cegard/Lift LX/LY

Installation and Operation Manual

CEDES AG is certified according to ISO 9001: 2015

English	Pages	2 – 26	Original version
German	Seiten	27 – 51	

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CEDES

Contents

1. About this manual

This installation and operation manual, with metric measurements is the **original version**.

The version number is printed at the bottom of each page.

To make sure you have the latest version, visit www.cedes.com where this manual and related documents can be downloaded.

1.1 Measurements

Measurements are, if not stated otherwise, given in mm (non-bracketed numbers) and inches (numbers in brackets).

1.2 Related documents

cegard/Lift LX, LY datasheet en
Part No. 001 010 en
cegard/Lift LX, LY (70 beams) datasheet en
Part No. 001 128 en

1.3 CEDES headquarter

CEDES AG
Science Park
CH-7302 Landquart
Switzerland

2. Safety information

IMPORTANT
READ BEFORE INSTALLATION!

The light curtain should never be installed in the elevator control in a manner which allows the doors to be opened during an emergency stop caused by an interruption of the protective field in the unlocking zone. This results in a dangerous step. Please read the instructions in Chapter 5.2.7.

If a person leaves the elevator car at this holding position without pressing the desired landing floor button again, with hydraulically driven elevators, there is still the danger that the elevator can slowly fall away from the holding position due to leakage of the elevator's hydraulic system. The next elevator user could fall into the cabin or the elevator shaft after the landing doors are opened.

This risk does not arise if the cegard/Lift is connected correctly.

Please check your installation in accordance with the specified criteria in Chapter 11.

The cegard/Lift LX/LY was developed and manufactured using state-of-the-art systems and technologies. However, injury and/or damage to the sensor can still occur.

To ensure safe conditions:

- Read all enclosed instructions and information and make sure you have understood it.
- Follow the instructions given in this manual carefully.
- Observe all warnings included in the documentation and attached to the sensor.
- Do not use the sensor if it is damaged in any way.
- Keep the instruction manual on site.

It is the sole responsibility of the planner and/or installer and/or buyer to ensure that this product is used according to all applicable local standards, laws and regulations in order to ensure safe operation of the whole application.

Only personnel authorized and instructed by the system integrator are allowed to operate, install and maintain the cegard/Lift LX/LY.

Any alterations to the system by anyone (e.g. the buyer, installer or user) may result in unsafe operating conditions. CEDES is not responsible for any liability or warranty claim that results from such manipulation. Failure to follow instructions given in this manual and/or other documents related to the cegard/Lift LX/LY may cause customer complaints, serious call backs, damage, injury or death.

2.1 Non-intended use

The cegard/Lift LX/LY **must not** be used for:

- Protection of dangerous machine
- Equipment in explosive atmospheres
- Equipment in radioactive environments

Use only specific and approved safety devices for such applications, otherwise serious injury or death or damage to property may occur! A CEDES safety light curtain for explosion hazardous areas (ATEX) is available.

3. Symbols, safety messages

Symbol	Meaning
▸	Single instruction or measures in no particular order
1. 2. 3.	Sequenced instructions
•	List, in no order of importance
→	Reference to a chapter, illustration or table within this document
Important	Important information for the correct use of the sensor

3.1 Safety messages categories

Warning of serious health risks

WARNING
Serious health risks

Highlights critical information for the safe use of the sensor. Disregarding these warnings can result in serious injury or death.

- ▸ Follow the measures highlighted by the triangle-shaped arrows
- ▸ Consult the safety information in Chapter 2 of this manual

Caution of possible health risk

CAUTION
Possible health risks

Highlights critical information for the safe use of the sensor. Disregarding these warnings can result in injury.

- ▸ Follow the measures highlighted by the triangle-shaped arrows
- ▸ Consult the safety information in Chapter 2 of this manual

Notice of damage risk

NOTICE
Risk of damage

Disregarding these notices can lead to damage to the sensor, the door controller and/or other devices.

- Follow the measures highlighted by the triangle-shaped arrows

4. Indroduction

The cegard/Lift light curtain serves to protect people in cargo and passenger elevators without elevator cage closure doors. The speed at which the elevator cage travels should not exceed 0.85 m/s (max. 0.63 m/s in Switzerland and Austria). All valid national regulations should be observed.

IMPORTANT NOTICE

cegard/Lift is constructed exclusively for elevators, and should not be used in areas where there is a risk of explosion (ATEX-areas). However, a product specifically designed for use in such ATEX-areas (Zone 2 and 22) is also available.

The cegard/Lift carries out a self-test:

- Before each journey
- Every time a person or object interrupts the light curtain

Every malfunction involving the opto edges, system control rack or incorrect wiring leads to a shutdown of the elevator system.

If an object causes an emergency stop by penetrating the protective field during the journey, it can be signalled either audibly or visually.

A journey interrupted by the safety equipment can only be continued after the protective zone is reenabled by a new drive / journey command from the interior of the elevator cage.

Where an elevator has entrances on either side, both are simultaneously bypassed. This occurs regardless of whether there are one or two entrances to the elevator cabin on a floor.

The cegard/Lift offers the following advantages:

- Also ideal for controlling automatic doors thanks to an additional output
- Cost effective
- Simple integration into almost all existing elevator control systems without additional travelling cables
- Simple, space-saving installation
- No setting or optical adjustment of the light curtain necessary
- Short installation time, can be easily carried out by just one single person
- Monitoring of up to two elevator cabin entrances
- Large range and dense protective field
- Automatic start after power-up
- 8 isolated inputs for cabin call signals, 12 … 265 VAC/DC
- Safety logics for the prevention of dangerous steps into the elevator
- System control rack IP54
- Opto-edge IP65; IP67 optional (fully potted)
- Actuation for load control display available as accessory

Assembly sets can be supplied as accessories which enable integration, installation and commissioning by a single installation fitter. The assembly kits also offer optimal protection from daily industrial use.

5. Description of function

5.1 Structure

The cegard/Lift control unit is mounted on the elevator car's roof using the enclosed mounting rails.

The block circuit diagram (Figure 1) shows the setup.

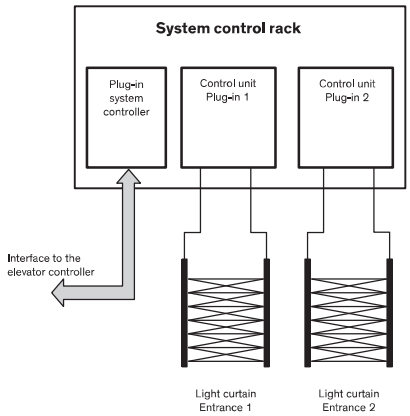


Figure 1: Interface to elevator controller

5.2 Interface to elevator controller

The following signals from the elevator controller are required for actuation:

- At least one **internal call** and/or reset signal from inside the elevator cabin (Chapter 5.2.1)
- Latch power supply: **Latch_In (Riegel_In)** (Chapter 5.2.2)
- Supply voltage of 230 VAC must be permanently supplied (Chapter 7.1)

Additional signals increase the elevator's level of comfort:

- Elevator shaft information (e.g. slower travel speed, zone signal) for early bypassing of the system (Chapter 5.2.3)
- Signal for testing of the safety components of cegard/Lift (Chapter 5.2.4)

The function of interface signals is described in detail in the following chapters.

The plug-in system controller monitors the correct function of interface signals. The elevator is immediately shut down if an error is detected and an appropriate error message appears on the diagnosis display.

The polarity at connections is irrelevant when actuating internal call signals with AC voltage. Correct polarity should be ensured for all other signals (see also Chapter 6.2. and 7).

5.2.1 Internal call signal / Reset signal

- See also Chapter 7: K7–K15
If an emergency stop is caused by the interruption of the light curtain, an **H** is displayed. The elevator can only be released from this emergency stop state by the pressing of a reset button from within the elevator car itself. There are eight independent reset inputs for this purpose. The journey can be continued if, with a free protection field, at least one of the inputs receives a negative or positive pulse (i.e. a reset button, for example, can be allocated to one of the internal call signals).

A call signal (and consequently, a test) during a journey does not adversely affect the function (i.e. safety contacts do not drop out (double or multiple start).

Special operating mode:
The service button on the plug-in system controller provides the elevator fitter with the possibility to simulate an internal call signal during commissioning and inspection (after an emergency stop). This enables the safety contacts to be re-closed from the elevator cabin roof.

5.2.2 Latch power supply (Latch_In (Riegel_ In))

- See also Chapter 7: K24-K25
The latch power supply is used to enable transit and to unlock the door.
The bypassing of the light curtain is cancelled by the **Latch_In** latch power supply HIGH signal, the **Latch_Out** output is switched through and the door is locked as a result. An **F** is displayed and every interruption of the light curtain now results in an emergency stop.
The latch circuit is described in Chapter 8.

5.2.3 Override delay and Option 2 (premature overriding)

- See also Chapter 7: K18-K19 / K22-K23
The light curtain can be bypassed with the **Override delay (bypass delay)** and **Option 2** inputs. An **U** is displayed. Bypassing can begin before the Latch signal switches to LOW. The light curtain is then overridden if both inputs are LOW:

Override delay	Option 2	Light curtain overriding
HIGH	HIGH	Inactive
LOW	HIGH	Inactive
HIGH	LOW	Inactive
LOW	LOW	Active

These signals should have changed status at least twice during a travel cycle (journey enabled - journey - stop at floor - journey enabled). If one of the signals remains LOW an error is interpreted and the elevator is shut down by breaking the safety contacts (see also Chapter 11.1, error no. 5 and 6).

5.2.4 Flush position (Testing)

- See also Chapter 7: K20-K21
Safe function of the output relays should also be checked, as these are located in the evaluation plug-in safety components in the elevator safety circuit. Testing of the plug-in system controller breaks the output contact for approx. 100 ms. This test is carried out after each elevator trip. The test timing can be controlled with the **Flush position (Bündigstellung)** input to avoid any influence on the elevator control system.

The cegard/Lift offers three test control versions:

1. The output relays are automatically tested 5 s after **Latch_In (Riegel_In)** drops out, if the input remains broken. The test is carried out immediately if a travel command occurs during this time period.
2. The output relays are automatically tested 10 s after **Latch_In (Riegel_In)** drops out, if the input is under a permanent voltage of >12 VAC/DC. The test is carried out immediately if a travel command occurs during this time period.
3. A test is carried out if the input is HIGH in the neutral status (>12 VAC/DC) and receives a negative edge when **Latch_In (Riegel_In)** has dropped out.
   The timing of the test can thus be specified by the elevator control system (e.g. at flush position). It means, for example, that the **Latch_In** input will be frequently bypassed with the 'Flush' position input **(Bündigstellung)**, which leads to a test immediately after the Latch signal switches to LOW.

5.2.5 Automatic start during power-up

The cegard/Lift automatically carries out a self-test after a power cut and only closes the safety circuits when the test has been concluded successfully. The cegard/Lift is ready for operation after the safety circuits are closed.

5.2.6 Safety circuit 1 and 2

- See also Chapter 7: K28-K29 / K30-K31
One of these two contacts must be looped into the elevator safety circuit so that interruption of the light curtain or a malfunction will lead to a shutdown of the elevator.
External power contactors with positive-action contact sets can also be connected to a safety circuit output, and a single contact should be fed back from each of these (Chapter 8.3).

These result in the following advantages:
- Switching of higher outputs
- Avoidance of internal safety contact over-loading
- More secure circuits can be realized

5.2.7 Latch output (Latch_Out (Riegel_Out))

- See also Chapter 7: K26-K27
A single-phase latch solenoid / motor can be connected to the K26/K27 connections. Connection of **Latch_Out (Riegel_Out)** (in accordance with Chapter 8) is essential with the cegard/Lift for safety reasons, as it effectively prevents the elevator leaving a floor and it also avoids a dangerous step into the elevator cabin from being created in the event of an interruption of the light curtain.

How is a step prevented? It is possible for the elevator to “slip” in the unlocking zone if an emergency stop is activated by an interruption of the light curtain shortly before reaching this zone. In such an instance, the cegard/Lift keeps the K26/K27 contacts closed and the door remains locked, preventing any dangerous step. However, should this condition exist for a longer period it could lead to the destruction of the latch solenoid or motor. A maximum latch holding time of 10 min is defined precisely for this reason. **Latch_Out (Riegel_Out)** is adapted to **Latch_In (Riegel_In)** after this time period expires. However, the elevator remains in the emergency stop status.

IMPORTANT NOTICE

The elevator can only be released from its emergency stop status via an internal call signal (the reset button) from within the elevator car itself.

When the emergency stop status has been exited via a Reset, the cegard/Lift offers three options (Internal Jumper, see Chapter 8.6):

1. **Setting:**
   Latch_Out (Riegel_Out) remains active for ca. 10 min.
   The elevator has to travel to another floor before it can proceed to the selected floor.
2. **Latch_Out (Riegel_Out)** drops out with a delay of 2.5 s. **Latch_Out (Riegel_Out)** succeeds **Latch_In** if **Latch_In (Riegel_In)** is HIGH during these 2.5 s.
3. As in 2. but with a 10 s delay.

The 2.5 s and 10 s settings can only be selected for elevators equipped with relevelling; otherwise a dangerous step could result.

Two cegard/Lift versions are available to provide the **Latch_Out (Riegel_Out)** output for different elevator types:

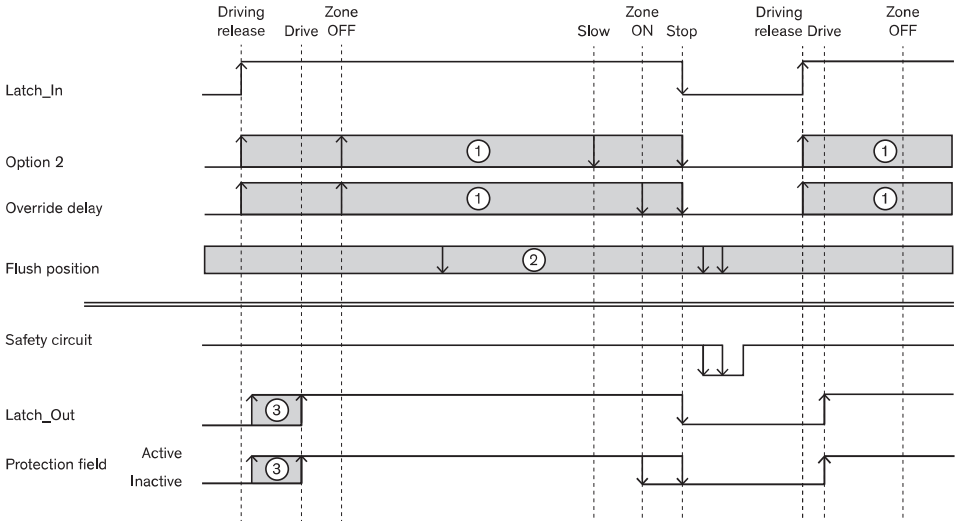
Version LX (with latch contactor)
A power contactor is connected in series to the **Latch_Out (Riegel_Out)** output in this version. This can directly actuate three-phase latch motors (see also Chapter 7.1).

Version LY (with rectifier)
A rectifier module is connected in series to the **Latch_Out (Riegel_Out)** output in this version. This can directly actuate a D.C. latch solenoid (**from 180 VDC**) (see also Chapter 7.2).

In order to ensure the Latch control operates properly, the use of a contactor or rectifier is recommended. The Latch should never be connected directly via the K26 and K27 contacts as this can interfere with the internal relay.

5.3 Timing diagrams

5.3.1 General timing diagram



Active : Light curtain interruption causes an emergency stop
Inactive : Light curtain interruption has no effect

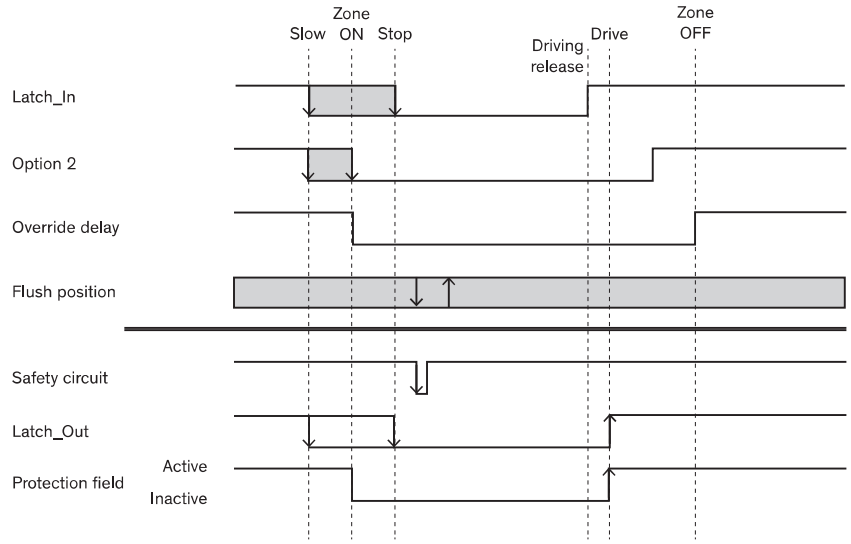
Figure 2: General timing diagram

① A change of status of one of these two signals during a journey does not influence the system function. Light curtain overriding only occurs if both signals are LOW.

② A change of status of this signal during a journey does not influence the system function. It is used to test the safety circuit when the latch has dropped out. The following three versions are possible:

③
1. The output relays are automatically tested 5 s after **Latch_In (Riegel_In)** drops out if the input remains broken. The test is carried out immediately if a travel command occurs during this time period.
2. The output relays are automatically tested 10 s after **Latch_In (Riegel_In)** drops out if the input is under a permanent voltage of >12 VAC/DC. The test is carried out immediately if a travel command occurs during this time period.
3. A test is carried out if the input is HIGH in the neutral status (>12 VAC/DC) and receives a negative edge when **Latch_In (Riegel_In)** has dropped out. The timing of breaking the safety circuit can thus be specified by the elevator controller (e.g. at flush position).

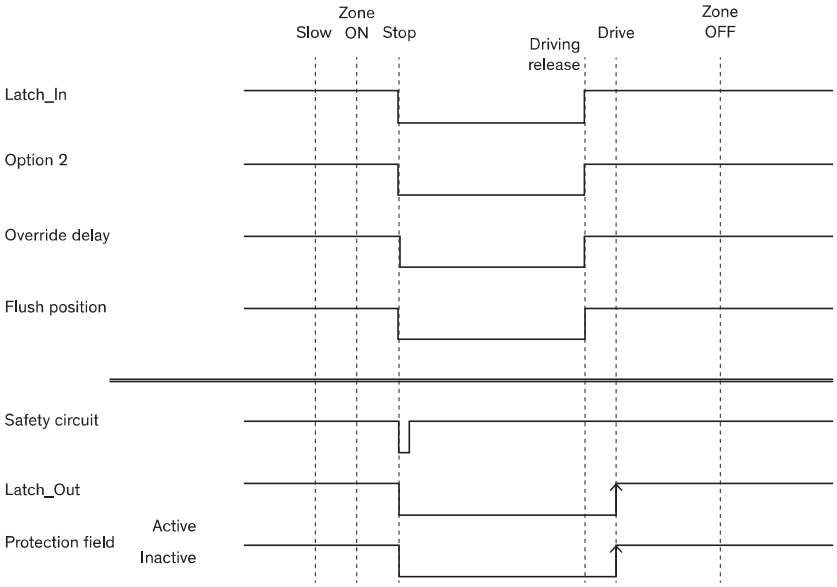
5.3.2 Timing diagram with premature door opening



Active : Light curtain interruption actuates an emergency stop
Inactive : Light curtain interruption has no effect

Figure 3: Timing diagram (premature door opening)

5.3.3 Timing diagram without premature door opening



Active : Light curtain interruption actuates an emergency stop
Inactive : Light curtain interruption has no effect

Figure 4: Timing diagram (without premature door opening)

5.4 Description of light curtain component

The cegard/Lift operates like a through-beam sensor. It consists of an emitter edge which emits a multitude of individually-pulsed infrared light beams (Figure 5).

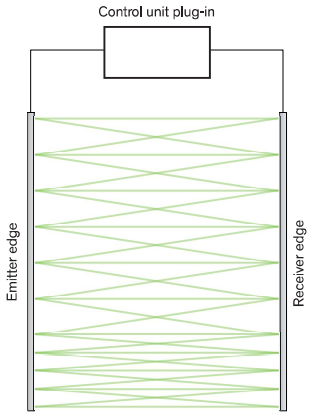


Figure 5: Schematic diagram of light curtains

These light beams are received by the receiver edge, converted to electrical signals and transmitted to the control unit plug-in. This signals the interruption of a light beam to its outputs.

5.4.1 Calibration

During calibration the control unit plug-in measures the transmission output required for each individual light beam to actuate the respect receivers. The value determined in this test is increased by approx. 100% and saved for normal operation. Calibration substantially prevents all too common reflection in through-beam sensor systems, replacing the bundling (concentration) of the optical aperture angle usual in other light barrier systems. This greatly simplifies the installation / adjustment of optical edges.

The calibration procedure takes between 0.5 and 2 s, depending on the distance from the emitter and receiver edges. Calibration is carried out during activation and by pressing the "**T**" button on the control unit plug-in. The control device automatically carries out a calibration if no change occurs in the protective field during a period of 30 min. Extensive changes in light intensity (e.g. due to cleaning, etc.) are identified within 3 s and calibrated.

5.4.2 Adjustment

No adjustments are necessary, thanks to the size of the aperture angle of the optical elements used in the cegard/Lift light curtain, provided the receiver edge is within the aperture angle of the emitter edges, and vice-versa (Figure 6).

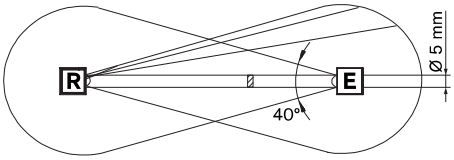


Figure 6: Aperture angle and beam cross-section

5.4.3 Reflection

Reflections occur if reflective surfaces are located directly opposite or in the vicinity of the monitoring level, e.g. a tiled shaft wall (see Figure 7).

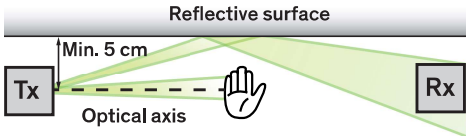


Figure 7: Reflection

These reflections are eliminated to a large extent by calibration, the use of the CEDES **installation kit** and adherence to **minimum distances**.

The optical axis must be at least 5 cm from the front edge of the elevator cabin.

6. Installation

6.1 Installation of opto edges

The following should be observed in general:

- Do not mount the emitter and receiver edges twisted through 180° (e.g. the opto edges' connection cables must be conveyed upwards).

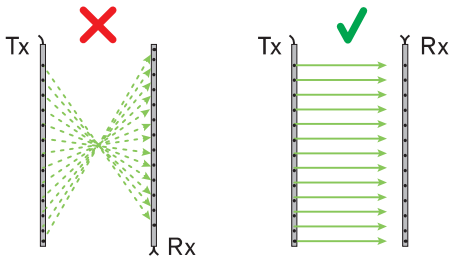


Figure 8: Alignment of emitter / receiver

- Do not bend or warp the opto edges. The opto edges should never be subject to torsion forces.
- The opto edges should be at least 5 cm from the front edge of the elevator cabin.
- The connection cable should not be under tension and should not be crushed.
- The connection cable should be well laid and secured. It should not be in continuous motion or rub against other objects.
- Avoid dirt and scratches.
- Fasten the opto edges securely with the screws provided. If need be, the screws can be secured against loosening using the usual methods.
- Ensure that the emitted light beams of one system are not directed at the receiver edge of another when using several light curtains close together. Light curtains can influence each other under certain circumstances. The emitter and receiver edges must be arranged on alternating sides in through-loading elevators for this reason.

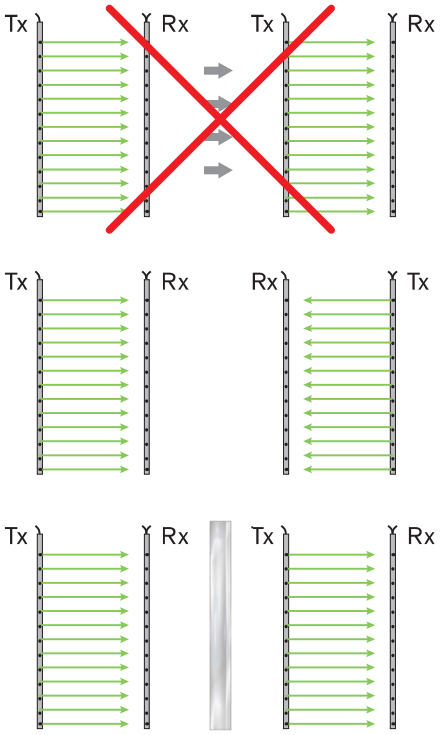


Figure 9: Alignment of multiple light curtains

The opto edges are provided with double-sided adhesive tape to aid installation and fixing for both flush mounting and surface installations. These should be used in conjunction with screws.

For installation purposes, we recommend either the CEDES **flush mounting kit** or or its **surface mounting counterpart**. These make installing the opto-edges quick and easy and their side covers help prevent reflection (see also Chapter 6.3 and 6.4).

6.2 Installation system control rack

The system is located in a control cabinet and is fixed to the cabin roof with the 4 screws provided or the 2 support strips included in the delivery.

It is imperative that the following be observed:

- Connections K18, K20, K22 and K24 should be actuated with the positive signal pole (with direct voltage), connects K19, K21, K23 and K25 with the negative pole (see Chapter 7, Connection configuration).
- The latch solenoid / motor is operated by the controller.
- The vibration should be reduced as much as possible and the installation should be stable and rigid.
- The cable inlet sleeves should be used correctly for IP54 density. The four rubber packing glands on the right side are for the connection cables for the opto edges, the four cable screw fittings on the left being for the elevator control system connection cables.
- Do not plug in or unplug any energized connection plugs into the control unit plug-in. The device or the opto edges can be destroyed.
- The elevator control system can not be capable of generating or influencing internal call signals.
- No external call signals should be linked to internal call signals.
- The system must be grounded. The “earth” connection should form a low-resistance connection ≤(10 Ω) with the ground. Correct grounding of opto edges is achieved automatically during installation.

6.3 Flush mounting kit

A guard plate is mounted on the inside of the cabin. The opto edges are mounted on the outside of the cabin (CEDES Part No.: 100 847).

6.4 Surface mounting kit

If there is not enough space on the outside of the cabin for the opto edges to be mounted there, they can also be installed on the inside of the cabin using the surface mounting kit. There is a loss of approximately 10 cm from the elevator cabin opening (CEDES part no.: 100 848).

Each mounting kit comes with a detailed manual

7. Connection configuration

Important safety notice:

The units should only be connected when de-energized!

K1 - K2	Emergency stop alarm detector
K3 - K4	Contact feedback for external latch contactor. These connections should be **bypassed** if an external contactor is not used.
K5 - K6	Contact feedback for external safety circuit contactor. These connections should be **bypassed** if an external contactor is not used.
K7	Internal call signal 1, 12 ... 265 VAC / DC
K8	Internal call signal 2, 12 ... 265 VAC / DC
K9	Internal call signal 3, 12 ... 265 VAC / DC
K10	Internal call signal 4, 12 ... 265 VAC / DC
K11	Internal call signal 5, 12 ... 265 VAC / DC
K12	Internal call signal 6, 12 ... 265 VAC / DC
K13	Internal call signal 7, 12 ... 265 VAC / DC
K14	Internal call signal 8, 12 ... 265 VAC / DC
K15	Internal call signals, common potential
K16 - 17	Option 1 (not used)
K18 - 19	Option 2, 12 ... 380 VAC / DC*
K20 - 21	Flush position, 12 ... 380 VAC / DC*
K22 - 23	Override delay 12 ... 380 VAC / DC*
K24 - 25	Latch In, 12 ... 380 VAC / DC*
K26 - 27	Latch Out (Relay-closing contact)
K28 - 29	Safety circuit 1: The circuit is closed if no error is evident and the system has been started ("Safety circuit LED" illuminates), isolated.
K30 - 31	Safety circuit 2, otherwise as safety circuit 1
K32, K33	230 VAC, phase / PEN conductor
K34	Protective earth
*Note polarity when actuating with direct voltage (see also Chapter 5.4)	

Figure 10: Connection terminals plug-in system controller

SAFETY ADVICE

Overcurrent protection shall be provided according to DIN EN 60204-1:2019-06 (see chapter 7).
The electrical equipment shall be wired according to DIN EN 60204-1:2019-06.

7.1 cegard/Lift LX with latch contactor

The **LX version** is fitted with a standard contactor with positive-action contacts, allowing the connection of larger latch motors or latch solenoids. The following circuit diagram clearly illustrates the connection:

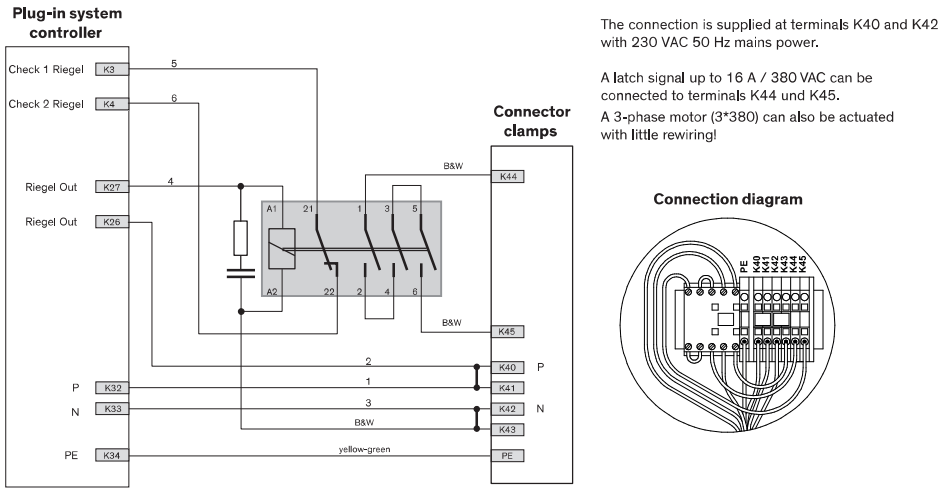


Figure 11: Latch contactor cegard/Lift LX

7.2 cegard/Lift LY with latch voltage rectifier

The **LY version** is fitted with a standard rectifier, allowing the connection of direct current latch motors or latch solenoids (from 180 VDC). The following circuit diagram clearly illustrates the connection:

The connection is supplied at terminals K40 and K42 with 230 VAC 50 Hz mains power. A DC latch solenoid not exceeding max. 2 A power input can be actuated at the rectifier outputs (±).

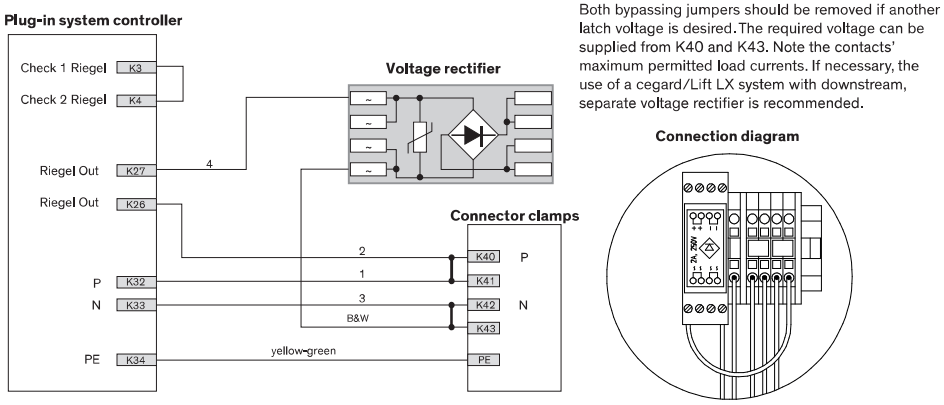


Figure 12: Latch voltage rectifier cegard/Lift LY

8. Switching examples

Ensure that suitable interference suppression is provided when connecting the latch drive and external output contactors (RC elements or rapid recovery diodes directly via inductors).

8.1 Connecting a single-phase latch solenoid

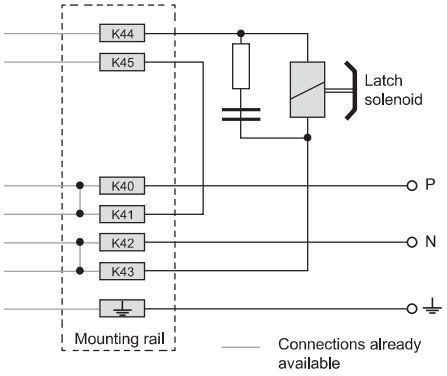


Figure 13: Connection diagram latch solenoid

8.2 Connecting a three-phase latch solenoid

A three-phase latch motor can be simply connected by changing the standard wiring of the cegard/Lift LX. The following existing connections should be (starting from the situation in Figure 11) removed: Contactor 2-4, contactor 3-5, contactor 1-K44, contactor 6-K45. The wiring should be subsequently supplemented in accordance with the diagram below.

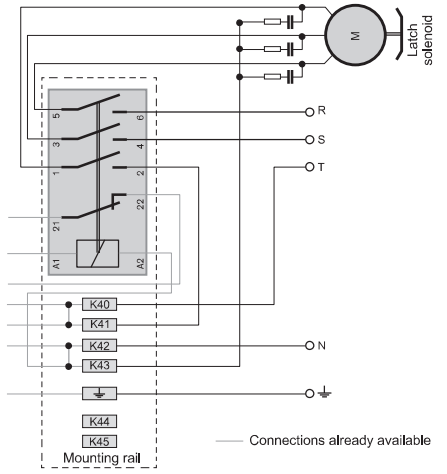


Figure 14: Connection diagram latch solenoid

8.3 Connecting two external output contactors to safety circuit

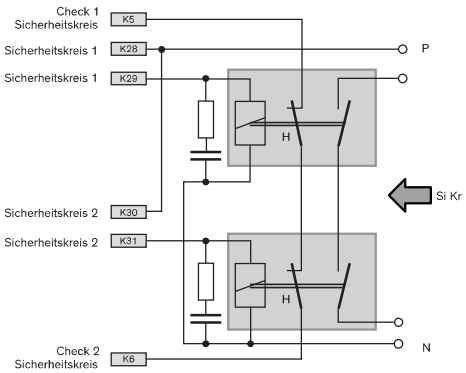


Figure 15: Connecting two external output contactors to safety circuit

8.4 Overriding the light curtain

The light curtain is overridden if the **Override delay (Überbrückungsverzögerung)** and **Option 2** inputs switch from HIGH to LOW when the elevator arrives at a floor. The **Override delay (Überbrückungsverzögerung)** and **Option 2** inputs can be connected parallel with the **Latch_In (Riegel_In)** input if required.

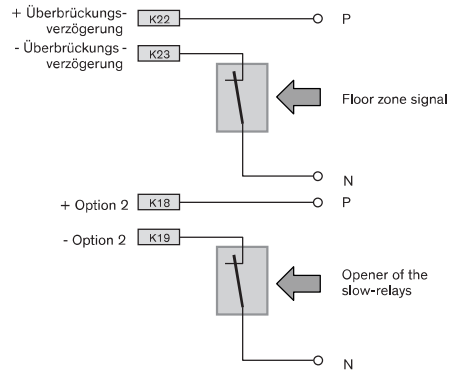


Figure 16: Overriding the light curtain

8.4.1 Connecting three internal call signal buttons

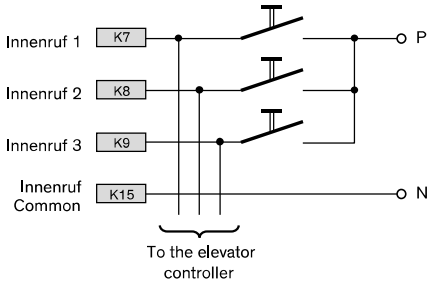


Figure 17: Connection internal call signal buttons

Internal call signal commands can be allocated to the existing internal call signal buttons, as the inputs for internal call signals are impulse edge-triggered and react to both positive and negative edges. Signal polarity is irrelevant here.

8.4.2 Connecting a reset button

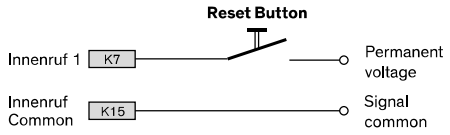


Figure 18: Connection reset button

Permanent voltage: 12 … 265 VAC/DC (see Technical Data)

8.4.3 Connecting the alarm transmitter

Prewired alarm transmitters can be ordered from CEDES (CEDES Part No.: 100 849)

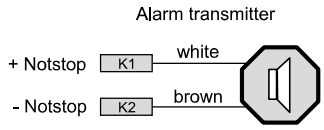


Figure 19: Connecting the alarm detector for continuous tone

Connecting the alarm transmitter for intermittent tone:
For interval tone the two wires are swapped.
(K1: brown, K2: white)

8.5 Avoidance of errors

The following control inputs are high-resistant to enable their actuation over a broad voltage range:

- Latch_in (Riegel_In)
- Override delay (Überbrückungsverzögerung)
- Flush position (Bündigstellung)
- Option 2
- Internal call signal 1-8 (Innenruf 1-8)

Signals created by capacitive or inductive coupling can, as a result, lead to errors. It is particularly important to ensure that the low level at these inputs is less than 5 Volt in every case (even for short periods of time). Otherwise these cannot be clearly identified as LOW and, as a consequence, can lead to errors.
Errors of this nature can be avoided by implementing the following measures:

- Uncouple signals via additional relays
- Load the inputs with resistance:
  for DC voltage 24 ...110 V R = 47 kΩ / 0.6 W
  for AC voltage 230 V R = 120 kΩ / 0.6 W
  for AC voltage 380 V R = 500 kΩ / 0.6 W
- Inputs should be loaded simultaneously with relays or contactors

8.6 Latch-stopping time following the ending of emergency stop via Reset

A plug-in jumper is fitted to the plug-in system controller PCB and can be used to set the **latchstopping time after the elevator has been released from its emergency stop status**. The stopping time can be set to:

- 2.5 s
- 10 s
- ~10 min (factory settings)

The versions (2.5 s,10 s) **should only** be selected for **elevators with relevelling**, as a dangerous step can otherwise be created (see also Chapter 5.2.7).

SAFETY ADVICE

Changes to this setting should only be carried out when the system is de-energized. Furthermore, the plug-in system controller should be unscrewed from the housing after deactivating the mains power supply and all energized connections. The correct position of the jumper is indicated on a sticker on the PCB.

8.7 Example 1 with cegard/Lift LX: Light curtain with dropped-out (released) latch solenoid actuation

This example shows a simple variant, illustrating how the cegard/Lift LX can be integrated in a system without premature door opening.

SAFETY ADVICE

Mains power must also be available during a safety circuit interruption. Internal call signals (Innenrufe) must also be possible during a safety circuit interruption.

Cross reference: See Chapter 5.3.3 for timing diagram

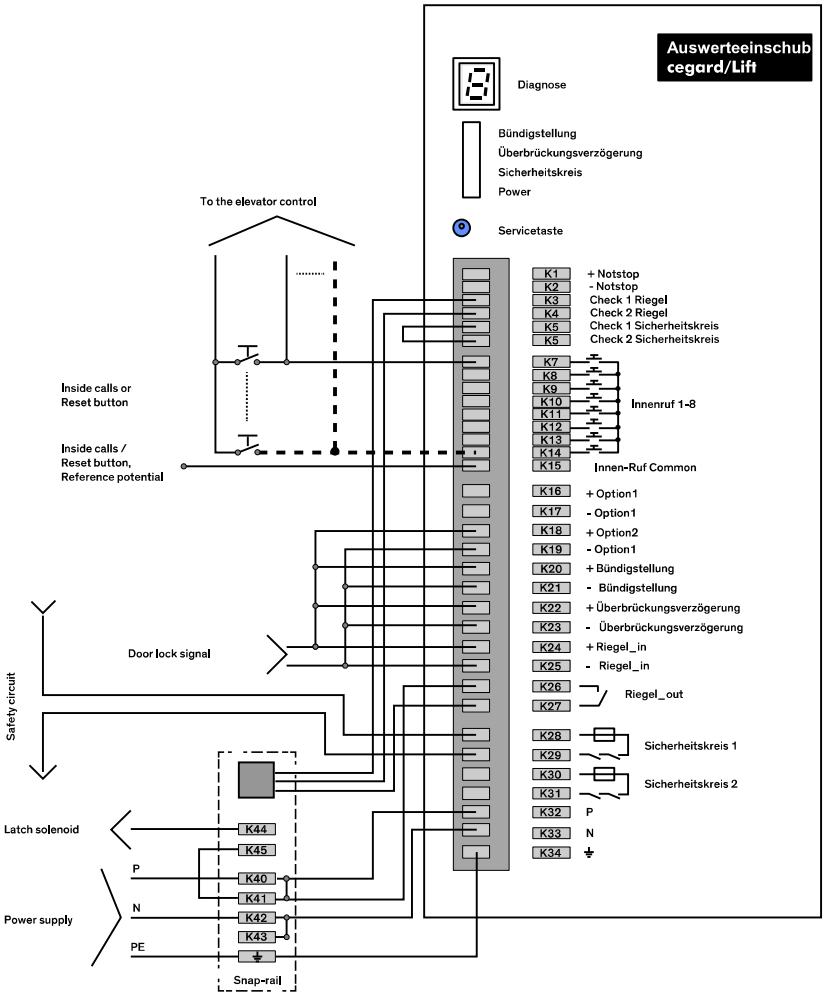


Figure 20: Connection diagram without premature door opening

8.8 Example 2 with cegard/Lift LX: Bypassed light curtain in floor zone

This example shows another variant, illustrating how the cegard/Lift LX can be integrated in a system. The difference to Example 1 is that the light curtain is bypassed somewhat earlier. The light curtain is thus overridden 10 cm prior to the flush position in the case of an elevator with a landing zone of ±10 cm. This variant is recommended, as many elevator users try to open the door while travelling slowly. This connection does not trigger an emergency stop under the conditions described, provided the elevator is already within the floor zone.

SAFETY ADVICE

Mains power must also be available during a safety circuit interruption. Internal call signals (Innenrufe) must also be possible during a safety circuit interruption.

Cross reference: See Chapter 5.3.2 for timing diagram

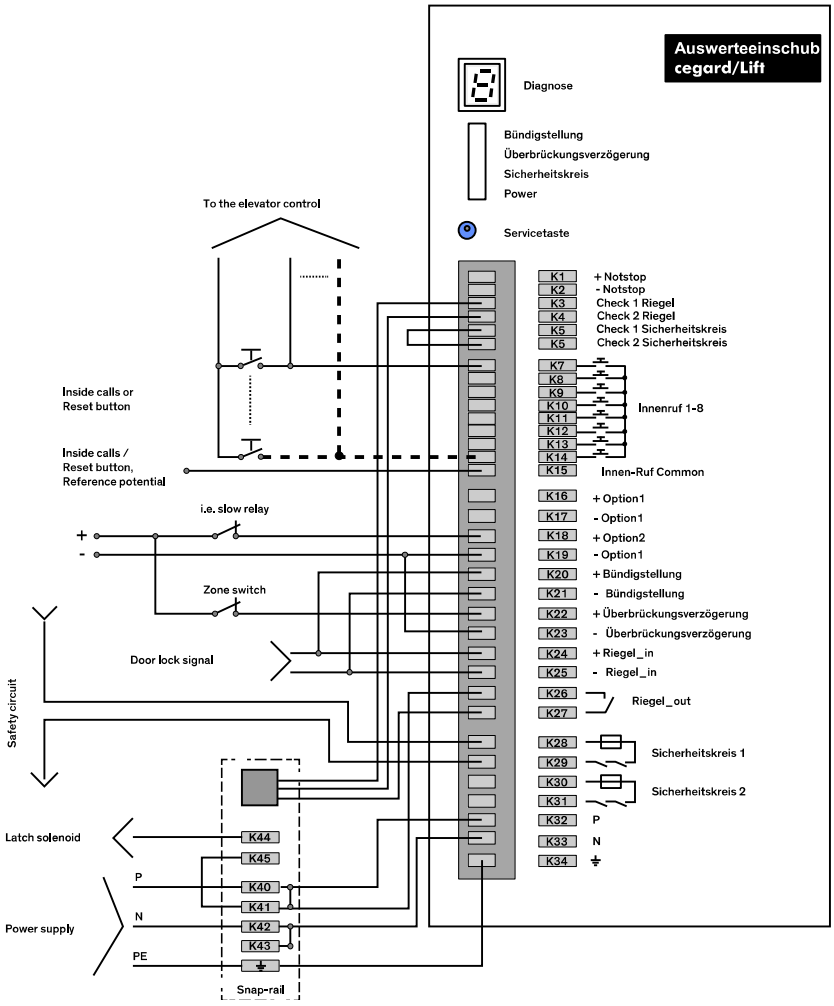


Figure 21: Connection diagram for early override

8.9 Example 1 with cegard/Lift LY: Bypassed light curtain with dropped-out (released) latch solenoid actuation

This example shows a simple variant, illustrating how the cegard/Lift LY can be integrated in a system without premature door opening.

SAFETY ADVICE

Mains power must also be available during a safety circuit interruption. Internal call signals (Innenrufe) must also be possible during a safety circuit interruption.

Cross reference: See Chapter 5.3.3 for timing diagram

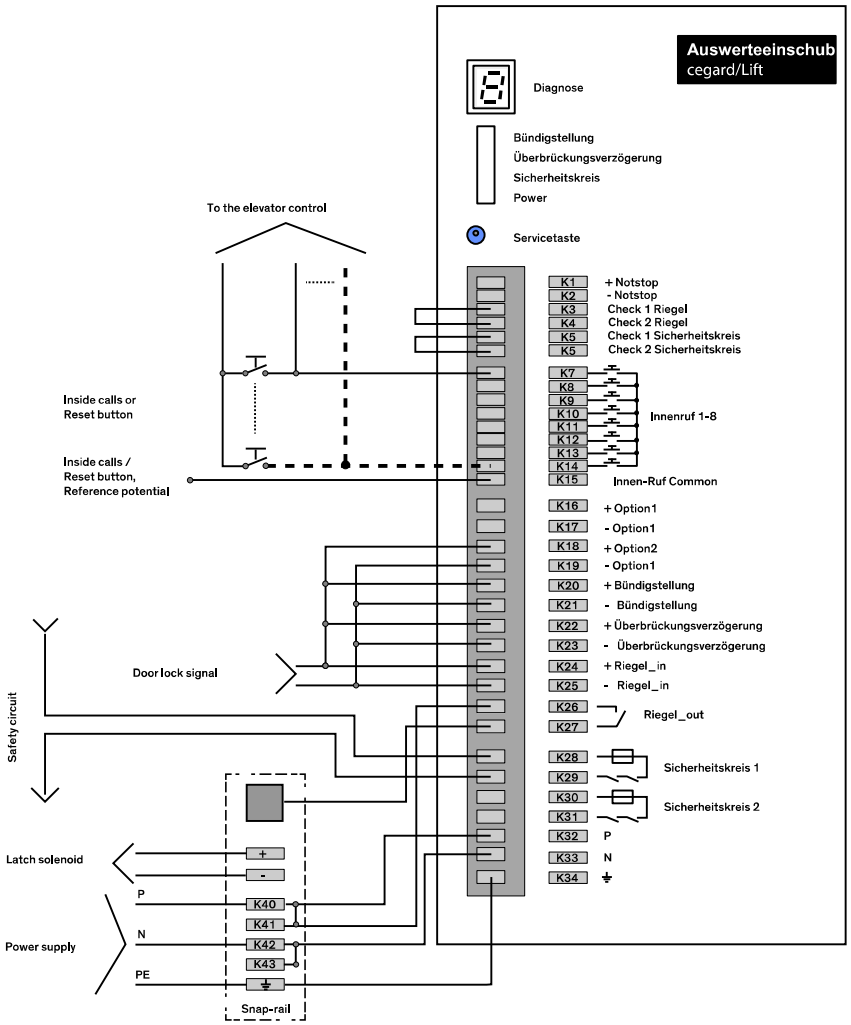


Figure 22: Connection diagram without premature door opening

8.10 Example 2 with cegard/Lift LY: Bypassed light curtain in the zone

This example shows another variant illustrating how the cegard/Lift LY can be integrated in a system. The difference to Example 1 is that the light curtain is bypassed somewhat earlier. The light curtain is thus overridden 10 cm prior to the flush position in the case of an elevator with a zone of ±10 cm. This variant is recommended, as many elevator users try to open the door while travelling slowly. This connection does not trigger an emergency stop under the conditions described, provided the elevator is already within the floor zone.

SAFETY ADVICE

Mains power must also be available during a safety circuit interruption. Internal call signals (Innenrufe) must also be possible during a safety circuit interruption.

Cross reference: See Chapter 5.3.2 for timing diagram

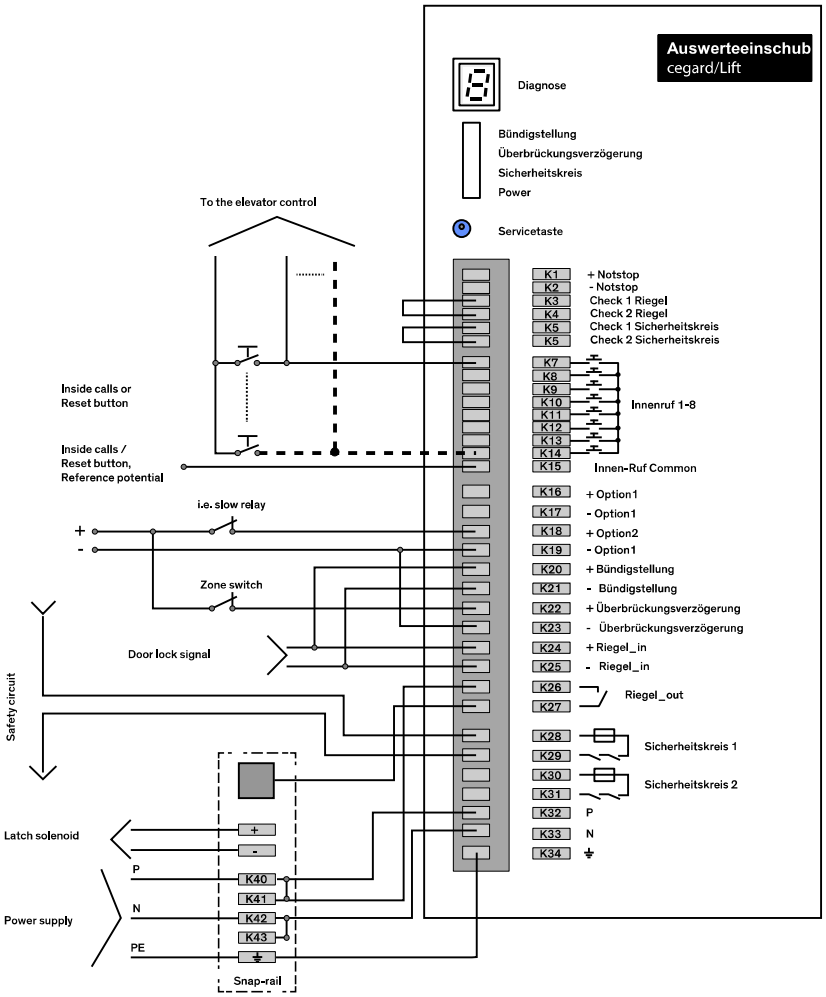


Figure 23: Connection diagram for early override

9. Commissioning

9.1 General description

The opto edges are connected to the control unit plug-in after installation. The plug with the blue marking (receiver edge) is inserted into the “receiver” socket, the plug with the white marking (emitter edge) being inserted into the “emitter” socket. The plugs are coded and cannot be inserted incorrectly or in the wrong sockets. Ensure that both of the plug’s safety jacks engage correctly.

The plug can be removed again by pressing the two safety clips. The final step is connecting the connectors (K28 … K34; observe connection configuration).

It goes without saying that opto edges should always be connected in pairs to each of the control unit plug-ins in cases of through-loading elevators.

The plug-in system controller and the control unit plug-ins are controlled by their own microprocessors. These test the entire system after activation. The following procedures occur during this:

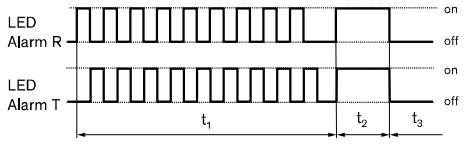
The following symbols appear **consecutively** on the **plug-in system controller**:

For elevators with one entrance:

For through-loading elevators:

A bar then circles around on the display until the self-test is completed. An **F** or **U** appears if the test is successful, depending on whether the light curtain is bypassed or not.

The LED “**Alarm T**” and “**Alarm R**” flash alternately with approx. 1 Hz for approx. 10 s on the control unit plug-in while the self-test is in progress.



t_1 = Approx. 10 s (self test)
t_2 = Approx. 2 s
t_3 = Ready for operation

Figure 24: Behaviour after control unit plug-in power-up

Both LEDs subsequently illuminate continuously for approx. 2 s. The light curtain is calibrated during this time period. The two LEDs “**Alarm T**” and “**Alarm R**” are then extinguished. The relevant control unit plug-in and associated opto edges are now ready for operation. Both control unit plug-ins undergo this procedure in the case of throughloading elevators.

9.2 Installation check

SAFETY ADVICE

- The items listed in this chapter are relevant to safety and must be checked when accepting an elevator. Failure of the installation conducted to match the points below should be adjusted immediately.
- Check with local elevator inspection authorities if different or additional installation requirements have to be considered.

- The distance between the sensors and the front edge of the cabin is 100 mm (tolerance ±50 mm).
- The lowest beam can be placed at a maximum of 30 mm above the cabin floor when the distance to the front edge is between 50 mm and 100 mm. If the sensor is located between 100 mm and 150 mm from the front edge of the cabin, the lowest beam can be placed between 30 mm and a maximum of 50 mm above the cabin floor.
- The height monitored is at least 1,500 mm.
- The sensor grid is ≤250 mm.
- The danger zones are marked with black and yellow.
- Both sensor connection cables are conveyed upwards away from the cabin.
- The system control rack is correctly grounded ≤ (10 Ω)

9.3 Function test

Correct integration of the cegard/Lift should now be checked. These tests should be conducted during the initial installation and after every elevator inspection. They help the elevator technician check the wiring and correct operation of the unit.

9.3.1 Test procedure

Individual procedures are approached step by step during the test. It is important that the sequence described be adhered to, as the desired points may otherwise not be tested in certain circumstances. Any error resulting in the failure of a test point should be remedied and the procedure should be recommenced from the first test. A minimum of two people are required to conduct these tests. (one person in the cabin, one person outside (e.g. caretaker)).

NOTICE

- No third person or any other object should be in the elevator during commissioning or inspection!

9.3.2 Testing

Procedure, test	Correct reaction	Measures in event of wrong reaction
Safety circuit integration		
Internal: Protection area is free **Internal:** Select other floor (travel command / reset) **Internal:** Interrupt light curtain during journey	The elevator must stop immediately if the light curtain is penetrated.	Loop safety circuit 1 into the elevator safety sequence. Check that the override signal sequence is correct (see Chapter 5).
Internal call signal wiring		
Internal: Enable light curtain **External:** Call elevator with external call	The elevator should not continue the journey. It should remain stationary.	An external call signal should not be carried out on the system control rack. Deactivate external call signal with contact (K30/K31) if necessary.
Internal: Select other floor (travel command)	The elevator should start moving and stop at the selected floor.	Check internal call signal wiring (no level?)
Latch_Out (Riegel_out) wiring		
Internal: Light curtain interrupted **Internal:** Select other floor (travel command	The elevator should remain stationary. It should not move. ⚠ **The door should be locked.**	Loop in **Latch_Out (Riegel_Out)** (see Chapter 4.2.7).
Internal: Enable light grid repeat travel command	The elevator should start moving and stop at the selected floor.	
Step test		
Internal: Attempt to induce an emergency stop shortly before the zone so that the elevator slips within the zone (see Chapter 5.2.7)	It should be impossible to open the landing door.	Check overall integration of system and elevator signals.
Internal: Select the same floor again while the light curtain is enabled. (travel command / reset) and wait briefly.	It should only be possible to open the landing door if the cabin is flush with it. No step should be visible!	Plug in latch stopping time jumper at 10 min. The latch stopping time should only be set at 2.5 or 10 s for elevators with recall!

10. Display and operating elements

10.1 Tumbler switch on control unit plug-in

A tumbler switch is located on the front of the control unit plug-in which has a central position, a contact function to the left and a switch function to the right.

10.1.1 Normal operating mode

The tumbler switch is at “0” (central position).

10.1.2 Operation with buzzer

The buzzer is switched on in the “Loudspeaker” position (to the right). This operating mode is used for an audible check during the installation.

10.1.3 Test

A calibrating procedure is conducted when the button on “**T**” is actuated (to the left). The LED’s “**Alarm T**” and / or “**Alarm R**” illuminate simultaneously for the duration of the calibration. **The monitored area should be empty during this time period**. The relay will not enable if the control unit plug-in detects covered elements, defective transmitters or defective receivers.

10.2 Tumbler switch on plug-in system controller (Service button)

A tumbler switch is located on the front of the plug-in system controller. Actuating this “service button” has the same function as an internal call signal. The elevator technician can close the safety circuit again from the plug-in system controller in the event of an emergency stop during commissioning and inspection control during installation.

10.3 “Status” output on control unit plug-in (Loading or door control)

The ‘Status’ output continuously indicates the status of the light curtain and can be used to control an automatic landing door or for load control. The switch relay (CEDES Part No.: 100 098) is available as an accessory for this purpose.

8-pin terminal of the control plug-in unit:

Label	Description
GND	Negative power supply connection (0 V = direct current, DC)
+24 V	Positive power supply connection (24 V = direct current, DC)
WK	Common contact
RK	NC output. Status is in idle, respectively monitored area interrupted or "SigIn" = 0 V connected with the WK connection
AK	NO output. In operation and monitored area free/uninterrupted, connected with the WK connection
SigIn	Test input for the testing of the system
Status	Status of surveillance area, independent of signal "SigIn", semiconductor output
SigOut	Status of surveillance area, dependent of signal "SigIn", (analogue relay output)
⚠	Electrical data of the interfaces (Chapter 14)

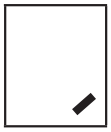
10.4 Display elements

The display elements are illuminated if the following conditions are fulfilled:

Control unit plug-in	
Power	Control unit plug-in is receiving power
Sig_Out	Light curtain is enabled and the relay in the control plug-in module is actuated
Sig_In	**Sig_In** connection is HIGH
Alarm R	Calibration, self-test or error in the receiver edge
Alarm T	Calibration, self-test or error in the emitter edge

Plug-in system controller	
Flush position	Input for the Flush position **(Bündigstellung)**
Override delay	Input for the Override Delay **(Überbrückungsverzögerung)**
Latch_In	Input for the Latch_In **(Riegel_In)**
Safety circuit	Safety circuit closed
Power	Plug-in system controller receiving power

The display on the plug-in system controller is used for various **status** displays during normal operating mode. These help the elevator technician to check the system for correct function. This can be particularly helpful when checking whether the wiring to the elevator control system is correct.



The small area in the lower right-hand corner of the displays flashes with approx. 3 Hz. The system is in normal state if this area is flashing.

The small '**r**' signals a Reset and is displayed for about half a second. (Exception: the small '**r**' can be displayed longer during the latch holding time; max. 10 min).

The '**F**' indicates that travel is enabled. The system status is "live" (i.e. an emergency stop will be triggered if the protective field is penetrated). A flashing "**F**" signals that the system is "live", even though **Latch_In (Riegel_In)** is LOW. The reason is that at least one of the **Option 2** and **Override Delay** inputs is still at 'HIGH'.

The '**U**' indicates that the light curtain has been overridden when the elevator is at floor level. Penetration of the protective field does not trigger an emergency stop. The **Option 2** and **Override Delay** inputs are at 'LOW'.

The system is experiencing an emergency stop triggered by penetration of the protective field. The safety circuits have been broken. The elevator can only recommence operation via a **Reset** or an **internal call signal (Innenruf)** while the light curtain is uninterrupted.

Rotating segment in circle. The self-test is being conducted after activation of the plug-in system controller.

Component test for production has been activated. You should never experience this display. However, please check the wiring of your **internal call signal (Innenruf)** should it occur.

10.5 Display and operation in cabin interior

The elevator stops immediately after elevator users or objects penetrate the protective zone. It is recommended that the user be made aware of the emergency with the optional alarm detector (CEDES Part No.: 101 243) and an informational notice. The user can acknowledge (reset) the emergency simply be re-actuating the floor button (internal call signal (Innenruf)).

Appropriate instructions in the case of elevators with their own exactly defined group of users can simplify use and help avoid incorrect conduct.

11. Error diagnosis

11.1 Plug-in system controller, interface for elevator control

The 7-segment display on the plug-in system controller is used as an error, status and diagnosis display. The numbers 0-9 serve as error indications. Each number is allocated to a possible error.

Internal error on plug-in system controller:
- Switch off unit, check wiring
- Activate unit
- Please contact your nearest CEDES office if the error occurs again

Power-up (static display), control unit plug-in_1 not enabling.
- Please check your edge installation
- Is the monitored area free?
- See Chapter 11.2

Operating (flashing display):
- The connection between the plug-in system controller and control unit plug-in_1 is interrupted or the control unit plug-in is defective.
- Check cables and plugs
- See Chapter 11.2

Same as error #1, but for control unit plug-in_2.

Wrong software version. Plug-in system controller is designed for two entrances, but the software is only for one entrance. Please contact a CEDES office.

Not used

The **override delay** signal is permanently LOW.
- Check the signal wiring (the input **must** be connected)
- The signal should carry out a clear signal change (LOW-HIGH) at least once per journey.
- Additionally check voltage level.
- See Chapter 5.2.3

The **Option 2** signal is permanently LOW. Same procedure as with error #5, but involving the **Option 2** input.

The safety circuit, the safety check circuit or an external contactor is either permanently broken or closed.
- Please check correct connection
- See Chapters 7 and 8

The latch relay, the latch check circuit or an external latch contactor is either permanently open or closed.
- Please check correct connection
- See Chapters 7 and 8

Not used

Ensure that the **Override delay (Überbrückungs-verzögerung)** control signal and **Option 2** can, under no circumstances, assume an improper status. This is particularly important while **travelling during inspection or commissioning**, as errors 5 or 6 will occur.

11.2 Control unit plug-in with optical edges

The LED displays on the control unit plug-in are used for light curtain component diagnosis and error location.

The following are possible causes of error if error 1 or 2 occur on the plug-in system controller:	
1. "Power" LED on control unit plug-in does not illuminate!	Check the control unit plug-in supply voltage (17 … 30 VDC via terminal "GND" and "V+"). Check the SI1 fuse on the control unit plug-in.
2. The buzzer sounds constantly when light beam is free!	Is the light beam free across the entire plane? Are all sensor elements free? A gap of at least 7 mm should be free.
3. How can a light curtain component error be localized?	The following errors can be located after activation by monitoring the LEDs "**Alarm R**" and "**Alarm T**" (see table "Control unit plug-in error diagnosis").

11.2.1 Control unit plug-in error diagnosis

Alarm R	Alarm T	Remark	Error possibility
✱	✱	Alternately flashing	Self-test during power-up for 10 s (no error!). The control unit light curtain is defective if permanent flashing occurs.
✱		Flashing	Receiver disconnected, not connected or defective.
	✱	Flashing	Emitter edges disconnected, not connected, defective or an individual sensor is covered.
◆	◆	Constantly illuminated	The control unit plug-in attempts to calibrate until all light beams are received. One or more light beams are interrupted by an object in the monitored area, opto edges are badly aligned or the distance between emitter and receiver edges is too large or too small. In the case of flush mounting, the drilled holes could also be too small!

12. Regulations

Safe operation can only be ensured if the points described below and the connection and limitation values in these operating instructions are observed by the installation company, service firm and the user. Operation of the system is unallowable if these requirements are not met.

12.1 Legislation and regulations

The installation company, service firm and the user must observe both national and local legislation, along with the regulations laid down by the elevator manufacturer, to enable cegard/Lift to fulfil its safety function and to maintain it.

12.2 Qualifications of skilled personnel

Installation, commissioning and maintenance of the cegard/Lift should only be carried out by qualified personnel who can prove that they have received special training in elevator system safety technology. The system control rack should be installed in a manner, which gives unauthorized personnel no opportunity to change the wiring. This is achieved by mounting it on the roof of the elevator cabin.

12.3 Periodic testing

The cegard/Lift should be checked for correct function at each legally-prescribed elevator service. This should involve checking whether the light curtain can be triggered throughout the entire monitoring range e.g. with the aid of the buzzer.

12.4 Reflection

Even very accurate calibration (as takes place in the control unit plug-in) cannot prevent every case of reflection. Extremely reflective shaft walls (tiled or with metal plating) running parallel to monitoring surfaces or even distances between emitter and receiver edges which are too short, can cause reflections.

Reflection should be reduced with appropriate measures if the light curtain is not triggered by interrupting the protective zone. This can involve the use of the CEDES flush mounting kit, a matt black paint coating, sand blasting or the fitting of a shade.

12.5 Cleaning the opto edges

The cegard/Lift is an optical device. The opto edges should therefore only be cleaned with a soft cloth and, in the case of stubborn dirt, soapy water. Solvents should never be used. Opto edges could be destroyed or their range could be reduced by such treatment.

13. Decommissioning, repair and disposal

13.1 Decommissioning

The cegard/Lift LX and LY can only be decommissioned if an equivalent or better accident prevention measure (e.g. interior cabin door) is installed. This should involved complete de-commissioning of installation kits, optical edges and the control unit plug-in.

13.2 Repair

Any repair work should be executed exclusively by CEDES specialised service or repair specialists with written authorization from CEDES.

SAFETY ADVICE

Any other repairs can adversely effect safety and constitute a risk for elevator users.

13.3 Disposal

Please recycle the packaging carton. Large quantities of packaging material can also be disposed of at every CEDES subsidiary or CEDES representative.

CEDES subsidiaries or CEDES representatives also take back used units for dismantling and reintroduce the components into the material cycle again.

14. Technical data

General data	
Unit type	Light curtain system, with integrated testing, for safeguarding passengers in lifts without cabin door
Safety classification	EN 61508 SIL 2 and EN ISO 13849-1 Cat. 2 / PL d
No. of entrances to be monitored	1 or 2 (through-loading elevators)
Norm conformity[1]	EN 61508:2010 EN ISO 13849-1:2015 EN 61496-1:2020 EN 61496-2:2020 EN 62061:2017 DAFA 74B:2018

Optical	
Operating range	0.7 ... 4 m or 4 ... 8 m
Active safety height[4]	1,630 mm (other protection heights are optionally available)
No. of light beams	46 (optional 70)
Emitter / receiver aperture angle	40°
Light reserve after calibration	Approx. 100%
Max. ambient light	Acc. to IEC 61496-2

Mechanical	
Opto edge - Cross-section (W × D) - Length	 14 mm × 17 mm 1,730 mm (other protection heights are optionally available)
System control rack - Dimensions (W × D × H) - Weight	318 × 342 × 201 mm 6 kg
Enclosure rating - Opto edges - Control unit light curtain	 IP65 IP54
Temperature range - cegard/Lift LX/LY - cegard/Lift LX/LY - IP67	 +10° ... +65°C –20° ... +65°C

[1] With consideration being given to the relevant instructions in these operating instructions and relevant regulations.

[2] Ensure that suitable interference suppression is provided (interference fuse via contactor coil) when using external load contactors. In addition, the load contactor should have positive-action contacts with auxiliary contact and meet the requirements of respective regulations in EN 81 and along with other national regulations (type testing).

Electrical	
Supply voltage U_{SP}	195 ... 265 VAC, 50 ... 60 Hz
Current input	< 100 mA at 230 VAC
Fuse supply voltage	100 mAF
Fuse safety circuits	2 x 4 AF

Outputs	
Safety circuit	Relay contacts (2-channeled) with restart inhibitor
Safety circuit load capacity	230 VAC / 4.0 A resistive load
With external load contactors[2]	Depends on load contactor used
Latch circuit	Relay contactor (single-channeled) with check test
LX latch circuit load capacity	230 VAC / 16 A, 3*380 VAC / 16 A resistive load
LY latch circuit load capacity	230 VDC / 2 A resistive load
- "Alarm" output	24 V / 100 mA, for connecting alarm detector
- HIGH	Emergency stop activated, safety circuits interrupted
- LOW	No emergency stop
Reaction time of outputs	< 150 ms, typ. 100 ms

Inputs	
Internal call signals	8 inputs, isolated, polarity irrelevant with DC for resetting an alarm and testing no safety circuit drop-out during double and multiple starts
Logical voltage range (HIGH)	12 ... 265 VAC / DC
Logical voltage range (LOW)	0 ... 5 VAC / DC (see Chapter 8)
Input current	Approx. 1 mA
Service button	On control unit light curtain for inspection purposes
Automatic start	After power-up test
Latch-In, flush position, Override delay, option 2	Isolated, note polarity with DC
Logical voltage range (HIGH)	12 ... 380 VAC / DC
Logical voltage range (LOW)	0 ... 5 VAC / DC (see Chapter 8)
Reaction time to signal change	Approx. 100 ms
Input current	Approx. 1 mA

Connection terminal - control plug-in unit

Relay output 	Relay changeover contact 24 V / 1 A, **may not be used for the mains voltage circuit or directly in the safety circuit of the elevator!**
2 semiconductor outputs ("Status" and "SigOut")	PNP 100 mA, short-circuit proof
Input "SigIn"	0 ... 3 VDC for "LOW", 10 … 30 VDC for "HIGH"
Response time output	< 80 ms, typ. 50 ms
Connections	Caged tension spring terminal, 8 pin, 1.5 mm²
Pre-wired	0 VDC 24 VDC SigIn SigOut

Installation

The following norms should be observed when using the cegard/Lift:

- DAFA 74B:2018 (Germany)
- EN 81 guidelines (Europe)
- SIA 370.001/A1 [2005] SIA 370.001/A2 [2006] guidelines (Switzerland)
- National legislation and regulations

Declaration of conformity	see CEDES website
TÜV certificate	see CEDES website

15. Order information

15.1 System components

Part number	Specification
101 070	**cegard/Lift LX system control rack** with latch contactor for one elevator cabin entrance, for opto edges with 16 elements
101 071	**cegard/Lift LX system control rack** with latch contactor for two elevator cabin entrances, for opto edges with 16 elements
102 804	**cegard/Lift LX system control rack** with latch contactor for one elevator cabin entrance, for opto edges with 24 elements
102 805	**cegard/Lift LX system control rack** with latch contactor for two elevator cabin entrances, for opto edges with 24 elements
101 384	**cegard/Lift LY system control rack** with rectifier module for one elevator cabin entrance wired for latch solenoid with DC supply 180 ... 220 V, 2 A, for opto edges with 16 elements
101 385	**cegard/Lift LY system control rack** with rectifier module for two elevator cabin entrances wired for latch solenoid with DC supply 180 ... 220 V, 2 A, for opto edges with 16 elements
101 072	**Pair of opto edges** 0.7 … 4 m, 16 elements, monitored height 1,630 mm
101 073	**Pair of opto edges** 4 … 8 m, 16 elements, monitored height 1,630 mm
102 809	**Pair of opto edges** 0.7 … 4 m, 24 elements, monitored height 1,908 mm
102 812	**Pair of opto edges** 0.7 … 4 m, 24 elements, monitored height 2,012 mm

15.2 Replacement / Individual parts

Part number	Specification
100 949	Control unit plug-in
100 937	Opto edge emitter 16 elements
100 936	Opto edge receiver 0.7 ... 4 m, 16 elements
100 951	Opto edge receiver 4 ... 8 m, 16 elements
100 952	Plug-in system controller for one elevator cabin entrance
100 976	Plug-in system controller for two elevator cabin entrance
101 250	IR transparent cover for flush mounting kit
101 604	Power contactor completely wired for latch solenoid with AC / DC supply from 230 / 380 V to 16 A, on DIN rail, snap-on
101 756	Rectifier module completely wired for latch solenoid with DC supply 180 ... 220 V, 3 A, on DIN rails, snap-on

15.3 Accessories

Part number	Specification
100 847	**Mounting kit for flush mounting** of one entrance: Includes drilling template, drill, protective plate, painted yellow and black and all necessary mounting material (only for standard opto edges, 16 elements)
100 848	**Mounting kit** and protective plate for **surface mounting** of one entrance: Includes drilling template, drill, protective plate made from stainless steel, painted yellow and black and all necessary mounting material (only for standard opto edges, 16 elements)
114 745	**Door control relay** for the actuation of an automatic door or for load control display, one unit required per entrance.
100 849	Alarm transmitter for surface mounting including 4 m connection cable for continuous or intermittent tone
104 075	Slot type sensor GLS 126 NT for override delay, 5 m cable, NC
104 073	Slot type sensor GLS 126 NT for override delay, 5 m cable, NO
101 716	**Stopping module** completely wired for the integration of a stop button. Activation of the stop button is handled like an emergency stop, on DIN rails, snap-on
101 243	Information sign for passangers
101 245	Information sign for passangers (reset button)

Order example:

A through-loading elevator with 6 m opening width requires:

- 1 × 101 071 system control rack for 2 elevator entrances
- 2 × 101 073 opto edge pair 4 to 8 m
- 2 × mounting kits of your choice
- 1 × 100 849 alarm transmitter

Other systems and accessories upon request from your CEDES partner or CEDES subsidiary.

15.4 Customer specific opto edge pairs

Part number	Specification
101 471 AXXXX	**Pair of opto edges 16 elements** Length of opto edges and monitoring height as desired
101 472 AXXXX	**Pair of opto edges 24 elements** Length of opto edges and monitoring height as desired

If required, the opto edges can also be supplied in IP67 rated casing.