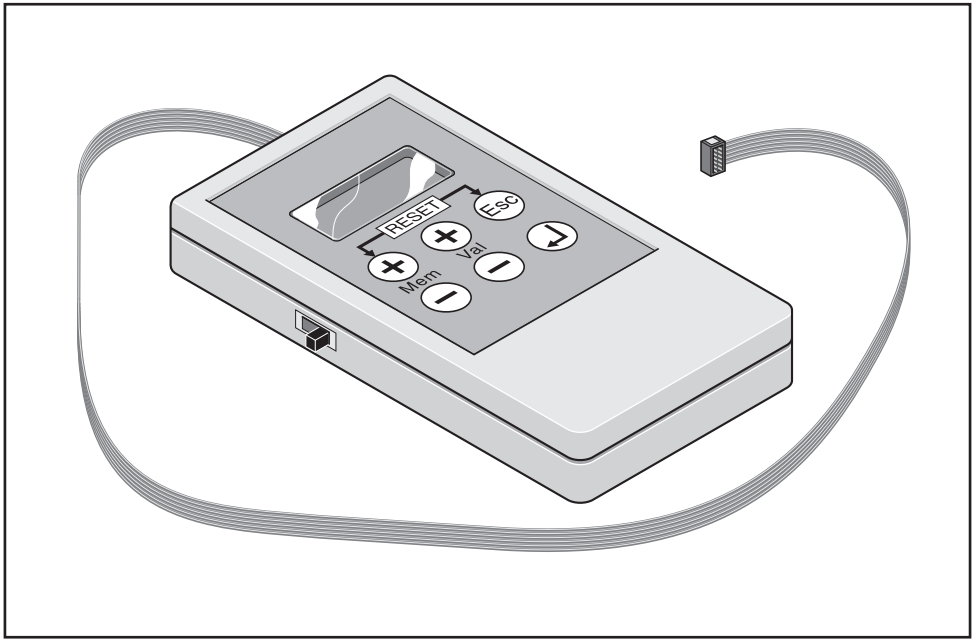

TorMinal

Operating instructions 1 - 138

3800-20310V001-112016-0-OCE-Rev.L_EN

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Table of contents

General Information

Symbols

CAUTIONSIGNS:
Important safety instructions!
To ensure personal safety, it is important to observe all instructions.
Save these instructions!

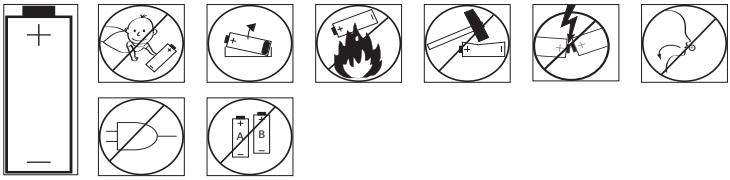
IMPORTANT INFORMATION SYMBOL:
Information, useful advice!

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

General safety instructions

- The person who uses the TorMinal must have read, understood and complied with these operating instructions.
- The manufacturer does not accept liability for damage or interruptions to business resulting from non-observance of the operating instructions. Modifications to the hardware and software of the TorMinal will void the warranty.
- Before doing any work on a gate or operator, disconnect it from the power supply and lock it to prevent reconnection.
- Only use the TorMinal for its intended use.
- Never operate a damaged TorMinal.
- Repair faults without delay.
- Read operating instructions completely before operation and note in particular the safety instructions.
- Perform the working steps in the order described in familiarize yourself with operation.
- If you make changes to the settings of a control unit, check the power deactivation of the operator according to the currently valid standards.
- Switch off the TorMinal after use.
- Do not carry the TorMinal by the connecting cable.

Safety information for batteries



General Information

Intended use

➢ The TorMinal is designed exclusively for reading out memory slots and setting values of the following operators and control units:

Garage gate operators

- duo 500 SL
- duo 650 SL
- duo rapido 650+
- duo vision
- marathon 550 SL
- marathon 800 SL
- marathon 1100 SL
- marathon tiga 800 SL(X)
- marathon tiga 1100 SL(X)
- MyDoor S+
- sprint 550 SL
- Sprint IV

Swing gate operators

- twist 200 (E) with control unit DSTA24
- twist 200 (E) with control unit DT-A-1
- twist XL with control unit DT-A-1
- twist 350 with control unit DT-A-1
- jive 200 with control unit DSTA24-UF

Sliding gate operators

- STArter
- STArter+
- SP 900, S 900
- RUNner
- RUNner+
- gator 400
- gator 800N
- SG1
- stargilder 300
- starglider 300 E

Control units for roller doors

- RDC 800
- RDC vision

➢ Any other use does not constitute intended use. The manufacturer accepts no liability resulting from use other than intended use. The user bears the sole responsibility for any risk involved. It also voids the warranty.

General Information

Scope of supply

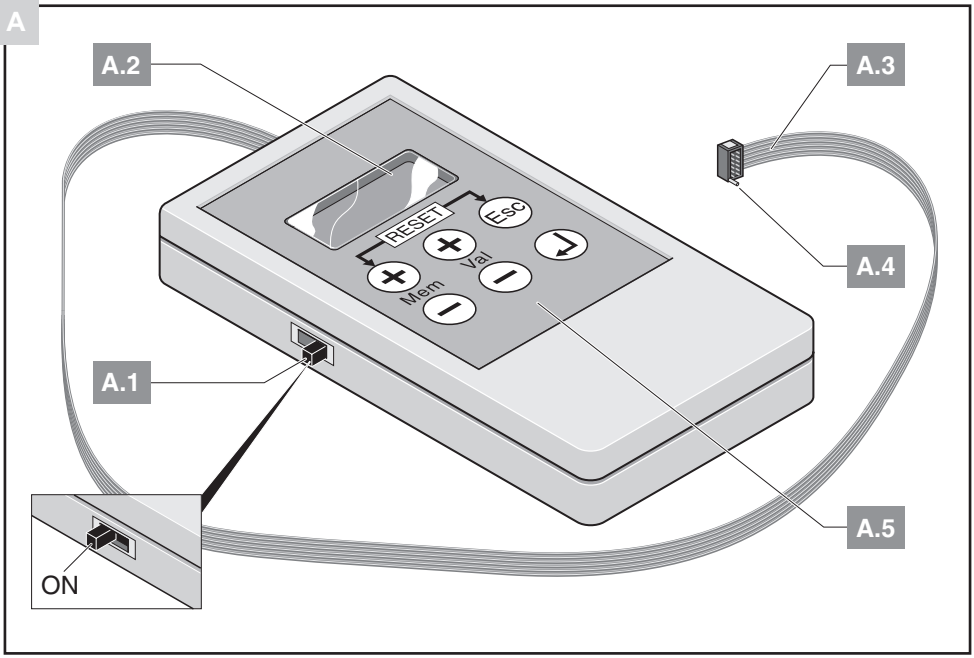
1. Operating instructions	1 x
2. TorMinal (including 9V block battery and connecting cable)	1 x
3. Case	1 x

Technical data

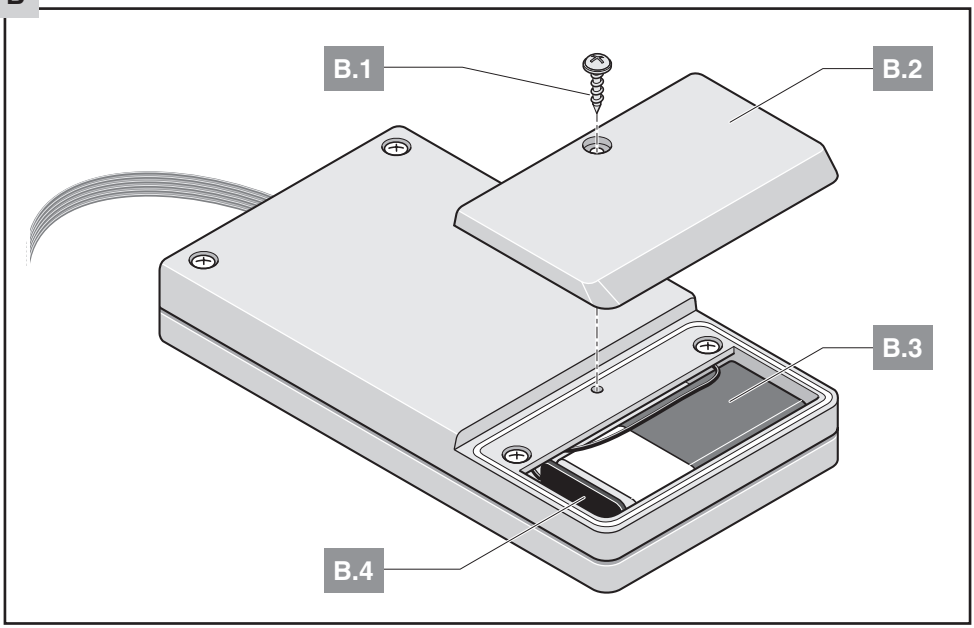
Dimensions	120 x 65 x 22	mm
Weight (including 9V block battery and connecting cable)	approx. 140	g
Battery	9V block	

Functional description

A



B



Functional description

A.1 **On and off switch**
The on and off switch turns the TorMinal ON or OFF.

A.2 **Display**
The display has two lines with 8 characters each.

A.3 **Connecting cable**
The connecting cable connects the TorMinal and control unit.

The plug has polarity protection (PIN).

A.4 **Polarity protection (PIN)**
The polarity protection (PIN) ensures the connecting cable is correctly connected.

A.5 **Buttons and their function**

Mem + selects the next highest memory slot (e.g. from 014 to 015).

Mem - selects the next lowest memory slot (e.g. from 014 to 013).

Val + increases the value.

Val - reduces the value.

Esc cancels a changed value that has not yet been stored.

↵ saves the set value or confirms a reset of the software.

B.3 **Battery**
A commercially available 9V block battery supplies the TorMinal with power.

B.4 **Battery connection**
The battery is connected to the battery connection.

Information on control unit version

Settings valid as of control unit version:

Operator	Control unit version
duo 500 SL	015
duo 650 SL	015
duo rapido 650+	014
duo vision	015
marathon 550 SL	017
marathon 800 SL	017
marathon 1100 SL	017
marathon tiga 800 SL(X)	010
marathon tiga 1100 SL(X)	010
sprint 550 SL	015
Sprint IV	
MyDoor S+	
twist 200 (E)	031
twist XL	012
twist 350	
jive 200	031
STArter	014
STArter+	
SP 900, S 900	015
RUNner	016
gator 800N	014
SG1	014
stargilder 300	012
starglider 300 E	010
RDC 800	010
RDC vision	010

Settings and descriptions of earlier control unit versions are not taken into account.

Information on control unit version

Display of the control unit version

IMPORTANT INFORMATION!
The correct display of the control unit version of the operator depends on the software version of the TorMinal. If the control unit version is not displayed correctly (e.g.: Test-PCB), the settings can still be modified.
Update of TorMinal software: Send TorMinal to the manufacturer postage-free.

TorMinal with software version 1.00

Operator	Display of upper line	Display of lower line*
sprint/duo SL	Sprint	
marathon SL	Marathon	
marathon tiga SL(X)	Test PCB	
twist 200 (E)	DSTA24	
twist XL	Test PCB	
jive 200	DSTA24	
gator 800N / SG1	Test PCB	
starglider 300	Test PCB	
starglider 300 E	Test PCB	
RDC 800	not possible	
RDCvision	not possible	

TorMinal with software version 1.10 and higher

Operator	Display of upper line	Display of lower line*
sprint/duo SL	Sprint	
marathon SL	Marathon	
marathon tiga SL(X)	Test PCB	
twist 200 (E)	DSTA24	
twist XL	Test PCB	
jive 200	DSTA24	
gator 800N / SG1	Test PCB	
starglider 300	STA24	
starglider 300 E	Test PCB	
RDC 800	not possible	
RDCvision	not possible	

*** The lower line shows the current control unit version**

Information on control unit version

TorMinal with software version 1.20 and higher

Operator	Display of upper line	Display of lower line*
sprint/duo SL	sprint	
marathon SL	marathon	
marathon tiga SL(X)	tiga	
twist 200 (E)	DSTA24	
twist XL	Test PCB	
jive 200	DSTA24	
gator 800N / SG1	Test PCB	
starglider 300	STA24	
starglider 300 E	Test PCB	
RDC 800	not possible	
RDCvision	not possible	

TorMinal with software version 1.30 and higher

Operator	Display of upper line	Display of lower line*
sprint/duo SL	sprint	
marathon SL	marathon	
marathon tiga SL(X)	tiga	
twist 200 (E)	DSTA24	
twist XL	DT-A-1	
jive 200	DSTA24	
gator 800N / SG1	STA1	
starglider 300	STA24	
starglider 300 E	STA1	
RDC 800	not possible	
RDCvision	not possible	

*** The lower line shows the current control unit version**

Information on control unit version

TorMinal with software version 1.40 and higher

Operator	Display of upper line	Display of lower line*
duo rapido 650+	Test PCP	
sprint/duo SL	sprint	
marathon SL	marathon	
marathon tiga SL(X)	tiga	
twist 200 (E)	DSTA24	
twist XL	DT-A-1	
twist 350	DT-A-1	
jive 200	DSTA24	
gator 800N / SG1	STA1	
STArter/STArter+	STA1	
starglider 300	STA24	
starglider 300 E	STA1	
RDC 800	RT-B-1	
RDCvision	RT-C-1	

TorMinal with software version 1.50 and higher

Operator	Display of upper line	Display of lower line*
sprint/duo SL	sprint	
marathon SL	marathon	
marathon tiga SL(X)	tiga	
twist 200 (E)	DSTA24	
twist XL	DT-A-1	
twist 350	twist 350	
jive 200	DSTA24	
STArter / STArter+	STA1	
SP 900 / S 900	ST-B-1	
RUNner / RUNner+	ST-B-1	
gator 800N / SG1	STA1	
starglider 300	STA24	
starglider 300 E	STA1	
RDC 800	RT-B-1	
RDCvision	RT-C-1	

*** The lower line shows the current control unit version**

Operation / Use

Safety instructions

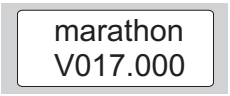
NOTE (DOES NOT APPLY TO THE TWIST XL + DT-A-1 AND TWIST 350)!
Before every modification of the setting values, perform a control unit reset (delete force values) on the control unit, see installation and operating instructions of the respective operator.
For a reset with the TorMinal, no force values are deleted but rather only the values that can be modified with the TorMinal will be reset to factory settings.
The control unit must relearn the run times and required forces.

➢ Never touch the conductor paths of the control unit circuit board.

Switching on TorMinal

A

1. Slide the switch (A.1) to the ON position.
   ⇒ The software version of the TorMinal is displayed: “TorMinal Vx.x” - .
   ⇒ If no control unit is connected and a button is pressed, this message is displayed: “ !No PCB! ”
   ⇒ If a control unit is connected, the following information is read out:
   The control unit type is displayed in the upper line.
   The software version and the control unit variant is displayed in the lower line.
   Example:



Connecting TorMinal to a control unit

A

1. Remove the control unit from the operator, see installation and operating instructions of the operator.
2. Connect the connecting cable (A.3) to the control unit with the red wire pointing towards the coding hole.

Reading out memory slots

1. Press **Mem +** button.
   ⇒ Memory slots are read out:
   The upper line shows the memory slot (Mem).
   The lower line shows the value (Val):
   - “x” in front of the value (Val): Value cannot be modified.
   - "s" in front of the value (Val.): Value can be modified and saved.

Operation / Use

Setting values

1. Select memory slot (Mem) with the **Mem +** or **Mem -** buttons.
2. Set value (Val) with the **Val +** or **Val -** buttons.
   ⇒ "s" in front of the value (Val.) goes out: Change has not yet been saved.
3. To save the value (Val), press the ↵ button.
   ⇒ "s" appears in front of the value (Val.): Change has been saved.

Resetting values to factory settings (software reset)

IMPORTANT INFORMATION!
All changes which can be modified with the TorMinal are set back to factory settings with a software reset. The saved force values of the control unit are maintained.

1. Press the buttons **Esc** and **Mem +** simultaneously.
   ⇒ Message is displayed: “Reset to default?” Meaning: Reset to factory settings?

IMPORTANT INFORMATION!
Aborting software reset: Press Esc button.

2. Press ↵ button.
   ⇒ All values are reset to the factory settings.
   ⇒ Message is displayed: “ALL RESET !” Meaning: Reset all values to the factory settings!
3. Press **Mem +** button.
   ⇒ Report goes out.

Replace battery

A

1. Switch off the TorMinal.
2. Remove the screw (B.1), open the battery compartment (B.2).
3. Remove the battery (B.3) and disconnect.
4. Replace the battery (B.3) with a new one of the same type.

IMPORTANT INFORMATION!
Do not pinch the battery cable. Note polarity (+/-)!

5. Insert the battery (B.3), close the battery compartment (B.2). Insert the screw (B.1) and tighten it.

Definitions

Backjump

Serves to relieve the gate and operator mechanical system. After reaching the gate CLOSE end position, the operator moves in the direction of gate OPEN, relieving the mechanical system.

Gate OPEN end position

Gate is open.

Gate CLOSE end position

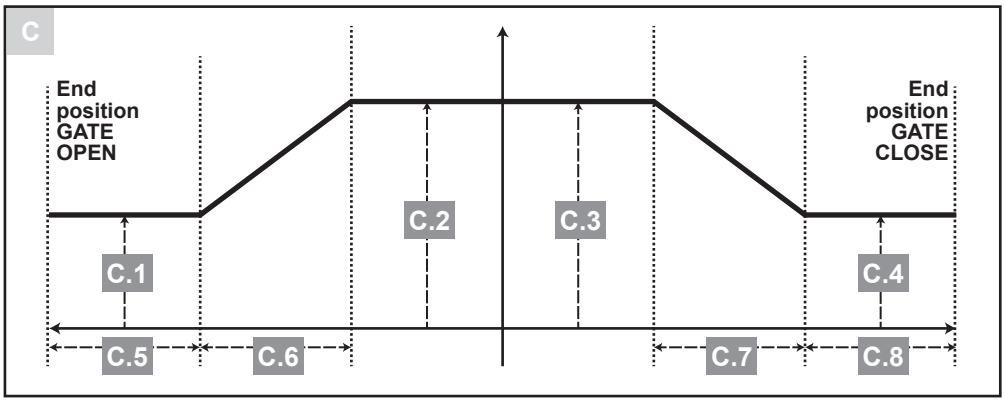
Gate is closed.

Velocity curve

NOTE:
Individual diagrams apply for the ST-B-1 control units from software version 3.0 (see the corresponding tables in the following)!

Operators and control units can be set to nearly any gate with the TorMinal.

A velocity curve of the operator when opening or closing a gate is derived from the values of the individual memory slots.



C.1 **Soft run speed, gate opening**
Lowest speed of the operator

IMPORTANT INFORMATION!
The soft run speed must be at least 2 setting values less than the maximum speed.

C.2 **Maximum run speed, gate opening**
Highest speed of the operator

Definitions

C.3 **Maximum run speed, gate closing**
Highest speed of the operator

C.4 **Soft run speed, gate closing**
Lowest speed of the operator

IMPORTANT INFORMATION!
The soft run speed must be at least 2 setting values less than the maximum speed.

C.5 **Length of soft run gate OPEN end position**
Distance the operator moves at soft run speed

C.6 **Length of soft run ramp gate OPEN end position**
Time required for switching between maximum and soft run speed

C.7 **Length of soft run ramp gate CLOSE end position**
Time required for switching between maximum and soft run speed

C.8 **Length of soft run gate CLOSE end position**
Time the operator moves at soft run speed

Gate run time

Time required to open or close a gate.

Gate running path

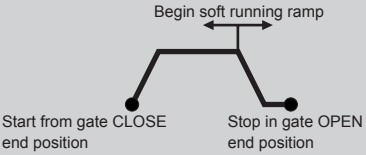
Path between the end positions

Cycle counter

Cycle = movement, consisting of a complete opening and closing movement between the end positions. A cycle is only counted upon reaching the gate CLOSE end position.

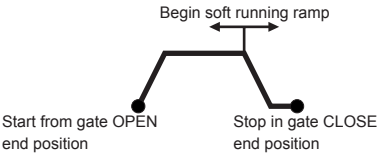
Functions of the memory slots

duo 500 SL / 650 SL, duo vision, sprint 550 SL

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
003	- [1]	*255* [3]			Programmed force during gate opening
004	- [1]	*255* [3]			Programmed force during gate closing
005	- [1]	*255* [3]		*0.25 s*	Run time of gate opening Example: Displayed value 40 = 10 seconds
006	- [1]	*255* [3]		*0.25 s*	Run time of gate closing Example: Displayed value 40 = 10 seconds
011	- [2]	*255* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
012	- [2]	*255* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
013	0 - 255	*255* [3]		*0.25 s*	Partial opening time Example: Displayed value 40 = 10 seconds
017	0 - 255	*0*			Length of soft run 0 = not a soft run 255 = maximum length
018	0 - 8	*4*			Length of the soft running ramp High value = long soft running ramp Low value = short soft running ramp
019	15 - 60	*25*			Soft run speed in gate OPEN end position direction
020	15 - 60	*55* [4]			Maximum speed in gate OPEN direction
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
021	0 - 40	*15*		*0.25 s*	Start of the soft running ramp for gate OPEN end position Start of the soft running ramp before the operator moves to the end positions. 

Functions of the memory slots

duo 500 SL / 650 SL, duo vision, sprint 550 SL

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
022	15 - 60	*25*			Soft run speed in gate CLOSE direction
023	15 - 60	*45* [4)]			Maximum speed in gate CLOSE direction
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
024	4 - 40	*15*		*0.25 s*	Start of the soft running ramp for gate CLOSE end position Start of the soft running ramp before the operator moves to the end positions. 
028	4 - 40	*12*		*0.25 s*	Early warning time Early warning time period Example: Displayed value 40 = 10 seconds
030	-	*5*			No function
031	1 - 255	*175*		*1 s*	Duty cycle of the internal lighting gate OPEN end position
032	1 - 255	*175*		*1 s*	Duty cycle of the internal lighting gate CLOSE end position
033	0 - 255	*20*		*1 ms*	Backjump
034	4 - 255	*8*		*0.25 s*	Reversion time Duration of reversion after event: • Triggering of safety input • Power deactivation
035	0 - 15	*15*			Switch soft running ramps on or off individually Example 1: Switching off Ramp 1 and Ramp 2: 15 - 1 - 2 = 12 Example 2: Switching on Ramp 2 + Ramp 4: 2 + 8 = 10
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON

Functions of the memory slots

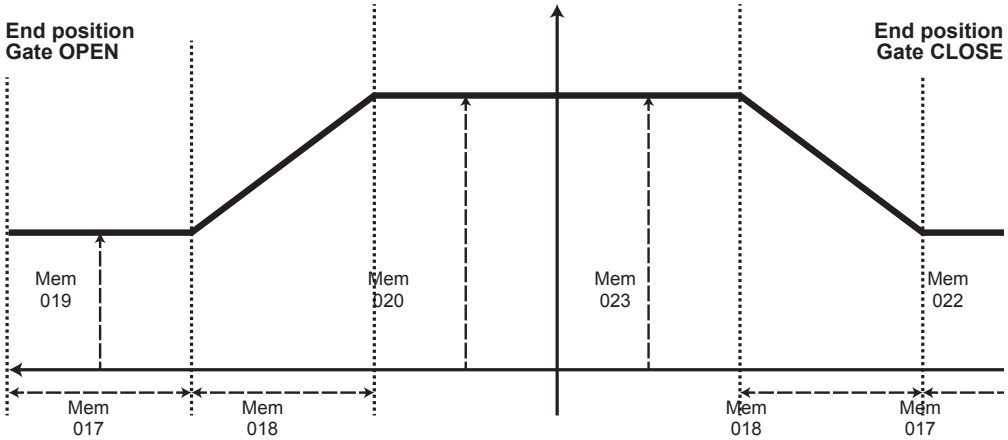
duo 500 SL / 650 SL, duo vision, sprint 550 SL					
Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
036	-				No function
037	16 - 48	*48* [4]			Force tolerance Adjustable additional force tolerance
			16		Minimum additional force
			48		Maximum additional force
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
047	-				For testing purposes in the factory

1) Displayed value cannot be modified, is saved by the control unit during the learning run.

2) Displayed value cannot be modified.

3) Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

4) Reset the control unit to be able to modify values.



Functions of the memory slots

duo rapido (T119), duo rapido 650+, Sprint IV

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	-	*255*			Maximum value of the occurring force during gate opening
003	10 - 50	*35*			Force tolerance during gate opening
004	10 - 50	*35*			Force tolerance (soft run) during gate opening
005	-	*255*			Maximum value of the occurring force during gate closing
006	10 - 50	*35*			Force tolerance during gate closing
007	10 - 50	*15*			Force tolerance (soft run) during gate closing
009	26 - 255	*35*			Start nominal rotation speed
010	0 - 255	*150*		*16 ms*	Time specification of soft start ramp during gate closing
011	0 - 255	*150*		*16 ms*	Time specification of soft start ramp during gate opening
012	0 - 80	*15*			Length of soft running ramp in gate OPEN end position Example: 2.4 m gate running path: 240 cm / 80 = 3 cm increment x 15 = 45 cm soft running starting point
013	0 - 80	*7*			Length of soft run in gate OPEN end position Example: 2.4 m gate running path: 240 cm / 80 = 3 cm increment x 7 = 21 cm soft running starting point Shortening the gate OPEN soft run end position: Reduce Mem 012 and Mem 013
014	0 - 80	*7*			Length of soft running ramp in gate OPEN end position Example: 2.4 m gate running path: 240 cm / 80 = 3 cm increment x 15 = 45 cm soft running starting point
015	0 - 90	*17*			Length of soft run in gate CLOSE end position Example: 2.4 m gate running path: 240 cm / 80 = 3 cm increment x 7 = 21 cm soft running starting point Shortening the gate CLOSE soft run end position: Reduce Mem 014 and Mem 015
016	25 - 255	*40*			Soft run speed in gate OPEN end position direction
017	25 - 255	*30*			Soft run speed in gate CLOSE direction
018	25 - 255	*120*			Maximum speed in gate OPEN direction
019	25 - 255	*55*			Maximum speed in gate CLOSE direction

Functions of the memory slots

duo rapido (T119), duo rapido 650+, Sprint IV

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
020	-	*0*			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
021	-	*0*			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
022	10 - 100	*100*		*10 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
023	10 - 100	*100*		*10 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
024	0 - 255	*175*		*1 s*	Duty cycle of the internal lighting after move to gate OPEN
025	0 - 255	*175*		*1 s*	Duty cycle of the internal lighting after move to gate CLOSE
026	100 - 255	*150*		*16 ms*	Reversion time for gate CLOSE for photo eyes CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
027	78 - 255	*78*		*64 ms*	Response time for driving through the photo eye The time after which it will be closed early if the photo eye is passed through PROVIDED DIP 6 is activated (= ON) Prerequisite: Mem 037: “5 seconds after photo eyes event close” is activated
028	0 - 200	*0*		*1 s*	Stay open time > 0 = the time set via TorMinal is valid 0 = the time set on the “Time” potentiometer is valid Differentiation between fully-automatic and semi-automatic closing: see Mem 037
029	1 - 255	*28*		*1 ms*	Backjump
032	30 - 100	*40*			“Slow gear” speed e.g. during the learning run or after power deactivation
033	0 - 80	*10*			Partial opening width Example: 2.4 m gate running path: 240 cm / 80 = 3 cm increment per Torminal increment
035	0 - 255	*12*		*0.25 s*	Early warning time OPEN

Functions of the memory slots

duo rapido (T119), duo rapido 650+, Sprint IV

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
036	0 - 255	*12*		*0.25 s*	Early warning time CLOSE
037	0 - 63	*59*			Special functions:
			1		Soft stop at intermediate position and partial opening
			2		Closing 5 seconds after photo eyes event.
			4		Ventilation function active
			8		Semi-automatic closing active / fully-automatic closing deactivated
			16		Automatic closing off OPENED active
			32		Automatic closing off PARTIAL OPENING active
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 037				
	Value 1		1		Soft stop at intermediate position and partial opening
	Value 2		2		Closing 5 seconds after photo eyes event.
	Value 3		8		Semi-automatic closing active / fully-automatic closing deactivated
	Value 4		16		Automatic closing off OPENED active
	Value 5		32		Automatic closing off PARTIAL OPENING active
	Sum of the values		59		
040	-	*0*			Fault memory: Last error to occur is stored in the faulty memory and reproduced.
			5		Power deactivation during soft running when closing
			6		Power deactivation during opening
			7		Power deactivation during soft running when opening
			8		Power deactivation during closing
			10		Running time or running path exceeded
			14		Operator has been overloaded during the run
			22		Motor blocking protection has activated
			23		Operator has been overloaded during the run

Functions of the memory slots

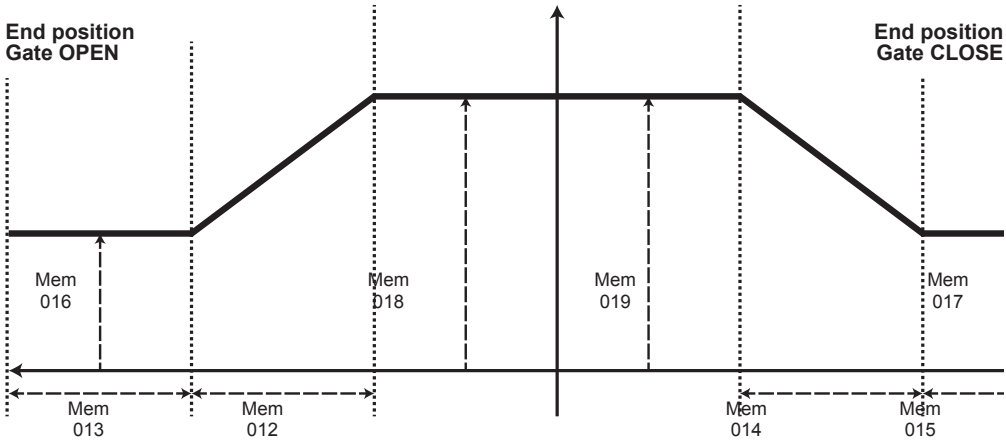
duo rapido (T119), duo rapido 650+, Sprint IV					
Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
042	10 - 255	*25*		*10 ms*	Delay time during test process of photo eye
045	-	*4*			Detected photo eyes type CAUTION: Photo eyes are only detected during the learning run. Modifying photo eye type later: 1. Delete force values. 2. Connect new photo eye.
			0		No photo eye detected
			2		2-wire photo eye detected
			4		4-wire photo eye detected

1) Displayed value cannot be modified, is saved by the control unit during the learning run.

2) Displayed value cannot be modified.

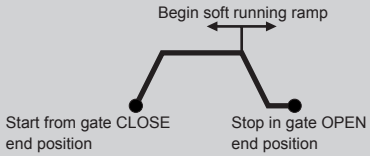
3) Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

4) Reset the control unit to be able to modify values.



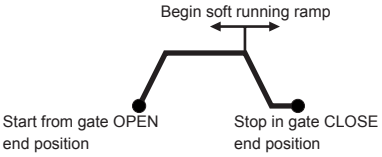
Functions of the memory slots

marathon 550 SL, 800 SL, 1100 SL

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
003	- [1]	*255* [3]			Programmed force during gate opening
004	- [1]	*255* [3]			Programmed force during gate closing
005	- [1]	*255* [3]		*0.25 s*	Run time of gate opening Example: Displayed value 40 = 10 seconds
006	- [1]	*255* [3]		*0.25 s*	Run time of gate closing Example: Displayed value 40 = 10 seconds
011	- [1]	*255* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
012	- [2]	*255* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
013	0 - 255	*255* [3]		*0.25 s*	Partial opening time Example: Displayed value 40 = 10 seconds
017	0 - 255	*0*			Length of soft run 0 = not a soft run 255 = maximum length
018	0 - 8	*4*			Length of the soft running ramp High value = long soft running ramp Low value = short soft running ramp
019	15 - 60	*25*			Soft run speed in gate OPEN end position direction
020	15 - 60	*55* [4]			Maximum speed in gate OPEN direction
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
021	0 - 40	*15*		*0.25 s*	Start of the soft running ramp for gate OPEN end position Start of the soft running ramp before the operator moves to the end positions. 

Functions of the memory slots

marathon 550 SL, 800 SL, 1100 SL

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
022	15 - 60	*25*			Soft run speed in gate CLOSE direction
023	15 - 60	*45* [4)]			Maximum speed in gate CLOSE direction
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
024	0 - 40	*15*		*0.25 s*	Start of the soft running ramp for gate CLOSE end position Start of the soft running ramp before the operator moves to the end positions. 
026	0 - 255	*0*			Cycle counter for maintenance message (Z3) Counts from 0 to 255 Number of cycles = Z3 x 256
028	4 - 40	12		*0.25 s*	Early warning time Early warning time period Example: Displayed value 40 = 10 seconds
030	1 - 20	*5*		*1 s*	Closing time photo eye Duration of the stay open time, after driving through the photo eye, only in conjunction with automatic closing function.
031	1 - 255	*175*		*1 s*	Duty cycle of the internal lighting gate OPEN end position
032	1 - 255	*175*		*1 s*	Duty cycle of the internal lighting gate CLOSE end position Duration of flashing if maintenance monitoring is triggered
033	0 - 255	*20*		*1 ms*	Backjump
034	4 - 255	*8*		*0.25 s*	Reversion timeDuration of reversion after event:Duration of reversion after event: • Triggering of safety input • Power deactivation

Functions of the memory slots

marathon 550 SL, 800 SL, 1100 SL

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
035	0 - 255	*31*			Switch soft running ramps on or off individually Example 1: Switching off Ramp 1 and Ramp 2: 15 - 1 - 2 = 12 Example 2: Switching on Ramp 2 + Ramp 4: 2 + 8 = 10
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON
					Operation of potential-free relay contact Terminals 23 + 24
			0		Relay OFF
			16		Pulse for motor start
			32		Status display, contact open for gate opening
			48		Status display, contact closed for gate opening
					Maintenance monitoring Number of Prerequisite: Mem 026: “Cycle counter for maintenance message (Z3)” is activated If the maintenance alarm is triggered, the value of the increases by 128. Deleting maintenance alarm: Reduce value by 128. Display of the triggered maintenance monitoring Light flashes after gate CLOSE, as long as Mem 032 is set for memory slot. Factory setting 175 seconds
			0		Maintenance monitoring OFF
			64		Monitor maintenance cycles
			128		Maintenance alarm is triggered

Functions of the memory slots

marathon 550 SL, 800 SL, 1100 SL

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 035				
	Value 1		15		All soft running ramps (1 - 4) ON
	Value 2		16		Pulse for motor start
	Value 3		0		Maintenance monitoring OFF
	Sum of the values		31		
036	0 - 31	*0* [4]			Special functions 2:
					Dead man operation only via buttons 1 + 2 Button 1 opens and button 2 always closes the gate
			0		OFF
			1		When closing (opening also possible with radio channel 1)
			2		When opening and closing
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
037	16 - 48	*48* [4]			Force tolerance Adjustable additional force tolerance
			16		Minimum additional force
			48		Maximum additional force
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
047	-	-			For testing purposes in the factory

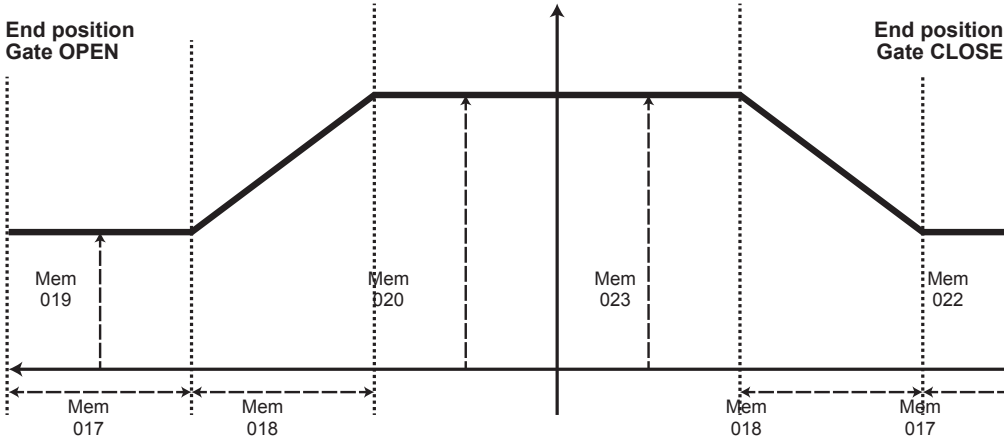
1) Displayed value cannot be modified, is saved by the control unit during the learning run.

2) Displayed value cannot be modified.

3) Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

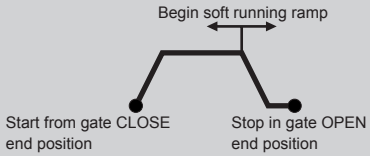
4) Reset the control unit to be able to modify values.

Functions of the memory slots



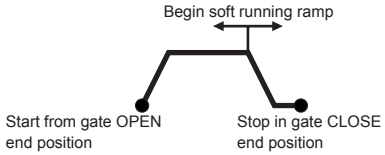
Functions of the memory slots

marathon tiga 800 SL(X) / 1100 SL(X)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
003	- [1]	*255* [3]			Programmed force during gate opening
004	- [1]	*255* [3]			Programmed force during gate closing
005	- [1]	*255* [3]		*0.25 s*	Run time of gate opening Example: Displayed value 40 = 10 seconds
006	- [1]	*255* [3]		*0.25 s*	Run time of gate closing Example: Displayed value 40 = 10 seconds
011	- [2]	*255* [3]			Cycle counter (Z0) Number of cycles = Z0 x 65536
012	- [2]	*255* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
013	- [2]	*255* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z0 x 65536 + Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
017	0 - 255	*0*			Length of soft run 0 = not a soft run 255 = maximum length
018	0 - 8	*4*			Length of the soft running ramp High value = long soft running ramp Low value = short soft running ramp
019	15 - 60	*25*			Soft run speed in gate OPEN end position direction
020	15 - 60	*55* [4]			Maximum speed in gate OPEN direction
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
021	0 - 40	*15*		*0.25 s*	Start of the soft running ramp for gate OPEN end position Start of the soft running ramp before the operator moves to the end positions. 

Functions of the memory slots

marathon tiga 800 SL(X) / 1100 SL(X)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
022	15 - 60	*25*			Soft run speed in gate CLOSE direction
023	15 - 60	*45* [4)]			Maximum speed in gate CLOSE direction
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
024	0 - 40	*15*		*0.25 s*	Start of the soft running ramp for gate CLOSE end position Start of the soft running ramp before the operator moves to the end positions. 
026	0 - 255	*0*			Cycle counter for maintenance message (Z3) Counts from 0 to 255 Number of cycles = Z3 x 256
027	0 - 255	*16*			Early warning time OPEN Example: Displayed value 40 = 10 seconds
028	4 - 40	*12*		*0.25 s*	Early warning time CLOSE Example: Displayed value 40 = 10 seconds
030	1 - 20	*5*		*1 s*	Closing time photo eyes or extension of the stay open time Depending on the setting of DIP switch 4 or 5, whereby DIP switch 4 has priority: DIP 4 OFF: Stay open time proceeds normally. DIP 4 ON: After driving through the photo eyes, close gate after x seconds. DIP 5 OFF: Stay open time proceeds normally. DIP 5 ON: After driving through the photo eyes, extend the stay open time by x seconds.
031	2 - 255	*30*			Stay open time
032	0 - 255	*40*		*1 s*	Clearing time
033	0 - 255	*20*			Backjump

Functions of the memory slots

marathon tiga 800 SL(X) / 1100 SL(X)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
034	4 - 255	*8*		*0.25 s*	Reversion time Duration of reversion after event: • Triggering of safety input • Power deactivation
035	0 - 255	*15*			Switch soft running ramps on or off individually Example 1: Switching off Ramp 1 and Ramp 2: 15 - 1 - 2 = 12 Example 2: Switching on Ramp 2 + Ramp 4: 2 + 8 = 10
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON
					Maintenance monitoring Prerequisite: Mem 026: “Cycle counter for maintenance message (Z3)” is activated If the maintenance alarm is triggered, the value of the increases by 128. Deleting maintenance alarm: Reduce value by 128. Display of the triggered maintenance monitoring Light flashes after gate CLOSE, as long as Mem 032 is set for memory slot. Factory setting 175 seconds
			0		Maintenance monitoring OFF
			64		Monitor maintenance cycles
			128		Maintenance alarm is triggered
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 035				
	Value 1		15		All soft running ramps (1 - 4) ON
	Value 2		0		Maintenance monitoring OFF
	Sum of the values		15		

Functions of the memory slots

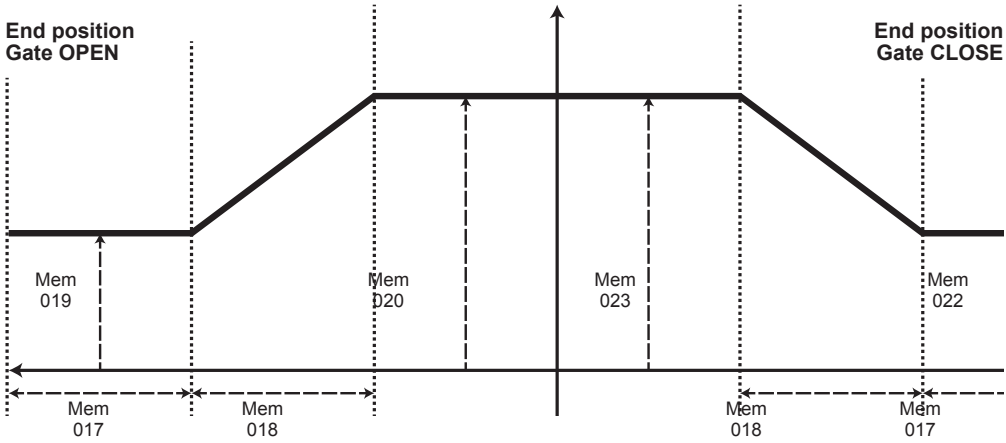
marathon tiga 800 SL(X) / 1100 SL(X)					
Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
037	16 - 60	*48* [4]			Force tolerance Adjustable additional force tolerance
			16		Minimum additional force
			60		Maximum additional force
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
047					For testing purposes in the factory

[1] Displayed value cannot be modified, is saved by the control unit during the learning run.

[2] Displayed value cannot be modified.

[3] Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

[4] Reset the control unit to be able to modify values.



Functions of the memory slots

MyDoor S+ (T118)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	-	*255*			Maximum value of the occurring force during gate opening
003	10 - 50	*35*			Force tolerance during gate opening
004	10 - 50	*35*			Force tolerance (soft run) during gate opening
005	-	*255*			Maximum value of the occurring force during gate closing
006	10 - 50	*35*			Force tolerance during gate closing
007	10 - 50	*15*			Force tolerance (soft run) during gate closing
009	26 - 255	*35*			Start nominal rotation speed
010	0 - 255	*150*		*16 ms*	Time specification of soft start ramp during gate closing
011	0 - 255	*150*		*16 ms*	Time specification of soft start ramp during gate opening
012	0 - 80	*8*			Length of soft running ramp in gate OPEN end position Example: 2.4 m gate running path: 240 cm / 80 = 3 cm increment x 15 = 45 cm soft running starting point
013	0 - 80	*4*			Length of soft run in gate OPEN end position Example: 2.4 m gate running path: 240 cm / 80 = 3 cm increment x 7 = 21 cm soft running starting point Shortening the gate OPEN soft run end position: Reduce Mem 012 and Mem 013
014	0 - 80	*5*			Length of soft running ramp in gate OPEN end position Example: 2.4 m gate running path: 240 cm / 80 = 3 cm increment x 7 = 21 cm soft running starting point
015	0 - 80	*2*			Length of soft run in gate CLOSE end position Example: 2.4 m gate running path: 240 cm / 80 = 3 cm increment x 7 = 21 cm soft running starting point Shortening the gate CLOSE soft run end position: Reduce Mem 014 and Mem 015
016	25 - 255	*50*			Soft run speed in gate OPEN end position direction
017	25 - 255	*40*			Soft run speed in gate OPEN end position direction

Functions of the memory slots

MyDoor S+ (T118)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
018	25 - 255	*150*			Maximum speed in gate OPEN direction
019	25 - 255	*85*			Maximum speed in gate CLOSE direction
020	-	*0*			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
021	-	*0*			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
022	10 - 100	*100*		*10 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
023	10 - 100	*100*		*10 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
024	0 - 255	*175*		*1 s*	Duty cycle of the internal lighting after move to gate OPEN
025	0 - 255	*175*		*1 s*	Duty cycle of the internal lighting after move to gate CLOSE
026	100 - 255	*150*		*16 ms*	Reversion time for gate CLOSE for photo eyes CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
027	78 - 255	*78*		*64 ms*	Response time for driving through the photo eye The time after which it will be closed early if the photo eye is passed through PROVIDED DIP 6 is activated (= ON) Prerequisite: Mem 037: “5 seconds after photo eyes event close” is activated
028	0 - 200	*0*		*1 s*	Stay open time > 0 = the time set via TorMinal is valid 0 = the time set on the “Time” potentiometer is valid Differentiation between fully-automatic and semi-automatic closing: see Mem 037
029	1 - 255	*6*		*1 ms*	Backjump

Functions of the memory slots

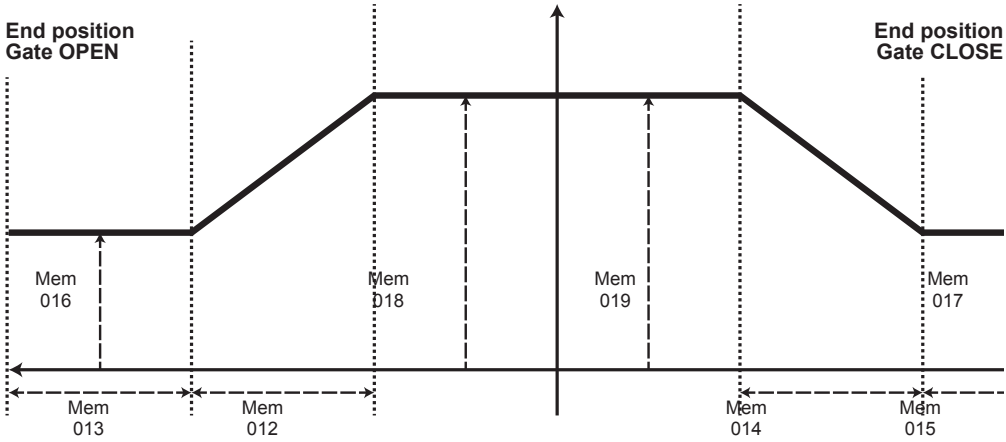
MyDoor S+ (T118)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
032	30 - 100	*70*			“Slow gear” speed e.g. during the learning run or after power deactivation
033	0 - 80	*2*			Partial opening width Example: 2.4 m gate running path: 240 cm / 80 = 3 cm increment per Torminal increment
035	0 - 255	*12*		*0.25 s*	Early warning time OPEN
036	0 - 255	*12*		*0.25 s*	Early warning time CLOSE
037	0 - 63	*63*			Special functions:
			1		Soft stop at intermediate position and partial opening
			2		Closing 5 seconds after photo eyes event.
			4		Ventilation function active
			8		Semi-automatic closing active / fully-automatic closing deactivated
			16		Automatic closing off OPENED active
			32		Automatic closing off PARTIAL OPENING active
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 037				
	Value 1		1		Soft stop at intermediate position and partial opening
	Value 2		2		Closing 5 seconds after photo eyes event.
	Value 3		8		Semi-automatic closing active / fully-automatic closing deactivated
	Value 4		16		Automatic closing off OPENED active
	Value 5		32		Automatic closing off PARTIAL OPENING active
	Sum of the values		59		

Functions of the memory slots

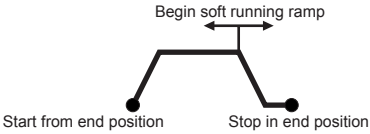
MyDoor S+ (T118)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
040	-	*0*			Fault memory: Last error to occur is stored in the faulty memory and reproduced.
			5		Power deactivation during soft running when closing
			6		Power deactivation during opening
			7		Power deactivation during soft running when opening
			8		Power deactivation during closing
042	10 - 255	*25*		*10 ms*	Delay time during test process of photo eye
045	-	*4*			Detected photo eyes type CAUTION: Photo eyes are only detected during the learning run. Modifying photo eye type later: 1. Delete force values. 2. Connect new photo eye.
			2		2-wire photo eye detected
			4		4-wire photo eye detected



Functions of the memory slots

twist 200 (E) / DSTA24, jive 200 / DSTA24-UF

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	- [2]	*255* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
003	- [2]	*255* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
005	- [1]	*255* [3]			Run time of gate leaf 2 opening
006	- [1]	*255* [3]			Run time of gate leaf 2 closing
007	- [1]	*255* [3]			Run time of gate leaf 1 opening
008	- [1]	*255* [3]			Run time of gate leaf 1 closing
013	- [1]	*255* [3]			Programmed force of gate leaf 2 opening
014	- [1]	*255* [3]			Programmed force of gate leaf 2 closing
015	- [1]	*255* [3]			Programmed force of gate leaf 1 opening
016	- [1]	*255* [3]			Programmed force of gate leaf 1 closing
019	15 - 40	*20*			Soft run speed
020	50 - 110	*104* [4]			Maximum speed
021	0 - 40	*14*		*0.25 s*	Motor 2: Start of the soft running ramp for the end positions Start of the soft running ramp before the operator moves to the end positions. 
022	0 - 40	*14*		*0.25 s*	Motor 1: Start of the soft running ramp for the end positions
023	4 - 16	*8*			No function
024	5 - 255	*60*		*1 s*	Stay open time (automatic closing) Stay open time period
026	1 - 40	*12*		*0.25 s*	Early warning time Early warning time period Example: Displayed value 40 = 10 seconds

Functions of the memory slots

twist 200 (E) / DSTA24, jive 200 / DSTA24-UF

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
027	4 - 40	*10*		*0.25 s*	Delay time of gate leaf 1 opening Time which gate leaf 1 opens after gate leaf 2.
028	8 - 40	*20*		*0.25 s*	Delay time of gate leaf 2 closing Time after which gate leaf 2 reaches the gate CLOSE end position after gate leaf 1.
030	1 - 20	*5*		*1 s*	Closing time photo eye Duration of the stay open time, after driving through the photo eye, only in conjunction with automatic closing function.
031	1 - 255	*3*		*1 s*	Switching duration relay contact Duration that the relay contact is closed after motor start.
032	0 - 15	*15*			Motor 2: Switch soft running ramps on or off individually Example 1: Switching off Ramp 1 and Ramp 2: 15 - 1 - 2 = 12 Example 2: Switching on Ramp 2 + Ramp 4: 2 + 8 = 10
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON
033	0 - 15	*15*			Motor 1: Switch soft running ramps on or off individually
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON
034	- [1)]	-			Programmed leaf delay x 0.25 s

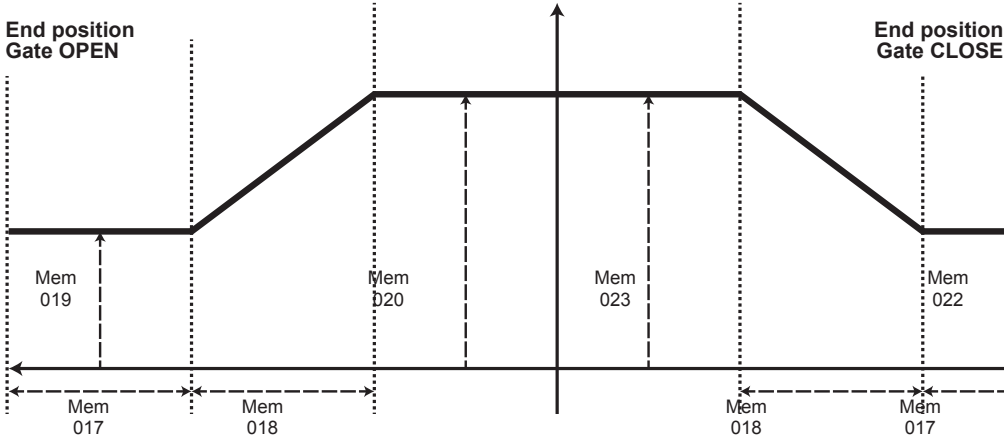
Functions of the memory slots

1) Displayed value cannot be modified, is saved by the control unit during the learning run.

2) Displayed value cannot be modified.

3) Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

4) Reset the control unit to be able to modify values.



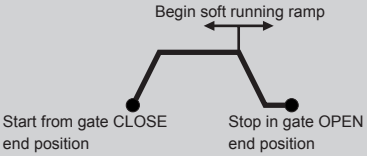
Functions of the memory slots

twist XL / DT-A-1 (up to software version 1.2)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
003	- [1]	*255* [3]			Programmed force of gate leaf 2 opening
004	- [1]	*255* [3]			Programmed force of gate leaf 2 closing
005	- [1]	*255* [3]			Programmed force of gate leaf 1 opening
006	- [1]	*255* [3]			Programmed force of gate leaf 1 closing
007	- [1]	*255* [3]			Run time of gate leaf 2 opening
008	- [1]	*255* [3]			Run time of gate leaf 2 closing
009	- [1]	*255* [3]			Run time of gate leaf 1 opening
010	- [1]	*255* [3]			Run time of gate leaf 1 closing
012	- [2]	*255* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
013	- [2]	*255* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
014	0 - 7	*1*			Warning light, dead man operation, power deactivation 2 Example: Warning light is to flash (1) + power deactivation 2 (4): 1 + 4 = 5, enter and save this value.
			0		Warning light lights up during a gate movement
			1		Warning light flashes during a gate movement
			2		Dead man operation
			4		Power deactivation (1 -> 2) switchover: more sensitive activation for smaller B-dimensions and smooth-running gates.
016	8 - 40	*12*		*0.25 s*	Early warning time Early warning time period Example: Displayed value 40 = 10 seconds
020	8 - 40	*27*		*0.25 s*	Delay time of gate leaf 2 closing Time after which gate leaf 2 reaches the gate CLOSE end position after gate leaf 1.

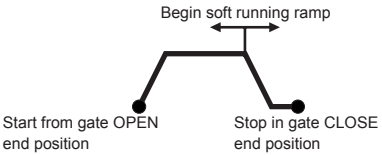
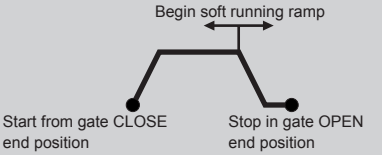
Functions of the memory slots

twist XL / DT-A-1 (up to software version 1.2)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
021	1 - 20	*5*		*1 s*	Closing time photo eye Duration of the stay open time, after driving through the photo eye, only in conjunction with automatic closing function.
022	1 - 255	*3*		*1 s*	Switching duration relay contact Duration that the relay contact is closed after motor start.
023	4 - 40	*12*		*0.25 s*	Delay time of gate leaf 1 opening Time which gate leaf 1 opens after gate leaf 2.
024	0 - 8	*4*			Length of the soft running ramp High value = long soft running ramp Low value = short soft running ramp
025	15 - 60	*27* 3)			Motor 2: Soft run speed in gate OPEN end position direction
026	15 - 60	*55* 3)			Motor 2: Maximum speed in gate OPEN direction
027	0 - 40	*15* 3)		*0.25 s*	Motor 2: Start of the soft running ramp for gate OPEN end position Start of the soft running ramp before the operator moves to the end positions. 
028	15 - 60	*27* 3)			Motor 2: Soft run speed in gate CLOSE direction
029	15 - 60	*45* 3)			Motor 2: Maximum speed in gate CLOSE direction

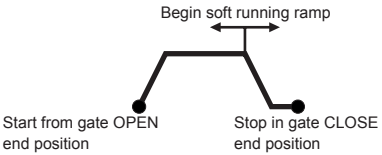
Functions of the memory slots

twist XL / DT-A-1 (up to software version 1.2)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
030	0 - 40	*15* [3]		*0.25 s*	Motor 2: Start of the soft running ramp for gate CLOSE end position Start of the soft running ramp before the operator moves to the end positions. 
031	15 - 60	*27* [3]			Motor 1: Soft run speed in gate OPEN end position direction
032	15 - 60	*55* [3]			Motor 1: Maximum speed in gate OPEN direction
033	0 - 40	*15* [3]		*0.25 s*	Motor 1: Start of the soft running ramp for gate OPEN end position Start of the soft running ramp before the operator moves to the end positions. 
034	15 - 60	*27* [3]			Motor 1: Soft run speed in gate CLOSE direction
035	15 - 60	*45* [3]			Motor 1: Maximum speed in gate CLOSE direction

Functions of the memory slots

twist XL / DT-A-1 (up to software version 1.2)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
036	0 - 40	*15* [3]		*0.25 s*	Motor 1: Start of the soft running ramp for gate CLOSE end position Start of the soft running ramp before the operator moves to the end positions. 
037	10 - 255	*30* [3]			Motor 2: Force tolerance, gate leaf 2 Adjustable additional force tolerance
			10		Minimum additional force
			255		Maximum additional force
038	10 - 255	*30* [3]			Motor 1: Force tolerance gate leaf 1 Adjustable additional force tolerance
			10		Minimum additional force
			255		Maximum additional force
039	0 - 15	*15*			Motor 2: Switch soft running ramps on or off individually Example 1: Switching off Ramp 1 and Ramp 2: 15 - 1 - 2 = 12 Example 2: Switching on Ramp 2 + Ramp 4: 2 + 8 = 10
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON

Functions of the memory slots

twist XL / DT-A-1 (up to software version 1.2)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
040	0 - 15	*15*			Motor 1: Switch soft running ramps on or off individually
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON
042	0 - 8	*0*		*0.25 s*	Motor 2: Close trailing gate After reaching the gate CLOSE end position, the operator continues to run in order to close the gate cleanly (gate leaves are braced with each other by this).
044	5 - 255	*60*			Stay open time (semi-automatic closing)

1) Displayed value cannot be modified, is saved by the control unit during the learning run.

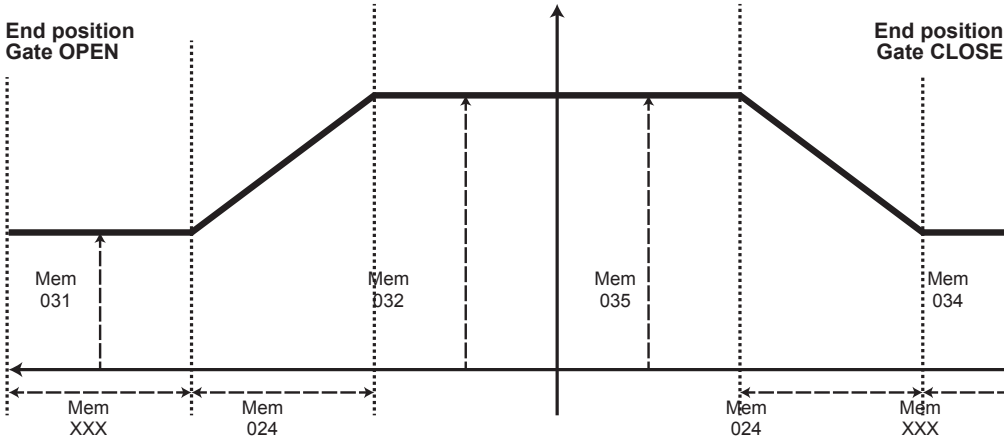
2) Displayed value cannot be modified.

3) Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

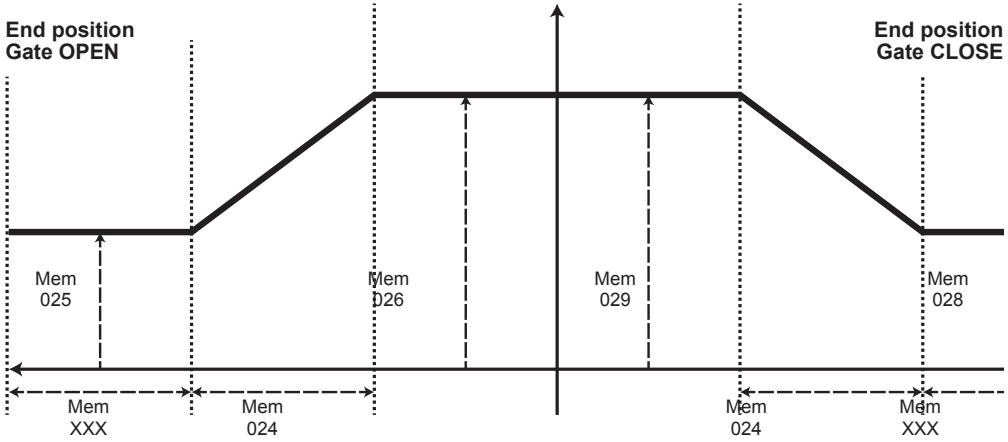
4) Reset the control unit to be able to modify values.

Functions of the memory slots

Motor 1



Motor 2



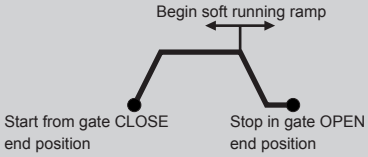
Functions of the memory slots

twist XL, twist 350 / DT-A-1 (as of software version 1.3)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
003	- [1]	*255* [3]			Programmed force of gate leaf 2 opening
004	- [1]	*255* [3]			Programmed force of gate leaf 2 closing
005	- [1]	*255* [3]			Programmed force of gate leaf 1 opening
006	- [1]	*255* [3]			Programmed force of gate leaf 1 closing
007	- [1]	*255* [3]			Run time of gate leaf 2 opening
008	- [1]	*255* [3]			Run time of gate leaf 2 closing
009	- [1]	*255* [3]			Run time of gate leaf 1 opening
010	- [1]	*255* [3]			Run time of gate leaf 1 closing
012	- [2]	*255* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
013	- [2]	*255* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
014	0 - 15	*1*			Warning light, dead man operation, power deactivation 2 Example: Warning light is to flash (1) + power deactivation 2 (4): 1 + 4 = 5, enter and save this value.
			0		Warning light lights up during a gate movement
			1		Warning light flashes during a gate movement
			2		Dead man operation
			4		Power deactivation (1 -> 2) switchover: more sensitive activation for smaller B-dimensions and smooth-running gates.
			8		Cancel write protection
016	8 - 40	*12*		*0.25 s*	Early warning time Early warning time period Example: Displayed value 40 = 10 seconds
020	8 - 40	*27*		*0.25 s*	Delay time of gate leaf 2 closing Time after which gate leaf 2 reaches the gate CLOSE end position after gate leaf 1.

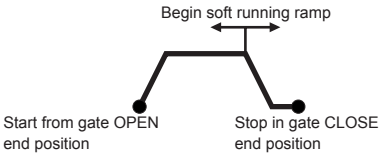
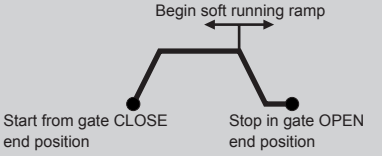
Functions of the memory slots

twist XL, twist 350 / DT-A-1 (as of software version 1.3)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
021	1 - 20	*5*		*1 s*	Closing time photo eye Duration of the stay open time, after driving through the photo eye, only in conjunction with automatic closing function.
022	1 - 255	*3*		*1 s*	Switching duration relay contact Duration that the relay contact is closed after motor start.
023	4 - 40	*12*		*0.25 s*	Delay time of gate leaf 1 opening Time which gate leaf 1 opens after gate leaf 2.
024	0 - 8	*4*			Length of the soft running ramp High value = long soft running ramp Low value = short soft running ramp
025	15 - 60	*27* 3) 5)			Motor 2: Soft run speed in gate OPEN end position direction
026	15 - 60	*55* 3) 5)			Motor 2: Maximum speed in gate OPEN direction
027	0 - 40	*15* 3)		*0.25 s*	Motor 2: Start of the soft running ramp for gate OPEN end position Start of the soft running ramp before the operator moves to the end positions. 
028	15 - 60	*27* 3) 5)			Motor 2: Soft run speed in gate CLOSE direction
029	15 - 60	*45* 3)			Motor 2: Maximum speed in gate CLOSE direction

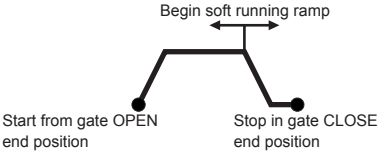
Functions of the memory slots

twist XL, twist 350 / DT-A-1 (as of software version 1.3)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
030	0 - 40	*15* 3)		*0.25 s*	Motor 2: Start of the soft running ramp for gate CLOSE end position Start of the soft running ramp before the operator moves to the end positions. 
031	15 - 60	*27* 3) 5)			Motor 1: Soft run speed in gate OPEN end position direction
032	15 - 60	*55* 3) 5)			Motor 1: Maximum speed in gate OPEN direction
033	0 - 40	*15* 3)		*0.25 s*	Motor 1: Start of the soft running ramp for gate OPEN end position Start of the soft running ramp before the operator moves to the end positions. 
034	15 - 60	*27* 3) 5)			Motor 1: Soft run speed in gate CLOSE direction
035	15 - 60	*45* 3) 5)			Motor 1: Maximum speed in gate CLOSE direction

Functions of the memory slots

twist XL, twist 350 / DT-A-1 (as of software version 1.3)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
036	0 - 40	*15* [3]		*0.25 s*	Motor 1: Start of the soft running ramp for gate CLOSE end position Start of the soft running ramp before the operator moves to the end positions. 
037	10 - 255	*30* [3] [5]			Motor 2: Force tolerance, gate leaf 2 Adjustable additional force tolerance
			10		Minimum additional force
			255		Maximum additional force
038	10 - 255	*30* [3] [5]			Motor 1: Force tolerance gate leaf 1 Adjustable additional force tolerance
			10		Minimum additional force
			255		Maximum additional force
039	0 - 15	*15*			Motor 2: Switch soft running ramps on or off individually Example 1: Switching off Ramp 1 and Ramp 2: 15 - 1 - 2 = 12 Example 2: Switching on Ramp 2 + Ramp 4: 2 + 8 = 10
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON

Functions of the memory slots

twist XL, twist 350 / DT-A-1 (as of software version 1.3)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
040	0 - 15	*15*			Motor 1: Switch soft running ramps on or off individually
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON
042	0 - 8	*0*		*0.25 s*	Motor 2: Close trailing gate After reaching the gate CLOSE end position, the operator continues to run in order to close the gate cleanly (gate leaves are braced with each other by this).
044	5 - 255	*60*			Stay open time (semi-automatic closing)

1) Displayed value cannot be modified, is saved by the control unit during the learning run.

2) Displayed value cannot be modified.

3) Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

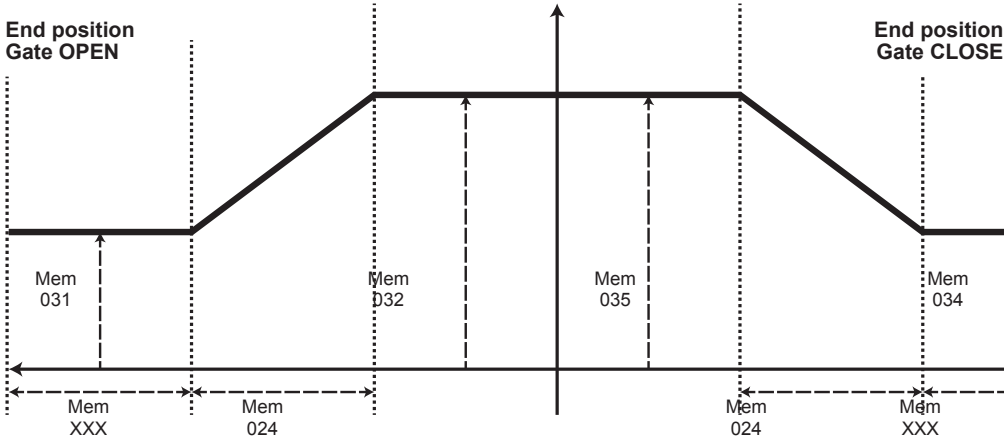
4) Reset the control unit to be able to modify values.

5) Cancelling write protection: Add Mem 14 + 8 (If the write protection is activated again, the control unit reverts to the potentiometer settings. The values set with the Torminal will be lost)

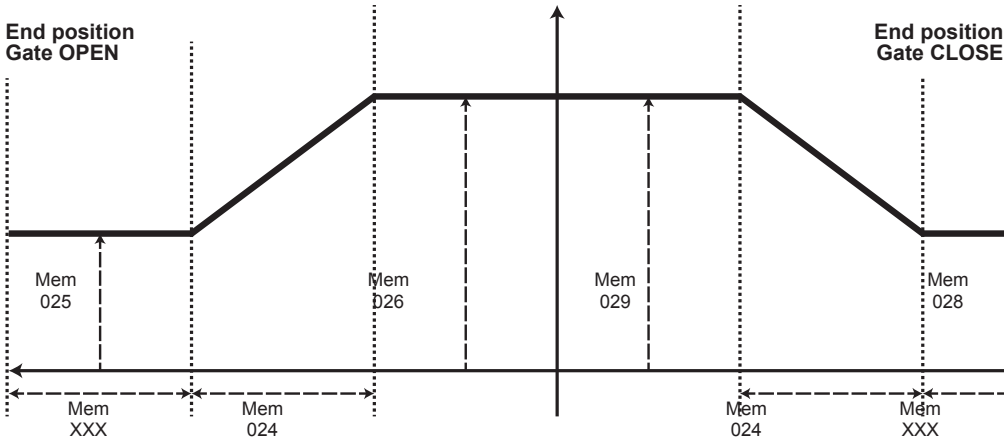
By cancelling the write protection, the following values can be modified

Functions of the memory slots

Motor 1

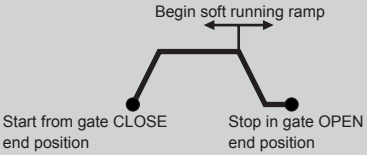


Motor 2



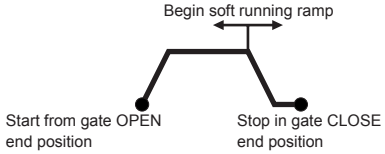
Functions of the memory slots

STArter (from software version 1.6)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
003	- [1]	*255* [3]			Programmed force during gate opening
004	- [1]	*255* [3]			Programmed force during gate closing
005	- [1]	*255* [3]		*0.25 s*	Run time of gate opening Example: Displayed value 40 = 10 seconds
006	- [1]	*255* [3]		*0.25 s*	Run time of gate closing Example: Displayed value 40 = 10 seconds
011	- [2]	*255* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
012	- [2]	*255* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
013	0 - 255	*255* [3]		*0.25 s*	Partial opening time Example: Displayed value 40 = 10 seconds
017	0 - 255	*0*			Length of soft run 0 = not a soft run 255 = maximum length
018	0 - 8	*8*			Length of the soft running ramp High value = long soft running ramp Low value = short soft running ramp
019	15 - 60	*41*			Soft run speed in gate OPEN end position direction
020	15 - 70	*55* [4]			Maximum speed in gate OPEN direction
021	0 - 40	*35*		*0.25 s*	Start of the soft running ramp for gate OPEN end position Start of the soft running ramp before the operator moves to the end positions. 
022	15 - 60	*41*			Soft run speed in gate CLOSE direction
023	15 - 70	*55* [4]			Maximum speed in gate CLOSE direction

Functions of the memory slots

STArter (from software version 1.6)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
024		*35*		*0.25 s*	Start of the soft running ramp for gate CLOSE end position Start of the soft running ramp before the operator moves to the end positions. 
026	0 - 255	*0*			Cycle counter for maintenance message (Z3) Counts from 0 to 255 Number of cycles = Z3 x 256
	4 - 40	*12*		*0.25 s*	Early warning time Early warning time period Example: Displayed value 40 = 10 seconds
030	0 - 20	*5*		*1 s*	Closing time photo eye Duration of the stay open time, after driving through the photo eye, only in conjunction with automatic closing function.
032	1 - 255	*175*		*1 s*	Duty cycle of the internal lighting gate CLOSE end position
034	4 - 255	*2*		*0.25 s*	Reversion time Duration of reversion after event: • Triggering of safety input • Power deactivation
035	0 - 255	*26*			Switch soft running ramps on or off individually Example 1: Switching off Ramp 1 and Ramp 2: 15 - 1 - 2 = 12 Example 2: Switching on Ramp 2 + Ramp 4: 2 + 8 = 10
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON

Functions of the memory slots

STArter (from software version 1.6)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
					Operation of potential-free relay contact Terminals 23 + 24
			0		Relay OFF
			16		Pulse for motor start
			32		Status display, contact open for gate opening
			48		Status display, contact closed for gate opening
					Maintenance monitoring Prerequisite: Mem 026: “Cycle counter for maintenance message (Z3)” is activated If the maintenance alarm is triggered, the value of the increases by 128. Deleting maintenance alarm: Reduce value by 128. Display of the triggered maintenance monitoring Light flashes after gate CLOSE, as long as Mem 032 is set for memory slot. Factory setting 175 seconds
			0		Maintenance monitoring OFF
			64		Monitor maintenance cycles
			128		Maintenance alarm is triggered
036	0 - 31	*24* [4]			Special functions:
			1		Dead man in direction gate CLOSE
			2		Dead man operation in direction gate OPEN and CLOSE
			4		Unlimited run time, one force value, no soft run
			8		DPS deactivated, one force value, soft run
			16		Semi-automatic closing function
037	16 - 255	*50* [4]			Force tolerance Adjustable additional force tolerance
			16		Minimum additional force
			48		Maximum additional force
			Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.		
047	-				For testing purposes in the factory

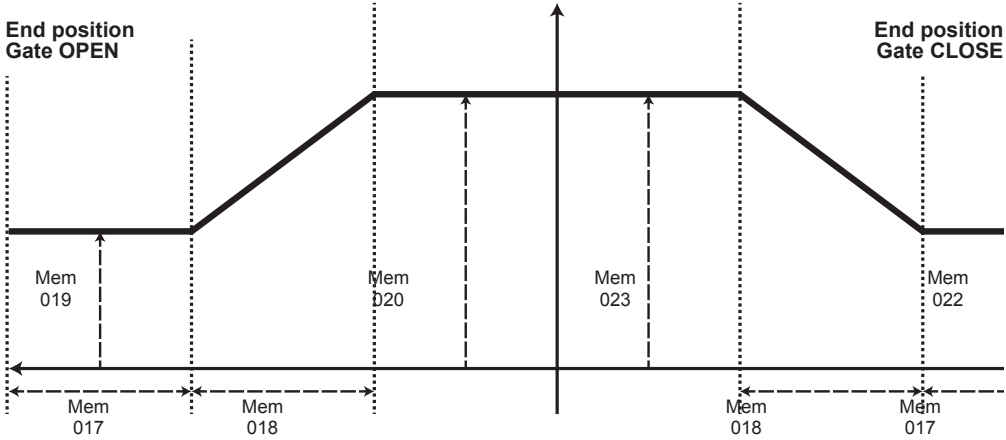
Functions of the memory slots

1) Displayed value cannot be modified, is saved by the control unit during the learning run.

2) Displayed value cannot be modified.

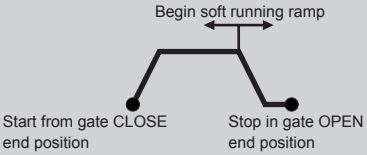
3) Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

4) Reset the control unit to be able to modify values.



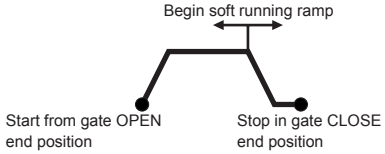
Functions of the memory slots

STArter+ (from software version 1.6)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
003	- [1]	*255* [3]			Programmed force during gate opening
004	- [1]	*255* [3]			Programmed force during gate closing
005	- [1]	*255* [3]		*0.25 s*	Run time of gate opening Example: Displayed value 40 = 10 seconds
006	- [1]	*255* [3]		*0.25 s*	Run time of gate closing Example: Displayed value 40 = 10 seconds
011	- [2]	*255* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
012	- [2]	*255* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
013	0 - 255	*255* [3]		*0.25 s*	Partial opening time Example: Displayed value 40 = 10 seconds
017	0 - 255	*0*			Length of soft run 0 = not a soft run 255 = maximum length
018	0 - 8	*8*			Length of the soft running ramp High value = long soft running ramp Low value = short soft running ramp
019	15 - 60	*41*			Soft run speed in gate OPEN end position direction
020	15 - 70	*55* [4]			Maximum speed in gate OPEN direction
021	0 - 40	*35*		*0.25 s*	Start of the soft running ramp for gate OPEN end position Start of the soft running ramp before the operator moves to the end positions. 
022	15 - 60	*41*			Soft run speed in gate CLOSE direction
023	15 - 70	*55* [4]			Maximum speed in gate CLOSE direction

Functions of the memory slots

STArter+ (from software version 1.6)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
024	0 - 40	*35*		*0.25 s*	Start of the soft running ramp for gate CLOSE end position Start of the soft running ramp before the operator moves to the end positions. 
026	0 - 255	*0*			Cycle counter for maintenance message (Z3) Counts from 0 to 255 Number of cycles = Z3 x 256
028	4 - 40	*12*		*0.25 s*	Early warning time Early warning time period Example: Displayed value 40 = 10 seconds
030	0 - 20	*5*		*1 s*	Closing time photo eye Duration of the stay open time, after driving through the photo eye, only in conjunction with automatic closing function.
032	1 - 255	*175*		*1 s*	Duty cycle of the internal lighting gate CLOSE end position
034	2 - 255	*2*		*0.25 s*	Reversion time Duration of reversion after event: • Triggering of safety input • Power deactivation
035	0 - 255	*26*			Switch soft running ramps on or off individually Example 1: Switching off Ramp 1 and Ramp 2: 15 - 1 - 2 = 12 Example 2: Switching on Ramp 2 + Ramp 4: 2 + 8 = 10
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON

Functions of the memory slots

STArter+ (from software version 1.6)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
					Operation of potential-free relay contact Terminals 23 + 24
			0		Relay OFF
			16		Pulse for motor start
			32		Status display, contact open for gate opening
			48		Status display, contact closed for gate opening
					Maintenance monitoring Prerequisite: Mem 026: “Cycle counter for maintenance message (Z3)” is activated If the maintenance alarm is triggered, the value of the increases by 128. Deleting maintenance alarm: Reduce value by 128. Display of the triggered maintenance monitoring Light flashes after gate CLOSE, as long as Mem 032 is set for memory slot. Factory setting 175 seconds
			0		Maintenance monitoring OFF
			64		Monitor maintenance cycles
			128		Maintenance alarm is triggered
036	0 - 31	*24* [4]			Special functions:
			1		Dead man in direction gate CLOSE
			2		Dead man operation in direction gate OPEN and CLOSE
			4		Unlimited run time, one force value, no soft run
			8		DPS deactivated, one force value, soft run
			16		Semi-automatic closing function
037	16 - 255	*255* [4]			Force tolerance Adjustable additional force tolerance
			16		Minimum additional force
			255		Maximum additional force
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
047	-				For testing purposes in the factory

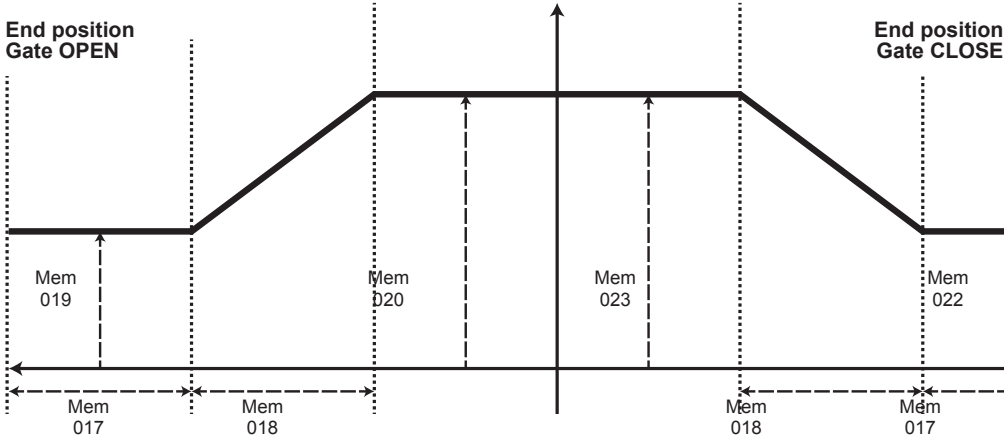
Functions of the memory slots

1) Displayed value cannot be modified, is saved by the control unit during the learning run.

2) Displayed value cannot be modified.

3) Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

4) Reset the control unit to be able to modify values.



Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 1.5)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	-	*255*			Maximum value of the occurring force during gate opening
003	0 - 100	*25*			Force tolerance during gate opening
004	0 - 100	*15*			Force tolerance (soft run) during gate opening
005	-	*255*			Maximum value of the occurring force during gate closing
006	0 - 100	*25*			Force tolerance during gate closing
007	0 - 100	*15*			Force tolerance (soft run) during gate closing
012	0 - 90	*19*			Length of soft running ramp in gate OPEN end position With this value, the transmission speed is set from normal speed to soft run speed Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 19 = 125 cm soft running starting point
013	0 - 90	*17*			Length of soft run in gate OPEN end position Shortening the gate OPEN soft run end position: Reduce Mem 012 and Mem 013 Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 17 = 112 cm soft running starting point
014	0 - 90	*19*			Length of soft running ramp in gate OPEN end position With this value, the transmission speed is set from normal speed to soft run speed Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 19 = 125 cm soft running starting point
015	0 - 90	*17*			Length of soft run in gate CLOSE end position Shortening the gate CLOSE soft run end position: Reduce Mem 014 and Mem 015 Example: 6m gate running path: 600 cm / 90 = 6.6 cm increment x 17 = 112 cm soft running starting point
016	26 - 255	*63*			Soft run speed in gate OPEN direction
017	26 - 255	*63*			Soft run speed in gate CLOSE direction
018	26 - 255	*115*			Maximum speed in gate OPEN direction
019	26 - 255	*115*			Maximum speed in gate CLOSE direction
020	-	*0*			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 1.5)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
021	-	*0*			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
022	10 - 100	*50*		*10 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
023	10 - 100	*50*		*10 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
025	100 - 255	*250*		*16 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
026	78 - 255	*78*		*64 ms*	Response time for driving through the photo eye The time after which it will be closed early if the photo eye is passed through PROVIDED DIP 6 is activated (= ON)
027	0 - 200	*0*			Stay open time > 0 = the time set via TorMinal is valid 0 = the time set on the “Time” potentiometer is valid Provided MEM 32 = 0, a differentiation can be made between fully-automatic and semi-automatic closing via MEM 37. Provided MEM 32 has a value other than 0, that is no longer possible Bear in mind that this memory cell works like activated automatic closing, the partial opening (if partial opening is required) must initially be programmed before this cell can be set to a value - otherwise the partial opening will not function.
033	0 - 30	*30*			Partial opening width Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 30 = 198 cm soft running starting point
034	0 - 42	*8*		*64 ms*	Release delay for lifting magnet for stop (jamming protection of the locking bolt)
035	0 - 255	*20*		*0.25 s*	Early warning time OPEN
036	0 - 255	*20*		*0.25 s*	Early warning time CLOSE

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 1.5)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
037	0 - 255	*59*			Special functions:
			0		Soft stop at press of a button or photo eye event deactivated Lights up during gate run Fully-automatic closing active (independent of “Time” potentiometer setting) Automatic closing off OPENED deactivated Automatic closing off PARTIAL OPENING deactivated Lifting magnet present
			1		Soft stop at press of a button or photo eye event active
			2		Flashes during gate run (delivery status)
			4	*6 ms*	Backjump
			8		Semi-automatic closing active Requirement: “Time” potentiometer position = 0
			16		Automatic closing off OPENED active
			32		Automatic closing off PARTIAL OPENING active
			64		Lifting magnet deactivated
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 037				
	Value 1		1		Soft stop at press of a button or photo eye event active
	Value 2		2		Flashes during gate run (delivery status)
	Value 3		8		Semi-automatic closing active
	Value 4		16		Automatic closing off OPENED active
	Value 5		32		Automatic closing off PARTIAL OPENING active
	Value 6		0		Lifting magnet present
	Sum of the values		59		

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 1.5)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
039	0 - 255	*0*			Potential-free relay contact:
			0		Pulse for motor start
			1		Gate status indicator (Relay activated as long as operator not in gate CLOSE end position, gate CLOSE end position = deactivated)
			2		Radio channel 4 -> Inching mode relay contact (defined opening and closing via radio is omitted)
			3		Radio channel 4 -> Toggle mode relay contact (defined opening and closing via radio is omitted) e.g. outside light
			4		Relay activated as long as operator stays in the GATE OPEN end position
			5		Relay activated as long as operator stays in the GATE CLOSE end position
			6		Relay activated as long as operator running (excluding pre-warning phase)
			7		Relay cycles while operator runs (excluding pre-warning phase)
			8		Relay activated as long as operator runs (including pre-warning phase)
			9		Relay cycles while operator runs (including pre-warning phase)
040	-	*0*			Fault memory: Last error to occur is stored in the faulty memory and reproduced.
			1		Safety contact strip operated in gate OPEN direction
			2		Wireless safety contact strip operated in gate OPEN direction
			3		Safety contact strip operated in gate CLOSE direction
			4		Wireless safety contact strip operated in gate CLOSE direction
			5		Power deactivation during soft running when closing
			6		Power deactivation during opening

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 1.5)

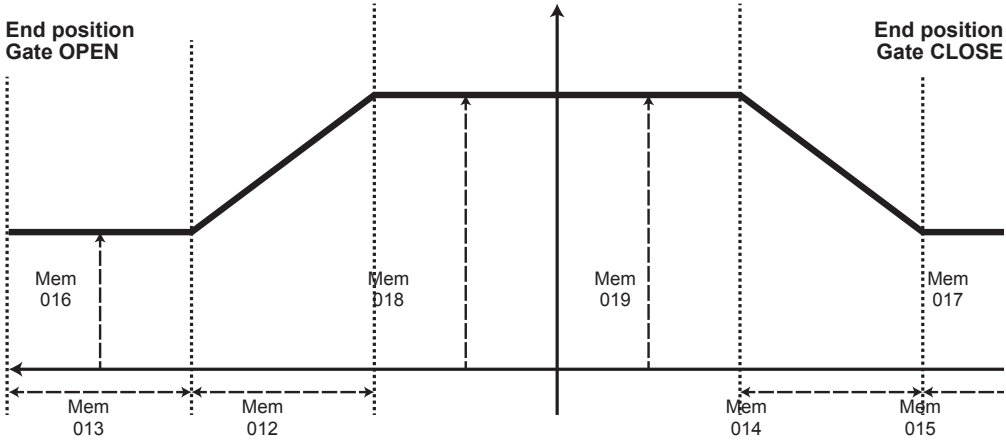
Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
			7		Power deactivation during soft running when opening
			8		Power deactivation during closing
			9		Motor encoder error
			10		Gate running path over 8 metres
			11		Running time or running path exceeded
			14		Operator has been overloaded during the run
			22		Motor blocking protection has activated
			23		Operator has been overloaded during the run
			28		End switch error, both end switches were simultaneously active
			42		Battery charge state critical (<20%)
			50		Obstacle in gate OPEN direction during start of a reverse procedure in OPEN
			51		Obstacle in gate CLOSE direction during start of a reverse procedure in CLOSE
			52		No strip for the gate CLOSE direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			53		No strip for the gate OPEN direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			54		Error of the wireless safety contact strip during self-test: - Module plugged in but defective - Safety contact strip blocked - Battery empty
041	0 - 255	*200*			Standby Modus: Time until switching into standby mode Maximum time approx. 255 x 2 sec.
			0		Deactivating standby: Val = „0“ or DIP switch 5 ON
042	0 - 255	*10*		*10 ms*	Delay time during test process of photo eye

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 1.5)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
043	0 - 255	*10*		*10 ms*	Delay time during test process of safety contact strip
044	0 - 10	*0*			Wireless safety contact strip CAUTION: Master module is only detected during the learning run. Adding module later: 1. Delete force values. 2. Plug in module.
			0		Master module not detected
			1		Master module detected
045	-	*4*			Detected photo eyes type CAUTION: Photo eyes are only detected during the learning run. Modifying photo eye type later: 1. Delete force values. 2. Connect new photo eye.
			2		2-wire photo eye detected
			4		4-wire photo eye detected
046	-	*8*			Detected safety contact strip gate opening CAUTION: Safety contact strips are only detected during the learning run. Adding safety contact strips later: 1. Delete force values. 2. Connect safety contact strips.
			0		No safety device detected
			8		8K2 strip detected
			16		OSE detected
047	-	*8*			Detected safety contact strip gate closing CAUTION: Safety contact strips are only detected during the learning run. Adding safety contact strips later: 1. Delete force values. 2. Connect safety contact strips.
			0		No safety device detected
			8		8K2 strip detected
			16		OSE detected

Functions of the memory slots



Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 1.6 - 1.9)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	-	*255*			Maximum value of the occurring force during gate opening
003	0 - 100	*80*			Force tolerance during gate opening
004	0 - 100	*40*			Force tolerance (soft run) during gate opening
005	-	*255*			Maximum value of the occurring force during gate closing
006	0 - 100	*80*			Force tolerance during gate closing
007	0 - 100	*40*			Force tolerance (soft run) during gate closing
012	0 - 90	*19*			Length of soft running ramp in gate OPEN end position With this value, the transmission speed is set from normal speed to soft run speed Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 19 = 125 cm soft running starting point
013	0 - 90	*17*			Length of soft run in gate OPEN end position Shortening the gate OPEN soft run end position: Reduce Mem 012 and Mem 013 Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 17 = 112 cm soft running starting point
014	0 - 90	*19*			Length of soft running ramp in gate OPEN end position With this value, the transmission speed is set from normal speed to soft run speed Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 19 = 125 cm soft running starting point
015	0 - 90	*17*			Length of soft run in gate CLOSE end position Shortening the gate CLOSE soft run end position: Reduce Mem 014 and Mem 015 Example: 6m gate running path: 600 cm / 90 = 6.6 cm increment x 17 = 112 cm soft running starting point
016	26 - 255	*35*			Soft run speed in gate OPEN direction
017	26 - 255	*35*			Soft run speed in gate CLOSE direction
018	26 - 255	*115*			Maximum speed in gate OPEN direction
019	26 - 255	*115*			Maximum speed in gate CLOSE direction
020	-	*0*			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 1.6 - 1.9)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
021	-	*0*			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
022	10 - 100	*50*		*10 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
023	10 - 100	*50*		*10 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
025	100 - 255	*250*		*16 ms*	Reversion time for gate CLOSE for photo eyes CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
026	78 - 255	*78*		*64 ms*	Response time for driving through the photo eye The time after which it will be closed early if the photo eye is passed through PROVIDED DIP 6 is activated (= ON)
027	0 - 200	*0*			Stay open time > 0 = the time set via TorMinal is valid 0 = the time set on the “Time” potentiometer is valid Provided MEM 32 = 0, a differentiation can be made between fully-automatic and semi-automatic closing via MEM 37. Provided MEM 32 has a value other than 0, that is no longer possible Bear in mind that this memory cell works like activated automatic closing, the partial opening (if partial opening is required) must initially be programmed before this cell can be set to a value - otherwise the partial opening will not function.
033	0 - 30	*30*			Partial opening width Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 30 = 198 cm soft running starting point
034	0 - 42	*8*		*64 ms*	Release delay for lifting magnet for stop (jamming protection of the locking bolt)
035	0 - 255	*20*		*0.25 s*	Early warning time OPEN
036	0 - 255	*20*		*0.25 s*	Early warning time CLOSE

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 1.6 - 1.9)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
037	0 - 255	*59*			Special functions:
			0		• Soft stop at press of a button or photo eye event deactivated • Lights up during gate run • Fully-automatic closing active (independent of “Time” potentiometer setting) • Automatic closing off OPENED deactivated • Automatic closing off PARTIAL OPENING deactivated • Lifting magnet present
			1		Soft stop at press of a button or photo eye event active
			2		Flashes during gate run (delivery status)
			8		Semi-automatic closing active Requirement: “Time” potentiometer position = 0
			16		Automatic closing off OPENED active
			32		Automatic closing off PARTIAL OPENING active
			64		Lifting magnet deactivated
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 037				
	Value 1		1		Soft stop at press of a button or photo eye event active
	Value 2		2		Flashes during gate run (delivery status)
	Value 3		8		Semi-automatic closing active
	Value 4		16		Automatic closing off OPENED active
	Value 5		32		Automatic closing off PARTIAL OPENING active
	Value 6		0		Lifting magnet present
	Sum of the values		59		

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 1.6 - 1.9)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
039	0 - 255	*0*			Potential-free relay contact:
			0		Pulse for motor start
			1		Gate status indicator (Relay activated as long as operator not in gate CLOSE end position, gate CLOSE end position = deactivated)
			2		Radio channel 4 -> Inching mode relay contact (defined opening and closing via radio is omitted)
			3		Radio channel 4 -> Toggle mode relay contact (defined opening and closing via radio is omitted) e.g. outside light
			4		Relay activated as long as operator stays in the GATE OPEN end position
			5		Relay activated as long as operator stays in the GATE CLOSE end position
			6		Relay activated as long as operator running (excluding pre-warning phase)
			7		Relay cycles while operator runs (excluding pre-warning phase)
			8		Relay activated as long as operator runs (including pre-warning phase)
			9		Relay cycles while operator runs (including pre-warning phase)
040	-	*0*			Fault memory: Last error to occur is stored in the faulty memory and reproduced.
			1		Safety contact strip operated in gate OPEN direction
			2		Wireless safety contact strip operated in gate OPEN direction
			3		Safety contact strip operated in gate CLOSE direction
			4		Wireless safety contact strip operated in gate CLOSE direction
			5		Power deactivation during soft running when closing
			6		Power deactivation during opening

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 1.6 - 1.9)

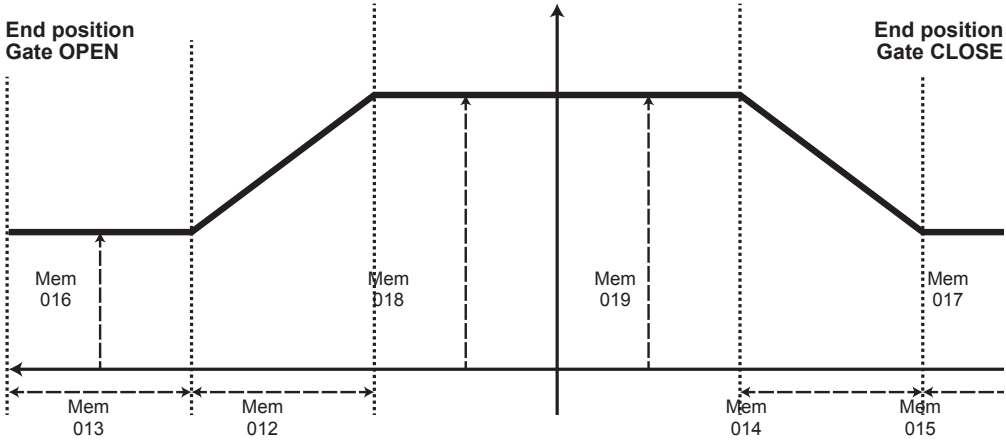
Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
			7		Power deactivation during soft running when opening
			8		Power deactivation during closing
			9		Motor encoder error
			10		Gate running path over 8 metres
			11		Running time or running path exceeded
			14		Operator has been overloaded during the run
			22		Motor blocking protection has activated
			23		Operator has been overloaded during the run
			28		End switch error, both end switches were simultaneously active
			42		Battery charge state critical (<20%)
			50		Obstacle in gate OPEN direction during start of a reverse procedure in OPEN
			51		Obstacle in gate CLOSE direction during start of a reverse procedure in CLOSE
			52		No strip for the gate CLOSE direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			53		No strip for the gate OPEN direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			54		Error of the wireless safety contact strip during self-test: - Module plugged in but defective - Safety contact strip blocked - Battery empty
041	0 - 255	*200*			Standby Modus: Time until switching into standby mode Maximum time approx. 255 x 2 sec.
			0		Deactivating standby: Val = „0“ or DIP switch 5 ON
042	0 - 255	*20*		*10 ms*	Delay time during test process of photo eye

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 1.6 - 1.9)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
043	0 - 255	*10*		*10 ms*	Delay time during test process of safety contact strip
044	0 - 10	*0*			Wireless safety contact strip CAUTION: Master module is only detected during the learning run. Adding module later: 1. Delete force values. 2. Plug in module.
			0		Master module not detected
			1		Master module detected
045	-	*4*			Detected photo eyes type
					CAUTION: Photo eyes are only detected during the learning run. Modifying photo eye type later: 1. Delete force values. 2. Connect new photo eye.
			2		2-wire photo eye detected
			4		4-wire photo eye detected
046	-	*8*			Detected safety contact strip gate opening CAUTION: Safety contact strips are only detected during the learning run. Adding safety contact strips later: 1. Delete force values. 2. Connect safety contact strips.
			0		No safety device detected
			8		8K2 strip detected
			16		OSE detected
047	-	*8*			Detected safety contact strip gate closing CAUTION: Safety contact strips are only detected during the learning run. Adding safety contact strips later: 1. Delete force values. 2. Connect safety contact strips.
			0		No safety device detected
			8		8K2 strip detected
			16		OSE detected

Functions of the memory slots



Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	-	*255*			Maximum value of the occurring force during gate opening
003	0 - 100	*80*			Force tolerance during gate opening
004	0 - 100	*40*			Force tolerance (soft run) during gate opening
005	-	*255*			Maximum value of the occurring force during gate closing
006	0 - 100	*80*			Force tolerance during gate closing
007	0 - 100	*40*			Force tolerance (soft run) during gate closing
012	0 - 255	*30*		*1 cm*	Length of soft running ramp in gate OPEN end position Defines the distance [cm] within which the operator is to reduce the speed from normal run to soft run speed 1.
013	0 - 255	*50*		*1 cm*	Length of entire soft run in gate OPEN end position Defines the distance [cm] with run in soft run speed [1+2] up to gate OPEN end position If the soft run for the gate OPEN (opening process) end position is to be shortened, both MEM 12 / MEM 13 values have to be reduced.
014	0 - 50	*20*		*1 cm*	Length of soft run with soft run speed 2 in gate OPEN end position
015	0 - 255	*30*		*1 cm*	Length of soft running ramp in gate OPEN end position Defines the distance [cm] within which the operator is to reduce the speed from normal run to soft run speed 1.
016	0 - 255	*50*			Length of entire soft run in gate CLOSE end position Defines the distance [cm] with run in soft run speed [1+2] up to gate CLOSE end position To shorten the soft run for the gate CLOSE end position, both MEM 15 / MEM 16 values have to be reduced.
017	0 - 50	*20*			Length of soft run with soft run speed 2 in gate CLOSE end position
018	26 - 210	*95*			Maximum speed in gate OPEN direction
019	26 - 210	*35*			Soft run speed 1 in gate OPEN end position direction

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
020	26 - 60	*30*			Soft run speed 2 in gate OPEN end position direction
021	26- 210	*95*			Maximum speed gate CLOSE
022	26 - 210	*35*			Soft run speed 1 in gate CLOSE end position direction
023	26 - 60	*30*			Soft run speed 2 in gate CLOSE end position direction
026	-	*0*			Cycle counter LowByte Cycle counter HighByte x 256 + Cycle counter LowByte = Total cycle count
027	-	*0*			Cycle counter HighByte Cycle counter HighByte x 256 + Cycle counter LowByte = Total cycle count
28	5 - 50	*10*		*1 cm*	Distance for reversing movement with power deactivation or safety contact strip for gate OPEN CAUTION: The modification of the reversion times is required, for example, if the gate has bars.
29	5 - 50	*10*		*1 cm*	Distance for reversing movement with power deactivation or safety contact strip for gate CLOSE CAUTION: The modification of the reversion times is required, for example, if the gate has bars.
30	10 - 225	*100*		*1 cm*	Distance for reversing movement when triggering photo eye for gate CLOSE
31	78 - 255	*78*		*64 ms*	Response time for driving through the photo eye The time after which it will be closed early if the photo eye is passed through provided DIP 6 is activated (= ON)
32	0 - 200	*0*			Stay open time > 0 = the time set via TorMinal is valid 0 = the time set on the “Time” potentiometer is valid Provided MEM 32 = 0, a differentiation can be made between fully-automatic and semi-automatic closing via MEM 37. Provided MEM 32 has a value other than 0, that is no longer possible Bear in mind that this memory cell works like activated automatic closing, the partial opening (if partial opening is required) must initially be programmed before this cell can be set to a value - otherwise the partial opening will not function.

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
033	0 - 60	*15*		*10 cm*	Partial opening width
034	0 - 42	*8*		*64 ms*	Release delay for lifting magnet for stop (jamming protection of the locking bolt)
035	0 - 255	*20*		*0.25 s*	Early warning time OPEN
036	0 - 255	*20*		*0.25 s*	Early warning time CLOSE

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
037	0 - 255	*59*			Special functions:
			0		Soft stop at press of a button or photo eye event deactivated Lights up during gate run Fully-automatic closing active (independent of “Time” potentiometer setting) Automatic closing off OPENED deactivated Automatic closing off PARTIAL OPENING deactivated Lifting magnet present
			1		Soft stop at press of a button or photo eye event active
			2		Flashes during gate run (delivery status)
			8		Semi-automatic closing active Requirement: “Time” potentiometer position = 0
			16		Automatic closing off OPENED active
			32		Automatic closing off PARTIAL OPENING active
			64		Lifting magnet deactivated
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 037				
	Value 1		1		Soft stop at press of a button or photo eye event active
	Value 2		2		Flashes during gate run (delivery status)
	Value 3		8		Semi-automatic closing active
	Value 4		16		Automatic closing off OPENED active
	Value 5		32		Automatic closing off PARTIAL OPENING active
	Value 6		0		Lifting magnet present
	Sum of the values		59		

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
038	0 - 31	*31*			Special functions:
			0		Dead man during commissioning and after emergency release Dead man deactivated Panic function for gate OPEN button deactivated Panic function for gate CLOSE button deactivated Panic function for PARTIAL OPENING button deactivated
			1		Creep speed during commissioning and after emergency release
			2		Activates "dead man by radio" (e.g. for dead man run when safety device has failed)
			4		Panic function for gate OPEN button Operator stops when button pressed
			8		Panic function for gate CLOSE button Operator stops when button pressed
			16		Panic function for PARTIAL OPENING button Operator stops when button pressed
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 038				
	Value 1		1		Creep speed during commissioning and after emergency release
	Value 2		2		Activates "dead man by radio" (e.g. for dead man run when safety device has failed)
	Value 3		4		Panic function for gate OPEN button Operator stops when button pressed
	Value 4		8		Panic function for gate CLOSE button Operator stops when button pressed
	Value 5		16		Panic function for PARTIAL OPENING button Operator stops when button pressed
	Sum of the values		31		

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
039	0 - 9	*0*			Multi-function relay programming
			0		Pulse for motor start
			1		Gate status indicator (Relay activated as long as operator not in gate CLOSE end position, gate CLOSE end position = deactivated)
			2		Radio channel 4 -> Inching mode relay contact (defined opening and closing via radio is omitted)
			3		Radio channel 4 -> Toggle mode relay contact (defined opening and closing via radio is omitted) e.g. outside light
			4		Relay activated as long as operator stays in the GATE OPEN end position
			5		Relay activated as long as operator stays in the GATE CLOSE end position
			6		Relay activated as long as operator running (excluding pre-warning phase)
			7		Relay cycles while operator runs (excluding pre-warning phase)
			8		Relay activated as long as operator runs (including pre-warning phase)
			9		Relay cycles while operator runs (including pre-warning phase)
040	-	*0*			Fault memory: Last error to occur is stored in the faulty memory and reproduced.
			1		Safety contact strip operated in gate OPEN direction
			2		Wireless safety contact strip operated in gate OPEN direction
			3		Safety contact strip operated in gate CLOSE direction
			4		Wireless safety contact strip operated in gate CLOSE direction
			5		Power deactivation during soft running when closing
			6		Power deactivation during opening

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
			7		Power deactivation during soft running when opening
			8		Power deactivation during closing
			9		Motor encoder error
			10		Max. running path exceeded
			11		Running time or running path exceeded
			14		Operator has been overloaded during the run
			22		Motor blocking protection has activated
			23		Operator has been overloaded during the run
			28		End switch error, both end switches were simultaneously active
			42		Battery charge state critical (<20%)
			50		Obstacle in gate OPEN direction during start of a reverse procedure in OPEN
			51		Obstacle in gate CLOSE direction during start of a reverse procedure in CLOSE
			52		No strip for the gate CLOSE direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			53		No strip for the gate OPEN direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			54		Error of the wireless safety contact strip during self-test: - Module plugged in but defective - Safety contact strip blocked - Battery empty
041	0 - 255	*200*		*2 sec*	Standby Modus: Time until switching into standby mode Maximum time approx. 255 x 2 sec.
			0		Deactivating standby: Val = „0“ or DIP switch 5 ON
042	0 - 255	*30*		*10 ms*	Delay time during test process of photo eye

Functions of the memory slots

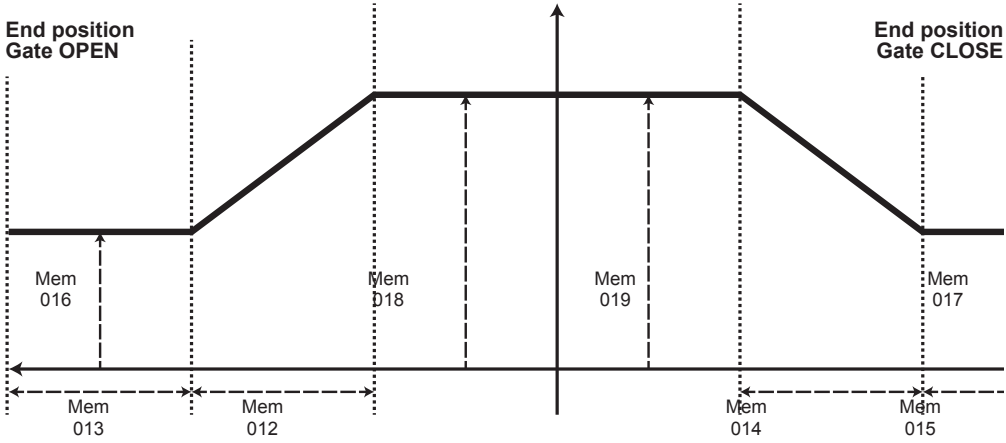
ST-B-1 (SP 900, S 900) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
043	0 - 255	*10*		*10 ms*	Delay time during test process of safety contact strip
044	-	*0*			Wireless safety contact strip CAUTION: Master module is only detected during the learning run. Adding module later: 1. Delete force values. 2. Plug in module.
			0		Master module not detected
			1		Master module detected
045	-	*0*			Detected photo eyes type CAUTION: Photo eyes are only detected during the learning run. Modifying photo eye type later: 1. Delete force values. 2. Connect new photo eye.
			0		No photo eye detected
			2		2-wire photo eye detected
			4		4-wire photo eye detected
046	-	*0*			Detected safety contact strip CAUTION: Safety contact strips are only detected during the learning run. Adding safety contact strips later: 1. Delete force values. 2. Connect safety contact strips.
			0		No safety device detected
			2		OSE detected for gate CLOSE direction
			8		8K2 detected for gate CLOSE direction
			32		OSE detected for gate OPEN direction
			128		OSE detected for gate OPEN direction

Functions of the memory slots

ST-B-1 (SP 900, S 900) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
47	0 - 2	*0*			Operating modes for "partial opening" pulse input
			0		partial opening
			1		Timer input Operating mode 1: When timer input is activated, the gate always opens immediately. If the timer input is deactivated, the gate closes after expiration of the stay open time, if applicable (only with automatic closing function). Requirement: No safety device activated
			2		Timer input Operating mode 2: When timer input is activated, the gate does not open immediately, but remains closed for the time being. The gate opens with the next start command. If the timer input is deactivated, the gate closes after expiration of the stay open time, if applicable. (Only with automatic closing function).



Functions of the memory slots

ST-B-1 (RUNner) (software version 1.6)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	-	*255*			Maximum value of the occurring force during gate opening
003	0 - 100	*80*			Force tolerance during gate opening
004	0-100	*65*			Force tolerance (soft run) during gate opening
005	-	*255*			Maximum value of the occurring force during gate closing
006	0 - 100	*80*			Force tolerance during gate closing
007	0 - 100	*65*			Force tolerance (soft run) during gate closing
012	0 - 90	*24*			Length of soft running ramp in gate OPEN end position With this value, the transmission speed is set from normal speed to soft run speed Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 19 = 125 cm soft running starting point
013	0 - 90	*27*			Length of soft run in gate OPEN end position Shortening the gate OPEN soft run end position: Reduce Mem 012 and Mem 013 Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 17 = 112 cm soft running starting point
014	0 - 90	*24*			Length of soft running ramp in gate OPEN end position With this value, the transmission speed is set from normal speed to soft run speed Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 19 = 125 cm soft running starting point
015	0 - 90	*27*			Length of soft run in gate CLOSE end position Shortening the gate CLOSE soft run end position: Reduce Mem 014 and Mem 015 Example: 6m gate running path: 600 cm / 90 = 6.6 cm increment x 17 = 112 cm soft running starting point
016	26 - 255	*36*			Soft run speed in gate OPEN direction
017	26 - 255	*36*			Soft run speed in gate CLOSE direction
018	26 - 255	*67*			Maximum speed in gate OPEN direction
019	26 - 255	*67*			Maximum speed in gate CLOSE direction

Functions of the memory slots

ST-B-1 (RUNner) (software version 1.6)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
020	-	*0*			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
021	-	*0*			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
022	10 - 100	*50*		*10 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
023	10 - 100	*50*		*10 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
025	100 - 255	*250*		*16 ms*	Reversion time for gate CLOSE for photo eyes CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
026	78 - 255	*78*		*64 ms*	Response time for driving through the photo eye The time after which it will be closed early if the photo eye is passed through PROVIDED DIP 6 is activated (= ON)
027	0 - 200	*0*			Stay open time > 0 = the time set via TorMinal is valid 0 = the time set on the “Time” potentiometer is valid Provided MEM 32 = 0, a differentiation can be made between fully-automatic and semi-automatic closing via MEM 37. Provided MEM 32 has a value other than 0, that is no longer possible Bear in mind that this memory cell works like activated automatic closing, the partial opening (if partial opening is required) must initially be programmed before this cell can be set to a value - otherwise the partial opening will not function.
033	0 - 30	*30*			Partial opening width Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 30 = 198 cm soft running starting point
035	0 - 255	*20*		*0.25 s*	Early warning time OPEN

Functions of the memory slots

ST-B-1 (RUNner) (software version 1.6)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
036	0 - 255	*20*		*0.25 s*	Early warning time CLOSE
037	0 - 255	*123*			Special functions:
			0		Soft stop at press of a button or photo eye event deactivated Lights up during gate run Fully-automatic closing active (independent of “Time” potentiometer setting) Automatic closing off OPENED deactivated Automatic closing off PARTIAL OPENING deactivated Lifting magnet present
			1		Soft stop at press of a button or photo eye event active
			2		Flashes during gate run (delivery status)
			8		Semi-automatic closing active Requirement: “Time” potentiometer position = 0
			16		Automatic closing off OPENED active
			32		Automatic closing off PARTIAL OPENING active
			64		Lifting magnet deactivated
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 037				
	Value 1		1		Soft stop at press of a button or photo eye event active
	Value 2		2		Flashes during gate run (delivery status)
	Value 3		8		Semi-automatic closing active
	Value 4		16		Automatic closing off OPENED active
	Value 5		32		Automatic closing off PARTIAL OPENING active
	Value 6		64		Lifting magnet deactivated
	Sum of the values		123		

Functions of the memory slots

ST-B-1 (RUNner) (software version 1.6)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
039	0 - 255	*0*			Potential-free relay contact:
			0		Pulse for motor start
			1		Gate status indicator (Relay activated as long as operator not in gate CLOSE end position, gate CLOSE end position = deactivated)
			2		Radio channel 4 -> Inching mode relay contact (defined opening and closing via radio is omitted)
			3		Radio channel 4 -> Toggle mode relay contact (defined opening and closing via radio is omitted) e.g. outside light
			4		Relay activated as long as operator stays in the GATE OPEN end position
			5		Relay activated as long as operator stays in the GATE CLOSE end position
			6		Relay activated as long as operator running (excluding pre-warning phase)
			7		Relay cycles while operator runs (excluding pre-warning phase)
			8		Relay activated as long as operator runs (including pre-warning phase)
			9		Relay cycles while operator runs (including pre-warning phase)
040	-	*0*			Fault memory: Last error to occur is stored in the faulty memory and reproduced.
			1		Safety contact strip operated in gate OPEN direction
			2		Wireless safety contact strip operated in gate OPEN direction
			3		Safety contact strip operated in gate CLOSE direction
			4		Wireless safety contact strip operated in gate CLOSE direction
			5		Power deactivation during soft running when closing
			6		Power deactivation during opening

Functions of the memory slots

ST-B-1 (RUNner) (software version 1.6)

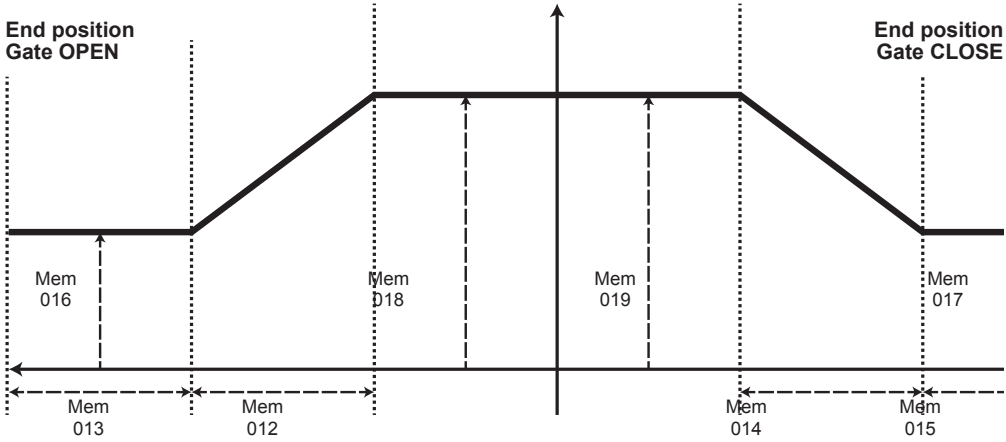
Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
			7		Power deactivation during soft running when opening
			8		Power deactivation during closing
			9		Motor encoder error
			10		Gate running path over 8 metres
			11		Running time or running path exceeded
			14		Operator has been overloaded during the run
			22		Motor blocking protection has activated
			23		Operator has been overloaded during the run
			28		End switch error, both end switches were simultaneously active
			42		Battery charge state critical (<20%)
			50		Obstacle in gate OPEN direction during start of a reverse procedure in OPEN
			51		Obstacle in gate CLOSE direction during start of a reverse procedure in CLOSE
			52		No strip for the gate CLOSE direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			53		No strip for the gate OPEN direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			54		Error of the wireless safety contact strip during self-test: - Module plugged in but defective - Safety contact strip blocked - Battery empty
041	0 - 255	*200*			Standby Modus: Time until switching into standby mode Maximum time approx. 255 x 2 sec.
			0		Deactivating standby: Val = „0“ or DIP switch 5 ON

Functions of the memory slots

ST-B-1 (RUNner) (software version 1.6)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
042	0 - 255	*20*		*10 ms*	Delay time during test process of photo eye
043	0 - 255	*10*		*10 ms*	Delay time during test process of safety contact strip
044	0 - 10	*0*			Wireless safety contact strip CAUTION: Master module is only detected during the learning run. Adding module later: 1. Delete force values. 2. Plug in module.
			0		Master module not detected
			1		Master module detected
045	-	*4*			Detected photo eyes type CAUTION: Photo eyes are only detected during the learning run. Modifying photo eye type later: 1. Delete force values. 2. Connect new photo eye.
			2		2-wire photo eye detected
			4		4-wire photo eye detected
046	-	*8*			Detected safety contact strip gate opening CAUTION: Safety contact strips are only detected during the learning run. Adding safety contact strips later: 1. Delete force values. 2. Connect safety contact strips.
			0		No safety device detected
			8		8K2 strip detected
			16		OSE detected
047	-	*8*			Detected safety contact strip gate closing CAUTION: Safety contact strips are only detected during the learning run. Adding safety contact strips later: 1. Delete force values. 2. Connect safety contact strips.
			0		No safety device detected
			8		8K2 strip detected
			16		OSE detected

Functions of the memory slots



Functions of the memory slots

ST-B-1 (RUNner) (software version 1.7 - 1.9)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	-	*255*			Maximum value of the occurring force during gate opening
003	0 - 100	*60*			Force tolerance during gate opening
004	0-100	*20*			Force tolerance (soft run) during gate opening
005	-	*255*			Maximum value of the occurring force during gate closing
006	0 - 100	*20*			Force tolerance during gate closing
007	0 - 100	*60*			Force tolerance (soft run) during gate closing
012	0 - 90	*24*			Length of soft running ramp in gate OPEN end position With this value, the transmission speed is set from normal speed to soft run speed Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 19 = 125 cm soft running starting point
013	0 - 90	*27*			Length of soft run in gate OPEN end position Shortening the gate OPEN soft run end position: Reduce Mem 012 and Mem 013 Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 17 = 112 cm soft running starting point
014	0 - 90	*24*			Length of soft running ramp in gate OPEN end position With this value, the transmission speed is set from normal speed to soft run speed Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 19 = 125 cm soft running starting point
015	0 - 90	*27*			Length of soft run in gate CLOSE end position Shortening the gate CLOSE soft run end position: Reduce Mem 014 and Mem 015 Example: 6m gate running path: 600 cm / 90 = 6.6 cm increment x 17 = 112 cm soft running starting point
016	26 - 255	*36*			Soft run speed in gate OPEN direction
017	26 - 255	*36*			Soft run speed in gate CLOSE direction
018	26 - 255	*67*			Maximum speed in gate OPEN direction
019	26 - 255	*67*			Maximum speed in gate CLOSE direction

Functions of the memory slots

ST-B-1 (RUNner) (software version 1.7 - 1.9)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
020	-	*0*			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
021	-	*0*			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
022	10 - 100	*50*		*10 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
023	10 - 100	*50*		*10 ms*	Reversion time for gate CLOSE with power deactivation or safety contact strip CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
025	100 - 255	*250*		*16 ms*	Reversion time for gate CLOSE for photo eyes CAUTION: Change reversion times if, for example, a gate with bars makes this necessary!
026	78 - 255	*78*		*64 ms*	Response time for driving through the photo eye The time after which it will be closed early if the photo eye is passed through PROVIDED DIP 6 is activated (= ON)
027	0 - 200	*0*			Stay open time > 0 = the time set via TorMinal is valid 0 = the time set on the “Time” potentiometer is valid Provided MEM 32 = 0, a differentiation can be made between fully-automatic and semi-automatic closing via MEM 37. Provided MEM 32 has a value other than 0, that is no longer possible Bear in mind that this memory cell works like activated automatic closing, the partial opening (if partial opening is required) must initially be programmed before this cell can be set to a value - otherwise the partial opening will not function.
033	0 - 30	*30*			Partial opening width Example: 6 m gate running path: 600 cm / 90 = 6.6 cm increment x 30 = 198 cm soft running starting point
035	0 - 255	*20*		*0.25 s*	Early warning time OPEN

Functions of the memory slots

ST-B-1 (RUNner) (software version 1.7 - 1.9)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
036	0 - 255	*20*		*0.25 s*	Early warning time CLOSE
037	0 - 255	*123*	0		Special functions: Soft stop at press of a button or photo eye event deactivated Lights up during gate run Fully-automatic closing active (independent of “Time” potentiometer setting) Automatic closing off OPENED deactivated Automatic closing off PARTIAL OPENING deactivated Lifting magnet present
			1		Soft stop at press of a button or photo eye event active
			2		Flashes during gate run (delivery status)
			4	*6 ms*	Backjump
			8		Semi-automatic closing active Requirement: “Time” potentiometer position = 0
			16		Automatic closing off OPENED active
			32		Automatic closing off PARTIAL OPENING active
			64		Lifting magnet deactivated
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 037				
	Value 1		1		Soft stop at press of a button or photo eye event active
	Value 2		2		Flashes during gate run (delivery status)
	Value 3		8		Semi-automatic closing active
	Value 4		16		Automatic closing off OPENED active
	Value 5		32		Automatic closing off PARTIAL OPENING active
	Value 6		64		Lifting magnet deactivated
	Sum of the values		123		

Functions of the memory slots

ST-B-1 (RUNner) (software version 1.7 - 1.9)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
039	0 - 255	*0*			Potential-free relay contact:
			0		Pulse for motor start
			1		Gate status indicator (Relay activated as long as operator not in gate CLOSE end position, gate CLOSE end position = deactivated)
			2		Radio channel 4 -> Inching mode relay contact (defined opening and closing via radio is omitted)
			3		Radio channel 4 -> Toggle mode relay contact (defined opening and closing via radio is omitted) e.g. outside light
			4		Relay activated as long as operator stays in the GATE OPEN end position
			5		Relay activated as long as operator stays in the GATE CLOSE end position
			6		Relay activated as long as operator running (excluding pre-warning phase)
			7		Relay cycles while operator runs (excluding pre-warning phase)
			8		Relay activated as long as operator runs (including pre-warning phase)
			9		Relay cycles while operator runs (including pre-warning phase)
040	-	*0*			Fault memory: Last error to occur is stored in the faulty memory and reproduced.
			1		Safety contact strip operated in gate OPEN direction
			2		Wireless safety contact strip operated in gate OPEN direction
			3		Safety contact strip operated in gate CLOSE direction
			4		Wireless safety contact strip operated in gate CLOSE direction
			5		Power deactivation during soft running when closing
			6		Power deactivation during opening

Functions of the memory slots

ST-B-1 (RUNner) (software version 1.7 - 1.9)

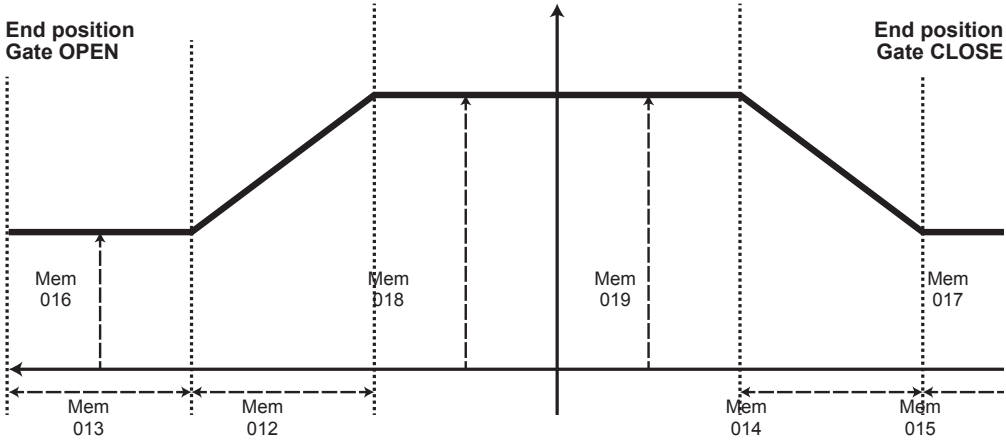
Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
			7		Power deactivation during soft running when opening
			8		Power deactivation during closing
			9		Motor encoder error
			10		Gate running path over 8 metres
			11		Running time or running path exceeded
			14		Operator has been overloaded during the run
			22		Motor blocking protection has activated
			23		Operator has been overloaded during the run
			28		End switch error, both end switches were simultaneously active
			42		Battery charge state critical (<20%)
			50		Obstacle in gate OPEN direction during start of a reverse procedure in OPEN
			51		Obstacle in gate CLOSE direction during start of a reverse procedure in CLOSE
			52		No strip for the gate CLOSE direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			53		No strip for the gate OPEN direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			54		Error of the wireless safety contact strip during self-test: - Module plugged in but defective - Safety contact strip blocked - Battery empty
041	0 - 255	*200*			Standby Modus: Time until switching into standby mode Maximum time approx. 255 x 2 sec.
			0		Deactivating standby: Val = „0“ or DIP switch 5 ON
042	0 - 255	*20*		*10 ms*	Delay time during test process of photo eye

Functions of the memory slots

ST-B-1 (RUNner) (software version 1.7 - 1.9)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
043	0 - 255	*10*		*10 ms*	Delay time during test process of safety contact strip
044	0 - 10	*0*			Wireless safety contact strip CAUTION: Master module is only detected during the learning run. Adding module later: 1. Delete force values. 2. Plug in module.
			0		Master module not detected
			1		Master module detected
045	-	*4*			Detected photo eyes type CAUTION: Photo eyes are only detected during the learning run. Modifying photo eye type later: 1. Delete force values. 2. Connect new photo eye.
			2		2-wire photo eye detected
			4		4-wire photo eye detected
046	-	*8*			Detected safety contact strip gate opening CAUTION: Safety contact strips are only detected during the learning run. Adding safety contact strips later: 1. Delete force values. 2. Connect safety contact strips.
			0		No safety device detected
			8		8K2 strip detected
			16		OSE detected
047	-	*8*			Detected safety contact strip gate closing CAUTION: Safety contact strips are only detected during the learning run. Adding safety contact strips later: 1. Delete force values. 2. Connect safety contact strips.
			0		No safety device detected
			8		8K2 strip detected
			16		OSE detected

Functions of the memory slots



Functions of the memory slots

ST-B-1 (RUNner) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	-	*255*			Maximum value of the occurring force during gate opening
003	0 - 100	*60*			Force tolerance during gate opening
004	0 - 100	*20*			Force tolerance (soft run) during gate opening
005	-	*255*			Maximum value of the occurring force during gate closing
006	0 - 100	*60*			Force tolerance during gate closing
007	0 - 100	*20*			Force tolerance (soft run) during gate closing
012	0 - 255	*30*		*1 cm*	Length of soft running ramp in gate OPEN end position Defines the distance [cm] within which the operator is to reduce the speed from normal run to soft run speed 1.
013	0 - 255	*50*		*1 cm*	Length of entire soft run in gate OPEN end position Defines the distance [cm] with run in soft run speed [1+2] up to gate OPEN end position If the soft run for the gate OPEN (opening process) end position is to be shortened, both MEM 12 / MEM 13 values have to be reduced.
014	0 - 50	*20*		*1 cm*	Length of soft run with soft run speed 2 in gate OPEN end position
015	0 - 255	*30*		*1 cm*	Length of soft running ramp in gate OPEN end position Defines the distance [cm] within which the operator is to reduce the speed from normal run to soft run speed 1.
016	0 - 255	*50*			Length of entire soft run in gate CLOSE end position Defines the distance [cm] with run in soft run speed [1+2] up to gate CLOSE end position To shorten the soft run for the gate CLOSE end position, both MEM 15 / MEM 16 values have to be reduced.
017	0 - 50	*20*			Length of soft run with soft run speed 2 in gate CLOSE end position
018	26 - 100	*67*			Maximum speed in gate OPEN direction
019	26 - 100	*36*			Soft run speed 1 in gate OPEN end position direction

Functions of the memory slots

ST-B-1 (RUNner) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
020	26 - 45	*30*			Soft run speed 2 in gate OPEN end position direction
021	26- 100	*67*			Maximum speed gate CLOSE
022	26 - 100	*36*			Soft run speed 1 in gate CLOSE end position direction
023	26 - 45	*30*			Soft run speed 2 in gate CLOSE end position direction
026	-	*0*			Cycle counter LowByte Cycle counter HighByte x 256 + Cycle counter LowByte = Total cycle count
027	-	*0*			Cycle counter HighByte Cycle counter HighByte x 256 + Cycle counter LowByte = Total cycle count
028	5 - 50	*10*		*1 cm*	Distance for reversing movement with power deactivation or safety contact strip for gate OPEN CAUTION: The modification of the reversion times is required, for example, if the gate has bars.
029	5 - 50	*10*		*1 cm*	Distance for reversing movement with power deactivation or safety contact strip for gate CLOSE CAUTION: The modification of the reversion times is required, for example, if the gate has bars.
030	10 - 255	*100*		*1 cm*	Distance for reversing movement when triggering photo eye for gate CLOSE
031	78 - 255	*78*		*64 ms*	Response time for driving through the photo eye The time after which it will be closed early if the photo eye is passed through PROVIDED DIP 6 is activated (= ON)
032	0 - 200	*0*			Stay open time > 0 = the time set via TorMinal is valid 0 = the time set on the “Time” potentiometer is valid Provided MEM 32 = 0, a differentiation can be made between fully-automatic and semi-automatic closing via MEM 37. Provided MEM 32 has a value other than 0, that is no longer possible Bear in mind that this memory cell works like activated automatic closing, the partial opening (if partial opening is required) must initially be programmed before this cell can be set to a value - otherwise the partial opening will not function.

Functions of the memory slots

ST-B-1 (RUNner) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
033	0 - 60	*15*		*10 cm*	Partial opening width
035	0 - 255	*20*		*0.25 s*	Early warning time OPEN
036	0 - 255	*20*		*0.25 s*	Early warning time CLOSE
037	0 - 255	*123*			Special functions:
			0		Soft stop at press of a button or photo eye event deactivated Lights up during gate run Fully-automatic closing active (independent of “Time” potentiometer setting) Automatic closing off OPENED deactivated Automatic closing off PARTIAL OPENING deactivated Lifting magnet present
			1		Soft stop at press of a button or photo eye event active
			2		Flashes during gate run (delivery status)
			8		Semi-automatic closing active Requirement: “Time” potentiometer position = 0
			16		Automatic closing off OPENED active
			32		Automatic closing off PARTIAL OPENING active
			64		Lifting magnet deactivated
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 037				
	Value 1		1		Soft stop at press of a button or photo eye event active
	Value 2		2		Flashes during gate run (delivery status)
	Value 3		8		Semi-automatic closing active
	Value 4		16		Automatic closing off OPENED active
	Value 5		32		Automatic closing off PARTIAL OPENING active
	Value 6		64		Lifting magnet present
	Sum of the values		123		

Functions of the memory slots

ST-B-1 (RUNner) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
038	0 - 31	*31*			Special functions:
			0		Dead man during commissioning and after emergency release Dead man deactivated Panic function for gate OPEN button deactivated Panic function for gate CLOSE button deactivated Panic function for PARTIAL OPENING button deactivated
			1		Creep speed during commissioning and after emergency release
			2		Activates "dead man by radio" (e.g. for dead man run when safety device has failed)
			4		Panic function for gate OPEN button Operator stops when button pressed
			8		Panic function for gate CLOSE button Operator stops when button pressed
			16		Panic function for PARTIAL OPENING button Operator stops when button pressed
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 038				
	Value 1		1		Creep speed during commissioning and after emergency release
	Value 2		2		Activates "dead man by radio" (e.g. for dead man run when safety device has failed)
	Value 3		4		Panic function for gate OPEN button Operator stops when button pressed
	Value 4		8		Panic function for gate CLOSE button Operator stops when button pressed
	Value 5		16		Panic function for PARTIAL OPENING button Operator stops when button pressed
	Sum of the values		31		

Functions of the memory slots

ST-B-1 (RUNner) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
039	0 - 255	*0*			Multi-function relay programming:
			0		Pulse for motor start
			1		Gate status indicator (Relay activated as long as operator not in gate CLOSE end position, gate CLOSE end position = deactivated)
			2		Radio channel 4 -> Inching mode relay contact (defined opening and closing via radio is omitted)
			3		Radio channel 4 -> Toggle mode relay contact (defined opening and closing via radio is omitted) e.g. outside light
			4		Relay activated as long as operator stays in the GATE OPEN end position
			5		Relay activated as long as operator stays in the GATE CLOSE end position
			6		Relay activated as long as operator running (excluding pre-warning phase)
			7		Relay cycles while operator runs (excluding pre-warning phase)
			8		Relay activated as long as operator runs (including pre-warning phase)
			9		Relay cycles while operator runs (including pre-warning phase)
040	-	*0*			Fault memory: Last error to occur is stored in the faulty memory and reproduced.
			1		Safety contact strip operated in gate OPEN direction
			2		Wireless safety contact strip operated in gate OPEN direction
			3		Safety contact strip operated in gate CLOSE direction
			4		Wireless safety contact strip operated in gate CLOSE direction
			5		Power deactivation during soft running when closing
			6		Power deactivation during opening

Functions of the memory slots

ST-B-1 (RUNner) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
			7		Power deactivation during soft running when opening
			8		Power deactivation during closing
			9		Motor encoder error
			10		Max. running path exceeded
			11		Running time or running path exceeded
			14		Operator has been overloaded during the run
			22		Motor blocking protection has activated
			23		Operator has been overloaded during the run
			28		End switch error, both end switches were simultaneously active
			42		Battery charge state critical (<20%)
			50		Obstacle in gate OPEN direction during start of a reverse procedure in OPEN
			51		Obstacle in gate CLOSE direction during start of a reverse procedure in CLOSE
			52		No strip for the gate CLOSE direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			53		No strip for the gate OPEN direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			54		Error of the wireless safety contact strip during self-test: - Module plugged in but defective - Safety contact strip blocked - Battery empty
041	0 - 255	*200*		*2 sec*	Standby Modus: Time until switching into standby mode Maximum time approx. 255 x 2 sec.
			0		Deactivating standby: Val = „0“ or DIP switch 5 ON
042	0 - 255	*30*		*10 ms*	Delay time during test process of photo eye

Functions of the memory slots

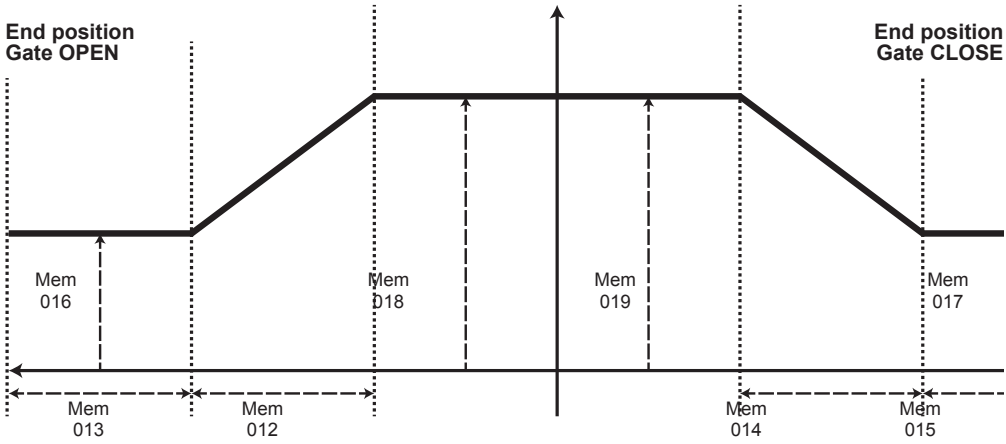
ST-B-1 (RUNner) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
043	0 - 255	*10*		*10 ms*	Delay time during test process of safety contact strip
044	-	*0*			Wireless safety contact strip CAUTION: Master module is only detected during the learning run. Adding module later: 1. Delete force values. 2. Plug in module.
			0		Master module not detected
			1		Master module detected
045	-	*0*			Detected photo eyes type
					CAUTION: Photo eyes are only detected during the learning run. Modifying photo eye type later: 1. Delete force values. 2. Connect new photo eye.
			0		No photo eye detected
			2		2-wire photo eye detected
			4		4-wire photo eye detected
046	-	*0*			Detected safety contact strip CAUTION: Safety contact strips are only detected during the learning run. Adding safety contact strips later: 1. Delete force values. 2. Connect safety contact strips.
			0		No safety device detected
			2		OSE detected for gate CLOSE direction
			8		8K2 detected for gate CLOSE direction
			32		OSE detected for gate OPEN direction
			128		OSE detected for gate OPEN direction

Functions of the memory slots

ST-B-1 (RUNner) (software version 3.0)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
47	0 - 2	*0*			Operating modes for "partial opening" pulse input
			0		partial opening
			1		Timer input Operating mode 1: When timer input is activated, the gate always opens immediately. If the timer input is deactivated, the gate closes after expiration of the stay open time, if applicable (only with automatic closing function). Requirement: No safety device activated
			2		Timer input Operating mode 2: When timer input is activated, the gate does not open immediately, but remains closed for the time being. The gate opens with the next start command. If the timer input is deactivated, the gate closes after expiration of the stay open time, if applicable. (Only with automatic closing function).



Functions of the memory slots

ST-B-1 (RUNner+)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	-	*255*			Maximum value of the occurring force during gate opening
003	0 - 200	*200*			Force tolerance during gate opening
004	0 - 200	*200*			Force tolerance (soft run) during gate opening
005	-	*255*			Maximum value of the occurring force during gate closing
006	0 - 200	*200*			Force tolerance during gate closing
007	0 - 200	*200*			Force tolerance (soft run) during gate closing
012	0 - 255	*30*		*1 cm*	Length of soft running ramp in gate OPEN end position Defines the distance [cm] within which the operator is to reduce the speed from normal run to soft run speed 1.
013	0 - 255	*50*		*1 cm*	Length of entire soft run in gate OPEN end position Defines the distance [cm] with run in soft run speed [1+2] up to gate OPEN end position If the soft run for the gate OPEN (opening process) end position is to be shortened, both MEM 12 / MEM 13 values have to be reduced.
014	0 - 50	*20*		*1 cm*	Length of soft run with soft run speed 2 in gate OPEN end position
015	0 - 255	*30*		*1 cm*	Length of soft running ramp in gate OPEN end position Defines the distance [cm] within which the operator is to reduce the speed from normal run to soft run speed 1.
016	0 - 255	*50*			Length of entire soft run in gate CLOSE end position Defines the distance [cm] with run in soft run speed [1+2] up to gate CLOSE end position To shorten the soft run for the gate CLOSE end position, both MEM 15 / MEM 16 values have to be reduced.
017	0 - 50	*20*			Length of soft run with soft run speed 2 in gate CLOSE end position
018	26 - 100	*75*			Maximum speed in gate OPEN direction
019	26 - 100	*50*			Soft run speed 1 in gate OPEN end position direction

Functions of the memory slots

ST-B-1 (RUNner+)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
020	26 - 55	*36*			Soft run speed 2 in gate OPEN end position direction
021	26- 100	*75*			Maximum speed gate CLOSE
022	26 - 100	*50*			Soft run speed 1 in gate CLOSE end position direction
023	26 - 55	*36*			Soft run speed 2 in gate CLOSE end position direction
026	-	*0*			Cycle counter LowByte Cycle counter HighByte x 256 + Cycle counter LowByte = Total cycle count
027	-	*0*			Cycle counter HighByte Cycle counter HighByte x 256 + Cycle counter LowByte = Total cycle count
028	5 - 50	*10*		*1 cm*	Distance for reversing movement with power deactivation or safety contact strip for gate OPEN CAUTION: The modification of the reversion times is required, for example, if the gate has bars.
029	5 - 50	*10*		*1 cm*	Distance for reversing movement with power deactivation or safety contact strip for gate CLOSE CAUTION: The modification of the reversion times is required, for example, if the gate has bars.
030	10 - 255	*100*		*1 cm*	Distance for reversing movement when triggering photo eye for gate CLOSE
031	78 - 255	*78*		*64 ms*	Response time for driving through the photo eye The time after which it will be closed early if the photo eye is passed through PROVIDED DIP 6 is activated (= ON)
032	0 - 200	*0*			Stay open time > 0 = the time set via TorMinal is valid 0 = the time set on the “Time” potentiometer is valid Provided MEM 32 = 0, a differentiation can be made between fully-automatic and semi-automatic closing via MEM 37. Provided MEM 32 has a value other than 0, that is no longer possible Bear in mind that this memory cell works like activated automatic closing, the partial opening (if partial opening is required) must initially be programmed before this cell can be set to a value - otherwise the partial opening will not function.

Functions of the memory slots

ST-B-1 (RUNner+)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
033	0 - 60	*15*		*10 cm*	Partial opening width
035	0 - 255	*20*		*0.25 s*	Early warning time OPEN
036	0 - 255	*20*		*0.25 s*	Early warning time CLOSE
037	0 - 255	*123*	0		Special functions: Soft stop at press of a button or photo eye event deactivated Lights up during gate run Fully-automatic closing active (independent of “Time” potentiometer setting) Automatic closing off OPENED deactivated Automatic closing off PARTIAL OPENING deactivated Lifting magnet present
			1		Soft stop at press of a button or photo eye event active
			2		Flashes during gate run (delivery status)
			8		Semi-automatic closing active Requirement: “Time” potentiometer position = 0
			16		Automatic closing off OPENED active
			32		Automatic closing off PARTIAL OPENING active
			64		Lifting magnet deactivated
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 037				
	Value 1		1		Soft stop at press of a button or photo eye event active
	Value 2		2		Flashes during gate run (delivery status)
	Value 3		8		Semi-automatic closing active
	Value 4		16		Automatic closing off OPENED active
	Value 5		32		Automatic closing off PARTIAL OPENING active
	Value 6		64		Lifting magnet present
	Sum of the values		123		

Functions of the memory slots

ST-B-1 (RUNner+)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
038	0 - 31	*31*			Special functions:
			0		Dead man during commissioning and after emergency release Dead man deactivated Panic function for gate OPEN button deactivated Panic function for gate CLOSE button deactivated Panic function for PARTIAL OPENING button deactivated
			1		Creep speed during commissioning and after emergency release
			2		Activates "dead man by radio" (e.g. for dead man run when safety device has failed)
			4		Panic function for gate OPEN button Operator stops when button pressed
			8		Panic function for gate CLOSE button Operator stops when button pressed
			16		Panic function for PARTIAL OPENING button Operator stops when button pressed
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 038				
	Value 1		1		Creep speed during commissioning and after emergency release
	Value 2		2		Activates "dead man by radio" (e.g. for dead man run when safety device has failed)
	Value 3		4		Panic function for gate OPEN button Operator stops when button pressed
	Value 4		8		Panic function for gate CLOSE button Operator stops when button pressed
	Value 5		16		Panic function for PARTIAL OPENING button Operator stops when button pressed
	Sum of the values		31		

Functions of the memory slots

ST-B-1 (RUNner+)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
039	0 - 9	*0*			Multi-function relay programming:
			0		Pulse for motor start
			1		Gate status indicator (Relay activated as long as operator not in gate CLOSE end position, gate CLOSE end position = deactivated)
			2		Radio channel 4 -> Inching mode relay contact (defined opening and closing via radio is omitted)
			3		Radio channel 4 -> Toggle mode relay contact (defined opening and closing via radio is omitted) e.g. outside light
			4		Relay activated as long as operator stays in the GATE OPEN end position
			5		Relay activated as long as operator stays in the GATE CLOSE end position
			6		Relay activated as long as operator running (excluding pre-warning phase)
			7		Relay cycles while operator runs (excluding pre-warning phase)
			8		Relay activated as long as operator runs (including pre-warning phase)
			9		Relay cycles while operator runs (including pre-warning phase)
040	-	*0*			Fault memory: Last error to occur is stored in the faulty memory and reproduced.
			1		Safety contact strip operated in gate OPEN direction
			2		Wireless safety contact strip operated in gate OPEN direction
			3		Safety contact strip operated in gate CLOSE direction
			4		Wireless safety contact strip operated in gate CLOSE direction
			5		Power deactivation during soft running when closing
			6		Power deactivation during opening

Functions of the memory slots

ST-B-1 (RUNner+)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
			7		Power deactivation during soft running when opening
			8		Power deactivation during closing
			9		Motor encoder error
			10		Max. running path exceeded
			11		Running time or running path exceeded
			14		Operator has been overloaded during the run
			22		Motor blocking protection has activated
			23		Operator has been overloaded during the run
			28		End switch error, both end switches were simultaneously active
			42		Battery charge state critical (<20%)
			50		Obstacle in gate OPEN direction during start of a reverse procedure in OPEN
			51		Obstacle in gate CLOSE direction during start of a reverse procedure in CLOSE
			52		No strip for the gate CLOSE direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			53		No strip for the gate OPEN direction could be found during the self-test of the wireless safety contact strip (goes along with system error)
			54		Error of the wireless safety contact strip during self-test: - Module plugged in but defective - Safety contact strip blocked - Battery empty
041	0 - 255	*200*		*2 sec*	Standby Modus: Time until switching into standby mode Maximum time approx. 255 x 2 sec.
			0		Deactivating standby: Val = „0“ or DIP switch 5 ON
042	0 - 255	*30*		*10 ms*	Delay time during test process of photo eye

Functions of the memory slots

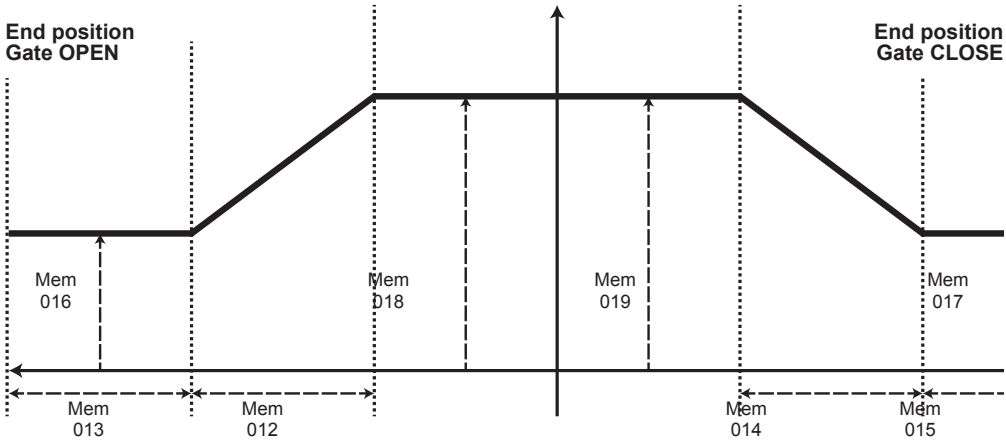
ST-B-1 (RUNner+)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
043	0 - 255	*10*		*10 ms*	Delay time during test process of safety contact strip
044	-	*0*			Wireless safety contact strip CAUTION: Master module is only detected during the learning run. Adding module later: 1. Delete force values. 2. Plug in module.
			0		Master module not detected
			1		Master module detected
045	-	*0*			Detected photo eyes type
					CAUTION: Photo eyes are only detected during the learning run. Modifying photo eye type later: 1. Delete force values. 2. Connect new photo eye.
			0		No photo eye detected
			2		2-wire photo eye detected
			4		4-wire photo eye detected
046	-	*0*			Detected safety contact strip CAUTION: Safety contact strips are only detected during the learning run. Adding safety contact strips later: 1. Delete force values. 2. Connect safety contact strips.
			0		No safety device detected
			2		OSE detected for gate CLOSE direction
			8		8K2 detected for gate CLOSE direction
			32		OSE detected for gate OPEN direction
			128		OSE detected for gate OPEN direction

Functions of the memory slots

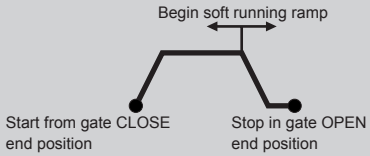
ST-B-1 (RUNner+)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
47	0-2	*0*			Operating modes for "partial opening" pulse input
			0		partial opening
			1		Timer input Operating mode 1: When timer input is activated, the gate always opens immediately. If the timer input is deactivated, the gate closes after expiration of the stay open time, if applicable (only with automatic closing function). Requirement: No safety device activated
			2		Timer input Operating mode 2: When timer input is activated, the gate does not open immediately, but remains closed for the time being. The gate opens with the next start command. If the timer input is deactivated, the gate closes after expiration of the stay open time, if applicable. (Only with automatic closing function).



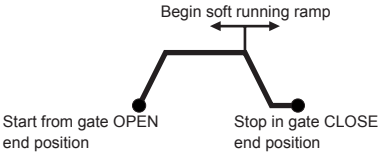
Functions of the memory slots

gator 800N, starglider 300, starglider 300 E

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
003	- [1]	*255* [3]			Programmed force during gate opening
004	- [1]	*255* [3]			Programmed force during gate closing
005	- [1]	*255* [3]		*0.25 s*	Run time of gate opening Example: Displayed value 40 = 10 seconds
006	- [1]	*255* [3]		*0.25 s*	Run time of gate closing Example: Displayed value 40 = 10 seconds
011	- [2]	*255* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
012	- [2]	*255* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
013	0 - 255	*255* [3]		*0.25 s*	Partial opening time Example: Displayed value 40 = 10 seconds
017	0 - 255	*0*			Length of soft run 0 = not a soft run 255 = maximum length
018	0 - 8	*4*			Length of the soft running ramp High value = long soft running ramp Low value = short soft running ramp
019	15 - 60	*27*			Soft run speed in gate OPEN end position direction
020	15 - 60	*55* [4]			Maximum speed in gate OPEN direction
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
021	0 - 40	*20*		*0.25 s*	Start of the soft running ramp for gate OPEN end position Start of the soft running ramp before the operator moves to the end positions. 

Functions of the memory slots

gator 800N, starglider 300, starglider 300 E

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
022	15 - 60	*27*			Soft run speed in gate CLOSE direction
023	15 - 60	*45* [4)]			Maximum speed in gate CLOSE direction
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
024	0 - 40	*20*		*0.25 s*	Start of the soft running ramp for gate CLOSE end position Start of the soft running ramp before the operator moves to the end positions. 
026	0 - 255	*0*			Cycle counter for maintenance message (Z3) Counts from 0 to 255 Number of cycles = Z3 x 256
028	4 - 40	*12*		*0.25 s*	Early warning time Early warning time period Example: Displayed value 40 = 10 seconds
030	1 - 20	*5*		*1 s*	Closing time photo eye Duration of the stay open time, after driving through the photo eye, only in conjunction with automatic closing function.
031	-	-			No function
032	1 - 255	*175*		*1 s*	Duty cycle of internal lighting, maintenance monitoring
034	4 - 255	*2*		*0.25 s*	Reversion time Duration of reversion after event: • Triggering of safety input • Power deactivation

Functions of the memory slots

gator 800N, starglider 300, starglider 300 E

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
035	0 - 255	*31*			Switch soft running ramps on or off individually Example 1: Switching off Ramp 1 and Ramp 2: 15 - 1 - 2 = 12 Example 2: Switching on Ramp 2 + Ramp 4: 2 + 8 = 10
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON
					Operation of potential-free relay contact Terminals 23 + 24
			0		Relay OFF
			16		Pulse for motor start
			32		Status display, contact open for gate opening
			48		Status display, contact closed for gate opening
					Maintenance monitoring Prerequisite: Mem 026: “Cycle counter for maintenance message (Z3)” is activated If the maintenance alarm is triggered, the value of the increases by 128. Deleting maintenance alarm: Reduce value by 128. Display of the triggered maintenance monitoring Light flashes after gate CLOSE, as long as Mem 032 is set for memory slot. Factory setting 175 seconds
			0		Maintenance monitoring OFF
			64		Monitor maintenance cycles
			128		Maintenance alarm is triggered

Functions of the memory slots

gator 800N, starglider 300, starglider 300 E

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 035				
	Value 1		15		All soft running ramps (1 - 4) ON
	Value 2		16		Pulse for motor start
	Value 3		0		Maintenance monitoring OFF
	Sum of the values		31		
036	0 - 31				Special functions 2:
					Dead man operation only via buttons 1 + 2 Button 1 opens and button 2 always closes the gate
			0		OFF
			1		When closing (opening also possible with radio channel 1)
			2		When opening and closing
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
037	16 - 48	*48* [4]			Force tolerance Adjustable additional force tolerance
			16		Minimum additional force
			48		Maximum additional force
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
047					For testing purposes in the factory

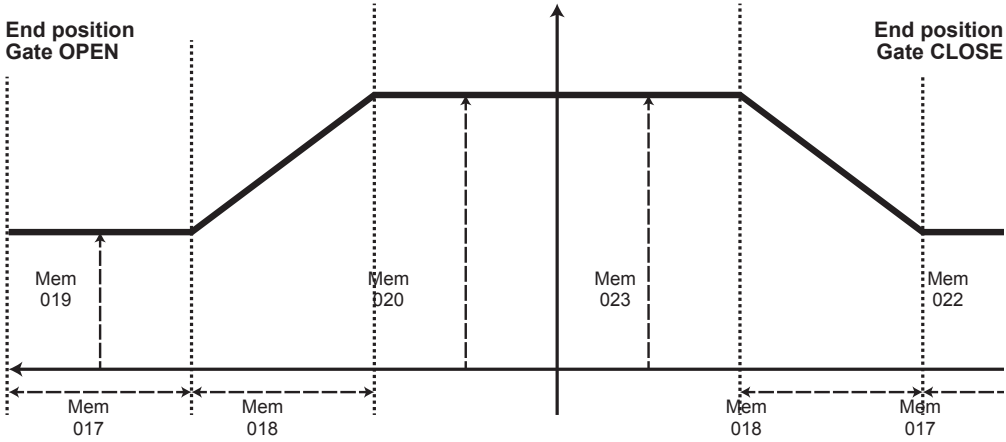
1) Displayed value cannot be modified, is saved by the control unit during the learning run.

2) Displayed value cannot be modified.

3) Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

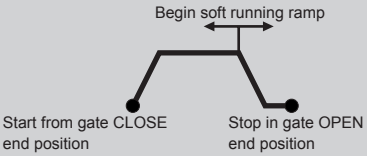
4) Reset the control unit to be able to modify values.

Functions of the memory slots



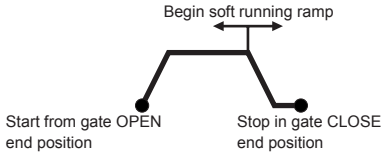
Functions of the memory slots

SG1

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
003	- [1]	*255* [3]			Programmed force during gate opening
004	- [1]	*255* [3]			Programmed force during gate closing
005	- [1]	*255* [3]		*0.25 s*	Run time of gate opening Example: Displayed value 40 = 10 seconds
006	- [1]	*255* [3]		*0.25 s*	Run time of gate closing Example: Displayed value 40 = 10 seconds
011	- [2]	*255* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
012	- [2]	*255* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
013	0 - 255	*255* [3]		*0.25 s*	Partial opening time Example: Displayed value 40 = 10 seconds
017	0 - 255	*0*			Length of soft run 0 = not a soft run 255 = maximum length
018	0 - 8	*6*			Length of the soft running ramp High value = long soft running ramp Low value = short soft running ramp
019	15 - 60	*30*			Soft run speed in gate OPEN end position direction
020	15 - 60	*43* [4]			Maximum speed in gate OPEN direction
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
021	0 - 40	*30*		*0.25 s*	Start of the soft running ramp for gate OPEN end position Start of the soft running ramp before the operator moves to the end positions. 

Functions of the memory slots

SG1

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
022	15 - 60	*30*			Soft run speed in gate CLOSE direction
023	15 - 60	*43* [4)]			Maximum speed in gate CLOSE direction
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
024	0 - 40	*30*		*0.25 s*	Start of the soft running ramp for gate CLOSE end position Start of the soft running ramp before the operator moves to the end positions. 
026	0 - 255	*0*			Cycle counter for maintenance message (Z3) Counts from 0 to 255 Number of cycles = Z3 x 256
028	4 - 40	*12*		*0.25 s*	Early warning time Early warning time period Example: Displayed value 40 = 10 seconds
030	1 - 20	*5*		*1 s*	Closing time photo eye Duration of the stay open time, after driving through the photo eye, only in conjunction with automatic closing function.
031	-	-			No function
032	1 - 255	*175*		*1 s*	Duty cycle of internal lighting, maintenance monitoring
034	4 - 255	*2*		*0.25 s*	Reversion time Duration of reversion after event: • Triggering of safety input • Power deactivation
035	0 - 255	*26*			Switch soft running ramps on or off individually Example 1: Switching off Ramp 1 and Ramp 2: 15 - 1 - 2 = 12 Example 2: Switching on Ramp 2 + Ramp 4: 2 + 8 = 10
			1		Ramp 1 (Start from gate CLOSE end position) ON

Functions of the memory slots

SG1					
Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON
					Operation of potential-free relay contact Terminals 23 + 24
			0		Relay OFF
			16		Pulse for motor start
			32		Status display, contact open for gate opening
			48		Status display, contact closed for gate opening
					Maintenance monitoring Prerequisite: Mem 026: “Cycle counter for maintenance message (Z3)” is activated If the maintenance alarm is triggered, the value of the increases by 128. Deleting maintenance alarm: Reduce value by 128. Display of the triggered maintenance monitoring Light flashes after gate CLOSE, as long as Mem 032 is set for memory slot. Factory setting 175 seconds
			0		Maintenance monitoring OFF
			64		Monitor maintenance cycles
			128		Maintenance alarm is triggered
	Setting memory slot with several functions: Enter and save the sum of the values. Example: Factory setting Mem 035				
	Value 1		10		Ramp 2 + Ramp 4 ON
	Value 2		16		Pulse for motor start
	Value 3		0		Maintenance monitoring OFF
	Sum of the values		26		

Functions of the memory slots

SG1					
Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
036	0 - 31	*0* [4]			Special functions 2:
					Dead man operation only via buttons 1 + 2 Button 1 opens and button 2 always closes the gate
			0		OFF
			1		When closing (opening also possible with radio channel 1)
			2		When opening and closing
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
037	16 - 48	*40* [4]			Force tolerance Adjustable additional force tolerance
			16		Minimum additional force
			48		Maximum additional force
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
047					For testing purposes in the factory

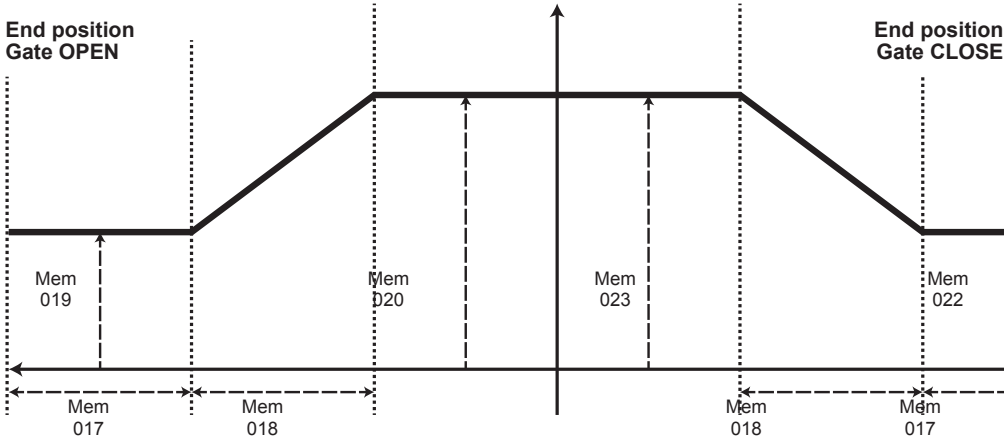
1) Displayed value cannot be modified, is saved by the control unit during the learning run.

2) Displayed value cannot be modified.

3) Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

4) Reset the control unit to be able to modify values.

Functions of the memory slots



Functions of the memory slots

RDC 800

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	- [1]	*255* [3]		*1 s*	Run time of gate opening Example: Displayed value 40 = 40 seconds
003	- [1]	*255* [3]		*1 s*	Run time of gate closing Example: Displayed value 40 = 40 seconds
004	0 - 128	*0*		*1 s*	Partial opening time
005	2 - 10	*2*		*1 s*	Run time monitoring offset Run time of gate opening and closing
007	- [2]	*255* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
008	- [2]	*255* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
010	- [2]	*0*			Automatic detection of the safety contact strip type
			128		Fraba System detected
			16		8.2 kOhm detected
011	0 - 255	*85*		*8 ms*	Setup time for photo eyes during self-test
013	0 - 255	*20*		*1 s*	Stay open time (automatic closing) via pulse button (DIP 5 ON)
017	60 - 255	*180*		*8 ms*	Start-up suppression
018	4 - 12	*8*		*256 ms*	Maximum delay up to the activation of the safety contact strip after activation of the pre-end position switch.
019	0 - 1	*1*			Test safety contact strip active After activating the pre-end position switch, the safety contact strip must be triggered.
			0		Test OFF
			1		Test ON
047	-				For testing purposes in the factory

Functions of the memory slots

1) Displayed value cannot be modified, is saved by the control unit during the learning run.

2) Displayed value cannot be modified.

3) Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

4) Reset the control unit to be able to modify values.

Functions of the memory slots

RDC vision (up to software version 1.5)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	- [1]	*0* [3]		*1 s*	Run time of gate opening Example: Displayed value 40 = 40 seconds
003	- [1]	*0* [3]		*1 s*	Run time of gate closing Example: Displayed value 40 = 40 seconds
004	0 - 128	*0*		*1 s*	Partial opening time
005	2 - 10	*30*		*1 s*	Run time monitoring offset Run time of gate opening and closing
007	- [2]	*0* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
008	- [2]	*0* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
010	- [2]	*0*			Automatic detection of the safety contact strip type
			2		8.2 kOhm detected
			4		Tested contact (NC) detected (radio-based SCS)
			4		Optical safety contact strip detected
011	1 - 255	*85*	8	*8 ms*	Setup time for photo eyes during self-test
012	0 - 30	*1*			Operation of potential-free relay contact
			0		Pulse for motor start Pulse duration 1 second (NO contact closed, NC contact open)
			1		Timer output (NO contact closed, NC contact open) Gate OPEN: Duration adjustable with MEM 014 Gate CLOSE: Duration adjustable with MEM 015
			2		Gate status indicator for end position Gate CLOSE - NO contact closed
			4		Gate CLOSE - NC contact closed
			8		Gate OPEN - NO contact open

Functions of the memory slots

RDC vision (up to software version 1.5)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
013	0 - 30	*20*		*1 s*	Stay open time (automatic closing) via pulse button (DIP 5 ON)
014	0 - 255	*120*		*1 s*	Duty cycle of the internal lighting gate OPEN end position
015	0 - 255	*120*		*1 s*	Duty cycle of the internal lighting gate CLOSE end position
016	0 - 255	*120*		*1 s*	Duty cycle of internal lighting, manual
017	60 - 255	*180*		*8 ms*	Start-up suppression
018	4 - 80	*24*		*256 ms*	Maximum delay up to the activation of the safety contact strip after activation of the pre-end position switch.

Functions of the memory slots

RDC vision (up to software version 1.5)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
019	0 - 31	*16*			Defines behaviour of control unit: • After activation of the pre-end position switch • When early warning time activated • During photo eye self-test • Support of a radio-based safety contact strip Memory slot 19 has several functions. To achieve the desired setting, all values must be added up and entered
			1		Activating "positive test" of SCS After activating the pre-end position switch, the SCS must be active until the end position has been reached
			2		Stop when activating SCS when pre-end position switch run over If the SCS are activated, the operation is immediately stopped when the pre-end position switch is activated
			4		Deactivation of the early warning time for gate OPEN Early warning time for gate OPEN = time set on potentiometer
			8		Switch-off of supply voltage for transmitter (TX) of photo eye during the self-test
			16		Activates the support of a radio-based safety contact strip CAUTION: Only products approved by SOMMER may be used!
			32		Activates the dead man function by radio
			64		Support of a light curtain If the option is activated, the software supports a light curtain from CEDES (Micro MF)
20	40 - 255	*192*		*8 ms*	Set-up time for safety contact strip during the self-test
047	-				For testing purposes in the factory

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2) Displayed value cannot be modified.

3) Value is entered at delivery. The actual required values are saved by the control unit during the learning run.

4) Reset the control unit to be able to modify values.

Functions of the memory slots

RDC vision (software version 1.7)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
002	- [1]	*0* [3]		*1 s*	Run time of gate opening Example: Displayed value 40 = 40 seconds
003	- [1]	*0* [3]		*1 s*	Run time of gate closing Example: Displayed value 40 = 40 seconds
004	0 - 128	*0*		*1 s*	Partial opening time
005	5 - 60	*30*		*1 s*	Run time monitoring offset Run time of gate opening and closing
007	- [2]	*0* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
008	- [2]	*0* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
010	- [2]	*0* [3]			Automatic detection of the safety contact strip type
			1		Radio-based safety contact strip detected
			2		8.2 kOhm detected
			16		Photo eye with potential-neutral contact detected
			32		2-wire photo eye detected
			64		Optical safety contact strip detected
			128		Detected photo eye is used as a frame photo eye
011	1 - 255	*85*		*8 ms*	Setup time for photo eyes during self-test
012	-	*16*			Operation of potential-free relay contact (changeover contact) Terminal 14: NO Terminal 16: COM Terminal 18: NC
			0		Pulse for motor start Pulse duration 1 second (NO contact closed, NC contact open)

Functions of the memory slots

RDC vision (software version 1.7)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
			1		Timer output (NO contact closed, NC contact open) Gate OPEN: Duration adjustable with MEM 014 Gate CLOSE: Duration adjustable with MEM 015
			2		Gate status indicator for end position Gate CLOSE - NO contact closed
			4		Gate CLOSE - NC contact closed
			8		Gate OPEN - NO contact open
			16		Function as alarm output • Function only in connection with a pre-end position switch • Alarm duration can be set via parameter 2 • A triggered alarm can only be prematurely aborted by radio
013	0 - 30	*20*		*1 s*	Stay open time (automatic closing) via pulse button (DIP 5 ON)
014	0 - 255	*120*		*1 s*	Duty cycle of the internal lighting gate OPEN end position
015	0 - 255	*120*		*1 s*	Duty cycle of the internal lighting gate CLOSE end position
016	0 - 255	*60*		*1 s*	Duty cycle of internal lighting, manual
017	60 - 255	*180*		*8 ms*	Start-up suppression
018	4 - 80	*24*		*256 ms*	Maximum delay up to the activation of the safety contact strip after activation of the pre-end position switch.
019	0 - 63	*48*			Defines behaviour of control unit: • After activation of the pre-end position switch • When early warning time activated • During photo eye self-test • Support of a radio-based safety contact strip Memory slot 19 has several functions. To achieve the desired setting, all values must be added up and entered
			1		Activating "positive test" of SCS After activating the pre-end position switch, the SCS must be active until the end position has been reached

Functions of the memory slots

RDC vision (software version 1.7)

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
			2		Stop when activating SCS when pre-end position switch run over If the SCS are activated, the operation is immediately stopped when the pre-end position switch is activated
			4		Deactivation of the early warning time for gate OPEN Early warning time for gate OPEN = time set on potentiometer
			8		Switch-off of supply voltage for transmitter (TX) of photo eye during the self-test
			16		Activates the support of a radio-based safety contact strip CAUTION: Only products approved by SOMMER may be used!
			32		Activates the dead man function by radio
20	1 - 255	*192*		*8 ms*	Set-up time for safety contact strip during the self-test
21	0 - 180	*30*		*1 s*	Activation of alarm output
22	0 - 6	*6*		*256 ms*	Maximum permitted run time tolerance when evaluating the frame photo eye
047	-	*0*			Last detected error during hardware self-test or during software run time
				0	No error
				245	Self-test error (RAMCHECK)
				244	Self-test error (EEPROM test)
				243	Self-test error (ROMCHECK)
				242	Self-test error (relay test)

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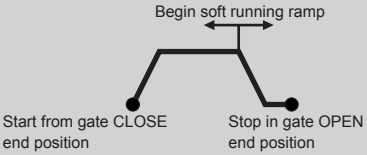
4) Reset the control unit to be able to modify values.

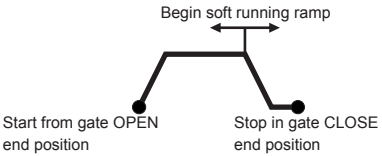
Functions of the memory slots

Barrier

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
003	- [1]	*255* [3]			Programmed force during gate opening
004	- [1]	*255* [3]			Programmed force during gate closing
005	- [1]	*255* [3]		*0.25 s*	Run time of gate opening Example: Displayed value 40 = 10 seconds
006	- [1]	*255* [3]		*0.25 s*	Run time of gate closing Example: Displayed value 40 = 10 seconds
011	- [2]	*255* [3]			Cycle counter (Z1) Counts from 0 to 255 Number of cycles = Z1 x 256
012	- [2]	*255* [3]			Cycle counter (Z2) Counts from 0 to 255 Total number of cycles = Z1 x 256 + Z2 Example: 3 x 256 + 77 = 845
013	0 - 255	*255* [3]		*0.25 s*	Partial opening time Example: Displayed value 40 = 10 seconds
017	0 - 255	*0*			Length of soft run 0 = not a soft run 255 = maximum length
018	0 - 8	*4*			Length of the soft running ramp High value = long soft running ramp Low value = short soft running ramp
019	15 - 60	*30*			Soft run speed in gate OPEN end position direction
020	15 - 60	*55* [4]			Maximum speed in gate OPEN direction
021	0 - 40	*5*		*0.25 s*	Start of the soft running ramp for gate OPEN end position Start of the soft running ramp before the operator moves to the end positions. 
022	15 - 60	*30*			Soft run speed in gate CLOSE direction

Functions of the memory slots

Barrier

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
023	15 - 60	*45* [4)]			Maximum speed in gate CLOSE direction
024	0 - 40	*5*		*0.25 s*	Start of the soft running ramp for gate CLOSE end position Start of the soft running ramp before the operator moves to the end positions. 
026	0 - 255	*0*			Cycle counter for maintenance message (Z3) Counts from 0 to 255 Number of cycles = Z3 x 256
028	4 - 40	*12*		*0.25 s*	Early warning time Early warning time period Example: Displayed value 40 = 10 seconds
030	0 - 20	*5*		*1 s*	Closing time photo eye Duration of the stay open time, after driving through the photo eye, only in conjunction with automatic closing function.
032	1 - 255	*175*		*1 s*	No function
034	4 - 255	*6*		*0.25 s*	Reversion time Duration of reversion after event: • Triggering of safety input • Power deactivation

Functions of the memory slots

Barrier

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
035	0 - 255	*26*			Switch soft running ramps on or off individually Example 1: Switching off Ramp 1 and Ramp 2: 15 - 1 - 2 = 12 Example 2: Switching on Ramp 2 + Ramp 4: 2 + 8 = 10
			1		Ramp 1 (Start from gate CLOSE end position) ON
			2		Ramp 2 (Stop in gate OPEN end position) ON
			4		Ramp 3 (Start from gate OPEN end position) ON
			8		Ramp 4 (Stop in gate CLOSE end position) ON
			15		All soft running ramps (1 - 4) ON
					Operation of potential-free relay contact Terminals 23 + 24
			0		Relay OFF
			16		Pulse for motor start
			32		Status display, contact open for gate opening
			48		Status display, contact closed for gate opening
					Maintenance monitoring Prerequisite: Mem 026: “Cycle counter for maintenance message (Z3)” is activated If the maintenance alarm is triggered, the value of the increases by 128. Deleting maintenance alarm: Reduce value by 128. Display of the triggered maintenance monitoring Light flashes after gate CLOSE, as long as Mem 032 is set for memory slot. Factory setting 175 seconds
			0		Maintenance monitoring OFF
			64		Monitor maintenance cycles
			128		Maintenance alarm is triggered
036	0 - 31	*0* [4]			Special functions 2:

Functions of the memory slots

Barrier

Memory slot	Setting range *Factory setting*		Value *Increment*		Functional description
Mem	Val		Val		
					Dead man operation only via buttons 1 + 2 Button 1 opens and button 2 always closes the gate
			0		OFF
			1		When closing (opening also possible with radio channel 1)
			2		When opening and closing
037	16 - 48	*35* [4]			Force tolerance Adjustable additional force tolerance
			16		Minimum additional force
			48		Maximum additional force
	Important information! Memory slot can only be modified after previous control unit reset (delete force). This control unit reset cannot be performed with the TorMinal.				
047	-				For testing purposes in the factory

1) Displayed value cannot be modified, is saved by the control unit during the learning run.

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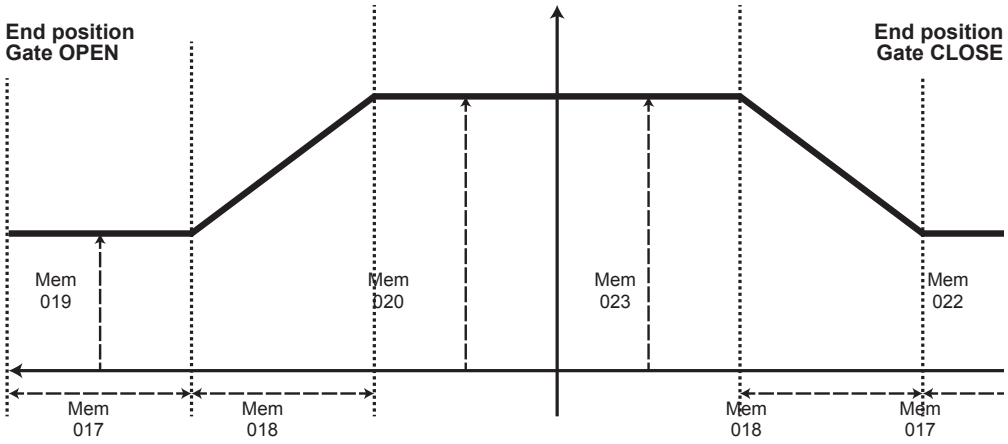

Maintenance and care

Regular maintenance

- Clean the housing with a moist cloth.
- Use warm water with a small amount of washing-up liquid or a plastic cleaner if necessary.

Warranty and customer service

The warranty complies with statutory requirements.

Contact your specialist dealer if there are any warranty claims.

The warranty claim is only valid in the country in which the TorMinal was purchased.

Batteries, fuses and bulbs are excluded from the warranty.

For customer service, spare parts or accessories, contact the dealer.

Improvement of the operating instructions

The manufacturer attempted to make these operating instructions as clear as possible.

If you have feedback which could help us improve there or there are missing specifications in the operating instructions, please send them to:

Fax: 0049 / 7021 / 8001 - 403

email: doku@sommer.eu

Disposal

CAUTION!
There is a risk of fire or acid burns if handled improperly.
Do not burn batteries, take them apart or damage them.

- Do not subject batteries to temperatures higher than 60° C.
- Do not subject batteries to direct sunlight or extreme humidity.
- Keep batteries out of the reach of children.
  If the battery is accidentally swallowed, seek immediate medical attention.
- When storing or disposing of batteries always pack them using tape so that they will not come into contact with other metal objects. They could ignite or cause damage.
- Do not dispose of batteries or the TorMinal in the regular household waste.
- Damaged or used batteries must be properly disposed of immediately.
  Contact your local environmental authority or your waste disposal representative.

Troubleshooting

Malfunction/behaviour – Cause/message on the display	Possible remedies
No display	
– TorMinal switched off	– Switch on the TorMinal
– Displayed effective - TorMinal was dropped	– Replace TorMinal
– Battery flat	– Replace battery
– Display black	– Connecting cable plugged in incorrectly
Information in the display	
– ! No PCB !	– No control unit connected – Connecting cable defective
Value (Val.) cannot be modified	
– "x" is in front of the value (Val.)	– Factory setting cannot be modified
Reset the setting to factory setting	
– "s" is in front of the value (Val.) – Modified value (Val.) not saved – RESET performed, all values reset to the factory setting	– Modify value (Val.) again and save

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