

CONTROLLER

Intelligent Door Management

Parameter Description

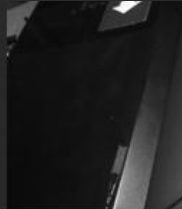
Complete Overview



TST FUZ2

-B / -C / -CX

-CGH / -CXGH / -LGH



FEIG

** Attention!**

This document is a detailed documentation of the associated door controller.

The safety instructions and installation recommendations of the control manual shall be followed.

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.



points out information which is useful but not essential for the use of the gate controller TST FUZ2.

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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.

1 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.

i 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.
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2 Hold open times / Auto close times

i 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.

3 Pre-warning time before door movement / Clearance time

P.	[Unit] Range	Function	Description/ Note
P.020 -rw	[10 ms] 0 ... 3000	Pre-warning time before open	The opening move is delayed following receipt of an OPEN command by the time specified in this parameter.
P.025 -rw	[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.	[Unit] Range	Function	Description/ Note
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, independent 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

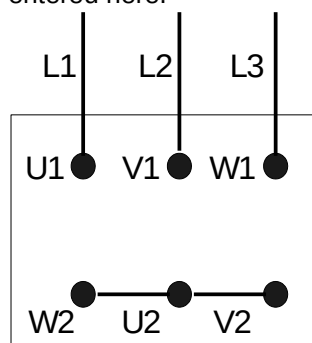
4 Forced closing time

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.

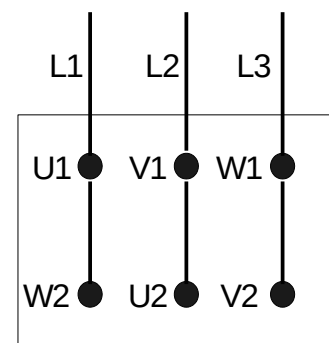
5 Motor settings

The motor ratings are used to teach the door controller what it needs to know about the motor used.

P.	[Unit] Range	Function	Description/ Note
P.100 -ww	[Hz] 30 ... 200	Motor rated frequency	The motor rated frequency indicated on the nameplate is entered here.
P.101 -ww	[A] 0,0 ... 10,0	Motor rated current	The motor rated current indicated on the nameplate is entered here.



Star-wiring



Delta-wiring

Figure 1 Star / Delta wiring



Note Star / Delta wiring of the motor !

P.	[Unit] Range	Function	Description/ Note
P.102 -ww	[%] 40 ... 100	Power factor Cos Phi	The power factor indicated on the nameplate is entered here.  The entry is made without the leading "0". Entry 63 means cos Phi 0.63.
P.103 -ww	[Volt] 100 ... 500	Motor rated voltage	The motor rated voltage indicated on the nameplate is entered here.  Note Star /Delta switching of the motor ! (see Fig. In parameter P.101: Star / Delta wiring)  Switching the motor windings to 400V operation makes no sense with 230 V supplied controllers, since they can output a maximum of 230V !
P.115 -ww	1,0 ... 3,0	Motor current regulator	The motor current regulator starts working at the set factor of the motor nominal current and tries to go below this value.  <i>0 = Deactivated</i>
P.116 --w	[%] 1 ... 100	DC bus current limiter	The parameter specifies at what percentage, of the long-term permitted value, the DC bus current is limited.  <i>0 = Deactivated</i>
P.117 -ww	0 ... 1	Cos phi Regulator - (Eco Modus)	The cos phi regulator regulates the phase angle between current and voltage to the nominal cos phi (P.102) in the part-load operational range of the motor by reducing the motor voltage. This function prevents thermal loss in the motor and frequency inverter. 0: Cos phi regulator turned off 1: Cos phi regulator turned on  <i>For very small nominal current of the motor used may be a proper operation of the controller is no longer possible. The motor might possibly remain.</i>  <i>In individual cases it may be necessary to slightly reduce the setting to P.102 to make the door running dynamic.</i>
P.130 -ww	0 ... 1	Motor rotary field	This parameter specifies the rotary field of the motor for OPEN move. 0: Right rotating 1: Left rotating

6 Boost

Boost is used to increase the power of drives in the lower speed range.

Either a too little or a too high boost setting can result in improper door movement. If too much boost is already set, this will result in an overcurrent error (F.510/F.410). In this case you must reduce the boost. If the boost is low or 0 and the motor still has insufficient force to move the door, you must increase the boost.

Due to the large number of possible door/gate types, the correct boost setting should be determined experimentally. The diagnostic function for motor current (see Parameter P.910) can be helpful here. By using the current indicator you can easily determine whether the changed setting has achieved the desired results.



The boost should always be set as low as possible, but high enough to do the job.

P.	[Unit] Range	Function	Description/ Note
P.140 -ww	[%] 0 ... 30	Boost for OPEN	The boost increases the output voltage and thus the power in the lower speed range until the cutoff frequency (P.100) is reached. The voltage is increased by the value in percent of the motor rated voltage (P.103) entered in the parameter.

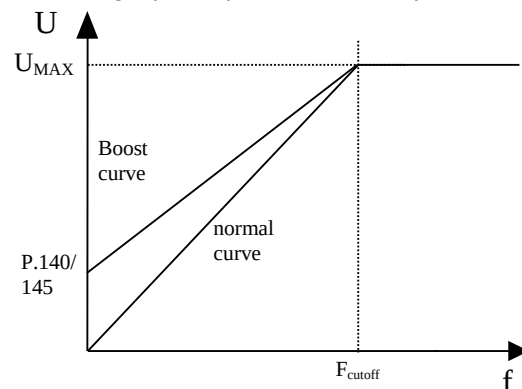


Figure 2 Boost characteristic

P.145 -ww	[%] 0 ... 30	Boost for CLOSE	see Parameter P.140
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7 I x R compensation

I x R compensation increases the voltage and with it the motor power only in the lower speed range.

P.	[Unit] Range	Function	Description/ Note
P.142 --W	[Hz] 0 ... 20	IxR compensation for OPEN	In this parameter you specify the frequency up to which IxR compensation is in effect. The voltage is held to the same value below this frequency. The voltage value is derived from the voltage which is normally output for the frequency set here.

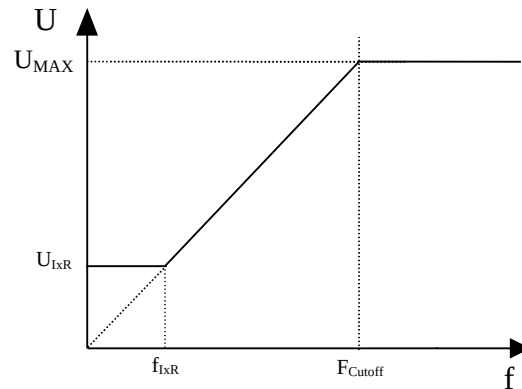


Figure 3 IxR compensation characteristic curve

P.147 --W	[Hz] 0 ... 20	IxR compensation for CLOSE	see Parameter P.142
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8 Voltage reduction

Reducing the motor voltage which is output prevents over-excitation of the motor. This reduces power dissipation and noise.

P.	[Unit] Range	Function	Description/ Note
P.143 --W	[%] 35 ... 100	Voltage reduction for OPEN	The indicated value specifies what percent of the output voltage is given out.

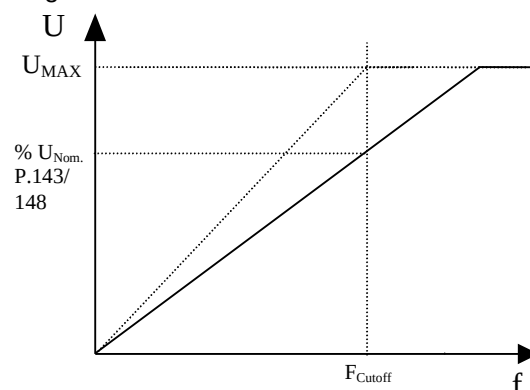


Figure 4 Voltage reduction characteristic curve

P.148 --W	[%] 35 ... 100	Voltage reduction for CLOSE	see Parameter P.143
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9 Selecting the positioning system

P.	[Unit] Range	Function	Description/ Note
P.202 -rr	0 ... 17	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.  <i>This parameter is only visible in case of TST PD is connected and set as limit switch.</i>
P.205 -ww	0000 ... 0900	Selecting the positioning system profile	This profile sets the limit switch system. Select from the following settings: 0000: Mechanical limit switches 1. The absolute limit switches are processed as normally closed and the pre-limit switches as normally open. 0001: Mechanical limit switches 2. All limit switches are processed as normally closed. 0300: Absolute encoder DES-A (GfA) 0700: Absolute encoder DES-B (Kostal) 0800: Absolute encoder TST PD / TST PE 0900: Mechanical limit switches assists by timer (incremental mode)  <i>This function is working only in automatic mode</i>  <i>The exact settings which this profile involves can be found in Appendix: Position Sensor Profile.</i>  In addition, the standard functions of the controller inputs are matched to the limit switch type in use.

10 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 turn direction are taught. i 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 pre-limit switch and limit switch bands	If automatic calculation of the pre-limit switch and limit switch bands (P.216) is activated, this parameter can be used to start a new teaching of the pre-limit switch and limit switch bands. 0: Make no correction. 1: Start correction of the pre-limit switch and limit switch bands. i Correction of the pre-limit switch and limit switch bands is only possible if P.216 = 2.
P.217 --w	0 ... 600	Tolerance of automatic end switch correction	With this parameter an offset is set to the end position find out by the automatic end switch correction. Because of that the door is not able to overrun the end switch position of the door by the first move. The end switch position will move by the value (in percent) adjusted with this parameter.

11 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.

11.1 End position door close modify

P.	[Unit] Range	Function	Description/ Note
P.221 www	[Increments] -120 ... 120	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.

11.2 Start of Door Closing

P.	[Unit] Range	Function	Description/ Note
P.350 -ww	[Hz] 6 ... 200	Travel frequency for rapid CLOSE	Here you specify the maximum close speed in Hz. Start ramp "r5" is used to accelerate to this speed. The steepness of the ramp is set with Parameter P.351 or P.352.

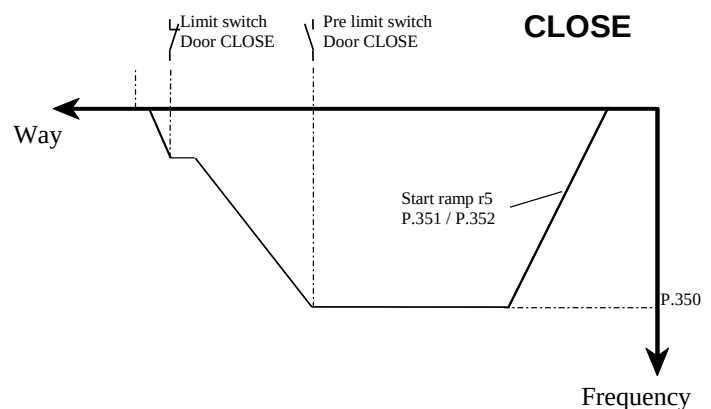


Figure 5 Start ramp, CLOSE

P.	[Unit] Range	Function	Description/ Note
P.351 --r	[10 ms] 20 ... 500	Duration of start ramp "r5"	Time of start ramp "r5" in milliseconds. The door is accelerated within the specified time from 0Hz to the maximum close speed (P.350). Smaller values result in greater acceleration of the door. Larger values result in diminished acceleration of the door. i This parameter is only visible and settable if Parameter P.216 is set to 0.
P.352 --r	[Hz/s] 5 ... 300	Acceleration of start ramp "r5"	Acceleration during start ramp "r5" in Hertz per second. Smaller values result in diminished acceleration of the door. Larger values result in greater acceleration of the door. i This parameter is only visible and settable if Parameter P.216 is greater than 0.

11.3 Slow down after Pre-limit switch during Door CLOSE

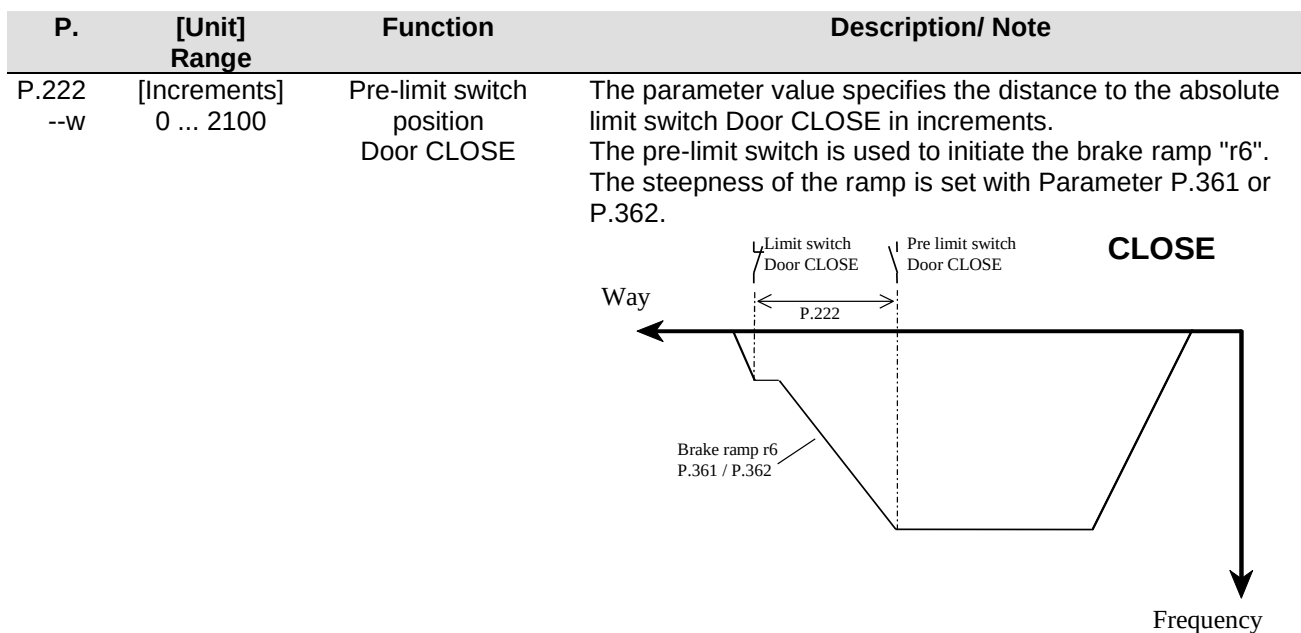


Figure 6 Pre-limit switch position Door CLOSE

P.	[Unit] Range	Function	Description/ Note
P.360 --w	[Hz] 6 ... 200	Creep speed frequency for CLOSE	Brake ramp "r6" is used to slow to creep speed frequency, and is initiated after activation of the pre-limit switch Door CLOSE. The steepness of the brake ramp "r6" is set with Parameter P361 or P.362.

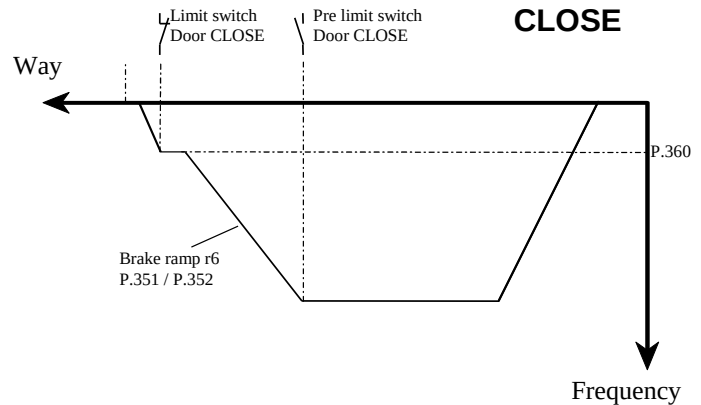


Figure 7 Creep move for CLOSE

P.361 --r	[10 ms] 15 ... 500	Duration of brake ramp "r6"	This parameter specifies the time of brake ramp "r6" in milliseconds. The door is decelerated from maximum close frequency (P350) to creep frequency (P.360) within this time. Smaller values result in greater deceleration of the door. Larger values result in diminished deceleration of the door. i This parameter is only visible and settable if Parameter P.216 is set to 0.
P.362 --r	[Hz/s] 5 ... 300	Acceleration of brake ramp "r6"	This parameter specifies the acceleration of the door during brake ramp "r6" in Hertz per second. Smaller values result in diminished deceleration of the door. Larger values result in greater deceleration of the door. i This parameter is only visible and settable if Parameter P.216 is greater than 0.

12 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.

12.1 Adjust the end position Door open

P.	[Unit] Range	Function	Description/ Note
P.231 -ww	[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.

12.2 Start Door Opening

P.	[Unit] Range	Function	Description/ Note
P.310 -ww	[Hz] 6 ... 200	Travel frequency for rapid OPEN	Here you specify the maximum open speed in Hz. Start ramp "r1" is used to accelerate to this speed. The steepness of the ramp is set with Parameter P.311 or P.312.

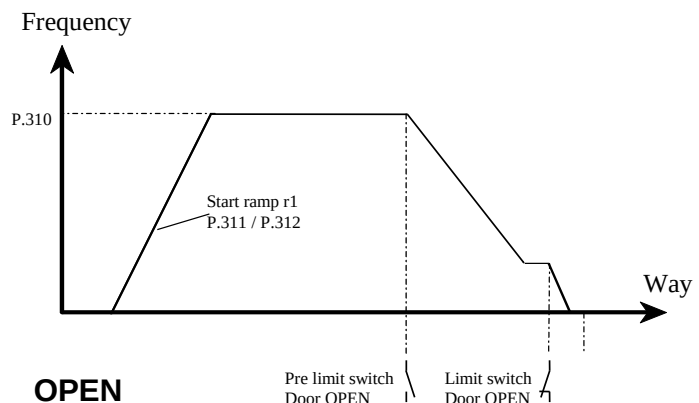
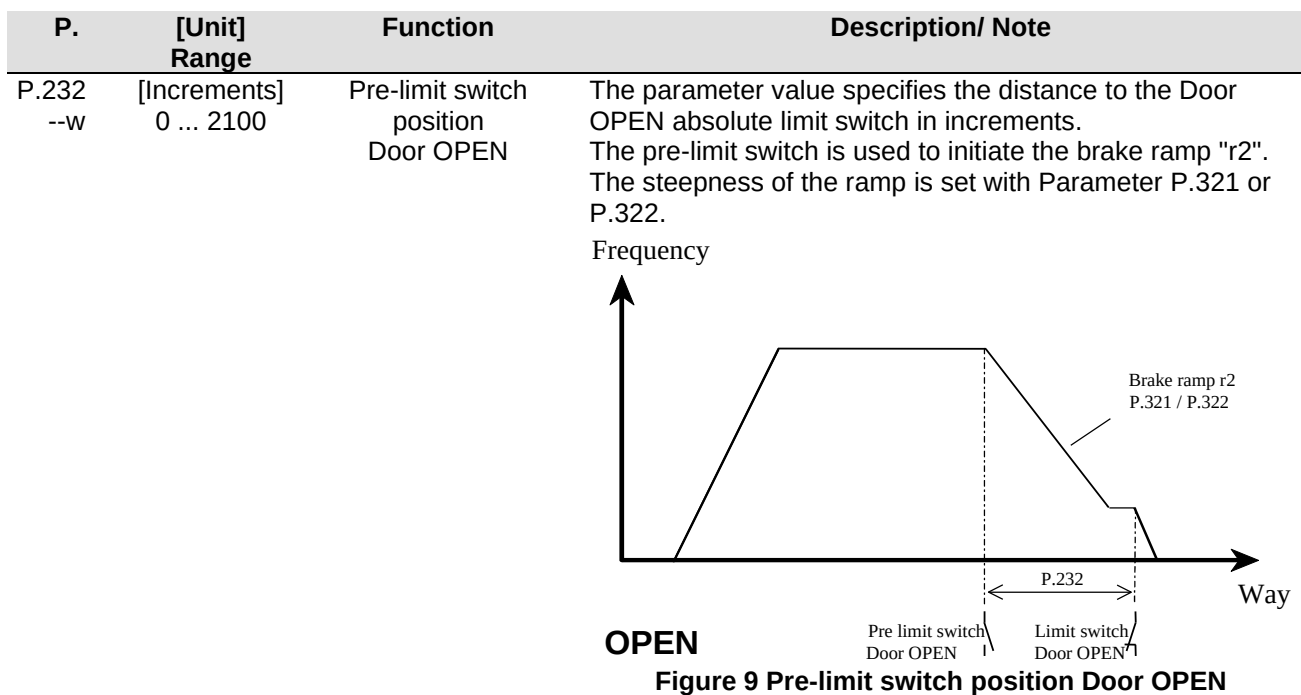


Figure 8 Start ramp, OPEN move

P.	[Unit] Range	Function	Description/ Note
P.311 --r	[10 ms] 20 ... 500	Duration of start ramp "r1"	Time of start ramp "r1" in milliseconds. The door is accelerated within the specified time from 0Hz to the maximum open speed (P.310). Smaller values result in greater acceleration of the door. Larger values result in diminished acceleration of the door. i This parameter is only visible and settable if Parameter P.216 is set to 0.
P.312 --r	[Hz/s] 5 ... 300	Acceleration of start ramp "r1"	Acceleration during start ramp "r1" in Hertz per second. Smaller values result in diminished acceleration of the door. Larger values result in greater acceleration of the door. i This parameter is only visible and settable if Parameter P.216 is greater than 0.

12.3 Slow down after pre-limit switch is triggered during Door OPEN



P.	[Unit] Range	Function	Description/ Note
P.320 --w	[Hz] 6 ... 200	Creep speed frequency for OPEN	Brake ramp "r2" is used to slow to creep speed frequency, and is initiated after activation of the pre-limit switch Door OPEN.

The steepness of the brake ramp "r2" is set with Parameter P.321 or P.322.

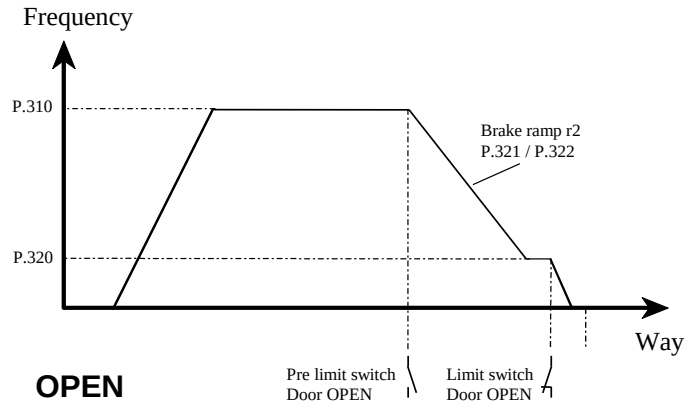


Figure 10 Creep move for OPEN

P.321 --r	[10 ms] 15 ... 500	Duration of brake ramp "r2"	This parameter specifies the acceleration of the door during brake ramp "r2" in Hertz per second. The door is slowed down from the maximum opening frequency (P.310) to creep frequency (P.320) within this time.
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Smaller values result in diminished deceleration of the door.
Larger values result in greater deceleration of the door.

i This parameter is only visible and settable if Parameter P.216 is greater than 0.

P.322 --r	[Hz/s] 5 ... 300	Acceleration of brake ramp "r2"	This parameter specifies the acceleration of the door during brake ramp "r2" in Hertz per second.
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Smaller values result in diminished deceleration of the door.
Larger values result in greater deceleration of the door.

i This parameter is only visible and settable if Parameter P.216 is greater than 0.

13 Synchronisation

13.1 Synchronization type

P.	[Unit] Range	Function	Description/ Note
P.25F -ww	0 ... 10	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 safety edge. 3: Synchronization to reference switch in Door OPEN endposition. 4: Synchronization to mechanical stop in Door OPEN endposition. 5: Synchronization to safety edge and then to mechanical stop in Door OPEN endposition. 6: Synchronization to safety edge and then to reference switch in Door OPEN endposition. 7: Synchronization to reference switch in Door CLOSE endposition and then to mechanical stop in Door OPEN Endposition. 8: Synchronization to mechanical stop in Door CLOSE Endposition and then to mechanical stop in Door OPEN Endposition. 9: Manual synchronization to Door CLOSE Endposition and to Door OPEN Endposition. 10: Timer-limit switch-mode. Synchronisation is done automatically to end switch CLOSE and OPEN.



The exact settings which this profile involves can be found in Appendix: Synchronization Type.

14 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.

15 Light Curtain

P.	[Unit] Range	Function	Description/ Note
A.480	0 ... 3	Light curtain 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. 3: Light curtain TST LGD activated.

15.1 TST LGB

P.	[Unit] Range	Function	Description/ Note
P.44A -ww	[m] 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 rrr		Serial number transmitter	Displays the serial number of the transmitter.
P.934 rrr		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.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 rww		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.

15.2 TST LGD

P.	[Unit] Range	Function	Description/ Note
L.201		Light curtain 1 Assignment	This parameter is used to select the light curtain that is connected to the CAN bus. The serial number of the selected light curtain is displayed and the light curtain's diagnostic LEDs are flashing.
L.207	0000 ... 1804	Light curtain 1 Input profile safety area	The reaction to a triggering in the safety area of the light curtain can be set via the following input profiles. The profile acts on parameters L.270 to L.27F.
L.208	0000 ... 1804	Light curtain 1 Input profile object protection area	The reaction to a triggering in the object protection area of the light curtain can be set via the following input profiles. The profile acts on parameters L.280 to L.28F.
L.210	0 ... 4	Light curtain 1 Operating mode	This parameter is used to configure the operating mode of the light curtain. 0: Deactivated - The light curtain is deactivated and there is no monitoring of the danger area. The virtual outputs are triggered. 1: Autark mode - In autark mode, all tests and virtual outputs of the light curtain have full functionality. The blanking of the door leaf is done by light line assignments and not by position encoder data. 2: Photo eye mode - In the photo eye mode there is no door blanking. Each interruption of a light line triggers virtual output no. 2. Virtual output no. 1 is permanently triggered in this operating mode. 3: Stack mode - Currently not yet supported 4: Position encoder mode - The regular mode for operating the light curtain as a safety device. All tests and virtual outputs of the light curtain have full functionality. The door leaf is blanked using position encoder data. An intermediate stop with a door leaf that is narrower than the light line distance is possible.
L.214	0 ... 56	Light curtain 1 Blanking of a single light line	With this parameter, a single, individual light beam can be blanked. Only the available light beams are listed for selection. The 1 indicates the lowest available light line.
L.215	0 ... 1	Light curtain 1 Teach-in	This parameter is used to restart the teach-in / synchronization mode (same as P.210 = 5) 1: Teach-in of all limit switches: sets P.210 to 5 and jumps back to 0
L.251	0 ... 1	Light curtain 1 Recording of light beam interruption sequences	This parameter can be used to activate/deactivate a diagnostic function, which saves changes of the light beam interruption to the log file. Prerequisite for this is a connected USB stick and an active logging function. 0: Deactivated 1: Activated (automatically deactivated after restart)

P.	[Unit] Range	Function	Description/ Note
L.252	0 ... 1	Light curtain 1 Recording Signal quality	With this parameter, cyclic storage of the light curtain signal quality in the log file can be activated / deactivated. 0: Deactivated 1: Activated
L.254		Light curtain 1 Signal quality in sections	This parameter displays the signal quality of the TST LGD in 3 sections (bottom/middle/top). For each range, a number from 0 (poor quality) to 9 (good quality) is displayed.
L.255		Light curtain 1 Signal quality single light beams	With this parameter, the current signal quality of each single light beam can be displayed.
L.256	0 ... 100	Light curtain 1 Storage of door run curves	With this parameter, the door run curve of the light curtain can be recorded for an adjustable number of cycles. This function is limited to a maximum of 100 door cycles, as it requires a lot of communication with the light curtain and a lot of space on a USB stick.
L.257		Light curtain 1 VCC 24 V receiver	Displays the current value of the 24 V voltage supply of the light curtain receiver.
L.258		Light curtain 1 VCC 24 V transmitter	Displays the current value of the 24 V power supply of the light curtain transmitter.
L.260		Light curtain 1 Serial Number Receiver	This parameter displays the serial number of the light curtain receiver.
L.261		Light curtain 1 Serial number transmitter	This parameter displays the serial number of the light curtain transmitter.
L.262		Light curtain 1 Software Version Receiver	This parameter displays the software version of the light curtain receiver.
L.263		Light curtain 1 Software version transmitter	This parameter displays the software version of the light curtain transmitter.
L.264		Light curtain 1 Hardware Version Receiver	This parameter displays the hardware version of the light curtain receiver.
L.265		Light curtain 1 Hardware Version Transmitter	This parameter displays the hardware version of the light curtain transmitter.
L.266		Light curtain 1 Bus protocol version	This parameter displays the communication protocol version of the light curtain.

16 Radio safety system

P.	[Unit] Range	Function	Description/ Note
P.92A rrr		Software version 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 actual capacity of the battery.  <i>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.</i>
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.9F3 -rr		Error counter FSx	Error counter of the wireless safety device. It shows the number of errors during the last door drive. This counter is reset by the beginning of each door drive. Also possible: P.910 = 24.
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.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.  <i>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</i>
P.F09 -ww	[Volt] 1,2 ... 3,6	Battery nominal voltage	Here the nominal voltage of the battery is put in.
P.FF2	0 ... 2	Mode output 2	Output mode of the output No. 2

P.	[Unit] Range	Function	Description/ Note
-ZZ			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 analogue input or mixed inputs are linked to this output the output signal is analogue. 1: Analogue output signal 2: Digital output signal

16.1 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.F1F -ww	0000 ... F302	Function input 1	Selection of the Input configuration for the input 1 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.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

P.	[Unit] Range	Function	Description/ Note
			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.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.

16.2 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.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 confirmed it. Because of this e.g. a crash tripping during switched off controller will not get lost.

P.	[Unit] Range	Function	Description/ Note
			0: Handshake deactivated 1: Handshake between input of mobile unit and controller activated.
			 The software version of the mobile unit as well as the software version of the stationary unit must support this function (from version Vxx-04.04 possible).
P.F19 -ZZ	0 ... 73	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</i>

16.3 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.	[Unit] Range	Function	Description/ Note
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.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 confirmed 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.  <i>The software version of the mobile unit as well as the software version of the stationary unit must support this function (from version Vxx-04.04 possible).</i>
P.F29 -ZZ	0 ... 73	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</i>

16.4 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.	[Unit] Range	Function	Description/ Note
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.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 confirmed 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.  <i>The software version of the mobile unit as well as the software version of the stationary unit must support this function (from version Vxx-04.04 possible).</i>
P.F39 -ZZ	0 ... 73	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</i>

16.5 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 confirmed 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. i <i>The software version of the mobile unit as well as the software version of the stationary unit must support this function (from version Vxx-04.04 possible).</i>
P.F49 -ZZ	0 ... 73	LCD Messages	Select the LCD Messages which are shown in the Display i <i>The list of messages can be found in the Appendix LCD Messages</i>

16.6 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 ... 73	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 ... 73	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 ... 73	LCD Messages	Select the LCD Messages which are shown in the Display  The list of messages can be found in the Appendix LCD Messages

17 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) .

17.1 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 edge with testing in Door close end position, functioning as normally open 4: Electrical safety edge 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.  <i>The exact settings which this profile involves can be found in the Appendix :Safety edge profile</i>
P.466 -zz	0 ... 2	External testing of safety edge	With this parameter a testing of the safety edge can requested. Testing is possible in door CLOSE or OPEN position. 0: No test 1: Test in the endposition Door Open and after start up of the controller 2: Test in the endposition Door Close and after start up of the controller

18 External control unit

P.	[Unit] Range	Function	Description/ Note
L.B01		TST UTA 1 Assignment	For the user, the lowest four digits of the serial number are displayed and the currently selected TST UTA flashes with its LEDs.
L.B02	0 ... 1	TST UTA 1 Activation	Activates/deactivates the corresponding device. 0: Deactivated 1: TST UTA
L.B07	0000 ... 1804	TST UTA 1 Input profile OPEN button	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.  <i>The exact settings which this profile involves can be found in Chapter "Overview of Input Profiles"</i>
L.B08	0000 ... 1804	TST UTA 1 Input profile STOP button	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.  <i>The exact settings which this profile involves can be found in Chapter "Overview of Input Profiles"</i>
L.B09	0000 ... 1804	TST UTA 1 Input profile CLOSE button	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.  <i>The exact settings which this profile involves can be found in Chapter "Overview of Input Profiles"</i>
L.B0C	0000 ... 3202	TST UTA 1 Output profile Red LED	The function of the output can be defined with this profile.
L.B0D	0000 ... 3202	TST UTA 1 Output profile Green LED	The function of the output can be defined with this profile.
L.B0E	0000 ... 3202	TST UTA 1 Output profile Blue LED	The function of the output can be defined with this profile.

P.	[Unit] Range	Function	Description/ Note
L.B13	0 ... A4	TST UTA 1 Linking of an output with OPEN LED	This parameter defines the output number to which the output LED "OPEN" of the UTA is to be linked. If this output is active, the output LED "OPEN" becomes active. 0: Deactivated 1: Output 1 2: Output 2 3: Output 3 4: Output 4 5: Output 5 6: Output 6 7: Output 7 8: Output 8 9: Output 9 10: Output 10 11: Output 11 12: Output 12 13: Output 13 14: Output 14 15: Output 15 21: Output 21 22: Output 22 23: Output 23 24: Output 24 25: Output 25 26: Output 26 27: Output 27 28: Output 28 29: Output 29 2A: Output 2A 2B: Output 2B 2C: Output 2C 2D: Output 2D 2E: Output 2E 2F: Output 2F 31: Output 31 32: Output 32 33: Output 33 34: Output 34 35: Output 35 36: Output 36 37: Output 37 38: Output 38 A2: TST UTA 1 Output 1 A3: TST UTA 1 Output 2 A4: TST UTA 1 Output 3

P.	[Unit] Range	Function	Description/ Note
L.B14	0 ... A4	TST UTA 1 Linking of an output with CLOSE LED	This parameter defines the output number to which the output LED "CLOSE" of the UTA is to be linked. If this output is active, the output LED "CLOSE" becomes active. 0: Deactivated 1: Output 1 2: Output 2 3: Output 3 4: Output 4 5: Output 5 6: Output 6 7: Output 7 8: Output 8 9: Output 9 10: Output 10 11: Output 11 12: Output 12 13: Output 13 14: Output 14 15: Output 15 21: Output 21 22: Output 22 23: Output 23 24: Output 24 25: Output 25 26: Output 26 27: Output 27 28: Output 28 29: Output 29 2A: Output 2A 2B: Output 2B 2C: Output 2C 2D: Output 2D 2E: Output 2E 2F: Output 2F 31: Output 31 32: Output 32 33: Output 33 34: Output 34 35: Output 35 36: Output 36 37: Output 37 38: Output 38 A2: TST UTA 1 Output 1 A3: TST UTA 1 Output 2 A4: TST UTA 1 Output 3
L.B15	0 ... A4	TST UTA 1 Linking of an output with STOP LED	This parameter defines the output number to which the output LED "STOP" of the UTA is to be linked. If this output is active, the output LED "STOP" becomes active. 0: Deactivated 1: Output 1 2: Output 2 3: Output 3 4: Output 4 5: Output 5 6: Output 6

P.	[Unit] Range	Function	Description/ Note
			7: Output 7 8: Output 8 9: Output 9 10: Output 10 11: Output 11 12: Output 12 13: Output 13 14: Output 14 15: Output 15 21: Output 21 22: Output 22 23: Output 23 24: Output 24 25: Output 25 26: Output 26 27: Output 27 28: Output 28 29: Output 29 2A: Output 2A 2B: Output 2B 2C: Output 2C 2D: Output 2D 2E: Output 2E 2F: Output 2F 31: Output 31 32: Output 32 33: Output 33 34: Output 34 35: Output 35 36: Output 36 37: Output 37 38: Output 38 A2: TST UTA 1 Output 1 A3: TST UTA 1 Output 2 A4: TST UTA 1 Output 3
L.B16	0 ... 1	TST UTA 1 Activate Bluetooth interface	This parameter activates the Bluetooth interface of the TST UTA. 0: Deactivated 1: Activated
L.B60		TST UTA 1 Serial number	This parameter displays the TST UTA serial number.
L.B62		TST UTA 1 Software version	This parameter displays the software version of the TST UTA.
L.B64		TST UTA 1 Hardware version	With this parameter the hardware version of the TST UTA 1 is displayed
L.B66		TST UTA 1 Bus protocol version	This parameter displays the communication protocol version of the TST UTA.

19 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 lockable, 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 0117: OPEN 1, NO contact, OPEN till final position is reached, without hold open time, with clearance time, direction from the inside

P.	[Unit] Range	Function	Description/ Note
		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
		0152:	OPEN Command which starts additionally the emergency opening test. For this P.494 = 2 must be set.
		0165:	OPEN 1 may be locked. Special functions for traffic light switching behavior 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. Intermediate 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. Intermediate 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. Intermediate 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
			 <i>This Function works only with inputs for 8K2 evaluation, e.g. IN10</i>
		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 interrupts the OPENING and locks CLOSE commands, NO contact, with Clearance time
		0704:	CLOSE-command which interrupts 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
		0803:	Stop, followed by automatic OPENING, NO contact, wait for CLOSE-command
		0804:	Stop, followed by automatic CLOSING, NO 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
		1106:	Pre-limit switch door OPEN, NO contact
		1107:	Pre-limit switch door OPEN, NC contact
		1108:	Pre-limit switch door CLOSE, NO contact
		1109:	Pre-limit switch door CLOSE, NC contact
		1110:	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

P.	[Unit] Range	Function	Description/ Note
			1422: Safety A, reversing when OPENING, 8K2 contact, End position as before, with clearance time  <i>This Function works only with inputs for 8K2 evaluation, e.g. IN10</i> 1501: Simulation foil keypad OPEN 1502: Simulation foil keypad CLOSE 1506: Simulation foil keypad STOP 1612: Safety C when OPENING, free ride as long as input is active, 8K2 contact, Final position OPEN, without Clearance time  <i>This Function works only with inputs for 8K2 evaluation, e.g. IN10</i> 1613: Safety C, reversing when CLOSING, 8K2 contact, End position as before, with Hold open time, with Clearance time  <i>This Function works only with inputs for 8K2 evaluation, e.g. IN10</i> 1615: Safety C. Reversing when closing, NC 1624: Safety C, Safety during 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  <i>To adjust the detector the parameters P.66x are used</i> 1802: External detector channel 2  <i>To adjust the detector the parameters P.67x are used</i> 1803: External detector channel 3  <i>To adjust the detector the parameters P.6Cx are used</i> 1804: External detector channel 4  <i>To adjust the detector the parameters P.6Dx are used</i>  <i>The exact settings which this profile involves can be found in Chapter "Overview of Input Profiles"</i>
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.	[Unit] Range	Function	Description/ Note
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

P.	[Unit] Range	Function	Description/ Note
P.608 --W	0000 ... 1804	Profile for radio channel 1	With this profile all parameters for the radio channel 1 will be set.
			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
			 <i>OPEN command will performed if detector channel 1 is active at the same time (P.660 = 7)</i>
			0114: OPEN lockage, not lockable, 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
			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

P.	[Unit] Range	Function	Description/ Note
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	
0152:		OPEN Command which starts additionally the emergency opening test. For this P.494 = 2 must be set.	
0165:		OPEN 1 may be locked. Special functions for traffic light switching behavior 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. Intermediate 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. Intermediate 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. Intermediate 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	
0407:		Crash impulse as N.O. contact	
0411:		Crash impulse as N.C. contact	

P.	[Unit] Range	Function	Description/ Note
		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 interrupts the OPENING and locks CLOSE commands, NO contact, with Clearance time
		0704:	CLOSE-command which interrupts 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
		0803:	Stop, followed by automatic OPENING, NO contact, wait for CLOSE-command
		0804:	Stop, followed by automatic CLOSING, NO contact
		0901:	Cross traffic, locking of OPEN 1 and detector 1 commands, NO contact

P.	[Unit] Range	Function	Description/ Note
		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
		1106:	Pre-limit switch door OPEN, NO contact
		1107:	Pre-limit switch door OPEN, NC contact
		1108:	Pre-limit switch door CLOSE, NO contact
		1109:	Pre-limit switch door CLOSE, NC contact
		1110:	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 keypad OPEN

P.	[Unit] Range	Function	Description/ Note
			1502: Simulation foil keypad CLOSE 1506: Simulation foil keypad STOP 1612: Safety C when OPENING, free ride as long as input is active, 8K2 contact, Final position OPEN, without Clearance time  <i>This Function works only with inputs for 8K2 evaluation, e.g. IN10</i> 1613: Safety C, reversing when CLOSING, 8K2 contact, End position as before, with Hold open time, with Clearance time  <i>This Function works only with inputs for 8K2 evaluation, e.g. IN10</i> 1615: Safety C. Reversing when closing, NC 1624: Safety C, Safety during 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  <i>To adjust the detector the parameters P.66x are used</i> 1802: External detector channel 2  <i>To adjust the detector the parameters P.67x are used</i> 1803: External detector channel 3  <i>To adjust the detector the parameters P.6Cx are used</i> 1804: External detector channel 4  <i>To adjust the detector the parameters P.6Dx are used</i>  <i>The exact settings which this profile involves can be found in the Appendix: Radio profile.</i>
P.609 --w	0000 ... 1804	Profile for radio channel 2	With this profile all parameters for the radio channel 2 will be set.  <i>The exact settings which this profile involves can be found in the Appendix: Radio profile.</i>

19.1 Input profiles with expansion card



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

20 Input parameterizing of standard digital and radio inputs

Any desired function can be set for each input on the door controller.

You can set the function either by selecting an input profile or individually using the following Parameters .

x = Number of the input you wish to configure

P.5x0 / P.Ex0 / P.Ax0 = Basic function of the input

P.5x1 / P.Ex1 / P.Ax1 = Mode of the basic function that was set under P.5x0

P.5x2 / P.Ex2 / P.Ax2 = Connected contact type: N.O. / normally open or N.C. / normally closed

P.5x3 / P.Ex3 / P.Ax3 = End position to move to

P.5x4 / P.Ex4 / P.Ax4 = Type of hold-open time / forced closing which runs after activating the input (P.010 to P.015)

P.5x5 / P.Ex5 / P.Ax5 = Specifies whether the clear time runs after activating the input (P.020 and P.025)

P.5x6 / P.Ex6 / P.Ax6 = Logical direction of the input

P.5x7 / P.Ex7 / P.Ax7 = Switch on delay of input

P.5x8 / P.Ex8 / P.Ax8 = Switch off delay of input

P.5x9 / P.Ex9 / P.Ax9 = LCD-Text, to be displayed when activating the input

P.5xA / P.ExA / P.AxA = Test of the input

P.5xF / P.ExF / P.AxF = Assignment to the output of the stationary unit of the radio safety system



Setting under P.5x0 / P.Ex0 / P.Ax0 also involves various settings for Parameters P.5x1 / P.Ex1 / P.Ax1 to P.5xF / P.ExF / P.AxF.

20.1 Cross-traffic input P.5x0 / P.Ex0 / P.Ax0 = 9

Parameter P.5x0 / P.Ex0 / P.Ax0 must be set to 9 in order to activate the basic function Cross-traffic for this input.

X = Number of the input you wish to configure

P.	[Unit] Range	Function	Description/ Note
P.810 --w	[Seconds] 0 ... 30	Block time Detector Channel 1 and OPEN 1	Detector channel 1 and OPEN 1 commands are locked out for the time specified in this parameter after activating a cross-traffic input.
P.820 --w	[Seconds] 0 ... 30	Block time Detector Channel 2 and OPEN 2	Detector channel 2 and OPEN 2 commands are locked out for the time specified in this parameter after activating a cross-traffic input.

21 Induction loop detectors

P.	[Unit] Range	Function	Description/ Note
P.890 --w	0 ... 2	Locking of Close commands from detector	Locking of Close commands from detectors at oncoming traffic and/or convoy traffic. The close command is suppressed as long as cross- or convoy traffic is there. 0: No locking of CLOSE commands of the detectors 1: Locking of CLOSE commands in case of recognized oncoming traffic 2: Locking of CLOSE commands in case of recognized oncoming traffic and convoy traffic.
P.B6D --w	0 ... 1	Sampled-data filter	The parameter shows if the sample-signals will be filtered. 0: No Filter (high sensitivity) 1: With Filter (Low sensitivity) i This function works only for detectors placed on extension boards but not for plug in detectors.
P.B6E --w	0 ... 1	Calling new adjustment	After setting the parameter to 1 a new adjustment of all loops will be performed. 0: No function 1: Ask for retuning i This function works only for detectors placed on extension boards but not for plug in detectors.

21.1 Detector channel 3



The detector channel 3 is only useable in connection with the additional board TST MNST / TST RFUxK (TST RFUxK is no longer supported in TST EWA4) or as input function external detector.

P.	[Unit] Range	Function	Description/ Note
P.BC2 -ww	0 ... 5	Frequency range of detector channel 3	This parameter specifies the frequency range on which detector channel 3 works 0: Range will set automatically dependent on the address. 1: Range 30-40 kHz 2: Range 45-55 kHz 3: Range 60-75 kHz 4: Range 80-100 kHz 5: Range 105-140 kHz



To prevent mutual influencing of the detectors among each others different working frequencies have to be adjusted.

P.BC3 -ww	1 ... 255	Threshold level of detector channel 3	Threshold value at which detector channel 3 is rated as tripped. 0: Threshold level 6 0,005% delta f/f 1: Threshold level 10 0,008% delta f/f . 12: Threshold level 120 0,100% delta f/f . 255: Threshold level 2550 2,125% delta f/f
P.BC4 -ww	20 ... 80	Hysteresis of detector channel 3	To prevent a momentary drop-out of the busy signal caused by vehicles such as articulated busses, streetcars, trucks with trailers, etc., it is possible to change the switching hysteresis. Interruption-free detection of critical vehicles is than possible even when the on sensitivity is set low. With the factory default setting the off threshold is 75%.

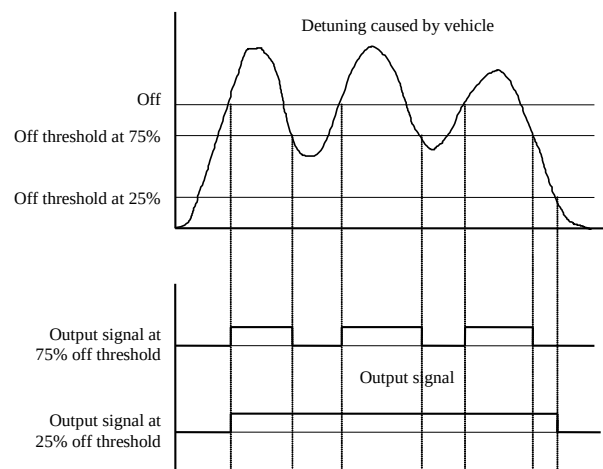


Figure 11 Waste hysteresis detector channel 3

P.BC5 -ww	0 ... 255	Holding time of detector channel 3	Defines the min. trigger time at which the detector starts a retuning of channel 3.
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21.2 Detector Channel 4



The detector channel 4 is only useable in connection with the additional board TST MNST / TST RFUxK (TST RFUxK is no longer supported in TST EWA4) or as input function external detector.

P.	[Unit] Range	Function	Description/ Note
P.BD2 -ww	0 ... 5	Frequency range of detector channel 4	This parameter specifies the frequency range on which detector channel 4 works 0: Range will set automatically dependent on the address. 1: Range 30-40 kHz 2: Range 45-55 kHz 3: Range 60-75 kHz 4: Range 80-100 kHz 5: Range 105-140 kHz i To prevent mutual influencing of the detectors among each others different working frequencies have to be adjusted.
P.BD3 -ww	1 ... 255	Threshold level of detector channel 4	Threshold value at which detector channel 4 is rated as tripped. 0: Threshold level 6 0,005% delta f/f 1: Threshold level 10 0,008% delta f/f ... 12: Threshold level 120 0,100% delta f/f ... 255: Threshold level 2550 2,125% delta f/f

P.	[Unit] Range	Function	Description/ Note
P.BD4 -ww	20 ... 80	Hysteresis of detector channel 4	To prevent a momentary drop-out of the busy signal caused by vehicles such as articulated busses, streetcars, trucks with trailers, etc., it is possible to change the switching hysteresis. Interruption-free detection of critical vehicles is than possible even when the on sensitivity is set low. With the factory default setting the off threshold is 75%.

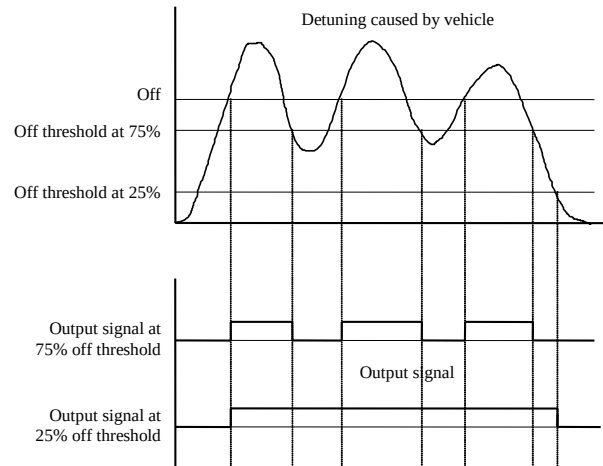


Figure 12 Waste hysteresis detector channel 4

P.BD5 -ww	0 ... 255	Holding time of detector channel 4	Defines the min. trigger time at which the detector starts a retuning of channel 4.
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22 Induction loop detector VEK MNST

P.	[Unit] Range	Function	Description/ Note
L.102	0 ... 1	VEK MNST Deactivate	This parameter can be used to temporarily deactivate the detector without deleting the slot assignment. 0: Detector inactive 1: Detector active
L.111	0 ... 1	VEK MNST Request new adjustment	A new adjustment of all loops is made. 0: No function 1: Ask for retuning

22.1 VEK MNST channel 1

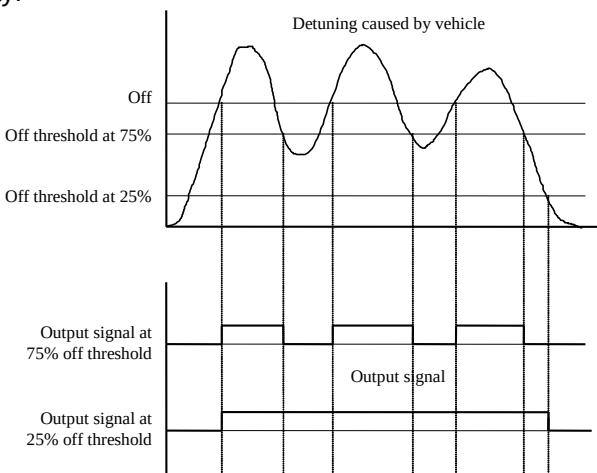
P.	[Unit] Range	Function	Description/ Note
L.120	0 ... 18	Frequency range of the detector VEK MNST Channel 1	The parameter defines the frequency range in which channel 1 of the VEK MNST detector operates. 0: Detector channel deactivated 17: Low frequency range 18: High frequency range
L.121	4 ... 2550	Threshold value of the VEK MNST detector Channel 1	Threshold value above which channel 1 of detector VEK MNST is rated as tripped (in increments (or delta f/f)). 4: Threshold value 4 (0.004%) 10: Threshold value 10 (0.010%) . 120: Threshold 120 (0.120%) . 255: Threshold value 2550 (2.55%)
L.122	[%] 20 ... 80	Off Threshold of the VEK MNST detector Channel 1	For vehicles with a high substructure, like buses, trams, trucks with trailers, etc. It is possible to change the switching hysteresis in order to avoid a temporary drop in the occupant signal. An uninterrupted detection of critical vehicles is then also possible with a low set trigger sensitivity. 
L.123	[Minutes] 0 ... 255	Hold time of the VEK MNST detector Channel 1	Defines the smallest busy time at which the VEK MNST detector starts a new calibration for channel 1. 0: Infinite hold time (no recalibration) 1-255: Hold time in minutes

Figure 13 Off Threshold of the VEK MNST detector Channel 1

22.2 VEK MNST channel 2

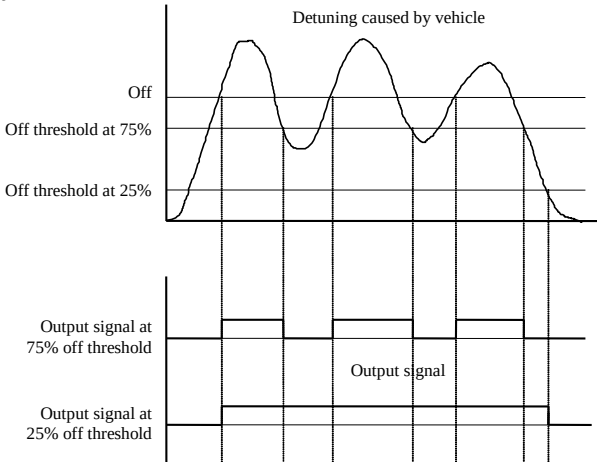
P.	[Unit] Range	Function	Description/ Note
L.124	0 ... 18	Frequency range of the detector VEK MNST Channel 2	The parameter defines the frequency range in which channel 2 of the VEK MNST detector operates. 0: Detector channel deactivated 17: Low frequency range 18: High frequency range
L.125	4 ... 2550	Threshold value of the VEK MNST detector Channel 2	Threshold value above which channel 2 of detector VEK MNST is evaluated as occupied (in increments (or delta f/f)). 4: Threshold value 4 (0.004%) 10: Threshold value 10 (0.010%) 120: Threshold 120 (0.120%) 255: Threshold value 2550 (2.55%)
L.126	[%] 20 ... 80	Off Threshold of the VEK MNST detector Channel 2	For vehicles with a high substructure, like buses, trams, trucks with trailers, etc. It is possible to change the switching hysteresis in order to avoid a temporary drop in the occupant signal. An uninterrupted detection of critical vehicles is then also possible with a low set trigger sensitivity. 
L.127	[Minutes] 0 ... 255	Hold time of the VEK MNST detector Channel 2	Defines the smallest busy time at which the VEK MNST detector starts a new calibration for channel 2. 0: Infinite hold time (no recalibration) 1-255: Hold time in minutes

Figure 14 Off Threshold of the VEK MNST detector
Channel 2

22.3 VEK MNST channel 3

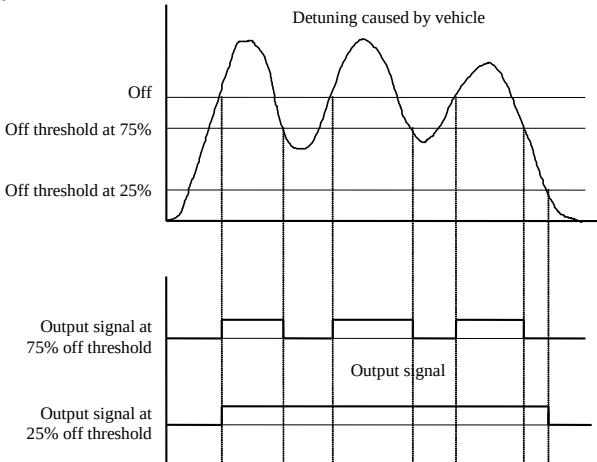
P.	[Unit] Range	Function	Description/ Note
L.128	0 ... 18	Frequency range of the detector VEK MNST Channel 3	The parameter defines the frequency range in which channel 3 of the VEK MNST detector operates. 0: Detector channel deactivated 17: Low frequency range 18: High frequency range
L.129	4 ... 2550	Threshold value of the VEK MNST detector Channel 3	Threshold value above which channel 3 of detector VEK MNST is evaluated as occupied (in increments (or delta f/f)). 4: Threshold value 4 (0.004%) 10: Threshold value 10 (0.010%) 120: Threshold 120 (0.120%) 255: Threshold value 2550 (2.55%)
L.12A	[%] 20 ... 80	Off Threshold of the VEK MNST detector Channel 3	For vehicles with a high substructure, like buses, trams, trucks with trailers, etc. It is possible to change the switching hysteresis in order to avoid a temporary drop in the occupant signal. An uninterrupted detection of critical vehicles is then also possible with a low set trigger sensitivity. 
L.12B	[Minutes] 0 ... 255	Hold time of the VEK MNST detector Channel 3	Defines the smallest busy time at which the VEK MNST detector starts a new calibration for channel 3. 0: Infinite hold time (no recalibration) 1-255: Hold time in minutes

Figure 15 Off Threshold of the VEK MNST detector
Channel 3

22.4 VEK MNST channel 4

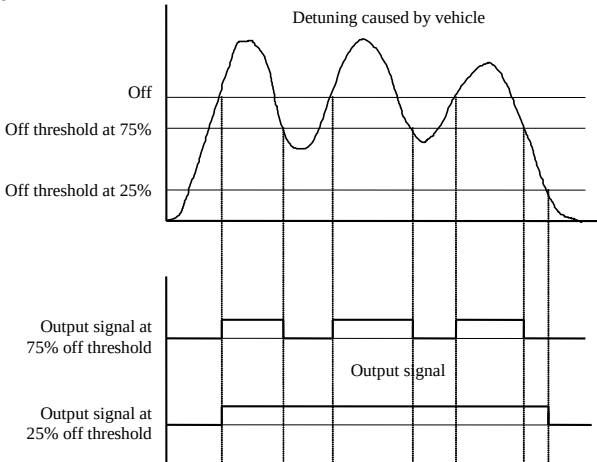
P.	[Unit] Range	Function	Description/ Note
L.12C	0 ... 18	Frequency range of the detector VEK MNST Channel 4	The parameter defines the frequency range in which channel 4 of the VEK MNST detector operates. 0: Detector channel deactivated 17: Low frequency range 18: High frequency range
L.12D	4 ... 2550	Threshold value of the VEK MNST detector Channel 4	Threshold value above which channel 4 of detector VEK MNST is evaluated as occupied (in increments (or delta f/f)). 4: Threshold value 4 (0.004%) 10: Threshold value 10 (0.010%) 120: Threshold 120 (0.120%) 255: Threshold value 2550 (2.55%)
L.12E	[%] 20 ... 80	Off Threshold of the VEK MNST detector Channel 4	For vehicles with a high substructure, like buses, trams, trucks with trailers, etc. It is possible to change the switching hysteresis in order to avoid a temporary drop in the occupant signal. An uninterrupted detection of critical vehicles is then also possible with a low set trigger sensitivity. 
L.12F	[Minutes] 0 ... 255	Hold time of the VEK MNST detector Channel 4	Defines the smallest busy time at which the VEK MNST detector starts a new calibration for channel 4. 0: Infinite hold time (no recalibration) 1-255: Hold time in minutes

Figure 16 Off Threshold of the VEK MNST detector
Channel 4

22.5 VEK MNST diagnostic

P.	[Unit] Range	Function	Description/ Note
L.150	1 ... 4	VEK MNST detector channel selection for diagnosis	The channel of the VEK MNST detector to be diagnosed is selected here. Subsequently, the parameters L.152 to L.155 can be used to call up various diagnostic data for the set channel. 1: Retrieve diagnostic data for channel 1 2: Retrieve diagnostic data for channel 2 3: Retrieve diagnostic data for channel 3 4: Retrieve diagnostic data for channel 4
L.152		Current frequency of the VEK MNST detector channel	This parameter displays the current frequency of the oscillating circuit of the channel of the VEK MNST detector selected via parameter L.150.
L.153		Current detuning of the VEK MNST detector channel	This parameter indicates the current detuning of the channel of detector VEK MNST selected via parameter L.150.
L.154		Maximum detuning of the VEK MNST detector channel	This parameter indicates the maximum detuning caused by the last metallic object that occupied the loop of the detector channel VEK MNST selected by parameter L.150.
L.155		Presence counter of the VEK MNST detector channel	This parameter displays the presence counter of the channel of detector VEK MNST selected via parameter L.150.
L.160		Serial number Detector VEK MNST	Displays the serial number of the inserted VEK MNST detector.
L.162		Software version Detector VEK MNST	Displays the software version of the inserted VEK MNST detector.
L.164		Hardware version Detector VEK MNST	Displays the hardware version of the inserted VEK MNST detector.
L.166		Bus protocol version Detector VEK MNST	Displays the bus protocol version of the inserted VEK MNST detector. This version is used to determine which parameters objects the detector supports.

23 Interface FEIG motion detector

23.1 Motion detector 1

P.	[Unit] Range	Function	Description/ Note
L.602	0 ... 1	Motion detector 1 Deactivation	This parameter can be used to temporarily deactivate motion detector 1. 0: Deactivated 1: Activated
L.660		Motion detector 1 Serial number	This Parameter shows the serial number of the Motion detector 1.
L.662		Motion detector 1 Software version	This Parameter shows the software version of Motion detector 1.
L.664		Motion detector 1 Hardware version	This Parameter shows the Hardware version of Motion detector 1.
L.601		Motion detector 1 MWD BPC Assignment	This parameter explicitly assigns a serial number of a connected motion detector to the MWD BPC motion detector 1. The lowest four digits of the serial number are displayed and the currently selected sensor flashes with its LEDs.
L.61F	0001 ... 0006	Motion detector 1 Profile	This profile sets all associated parameters of motion detector 1. 0001: Default values for motion detector 1 0002: Channel 1 all settings, channel 2 deactivated 0004: Channel 1 persons only (medium), channel 2 vehicles only (medium) 0005: Channel 1 all settings, channel 2 without cross traffic (medium) 0006: Channel 1 all settings, channel 2 with detecting slowly moving objects  <i>The exact settings that this profile entails can be found in the appendix Motion Detector Profiles.</i>
L.666		Bus protocol version	This parameter displays the communication protocol version of the motion detector 1.

23.2 Motion detector 2

P.	[Unit] Range	Function	Description/ Note
L.702	0 ... 1	Motion detector 2 Deactivation	This parameter can be used to temporarily deactivate motion detector 2. 0: Deactivated 1: Activated
L.760		Motion detector 2 Serial number	This Parameter shows the serial number of the Motion detector 2.
L.762		Motion detector 2 Software version	This Parameter shows the software version of Motion detector 2.
L.764		Motion detector 2 Hardware version	This Parameter shows the Hardware version of Motion detector 2.
L.701		Motion detector 2 MWD BPC Assignment	This parameter explicitly assigns a serial number of a connected motion detector to the MWD BPC motion detector 2. The lowest four digits of the serial number are displayed and the currently selected sensor flashes with is LEDs.
L.71F	0001 ... 0006	Motion detector 2 profile	This profile sets all associated parameters of motion detector 2. 0001: Default values for motion detector 1 0002: Channel 1 all settings, channel 2 deactivated 0004: Channel 1 persons only (medium), channel 2 vehicles only (medium) 0005: Channel 1 all settings, channel 2 without cross traffic (medium) 0006: Channel 1 all settings, channel 2 with detecting slowly moving objects  <i>The exact settings that this profile entails can be found in the appendix Motion Detector Profiles.</i>
L.766		Bus protocol version	This parameter displays the communication protocol version of the motion detector 2.

24 Output Profiles

P.	[Unit] Range	Function	Description/ Note
P.701 --W	0000 ... 3202	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 <i> The message depends on the logical status of the door</i> 0103: Door is Open <i> The message depends on the position of the door</i> 0201: Door is Closed <i> The message depends on the logical status of the door</i> 0203: Door is Closed <i> The message depends on the position of the door</i> 0401: There is no error 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 0630: Forwarding Brake 0634: Forwarding, of an low Battery from the WiCab mobile Unit 0659: F.363: forwarding disturbance of the internal safety edge. 0660: Forwarding: maximum number of trips of the safety edges has been exceeded. 0665: Forwarding detector channel 3 0666: Forwarding detector channel 4 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

P.	[Unit] Range	Function	Description/ Note
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	
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	
12AD:		Direction-independent traffic light, flashing during clearing time, switched on during OPEN and CLOSE movement, flashing during stop	
1601:		Airlock OPEN	
1701:		Testing in end position close	
1801:		Counting +	 <i>The function is only possible with detectors 1 and 2. At first you have to activate the + loop and then the - loop.</i>
1901:		Counting -	 <i>The function is only possible with detectors 1 and 2. At first you have to activate the - loop and then the + loop.</i>
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	
2601:		Emergency opening test	
3201:		Output function brake	
3202:		Output function brake (N.C., output turned)	
			 <i>The exact settings which this profile involves can be found in Appendix Output Profile.</i>

P.	[Unit] Range	Function	Description/ Note
P.702 --W	0000 ... 3202	Function of Output 2	see P.701 or P.704
P.70F --W	0000 ... 3202	Function of output 15	see P.701 or P.704
P.D0A --W	0000 ... 3202	Function of output 2A	see P.701 or P.704

24.1 Output profiles with expansion card

P.	[Unit] Range	Function	Description/ Note
P.705 --W	0000 ... 3202	Function of Output 5	see P.701 or P.704
P.706 --W	0000 ... 3202	Function of Output 6	see P.701 or P.704
P.707 --W	0000 ... 3202	Function of Output 7	see P.701 or P.704
P.708 --W	0000 ... 3202	Function of Output 8	see P.701 or P.704
P.709 --W	0000 ... 3202	Function of Output 9	see P.701 or P.704
P.70A --W	0000 ... 3202	Function of Output 10	See P.701 or P.704
P.70B --W	0000 ... 3202	Function of Output 11	see P.701 or P.704
P.D0B --W	0000 ... 3202	Function of output 2B	see P.701 or P.704
P.D0C --W	0000 ... 3202	Function of output 2C	see P.701 or P.704
P.D0D --W	0000 ... 3202	Function of output 2D	see P.701 or P.704
P.D0E --W	0000 ... 3202	Function of output 2E	see P.701 or P.704
P.D0F --W	0000 ... 3202	Function of output 2F	see P.701 or P.704

25 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

26 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 cancelled 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 ... 0301	Airlock mode	This parameter specifies the mode of the airlock system. 0000: Airlock deactivated 0200: Comfortable Airlock Slave, Commands will be forwarded. (Wiring via interface) 0201: Comfortable Airlock Master. (Wiring via interface) 0300: Comfortable Airlock with drive thru recognition by photo eye, Slave. (Wiring via interface) 0301: Comfortable Airlock with drive thru recognition by photo eye, Master. (Wiring via interface)

27 Diagnostics display

P.	[Unit] Range	Function	Description/ Note
P.910 -ww	0 ... 41	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)
- 1: [Hz] The current travel speed
- 2: [A] The current motor current
 -  When at a stop, the maximum value of the motor current of the last movement can be displayed by briefly pressing the stop button.
- 3: [V] The current motor voltage
- 4: [A] The current DC-Bus current
- 5: [V] The current DC-Bus voltage
- 6: Power stage module temperature °Celsius
- 7: Power stage temperature in °Fahrenheit
- 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
- 13: [V] Current reference voltage
- 14: [°C] Temperature inside the housing in °Celsius
- 15: [°F] Temperature inside the housing in °Fahrenheit
- 16: Transmission ratio from motor to encoder during opening
- 17: Transmission ratio from motor to encoder during closing
- 21: Number of position requisition without answer 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.
- 25: Time of the real time clock module
- 29: Address of the partner controller (only in Master mode senseful)
- 39: Shows the current cos phi
- 40: Display of the momentary DC bus current in percent of maximum continuously permissible DC bus current.
- 41: Display of the load of the motor protection switch in percent

28 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.

29 Information memory

P.	[Unit] Range	Function	Description/ Note
P.91F rww		Information memory	The controller stores the last eight occurred information messages in the information memory. After entering the parameter P.91F: - Changing the level with foil key OPEN and foil key CLOSED - Clear the information memory by selecting and confirming the "Clear" or "cl" entry on 7-segment - Exit the parameter by short pressing of the STOP key

30 Software Version

P.	[Unit] Range	Function	Description/ Note
P.921 rrr		Feig serial number	Display of the Feig serial number. This serial number cannot be changed.
P.922 rrr		Customer number	Display of the customer number. If no number is entered, "not set" appears
P.923 rrr	00000 ... 65533	Authorisation number	The authorisation number is an individual ID that can be set by the customer purchasing the door control unit. Customer who purchases the door control unit.
P.925 rrr		Software Version	This parameter displays the version of the currently used software.
P.926 rrr		Software version of additional board	This parameter shows the current used software version of the additional board.

P.	[Unit] Range	Function	Description/ Note
P.927 rrr		Serial number	Display of serial number. The serial number can be set on highest password level. As long no serial number is set "Not Set" is displayed
P.929 rrr		RFUxIO Software version	Software version of the TST RFUxIO expansion board

31 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.

32 Testing of emergency opening

This function is used to make sure that the emergency opening is working. For that the time that the door needs for a full opening, is measured. If it takes too long, the error message F.021 appears and a user intervention is necessary.

The testing happens every time from endposition close, under the following conditions:

1. After power on with the first message door is close.
2. After the door cycles set in P.492, after power on or after the last testing.
3. After the time set in P.493, after power on or after the last testing.

 This chapter also describes a possible spring fracture test if setting option 5 is available and can be set in P.499:

A spring fracture test checks from the upper end position to a defined intermediate stop2 (P.245) whether the spring is functioning within a limit value that can also be defined.

If the limit values are exceeded, error message F.022 is displayed and operator intervention is required.

If the test is passed, the door continues to the bottom end position.

Functions and descriptions for a spring fracture test are only active in the parameters of this chapter if P.499 = 5.

P.	[Unit] Range	Function	Description/ Note
A.490	0 ... 1	Application emergency opening test	With this application the checking of the emergency opening test is set. 0: Deactivation emergency opening test 1: Mechanical emergency opening test

P.	[Unit] Range	Function	Description/ Note
P.495 -zz	[Increments] 0 ... 9999	Endposition of testing	This parameter specifies a position in increments relate to endposition close, if the door passes this position the test is ok.  <i>This function prevents that the test fails if the endposition open is not reached completely.</i>  In the spring fracture test, the limit value is entered here in increments that the door must move at least in the direction of the upper end position during a test. Once this opening height is reached, the test is immediately considered successful and the door closes. If the value is set to 0, a tolerance of 5 increments is assumed. If the door does not move at all with this setting, the test is considered successful after P.490 has elapsed. If the door moves 5 increments towards the top end position during the test, the test is considered successful.

33 Input Voltage Measurement

P.	[Unit] Range	Function	Description/ Note
P.940 -rr	[Volt]	Input voltage	In this parameter the amount of the currently present input voltage is displayed.

34 Electronic Position Encoder Diagnostics

P.	[Unit] Range	Function	Description/ Note
P.950 -rr	[Increments]	Current position	In this parameter the current position of the door referenced to the Door CLOSE end position is displayed.
P.951 -rr	[Digits]	Current counter state	This parameter indicates the current counter state of the incremental encoder.
P.953 -rr	[Digits]	Diagnostic of TST PD	Displays the diagnostic information.
P.954 -rr		Bus diagnostic of encoder	This parameter shows the number of position requisitions without guilty answer. By opening the parameter and afterwards long time STOP pressing the counter will reset.

P.	[Unit] Range	Function	Description/ Note
P.955 -rr		Bus Diagnostic of TST PD	This parameter shows the number of protocols which were not understood by TST PD. The number can only shown if P.910 = 22. By opening the parameter and afterwards long time STOP pressing the counter will reset (only possible if the communication with TST PD is O.K.).
P.958 rrr		Software version of position encoder TST PD2	This parameter shows the current used software version of the position encoder TST PD2.  This Parameter is only visible if a TST PD2-Rx (RS485) is connected.
P.959 rrr		Serial number of position encoder TST PD2	Display of serial number of the position encoder TST PD2.  This Parameter is only visible if a TST PD2-Rx (RS485) is connected.
P.960 -ww		PD2 Batterie service	Parameters for servicing the PD2 battery. 0: Inactive 1: Confirm battery replacement. PD2 is reset and any pending errors are deleted. The end positions of the door have to be taught in again afterwards. 2: Start PD2 battery depassivation and initiate battery measurement.

35 Activation of the Expansion Board

P.	[Unit] Range	Function	Description/ Note
P.800 -ww	0 ... 8	Activate Expansion board	The expansion board is activated with this parameter. 0: Board deactivated 5: TST RFUxK 8: TST RFUxIO
P.802 -ww	0000 ... 0400	Function of the expansion slot	This parameter defines the hardware that was inserted into the expansion slot. 0000: Expansion slot deactivated 0101: TST SURAl activated 0106: TST SURAl activated 0202: Radio module activated 0302: Detector activated 0400: TST MNST activated
P.94C -rr		CAN-Bus-Diagnoses of extension board	The counter shows the number of time outs which are caused by missing telegrams of the extension board.

36 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  <i>This function is only active if the operating mode automatic (P.980 = 0) or semi-automatic (P.980 = 1) has been set.</i>
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.  <i>After turning off the controller, the controller changes in the operating mode "deadman"</i> 4: Endurance test with safety devices Automatic OPEN and CLOSE operation. Before each new operation the hold-open time P.010 is in effect.  <i>The endurance test setting is lost after turning off the controller. The controller then reverts to manual mode.</i>

37 Display Text Language

P.	[Unit] Range	Function	Description/ Note
P.984 -WW	0 ... 1	Screensaver	Scrolling text specifically for use with OLED displays to protect against premature aging of individual pixels. 0: Deactivated 1: Activated

P.	[Unit] Range	Function	Description/ Note
P.985 www	0 ... 3	Text language	The language used for displaying texts can be set with this parameter. 0: English text 1: German text 2: Spanish text 3: French text

38 Password

 The password is not settable on the customer level

P.	[Unit] Range	Function	Description/ Note
P.996 www	0000 ... FFFF	Bridgeover DIP-Switch	Entry of the pre defined Password to bridgeover the Program mode-DIP-switch. If the right password is put in the DIP-switch is active.
P.999 -ww	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 their functionality is forbidden. In order to avoid failure and endangering because of unauthorized access passwords are only allowed to give to trained staff.

39 Factory Setting / Defaults

P.	[Unit] Range	Function	Description/ Note
P.990 -ZZ	0 ... 3	Factory setting	By setting and saving this parameter all parameter values are restored. 1: Load parameter set, which are adjusted ex works 2: Loads parameter set, which was stored before with P.997 = 2, from the internal storage.  After a software update the stored parameter set should not fit to the new program structure. 3: Load the second duplicated parameter set that was previously saved with P.997 = 3 from internal memory.  After a software update the stored parameter set should not fit to the new program structure.

P.	[Unit] Range	Function	Description/ Note
P.997 -ww	0 ... 3	Storage of actual parameter settings	The actual parameter settings are stored in the internal storage. 0: The current parameter set is not saved. 2: The current parameter set is saved and can be loaded via P990 = 2 again. 3: The current parameter set is saved and can again be loaded via P 990 = 3  <i>The second parameter set can only be stored at the highest password level.</i>

40 Software update with RS485 Interface

The controller software can be updated with the RS485 Interface of the position encoder.

P.	[Unit] Range	Function	Description/ Note
P.989 -ww	0 ... 1	Start a software update	Starts the boot loader. Now the firmware update can be programmed via the encoder interface. The Cycle LED flashes while the bootloader is running. 1: With saving this setting the bootloader will start.  ATTENTION Before starting the update, bring the gate into a safe position and secure it against unintentional movement. During the update process, outputs of the control unit may change their switching state. In the worst case, this can lead to an unintentional movement of the door, e.g. when the brake is released.

41 Digital timer

P.	[Unit] Range	Function	Description/ Note
P.C1F --w	0 ... 1	This parameter is for activating or deactivating of the clock (only switching clock)	This parameter is for activating or deactivating of the clock (only switching clock). Is the clock deactivated all parameters about the clock are disabled. Also all failures about the clock are inactive.

41.1 Real time clock

P.	[Unit] Range	Function	Description/ Note
P.C00 rrr		The current time and date is shown.	The current time and date of the clock device is shown. This parameter is "read only". The shown text can be scrolled by pressing the OPEN or CLOSE key.
P.C01 -ww	00 ... 23	Adjusting of hours	This parameter is for adjusting the hours of the current time.
P.C02 -ww	00 ... 59	Adjusting of minutes	This parameter is for adjusting the minutes of the current time.
P.C03 -ww	00 ... 59	Adjusting of seconds	This parameter is for adjusting the seconds of the current time.
P.C04 -ww	0101 ... 1231	Adjusting of day and month	This parameter is for adjusting the day and month of the current date.
P.C06 -ww	2000 ... 2099	Adjusting of year	This parameter is for adjusting the year of the current date.
P.C07 -ww	0 ... 3	Summer- / Wintertime adjustment	This parameter is for adjusting the automatic Summer- / Wintertime switching. 0: Change over deactivated 1: EU: Change over last Sunday in March from 02:00 am to 03:00 am and last Sunday in October from 03:00 am to 02:00 am 2: UK: Change over on last Sunday in March from 01:00 am to 02:00 am and on last Sunday in October from 02:00 am to 01:00 am 3: USA since 2007: Change over on second Sunday in March from 02:00 am to 03:00 am and on first Sunday in November from 03:00 am to 02:00 am

41.2 Input selection

P.	[Unit] Range	Function	Description/ Note
P.C0A --W	0 ... A4	Input Channel A	This parameter assigned channel A of the clock with any inverter input.

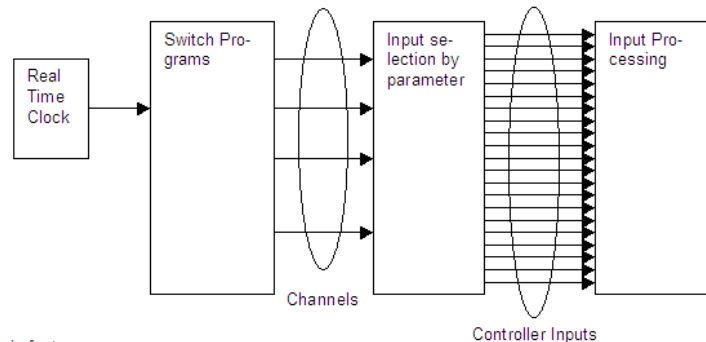


Figure 17 Block diagram of digital time switch

- 0: Assignment of this clock channel to an input is disabled
- 1: Assignment of this clock channel to input 1
- 2: Assignment of this clock channel to input 2
- 3: Assignment of this clock channel to input 3
- 4: Assignment of this clock channel to input 4
- 5: Assignment of this clock channel to input 5
- 6: Assignment of this clock channel to input 6
- 7: Assignment of this clock channel to input 7
- 8: Assignment of this clock channel to input 8
- 9: Assignment of this clock channel to input 9
- 10: Assignment of this clock channel to input 10
- 11: Assignment of this clock channel to input 11
- 12: Assignment of this clock channel to input 12
- 13: Assignment of this clock channel to input 13
- 14: Assignment of this clock channel to input 14
- 15: Assignment of this clock channel to input 15
- 21: Assignment of this clock channel to input 21
- 22: Assignment of this clock channel to input 22
- 23: Assignment of this clock channel to input 23
- 24: Assignment of this clock channel to input 24
- 25: Assignment of this clock channel to input 25
- 26: Assignment of this clock channel to input 26
- 27: Assignment of this clock channel to input 27
- 28: Assignment of this clock channel to input 28
- 3A: Assignment of this clock channel to input 3A
- 3B: Assignment of this clock channel to input 3B
- 3C: Assignment of this clock channel to input 3C
- 3D: Assignment of this clock channel to input 3D
- 3E: Assignment of this clock channel to input 3E
- 3F: Assignment of this clock channel to input 3F
- 75: Assignment of this clock channel to input safety area of Light curtain 1
- 76: Assignment of this clock channel to input object protection area of Light curtain 1
- 89: Input 1 motion detector 1
- 8A: Input 2 motion detector 1
- 8E: Input 1 motion detector 2
- 8F: Input 2 motion detector 2

P.	[Unit] Range	Function	Description/ Note
			A2: Assignment of this clock channel to TST UTA 1 Input 1
			A3: Assignment of this clock channel to TST UTA 1 Input 2
			A4: Assignment of this clock channel to TST UTA 1 Input 3
			 The setting 0 means that no input is assigned.

P.	[Unit] Range	Function	Description/ Note
P.C0B --W	0 ... A4	Input Channel B	This parameter assigned channel B of the clock with any inverter input. 0: Assignment of this clock channel to an input is disabled 1: Assignment of this clock channel to input 1 2: Assignment of this clock channel to input 2 3: Assignment of this clock channel to input 3 4: Assignment of this clock channel to input 4 5: Assignment of this clock channel to input 5 6: Assignment of this clock channel to input 6 7: Assignment of this clock channel to input 7 8: Assignment of this clock channel to input 8 9: Assignment of this clock channel to input 9 10: Assignment of this clock channel to input 10 11: Assignment of this clock channel to input 11 12: Assignment of this clock channel to input 12 13: Assignment of this clock channel to input 13 14: Assignment of this clock channel to input 14 15: Assignment of this clock channel to input 15 21: Assignment of this clock channel to input 21 22: Assignment of this clock channel to input 22 23: Assignment of this clock channel to input 23 24: Assignment of this clock channel to input 24 25: Assignment of this clock channel to input 25 26: Assignment of this clock channel to input 26 27: Assignment of this clock channel to input 27 28: Assignment of this clock channel to input 28 3A: Assignment of this clock channel to input 3A 3B: Assignment of this clock channel to input 3B 3C: Assignment of this clock channel to input 3C 3D: Assignment of this clock channel to input 3D 3E: Assignment of this clock channel to input 3E 3F: Assignment of this clock channel to input 3F 75: Assignment of this clock channel to input safety area of Light curtain 1 76: Assignment of this clock channel to input object protection area of Light curtain 1 89: Input 1 motion detector 1 8A: Input 2 motion detector 1 8E: Input 1 motion detector 2 8F: Input 2 motion detector 2 A2: Assignment of this clock channel to TST UTA 1 Input 1 A3: Assignment of this clock channel to TST UTA 1 Input 2 A4: Assignment of this clock channel to TST UTA 1 Input 3



The setting 0 means that no input is assigned.

P.	[Unit] Range	Function	Description/ Note
P.C0C --W	0 ... A4	Input Channel C	This parameter assigned channel C of the clock with any inverter input. 0: Assignment of this clock channel to an input is disabled 1: Assignment of this clock channel to input 1 2: Assignment of this clock channel to input 2 3: Assignment of this clock channel to input 3 4: Assignment of this clock channel to input 4 5: Assignment of this clock channel to input 5 6: Assignment of this clock channel to input 6 7: Assignment of this clock channel to input 7 8: Assignment of this clock channel to input 8 9: Assignment of this clock channel to input 9 10: Assignment of this clock channel to input 10 11: Assignment of this clock channel to input 11 12: Assignment of this clock channel to input 12 13: Assignment of this clock channel to input 13 14: Assignment of this clock channel to input 14 15: Assignment of this clock channel to input 15 21: Assignment of this clock channel to input 21 22: Assignment of this clock channel to input 22 23: Assignment of this clock channel to input 23 24: Assignment of this clock channel to input 24 25: Assignment of this clock channel to input 25 26: Assignment of this clock channel to input 26 27: Assignment of this clock channel to input 27 28: Assignment of this clock channel to input 28 3A: Assignment of this clock channel to input 3A 3B: Assignment of this clock channel to input 3B 3C: Assignment of this clock channel to input 3C 3D: Assignment of this clock channel to input 3D 3E: Assignment of this clock channel to input 3E 3F: Assignment of this clock channel to input 3F 75: Assignment of this clock channel to input safety area of Light curtain 1 76: Assignment of this clock channel to input object protection area of Light curtain 1 89: Input 1 motion detector 1 8A: Input 2 motion detector 1 8E: Input 1 motion detector 2 8F: Input 2 motion detector 2 - A2: Assignment of this clock channel to TST UTA 1 Input 1 - A3: Assignment of this clock channel to TST UTA 1 Input 2 - A4: Assignment of this clock channel to TST UTA 1 Input 3
 The setting 0 means that no input is assigned.			
P.C0D --W	0 ... A4	Input Channel D	This parameter assigned channel D of the clock with any inverter input. 0: Assignment of this clock channel to an input is disabled 1: Assignment of this clock channel to input 1 2: Assignment of this clock channel to input 2

P.	[Unit] Range	Function	Description/ Note
			3: Assignment of this clock channel to input 3
			4: Assignment of this clock channel to input 4
			5: Assignment of this clock channel to input 5
			6: Assignment of this clock channel to input 6
			7: Assignment of this clock channel to input 7
			8: Assignment of this clock channel to input 8
			9: Assignment of this clock channel to input 9
			10: Assignment of this clock channel to input 10
			11: Assignment of this clock channel to input 11
			12: Assignment of this clock channel to input 12
			13: Assignment of this clock channel to input 13
			14: Assignment of this clock channel to input 14
			15: Assignment of this clock channel to input 15
			21: Assignment of this clock channel to input 21
			22: Assignment of this clock channel to input 22
			23: Assignment of this clock channel to input 23
			24: Assignment of this clock channel to input 24
			25: Assignment of this clock channel to input 25
			26: Assignment of this clock channel to input 26
			27: Assignment of this clock channel to input 27
			28: Assignment of this clock channel to input 28
			3A: Assignment of this clock channel to input 3A
			3B: Assignment of this clock channel to input 3B
			3C: Assignment of this clock channel to input 3C
			3D: Assignment of this clock channel to input 3D
			3E: Assignment of this clock channel to input 3E
			3F: Assignment of this clock channel to input 3F
			75: Assignment of this clock channel to input safety area of Light curtain 1
			76: Assignment of this clock channel to input object protection area of Light curtain 1
			89: Input 1 motion detector 1
			8A: Input 2 motion detector 1
			8E: Input 1 motion detector 2
			8F: Input 2 motion detector 2
			A2: Assignment of this clock channel to TST UTA 1 Input 1
			A3: Assignment of this clock channel to TST UTA 1 Input 2
			A4: Assignment of this clock channel to TST UTA 1 Input 3



The setting 0 means that no input is assigned.

41.3 Switching programs

P.	[Unit] Range	Function	Description/ Note
P.C10 --W	1 ... 50	Choice of switching program	By the help of this parameter you can chose an switching program. With the parameters P.C11 and P.C19 the program can specified.

P.	[Unit] Range	Function	Description/ Note
P.C11 --W	0 ... 15	Choice of channel	This parameter select which channel's from the clockprogram be controlled. It will be 16 combinations from " no channel is selected" till all four (A,B,C,D) 0: No channel is activated. Program is deactivated. 1: Channel A 2: Channel B 3: Channel A + B 4: Channel C 5: Channel A + C 6: Channel B + C 7: Channel A + B + C 8: Channel D 9: Channel A + D 10: Channel B + D 11: Channel A + B + D 12: Channel C + D 13: Channel A + C + D 14: Channel B+ C + D 15: Channel A + B + C + D
P.C12 --W	0 ... 1	Polarity of channel	The parameter shows, if the clockprogram will switch the selected channel's on or off 0: Channels will switch off 1: Channels will switch on
P.C13 --W	0 ... 9	Day of week	The parameter shows at which day the clockprogram will be working 0: Monday to Sunday 1: Sunday 2: Monday 3: Tuesday 4: Wednesday 5: Thursday 6: Friday 7: Saturday 8: Monday to Friday 9: Saturday to Sunday
P.C14 --W	00 ... 23	Hour	The parameter shows at which hour the clockprogram will be working
P.C15 --W	00 ... 59	Minute	The parameter shows at which minute the clockprogram will be working
P.C16 --W	00 ... 59	Seconds of switch program	The parameter determines at which second the switch program is executed
P.C17 --W	0 ... 9	Priority of switching program	This parameter defines the priority of the switching program. 0 means the lowest priority and 9 the highest.
P.C18 --W	0101 ... 1231	Date of start	The parameter shows at which day and month the clockprogram will be working

P.	[Unit] Range	Function	Description/ Note
P.C19 --w	0101 ... 1231	End date	The parameter shows at which day and month the clockprogram will be working. If the startdate will be higher than the enddate, than will the clock start at the startdate till the end of the year and from the beginning of the year till the enddate.
P.C1E --w	0 ... 1	Reset all switching programs	All switching program parameters will be deleted and all switching programs will stop 1: Reset all switching clock programs

42 Diagnostic of the detector channels of the extension board.

P.	[Unit] Range	Function	Description/ Note
P.945 -ww	3 ... 4	Choice of detector channel for diagnosis	Choice of detector channel 3: Diagnosis data for detector channel 1 4: Diagnosis data for detector channel 2
P.946 -rr	[Hz]	Current frequency	This parameter shows the current frequency of the oscillating circuit of the detector channel set with parameter P.945.
P.947 -rr		Current disgruntlement	This parameter shows the current disgruntlement of the detector channel set with parameter P.945.
P.948 -rr		Max. disgruntlement	This parameter shows the max. disgruntlement, caused by the last metal object which activates the detector channel set by parameter P.945.
P.949 -rr		Presence counter	This parameter shows the presence counter of the detector channel set by parameter P.945

43 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 parameter shows the number of counted crashes.

44 Parameter Summary

P.	Function	Default	Changed of: at:	Page
A.480	Light curtain application	0		20
A.490	Application emergency opening test	0		67
A.830	Airlock mode	0000		64
A.F00	FSx Wireless safety system profile	0000		24
L.102	VEK MNST Deactivate	1		53
L.111	VEK MNST Request new adjustment	0		53
L.120	Frequency range of the detector VEK MNST Channel 1	17		54
L.121	Threshold value of the VEK MNST detector Channel 1	120		54
L.122	Off Threshold of the VEK MNST detector Channel 1	75 [%]		54
L.123	Hold time of the VEK MNST detector Channel 1	0 [Minutes]		54
L.124	Frequency range of the detector VEK MNST Channel 2	17		55
L.125	Threshold value of the VEK MNST detector Channel 2	120		55
L.126	Off Threshold of the VEK MNST detector Channel 2	75 [%]		55
L.127	Hold time of the VEK MNST detector Channel 2	0 [Minutes]		55
L.128	Frequency range of the detector VEK MNST Channel 3	17		56
L.129	Threshold value of the VEK MNST detector Channel 3	120		56
L.12A	Off Threshold of the VEK MNST detector Channel 3	75 [%]		56
L.12B	Hold time of the VEK MNST detector Channel 3	0 [Minutes]		56
L.12C	Frequency range of the detector VEK MNST Channel 4	17		57
L.12D	Threshold value of the VEK MNST detector Channel 4	120		57
L.12E	Off Threshold of the VEK MNST detector Channel 4	75 [%]		57
L.12F	Hold time of the VEK MNST detector Channel 4	0 [Minutes]		57
L.150	VEK MNST detector channel selection for diagnosis	1		58
L.152	Current frequency of the VEK MNST detector channel	ND		58
L.153	Current detuning of the VEK MNST detector channel	ND		58
L.154	Maximum detuning of the VEK MNST detector channel	ND		58
L.155	Presence counter of the VEK MNST detector channel	ND		58
L.160	Serial number Detector VEK MNST	ND		58
L.162	Software version Detector VEK MNST	ND		58
L.164	Hardware version Detector VEK MNST	ND		58
L.166	Bus protocol version Detector VEK MNST	ND		58
L.201	Light curtain 1 Assignment	0		21
L.207	Light curtain 1 Input profile safety area Input	1615		41
L.208	Light curtain 1 Input profile object protection area Input	0501		41
L.210	Light curtain 1 Operating mode	4		21
L.214	Light curtain 1 Blanking of a single light line	0		21
L.215	Light curtain 1 Teach-in	0		21
L.251	Light curtain 1 Recording of light beam interruption sequences	0		21
L.252	Light curtain 1 Recording Signal quality	0		22
L.254	Light curtain 1 Signal quality in sections	ND		22
L.255	Light curtain 1 Signal quality single light beams	ND		22
L.256	Light curtain 1 Storage of door run curves	0		22
L.257	Light curtain 1 VCC 24 V receiver	ND		22
L.258	Light curtain 1 VCC 24 V transmitter	ND		22
L.260	Light curtain 1 Serial Number Receiver	ND		22
L.261	Light curtain 1 Serial number transmitter	ND		22
L.262	Light curtain 1 Software Version Receiver	ND		22
L.263	Light curtain 1 Software version transmitter	ND		22

P.	Function	Default	Changed of: at:	Page
L.264	Light curtain 1 Hardware Version Receiver	ND		22
L.265	Light curtain 1 Hardware Version Transmitter	ND		22
L.266	Light curtain 1 Bus protocol version	ND		22
L.601	Motion detector 1 MWD BPC Assignment	0		59
L.602	Motion detector 1 Deactivation	1		59
L.61F	Motion detector 1 Profile	0001		59
L.660	Motion detector 1 Serial number	ND		59
L.662	Motion detector 1 Software version	ND		59
L.664	Motion detector 1 Hardware version	ND		59
L.666	Bus protocol version	ND		59
L.701	Motion detector 2 MWD BPC Assignment	0		60
L.702	Motion detector 2 Deactivation	1		60
L.71F	Motion detector 2 profile	0001		60
L.760	Motion detector 2 Serial number	ND		60
L.762	Motion detector 2 Software version	ND		60
L.764	Motion detector 2 Hardware version	ND		60
L.766	Bus protocol version	ND		60
L.B01	TST UTA 1 Assignment	0		33
L.B02	TST UTA 1 Activation	1		33
L.B07	TST UTA 1 Input profile OPEN button Input	1501		41
L.B08	TST UTA 1 Input profile STOP button Input	1506		41
L.B09	TST UTA 1 Input profile CLOSE button Input	1502		41
L.B0C	TST UTA 1 Output profile Red LED Output 0	12AD		63
L.B0D	TST UTA 1 Output profile Green LED Output 0	1295		63
L.B0E	TST UTA 1 Output profile Blue LED Output 0	0000		63
L.B13	TST UTA 1 Linking of an output with OPEN LED	0		34
L.B14	TST UTA 1 Linking of an output with CLOSE LED	0		35
L.B15	TST UTA 1 Linking of an output with STOP LED	0		35
L.B16	TST UTA 1 Activate Bluetooth interface	0		36
L.B60	TST UTA 1 Serial number	ND		36
L.B62	TST UTA 1 Software version	ND		36
L.B64	TST UTA 1 Hardware version	ND		36
L.B66	TST UTA 1 Bus protocol version	ND		36
P.000	Cycle counter	ND [Cycles]		6
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.020	Pre-warning time before open	0 [10 ms]		6
P.025	Pre-warning time before closing	0 [Seconds]		6
P.026	Pre-warning time before closing from between the end positions	0		7
P.100	Motor rated frequency	ZW [Hz]		7
P.101	Motor rated current	ZW [A]		7
P.102	Power factor Cos Phi	ZW [%]		8
P.103	Motor rated voltage	ZW [Volt]		8
P.115	Motor current regulator	2,5		8
P.116	DC bus current limiter	100 [%]		8
P.117	Cos phi Regulator (Eco Modus)	1		8
P.130	Motor rotary field	0		8
P.140	Boost for OPEN	0 [%]		9
P.142	IxR compensation for OPEN	0 [Hz]		10
P.143	Voltage reduction for OPEN	100 [%]		10
P.145	Boost for CLOSE	0 [%]		9
P.147	IxR compensation for CLOSE	0 [Hz]		10

P.	Function	Default	Changed of: at:	Page
P.148	Voltage reduction for CLOSE	100 [%]		10
P.202	Transmission ratio	ND		11
P.205	Selecting the positioning system profile	ZW		11
P.210	New teaching of the end positions	5		12
P.215	Requesting correction of the pre-limit switch and limit switch bands	0		12
P.217	Tolerance of automatic end switch correction	20		12
P.221	Correction value End position door CLOSE	0 [Increments]		13
P.222	Pre-limit switch position Door CLOSE	400 [Increments]		14
P.231	Correction value End position Door OPEN	0 [Increments]		16
P.232	Pre-limit switch position Door OPEN	500 [Increments]		17
P.25F	Synchronization type profile	ND		19
P.310	Travel frequency for rapid OPEN	60 [Hz]		16
P.311	Duration of start ramp "r1"	60 [10 ms]		17
P.312	Acceleration of start ramp "r1"	100 [Hz/s]		17
P.320	Creep speed frequency for OPEN	20 [Hz]		18
P.321	Duration of brake ramp "r2"	50 [10 ms]		18
P.322	Acceleration of brake ramp "r2"	80 [Hz/s]		18
P.350	Travel frequency for rapid CLOSE	40 [Hz]		13
P.351	Duration of start ramp "r5"	50 [10 ms]		14
P.352	Acceleration of start ramp "r5"	80 [Hz/s]		14
P.360	Creep speed frequency for CLOSE	20 [Hz]		15
P.361	Duration of brake ramp "r6"	50 [10 ms]		15
P.362	Acceleration of brake ramp "r6"	40 [Hz/s]		15
P.44A	Range	4,0 [m]		20
P.460	Profile internal safety edge	6		32
P.466	External testing of safety edge	0		32
P.495	Endposition of testing	0 [Increments]		68
P.501	Function of Input 1	0101		37
P.502	Function of Input 2	0401		41
P.503	Function of Input 3	0701		41
P.504	Function of Input 4	0201		41
P.505	Function of Input 5	0501		41
P.506	Function of Input 6	ND		41
P.507	Function of Input 7	ND		42
P.508	Function of Input 8	ND		42
P.509	Function of Input 9	ND		42
P.50A	Function of Input 10	1001		42
P.608	Profile for radio channel 1	0223		43
P.609	Profile for radio channel 2	0223		47
P.701	Function of Output 1	0101		49
P.702	Function of Output 2	0201		49
P.705	Function of Output 5	1220		49
P.706	Function of Output 6	1201		49
P.707	Function of Output 7	1250		49
P.708	Function of Output 8	1210		49
P.709	Function of Output 9	0000		49
P.70A	Function of Output 10	0000		49
P.70B	Function of Output 11	0001		49
P.70F	Function of output 15	0001		49
P.800	Activate Expansion board	0		69
P.802	Function of the expansion slot	0202		69
P.810	Block time Detector Channel 1 and OPEN 1	0 [Seconds]		50

P.	Function	Default	Changed of: at:	Page
P.820	Block time Detector Channel 2 and OPEN 2	0 [Seconds]		50
P.871	Breakaway counter	ND		80
P.890	Locking of Close commands from detector	1		50
P.894	Automatic open command	0		70
P.8BA	Specialization of a safety function A to E in operating mode 7	0		19
P.910	Display mode selection	0		65
P.91F	Information memory	0		66
P.920	Error Memory	0		66
P.921	Feig serial number	ND		66
P.922	Customer number	0000000000		66
P.923	Authorisation number	00000		66
P.925	Software Version	ND		66
P.926	Software version of additional board	ND		66
P.927	Serial number	0000000000		67
P.929	RFUxIO Software version	ND		67
P.92A	Software version FSx mobile unit	ND		23
P.92B	Software version FSx stationary unit	ND		23
P.930	Motor run-time	ND [Seconds]		67
P.931	Software version transmitter	ND		20
P.932	Software version receiver	ND		20
P.933	Serial number transmitter	ND		20
P.934	Serial number receiver	ND		20
P.935	Error bit transmitter	ND [Digits]		20
P.936	Error bit receiver	ND [Digits]		20
P.937	Aligning mode	0		20
P.938	Light line quality	ND		20
P.93C	Error counter RS485	0		20
P.940	Input voltage	ND [Volt]		68
P.945	Choice of detector channel for diagnosis	3		80
P.946	Current frequency	ND [Hz]		80
P.947	Current disgruntlement	ND		80
P.948	Max. disgruntlement	ND		80
P.949	Presence counter	ND		80
P.94C	CAN-Bus-Diagnoses of extension board	ND		69
P.950	Current position	ND [Increments]		68
P.951	Current counter state	ND [Digits]		68
P.953	Diagnostic of TST PD	ND [Digits]		68
P.954	Bus diagnostic of encoder	0		68
P.955	Bus Diagnostic of TST PD	0		69
P.958	Software version of position encoder TST PD2	ND		69
P.959	Serial number of position encoder TST PD2	ND		69
P.960	PD2 Batterie service	0		69
P.973	Resetting the maintenance counter	0		6
P.980	Operating mode	ND		70
P.984	Screensaver	0		70
P.985	Text language	1		71
P.989	Start a software update	0		72
P.990	Factory setting	0		71
P.996	Bridgeover DIP-Switch	0000		71
P.997	Storage of actual parameter settings	0		72
P.999	Password	0000		71
P.9F0	Capacity of battery	0 [%]		23
P.9F1	Battery voltage of radio safety system	ND [Volt]		23

P.	Function	Default	Changed of: at:	Page
P.9F2	Wireless status	ND [%]		23
P.9F3	Error counter FSx	ND		23
P.A01	Function of Input 21	0104		48
P.A02	Function of Input 22	0901		48
P.A03	Function of Input 23	0502		48
P.A04	Function of Input 24	0106		48
P.A05	Function of Input 25	0109		48
P.A06	Function of Input 26	1002		48
P.B6D	Sampled-data filter	1		50
P.B6E	Calling new adjustment	0		50
P.BC2	Frequency range of detector channel 3	4		51
P.BC3	Threshold level of detector channel 3	12		51
P.BC4	Hysteresis of detector channel 3	75		51
P.BC5	Holding time of detector channel 3	0		51
P.BD2	Frequency range of detector channel 4	4		52
P.BD3	Threshold level of detector channel 4	12		52
P.BD4	Hysteresis of detector channel 4	75		53
P.BD5	Holding time of detector channel 4	0		53
P.C00	The current time and date is shown.	ND		73
P.C01	Adjusting of hours	ND		73
P.C02	Adjusting of minutes	ND		73
P.C03	Adjusting of seconds	ND		73
P.C04	Adjusting of day and month	ND		73
P.C06	Adjusting of year	ND		73
P.C07	Summer- / Wintertime adjustment	0		73
P.C0A	Input Channel A	0		74
P.C0B	Input Channel B	0		76
P.C0C	Input Channel C	0		77
P.C0D	Input Channel D	0		77
P.C10	Choice of switching program	1		78
P.C11	Choice of channel	0		79
P.C12	Polarity of channel	0		79
P.C13	Day of week	0		79
P.C14	Hour	12		79
P.C15	Minute	00		79
P.C16	Seconds of switch program	00		79
P.C17	Priority of switching program	0		79
P.C18	Date of start	0101		79
P.C19	End date	1231		80
P.C1E	Reset all switching programs	0		80
P.C1F	This parameter is for activating or deactivating of the clock (only switching clock)	ND		72
P.D0A	Function of output 2A	0000		63
P.D0B	Function of output 2B	0001		63
P.D0C	Function of output 2C	0001		63
P.D0D	Function of output 2D	0001		63
P.D0E	Function of output 2E	0001		63
P.D0F	Function of output 2F	0001		63
P.F00	Activation of the wireless	0		23
P.F01	Timeout for the wireless	50 [ms]		23
P.F05	Channelgroup	1		23
P.F07	Address of the mobile unit	00000000		23
P.F09	Battery nominal voltage	3,6 [Volt]		23
P.F10	Mode input 1	0		26
P.F11	Safety	2		26

P.	Function	Default	Changed of: at:	Page
P.F12	Contact type of the input	0		26
P.F13	Debouncing time	1		26
P.F16	Output	1		26
P.F17	Direction 1	0		26
P.F18	Handshake	0		26
P.F19	LCD Messages	0		27
P.F1F	Function input 1	0000		24
P.F20	Mode input 2	0		27
P.F21	Safety	2		27
P.F22	Contact type of the input	0		27
P.F23	Debouncing Time	1		27
P.F26	Output	1		27
P.F27	Direction 2	0		28
P.F28	Handshake	0		28
P.F29	LCD Messages	0		28
P.F2F	Function input 2	0000		24
P.F30	Mode input 3	0		28
P.F31	Safety	2		28
P.F32	Contact type of the input	0		28
P.F33	Debouncing time	1		29
P.F36	Output	1		29
P.F37	Direction 3	0		29
P.F38	Handshake	0		29
P.F39	LCD Messages	0		29
P.F3F	Function input 3	0000		25
P.F40	Mode input 4	0		29
P.F41	Safety	2		30
P.F42	Contact type of the input	0		30
P.F43	Debouncing time	1		30
P.F46	Output	1		30
P.F47	Direction 4	0		30
P.F48	Handshake	0		30
P.F49	LCD Messages	0		30
P.F4F	Function input 4	0000		25
P.FA9	LCD- Messages	0		31
P.FB9	LCD Messages	0		31
P.FC9	LCD Messages	0		31
P.FF2	Mode output 2	0		24