Installation Manual

sGate with top guide
sGate with bottom guide
sGate Trackless

Please read this user manual before using this gate for the first time! Act in accordance with the manual and keep it in a safe place for later use or for the following owner.

EN – Translation of the original installation manual - 1.1 | 2019

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FOREWORD

This installation manual enables you to commission and configure the gate correctly. All available options are described in detail. The chapter Parameter Description guides you through the operation. It explains, among other things, how various settings can be adjusted. In addition to this manual, you also need a wiring diagram.

Read this installation manual carefully before using the gate.
Keep the installation manual so you can consult it if necessary.

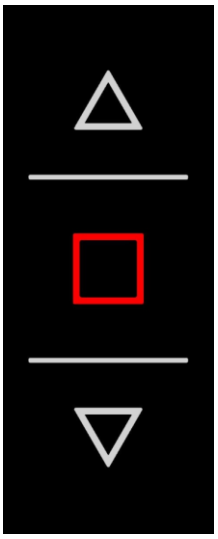
This description is intended for the installer of the gate, with access to level 2, and applies to gates that are top guided, bottom guided and Trackless, provided with a FUZ2B control with at least software version HR V43-02.08 or higher.

1 OPERATION AND VIEWS

This chapter explains how settings can be adjusted or viewed. Depending on the possibly entered password, it is determined which parameters become visible.

1.1 EXPLANATION OF KEYS ON THE CONTROL

The control has 3 keys which are mounted on the cover of the control. See the image below.



Triangle up: OPEN
Red square: STOP
Triangle down: CLOSE

By pressing a key or combination of keys you enter the menu, you can leave the menu or change a value.

1.2 ENTERING OR LEAVING THE MENU

The following actions explain how to enter and leave the menus:

- Press and hold the OPEN and STOP buttons simultaneously until P.000 appears to enter the menu
- Press and hold the STOP key until there is no more P.xxx to leave the menu

Once in the menu, the OPEN and CLOSE keys can be used to scroll up and down through the list of parameters. When a correct parameter is found, the value can be made visible by pressing the STOP key. Once a value has been found, it can be adjusted with the OPEN and CLOSE keys.

A new value will be accompanied by a flashing dot in the lower right of the display. This indicates that the value has changed. If you shortly press the STOP button after adjusting, the value will not be saved. To save the value, press the STOP button until the blinking point is gone. By briefly pressing the STOP key after saving, you go back one step and you are back in the list of parameters.

If no further adjustments are needed, you can leave the menu as described above.

1.3 ENTERING THE PASSWORD

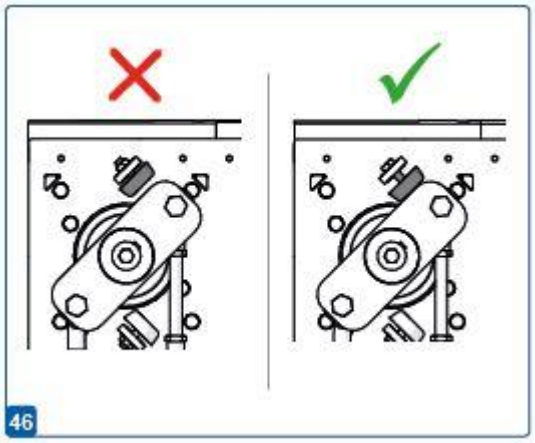
To access the menu, use the steps above to go to P.999. There the password, which consists of a hexadecimal code, must be entered. Depending on the password, part of the parameters will be visible.

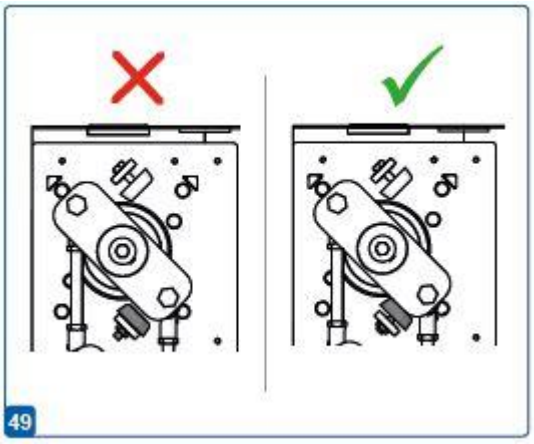
2 LEARNING THE END POSITIONS

Before this step is started, the positions of the stop rubbers must be checked. If necessary, see the installation manual.

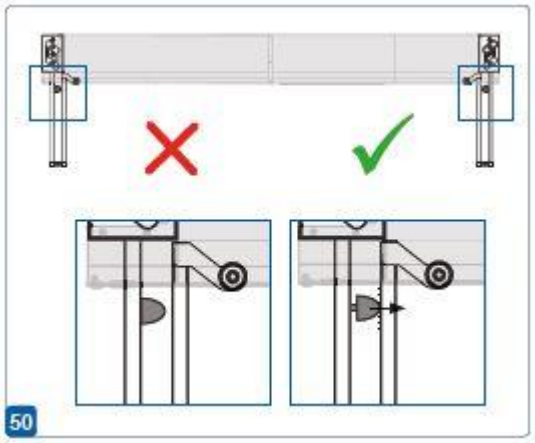
2.1 CHECK RUBBER STOPS

OPEN-CLOSE TRANSMISSION POSITION





OPEN POSITION GATE LEAFS



2.2 LEARNING THE ENDPOSITIONS

There are 2 procedures for learning the end positions. Depending on the mounting method, you will have to load a profile yourself or just re-learning the positions will suffice.

2.2.1 Re-learning end positions of a pre-assembled gate

The gate is already loaded with the correct profiles at the factory. The end positions must be deleted and reset after mounting. This operation must be performed per control. Proceed as follows:

- Make sure that everything is connected according to the electrical diagram
- Switch on the power
- Enter the menu and go to P.210
- Change the value to 3 and then save it
- Continue with parameter P.980
- Change the value from 0 to 2 and then save it
- Exit the menu to set the end positions

"E.i CH" appears on the display. This is the protocol to learn the CLOSE and OPEN position.

- Briefly press the STOP button. This confirms the learning. "Ei Eu" appears on the display. With "Ei Eu" the "CLOSE" position of the gate can be learned
- Use the OPEN and CLOSE keys to move the gate to the desired position. Press it as long as the gate needs to open or close

- Press the STOP button until the 4 dots no longer flash. "E.i.E.o." appears on the display. With "E.i.E.o." the "Open" position of the gate can be learned

- Move the gate to the OPEN position with the OPEN key.
- After reaching the desired position, press the STOP button until the 4 dots no longer flash. The "OPEN" position has been confirmed

After learning the end positions, P.980 must be set to "0" again. The sGate is now back in "Automatic" mode. As a check, "_Eu_" appears on the display.

2.2.2 Learning profile and end positions of a non-pre-assembled gate

The gate is not yet fitted with the correct profiles at the factory. The profiles and end positions must be set after mounting. This operation must be performed per control. Proceed as follows:

- Make sure that everything is connected according to the electrical diagram
- Switch on the power
- After switching on, P.991 appears on the display
- Briefly press the STOP button. Then the following appears on the display:

- Change the value to the required profile. In a profile the correct parameters are specified for the selected gate type. See the overview below

Top guided and bottom guided

0: Factory setting
1: Stand-alone
2: Master XL 4 m (profiles 2 and 3 belong together)
3: Slave XL 4 m
4: Master XXL 6 m (profiles 4 and 5 belong together)
5: Slave XXL 6 m

Trackless

6: Master L 4 m (profiles 6 and 7 belong together)
7: Slave L 4 m
8: Master XL 6 m (profiles 8 and 9 belong together)
9: Slave XL 6 m
10: Master XXL 8 m (profiles 10 and 11 belong together)
11: Slave XXL 8 m
12: Standalone

- Confirm the desired profile by pressing the STOP key until “ProG” appears on the display.

"E.I CH" will appear on the display after loading.

- Re-enter the menu again
- Continue with parameter P.980
- Change the value from 0 to 2 and then save it
- Exit the menu to set the end positions

"E.I CH" will appear on the display after loading. This is the protocol to learn the start and end positions.

- Briefly press the STOP button. This confirms the learning. "Ei Eu" appears on the display. With "Ei Eu" the "CLOSE" position of the gate can be learned.
- Use the OPEN and CLOSE keys to move the gate to the desired position. Press it as long as the gate needs to open or close.

- Press the STOP button until the 4 dots no longer flash. "E.ı.E.o." appears on the display. With "E.ı.E.o." the "Open" position of the gate can be learned.

- Move the gate to the OPEN position with the OPEN key.
- After reaching the desired position, press the STOP button until the 4 dots no longer flash. The "OPEN" position has been confirmed.

After learning the end positions, P.980 must be set to "0" again. The sGate is now back in "Automatic" mode. As a check, "_Eu_" appears on the display.

3 PARAMETER DESCRIPTION

3.1 CYCLE COUNTER

P.	[Unit] Range	Function	Description / Note
P.000 rrr	[Cycles]	Cycle Counter	The content of this parameter indicates the number of movement cycles counted so far.

3.2 MAINTENANCE COUNTER

P.	[Unit] Range	Function	Description / Note
P.005 rrr	[Cycles]	Maintenance Counter	The content of this parameter indicates the number of gate cycles until the next maintenance interval. *The setting -1 means that the maintenance counter has not yet been activated.*
P.973 --w	0 ... 1	Resetting the maintemaintenance counter	By setting this parameter to 1 the maintenance counter is confirmed.

3.3 AUTOMATIC CLOSING TIME

P.	[Unit] Range	Function	Description / Note
P.010 --w	[Seconds] 0 .5.. 9999	Opening time 1, OPEN	The gate remains in the end position OPEN for the set time. After this time, it will automatically close.
P.011 --w	[Seconds] 0 .15.. 9999	Opening time 2, PARTLY OPEN	The gate remains open in the end position intermediate stop / partial opening for the set time.

3.4 WARNING TIME FOR THE CLOSING MOVEMENT

P.	[Unit] Range	Function	Description / Note
P.020 --w	[10 ms] 0 ... 3000	Pre-warning time before opening	The opening of the gate is delayed after the receipt of an OPEN command by the time specified in this parameter.
P.025 --w	[Seconds] 0 ... 20	Pre-warning time before closing	After the receipt of a CLOSED command or after the opening time has expired (forced closing), the closing of the gate is delayed by the time specified in this parameter.

3.5 FORCED CLOSING TIME

P.	[Unit] Range	Function	Description / Note
P.012 --w	[Seconds] 0 .30.. 200	Forced closing time	After the time set for this parameter has expired, the closing of the gate is activated. The time starts running the moment no opening or closing is active. The opening time and evacuation time have a higher priority, i.e. when one of these times is running, the forced closing time will not expire. The same applies when the barrier or gate is in the upper end position at the moment of activation.

3.6 RE-LEARNING THE END POSITION

P.	[Unit] Range	Function	Description / Note
P.210 --w	0 ... 5	Re-configuring the end positions	This parameter restarts the configuration of the end positions. After activating the procedure in the press-and-hold mode, the gate moves in the direction of end positions and is saved by pressing the STOP key for a long time. The following setting options can be selected:

	0: Cancel, no end position will be re-configured. 1: The limit switch Close, the limit switch Open and, if required, the limit switch Partly open will be configured. 2: The limit switch Open, and, if re-quired, the limit switch partly open will be configured. 3: The limit switch Close and the limit switch Open will be configured. 4: The limit switch partly open will be configured. 5: All limit switches and the direction of rotation are configured.

3.7 SHIFTING THE FINAL OPEN POSITION

P.	[Unit] Range	Functie	Beschrijving/ Notitie
P.230 ww	[Increments] 50 ... 9999	Endposition gate OPEN	This parameter displays the number of increments that were taught during calibration or synchronization of the gate ℹ The end position gate OPEN can be manually shifted by changing this value ℹ *A maximum of 3700 increments are possible when using absolute encoders DES or TST PE for position sensing*

3.8 CORRECTING THE END POSITION GATE CLOSED

P.	[Unit] Range	Function	Description / Note
P.221 --w	[Incre-ments] -125 .0.. 125	Correction value end position gate CLOSED	This parameter allows for a shift of the entire lower end position, i.e. the end position is shifted together with the associated pre-limit switches. A change in the parameter value in the positive direction results in an upward shift of the end position. A change in the parameter value in the negative direction results in a downward shift of the end position.

3.9 CORRECTING THE END POSITION GATE OPEN

P.	[Unit] Range	Function	Description / Note
P.231 --w	[Increments] -60 .0.. 60	Correction value end position Gate OPEN	This parameter allows for a shift of the entire Gate OPEN end position, i.e. the end position is shifted together with the associated pre-limit switch. A change in the parameter value in the positive direction results in an upward shift of the end position. A change in the parameter value in the nega-tive direction results in a downward shift of the end position.

4 SETTING THE INDUCTION LOOPS

4.1 DETECTOR CHANNEL 1

P.	[Unit] Range	Function	Description / Note
P.660 --w	20 ... 29	Function detector channel 1	This parameter sets the response of the gate control to the activation of detector channel 1. The detector will respond if: 20: Deactivated, no notification, no transfer, no scanning (only at det. 3.4) 21: Analysis only for the transmission of commands, blocking of a partner loop and CLOSED-command upon leaving 22: OPEN command, protection against closing with reversal, possible blocking by partner loop 23: Protection against closing with reversal, no blocking by partner loop possible 24: Protection against closing with stop, no blocking by partner loop possible 25: Provides legitimacy for this programmed external command to open, but always works as a security against supply with a reversal, even without the command to open. 27: Protection against opening and closing, when released after activation during opening, opening is continued, no blocking by partner loop is possible 28: Protection against opening and closing, when released after activation during opening, opening is continued, otherwise after the release of the CLOSED command, no blocking by partner loop is possible 29: Provides legitimacy for correspondingly programmed external OPEN command, does not work as a safety device.

Additional protection = when activated during closing, a reversal occurs, during end position OPEN, no automatic closing is possible

P.	[Unit] Range	Function	Description / Note
P.663 --w	0 ... 4	End position that must be reached	The parameter determines which end position must be reached after activating the detector channel 1. 0: End position Gate OPEN 1: End position intermediate stop / partial opening 2: Upon activation in the end position Gate CLOSED a movement of the gate takes place to the end position Intermediate Stop. 3: the same as 2. However, in this case the gate goes directly to the end position Gate OPEN if in the end position Under, the activation takes place 2 times in quick succession. 4: The same end position as that of the previous entry .

P.664 --w	0 ... 7	Opening time / priority	This parameter determines whether and what opening time / forced closing time expires after reaching the end position. 0: Without opening time 1: With opening time (P.010 or 011) 2: With a minimum opening time (P.015) 3: No hold-open time, at the same time, the hold-open time is also blocked for other OPEN commands until the end position is left. 4: Opening time as after the last OPEN command 5: When activating in end position Top, the opening time is stopped, and the time will continue to elapse after the release of the entrance. After reversing during the CLOSING movement, the minimum opening time runs. 6: with priority 1 (highest priority: such as PULSE OPEN) 7: with priority 2 (second highest priority: such as single channel (= power surge)) *The minimum opening time is set with parameter P.015.* *The opening time / forced closing time is set with parameter P.010 / P.011.*
P.665 --w	0 ... 1	Evacuation time	Activates the expiration of the evacuation time / pre-warning time before closing the gate when it was opened beforehand by detector channel 1. 0: Without evacuation time 1: With evacuation time (P.025) *The evacuation time / pre-warning time is set with parameter P.025.*

P.	[Unit] Range	Function	Description / Note
P.666 --w	0 ... 3	Direction	The direction is mainly used for the direction-dependent control of traffic lights. The parameter indicates for which direction detector channel 1 operates. 0: No direction set 1: Direction from outside to inside 2: Direction from inside to outside 3: Both directions are released
P.667 --w	20 ... 25	Lock detector channel 1	In order to prevent accidental activations, detector channel 1 can be locked by its partner detector A (detector channel 2) or partner detector B (detector channel 3) with a time to be set at the partner detector (P.678 or P.6C8). In addition, the partner OPEN command A (OPEN2) or partner OPEN command B (OPEN1) can be blocked when using detector channel 1. Blocking only works when different directions of detector channel 1 and of the partner detector are selected for parameterised traffic light relays. If no traffic light is parameterised, the direction of the detectors will not be taken into account. Detector channel 1 is blocked by: 20: Deactivated 21: Blocked by partner loop A 22: Blocked by partner loop A and the blocking of partner OPEN command A upon activation of this channel 23: Permanent non-time-controlled blocking of the partner loop A in the end position Bottom so that there is no opening for vehicles that pass under the barrier up to the opening loop and thus open the barrier. 24: Blocked by partner loop B 25: Blocked by partner loop B and the blocking of partner OPEN command B upon activation of this channel
P.668 --w	[Seconds] 0 ... 120	Locking time detector channel 1	Detector channels 2 and 3 are locked for the time set in this parameter (see also P.677 and P6C7 respectively). The lock will not work if

			the time is set to 0.
P.669 --w	0 ... 62	LCD notification	A notification can be selected for each entrance from the list that will be displayed on the LCD display when the corresponding entrance is activated. The list of notifications can be found in the appendix LCD selection notifications
P.66A --w	[Seconds] 0 ... 120	Activation delay detector channel 1	The parameterised function of detector channel 1 is only executed after the time specified in this parameter has expired.

P.	[Unit] Range	Function	Description / Note
P.66C --w	0 ... 4	CLOSED command when leaving loop channel 1	Upon leaving loop channel 1, various CLOSED commands can be generated: 0: No CLOSED command 1: CLOSED command after the protection is released 2: CLOSED command after the protection is released and the CLOSED command is also stored during the OPEN movement. 3: CLOSED command after the protection is released, also during the OPEN movement. 4: CLOSED command that overwrites a current OPEN command.
P.66D --w	0 ... 1	Deactivation of detector channel 1 during the automatic synchronisation	Deactivates detector channel 1 during the automatic synchronisation. 0: The input is analysed 1: The input is ignored during the synchronisation
P.66F --w	0 ... 1	Operation of the lock of detector channel 1	The lock of detector channel 1 and the OPEN commands set via P.667 behave as follows: 0: Locking time runs from the activation of the activated channel, the time is not stopped by another channel. 1: Locking time runs from the activation of the activated channel, the time is stopped by another channel when a flank drops.

4.2 DETECTOR CHANNEL 2

P.	[Unit] Range	Function	Description / Note
P.670 --w	20 ... 29	Function detector channel 2	This parameter sets the response of the gate control to the activation of detector channel 2. The detector will respond if: 20: Deactivated, no notification, no transfer, no scanning (only at det. 3.4) 21: Analysis only for the transmission of commands, blocking of a partner loop and CLOSED-command upon leaving 22: OPEN command, protection against closing with reversal, possible blocking by partner loop 23: Protection against closing with reversal, no blocking by partner loop possible 24: Protection against closing with stop, no blocking by partner loop possible 25: Provides legitimacy for this programmed external command to open, but always works as a security against supply with a reversal, even without the command to open. 27: Protection against opening and closing, when released after activation during opening, opening is continued, no blocking by partner loop is possible 28: Protection against opening and closing, when released after activation during opening, opening is continued, otherwise after the release of the CLOSED command, no blocking by partner loop is possible 29: Provides legitimacy for correspondingly programmed external OPEN command, does not work as a safety device. *Additional protection = when activated during closing, a reversal occurs, during end position OPEN, no automatic closing is possible*

P.673 --w	0 ... 4	End position that must be reached	The parameter determines which end position must be reached after activating the detector channel 2. 0: End position Gate OPEN 1: End position intermediate stop / par tial ope ning 2: Upon activation in the end position Gate CLOSED a movement of the gate takes place to the end position Intermediate Stop. 3: the same as 2. However, in this case the gate goes directly to the end position Gate OPEN if in the end position Under, the activation takes place 2 times in quick succession. 4: The same end position as that of the previous entry .

P.	[Unit] Range	Function	Description / Note
P.674 --w	0 ... 7	Opening time / priority	This parameter determines whether and what opening time / forced closing time will elapse after reaching the end position. 0: Without opening time 1: With opening time (P.010 or 011) 2: With a minimum opening time (P.015) 3: No hold-open time, at the same time, the hold-open time is also blocked for other OPEN commands until the end position is left. 4: Opening time as after the last OPEN command 5: When activating in end position Top, the opening time is stopped, and the time will continue to elapse after the release of the entrance. After reversing during the CLOSING movement, the minimum opening time runs. 6: with priority 1 (highest priority: such as PULSE OPEN) 7: with priority 2 (second highest priority: such as single channel (= power surge)) *The minimum opening time is set*

			with parameter P.015. *The opening time / forced closing time is set with parameter P.010 / P.011.*
P.675 --w	0 ... 1	Evacuation time	Activates the expiration of the evacuation time / pre-warning time before closing the gate when it was opened beforehand by detector channel 2. 0: Without evacuation time 1: With evacuation time (P.025) *The evacuation time / pre-warning time is set with parameter P.025.*
P.676 --w	0 ... 3	Direction	The direction is mainly used for the direction-dependent control of traffic lights. The parameter indicates for which direction detector channel 2 operates. 0: No direction set 1: Direction from outside to inside 2: Direction from inside to outside 3: Both directions are released

P.	[Unit] Range	Function	Description / Note
P.677 --w	20 ... 25	Lock detector channel 2	In order to prevent accidental activations, detector channel 2 can be locked by its partner detector A (detector channel 1) or partner detector B (detector channel 4) with a time to be set at the partner detector (P.668 or P.6D8). In addition, the partner OPEN command A (OPEN1) or partner OPEN command B (OPEN2) can be blocked when using detector channel 2. Blocking only works when different directions of detector channel 2 and of the partner detector are selected for parameterised traffic light relays. If no traffic light is parameterised, the direction of the detectors will not be taken into account. Detector channel 2 is blocked by: 20: Deactivated

			21: Blocked by partner loop A 22: Blocked by partner loop A and the blocking of partner OPEN command A upon activation of this channel 23: Permanent non-time-controlled blocking of the partner loop A in the end position Bottom so that there is no opening for vehicles that pass under the barrier up to the opening loop and thus open the barrier. 24: Blocked by partner loop B 25: Blocked by partner loop B and the blocking of partner OPEN command B upon activation of this channel
P.678 --w	[Seconds] 0 ... 120	Locking time detector channel 2	Detector channels 1 and 4 are locked for the time set in this parameter (see also P.677 and P6D7 respectively). The lock will not work if the time is set to 0.
P.679 --w	0 ... 62	LCD notification	A notification can be selected for each entrance from the list that will be displayed on the LCD display when the corresponding entrance is activated. The list of notifications can be found in the appendix LCD selection notifications
P.67A --w	[Seconds] 0 ... 120	Activation delay detector channel 2	The parameterised function of detector channel 2 is only executed after the time specified in this parameter has expired.

P.	[Unit] Range	Function	Description / Note
P.67C --w	0 ... 4	CLOSED command when leaving loop channel 1	Upon leaving loop channel 1, various CLOSED commands can be generated: 0: No CLOSED command 1: CLOSED command after the protection is released 2: CLOSED command after the protection is released and the CLOSED command is also stored during the OPEN movement. 3: CLOSED command after the protection is released, also during the OPEN movement. 4: CLOSED command that overwrites a current OPEN command.

P.67 D --w	0 ... 1	Deactivation of detector channel 1 during the automatic synchronisation	Deactivates detector channel 2 during the automatic synchronisation. 0: The input is analysed 1: The input is ignored during the synchronisation
P.67F --w	0 ... 1	Operation of the lock of detector channel 1	The lock of detector channel 2 and the OPEN commands set via P.677 behave as follows: 0: Locking time runs from the activation of the activated channel, the time is not stopped by another channel. 1: Locking time runs from the activation of the activated channel, the time is stopped by another channel when a flank drops.

4.3 SENSITIVITY LOOP 3

P.	[Unit] Range	Function	Description / Note
P.BC2 --w	0 … 5	Frequency range of detector channel 3	This parameter defines the frequency range in which the detector channel 3 operates. 0: Range is automatically set based on the address 1: Range 30-40kHz 2: Range 45-55 kHz 3: Range 60-75 kHz 4: Range 80-100kHz 5: Range 105-140 kHz *To prevent interference between the detectors, they are set to different operating frequencies.*

P.BC3 --w	1 … 255	Threshold value of detector channel 3	Threshold from which the detector channel 3 is switched on. 0: Threshold 6 0,005% delta f/f 1: Threshold 10 0,008% delta f/f … 12: Threshold 120 0,100 delta f/f … 255: Threshold 2550 2,125 delta f/f
P.BC4 --w	20 … 80	Hysteresis of detector channel 3	In order to prevent an intermediate loss of the loop active signal in vehicles with a high substructure such as articulated buses, trams, trucks with trailers, etc., it is possible to change the switching hysteresis. Detection of critical vehicles without interruptions is therefore possible with a low sensitivity. According to the factory setting, the switch-of threshold is 75%
P.BC5 --w	0 … 255	Stop time of detector channel 3	Specifies the smallest switch-on time at which the detector starts a new setting for channel 3. 0: infinite stop time (no new setting) 1-255: stop time in minutes

4.4 SENSITIVITY LOOP 4

P.	[Unit] Range	Function	Description / Note
P.BD2 --w	0 … 5	Frequency range of detector channel 4	This parameter defines the frequency range in which the detector channel 4 operates. 0: Range is automatically set based on the address 1: Range 30-40kHz 2: Range 45-55 kHz 3: Range 60-75 kHz 4: Range 80-100kHz 5: Range 105-140 kHz *To prevent interference between the detectors, they are set to different operating frequencies.*
P.BD3 --w	1 … 255	Threshold value of detector channel 4	Threshold from which the detector channel 4 is switched on. 0: Threshold 6 0,005% delta f/f 1: Threshold 10 0,008% delta f/f … 12: Threshold 120 0,100 delta f/f … 255: Threshold 2550 2,125 delta f/f
P.BD4 --w	20 … 80	Hysteresis of detector channel 4	In order to prevent an intermediate loss of the loop active signal in vehicles with a high substructure such as articulated buses, trams, trucks with trailers, etc., it is possible to change the switching hysteresis. Detection of critical vehicles without interruptions is therefore possible with a low sensitivity. According to the factory setting, the switch-of threshold is 75%

P.BD5 --w	0 … 255	Stop time of detector channel 4	Specifies the smallest switch-on time at which the detector starts a new setting for channel 4. 0: infinite stop time (no new setting) 1-255: stop time in minutes

5 SOFTWARE VERSION

P.	[Unit] Range	Function	Description / Note
P.925 rrr		Software version	This parameter shows the version of the software currently used.

6 ACTIVATION OF THE EXPANSION BOARD

P.	[Unit] Range	Function	Description / Note
P.802 --w	0000 ... 0302	Function of the expansion slot	This parameter establishes the hardware inserted into the expansion board. 0000: Expansion slot deactivated 0101: TST SURA1 activated 0106: TST SURA6 activated 0202: Radio module activated 0302: Detector activated

7 SETTING THE OPERATING MODE

P.	[Unit] Range	Function	Description / Note
P.980 --w	0 ... 4	Operating mode	This parameter sets the operating mode control. The following modes can be set: 0: OPEN and CLOSE movement in stationary mode (automatic mode) 1: OPEN movement in stationary mode, CLOSE movement in manual mode (partial automatic mode) 2: OPEN and CLOSE movement in manual mode (press-and-hold) 3: Emergency movement in press-and-hold mode ⚠ Let op **All safety devices and limit switches are ignored.** ℹ ***After switching off the control, it switches to the "dead man" operating mode*** 4: Continuous test with safety devices automatic OPEN and CLOSE movement. The opening time P.010 runs prior to each movement. ℹ *After switching off the control, it switches to the "dead man" operating mode* ℹ *The setting Continuous test is lost after switching off the control. In this situation, the control switches to manual mode.*

8 FACTORY SETTINGS / ORIGINAL PARAMETERS

P.	[Unit] Range	Function	Description / Note
P.990 --w	0 ... 2	Factory setting	By setting and saving this parameter, all parameter values will be reset. 1: Load set of parameters already set 2: Load set of parameters that were first saved with P.997 = 2 from the internal memory. *After a software update, the stored parameter set may no longer fit on the new program structure.*
P.997 --w	0 ... 1	Save current set of parameters	The current parameter settings will be stored in the internal memory. 0: The current parameter set is not stored. 1: The current parameter set is stored and can be loaded via P.990 = 2.

Appendix A: Overview of error messages

P920	Read out fault history	
F000	Door open outside position	– Parameter value emergency limit switch – Limit switch open range too small – The mechanical brake is defective or set incorrectly
F005	Door closed outside position	– Parameter value emergency limit switch – Limit switch open range too small – The mechanical brake is defective or set incorrectly
F020	Running time exceeded during opening or closing or in hold to run mode of control	– Current motor has exceeded a set maximum running time – The gate runs with difficulty or is obstructed – If mechanical limit switches are used, a limit switch may be defective – If an encoder is used, this fault is virtually impossible
F021	Testing the emergency opening was not successful	– The maximum permissible running time (P.490) was exceeded during the test. Call Customer Service
F030	Gate runs slowly, the change in position is slower than expected	– Axle of the encoder on the motor is loose – Wrong positioning system has been selected. – Motor phase is missing – Motor brake is not released – Error recognition setting too small – Movement speed too low – Mechanical limit switch

		remains active or is defective
F031	Reversal time error at DES	– Wrong direction of rotation – In the selection of the encoder, an incorrect channel has been selected. A with B were switched (pulse generators are not used)
F033	Protocols of the position sensor erroneous	– Failure of the position sensor's bus. No position data received over a longer period of time.
F043	Failure of the pre-limit switch of the photoelectric light barrier	– The pre-limit switch of the photoelectric light barrier also remains in the middle or the upper end position respectively.
F060	Crash detected	– Crash detected, but not remedied.
F061	Belt breakage	– An input configured as belt break detector (P.50x = 0416) was activated. As long as the display flashes fast, no movement is permitted -> acknowledgement required. – Access permitted via a press-and-hold operation by briefly pressing the STOP membrane button If a broken belt is mechanically repaired and input is no longer active, self-acknowledgement will take place if the CLOSED position has been reached in press-and-hold operation.
F063	Adjustment error to loop 3	– Disturbed environment. Loop is outside the

		tolerance values.
F064	Adjustment error to loop 4	– Disturbed environment. Loop is outside the tolerance values.
F067	Safety loop 3 defect	– Short circuit or interruption of loop 3
F068	Safety loop 4 defect	– Short circuit or interruption of loop 4
F080	Perform maintenance	– Service counter has reached maintenance status
F090	Set control parameters	– The minimum basic parameters are not set in the control system
F201	Internal emergency stop active or watchdog active	– Check the internal emergency stop wiring, test the microprocessor by pressing the stop sheet, it will display Information about the possible cause
F211	External emergency stop 1	– Check external emergency stop wiring of 1
F212	External emergency stop 2	– Check external emergency stop wiring of 2
F320	Gate blocked during opening	– The gate is stopped during opening
F325	Gate blocked during closing	– The gate is stopped during closing
F360 to F364		– Safety edge 1 is malfunctioning
F370 to F374		– Safety edge 2 is malfunctioning
F380	Short circuit on the safety edge entry	– Cable short circuit detected at the safety edges
F383	Short circuit on the safety edge entry detected	– Connection cable defective or not connected – Terminator damaged or missing – Jumper set incorrectly
F400	RAM error	– Reset FUE/FUZ

F401	Watchdog error	– Internal Watchdog activated.
F40A	Software exception	– Internal error detected.
F40B	Expansion board communication error	– Communication disrupted between the main circuit board and the expansion board.
F40C	Unknown expansion board (Connected via CAN)	– Incorrect coding of the hardware of the expansion board. Operating software does not support the expansion board. Expansion board defective
F410	Overcurrent limit ((motor current or DC link)	– Motor data set incorrectly – sGate is running too sluggishly
F420	Overcurrent DC link 1	– Braking chopper malfunctioning / defect / not present – Mains voltage too high – Motor returning too much energy (generator effect). E.g. when gate is closed and during a storm.
F425	Mains overvoltage	– The supply voltage of the control is too high.
F426	Mains undervoltage	– The supply voltage of the control is too low.
F430	Heat sink temperature outside working range limit 1	– Temperature too low limit 1
F435	Temperature in housing in limit range	– Temperature in the cabinet too low, high
F440	Overload current in intermediate circuit limit 1	– Set voltage increase ("Boost") not adjusted. Motor incorrectly dimensioned for gate used. Gate moves in a sluggish manner.

F510		– Motor using too much power limit 2
F511	Malfunction in DC supply	– DC supply not possible (overcurrent, IGBT error F.519, short-circuit, 24V error, excess temperature). Emergency stop is activated.
F512	Offset motor current / Intermediate circuit current faulty	– Faulty hardware.
F515	Motor protection function has recognised overload current	– Incorrect motor characteristic curve (Motor Nominal Current) set (P101). – Voltage increase / Boost set too high (P140 or P145) – motor incorrectly dimensioned
F519	IGBT control unit has detected overload current.	– Short circuit or earth contact at motor terminals. – Nominal motor frequency set incorrectly (P.100). – Voltage increase / boost set much too high (P.140 or P.145). – Motor incorrectly dimensioned. – Motor winding defective – Brief interruption of emergency-stop circuit.
F520	Overvoltage in intermediate circuit Limit 2	– Brake chopper malfunctioning / defective / not present. Input supply voltage too high. The motor feeds too much energy back during generator mode, because it

		needs to reduce the kinetic energy of the gate.
F521	Undervoltage in intermediate circuit	– Input supply voltage often too low when operating under load. Load too high / output stage or brake chopper malfunction.
F524	Ext. 24 VDC problem	– External 24 VDC fails or is too low/ closure.
F525	Overvoltage input	– Mains voltage is too high or unstable
F530	Low temperature	– Temperature of the controls is too low limit 2
F535	High temperature	– Temperature of the controls is too high (ventilate or cool)
F540	Overload current in intermediate circuit limit 2.	– Set voltage increase (“Boost") not adjusted. Motor incorrectly dimensioned for the gate used. – Gate moves in a sluggish manner.
F700	Gate position registration error	– When using limit switches, both limit switches are activated at the same time
F701	CLOSED position not found during timer mode	– The simulated limit switch CLOSED has not reached the expected position. – The tolerance range of the detection time is too small (P.229)
F702	OPEN position not found during timer mode	– The simulated limit switch OPEN has not reached the expected position. – The tolerance range of the detection time is too small (P.239)
F752	Timeout during protocol transfer	– Interface cable defective / interrupted. – Incorrect operation of the evaluation elec-

		tronics of the absolute encoder. – Defective hardware or an environment with a high level of electrical interference. – Shield the control cable. – Fit RC module (100Ω+100nF) to brake.
F760	Gate position outside window range	– Incorrect operation of the drive of the position sensors – Incorrect operation of the absolute encoder of the analysis electronics – Defective hardware or strongly disturbed environment
F763	DES-B malfunctions	– The encoder is malfunctioning.
F766	Internal TST PD/PE error	– Failure of the position sensor TST PD/PE. Perform a reset.
F767	Over temperature TST PD	– Temperature in housing too high
F768	Battery almost empty	– The battery current of the TST PD is too low (replace battery)
F7A2	Communication disrupted	– Communication disrupted or communication print defective
F910	No communication with the expansion board possible.	– Communication with the expansion board is disrupted. No expansion board inserted. CAN connection disrupted (cable breakage or no power supply for the expansion board).
F911	ROM error in the expansion board	– Incorrect Flash code – Defective hardware or an environment with a high level of electrical interference.

F912	RAM error in the expansion board	– Defective hardware or an environment with a high level of electrical interference.
F920	2.5 V malfunction	– Hardware defect
F921	15 V malfunction	– Hardware defect
F922		– Emergency circuit not closed (see connection terminals)
F931	ROM malfunction	– incorrect ROM code / defective hardware
F932	RAM malfunction	– Hardware defect
F933	CPU malfunction	– the pulse frequency to the CPU is not in order

Appendix B: Overview of information messages

No.	Description
I.021	Test of the emergency opening activated
I.080	Maintenance counter almost at set value
I.100	Speed in upper limit switch too high
I.150	Speed in lower limit switch too high
I.160	Permanent OPEN still active
I.161	Priority still active
I.170	Forced opening still active
I.180	Waiting for the command of the membrane keypad
I.185	Waiting for acknowledgement by membrane stop
I.199	Gate cycle counter faulty
I.200	Reference position acquired
I.201	Reference position re-initiated
I.205	Synchronisation executed
I.210	Limit switch incorrect (upper pre-limit switch)
I.211	Limit switch incorrect (upper pre-limit switch)
I.310	OPEN command Gate 2
I.320	Obstacle during the OPEN movement
I.325	Obstacle during the CLOSED movement
I.360	Failure of the NC safety strip
I.363	Failure of the NO safety strip
I.380	Failure of the 2nd internal NC safety strip
I.383	Failure of the 2nd internal NO safety strip
I.510	Correction complete
I.515	Active correction
I.520	Desired opening or closing speed not reached • Pre-limit switch range for full speed was reached -> adjust slopes • Current limiters have prevented the reaching of the desired speed -> Inverter, resp. motor works on power limit -> adjust slopes, adjust controller
I.555	Measurement transfer factor not yet ended
I.700	In timer limit switch mode (typical after power on) the door position is not available. Dead man speed is maintained until the position becomes available again.

Appendix C: General messages

General messages	
STOP	**stop /** reset status, waiting for the next command
_Eu_	**lower limit position Eu**
☐Eu☐	**lower position locked** ☐ gate cannot be opened (e.g. air lock)
ZUF@	**active closing**
-Eo-	**upper limit position Eo**
☐Eo☐	**upper position locked** ☐ gate cannot be opened (e.g. safety loop)
@AUF	**active opening**
-E1-	**Middle limit position E1 (intermediate position)**
☐E1☐	**Middle limit position locked** ☐ gate cannot be closed (e.g. safety loop)
FAIL	**Fault** ☐ only press-and-hold operation is possible, possibly automatic opening
EICH	**Calibration** ☐ adjustment of travel limits in press-and-hold operation (with absolute encoder) ☐ begin process via STOP button
☐NA☐	**Emergency stop** ☐ no movement possible, hardware safety chain interrupted
NOTF	**Emergency operation** ☐ press-and-hold operation, ignores all safety devices, etc.
'Hd'	**Manual** ☐press-and-hold operation
ParA	**Setting the parameters**
SYNC	**Synchronization** (incremental position sensor/limit switch ☐ pos. unknown)
'Au'	**Automatic** ☐ indicates change from "Manual" to "Automatic" status
'Hc'	**Semi-automatic** ☐ indicates change from "Manual" to "Semi-automatic" status
FUZ	Initial display after power up **(Power Up and self-test)**
Status messages during calibration	
E.i.E.u.	calibration of End Position CLOSED requested (in press-and-hold mode)
E.i.E.o.	calibration of End Position OPEN requested (in press-and-hold mode)
E.i.E.1.	calibration of Intermediate Stop Position E1 (in press-and-hold mode)
Status messages during synchronisation	
S.y.E.u.	synchronisation of End Position CLOSED requested (press-and-hold mode or wait for starting condition)
S.y.E.o.	synchronisation of End Position OPEN requested (press-and-hold mode or wait for starting condition)
S.y.E.1.	calibration or intermediate stop position E1 (in press-and-hold mode)
S.y.op	automatic OPEN movement up to mechanical stop, then automatic synchronisation of End Position OPEN
S.y.cL	automatic CLOSED movement taking into account safety devices up to mechanical stop, followed by automatic synchronisation of End Position CLOSED
S.y.c☐	automatic CLOSED movement is locked due to request Å
Status messages in the press-and-hold mode	
Hd.cL	CLOSED movement in dead man mode (membrane key: CLOSED)
Hd.oP	OPEN movement in dead man mode (membrane key: OPEN)

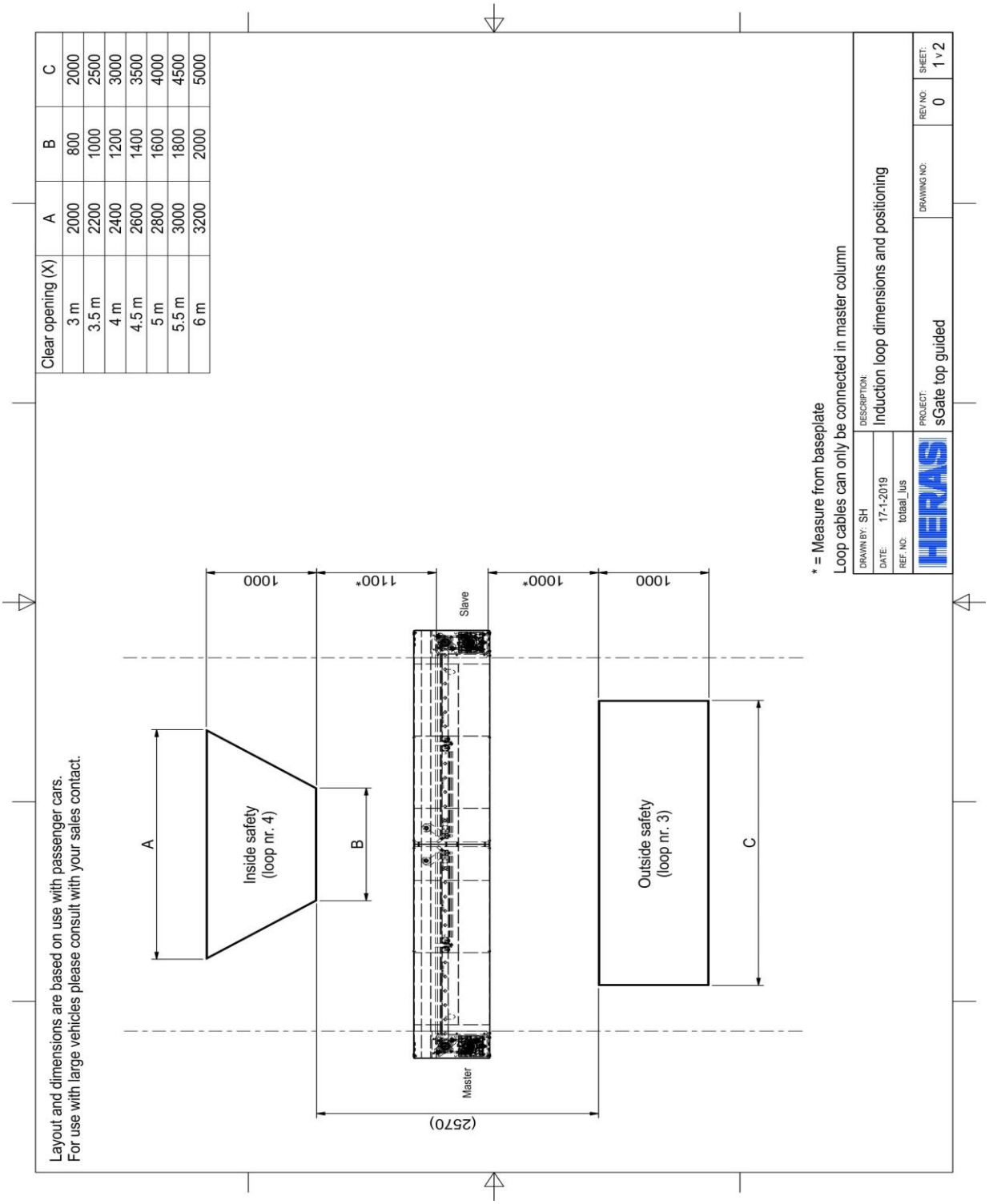
Hd.Eu	end position CLOSED reached, no further closing possible in dead man mode
Hd.Eo	end position OPEN reached, no further opening possible in dead man mode
Hd.Ao	outside of permitted Eo position (no opening possible in dead man mode)
Information messages during the setting of the parameters	
noEr	error memory: no error saved
Er--	error memory: if case of error but without associated message being found
Prog	programming message while performing original parameter or default

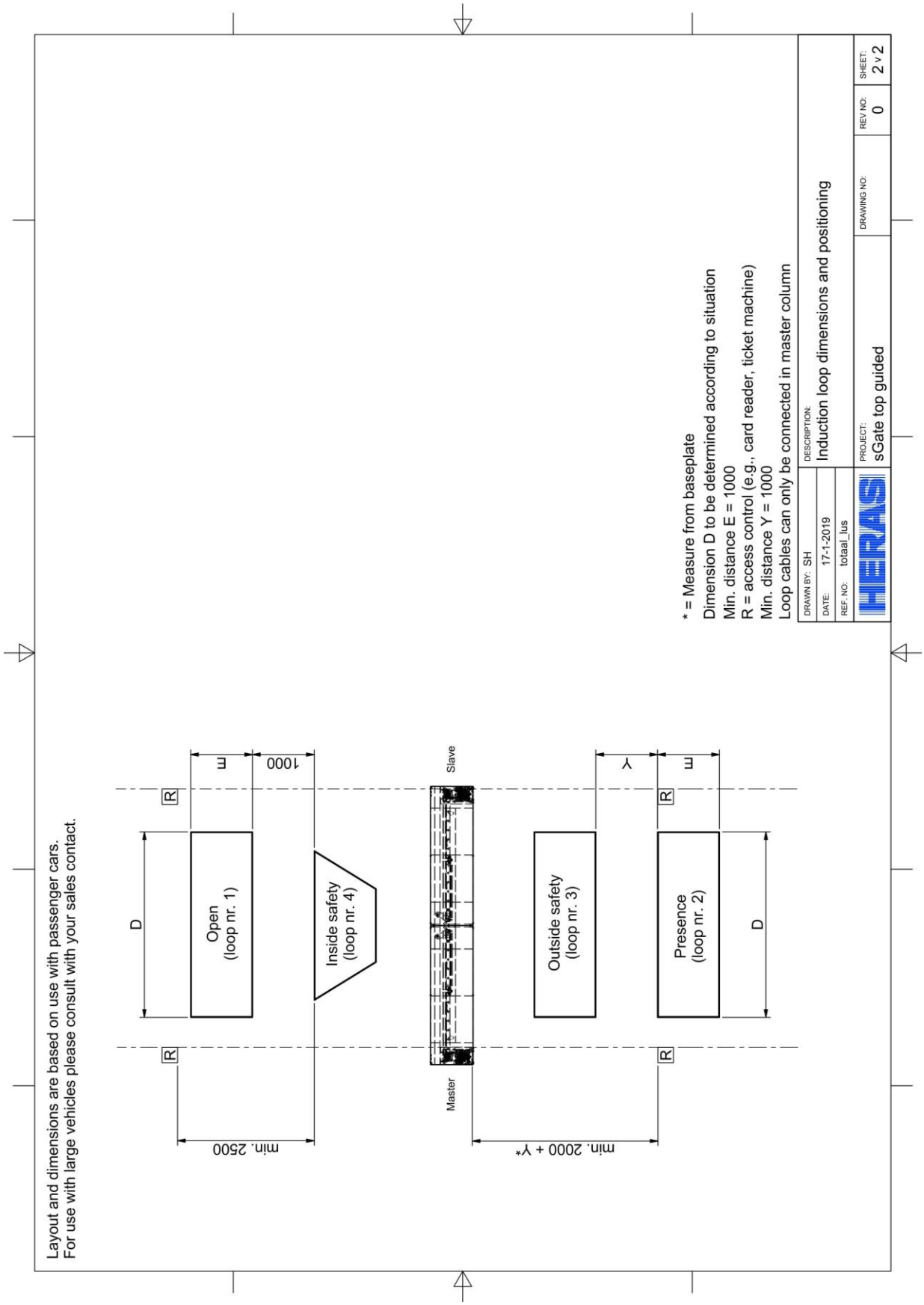
Appendix D: Input notifications

General inputs		Function	Terminal
E.000	OPEN	Open foil key	X502
E.050	STOP	Stop foil key	X502
E.090	DICHT	Close foil key	X502
E.101	Input 1	Open ingoing	52
E.102	Input 2	Open outgoing	53
E.103	Input 3	Partly open	54
E.104	Input 4	Stop	72
E.105	Input 5	Photocell 1 active (column)	75
E.106	Input 6	Photocell 2 active (column)	82
E.107	Input 7	Photocell 3 active (column)	85
E.108	Input 8	Photocell 4 active (wall)	61
E.109	Input 9	Photocell 5 active (wall)	64
E.110	Input 10	Safety edge open active	65
E.111	Input 11 *virtual*	Safety edge open active	na
E.112	Input 12 *virtual*	Safety edge close active	na
E.113	Input 13 *virtual*	Safety loop outside active	na
E.114	Input 14 *virtual*	Safety loop inside active	na
E.115	Input 15 *virtual*	Photocell wall 4 or 5 active	na
E.121	Input 21	Emergency open	331
E.122	Input 22	Emergency close	334
E.123	Input 23	Deadmans open	341
E.124	Input 24	Deadmans close	361
E.125	Input 25	Close	362
E.126	Input 26	Not used	363
E.127	Input 27 *virtual*	Slave in programming mode or in failure	na
E.13A	Input 3A *virtual*	Open ingoing	na
E.13B	Input 3B *virtual*	Open outgoing	na
E.13C	Input 3C *virtual*	Partly open	na
E.13D	Input 3D *virtual*	Stop	na
E.13E	Input 3E *virtual*	Photocell 1 or 2 active	na
E.13F	Input 3F *virtual*	Photocell 3 active	na
Emergency stop		**Function**	**Terminal**
E.201	Internal emergency stop active		na
E.211	External emergency 1 stop active		41/42
E.212	External emergency 2 stop		31/32

	active		
Safety edges		**Function**	**Terminal**
E.360	Safety edge close active		43/44
E.363	Failure safety edge closing		na
E.380	Safety edge open active		65/71
E.383	Failure safety edge open		na
Loops		**Function**	**Terminal**
E.501	Loop channel 1	Free exit loop active	X5-1/X5-2
E.502	Loop channel 2	Presence loop active	X5-3/X5-4
E.503	Loop channel 3	Safety loop outside active	352/353
E.504	Loop channel 4	Safety loop inside active	350/351

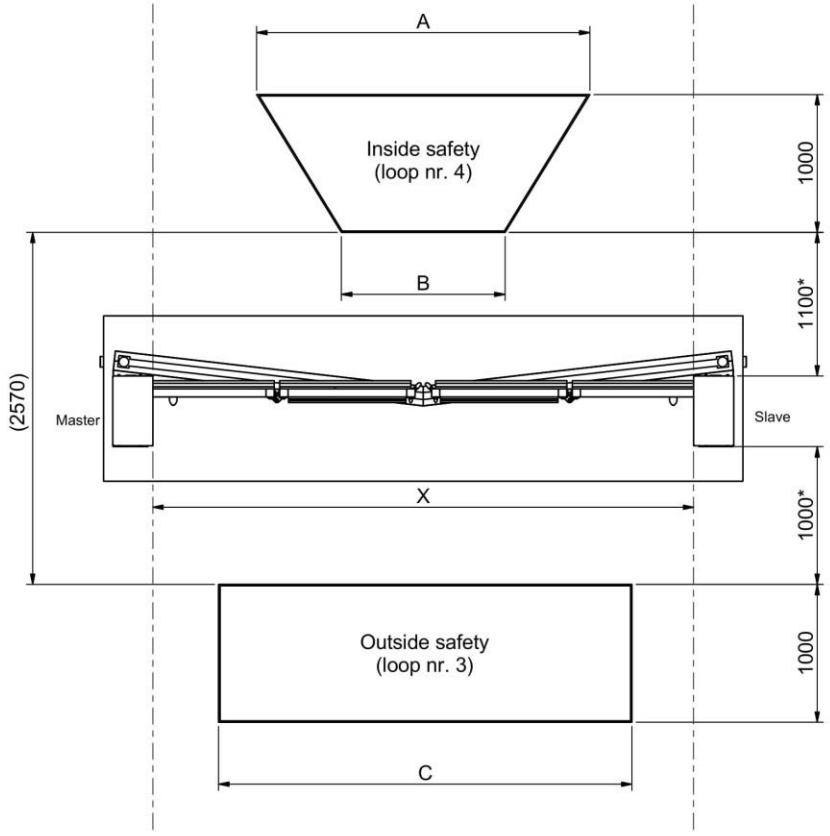
Appendix E: Loop positioning




Layout and dimensions are based on use with passenger cars.
For use with large vehicles please consult with your sales contact.
R
E
1000
D
Open
(loop nr. 1)
Inside safety
(loop nr. 4)
min. 2500
Slave
Master
Y
Outside safety
(loop nr. 3)
Presence
(loop nr. 2)
min. 2000 + Y*
* = Measure from baseplate
Dimension D to be determined according to situation
Min. distance E = 1000
R = access control (e.g., card reader, ticket machine)
Min. distance Y = 1000
Loop cables can only be connected in master column
DRAWN BY: SH
DATE: 17-1-2019
REF. NO: totaal_lus
DESCRIPTION:
Induction loop dimensions and positioning
PROJECT:
sGate top guided
DRAWING NO:
REV NO: 0
SHEET: 2 v 2

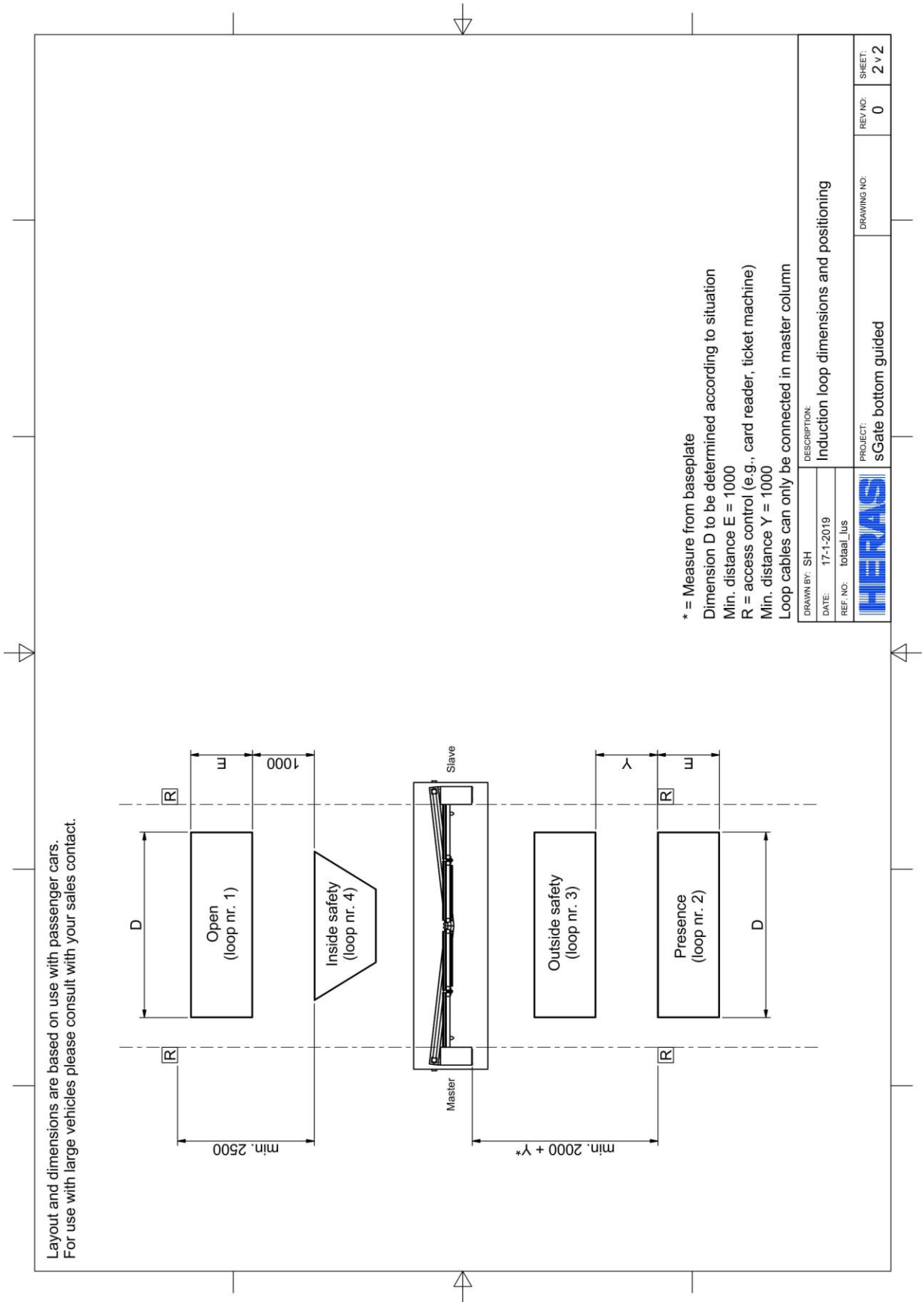
Layout and dimensions are based on use with passenger cars.
For use with large vehicles please consult with your sales contact.

Clear opening (X)	A	B	C
3 m	2000	800	2000
3.5 m	2200	1000	2500
4 m	2400	1200	3000
4.5 m	2600	1400	3500
5 m	2800	1600	4000
5.5 m	3000	1800	4500
6 m	3200	2000	5000

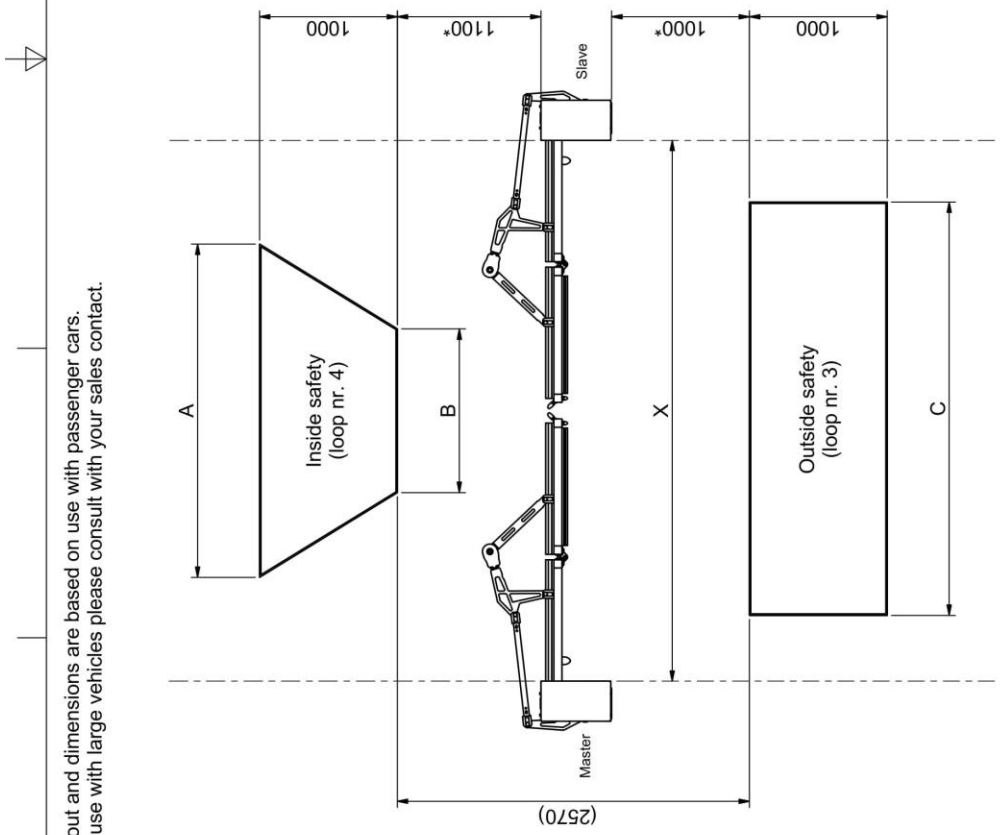


* = Measure from baseplate
Loop cables can only be connected in master column

DRAWN BY: SH	DESCRIPTION: Induction loop dimensions and positioning			
DATE: 17-1-2019				
REF. NO: totaal_lus				
HERAS	PROJECT: sGate bottom guided	DRAWING NO:	REV NO: 0	SHEET: 1 v 2


Layout and dimensions are based on use with passenger cars.
For use with large vehicles please consult with your sales contact.
D
R
E
1000
Open
(loop nr. 1)
Inside safety
(loop nr. 4)
min. 2500
Slave
Master
Outside safety
(loop nr. 3)
Presence
(loop nr. 2)
Y
min. 2000 + Y*
* = Measure from baseplate
Dimension D to be determined according to situation
Min. distance E = 1000
R = access control (e.g., card reader, ticket machine)
Min. distance Y = 1000
Loop cables can only be connected in master column
DRAWN BY: SH
DATE: 17-1-2019
REF. NO: totaal_lus
DESCRIPTION:
Induction loop dimensions and positioning
PROJECT:
sGate bottom guided
DRAWING NO:
REV NO: 0
SHEET: 2 v 2

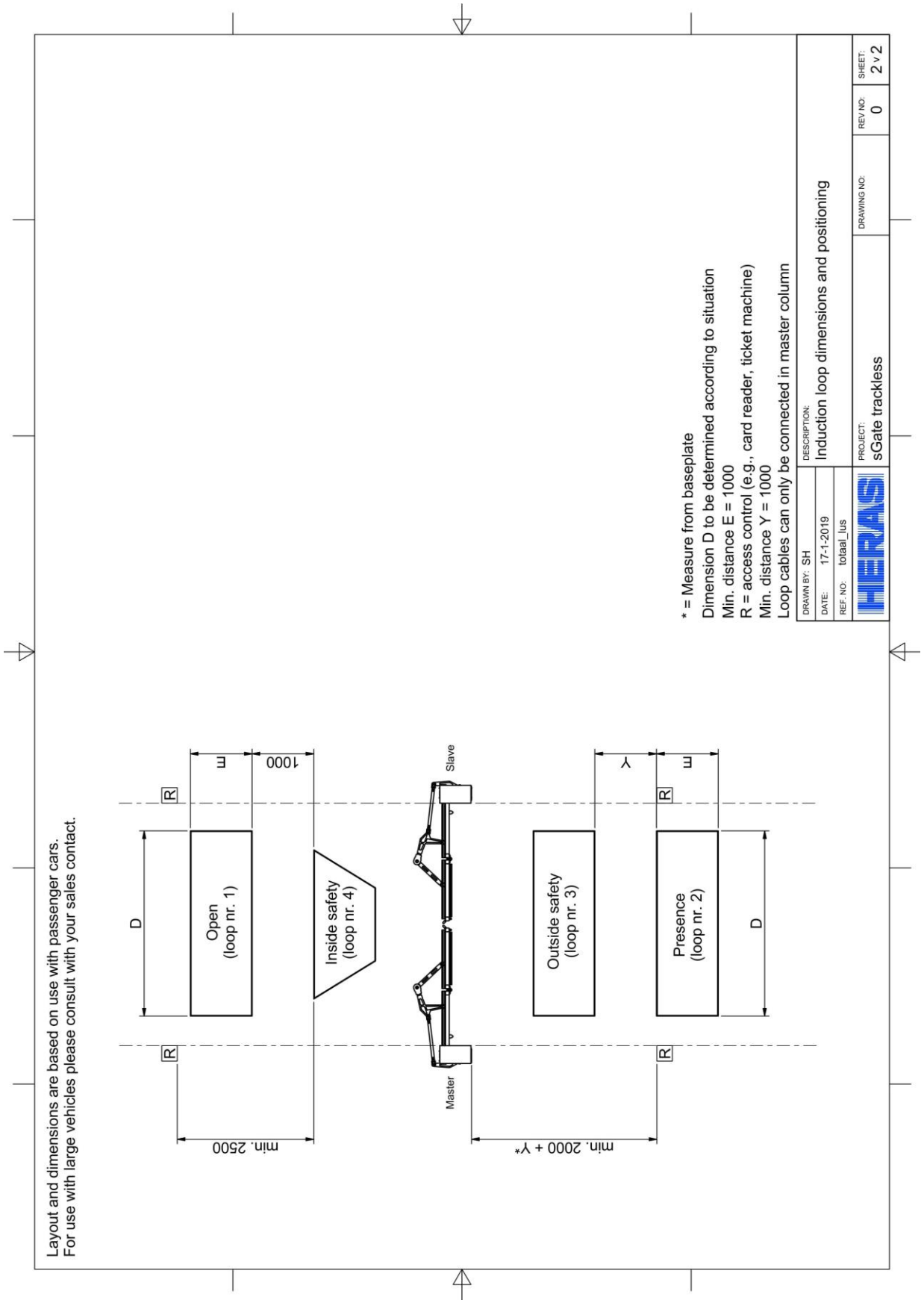
Clear opening (X)	A	B	C
3 m	2000	800	2000
3.5 m	2200	1000	2500
4 m	2400	1200	3000
4.5 m	2600	1400	3500
5 m	2800	1600	4000
5.5 m	3000	1800	4500
6 m	3200	2000	5000
6.5 m	3500	2200	5500
7 m	4000	2400	6000
7.5 m	4500	2600	6500
8 m	5000	2800	7000



* = Measure from baseplate
Loop cables can only be connected in master column

Layout and dimensions are based on use with passenger cars.
For use with large vehicles please consult with your sales contact.

DRAWN BY: SH
DATE: 17-1-2019
REF. NO: totaal_lus
DESCRIPTION: Induction loop dimensions and positioning
PROJECT: sGate trackless
DRAWING NO:
REV NO: 0
SHEET: 1 v 2


Layout and dimensions are based on use with passenger cars.
For use with large vehicles please consult with your sales contact.
R
E
1000
D
Open
(loop nr. 1)
Inside safety
(loop nr. 4)
Slave
Master
Outside safety
(loop nr. 3)
Presence
(loop nr. 2)
Y
min. 2500
min. 2000 + Y*
* = Measure from baseplate
Dimension D to be determined according to situation
Min. distance E = 1000
R = access control (e.g., card reader, ticket machine)
Min. distance Y = 1000
Loop cables can only be connected in master column
DRAWN BY: SH
DATE: 17-1-2019
REF. NO: totaal_lus
DESCRIPTION:
Induction loop dimensions and positioning
PROJECT:
sGate trackless
DRAWING NO:
REV NO: 0
SHEET: 2 v 2

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