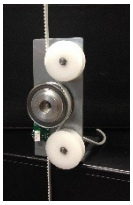
USER MANUAL

Control panel

SETRONIK 1 Restyling

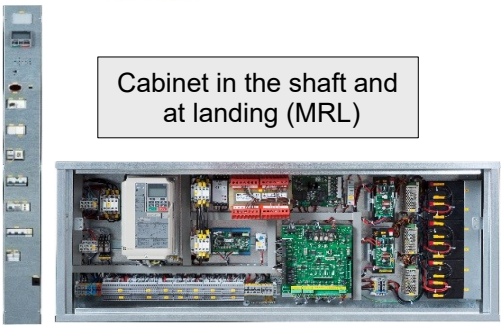
Cabinet at landing (MRL)

Encoder on car roof



Machine room cabinet (MR)

Cabinet in the shaft and at landing (MRL)



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STK1R-EN-97-0-A
rev0
13/09/2022

INDEX

List of changes from “STK1R-EN-96-0-A rev0” to “STK1R-EN-97-0-A rev0”

Page	Description
5	Release software
66	New timers 4.71 e 4.72
73	New virtual output VO.74
82	New parameter C.37
84	Added vocal message number 118

1. INTRODUCTION AND FIELD OF APPLICATION

The control panels of the ***SETRONIK1 Restyling*** family are specially designed for the control of electric and hydraulic lifts complying with the lift directive, and lifting platforms complying with the machinery directive.

The STK2-PM programmer allows for setting a secret access code, knowing the conditions the lift is operating in, which and how many times alarms have occurred, controlling the lift and door motion and modifying the operating characteristics of the lift itself.

Functional diagnostic is managed by alarm codes that are displayed on the STK2-PM terminal and by LEDs on the STK1R board.

CE

STK1R Restyling control panels are compliant with the following European directives:

- 2014/33/UE (Lift directive), for any embedded safety component
- 2014/30/UE (EMC directive)

In addition, according to customers requests, they can be made in compliance with the main industry standards (EN81-1, EN81-2, EN 81-20 / EN81-50, EN81-21, EN81-70, EN81-72, EN 81-73, etc.)

This manual is valid only for control panels equipped with STK1R main board with software release (see parameter 0.14.0 and 0.15.0):

1.97.x.0

In case of different software, the reader should get and read the corresponding manual.

1.1. Symbols used in this manual

NOTE
Used to indicate a very important information.

WARNING
Used to indicate an information whose content, if not observed, may cause minor injuries to persons or damages to the lift plant.

DANGER
Used to indicate that the described operation can cause physical injuries, if not performed in accordance with safety regulations.

2. SAFETY PRECAUTIONS

The control panel and all the other electrical parts supplied by Sea Systems have been designed and built in accordance with the safety and health requirements of the lift and machinery directives. These precautions are provided to ensure safety and they must be read carefully.

- Installation and maintenance must be carried out in accordance with current regulations, according to the manufacturer's instructions, and only by qualified personnel.
- Improper installation or poor maintenance may cause harm to persons, animals or things, for which the manufacturer can not be held liable.
- Before starting any cleaning or maintenance operation, disconnect the appliance from the mains supply by turning off the main circuit breaker.
- Always wear the necessary PPE (Personal Protective Equipment).
- Do not wear loose or dangling objects (necklaces, watches, ties...) and keep long hair tied back.
- Do not carry sharp or pointed objects in shirt pockets (such as screwdrivers, scissors...).
- Do not tamper with, damage or hide the warning signs/labels and, in case of deterioration, immediately request a substitution.
- When lifting heavy loads, use the proper equipment in order to avoid back injuries that could be caused by manually moving them.
- The documentation provided by Sea Systems must be kept by the system administrator, for the proper and safe installation and maintenance of the lift. Remember that said documentation is considered to be an integral part of the system and therefore it must not be damaged. If the lift is sold or transferred to a new owner, always make sure that all of the following documentation is transferred so that it can be consulted by the new owner and/or installer. Sea Systems provides the following documentation for each plant:
  - manual for installation and use (this document)
  - electrical diagrams
  - setting of the STK1R board parameters.

3. FUNCTIONAL CHARACTERISTICS

LIFT TYPES	- Electric : 1-2 Speeds, VVVF - Hydraulic : Direct, Star-delta, Soft Starter, Soft Stop, SCC, Electronic controlled valves
OPERATIONS	- Automatic Push Button - Hold-to-run in the car and at landings or just in the car - Collective down or Collective up-down - Pick up - Firefighters lifts (EN81-72), behaviour of lifts in case of fire (EN81-73) - Multiplex (up to eight group elevators)
DOORS CONTROL	- Manual, automatic, semi-automatic - With contactors, limit switches, safety photocell, light curtain - Simultaneous or selective opening - Open or closed doors parking at landings - Early doors opening
CAR AND LANDINGS SIGNALS (24V)	- present / busy / incoming (at landings) - booking (in the car and at landings) - display outputs for 1 wire/floor, binary, gray, bcd, 7 segments - Next direction arrows (in the car / at landings) - overload - gong - Voice synthesis
SHAFT SENSORS	- Magnetic sensors (reed switches) - Belt encoder on the car roof (with self learning) - Encoder on the motor (with self learning)
EMERGENCIES	- alarm, 12vdc emergency light - Automatic emergencies for hydraulic lifts - Automatic emergencies for electric lifts with brake release (only for gearless machines) or with VVVF inverter and batteries
SERIAL / PARALLEL CONNECTION	- Parallel at landings and in the car - serial can bus in the car and parallel at landings - serial can bus in the car and at landings

4. TECHNICAL CHARACTERISTICS

MAINS VOLTAGE	From 110 to 440 Vac (single phase and three phases)
SAFETY CHAIN VOLTAGE	48 Vdc or 110 Vac (for lifts) 24 Vdc (for platforms)
CAM, VALVES AND DOOR OPERATORS VOLTAGES	On demand
SIGNAL OUTPUTS	24 Vdc, 650mA each, 2A total (for higher power STK1-RO board is required)
BUSY SIGNAL OUTPUT (RELÈ)	24 Vdc, 2A
SAFETY CHAIN MONITORING INPUTS	Opto-insulated (compliant with EN81-20 EN81-50 EN81-1 EN81-2)
OPERATING TEMPERATURE	-10 ... +65 °C
CONTROL LOGIC	With microcontroller
DATA STORAGE	Permanent
RECHARGEABLE BATTERIES	12Vdc, 2…7Ah according to needs

5. INSTALLATION AND TESTS

Follow the 'safety precautions' listed in chapter 2 during installation.

Under no circumstances SEA SYSTEMS S.r.l. will be held liable for any damage arising from failure to comply with the instructions below, or for any unauthorized modification of the original equipment.

INSTALLATION MODE

At some point during the installation operations you probably need to move the car frame by rotating the motor. You can do this without having completed yet the placement and wiring of shaft sensors and of other devices by using the "installation mode" (see parameter 1.08.0).

5.1. Preliminary operations

Before starting the installation, proceed to the following checks and arrangements.

5.1.1. PREPARING OF THE INSTALLATION SITE

- Check whether there is sufficient lighting in the shaft.
- Check the cleanliness of the shaft and the pit.
- Check whether the grounding system is effective (if not, immediately stop installation until a suitable grounding system has been provided).
- Make sure that the shaft entrances are properly closed.
- Organise a storage area for materials next to the shaft, which is easily accessible and protected from any possible adverse weather conditions.
- Make sure that all of the electrical cable ducts and wire passages are free, examinable and well-finished.

5.1.2. UNLOADING AND STORING THE MATERIALS

- Make sure that the STK1R control panel specifications (control panel type, contactors, starter…) comply with the order specifications listed on the order confirmation.
- Check the bill of materials to verify the availability of all the materials required for installation.
- Check the status of all the components and materials upon delivery to the site, in order to verify any possible damages which may have occurred during transportation. Immediately notify SEA SYSTEMS S.r.l. in the case of missing or damaged components.
- Store electric and electronic components in their original packaging, in a dry and cool location.
- If for any reason it is not possible to immediately install the unit, periodically check the stored components to prevent any damages which could be caused by long-term storage in unfavourable conditions.

5.2. Fixing of the control panel

Depending on the version supplied, follow one of the following instructions:

5.2.1. CONTROL PANEL IN THE MACHINE ROOM STK1R-MR (FOR ELECTRIC AND HYDRAULIC LIFTS)

Attach the panel in the machine room as close as possible to the motor, using the angle bracket provided.

5.2.2. CONTROL PANEL AT LANDING STK1R-MRLP (FOR ELECTRIC LIFTS)

Place the control panel as close as possible to the motor.

5.2.3. POWER CONTROL PANEL IN THE SHAFT AND MAINTENANCE CONTROL PANEL IN THE DOOR JAMB OF THE UPPERMOST LANDING STK1R-MRLV (FOR ELECTRIC LIFTS)

1. Attach the 'main panel' with the two angle brackets provided in the headroom of the shaft, above the operator of the uppermost landing, so that it does not interfere with car movement and so that it is accessible from the car roof.
2. Put the 'maintenance panel' in the door jamb on the uppermost landing and attach it according to the instructions supplied by the door manufacturer.

5.3. Fastening and connecting devices in the shaft

1. Attach the provided cable duct in the shaft near the push-button panel with the provided plugs.
2. Attach the bundle of cables to the cable duct with the provided tie-wraps, starting from the top.
3. Connect the bundle of cables to the control panel as shown on the installation diagram.
4. Connect the various devices for the landings (limit switches, siren, pit emergency stop, landing door locking devices, car operating panel) as shown on the installation diagram.

5.4. Attaching the 'connection box' to the car roof

1. Place the 'connections box' on the car roof in such a way that it is easy to connect the flexible cables that come from the panel, the car operating panel, the door operator and the shaft sensors.
2. Attach the connections box to the car roof with the provided screws.

5.5. Attaching and connecting the flex cable in the shaft

1. Connect the flexible cable (ground side with eyelet terminal) to the connectors of the connection box on the car roof according to the installation diagram. Attach them to the box using the supplied cable ties.
2. Attach the flexible cable on the car roof and under the car with the supplied cable brackets and plugs.
3. Connect the flexible cable (ground side without eyelet terminal) to the control panel according to the installation diagram.
4. Attach the provided wedge bracket approximately in the middle of the shaft using the provided plugs.
5. Attach the flexible cables to the wedge bracket at such a point that when the car is at the lowest point, the flexible cable bag does not touch the bottom of the pit.

EXCESSIVE FLEXIBLE CABLE LENGTH

To solve the problem of excessive length of flexible cables in the pit, move the wedge bracket upward. Please note that a raising of 1 meter of the wedge bracket corresponds to approximately 0.5 meter of raising of the cable bag under the car.

6. Make sure that the flexible cables are not twisted in the pit. If they are, disconnect the connectors from the control panel, untwist, and reconnect them.
7. Attach the provided fastening bracket to the wall of the pit at the point where the flexible cables begin to rise vertically along the shaft.

5.6. Attaching and connecting the car position sensors and the relative magnets

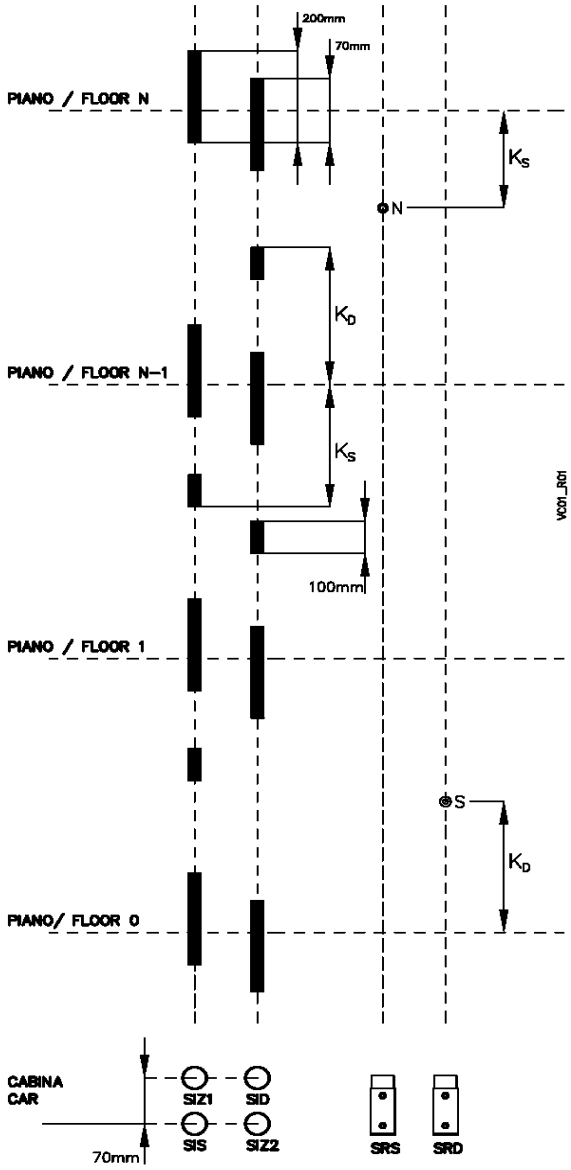
SEA SYSTEMS S.r.l. provides various types of shaft sensors depending on the application. Each solution is outlined by one of the following installation diagrams.

1. Attach the shaft sensors and the relative magnets according to the indications on the relative diagram.
2. Connect the shaft sensors according to the installation diagram.

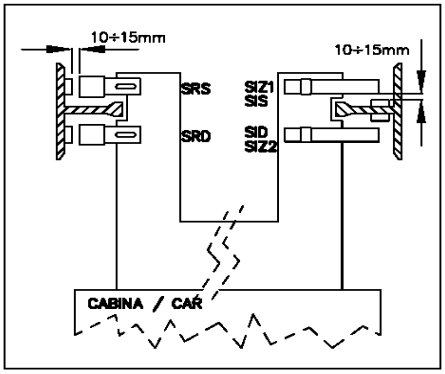
5.6.1. SHAFT SYSTEM VC01

System made up of magnetic sensors (reed switches). Used for electric and hydraulic lifts.

FRONT VIEW



CAR ROOF VIEW



Sensor	Function
SIS	Monostable reed switch for ascending stop control and ascending speed change control
SID	Monostable reed switch for descending stop control and descending speed change control
SRS	Bistable reed switch for speed change control at uppermost landing
SRD	Bistable reed switch for speed change control at lowest floor and position reset
SIZ1, SIZ2	Monostable reed switches for controlling CS4 safety circuit (*)

(*) The CS4 safety circuit is necessary in the following cases:

- amendment A3
- hydraulic/electric relevelling
- early door opening

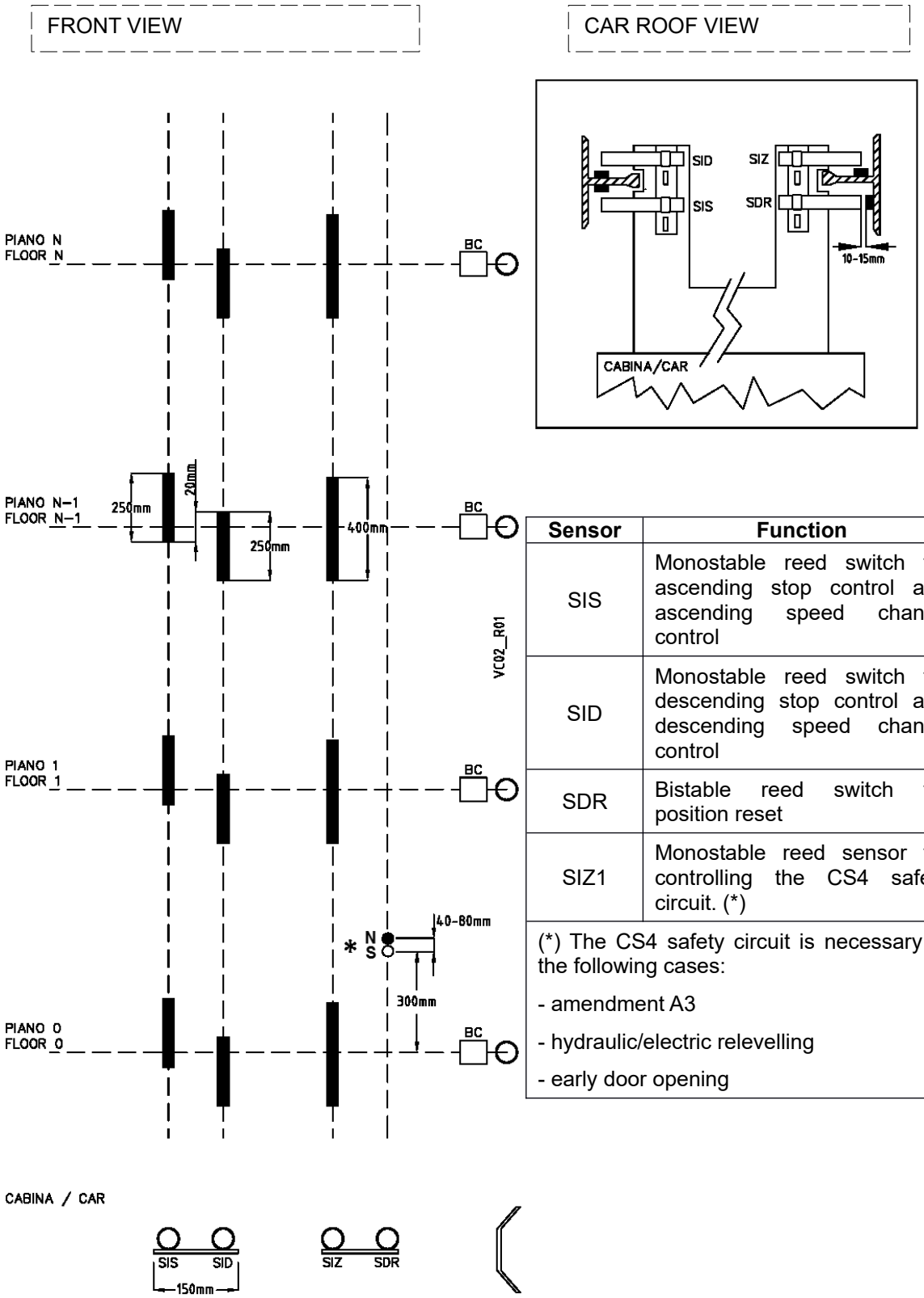
K_D, K_S = SLOWDOWN DISTANCES

These distances depend on the speed of the lift and the technical characteristics of the motor or the hydraulic unit installed.

If **K_D + K_S + 5CM > minimum distance between adjacent floors**, it is necessary to install the VEN01 encoder shaft system.

5.6.2. SHAFT SYSTEM VC02

A system made up of magnetic sensors (reed switches). Used for elevator platforms.



Sensor	Function
SIS	Monostable reed switch for ascending stop control and ascending speed change control
SID	Monostable reed switch for descending stop control and descending speed change control
SDR	Bistable reed switch for position reset
SIZ1	Monostable reed sensor for controlling the CS4 safety circuit. (*)

(*) The CS4 safety circuit is necessary in the following cases:

- amendment A3
- hydraulic/electric relevelling
- early door opening

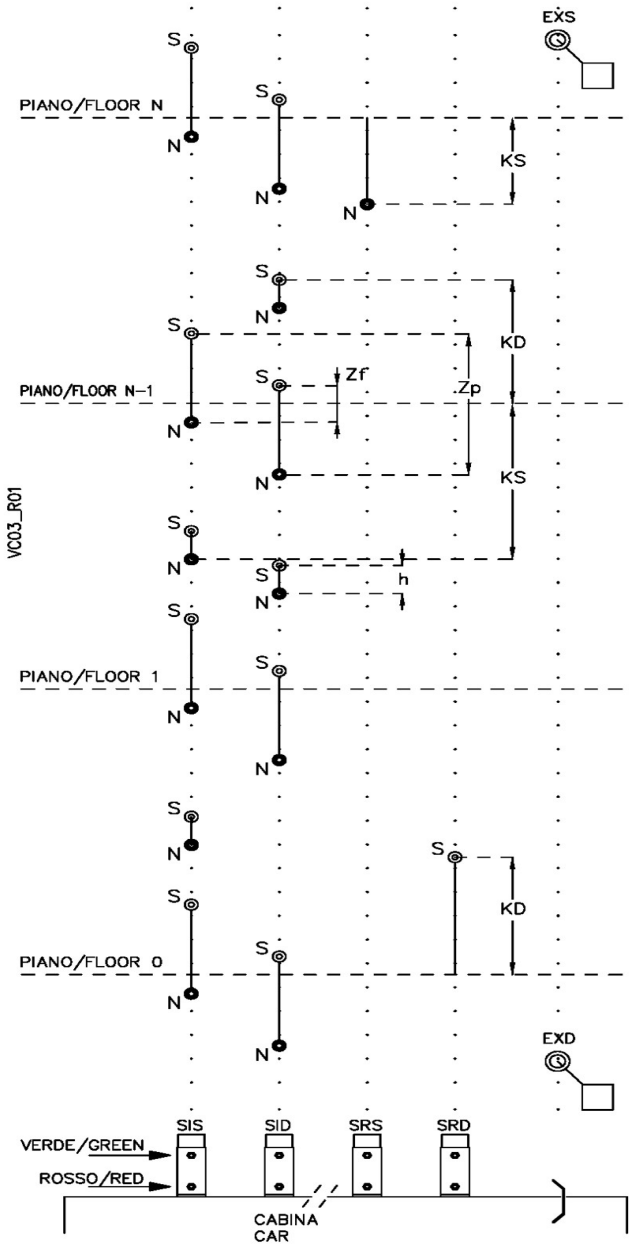
) The orientation of these magnets depends on the sensor manufacturer / model. The figure shows the correct orientation with CARLO GAVAZZI model FMPB2 sensor.

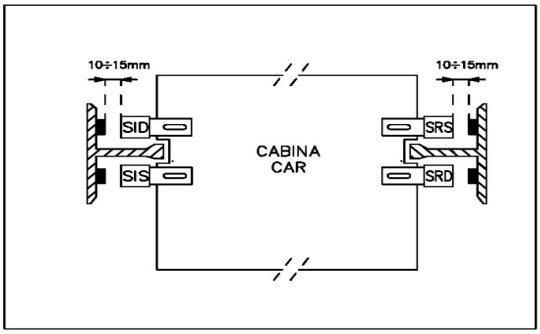
5.6.3. SHAFT SYSTEMS VC03

System made up of bistable magnetic sensors (reed switches), used for electric lifts without a CS4 safety circuit.

FRONT VIEW

CAR VIEW VIEW





Adjustable spacings (by moving the magnets)	
Zp	Door unlocking zone (around 35 cm)
Zf	Stopping zone (around 5 cm)
h	10 cm
Sensor	**Function**
SIS	Bistable reed sensor for ascending stop control and ascending speed change control
SID	Bistable reed sensor for descending stop control and descending speed change control
SRS	Bistable reed sensor for speed change control at uppermost landing
SRD	Bistable reed sensor for speed change control at lowest floor and position reset

K_D, K_S = SLOWDOWN DISTANCES

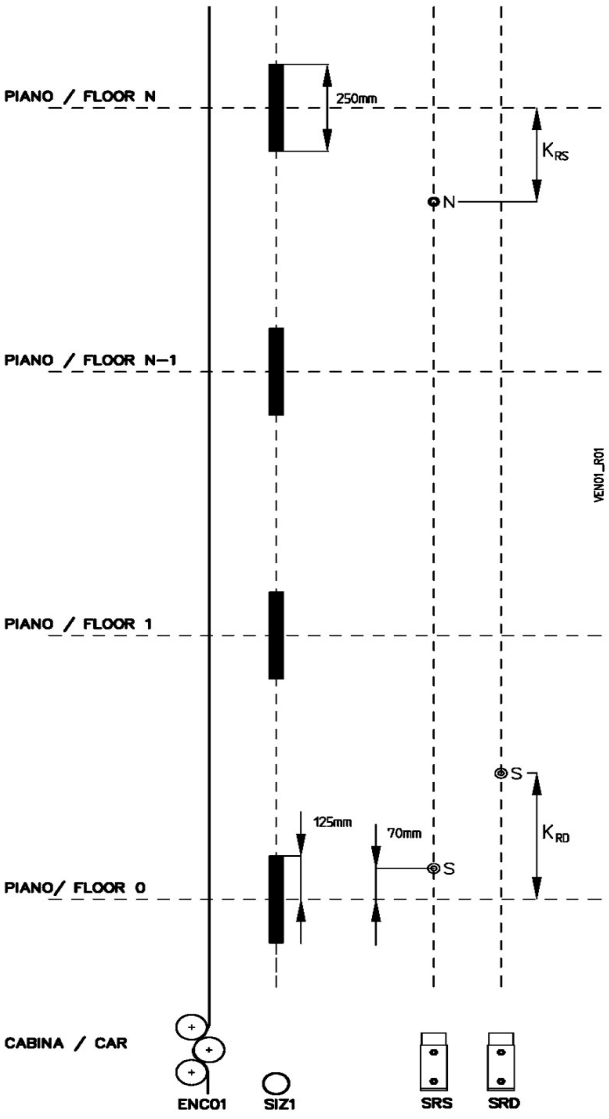
These distances depend on the speed of the system and the technical characteristics of the motor or the hydraulic unit installed.

If **K_D + K_S + 5CM > minimum distance between adjacent floors**, it is necessary to install the VEN01 encoder shaft system.

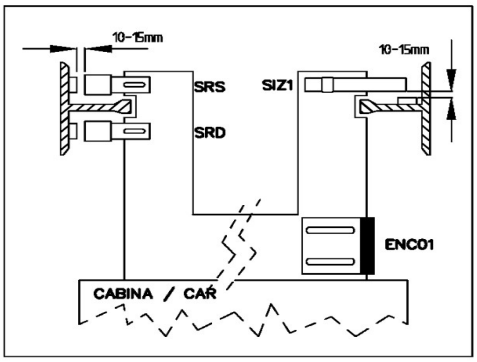
5.6.4. SHAFT SYSTEM VEN01

System made up of magnetic sensors (reed switches) and an encoder on the car or on the motor shaft. Used for electric/hydraulic lifts and elevator platforms.

FRONT VIEW



CAR ROOF VIEW



Sensor	Function
ENC01	Encoder for the control of stopping and speed change. The one on the motor can also be used.
SRS	Bistable reed switch for speed change control at uppermost landing during acquisition and rephrasing of the encoder
SRD	Bistable reed switch for speed change control at lowest landing during acquisition
SIZ1	Monostable reed switch for controlling CS4 safety circuit (*)

(*) The CS4 safety circuit is necessary in the following cases:

- amendment A3
- hydraulic/electric relevelling
- early door opening

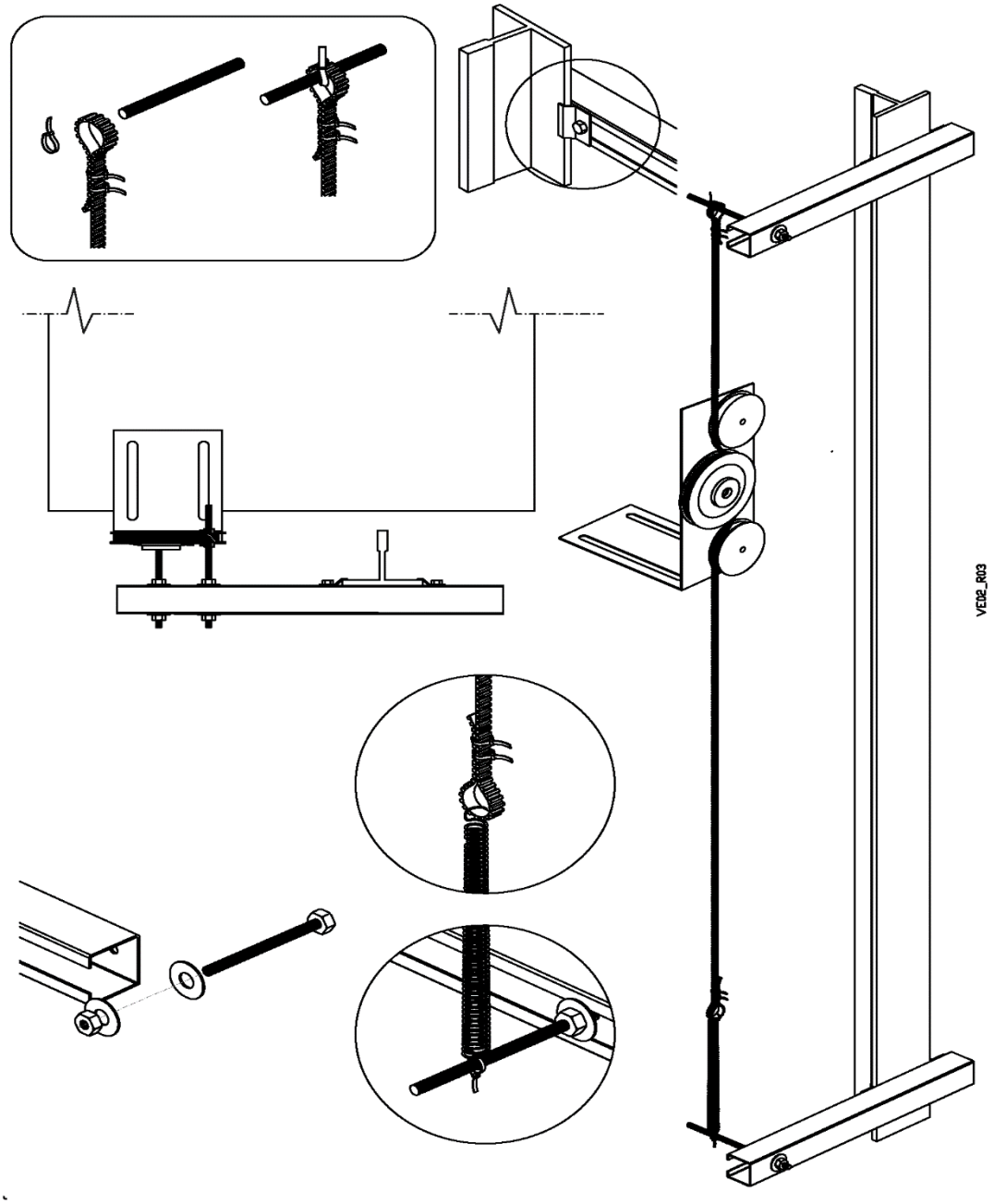
K_{RS}, K_{RD}

These distances must be about 10 cm smaller than the slowdown distances set in parameters 8.05.0 and 8.06.0

SELF LEARNING OF FLOOR HEIGHTS AND STOP DISTANCES

For automatic acquisition of floor heights and stop distances, see parameter 9.00.

5.6.5. SHAFT SYSTEM VEN01: ATTACHING THE ENC01 ENCODER TO THE CAR ROOF



ENCODER POSITIONING

To avoid excessive noise, it is absolutely necessary to attach the pulleys bracket of the encoder ECN01 on the arch of the car, and not on covering plates.

ADJUSTING THE TENSION OF THE TOOTHED BELT

Extend the spring until it has a length of 17 cm

5.7. Connecting and using of the STK2-PM programmer

Connect the STK2-PM programmer to the FC3 connector on the STK1R board and turn it on (on/off switch). On the display, one of the following three parameters will appear:

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
F	0	0	0	0	0	0	A password as been entered See parameters 0.10.0 e 0.11.0
0	0	0	X	X	X	X	There is no password. XXXX indicates the system status. See parameter 0.00
F	0	1	X	X	X	X	A standard programmer has been connected to a customized board. Contact technical assistance

See chapter 6 for more informations about the STK2-PM programmer and for an exhaustive guide to all parameters and functions of the STK1R board.

5.8. Procedure for system start-up

To put the lift into normal service follows this steps:

1. Set the parameter 1.08.0 to a value different from 4 (i.e remove the installation mode)
2. Make sure that maintenance switch on the car roof is set to NORMAL.
3. Make sure that there are no active alarms (see parameter 0.01). In case of alarms refer to the chapter "9. Anomalies and Solutions".
4. Cancel any old alarms that were recorded during installation / maintenance operations (see parameter 0.03.0)

5.9. Insulation tests

Before executing the insulation tests required by standards (EN81-20 item 5.10.1.3, EN81-20 item 6.3.2 c), EN81-1 and EN81-2 item 13.1.3), you have to:

1. place the car out of floors
2. open mains switches
3. check that the automatic switch FA is closed
4. disconnect green-yellow wire from the RCF01 device
5. disconnect from the earth collector on the control panel any other conductor that has **not** protective function or equipotentiality function (i.e. which is not green-yellow). Conductors with protective function are, for example, any connection to metal plates, frames or enclosure of any electrical equipment, while conductors with equipotentiality function are connections to foreign metallic parts, such as a metal pipe coming from the outside
6. if a VVVF drive or a soft starter device is used, please follow the instruction for insulation tests supplied by the manufacturer. Generally, a short-circuit between the power terminals (all together) is required. With ZIEHL-ABEGG Zadyn4CS VVVF drive, please disconnect the wiring on the inverter X-ENCO connector (otherwise the "electronic" circuit is not isolated from the ground)
7. disconnect the phone line from the automatic phone dialer
8. disconnect the control panel from any other control panel belonging to an array of lifts
9. for any device not supplied by SEA SYSTEMS, always follow the manufacturer instructions. For example, if you use ***VEGA B-LIFT series 8120 evo*** light curtain along with the ***CPB12/24*** control unit supplied by 0/24V coming from the STK1R control panel, you have to disconnect the supply conductors of ***CBP12/24*** (DC IN terminals) before performing any test, because its electrical circuits are not insulated from the ground (G terminal) and from the metallic frame of the light curtains.

The circuits that must be isolated from each other and the tests to be performed are summarized in the following tables.

Circuit	Signals / terminals
Motive power, motors	R, S, T, U, V, W, U1, V1, W1, U2, V2, W2
Car light	L1, L, N
AC door motor	MPA, MPB, MPC, MPD, MPE, MPF
DC door motor	+, -, 30, 32, MPA, MPB
Safety chain, brake, cam	1 … 10, F1+, F1-, F2+, F2-, PR+, PR-, VALVES
Electronic	**0**, +24, OCC, FS, FD, PS1 … PS6, AL+, AL-, AL, IS, ID, SR, DR, SIZ, CAN+, CAN-, SGG, SGE, FFS, encoder, inverter commands, sensors, …. To simplify the measure, it is possible to perform the insulation test of this circuit only on the signal “0”, which is available, for example, on terminals A0.1, A0.2 of the STK1R board. All other signals are kept almost at the same voltage (within a few volt) by protective electronic devices provided on all inputs and outputs.

TO / FROM	Motive power, Motors	Car light	AC door motor	DC door motor	Safety chain, brake, cam	Electronic
Earth	X	X	X	X	X	X
Motive power, Motors	NO	O	O	O	O	O
Car light	-	NO	O	O	O	O
AC door motor	-	-	NO	O	O	O
DC door motor	-	-	-	NO	O	O
Safety chain, brake, cam	-	-	-	-	NO	O
Electronic	-	-	-	-	-	NO

Legend

X : test to be performed (500Vcc, R_{iso} >= 1Mohm) **O** : optional test (not required by standards) **NO** : test not to be executed
- : test already executed

5.10. Test procedure of the UCM protection system, for STK1R-A3 control panels

STK1R control panels designed for lifts equipped with UCM protection means are called STK1-A3. Below you will find the relative tests to be performed before putting the lift into service.

5.10.1. STK1R-UCM PROCEDURE – TEST OF INDIVIDUATION AND INTERRUPTION OF UNINTENDED CAR MOVEMENTS WITH DOORS NOT CLOSED AND LOCKED (WITH THE EXCEPTION OF HYDRAULIC LIFTS WITH MORIS KMI DEVICE, SEE PARAGRAPH 5.10.7)

1. Call the car to the second floor, leave it with doors closed
2. Open the safety chain just after the door safety contacts (terminal 10 of the CM4 connector, on the control panel terminals block)
3. Lower the car using the parameter 0.09.0=4
4. When the car exits from the door unlocking zone, lift is put out of service. Check that alarm 88 is active (see parameter 0.01)
5. Restore the safety chain (undo point 2)
6. Reset the alarm (by using the SW1 push-button on the STK1R board or the parameter 0.03)
7. Call the car to the second to last floor, leave it with doors closed
8. Repeat points 2 through 6 (at point 3 raise the car instead of lowering it)

5.10.2. STK1R-SMA1 PROCEDURE – TEST OF THE SELF MONITORING FUNCTION OF TWO HYDRAULIC VALVES IN SERIES

1. Turn the power switch off and on again (QFM switch)
2. Set the delay before return to the lowest floor to 1 minute (parameter 4.09=0600)
3. Call the car to the second floor
4. When the time 4.09 is elapsed, the car begins to move toward the lowest floor. As soon as it starts, keep the first hydraulic valve open
5. Two consecutive re-levelling operations will be executed. After the second one, the lift is put out of service. Check that alarm 81 is active (see parameter 0.01)
6. Reset the alarm (by using the SW1 push-button on the STK1R board or the parameter 0.03)
7. Repeats steps 2 through 6 (at step 4 keep open the second hydraulic valve)
8. Turn the power switch off and on again (QFM switch)

For machine-roomless plants, the valve referred to in step 4 must be kept open electrically, temporarily modifying its wiring. **Pay close attention to remove completely these changes at the end of the procedure!**

5.10.3. STK1R-SMA2 PROCEDURE – TEST OF THE SELF MONITORING FUNCTION OF TWO BRAKES

1. Call the car to an intermediate floor
2. Disconnect the wire under the PST terminal on the STK1R board (state sensor of the first brake)
3. Move the car by making a call. Check that the lift is put out of service and that the alarm 81 is active (see parameter 0.01)
4. Reset the alarm (by using the SW1 push-button on the STK1R board or the parameter 0.03)
5. Reconnect the wire under the PST terminal (undo step 2)
6. Disconnect the wire under the TC terminal on the STK1R board (state sensor of the second brake)
7. Move the car by making a call. Check that the lift is put out of service and that the alarm 81 is active (see parameter 0.01)
8. Reset the alarm (by using the SW1 push-button on the STK1R board or the parameter 0.03)
9. Reconnect the wire under the TC terminal (undo step 6)

5.10.4. STK1R-SMA3 PROCEDURE – TEST OF THE SELF MONITORING FUNCTION OF THE BUCHER IVALVE

1. Force to 0 the virtual input VI.13 (for example disconnecting the wire under the SMA terminal of the iValve and connecting it to 0V)
2. Move the car by making a call
3. 1.5s after the car stops at the floor of destination check the activation of alarm 81 (see parameter 0.01), and the consequent out of service state
4. Force to 1 the virtual input VI.13 (same wire of step 1 now connected to +24V)
5. Reset the alarm (by using the SW1 push-button on the STK1R board or the parameter 0.03)
6. Move the car by making a call
7. 0.2 seconds after the movement commands are given to the iValve, check the activation of the alarm 81 (see parameter 0.01) and the consequent out of service state
8. Reconnect the wire of point 1 to the SMA terminal of the iValve
9. Reset the alarm (by using the SW1 push-button on the STK1R board or the parameter 0.03)

5.10.5. STK1R-SMA4 PROCEDURE – TEST OF THE SELF MONITORING FUNCTION OF THE GMV NGV-A3 VALVE

The test of the self monitoring function of the GMV NGV-A3 valve involves simulating the malfunction of the RUN and READY signals and checking for the activation of the alarm 81. To this end, see the manufacturer's user manual of the NGV-A3 valve.

5.10.6. STK1R-SMA5 PROCEDURE – TEST OF THE UCM SELF MONITORING FUNCTION OF THE GMV 3010-2CH-A3 AND 3100-2CH-A3 VALVES

The test the UCM self-monitoring function, as part of the tests and checks to be performed before the lift is put into service (EN81-20 point 6.3.13), naturally consists of simulating the failure of the Se1 and Se2 signals and checking the onset of error 81. It is possible to proceed in this way:

1. With the car stationary, disconnect the Se1 sensor. After the time programmed by parameter 4.16 has elapsed, verify the activation of error 81 and that the lift is put out-of-service
2. Reconnect the Se1 sensor
3. Reset the error with the SW1 push-button on the STK1R board, or with the programmer (see parameter 0.03)
4. With the car stationary, disconnect the Se2 sensor. After the time programmed by parameter 4.16 has elapsed, verify the activation of error 81 and that the lift is put out-of-service
5. Reconnect the Se2 sensor
6. Reset the error with the SW1 push-button on the STK1R board, or with the programmer (see parameter 0.03)
7. Make an upward and a downward run and check that Se1 and Se2 sensors switch during the run as specified by the manufacturer (see fig. 1), checking the status of the relative LEDs on the STK1R board (in the example of fig. 2, LEDs X11 and X12).

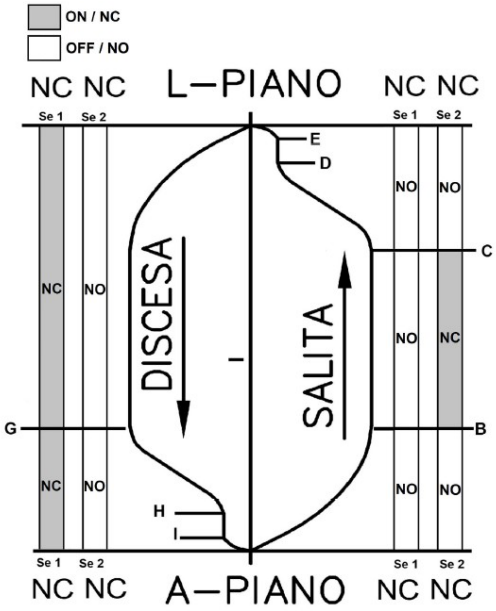


Figure 1

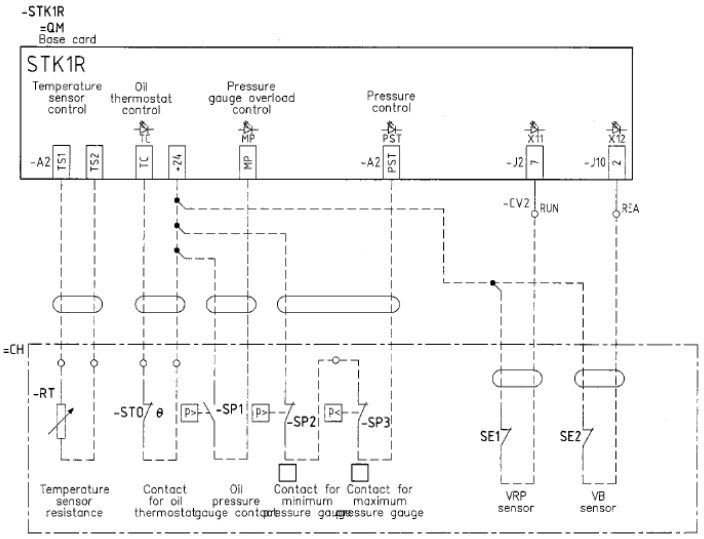


Figure 2

5.10.7. STK1R-KMI PROCEDURE - TEST OF INDIVIDUATION AND INTERRUPTION OF UNINTENDED CAR MOVEMENTS WITH DOORS NOT CLOSED AND LOCKED (ONLY FOR HYDRAULIC LIFTS EQUIPPED WITH THE MORIS KMI DEVICE)

Please follow the specific instructions provided by the manufacturer (MORIS Italia). See, for example, the "Use and maintenance manual" of the KMI device, page 13.

In case of block following a UCM event identified by the KMI device, the STK1R control board signals the alarm 94.

5.11. Test of the safety circuit CS4

The CS4 safety circuit can be used for these functions:

- levelling and re-levelling with car and landing doors not closed and locked
- detection of an UCM event (Unintended Car Movement) and activation of the UCM stopping means

The following tests must be carried out after checking the regular operation of the safety contacts of the doors.

5.11.1. NORMAL OPERATION CHECK

1. While the car is stationary at a floor, check that both the safety circuit inputs are active (i.e. the led “K1” and “K2” on CS4 are lit) and that the bypasses (terminals 13-14 and 23-14) are closed (i.e. that both the led “10” and “X8” on the STK1R board are lit). It is possible to proceed in this manner:
    a. call the car to a floor
    b. keep doors open
    c. lower the car by few centimeters using the parameter 0.09.0=4 (see instructions for use of the STK2-PM programmer)
    d. exit from the parameter 0.09.0=4 (or turn off the STK2-PM programmer)
    e. check that a re-levelling operation is performed
2. While the car is stationary out of the unlocking door zone, check that both the CS4 inputs are not active (i.e. both the leds “K1” and “K2” are off) and that the bypasses are open (both the led “10” and “X8” are off while the doors are open)

5.11.2. SIMULATION OF A FAILURE ON THE FIRST INPUT

1. Call the car to a floor and keep doors open
2. Check that the bypasses (terminals 13-14 and 23-24) are closed (leds “10” and “X8” lit)
3. Disconnect the wire under the terminal T22
4. Check that the bypasses are now open (led “10” and “X8” off) and that the “K1” led is off
5. Reconnect the wire under the terminal T22 (undo step 3). Check that the bypasses are still open and the led “K1” is off.

5.11.3. SIMULATION OF A FAILURE ON THE SECOND INPUT

1. Call the car to a floor and keep doors open
2. Check that the bypasses (terminals 13-14 and 23-24) are closed (leds “10” and “X8” lit)
3. Disconnect the wire under the terminal T12
4. Check that the bypasses are now open (led “10” and “X8” off) and that the “K2” led is off
1. Reconnect the wire under the terminal T12 (undo step 3). Check that the bypasses are still open and the led “K2” is off.

5.12. Test of the limit switches

5.12.1. LOWER LIMIT SWITCH

1. Call the car to the lowest floor
2. With doors closed check that the leds “1”, “2”, “8”,”10” on the STK1R board (led for safety chain monitoring) are all lit
3. Bring the car over the lower limit switch. If you have the STK2-PM programmer, you can proceed in this manner:
   a. set (or verify) parameter 1.08.0=3
   b. using parameter 0.09.0=3, lower the car until the lower limit switch is actuated or a mechanical stop occurs. The car moves at low speed.
4. Check that leds “2”, “8”, “10” are now off (only “8” and “10” if the limit switch is mounted on the car) and that alarm 11 is active on parameter 0.01 (alarm 12 if the limit switch is on the car)
5. Recover the car from the overrun condition using the Electrical Emergency Operation commands, if present. Otherwise raise the car using the same parameter 0.09.0=3 and bypassing temporarily only the limit switch.

5.12.2. UPPER LIMIT SWITCH

1. Call the car to the highest floor
2. With doors closed check that the leds “1”, “2”, “8”,”10” on the STK1R board (led for safety chain monitoring) are all lit
3. Bring the car over the upper limit switch. If you have the STK2-PM programmer, you can proceed in this manner:
   a. set (or verify) parameter 1.08.0=3
   b. using parameter 0.09.0=3, raise the car until the upper limit switch is actuated or a mechanical stop occurs. The car moves at low speed.
4. Check that leds “2”, “8”, “10” are now off (only “8” and “10” if the limit switch is mounted on the car) and that alarm 11 is active on parameter 0.01 (alarm 12 if the limit switch is on the car)
5. Recover the car from the overrun condition using the Electrical Emergency Operation commands, if present. Otherwise lower the car using the same parameter 0.09.0=3 and bypassing temporarily only the limit switch.

5.13. Test of the motor run time limiter

The test should be performed under the conditions stated in the EN81-20 standard, i.e:

- simulating a fault that prevents the machine from starting (for example disconnecting the motor on hydraulic lifts)
- blocking the car (while ropes are slipping, on electric lifts)

If this is not possible or desirable, you can proceed as follows.

1. Call the car to the lowest floor
2. Reduce the high speed, for example ensuring that only the low speed is always commanded to the drive
3. Set parameter 1.16.1=2 (in this way the counting of the motor run time is not restarted from zero when a car motion is detected)
4. call the car to the highest floor and verify the activation of alarm 001 within the time 4.00
5. Set parameter 1.16.1 to its original value and restore the normal speed commands
6. Measure the time needed for the longest travel and check that the timer 4.00 is within the limits stated by the standard (EN81.20 points 5.9.2.7.2 and 5.9.3.10.2)

Please note that there may be alarms that are activated before the alarm 001, and that for this reason must be temporarily disabled or modified (for example alarms 97 and 420 must be disabled setting respectively timer 4.41 to zero and 4.34 to its maximum value). This also applies to alarms from other devices (VVVF inverter, soft starter, etc.)

5.14. Test of the CAN bus

With the system powered, check with a Vdc voltmeter the following measurements on connectors S1 or S2:

- between CAN1+ and 0: 2,50V ± 0,25V
- between CAN1- and 0: 2,50V ± 0,25V

In case of multiplex lifts, check also the similar measurements on connector M1:

- between CAN2+ and 0: 2,50V ± 0,25V
- between CAN2- and 0: 2,50V ± 0,25V

Measured values beyond the indicated limits may be due to short circuits between the CANx and 0 lines (or between CANx and + 24V), to non-continuity of CANx lines, to incorrect CAN bus terminations (see next paragraph), or to the failure of one or more CAN devices.

Similar measurements should be made on any malfuctioning CAN device.

5.15. Test of the CAN bus terminations

For the proper functioning of the CAN serial communication, it is important that the transmission line formed by the two conductors CAN+ and CAN- is correctly terminated, i.e. that a resistor with a value equal to about the characteristic impedance of the line itself (typically 120 ohms) is connected at both ends of this line (and not in other positions). Such a resistor is already present on each STK1R board both for the floor / car CAN line (connectors S1 and S2) and for the multiplex CAN line (connector M1), and can be connected / disconnected by means of the dip switches located immediately below the FC3 programmer connector (those closest to the FC3 connector are for the multiplex CAN bus, while the others are for the landing / car CAN bus). Both dip switches of each group must be simultaneously closed (ON) to connect the resistor, or both open (OFF) to disconnect it. Dip switches with same function are available on every serial device that can be connected to STK1R (EC02, ER02, BOX05, CAB01, SV01, etc.). It is equally important that only the termination resistor of the devices connected to the ends of the CAN bus are inserted, and not also those of the intermediate devices. Only for particularly short transmission lines (less than 5 meters), the insertion of two termination resistors in arbitrary positions on the CAN line is allowed (or even just one).
Only for particularly short transmission lines (less than 5 meters) it is allowed to insert two terminating resistors in arbitrary positions on the CAN line (or even just one).

For a quick check of the CAN bus terminations, it is possible to proceed as follows:

- remove any power supply voltage (including any battery connected on J16 of the STK1R board)
- with an ohmmeter, measure the resistance between the CAN1+ and CAN1- lines (and also between CAN2+ and CAN2- on multiplex systems): it must be 68 ohm ± 7 ohm. Larger values indicate that at least one termination is missing, smaller values that more than two terminations have been inserted.

The correct position of the terminations can only be checked visually.

6. PROGRAMMING

This chapter describes the main configuration parameters of the STK1R board and their visualization / programming using the STK2-PM programmer.

Any STK1R parameter is identified by three numbers separated by dots (for example 1.08.1), called respectively the “group”, the “subgroup”, and the “index” of the parameter. This identifier is used in this document as a quick reference to the parameters and, in future programmers, will be directly used to identify a parameter.

However the STK2-PM shows only the group (on DG0) and the subgroup (on DG1, DG2), while DG3, DG4, DG5 and DG6 are reserved for the value. The index of the parameter is generally linked to the cursor position (i.e. the flashing digits), but not in a fixed way.

As an example, if you find somewhere “… parameter 1.08.1 …”, and you want to know what that parameter does and how to view or change it with STK2-PM, you have to:

- find the paragraph heading in this chapter starting with “1.08” (and for sure you already know that you have to put DG0=1, DG1=0, DG2=8 on STK2-PM)
- find in that paragraph the full identifier 1.08.1, written in square brackets just before the brief description of the parameter itself
- note what digits are reserved for the value of this parameter, and, if marked, the cursor position (i.e. the flashing digits) you have to set to view/edit the parameter. In the following, the cursor position, is marked by the “_” character in the drawing of the 7 digits of STK2-PM. Please note that when the cursor position is not marked, this means that the digits reserved for the value are the same you have to make flashing (i.e. to set the cursor on) to edit them.

You can change the cursor position pressing the >> push-button, while with the ^ and v push-buttons you can change the value or activate / deactivate a function. Please note that any change to a parameter in not applied until the cursor position rolls back from DG6 to DG0. Please note also that many parameters are editable only when the automatic switch FA is OFF (i.e. only in absence of voltage on the safety chain, so that the lift can not move).

LOSS OF PARAMETER CHANGES

Unless otherwise indicated, any modification of a parameter is never permanent in itself, i.e. when the STK1R board is turned off and on again (or after a reset) the previous value will be reapplied. To make the changes permanent, it is necessary to save them using 0.12 or 0.17.

Legend

VI.xx : virtual input (i.e. input function) xx, assignable to a programmable physical input. See paragraph “5.xx Inputs”.

VO.xx : virtual output (i.e. output function) xx, assignable to a programmable physical output. See paragraph “6.xx Outputs”.

EEO : Electrically Emergency Operation

UCM : Unintended Car Movement, according to EN81-20 standard

SAPB : single automatic push-button operation

0.00 Lift state

This parameter shows the current state of the lift.

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	0	0				

DG3	[0.00.0] OPERATING STATE
0	Normal operation
1	EN81-73 operation, with car recalled to the first designated floor (see VI.08 and parameter 1.03.0) / Phase 1 of the firefighting operation according to EN81-72
2	EN81-73 operation, with car recalled to the second designated floor (see VI.09 and parameter 1.03.1) / Phase 2 of the firefighting operation according to EN81-72
3	Preferential operation is active (a call of type 3.xx.2=3 or 4 was made) / “Water in the pit” operation (see VI.95)
4	Reserved operation is active (see VI.21)
5	Safety photocell action
6	Reserved firefighter operation is active (see VI.79)
7	Out of service for errors with automatic reset (see parameter 0.01)
8	Out of service for errors with manual reset (see parameter 0.01)
9	Out of service for maintenance operation from car roof or for EEO
A	Installation operation (see parameter 1.08.0)
B	Shabbat operation (see VI.44)
C	Maintenance from the pit
D	Entrance / exit phase from pit for maintenance (a reset is required with VI.50 or STK2-PM)
E	Normal service fade-out (virtual input VI.92 is active)
F	“Out of service for maintenance” entered from programmer STK2-PM (*1)

DG4	[0.00.1] DOOR AND CAR STATE
0	Stationary at floor
1	Doors closing
2	High speed motion
3	Low speed motion
4	Doors opening
5	Stationary out of floor

DG56	[0.00.2] CURRENT CAR POSITION
00	Not known
01÷24	Current car position (01 for the lowest floor)

(*1) To enter “out of service for maintenance” with the STK2-PM programmer, select DG3 and press the ^ push-button. DG3 will show “F”. This state produces the following effects:

- alarm 050 is activated, which puts the system out of service.
- all the parameters that normally can only be modified in absence of the safety chain voltage (i.e. with the automatic switch FA open) may now be modified even in presence of that voltage (i.e. with the automatic switch FA closed)

To exit ‘out of service for maintenance”, you can select DG3 and press ∨, turn off the programmer, or simply disconnect it.

0.01 Active alarms causing out of service

This parameter shows the active alarms that are causing the current out of service state.

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	0	1	0			

DG456 = [0.01.0] Alarm code (see alarm codes table)

To scroll through the list (consisting of a maximum of 16 alarms) set the cursor on DG3456 and press the ∧ or ∨ push-buttons.

0.02 Alarms log

Parameter 0.02 shows the last 32 alarms registered. To scroll through the list (consisting of a maximum of 32 alarms) set the cursor on DG3456 and press the ∧ or ∨ push-buttons.

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	0	2	_			

DG3 = [0.02.1] Number of times of consecutive triggering of the alarm shown by DG456
DG456 = [0.02.0] alarm code (see alarm codes table)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	0	2	0	0		

DG56 = [0.02.2] Car position (floor number) when the alarm was activated. 00 means “position not known”, while 01 is the lowest floor

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	0	2			_	

DG3456 = [0.02.3] Time elapsed from when the alarm was activated, first part: days (0000÷9999)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	0	2	0	0		_

DG56 = [0.02.3] Time elapsed from when the alarm was activated, second part: hours (00÷23)

0.03 Alarm reset / alarm log erasing

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	0	3	0	0	0	

[0.03.0] Set the cursor on DG3456 (DG3-DG6 flash), then press ^ for 1 seconds to reset the alarms that requires manual reset and which are currently causing out of service (see parameter 0.01.0), or press ^ for about 5 seconds to erase also the alarm log (see parameters 0.02.0).

The following result will be displayed:

DG6	RESULT
0	Alarms have not been reset
1	Alarms have been reset
2	The alarms log have been erased

ALARM RESET BY SW1 PUSH-BUTTON

Manual reset alarms can also be reset by pressing the SW1 button on the STK1R card for about 2 seconds, provided that this SW1 function is enabled (see parameter 0.35.0).

NOTES

- It is never necessary to delete any automatic reset alarm: just eliminate its causes.
- It is never necessary, **rather it is strongly advised not to erase** the alarms log, especially when there are anomalies and the customer wishes to contact SEA SYSTEMS for any clarification about them. By erasing the errors log, important informations are deleted that could be very useful to understand the causes of such anomalies. When the error log is full (32 alarms), automatically any new error is registered deleting the oldest one.

0.04 Total runs count

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	0	4	_			

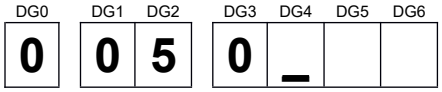
DG3456 = **[0.04.0]** total number of runs, first part: thousands (0000÷9999)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	0	4	0	_		

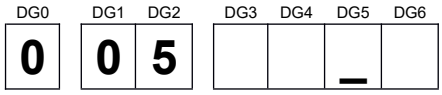
DG456 = **[0.04.0]** total number of runs, second part: units (000÷999)

0.05 Upward and downward run counts

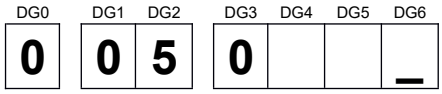
DG3456 = [0.05.0] upward runs count, firs part: thousands (0000÷9999)



DG456 = [0.05.0] upwards runs count, second part: units (000÷999)



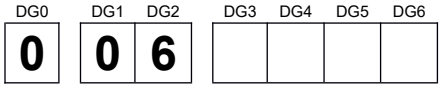
DG3456 = [0.05.1] downward runs count, first part: thousands (0000÷9999)



DG456 = [0.05.1] downward runs count, second part (000÷999)

To reset the upward and downward runs counters, set the cursor on DG3456 and press v

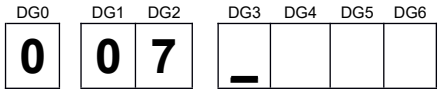
0.06 Emergency runs count



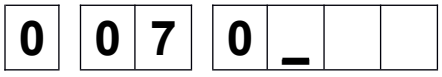
DG3456 = [0.06.0] emergency runs count (0000÷9999)

To reset this counter, set the cursor on DG3456 and press v

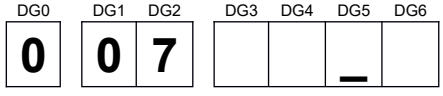
0.07 Re-levelling counts



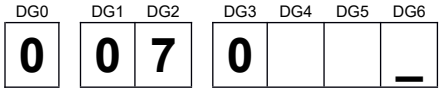
DG3456 = [0.07.0] upward re-levelling count, first part: thousands (0000÷9999)



DG456 = [0.07.0] upward re-levelling count, second part: units (000÷999)



DG3456 = [0.07.1] downward re-levelling count, first part: thousands (0000÷9999)



DG456 = [0.07.1] downward re-levelling count, second part: units (000÷999)

To reset all the re-levelling counters, set the cursor on DG3456 and press v

0.08 Door state and commands

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	0	8				

DG3	[0.08.0] DOOR 1 STATE / [0.08.3] DOOR 1 COMMANDS
A	Door open
B	Door opening
C	Door closed
D	Door closing
0	STOP

DG4	[0.08.1] DOOR 2 STATE / [0.08.4] DOOR 2 COMMANDS
A	Door open
B	Door opening
C	Door closed
D	Door closing
0	STOP

DG5	[0.08.2] DOOR 3 STATE / [0.08.5] DOOR 3 COMMANDS
A	Door open
B	Door opening
C	Door closed
D	Door closing
0	STOP

DG6	[0.08.6] DOORS DISABLING
0	Doors enabled
1	Doors disabled (always closed)

Door commands:

- for door 1, set the cursor on DG3 and press ∧ to close or ∨ to open
- for door 2, set the cursor on DG4 and press ∧ to close or ∨ to open
- for door 3, set the cursor on DG5 and press ∧ to close or ∨ to open

Doors command are effective only when the lift is in the door unlocking zone and the car position is known.

Doors disabling: set the cursor on DG6 and press ∧ to disable the doors, ∨ to enable them. Door disabling is not permanent and the doors are in any case re-enabled when the STK2-PM is disconnected or switched off.

Notes

1. "STOP" state means the absence of both opening or closing commands, and may be caused by:
   - VI.80=0 (absence of safety chain voltage)
   - VI.88=0 (absence of voltage on the point of the safety chain just before the door contacts, see also parameter 1.19.2)
   - VI.86=1 (maintenance operation), in absence of maintenance up / down commands (VI.58=0 and VI.59=0)
   - VI.12=1 and/or VI.22=1 (stop command for door 1 and 2, respectively)
   - VI.49=0 with parameter 1.23.0=1 (bypass of door safety contacts is active)

0.09 Car movement commands

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	0	9				

DG3	[0.09.0] [0.09.1] CAR MOVEMENT COMMANDS
0	No command. The lift works normally
1	Random calls at all floors, with door opening and closing: - set the cursor on DG4 to start the command - set the cursor on DG3 and select 0 to stop the command To set the time between one call and the next, use timer 4.65 The command is effective only with STK2-PM programmer connected and switched on
2	Random calls at all floors except for the lowest floor, with door opening and closing: - set the cursor on DG4 to start the command - set the cursor on DG3 and select 0 to stop the command To set the time between one call and the next, use timer 4.65 The command is effective only with STK2-PM programmer connected and switched on
3	“Hold to run” upward / downward movement command at low speed. - Set the cursor on DG4 - Press and hold down the ∨ push-button to go down, ∧ to go up
4	“Hold to run” upward / downward movement command at low speed for UCM test (the safety circuit CS4 is not turned off) - Set the cursor on DG4 - Press and hold down the ∨ push-button to go down, ∧ to go up. (see STK1R-A3-P instructions for UCM test)
5	Call to the lowest or the highest floor. - set the cursor on DG4 - Press ∨ for the lowest floor, ∧ for the highest one.
6	Call to the next floor above or below the current car position - Set the cursor on DG4 - Press ∨ for the next floor below the car, ∧ for the next floor above.

DG4	[0.00.1] CAR MOVEMENT STATE
0	Car is motionless (at landings or not)
1	Car is moving upward
2	Car is moving downward

DG5	[0.09.2] CALLS DISABLING
0	No new call is disabled (lift work normally)
1	New external (floor) calls are disabled
2	New internal (car) calls are disabled
3	New external and internal calls are disabled

0.10 | 0.11 Setting the maintainer password

To prevent modification of the parameters by unauthorized persons, the maintainer can set a protection password.

Set the password (four hexadecimal digits, 0 … 9, A … F) in 0.10.0 and confirm it in 0.11.0, then save it with 0.12. Set “0000” or “FFFF” if you want to remove the protection (no password will be asked).

[0.10.0] First password entry

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	1	0				

[0.11.0] Second password entry

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	1	1				

0.12 Storing the parameters

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	1	2	0	0	0	

[0.12.0] To store permanently the parameter, set the cursor on DG3456 and press the ^ push-button. One of the following results will be shown:

DG6	RESULT
2	The parameters have been stored correctly
3	The parameters have not been stored. Try to repeat the procedure

LOSS OF PARAMETER SETTINGS

This parameter makes the modified parameters permanent. If this operation is not performed, the parameter settings will be lost if the power to the STK1R board is cut off.

0.13 Operating time of STK1R board

This parameter shows the total operating time the STK1R board.

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
0	1	3	_				**DG3456** = [0.13.0] Total operating time of STK1R board, first part: days (0000÷2730)

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
0	1	3	0	0			**DG56** = [0.13.0] Total operating time of STK1R board, second part: hours (00÷23)

0.14 | 0.15 Software release

[0.14.0] This parameter shows which software release is currently running on the STK1R board.

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
0	1	4					**DG34** = SERIES **DG56** = VERSION

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
0	1	5					**DG34** = REVISION **DG56** = CUSTOM VERSION

Any written reference to a software release must consist of these 4 numbers separated by dots: SERIES.VERSION.REVISION.CUSTOM_VERSION (1.46.0.0, for example).

0.16 Loading a parameter set

The STK1R board has the ability to store 3 complete sets of user-defined parameters, plus a fourth set of factory defaults (not user-modifiable). To load a set of parameters that has been stored, select the desired set of parameters on DG6 and press >>.

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	1	6	0	0	0	

DG6	[0.16.0] PARAMETER SET
0	Loads factory defaults (parameter set #0)
1	Loads user-defined parameter set #1
2	Loads user-defined parameter set #2
3	Loads user-defined parameter set #3

Loading a parameter set throws away all the current parameters (i.e. the parameters currently in use). If you have changed a current parameter without saving it with 0.12 or 0.17, you will lost those changes.

0.17 Store a parameter set / transfer parameter sets from and to an USB pen drive

The STK1R board has the ability to store 3 complete sets of user-defined parameters, plus a fourth set of factory defaults (not user-modifiable). To save the current parameters as a set of parameters or to transfer all the parameter sets to or from an USB pen drive, select the desired function on DG6 and press >>.

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	1	7	0	0	0	

DG6 = shows the current parameter set (0 ... 3)

DG6	OPERATION
1	[0.17.0] Saves the current parameters as set #1
2	[0.17.0] Saves the current parameters as set #2
3	[0.17.0] Saves the current parameters as set #3
A	[0.17.1] Transfer all sets of parameters from the STK1R board to the USB pen drive, on a file named 'STK1R_PR.BIN'
b	[0.17.1] Transfer all sets of parameters from the STK1R board to the USB pen drive, on a file named 'HHHHHHHH.BIN' (HHHHHHHH indicates the board serial number, as shown by the parameter 0.20.0)
d	[0.17.1] Transfers only the 3 sets of user-defined parameters from the USB pen drive to the STK1R board. The file on the pen drive must be the one saved from another STK1R board by using the function A (i.e. with name 'STK1R_PR.BIN'), or by using function b, but in this case you have to rename it. If the operation is successfully, the programmer turns off and on again, displaying 0.00.xxxx.

After the command has been executed DG3456 will indicate:
AAAA: Operation underway
BBBB: Operation completed with success
EEEE: Operation completed with errors

0.18 STK1R board temperature

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	1	8	0			

DG456 = [0.18.0] STK1R board temperature in tenths of °C. For temperature below a 0 °C, DG3 is set to 9.

For example:

- 0.18.0253 means that the board temperature is 25.3 °C
- 0.18.9017 means that the board temperature is -1.7 °C

0.19 Battery voltage

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	1	9	0			

DG456 = [0.19.0] Battery voltage (on connector J16) in tenths of Volt (0.1V)

0.20 STK1R board serial number

[0.20.0] Unique serial number of the STK1R board

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	2	0	_			

DG34 = year of production (00÷FFh)
DG56 = month of production (00÷FFh)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	2	0		_		

DG3456 = sequential number (0000÷FFFFh)

0.21 Reserved parameter

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	2	1				

0.22 | 0.23 | 0.24 Updating STK1R board software

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
0	2	2					**DG3456** = [0.22.0] activation code, first part
0	2	3					**DG3456** = [0.23.0] activation code, second part
0	2	4					**DG3456** = [0.24.0] activation code, third part

The STK1R board software can be upgraded using an USB pen drive, strictly adhering to the following instructions.

Before updating the STK1R software make sure that:

- you have an efficient STK2-PM
- you have the activation codes for software unlocking of the STK1R board you want to upgrade (you must contact SEA SYSTEMS to get them!). Remember that these activation codes are uniquely linked to the serial number of the board (see parameter 0.20.0).

If anyway you update the software, even if one of these points is not satisfied, you will get a locked STK1R board (by error 261), and the elevator will be out of service, with the consequent disruptions for the users!

To upgrade the software, follows these steps:

1. Connect and turn on the STK2-PM programmer.
2. Make sure that you have on the USB stick the STK1R software renamed as "STK1R_FW.hxx". The USB stick must be FAT16 or FAT32 formatted (no NTFS).
3. Make sure that the HD4 LED on the STK1R board is off.
4. Turn off the safety chain voltage (turn off the automatic switch FA).
5. Place the USB stick on the X2 connector of the STK1R board.
6. Hold down the SW1 button on the STK1R board. These things should happens:

   6.1. after about 5 seconds HD4 LED lights up

   6.2. after another 2 seconds the HD1, HD2 and HD3 LEDs start flashing all together (this means that the bootloader is searching for the file "STK1R_FW.hxx" on the USB pen drive)
7. Release the SW1 button. In few seconds the bootloader find the software and starts to load it. This phase is signalled by LED HD1 flashing in opposition to HD2 and HD3.
8. If the loading ends successfully, led HD4 goes off, and the STK1R boards is restarted with the new software. If LED HD4 does not go off, some errors occurred. You can try again repeating the procedure from point 6, skipping point 6.1, because led HD4 is already lighted.
9. Remove the USB pen drive.
10. Enter the activation codes communicated by SEA SYSTEMS in parameters 0.22 and 0.23.
11. Enter 0001 at parameter 0.24 and check the result of the unlocking operation on DG3456, as shown in the following table:

DG3456	Software unlocking result
BBBB	Unlock successful
EEEE	Invalid activation codes
CCCC	Operation impossible due to error 260. Call SEA SYSTEMS technical support.

0.25 | 0.26 | 0.27 | 0.28 | 0.29 | 0.30 Reserved parameters

0.31 CAB01 board settings

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	3	1				0

This function allows you to write only (not to read) some configuration parameters of the CAB01 expansion board, which are stored permanently on the board itself. Set values are sent and stored on the CAB01 board as soon as they are confirmed (i.e. when the cursor returns to DG0, in absence of safety chain voltage). A copy of them is also stored on the STK1R board, if you save them by using 0.12 or 0.17.

In case of replacement of the CAB01 board you must re-run this function with the desired values. Please note that the values that are shown when you select 0.31 parameter are those stored on STK1R board, which do not necessarily coincide with the current ones on the CAB01 board.

DG3	[0.31.0] VOLUME OF THE ACOUSTIC SIGNALS GENERATED BY THE CAB01 BUZZER
0 … 5	0 = mute, 4 = default value, 5 = max volume

DG4	[0.31.1] FREQUENCY OF THE ACOUSTIC SIGNALS GENERATED BY THE CAB01 BUZZER
0 … F	0 = 1318Hz, A = 2350Hz (default value), F = 3136Hz

DG5	[0.31.2] CHOOSING THE SET OF OUTPUTS O1 ... O12
0	• O1 … O6 : car position in binary (CAB01.DP2.4=OFF) or gray (DP2.4=ON) format (O1 = less significant bit) • O7 : up arrow (repetition of the physical STK1R output FS) • O8 : down arrow (repetition of the physical STK1R output FD) • O9 : out of service (repetition of the physical STK1R output FFS) • O10 : overload (repetition of the physical STK1R output SCE) • O11 : gong (repetition of the STK1R virtual output 36) • O12 : no function
1	• O1 … O4 : car position in binary (CAB01.DP2.4=OFF) or gray (DP2.4=ON) format (O1 = less significant bit) • O5 : up command (repetition of the state of the STK1R relay AS) • O6 : down command (repetition of the state of the STK1R relay AD) • O7 … O12 : same as with 0.31.2=0
2	• O1 … O6 : car position in 1 wire/floor format (O1 for the lowest floor) • O7 … O12 : same as with 0.31.2=0

DG6	[0.31.3] CAB01 BUZZER OPERATING MODE
0	The buzzer sounds only when a car call push-button is pressed (EN81-70)
1	The buzzer sounds only in case of car overload
2	The buzzer sounds when a car call push-button is pressed (EN81-70) and in case of car overload. Overload takes precedence.

During out of service, all acoustic signals generated by the CAB01 buzzer are suppressed.

0.32 Reserved parameter

0.33 SMS sending

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	3	3		0	0	0

DG3	[0.33.0] SMS SENDING
0	No SMS is sent
1	SMS sent on the activation of the first alarm which causes out of service
2	SMS sent on the activation of the first alarm which causes out of service and at return to service

For SMS sending, it is necessary to connect the GSM500.net/can device (made by ESSE-TI Srl), suitably programmed, to the STK1R CAN serial bus (connector S1 or S2). Independently from the setting of parameter 0.33, no SMS will be sent if:

- a programmer (STK2-PM or STK1R-PM) is connected to the STK1R board
- a data connection (for example for remote control) is in progress
- a voice call is in progress

The phone number to which messages are sent, and the identifier of the plant, can only be programmed via STK1R-PM, or by accessing the STK1R board with the remote control system (http://stk1r-tc.seasystems.it).

0.34 State of some virtual inputs dealing with the safety chain

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	3	4				

DG3 … DG6 show the state of virtual inputs used to monitor the safeties chain, in the following way.

DG3 flashing:
- DG3 : state of virtual input 80 (safety chain monitoring, starting point of the chain, point 1)
- DG4 : state of virtual input 81 (safety chain monitoring, after the limit switches, point 2)
- DG5 : state of virtual input 89 (safety chain monitoring, after swing landing doors safety contacts, point 8)
- DG6 : state of virtual input 91 (safety chain monitoring, after landing door locks, point 10)

DG4 flashing:
- DG3 : state of virtual input 86 (safety chain monitoring, state of the inspection switch on the car roof, point 5)
- DG4 : state of virtual input 88 (safety chain monitoring, after the emergency stop on the car roof)
- DG5 : state of virtual input 90 (safety chain monitoring, after car doors safety contacts or safety photocell, point 9)

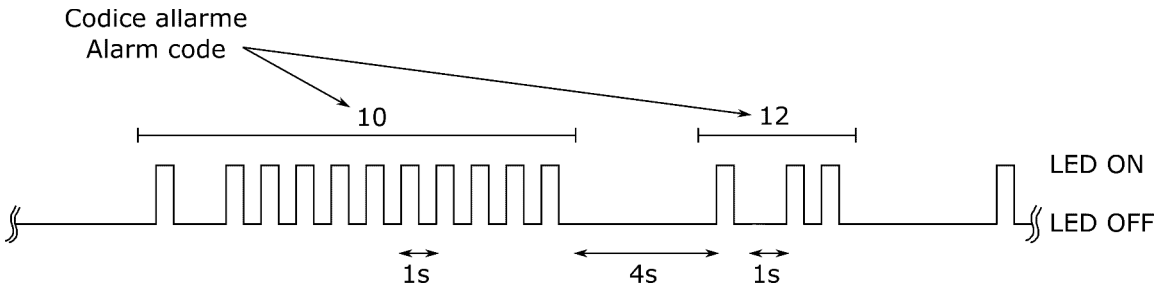
DG3 … DG6 may be 0 or 1, with the meaning shown in the following table.

DG3 … DG6	Input setting (polarity)	Voltage on input V : voltage on input VTH : threshold voltage	Contact toward +24V	Contact toward 0V
0	5.xx.00.yy	V < VTH	open	closed
1	5.xx.00.yy	V > VTH	closed	open
0	5.xx.01.yy	V > VTH	closed	open
1	5.xx.01.yy	V < VTH	open	closed

0.35 SW1 push-button functions – ALL led signalling mode

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	3	5			0	0

DG3	[0.35.0] SW1 PUSH-BUTTON FUNCTION
0	With SW1 is possible to reset alarms that require manual reset
1	With SW1 is **not** possible to reset alarms that require manual reset

DG4	[0.35.1] ALL LED SIGNALLING MODE
0	The ALL led indicates that at least one alarm has been added to the error log
1	The ALL led indicates the alarm code of any alarm that is causing out of service. For any digit of the alarm code, a corresponding number of flashes are emitted (ten flashes are emitted for “0”) 

0.36 Shaft sensors state

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	3	6				

DG3 : state of virtual input VI.66 (SR sensor)
DG4 : state of virtual input VI.67 (DR sensor)
DG5 : state of virtual input VI.64 (IS sensor)
DG6 : state of virtual input VI.65 (ID sensor)

DG3 … DG6 may be 0 or 1, with the same meaning already seen for the parameter 0.34.

Setting the cursor on DG3 … DG6, a note will be output from the buzzer on the STK1R board with a frequency which depends on the state of the IS and ID sensors, as shown in the following table.

IS	ID	Note
0	0	-
0	1	DO_7
1	1	MI_7
1	0	SOL_7

0.37 State of some virtual inputs dealing with the doors

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	3	7				

DG3 … DG6 show the state of the main virtual inputs used to manage the doors, in the following way.

DG3 flashing:
- DG3 : state of virtual input VI.06 (opening limit switch of door A / “door A is moving” signal)
- DG4 : state of virtual input VI.30 (closing limit switch of door A)
- DG5 : state of virtual input VI.46 (obstruction while closing door A)
- DG6 : state of virtual input VI.23 (door A photocell)

DG4 flashing:
- DG3 : state of virtual input VI.07 (opening limit switch of door B / “door B is moving” signal)
- DG4 : state of virtual input VI.31 (closing limit switch of door B)
- DG5 : state of virtual input VI.47 (obstruction while closing door B)
- DG6 : state of virtual input VI.24 (door B photocell)

DG5 flashing:
- DG3 : state of virtual input VI.54 (opening limit switch of door C/ “door C is moving” signal)
- DG4 : state of virtual input VI.78 (closing limit switch of door C)
- DG5 : state of virtual input VI.48 (obstruction while closing door C)
- DG6 : state of virtual input VI.51 (door C photocell)

DG6 flashing:
- DG3 : state of virtual input VI.43 (door A opening push-button)
- DG4 : state of virtual input VI.29 (door B opening push-button)
- DG5 : state of virtual input VI.45 (door C opening push-button)
- DG6 : state of virtual input VI.42 (door opening unique push-button)

In all cases DG3 … DG6 may be 0 or 1, with the same meaning already seen for the parameter 0.34.

0.38 | 0.39 | 0.40 Reserved parameters

0.41 Counted random automatic calls

DG0	DG1	DG2	DG3	DG4	DG5	DG6
0	4	1				

DG3456: number of automatic random calls to be performed, min value 0, max value 9999.

This functions allows you to perform a general check of the lift making a given number of automatic random calls. When the cursor is positioned on DG0, DG1 or DG2, the value shown by DG3456 is continuously updated to the current number of automatic calls still to be executed. At any time the test can be stopped by entering the value 0. The test is also stopped by:

- the activation of any alarm that puts the lift out of service
- turning off and on again the STK1R controller board
- resetting the STK1R controller board

Instead, the test is **not** stopped by turning off or disconnecting the STK2-PM programmer.

Random calls are entered only when the lift is not busy, and do not prevent the normal use of the lift. First, an external call (a landing call) is entered, followed immediately by an internal call (from the car). Then a pause equal to the value of timer 4.65 is applied before entering a new pair of calls. This cycle is repeated up to the desired number of calls.

1.00 Programming the driver, operation, shaft sensors

In order to modify parameter values you must disengage the automatic switch FA. To simply view the parameters this is not necessary.

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	0	0				

DG3	[1.00.0] DRIVER
0	reserved
1	Electric 2 speed
2	reserved
3	Electric with VVVF drive (main contactors and brake handled by STK1R board – no more used)
4	reserved
5	Hydraulic The type of hydraulic valve unit can be selected by assigning one of the following virtual outputs to a physical output: • VO.23: GMV NGV-A3 valve unit • VO.73: HEVOS HE100 valve unit • VO.32: MORIS valve unit with HSV valve (as UCM stop valve not participating to the normal stop) and similar • VO.25: GMV 3010 / 2CH / S valve unit and similar • none of the previous virtual outputs assigned: GMV 3010 valve unit and similar
6	Electric with FUJI VVVF drive (main contactors and brake handled by VVVF)
7	Electric with ZIEHL-ABEGG ZAdyn4CS VVVF drive

DG4	[1.00.1] OPERATION
0	SAPB (single automatic push-button operation)
1	Hold-to-run in the car and at landings
2	Hold-to-run in the car, SAPB at landings
3	Selective collective down or full collective (up/down)
4	Pick up

DG5	[1.00.2] SHAFT SENSORS
0, 1	Magnetic reed switches IS, ID, DS (retrofit)
2	Magnetic reed switches SIS and SID (for lifts)
3	Synchronous encoder (encoder on the car roof, driven by a toothed belt)
4	Magnetic reed switches SIS and SID (for elevating platforms)
5	Asynchronous encoder (encoder on the motor shaft)
6	Reserved

DG6	[1.00.3] LOADING / UNLOADING TIME SHORTENING
0	The loading/unloading times set with timers 4.02 and 4.03 are reset by the door close button or by a call in the car
1	The loading/unloading times set with timers timer 4.02 and 4.03 are reset only by the door close button

1.01 Programming the number of stops

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	0	1			0	0

DG34	[1.01.0] NUMBER OF STOPS
02÷24	From 2 to 24 stops

1.02 Programming the main floor and the parking floor

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	0	2				

DG34	[1.02.0] MAIN FLOOR
01÷24	Floor number, 01 is the lowest floor

DG56	[1.02.1] PARKING FLOOR OR PREFERENTIAL OPERATION FLOOR
01÷24	Floor number, 01 is the lowest floor

For enabling the automatic recall to the parking floor, see timer 4.08

1.03 Designated floor in case of fire / firefighter access floor

With these parameters you can program the designated floors required by the EN81-73 standard, or the firefighter access floor required by EN81-72. First and second designated floor are the floors to which the lift is recalled after an activation of VI.08 or VI.09, respectively.

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	0	3				

DG34	[1.03.0] 1ST DESIGNATED FLOOR IN CASE OF FIRE (EN81-73) / FIREFIGHTER ACCESS FLOOR (EN81-72)
01÷24	Floor number, 01 is the lowest floor

DG56	[1.03.1] 2ND DESIGNATED FLOOR IN CASE OF FIRE (EN81-73)
01÷24	Floor number, 01 is the lowest floor

1.04 Other settings for EN81-72 / EN81-73 operation

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	0	4				

DG3	[1.04.0] DOOR STATE AT THE FIRST DESIGNATED FLOOR (EN81-73)	
	OPEN	CLOSED
0	A, B, C	none
1	B, C	A
2	A, C	B
3	C	A, B
4	A, B	C
5	B	A, C
6	A	B, C
7	none	A, B, C

DG4	[1.04.1] DOOR STATE AT THE SECOND DESIGNATED FLOOR (EN81-73)	
	OPEN	CLOSED
0	A, B, C	none
1	B, C	A
2	A, C	B
3	C	A, B
4	A, B	C
5	B	A, C
6	A	B, C
7	none	A, B, C

DG5	[1.04.2] FIREMAN SWITCH IN THE CAR FOR THE FIREFIGHTER OPERATION (EN81-72)
0	Firefighting operation without fireman switch in the car
1	Firefighting operation with fireman switch in the car

DG6	[1.04.3] EN81-73 / EN81-72 SELECTION
0	Behaviour in the event of fire according to EN81-73:2005
1	Firefighting operation according to EN81-72:2003
2	Firefighting operation according to EN81-72:2015
3	Behaviour in the event of fire according to EN81-73:2016

Parameters 1.04.0 / 1.04.1 set the state of the doors after the car is recalled to the designated floor programmed with parameters 1.03.0 / 1.03.1.

When the car lands at the designated floor, all doors enabled to open at that floor are opened, unless one or more of these are excluded from opening by parameters 1.24.0 and 1.24.1.

1.05 | 1.06 Car door type

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	0	5				

DG34 = [1.05.0] Side 1 car door type
DG56 = [1.05.1] Side 2 car door type

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	0	6			0	0

DG34 = [1.06.0] Side 3 car door type

A value of 0 indicates the absence of the car door on the respective side.

Door type table (for manual car doors, or without car doors)

Door type (DG34 e DG56)	Landing doors	Car doors
1	Manual	Manual
2	Manual	Safety photochell / light curtain

Door type table (for automatic car doors)

Door type (DG34 e DG56)		Description
With manual landing doors	With automatic landing doors	
3	10	Door motor directly driven by contactors, with open/close limit switches
4	11	Door motor directly driven by contactors, with open/close limit switches and forced closing while car is running
5	12	Electronically controlled door motor, no limit switches monitoring, permanent O/C commands
6	13	Electronically controlled door motor, no limit switches monitoring, removed O/C commands, with forced closing command while car is running
7	14	Electronically controlled door motor, permanent O/C commands, with single limit switches monitoring input
8	15	Electronically controlled door motor, removed O/C commands, with single limit switches monitoring input
9	16	Electronically controlled door motor / directly driven by contactors, removed O/C commands, with two independent limit switches monitoring inputs
20	17	Electronically controlled door motor, permanent O/C commands, with two independent limit switches monitoring inputs
21	18	Electronically controlled door motor, permanent opening command, forced closing command while car is running, with two independent limit switches monitoring inputs
22	19	Electronically controlled door motor / directly driven by contactors, removed O/C commands, forced closing command while car is running, with two independent limit switches monitoring inputs
23	30	Electronically controlled door motor / directly driven by contactors, removed O/C commands, forced closing command while car is running, with only the opening limit switch
24	31	Serial controlled car door operator Fermator VF7-CAN “SEA“ (see note 5), permanent O/C commands
25	32	Serial controlled car door operator Fermator VF7-CAN “SEA” (see note 5), removed O/C commands, with forced closing command while car is running
26 … 29	33 … 39	Reserved

Notes

1. “Permanent O/C commands” means that the opening / closing commands are not removed (turned off) when the car door is fully open / closed.
2. “Removed O/C commands” means that the opening / closing commands are removed (turned off) when the car door is fully open / closed.
3. “with single limit switches monitoring input” means that there is only one door state monitoring signal that change state when the door is fully open or fully closed
4. “with two independent limit switches monitoring inputs” means that there are two door state monitoring signals, one that change state only when the door is fully open, and the other only when it is fully closed.

5. Door operator Fermator VF7-CAN “SEA” is special version of the VF7-CAN operator customized with the following CAN identifiers:

Messages (see Fermator instructions DOC-FE.IE.IN.017002.EN)	CAN identifiers			
	Door 1	Door 2	Door 3	Door 4
“6.1 Frame RX (call back)” “6.3 Frame RX”	0x300	0x301	0x302	0x303
“6.2 Frame TX”	0x304	0x305	0x306	0x307
“6.4 Heartbeat”	0x308	0x309	0x30A	0x30B

Furthermore, at least the following parameters must be set on the VF7-CAN:

CAN CONFIGURATION → BAUDRATE = 50 Kbit/s; Heartbeat = OFF
PROGRAM MENU → PROGRAM OPTIONS → Inputs = 2; Control = Slave

Summary of timers related to the doors

Timer	Function	Door
4.04	• For door type 5, 6, 12, 13 : O/C commands duration	1
4.05	• For door type 23, 30 : C command duration (equal to half the timer value) / max O command duration	2
4.18	• For any other door type : max O/C commands duration (beyond which alarms 76, 77, 78, 79, 85, 86 are activated)	3
4.25	Maximum delay between O/C commands and the door movement beginning (for all door types excluded 5, 6, 12, 13). If exceeded, alarms 70, 72, 71, 73, 82, 83 are activated	1
4.26		2
4.27		3
4.28	Pause (non-overlap time) between O/C commands	1
4.29		2
4.30		3
4.68	Extension time for the STOP command (see VI.12, VI.22)	1
4.69		2
Not implemented		3

Summary of alarms related to the doors

Alarm description	Alarm code (shown on 0.02)		
	Door A	Door B	Door C
Door type 3, 4, 10, 11 : closing failure of the door opening contactor Door type 7, 8, 9, 14, 15, 16, 17, 18, 19, 20, 21, 22 : no switching of the door closing limit switch within the time 4.25 … 4.27 from the beginning of the opening command.	70	71	82
Door type 3, 4, 10, 11 : closing failure of the door closing contactor Door type 7, 8, 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 : no switching of the door opening limit switch within the time 4.25 … 4.27 from the beginning of the closing command	72	73	83
Door type 3, 4, 10, 11 : opening failure of the door opening / closing contactors	74	75	84
Excessive opening time (greater than time 4.04 / 4.05 / 4.18)	76	78	85
Excessive closing time (greater than time 4.04 / 4.05 / 4.18)	77	79	86

Summary of inputs (5.xx) and outputs (6.xx) related to the doors

Type	Description		Door		
			1	2	3
Inputs	User push-buttons for commands	Door opening push-button	VI.43	VI.29	VI.45
		Unique door opening push-button	VI.42		
		Door closing push-button	VI.41		
	Safeties	Sensitive edge (see note 8)	VI.46	VI.47	VI.48
		Photocell / light curtain (see note 8)	VI.23	VI.24	VI.51
	Limit switches	Opening limit switch / Signal “door is moving”	VI.6	VI.7	VI.54
		Closing limit switch	VI.30	VI.31	VI.78
		Opening limit switch (only for alarm filtering output according to EN81-28, see VO.26)	VI.1	VI.93	VI.94
	Other	Door stop	VI.12	VI.22	---
		Door stop (all)	VI.80, VI.86, VI.88 (see param. 1.19.2), VI.49 (see param. 1.23.0)		
Outputs	Commands	Opening command	VO.1	VO.2	VO.33
		Closing command	VO.3	VO.4	VO.34
		Forced closing command at reduced speed (“nudge mode”, used only during firefighting operation according to EN81-72)	VO.53		
	Signals	Blinking signal of forced closing at reduced speed (used only during firefighting operation according to EN81-72)	VO.54		
		Blinking signal of car moving with bypassed door safety contacts	VO.58		

Notes

1. During normal operation, the photocell (VI.23, VI.24, VI.51) can be excluded when the car is not in the door unlocking zone and/or when car position is not known using parameter 1.16.3

2. During inspection operation from the car roof or from the pit, electrical emergency operation, or car movements commanded by programmer through parameter 0.09.0=3 or 0.09.0=4:
   - the photocell (VI.23, VI.24, VI.51) is excluded
   - the door opening / closing push-buttons (VI.41, VI.42, VI.43, VI.29, VI.45) are excluded
   - the sensitive edge (VI.41, VI.42, VI.43, VI.29, VI.45) stops the closing movement of the doors, but does not command their reopening

3. For all serial controlled car door operators (for example 24, 25, 31, 32), virtual inputs VI.46, VI.47, VI.48 (sensitive edge) and VI.23, VI.24, VI.51 (photocell/ light curtain) are processed in logical OR with the same signals generated and transmitted by the serial operator.

1.07 Re-levellings / Early door opening / Alarm 20

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	0	7				0

DG34	[1.07.0] MAXIMUM ALLOWED NUMBER OF RE-LEVELLINGS AT A LANDING
00	Disabled
01÷99	When this number of re-levellings is reached, alarm 005 is activated

DG5	[1.07.1] EARLY DOOR OPENING / ALARM 20
0	Early door opening disabled, alarm 20 disabled
1	Early door opening enabled, alarm 20 disabled
2	Early door opening disabled, alarm 20 enabled
3	Early door opening enabled, alarm 20 enabled

Note : re-levelling with closed doors is always enabled, and you can not disable it, except in case of shaft systems VEN01 (shaft with encoder, see paragraph 5.6.4), by an appropriate programming of the parameters 8.01.0 and 8.02.0).

1.08 Inspection operation speed and stops / reduced headroom

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	0	8			0	0

DG3	[1.08.0] SPEED AND STOPS IN INSPECTION OPERATION / EEO (ELECTRIC EMERGENCY OPERATION)
0	Low speed, travel is limited by SR and DR magnets, both in inspection and EEO
1	High speed, travel is limited by SR and DR magnets, both in inspection and EEO
2	High speed, SR and DR magnets stops the car movement, but you can go beyond them repeating the command, both in inspection and EEO
3	In inspection: high speed, travel is limited by SR and DR magnets. In EEO: high speed, SR and DR magnets stops the car movement, but you can go beyond them repeating the command
4	Installation mode

DG4	[1.08.1] INSPECTION COMMANDS
0	Up command by VI.58 Down command by VI.59
1	Up command by VI.58 or by car call for floor 1 (the second floor) Down command by VI.59 or by car call for floor 0 (the lowest floor)

DG5	[1.08.2] HEADROOM CONTROL MODE
0	Normal headroom
1	Reduced headroom controlled by 2 supplementary limit switches in series (see VI.18) and supplemental CS4 safety circuit (see VI.74). If the limit switches does not function in normal operation, alarm 095 is activated.

DG6	[1.08.3] DOOR COMMANDS IN MAINTENANCE
0	During maintenance operation, the activation of the door open / close push-buttons in the car has no effect.
1	During maintenance operation, the activation of the door open / close push-buttons in the car causes the opening / closing of the car doors (in hold-to-run mode), also when the car is not in the door unlocking zone.
With 1.08.3=1 : • VI.42 opens all doors at the same time • VI.43, VI.29, VI.45 open door A, B, C respectively • VI.41 closes all doors at the same time	

The installation mode (1.08.0=4) is reserved for the initial mounting operations of the lift. When 1.08.0=4, control panel operates as follows:

- lift is put out of service, state “A” is reported on parameter 0.00.0, and alarm 901 on parameter 0.01.0
- movements are commanded exclusively by the STK1R board BS and BD inputs (terminals B2.1 and B2.2)
- car position sensors (IS, ID, SR, DR, and the encoder) have no effect
- the first point of the safety chain (VI.80) and the last one (VI.91) must be on
- no door state check is executed before the car departure
- when the car is moving, the virtual output VO.58 is activated (to drive an acoustic and luminous warning signal)
- the alarms that are enabled are only these:
    - 6 : failure to open main contactors (KM)
    - 7 : Failure to open upward contactor (KS) / star-delta contactor (KT)
    - 8 : Failure to open downward contactor (KD) / soft starting resistor exclusion contactor
    - 9 : Phase loss or wrong phases rotation detected by RCF01 board
    - 10: No voltage on safety chain point 1
    - 15 : Failure to close the main contactors (KM)
    - 16 : Failure to close the upward contactor (KS) / star-delta contactor (KT)
    - 17 : Failure to close the downward contactor (KD)
    - 50 : Out of service for maintenance, activated by parameter 0.00
    - 200 : Checksum error of the lift configuration data (in EEPROM memory)
    - 204 … 209 : STK1R supply voltages out of bounds
    - 260 : reserved
    - 261 : reserved

To enable normal operation, the value of the parameter 1.08.0 must be changed.

1.09 In-use signalling, in-car presence sensor, gong, retractable cam

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	0	9				

DG3	[1.09.0] IN-USE SIGNALLING
0	Flashing when the car is moving, by OCC output
1	Flashing when the car is moving, by E1÷En outputs (the external call booking signals)
2	Always fixed, by OCC output
3	Always fixed, by E1÷En outputs (the external call booking signals)

DG4	[1.09.1] IN-CAR PRESENCE SENSOR (SEE VI.33)
0	VI.33=1 activates the in-use signalling, keeps doors open until an internal call is made, and suspends the counting of the loading / unloading time 4.02 / 4.19 / 4.21. Alarm 80 is disabled.
1	Same as above, with in addiction the enabling (when VI.33=1) and disabling (when VI.33=0) of the internal (car) calls. Alarm 80 is enabled.

DG5	[1.09.2] ACTIVATION OF THE "GONG" ACOUSTIC SIGNAL (OUTPUTS SGG AND VO.36)
0	At the beginning of the slowdown before stopping at a floor, only for external calls
1	At stopping at a floor, only for external calls
2	At the beginning of the slowdown before stopping at a floor, for all calls
3	At stopping at a floor, for all calls
4	SGG / VO.36 outputs signal the out-of-service (same as the FFS output)
5	When a car door reaches the fully open position
The "gong" signal is activated when the indicated event occurs, and remains activated for a time equal to the value of the timer 4.43	

DG6	[1.09.3] ACTIVATION OF THE BUSY SIGNAL / INHIBITION OF THE RETRACTABLE CAM WITH CAR DOORS OPEN
0	The condition VI.90=0 and VI.89=1 does not activate the busy signal
1	The condition VI.90=0 and VI.89=1 activates the busy signal
2	The condition VI.90=0 and VI.89=1 activates the busy signal and inhibits the activation of the retractable cam (virtual output VO.6)

1.10 Car position signals

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	1	0				

DG34	[1.10.0] PS1-PS6 STK1R BOARD OUTPUTS FUNCTION
00	PS1...PS6 : car position 1 wire/floor
01	PS1...PS4 : "car position with offset" (see 1.10.1) in binary format PS5 : door opening signalling (for voice synthesis) PS6 : door closing signalling (for voice synthesis)
02	PS1...PS6 : "car position with offset" (see 1.10.1) in gray format
03	PS1...PS6 : "car position with offset" (see 1.10.1) in BCD format
04	PS1...PS6 : "car position with offset" (see 1.10.1) in inverted BCD format
05	PS1...PS6 : "car position with offset" (see 1.10.1) in binary format

DG56	[1.10.1] CAR POSITION DISPLAY OFFSET
00÷23	This value is added to the base car position (0 for the lowest floor) to generate the "car position with offset" information

1.11 Car position / car speed signalling during rescue operation (EEO or brake release)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	1	1			0	0

DG3	[1.11.0] OFFSET OF THE DISPLAYS CONNECTED TO THE EC02-P BOARDS DURING THE EMERGENCY OPERATION
0÷9	This value is added to the "speed index" N shown in the table below before being put on the outputs of EC02-P (using the format set by dip switches DP2, see EC02 board description)

DG4	[1.11.1] TYPE OF SIGNALLING OF THE STK1R PS1÷PS6 OUTPUTS DURING THE EMERGENCY OPERATION
0	PS1 … PS6 : speed indication as shown in the table below
1	PS1 … PS6 : off
2	PS1 … PS6 : car position indication as set with parameter 1.10.0 and 1.10.1

V (car speed in m/s)	"Speed index" N	PS1	PS2	PS3	PS4	PS5	PS6
		● = led / output ON, ○ = led / output OFF					
V < 0.05	0	○	○	○	○	○	○
0.05 <= V < 0.15	1	●	○	○	○	○	○
0.15 <= V < 0.25	2	●	●	○	○	○	○
0.25 <= V < 0.35	3	●	●	●	○	○	○
0.35 <= V < 0.45	4	●	●	●	●	○	○
0.45 <= V < 0.55	5	●	●	●	●	●	○
0.55 <= V	6	●	●	●	●	●	●

1.12 Automatic emergency operation / Enabling of the electrical emergency operation in absence of mains

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	1	2				

These parameters controls how the automatic emergency operation is done. Automatic emergency operation is activated by setting VI.28=1.

DG3	[1.12.0] AUTOMATIC EMERGENCY FOR HYDRAULIC LIFTS
0	With hold-to-run operation (1.00.1=1 or 1.00.1=2) the emergency descent is activated by holding down any of the call buttons in the car With other operations: emergency descent is automatic
1	With all operations: emergency descent is automatic
2	With all operation: the emergency descent is activated by a special 'Emergency Descent' button in the car (see VI.71)

DG4	[1.12.1] AUTOMATIC EMERGENCY FOR ELECTRIC LIFTS
0	VVVF drive with auxiliary battery supply, the car moves downward and stops at the first landing it finds
1	Only brake release with auxiliary power supply from EM01 / EM02, the car moves in the direction forced by the car load and stops at the first landing it finds
2	VVVF drive with auxiliary battery supply, the car moves in the direction dictated by VI.71 (recommended direction calculated by the inverter) and then stops at the first landing it finds
3	VVVF drive with auxiliary battery supply, the car moves upward and stops at the first landing it finds
4	VVVF drive with auxiliary UPS supply, the car moves downward and stops at the first landing it finds (see also virtual output VO.64)
5	VVVF drive with auxiliary UPS supply, the car moves in the direction dictated by VI.71 (recommended direction calculated by the inverter) and stops at the first landing it finds (see also virtual output VO.64)
6	Only brake release with auxiliary UPS supply, the car moves in the direction imposed by the car load and stops at the first landing it finds

DG5	[1.12.2] DOORS STATUS AT THE END OF AN AUTOMATIC EMERGENCY OPERATION
0	Doors are closed (after being opened for the unloading of passengers)
1	Doors are left open

DG6	[1.12.3] ENABLING OF THE ELECTRICAL EMERGENCY OPERATION IN ABSENCE OF MAINS (WITH VVVF SUPPLIED BY BATTERIES / UPS)
0	The electrical emergency operation is always disabled in absence of mains voltage (i.e. with virtual input VI.28 activated)
1	The electrical emergency operation is enabled in the absence of mains voltage (i.e. with input VI.28 active) if parameter 1.12.1 is equal to 0, 2, 3, 4, or 5 (i.e. for any type of the automatic emergency operation that requires the use of engine torque).

For automatic emergency operations, the shaft must have SIZ1 and SIZ2 sensors (for shafts without an encoder) or a SIZ1 sensor (for shafts with an encoder).

1.13 Control panel operating temperature limits

The temperature is measured by a sensor placed on the STK1R board.

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	1	3				

DG34	[1.13.0] MINIMUM OPERATING TEMPERATURE
0 – 40	Minimum operating temperature below 0 °C (default -10 °C)

DG56	[1.13.1] MAXIMUM OPERATING TEMPERATURE
0 – 85	Maximum functioning temperature above 0 °C (default 65 °C)

If the operating temperature exceeds the two set values, alarm 099 is activated. The current temperature is shown at parameter 0.18.0.

1.14 Multiplex (group of lifts)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	1	4				0

DG3	[1.14.0] MULTIPLEX MODE
0	Manages only one lift (Multiplex disabled)
1	Manages up to 8 lifts simultaneously with collective operation
2	Manages two lifts with APB operation (“duplo”)

DG4	[1.14.1] LIFT IDENTIFICATION
0..7	Identifies the lift in a group. You must give to this parameter a different value for each lift in a group, so that it can be uniquely identified.

DG5	[1.14.2] LOWER LANDINGS MISSING
0..9	Number of lower landings missing in this lift, with respect to the lifts in the same group which have the lowest landing. Set 0 if no landing is missing.

DG6	[1.14.3] LANDING CALL PUSH-BUTTONS
0	Landing call push-buttons are in common with all lifts in the group (i.e. any landing call is connected to all lift control panels)
1	There are separated landing call push-buttons for each lift the group

1.15 Unintended car movement (UCM) / Safety gear tripping device

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	1	5				0

DG3	[1.15.0] UCM ALARM TRIPPING (ALARM 88)
0	Disabled
1	Enabled (for automatic landing / car doors)
2	Enabled (for manual landing doors)

DG4	[1.15.1] SELF MONITORING OF UCM MEANS (ALARM 81)
0	Disabled
1	Brakes (check of brakes state by sensors)
2	GMV valve NGV-A3 (RUN & READY signals monitoring)
3	Two valves working in series (check of leakage of both valves)
4	Bucher iValve (SMA signal monitoring)
5	GMV valve 3010-2CH-A3 / 3100-2CH-A3

DG5	[1.15.2] SAFETY GEAR TRIPPING DEVICE (ALARMS 22 AND 23)
0	Safety gear tripping device driven by the run contactors, with turning-off delay by means of capacitors. See also parameters 4.56, VI.40.
1	Safety gear tripping device driven by the virtual output VO.65. See also parameters 4.56, 4.63, VI.40. ***This mode can be used only on elevators that has an encoder for detecting the car position, and only if the supply of the STK1R board and of the electromagnet of the safety gear tripping device comes from sources that are not interrupted in the event of a power failure (UPS, batteries, DC-DC inverters, etc.)***

1.16 Shaft sensors behaviour / motor run time limiter operating mode / Enabling of automatic calls with hold-to-run operation / Exclusion of door photocells according to the car position

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	1	6				

DG3	[1.16.0] SHAFT SENSORS IS, ID, SR, DR, DS BEHAVIOUR
0	The lack of safety chain voltage causes incorrect signals from the shaft sensors
1	The lack of safety chain voltage **does not** cause incorrect signals from the shaft sensors

With 1.16.0=0 any interruption (even short) of the safety chain voltage necessarily invalidates the car position information, forcing a re-phasing travel on the next call.

DG4	[1.16.1] MOTOR RUN TIME LIMITER OPERATING MODE
0	Counting of the motor run time (see timer 4.00, alarm 001) restarts from zero if one of the following conditions occurs: • relay AS=0 and relay AD=0 • any switching of the IS, ID, SIZ sensors • car speed detected by the encoder is greater than 0.01m/s  **This operating mode shall not be used when the encoder can not detect the effective car speed in case of ropes slipping, for example when it is mounted on the motor shaft or on the traction sheave!**
1	Counting of the motor run time (see timer 4.00, alarm 001) restarts from zero if one of the following conditions occurs: • relay AS=0 and relay AD=0 • any switching of the IS, ID, SIZ sensors
2	Counting of the motor run time (see timer 4.00,, alarm 001) restarts from zero if is true that: • relay AS=0 and relay AD=0

DG5	[1.16.2] ENABLING OF AUTOMATIC CALLS WITH HOLD-TO-RUN OPERATION
0	With hold-to-run operation (parameter 1.00.1=1 or 2), automatic calls are disabled
1	With hold-to-run operation (parameter 1.00.1=1 or 2), automatic calls are enabled  **This operating mode does not comply with the safety requirements of the machine directive, if adequate presence sensors are not used in the car!**

DG6	[1.16.3] EXCLUSION OF DOOR PHOTOCELLS ACCORDING TO THE CAR POSITION
0	Photocells (virtual inputs VI.23, VI.24, VI.51) are never excluded according to the car position
1	Photocells are excluded only if the car is not in the door unlocking zone
2	Photocells are excluded only if the car is not in the door unlocking zone or if the car position is not known
	**On car lifts it is strongly recommended to set 1.16.3 = 0, to avoid damage to cars in case of loss of position during the crossing. In general, it is recommended to use values 1 or 2 only in case of possible obstruction of the photocells by the coupling / unlocking mechanisms of the landing doors, when the car is outside the door opening zone.**

1.17 Landing / car CAN bus error logging

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	1	7		0	0	0

DG3	[1.17.0] CAN1 bus error logging (landing / car CAN bus)
0	Alarms from 270 to 273 are not logged
1	Alarms from 270 to 273 are logged

1.18 Max switching frequency of contactors / Contactorless VVVF

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	1	8				0

DG34	[1.18.0] MAXIMUM NUMBER OF SWITCHING PER MINUTE OF THE MOTOR CONTACTORS
00	Control is disabled
xx	If this value is exceeded, alarm 24 is triggered.

DG5	[1.18.1] VVVF drive without contactors (valid only with parameter 1.00.0=6 or 7)
0	VVVF drive with motor contactors (default value, errors 6 and 15 relate to motor contactors)
1	VVVF drive without motor contactors (errors 6 and 15 relate to brake contactors)

1.19 Electrical landing door interlocks / Door closing push-button / Door STOP / Retractable cam

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	1	9				

DG3	[1.19.0] ELECTRICAL LANDING DOOR INTERLOCKS OPERATING MODE
0	Landing door is unlocked for all the time set by timer 4.52, or until the landing door is closed again (pulse mode, for locks that do not allows permanent excitation)
1	Landing door is unlocked for all the time set by timer 4.52, but if the door is open during this time, the lock will be kept energized until the door is closed again, also if the time 4.52 is elapsed (only for locks that allows permanent excitation)
2	Landing door is unlocked for all the time set by timer 4.52, but if the landing door or the car door is open during this time, the lock will be kept energized until both doors are closed again, also if the time 4.52 is elapsed (only for locks that allows permanent excitation)
Lock activation can be anticipated with respect to the opening of an automatic car door by means of the timer 4.06, while its deactivation is delayed 0.5 seconds (fixed) after closing of the landing door.	

DG4	[1.19.1] DOOR CLOSING PUSH-BUTTON OPERATING MODE
0	The activation of VI.41 (door closing push-button) while car doors are open or opening, causes a reduced load /unload time (timers 4.03 / 4.20 / 4.22 are used)
1	Same as 0, but in addiction the activation of VI.41 while doors are opening forces them to immediately close (provided that PAP, CM and FT are not active)

DG5	[1.19.2] DOOR STOP
0	VI.80=0 (lack of safety chain voltage) causes the doors to stop (both open and close commands are removed)
1	VI.80=0 (lack of safety chain voltage) or VI.88=0 (lack of voltage on the safety chain point just before the door safety contacts) causes the doors to stop.
2	VI.80=0 (lack of safety chain voltage) or VI.89=0 (lack of voltage on the safety chain point just before the door safety contacts) causes the doors to stop.

DG6	[1.19.3] RETRACTABLE CAM OPERATING MODE (VO.06)
0	With automatic car doors, the cam is retracted only if all the doors are closed (0.08=CCC0) and there are no “Excessive closing time” alarms (see alarm 77, 79 and 86)
1	With automatic car doors, the cam is retracted as soon as all the doors are closed (0.08=CCC0), also if there are “Excessive closing time” alarms (see alarm 77, 79 and 86)

1.20 Car-lift semaphores / Car-lift side photocells

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	2	0				0

DG3	[1.20.0] SIDE PHOTOCELLS OPERATING MODE
0	Side photocells are used only for the management of the semaphores, without any other effect.
1	Side photocells are used for the management of the semaphores and also to re-open, or hold open, the associated door, if the door is not closed (they work as the normal door photocells)

DG4	[1.20.1] SEMAPHORES OPERATING MODE
0	Semaphores are always active.
1	Semaphores are activated only when the lift is in-use.

DG5	[1.20.2] TIME TO EXTEND THE PROHIBITION TO CARS TO USE THE LIFT
0 … 9, A=10, B=11, ... F=15	Time in seconds to extend the prohibition to cars to use the lift after the deactivation of the virtual input VI.10

1.21 Reserved operation activation - Preliminary checks at departure

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	2	1		0	0	0

DG3	[1.21.0] RESERVED OPERATION ACTIVATION
0	Reserved operation is activated according to the state of VI.21
1	Reserved operation is activated by a pulse on VI.21 and deactivated by the next pulse.

DG4	[1.21.1] PRELIMINARY CHECKS AT DEPARTURE
0	Departure is enabled if the safety chain is closed, regardless of the state of the car doors.
1	Departure is enabled if the safety chain and the car doors are closed (useful, for example, for lifts with the landing doors unlock operated by a fixed cam). Detection of alarms 43 and 44 is enabled.

1.22 "Shabbat" operation

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	2	2			0	0

DG3	[1.22.0] SHABBAT OPERATION: DOOR PHOTOCELLS EXCLUSION
0	Door photocells are not excluded during Shabbat operation
1	Door photocells are excluded during Shabbat operation

DG4	[1.22.1] SHABBAT OPERATION: PREFERRED DIRECTION
0	Up / down (car stops at any floor while moving upward and downward, and at the ends inverts the direction)
1	Up only (car stops at any floor only while moving upward, when it reaches the highest floor it goes directly to the lowest one)
2	Down only (car stops at any floor only while moving downward, when it reaches the lowest floor it goes directly to the highest one)

Shabbat operation is activated by VI.44.

1.23 Standards compliance – Reset of alarm 53 (maintenance from the pit) – Commands enabled when the door safety contacts are bypassed

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	2	3				0

DG3	[1.23.0] STANDARDS COMPLIANCE
0	EN81-1 / EN81-2 compliant
1	EN81-20 compliant

DG4	[1.23.1] RESET OF ALARM 53 (MAINTENANCE FROM THE PIT)
0	Only by virtual input VI.50
1	By virtual input VI.50 or by landing call push-buttons of the lowest floor

DG5	[1.23.2] COMMANDS ENABLED WHEN THE DOOR SAFETY CONTACTS ARE BYPASSED (VALID ONLY IF PARAMETER 1.23.0 = 1)
0	When the door safety contacts are bypassed (virtual input VI.49=0), it is possible to move the car only in inspection or in electrical emergency operation
1	When the door safety contacts are bypassed (virtual input VI.49=0), it is possible to move the car only in inspection operation, in electrical emergency operation, and with "hold to run" commands from the programmer (see parameter 0.09, DG3=3 or 4)

By setting 1.23.0=1 the following functions, alarms, inputs and outputs are activated:

- check of bypass of the landing / car door safety contacts (virtual input VI.49, alarm 27, virtual output VO.58) for compliance with point 5.12.1.8.3 a) d) f) g) of the EN 81-20:2014 standard
- check of an opening failure of the safety contacts of landing / car door (alarm 28), for compliance with point 5.12.1.9 of the EN 81-20:2014 standard
- check of the return to normal operation after maintenance from the pit (VI.50), for compliance with point 5.12.1.5.2.2 of the EN 81-20:2014 standard

With parameter 1.23.1=1, alarm 53 (maintenance operation from the pit) can be reset not only by the virtual input VI.50, but also by means of any landing call push-button associated with the lowest floor, pressing it 3 times consecutively within 2 seconds from the first pressure. If the operation is successfully completed, the booking signals of the landing calls of the lowest floor will flash 5 times (also when the reset is done by means of VI.50).

1.24 Doors not to open during the EN81-72 / EN81-73 operation – Functions of virtual output VO.58

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	2	4			0	0

DG3	[1.24.0] DOORS NOT TO OPEN AT THE FIRST DESIGNATED FLOOR IN CASE OF FIRE (EN81-72 / EN81-73 OPERATION)
0 … 7	Selects the doors **not** to open at the first designated floor in case of fire (see parameter 1.03.0) during EN81-72 / EN81-73 operation, as shown in the following table.

DG4	[1.24.1] DOORS NOT TO OPEN AT THE SECOND DESIGNATED FLOOR IN CASE OF FIRE (EN81-72 / EN81-73 OPERATION)
0 … 7	Selects the doors **not** to open at the second designated floor in case of fire (see parameter 1.03.1) during EN81-72 / EN81-73 operation, as shown in the following table.

Doors table

DG3 or DG4	Door not to open
0	None
1	A
2	B
3	A, B
4	C
5	A, C
6	B, C
7	A, B, C

Example: first designated floor in case of fire with two doors (A and C). When the car lands at that floor after the EN81-72 / EN81-73 operation is activated:

- if 1.24.0=0, both doors A and C will open
- if 1.24.0=1 or 1.24.0=3, only door C will open
- if 1.24.0=4 or 1.24.0=6, only door A will open

DG5	[1.24.2] FUNCTIONS OF THE VIRTUAL OUTPUT VO.58
0	Virtual output VO.58 is activated when at least one of the following conditions is met: • car is moving during installation operation (1.08.0=4) • car is moving during inspection operation while the door safety contacts are bypassed (see virtual input VI.49)
1	In addition to the occurrence of one of the conditions indicated for the value 0, virtual output VO.58 is activated also when: • EN81-72 fire-fighting operation is running and the car is stopped at the fire service access floor with the doors open • virtual input VI.34 (car overload) is active • during the EN81-72 operation, a door is forced to close against a reopening request made by the related photocell • during the maintenance operation, the EN81-72 fire-fighting operation is requested (i.e. VI.8 and/or VI.9 are active)

1.25 Mode of generation and distribution of the lock commands

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	2	5				

This parameter allows the selection of two different modes of generation and distribution of the lock commands (see virtual outputs VO.42...47) to the respective lock.

DG3456 [1.25.0] equal to 51dE
There is only one output for all the locks placed on a given side (respectively VO.42, VO.43 and VO.44 for side A, B, and C). The installer is responsible for distributing that commands to the locks of the floor where the car is located.

DG3456 [1.25.0] different from 51dE
Each of the outputs VO.42… 47 is associated with a single lock. The association is made by assigning in sequence the outputs VO.42 … VO.47 to each landing door, proceeding from the lowest floor to the highest floor and from side A to side C, first counting the doors on the same floor. With this operating mode, the locks can not be unlocked if the car position is unknown (for example, during automatic rescue operation on electric lifts, where normally the first floor at which the car stops is unknown to the STK1R board).

NOTE
Please note that, regardless of the value of parameter 1.25.0, it is the installer's responsibility to use door interlocks in compliance with current regulations. If a simple interlock is used that is not mechanically or magnetically enabled, in order to ensure the safety of the system it is absolutely necessary to put a safety contact (as defined in EN81-1 14.1.2.2) in series with the interlock coil of the N^{th} landing, which closes only when the car is in the door unlocking zone of the N^{th} landing!

NOTE
Locks operation with parameter 1.25.0 different from 51dE is incompatible (on electric lifts) with the automatic rescue operation.

1.26 Voice announcer SV01 “CHOPIN” – advanced settings

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	2	6				

DG3	[1.26.0] Volume of voice messages when input VI.84 is activated (night attenuation)
0 … 9	0=mute, 9=volume max. Value 0 implies disabling the reproduction of all voice messages.

DG4	[1.26.1] Background music volume when input VI.84 is activated (night attenuation)
0 … 9	0=mute, 9=volume max

When input VI.84 is not active, volumes are defined by parameters C.00.0 and C.00.1

DG5	[1.26.1] Definition of event 1 … 24 (see parameters C.xx)
0	The events from 1 to 24 (see parameters C.xx) are: “Start of slowdown for stopping at floor 1 … 24”
1	The events from 1 to 24 (see parameters C.xx) are: “Car stop at floor 1 … 24”

DG6	[1.26.3] Activation of the background music
0	Background music is always present
1	Background music is present only when the lift is busy and not out of service
2	Background music is present only when the car light is on and the lift is not out of service

These settings are applied to all SV01-n devices of a given installation (please see paragraph “7.10. Voice announcer SV01 CHOPIN” for the definition of SV01-n device).

1.27 Periodic test of the 12V battery

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	2	7		0	0	0

DG3	[1.27.0] 12V battery voltage measurement input
0	Battery test is disabled
1	12V battery is connected to J16 connector of STK1R board
2	The 12V battery voltage is measured through input X8 (STK1R board, connector J2, pin 4)
3	The 12V battery voltage is measured through input X9 (STK1R board, connector J2, pin 5)
4	The 12V battery voltage is measured through input X10 (STK1R board, connector J2, pin 6)
5	The 12V battery voltage is measured through input X11 (STK1R board, connector J2, pin 7)
6	The 12V battery voltage is measured through input X12 (STK1R board, connector J10, pin 2)

The 12V battery test is performed periodically with a period defined by the timer 4.88. In the event of a defective or discharged battery, the lift is put out of service with alarm 30. The test requires the temporary shutdown of the battery charger, to be carried out via the virtual output VO.71. The test is disabled with parameter 1.27.0 = 0 or with timer 4.88 = 0. After replacing the battery, it is advisable to reset errors using parameter 0.03, or turn the STK1R board off and on again, to start a test cycle on the new battery (the cycle will begin as soon as the lift is free).

1.28 Brakes check according to UNI 10411-1:2021

DG0	DG1	DG2	DG3	DG4	DG5	DG6
1	2	8				

DG3456	[1.28.0] Time for brakes check according to UNI 10411-1: 2021
0000	Test is disabled
0001 ... 0200	Time (expressed in tenths of second) for checking the brakes according to point 11.1.4 (or 14.4.g) of the UNI 10411-1:2021 standard

The brakes check according to UNI 10411-1: 2021 is performed by comparing the state of the motor contactors (virtual input VI.35) with the state of the brakes (virtual inputs VI.38 and VI.39), as follows:

- if the condition "*motor contactors are energized (VI.35 = 1) and brakes are closed (VI.38 = 0 and / or VI.39 = 0)*" is verified for more than 1.28.0 time, alarm 31 is activated at the next stop
- if the condition "*motor contactors are not energized (VI.35 = 0) and brakes are open (VI.38 = 1 and / or VI.39 = 1)*" is verified for more than 1.28.0 time, the alarm 31 is immediately activated

Alarm 31 requires manual reset. 1.28.0 = 0 disables this check and the detection of alarm 31.

2.xx Floor table: enabled doors, parking type, short floors and selective door opening

In order to modify these parameters, you must open the automatic FA switch.

DG0	DG1	DG2	DG3	DG4	DG5	DG6
2						

DG12	FLOOR NUMBER
01÷24	Floor number, 01 is the lowest floor

DG3	[2.xx.0] DOORS ENABLED TO OPEN
0	None
1	A
2	B
3	A, B
4	C
5	A, C
6	B, C
7	A, B, C

DG4	[2.xx.1] PARKING TYPE	
	DOOR OPEN	DOOR CLOSED
0	A, B, C	None
1	B, C	A
2	A, C	B
3	C	A, B
4	A, B	C
5	B	A, C
6	A	B, C
7	None	A, B, C

DG5	[2.xx.2] DISTANCE BETWEEN FLOORS (ONLY WITH ENCODER)
0	The distance between the floor shown by DG12 and the next is greater than 300mm
1	The distance between the floor shown by DG12 and the next is smaller than 300mm

DG6	[2.xx.3] SELECTIVE DOOR OPENING
0	When the car is at the floor shown by DG12, all car doors can open together.
1	When the car is at the floor shown by DG12, only one door at a time can open (selective opening). If two or more opening requests are pending, they are queued.

xx = 01 … 24 = DG12 = floor number

3.00 Call inputs state

DG0	DG1	DG2	DG3	DG4	DG5	DG6
3	0	0	0	0		

DG56	INDEX OF CALL INPUT
00	No call input is active
nn	The call input programmed at parameter 3.nn is active

If multiple call inputs are active at the same time, only the input with the lowest index is shown.

3.xx Calls

In order to change these parameters, you must open the automatic FA switch.

DG0	DG1	DG2	DG3	DG4	DG5	DG6
3						

DG12 : physical input index to which the call must be associated (see inputs table)

DG34	[3.xx.0] CALL FLOOR NUMBER
00	Input not used
01÷24	Floor number, 01 is the lowest floor.

DG5	[3.xx.1] DOORS TO OPEN	DG5	[3.xx.1] DOORS TO OPEN
0	None	4	C
1	A	5	A, C
2	B	6	B, C
3	A, B	7	A, B, C

DG6	[3.xx.2] CALL TYPE
0	Internal (from the car)
1	External upward
2	External downward
3	External preferential upward
4	External preferential downward
5	Priority external for firefighting operation according to EN81-72:2003
6	External upward simplex (not assignable to other lifts in a group)
7	External downward simplex (not assignable to other lifts in a group)

Legend for the inputs table

In the inputs table the following names have been used to synthetically designate some devices with appropriate settings of the relative configuration dip-switches

Device name	Dip switches DP2 (blank = OFF X = indifferent)							
	1	2	3	4	5	6	7	8
EC02-C-0								
EC02-C-1								ON
EC02-C-2							ON	
EC02-C-3							ON	ON
EC02-C-4						ON		
EC02-C-5						ON		ON
EC02-C-6						ON	ON	

Device name	Dip switches DP2 (blank = OFF X = indifferent)			
	1	2	3	4
CAB01-0				X
CAB01-1	ON			X
CAB01-2		ON		X
CAB01-3	ON	ON		X
CAB01-4			ON	X
CAB01-5	ON		ON	X
CAB01-6		ON	ON	X

Device name	Dip switches DP1 (blank = OFF X = indifferent)							
	1	2	3	4	5	6	7	8
EC03-1	ON							
EC03-2		ON						
EC03-3			ON					
EC03-4				ON				
EC03-5					ON			
EC03-6						ON		
EC03-7							ON	
EC03-8								ON

Device name	Dip switches DP1 (blank = OFF X = indifferent)			
	1	2	3	4
LCD581-xx0	X	X		X
LCD581-1x0	ON	X		X
LCD581-110	ON	ON		X
LCD581-xx1	X	X	ON	X
LCD581-1x1	ON	X	ON	X
LCD581-111	ON	ON	ON	X

Inputs table

3.xx	Physical input							
3.01	STK1R	B3.1						
3.02		B3.2						
3.03		B3.3						
3.04		B3.4						
3.05		B3.5						
3.06		B3.6						
3.07		A3.1						
3.08		A3.2						
3.09		A3.3						
3.10		A3.4						
3.11		A3.5						
3.12		A3.6						
3.13	EC02-C0	X3.5	LCD581-xx0	JP0.4	CAB01-0	X2.2		
3.14		X3.4		JP1.4		X2.3		
3.15		X3.3		JP2.4		X2.4		
3.16		X3.2		JP3.4		X2.5		
3.17		X4.5		JP4.4		X2.6		
3.18		X4.4		JP5.4		X2.7		
3.19		X4.3		JP6.4		X2.8		
3.20		X4.2		JP7.4		X2.9		
3.21	EC02-C1	X3.5	LCD581-1x0	JP8.4	CAB01-1	X2.2	CAB01-x.EC03-y with x+y=1	X1.2
3.22		X3.4		JP9.4		X2.3		X1.3
3.23		X3.3		JP10.4		X2.4		X1.4
3.24		X3.2		JP11.4		X2.5		X1.5
3.25		X4.5		JPB.JP0.4		X2.6		X1.6
3.26		X4.4		JPB.JP1.4		X2.7		X1.7
3.27		X4.3		JPB.JP2.4		X2.8		X1.8
3.28		X4.2		JPB.JP3.4		X2.9		X1.9
3.29	EC02-C2	X3.5	LCD581-110	JPC.JP0.4	CAB01-2	X2.2	CAB01-x.EC03-y with x+y=2	X1.2
3.30		X3.4		.JPC.JP1.4		X2.3		X1.3
3.31		X3.3		JPC.JP2.4		X2.4		X1.4
3.32		X3.2		JPC.JP3.4		X2.5		X1.5
3.33		X4.5				X2.6		X1.6
3.34		X4.4				X2.7		X1.7
3.35		X4.3				X2.8		X1.8
3.36		X4.2				X2.9		X1.9
3.37	EC02-C3	X3.5	LCD581-xx1	JP0.4	CAB01-3	X2.2	CAB01-x.EC03-y with x+y=3	X1.2
3.38		X3.4		JP1.4		X2.3		X1.3
3.39		X3.3		JP2.4		X2.4		X1.4
3.40		X3.2		JP3.4		X2.5		X1.5
3.41		X4.5		JP4.4		X2.6		X1.6
3.42		X4.4		JP5.4		X2.7		X1.7
3.43		X4.3		JP6.4		X2.8		X1.8
3.44		X4.2		JP7.4		X2.9		X1.9
3.45	EC02-C4	X3.5	LCD581-1x1	JP8.4	CAB01-4	X2.2	CAB01-x.EC03-y with x+y=4	X1.2
3.46		X3.4		JP9.4		X2.3		X1.3
3.47		X3.3		JP10.4		X2.4		X1.4
3.48		X3.2		JP11.4		X2.5		X1.5
3.49		X4.5		JPB.JP0.4		X2.6		X1.6
3.50		X4.4		JPB.JP1.4		X2.7		X1.7
3.51		X4.3		JPB.JP2.4		X2.8		X1.8
3.52		X4.2		JPB.JP3.4		X2.9		X1.9
3.53	EC02-C5	X3.5	LCD581-111	JPC.JP0.4	CAB01-5	X2.2	CAB01-x.EC03-y with x+y=5	X1.2
3.54		X3.4		.JPC.JP1.4		X2.3		X1.3
3.55		X3.3		JPC.JP2.4		X2.4		X1.4
3.56		X3.2		JPC.JP3.4		X2.5		X1.5
3.57		X4.5				X2.6		X1.6
3.58		X4.4				X2.7		X1.7
3.59		X4.3				X2.8		X1.8
3.60		X4.2				X2.9		X1.9
3.61	EC02-C6	X3.5			CAB01-6	X2.2	CAB01-x.EC03-y with x+y=6	X1.2
3.62		X3.4				X2.3		X1.3
3.63		X3.3				X2.4		X1.4
3.64		X3.2				X2.5		X1.5
3.65		X4.5				X2.6		X1.6
3.66		X4.4				X2.7		X1.7
3.67		X4.3				X2.8		X1.8
3.68		X4.2				X2.9		X1.9

In the table each physical input is designated by :

- the name of the device on which it is placed (vertical text). If the device has an active expansion and the input is placed on this expansion, this is indicated by the notation **device.expantion**.

- the name of the connector and the related name/number of its terminal (horizontal text), with the notation **connector.terminal**, or **espansionBoardConnector.connector.terminal** for purely passive expansions

Example 1

Parameter 3.15 allows to program a call on only one of the following physical inputs :

- pin 5 of connector X3 of the board EC02-C0
- pin 4 of connector JP2 of the display LCD581-xx0
- pin 4 of connector X2 of the board CAB01-0

Example 2

Parameter 3.37 allows to program a call on only one of the following physical inputs :

- pin 5 of connector X3 of the board EC02-C3
- pin 4 of connector JP0 of the display LCD581-xx1
- pin 2 of connector X2 of the board CAB01-3
- pin 2 of connector X1 of the board EC03-1 ussed as expansion of CAB01-2
- pin 2 of connector X1 of the board EC03-2 used as expansion of CAB01-1

4.xx Timers

DG0	DG1	DG2	DG3	DG4	DG5	DG6
4	x	x				

DG12	TIMER	[4.xx.0] DG3456		
		RANGE	DEFAULT	UNITS
00	Maximum motor working time without car movement (triggers alarm 001). See also parameter 1.16.1. **Subjected to standard (EN81-1/2 12.10 / EN81-20 5.9.2.7): values over 45s are non compliant!**	(0÷6553)	450	0,1s
01	Max motor working time with car moving at low speed (triggers alarm 002)	(0÷9999)	200	0,1s
02	Loading / unloading time for door 1 (time that door 1 is kept open to allow loading / unloading the car)	(0÷0999)	50	0,1s
03	Shortened loading / unloading time for door 1, applied after door re-opening caused by the photocell / the sensitive door edge / door opening push-button	(0÷0999)	5	0,1s
04	(Maximum) opening / closing time for door 1 (triggers alarms 076, 077). See also parameter 1.05	(0÷0999)	60	0,1s
05	(Maximum) opening / closing time for door 2 (triggers alarms 078, 079). See also parameter 1.05	(0÷0999)	60	0,1s
06	Doors opening delay	(0÷0999)	0	0,1s
07	Maximum wait time for closure of the safety chain after all doors are closed (at departure). Triggers alarm 21.	(0÷0999)	40	0,1s
08	Delay before return to parking floor (0: return to parking floor disabled)	(0÷9999)	0	1s
09	Delay before return to lowest floor (0: return to lowest floor disabled) **Subjected to standard *(EN81-2 14.2.1.5 / EN81-20 5.12.1.10)***	(0÷9000)	9000	0,1s
10	With parameter 1.00.0=3: time that the brake is kept released after zero speed is commanded, at a landing With parameter 1.00.0=5 and upward soft stop (i.e. with VO.09 or VO.25 assigned to a physical input): delay in turning off the pump motor at an upward stop With parameter 1.00.0=1: delay in excluding the high speed soft starting resistors	(0÷0999)	0	0,1s
11	With parameter 1.00.0=3: time that the main contactors are kept closed after the brake is brake closed, at a landing With parameter 1.00.0=5: delay of star-delta starting contactor / duration of command VO.25=1 at an upward starting With parameter 1.00.0=1: delay in excluding the low speed soft starting resistors	(0÷0999)	0	0,1s
12	Stop delay in an upward landing (for levelling accuracy adjustment)	(0÷9999)	0	0,01s
13	Maximum time of continuous activation of door photocell, safety edges, door opening push-buttons, swing landing door contacts, in-car presence sensor (see alarms from 211 to 222, disabled with timer equal to 0)	(0÷9999)	3000	0,1s
14	Delay of car starting after doors closing	(0÷0999)	2	0,1s
15	Call holding timer in case of manual landing doors re-opening (only with SAPB operation, parameter 1.00.1=0)	(0÷0600)	5	0,1s
16	Used for the self-monitoring of UCM stopping means: - maximum discordance time between brakes state and brakes command at starting - maximum discordance time between GMV NGV-A3 valve RUN and READY signals - opening time for leakage check of two valves operating in series - maximum discrepancy time of signals Se1, Se2 of the GMV 3xxx-2CH-A3 valve against specifications, with car stopped If the time is exceeded, alarm 081 is activated	(0÷0999)	0	0,1s

DG12	TIMER	[4.xx.0] DG3456		
		RANGE	DEFAULT	UNITS
17	Used for the self-monitoring of UCM stopping means: - maximum discordance time between brakes state and brakes command at stopping - pause between leakage check of two valves operating in series - maximum discrepancy time of signals Se1, Se2 of the GMV 3xxx-2CH-A3 valve against specifications, with car moving If the time is exceeded, alarm 081 is activated	(0÷0999)	0	0,1s
18	(Maximum) opening / closing time for door 3 (triggers alarms 085, 086). See also parameter 1.05	(0÷0999)	60	0,1s
19	Loading / unloading time for door 2	(0÷0999)	50	0,1s
20	Shortened loading / unloading time for door 2, applied after door re-opening caused by the photocell, the sensitive door edge, or the door opening push-button	(0÷0999)	5	0,1s
21	Loading / unloading time for door 3	(0÷0999)	50	0,1s
22	Shortened loading / unloading time for door 3, applied after door re-opening caused by the photocell, the sensitive door edge, or the door opening push-button	(0÷0999)	5	0,1s
23	Waiting time between the end of the door closing and the door opening (for cars with multiple accesses and selective opening)	(0÷0999)	1	0,1s
24	Timer to extends the in-use state after the loading / unloading time has expired. **Subjected to standard (EN81-1 14.2.4.2 / EN81-20 5.12.4.2)**	(0÷0999)	2	0,1s
25	Maximum delay between O/C commands and the beginning of door 1 opening/closing. Only for doors with limit switches monitoring (triggers alarms 70, 72).	(0÷9999)	50	0,01s
26	Maximum delay between O/C commands and the beginning of door 2 opening/closing. Only for doors with limit switches monitoring (triggers alarms 71, 73).	(0÷9999)	50	0,01s
27	Maximum delay between O/C commands and the beginning of door 3 opening/closing. Only for doors with limit switches monitoring (triggers alarms 82, 83).	(0÷9999)	50	0,01s
28	Non-overlap time for door 1 O/C commands	(0÷9999)	0	0,01s
29	Non-overlap time for door 2 O/C commands	(0÷9999)	0	0,01s
30	Non-overlap time for door 1 O/C commands	(0÷9999)	0	0,01s
31÷33	Reserved			
34	Maximum allowed delay for detection of the encoder signals (triggers alarm 420).	(0÷9999)	50	0,1s
35	Stop delay in a downward landing (for levelling accuracy adjustment)	(0÷9999)	0	0,01s
36÷40	Reserved			
41	Maximum start / stop time With parameter 1.00.0=3 or 6: maximum discordance time between a run command given to the VVVF drive and the state of VI.20 With parameter 1.00.0=5 and NGV-A3 valve: maximum discordance time between a run command given to the valve and the state of the RUN and READY signals (VI.13 and VI.14) With parameter 1.00.0=1: maximum insertion time of the soft starting resistors With parameter 1.00.0=5 and HEVOS HE100 valve unit : maximum allowed time of condidtion RDY=0 (valve not ready) Triggers alarm 97, 100. Set to 0 to disable this check.	(0÷9999)	400	0,01s
42	Reserved			
43	Duration of the “Gong” command	(0÷9999)	400	0,01s
44	Maximum discordance time between a run command and the state of main contactors KM, KS, KD (triggers alarms 6, 7, 8, 15, 16, 17)	(0÷9999)	400	0,01s

DG12	TIMER	[4.xx.0] DG3456		
		RANGE	DEFAULT	UNITS
45	Car light 1 holding time after the in-use signal goes off (see VO.05)	(0÷9999)	500	0,01s
46	Reserved			
47	Max holding time for external calls in multiplex operation. If a call is not processed after this time, it is re-assigned to other lifts in the group.	100÷ 6000	600	0,1s
48	Reserved			
49	Delay in turning on the retractable cam after door closing, at start	0÷9999	0	0,01s
50	Delay in turning off the retractable cam, at stop	0÷6553	0	0,1s
51	Vocal synthesis “START” command duration (see VO.37)	0÷9999	20	0,1s
52	Duration of the unlocking command for electrical interlocks (see VO 42 … 47)	0÷0100	10	0,1s
53	Car light 2 holding time after the in-use signal goes off (see VO.41)	0÷9999	9600	0,1s
54	Downward slowdown command delay after entering the door unlocking zone (for platforms only)	0÷9999	0	0,01s
55	Upward slowdown command delay after entering the door unlocking zone (for platforms only)	0÷9999	0	0,01s
56	Max discordance time between the command and the state of the electromagnet of the safety gear tripping device (see VI.40). Activates alarms 22 and 23. Set to 0 to disable this check.	(0÷0099)	0	0,1s
57	Preferential operation holding time after any preferential call was processed (see 3.xx.2=3 or 4)	(0÷9999)	80	0,1s
58	Reserved			
59	Delay in closing the “door lock” valve (see VO.32)	(0÷9999)	0	0,1s
60	Upward micro-levelling stop delay (see VO.50)	(0÷9999)	0	0,1s
61	Downward micro-levelling stop delay (see VO.51)	(0÷9999)	0	0,1s
62	Holding time of the command VO.25=1 at an upward stopping	(0÷9999)	0	0,1s
63	Turning-off delay of the virtual output VO.65 (command of the safety gear tripping device). See also parameter 1.15.2	(0÷0099)	0	0,1s
63÷64	Reserved			
65	Time interval between two automatic calls (when 0.09.0=1 or 2)	(5÷9999)	60	1s
66	Parking time at landings (excluded the main floor) in Shabbat operation	(0÷9999)	10	1s
67	Parking time at the main floor in Shabbat operation	(0÷9999)	120	1s
68	STOP command (VI.12) holding time for door 1	(0÷9999)	0	1s
69	STOP command (VI.22) holding time for door 2	(0÷9999)	0	1s
70	Maintenance command (VI.86) holding time, valid only for “home lift” system (1.00.2=4)	(0÷300)	0	1s
71	Maximum opening time of the manual landing door and / or of the manual car door beyond which the voice message specified by parameter C.37 is played (see parameters C.xx, page 82) and the virtual output VO.74 is activated. If set to 0, it disables both signals.	(0÷9999)	0	1s
72	Repetition time of the voice message specified by parameter C.37, when the manual landing door and / or the car door is open	(10÷9999)	60	1s
73÷80	Reserved			
81	Time interval between self-monitoring operations (leakage check) of two hydraulic valves operating in series used as UCM protection means.	(1÷9999)	1440	1min
82÷87	Reserved			
88	Timer for the periodic test of the 12V battery (see parameter 1.27.0)	(0÷9999)	24	1h

5.xx Inputs

DG0	DG1	DG2	DG3	DG4	DG5	DG6
5	x	x				

Programmable inputs on STK1R, EC02, BOX05, CAB01, EC03, LCD581SE boards

DG 12	Terminal (LED)	DG 12	Terminal (LED)	DG 12	Terminal (LED)	DG 12	Terminal (LED)
01	STK1R.B1.6 (X1)	25	STK1R.J10.2 (X12)	49	STK1R.J6.1 (1)	73	BOX05.X13.1 (FT1)
02	BOX05.X11.4 (IO1)	26	STK1R.E2.4 (X13)	50	STK1R.J6.5 (2)	74	BOX05.X15.2 (CM1)
03	BOX05.X12.4 (IO2)	27	STK1R.J2.2 (M-AB)	51		75	BOX05.X15.4 (FC1)
04	BOX05.X11.2 (IO3)	28	STK1R.J2.1 (S)	52		76	BOX05.X15.6 (FA1)
05	BOX05.X12.2 (IO4)	29	STK1R.J2.3 (D-E)	53		77	BOX05.X14.1 (FT2)
06	STK1R.J8.4 (X6)	30	BOX05.X7.2 (BS)	54	BOX05.X6.2 (MS1)	78	BOX05.X16.2 (CM2)
07		31	BOX05.X7.3 (BD)	55	STK1R.J6.8 (5)	79	BOX05.X16.4 (FC2)
08	STK1R.J2.4 (X8)	32		56		80	BOX05.X16.6 (FA2)
09	STK1R.J2.5 (X9)	33	STK1R.B1.3 (IS)	57		81	EC03-8.X1.2 (IO1) LCD581-xx0.JP16.4
10	STK1R.J2.6 (X10)	34	STK1R.B1.4 (ID)	58	STK1R.J1.1 (8)	82	EC03-8.X1.3 (IO2) LCD581-xx0.M3.2
11	STK1R.J2.7 (X11)	35	STK1R.B1.1 (SR)	59	BOX05.X6.3 (MS2)	83	EC03-8.X1.4 (IO3) LCD581-xx0.M3.3
12	STK1R.B2.4 (FG)	36	STK1R.B1.2 (DR)	60	STK1R.J1.5 (10)	84	EC03-8.X1.5 (IO4)
13	STK1R.B2.6 (MR)	37	STK1R.B1.5 (DS)	61	EC02-SE-0.X4.5 (HIO5)	85	EC03-8.X1.6 (IO5)
14	STK1R.A2.3 (TC)	38		62	EC02-SE-0.X4.4 (HIO6)	86	EC03-8.X1.7 (IO6)
15	STK1R.A2.4 (PST)	39		63	EC02-SE-0.X4.3 (HIO7)	87	EC03-8.X1.8 (IO7)
16	STK1R.A2.5 (MP)	40		64	EC02-SE-0.X4.2 (HIO8)	88	EC03-8.X1.9 (IO8)
17	STK1R.A1.4 (PCP)	41	EC02-V-0.X4.5 (HIO5)	65	EC02-I-0.X3.5 (HIO1)	89	CAB01.X3.2 (IO1) LCD581-xx0.JP12.4
18	STK1R.A1.3 (CM)	42	EC02-V-0.X4.4 (HIO6)	66	EC02-I-0.X3.4 (HIO2)	90	CAB01.X3.3 (IO2) LCD581-xx0.JP13.4
19	STK1R.A1.5 (BA)	43	EC02-V-0.X4.3 (HIO7)	67	EC02-I-0.X3.3 (HIO3)	91	CAB01.X3.4 (IO3) LCD581-xx0.JP14.4
20	STK1R.A1.6 (BKC)	44	EC02-V-0.X4.2 (HIO8)	68	EC02-I-0.X3.2 (HIO4)	92	CAB01.X3.5 (IO4) LCD581-xx0.JP15.4
21	STK1R.B2.1 (BS)	45	BOX05.X9.4 (IS)	69	EC02-I-0.X4.5 (HIO5)	93	
22	STK1R.B2.2 (BD)	46	BOX05.X9.2 (ID)	70	EC02-I-0.X4.4 (HIO6)	94	
23	STK1R.B2.3 (FM)	47	BOX05.X10.4 (SR)	71	EC02-I-0.X4.3 (HIO7)	95	
24	STK1R.B2.5 (CE)	48	BOX05.X10.2 (DR)	72	EC02-I-0.X4.2 (HIO8)	96	

DG3	[5.xx.0] INPUT STATE	
0	Non active	
1	Active	
E	Not set	See note 6
F	Data not received	

DG4	[5.xx.1] INPUT POLARITY
0	Normal
1	Inverted

Note

1) Terminals are identified in this way: **<board name>.<connector name>.<terminal number>**.
2) EC02-V-0 : EC02 board with dip switch DP2 set as 0010.0000
3) EC02-I-0 : EC02 board with dip switch DP2 set as 0100.0000
4) EC02-SE-0 : EC02 board with dip switch DP2 set as 1010.0000
5) EC03-8 : EC03 board with dip switch DP1 set as 0000.0001
6) LCD581-xx0 : display VEGA LCD581 with dip-switche DP1.3=OFF
7) CAB01 (with its expansions EC03) and LCD581 are alternative (they can not be present at the same time)
8) All the programmable inputs of LCD581 (5.81...5.83 and 5.89...5.92) have a pull up resistor toward 8V and are active-low with parameter 5.xx.1=0. All other inputs are active-high with parameter 5.xx.1=0. Only the input 5.26 (X13) has a pull up resistor toward 24V.

Virtual inputs table

DG56	[5.xx.2] VIRTUAL INPUTS (INPUT FUNCTIONS) ASSOCIATED TO INPUT DG12
00	Reserved
01	Opening limit switch of car door 1, just to enable the alarm filtering output (VO.26) according to EN81-28
02	Excessive oil temperature. Triggers alarm 90.
03	Oil pressure below the minimum allowed value. Triggers alarm 91.
04	Oil pressure above the maximum allowed value. Triggers alarm 91.
05	Monostable stop push-button (in the car)
06	Door 1 “moving door” signal / Door 1 opening limit switch
07	Door 2 “moving door” signal / Door 2 opening limit switch
08	With parameter 1.04.3=0 (EN81-73 operation): activation of EN81-73 operation, with car recalled to the floor set by parameter 1.03.0 With parameter 1.04.3=1, 2 (EN81-72 operation): automatic activation of phase 1 of the firefighter operation according to EN81-72, with car recalled to the floor set by parameter 1.03.0
09	With parameter 1.04.3=0 (EN81-73 operation): activation of EN81-73 operation, with car recalled to the floor set by parameter 1.03.1 With parameter 1.04.3=2 (EN81-72:2015 operation): firefighters lift switch at the firefighters access floor set by parameter 1.03.0
10	Activates the prohibition to cars to use the lift (on lifts with car-lift traffic lights)
11	State of the safety circuit for open door re-levelling / UCM detection. If not active with car in the landing zone, alarm 20 is activated (only if parameter 1.07.1=2 or 3)
12	STOP command for door 1
13	**READY** signal of NGV-A3 valve / **SMA** signal of Bucher iValve / **Se1** signal of GMV 3xxx-2CH-A3 valve. See also timers 4.16 and 4.41 for NGV-A3 valve, 4.16 and 4.17 for GMV 3xxx-2CH-A3. If the signal has an abnormal behaviour (according to the manufacturer's specifications), alarm 81 is activated.
14	**RUN** signal of NGV-A3 valve / Enabling upward commands signal for Bucher iValve / **Se2** signal of GMV 3xxx-2CH-A3 valve. See also timers 4.16 and 4.41 for NGV-A3 valve, 4.16 and 4.17 for GMV 3xxx-2CH-A3. If the signal has an abnormal behaviour (according to the manufacturer's specifications), alarm 81 is activated.
15	Missing power or reverse phase rotation. Triggers alarm 9.
16	Full load. Disables any new external call.
17	Puts the lift out of service as soon as the car is stopped (triggers alarm 94)

DG56	[5.xx.2] VIRTUAL INPUTS (INPUT FUNCTIONS) ASSOCIATED TO INPUT DG12
18	Additional limit switch for lifts with short headroom (EN81-21).
19	Puts the lift out of service immediately (triggers alarm 96)
20	With parameter 1.00.0=3, “active VVVF driver” signal. With parameter 1.00.0=6, motor contactors command (from the VVVF driver). With parameter 1.00.0=1, check of exclusion of the soft starting resistors. Triggers alarm 97 and 100. See also timers 4.41.
21	Reserved operation activation (see also parameter 1.21.0)
22	STOP command for door 2
23	Door 1 photocell
24	Door 2 photocell
25	Puts the lift out of service, recalling the car to the parking floor 1.02.1. Triggers alarm 98.
26	Door 1 opening command, in inspection operation
27	Puts the lift out of service as soon as the car is stopped and levelled at a floor. Triggers alarm 4.
28	Automatic emergency operation (see also parameter 1.12).
29	Door 2 opening command
30	Door 1 closing limit switch
31	Door 2 closing limit switch
32	Brakes contactor state, for brakes self-monitoring (UCM). You have to program also VI.38 and VI.39, and the timers 4.16 and 4.17. In case of a brake failure, alarm 81 is activated.
33	In-car presence sensor (active when there is someone in the car). See also parameter 1.09.1.
34	Overload. The activation of this input stops the car as soon as it is levelled at a floor, and turns on the overload signalling output (terminal SCE on STK1R board)
35÷37	Reserved
38	Brake 1 state signal, for brakes self-monitoring (UCM). See also VI.32, VI.39 and timers 4.16, 4.17. In case of a brake failure, alarm 81 is activated.
39	Brake 2 state signal, for brakes self-monitoring (UCM). See also VI.32, VI.38 and timers 4.16, 4.17. In case of a brake failure, alarm 81 is activated.
40	State of the safety gear tripping device. Triggers alarms 22 and 23. See also timer 4.56.
41	Closing command of all doors
42	Unique door opening command (re-opens the last door that has been open)
43	Door 1 opening command
44	Activation of the Shabbat operation
45	Door 3 opening command
46	Door 1 sensitive edge
47	Door 2 sensitive edge
48	Door 3 sensitive edge
49	State of the car/landing door contacts bypass (1 = bypass non active)
50	Reset maintenance operation from the pit
51	Door 3 photocell
52	Upward movement command in maintenance operation from the pit
53	Downward movement command in maintenance operation from the pit
54	Door 3 “moving door” signal / opening limit switch for door 3
55	Door 2 opening command, in maintenance operation
56	Door 2 opening command, in maintenance operation
57	Closing command for all doors, in maintenance operation
58	Upward movement command, in maintenance operation from the car roof
59	Downward movement command, in maintenance operation from the car roof

DG56	[5.xx.2] VIRTUAL INPUTS (INPUT FUNCTIONS) ASSOCIATED TO INPUT DG12
60	During EEO (see VI.62): upward movement command During normal operation: enters a call to the highest floor
61	During EEO (see VI.62): downward movement command During normal operation: enters a call to the lowest floor
62	Activates the Electrical Emergency Operation (EEO).
63	Activates the “manual brake release” emergency operation (see also VO.13)
64	SIS car position sensor. Triggers alarms 300 and followings.
65	SID car position sensor. Triggers alarms 300 and followings.
66	SRS car position sensor. Triggers alarms 300 and followings.
67	SRD car position sensor. Triggers alarms 300 and followings.
68	SIZ1 / DS car position sensor. Triggers alarms 300 and followings.
69	Reserved
70	Reserved
71	With electrical lifts and parameter 1.12.1=2: “Recommended running direction” signal from VVVF drive (1= upward). With hydraulic lifts with hold-to run operation and parameters 1.12.0=2: “Emergency Descent” command.
72	State of the relays that commands the electrical interlocks. If the input is active after turning off all the interlocks, alarm 25 is activated.
73	Pit access door unlocking contact, for lifts with reduced pit depth. Activates alarm 26 and virtual output VO.63.
74	State of the safety circuit for reduced headroom maintenance operation
75	Load centering photocell (next to door 1), for car lifts
76	Load centering photocell (central), for car lifts
77	Load centering photocell (next to door 2), for car lifts
78	Door 3 closing limit switch.
79	Reserved operation for firefighters / optional key in car for firefighting operation according to EN81-72
80	Safety chain monitoring input, starting point of the chain (point 1).
81	Safety chain monitoring input, after the limit switches (point 2)
82…83	Reserved
84	Night attenuation of the volume of the voice messages played by the SV01 device
85	Reserved
86	Safety chain monitoring input, state of the inspection switch on the car roof (point 5)
87	State of the inspection switch in the pit.
88	Safety chain monitoring input, just before any door safety contact (point 7). If = 0, stops all automatic car doors. See also 1.19.2.
89	Safety chain monitoring input, after swing landing doors safety contacts (point 8)
90	Safety chain monitoring input, after car doors safety contacts or safety photocell (for car without car doors) (point 9). With parameter 1.05.x=2 or 1.06.0=2 triggers alarm 14, if the input is off when the car is not in the door unlocking zone.
91	Safety chain monitoring input, after landing door locks (point 10)
92	Normal service fade-out (landing calls are disabled and cancelled, car calls are disabled)
93	Opening limit switch of car door 2, just to enable the alarm filtering output (VO.26) according to EN81.28
94	Opening limit switch of car door 3, just to enable the alarm filtering output (VO.26) according to EN81.28
95	Activation of “water in the pit” operation

Notes

- *Virtual inputs with gray background are not user modifiable.*

6.xx Outputs

DG0	DG1	DG2	DG3	DG4	DG5	DG6
6	x	x				

Programmable outputs on STK1R, EC02, BOX05, CAB01, EC03, ER02 boards

DG 12	Type	Terminal (LED)
01	Relay	STK1R.[J8.2, A1.2, -] (O1)
02	Relay	STK1R.[J8.3, A1.1, -] (O2)
03	Relay	STK1R.[A5.1, -, -] (OCC) common terminal at 0V or +24V, selectable with J5
04		
05	Relay	STK1R.[J7.2, J7.1 o J9.4, J9.1] (O5)
06	Relay	STK1R.[J7.3, J9.2, J9.3] (O6)
07	Relay	STK1R.[J11.3, J11.2, J11.1] (O7)
08	Relay	STK1R.[J12.3, J12.2, J12.1] (O8)
09	Relay	STK1R.[J10.5, J10.4, J10.3] (O9)
10	Relay	BOX05.[X15.10, X15.9, -] (AP1)
11	Relay	BOX05.[X15.8, X15.7, -] (CP1)
12	Relay	BOX05.[X16.10, X16.9, -] (AP2)
13	Relay	BOX05.[X16.8, X16.7, -] (CP2)
14	Relay	BOX05.[X5.1, X5.2, X5.3] (O1)
15	Relay	BOX05.[X5.4, X5.5, X5.6] (O2)
16		
17	HS24	EC02-O-0.X3.5 (HIO1)
18	HS24	EC02-O-0.X3.4 (HIO2)
19	HS24	EC02-O-0.X3.3 (HIO3)
20	HS24	EC02-O-0.X3.2 (HIO4)
21	HS24	EC02-O-0.X4.5 (HIO5)
22	HS24	EC02-O-0.X4.4 (HIO6)
23	HS24	EC02-O-0.X4.3 (HIO7)
24	HS24	EC02-O-0.X4.2 (HIO8)

DG 12	Type	Terminal (LED)
25	Relay	ER02-O-0.[X4.1, X4.2, X3.1] (O1)
26	Relay	ER02-O-0.[X3.3, X4.4, -] (O2)
27	Relay	ER02-O-0.[X3.4, X4.5, X3.5] (O3)
28	Relay	ER02-O-0.[X3.6, X4.6, -] (O4)
29	Relay	ER02-O-1.[X4.1, X4.2, X3.1] (O1)
30	Relay	ER02-O-1.[X3.3, X4.4, -] (O2)
31	Relay	ER02-O-1.[X3.4, X4.5, X3.5] (O3)
32	Relay	ER02-O-1.[X3.6, X4.6, -] (O4)
33	Relay	ER02-O-2.[X4.1, X4.2, X3.1] (O1)
34	Relay	ER02-O-2.[X3.3, X4.4, -] (O2)
35	Relay	ER02-O-2.[X3.4, X4.5, X3.5] (O3)
36	Relay	ER02-O-2.[X3.6, X4.6, -] (O4)
37	Relay	ER02-O-3.[X4.1, X4.2, X3.1] (O1)
38	Relay	ER02-O-3.[X3.3, X4.4, -] (O2)
39	Relay	ER02-O-3.[X3.4, X4.5, X3.5] (O3)
40	Relay	ER02-O-3.[X3.6, X4.6, -] (O4)
41	HS24	BOX05.X11.4 (IO1)
42	HS24	BOX05.X12.4 (IO2)
43	HS24	BOX05.X11.2 (IO3)
44	HS24	BOX05.X12.2 (IO4)
45	HS24	EC03-8.X1.2 (IO1)
	LS0	LCD581-xx0.JP16.3
46	HS24	EC03-8.X1.3 (IO2)
47	HS24	EC03-8.X1.4 (IO3)
48	HS24	EC03-8.X1.5 (IO4)

DG 12	Type	Terminal (LED)
49	HS24	EC03-8.X1.6 (IO5)
50	HS24	EC03-8.X1.7 (IO6)
51	HS24	EC03-8.X1.8 (IO7)
52	HS24	EC03-8.X1.9 (IO8)
53	HS24	CAB01-n.X3.2 (IO1)
	LS0	LCD581-xx0.JP12.3
54	HS24	CAB01-n.X3.3 (IO2)
	LS0	LCD581-xx0.JP13.3
55	HS24	CAB01-n.X3.4 (IO3)
	LS0	LCD581-xx0.JP14.3
56	HS24	CAB01-n.X3.5 (IO4)
	LS0	LCD581-xx0.JP15.3
57		
58		
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62		
63		
64		
65		
66		
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69		
70		
71		
72		

DG34	[6.xx.0] OUTPUT POLARITY
00	Normal
01	Inverted

Notes

1) Terminals are identified in this way: **<board name>.<connector name>.<terminal number>**. For relay outputs SPDT or SPDT, the related contacts are listed between square brackets: [<NO>, <COM>, <NC>] (<-> if unconnected).
2) Type “HS24” means “High Side 24V output” (PNP)
3) Type “LS0” means “Low Side 0V output” (NPN)
4) EC02-O-0 : EC02 board with dip switch DP2 set as 0011.0000
5) ER02-O-0 : ER02 board with dip switch DP2 set as 0000
6) ER02-O-1 : ER02 board with dip switch DP2 set as 0001
7) ER02-O-2 : ER02 board with dip switch DP2 set as 0010
8) ER02-O-3 : ER02 board with dip switch DP2 set as 0011
9) EC03-8 : EC03 board with dip switch DP1 set as 0000.0001
10) LCD581-xx0 : display VEGA LCD581 with dip-switch DP1.3=OFF
11) CAB01 (with its expansions EC03) and LCD581 are alternative (they must not be present at the same time)

Virtual outputs table

DG56	[6.xx.1] VIRTUAL OUTPUTS (OUTPUT FUNCTIONS)
00	Reserved
01	Door 1 opening command
02	Door 2 opening command
03	Door 1 closing command
04	Door 2 closing command
05	Car light 1. See also timer 4.45
06	Rettractable cam. See also timers 4.49 and 4.50
07	Reserved
08	Reserved
09	Soft stop valve command (upward only)
10	Star-delta starting contactor command. See also timer 4.11
11	Reserved
12	Soft stop valve command (upward and downward)
13	Brakes command (used in “manual brake unlocking” emergency operation). See also VI.63.
14	Exclusion of high speed soft starting resistors (see also timers 4.10, 4.41 and virtual input VI.20)
15	Exclusion of low speed soft starting resistors (see also timers 4.11, 4.41 and virtual input VI.20)
16 ÷ 19	Reserved
20	Speed selection bit 1
21	Speed selection bit 2
22	Speed selection bit 3
23	Upward motion command for NGV-A3 valve
24	Reserved
25	VMP/2CH/S valve command (for GMV valve block type 3010/2CH/S)
26	Alarm filtering according to EN81-28. See also VI.1, VI.93, VI.94.
27	Reserved
28	Command for the car door locking electromagnet
29	Enable signal for VVVF drive (with parameter 1.00.0=6)
30	Reserved
31	2nd downward valve command (for hydraulic lifts with 2 valves operating in series as UCM protection means)
32	“Doorlock” valve used as UCM protection mean (see also timer 4.59)
33	Door 3 opening command
34	Door 3 closing command
35	In-use signal
36	“Gong” signal (acoustic warning signal of imminent landing)
37	Vocal synthesis START command (see also timer 4.51).
38	Red light for car without door (with the safety photocell)
39	Green light for car without door (with the safety photocell)
40	Car in the door unlocking zone of the destination floor.
41	Car light 2 (see also timer 4.53)
42	Electrical interlock no. 1 / Side A electrical interlocks command (see also timer 4.52 and parameter 1.25)
43	Electrical interlock no. 2 / Side B electrical interlocks command (see also timer 4.52 and parameter 1.25)
44	Electrical interlock no. 3 / Side C electrical interlocks command (see also timer 4.52 and parameter 1.25)
45	Electrical interlock no. 4 (see also timer 4.52 and parameter 1.25)
46	Electrical interlock no. 5 (see also timer 4.52 and parameter 1.25)
47	Electrical interlock no. 6 (see also timer 4.52 and parameter 1.25)
48	Car stationary at floor (used for “car at floor” indication)
49	“Get out of the car” signal, for preferential operation (see also parameter 3.xx.2=3 or 4 and timer 4.57)
50	Micro-levelling upward command (see also timer 4.60)
51	Micro-levelling downward command (see also timer 4.61)

DG56	[6.XX.1] VIRTUAL OUTPUTS (OUTPUT FUNCTIONS)
52	Automatic hoistway light command (turns on during inspection, electrical emergency operation, or fire-fighting operation EN81-72)
53	Forced door closing command (used during EN81-72 / EN-81-73:2016 operation) (door “nudge” command)
54	Acoustic warning of fire during maintenance / forced closing of doors (during EN81-72 or EN81-73: 2016 operation)
55	“Out of service” signal (same as FFS output on STK1R board)
56	“In service” signal (inverted FFS output)
57	Buzzer for Shabbat operation
58	Acoustic / luminous warning signal of “moving car”, activated when the door safety contacts are bypassed (see VI.49), or during the installation operation (parameter 1.08.0=4) / Signaling of fire-fighting operation in progress / Signaling of car overload (see parameter 1.24.2)
59	24V voltage OK (> 16V)
60	UCM valves self-monitoring is running
61	“Reserved operation is active” signal
62	“Car next to the floor of destination” signal
63	Alarm 26 “man in the pit” signalling output (see VI.73)
64	Output for switching the VVVF drive power supply (0=supply from mains, 1 supply from UPS, works only with parameter 1.12.1=4, 5 or 6)
65	Command of the safety gear tripping device. See also parameter 1.15.2 and timer 4.63.
66	Signal of “firefighting operation in progress”
67	Acoustic and / or visual signal to leave the car (used in EN81-73:2016 operation). This output is cycled with Ton / Toff = 14s / 1s, to allow the repetition of the (acoustic) signal every 15s.
68	"Door on side A" signal (EN81-72 operation)
69	"Door on side B" signal (EN81-72 operation)
70	“Phase 2 of EN81-72 operation" signal
71	Battery charger shutdown (to check the 12V battery). See also parameter 1.27.0 and timer 4.88.
72	Signal of “load presence in the car”
73	Command of the pump motor (for HEVOS HExxx valve units)
74	Signal of “close the manual doors” (see timer 4.71)

NOTE

Please note that it is the responsibility of the installer to use door interlocks (see VO.42...47) that conforms to current regulations. If a simple interlock that is not mechanically or magnetically enabled is used in order to ensure the safety of the system, it is absolutely necessary to put a safety contact (as defined in EN81-1 14.1.2.2) in series with the interlock coil of the Nth landing, which is closed only when the car is in the door unlocking zone of the Nth landing!

7.00 Reserved

DG0	DG1	DG2	DG3	DG4	DG5	DG6
7						

The parameters of group 7 (7.xx) that were present in all software versions preceding the 1.32.x.x release, were moved to group 9 (9.xx).

8.00 Encoder type / direction / multiplying factor

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	0	0			0	0

DG3	[8.00.0] COUNTING DIRECTION
0	Normal
1	Inverted

CHECK OF RIGHT COUNTING DIRECTION

Check with parameter 8.10.0 that the car position increases when the car is moved upward and decreased when moved downward. If it is not so, you have to change parameter 8.00.0, or to invert the signals of the encoder (A with B, or A+ with A-, or B+ with B-).

DG4	[8.00.1] ENCODER TYPE
0	Encoder with “line driver” outputs. You need to connect all A+, B+, A-, B- signals. Encoder ENC01 is of this type.
	Encoder with “Open Collector” or “HTL” outputs. You need to connect only A+, B+ signals (please leave floating the other inputs A-, B-).

DG5	[8.00.2] MULTIPLICATION FACTOR OF PARAMETER 8.07.0
0	The actual number of pulses/meter generated by the encoder is equal to the value of parameter 8.07.0
1	The actual number of pulses/meter generated by the encoder is equal to the value of parameter 8.07.0 multiplied by 2
2	The actual number of pulses/meter generated by the encoder is equal to the value of parameter 8.07.0 multiplied by 4

If the encoders ENC01 / ENC02 are fixed on the car with their basement facing downward, the correct counting direction is achieved by setting:

- 8.00.0=1 with ENC01
- 8.00.0=0 with ENC02

8.01 | 8.02 Re-levelling distance (with encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
8	0	1					[8.01.0] Re-levelling distance above the floor (0000÷0100 mm)
8	0	2					[8.02.0] Re-levelling distance below the floor (0000÷0100 mm)

If you set 8.01 > 8.03, the downward re-levelling is disabled.
If you set 8.02 > 8.04, the upward re-levelling is disabled.

NB: this parameter is subjected to standard (EN81-20 point 5.12.1.1.4).

8.03 | 8.04 Door opening distances (with encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
8	0	3					[8.03.0] Door opening distance above the floor (0000÷0350 mm)
8	0	4					[8.04.0] Door opening distance below the floor (0000÷0350 mm)

Sets the zone around the floor within which the doors are enabled to open (included eventually the early door opening).

8.05 | 8.06 Slowdown distance for primary high speed (with encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
8	0	5					[8.05.0] Slowdown distance above the floor (0000÷9999 mm)
8	0	6					[8.06.0] Slowdown distance below the floor (0000÷9999 mm)

8.07 Number of pulses/meter of the encoder

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
8	0	7	0	0			**DG56** = [8.07.0] Number of pulses/meter, first part: tens (00 … 59)
8	0	7	0	_			**DG456** = [8.07.0] Number of pulses/meter, second part: units (000 ... 999)

Please note that the actual number of pulses/meter generated by the encoder is given by the value of parameter 8.07 multiplied by 1, 2 or 4, depending on the value of parameter 8.00.2.

With encoder ENC01 it is necessary to set 8.07=16762 and 8.00.2=0
With encoder ENC02 it is necessary to set 8.07=19505 and 8.00.2=0

8.08 Number of SIZ1 magnets above SR magnet (with Encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	0	8	0	0	0	

DG6 = [8.08.0] Number of SIZ1 magnets placed fully above the SR magnet (1 … 9)

Any SIZ1 magnets placed across the SR magnet shall not be counted.

8.09 Car speed (with Encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	0	9	0	0	0	0

With DG12 flashing, press >> and the car speed in mm/s will be shown (all seven digits are used).

DG0	DG1	DG2	DG3	DG4	DG5	DG6
A	0					

DG23456 = [8.09.0] Upward car speed (00000÷99999 mm/s)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
B	0					

DG23456 = [8.09.0] Downward car speed (00000÷99999 mm/s)

Press >> again to exit from car speed screen.

Instead, until the group and subgroup are visible, the last four digits DG3456 show the direction of the car motion as follows.

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	0	9	0	0	0	0

Car is stopped

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	0	9	A	A	A	A

Car is going up

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	0	9	B	B	B	B

Car is going down

If the shown direction is opposite to the real direction of the car, the counting direction of the encoder must be changed by means of parameter 8.00.0.

8.10 Car position (with Encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	1	0	0	0	0	0

With DG12 flashing, press >> and the car position in mm will be shown (all seven digits are used).

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
A							**DG123456** = [8.10.0] Positive car position (000000÷999999 mm)
B							**DG123456** = [8.10.0] Negative car position (000000÷999999 mm)

Press >> again to exit from car position screen.

Instead, until the group and subgroup are visible, the last four digits DG3456 show the direction of the car motion as follows.

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
8	1	0	0	0	0	0	Car is stopped
8	1	0	A	A	A	A	Car is going up
8	1	0	B	B	B	B	Car is going down

If the shown direction is opposite to the real direction of the car, the counting direction of the encoder must be changed by means of parameter 8.00.0.

SOME CONVENTIONS ABOUT THE CAR POSITION

Car position is assumed to increase by moving the car upward.

When the lift is in phase (i.e. when the car position can be fully determined), car position is assumed to be 500mm when the SIZ sensor is centred on the lowest SIZ magnet.

When the lift is out of phase, car position cannot be absolutely referred to a fixed point in the hoistway, and it is valid only in relative terms.

8.11 | 8.12 | 8.13 Reserved

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	1	1				
8	1	2				
8	1	3				

8.14 Slowdown distance for secondary high speed

The secondary high speed is a car speed between low speed and primary high speed. It is used in case of short floor, i.e. when the distance between two consecutive floors is much less than the double of the slowdown distance for primary high speed (see parameters 8.05.0, 8.06.0). It can be used only with lifts with encoder and VVVF drive.

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	1	4				

[8.14.0] Slowdown distance for secondary high speed, in mm (0000÷9999 mm)

This distance is unique for upward and downward slowdown. Set to zero if the secondary high speed is not needed.

8.15 Reserved

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	1	5				

8.16 SRS magnet position (with Encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	1	6				

[8.16.0] Distance K_{RS} (see paragraph 5.6.4) in mm, updated at any passage on the magnet. (0000÷9999 mm)

8.17 SRD magnet position (with Encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	1	7				

[8.17.0] Distance K_{RD} (see paragraph 5.6.4) in mm, updated at any passage on the magnet. (0000÷9999 mm)

8.18 Absolute reference position (with Encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6
8	1	8				

[8.18.0] Distance in mm of the absolute reference from the lowest floor, measured during encoder shaft learning (see parameter 9.00.0) (0000÷9999 mm)

The absolute reference is the switching of SR sensor (VI.66) when DR sensor (VI.67) is OFF. When this happens, the value of this parameter is assigned to the car position, and lift is considered “in phase”.

If you followed the magnets placement laid down in paragraph 5.6.4, this distance should be approximately 70mm.

8.19 Adjustment of stop height in automatic emergency (with Encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
8	1	9					[8.19.0] units=mm, min=0, max=125, default=100

Distance to be covered after the transition SIZ 0 → 1 (VI.68 0 → 1) before the stop command is given, during an automatic emergency run. Adjusts the stopping height of the car against the floor, in automatic emergency. Increasing the value of parameter 8.19.0 moves the stop height forward (i.e. in the direction of movement of the car).

Please note that with some emergency operation where the speed is not fully controlled (such as “brake release only”, see 1.12.1), the stop height of the car depends on the load of the car, so this adjustment can be only approximate.

8.20 Minimum distance for the selection of the primary high speed (with Encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
8	2	0					[8.20.0] units=% min=100, max=250, default=100

Minimum flight distance for the selection of the primary high speed, expressed as a percentage of the respective slowdown distances (8.05.0 and 8.06.0). Applied only when parameter 8.14.0 is different from 0 (i.e. when a secondary high speed is enabled).

8.21 Length of the SIZ magnet of the lowest floor (with Encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
8	2	1	0				[8.21.0] units=mm, min=250, max=550, default=250

Length in mm of the SIZ magnet of the lowest floor.

8.22 Length of the SIZ magnet of the highest floor (with Encoder)

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
8	2	2	0				[8.22.0] units=mm, min=250, max=550, default=250

Length in mm of the SIZ magnet of the highest floor.

9.00 Encoder shaft learning

DG0	DG1	DG2	DG3	DG4	DG5	DG6
9	0	0				

To perform learning of floor heights and of stop distances, follow the procedure below.

1) Check the following points:
   a) the positioning of the SIZ1 magnets (if used) and of the SRD and SRS magnets (see paragraph 5.6.4)
   b) The efficiency of the sensors SIZ1, SRD and SRS

2) Set or check the values of the following parameters:
   a) 1.01.0 = floor number
   b) 2.xx.2 = short floors
   c) 8.08.0 = number of SIZ1 magnets above the SRS highest magnet
   d) 8.05.0 e 8.06.0 = slowdown distances
   e) 9.xx.0 = floor height (if there are no SIZ1 magnets)

3) Select the acquisition type: on parameter 9.00 set DG5 according to the chart below:

DG5	[9.00.0] ENCODER SHAFT LEARNING TYPE
0	For shafts with SIZ1: This operation performs a complete ascending and a complete descending run. Then a 500 mm ascending run and a 500 mm descending run are performed. During this operation, the landing threshold heights and stop distances from the landing are detected.
1	For shafts without SIZ1: This operation performs a 500 mm ascending run and a 500 mm descending run. During this operation, only the stop distances from the landings are detected.

4) Start the acquisition:
   move the cursor to DG6 and press ^. To interrupt the acquisition, press v. DG6 will show the status of acquisition as listed in the following table.

DG6	LEARNING RESULT
0	Procedure not yet performed
1	Procedure is in progress
A	Procedure completed successfully
E	Procedure completed with errors (see point 5)

5) If the procedure ends with errors, these are displayed on DG34. Alarm codes and their causes are described in paragraph 9.3. After removing all the causes, repeat the procedure from point 3.

6) By monitoring parameter 8.10.0, make sure that the car stops at the same height at an intermediate landing, both coming from above and from below (at this stage it does not matter if the car is not leveled at the landing floor). If there is a difference greater than 5 mm, make sure that the slowdown distances (parameters 8.05.0 and 8.06.0) are compatible with the type of machine or power unit installed (refer to the manufacturer's information) and start the procedure again from point 2.

7) Perform stops at all landings and detect the height differences found at each threshold. Correct the stop height at each landing using parameter 9.xx (increasing the value the car will stop higher).

8) Save the acquired values and the applied corrections using the parameter 0.12 (or 0.17).

9.xx Floors table: heights and stop distances (with Encoder)

Shows the heights of each landing and the ascending and descending stop distances that were acquired using parameter 9.00. It is possible to modify the heights of each landing.

DG0	DG1	DG2	DG3	DG4	DG5	DG6	
9	x	x	_				**DG3456=** [9.xx.0] Floor height in mm, first part: thousands (0000÷9999)
9	x	x	0	_			**DG456=** [9.xx.0] Floor height in mm, second part: units (000÷999)
9	x	x	0		_		**DG456=** [9.xx.1] Stop distance above the floor (downward) in mm (000÷255)
9	x	x	0			_	**DG456=** [9.xx.2] Stop distance below the floor (upward) in mm (000÷255)

XX = Floor number (from 01 to 24)

The stop distances are measured automatically during the shaft learning procedure (see parameters 9.00.0) and **should never be changed manually**.

C.00 Voice announcer SV01 “CHOPIN” – basic settings

DG0	DG1	DG2	DG3	DG4	DG5	DG6
C	0	0				

DG3	[C.00.0] LANGUAGE OF MESSAGES – FIRST ANNOUNCEMENT
1…9, A … F	First ... ninth language, tenth ... fifteenth language (see paragraph “7.10. Voice announcer SV01 CHOPIN" for the correspondence between the numerical index of the language and the language of the messages)

DG4	[C.00.1] LANGUAGE OF MESSAGES – SECOND ANNOUNCEMENT
0…9, A … F	As for DG3. The second announcement is played only if DG4 is different from DG3.

DG5	[C.00.2] VOLUME OF VOICE MESSAGES
0…9	0=mute, 9=volume max. Value 0 implies disabling the reproduction of all voice messages.

DG6	[C.00.3] VOLUME OF THE BACKGROUND MUSIC
0…9	0=mute, 9=volume max. To play the background music, a micro-SD card with the music files must be permanently installed on the SV01.

These settings are applied to all SV01-n devices of a given installation (please see paragraph “7.10. Voice announcer SV01 CHOPIN” for the definition of SV01-n device).

C.xx Voice announcer SV01 “CHOPIN” – messages selection

DG0	DG1	DG2	DG3	DG4	DG5	DG6
C						

DG12 (xx)	Event
01 … 24	With parameter 1.26.2=0: start of slowdown for stopping at floor 1 … 24 With parameter 1.26.2=1: car stop at floor 1 … 24
25	Doors opening
26	Doors closing
27	Activation of the up arrow
28	Activation of the down arrow
29	Activation of the out of service signal
30	Activation of the overload signal
31	Activation of the virtual output VO.67 (warning to leave the car during EN81-73 operation)
32	Activation of the virtual output VO.36 (“gong”)
33	An external booking was registered on the main floor (see parameter 1.02.0)
34	Car is coming to the main floor (see parameter 1.02.0) to serve an external call at the same floor
35	Up arrow is lit at the start of the door opening (after event 25)
36	Down arrow is lit at the start of the door opening (after event 25)
37	The manual landing and / or manual car door has been left open for more than the time 4.71. As long as this condition persists, this message is repeated after the period that can be set using the timer 4.72
38 … 40	Reserved

DG3	[C.xx.0] SV01 device on which to play the voice message
0 … 9, A … E	The message identified by the number set on DG456 (parameter C.xx.1) will be played on the SV01-0 … SV01-9, SV01-10 … SV01-14 device
F	The message identified by the number set on DG456 (parameter C.xx.1) will be played on all SV01-n devices

DG456	[C.xx.1] Index of message to be played
000	Event **xx** does not trigger the playback of any message
001 … 255	Event **xx** triggers the playback of the message with index equal to 1 … 255

Upon occurrence of event **xx** (DG12), the message selected by the numerical index DG456 is reproduced on the SV01 device identified by DG3, in the language (or languages) set using parameters C.00.0 and C.00.1.

Please note that setting C.01.1 with values between 1 and 6 causes the automatic reprogramming of the subsequent parameters from C.02.1 to C.24.1 (arrival at floors) with values C.02.1 = C.01.1 + 1, C.03.1 = C.01.1 + 2, etc.

Please note that messages with an index between 200 and 255 are played only once in language 0, regardless of the setting of parameters C.00.0 and C.00.1 (i.e. they are reserved for any non-vocal acoustic signals, or for vocal announcements that must be reproduced in one language only, in coexistence with other messages to be reproduced in two languages).

For more details about:

- the definition of SV01-n devices
- the correspondence between the numerical index of the message (DG456) and the message itself
- the correspondence between the numerical index of the language (parameters C.00.0 and C.00.1) and the language of the message

please see paragraph “7.10. Voice announcer SV01 CHOPIN”.

Standard voice messages pre-loaded on SV01

In the absence of different specifications from the customer, the messages shown in the following table are available on SV01, in Italian (C.00.0 = 1), English (2), German (3) and French (4).

Index	Message
1	“Floor minus four”
2	“Floor minus three”
3	“Floor minus two”
4	“Floor minus one”
5	“Floor zero”
6	“First floor”
7	“Second floor”
8	“Third floor”
9	“Fourth floor”
10	“Fifth floor”
11	“Sixth floor”
12	“Seventh floor”
13	“Eighth floor”
14	“Ninth floor”
15	“Tenth floor”
16	“Eleventh floor”
17	“Twelfth floor”
18	“Thirteenth floor”
19	“Fourteenth floor”
20	“Fifteenth floor”
21	“Sixteenth floor”
22	“Seventeenth floor”
23	“Eighteenth floor”
24	“Nineteenth floor”
25	“twentieth floor”
26	“twenty-first floor”
27	“twenty-second floor”
28	“twenty-third floor”
29	“twenty-fourth floor”
30	“Ground floor”
31	“Underground floor”
32	“Basement”
33	“Mezzanine”
34	“Restaurant”
35	“Gym”
36	“Main entrance”
37	“Car parking”

Index	Message
100	“Doors opening”
101	“Doors closing“
102	“Lift is going up”
103	“Lift is going down”
104	“Lift is out of service”
105	“Overload: please unload the car”
106	“Fire alarm: leave the car”
107	“Lift is out of service: please leave the car”
108	“Lift on the right is coming”
109	“Lift on the left is coming”
110	“Lift A is coming”
111	“Lift B is coming”
112	“Lift C is coming”
113	“Lift D is coming”
114	“Lift number one is coming”
115	“Lift number two is coming”
116	“Lift number three is coming”
117	“Lift number four is coming”
118	“Attention: close the doors !”
200	“din” (sol5)
201	“dan” (mi5)
202	“don” (do5)
203	“dinDon” (mi5, do5)
204	“dinDonDan” (sol5, do5, mi5)
205	Single beep
206	Double beep
207	“Reception” (in English)
208	“Hall” (in English)

7. ELECTRONIC BOARDS DESCRIPTION

7.1. Legend

7.1.1. TYPE OF INPUTS AND OUTPUTS

Type	Description
OUT_{RELAY}	Relay output (voltage free contact)
OUT_{HS24}	“High side” 24V output (same as a contact that closes toward 24V)
OUT_{LS}	”Low side” output (same as a contact that closes toward GND)
IN_0	Input activated by a contact that closes toward the positive supply vltage
IN_1	Input activated by a contact that closes toward the negative supply vltage
I/O_{CAN}	CAN bus data signals
IN	Generic input
OUT	Generic output
V_{SUPPLY}	Supply voltage (input or output)

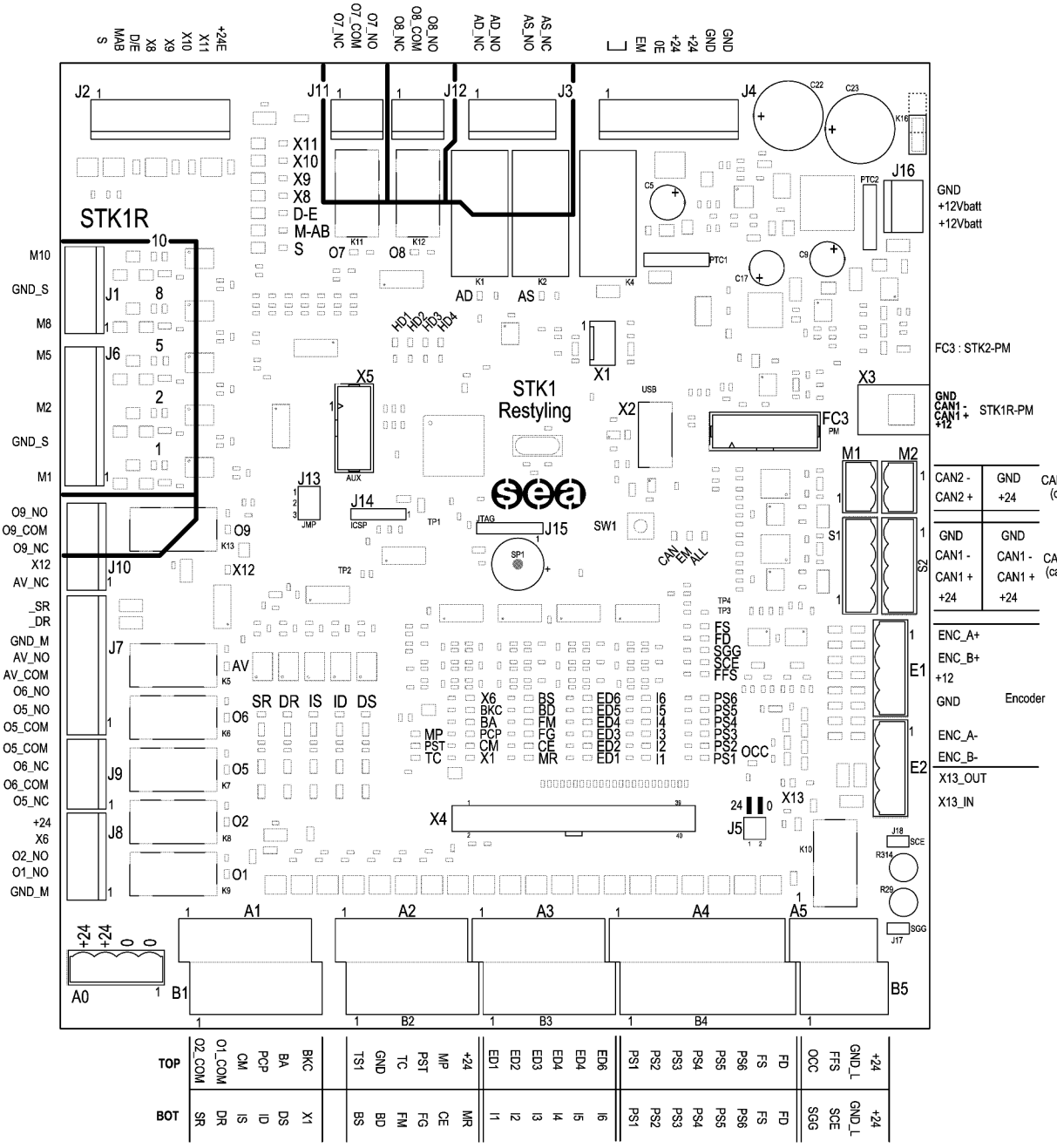
7.1.2. TERMINALS DESIGNATION

A terminal is designated with a unique name built up in this way: **[<board name>.]<connector name>.<pin number>** (board name is optional and used only if it is not clear from the context). Connector names and pins number 1 are printed on any board.

7.1.3. DIP-SWITCHES DESIGNATION

Any dip switch is designated with a unique name built up in this way: **[<board name>.]<group name>.<number>** (board name is optional and used only if it is not clear from the context). The dip-switch group name is printed on any board, while its number and the ON position is marked on the component body. If it is necessary to indicate the state of a whole group of dip-switches, this will be shown as a sequence of character 0,1,x (respectively for OFF, ON, or don’t care) of which the first on the left correspond to the dip-switch no. 1.

7.2. STK1R motherboard



STK1R fixed (non programmable) inputs and outputs.

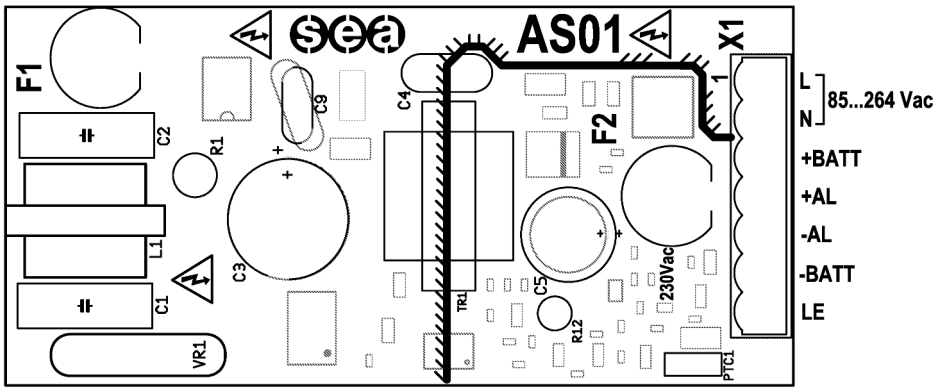
TERMINAL	LED / SIGNAL NAME	TYPE	DESCRIPTION
$J3.1_{NC}$ | $J3.2_{NO}$	AD	OUT_{RELAY}	Downward command
$J3.4_{NO}$ | $J3.5_{NC}$	AS	OUT_{RELAY}	Upward command
$J7.5_{NO}$ | $J7.4_{COM}$ | $J10.1_{NC}$	AV	OUT_{RELAY}	High speed command
A4.8, B4.8	FD	OUT_{HS24}	Downward arrow
A5.2	FFS	OUT_{HS24}	Out of service
A4.7, B4.7	FS	OUT_{HS24}	Upward arrow
A3.1 … A3.6	ED1...ED6	IN_0 / OUT_{HS24}	Call inputs / “booked call” outputs
B3.1...B3.6	I1...I6	IN_0 / OUT_{HS24}	Call inputs / “booked call” outputs
A5.1	OCC	OUT_{HS24} / OUT_{LS}	In-use signal
A4.1 … A4.6 B4.1 … B4.6	PS1...PS6	OUT_{HS24}	Car position signalling (see parameter 1.10.0 to set the format)
B5.2	SCE	OUT_{HS24}	Overload
B5.1	SGG	OUT_{HS24}	Gong
A2.1	TS1	IN	PTC thermistor for motor protection. Connect the thermistor between the input and GND.
E1.1 E1.2 E2.1 E2.2	ENC_A+ ENC_B+ ENC_A- ENC_B-	IN	This inputs are suitable for reading encoders with line-driver, open collector, or HTL outputs, by selecting the output type with parameter 8.00.1

For other inputs and outputs not listed in the above table see chapter 6, paragraphs “5.xx Inputs” and “6.xx Outputs”, respectively. They are programmable inputs and outputs.

STK1R leds (not directly linked to inputs or outputs)

LED	COLOR	DESCRIPTION
ALL	RED	Flashes to signal that an alarm was registered (see also parameter 0.02 and 0.35)
EM	YELLOW	Flashes to signal automatic emergency operation or electrical emergency operation
CAN	GREEN	Fixed ON: CAN-BUS1 communication is OK Flashing: CAN-BUS1 communication errors (see alarms 270 … 273)
HD1	GREEN	Flashes to signal that microprocessor is running
HD2	GREEN	Flashes to signal that a test operation is running (see parameter 0.09)
HD3	GREEN	Fixed ON: CAN-BUS2 (used for group operation) communication is OK Flashing: CAN-BUS2 communication errors (see alarms 278 … 281)
HD4	RED	If it is lit, bootloader is operating

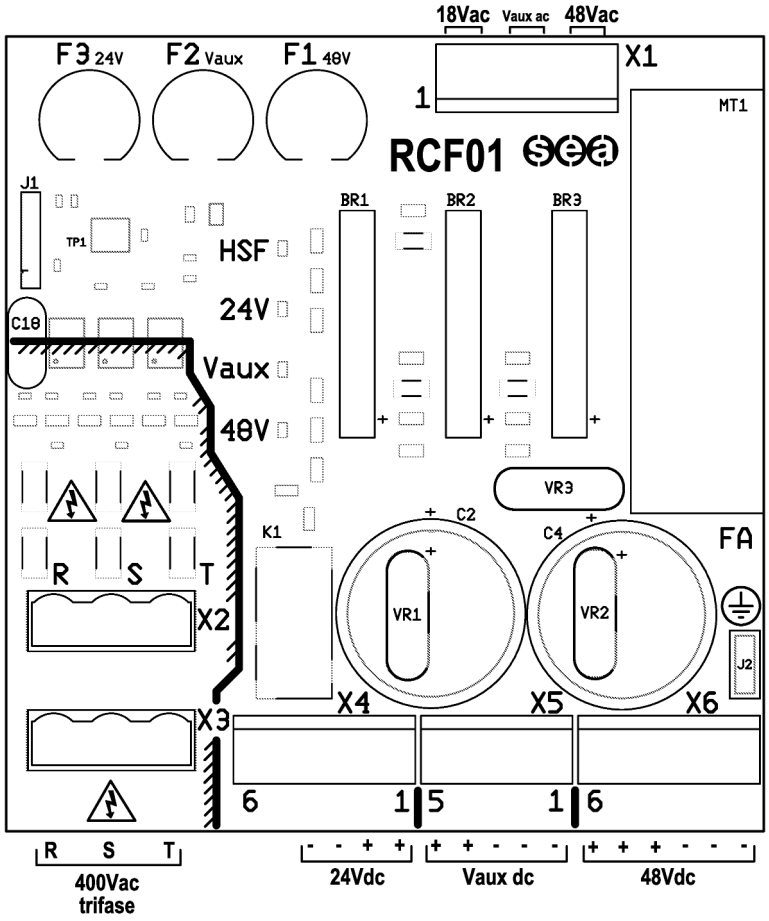
7.3. AS01 board – battery charger and emergency light



AS01 terminals

TERMINAL	NAME	LED	TYPE	DESCRIPTION
X1.1, X1.2	L, N	230Vac (green)	V_{SUPPLY}	Mains voltage input. The associated led is lit in presence of mains voltage.
X1.3	+BATT	-	V_{SUPPLY}	12V lead-acid battery positive terminal
X1.4	+AL	-	V_{SUPPLY}	12V loads positive (protected by F2 fuse)
X1.5	-AL	-	V_{SUPPLY}	12V loads negative
X1.6	-BATT	-	V_{SUPPLY}	12V lead-acid battery negative terminal
X1.7	LE	-	OUT_{LS}	Emergency light output (0.25A max), turned on when there is no mains voltage

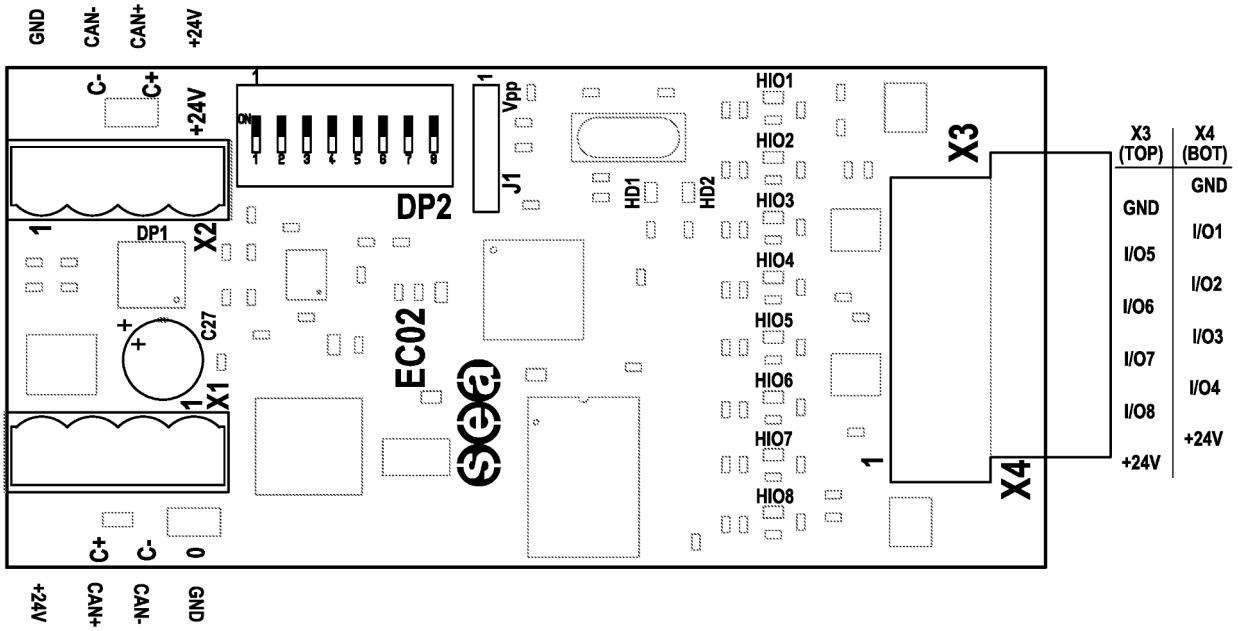
7.4. RCF01 board – supply



RCF01 terminals

TERMINAL	LED	TYPE	DESCRIPTION
X1.1, X1.2	-	V_{SUPPLY}	18Vac input (for 24Vdc output on X4)
X1.3, X1.4	-	V_{SUPPLY}	Vac inputs (for Vaux output on X5)
X1.5, X1.6	-	V_{SUPPLY}	42Vac input (for 48Vdc output on X6)
X2, X3	-	IN	RST 400Vac phases (for detecting the direction of rotation or phase loss)
X4.1, X4.2	24V	V_{SUPPLY}	24Vdc positive output
X4.3, X4.4		V_{SUPPLY}	24Vdc negative output
$X4.5_{NO}$ | $X4.6_{COM}$	HFS	OUT_{RELAY}	"RST good" output. Contact is closed if the direction of rotation is correct and all phases are present, open otherwise. The associated led is fixed ON in case of "RST good" condition (relay contact closed), flashing otherwise.
X5.1, X5.2, X5.3	Vaux	V_{SUPPLY}	Vaux dc negative output
X5.4, X5.5		V_{SUPPLY}	Vaux dc positive output
X6.1, X6.2, X6.3	48V	V_{SUPPLY}	48Vdc negative output
X6.4, X6.5, X6.6		V_{SUPPLY}	48Vdc positive output

7.5. EC02 board – inputs ant outputs expansion



It is possible to expand STK1R board inputs and outputs by connecting one or more EC02 boards to the CAN1 serial bus (connectors S1 or S2 on STK1R). Each EC02 board has 8 inputs / outputs, usable as:

- programmable inputs / outputs
- inputs/outputs for calls
- non programmable outputs

Apart from this paragraph, you can find some informations for their use also in Chapter 6, paragraphs “5.xx Inputs”, “6.xx Outputs”, “3.xx Calls”. For more details please contact SEA SYSTEMS technical support.

EC02 terminals

NAME	TERMINAL	LED	TYPE	STK1R PARAM.	DESCRIPTION
0 (GND)	X1.1, X2.1		V_{SUPPLY}		CAN bus (24V power supply and CAN data signals)
CAN-	X1.2, X2.2		I/O_{CAN}		
CAN+	X1.3, X2.3		I/O_{CAN}		
+24V	X1.4, X2.4		V_{SUPPLY}		
+24V	X3.1, X4.1		V_{SUPPLY}		24Vdc supply voltage output
0 (GND)	X3.6, X4.6		V_{SUPPLY}		0V
I/O8	X3.2	HIO8	IN_0 / OUT_{HS24}	3.13 … 3.68 5.41 … 5.44 5.61 … 5.72 6.17 … 6.24	Generic programmable inputs / outputs (see chapter 6, paragraphs “3.xx Calls”, “5.xx Inputs” and “6.xx Outputs”)
I/O7	X3.3	HIO7	IN_0 / OUT_{HS24}		
I/O6	X3.4	HIO6	IN_0 / OUT_{HS24}		
I/O5	X3.5	HIO5	IN_0 / OUT_{HS24}		
I/O4	X4.2	HIO4	IN_0 / OUT_{HS24}		
I/O3	X4.3	HIO3	IN_0 / OUT_{HS24}		
I/O2	X4.4	HIO2	IN_0 / OUT_{HS24}		
I/O1	X4.5	HIO1	IN_0 / OUT_{HS24}		

EC02 leds (not directly linked to inputs, outputs or supply voltages)

LED	COLOR	DESCRIPTION
HD1	RED	Flashes in case of errors
HD2	GREEN	Flashes when a CAN telegram is transmitted or received

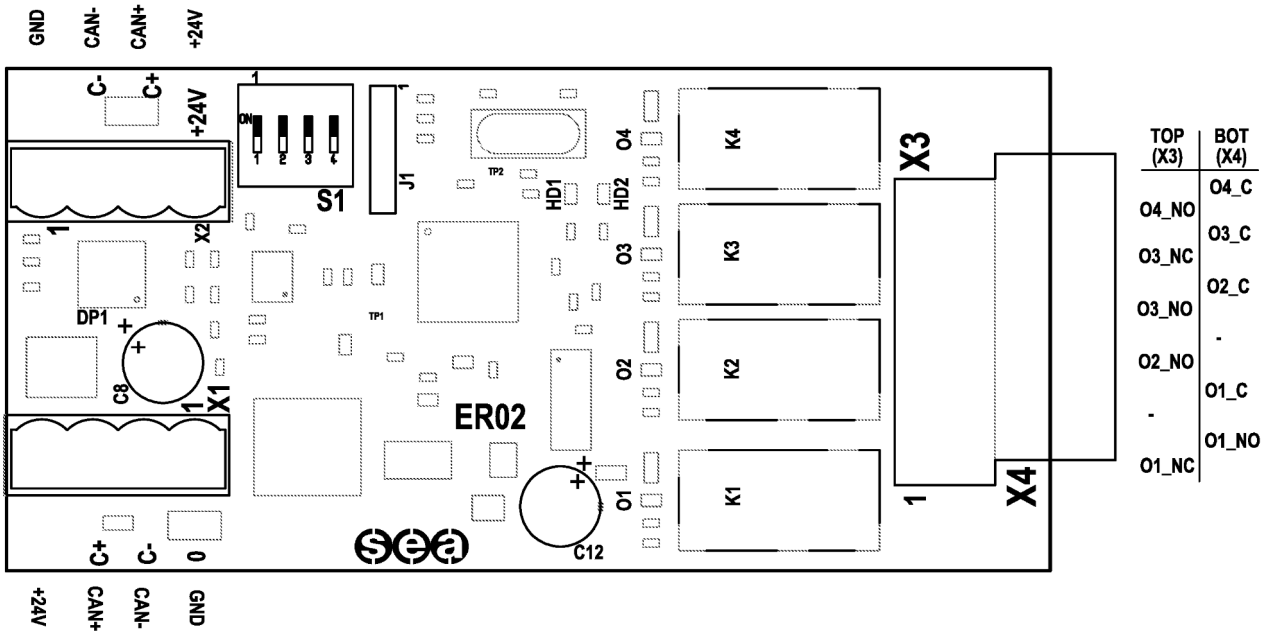
Functions available on "standard" EC02 boards (product code EDA5xx_yy)

Name	Function	DP2	Terminal name
EC02-C0	8 inputs/outputs for calls (see parameters 3.13 … 3.20)	0000.0000	In, En (see the electric diagram)
EC02-C1	8 inputs/outputs for calls (see parameters 3.21… 3.28)	0000.0001	In, En (see the electric diagram)
EC02-C2	8 inputs/outputs for calls (see parameters 3.29… 3.36)	0000.0010	In, En (see the electric diagram)
EC02-C3	8 inputs/outputs for calls (see parameters 3.37… 3.44)	0000.0011	In, En (see the electric diagram)
EC02-C4	8 inputs/outputs for calls (see parameters 3.45… 3.52)	0000.0100	In, En (see the electric diagram)
EC02-C5	8 inputs/outputs for calls (see parameters 3.53… 3.60)	0000.0101	In, En (see the electric diagram)
EC02-C6	8 inputs/outputs for calls (see parameters 3.61… 3.68)	0000.0110	In, En (see the electric diagram)
EC02-CP0	6 inputs/outputs for calls (3.13, 3.14, 3.15, 3.17, 3.18, 3.19) 2 outputs for car position 1 wire/floor, floors 7 and 8	0101.0000	In, En (see the electric diagram). PS7, PS8
EC02-P0	8 outputs for car position 1 wire/floor, floors 7 to 14	00010000	PS7÷PS14
EC02-P1	8 outputs for car position 1 wire/floor, floors 15 to 22	00010001	PS15÷PS22
EC02-P2	8 outputs for car position 1 wire/floor, floors 23 to 30	00010010	PS23÷PS30
EC02-P4	8 outputs for car position 1 wire/floor, floors 1 to 8	00010100	PS1÷PS8
EC02-P5	8 outputs for car position 1 wire/floor, floors 9 to 16	00010101	PS9÷PS16
EC02-P6	8 outputs for car position 1 wire/floor, floors 17 to 24	00010110	PS17÷PS24
EC02-P8	6 outputs for car position, binary format, with offset set by parameters 1.10 and 1.11 2 outputs for direction arrows	00011000	PS1÷PS6, FD, FS
EC02-P9	6 outputs for car position, gray format, with offset set by parameters 1.10 and 1.11 2 outputs for direction arrow	00011001	PS1÷PS6, FD, FS
EC02-P10	8 outputs for car position, BCD format, with offset set by parameters 1.10 and 1.11	00011010	PS1÷PS8
EC02-P11	6 outputs for car position, 1 wire/floor, floors 1 to 6 2 outputs for direction arrows	00011011	PS1÷PS6, FD, FS
EC02-P-12	4 outputs for car position, binary format 1 output for the "out of service" signal 1 output for the "overload" signal 2 outputs for direction arrows	0001.1100	
EC02-V-0	VVVF drive interface	00100000	O1÷O4, I5÷I8
EC02-V-1	Interface for the control of HEVOS HE100 - HE250 – HE650 valve units	00100001	
EC02-I0	Generic inputs (see parameters 5.65 … 5.72)	01000000	IP1÷IP8
EC02-O0	Generic outputs (see parameters 6.17 … 6.24)	00110000	OP1÷OP8
EC02-CPn	6 inputs/outputs for calls, 2 outputs for car position 1 wire/floor	0101.xxxx	
EC02-An	8 outputs for vocal synthesis driving (VOX17P)	1000.xxxx	
EC02-CQn	4 inputs/outputs for calls 4 outputs for car position 1 wire/floor	1001.xxxx	
EC02-SEn	Inputs and outputs for car lift lights	1010.xxxx	
EC02-PS-n	8 outputs for car position, 7 segment display format	1011.xxxx	
EC02-EM-n	Power exchange between mains / batteries / EM02	1100.xxxx	
EC02-GE-n	Power exchange between mains / emergency generator / EM02	1101.xxxx	
EC02-TM-n	Timer for low duty cycle electromagnets	1110.xxxx	

Functions available on "special" EC02 boards (but usable with standard STK1R software)

Name	Function	Product code
EC02-PT0 + EC02-PT1	Management of motorized movable stops and semaphores for reduced pit / headroom	EDA515S_00
EC02-PR-n	"present" signals (the car is present at the floor)	EDA520S_00
EC02-IA-n	"incoming" signals (the car is coming to the floor)	EDA520S_00

7.6. ER02 board – relay outputs expansion



It is possible to expand STK1R board outputs by connecting one or more ER02 boards to the CAN1 serial bus (connectors S1 or S2 on STK1R). Each ER02 board has 4 programmable relay outputs (see chapter 6, paragraph "6.xx Outputs" for their programming). For more details please contact SEA SYSTEMS technical support.

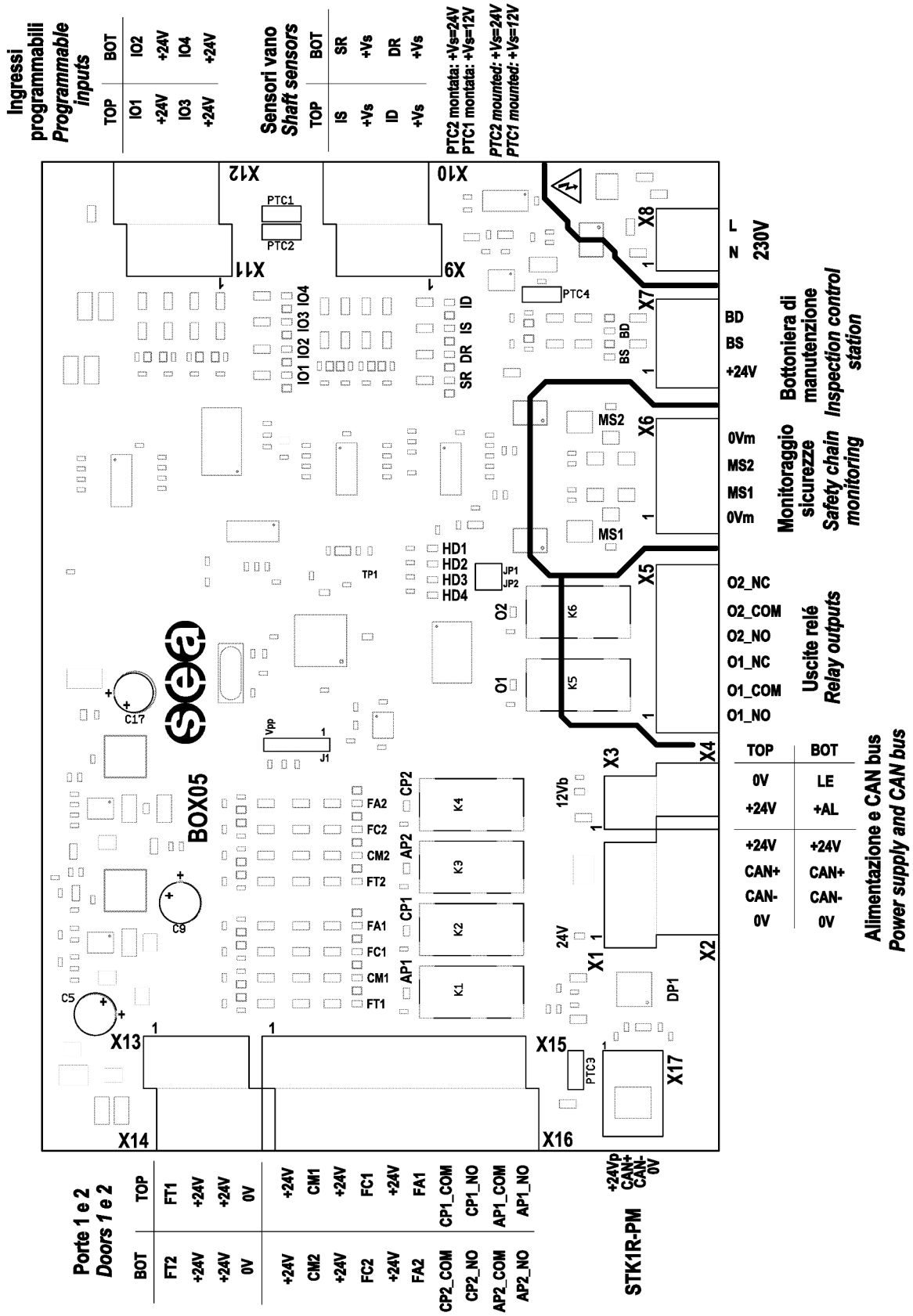
ER02 terminals

NAME	TERMINAL	LED	TYPE	STK1R PARAM.	DESCRIPTION
0 (GND)	X1.1, X2.1		V_{SUPPLY}		CAN bus (24V power supply and CAN data signals)
CAN-	X1.2, X2.2		I/O_{CAN}		
CAN+	X1.3, X2.3		I/O_{CAN}		
+24V	X1.4, X2.4		V_{SUPPLY}		
O1_x	$X4.1_{NO}$ | $X4.1_{COM}$ | $X3.1_{NC}$	O1	OUT_{RELAY}	6.25 … 6.40	Generic programmable outputs (see chapter 6, paragraph "6.xx Outputs")
O2_x	$X3.3_{NO}$ | $X4.4_{COM}$	O2	OUT_{RELAY}		
O3_x	$X3.4_{NO}$ | $X4.5_{COM}$ | $X3.5_{NC}$	O3	OUT_{RELAY}		
O4_x	$X3.6_{NO}$ | $X4.6_{COM}$	O4	OUT_{RELAY}		

ER02 leds (not directly linked to inputs, outputs or supply voltages)

LED	COLOR	DESCRIPTION
HD1	RED	Flashes in case of errors
HD2	GREEN	Flashes when a CAN telegram is transmitted or received

7.7. BOX05 board – car roof inputs and outputs expansion



It is possible to expand STK1R board inputs and outputs by connecting only one BOX05 board to the CAN1 serial bus (connectors S1 or S2 on STK1R). All available inputs and outputs (excluded the LE output on connector X4) are programmable (see chapter 6, paragraphs "5.xx inputs" and "6.xx Outputs" for their programming). For more details please contact SEA SYSTEMS technical support.

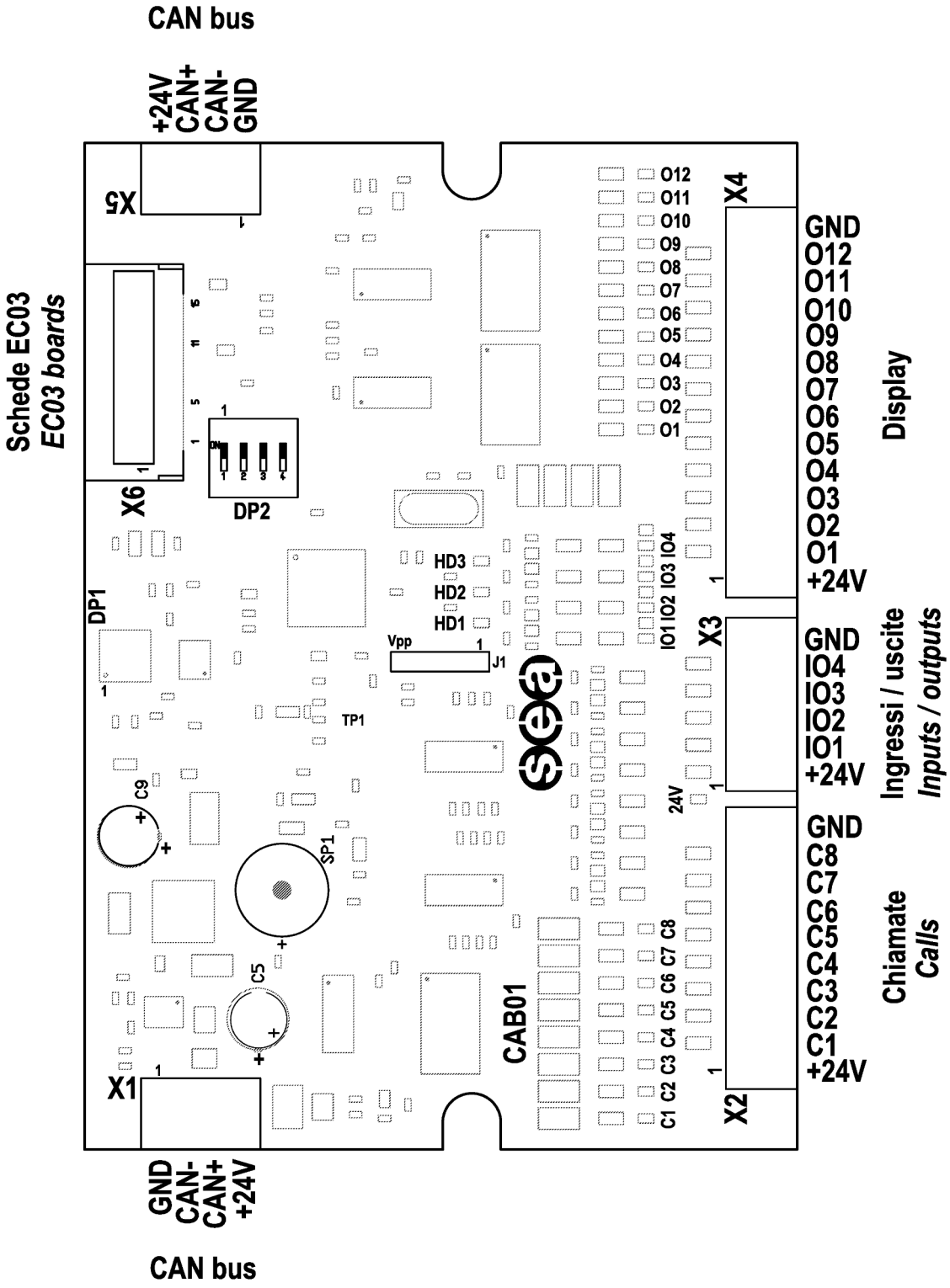
BOX05 terminals

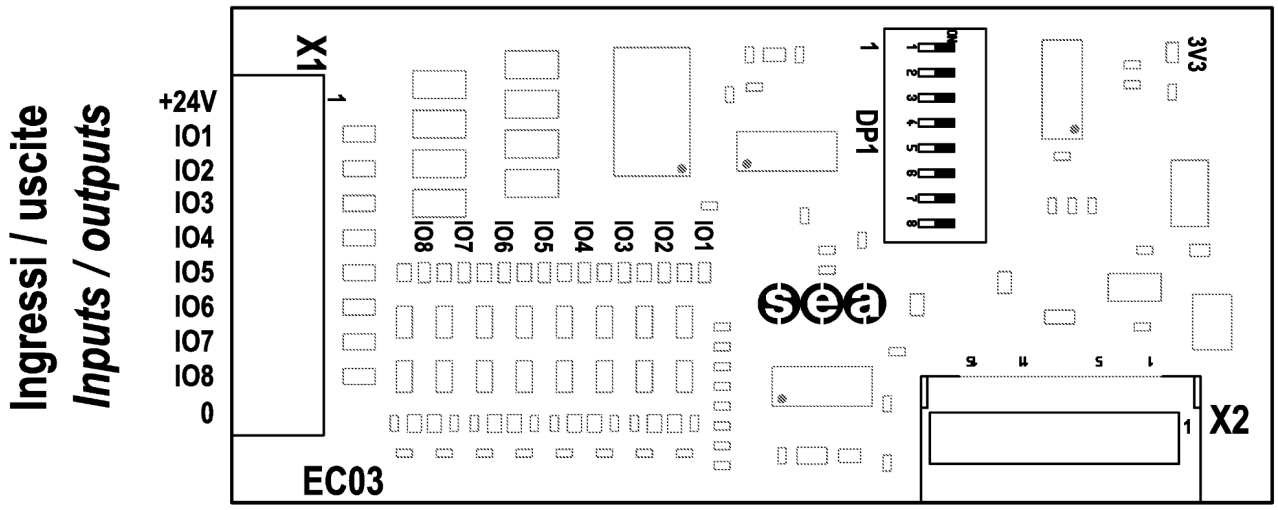
NAME	TERMINAL	LED	TYPE	STK1R PARAM.	DESCRIPTION
0V	X1.1, X2.1		V_{SUPPLY}		CAN bus (24V power supply and CAN data signals)
CAN-	X1.2, X2.2		I/O_{CAN}		
CAN+	X1.3, X2.3		I/O_{CAN}		
+24V	X1.4, X2.4	24V	V_{SUPPLY}		
+24V	X3.1, X7.1, X11.1, X11.3, X12.1, X12.3, X13.2, X13.3, X14.2, X14.3, X15.1, X15.3, X15.5, X16.1, X16.3, X16.5		V_{SUPPLY}		24Vdc positive
0V	X3.2, X13.4, X14.4		V_{SUPPLY}		0V
+AL	X4.1	12Vb	V_{SUPPLY}		12V battery supply voltage (negative in common with 0V)
LE	X4.2		OUT_{LS}		Emergency light output (0.25A max), turned on when there is no mains voltage on X8.1, X8.2
O1_x	$X5.1_{NO}$ | $X5.2_{COM}$ | $X5.3_{NC}$	O1	OUT_{RELAY}	6.14	Generic programmable inputs /outputs
O2_x	$X5.4_{NO}$ | $X5.5_{COM}$ | $X5.6_{NC}$	O2	OUT_{RELAY}	6.15	
0Vm	X6.1, X6.4				Reference for inputs MS1 and MS2
MS1	X6.2	MS1	IN	5.54	Programmable isolated input for safety chain monitoring
MS2	X6.3	MS2	IN	5.59	
BS	X7.2	BS	IN_0	5.30	Programmable inputs, normally used for up/down inspection commands
BD	X7.3	BD	IN_0	5.31	
L, N	X8.1, X8.2		IN		230V mains monitoring input (see output LE)
+Vs	X9.1, X9.3, X10.1, X10.3		V_{SUPPLY}		IS ID SR DR sensors supply voltage (12 / 24V)
ID	X9.2	ID	IN_0	5.34	Programmable 'fast' inputs, normally used for car position sensors
IS	X9.4	IS	IN_0	5.33	
DR	X10.2	DR	IN_0	5.36	
SR	X10.4	SR	IN_0	5.35	
IO3	X11.2	IO3	IN_0 / OUT_{HS24}	5.04 / 6.43	Generic programmable inputs / outputs (see chapter 6, paragraphs "5.xx Inputs" and "6.xx Outputs")
IO1	X11.4	IO1	IN_0 / OUT_{HS24}	5.02 / 6.41	
IO4	X12.2	IO4	IN_0 / OUT_{HS24}	5.05 / 6.44	
IO2	X12.4	IO2	IN_0 / OUT_{HS24}	5.03 / 6.42	
FT1	X13.1	FT1	IN_0	5.73	Programmable inputs/outputs, normally used for control of car doors 1 and 2 (see chapter 6, paragraphs "5.xx Inputs" and "6.xx Outputs")
FT2	X14.1	FT2	IN_0	5.77	
CM1	X15.2	CM1	IN_0	5.74	
FC1	X15.4	FC1	IN_0	5.75	
FA1	X15.6	FA1	IN_0	5.76	
CP1_x	$X15.7_{COM}$ | $X15.8_{NO}$	CP1	OUT_{RELAY}	6.11	
AP1_x	$X15.9_{COM}$ | $X15.10_{NO}$	AP1	OUT_{RELAY}	6.10	
CM2	X16.2	CM2	IN_0	5.78	
FC2	X16.4	FC2	IN_0	5.79	
FA2	X16.6	FA2	IN_0	5.80	
CP2_x	$X16.7_{COM}$ | $X16.8_{NO}$	CP2	OUT_{RELAY}	6.13	
AP2_x	$X16.9_{COM}$ | $X16.10_{NO}$	AP2	OUT_{RELAY}	6.12	

BOX05 leds (not directly linked to inputs, outputs or supply voltages)

LED	COLOR	DESCRIPTION
HD1	RED	Flashes in case of errors
HD2	GREEN	Flashes when a CAN telegram is received
HD3	GREEN	Flashes when a CAN telegram is transmitted
HD4	GREEN	1Hz regular blinking: the microprocessor is running and supply voltages are OK N distinguishable flashes: supply voltages errors

7.8. CAB01 / EC03 board – car inputs and outputs expansion





Alla scheda CAB01 (X6)
To CAB01 board (X6)

It is possible to handle calls and other commands / signals from the car by connecting a single CAB01 board to the CAN1 serial bus (connectors S1 or S2 on STK1R). Additional calls or inputs/outputs are available expanding the CAB01 board itself with one or more EC03 boards (up to 8), which can be connected via a single 16-pin flat cable between the CAB01.X6 and EC03.X2 connectors (and passing through the X2 connector of any intermediate EC03). All available inputs and outputs (excluded the O1 … O12 outputs on connector CAB01.X4) are programmable (see chapter 6, paragraphs "5.xx inputs", "6.xx Outputs", "3.xx Calls" for their programming).

CAB01 terminals

NAME	TERMINAL	LED	TYPE	STK1R PARAM.	DESCRIPTION
0 (GND)	X1.1, X5.1		V_{SUPPLY}		CAN bus (24V power supply and CAN data signals)
CAN-	X1.2, X5.2		I/O_{CAN}		
CAN+	X1.3, X5.3		I/O_{CAN}		
+24V	X1.4, X5.4	24V	V_{SUPPLY}		
+24V	X2.1, X3.1, X4.1		V_{SUPPLY}		24Vdc supply voltage output
0 (GND)	X2.10, X3.6, X14.14		V_{SUPPLY}		GND
C1 … C8	X2.2 … X2.9	C1 … C8	IN_0 / OUT_{HS24}	3.13 … 3.68	Programmable inputs / outputs for calls (see chapter 6, paragraph "3.xx Calls")
IO1 … IO4	X3.2 … X3.5	IO1 … IO4	IN_0 / OUT_{HS24}	5.89 … 5.92 6.53 … 6.56	Generic programmable inputs / outputs (see chapter 6, paragraphs "5.xx Inputs" and "6.xx Outputs")
O1 … O12	X4.2 … X4.13	O1 … O12	OUT_{HS24}		Outputs, normally used for controlling the car display
X6	all				Connector for EC03 expansions

CAB01 leds (not directly linked to inputs, outputs or supply voltages)

LED	COLOR	DESCRIPTION
HD1	RED	Flashes in case of errors
HD2	GREEN	Flashes when a CAN telegram is received
HD3	GREEN	Flashes when a CAN telegram is transmitted

EC03 terminals

NAME	TERMINAL	LED	TYPE	STK1R PARAM.	DESCRIPTION
+24V	X1.1		V_{SUPPLY}		CAN bus (24V power supply and CAN data signals)
IO1 … IO8	X1.2 … X1.9	IO1 … IO8	IN_0 / OUT_{HS24}	3.21 … 3.68 5.81 … 5.88 6.45 … 6.52	Generic programmable inputs / outputs (see chapter 6, paragraphs "3.xx Calls", "5.xx Inputs" and "6.xx Outputs")
0 (GND)	X1.10		V_{SUPPLY}		GND
X2	all	3V3			Connector for communication with the CAB01 motherboard

The O1 ... O12 outputs available on the CAB01 X4 connector can not be programmed individually but only as a set, by setting parameter 0.31.2 and dip-switch CAB01.DP2.4.

0.31.2=0

- O1 … O6 : car position in gray (DP2.4=ON) or binary format (DP2.4=OFF). O1 is the less significant bit.
- O7 : upward arrow (same as the FS output on STK1R board)
- O8 : downward arrow (same as the FD output on STK1R board)
- O9 : out of service (same as FFS output on STK1R board)
- O10 : overload (same as SCE output on STK1R board)
- O11 : gong (same as VO.36)
- O12 : no function

0.31.2=1

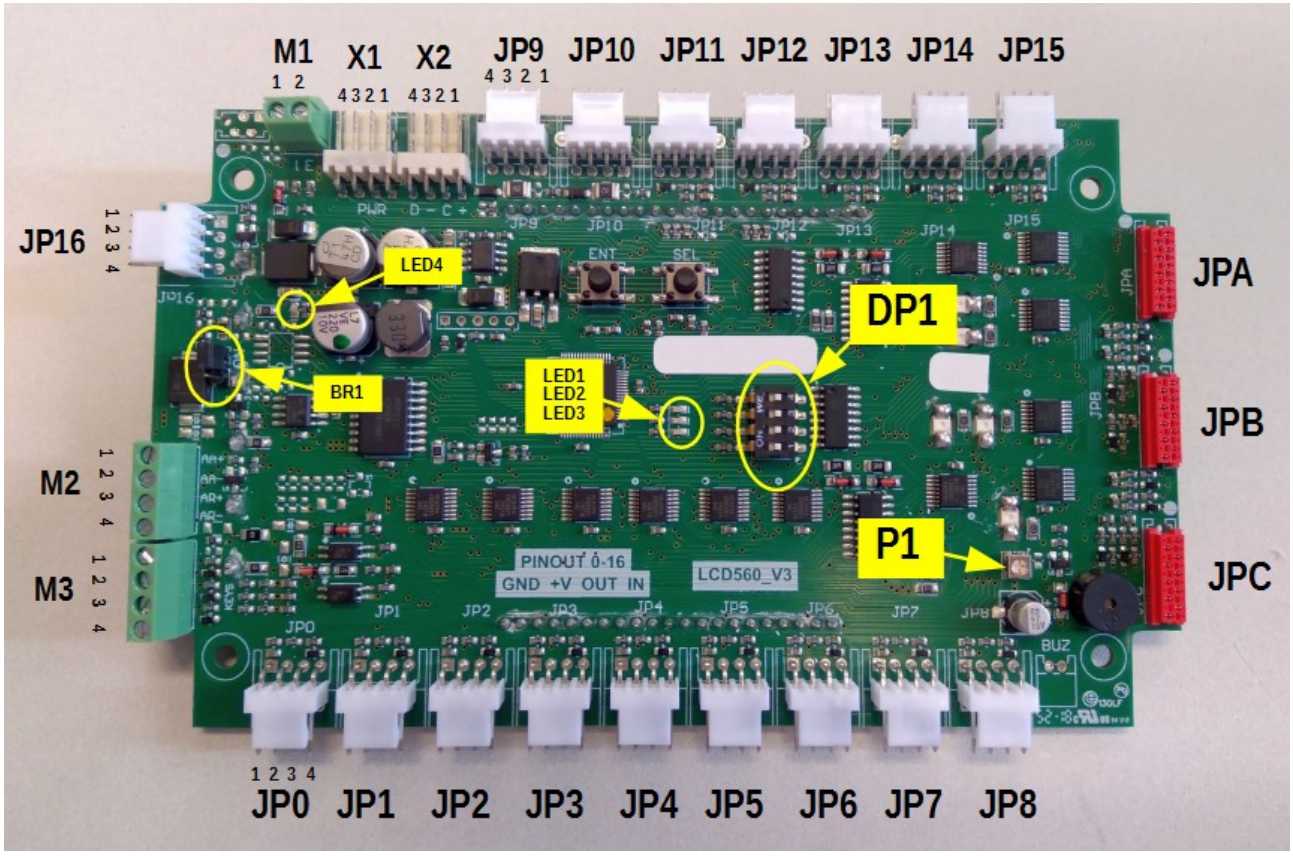
- O1 … O4 : car position in gray (DP2.4=ON) or binary format (DP2.4=OFF). O1 is the less significant bit.
- O5 : upward command (same as relay AS on STK1R board)
- O6 : downward command (same as relay AD on STK1R board)
- O7 … O12 : same as with 0.31.2=0

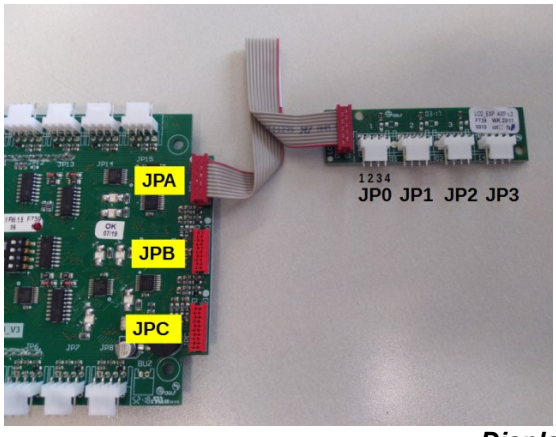
0.31.2=2

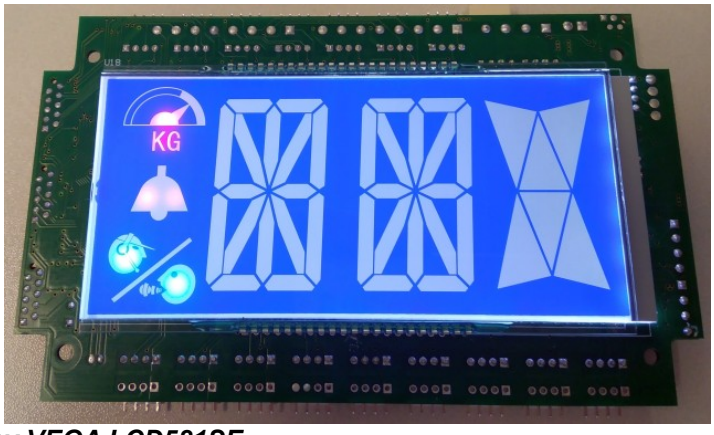
- O1 … O6 : car position in 1 wire/floor format (O1 for the lowest floor)
- O7 … O12 : same as with 0.31.2=0

For more details please contact SEA SYSTEMS technical support.

7.9. VEGA LCD581SE display – car inputs and outputs expansion







Display VEGA LCD581SE

It is possible to handle calls and other commands / signals from the car by connecting VEGA LCD581SE display to the CAN1 serial bus (connectors S1 or S2 on STK1R). Additional calls or inputs/outputs are available expanding the display with one or more LCD_EXP boards. Quite all available inputs and outputs are programmable (see chapter 6, paragraphs "**5.xx inputs**", "**6.xx Outputs**", "**3.xx Calls**" for their programming).

VEGA LCD581SE display - Terminals

NANE	TERMINAL	LED	TYPE	PARAM. STK1R	DESCRIPTION
+	X1.1, X2.1	LED4	V_{SUPPLY}		Positive supply voltage (12… 24V)
C	X1.2, X2.2		I/O_{CAN}		CAN+
-	X1.3, X2.3		V_{SUPPLY}		Negative supply voltage
D	X1.4, X2.4		I/O_{CAN}		CAN-
GND	JPn.1 (n=1 … 16)		V_{SUPPLY}		Negative supply voltage (connected to X1.3, X2.3)
+V	JPn.2 (n=1 … 16)		V_{SUPPLY}		Positive supply voltage (connected to X1.1, X2.1)
	M1.1		V_{SUPPLY}		Positive supply voltage for emergency light (12V)
	M1.2		V_{SUPPLY}		Negative supply voltage of emergency light (connected to X1.3, X2.3)
AA+	M2.1		IN_0		Input for turning on the alarm-activated icon
AA-	M2.2				
AR+	M2.3		IN_0		Input for turning on the alarm-received icon
AR-	M2.4				
GND	M3.1		V_{SUPPLY}		Negative supply voltage (connected to X1.3, X2.3)
	M3.2		IN_1	5.82	Programmable inputs (see chapter 6, paragraph “5.xx Inputs”)
	M3.3		IN_1	5.83	
	M3.4		IN_1	---	Not used
	JPn.4 (n=0 … 11)		IN_1	3.13 … 3.24 3.37 … 3.48	Programmable inputs for calls (see chapter 6, paragraph “3.xx Calls”)
	JPB.JPn.4 (n=0 … 3)			3.25 … 3.28 3.49 … 3.52	
	JPC.JPn.4 (n=0 … 3)			3.29 … 3.32 3.53 … 3.56	
	JP12.4			5.89	Programmable inputs (see chapter 6, paragraph “5.x Inputs”)
	JP13.4			5.90	
	JP14.4			5.91	
	JP15.4			5.92	
	JP16.4			5.81	
	JP12.3		OUT_{LS}	6.53	Programmable outputs (see chapter 6, paragraph “6.xx Outputs)
	JP13.3			6.54	
	JP14.3			6.55	
	JP15.3			6.56	
	JP16.3			6.45	
	JPn.3 (n=0 … 11)			3.13 … 3.24 3.37 … 3.48	Programmable outputs for call booking signals (see chapter 6, paragraph “3.xx Calls”)
	JPB.JPn.3 (n=0 … 3)			3.25 … 3.28 3.49 … 3.52	
	JPC.JPn.3 (n=0 … 3)			3.29 … 3.32 3.53 … 3.56	

LCD581SE leds (not directly linked to inputs, outputs or supply voltages)

LED	COLOR	DESCRIPTION
LED1	RED	Lights up when at least one input is active.
LED2	RED	Blinks slowly to indicate the microcontroller is working.
LED3	RED	Blinks fast if there are communication problems on the CAN bus, otherwise it blinks together with LED2

Display programming

Programming is done using the two SEL and ENT buttons placed on the back of the display.

Programming of the self-power-off of the backlight (default : 30 minutes)

1. Press SEL once to select menu 1 (“M1” appears)
2. Press ENT once, the current value (in minutes) of the idle time for the self-power-off of the backlight is shown
3. If needed, press SEL repeatedly (or keep pressed) until the desired value is selected (from 0 to 99 minutes, 0 sets the backlight always on)
4. Press ENT once, “ME” (memorizing) is shown for few seconds, then you can proceed with any other programming

Programming of the buzzer volume (default: 15)

1. Press SEL 2 times to select menu 2 (“M2” appears)
2. Press ENT once, the current value of the buzzer volume is shown
3. If needed, press SEL repeatedly (or keep pressed) until the desired value is selected (0 to fully disable the buzzer, 15 for max volume)
4. Press ENT once, “ME” (memorizing) is shown for few seconds, then you can proceed with any other programming
5. **Please note that the volume can also be adjusted with the trimmer P1**

Programming of normal / demo operation (default: NO)

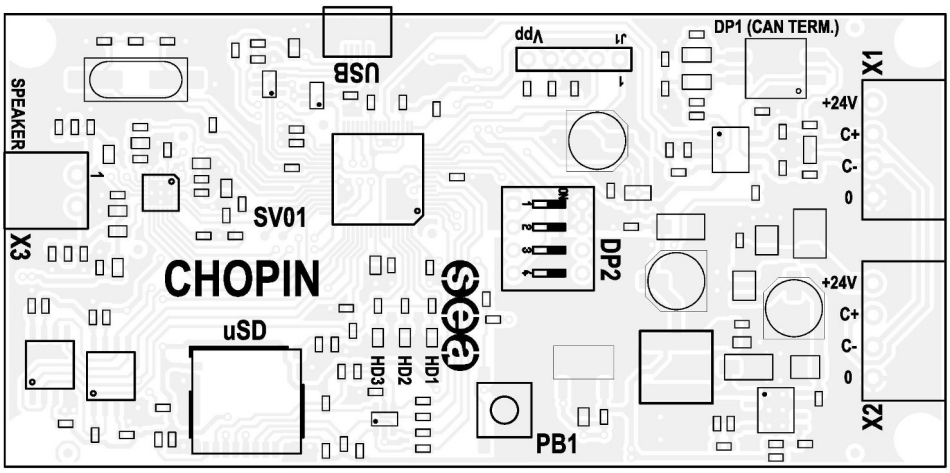
1. Press SEL 3 times to select menu 3 (“M3” appears)
2. Press ENT once, the current value is shown (SI / NO)
3. If needed, press SEL to select the desired value (SI for demo operation, NO for normal operation)
4. Press ENT once, “ME” (memorizing) is shown for few seconds, then you can proceed with any other programming

Programming of the symbols for out-of-service and floors

1. Press SEL 5 times to select menu 5 (“M5” appears)
2. Press ENT once, the current symbol index is shown
3. If needed, press SEL repeatedly (or keep pressed) until the desired index is selected (-1 for the out-of service symbol, and from 0 to 31 for the floors)
4. Press ENT once, the current symbol corresponding to the selected index is shown
5. If needed, press SEL repeatedly (or keep pressed) until the desired symbol on the right digit is selected
6. Press ENT once
7. If needed, press SEL repeatedly (or keep pressed) until the desired symbol on the left digit is selected
8. Press ENT once, “ME” (memorizing) is shown for few seconds, then you can proceed with any other programming

For more details please contact SEA SYSTEMS technical support.

7.10. Voice announcer SV01 “CHOPIN”



Voice announcer SV01 - Terminals

NAME	TERMINALS	TYPE	DESCRIPTION
+24V	X1.4, X2.4	V_{SUPPLY}	Positive supply (6 … 27V)
C+	X1.3, X2.3	I/O_{CAN}	CAN+
C-	X1.2, X2.2	I/O_{CAN}	CAN-
0	X1.1, X2.1	V_{SUPPLY}	Negative supply
SPEAKER	X3.1, X3.2	Output	Speaker (min. 4 ohm). For the wiring, a twisted pair less than 2 meters long must be used.

Dip-switches DP1 e DP2

Dip-switches DP1 allow the activation / deactivation of the CAN bus termination.

The function of DP2 dip-switches, on the other hand, is to distinguish several SV01 devices (up to 16) simultaneously connected on the same CAN bus. For the sake of brevity, in this document the setting of these 4 dip-switches is indicated with a suffix number to the name SV01, as specified in the following table.

Dip-switches DP2 (blank = OFF)				Short name
1	2	3	4	
				SV01-0
			ON	SV01-1
		ON		SV01-2
		ON	ON	SV01-3
	ON			SV01-4
	ON		ON	SV01-5
	ON	ON		SV01-6
	ON	ON	ON	SV01-7

Dip-switches DP2 (blank = OFF)				Short name
1	2	3	4	
ON				SV01-8
ON			ON	SV01-9
ON		ON		SV01-10
ON		ON	ON	SV01-11
ON	ON			SV01-12
ON	ON		ON	SV01-13
ON	ON	ON		SV01-14
ON	ON	ON	ON	SV01-15

Please note that the SV01-15 device cannot be used in conjunction with STK1R, because it cannot be selected from parameter C.xx.0.

Signaling LEDs

HD1 (green): operating status

- regular flashing 1s ON / 1s OFF: normal operation (playback of voice messages and background music)
- steady lit: voice messages are being loaded from the micro-SD card

HD2 (green)

- during normal operation (i.e. with HD1 flashing) emits a short flash when receiving a command via CAN
- during the loading of messages from the micro-SD card (i.e. with HD1 steady lit) is:
  - steady lit when the FLASH memory erasing is in progress
  - flashing 0.5s ON / 0.5s OFF when the message are being transferred
  - off when the transfer is complete (with or without errors)

HD3 (red): errors

- during normal operation it is off if there are no CAN communication errors, otherwise it flashes
- during the loading of messages from the micro-SD card is:
  - off during FLASH memory erasing and message transfer
  - flashing when the transfer is completed with errors (for more details see the paragraph "Transferring the voice message files from micro-SD card to FLASH memory")

Preparation of voice message and music files on the micro-SD card

The micro-SD card must be FAT formatted. If there are multiple partitions, files and folders to be used with SV01 must be placed on the first partition.

Voice messages must be in WAV format PCM 8KHz 8bit unsigned, without accessory fields in the header with respect to the required fields (i.e. the header must be 44 bytes long). They can be freely organized into folders and / or subfolders, with the only constraint that the length of the path + file name must be limited to 255 characters.

The background music files must be present in a folder named “music”, located directly in the root folder. The format must be WAV PCM 16KHz 16 bit signed, without accessory fields in the header with respect to the required fields (i.e. the header must be 44 bytes long). The length of the path + file name must be limited to 255 characters. The sequence with which these files are cyclically reproduced is the same with which they were written on the micro-SD (i.e. the same sequence with which they appear in the file allocation table).

Finally, in the root folder there must be a text file named “**config.txt**”, whose syntax is described below.

Syntax of the “config.txt” file

The “**config.txt**” file in the root folder of the micro-SD card allows you to indicate to the SV01 device which voice messages must be transferred to the FLASH memory integrated on the device, so that they can be played even without the micro-SD itself. It also allows you to assign two unique identification numbers to each message transferred, which are essential for activating its reproduction by means of commands given via CAN bus.

Each audio message to be loaded into the built-in memory on the SV01 device must first be uniquely identified by a pair of numbers (L, ID). The first (L) must be associated with the language of the message, while the second (ID) with its meaning, so that messages with the same ID and different L express the same meaning in different languages. L and D are freely assignable, with the only constraint that L must be between 0 and 15, while ID must be between 1 and 511. When using SV01 in combination with the STK1R board, L corresponds to the values that can be assigned to the STK1R parameters C.00.0 / C.00.1 (language selection), while ID corresponds to the values that can be assigned to parameter C.xx.1 (selection of the voice message to be played when a given event occurs). Note that these STK1R parameters have a narrower range than the corresponding SV01 parameters (C.00.0 and C.00.1 must be between 1 and 15,

while C.xx.1 must be between 0 and 255). Remember also that, with C.xx.1 between 200 and 255, STK1R commands the SV01 device to play the message with the ID equal to the value of C.xx.1 and language L = 0, regardless of the settings of the parameters C.00.0 and C.00.1.

The association between L, ID and the file that contains a voice message to be loaded, is established in the "**config.txt**" file using the following syntax:

- the special character **$** placed at the beginning of a line and followed by a number between 0 and 15 defines the L number for all the associations defined in the following lines, up to a new line starting with **$**
- a line starting with a number between 1 and 511 followed by the **=** character and a path / file name enclosed in quotation marks defines the ID number for that file. The separator character to use in the path to distinguish folders and file names is the "*/*" character (UNIX-style). The root folder must not be expressed in any way (neither with a WINDOWS-style disk letter like "C:", nor with the UNIX-style file systems root character identifier "*/*"). A valid example is "Messages/IT/piano1.wav", which identifies the file "piano1.wav" present in the "IT" folder, sub-folder of the "Messages" folder present in the root folder of the first partition existing on the micro-SD card.
- any line starting with the **#** character is a comment and has no effect

Example of a possible "**config.txt**" file:

```
#Sounds
$0
200="UN/gong.wav"

#Italian
$1
1="IT/p-4c.wav"
2="IT/p-3c.wav"
3="IT/p-2c.wav"
4="IT/p-1c.wav"
128="IT/apPorte.wav"
129="IT/chPorte.wav"

#English
$2
1="EN/p-4c.wav"
2="EN/p-3c.wav"
3="EN/p-2c.wav"
4="EN/p-1c.wav"
128="EN/apPorte.wav"
129="EN/chPorte.wav"
```

The result of this example will be as follows:

- the "UN/gong.wav" file will be loaded and associated with L = 0 and ID = 200. The corresponding message will then be reproduced upon the occurrence of event **xx** whose associated parameter C.**xx**.1 has been programmed equal to 200
- the file "IT/p-4c.wav" will be loaded and associated with L = 1 and ID = 1. The corresponding message will then be reproduced upon the occurrence of event **xx** whose associated parameter C.**xx**.1 has been programmed equal to 1, if C.00.0 (or C.00.1) is set to 1
- the file "IT/p-3c.wav" will be loaded and associated with L = 1 and ID = 2. The corresponding message will then be reproduced upon the occurrence of event **xx** whose associated parameter C.**xx**.1 has been programmed equal to 2, if C.00.0 (or C.00.1) is set to 1
- etc.

Transferring the voice message files from micro-SD card to FLASH memory

1. Insert the micro-SD card, prepared as indicated in the previous paragraphs, in the appropriate slot on the SV01 device.
2. Press the PB1 button for at least 3 seconds, until the HD1 and HD2 LEDs light up steadily
3. Release the button. When HD2 starts flashing (after a few tens of seconds) it means that the erasing of the FLASH memory has finished and the file transfer has begun. The uploading process can take a few minutes, depending on the number and size of the files to upload.
4. If the loading procedure ends without errors, SV01 automatically resumes normal operation (the HD1 LED starts flashing regularly). Otherwise, the HD3 LED will emit a certain number of flashes depending on the error that has occurred (see the following table), and to resume normal operation it is necessary to briefly press the PB1 button.
5. Remove the micro-SD card, if no background music is required.

HD3 signals in case of transfer procedure terminated with errors

Number of HD3 flashes	Error description
1	Impossible to open the root folder
2	“config.txt” file no found
3	WAV file not found
4	WAV file bad format
5	Errors while writing the FLASH memory
6	Not enough space in FLASH memory

8. MAINTENANCE

Follow the ‘safety precautions’ listed in chapter 2 during installation operations.
Under no circumstances shall SEA SYSTEMS S.r.l. be liable for any damages resulting from the failure to comply with the above instructions, or from any non authorized modifications of the original equipment.

Before carrying out any cleaning or maintenance operation, remove the power supply to the unit by turning off the master switch.

8.1. Battery maintenance

The control panel is fitted with 12V lead-acid batteries that have different capacity depending on the specific application. The battery has a life expectancy of 3 years if it is constantly under charge.

Check the status yearly and if necessary replace it with another battery having the same characteristics.

8.2. Shaft sensor maintenance (magnetic sensors and belt encoder)

Car position is generally read by using magnetic reed switches (of monostable and bistable type), some magnets to activate them, and eventually an incremental encoder.

In order to ensure that sensors switch over properly when are in proximity of their corresponding magnets, check on a yearly basis that:

- the distance between the sensor and the magnet is about 1-1.5 cm, even during mechanical stress.
- Sensor displacements due to plays of car shoes on the rails are parallel to the sensor axis (i.e. to the reed switch)
- The magnets do not have any iron element or residue attached to them.
- The brackets for both sensors and magnets are well fastened to the car roof and to the rails.

In case of presence on ENC01 encoder, check periodically:

- the belt fixing
- the correct mechanical coupling between the toothed belt and the pulley

8.3. STK1R board maintenance

MONITORING THE SAFETY CHAIN

The STK1R board contains circuits connected to the safety chain exclusively for monitoring purpouses, in accordance with EN81-1 / EN81-2 / EN81-20 / EN81-50 standards. Should the card be removed for replacement, please follow the instructions below to avoid compromising the safety of its operation.

1. Before performing any operation make sure that the control panel is not under voltage.
2. Disconnect the board connectors by pulling the connectors, not the wires.
3. Use only M3x8 screws and a suitable cross-type screwdriver to secure the board, making sure not to damage it.
4. Screw in all the screws so that the board is firmly attached to the frame.
5. Reconnect all connectors coming from the control panel wiring.
6. When stripping the wires for connection purposes, turn them towards the outside of the cabinet to avoid aiming copper wires towards the board.
7. Visually check the board and make sure that there are no foreign materials, such as flakes of plaster, pieces of electric wire or conductive material.
8. While tightening the screws of the removable terminals, use an appropriate sized screwdriver and avoid damaging the board.

8.4. CS4 safety circuit maintenance

If it is necessary to remove the CS4 device for a replacement, please follow the instructions below, in order to avoid compromising the safety of its operation. Do not open the protective cover of the CS4 device under any circumstances.

After replacing, always carry out a test to verify that the device is working properly.

- Before performing any operation make sure that the control panel is not under voltage.
- The CS4 safety circuit is anchored to a DIN rail in the control panel. To remove the device from the DIN rail, use an appropriate screwdriver to loosen the upper tab of the device.
- When connecting or disconnecting the CS4 device from or to the control panel, use a suitable screwdriver.

TERMINALS IDENTIFICATION

In order to avoid making erroneous connections to the CS4 device, we recommend that you identify each connector with the name of the corresponding clamp on the CS4 device before disconnecting.

- Visually inspect the circuit and look for any possible short-circuits between the terminals.

9. ANOMALIES AND SOLUTIONS

Any current or past anomaly can be viewed using the parameters 0.01 and 0.02, or using the parameter 9.00 for errors concerning only the self-learning process of the shaft system VEN01 (i.e. with encoder, see paragraph 5.6.4). Each alarm is identified by a numeric code, the meaning of which is shown in the following tables.

9.1. Legend

Alarm type

- **"A"** : alarm that causes out of service, with automatic reset (you have just to remove the causes)
- **"M"** : alarm that causes out of service, with manual reset (you have to remove the causes and then to reset the error with the parameter 0.03, or with SW1 push-button if enabled by parameter 0.35.0)
- Without any indication: alarm that not causes out of service

9.2. Alarm codes displayed at parameters 0.01 and 0.02

Generic alarms

ALARM CODE	TYPE	DESCRIPTION
001	M	Excessive motor working time without car movement (see timer 4.00)
002	M	Excessive motor working time at low speed (see timer 4.01)
003	A	Excessive motor temperature (detected by thermal sensor RT)
004	A	Out of service caused by VI.27 (out of service with car stopped and levelled at a floor)
005	M	Excessive number of re-levelling operations (see parameter 1.07.0)
006	M	Failure to open motor contactors KM (with parameter 1.18.1=0) / brake contactors (with 1.18.1=1) (see timer 4.44)
007	M	Failure to open upward contactor (KS) / star-delta contactor (KT) (see timer 4.44)
008	M	Failure to open downward contactor (KD) / soft starting resistor exclusion contactor (see timer 4.44)
009	A	Phase loss or wrong phases rotation detected by RCF01 board (see also VI.15)
010	A	No voltage on safety chain point 1 (see also VI.80)
011	M/A	Overrun (a limit switch SEC, SEC1, SEC2 was actuated). See also VI.81.
012	A	Activation of an emergency stop (SAF, SMA1, SMA2, SMAQ), of the safety gear (SPT), or of the limit switch (SEC, only if mounted on the car)
013		Overload (SP1/SCS)
014	A	Safety photocell activated out of the door unlocking zone, for cars without doors (SFS1, SFS2, SFS3). See also VI.90.
015	A	Failure to close the motor contactors KM (with parameter 1.18.1=0) / brake contactors (with 1.18.1=1) (see timer 4.44)
016	A	Failure to close the upward contactor (KS) / star-delta contactor (KT) (see timer 4.44)
017	A	Failure to close the downward contactor (KD) (see timer 4.44)
018	A	Reserved
019	A	Safety circuit CS4 is active during departure preliminaries (with relay AV excited)
020	A	Safety circuit (CS4) not active with door opening commands enabled.
021		Failure to close of car/landing door safety contacts (SBP01, SPC1, SPC2, SPC3)
022	A	The state of the safety gear tripping device (see VI.40) is inconsistent with the relative command, at departure. See also parameters 1.15.2, 4.56, 4.63, VI.40, VO.65. Disabled with timer 4.56=0 and during the electrical emergency operation.

ALARM CODE	TYPE	DESCRIPTION
023	A	The state of the safety gear tripping device (see VI.40) is inconsistent with the relative command, at landing. See also parameters 1.15.2, 4.56, 4.63, VI.40, VO.65. Disabled with timer 4.56=0 and during the electrical emergency operation.
024	A	Excessive switching frequency of main contactor KM (greater than the value set with parameter 1.18.0)
025	A	Failure to open of the relays that commands the electrical interlocks. See also VI.72.
026	M	Unlocking of the pit access door, for lifts with reduced pit depth (see also VI.73)
027	A	Bypass of car/landing door safety contacts is activated (VI.49=0)
028	A	Failure to open car/landing door safety contacts
029		Retention of the emergency stop activated by the monostable stop push-button in the car (see VI.05)
030	A	12V battery discharged or defective (see parameter 1.27.0)
031	M	Brakes malfunction (check the correct opening and closing of both brakes)
032÷042		Reserved
043		Failure to close the car doors during the preliminary checks at departure (only with VI.49 = 0, or with parameter 1.21.1 = 1, or in the presence of error 28)
044		Car door opening while running (only with VI.49 = 0, or with parameter 1.21.1 = 1, or in the presence of error 28)
045		Opening of car/landing door safety contacts while car is running (SBP1, SPC1, SPC2, SPC3)
046÷048		Reserved
049	M	Permanent out of service activated by the maintainer
050	A	Temporary out of service activated by the maintainer to modify the parameters (see parameter 0.00)
051		Automatic emergency operation activated
052		Water in the pit
053		Input / exit phase from the pit for maintenance
054÷068		Reserved
069		Opening of car/landing door safety contacts while the car is running, with unknown car position
070		For door types 3, 4, 10, 11: closing failure of the door 1 opening contactor. For door types 7, 8, 9, 14, 15, 16, 17, 18: no switching of the door 1 closing limit switch within the time 4.25 from the opening command.
071		For door types 3, 4, 10, 11: closing failure of the door 2 opening contactor. For door types 7, 8, 9, 14, 15, 16, 17, 18: no switching of the door 2 closing limit switch within the time 4.26 from the opening command.
072		For door types 3, 4, 10, 11: closing failure of the door 1 closing contactor. For door types 7, 8, 9, 14, 15, 16, 17, 18: no switching of the door 1 opening limit switch within the time 4.25 from the closing command.
073		For door types 3, 4, 10, 11: closing failure of the door 2 closing contactor. For door types 7, 8, 14, 15: no switching of the door 2 opening limit switch within the time 4.26 from the closing command.
074		Opening failure of the door 1 opening/closing contactors (only for door types 3, 4, 10, 11)
075		Opening failure of the door 2 opening/closing contactors (only for door types 3, 4, 10, 11)
076		Excessive door 1 opening time (see timer 4.04)
077		Excessive door 1 closing time (see timer 4.04)
078		Excessive door 2 opening time (see timer 4.05)
079		Excessive door 2 closing time (see timer 4.05)
080		The in-car presence sensor was not active during the last 5 consecutive travels (see V1.33 and parameter 1.09.1).
081	M	Self monitoring of UCM means failed
082		For door types 3, 4, 10, 11: closing failure of the door 3 opening contactor. For door types 7, 8, 14, 15: no switching of the door 3 closing limit switch within the time 4.27 from the opening command.
083		For door types 3, 4, 10, 11: closing failure of the door 3 closing contactor. For door types 7, 8, 14, 15: no switching of the door 3 opening limit switch within the time 4.27 from the closing command.
084		Opening failure of the door 3 opening/closing contactors (only for door types 3, 4, 10, 11)
085		Excessive door 3 opening time (see timer 4.18)
086		Excessive door 3 closing time (see timer 4.18)

ALARM CODE	TYPE	DESCRIPTION
087		Reserved
088	M	An unintended car movement with open doors has been detected
089		Reserved
090	A	Excessive oil temperature (detected by sensor STO)
091	A	Oil pressure exceeds max (SP3 sensor) or min (SP2 sensor) limit
092÷093		Reserved
094	A	Out of service commanded by VI.17 (out of service as soon as the car is stopped)
095	M	"Short headroom" alarm. With parameter 1.08.2=1, possible failure of one of these devices: • additional limit switch for short headroom (see VI.18) • safety circuit for short headroom (see VI.74) • DR sensor (see VI.67)
096	A	Out of service commanded by VI.19 (immediate out of service), or HEVOS HE100 valve unit faulty (signal ERR = 1)
097	A	With electrical lifts with VVVF (1.00.0=3 or 1.00.0=6): failure to start With electrical lifts 2 speeds (1.00.0=1) : failure to exclude high speed soft start resistors after time 4.41 With hydraulic lifts with HEVOS HE100 valve unit: valve not ready for more than the time 4.41 **Disabled if timer 4.41=0**
098	A	Out of service commanded by VI.25 (out of service with car recalled to the parking floor 1.02.1)
099	A	STK1R board temperature exceeds the limits set with parameters 1.13.x
100	A	With electrical lifts with VVVF (1.00.0=3 or 1.00.0=6): failure to stop With electrical lifts 2 speeds (1.00.0=1): failure to exclude low speed soft start resistors after time 4.41 has elapsed. **Disabled if timer 4.41=0**
101÷199		Reserved
200	A	Checksum error of EEPROM configuration data
201		Checksum error of EEPROM data (excluded configuration data)
202		Timeout error during EEPROM reading/writing
203		Verify error after writing data to EEPROM
204	A	24Vdc supply voltage (on connector J4) less than 16Vdc
205		Reserved
206	A	12Vdc supply voltage (on connector E1) less than 10.8Vdc
207		Reserved
208	A	5Vdc supply voltage (internal to STK1R board) less than 4.5Vdc
209		Reserved
210		Voltage dips < 100 ms on the safety chain voltage
		Alarms from 211 to 222 are disabled with timer 4.13=0
211		Door 1 photocell (FT1) is constantly active for more than time 4.13, while door 1 is open.
212		Door 2 photocell (FT2) is constantly active for more than time 4.13, while door 2 is open.
213		Door 3 photocell (FT3) is constantly active for more than time 4.13, while door 3 is open.
214		Door 1 sensitive edge (CM1) is constantly active for more than time 4.13, while door 1 is open.
215		Door 2 sensitive edge (CM2) is constantly active for more than time 4.13, while door 2 is open.
216		Door 3 sensitive edge (CM3) is constantly active for more than time 4.13, while door 3 is open.
217		Unique door opening pushbutton (PAP, see VI.42) is constantly active for more than time 4.13 with at least one open door.
218		Door 1 opening push-button (PAP1) is constantly active for more than time 4.13, while door 1 is open.
219		Door 2 opening push-button (PAP2) is constantly active for more than time 4.13, while door 2 is open.
220		Door 3 opening push-button (PAP3) is constantly active for more than time 4.13, while door 3 is open.
221		Swing doors (SCA01…) are constantly open for more than the time 4.13
222		In-car presence sensor (VI.33) is constantly active for more than the time 4.13, with at least one open door.
223÷249		Reserved
250		Two or more lifts in multiplex operation have the same identity number (see parameter 1.14.1)
251÷259		Reserved
260	M	EEPROM memory not recognized. Please contact Sea Systems.

ALARM CODE	TYPE	DESCRIPTION
261	M	Locked STK1R board after a software upgrading (see parameters 0.22, 0.23, 0.24). Please contact Sea Systems.
262 ÷ 264	M	Generic anomalies. Please contact Sea Systems.
265 ÷ 269		Reserved
270 ÷ 273		Communication errors on CAN1 bus. Please contact Sea Systems.
274 ÷ 277		Reserved
278 ÷ 281		Communication errors on CAN2 bus. Please contact Sea Systems.
282 ÷ 900		Reserved
901	A	Installation mode is active (see 1.08.0)

Car position sensors alarms, with parameter 1.00.2=2 (sensors SIS, SID, SRS, SRD)

ALARM CODE	TYPE (*)	CAR POSITION SENSORS ALARMS, WITH PARAMETER 1.00.2=2 (SIS, SID, SRS, SRD)
300		Abnormal switching of SRS and SRD sensors. Check for fake contacts and/or supply voltage interruption of these sensors.
301	A	Both SRS and SRD sensors are off. Check for fake contacts and/or supply voltage interruption of these sensors.
302		Abnormal switching of SIS and SID sensors. Check the sensors and their power supply, and the positioning of the corresponding magnets around the floor at which the error was registered (see 0.02.1).
303		Abnormal switching of SIS and SID sensors, while the upward command is active. Check the sensors and their power supply, and the positioning of the corresponding magnets around the floor at which the error was registered (see 0.02.1).
304		Abnormal switching of SIS and SID sensors, while the downward command is active. Check the sensors and their power supply, and the positioning of the corresponding magnets around the floor at which the error was registered (see 0.02.1).
305		SIS sensor is active at the switching of SRS or SRD sensor. Check SIS sensor (possible welding of the contact).
306		SID sensor is active at the switching of SRS or SRD sensor. Check SID sensor (possible welding of the contact).
307÷319		Reserved

Car position sensors alarms, with parameter 1.00.2=0 or 1 (sensors IS, ID, DS, SR, DR)

ALARM CODE	TYPE (*)	DESCRIPTION
320		Abnormal switching of RS and RD sensors. Check for fake contacts and/or supply voltage interruption of these sensors.
321	A	Both RS and RD sensors are off. Check for fake contacts and/or supply voltage interruption of these sensors.
322		Abnormal switching of IS, ID and DS sensors. Check the sensors and their power supply, and the positioning of the corresponding magnets around the floor at which the error was registered (see 0.02.1).
323		Abnormal switching of IS, ID and DS sensors, while the upward command is active. Check the sensors and their power supply, and the positioning of the corresponding magnets around the floor at which the error was registered (see 0.02.1).
324		Abnormal switching of IS, ID and DS sensors, while the downward command is active. Check the sensors and their power supply, and the positioning of the corresponding magnets around the floor at which the error was registered (see 0.02.1).
325		IS sensor is active at the switching of RS or RD sensor. Check IS sensor (possible welding of the contact).
326		ID sensor is active at the switching of RS or RD sensor. Check ID sensor (possible welding of the contact).
327÷341		Reserved

Car position sensors alarms, with parameter 1.00.2=4 (sensors SIS, SID, SRD)

ALARM CODE	TYPE (*)	DESCRIPTION
342		Abnormal switching of SIS and SID sensors. Check the sensors and their power supply, and the positioning of the corresponding magnets around the floor at which the error was registered (see 0.02.1).
343		Abnormal switching of SIS and SID sensors, while the upward command is active. Check the sensors and their power supply, and the positioning of the corresponding magnets around the floor at which the error was registered (see 0.02.1).
344		Abnormal switching of SIS and SID sensors, while the downward command is active. Check the sensors and their power supply, and the positioning of the corresponding magnets around the floor at which the error was registered (see 0.02.1).
345		SIS sensor is active at the switching of SRS or SRD sensor. Check SIS sensor (possible welding of the contact).
346		SID sensor is active at the switching of SRS or SRD sensor. Check SID sensor (possible welding of the contact).
347÷399		Reserved

Car position sensors alarms, with parameter 1.00.2=3 or 5 (with encoder)

ALARM CODE	TYPE (*)	DESCRIPTION
400		Abnormal switching of SRS and SRD sensors. Check for fake contacts and/or supply voltage interruption of these sensors.
401		Reserved
402		The top SRS magnet is too high for the slowdown distance set at parameter 8.06.0. The maximum difference allowed between the value of parameter 8.06.0 and the distance of the magnet from the highest floor is 200 mm.
403		The bottom SRD magnet is too low for the slowdown distance set at parameter 8.05.0. The maximum difference allowed between the value of parameter 8.05.0 and the distance of the magnet from the lowest floor is 200 mm.
404		Cab position inconsistent with the absolute reference (SRS = 1 with car position 30mm below the absolute reference height 8.18.0, or SRS = 0 with car position 30 mm above the absolute reference height 8.18.0). Check shaft encoder setup / ropes slipping.
405	A	The distance between the absolute reference magnet and the lowest floor is less than 20mm. Move up the absolute reference magnet.
406		The SRS magnet is too low for the slowdown distance set at parameter 8.06.0. The maximum difference allowed between the value of parameter 8.06.0 and the distance of the magnet from the highest floor is 200 mm.
407		The SRD magnet is too high for the slowdown distance set at parameter 8.05.0. The maximum difference allowed between the value of parameter 8.05.0 and the distance of the magnet from the lowest floor is 200 mm.
408÷409		Reserved
410		SIZ1 magnet is at least 50mm higher than the floor. Only with parameter 1.00.2=3 (synchronous encoder).
411		SIZ1 magnet is at least 50mm lower than the floor. Only with parameter 1.00.2=3 (synchronous encoder).
412		SIZ1 magnet is at least 35mm (but less than 50mm) higher than the floor. Only with parameter 1.00.2=3 (synchronous encoder).
413		SIZ1 magnet is at least 35mm (but less than 50mm) lower than the floor. Only with parameter 1.00.2=3 (synchronous encoder).
414÷418		Reserved
419		Encoder slipping higher than 100mm. Only with parameter 1.00.2=5 (asynchronous encoder).
420		Car speed detected by encoder is less than 10 mm/s (or opposed to the commanded direction) while a movement command is given. Disabled if timer 4.34=0.
421		Encoder shaft learning not yet executed. Execute the learning procedure (see parameter 9.00)
422		Wrong checksum of SIZ heights table.

9.3. Alarm codes displayed at parameter 9.00 (shaft learning with encoder)

ALARM CODE	DESCRIPTION
01	Procedure was interrupted by the operator, generic errors (see 0.01, 0.02), or by a failure to close the safety chain.
02	The number of SIZ1 magnets counted during shaft learning is greater than the number of floors, taking into account the short floors. Check the number of magnets and the floor programming.
03	The number of SIZ1 magnets counted during shaft learning is less than the number of floors, taking into account the short floors. Check: the SIZ1 input programming, the number of SIZ1 magnets, the floor programming, the minimum allowed space between magnets (see error 04).
04	Spacing between two SIZ1 magnets is too small. The minimum space between SIZ1 magnets (understood as the minimum length of the SIZ1=0 state) is equal to 0.025s*Vnom (m/s). Check the encoder settings (number of pulses/meter, see 8.00.2 and 8.07.0).
05	One or more of the height readings is missing. Try to repeat the procedure.
06	With encoder type 1.00.2=3 : the reading of a height during upward movement and the reading of the same heigh during the downward movement differs to much. The lift is too fast, or the hysteresis of SIZ1 sensor is too high. Check the encoder settings (number of pulses/meter, see 8.00.2 and 8.07.0). Check also the wiring and the functionality of the encoder. With encoder type 1.00.2=3 : check that the encoder slipping is less than 200 mm after a trip made up of a full upward travel followed by a full downward travel.
07	SIZ1 magnets is too short (less than 200mm). Check the encoder settings (number of pulses/meter, see 8.00.2 and 8.07.0).
08	SIZ1 magnets is too long (more than 550mm). Check the minimum spacing between magnets (see error 4). Check the correct polarity of the SIZ1 input (see VI.68).
09	Encoder malfunction (inconsistent heights). Check the counting direction and the type of encoder (see 8.00.1).
10	With encoder type 1.00.2=5 and full shaft learning 9.00.xx0x : hysteresis of SIZ sensor is negative (parameter 8.12.0 is forced to 0), or greater than than 50mm (8.12.0 is forced to 50mm). Check the efficiency of the SIZ sensor. Check the entity of car plays on the rails. In all other cases: not used.
11	The absolute reference detected heights are inconsistent. Check the positioning of the absolute reference magnets according to the layout laid down in paragraph 5.6.4, and try to repeat the procedure.
12	The SRD detected heights are inconsistent. Check the positioning of the SRD magnets according to the layout laid down in paragraph 5.6.4, and try to repeat the procedure.
13	The SRS detected heights are inconsistent. Check the positioning of the SRS magnets according to the layout laid down in paragraph 5.6.4, and try to repeat the procedure.
14	One of the following operations is in progress: inspection operation (see VI.86, VI.87), electric emergency operation (see VI.62), automatic rescue operation (see VI.28)
15	Departure preliminary operations failed. Check if the safety chain is closed, and that door closing is not obstructed by the sensitive edge, photocell, opening push-button or the loading/unloading time not yet expired (see timers 4.02, 4.03).
16 ÷ 19	Reserved
The following errors are detected only during the stop distance learning phase	
20	Procedure was interrupted by the operator, generic errors (see 0.01, 0.02), or by a failure to close the safety chain.
21	Reserved
22	The upward stop distance reading is missing. Try to repeat the procedure.
23	The upward stop distance reading is negative (the final height is less than height at witch the stop was commanded, after an upward movement). Check the driver settings.
24	The upward stop distance is more than 200 mm. Check the driver settings. Check the delay of the upward stop command (see timer 4.12).
25	The downward stop distance reading is missing. Try to repeat the procedure.
26	The downward stop distance reading is negative (the final height is more than height at witch the stop was commanded, after a downward movement). Check the driver settings.
27	The downward stop distance is more than 200 mm. Check the driver settings. Check the delay of the upward stop command (see timer 4.20).
28 ÷ 32	Reserved
33	One of the following operations is in progress: inspection operation (see VI.86, VI.87), electric emergency operation (see VI.62), or automatic rescue operation (see VI.28)
34	Departure preliminary operations failed. Check if the safety chain is closed, and that door closing is not obstructed by the sensitive edge, photocell, opening push-button or the loading/unloading time not yet expired (see timers 4.02, 4.03).

10. REMOTE CONTROL

All STK1R control panels are remote controllable via the web by using the ESSE-TI GSM500.net/can GPRS modem. The remote control service, along with other useful tools for the STK1R control panels, is available at the web site http://stk1r-tc.seasystems.it :

If you need more details or if you want to request new access credentials for the STK1R remote control service, please contact SEA SYSTEMS.

11. TECHNICAL SUPPORT

Please, **before** contacting the technical support:

- check to see if the anomaly can be resolved independently (refer to chapter "9. Anomalies and solutions")
- make sure you have the serial number of the control panel (it is composed of 6 digits, printed on a label placed outside of the control panel)
- collect as more as possible informations about the problem, such as:
  - STK1R board active alarms (see parameter 0.01)
  - STK1R board logged alarms (code, floor and time of occurrence, see parameter 0.02)
  - LEDs status of other boards such as EC02, ER02, BOX05, CAB01, if you suspect that they take part of the problem
  - alarms (active and logged) of third party equipment (VVVF drives, electronic controlled valves, soft starters, and so on)

Remember that the more accurate are the informations you are able to give us, the less will be the time required to solve the problem!

12. WARRANTY

Warranty terms are printed on the back of the product transportation document. This guarantee provides the assurance that SEA SYSTEMS will support its products if defects occur within the established period. The warranty will be void if the product is used incorrectly or modified to change its performance beyond the original factory specifications.