CONTROLLER

Intelligent Door Management

Parameter Description

TST WUE2

TST WU2

FEIG

⚠ Attention!

This document belongs to the assembly instruction of the door controller TST WU2-ST and is only in connection with this valid.

The important safety advisories as well as the installation and wiring notes, mentioned in the assembly instruction, must be strictly observed.

The functional description employs the following characters to indicate the different danger areas and useful tips.

⚠ Attention!

indicates a risk to persons if the procedure is not carried out as described.

⚠ Warning!

indicates that the controller is at risk.

points out information which is IMPORTANT to the operation of the gate controller and/or the gate.

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points out information which is useful but not essential for the use of the gate controller.

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1 Door Cycle Counter

P.	[Unit] Range	Function	Description/ Note
P.000 rrr	[Cycles]	cycle counter	The content of this parameter indicates the number of previously counted cycles.

2 Maintenance counter

P.	[Unit] Range	Function	Description/ Note
P.005 rrr	[Cycles]	Maintenance counter	The content of this parameter indicates the number of cycles remaining until maintenance is due. *The setting -1 means that the maintenance counter has not yet been activated.*
P.973 -ww	0 ... 1	Resetting the maintenance counter	By setting this parameter to 1 the maintenance counter is reset.

3 Hold open times / Auto close times

Which Auto close time runs depends on the arrived end position and on the OPEN command used. For each OPEN command you can use Parameter P.5x4 to set separately whether and which Auto close time runs
(X = Number of used input).

P.	[Unit] Range	Function	Description/ Note
P.010 www	[Seconds] 0 ... 9999	Auto close time 1	The door is held in the end position door OPEN for the set time. The door is then automatically closed.
P.011 www	[Seconds] 0 ... 9999	Auto close time 2	The door is held in the end position Intermediate Stop / Partial open for the set time. The door is then automatically closed.

4 Pre-warning time before door movement / Clearance time

P.	[Unit] Range	Function	Description/ Note
P.025 -rr	[Seconds] 0 ... 20	Pre-warning time before closing	The closing move is delayed following receipt of a CLOSE command or after expiration of the auto close time (forced close) by the time specified in this parameter.
P.026 --r	0 ... 1	Pre-warning time before closing from between the end positions	By activating this parameter the pre-warning time runs always before closing, undependend from the input, also between end positions and not only in end position OPEN. The used time is set by P.025. 0: Pre-warning time set by input 1: Pre-warning time always active

5 Oncoming traffic

P.	[Unit] Range	Function	Description/ Note
P.892 -zz	0 ... 1	Oncomming traffic control	With this parameter the oncoming traffic function is activated. If activated the direction imformation of an open command (P.5x6) is used to control the traffic lights and the hold open time. 0: The oncomming traffic function is deactivated. The programmed direction with P.5x6 of relevant commands is not evaluated. Internal the direction is set to "both directions" (P.5x6 = 3). 1: The oncomming traffic function is active. The direction set by P.5x6 is evaluated. Traffic lights and hold open time are influenced by the used direction.

6 Forced closing time

P.	[Unit] Range	Function	Description/ Note
P.012 -ww	[Seconds] 0 ... 200	Forced closing time	The closing starts after the time set with this parameter. The time starts as soon as no opening or closing is active. The hold open time and the clearance time have a higher priority. That means if one of these times is running the forced closing time will not run. The same is if the door or barrier is in the open position by switching on the controller.

7 Selecting the positioning system

P.	[Unit] Range	Function	Description/ Note
P.202 -rr	0 ... 20	Transmission ratio	With this parameter the transmission ratio of the encoder to the motor is set. As faster the drive shaft is as higher has the parameter value to be. *This parameter is only visible in case of TST PD is connected and set as limit switch.*

P.	[Unit] Range	Function	Description/ Note
P.205 -ww	0000 ... 0800	Selecting the positioning system profile	This profile sets the limit switch system. Select from the following settings: 0000: Mechanical limit switches 0001: Mechanical limit switches 0300: Absolute encoder DES-A (GfA) 0700: Absolute encoder DES-B (Kostal) 0800: Absolute encoder TST PD / TST PE *The exact settings which this profile involves can be found in Appendix: Position Sensor Profile.* **In addition, the standard functions of the controller inputs are matched to the limit switch type in use.**

8 End position correction

P.	[Unit] Range	Function	Description/ Note
P.210 -ww	0 ... 5	New teaching of the end positions	This parameter is used to start a new teaching of the end positions. The corresponding end positions are moved to in deadman mode after activating the procedure and saved by holding down the Stop key. Select from the following settings: 0: Cancel, no end positions are taught. 1: Limit switch Lower, limit switch Upper and if appropriate limit switch Intermediate Stop are taught. 2: Limit switch Upper and if appropriate limit switch Intermediate Stop are taught. 3: Limit switch Lower and limit switch Upper are taught. 4: Limit switch Intermediate Stop is taught. 5: All limit switches and the turndirection are taught. *Teaching the Intermediate Stop limit switch depends on the setting in Parameter P.244 (see section Partial Opening / Intermediate Stop).*
P.215 -ww	0 ... 1	Requesting correction of the limit switch bands	If automatic calculation of the limit switch bands (P.216) is activated, this parameter can be used to start a new teaching of the limit switch bands. 0: Make no correction. 1: Start correction of the pre-limit switch and limit switch bands. *Correction of the limit switch bands is only possible if P.216 = 2.*

P.	[Unit] Range	Function	Description/ Note
P.216 --w	0 ... 3	Selecting the ramp setting mode	There are two basic ways to set the steepness of a ramp. The ramp time can be set in milliseconds, or the ramp acceleration can be set in Hz per second. In addition, the limit switch bands are automatically set when Automatic is activated. 0: Ramp times have to be set manuelly (as in earlier door controllers from FEIG ELECTRONIC GmbH). 1: Ramp acceleration has to be set manuelly. 2: Ramp acceleration has to be set and limit switches are automatically set. ⚠ **In case of changing the speed of the door or one of the ramp accelerations the automatically setting of the pre limit switches and limit switch bands will start again.The values set in the corresponding parameters are then overwritten.** 3: like 2, but no automatic correction by reaching the limit too fast (I.100 / I.150) after the teach in was ready one time.

9 CLOSE

⚠ **If automatic setting of the pre-limit switches and limit switch bands is used (P.216 = 2), Parameters P.222 and P.223 are automatically changed.**
The parameters are even changed if the speed of the door or the steepness of a ramp is changed, since this results in a new start of automatic limit switch correction.
If you want to set these ramps manually, P.216 must be < 2.

9.1 End position door close modify

P.	[Unit] Range	Function	Description/ Note
P.221 www	[Increments] -125 ... 125	Correction value End position door CLOSE	This parameter is used to shift 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 causes the end position to shift up. A change in the parameter value in the negative direction causes the end position to shift down.

10 Open

If automatic setting of the pre-limit switch and limit switch bands is used (P.216 = 2), Parameters P.232 and P.233 are automatically changed.
The parameters are even changed if the speed of the door or the steepness of a ramp is changed, since this results in a new start of automatic limit switch correction.
If you want to set these ramps manually, P.216 must be < 2.

10.1 Adjust the end position Door open

P.	[Unit] Range	Function	Description/ Note
P.231 www	[Increments] -60 ... 60	Correction value End position Door OPEN	This parameter is used to shift the entire Door OPEN end position, i.e., the end position is shifted together with the associated pre-limit switches. A change in the parameter value in a positive direction causes the end position to shift up. A change in the parameter value in the negative direction causes the end position to shift down.

11 Incremental encoder / Synchronisation

11.1 Synchronization type

P.	[Unit] Range	Function	Description/ Note
P.25F -ww	0 ... 9	Synchronization type profile	This profile is used to set the reference switches and automatic synchronization mode. 0: Deactivated 1: Synchronization to reference switch in Door CLOSE Endposition. 2: Synchronization to to safety edge. 3: Synchronization to reference switch in Door OPEN endposition. 6: Synchronization to safety edge and then to reference switch in Door OPEN endposition. 9: Manual synchronization to Door CLOSE Endposition and to Door OPEN Endposition. *The exact settings which this profile involves can be found in Appendix: Synchronization Type.*

12 Specialization of safety functions

P.	[Unit] Range	Function	Description/ Note
P.8BA --w	0 ... 4	Specialization of a safety function A to E in operating mode 7	Specialization of a safety function in operating mode 7. When function is activated, after tripping the safety edge during opening, a close command is generated. The behavior after reaching the end position door close can be selected by the control options. 0: Disabled, tripping the safety edge during opening will just stop the door. 1: Door closes after safety is free and opens again when door is closed. 2: Door closes slowly after safety is free and opens again when door is closed. 3: Door closes slowly after safety is free and stops in endposition close. 4: Door closes after safety is free, without opening when door is closed.

13 Light Curtain

P.	[Unit] Range	Function	Description/ Note
A.480	0 ... 1	Application	This parameter activates the Light curtain and automatically sets all the necessary parameters and input functions. 0: Light curtain deactivated 1: Light curtain TST LGB activated.

13.1 TST LGB

P.	[Unit] Range	Function	Description/ Note
P.44A -ww	0,5 ... 10,0	Range	This parameter sets the beam intensity or the door width in increments of 0.5 m.
P.931 rrr		Software version transmitter	Shows the software version of the transmitter.
P.932 rrr		Software version receiver	Shows the software version of the receiver.
P.933 -rr		Serial number transmitter	Displays the serial number of the transmitter.
P.934 -rr		Serial number receiver	Displays the serial number of the receiver.
P.935 -rr	[Digits]	Error bit transmitter	Display the "System error bitmask" of transmitter.
P.936 -rr	[Digits]	Error bit receiver	Display the "System error bitmask" of receiver.

P.	[Unit] Range	Function	Description/ Note
P.937 -ww		Aligning mode	Activation of the alignment mode in the light curtain (LED flashing codes). 0: Alignment mode deactivated. 1: Alignment mode activated.
P.938 -rr		Light line quality	Diagnostic display for commissioning as alignment aid or for troubleshooting purposes. Requires activation of P.937.
P.93C zww		Error counter RS485	The number of faulty protocols of the RS485 interface between the transmitter and the receiver of the light curtain is displayed. *The counter can be reset by holding the Stop key pressed.*

14 Radio safety system

P.	[Unit] Range	Function	Description/ Note
P.92A rrr		Softwareversion FSx mobile unit	Software version of the mobile unit of the wireless safety device.
P.92B rrr		Software version FSx stationary unit	Software version of the stationary unit of the wireless safety device.
P.9F0 -ww	[%] 0 ... 100	Capacity of battery	This parameter shows the actuall capacity of the battery. *In order to set the value back to 100%, e.g. after changing the battery, you have to press the stop key for a long time.*
P.9F1 -rr	[Volt]	Battery voltage of radio safety system	Shows the battery voltage of the mobile unit if the radio safety system.
P.9F2 -rr	[%]	Wireless status	Shows the quality of the radio link to the mobile unit of the radio safety system.
P.F00 -ww	0 ... 1	Activation of the wireless	Activation of the wireless 0: Deactivated 1: Activated
P.F01 -zz	[ms] 6 ... 250	Timeout for the wireless	Defines the time in which the radio safety system is set as tripped in case of an radio interruption.
P.F05 -ww	1 ... 10	Channelgroup	Sets the channel group which the radio safety system is using.

P.	[Unit] Range	Function	Description/ Note
P.F07 -ww	00000000 ... 0FFFFFFF	Address of the mobile unit	Address of the mobile unit with which the wireless security system should communicate **ATTENTION** **After entering the address it is necessary to check whether the controller is connected to and works with the selected mobile unit.** *It is also possible to "learn" the address automatically. To do this, the parameter must be set to - then the mobile unit must be reset by removing the battery. The address is then entered into the parameter and can be saved*
P.F09 -ww	[Volt] 1,2 ... 3,6	Battery nominal voltage	Here the nominal voltage of the battery is put in.
P.FF2 -zz	0 ... 2	Mode output 2	Output mode of the output No. 2 Function is available from software version TST FSx-ST-V00-04.05 of the Stationary unit. 0: Automatic. If a digital Input is linked to this output, the output signal is digital. If a analogoue input or mixed inputs are linked to this output the output signal is analogoue. 1: Analogue output signal 2: Digital output signal

14.1 FSx input profiles

The settings that may be necessary for these profiles are available from the attachments.

P.	[Unit] Range	Function	Description/ Note
A.F00	0000 ... 21BB	FSx Wireless safety system profile	This Profile activates the radio safety system TST FSx and sets configurations for the typical door applications. 0000: No profile set 10BB: Sectional door, WiCab PE_FSBS and FSBM 20AA: Rolling door, WiCab PD_FSAS and FSAM 20BA: Rolling door, WiCab PE_FSBS and FSAM 20BB: Rolling door, WiCab PE_FSBS and FSBM 21AA: Rolling door with breakaway sensor, WiCab PD_FSAS and FSAM 21BA: Rolling door with breakaway sensor, WiCab PE_FSBS and FSAM 21BB: Rolling door with breakaway sensor, WiCab PE_FSBS and FSBM

P.	[Unit] Range	Function	Description/ Note
P.F1F -ww	0000 ... F302	Function input 1	Selection of the Input configuration for the input 1of the FSx unit. 0000: Deactivated F101: Safety edge 8K2 F102: Dynamical optical safety edge F103: Like F101 but takes effect to output 2 of the stationary unit F104: 8K2 safety edge on output 3, for FSA digital put thru of an 8K2 input. F201: Flap door switch digital F202: Flap door switch 8k2 F203: Slack rope switch digital F206: Thermo pill F207: Crank switch F301: Crash impulse switch with handshake F302: crash static
P.F2F -ww	0000 ... F302	Function input 2	Selection of the Input configuration for the input 2 of the FSx unit. 0000: Deactivated F101: Safety edge 8K2 F102: Dynamical optical safety edge F103: Like F101 but takes effect to output 2 of the stationary unit F104: 8K2 safety edge on output 3, for FSA digital put thru of an 8K2 input. F201: Flap door switch digital F202: Flap door switch 8k2 F203: Slack rope switch digital F206: Thermo pill F207: Crank switch F301: Crash impulse switch with handshake F302: crash static
P.F3F -ww	0000 ... F302	Function input 3	Selection of the Input configuration for the input 3 of the FSx unit. 0000: Deactivated F101: Safety edge 8K2 F102: Dynamical optical safety edge F103: Like F101 but takes effect to output 2 of the stationary unit F104: 8K2 safety edge on output 3, for FSA digital put thru of an 8K2 input. F201: Flap door switch digital F202: Flap door switch 8k2 F203: Slack rope switch digital F206: Thermo pill F207: Crank switch F301: Crash impulse switch with handshake F302: crash static

P.	[Unit] Range	Function	Description/ Note
P.F4F -ww	0000 ... F302	Function input 4	Selection of the Input configuration for the input 4 of the FSx unit. 0000: Deactivated F101: Safety edge 8K2 F102: Dynamical optical safety edge F103: Like F101 but takes effect to output 2 of the stationary unit F104: 8K2 safety edge on output 3, for FSA digital put thru of an 8K2 input. F201: Flap door switch digital F202: Flap door switch 8k2 F203: Slack rope switch digital F206: Thermo pill F207: Crank switch F301: Crash impulse switch with handshake F302: crash static *This parameter is visible only in connection with TST FSBM mobile unit.*

14.2 FSx input 1

P.	[Unit] Range	Function	Description/ Note
P.F10 -zz	0 ... 4	Mode input 1	Defines the operation mode of input 1 of the mobile unit. 0: Deactivated 1: Analogue evaluation with 8K2 Ohm 2: Analogue evaluation with 1K2 Ohm 3: Dynamic optical system 4: Digital evaluation
P.F11 -zz	0 ... 2	Safety	This parameter specifies how the input will work after the radio signal is missing. 0: Input active at missing radio signal and always in sleepmode. 1: Input active at missing radio signal 2: The last status of the input is given out (missing radio signal and sleepmode doesn`t change the output)
P.F12 -zz	0 ... 1	Contact type of the input	Specifies the contact type of the switch which is connected to the input. 0: Normally open 1: Normally closed

P.	[Unit] Range	Function	Description/ Note
P.F13 -zz	0 ... 1	Debouncing time	This Parameter determine the debouncing time for the Input 0: Short debouncing time (3 ms) 1: Long debouncing time (30 ms)
P.F16 -zz	1 ... 3	Output	With this parameter the allocation from the input 1 of the mobile unit to the stationary unit is done. 1: Output 1 2: Output 2 3: Output 3
P.F17 -zz	0 ... 2	Direction 1	Drive direction at which the safety, connected on input 1, must be activated (at the moment only for optical systems evaluated). 0: Both directions 1: Door opening 2: Door closing
P.F18 -zz	0 ... 1	Handshake	With this Parameter a Handshake between an input of the mobile unit and an controller input can be activated. If the input of the mobile unit is tripped, the tripping will store and shown as long as the controller has confimed it. Because of this e.g. a crash tripping during switched off controller will not get lost. 0: Handshake deactivated 1: Handshake between input of mobile unit and controller activated. ⚠ **The software version of the mobile unit as well as the the software version of the stationary unit must support this function (from version Vxx-04.04 possible).**
P.F19 -zz	0 ... 70	LCD Messages	Select the LCD Messages which are shown in the Display ℹ *The list of messages can be found in the Appendix LCD Messages*

14.3 FSx input 2

P.	[Unit] Range	Function	Description/ Note
P.F20 -zz	0 ... 4	Mode input 2	Defines the operation mode of input 2 of the mobile unit. 0: Deactivated 1: Analogue evaluation with 8K2 Ohm 2: Analogue evaluation with 1K2 Ohm 3: Dynamic optical system 4: Digital evaluation
P.F21 -zz	0 ... 2	Safety	This parameter specifies how the input will work after the radio signal is missing. 0: Input active at missing radio signal and always in sleepmode. 1: Input active at missing radio signal 2: The last status of the input is given out (missing radio signal and sleepmode doesn`t change the output)
P.F22 -zz	0 ... 1	Contact type of the input	Specifies the contact type of the switch which is connected to the input. 0: Normally open 1: Normally closed
P.F23 -zz	0 ... 1	Debouncing Time	This Parameter determine the debouncing time for the Input 0: Short debouncing time (3 ms) 1: Long debouncing time (30 ms)
P.F26 -zz	1 ... 3	Output	With this parameter the allocation from the input 2 of the mobile unit to the stationary unit is done. 1: Output 1 2: Output 2 3: Output 3
P.F27 -zz	0 ... 2	Direction 2	Drive direction at which the safety is activated (Only for optical systems) 0: Both directions 1: Door opening 2: Door closing

P.	[Unit] Range	Function	Description/ Note
P.F28 -zz	0 ... 1	Handshake	With this Parameter a Handshake between an input of the mobile unit and an controller input can be activated. If the input of the mobile unit is tripped, the tripping will store and shown as long as the controller has confimed it. Because of this e.g. a crash tripping during switched off controller will not get lost. 0: Handshake deactivated 1: Handshake between input of mobile unit and controller activated. *The software version of the mobile unit as well as the the software version of the stationary unit must support this function (from version Vxx-04.04 possible).*
P.F29 -zz	0 ... 70	LCD Messages	Select the LCD Messages which are shown in the Display *The list of messages can be found in the Appendix LCD Messages*

14.4 FSx input 3

P.	[Unit] Range	Function	Description/ Note
P.F30 -zz	0 ... 4	Mode input 3	Defines the operation mode of input 3 of the mobile unit. 0: Deactivated 1: Analogue evaluation with 8K2 Ohm 2: Analogue evaluation with 1K2 Ohm 3: Dynamic optical system 4: Digital evaluation
P.F31 -zz	0 ... 2	Safety	This parameter specifies how the input will work after the radio signal is missing. 0: Input active at missing radio signal and always in sleepmode. 1: Input active at missing radio signal 2: The last status of the input is given out (missing radio signal and sleepmode doesn`t change the output)
P.F32 -zz	0 ... 1	Contact type of the input	Specifies the contact type of the switch which is connected to the input. 0: Normally open 1: Normally closed
P.F33 -zz	0 ... 1	Debouncing time	This Parameter determine the debouncing time for the Input 0: Short debouncing time (3 ms) 1: Long debouncing time (30 ms)

P.	[Unit] Range	Function	Description/ Note
P.F36 -zz	1 ... 3	Output	With this parameter the allocation from the input 3 of the mobile unit to the stationary unit is done. 1: Output 1 2: Output 2 3: Output 3
P.F37 -zz	0 ... 2	Direction 3	Drive direction at which the safety is activated (Only for optical systems) 0: Both directions 1: Door opening 2: Door closing
P.F38 -zz	0 ... 1	Handshake	With this Parameter a Handshake between an input of the mobile unit and an controller input can be activated. If the input of the mobile unit is tripped, the tripping will store and shown as long as the controller has confimed it. Because of this e.g. a crash tripping during switched off controller will not get lost. 0: Handshake deactivated 1: Handshake between input of mobile unit and controller activated. *The software version of the mobile unit as well as the the software version of the stationary unit must support this function (from version Vxx-04.04 possible).*
P.F39 -zz	0 ... 70	LCD Messages	Select the LCD Messages which are shown in the Display *The list of messages can be found in the Appendix LCD Messages*

14.5 FSx input 4

The input 4 of the mobile unit is only possible with TST FSBM. The following parameters are only visible by using this mobile unit.

P.	[Unit] Range	Function	Description/ Note
P.F40 -zz	0 ... 4	Mode input 4	Defines the operation mode of input 4 of the mobile unit. 0: Deactivated 1: Analogue evaluation with 8K2 Ohm 2: Analogue evaluation with 1K2 Ohm 3: Dynamic optical system 4: Digital evaluation

P.	[Unit] Range	Function	Description/ Note
P.F41 -zz	0 ... 2	Safety	This parameter specifies how the input will work after the radio signal is missing. 0: Input active at missing radio signal and always in sleepmode. 1: Input active at missing radio signal 2: The last status of the input is given out (missing radio signal and sleepmode doesn`t change the output)
P.F42 -zz	0 ... 1	Contact type of the input	Specifies the contact type of the switch which is connected to the input. 0: Normally open 1: Normally closed
P.F43 -zz	0 ... 1	Debouncing time	This Parameter determine the debouncing time for the Input 0: Short debouncing time (3 ms) 1: Long debouncing time (30 ms)
P.F46 -zz	1 ... 3	Output	With this parameter the allocation from the input 4 of the mobile unit to the stationary unit is done. 1: Output 1 2: Output 2 3: Output 3
P.F47 -zz	0 ... 2	Direction 4	Drive direction at which the safety is activated (Only for optical systems) 0: Both directions 1: Door opening 2: Door closing
P.F48 -zz	0 ... 1	Handshake	With this Parameter a Handshake between an input of the mobile unit and an controller input can be activated. If the input of the mobile unit is tripped, the tripping will store and shown as long as the controller has confimed it. Because of this e.g. a crash tripping during switched off controller will not get lost. 0: Handshake deactivated 1: Handshake between input of mobile unit and controller activated. *The software version of the mobile unit as well as the the software version of the stationary unit must support this function (from version Vxx-04.04 possible).*
P.F49 -zz	0 ... 70	LCD Messages	Select the LCD Messages which are shown in the Display *The list of messages can be found in the Appendix LCD Messages*

14.6 FSx stationary unit inputs

The stationary inputs are existing only on TST PE FSB stationary unit.

P.	[Unit] Range	Function	Description/ Note
P.FA9 -zz	0 ... 70	LCD- Messages	Select the LCD Messages which are shown in the Display *The list of messages can be found in the Appendix LCD Messages*
P.FB9 -zz	0 ... 70	LCD Messages	Select the LCD Messages which are shown in the Display *The list of messages can be found in the Appendix LCD Messages*
P.FC9 -zz	0 ... 70	LCD Messages	Select the LCD Messages which are shown in the Display *The list of messages can be found in the Appendix LCD Messages*

15 Safety Edges

The following parameters can be set both for integrated safety edge processing as well as for external safety edge processing (optional for different controllers) .Integrated safety edge processing
The controllers have a safety edge processor already on the motherboard.
No additional plug-in cards are necessary.

P.	[Unit] Range	Function	Description/ Note
P.460 --r	0 ... 6	profile internal safety edge	With this profile the parameter´s for the function of the internal safety edge are set. 0: Deactivated 1: Electrical safety edge, redundantly processed, functioning as normally open 2: Electrical safety edge, redundantly processed, functioning as normally closed 3: Electrical safety egde with testing in Door close end position, functioning as normally open 4: Electrical safety egde with testing in Door close end position, functioning as normally closed 5: Dynamic optical system 6: Automatically detection of the connected safety edge. Electrical N.O. edges and dynamic optical systems are recognised automatically. *The exact settings which this profile involves can be found in the Appendix :Safety egde profile*

16 Input profiles

P.	[Unit] Range	Function	Description/ Note
P.501 --w	0000 ... 1804	Function of Input 1	This profile can be used to specify the function of the input. All parameters needed for the function of the input are changed in one step. 0000: Input deactivated 0101: OPEN1, NO contact, OPEN till final position is reached, with hold open time, with clearance time, both directions 0102: OPEN1, NO contact, till intermediate stop, with hold open time, with clearance time, both directions 0103: OPEN lockage, NO contact, till intermediate stop, with hold open time, with clearance time, both directions 0104: OPEN 1, NO contact, till intermediate stop, with hold open time, with clearance time, direction from the outside 0105: OPEN 2, NO contact, OPEN till final position is reached, with hold open time, with clearance time, both directions 0106: OPEN 2, NO contact, OPEN till final position is reached, with hold open time, with clearance time, direction from the inside 0107: OPEN 4, NO contact, OPEN till final position is reached, with hold open time, with clearance time, both directions 0108: OPEN 2, NO contact, till intermediate stop, with hold open time, with clearance time, both directions 0109: OPEN 3, NO contact, till intermediate stop, with hold open time, with clearance time, both directions 0110: OPEN 1, NO contact, OPEN till final position is reached, with hold open time, with clearance time, direction from the outside 0111: OPEN 1, NC contact, OPEN till final position is reached, without hold open time, without clearance time, both directions 0112: OPEN 1, NO contact, OPEN till final position is reached, without hold open time, with clearance time, both directions 0113: OPEN-legitimation, with hold open time, with clearance time *OPEN command will performed if detector channel 1 is active at the same time (P.660 = 7)* 0114: OPEN lockage, not lockabel, NO contact, till final position is reached intermediate stop, with hold open time, with clearance time, direction from the inside 0116: OPEN 1, NO contact, OPEN till final position is reached, without hold open time, with clearance time, direction from the outside

P.	[Unit] Range	Function	Description/ Note
			0117: OPEN 1, NO contact, OPEN till final position is reached, without hold open time, with clearance time, direction from the inside
			0120: OPEN 2, NO contact, OPEN till final position is reached, with hold open time, without clearance time, direction from the inside
			0121: OPEN 1, NO contact, OPEN till final position is reached, with hold open time, without clearance time, direction from the outside
			0124: OPEN 2, NO contact, till intermediate stop, with hold open time, with clearance time, direction from the inside
			0125: OPEN 2, NO contact, OPEN till final position is reached, with hold open time, with clearance time, direction from the inside
			0129: OPEN 2, NO contact, till intermediate stop, with hold open time, with clearance time, direction from the outside
			0165: OPEN 1 may be locked. Special functions for traffic light switching behaviour in end position OPEN (selected by P.7x9> = 5) are ignored
			0180: OPEN 5, deadman travel possible, N.O. contact, OPEN till final position is reached, with hold open time, with clearance time, direction from the inside
			0201: Pull switch, OPEN-> final position-> CLOSE->OPEN, NO contact, 1. Intermediat stop 2. Final position OPEN, with hold open time, with clearance time, both directions
			0202: Pull switch, OPEN-> final position-> CLOSE->OPEN, NO contact, 1. Intermediat stop 2. Final position OPEN, without hold open time, with clearance time, both directions
			0204: Pull switch OPEN-> final position-> CLOSE->OPEN, NO contact, OPEN till final position is reached, without hold open time, with clearance time, both directions
			0205: Pull switch, OPEN-> STOP -> CLOSE->OPEN, NO contact, Final position OPEN, without Hold open time, without clearance time, both directions
			0223: Pull switch, OPEN-> STOP -> CLOSE->OPEN, NO contact, Final position OPEN, with Hold open time, with clearance time, both directions
			0301: Permanent-OPEN, NO contact, 1. Intermediat stop 2. OPEN, without hold open time, without clearance time, both directions
			0302: Permanent-OPEN (summer mode lock), NO contact, OPEN till final position is reached, without hold open time, with clearance time, both directions
			0304: Permanent-OPEN, NO contact, OPEN till final position is reached, without hold open time, without clearance time, no direction
			0401: Stop-command, NC contact
			0402: Stop-command, NO contact
			0403: Stop-command acknowledgement possible, NC contact
			0404: Stop-command acknowledgement possible, NO contact

P.	[Unit] Range	Function	Description/ Note
			0407: Crash impulse as N.O. contact 0411: Crash impulse as N.C. contact 0501: Safety B reversing when CLOSING, NC contact, final position as before, hold open time as before, with clearance time 0502: Safety B reversing when CLOSING, NC contact, final position as before, hold open time as before, with clearance time 0504: Safety B reversing when CLOSING, NC contact, final position as before, at least with hold open time, with clearance time 0505: Safety B reversing when CLOSING, NO contact, final position as before, hold open time as before, with clearance time 0506: Safety B reversing when CLOSING, NC contact, final position as before , at least with hold open time, with clearance time 0507: Safety B reversing when CLOSING, NO contact, final position as before, with hold open time as before, with clearance time 0509: Safety B with reversing when closing, with open holding time, with clearance time 0511: Safety input B with reversing during closing in combination with light Curtain 0520: Safety B: Reversing when CLOSING, NO contact, with testing in end position OPEN 0522: Safety input B: Reversing when OPENING, 8K2 contact, End position as before, with Clearance time *This Function works only with inputs for 8K2 evaluation, e.g. IN10* 0530: Security B reversing during the CLOSING run, normally closed, end position as before, open holding time, as before, with evacuation time, LC message Safety. 0601: Manual operation for OPENING and CLOSING, NO contact 0602: Manual operation for CLOSING, NO contact 0701: CLOSE-command, NO contact, with Clearance time 0703: CLOSE-command which interrups the OPENING and locks CLOSE commands, NO contact, with Clearance time 0704: CLOSE-command which interrups the OPENING, reversing is possible, NO contact, with Clearance time 0713: CLOSE command, N.C., with clearance time 0714: CLOSE command which stops the opening movement, Opening is possible, N.O., with clearance time. 0801: Interlock in final CLOSED position, no dead man move is possible, NO contact 0802: Interlock in final CLOSED position, dead man move is possible, NO contact 0813: Lock in end position CLOSE, stop and then automatic movement to CLOSED position, N.O. contact

P.	[Unit] Range	Function	Description/ Note
			0901: Cross traffic, locking of OPEN 1 and detector 1 commands, NO contact
			0902: Cross traffic, locking of OPEN 2 and detector 2 commands, NO contact
			0903: Cross traffic, locking of OPEN 1 and OPEN 2 as well as detector 1 and detector 2 commands, NO contact
			1001: Disable hold open time, NO contact
			1002: Disable lockage, NO contact
			1003: Disable intermediate stop, NO contact
			1004: Disabled detector commands from the direction outside, NO contact
			1005: Deactivation of detector open and close commands, the safety function of the detector remains active.
			1101: Pre-limit switch light barrier, NO contact
			1102: Limit switch intermediate stop, NO contact
			1103: Pre-limit switch intermediate stop, NO contact
			1104: Pre-limit switch safety edge, NO contact
			1105: Pre-limit switch safety edge, NC contact
			1110: Pre-limit switch door OPEN, NC contact
			1111: Limit switch door CLOSE, NC contact
			1114: Crash switch, NO contact
			1116: Limit switch door CLOSE, NO contact
			1401: Safety A, stop during CLOSING, NC contact
			1402: Safety A, reversing when CLOSING, NC contact, final position as before, hold open time as before, with clearance time
			1403: Safety A, stop when CLOSING after release, move continues when CLOSED, NC contact, with Clearance time
			1404: Safety A, stop when OPENING and CLOSING, NC contact
			1405: Safety A, stop when OPENING and CLOSING, after release, the CLOSING move continues until CLOSED, NC contact, with Clearance time
			1406: Safety A, reversing when OPENING, NC contact, final position as before, hold open time as before, with clearance time
			1407: Safety A, stop when OPENING, NC contact
			1408: Safety A, pull-in protection, stop when OPENING, then only dead man CLOSING possible, NC contact, final position as before, auto-close time as before, without clearance time
			1418: Safety A, stop when OPENING or CLOSING, N.C. contact
			1420: Safety A, reversing when CLOSING, 8K2 contact, Final position as before, with clearance time *This Function works only with inputs for 8K2 evaluation, e.g. IN10*
			1422: Safety A, reversing when OPENING, 8K2 contact, End position as before, with clearance time *This Function works only with inputs for 8K2 evaluation, e.g. IN10*
			1501: Simulation foil key pad OPEN
			1502: Simulation foil key pad CLOSE
			1506: Simulation foil key pad STOP

P.	[Unit] Range	Function	Description/ Note
			1612: Safety C when OPENING, free ride as long as input is active, 8K2 contact, Final position OPEN, without Clearance time *This Function works only with inputs for 8K2 evaluation, e.g. IN10* 1613: Safety C, reversing when CLOSING, 8K2 contact, End position as before, with Hold open time, with Clearance time *This Function works only with inputs for 8K2 evaluation, e.g. IN10* 1624: Safety C, Safety durng OPENING: reversing in CLOSE- direction during automatic OPENING, Stop during dead man OPENING, no reaction during CLOSING, N. C. contact, endposition as before, hold open time as before, with clearance time 1701: Driving to intermediate stop / partial open from each position, NO contact, with Hold open time, with Clearance time, both directions 1801: External detector channel 1 *To adjust the detector the parameters P.66x are used* 1802: External detector channel 2 *To adjust the detector the parameters P.67x are used* 1803: External detector channel 3 *To adjust the detector the parameters P.6Cx are used* 1804: External detector channel 4 *To adjust the detector the parameters P.6Dx are used* *The exact settings which this profile involves can be found in Chapter "Overview of Input Profiles"*
P.502 --w	0000 ... 1804	Function of Input 2	see P.501
P.503 --w	0000 ... 1804	Function of Input 3	see P.501
P.504 --w	0000 ... 1804	Function of Input 4	see P.501
P.505 --w	0000 ... 1804	Function of Input 5	see P.501
P.506 --w	0000 ... 1804	Function of Input 6	see P.501
P.507 --w	0000 ... 1804	Function of Input 7	see P.501
P.508 --w	0000 ... 1804	Function of Input 8	see P.501
P.509 --w	0000 ... 1804	Function of Input 9	see P.501
P.50A --w	0000 ... 1804	Function of Input 10	see P.501

16.1 Input profiles with expansion board

The expansion board is activated by P.800

The expansion board can not be used with all controllers.

P.	[Unit] Range	Function	Description/ Note
P.A01 --w	0000 ... 1804	Function of Input 21	see P.501
P.A02 --w	0000 ... 1804	Function of Input 22	see P.501
P.A03 --w	0000 ... 1804	Function of Input 23	see P.501
P.A04 --w	0000 ... 1804	Function of Input 24	see P.501
P.A05 --w	0000 ... 1804	Function of Input 25	see P.501
P.A06 --w	0000 ... 1804	Function of Input 26	see P.501
P.A07 --w	0000 ... 1804	Function of input 27	see P.501
P.A08 --w	0000 ... 1804	Function of input 28	see P.501

16.2 OPEN commands P.5x0 / P.Ex0 / P.Ax0 = 1

Parameter P.5x0 / P.Ex0 / P.Ax0 must be set to 1 in order to activate the basic function OPEN command for this input.

X = number of the input you wish to configure

P.	[Unit] Range	Function	Description/ Note
P.893 -zz	0 ... 1	Executing open commands while closing	While the door is closing, open commands can be ignored and repeated when it reaches the closed position 0: An open command that is issued when closing reverses the door when it has opened (except for specially configured close commands, e.g. for barriers) 1: An open command that is issued when closing does not reverse the door, the open command is repeated when reaching the lower final position

17 Output Profiles

P.	[Unit] Range	Function	Description/ Note
P.701 --w	0000 ... 2501	Function of Output 1	The function of the output relay can be specified using this profile. All parameters needed for the function of the output are changed in one step. 0000: Output deactivated 0001: Continuously turned on 0101: Door is Open *The message depends on the logical status of the door* 0103: Door is Open *The message depends on the position of the door* 0201: Door is Closed *The message depends on the logical status of the door* 0203: Door is Closed *The message depends on the position of the door* 0501: Courtyard light function, switched ON during opening and closing with 10 s switch off delay after closing. 0601: Passing on detector channel 1 0602: Passing on detector channel 2 0605: Synchronous control OPEN, signal duration 0.5 seconds. The output is active during opening, in End position OPEN and during locking in end open position. 0606: Synchronous control CLOSE, signal duration 0.5 seconds. The output is active during Closing, in End position Close and during locking in end position close. 0607: Synchronous control STOP, signal duration 0.5 seconds. The output is active when the door is not moving, no end position is approached and no locking in any end position is active. 0612: Passing on leaving detector 1 0613: Passing on leaving detector 2 0634: Forwarding, of an low Battery from the WiCab mobile Unit 0701: Flashing during opening and closing 0703: Switched on during Opening and Closing 0801: Active during opening and closing and during active pre-warning / clearance time. 1001: Locking second door 1002: Locking second door, 1 s switch off delay 1101: Magnet voltage in end position CLOSE **The N.C. contact of the relay has to be used** 1102: Magnet voltage during Closing and in end position CLOSE 1201: Green traffic light on inside of door 1210: Green traffic light on outside of door

P.	[Unit] Range	Function	Description/ Note
			1220: Red traffic light on inside of door 1 1221: Flashing red traffic light on inside of door 1 1222: Red traffic light on inside of door 2 1223: Flashing red traffic light on inside of door 2 1224: Red traffic light on inside of door 1232: Red traffic light on inside 1233: Red traffic light on inside, inverted 1250: Red traffic light on outside of door 1, flashing during clearance time 1251: Flashing red traffic light on outside of door 1 1252: Red traffic light on outside of door 2 1253: Flashing red traffic light on outside of door 2 1255: Red traffic light on outside of door 1263: Red traffic light on outside 1264: Red traffic light on outside, inverted 1295: Green traffic light, flashing during pre-warning / clearance time, ON in end position OPEN 1298: Direction dependent red traffic light. On for opening and closing movement. Off when CLOSED and when OPEN. Flashes during evacuation time 1601: Airlock OPEN 1701: Testing in end position close 1801: Counting + *The function is only possible with detectors 1 and 2. At first you have to activate the + loop and then the - loop.* 1901: Counting - *The function is only possible with detectors 1 and 2. At first you have to activate the - loop and then the + loop.* 2001: Warning light 1, always ON if door is not closed. 2101: Warning light 2, switched ON during closing 2201: Active green traffic light, ON in endposition OPEN until a close command is given or detector 2 gets active. 2301: Active green traffic light, ON in endposition OPEN until a close command is given or detector 1 gets active. 2501: Testing in endposition OPEN *The exact settings which this profile involves can be found in Apendix Output Profile.*
P.702 --w	0000 ... 2501	Function of Output 2	see P.701 or P.704
P.70F --w	0000 ... 2501	Function of output 15	see P.701 or P.704

17.1 Door profiles with expansion card

P.	[Unit] Range	Function	Description/ Note
P.703 --w	0000 ... 2501	Function of output 3	see P.701 or P.704

P.	[Unit] Range	Function	Description/ Note
P.704 --w	0000 ... 2501	Function of Output 4	see P.701 or P.704
P.705 --w	0000 ... 2501	Function of Output 5	see P.701 or P.704
P.706 --w	0000 ... 2501	Function of Output 6	see P.701 or P.704

18 Output parameterizing

Any desired function can be set for each output on the door controller.
You can set the function either by selecting an output profile or individually using the following Parameters.

X = number of the output you wish to configure

19 Airlock function

An airlock consists of two doors. These are locked against each other so that only one door can be opened at same time. In addition, after the first door has been closed, an OPEN command is sent to the second gate via an interface. This means that OPEN command switches can be saved inside the airlock.

An OPEN command is issued at the first door. The input of the OPEN command must have the direction "from outside". When the airlock function is activated, the airlock operation is initiated.
The first door opens, the hold-open time expires and the door closes again. While the door is opened, the second door is locked in the end position door CLOSED.
The locking of the second door can optionally be canceled by pressing the stop button on the locked door in order to deliberately deactivate the airlock for one operation.
After reaching the end position door CLOSED, the interlock of the second door is released again and, in addition, an OPEN command is issued to the second door.
Optionally, it is also possible to activate a drive through detection by means of a light barrier. If no vehicle enters the airlock, the process is interrupted.
This door will now be opened and closed again. The airlock operation is now complete.
If the second door can not open, e.g. by an actuated EMERGENCY STOP, the first door re-opens to allow the person or vehicle inside the airlock to exit the airlock.

P.	[Unit] Range	Function	Description/ Note
A.830	0000 ... 0300	Airlock mode	This parameter specifies the mode of the airlock system. 0000: Airlock deactivated 0100: Simple airlock, the second door will lock, no open commands given to the second door 0200: Comfortable airlock, locking and open commands are given to the second door. 0300: Comfortable airlock with drive thru recognisation

20 Diagnostics display

P.	[Unit] Range	Function	Description/ Note
P.910 -ww	0 ... 24	Display mode selection	With the aid of this parameter you can show the variables listed below in the display of the door controller. The following variables are displayed 0: The control sequence is displayed (Automatic) 8: [s] The run-time of the motor during the last door operation 9: [Increments] The current position 10: [Increments] The position of the reference 11: [Dig] Channel 1 value of the absolute encoder 12: [Dig] Channel 2 value of the absolute encoder 16: Transmission ratio from motor to encoder during opening 17: Transmission ratio from motor to encoder during closing 21: Number of position requisition without answere from encoder 22: Number of wrong received signs in TST PD encoder (activates also the output in P.955) 23: Radio quality of the wireless safety device in %. 24: Number of errors of the wireless safety device during the last door drive.
P.912 --r		Diagnoses of safety chain	This Parameter shows information that can be helpful to find a problem in the safety chain.

21 Error Memory

P.	[Unit] Range	Function	Description/ Note
P.920 rww		Error Memory	The controller stores the last eight errors in the error memory. After opening Parameter P.920: - Change level using OPEN and CLOSE keys - Opening the error memory with the STOP key - Closing the error memory with the STOP key - Exiting Parameter P.920 with Eb - *Er- in the display means that no error was entered.*

22 Software Version

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

23 Door run-Time

P.	[Unit] Range	Function	Description/ Note
P.930 -rr	[Seconds]	Motor run-time	In this parameter the time required for the last drive operation is stored.

24 Activation of the Expansion Board

P.	[Unit] Range	Function	Description/ Note
P.802 -ww	0000 ... 0302	Function of the expansion slot	This parameter defines the hardware that was inserted into the expansion slot. 0000: Expansion slot deactivated 0102: Activation of safety edge modules TST SUKS-A or TST SSKS-A **⚠ATTENTION** **With this modul you cannot test directly before a door movement (Parameter P.40D>0)** 0302: Detector activated

25 Operating Mode of the Controller

P.	[Unit] Range	Function	Description/ Note
P.894 --w	0 ... 1	Automatic open command	This parameter can be used to generate an automatic OPEN command if the door has not reached the end position CLOSED. 0: No automatic open command 1: Automatically open command if end position CLOSED has not been reached *This function is only active if the operating mode automatic (P.980 = 0) or semi-automatic (P.980 = 1) has been set.*

P.	[Unit] Range	Function	Description/ Note
P.980 -ww	0 ... 4	Operating mode	This parameter is used to set the operating mode for the controller. The following modes are possible: 0: OPEN and CLOSE move in self-holding (Automatic) 1: OPEN move in self-holding, CLOSE move in manual mode (partial automatic) 2: OPEN and CLOSE move in Manual mode (deadman) 3: Deadman emergency operation **ATTENTION** **All safety devices and limit switches are ignored.** *After turning off the controller, the controller changes in the operating mode "deadman"* 4: Endurance test with safety devices Automatic OPEN and CLOSE operation. Before each new operation the hold-open time P.010 is in effect. *The endurance test setting is lost after turning off the controller. The controller then reverts to manual mode.*

26 Password

The password is not setable on the customer level

P.	[Unit] Range	Function	Description/ Note
P.999 www	0000 ... FFFF	Password	The password provides access to the various parameter levels. **There are different parameters visible depending on the password level.** **A changing of parameters without to know there functionality is forbidden.** **In order to avoid failure and endangering because of unauthorized access passwords are only allowed to give to trained staff.**

27 Factory Setting / Defaults

P.	[Unit] Range	Function	Description/ Note
P.990 -zz	0 ... 1	Factory setting	By setting and saving this parameter all parameter values are restored. 1: Load parameter set, which are adjusted ex works

28 Virtual key switch

The function simulates a virtual key switch so that no additional hardware is required. To activate the switch, a time is set via parameter P.032. After the time has elapsed, the controller stays locked in the endposition. No more drive is possible. If the key switch is not active, ``LOCK´´ remains on the display until a time is activated again.

P.	[Unit] Range	Function	Description/ Note
P.032 www	[minutes] 0 ... 99	Timer virtual key switch	0 = Time of the timer has expired. The gate stands and is locked against opening and closing. Values> 0 indicate the time in minutes during which the gate can be operated. *This parameter is only available, if you set P.841 = 1.*

29 Breakaway-function

In case of an tripped breakaway input the breakaway counter will count up by 1.
In case of breakaway only dead man move is possible. The breakaway error must be resetet manually.

P.	[Unit] Range	Function	Description/ Note
P.871 rrr		Breakaway counter	This parameters shows the number of counted crashes.

30 Parameter Summary

P.	Function	Default	Changed of: at:	Page
A.480	Application	0		11
A.830	Airlock mode	0000		33
A.F00	FSx Wireless safety system profile	0000		13
P.000	cycle counter	ND [Cycles]		5
P.005	Maintenance counter	ND [Cycles]		6
P.010	Auto close time 1	10 [Seconds]		6
P.011	Auto close time 2	10 [Seconds]		6
P.012	Forced closing time	0 [Seconds]		7
P.025	Pre-warning time before closing	0 [Seconds]		6
P.026	Pre-warning time before closing from between the end positions	0		6
P.032	Timer virtual key switch	0 [minutes]		37
P.202	Transmission ratio	ND		7
P.205	Selecting the positioning system profile	ZW		8
P.210	New teaching of the end positions	5		8
P.215	Requesting correction of the limit switch bands	0		8
P.216	Selecting the ramp setting mode	3		9
P.221	Correction value End position door CLOSE	0 [Increments]		9
P.231	Correction value End position Door OPEN	0 [Increments]		10
P.25F	Synchronization type profile	ND		10
P.44A	Range	4,0		11
P.460	profile internal safety edge	6		22
P.501	Function of Input 1	0101		23
P.502	Function of Input 2	0401		27
P.503	Function of Input 3	0701		27
P.504	Function of Input 4	0201		27
P.505	Function of Input 5	0501		27
P.506	Function of Input 6	ND		27
P.507	Function of Input 7	ND		27
P.508	Function of Input 8	ND		27
P.509	Function of Input 9	ND		27
P.50A	Function of Input 10	ND		27
P.701	Function of Output 1	0101		30
P.702	Function of Output 2	0201		30
P.703	Function of output 3	1220		30
P.704	Function of Output 4	1201		30
P.705	Function of Output 5	1250		30
P.706	Function of Output 6	1210		30
P.70F	Function of output 15	0001		30
P.802	Function of the expansion slot	0000		35
P.871	Breakaway counter	ND		37
P.892	Oncomming traffic control	1		7
P.893	Executing open commands while closing	0		29
P.894	Automatic open command	0		35
P.8BA	Specialization of a safety function A to E in operating mode 7	0		11
P.910	Display mode selection	0		34
P.912	Diagnoses of safety chain	ND		34
P.920	Error Memory	0		34

P.	Function	Default	Changed of: at:	Page
P.925	Software Version	ND		35
P.92A	Softwareversion FSx mobile unit	ND		12
P.92B	Software version FSx stationary unit	ND		12
P.930	Motor run-time	ND [Seconds]		35
P.931	Software version transmitter	ND		11
P.932	Software version receiver	ND		11
P.933	Serial number transmitter	ND		11
P.934	Serial number receiver	ND		11
P.935	Error bit transmitter	ND [Digits]		11
P.936	Error bit receiver	ND [Digits]		11
P.937	Aligning mode	0		12
P.938	Light line quality	ND		12
P.93C	Error counter RS485	0		12
P.973	Resetting the maintenance counter	0		6
P.980	Operating mode	ND		36
P.990	Factory setting	0		37
P.999	Password	0000		36
P.9F0	Capacity of battery	0 [%]		12
P.9F1	Battery voltage of radio safety system	ND [Volt]		12
P.9F2	Wireless status	ND [%]		12
P.A01	Function of Input 21	0104		28
P.A02	Function of Input 22	0901		28
P.A03	Function of Input 23	0502		28
P.A04	Function of Input 24	0107		28
P.A05	Function of Input 25	0109		28
P.A06	Function of Input 26	1002		28
P.A07	Function of input 27	0106		28
P.A08	Function of input 28	0802		28
P.F00	Activation of the wireless	0		12
P.F01	Timeout for the wireless	50 [ms]		12
P.F05	Channelgroup	1		12
P.F07	Address of the mobile unit	00000000		13
P.F09	Battery nominal voltage	3,6 [Volt]		13
P.F10	Mode input 1	0		15
P.F11	Safety	2		15
P.F12	Contact type of the input	0		15
P.F13	Debouncing time	1		16
P.F16	Output	1		16
P.F17	Direction 1	0		16
P.F18	Handshake	0		16
P.F19	LCD Messages	0		16
P.F1F	Function input 1	0000		14
P.F20	Mode input 2	0		17
P.F21	Safety	2		17
P.F22	Contact type of the input	0		17
P.F23	Debouncing Time	1		17
P.F26	Output	1		17
P.F27	Direction 2	0		17
P.F28	Handshake	0		18
P.F29	LCD Messages	0		18
P.F2F	Function input 2	0000		14
P.F30	Mode input 3	0		18
P.F31	Safety	2		18
P.F32	Contact type of the input	0		18
P.F33	Debouncing time	1		18

P.	Function	Default	Changed of: at:	Page
P.F36	Output	1		19
P.F37	Direction 3	0		19
P.F38	Handshake	0		19
P.F39	LCD Messages	0		19
P.F3F	Function input 3	0000		14
P.F40	Mode input 4	0		19
P.F41	Safety	2		20
P.F42	Contact type of the input	0		20
P.F43	Debouncing time	1		20
P.F46	Output	1		20
P.F47	Direction 4	0		20
P.F48	Handshake	0		20
P.F49	LCD Messages	0		20
P.F4F	Function input 4	0000		15
P.FA9	LCD- Messages	0		21
P.FB9	LCD Messages	0		21
P.FC9	LCD Messages	0		21
P.FF2	Mode output 2	0		13

31 LCD-Messages

For each input of the controler a text message can be set, that appears on the LCD display when the input is triggered.

For the following inputs, the LCD message can be changed from the standard LCD text to an optional LCD message:

31.1 LCD text

31.2 Selectable LCD text messages:

No.	Description	English	German	French	Spanish
1	Open	Open	Auf	Ouvert	Abrir
2	Open outside	Open extern	Auf extern	Ouvert extern	Abrir externa
3	Open inside	Open intern	Auf intern	Ouvert intern	Abrir interna
4	Single channel	Pull Switch	Einkanal	Sequentiel	Un Canal
5	Permanent open	Perm. Open	Dauerauf	Ouv Perm	Perm. Abierto
6	Stop	Stop	Stopp	Stop	Parar
7	Light beam	Photoeye	Lichtschranke	Cellule	Barrera Luz
8	Dead man mode	Deadman	Totmann	Hommort	Hombre M.
9	Close	Close	Zu	Ferm.	Cerrar
10	Locked close	Locked Closed	Verrieg. EU	VerrPosBas	Cerrado bloq.
11	Cross traffic	Cross Traffic	Querverkehr	Trafic trans.	Trafic.trans
12	Deactivation	Deactivation	Abschaltung	Deactivation	Desactivacion
13	Limit switch	Limit Switch	Endschalter	FdC	Lim.F.Carrera
14	Radar	Radar	Radardetektor	Detect radar	Radar
15	OBID-Card	OBID Card	OBID-Karte	Carte OBID	OBID Tarjeta
16	Emergency stop - thermo switch	E-Stop Ext 1	Thermo-Pille	Sonde T° Mot	Alto-E Ext 1
17	Emergency stop - slackrope switch	E-Stop Ext 2	Schlaffseil	MouCab	Alto-E Ext 2
18	Key switch	Keyswitch	Schlüsselsch.	Int a clef	Inter.d.llave
19	Pre limit switch light beam	PreLimitPhoto	VorendLi-schr	FdCDesacCell	Prelimit.Foto

20	Pre limit switch safety edge	PreLimit Edge	Vorend SiLei	FdCDesacLdS	Prelim.Banda
21	Pre limit switch open	PreLimit Open	Vorend Oben	2FdCHaut	Prelimit.sup
22	Pre limit switch intermediate stop	PreLimIntern.	VorendZw.halt	FdCPart	Prelim.inter.
23	Pre limit switch close	PreLimitClose	Vorend Unten	2FdCBas	Prelimit.Cr.
24	Limit switch open	Limit Open	Endsch. Oben	FdCHaut	Limite Abier.
25	Limit switch intermediate stop	LimitIntermed	EndschZw.halt	FdCPart	Limite.Inter.
26	Limit switch close	Limit Close	Endsch. Unten	FdCBas	Limite Cerr.
27	Reference switch	Reference	Referenz	PointDeRef.	Referencia
28	Locking in intermediate stop 2	Locked Interm	Verrieg. E2	Verr.E2	Locked Interm
30	Locking close speed	Locked Cspeed	Verrieg. Cs	VerrVitFerm	Cerrado bloq.
31	Feed rentention	Feed Retent.	Einzugsich.	Feed Retent.	Feed Retent.
32	Pull switch inside	Pull Swit.int	Eink. innen	Un canal int	Un Canal int
33	Pull switch outside	Pull Swit.ext	Eink. extern	Un canal ext	Un Canal ext
36	Crash	Crash	Crash	Crash	Crash
44	Obstacle detection	Obstacle	Hindernis	Obstacle	Obstacle
49	Personnel door switch	Escape door	Schlupftür	Portillon	Deslizamiento
50	Autoclose off	AutoClose Off	Zeitschl. aus	Temp.Ouv.Des.	Apagad.autom.
51	Emergency stop - Slack rope switch	E-Stop Ext	Schlaffseil	MouCab	Alto-E Ext
52	Safety Edge	Edge Tripped	Leiste Ausl.	LdS	Barra Infer
53	Emergency crank	Emerg.Crank	Not-Handbed.	Deverrou.	Maniv.Emerg
54	Thermo switch	Thermo Switch	Thermopille	Sonde T° Mot	Int.Termico
56	Deactivation intermediate stop	PartialOpnOff	Zwischenh.Aus	Ouv.Part.Des.	AperParclOff
58	E-Locked	Stop E-Lock	Stop E-Verr.	Verr-E.Stop	Stop E-Bloq
59	Light curtain danger zone	Safety	Sicherheit	Securite	Safety
60	Light curtain occupied	Object	Hindernis	Opstacle	Object

Parameter A.480

A.480	Unit	0	1
P.201	-	NS	1
P.210	-	NS	5
P.218	-	NS	1
P.253	-	NS	2
P.270	-	NS	3
P.271	-	NS	0
P.275	[Increments]	NS	0
P.433	-	0	5
P.447	-	NS	46
P.448	-	NS	5
P.449	-	NS	0
P.44A	-	NS	ZW
P.460	-	NS	1
P.461	-	NS	0
P.469	-	NS	59
P.46F	-	NS	1
P.4A0	-	NS	NS
P.4A1	-	NS	NS
P.4A4	-	NS	NS
P.4A8	-	NS	NS
P.4B0	-	NS	0
P.4B1	-	NS	0
P.4B4	-	NS	0
P.4B8	-	NS	0
P.4D1	-	NS	3
P.4D6	-	NS	1
P.4D9	-	NS	0
P.505	-	0501	0530
P.50A	-	1001	NS

Parameter A.830

A.830	Unit	0000	0100	0200	0300
P.017	[Seconds]	NS	60	60	60
P.030	[Seconds]	NS	NS	NS	NS
P.505	-	NS	NS	NS	0501
P.506	-	NS	NS	0302	0302
P.508	-	NS	0801	NS	NS
P.702	-	NS	1002	1002	1002
P.800	-	NS	1	1	1
P.830	-	0	NS	1	2
P.831	-	NS	NS	1	1
P.A01	-	NS	NS	0104	0104
P.A08	-	NS	NS	0801	0801

Parameter A.F00

A.F00	Unit	0000	10BB	20AA	20BA	20BB	21AA	21BA	21BB
P.200	-	NS	8	8	8	8	8	8	8
P.460	-	NS	1	1	1	1	1	1	1
P.465	-	0	1	1	1	1	1	1	1
P.47B	-	0	0	0	0	0	0	0	0
P.509	-	NS	NS	NS	NS	NS	0411	0411	0411
P.51F	-	0	NS	NS	NS	NS	NS	NS	NS
P.58F	-	0	NS	NS	NS	NS	NS	NS	NS
P.59F	-	0	NS	NS	NS	NS	2	2	2
P.5AF	-	0	NS	NS	NS	NS	NS	NS	NS
P.601	-	0	NS	NS	NS	NS	NS	NS	NS
P.602	-	0	3	NS	3	3	NS	3	3
P.F00	-	0	1	1	1	1	1	1	1
P.F07	-	NS	00000 000	00000 000	00000 000	00000 000	00000 000	00000 000	00000 000
P.F1F	-	0000	F203	0000	0000	0000	F301	F301	F301
P.F2F	-	0000	0000	0000	0000	0000	0000	0000	0000
P.F3F	-	0000	F102	F102	F102	F102	F102	F102	F102
P.F4F	-	0000	F203	0000	0000	0000	0000	0000	0000
P.FA9	-	NS	16	NS	16	16	NS	16	16
P.FB9	-	NS	53	NS	53	53	NS	53	53
P.FC9	-	NS	0	0	0	0	0	0	0

Parameter P.25F

P.25F	Unit	0	1	2	3	6	9
P.253	-	0	0	0	0	0	0
P.270	-	0	1	3	0	3	0
P.271	-	0	1	1	0	1	1
P.273	[Seconds]	5	5	5	5	5	5
P.280	-	0	0	0	1	1	0
P.281	-	0	0	0	1	1	1
P.283	[Seconds]	5	5	5	5	5	5

Parameter P.205

P.205	Unit	0000	0001	0300	0700	0800
P.200	-	0	0	3	7	8
P.202	-	0	0	0	0	13
P.25F	-	0	0	0	0	0
P.506	-	1104	1104	NS	NS	NS
P.507	-	1102	1102	NS	NS	NS
P.508	-	1110	1110	NS	NS	NS
P.509	-	1111	1111	NS	NS	NS
P.980	-	2	2	0	0	0

Parameter P.460

P.460	Unit	0	1	2	3	4	5	6
P.467	-	0	0	0	0	0	0	0
P.46D	-	0	0	0	1	1	0	0
P.46F	-	0	1	2	1	2	3	-1

Parameter P.470

P.470	Unit	0101	0102	0104
P.471	-	3	3	3
P.472	-	0	0	0
P.473	-	4	4	4
P.474	-	4	4	4
P.475	-	0	0	0
P.477	-	0	0	9
P.479	-	0	0	0
P.47A	-	1	1	1
P.47D	-	0	1	0
P.47E	-	E	E	E
P.47F	-	1	1	1

Parameter P.50x

P.50x	Unit	0000	0101	0102	0103	0104	0105	0106	0107	0108	0109
P.5x0	-	0	1	1	1	1	1	1	1	1	1
P.5x1	-	0	0	0	5	0	1	1	3	1	2
P.5x2	-	0	0	0	0	0	0	0	0	0	0
P.5x3	-	0	0	1	1	1	0	0	0	1	1
P.5x4	-	0	1	1	1	1	1	1	1	1	1
P.5x5	-	0	1	1	1	1	1	1	1	1	1
P.5x6	-	0	3	3	3	1	3	2	3	3	3
P.5x7	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x8	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x9	-	0	1	1	1	2	1	3	1	1	1
P.5xA	-	0	0	0	0	0	0	0	0	0	0

P.50x	Unit	0110	0111	0112	0113	0114	0116	0117	0120	0121	0124
P.5x0	-	1	1	1	1	1	1	1	1	1	1
P.5x1	-	0	0	0	6	5	0	0	1	0	1
P.5x2	-	0	1	0	0	0	0	0	0	0	0
P.5x3	-	0	0	0	0	1	0	0	0	0	1
P.5x4	-	1	0	0	1	1	0	0	1	1	1
P.5x5	-	1	0	1	1	1	1	1	0	0	1
P.5x6	-	1	3	3	3	2	1	2	2	1	2
P.5x7	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x8	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x9	-	2	0	1	1	1	1	1	1	2	3
P.5xA	-	0	0	0	0	0	0	0	0	0	0

P.50x	Unit	0125	0129	0165	0180	0201	0202	0204	0205	0223	0301
P.5x0	-	1	1	1	1	2	2	2	2	2	3
P.5x1	-	1	1	18	4	2	2	2	4	4	0
P.5x2	-	0	0	1	0	0	0	0	0	0	0
P.5x3	-	0	1	0	0	2	3	0	0	0	2
P.5x4	-	1	1	2	1	1	0	0	0	1	0
P.5x5	-	1	1	0	1	1	1	1	0	1	0
P.5x6	-	2	1	3	2	3	3	3	3	3	3
P.5x7	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x8	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x9	-	3	2	1	3	4	4	4	4	4	5
P.5xA	-	0	0	0	0	0	0	0	0	0	0

P.50x	Unit	0302	0304	0401	0402	0403	0404	0407	0411	0501	0502
P.5x0	-	3	3	4	4	4	4	4	4	5	5
P.5x1	-	1	0	0	0	1	1	2	2	0	0
P.5x2	-	0	0	1	0	1	0	0	1	1	1
P.5x3	-	0	0	0	0	0	0	0	0	4	4
P.5x4	-	0	0	0	0	0	0	0	0	4	4
P.5x5	-	1	0	0	0	0	0	0	0	1	1
P.5x6	-	3	0	0	0	0	0	0	0	3	3
P.5x7	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x8	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x9	-	1	5	6	6	6	6	6	36	7	7
P.5xA	-	0	0	0	0	0	0	0	0	0	0

P.50x	Unit	0504	0505	0506	0507	0509	0511	0520	0522	0530	0601
P.5x0	-	5	5	5	5	5	5	5	5	5	6
P.5x1	-	0	0	0	0	0	0	0	9	0	1
P.5x2	-	1	0	1	0	1	1	1	2	1	0
P.5x3	-	4	4	4	4	4	4	4	4	4	0
P.5x4	-	2	4	2	4	5	5	4	2	4	0
P.5x5	-	1	1	1	1	1	1	1	1	1	0
P.5x6	-	3	3	3	3	3	3	3	3	3	0
P.5x7	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x8	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x9	-	7	7	7	7	7	7	7	52	60	8
P.5xA	-	0	0	0	0	0	0	1	0	0	0

P.50x	Unit	0602	0701	0703	0704	0713	0714	0801	0802	0813	0901
P.5x0	-	6	7	7	7	7	7	8	8	8	9
P.5x1	-	0	0	4	5	0	5	0	1	7	5
P.5x2	-	0	0	0	0	1	1	0	0	0	0
P.5x3	-	0	0	0	0	0	0	0	0	0	0
P.5x4	-	0	0	0	0	0	0	0	0	3	0
P.5x5	-	0	1	1	1	1	1	0	0	0	0
P.5x6	-	0	0	0	0	0	0	0	0	0	0
P.5x7	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x8	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x9	-	8	9	9	9	9	9	10	10	28	11
P.5xA	-	0	0	0	0	0	0	0	0	0	0

P.50x	Unit	0902	0903	1001	1002	1003	1004	1005	1101	1102	1103
P.5x0	-	9	9	10	10	10	10	10	11	11	11
P.5x1	-	7	0	0	4	3	2	7	1	2	6
P.5x2	-	0	0	0	0	0	0	0	0	0	0
P.5x3	-	0	0	0	0	0	0	0	0	0	0
P.5x4	-	0	0	0	0	0	0	0	0	0	0
P.5x5	-	0	0	0	0	0	0	0	0	0	0
P.5x6	-	0	0	0	0	0	0	0	0	0	0
P.5x7	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x8	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x9	-	11	11	12	12	56	12	12	19	25	22
P.5xA	-	0	0	0	0	0	0	0	0	0	0

P.50x	Unit	1104	1105	1110	1111	1114	1116	1401	1402	1403	1404
P.5x0	-	11	11	11	11	11	11	14	14	14	14
P.5x1	-	0	0	9	10	7	10	1	0	8	6
P.5x2	-	0	1	1	1	0	0	1	1	1	1
P.5x3	-	0	0	0	0	0	0	0	4	0	0
P.5x4	-	0	0	0	0	1	0	0	4	0	0
P.5x5	-	0	0	0	0	0	0	1	1	1	1
P.5x6	-	0	0	0	0	3	0	0	3	0	0
P.5x7	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x8	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x9	-	20	20	24	26	0	26	6	7	6	7
P.5xA	-	0	0	0	0	0	0	0	0	0	0

P.50x	Unit	1405	1406	1407	1408	1418	1420	1422	1501	1502	1506
P.5x0	-	14	14	14	14	14	14	14	15	15	15
P.5x1	-	7	9	3	4	6	0	9	0	2	1
P.5x2	-	1	1	1	1	0	2	2	0	0	1
P.5x3	-	0	4	4	4	0	4	4	0	0	0
P.5x4	-	0	4	4	4	0	4	2	1	0	0
P.5x5	-	1	1	1	1	0	1	1	0	0	0
P.5x6	-	0	3	3	3	0	3	3	3	0	0
P.5x7	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x8	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x9	-	7	7	6	31	6	52	52	2	9	6
P.5xA	-	0	0	0	2	0	0	0	0	0	0

P.50x	Unit	1612	1613	1624	1701	1801	1802	1803	1804
P.5x0	-	16	16	16	17	18	18	18	18
P.5x1	-	10	0	9	0	1	2	3	4
P.5x2	-	2	2	1	0	0	0	0	0
P.5x3	-	0	4	4	0	0	0	0	0
P.5x4	-	0	4	4	1	0	0	0	0
P.5x5	-	0	1	1	1	0	0	0	0
P.5x6	-	0	3	3	3	3	3	3	3
P.5x7	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x8	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.5x9	-	52	52	7	25	2	2	2	2
P.5xA	-	0	0	0	0	0	0	0	0

Parameter P.70x

P.70x	Unit	0000	0001	0101	0103	0201	0203	0501	0601	0602	0605
P.7x0	-	6	6	0	6	2	6	5	6	6	6
P.7x1	[Seconds]	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	0,5
P.7x2	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1
P.7x3	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.7x4	-	0	1	0	0	0	0	0	0	0	0
P.7x5	[Increments]	0	0	0	0	0	0	0	0	0	0
P.7x6	-	0	0	0	0	0	0	0	0	0	0
P.7x7	-	0	0	0	0	0	0	0	0	0	0
P.7x8	-	0	0	0	0	0	0	0	0	0	0
P.7x9	-	0	0	0	0	0	0	0	0	0	0
P.7xA	-	0	0	0	0	0	0	0	0	0	0
P.7xB	-	0	0	0	0	0	0	0	0	0	0
P.7xC	-	0	0	0	0	0	0	0	0	0	0
P.7xD	-	0	0	0	0	0	0	0	0	0	0
P.7xF	-	0	0	0	70	0	69	0	19	20	38

P.70x	Unit	0606	0607	0612	0613	0634	0701	0703	0801	1001	1002
P.7x0	-	6	6	6	6	6	7	7	8	10	10
P.7x1	[Seconds]	0,5	0,5	1000,0	1000,0	1000,0	0,0	1000,0	1000,0	1000,0	1000,0
P.7x2	[Seconds]	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.7x3	[Seconds]	0,0	0,0	1,0	1,0	0,0	0,0	0,0	0,0	0,0	1,0
P.7x4	-	0	0	0	0	0	0	0	0	0	0
P.7x5	[Increments]	0	0	0	0	0	0	0	0	0	0
P.7x6	-	0	0	0	0	0	0	0	0	0	0
P.7x7	-	0	0	0	0	0	0	0	0	0	0
P.7x8	-	0	0	0	0	0	0	0	0	0	0
P.7x9	-	0	0	0	0	0	0	0	0	0	0
P.7xA	-	0	0	0	0	0	0	0	0	0	0
P.7xB	-	0	0	0	0	0	0	0	0	0	0
P.7xC	-	0	0	0	0	0	0	0	0	0	0
P.7xD	-	0	0	0	0	0	0	0	0	0	0
P.7xF	-	39	43	46	47	65	0	0	0	0	0

P.70x	Unit	1101	1102	1201	1210	1220	1221	1222	1223	1224	1232
P.7x0	-	10	11	12	12	12	12	12	12	12	12
P.7x1	[Seconds]	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0
P.7x2	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.7x3	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.7x4	-	0	0	0	0	0	0	0	0	0	0
P.7x5	[Increments]	0	0	0	0	0	0	0	0	0	0
P.7x6	-	0	0	0	2	1	1	1	1	1	1
P.7x7	-	0	0	0	0	0	0	1	1	1	1
P.7x8	-	0	0	0	0	1	3	1	3	1	1
P.7x9	-	0	0	1	1	0	0	0	0	6	6
P.7xA	-	0	0	0	0	3	4	3	4	1	1
P.7xB	-	0	0	0	0	1	3	1	3	1	1
P.7xC	-	0	0	0	0	1	1	1	1	1	1
P.7xD	-	0	0	0	0	1	1	1	1	1	1
P.7xF	-	0	0	0	0	0	0	0	0	20	51

P.70x	Unit	1233	1250	1251	1252	1253	1255	1263	1264	1295	1298
P.7x0	-	12	12	12	12	12	12	12	12	12	12
P.7x1	[Seconds]	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0
P.7x2	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.7x3	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.7x4	-	1	0	0	0	0	0	0	1	0	0
P.7x5	[Increments]	0	0	0	0	0	0	0	0	0	0
P.7x6	-	1	3	3	3	3	3	3	3	4	4
P.7x7	-	1	0	0	1	1	1	1	1	0	0
P.7x8	-	1	1	3	1	3	1	1	1	0	1
P.7x9	-	6	0	0	0	0	6	6	6	1	0
P.7xA	-	1	3	4	3	4	1	1	1	3	3
P.7xB	-	1	1	3	1	3	1	1	1	0	1
P.7xC	-	1	1	1	1	1	1	1	1	0	1
P.7xD	-	1	1	1	1	1	1	1	1	0	1
P.7xF	-	51	0	0	0	0	19	50	50	0	0

P.70x	Unit	1601	1701	1801	1901	2001	2101	2201	2301	2501
P.7x0	-	16	17	18	19	20	21	22	23	25
P.7x1	[Seconds]	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0	1000,0
P.7x2	[Seconds]	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
P.7x3	[Seconds]	0,0	0,0	0,5	0,5	0,0	0,0	0,0	0,0	0,0
P.7x4	-	0	0	0	0	0	0	0	0	0
P.7x5	[Increments]	0	0	0	0	0	0	0	0	0
P.7x6	-	0	0	0	0	0	0	0	0	0
P.7x7	-	0	0	0	0	0	0	0	0	0
P.7x8	-	0	0	0	0	0	0	0	0	0
P.7x9	-	0	0	0	0	0	0	0	0	0
P.7xA	-	0	0	0	0	0	0	0	0	0
P.7xB	-	0	0	0	0	0	0	0	0	0
P.7xC	-	0	0	0	0	0	0	0	0	0
P.7xD	-	0	0	0	0	0	0	0	0	0
P.7xF	-	0	0	0	0	0	0	0	0	0

Parameter P.991

P.991	Unit	0
P.205	-	ZW
P.210	-	5
P.465	-	0
P.501	-	0101
P.502	-	0401
P.503	-	0701
P.504	-	0201
P.505	-	0501
P.506	-	0301
P.507	-	0601
P.508	-	0801
P.509	-	0903
P.50A	-	1001
P.608	-	0223
P.609	-	0223
P.701	-	0101
P.702	-	0201
P.703	-	1220
P.704	-	1201
P.705	-	1250
P.706	-	1210
P.70F	-	0001
P.970	-	0
P.971	[1000 Cycles]	1000
P.972	[Cycles]	1000
P.973	-	0
P.985	-	1
P.A01	-	0104
P.A02	-	0901
P.A03	-	0502
P.A04	-	0107
P.A05	-	0109
P.A06	-	1002

P.991	Unit	0
P.A07	-	0106
P.A08	-	0802
P.F00	-	0
P.F1F	-	0000
P.F2F	-	0000
P.F3F	-	0000
P.F4F	-	0000

Parameter P.F1F

P.F1F	Unit	0000	F101	F102	F103	F104	F201	F202	F203	F206	F207	F301	F302
P.F10	-	0	1	3	1	1	4	1	4	4	4	4	4
P.F11	-	2	0	0	0	0	1	1	1	1	1	2	2
P.F12	-	0	0	0	0	0	1	0	1	1	1	1	1
P.F13	-	1	0	0	0	0	1	1	1	1	1	1	1
P.F16	-	1	1	1	2	3	3	3	3	3	3	2	2
P.F19	-	0	52	52	52	52	49	49	51	16	53	0	0

Overview of messages

Faults can be acknowledged provided they are not reset automatically.

⚠**ACHTUNG** The cause of the fault must be resolved first before the corresponding message is acknowledged.
Press the STOP button and keep it pressed, then press the EMERGENCY STOP button.
Alternatively, the STOP button can also be kept pressed for approx. 5 seconds.

Error No.	Description	Reason
F.000	Door position too far up	• Too small a parameter value for upper emergency limit switch → increase P.239 • Upper limit switch range (limit switch band) too small → increase P.233 • Mechanical brake defective or improperly set
F.005	Door position too far down	• Too small a parameter value for lower emergency limit switch → increase P. 229 • Lower limit switch range (limit switch band) too small → increase P. 223 • Mechanical brake defective or improperly set
F.010	Foilkeypad short circuit	Foilkey Open or CLOSE has a short circuit
F.020	Run time exceeded (during opening, closing or deadman)	• current motor run time has exceeded set maximum run time (P.410 (Opening), P.415 (Closing), P.419 (Deadman move)), door may be sticking or is blocked • Door is blocked • If using mechanical limit switches, one may not have tripped
F.030	Lag error (position change of the door is less than expected)	• gate or motor is blocked • insufficient power for providing necessary torque • too little speed • mechanical limit switch was not left or is defective • Incremental or absolute encoder shaft is slipping • wrong positioning system selected (P.205) • one motor phase is missing • the brake does not release • Settings of the failure detecting time are not correct (P.430 or P.450)

Error No.	Description	Reason
F.031	Detected rotational direction deviates from expected	• When using incremental encoders: Channel A and B reversed • Motor rotation direction reversed compared with calibration setting → teach in the limits new (P.210 = 5) • Too much „pancaking“ when starting, brake releases too soon, or too little torque, adjust boost (P.140 or P.145) as necessary.
F.043	Pre-limit switch fault (light barrier)	• The pre-limit switch for the light barrier remains activated even in the middle end position or upper end position.
F.060	Breakaway recognized	• Breakaway was detected but not fixed • The automatic lead in after breakaway has failed
F.080	Fault: Maintenance is required	• Service counter has expired
F.090	Controller not parameterized	• The min. necessary basic parameters for the controller have not yet been set → Activate DIP-switch and put in the asked parameters.
F.201	Internal E-Stop „push-button“ tripped or Watchdog (computer monitor) (watchdog only for FUS, FUN, FUE, FU3E, FU3P)	• E-Stop chain was interrupted starting at input „internal E-Stop“ without parameterizing mode having been selected • Internal parameter or EEPROM checks defective, pressing the STOP button provides additional information about the cause (only valid for FUS, FUN, FUE, FU3E, FU3P)
F.211	External E-Stop 1 tripped	• E-Stop chain was interrupted starting at Input 1
F.212	External E-Stop 2 tripped	• E-Stop chain was interrupted starting at Input 2
F.360	Short circuit detected on edge input	• Short circuit detected on edges with normally closed contact • The light beam of the optical edge is interrupted • Jumper for 1K2 / 8K2 is wrong set
F.361	Number of trips of the Safety input D, normally this is the	• Parameterized, maximum number of trips of the safety input D during a door cycle was exceeded → To reset close the door in deadman mode

Error No.	Description	Reason
	integrated safety edge evaluation, has reached set limit	• Check the set number of trips in P.46E
F.362	Redundancy error with short circuit	• One of the processing channels for short circuit detection does not react identically with the second channel → Controller board defective, if no other error message F.3xx is shown • Dynamical optical safety edge connected but not set in Parameter P.460
F.363	Interruption on edge input	• Connection cable defective or not connected • Termination resistor incorrect or missing • Jumper 1K2 / 8K2 incorrectly set
F.364	Safety edge testing failed	• Safety edge was not activated as expected when requesting a test. • The time between request for testing and actual testing not in agreement
F.366	Too high a pulse frequency for optical safety edge	• Defective optical safety edge • Defective input for internal safety edge
F.369	Internal safety edge incorrectly parameterized	• An internal safety edge is connected but deactivated → set P.460 to the used edge type
F.371	Number of trips of the Safety input E, normally this is the integrated safety edge evaluation, has reached set limit	• Parameterized, maximum number of trips of the safety input E during a door cycle was exceeded → To reset close the door in deadman mode • Check the set number of trips in P.47E
F.372	Redundancy error with short circuit	• One of the processing channels for short circuit detection does not react identically with the second channel. • Controller board defective
F.373	Fault in the safety edge (message comes from module)	• Cable break to safety edge, no edge connected, edge termination resistor incorrect or defective • Jumper for termination resistor definition in wrong position. • Safety edge processing selected with Parameter P.470, but module not plugged in or wrong module.

Error No.	Description	Reason
F.374	Safety bar testing failed	• Pre-limit switch for safety edge incorrectly set or defective • Processing module defective • Safety edge defective
F.379	Safety edge detection defective (coding pin or parameter setting)	• No module plugged in but was reported as present by a parameter • The controller was started up with another module than the one currently plugged in
F.380	Short circuit detected on safety input	• Short circuit detected on edges with normally closed contact
F.383	Interruption on safety input	• Connection cable defective or not connected • Termination resistor incorrect or missing • Jumper incorrectly set
F.384	Safety input testing failed	• Safety edge was not activated as expected when requesting a test. • The time between request for testing and actual testing not in agreement
F.385	Fault in pre-limit switch for safety edge	• Pre-limit switch for turning off the safety edge or reversing after safety edge tripping remains tripped even in the upper end position.
F.389	Safety input incorrectly parameterized	• A safety edge is connected but deactivated • With FUZ2: Safety input Jumper incorrectly set (as digital input jumpered but as safety edge set)
F.38A	Redundancy error of the 8K2 slip door switch on the second internal safety edge evaluation unit	• One of the contacts of the redundant 8k2 slip door switch is defective • The slip door was not fully opened or closed
F.3A1	Number of trips for safety input A has reached set limit	• Parameterized, maximum number of safety input trips during a door cycle was exceeded
F.3B1	Number of trips for safety input B has reached set limit	• Parameterized, maximum number of safety input trips during a door cycle was exceeded
F.3C1	Number of trips for safety input C has reached set limit	• Parameterized, maximum number of safety input trips during a door cycle was exceeded

Error No.	Description	Reason
F.400	Controller hardware reset detected	• Excessive noise on supply voltage • Internal watchdog tripped • RAM error
F.401	Watchdog Error	• Internal Watchdog has released
F.40A	internal Software Reset	unplanned software reset of the processor
F.410	Over-current (motor current or DC-bus)	• Wrong motor data set (P.100 – P.103) • Non-adjusted voltage increase / boost set (P.140 or P.145) • Motor not properly dimensioned for door • Door sticks
F.420	Overvoltage in DC-bus Limit 1	• Brake chopper interference / defective / missing • Feed voltage much to high • Motor is generating excessive voltage - brake chopper cannot dissipate the re-generated energy
F.425	Overvoltage line supply	• The supply voltage for the controller is to high
F.426	Undervoltage line supply	• The supply voltage for the controller is to low
F.430	Temperature heat sink outside of working range Limit 1	• Excessive load on power stage or brake chopper • Ambient temperature too low for controller operation • Clock frequency of power stage too high (Parameter P.160)
F.440	Overcurrent in DC-bus Limit 1	• Boost not adjusted • Motor incorrectly dimensioned for door • Door sticks
F.510	Motor / DC-bus overcurrent Limit 2	• Wrong motor data set (P.100 – P.103) • Non-adjusted voltage increase / boost set (P.140 or P.145) • Motor not properly dimensioned for door • Door sticks
F.515	Motor protection function detected overcurrent	• Incorrect motor curve (motor rated current) set (P.101) • Too much boost (P.140 or P.145) • Motor incorrectly dimensioned • To reset the error, no or low current must flow for a longer period of time. To do this, the control unit must remain switched on!

Error No.	Description	Reason
F.519	IGBT driver chip detected overcurrent	• Short circuit or ground fault on motor terminals • Motor rated current setting extremely wrong (P.100) • Extremely too much boost (P.140 or P.145) • Motor incorrectly dimensioned • Motor winding defective • Momentary interruption of the E-Stop circuit.
F.520	Overvoltage in DC-bus Limit 2	• Brake chopper interference / defective / missing • Incoming mains voltage much to high • Motor is generating excessive voltage - brake chopper cannot dissipate the re-generated energy
F.521	Low voltage in DC-bus	• Input voltage supply too low, usually at load • Load too great / final stage or brake chopper fault
F.522	Permissible DC current for a single-phase power supply is too high	On the FU3F a single-phase power supply was detected and the permissible DC current for a single-phase power supply is too high. This error always occurs in combination with F.540
F.524	Ext. 24 V supply missing or too low	• Overload but no short circuit • When 24V is shorted the controller voltage does not ramp up and glow lamp V306 comes on.
F.525	Overvoltage at the incoming mains supply	• The incoming mains supply for the Controller is to high • The incoming mains supply fluctuates very extremly
F.530	Heatsink temperature outside of working range Limit 2	• Excessive load on final stages or brake chopper • Ambient temperature too low for controller operation • Clock frequency of final stage too high (Parameter P.160)
F.540	Overcurrent in DC-bus Limit 2	• Boost not adjusted • Motor incorrectly dimensioned for door • Door sticks
F.601	Bad Light curtain reception quality	Poor reception quality when the light curtain is started • Light curtain dirty • Protection foil not removed • bad aligned • wrong Range set.
F.610	Light curtain light line alignment	Light line alignment has not been done. • Too less Increments

Error No.	Description	Reason
F.611	Light curtain light line position values not plausible	Position values stored by the light curtain do not match door movement • Objects in the door area during teach in
F.612	External RS-485	RS-485 communication failure between Receiver and Door Controller • Insufficient valid position data • A and B wires twisted • wrong connection.
F.613	Internal RS-485	RS-485 communication error between Transmitter and Receiver • A and B wires twisted • wrong connection

Error No.	Description	Reason
F.615	Internal error of the light curtain transmitter	• Internal transmitter error • RAM test has failed • ROM test has failed • Program run error • Synchronisation error • Addressing module defective • Dark test has failed • Digital-analog converter is defective • Replace hardware!
F.616	Internel error Light curtain Receiver	• Internal receiver error • RAM test fail • ROM test fail • Program run error • Sync error • Addressing module defective • Dark test fail • D/A converter defective • Watchdog not triggered or hangs • Replace hardware!
F.617	Light curtain incompatibility	Transmitter and receiver are not compatible. • modified Transmitter serial number • incompatible Hardware version / revision level • incompatible Software version

Error No.	Description	Reason
F.621	Light curtain test error (transmitter)	test error for the internal transmitter system test
F.622	Light curtain test error (receiver)	test error for the internal receiver system test
F.626	Light curtain test error (Out 1)	Test / wiring error of output 1
F.627	Light curtain test error (Out 2)	Test / wiring error of output 2
F.628	Light curtain LGB dark test error	• Dark test error • external light source • uncontrolled transmissions • defective receiver
F.700	Position sensing defective	For mechanical limit switches: • At least one limit switch does not correspond to the configured active status. • An implausible combination of at least 2 active limit switches For electronic limit switches: • After invoking activation of the factory parameters (Parameter P.990) the corresponding positioning system was not parameterized. • Calibration not completed or is incorrect and must be repeated. • When activating the intermediate stop the intermediate stop is implausible. • Synchronization not finished or reference switch defective.
F.752	Loss of communication with encoder	• Interface cable defective / interrupted • supply voltage 12 Volt faulty, e.g. shortcut in spiral cable • Channel A and B connected over cross • Absolute encoder processor electronics defective • Defective hardware or electrically noisy environment • Use a shielded control cable • Install a RC element (100Ω+100nF) at the brake
F.760	Position outside of window	• Position encoder drive defective • Absolute encoder processing electronics defective • Defective hardware or electrically noisy environment

Error No.	Description	Reason
F.763	DES-B Error	• Position encoder drive defective -> make a reset
F.766	Internal error TST PD/PE	• The position encoder TST PD / PE is disturbed -> make a reset
F.767	Overtemperature TST PD	• The temperature in the encoder housing is to high
F.768	Battery voltage	• The voltage of the buffer battery is to low → change battery
F.769	Rotation speed of PD shaft to high	• The rotation speed of the shaft where the encoder is mounted is to high → mount the encoder on another shaft
F.770	Door way is to high for the parameter set Encoder resolution	• The Value of the Parameter P.202 (set Encoder resolution) is to high for the combination Encoder and Door.
F.801	Wrong Test of input 1 of the mobile unit TST FSx	• Input 1 of the mobile unit was tested wrong • The device which is connected to the input does not work correct • The mobile unit is defective
F.802	Wrong Test of input 2 of the mobile unit TST FSx	• Input 2 of the mobile unit was tested wrong • The device which is connected to the input does not work correct • The mobile unit is defective
F.803	Wrong Test of input 3 of the mobile unit TST FSx	• Input 3 of the mobile unit was tested wrong • The device which is connected to the input does not work correct • The mobile unit is defective
F.804	Wrong Test of input 4 of the mobile unit TST FSx	• Input 4 of the mobile unit was tested wrong • The device which is connected to the input does not work correct • The mobile unit is defective
F.80A	Wrong Test of input A of the stationary unit TST FSx	• Input A of the stationary unit was tested wrong • The device which is connected to the input does not work correct • The stationary unit is defective
F.80B	Wrong Test of input B of the stationary unit TST FSx	• Input B of the stationary unit was tested wrong • The device which is connected to the input does not work correct • The stationary unit is defective
F.80C	Wrong Test of input C of the stationary unit TST FSx	• Input C of the stationary unit was tested wrong • The device which is connected to the input does not work correct • The stationary unit is defective

Error No.	Description	Reason
F.811	Wrong test for output 1 of the stationary unit TST FSx	• Output 1 of the stationary unit was tested incorrectly • The cable between the stationary unit and the controller is damaged or not connected • The stationary unit is defective • Incorrect settings for parameter P.5xF, P.47b or P.465
F.812	Wrong Test for output 2 of stationary unit TST FSx	• Output 2 of the stationary unit was tested incorrectly • The cable between stationary unit and controller is damaged or not connected • The stationary unit is defective • Incorrect settings for parameter P.5xF, P.47b or P.465
F.813	Wrong Test of output 3 of the stationary unit TST FSx	• Output 3 of the stationary unit was tested incorrectly • The cable between the stationary unit and the controller is damaged or not connected • The stationary unit is defective • Incorrect settings of parameter P.5xF, P.47b or P.465
F.821	Wrong parameter setting input 1 of mobile unit	• The device which is connected to input 1 of the mobile unit does not fit to the settings • Check Parameter P.F1F
F.822	Wrong parameter setting input 2 of mobile unit	• The device which is connected to input 2 of the mobile unit does not fit to the settings • Check Parameter P.F2F
F.823	Wrong parameter setting input 3 of mobile unit	• The device which is connected to input 3 of the mobile unit does not fit to the settings • Check Parameter P.F3F
F.824	Wrong parameter setting input 4 of mobile unit	• The device which is connected to input 4 of the mobile unit does not fit to the settings • Check Parameter P.F4F
F.831	Disturbed input 1 of mobile unit TST FSx	• The input 1 of the mobile unit is disturbed • The connection to the device is interrupted
F.832	Disturbed input 2 of mobile unit TST FSx	• The input 2 of the mobile unit is disturbed • The connection to the device is interrupted
F.833	Disturbed input 3 of mobile unit TST FSx	• The input 3 of the mobile unit is disturbed • The connection to the device is interrupted
F.834	Disturbed input 4 of mobile unit TST FSx	• The input 4 of the mobile unit is disturbed • The connection to the device is interrupted
F.841	Frequency error on input 1 of mobile unit	• The connected optical safety edge is faulty

Error No.	Description	Reason
F.843	Frequency error on input 3 of mobile unit	• The connected optical safety edge is faulty
F.851	Max. Number of allowed Reversings, because of bad WiCAB radio, exceeded.	The radio connection interrupts during door drive for a short time
F.852	Communication error between TST FSx and controller	This error is shown when the controller looses RS485 communication for min. 1 second with the stationary unit of TST FSx. Possible causes are: • The stationary unit is broken • The stationary unit is not or wrong connected
F.853	TST PE_FSBS operating voltage too low	The operating voltage of encoder TST PE_FSBS is too low (less than 8V). As a result, the calculation of the position must be terminated.
F.854	Faulty wiring between stationary unit and controller	Number of trips permitted (P.F02) due to breakage or short circuit on a line between stationary unit and door controller. This fault may be caused by a disturbance on the edge connection cable (e.g. motor cable).
F.856	Communication error between mobile and stationary unit	This error is shown when the stationary unit don`t have communication for min. 1 second with the mobile unit of TST FSx. Possible causes are: • No mobile unit in radio range • The battery of the mobile unit is empty or not connected • The antenna of the stationary unit is not connecteed or missing • Moile unit or stationary unit is defective
F.857	Battery empty	• The battery voltage is under the limit set with Parameter P.F0B • The battery voltage of the mobile unit is to low • To deactivate this error message you can set P.F09 and P.F0B to 1
F.859	Software version	The software versions of the stationary and the mobile unit are not compatible. No safe trip possible.
F.860	Internal fault stationary unit	Internal system fault on the stationary unit.
F.861	Internal fault mobile unit	Internal system fault on the mobile unit.

Error No.	Description	Reason
F.862	Internal positioning system error	Internal error of the positioning system. Presumably, the magnet is not attached properly.
F.867	Address of mobile unit not set	• The address of the mobile unit was not set so far • The address has to be set in Parameter P.F07 • The address is written on a sticker on the mobile unit
F.920	Internal 2.5 V reference voltage incorrect	• Hardware defect
F.921	Internal 15 V voltage incorrect	• Hardware defect
F.922	Static and dynamic monitoring of the emergency stop chain against defect or external power (static monitoring is offered by each controller, dynamic monitoring does not exist in WU2/WUI2/FUH/FU3R/FUZ/FUZ2	Static monitoring: Interrupted emergency stop chain means: All emergency inputs from the interrupted one, including all subsequent emergency inputs, must be triggered, if one of the subsequent emergency inputs is not triggered it must be assumed that a remote supply is used Dynamic monitoring: During the system tests, the closed emergency chain is actively opened by an internal switch, so that all emergency inputs must be activated, if this does not occur, it must be assumed that an external supply is used or that a defect has occurred
F.928	Faulty input testing	• The testing of an cyclic tested input was not successful • The connected device is not working • The cable connection between the connected device and the controller is broken
F.929	Faulty K-stop relay	• The testing of the stop relay was not successful • Controller defective
F.930	External watchdog incorrect	• Defective hardware or noise-saturated environment
F.931	ROM error	• Wrong EPROM code • Defective hardware or noise-saturated environment
F.932	RAM error	• Defective hardware or noise-saturated environment
F.933	Wrong frequency of CPU	• The clock frequency of the processor is wrong
F.935	Stack error	• UserSTack or SystemStack overflowed • Possible software error due to recursive invocations (e.g. profile)

Error No.	Description	Reason
F.939	Triac Extender Signal faulty	• Triac board not assembled or defective • Triac board not connected to the main board
F.960	Wrong parameter checksum	• New EPROM version with different parameters • Controller not yet initialized
F.961	Checksum from calibration values etc.	• New EPROM version with different EEPROM structure • Controller not yet initialized
F.962	Converter parameters not plausible	• New EPROM version • Controller not yet initialized
F.964	Program version / manufacturer code	• New EPROM version • Controller not yet initialized
F.970	Plausibility Param.block error	• New EPROM version • Controller not yet initialized • Some parameter is implausible

Information messages

No.	Description
I.043	• During teaching there was passing traffic that triggered the photo eye. • The photo eye position tolerance set in P.4xA was exceeded or dropped below in two successive cases.
I.080	Service counter will run off
I.160	Permanent open command still active
I.161	Priority still active
I.170	Forced opening active
I.180	Wait for foil key command
I.185	Wait for reset by stop foil key
I.199	Door counter wrong
I.205	Synchronization performed
I.210	Limit switch not plausible
I.211	Limit switch not plausible
I.310	Open command to door 2
I.360	Disturbed N.C. safety edge
I.363	Disturbed N.O. safety edge
I.380	Faulty 2nd internal N.C. safety bar
I.383	Faulty 2nd internal N.O. safety bar
I.510	Correction drive finished
I.515	Active correction drive
I.520	Preset speed for open or close drive not reached • Pre limit switch reached before full speed was reached --> adjust ramps • Current limiter prevents the driving in full speed --> Inverter or motor are working on their limits --> adjust ramps or limiter
I.610	Light curtain light line alignment OK
I.615	Light line alignment requested.

I.616	Second light line alignment The second light line alignment with normal drive speed is active
I.621	Light curtain position encoder resolution too low The resolution of the installed position encoder is too low to maintain robust light curtain operation. More increments are required per door move. (Message only occurs when DIP-Switch is ON.)
I.856	The internal safety edge is tripped because of an WiCab radio problem The radio connection of the WiCab system is gone for a short moment during door drive. Possible reasons for this are: • The Distance between mobile and stationary unit is larger than specified • No perfect Orientation of stationary and mobile antenna • The radio link is disturbed by external noise