ45 cable to Controller is properly inserted at both ends

10.2 Siren test

10.2.1 Siren does not sound

10.2.2

#	Test	Faults / Remedy
1	Verify that pressing the Alarm button in the car causes the Bell icon to light up on the car and landing displays.	If not, verify: 1. Alarm button – XLB2016 board 2. Connection XLB2016 (Car) – XLB2002 (Roof) Between JT16.X and JT16.Y must read 24V when button is pressed 3. Repeat measurement on Controller to verify flexible cable. Between J5.X and J5.Y must read 24V when button is pressed
2	Verify that the siren is not faulty.	Verify presence of 24V between JS.1 and PE. With siren connected to its JS connector on the same board, short-circuit the Sirena test point to PE.
3	Connect the siren to the XLB2003 board nearest to the Controller and press the Alarm pushbutton	No sound: check RJ45 cable to the Controller at both ends Sounds: repeat the test on the XLB2003 board at the next landing up until the desired landing, checking the RJ45 cable connecting to the board below at both ends

1 NFC Tag

NFC tags replace traditional contact keys with a contactless mode.
They also extend the possible applications.

Use requires an RFID reader which is installed inside the landing stations and/or car operating panel in a completely transparent manner.

1.1 Available modes

As with mechanical keys, the following activation modes are available:

- Monostable, comparable to a single-position / single-extraction key
- Bistable, comparable to a two-position / two-extraction key.
- Mono and Bistable, both modes possible

1.2 Activation

When a tag is brought near the push-button station in the reader area, four blue LEDs light up to indicate reading.
Holding the tag for approximately 2 s activates monostable mode; holding for more than 5 s activates/deactivates bistable mode.

If the Tag identification code (ID) is recognised among those registered in the application and valid for the specific push-button station, recognition is indicated by:

- on landing stations:
  - flashing green LED: monostable activation
  - steady green LED: bistable activation
  - steady red LED: deactivated
- on car operating panel:
  - flashing green padlock: monostable activation
  - steady green padlock: bistable activation
  - steady red padlock: deactivated

1.3 Available Functions

The following functions are currently available:

#	Description
01	Car call(s) enable All floors or only some
02	Landing call(s) enable All floors or only some
03	Reserved Operation
04	Out of Service
05	Landing call without pushbutton

In general, monostable mode means that the function remains valid until the requested action is completed.
E.g.: function 01 enables car calls and remains active until the booked floor is reached and the doors are opened.
On controller power-up and in the out of service state, all functions active in monostable mode are cancelled.

1.4 Tag / Function Association

Each Tag can be associated with one or more functions and the floor/door for recognition and/or action can be discriminated.

For example, the same Tag can be used to enable the landing call when read on the landing station and enable a specific car call when read on the car operating panel.

Two configuration modes are provided:

- ***Simple Mode***
  for basic associations
- ***Advanced Mode***
  for complex associations

1.4.1 Association Codes in 'Simple Mode', function 01: Enable car calls

100	Enable / Disable all floors door 1-2-3
101	Enable / Disable all floors door 1
102	Enable / Disable all floors door 2
103	Enable / Disable all floors door 3
104	Enable / Disable all floors doors 1-2
105	Enable / Disable all floors doors 1-3
106	Enable / Disable all floors doors 2-3
110	Enable / Disable floor 1 only doors 1-2-3
111	Enable / Disable floor 1 only door 1
112	Enable / Disable floor 1 only door 2
113	Enable / Disable floor 1 door 3 only
114	Enable / Disable floor 1 doors 1-2 only
115	Enable / Disable floor 1 doors 1-3 only
116	Enable / Disable floor 1 doors 2-3 only
120	Enable / Disable floor 2 doors 1-2-3 only
121	Enable / Disable floor 2 door 1 only
122	Enable / Disable floor 2 door 2 only
123	Enable / Disable floor 2 door 3 only
124	Enable / Disable floor 2 doors 1-2 only
125	Enable / Disable floor 2 doors 1-3 only
126	Enable / Disable floor 2 doors 2-3 only

....

180	Enable / Disable floor 8 doors 1-2-3 only
181	Enable / Disable floor 8 door 1 only
182	Enable / Disable floor 8 door 2 only
183	Enable / Disable floor 8 door 3 only
184	Enable / Disable floor 8 doors 1-2 only
185	Enable / Disable floor 8 doors 1-3 only
186	Enable / Disable floor 8 doors 2-3 only

Association Codes in 'Simple Mode', function 02: Landing Call Enable

1.4.2 Association Codes in 'Simple Mode', function 03: Reserved Operation

200	Enable / Disable all floors doors 1-2-3
201	Enable / Disable all floors door 1
202	Enable / Disable all floors door 2
203	Enable / Disable all floors door 3
210	Enable / Disable floor 1 only doors 1-2-3
211	Enable / Disable floor 1 only door 1
212	Enable / Disable floor 1 only door 2
213	Enable / Disable floor 1 door 3 only
220	Enable / Disable floor 2 doors 1-2-3 only
221	Enable / Disable floor 2 door 1 only
222	Enable / Disable floor 2 door 2 only
223	Enable / Disable floor 2 door 3 only

...

280	Enable / Disable floor 8 doors 1-2-3 only
281	Enable / Disable floor 8 door 1 only
282	Enable / Disable floor 8 door 2 only
283	Enable / Disable floor 8 door 3 only

1.4.3 Association Codes in 'Simple Mode', function 04: Out of Service

300	Reserved Operation

1.4.4 Association Codes in 'Simple Mode', function 05: Landing Call

400	Out of Service

1.4.5 Procedure

500	TBD

1.5 PT01 menu 2.14 NFC TAG

If necessary, update software on XLB2001 board.

1. Reset the existing table to clear any previous stored data, menu 2.14.3.3
   All stored configurations will be deleted
   Do this only the first time or when you actually want to clear the table.
2. Acquire new TAGs:
   a. Select menu 2.14.1 New
      Select 2.14.1.1 Tag Reading
      Select 2.14.1.1.1 Start reading
      read all TAGs (max 5) on the push-button station that must perform the same action.
   b. After reading all the TAGs for the same function
      press ESC once only to finish reading and proceed with the configuration.
   c. Press to go to menu 2.14.1. 2. Set and press ENT⇩
   d. select 1 Simple mode, ENT
   e. set desired function, ⇩
   f. set mode (monostable / bistable / mono-bistable), ⇩
   g. add configuration
      press ENT to add
   h. press ESC several times to close read/set and return to menu .14 NFC TAG
3. Save Table with menu 2.14.3.1

If new TAGs must be added, repeat points 2 and 3.

1.6 New TAGs

```
  GMV - NX_HL01
1 System
.2 Machine Room
.3 Overhead
.4 Pit
.5 Start
.6 Set up
.7 Stops
.8 Door side 1
.9 Door side 2
.10 Door side 3
.11 Operation
.12 EN81.70
.13 Shaft
.14 NFC TAGs
```

Parameter list / Configuration menu
Scroll with and buttons to view parameter ⇩⇧
Press ENT to enter submenu

NOTE:
EXCEPT FOR MENU 14 NFC TAG,
THE PARAMETERS IN THIS MENU CAN ONLY BE MODIFIED
WITH FA SWITCH IN DOWN POSITION

```
.14 NFC TAGs
.1 New
.2 Changes
.3 TAG Table
```

New associations
Changes to existing associations
Table management

1.6.1 Changes to stored TAGs / associations

```
.14 NFC TAGs
.1 New
```

New associations menu

```
.1 New
.2 TAG reading
.1 Input ID
```

New associations

.1 TAG reading via push-button station
.2 Manual TAG ID entry (TAG read with another device)

```
.2 TAG reading
.1 Start reading
```

New associations

Select to start TAG acquisition via push-button station (max 5 TAGs at a time)

```
.1 Start reading
.1 ESC to Stop
01 >nnnnnnnn<
02 >nnnnnnnn<
03 >nnnnnnnn<
04 >nnnnnnnn<
05 >nnnnnnnn<
```

Bring the TAGs close to the push-button station and hold for a few seconds.
The code is displayed
Press ESC (once) to stop reading TAGs on the push-button station

The read TAG IDs are displayed
duplicate readings are automatically discarded.

It is recommended to note the TAG ID codes for any changes

```
.2 TAG reading
.2 Edit
.1 Simple mode
.2 Advanced mode
```

Association entry mode for all read TAGs (1...5)

1. Simple Mode
2. Advanced Mode

Simple Mode:

.1 Function nnn	Enter function code (see table) which will be applied to all TAGs just read
.2 Mode 0:monostable 1:bistable 2:mono/bistabile	TAG action mode to be applied to all TAGs just read
.3 Add to list? ESC=NO ENT=YES	Confirm association entry in TAG table press ENT to add

If the TAGs just read and configured must perform multiple functions, do not exit the menu; press to return to .1 Function and enter a new associated function.

EXAMPLE: The same TAGs used to enable a landing call when read on a landing station and to enable a car call when read on the car operating panel.

1.7 Menu 14.3 TAG Table

.14 NFC TAGs .2 Changes	Modifications menu
.2 Changes .1 Simple mode .2 Advanced mode	Mode for editing TAG associations in table with TAG selection Simple Mode Advanced Mode (not implemented)

Simple Mode

Tag_nn:xxxxxxxx Fun:fff - Mod:m	Display of TAGs in table with their configured Function and Mode Scroll with UP / DOWN arrows to locate TAG Press ENT to edit

Modify

.1 Delete NO YES	Press ENT to select action
.2 Function nnn	Press ENT to modify (see table)
.3 Mode 0:bistable 1:bistable 2:mono/bistabile	Press ENT to modify mode

.4 Apply ESC=NO ENT=YES	Confirm association entry in TAG table ENT to edit ESC to cancel

1.8 Menu 14.3 TAG Table

.14 NFC TAGs .3 TAG Table	Table Operations
.3 TAG Table .1 Save .2 Load from uSD .3 Clean	Table Operations
.3 TAG Table .1 Save	Saves the table to internal memory and to microSD

Note:
The table is saved to microSD in the path nx\nx_hl01\xlb2001\usr\liftdata\ in a file named TAG_NFC.txt
The file can be edited if necessary with a text editor (e.g. Windows Notepad).

.3 TAG Table .2 Load from uSD	Loads table from microSD and saves it to internal memory
.3 TAG Table .3 Clean	Erase entire table from internal memory
.1 Reset? ESN=NO ENT=YES	Confirm erasure