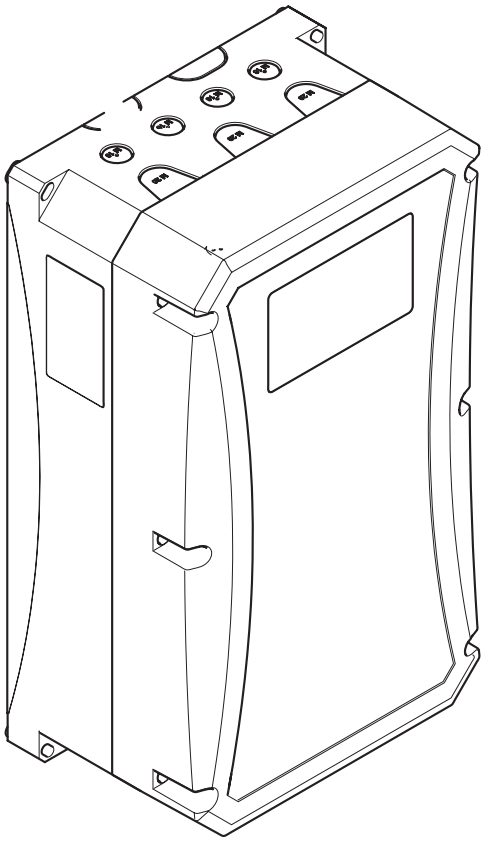


GIGAcontrol A

GB

46819V001-372013-0-OCE-Rev.A-EN

Table of contents

General Information

Symbols

CAUTION SYMBOL:
Important safety instructions!
Attention - to ensure personal safety, it is important to observe all instructions. Save these instructions!

IMPORTANT INFORMATION SYMBOL:
Information, useful advice!

1 (1) Refers to a respective picture in the introduction or main text.

This control unit is manufactured in accordance with

- EN 12453 Safety in use of power operated doors, requirements
- EN 12978 Safety devices for power operated doors and gates, requirements and test methods
- Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC

and has left the factory in good technical condition.

Safety instructions

General

- These installation and operating instructions must be read, understood and complied with by persons who install, use or perform maintenance on the control unit.
- Installation, connection and initial commissioning of the control unit may only be carried out by an electrician.
- The system manufacturer is responsible for the complete system. The system manufacturer must ensure that all applicable standards, directives and regulations applicable at the installation site are observed. In addition to other items, the system manufacturer must test and maintain the maximum approved closing forces in accordance with EN 12445 (Safety in use of power operated doors, test methods) and EN 12453 (Safety in use of power operated doors, requirements). The system manufacturer is responsible for preparation of technical documentation for the complete system and the documentation must accompany the system.
- All electrical wires must be fitted tightly and secured against shifting.
- The manufacturer assumes no liability for injuries, damage or break-downs that occur due to non-compliance with the installation and operating instructions.
- Before commissioning, ensure that the mains connection matches the specifications on the type plate. If this is not the case, the control unit must not be operated.
- With a three-phase connection make sure that the direction of rotation is clockwise.
- Installations with a fixed mains connection require an all-phase disconnection device with appropriate fuses.
- Keep the installation instructions within reach.
- Always ensure compliance with accident prevention regulations and current standards in each respective country.
- Take heed of and comply with the 'ASR A1.7 Technical Regulations for Workplaces' of the committee for workplaces (ASTA). (Applicable for the operator in Germany, observe and comply with the applicable regulations in other countries).
- Before working on the control unit, always disconnect the power plug or disconnect the mains voltage at a main switch (lock to prevent activation).
- Regularly check power cables and wires for insulation defects or cracks. If a wiring fault is found, switch off the power immediately and repair the faulty cable or wire.
- Before switching on the power supply for the first time, make sure that the plug-in terminals are in their correct positions, otherwise the control unit may malfunction or be damaged.
- Observe the requirements of the local power supplier.
- Only use OEM (Original Equipment Manufacturer) spare parts, accessories and mounting material.

Storage

- The control unit must be stored in an enclosed, dry area at a room temperature of -20 - +70 °C ad relative humidity of 20 - 90% (non-condensing).

Operation

- When using the automatic close function, ensure compliance with EN 12453 (e.g. install safety devices such as photo relay).
- After installation and commissioning, all users must be instructed in the function and operation of the system. All users must be informed on the hazards and risks inherent in the system.
- Open and close the gate only if there are no persons, animals or objects within its area of movement.
- Continuously monitor the gate while it is in motion and keep all persons away from it until the gate is completely opened or closed.
- Dot not drive through the gate until it has been fully opened.
- The control unit must be adjusted to ensure safe operation in conformity with the standards.

Radio remote control

- The remote control must only be used for devices and systems in which radio interference will not endanger people, animals or objects, or the risk is reduced by other safety devices.
- The user must be informed that the remote control of equipment that presents a risk of accident may take place, if at all, only when there is direct visual contact with the equipment.
- Radio remote control may be used only if the gate's movement can be viewed and if no persons or objects are in the area of movement.
- Store the handheld transmitter so that unintended operation, e.g., by children or animals, is impossible.
- The operator of the radio system is not protected from faults due to other telecommunications equipment or devices (e.g. radio-controlled systems that are licensed to operate in the same frequency range). If substantial interference occurs, please contact your appropriate telecommunications office which has radio interference measuring equipment (radiolocation).
- Do not operate the handheld transmitter in areas with sensitive radio communications or systems (e.g. airports, hospitals).

General Information

Type plate

- The type plate is attached to the inside of the control unit housing.
- The type plate shows the exact type designation and the date of manufacture (month/year) of the control unit.

Intended use

CAUTION! RISK OF DEATH!
Remove all cords or straps necessary to operate the door by hand.

- The GIGAcontrol A control unit is intended exclusively for opening and closing industrial gates, such as sectional, roller, folding, fast membrane and roller grille gates. Any other use does not constitute intended use. The manufacturer accepts no liability resulting from use other than intended use. The user bears the sole responsibility for any risk involved. It also voids the warranty.
- Genuine SOMMER industrial gate drives only must be used.
- Only command initiators and sensors in good technical conditions may be connected, and they must be used for the intended purpose with awareness of the hazards as described by the installation and operating manual.
- Gates automated with a drive must comply with all valid standards and directives: e.g. EN 12604, EN 12605.
- Malfunctions which could affect safety must be corrected immediately (see EN 13241-1).
- The gate must be stable and torsionally stiff, i.e. it must not bend or twist when being opened or closed.
- Only use the control unit in a dry, non-hazardous area.
- The control unit conforms to the requirements of the IP-54 protection class. The control unit must not be installed in areas with a corrosive atmosphere (e.g. salty air).

Types

The GIGAcontrol A control unit is available in the following types:

- GIGAcontrol A R1
  with one relay up to 1.5 kW (power shut-off for operation with a frequency converter)
- GIGAcontrol A R2
  with two relays up to 1.5 kW (reversing mechanism, directly connected drives 3-phase 230/400 V)
- GIGAcontrol A R3
  with three relays up to 1.5 kW (universal control unit, reversing mechanism with 2nd shut-off path)
- GIGAcontrol A C1
  with one contactor up to 2.2 kW (power shut-off for operation with a frequency converter)
- GIGAcontrol A C2
  with two contactors up to 2.2 kW (reversing mechanism, directly connected drives 3~230/400 V)
- GIGAcontrol A C3
  with three contactors up to 2.2 kW (universal control unit, reversing mechanism with 2nd shut-off path)

All control unit types can be (optionally) fitted with

- - a radio receiver
- - a traffic light module (two way traffic control)
- - an induction loop module (2 loops).

The following optional types of control unit are available:

Sommer Standard three-key combination or three-key keypad with conventional keys with:

- - key switch
- - emergency stop switch
- - main switch

Available safety accessories

The following safety devices can be connected to the control unit:

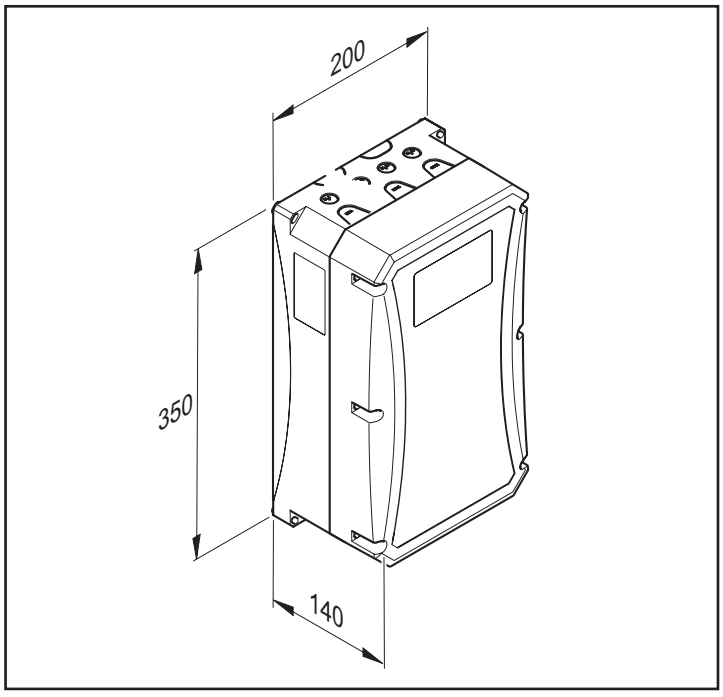
- light curtain, untested photo relay or tested photo relay
- 2-wire photo relay (frame-mounted photo relay)
  disable photo relay
- optical safety contact strip (OSE 1)
- optical safety contact strip (OSE 2)
- 8.2 K**Ω** safety contact strip, SKL 1 pressure wave switch
- 8.2 K**Ω** safety contact strip, SKL 2 pressure wave switch

Dimensions of housing (W x H x D)

approx. 200 x 350 x 140 mm

CAUTION!
The mains cable must only be replaced by the manufacturer, customer service or another electrician.

GIGAcontrol 1



EU Declaration of Conformity

www.sommer.eu/mrl

Scope of supply

The actual scope of supply may vary depending on the control unit version.

Declaration of Installation

for the installation of an incomplete machine
in accordance with the Machinery Directive 2006/42/EC, Appendix II, Section 1 B

SOMMER Antriebs- und Funktechnik GmbH
Hans - Böckler - Straße 21 - 27
73230 Kirchheim unter Teck
Germany

hereby declares that the industrial gate control unit

GIGAcontrol A

have been developed, designed and manufactured in conformity with the

- Machinery Directive 2006/42/EC
- Construction Products Directive 89/106/EEC
- Low Voltage Directive 2006/95/EC
- Electromagnetic Compatibility Directive 2004/108/EC
- RoHS Directive 2001/65/EU.

The following standards were applied:

• EN ISO 13849-1, PL "C" Cat. 2	Safety of machines - safety-related parts of controls - Part 1: General design guidelines
• EN 60335-1, where applicable	Safety of electrical appliances / drives for gates
• EN 61000-6-3	Electromagnetic compatibility (EMC) - interference
• EN 61000-6-2	Electromagnetic compatibility (EMC) - interference resistance

The following requirements of Annex 1 of the Machinery Directive 2006/42/EC are met:

1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.6, 1.3.2, 1.3.4, 1.3.7, 1.5.1, 1.5.4, 1.5.6, 1.5.14, 1.6.1, 1.6.2, 1.6.3, 1.7.1, 1.7.3, 1.7.4

The special technical documentation was prepared in accordance with Annex VII Part B and will be submitted to regulators electronically on request.

The incomplete machine is intended for installation in a gate system only to form a complete machine as defined by the Machinery Directive 2006/42/EC. The gate system may only be put into operation after it has been established that the complete system complies with the regulations of the above EC Directive.

The undersigned is responsible for compilation of the technical documents.

Kirchheim, 06-06-2013

CE

i.V.

Jochen Lude
Responsible for documents

Installation preparations

Safety instructions

CAUTION!

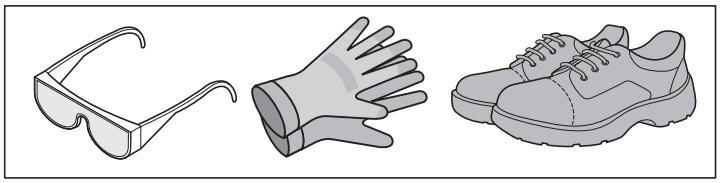
Important instructions for safe installation. Observe all installation instructions – improper installation can lead to serious injuries!

- Use only suitable tools.
- The mains supply line that has been provided may not be shortened or extended.
- Before commissioning, ensure that the mains connection matches the specifications on the type plate. If this is not the case, the control unit must not be operated.
- All devices to be connected externally must have a safe isolation of the contacts from the mains voltage supply according to EC 60364-4-41.
- Wiring for external devices must be installed in accordance with IEC 60364-4-41.
- Live parts of the control unit must not be connected to the earth or with live parts or protective conductors of other electrical circuits.
- The control unit should be mounted on a low-vibration surface to eliminate vibrations that could have a negative effect on it over time (e.g. a brick wall).

CAUTION! RISK OF DEATH!

Remove all cords or straps necessary to operate the door by hand.

Personal protective equipment



- Safety glasses (for drilling)
- Work gloves
- Safety shoes

Installation

Safety instructions

CAUTION!
Important instructions for safe installation. Observe all installation instructions – improper installation can lead to serious injuries!

CAUTION!
Control or regulating units (buttons) in a fixed position must be mounted within sight of the door. They may not, however, be mounted close to moving parts and must be at least 1.5 m above the ground.

CAUTION!
After installation, it is imperative that you check the drive to ensure that it has been correctly adjusted and that it reverses upon contacting a 50 mm high object on the floor.

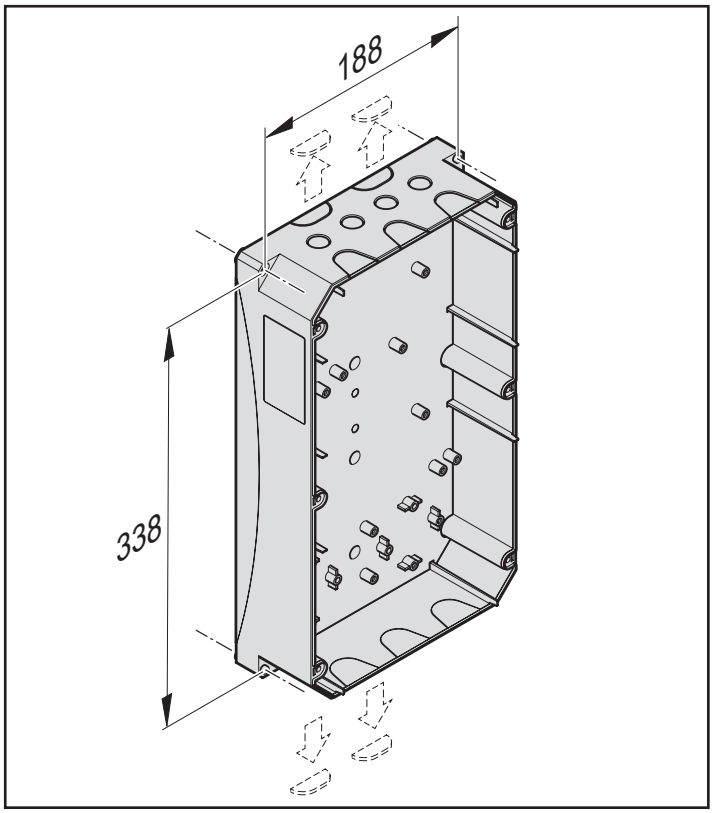
- The drive may be installed, connected and commissioned by competent personnel only.
- Do not move the gate, if there are any people, animals or objects in the area of movement.
- Keep disabled persons and animals away from the gate.
- Wear safety glasses when drilling the fastening holes.
- Cover all drill holes to prevent ingress of dirt.
- Before opening the housing, make sure that drilling chips or any other material cannot fall into the housing.
- All electrical wires must be fitted tightly and secured against shifting.
- Before installing the control unit, inspect it for damage caused by shipping or other causes.
  ⇒ Never install a damaged control unit. Serious injuries may result.
- Keep the system disconnected from the power supply when installing the control unit.
- Electronic components may be damaged by electrostatic discharge when touched.
  ⇒ Do not touch the electronic components of the control unit (boards etc.).
- Close unused cable inserts with suitable material to maintain the IP 54 protection class.

Information on installation

CAUTION!
Always unplug the mains plug before opening the housing.

- Use indoors (see data regarding temperature and IP protection class).
- The substructure must be flat and low-vibration.
- Mount the control unit housing vertically.

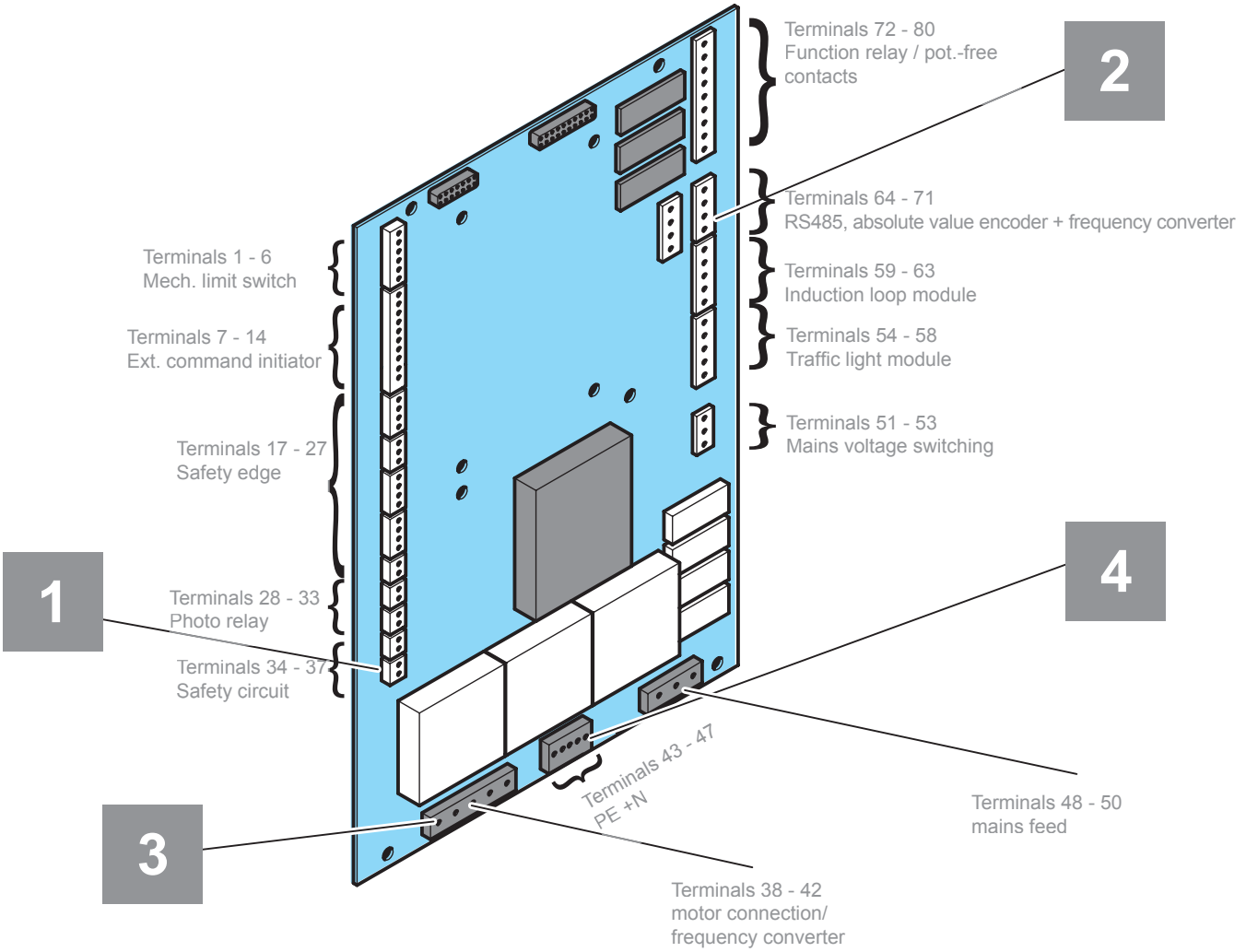
NOTE:
The dimensions specified here are the dimensions for drilling. For housing dimensions see the "Dimensions" section.

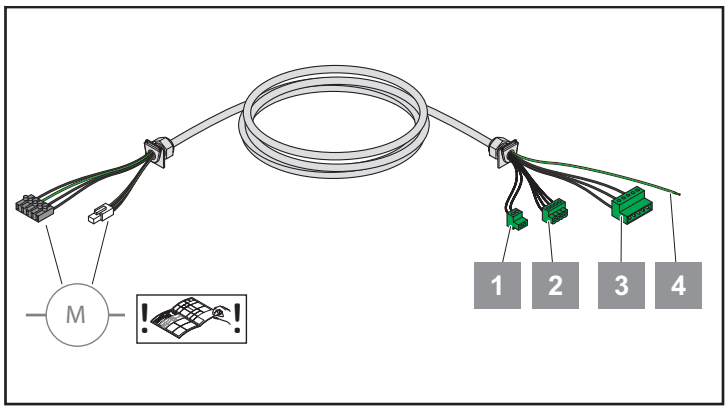


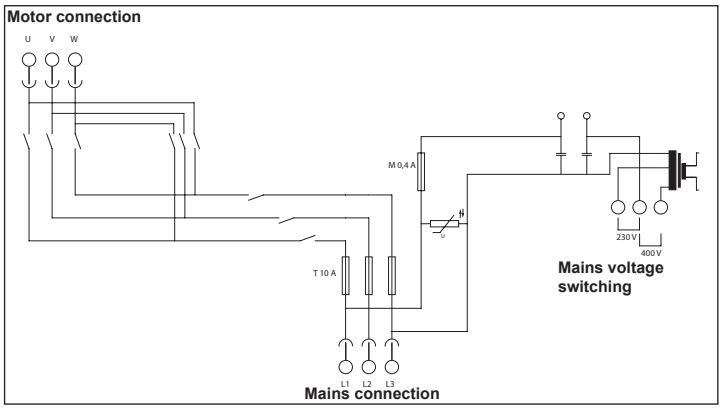
NOTE:
The cable feedthroughs can be easily opened without damaging the housing. This allows cables to be installed behind the control unit housing.

- Attach housing to the substructure correctly.
- Use suitable tools.

Connection







Plug:

1. Safety circuit (2-pin terminal)
2. Encoder (+/-/A/B)
3. Motor (1~ 230 V / 3 ~ 230 V 3 ~ 400 V)
4. Earth (PE)

Connection

Electrical installation

CAUTION!
Electrical work must be performed by qualified electricians only.

CAUTION!
Observe the requirements of the local power supplier.

Mains connection

NOTE:
The connection depends on the mains and the drive with which the control unit will be used.

The control unit is suitable for the following mains voltages: 1~230 V, 3~230 V or 3~400 V.

NOTE:
Caution! Check the jumper on the board before switching mains voltage. An incorrectly positioned jumper may destroy the control unit.

The control unit must be protected from short-circuit and overload by a nominal fuse value of 10 A per phase.

- A three-phase automatic circuit breaker must be used with three-phase power supplies.
- A single-phase automatic circuit breaker must be used with AC power supplies.

The control unit must have an all-phase mains circuit breaker conforming to EN 12453.

This can be:

- a plug connection (max. 1 m cable length)

or

- a main switch.

NOTE:
The mains circuit breaker must be easily accessible at a height between 0.6 m and 1.7 m.

The following fuses are required depending on the delivery state:

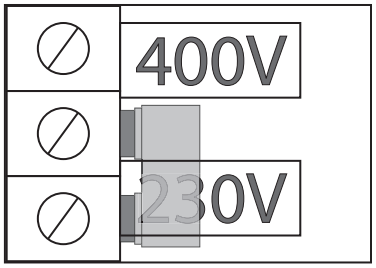
Control unit without mains plug:
main switch, automatic circuit breaker mains side (max. 10 A)

Control unit with 5-pin CEE plug:
16 A socket (3-pole three-phase automatic circuit breaker 3 x 10 A)

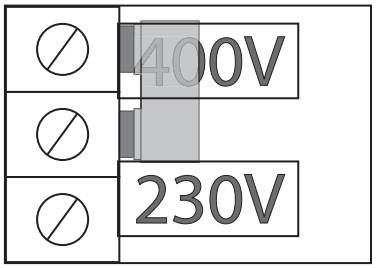
Control unit with 3-pin CEE plug:
16 A socket (1-pole automatic circuit breaker 1 x 10 A)

Selecting and switching mains voltage

IMPORTANT!
It is important to ensure that the jumper on the board conforms to the actual voltage. Otherwise the board may be destroyed.



For 1 ~ 230 V and 3 ~ 230 V



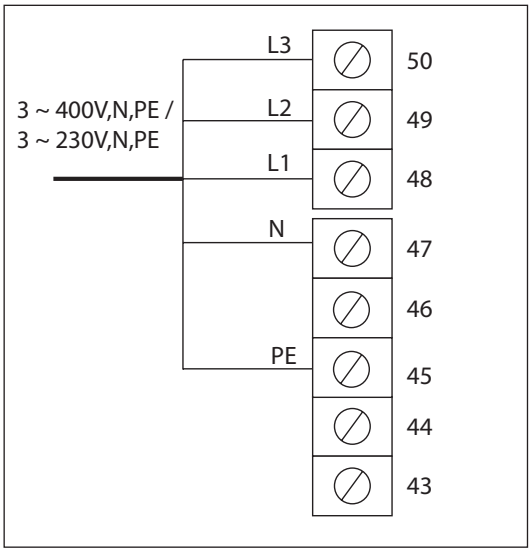
For 3 ~ 400 V

Connection

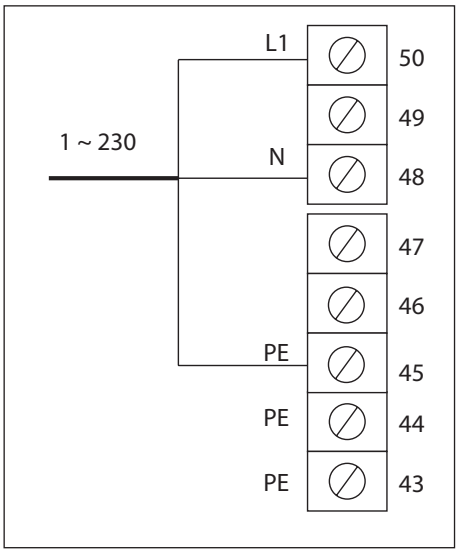
Mains feed

NOTE:
If ground fault interrupters are integrated into the building installation, the control unit must not be connected unless the ground fault interrupters are class B devices (all-current-sensitive ground fault interrupters). If different types of ground fault interrupters are used, circuits may be interrupted incorrectly or not at all.

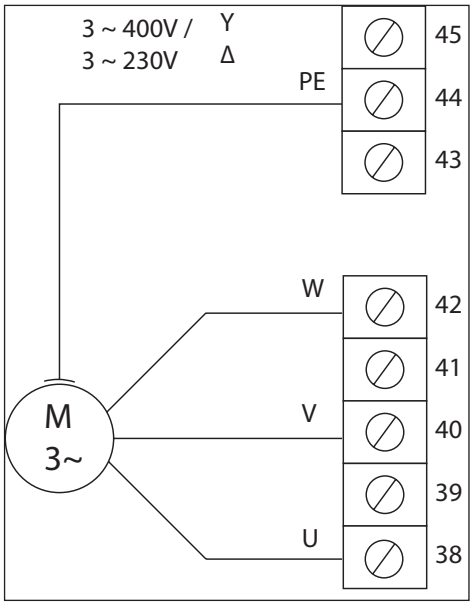
3-phase



1-phase



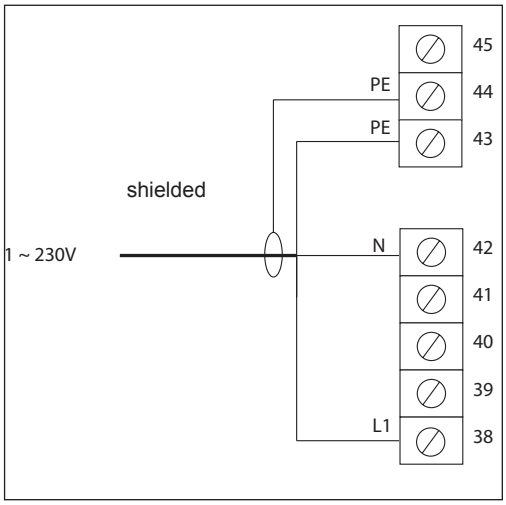
Motor connection



Frequency converter

(Menu item 1500 ff.)

NOTE:
Use only the included cables.

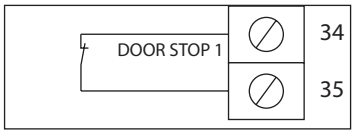


Safety circuits

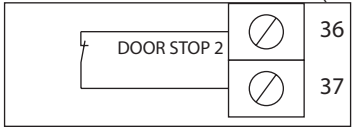
(Menu item 1000 ff.)

Emergency actuation, thermal contact and slack wire switch

DOOR STOP 1 = microswitch emergency actuation and thermal contact (connection with yellow + grey motor cable)

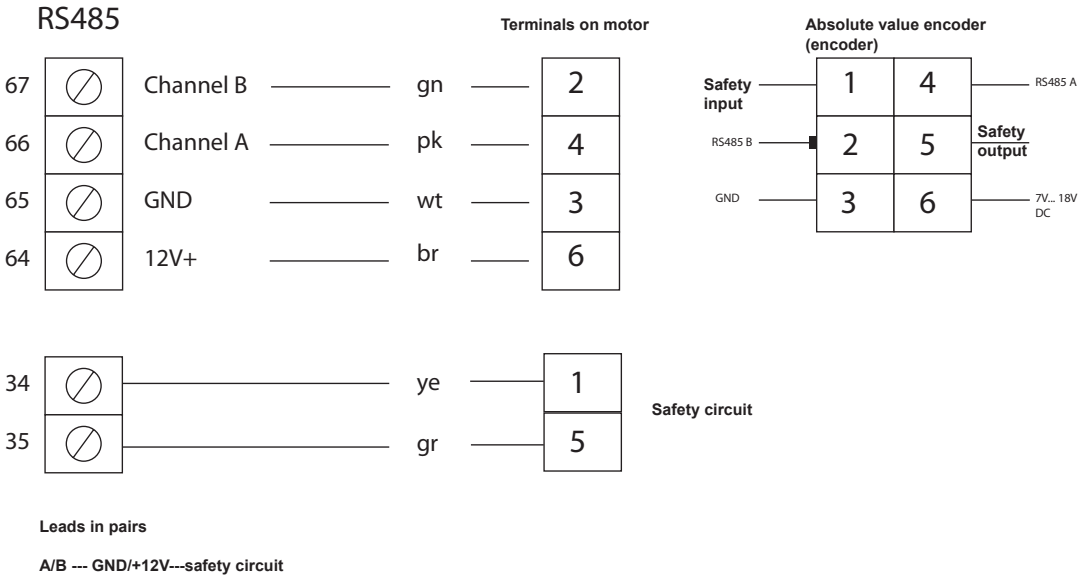


Door STOP 2 = slack wire switch (connection with spiral cable/gate socket)



Connection

Absolute value encoder



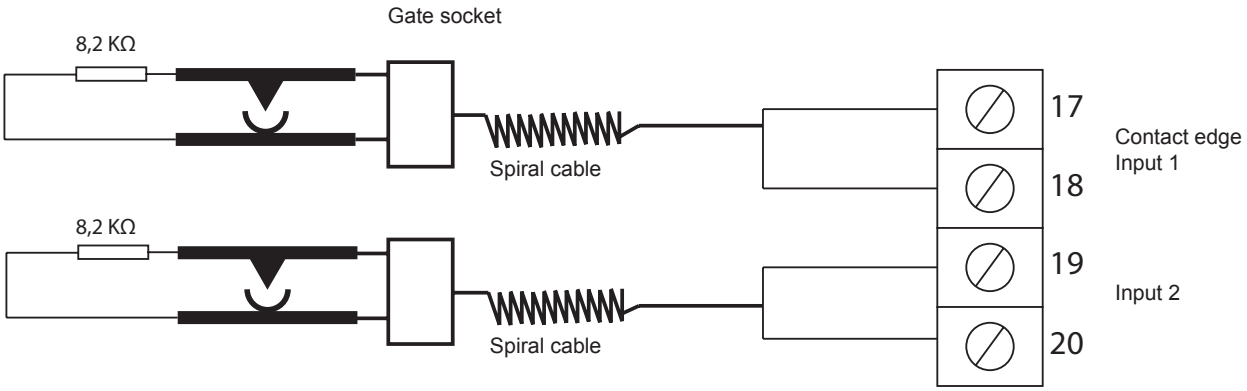
Leads in pairs

A/B --- GND/+12V---safety circuit

Safety edge

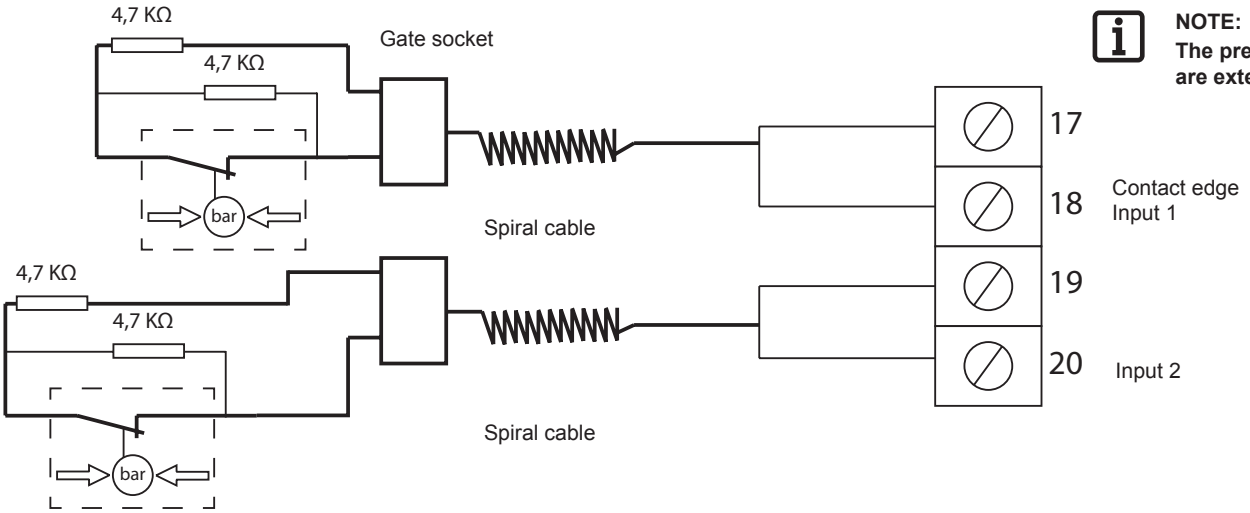
Safety edge - 8.2 K-Ohm

(Menu item 1240 ff.; 1260 ff.)



Pressure wave switch

(Menu item 1240 ff.; 1260 ff.)

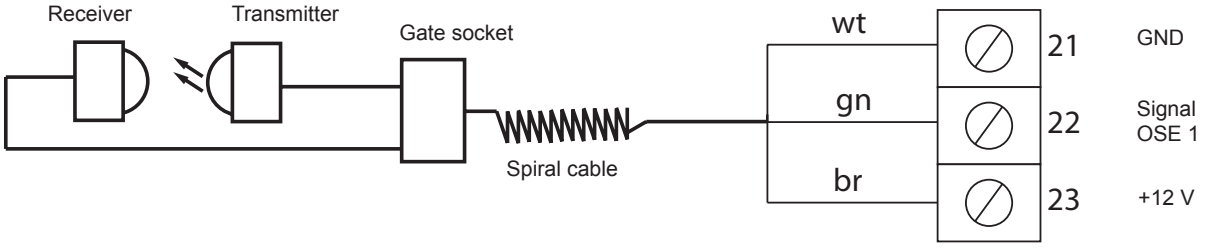


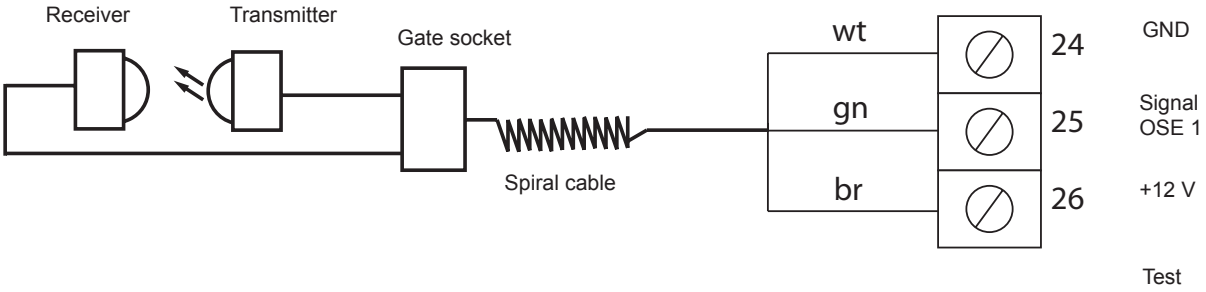
NOTE:
The pressure wave switches are externally wired!

Connection

OSE (optical safety edge)

(Menu item 1200 ff.; 1220 ff.)

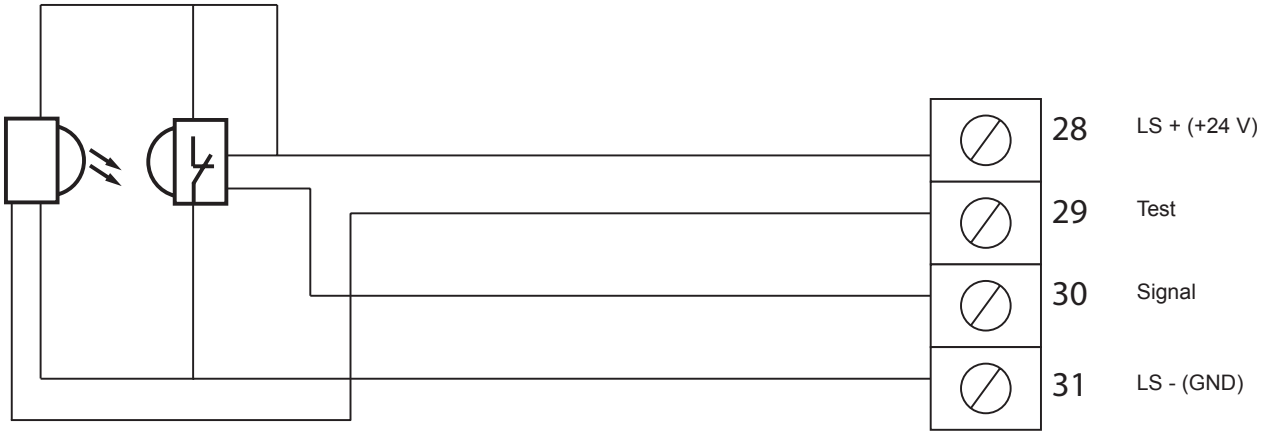




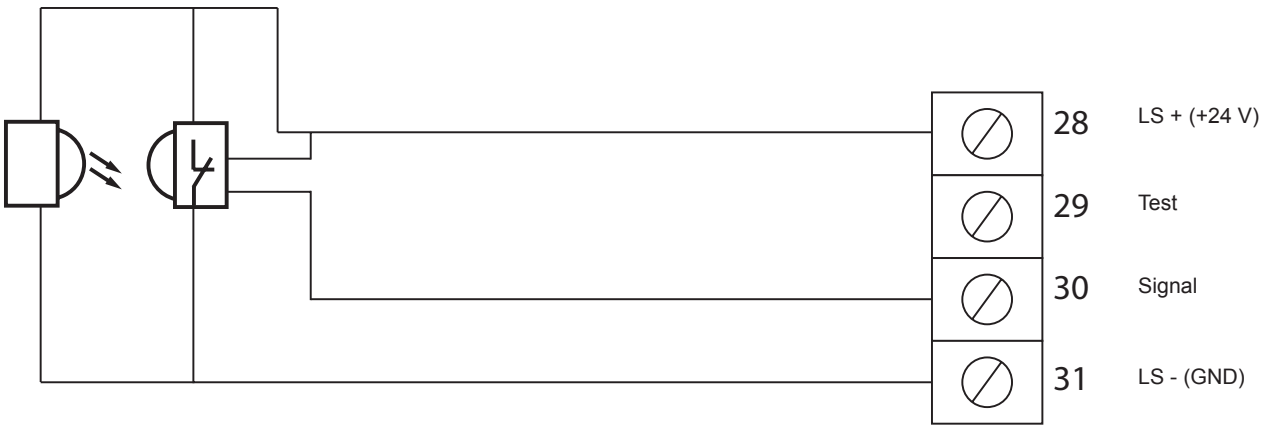
4-wire photo relay with testing

(Menu item 1111 ff.)

CAUTION!
The max. mounting height for photo relays is 30 cm.



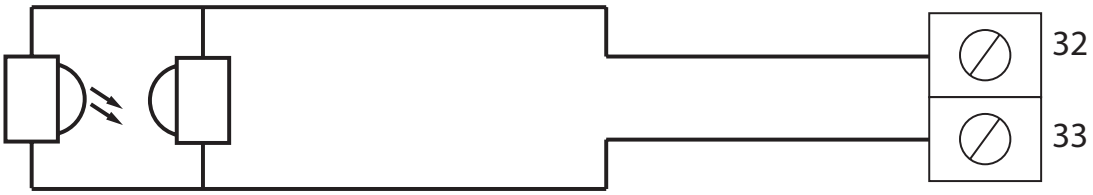
4-wire photo relay without testing



Connection

2-wire photo relay or frame photo relay

(Menu item 1115 ff.)



Connection

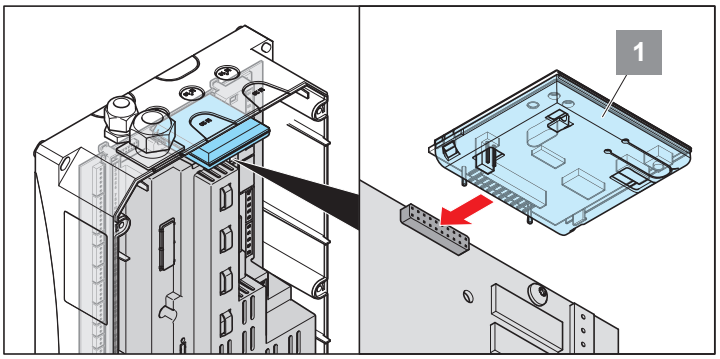
Radio

(Menu item 2560 ff.)

Four radio channels are available when using the #7000 (868.8 MHz) or #7080 (434.42 MHz) radio receiver.
Every radio channel has a preset function, which can be manually changed in the parameter menu.

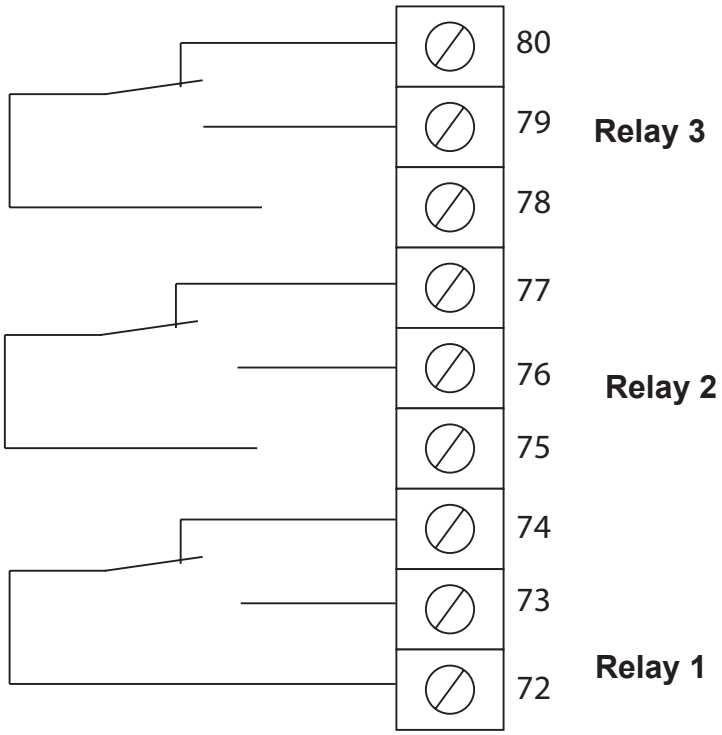
IMPORTANT INFORMATION!
List of functions in the "Commissioning" chapter.

IMPORTANT INFORMATION!
See separate instructions for the radio receiver!



Programmable relays

Menu item 1600 ff.



NOTE:

Allowable contact load:

max. 8 A 250 V AC 30 V DC
max. 3 A 250 V AC cos ϕ = 0.4
max. 2000 VA / 300 W

The relays can be programmed as required for the following functions:

- Not Active (every relay)
- Message when end positions reached (Pos.: top / bottom / both + permanent / impulse) (every relay)
- Active during movement (up / down + permanent / blink + - / 3s / 5s (every relay)
- Switch brake (relay 1 only)
- Switch electric lock (every relay)

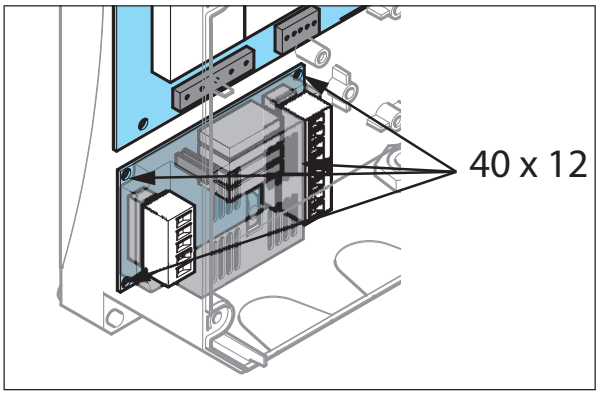
  ⇒ For more information see parameter settings
- Radio settings (relay 3 only)

Connection

Traffic light module / two way control (optional)

Menu item 2200 ff.

Mechanical installation



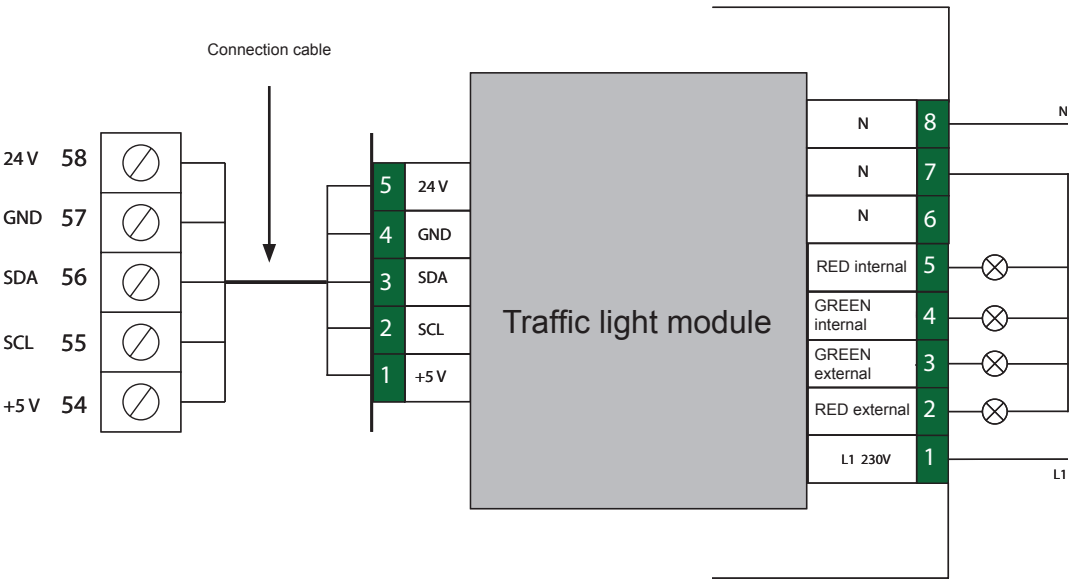
1. Open control unit housing
2. Install traffic light module in the control unit housing with the 40 x 12 mm bolts

Electrical installation

CAUTION!
Electrical work must be performed by qualified electricians only.

IMPORTANT INFORMATION!
The traffic light module requires an external power source!

IMPORTANT INFORMATION!
The output contacts of the traffic light module are potential-free!



NOTE:

Allowable contact load:

max. 3 A 250 V / AC / cos ϕ = 1
AC 15: 250 V / AC, 3 A
DC 13: 24 V / DC, 2 A

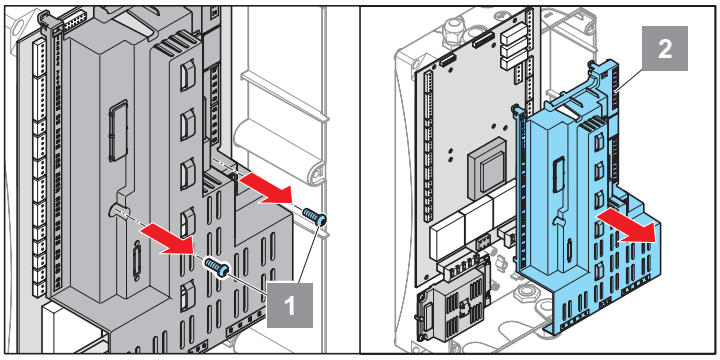
Induction loop module (optional)

Technical specifications:

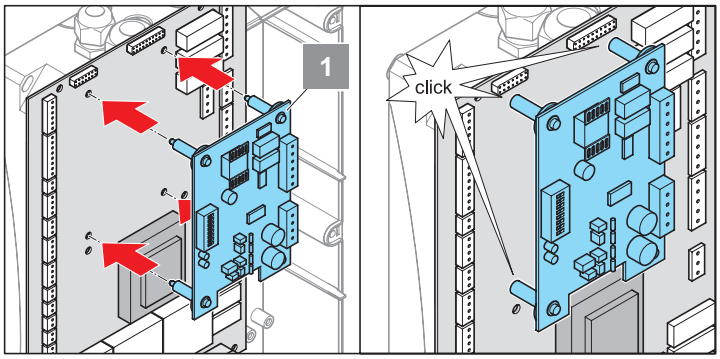
Power consumption	1 VA
Response time	200 ms
Loop inductance	100 - 1000 µH
Loop frequency range	20 to 120 KHz

CAUTION!
Before working on the control unit, always disconnect the power plug or disconnect the mains voltage at a main switch (lock to prevent activation).

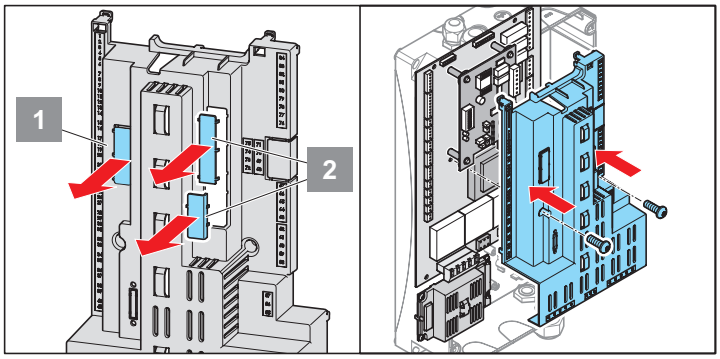
Retrofit:



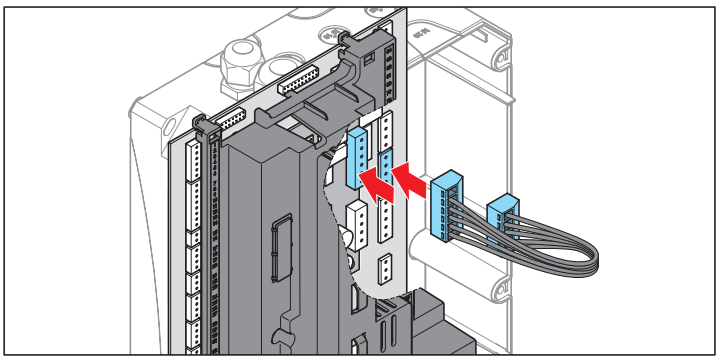
1. Unscrew bolts.
2. Remove cover.



3. Install induction loop module.
   ⇒ Spacers lock



4. Break out openings for terminal area from cover.
5. Replace the cover.

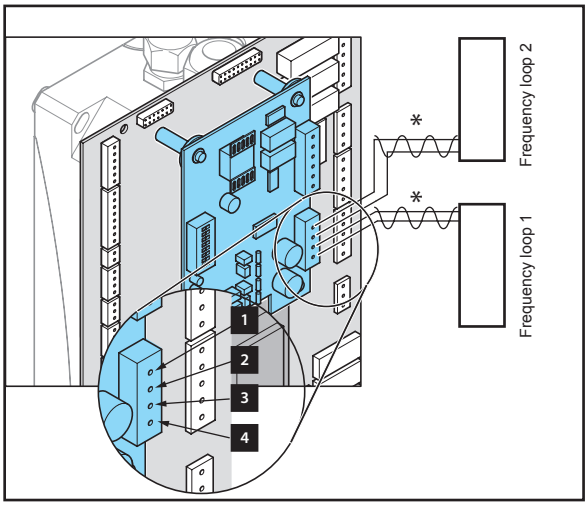


6. Connect the control unit and the induction loop module with the connecting cable.
   ⇒ Plug-in terminal (top terminal bar) on the induction loop module
   ⇒ Plug-in terminals: 59 - 63 on the control unit

CAUTION!
No electrical isolation between loop and operating voltage.

NOTE:
Do not install these cables in the same duct as high-voltage cables.

Connecting induction loops:

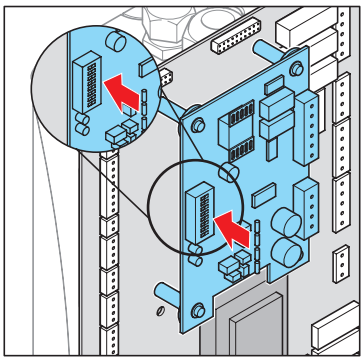


7. Connecting induction loops.
   ⇒ terminals 1 + 2 = induction loop 2
   ⇒ terminals 3 + 4 = induction loop 1

*Twist wires (20 x / metre line length)

DIP switches

DIP switches 1 + 2 (frequency adjustment for loop 1)



Switch 1	Switch 2	Frequency
OFF	OFF	Standard frequency f
ON	OFF	f - 10%
OFF	ON	f - 15%
ON	ON	f - 20%

Switches 1 + 2 can be used to change the loop frequency for loop 1 in 4 steps. This prevents the loops from interfering with each other.

When the frequency switch is actuated, loop 1 must be recalibrated with the OFF / OFF position.

DIP switch 3, 4, 5, 6 (sensitivity)

Loop 1

Switch 3	Switch 4	Sensitivity
OFF	ON	low (1)
ON	OFF	medium (2)
ON	ON	high (3)
OFF	OFF	Loop disabled

Loop 2

Switch 5	Switch 6	Sensitivity
OFF	ON	low (1)
ON	OFF	medium (2)
ON	ON	high (3)
OFF	OFF	Loop disabled

NOTE:
Recommended setting: medium

DIP switch 7 (direction recognition)

Switch	Effect
OFF	Goto operation - the assignment states of the loops are output independently over the channels.
ON	Direction recognition enabled. The signal is sent depending on the assignment sequence.

Special features:

If loop 1 is actuated before loop 2, the signal output for loop 2 is blocked until both loops are free again.

If loop 2 is actuated before loop 1, the signal output for loop 1 is blocked until both loops are free again.

DIP switch 8 (sensitivity increase)

Switch	Effect
OFF	Normal sensitivity.
ON	Loop sensitivity is increased. This mode of operation allows high vehicles (lorries) to be correctly recognised over their complete length.

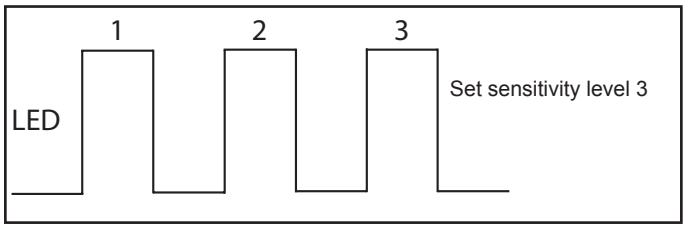
Testing sensitivity

The recommended sensitivity can be increased using the LED display.

NOTE:
After the second step one of the LEDs starts flashing.
The frequency of the flashing must be counted.
The sensitivity is set manually based on the calculated value.

1. Drive a high vehicle, e.g. lorry, over the induction loop.
   ⇒ The induction loop module evaluates the values generated by the vehicle.
2. Set DIP switches 3+4 and 5+6 in to the "OFF" position.
   ⇒ The recommended sensitivity setting is displayed by the flash frequency of the LED.

e.g.:



Technical data

Measuring the loop frequency

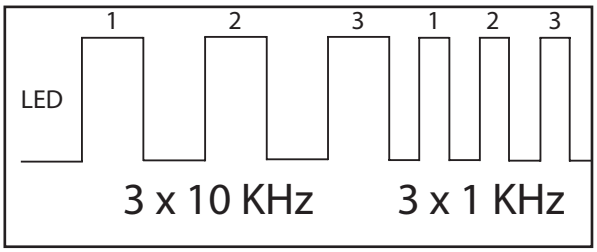
The recommended sensitivity can be displayed using the LED display.

NOTE:
When the DIP switches (sensitivity switches) have been switched from OFF position to ON position, the LED belonging to the loop flashes.

The following items are important for measuring the loop frequency:

1. The frequency of flashing
2. The frequency of flashing

The loop frequency can be calculated based on the calculated values.



Loop frequency = 33 KHz

GIGAcontrol A R1, R2, R3 control unit

(Relay)

Dimensions	350 x 200 x 135 mm (H x W x D)
Operating voltage	1 / 3 ~ 230 V AC; 3 ~ 400 V AC
Mains feed fuse	10 A slow-blow
Controlling voltage	24 V
Control voltage fuse	0.8A-T
Temperature range	-10 °C to +50 °C
Connection cross-section	1.2 mm^2
Switching capacity	1.2 kVA
Protection type	IP54

GIGAcontrol A C1, C2, C3 control unit

(Contactor)

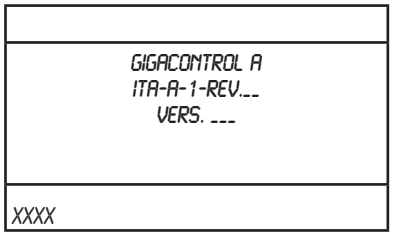
Dimensions	350 x 200 x 135 mm (H x W x D)
Operating voltage	1 / 3 ~ 230 V AC; 3 ~ 400 V AC
Mains feed fuse	10 A slow-blow
Controlling voltage	24 V
Control voltage fuse	0.8 A-T
Temperature range	-10 °C to +50 °C
Connection cross-section	1.5 mm^2
Switching capacity	4 kVA
Protection type	IP54

LCD Display

The menu consists of two main modes:

1. Display of operating mode + error display
2. Parameter mode (settings)

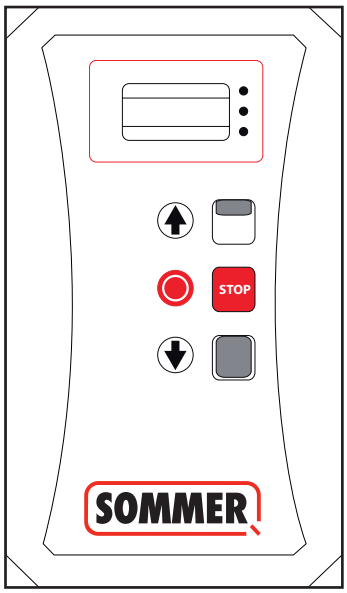
After main voltage has been applied, the display shows the name of the control unit and the software version for a few seconds.



The following modes of operation are available depending on the hardware configuration, the connection safety devices and the parameter properties:

- Deadman UP/DOWN
- Impulse UP / deadman DOWN
- Impulse UP / DOWN
- Two way

General notes on operation of the control unit



The following actions can be performed with the ⇧ button:

- Gate OPEN
- "Back" in main menu
- "Change parameters/values" in submenus

The following actions can be performed with the ⇩ button:

- Gate CLOSE
- "Next" in main menu
- "Change parameters/values" in submenus

The following actions can be performed with the STOP button:

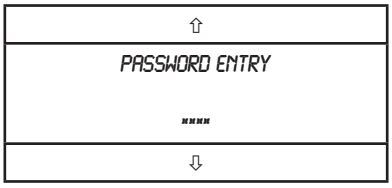
- STOP gate
- "Select from selected parameters and confirm values/settings" menu

Starting commissioning

NOTE:
The gate must be moved manually to approximately the centre position before starting commissioning. At least one revolution of the hollow shaft must be possible to allow recognition of the direction of rotation.

Enter password

1. *Press STOP button for approx. 10 seconds.*
2. *Also press ⇧ or ⇩ for 3 seconds.*
3. *Release all buttons.*
   ⇒ The password entry prompt appears on the display.
   ⇒ The active position flashes.

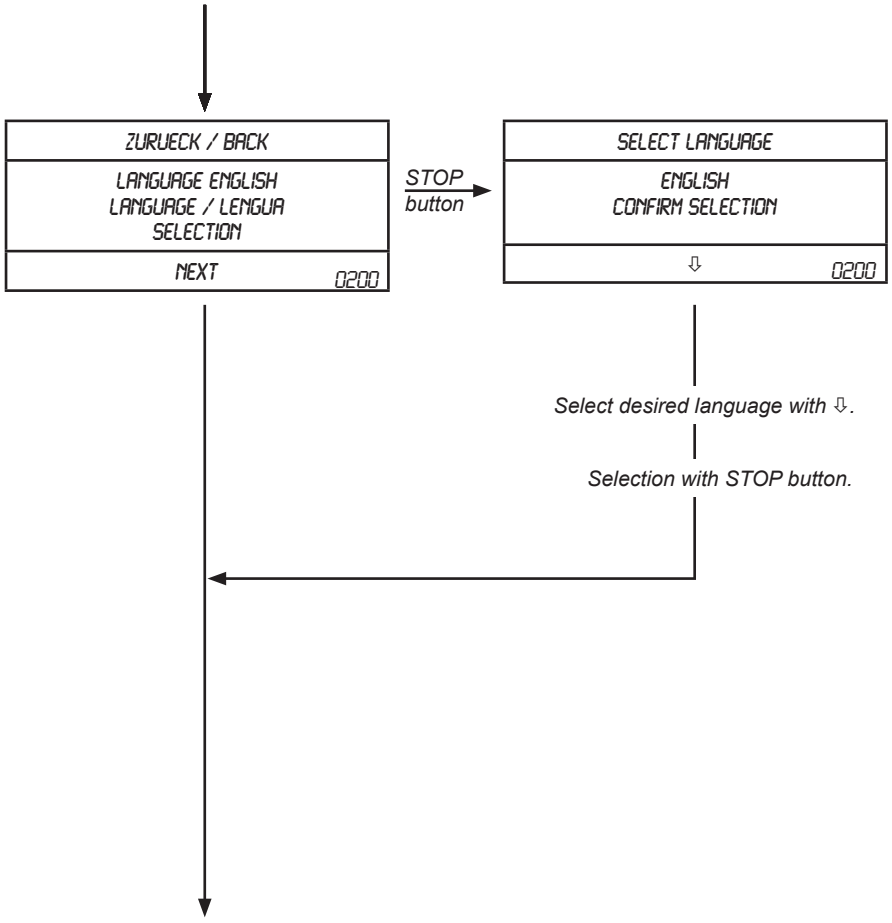


NOTE:
The factory-set main password is 0000.

It should always be changed for safety reasons by a trained person (menu: "Profiles -> Passwords no. 2570").

4. *Select the applicable digit with ⇧ or ⇩ and confirm with STOP.*
   ⇒ The next position is automatically selected.

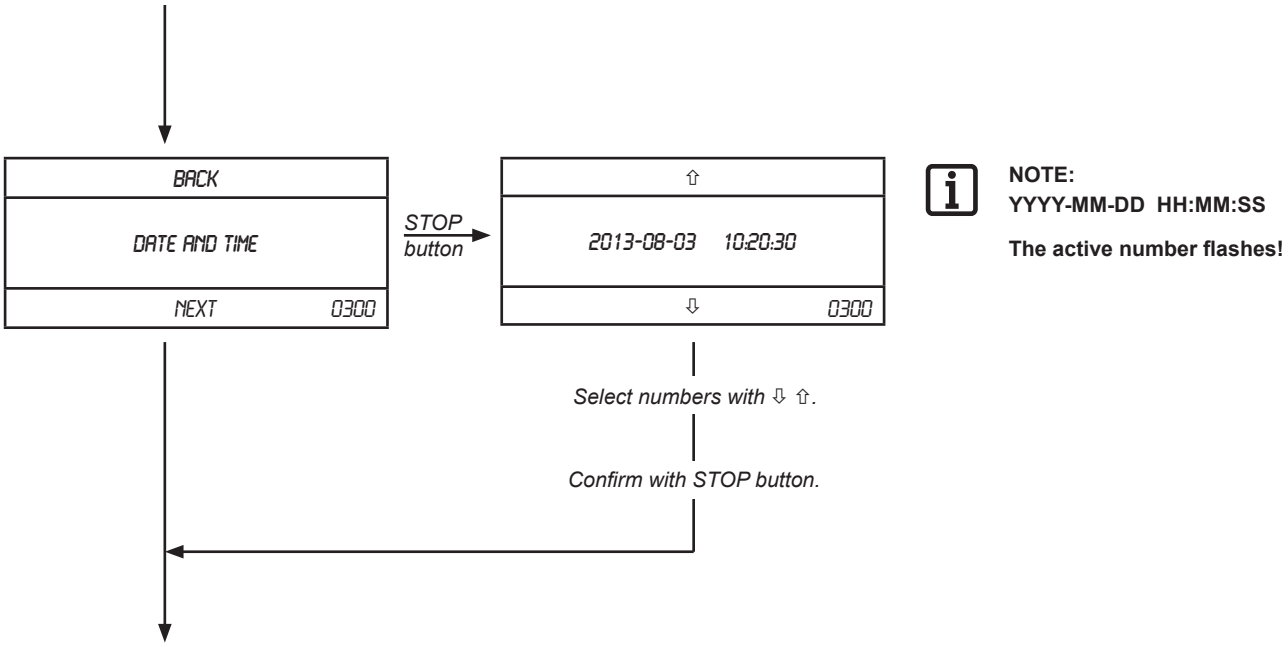
Select language



Initial operation

Select date and time

NOTE:
The date and time are retained for several days in the event of power failure and are correctly displayed when the power is restored. (This requires the energy buffer to be charged.)

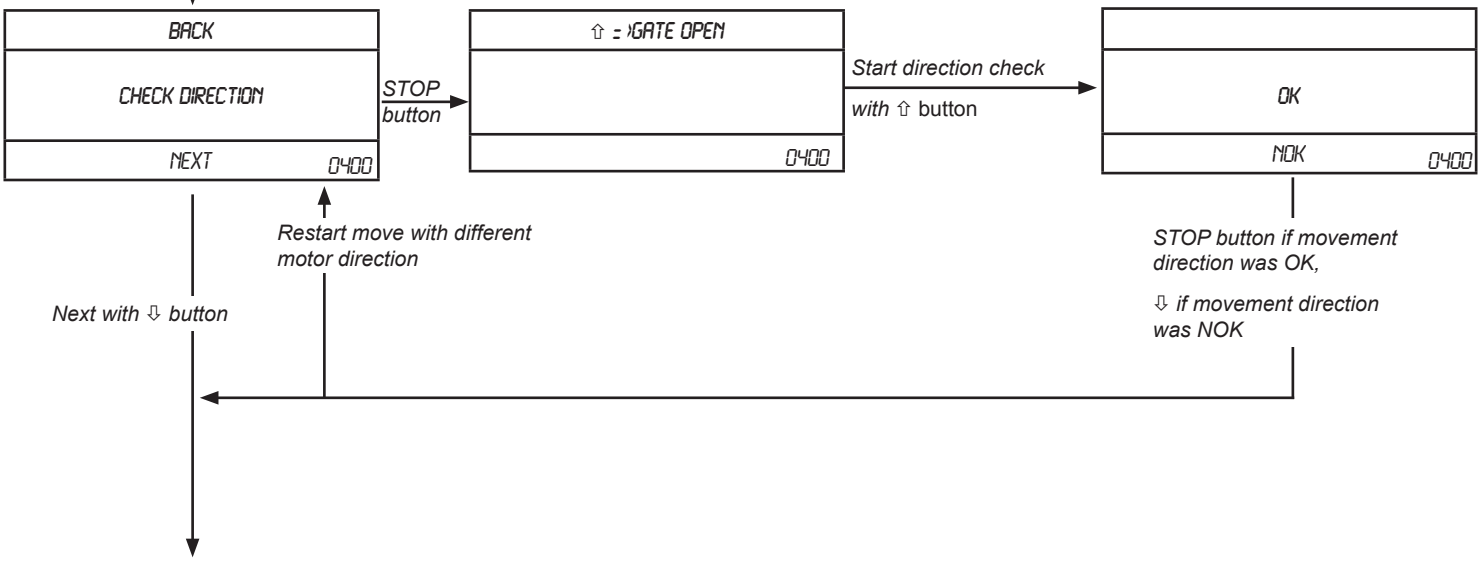


Check direction

NOTE:
The motor direction must be checked during initial commissioning to allow the OPEN/CLOSE buttons to be correctly assigned.

This step is an important part of the initial commissioning. All following steps are based on this.

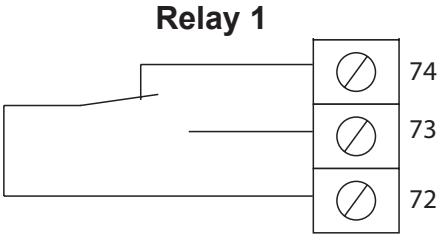
This requires the gate to be in an approximately central position between the end positions to allow sufficient travel distance for checking the direction. If this menu item is selected, the gate can only be moved with the ⇧ button in the housing cover. The control unit automatically limits the movement (approx. 1 s). If the direction of movement of the gate is in the OPEN direction, this must be confirmed with the STOP button. If the direction of movement is in the CLOSE direction, the ⇩ button for incorrect motor direction must be pressed. The control unit again has the option of moving the door in the OPEN direction with the ⇧ button and changed gate direction. Confirm with the STOP button.

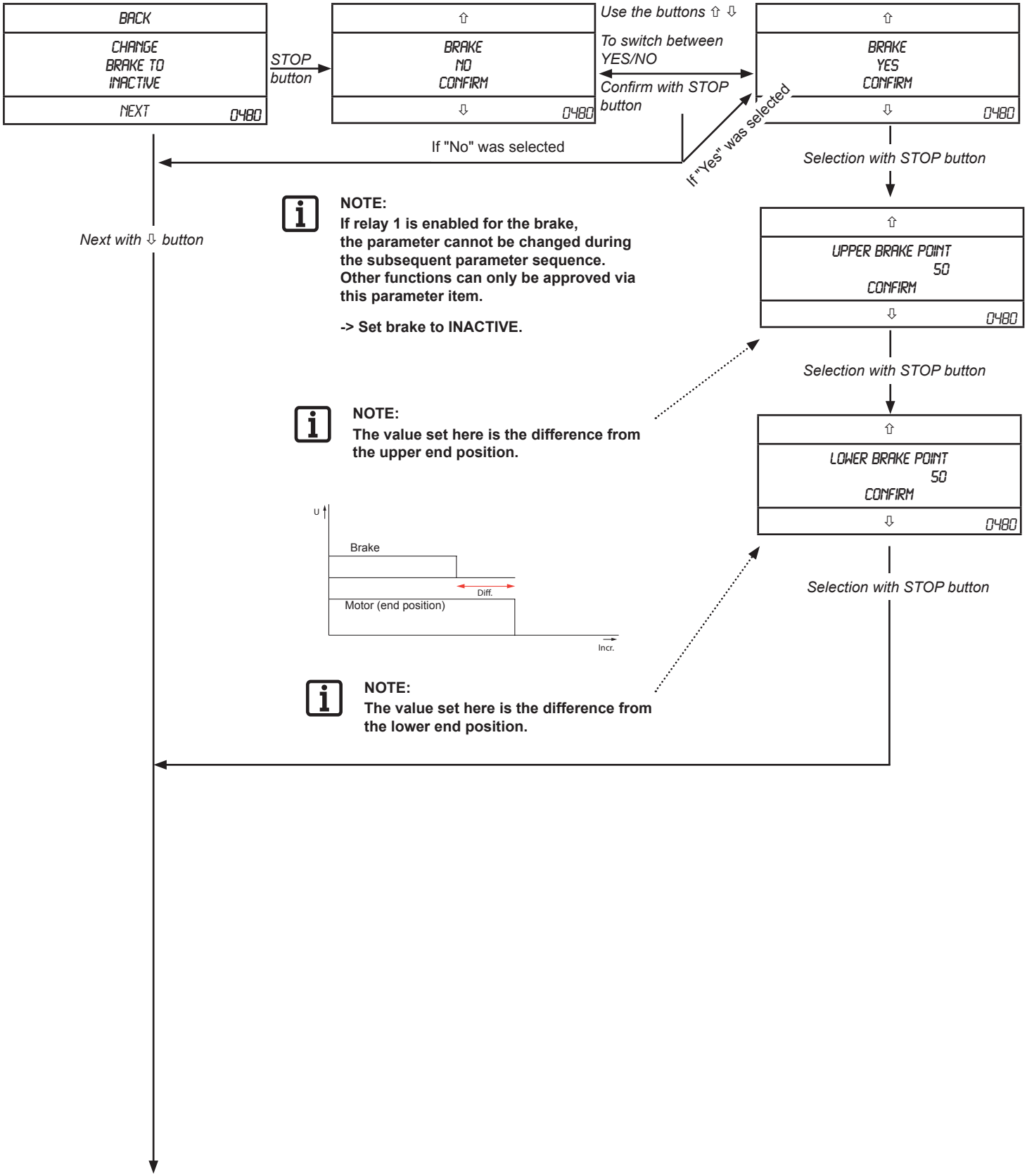


Initial operation

Switch brake with relay 1

NOTE:
The display shows the status of the brake parameter in the main menu. The brake must be set to INACTIVE at this position in combination with the integrated frequency converter, because in this case the brake is actuated by the frequency converter. The result is a parameter that appears in connection with frequency converter parameter setting in the following menu sequence. In some cases, the brake (without frequency converter) can be switch by one phase and the neutral point. It is also not necessary to enable the brake relay in this case.

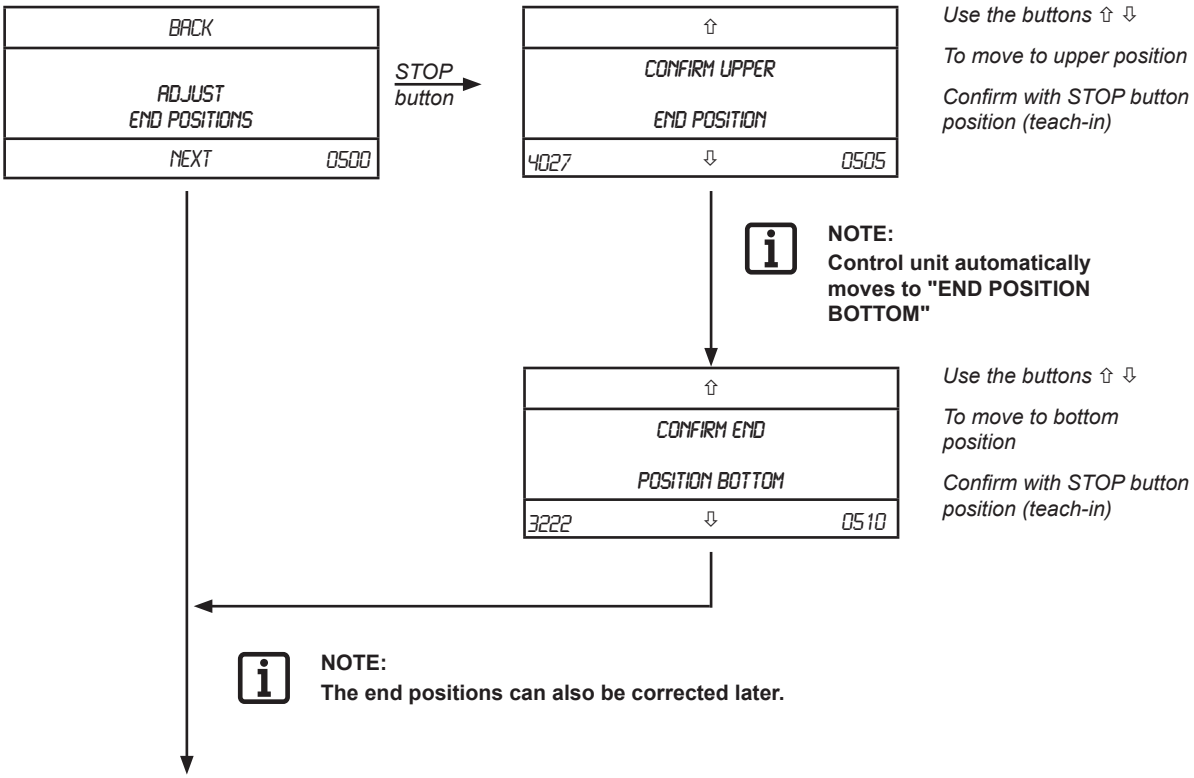




Adjust end positions

(Initial commissioning)

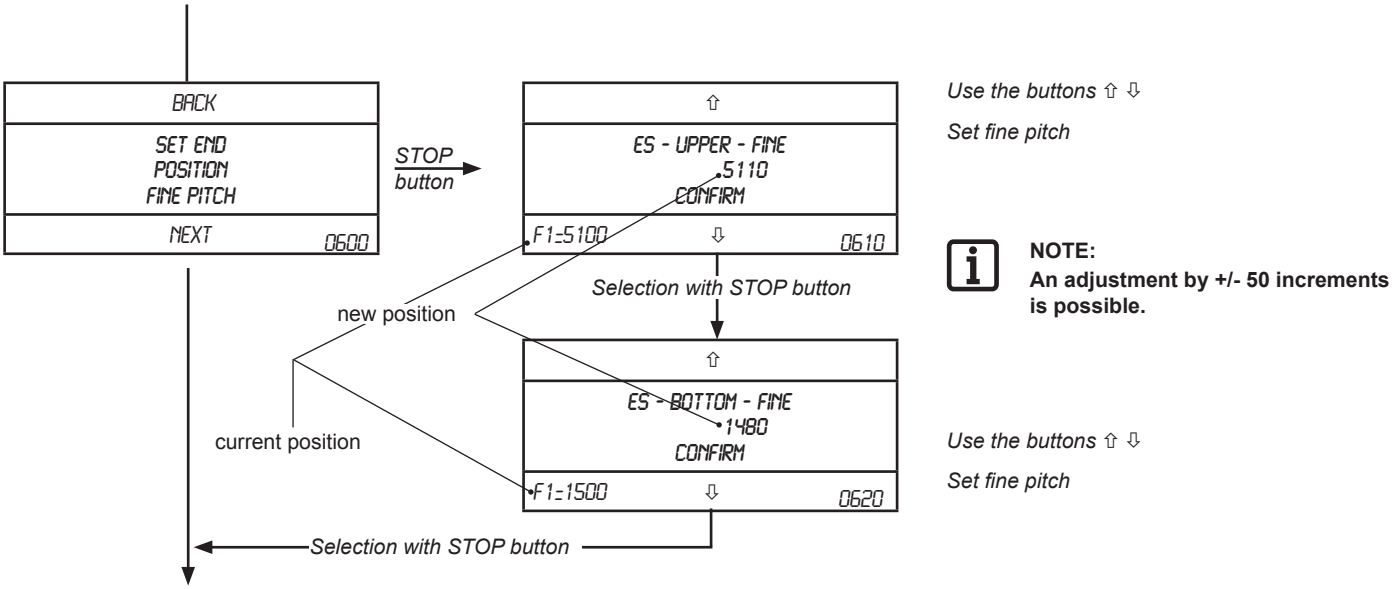
CAUTION!
Safety devices are not yet functional. System runs in deadman mode!
Make sure that there are no persons in the danger zone!



Fine pitch of end positions

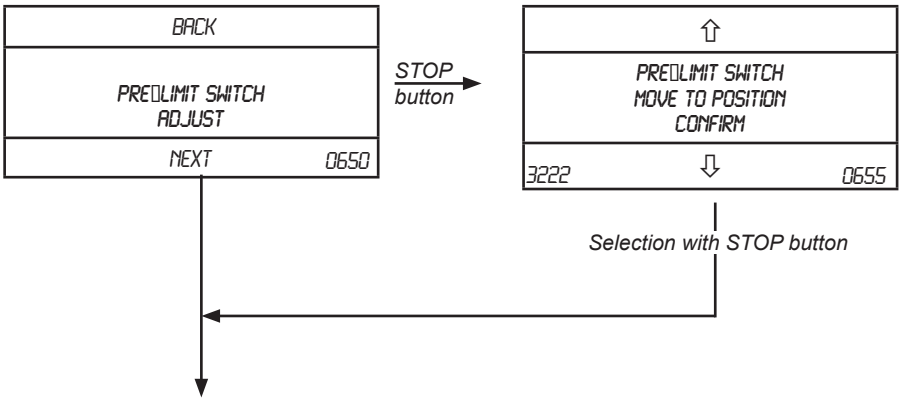
NOTE:
The end positions fine pitch is used for more accurate setting of the desired end positions. The adjustment is more accurate than the "Adjust end positions" item

NOTE:
The gate does not move during fine pitch of the end positions.



Adjust pre-limit switch

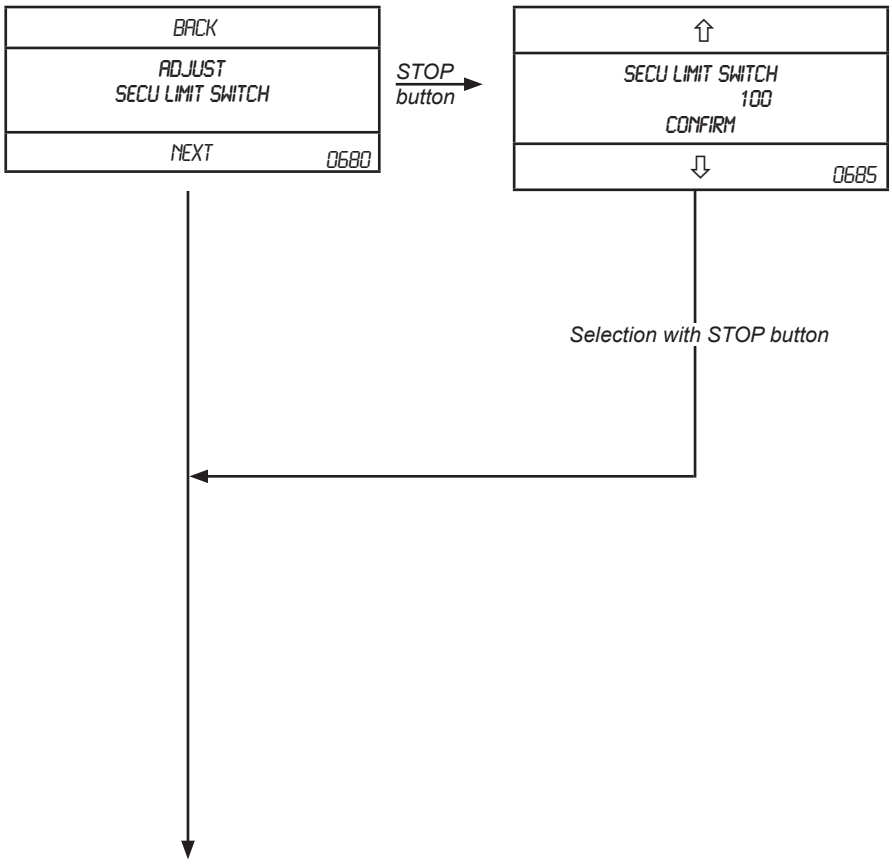
CAUTION!
DIN EN 12453 allows the closing edge to be hidden in an area max. 50 mm above the ground or switching from "Stop Emergency Reverse" to "Stop only". The requirements of the standard must be complied with.
The optical safety edges are hidden in this area, the 8.2 KΩ safety edges are switched to "STOP ONLY". The test is enabled for the safety edges with pressure wave switches. After crossing the pre end pos switch, the control unit expects a signal from the pressure wave switch within a specified time window. This requires the gate with the safety edge to be in contact with the ground.



Adjust secu limit switch

NOTE:
The secu limit switch is a redundant safety device for the standard limit switches. If the standard limit switches are crossed, the system is stopped by the secu limit switches

NOTE:
The secu limit switches for the top and bottom end positions can be adjusted within a range of 50 to 300 increments.



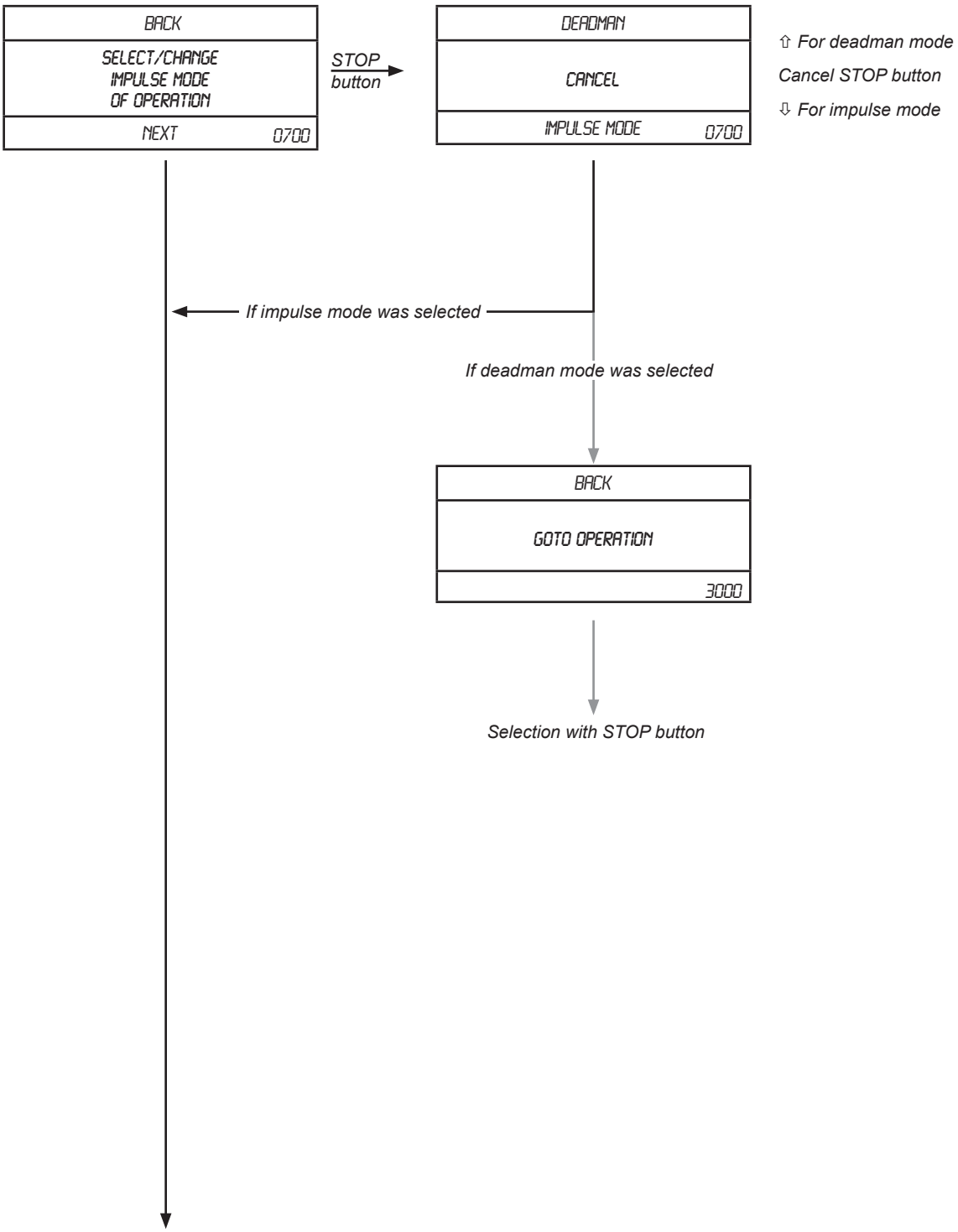
NOTE:
If the secu limit switches have tripped, the gate stops. The system must be moved back to the normal limit switch area in jog mode. The error is then automatically corrected.

Select mode of operation

CAUTION!
The safety edges and photo relays are not active in deadman mode.
Danger of serious injury!
Always ensure that there are no persons, animals or object in the area of movement of the gate.

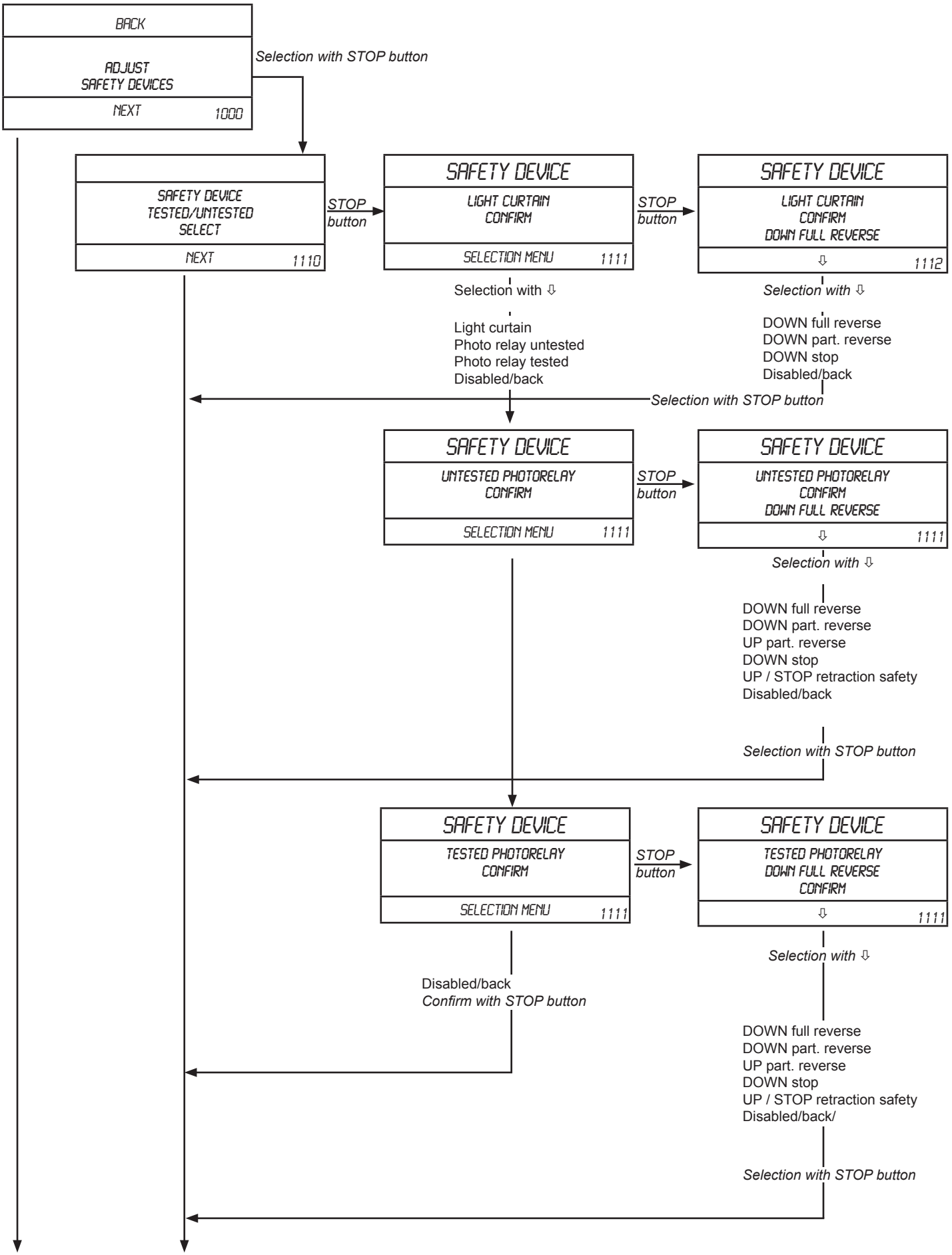
NOTE:
Either the deadman or impulse modes of operation can be selected.

- **This menu item is used for fast selection of deadman or impulse mode of operation. If deadman mode is selected, all other menu items are skipped because they are relevant for impulse mode only. (Except for setting inverter parameters)**
- **In deadman mode the buttons must be pressed as long as the gate is to move.**



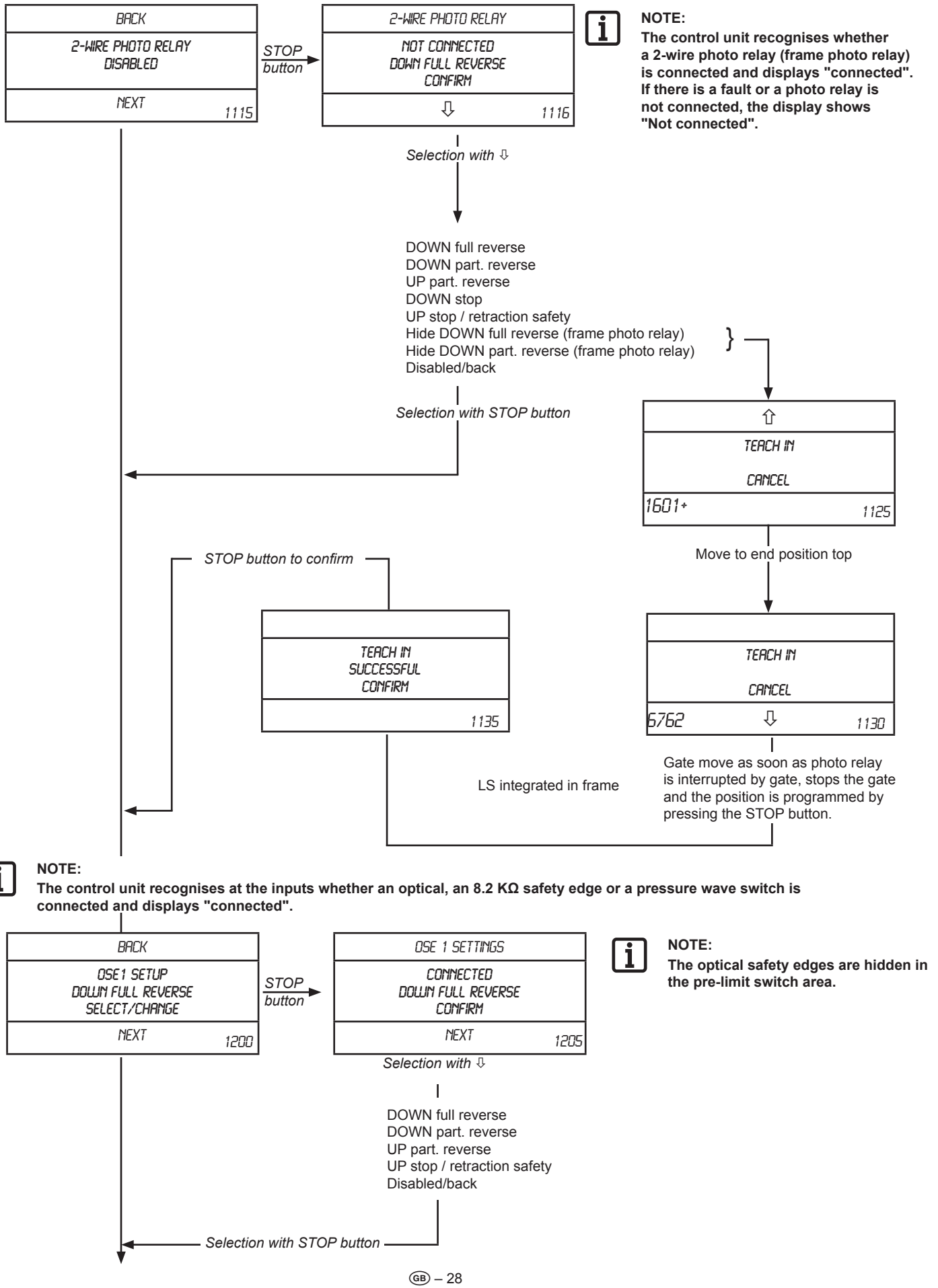
Initial operation

Select safety devices

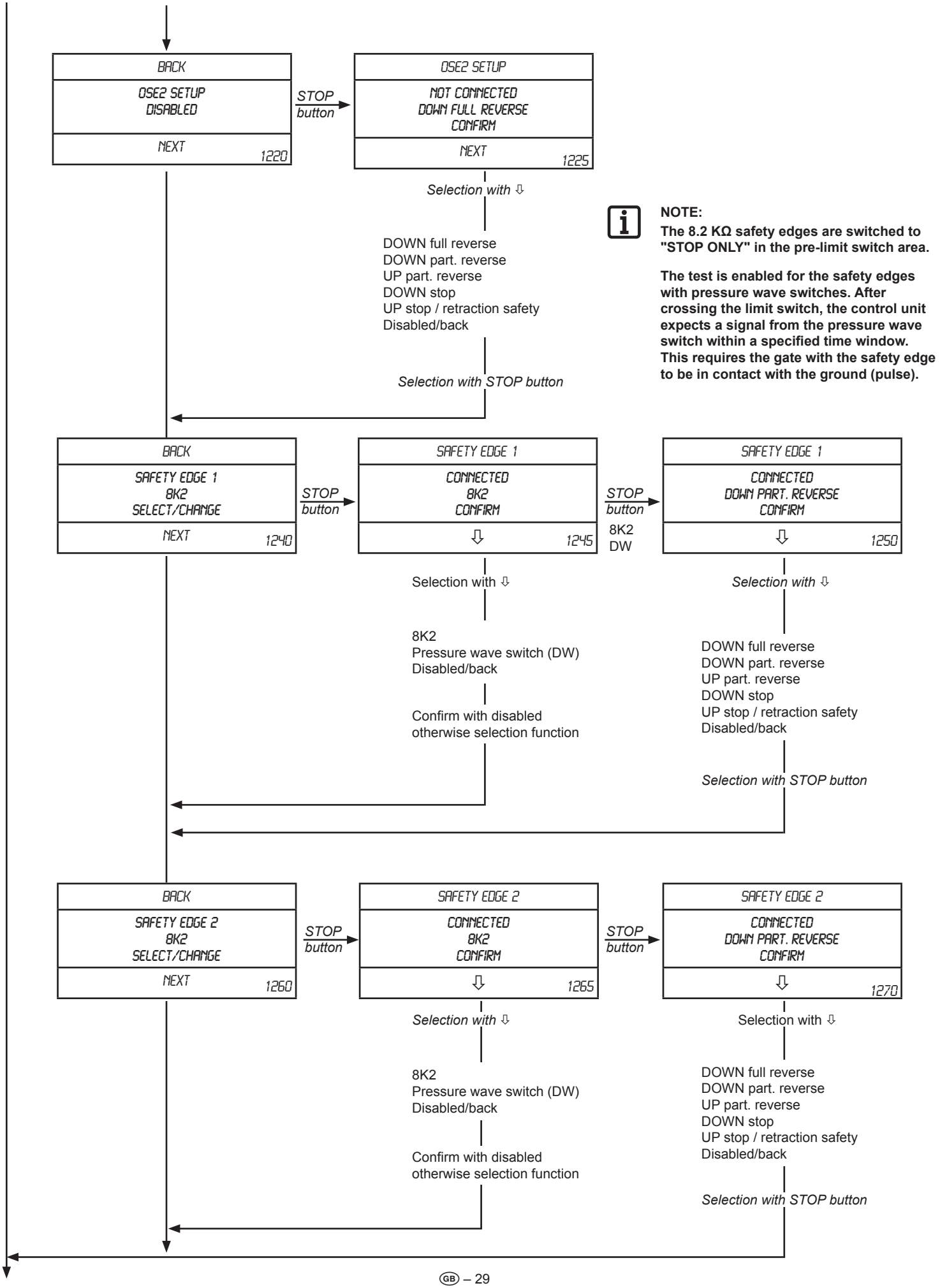


Initial operation

CAUTION!
The max. mounting height for photo relays is 30 cm.

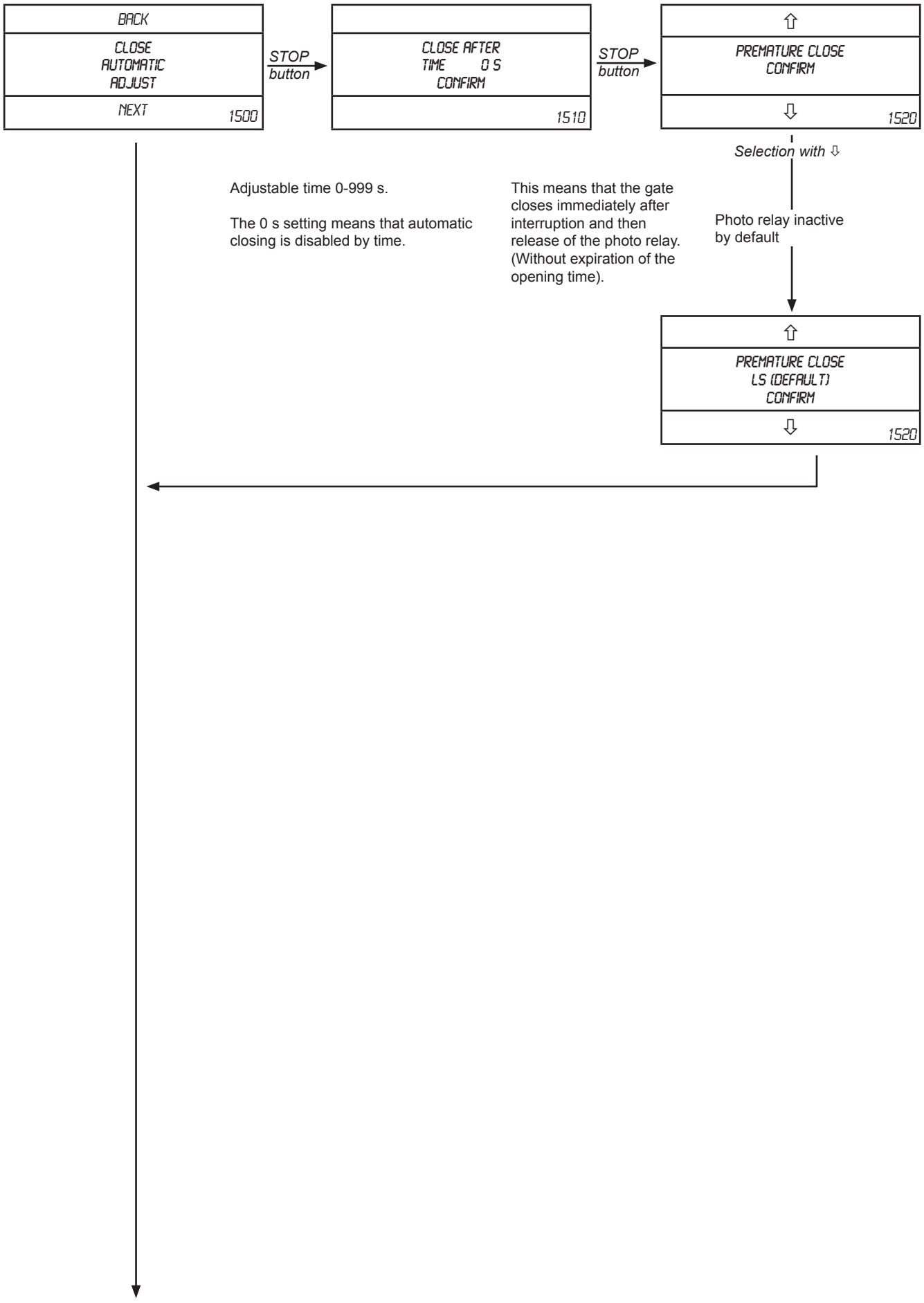


Initial operation



Automatic close

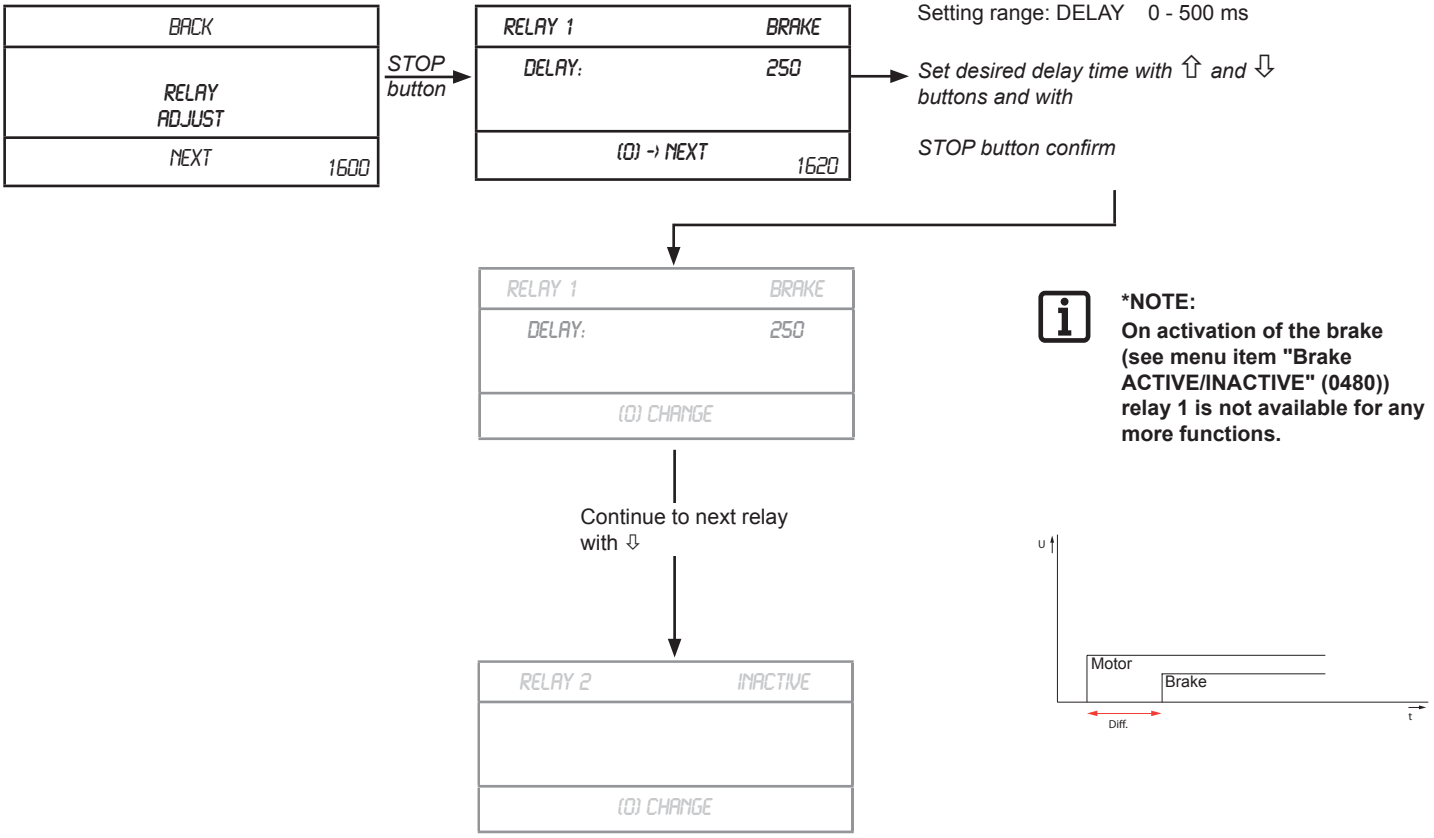
(Only possible with photo relay)



Adjust relays

Case 1: Brake ACTIVE

***NOTE:**
This menu item is only available for relay 1.

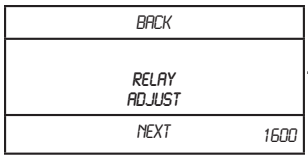


***NOTE:**
On activation of the brake (see menu item "Brake ACTIVE/INACTIVE" (0480)) relay 1 is not available for any more functions.

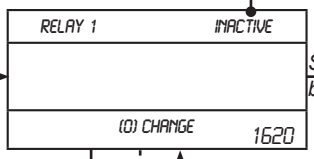
NOTE:
Function field:

Case 2: Brake INACTIVE

(Menu item 0480 ff.)



STOP button



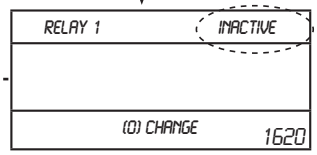
STOP button

Function field blinks:
Selection with buttons ⇧ ⇩

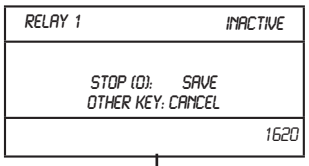
INACTIVE
END POSITION
MOVEMENT
EL. LOCK

Selection with STOP button

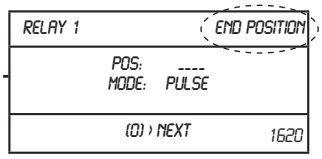
"INACTIVE" blinks!



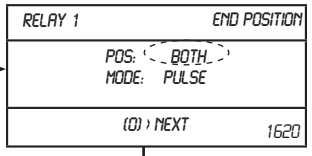
STOP button



Continue to next relay with ⇩



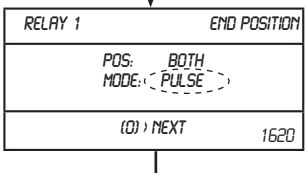
STOP button



Function field blinks:
Selection with buttons ⇧ ⇩

Selection options	Relay trips if:
----	----
TOP	End position top reached
BOTTOM	End position bottom reached
BOTH	One of the two end positions reached

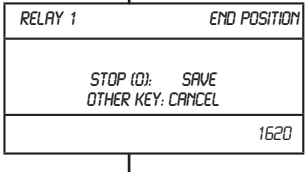
Confirm with STOP button



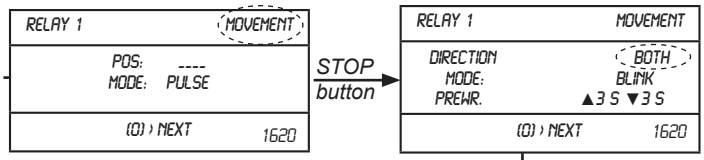
Function field blinks:
Selection with buttons ⇧ ⇩

Selection options	If relay trips:
DURATION	Permanently in end position
PULSE	Pulse in end position (pulse duration approx. 1 s)

Confirm with STOP button



Confirm with STOP button

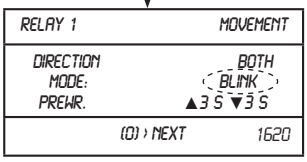


Function field blinks:

Selection with buttons ⇧ ⇩

Selection options	Relay trips during:
----	----
OPEN	Gate in UP movement
DOWN	Gate in DOWN movement
BOTH	Both movement directions

Confirm with STOP button

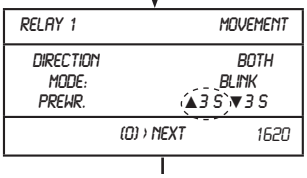


Function field blinks:

Selection with buttons ⇧ ⇩

Selection options	If relay trips:
DURATION	Permanent during movement
BLINK	Blink during movement

Confirm with STOP button

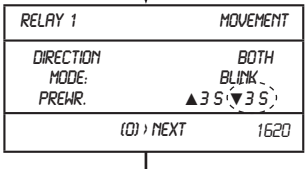


Function field blinks:

Selection with buttons ⇧ ⇩

Selection options	
0 / 1 / 2 / 3 / 4 / 5	Lead time in s for gate in UP direction

Confirm with STOP button

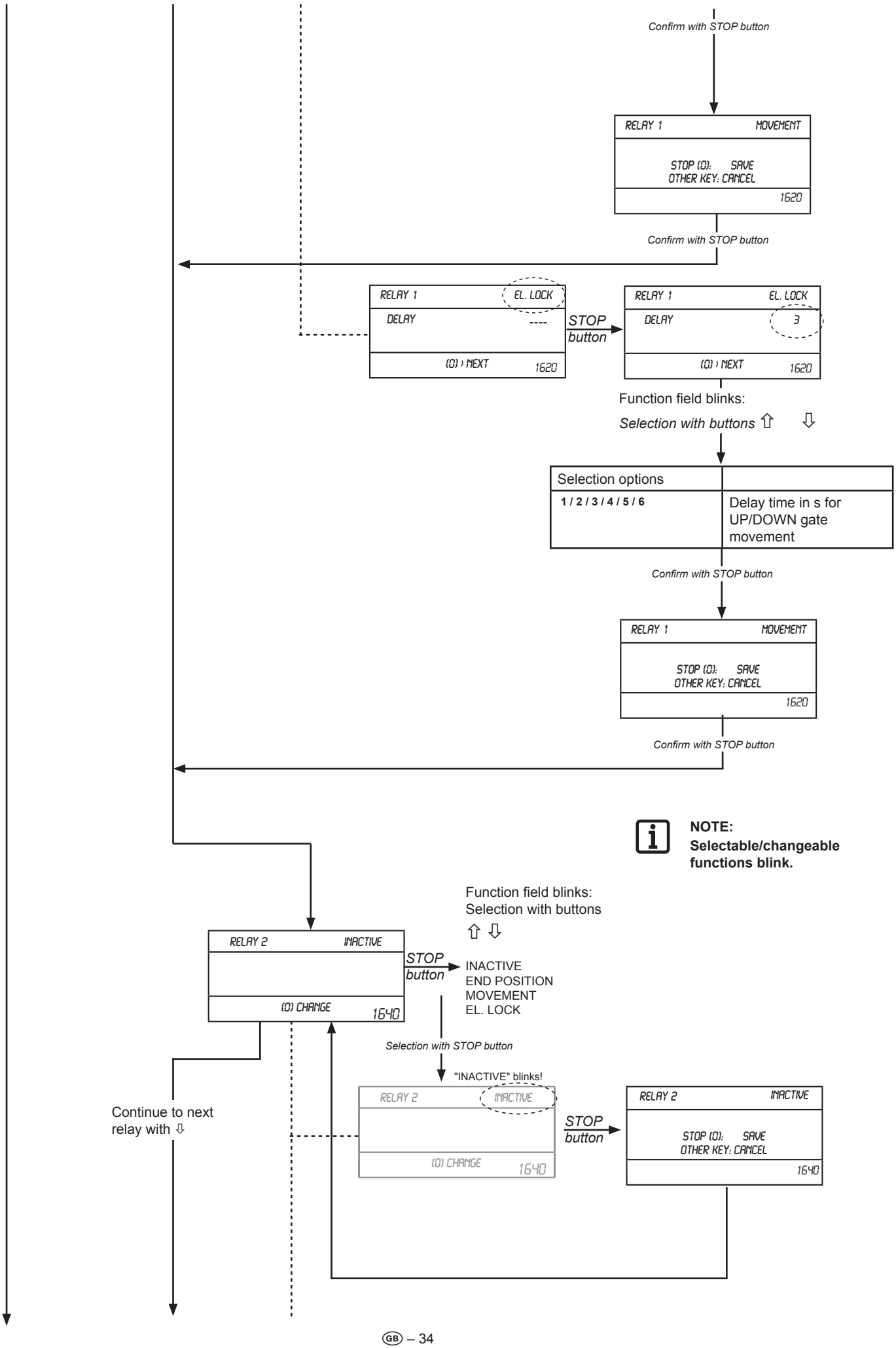


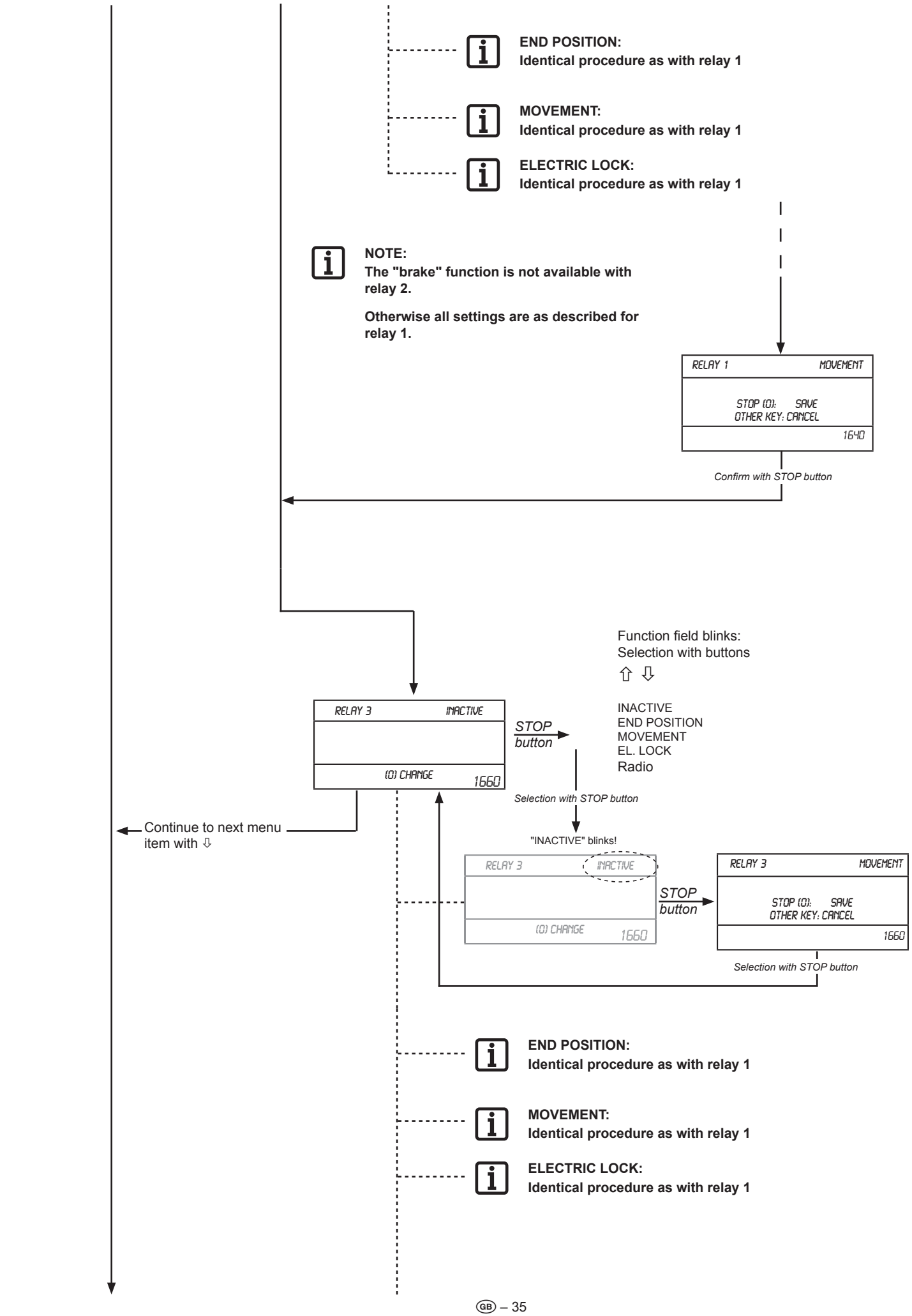
Function field blinks:

Selection with buttons ⇧ ⇩

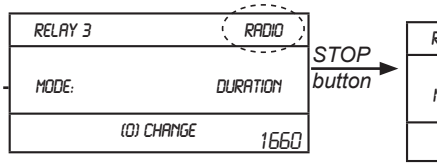
Selection options	
0 / 1 / 2 / 3 / 4 / 5	Lead time in s for gate in DOWN direction

Initial operation

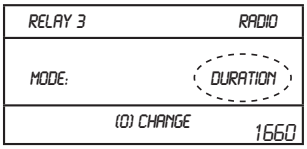



END POSITION:
Identical procedure as with relay 1
MOVEMENT:
Identical procedure as with relay 1
ELECTRIC LOCK:
Identical procedure as with relay 1
NOTE:
The "brake" function is not available with relay 2.
Otherwise all settings are as described for relay 1.
RELAY 1 MOVEMENT
STOP (0): SAVE
OTHER KEY: CANCEL
1640
Confirm with STOP button
Function field blinks:
Selection with buttons
⇧ ⇩
INACTIVE
END POSITION
MOVEMENT
EL. LOCK
Radio
RELAY 3 INACTIVE
(0) CHANGE
1660
STOP button
Selection with STOP button
Continue to next menu item with ⇩
"INACTIVE" blinks!
RELAY 3 INACTIVE
(0) CHANGE
1660
STOP button
RELAY 3 MOVEMENT
STOP (0): SAVE
OTHER KEY: CANCEL
1660
Selection with STOP button
END POSITION:
Identical procedure as with relay 1
MOVEMENT:
Identical procedure as with relay 1
ELECTRIC LOCK:
Identical procedure as with relay 1

Initial operation



STOP button

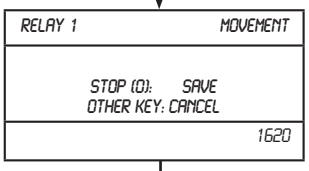


Function field blinks:

Selection with buttons ⇧ ⇩

Selection options	
DURATION	Relay triggered permanently after radio signal
PULSE	Relay sends pulse after radio signal

Confirm with STOP button



Confirm with STOP button

NOTE:
The "brake" function is not available with relay 3.

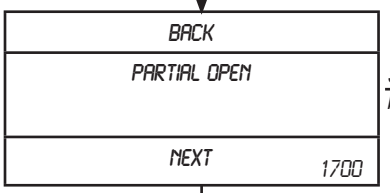
Radio function only available with relay 3.

Otherwise all settings are as described for relay 1.

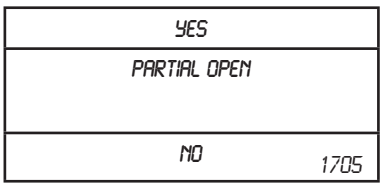
NOTE:
Selection mode menu item 2560 ff.

Teach-in partial open

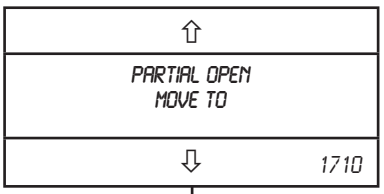
NOTE:
Partial open does not function in "two way traffic" mode of operation.



STOP button



Yes with ⇧



No with ⇩

Move to desired partial open with ⇧ and ⇩ buttons and confirm position with STOP button.

NOTE:
The menu items shown on the following pages with grey background (frequency converter and traffic light settings) are only available if a frequency converter or traffic light module is connected. Otherwise the menu items are not available.

Initial operation

Select inv. profile

(This menu is only available if an inverter has been detected.)

NOTE:
only one selection is available if profiles were set.

A maximum of 10 profiles can be stored.

BACK
INV. PROFILE? ADJUST
NEXT 1860

STOP button →

⇧
SELECT INV. PROFILE NO CHANGE
⇩ 0666

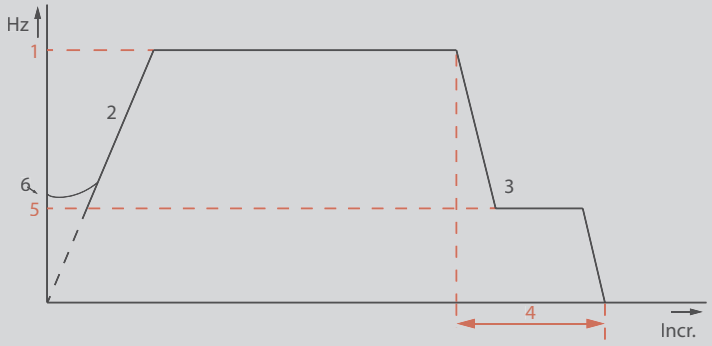
Move to profile with the ⇧ and ⇩ buttons, select and confirm position with the STOP button.

CHANGES APPLY CONFIRM
CANCEL 0666

Confirm desired changes with the STOP button or cancel the process with ⇩ cancel.

Inv. profile UP direction

1. Max. speed (Hz)
2. Startslope (ms)
3. Stopslope (ms)
4. Stopslope (inc.)
5. Slow gear (Hz)
6. Boost (increase voltage at start)



BACK
INV. PROFILE UP ADJUST
NEXT 1900

STOP button →

⇧
MAX. SPEED UP 80 HZ CONFIRM
⇩ 1910

Set speed with ⇧ and ⇩ and confirm with STOP button Setting range 0 - 150 Hz

Selection with STOP button

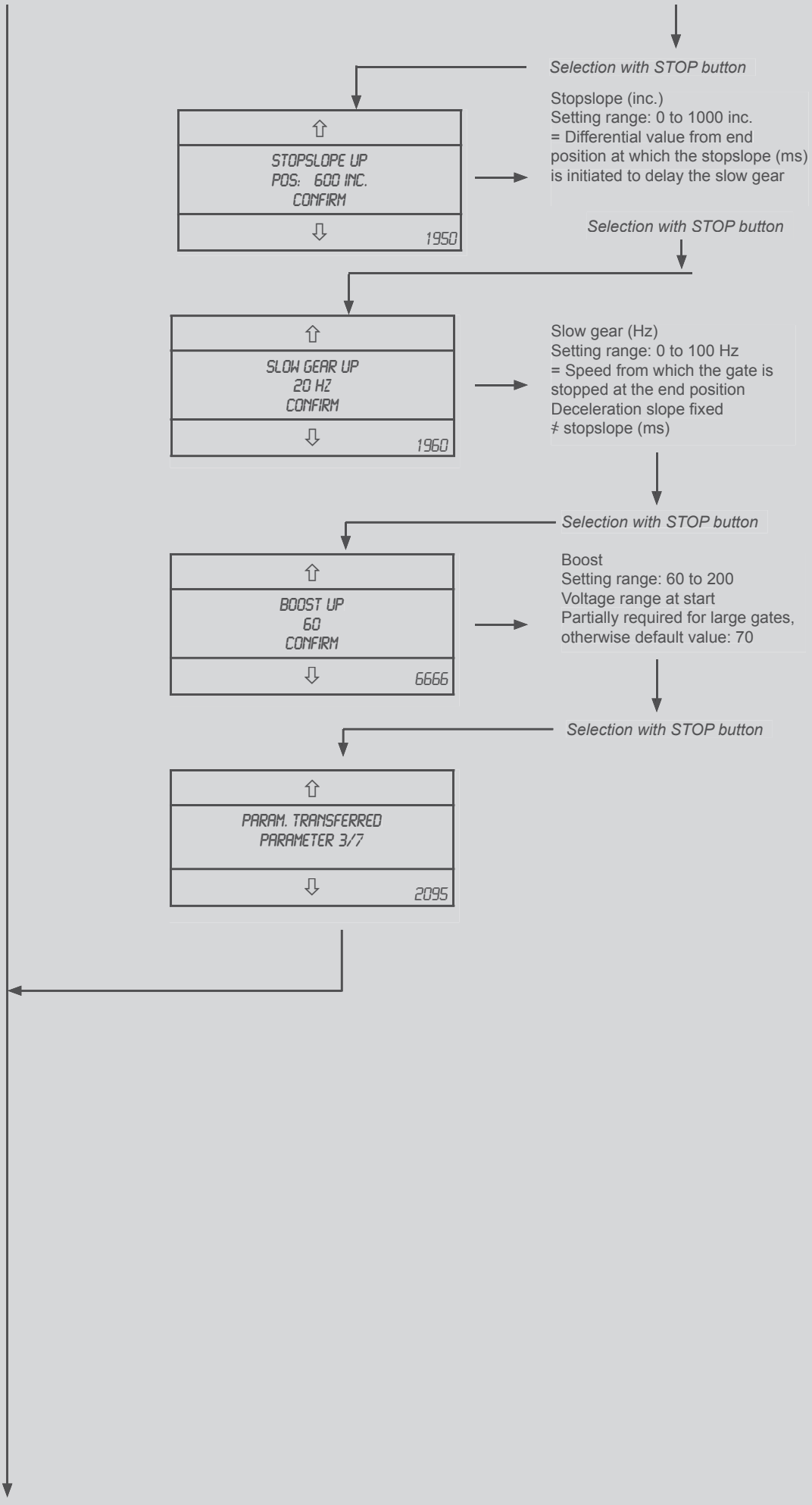
⇧
STARTSLOPE UP 600 MS CONFIRM
⇩ 1920

Startslope (ms)
Setting range: 512 to 1000 ms
= Time from 0 to max. speed,
Acceleration ramp slope changes with Vmax setting

Selection with STOP button

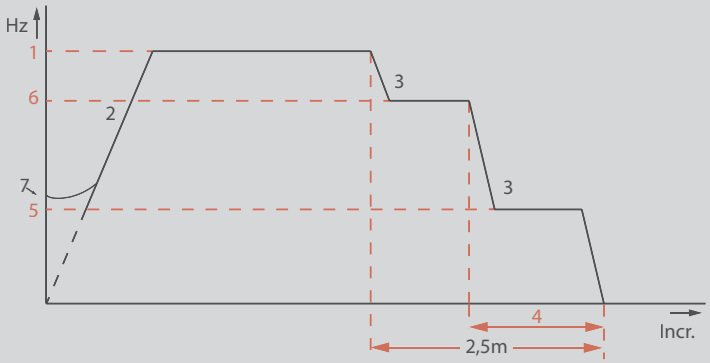
⇧
STOPSLOPE UP 512 MS CONFIRM
⇩ 1930

Stopslope (ms)
Setting range: 512 to 1000 ms
= Brake slope, slope changes with adjustment of speed


Selection with STOP button
STOPSLOPE UP
POS: 600 INC.
CONFIRM
1950
Stopslope (inc.)
Setting range: 0 to 1000 inc.
= Differential value from end position at which the stopslope (ms) is initiated to delay the slow gear
Selection with STOP button
SLOW GEAR UP
20 HZ
CONFIRM
1960
Slow gear (Hz)
Setting range: 0 to 100 Hz
= Speed from which the gate is stopped at the end position
Deceleration slope fixed
≠ stopslope (ms)
Selection with STOP button
BOOST UP
60
CONFIRM
6666
Boost
Setting range: 60 to 200
Voltage range at start
Partially required for large gates, otherwise default value: 70
Selection with STOP button
PARAM. TRANSFERRED
PARAMETER 3/7
2095

Inv. profile DOWN direction

1. Max. speed (Hz)
2. Startslope (ms)
3. Stopslope (ms)
4. Stopslope (inc.)
5. Slow gear (Hz)
6. Medium speed (Hz)
7. Boost (increase voltage at start)



BACK
INV. PROFILE DOWN ADJUST
NEXT
2000

STOP button

⇧
MAX. SPEED DOWN
50 HZ
CONFIRM
⇩
2010

Max. speed (Hz) (Vmax)
Setting range: 0 - 150 Hz

Selection with STOP button

⇧
STARTSLOPE DOWN
600 MS
CONFIRM
⇩
2020

Startslope (ms)
Setting range: 512 to 1000 ms
= Time from 0 to max. speed,
Acceleration ramp slope changes with Vmax setting

Selection with STOP button

⇧
STOPSLOPE DOWN
512 MS
CONFIRM
⇩
2030

Stopslope (ms)
Setting range: 512 to 1000 ms
= Brake slope, slope changes with adjustment of speed

Selection with STOP button

⇧
STOPSLOPE DOWN
POS: 600 INC.
CONFIRM
⇩
2050

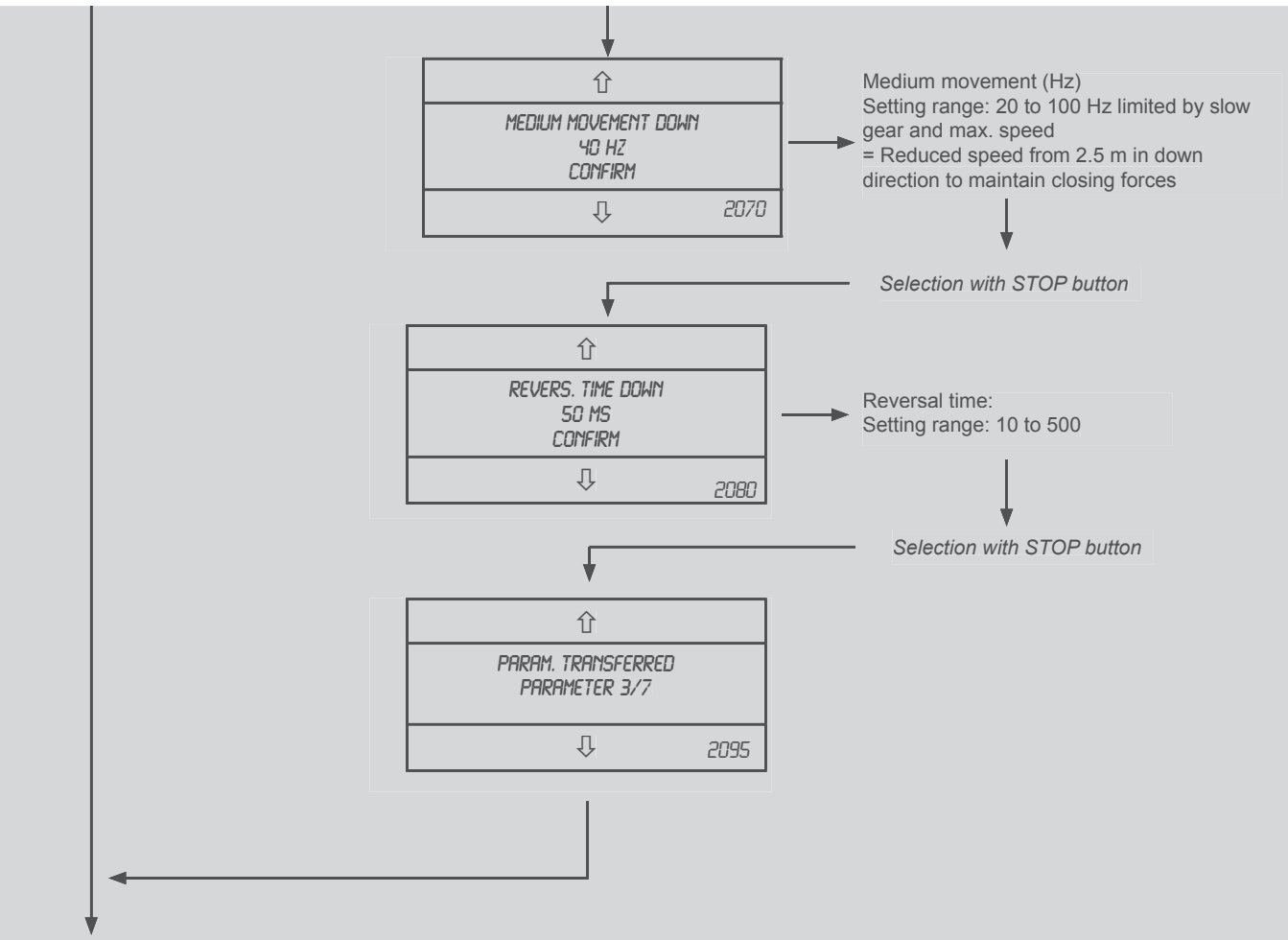
Stopslope (inc.)
Setting range: 0 to 1000 inc.
= Differential value from end position at which the stopslope (ms) is initiated to delay the slow gear

Selection with STOP button

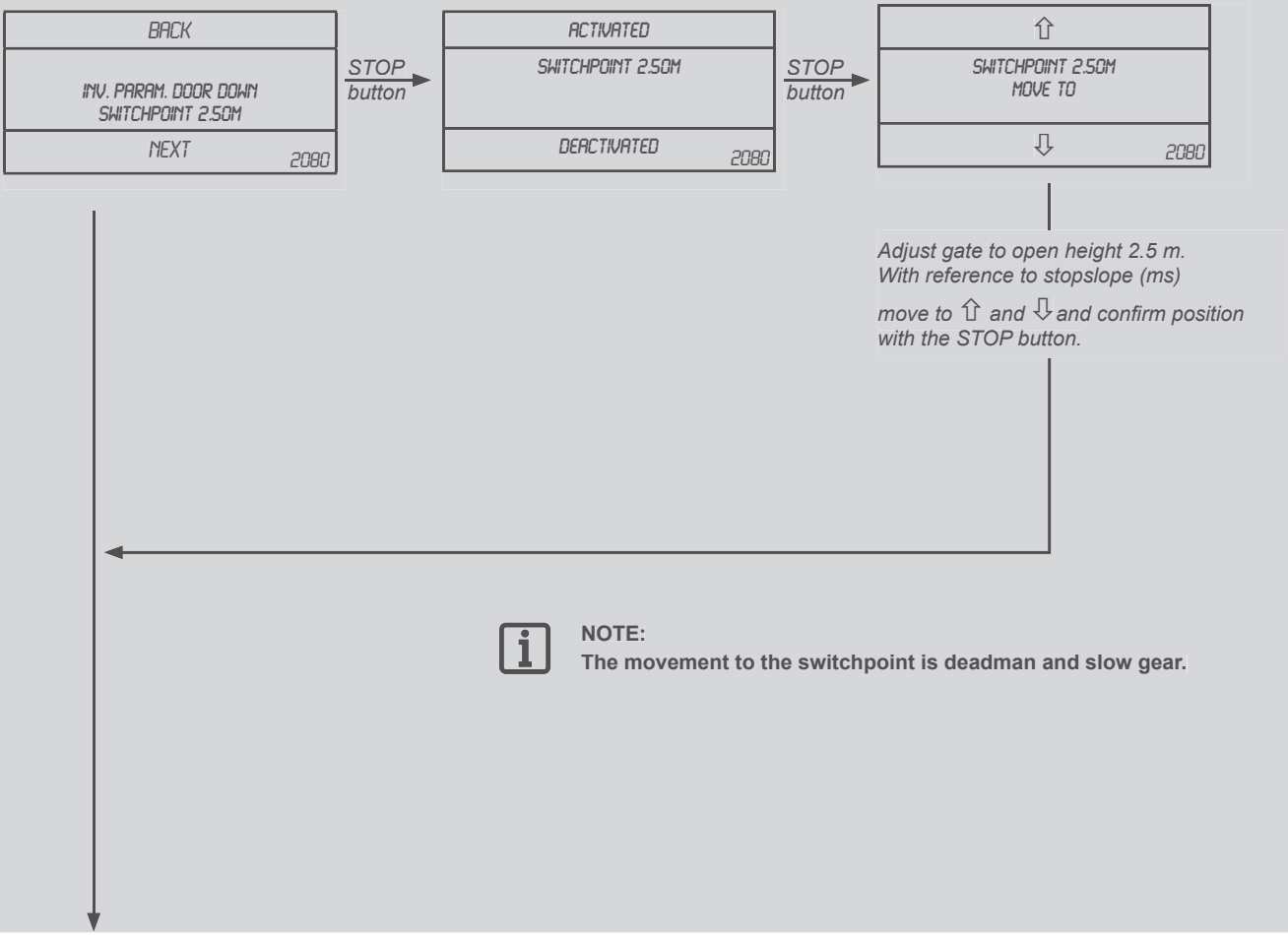
⇧
SLOW GEAR DOWN
20 HZ
CONFIRM
⇩
2060

Slow gear (Hz)
Setting range: 0 to 100 Hz
= Speed from which the gate is stopped at the end position
Deceleration slope fixed
≠ stopslope (ms)

Selection with STOP button

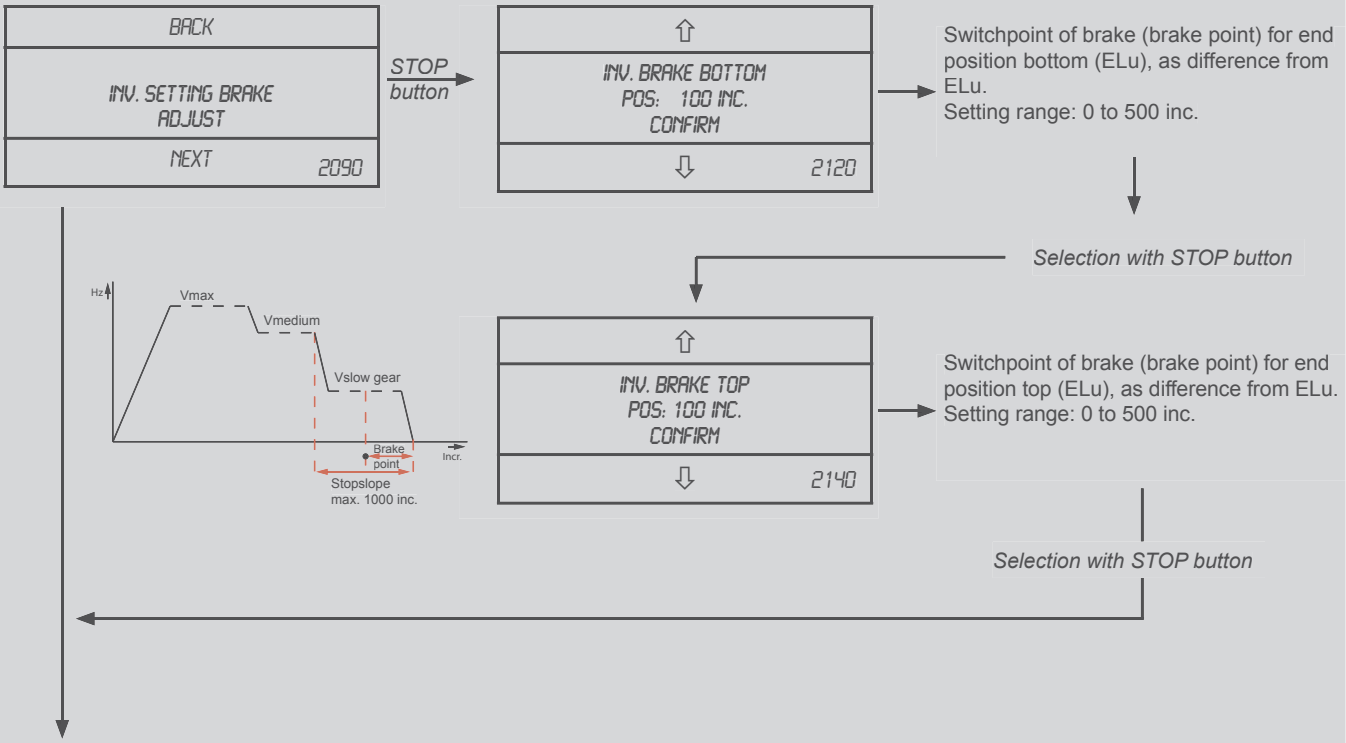


Inv. setting gate DOWN switchpoint 2.5 m (medium gear)



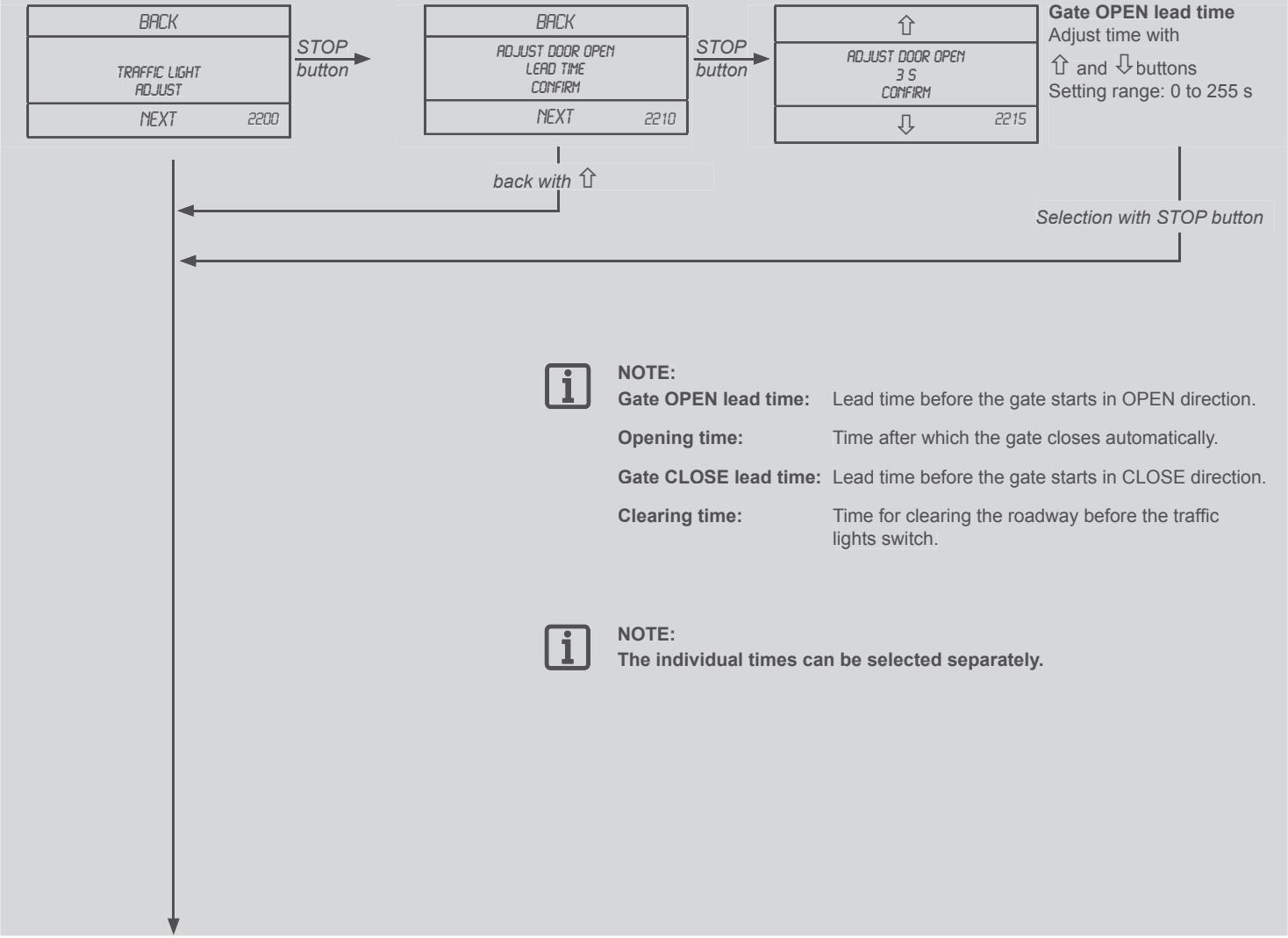
NOTE:
The movement to the switchpoint is deadman and slow gear.

Inv. setting brake



Traffic light parameter menu appears

(This menu is only available if a traffic light module has been detected.)



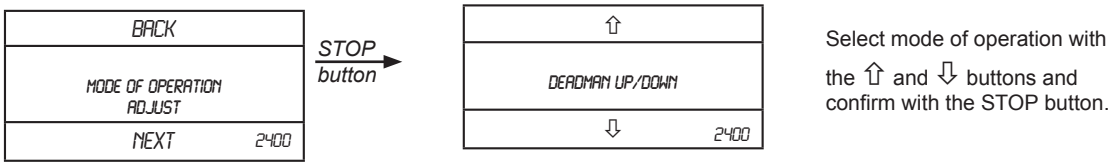
NOTE:

Gate OPEN lead time:	Lead time before the gate starts in OPEN direction.
Opening time:	Time after which the gate closes automatically.
Gate CLOSE lead time:	Lead time before the gate starts in CLOSE direction.
Clearing time:	Time for clearing the roadway before the traffic lights switch.

NOTE:
The individual times can be selected separately.

Initial operation

Adjust mode of operation



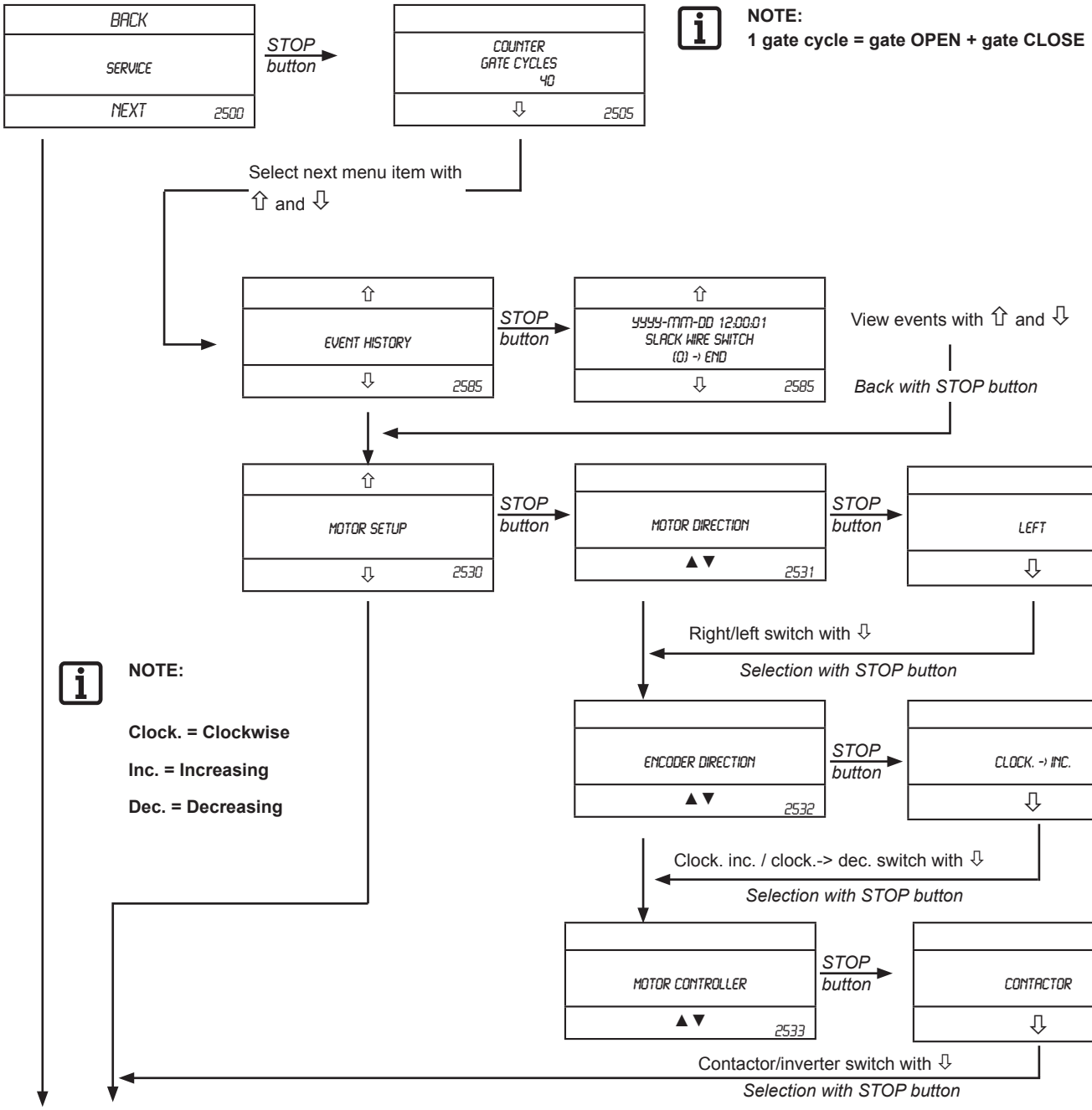
Select mode of operation with the ⇧ and ⇩ buttons and confirm with the STOP button.

The following modes of operation are available:

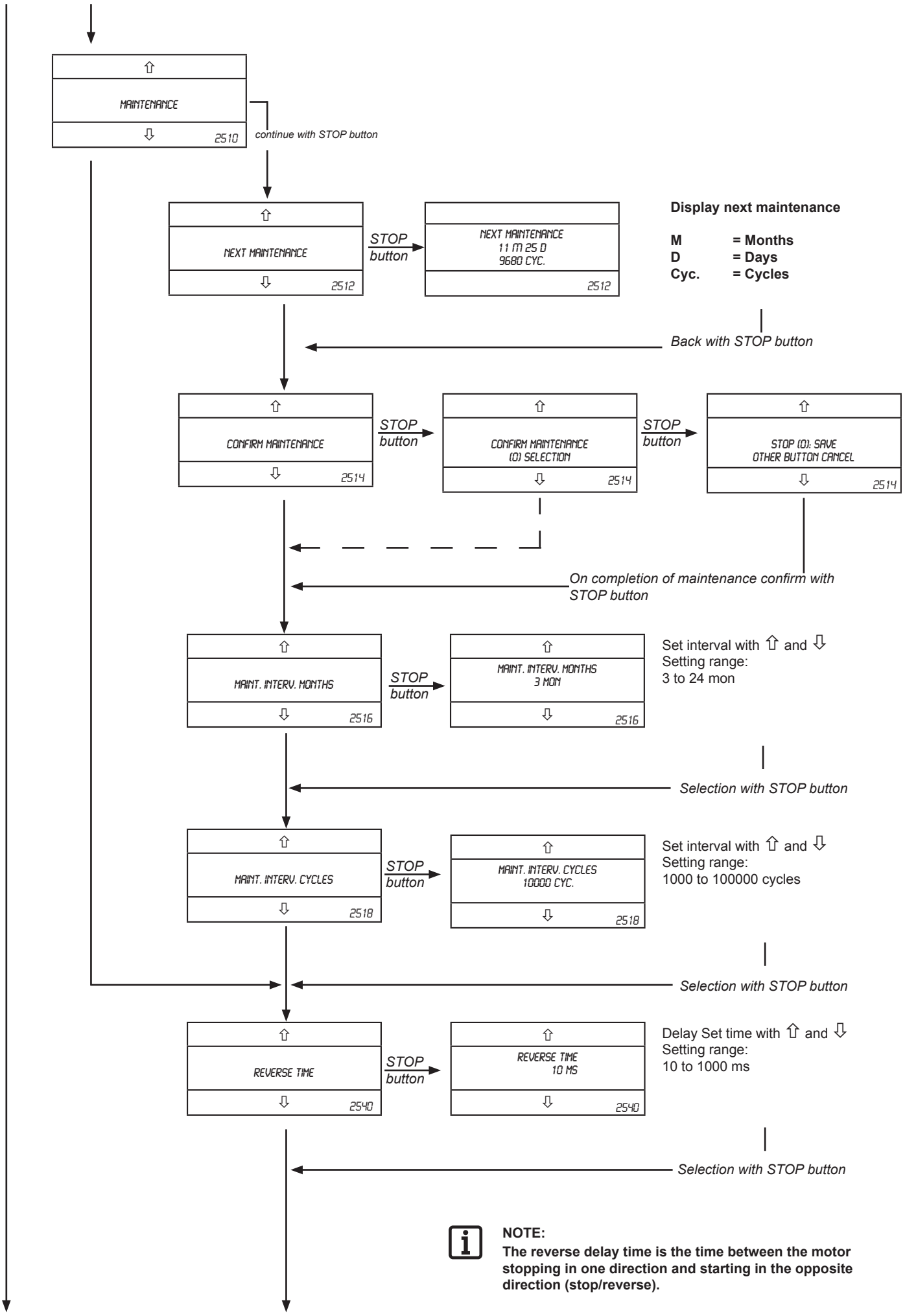
Deadman UP/DOWN
Impulse UP / deadman DOWN
Impulse UP / DOWN
Two way

Two way traffic can only be selected if the traffic light module is connected. If the connection to the traffic light module is broken, the control unit automatically switches to impulse mode.

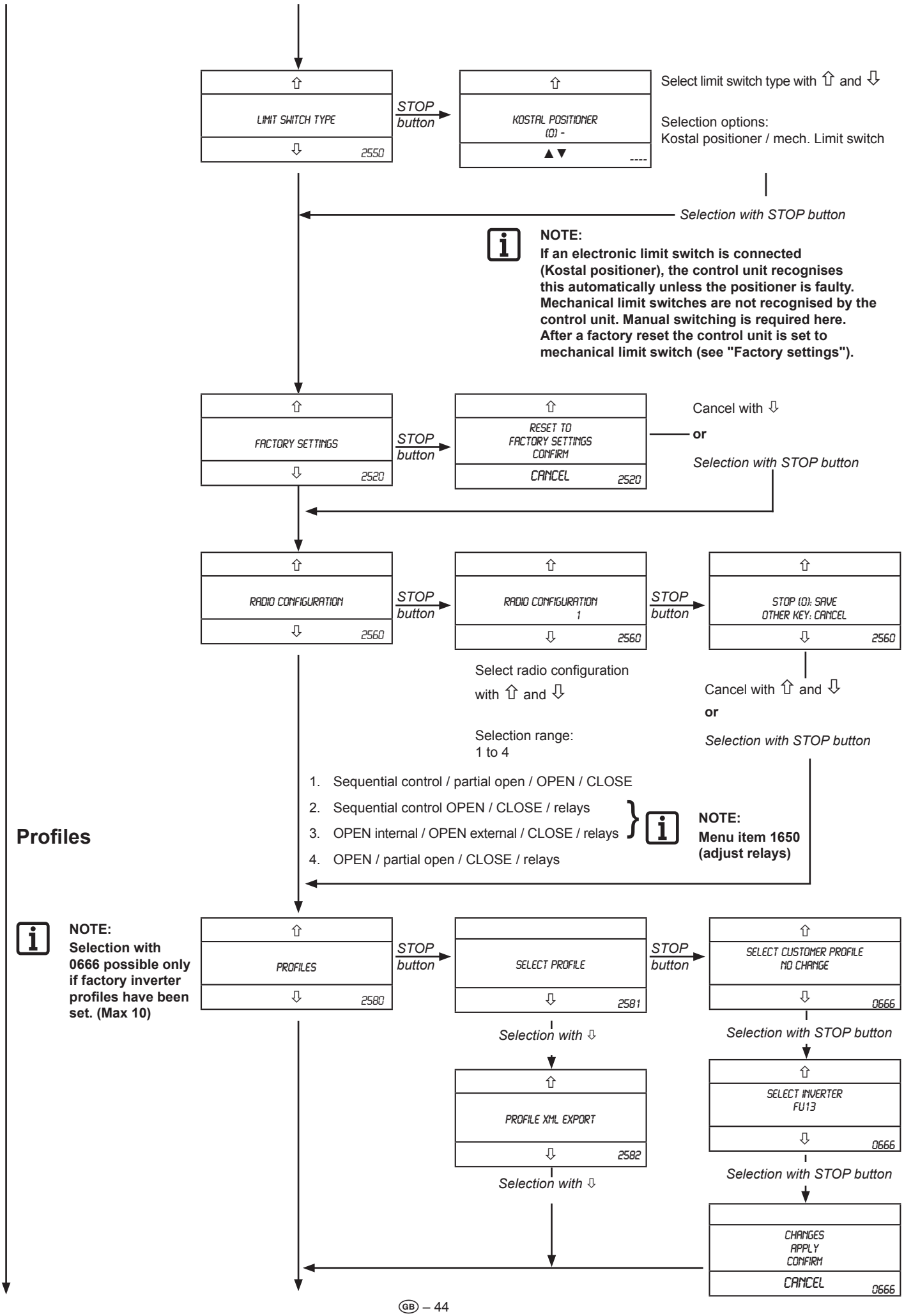
Service



Initial operation

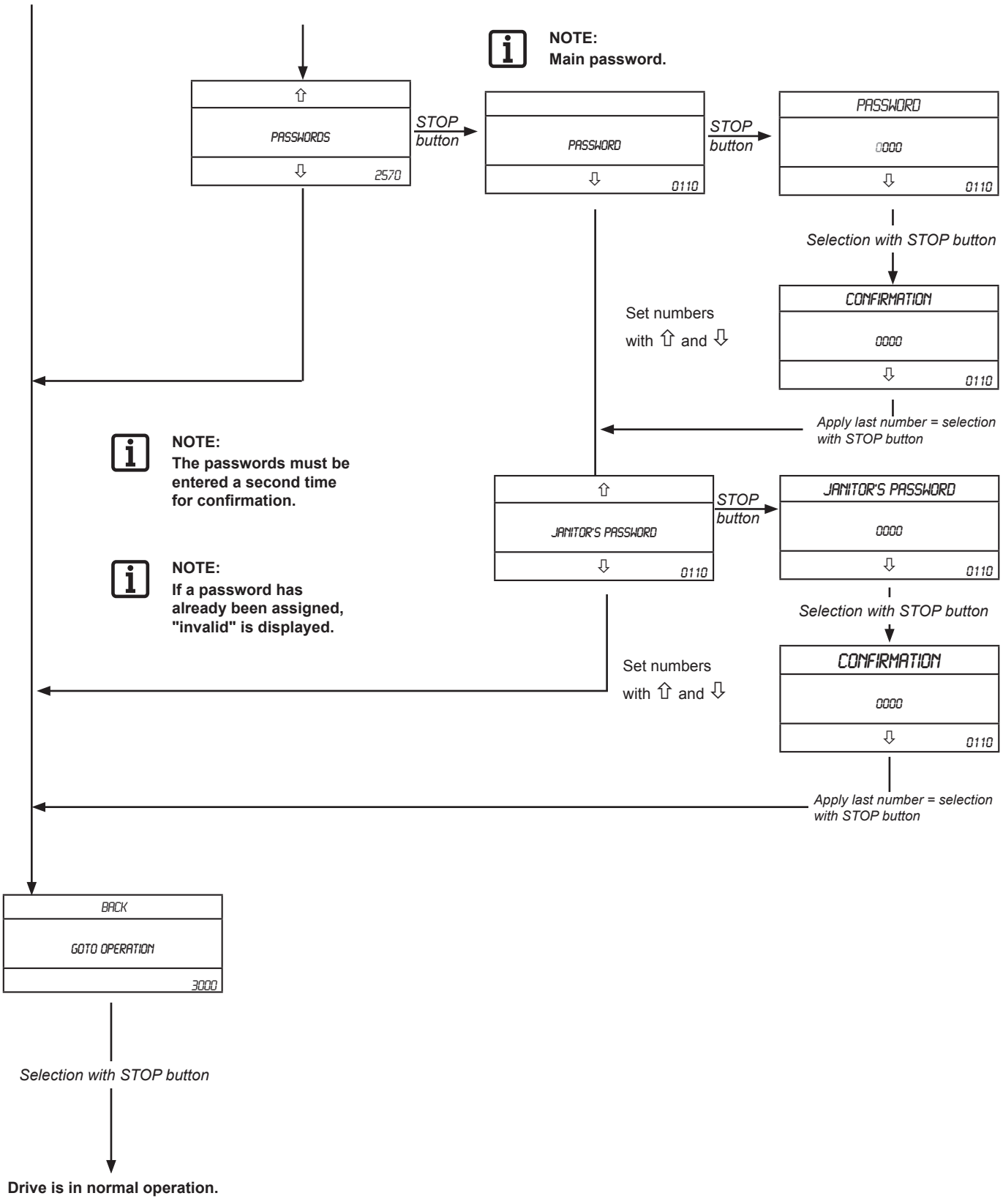


NOTE:
The reverse delay time is the time between the motor stopping in one direction and starting in the opposite direction (stop/reverse).


LIMIT SWITCH TYPE
2550
STOP button
KOSTAL POSITIONER
(0) -

Select limit switch type with ⇧ and ⇩
Selection options:
Kostal positioner / mech. Limit switch
Selection with STOP button
NOTE:
If an electronic limit switch is connected (Kostal positioner), the control unit recognises this automatically unless the positioner is faulty. Mechanical limit switches are not recognised by the control unit. Manual switching is required here. After a factory reset the control unit is set to mechanical limit switch (see "Factory settings").
FACTORY SETTINGS
2520
STOP button
RESET TO FACTORY SETTINGS CONFIRM
CANCEL
2520
Cancel with ⇩
or
Selection with STOP button
RADIO CONFIGURATION
2560
STOP button
RADIO CONFIGURATION 1
2560
STOP button
STOP (0): SAVE
OTHER KEY: CANCEL
2560
Select radio configuration with ⇧ and ⇩
Selection range:
1 to 4
Cancel with ⇧ and ⇩
or
Selection with STOP button
1. Sequential control / partial open / OPEN / CLOSE
2. Sequential control OPEN / CLOSE / relays
3. OPEN internal / OPEN external / CLOSE / relays
4. OPEN / partial open / CLOSE / relays
NOTE:
Menu item 1650 (adjust relays)
Profiles
NOTE:
Selection with 0666 possible only if factory inverter profiles have been set. (Max 10)
PROFILES
2580
STOP button
SELECT PROFILE
2581
STOP button
SELECT CUSTOMER PROFILE
NO CHANGE
0666
Selection with ⇩
Selection with STOP button
PROFILE XML EXPORT
2582
SELECT INVERTER
FU13
0666
Selection with ⇩
Selection with STOP button
CHANGES
APPLY
CONFIRM
CANCEL
0666

Initial operation



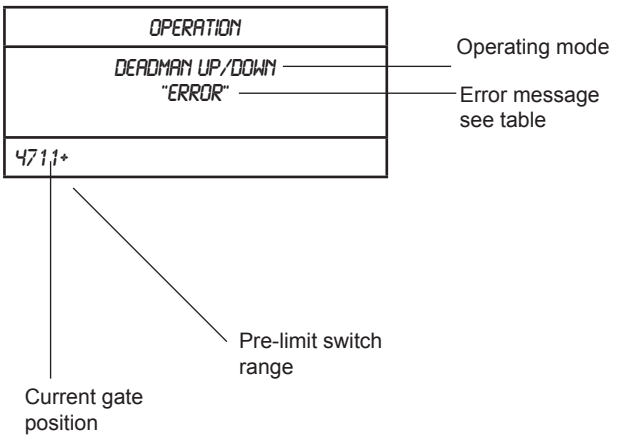
Error messages

The control unit is self-monitoring and partially self-healing. This means that it detects errors (including errors in connected devices) and shows them in the LCD display.

Depending on the severity of the error, the display is automatically reset after correction of the error or must be manually reset as directed.

All errors and events that affect the safety of the system are logged with date and time. They can be viewed in the "Event history" item.

NOTE:
Self-healing means that the control unit automatically resets the error display automatically as soon as it has been corrected.



	Error message	Error class*	Log**	Self-healing
1	Thermal/H/C/D	S	Yes	Yes
2	Safety chain 2 safety chain 2 triggered	S	Yes	Yes
3	Inverter error communications error in inverter	S	Yes	No
4	Kostal positioner communications error with Kostal positioner	F	Yes	Yes
5	Inv. thermal (Inverter signalled overheating via RS485)	S	Yes	Yes
6	Inverter overcurrent Inverter has signalled overcurrent	F	Yes	No
7	Inverter overvoltage (Inverter has signalled overvoltage)	F	Yes	No
8	Inverter safety shutdown	S	Yes	Yes
9	OSE 1 error	GB	Yes	Yes
10	OSE 1 triggered	E	No	---
11	OSE 2 error	GB	Yes	Yes
12	OSE 2 triggered	E	No	---
13	BREAK. CAP. 1 error	GB	Yes	Yes
14	BREAK. CAP. 1 triggered	E	No	---
15	BREAK. CAP. 2 error	GB	Yes	Yes
16	BREAK. CAP. 2 triggered	E	No	---
17	2-wire photo eyes error	GB	No	---
18	4-wire photo eyes error Only with tested photo relay and light curtain	GB	Yes	Yes
19	4-wire photo eyes triggered Only with tested photo relay and light curtain	E	No	---
20	User intervention: Adjust end positions	E	Yes	---
21	User intervention: Operating mode	E	Yes	---
22	User intervention: Safety device	E	Yes	---
23	Gate too slow Increments per second	S	Yes	yes (with switch to deadman)
24	Gate too fast Increments per second	S	No	Yes
25	Wrong direction Gate moves in the wrong direction	S	No	Yes
26	No display Program memory System freezes (display etc.)	F	No	No
27	Error in configuration Error in configuration data	F	Yes	No
28	No display Working memory System freezes	F	Yes	No
29	Safety limit switch End position top or bottom was overrun	S	Yes	Yes

* Error classes:

F = Fatal error
S = Serious error
D = Defect
E = Safety event

** Event is logged in the service menu (parameter menu).

Factory settings

Factory settings:

Language:		English
Date/time		Unchanged
Brake		Inactive
End positions		Pos. retained
Pre-limit switch		Pos. retained
Safety limit switch		100 inc.
Operating mode		Deadman UP/DOWN
Safety devices	Safety device tested/untested	Deactivated
	2-wire photo relay	Deactivated
	OSE 1	Deactivated
	OSE 2	Deactivated
	Switchrail 1	Deactivated
	Switchrail 2	Deactivated
Automatic close		0 sec. (disabled)
Relay 1		Inactive
Relay 2		Inactive
Relay 3		Inactive
Partial opening		Pos. deleted
Inverter profile UP	Max. speed	50 Hz
	Startslope (ms)	700 ms
	Stopslope (ms)	700 ms
	Stopslope (inc.)	400 inc.
	Slow gear	25 Hz
	Boost	80
Inverter profile down	Max. speed	50 Hz
	Startslope (ms)	700 ms
	Stopslope (ms)	700 ms
	Stopslope (inc.)	400 inc.
	Slow gear	25 Hz
	Medium movement	40 Hz
	Emergency reverse time	50 ms
Switchpoint 2.5 mm		Pos. deleted
Inv. setting brake		10 inc.
Traffic light control	Gate OPEN lead time	3 sec.
	Open hold time	20 sec.
	Gate CLOSE lead time	3 sec.
	Clearing time	5 sec.
Gate cycles		Unchanged
Event history		Unchanged
Motor setup	Motor direction	Unchanged
	Encoder direction	Unchanged
	Motor controller	Unchanged
Service interval	Time	12 months
	Cycles	10,000 cycles
Emergency reverse time		50 ms
Limit switch		Unchanged

NOTE:
The factory settings are applicable for standard control units only. There may be differences with personalised control units.