# **OPERATING INSTRUCTIONS**



# KFV/

**Electro-mechanical systems** 

**GENIUS 2.1 A and B** 

Window systems

Door systems

Comfort systems

# Contents

1.	Introduction	3
1.1	Validity	3
1.2	Target group of this documentation	3
1.3	Correct use	3
1.3.1	Locking part and hardware	3
1.3.2	Transport	3
1.3.3	Opening/Closing/Locking	3
1.4	Improper use	3
1.5	Maintenance and service notes	4
1.6	Dimensions	4
1.7	Visual indicators	4
1.7.1	Instructions and symbols	4
1.8	Other types of indicators	4
2.	Safety	4
2.1	Electricity	4
2.2	Causes of damage	5
2.3	The components of the GENIUS 2.1 motor	6
3.	Operation	8
3.1	Menu - Handling	8
3.2	Set day / night mode manually	. 11
3.3	Set the volume of the buzzer	. 12
3.4	Setting the feedback function (only with GENIUS 2.1 B)	. 13
3.5	Set feedback contact (only for GENIUS 2.1 B)	. 14
3.6	Day / Night switchover mode	. 15
3.7	Cylinder operated lock mode	. 16
3.8	Call up system services	. 17
3.9	Display of status LED	. 19
3.10	Locking and release	. 19
3.11	Adjustment of frame parts and AT piece	. 20
3.11.1	Adjustment of Q adjustment	. 20
3.11.2	Adjustment of AT piece	. 21
4.	Appendix	. 22
<i>l</i> 1	Tochnical enceifications	22



#### 1. Introduction

#### 1.1 Validity

These instructions describe the operation of the GENIUS 2.1 multi-point lock and are valid unless revoked.

#### 1.2 Target group of this documentation

This documentation is intended for use by end users. In order to guarantee the safe use of the GENIUS 2.1 multi-point lock and to prevent malfunction or damage, please read these operating instructions carefully and completely and observe the instructions specified in the chapter "Safety" in particular.

#### 1.3 Correct use

- The GENIUS 2.1 multi-point lock is a special lock for locking and unlocking doors automatically.
- The GENIUS 2.1 multi-point lock is suitable for installation in timber, aluminium, steel and PVC entry doors for residential and public buildings.
- All assembly and electrical installation work must be carried out by a qualified electrician according to our assembly instructions. Wiring the unit incorrectly can irreparably damage its electronic components.
- The GENIUS 2.1 multi-point lock must be operated with a free-running cylinder compliant with the German standard DIN 18252 (marked FZG).



Only use cylinders with the FZG\* marking

\*Directives of the Trade Organisation for Locks and Hardware (Gütegemeinschaft Schlösser und Beschläge e.V.)

Supplementary to DIN 18252 or EN 1303, this directive describes a reproducible test for profile cylinders with free-running cam. According to the definition of DIN 18252, free-running cam means that it must be possible to turn the lock ward of the profile cylinder when the key is removed. With profile cylinders without free-running cam, the lock ward is blocked when the key is removed and can no longer be turned.

- As a result of the testing certification, the manufacturer is authorised to mark the profile cylinder(s) of the defined product family with "FZG". The suitability for installation in escape door locks with gear boxes, which will also be marked with "FZG" in the future, has been proven. The GENIUS 2.1 multi-point lock can be connected to an external access control system (e.g. wireless, transponder or fingerprint scanner system) via a voltage-free contactswitching time: min. 1 second.
- Use the GENIUS 2.1 multi-point lock only when it is in a technically sound condition. Do not modify the unit's components in any way.
- Use the GENIUS 2.1 multi-point lock only with genuine KFV accessories.

#### 1.3.1 Locking part and hardware

- The use of any additional devices to keep the door closed (with the exception of a door closer) is not permitted. If a door closer is installed, it must not impede operation of the door by children, the elderly or infirm.
- Repair of the GENIUS 2.1 multi-point lock is not permissible. If the GENIUS 2.1 multi-point lock is damaged, it must be replaced by KFV or repaired by a service agent authorised by KFV.
- Only KFV frame parts with Q adjustment may be used.

#### 1.3.2 Transport

- Always transport the door leaf in a vertical position.
- Do not carry the door leaf by the lever handle or hardware when transporting it.

#### 1.3.3 Opening/Closing/Locking

- It must be possible to open and close the door easily.
   A protruding latch and /or deadbolt must not impede the opening and closing of the door.
- The locking elements must always engage freely in the lock striker of the frame parts.
- If the locking elements do not retract easily, adjust the frame parts and the AT-piece. See: "3.11 Adjustment of frame parts and AT piece" on page 20.





If energy-carrying cables are routed in parallel to data cables (ISDN, DSL, etc.), this could lead to interference e.g. in the speed of the data transmission.

We recommend that you use the shielded KFV cable.

See: Product catalogue KFV GENIUS and A-opener

#### 1.4 Improper use

- The GENIUS 2.1 multi-point lock must not be used for escape doors!
- The multi-point lock is not designed to accommodate changes to its shape or seal which arise as a result of differences in temperature or changes to the building.
- The GENIUS 2.1 multi-point lock must not be used with a cylinder with a fixed catch, as this will cause the main lock to jam when the key is removed.
- The multi-point lock must not be used in doors for wet rooms or rooms in which the air contains aggressive or corrosive components.
- Foreign objects and/or materials which impede or prevent proper use must not be placed within the opening range, the locking system or the striker plates.
- The multi-point lock must not be interfered with and/or modified.
- Locking elements must not be misused to hold the door open.

 Movable or adjustable locking pieces (e.g. deadbolt, latch) must not be painted over.

#### 1.5 Maintenance and service notes

- A regular annual maintenance should be carried out to check that all movable components are functioning correctly and that the screwing is tight.
- The multi-point lock is equipped with long-term lubrication and is consequently maintenance-free.
   However, if a subsequent lubrication should be necessary, use only fully synthetic, resin-free spray-on grease.
- Never use cleaning agents that are aggressive or contain solvents, as these could damage the surface of the components.

#### 1.6 Dimensions

All measurements are given in mm.

#### 1.7 Visual indicators

#### 1.7.1 Instructions and symbols



This symbol designates hazards that could damage the product or something in the surrounding area.



This symbol indicates special features and designates facts that require increased attention.

# 1.8 Other types of indicators

Below is a list of symbols used in these instructions and their meanings:

- Items of text with this marking in front of them are instructions that must be followed in the specified order.
- Texts with a preceding dot are lists or enumerations.
- " " Items of text in quotation marks are cross-references to

other chapters or sections.

# 2. Safety

Read the following safety instructions carefully before you operate the GENIUS 2.1 multi-point lock.

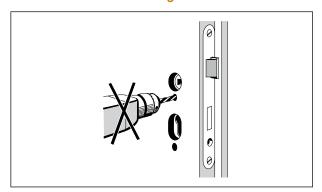
They are designed to keep you safe and prevent hazards, injuries and material damage.

#### 2.1 Electricity

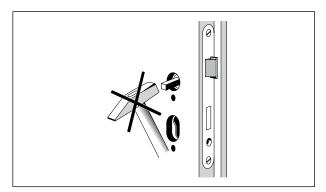
Read the assembly instructions carefully before you carry out any work on the GENIUS 2.1 multi-point lock.

- All work on a 230 V AC mains power supply may only be performed by a qualified electrician.
- All work on the 230 V AC mains power supply must be carried out in compliance with the current German VDE regulations (e.g. VDE 0100) and any relevant countryspecific requirements.
- All-pole safety isolation should be used when fitting the network connection cable on-site.
- Some external access control systems available on the market transmit a brief "open" signal when the operating voltage is switched on. This can mean that the GENIUS 2.1 multi-point lock will open the door following a power failure. If in doubt, please contact the system manufacturer.

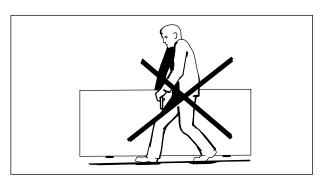
# 2.2 Causes of damage



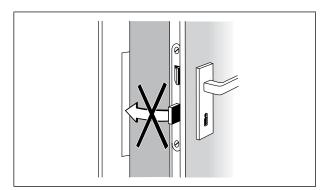
Do not drill through the door leaf in the area of the gear box/boxes when the lock or the multi-point lock is installed.



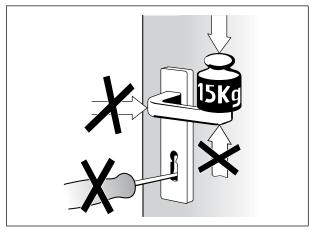
The spindle must not be hit through the lock nut with force.



The door leaf must not be carried using the lever handle as a grip.



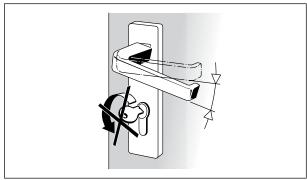
None of the locking elements may be excluded when the door is open.



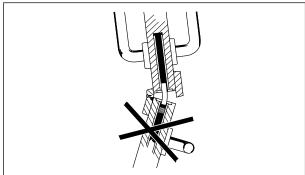
Force must be exerted on the lever handle only in the normal direction of rotation.

A maximum force of  $150\ N$  may be applied to the lever handle in the direction of actuation.

The lock or multi-point lock must be locked only with the associated key (and not with foreign objects).



The lever handle and key must not be operated at the same time.



Double-leaf doors must not be forced open using the inactive sash.

# 2.3 The components of the GENIUS 2.1 motor

#### [1] Connector pin assignment

Connections	Function
A, B, C, D	Terminal A/B  = Data interface SI - RS 485  Terminal D  = Output supply voltage + 24 V DC  Terminal C  = Output supply voltage - GND
2, 3	Operating voltage Terminal 2 = + 24 V DC Terminal 3 = - GND
4	External unlocking signal.  If +24 V DC is supplied to this terminal for ≥1 sec., then an opening cycle is performed in both modes of operation

#### [2] Buttons with menu LED

All adjustments of the GENIUS 2.1 multi-point lock are made via this button. You can proceed to the individual menus and program the different functions by pressing different sequences, "see page 8 - 15".

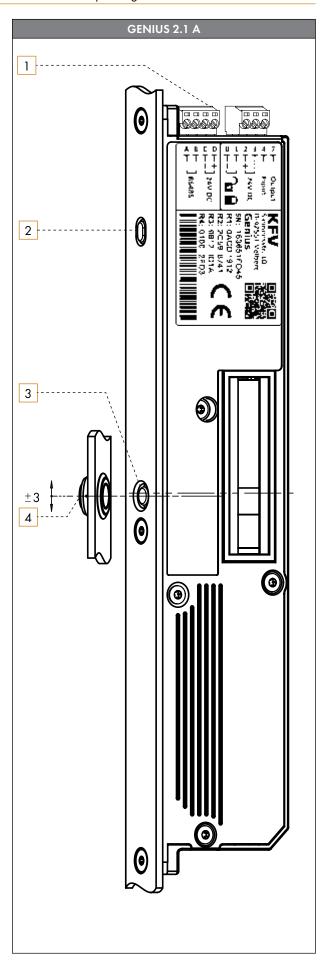
# [3] Status LED

Indicates the current operating status. For detailed information, see: "3.9 Display of status LED" on page 19.

# [4] Magnet

The magnetic sensor of the GENIUS 2.1 registers whether the door is closed via the magnets on the frame side.

The magnetic sensor must be readjusted in case of functional disorders, see "Adjust magnetic sensor" on page 18.



# [1] Connector pin assignment

Connections	Function			
A, B, C, D	Terminal A/B  = Data interface SI - RS 485  Terminal D  = Output supply voltage + 24 V DC  Terminal C  = Output supply voltage - GND			
0, 1	Mode switch, day / night mode			
2, 3	Operating voltage Terminal 2 = + 24 V DC Terminal 3 = - GND			
4	External unlocking signal.  If +24 V DC is supplied to this terminal for ≥1 sec., then an opening cycle is performed in both modes of operation			
7	Lock status indicator, the desired state is selected by the button			

# [2] Buttons with menu LED

All adjustments of the GENIUS 2.1 multi-point lock are made via this button. You can proceed to the individual menus and program the different functions by pressing different sequences, see: "3.2 Set day / night mode manually" on page 11.

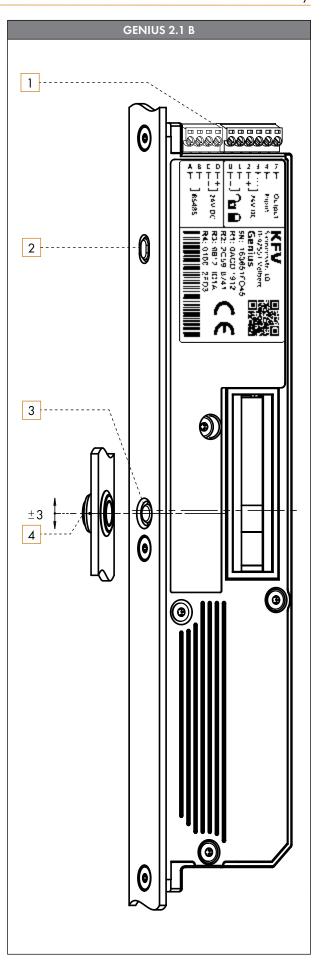
# [3] Status LED

Indicates the current operating status. For detailed information, see: "3.9 Display of status LED" on page 19.

#### [4] Position of magnet

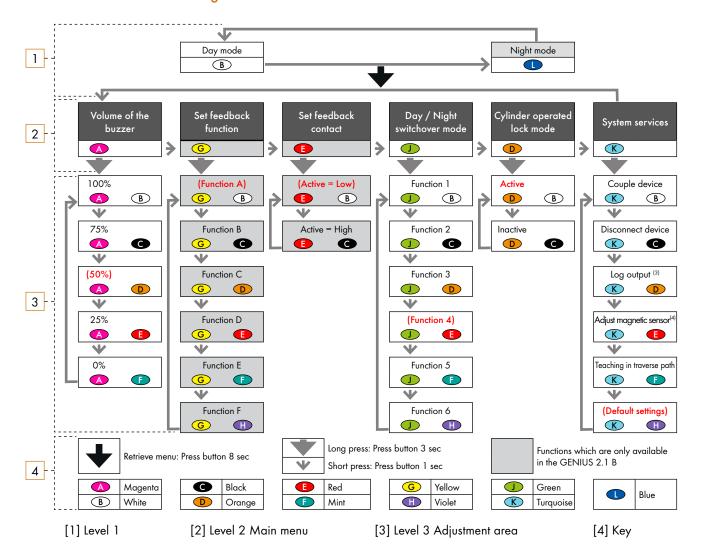
The magnetic sensor of the GENIUS 2.1 registers whether the door is closed via the magnets on the frame side.

The magnetic sensor must be readjusted in case of functional disorders, see "Adjust magnetic sensor" on page 18.



# 3. Operation

#### 3.1 Menu - Handling

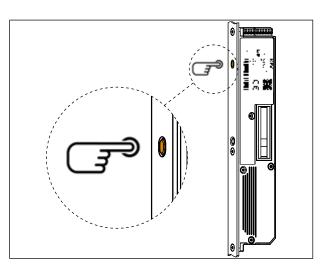


# Buttons with menu - LED

The entire operation and all adjustments are performed via the buttons with menu - **LED**.

Press the button. The individual functions are navigated and programmed via the three different holding times (1 sec, 3 sec, 8 sec)

The **LED** of the button lights up or flashes in different colours. The single colours indicate the position of the user in the menu.



#### The three holding times

The three different holding times are designated by three different arrows in these instructions.

		Ψ
Large arrow	Large arrow	Small arrow
black	grey	grey
= 8 sec	= 3 sec	= 1 sec

#### Level 1

After the door has been opened, the menu LED indicates the current status of the GENIUS 2.1 multi-point lock.

The LED indicates level 1 and lights up white B or **blue**. If the menu LED does not light up (timeout mode), the current status can be indicated by pressing the button with the menu - LED once. At level 1, pressing (1 sec) switches between day operation (white) and night operation (blue).

Large arrow	Large arrow	Small arrow
black	grey	grey
= 8 sec	= 3 sec	= 1 sec
В	$\longleftrightarrow$	

# Change to level 2 main menu

Press button (8 sec)



#### Level 2 Main menu

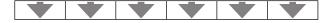
The main menu, consisting of six menu items, is on level II. When you press the button (1 sec), the menu items are retrieved step by step.

The second colour of the LED changes with each step. Each colour designates the retrieved menu item.



#### Change to Level 3 Adjustment area

If the desired menu item is retrieved, the setting range of the menu item is opened by pressing the button (3 sec).



#### Level 3 Adjustment area

Using the example of the menu items "System services"

In level 3, the LED starts to flash. The colour changes between the basic colour of the selected menu item and the colour of the position in the setting range that was saved most recently.

This is the position of the default settings in case of commissioning. The default settings are highlighted in red in the tables. The default settings can be found in the system services menu at pos. 6 III.

When you press the button (1 sec), the setting options of the menu item are retrieved step by step.

The second colour of the flashing LED changes with each step. The second colour designates the position in the setting range. The number of positions varies according to the menu item. There are up to six items.

Pos. 1	K B	White	Couple device
Pos. 2	K C	Black	Disconnect device
Pos. 3	(K) (D)	Orange	Log output
Pos. 4	K 🕕	Red	Adjust magnetic sensor
Pos. 5	K F	Mint	Teaching in traverse path
Pos. 6	(K) (H)	Violet	(Default settings)



#### Save and finish

When you have selected the desired setting, press "Button with menu - LED" for 3 sec. This will save the setting. You will then proceed automatically to level 1.



#### Finish without changes

Close door or wait for timeout (30 sec).

#### Standby

After 2 min without pressing the button with menu - LED, its light and the status - LED light will switch off.



After an opening signal, the latch is retracted and an acoustic signal sounds for up to 7 sec. If the door jumps or is opened, the acoustic signal switches off after 2 sec.



The GENIUS 2.1 multi-point lock emits an acoustic signal for 14 sec in case of a block move.



If terminal 4 is continuously activated, an acoustic signal is emitted for 7 sec and then automatically switched off.

#### 3.2 Set day / night mode manually

The GENIUS 2.1 enables use in two different modes of operation.

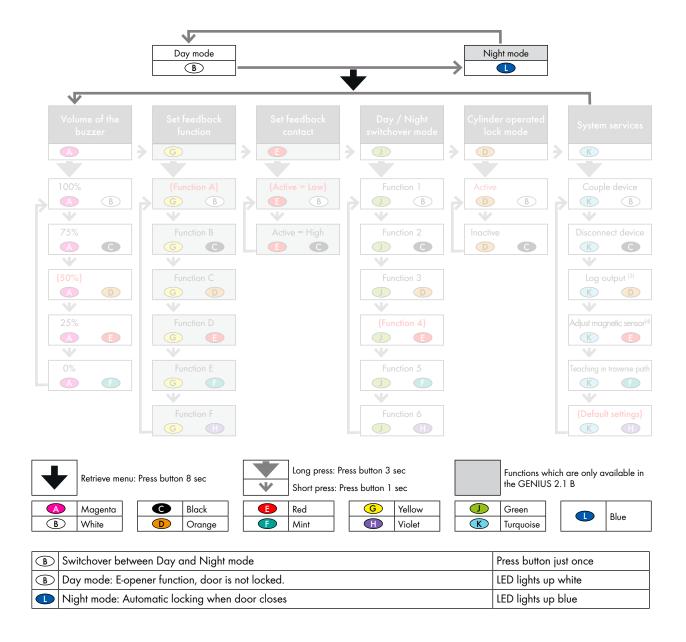
In day mode the door is only used in latch function, the door is not completely locked when it is closed.

This mode of operation is recommended for frequently used doors.

Access without authorisation is possible in combination with an optional day latch.

In night mode the door is locked automatically when it is closed. This mode of operation is recommended for doors with normal levels of use, e. g. in detached houses and apartments.

(Alternative modes see "3.6 Day / Night switchover mode" on page 15)

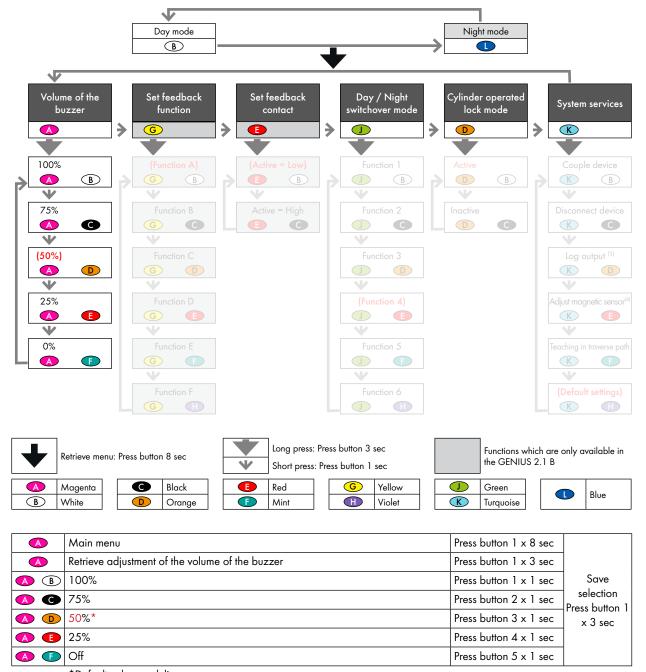


#### 3.3 Set the volume of the buzzer

The buzzer delivers the acoustic feedback of the opening process or malfunction.

The volume for the feedback of the opening process is adjustable in five stages from 0% to 100%. Coupled to this is the sound volume of the button of the menu - LED with exception of the stage 0%. The volume remains at 25% here.

The volume for the feedback of malfunction is preset.



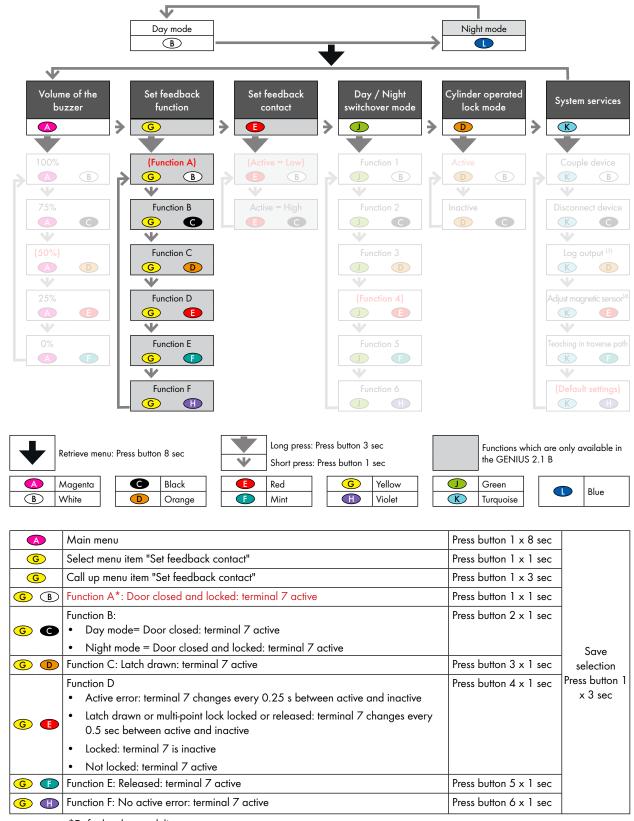
<sup>\*</sup>Default value on delivery



In case of a continual opening impulse at terminal 4, the tone output of the buzzer will be switched off after 7 sec at the latest.

## 3.4 Setting the feedback function (only with GENIUS 2.1 B)

The feedback contact is an output that actuates when the status of the selected function is fulfilled (e. g. door closed and locked). To achieve this, an optional 24 V DC coupling relay is interconnected between + 24 V DC and terminal 7. This makes a potential-free switching output available for third party systems (e. g. alarm systems).



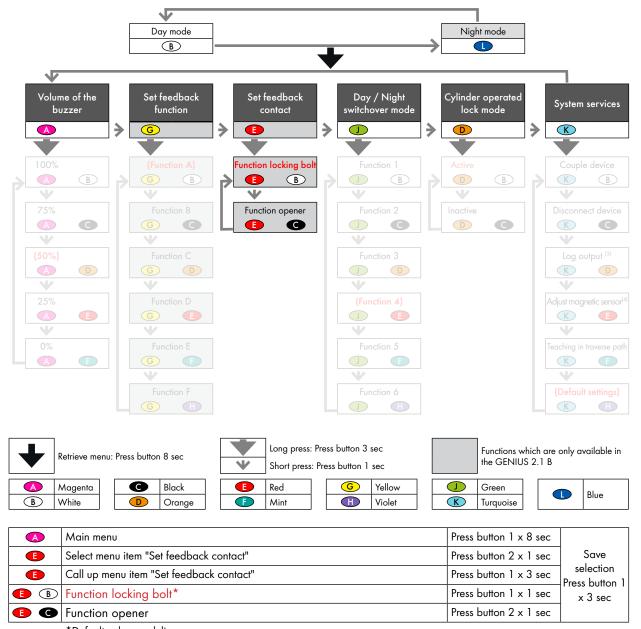
<sup>\*</sup>Default value on delivery

# 3.5 Set feedback contact (only for GENIUS 2.1 B)

This menu item is directed towards special application cases. A selection can be made between locking bolt and opener function.

If "Function locking bolt" is selected, this will switch on the coupling relay when the status of the selected function is fulfilled (e.g. door closed and locked). This setting is appropriate for the majority of feedback application cases.

If "Function opener" is selected, this will switch on the coupling relay when the status of the selected function is fulfilled (e.g. door closed and locked). This setting is appropriate for the feedback to an alarm system. The coupling relay status will be retained if the supply voltage should fail in this setting.

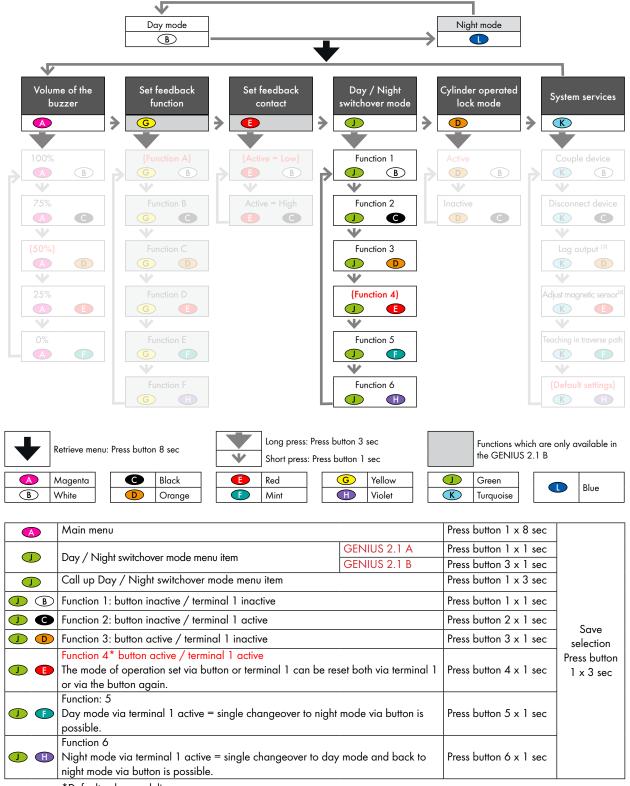


\*Default value on delivery

#### 3.6 Day / Night switchover mode

The Day / Night switchover mode can be activated via the button with the menu LED or via the input terminal 0/1. Different presettings can be made. E.g. the button with menu LED can be deactivated and, in return, an external switch activated in order to exclude an unauthorised switchover of the Day/Night mode on the GENIUS 2.1 multi-point lock. The last status set on the button remains.

Day operation is active when terminal 0/1 is locked via a potential-free make contact. Night operation is active when the make contact is open.

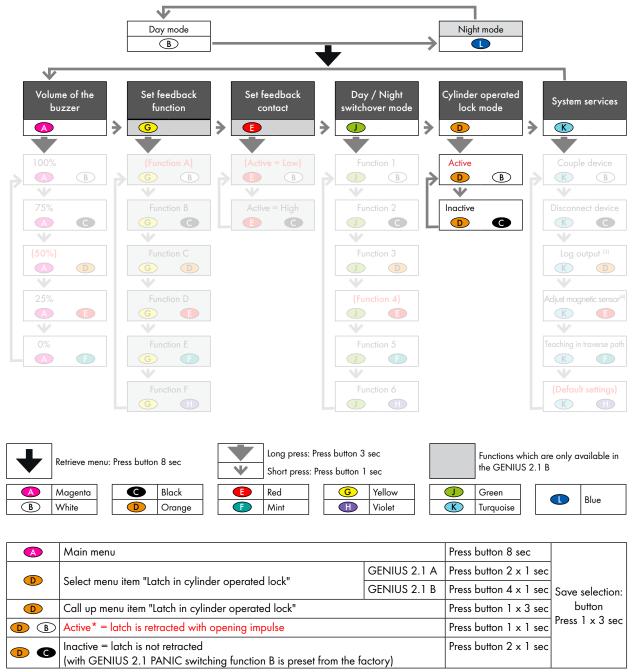


# 3.7 Cylinder operated lock mode



The latch cannot be withdrawn in the cylinder operated lock with the GENIUS 2.1 multi-point lock in switching function **B**. Hence this function must be deactivated!

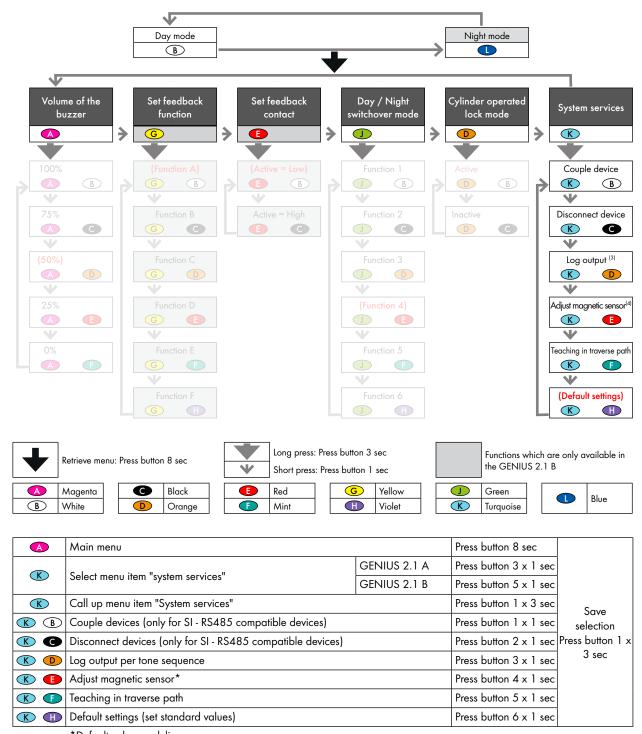
In the menu item "Cylinder operated lock mode", you can set whether the GENIUS 2.1 multi-point lock will draw the latch into the cylinder operated lock during the opening process or not.



<sup>\*</sup>Default value on delivery

#### 3.8 Call up system services

The system services are mainly for the purpose of commissioning or service.

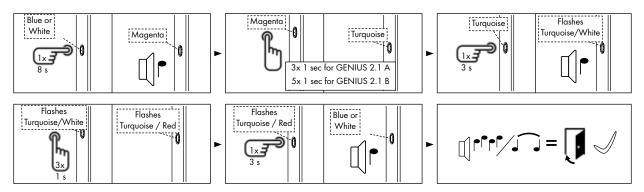


<sup>\*</sup>Default value on delivery

#### Adjust magnetic sensor



The magnetic sensor need only be adjusted when the GENIUS 2.1 multi-point lock does not move to the locking position after the door is closed.



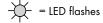
The adjustment of the magnetic sensor is carried out after the door has been closed, this will take a few seconds. If the magnetic sensor has been successfully adjusted, the GENIUS 2.1 multi-point lock will move to the locking position. There is a functional disorder if the GENIUS 2.1 multi-point lock does not move to the locking position. This can be due to the following reasons:

Description	Action	Comments
No magnet available.	Install magnets and repeat adjustment of the magnetic sensor.  According to the frame parts used, a magnet with round bushing [1] or with oval bushing [2] is inserted in the frame part or a round magnet [3] is adhered.	Contact your contractual partner for the selection of the matching magnet.
Height position of the magnet is outside the tolerance range.	Reposition the magnet. This is only possible with an adhered magnet or with a magnet with oval bushing [1].  The door must be reset in the case of a permanently installed magnet.	The adjustments must be carried out by qualified specialists. Get in touch with your contractual partner.
Distance between magnet and magnetic sensor is outside the tolerance range.  3,5 mm ± 1,5 mm	The magnetic sensor will not be able to detect the magnet if the gap between the door leaf and frame (the so-called airgap) is too great. The door must be reset.	The adjustments must be carried out by qualified specialists. Get in touch with your contractual partner.

# 3.9 Display of status LED

LE	D	Buzzer	Description	Action	Comments
Green		X	Disturbance-free		
Flashes green	*	×	Opening signal is present at terminal 4.		
Flashes yellow	*	×	Faulty contact of the connecting clamps	Check connecting clamps	Contact service partner if the fault persists.
Yellow	0	×	Limited function		Contact service partner if the fault persists.
Flashes yellow	*	□()))	Magnetic sensor malfunction	Adjust magnetic sensor See: "3.8 Call up system services" on page 17	Contact service partner if the fault persists.
Flashes yellow- green	*	<b>((</b> )))	Locking elements extended with opened door	Release door before closing	
			Supply voltage defective	Have the supply voltage checked	
Red		• □()))	Operating voltage exceeded	Check the ambient temperature	Contact service partner if the fault persists.
			Adjustment of magnetic sensor failed	Check position of magnet	
Red	•	×	Error in the control unit		Contact service partner if the fault persists.
Flashes red	red ( )))		Check for mechanical sluggishness		
		<b>₩</b> □(1))	Block movement (complete deadbolt projection not possible)	Check free-running cylinder	Contact service partner if the fault persists.
				Check the free running of the locking elements	





#### 3.10 Locking and release

#### Lock

#### Day mode

In day mode the door can be locked manually with the cylinder key. All locking elements are extended in the process.

#### Night mode

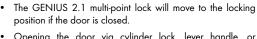
In night mode the door is locked automatically when it is closed. All locking elements are extended in the process.

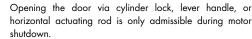
# Release

The GENIUS 2.1 multi-point lock can be unlocked from the inside via the cylinder lock, the lever handle, the horizontal actuating bar or via an optional access control system. To do this, the key must be turned to the unlocking stop or the hardware activated completely

or triggered via an opening impulse from the access control system: All locking elements including the latch are retracted (exception GENIUS 2.1 with switching function B).

- To lock or unlock the door with the cylinder key, always turn it as far as it will go. The cylinder key must then be turned back some way before it can be removed from the cylinder lock.
- If the door does not open immediately following automatic release, it will remain released for 7 sec, an acoustic signal will be audible for this period.
- If the door is opened during this period, the signal tone will switch off.
- The GENIUS 2.1 will return to the locking position if the door is not opened during this period.





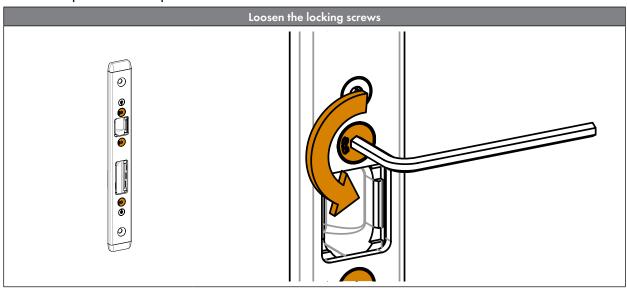


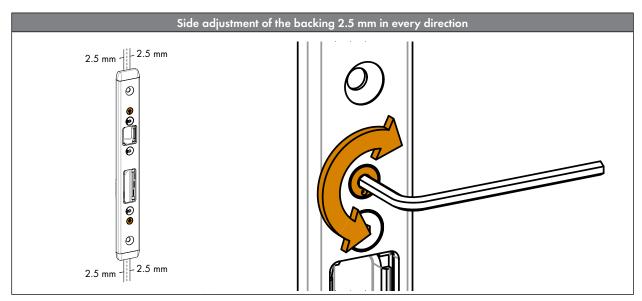
- Opening during the locking process leads to cancellation. The GENIUS 2.1 multi-point lock moves to the "unlocked" position and the latch is drawn into the cylinder operated lock. Not with GENIUS 2.1 with switching function B!
- The door must be opened and closed before it can be locked electro-mechanically. The GENIUS 2.1 multi-point lock then moves to the 'locked' position.



# 3.11 Adjustment of frame parts and AT piece

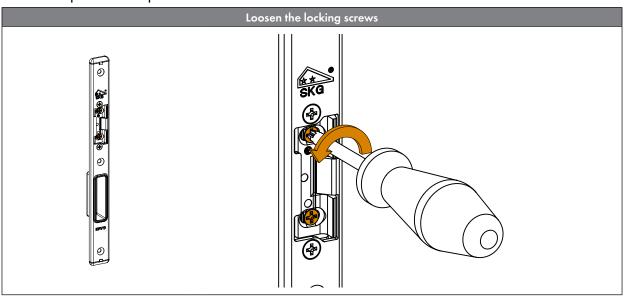
# 3.11.1 Adjustment of Q adjustment

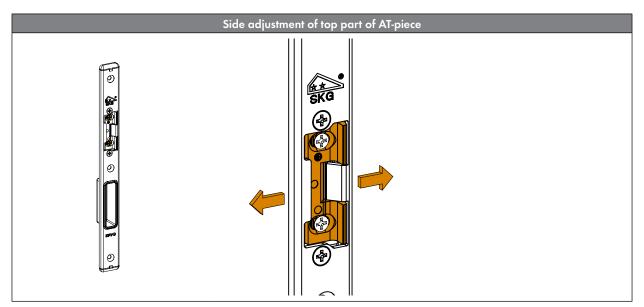


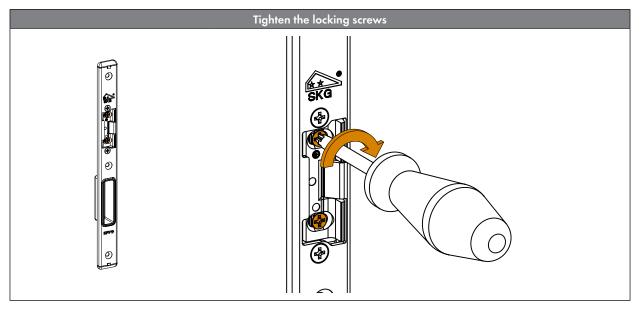




# 3.11.2 Adjustment of AT piece







# 4. Appendix

# 4.1 Technical specifications

Environmental conditions			
Ambient temperature range in the door (according to DIN EN 14846 class T <sub>UM</sub>		-25 °C+70 °C	
Relative humidity		20% to 80% (non-condensing)	
Protection class		IP 40	

Electrical data				
Operating voltage	U <sub>B</sub>	+24 V DC (+19 V DC +32 V DC)		
Operating current standby / standby	I <sub>St</sub>	Type 30 mA		
Operating current for motor control	I <sub>B</sub>	Type 500 mA (max. 1000 mA)		
Reverse polarity protection	U <sub>Verp</sub>	- 50 V		
Output signal terminal 7				
Switches actively against mass (GND)	I <sub>KL7</sub>	≤ 20 mA		
Internal with Pullup resistance	R <sub>Pullup</sub>	4,7 kΩ		
Max. capacitive load	C <sub>max</sub>	≤ 47 µF		
Input signal terminal 4				
Release On	U <sub>KL4.ON</sub>	> 7.0 V DC		
Release Off	U <sub>KL4.OFF</sub>	< 4.0 V DC		
Internal with Pulldown resistance	R <sub>Pulldown</sub>	4,7 kΩ		
Input signal terminal 1				
Night mode	U <sub>KL1.Night</sub>	> 7.0 V DC		
Day mode	U <sub>KL1.Day</sub>	< 4.0 V DC		
Internal with Pullup resistance	R <sub>Pullup</sub>	4,7 kΩ		

Magnetic sensor		
Airgap	4 mm ± 3 mm (with original magnet and correct adjustment)	

Dimensions			
Dimensions W x L x D		16 mm, 252 mm, 49 mm + faceplate thickness	

Cable lengths		
Cable length at 0.14 mm <sup>2</sup>	LIYCY	≤ 24 m
Cable length at 0.5 mm <sup>2</sup>	LIYCY	≤ 50 m



brings spaces to life

A company of the SIEGENIA GROUP KFV Karl Fliether GmbH & Co. KG Siemensstraße 10 42551 Velbert GERMANY Phone: +49 2051 278-0 Fax: +49 2051 278-167

info@siegenia.com www.siegenia.com



You can find address details for our international sites at: www.siegenia.com

SIEGENIA worldwide:

Austria Phone: +43 6225 8301

Belarus Phone: +375 17 3143988

Benelux Phone: +31 85 4861080

China Phone: +86 316 5998198

France Phone: +33 3 89618131

Germany Phone: +49 271 39310

Great Britain Phone: +44 2476 622000

Hungary Phone: +36 76 500810 Italy Phone: +39 02 9353601 Poland Phone: +48 77 4477700 Russia Phone: +7 495 7211762 South Korea Phone: +82 31 7985590 Switzerland Phone: +41 33 3461010 Turkey Phone: +90 216 5934151 Ukraine Phone: +38 044 4054969

Contact your dealer: