Assembly instructions

GENIUS
Electronic door lock

Window hardware
Door hardware
Sliding door hardware
Ventilation and building technology
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Target group of this documentation

This documentation is intended to be used by specialists only. All work described in this document is to be performed by experienced professionals with training and practice in the assembly, installation and maintenance of the GENIUS door lock and its individual components. Safe and proper assembly of this electronic door lock is not possible without expert knowledge.

Intended use

- The GENIUS door lock is a special lock for automatically locking and unlocking doors.
- It 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 according to our assembly and installation instructions. Wiring the unit incorrectly can irreparably damage its electronic components.
- The GENIUS door lock must be used with a free-running cylinder compliant with the German standard DIN 18252. Alternatively a thumbturn cylinder can be used, but it should be noted that this will result in a loss of power at the locking points.
- The GENIUS door lock can be connected to an external access control system (e.g. wireless, transponder or fingerprint scanner system) via a voltage-free contact (switching time: min. 1 second).
- Use the GENIUS door lock only when it is in a technically sound condition. Do not modify the unit’s components in any way.
- Use the GENIUS door lock only with genuine KFV accessories.

Improper use

- The GENIUS door 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 GENIUS door lock must not be installed in moisture-prone areas or areas with a corrosive atmosphere (e.g. electroplating shops).
- The length of the cable between the power supply and the GENIUS door lock must not exceed 13 m.

Safety notes

- Work on an 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 country-specific requirements.
- All-pole safety isolation should be used when fitting the power lead 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 door lock will open the door following a power cut. If in doubt, please contact the system manufacturer.

Warning

Where power supply cables are routed parallel to data cables (IDSN, DSL etc), interference can occur, eg: with the data transfer speed.
Explanation of symbols

- Ø16: Milling cutter or drill diameter
- 180: Groove length
- Groove depth from profile

Rotary switch (optional signal outputs)

- The rotary switch can only be operated when the lock is not installed.
- The rotary switch is used to control the optional signal output, terminal 7. The output must not be subjected to a current of more than 20 mA.
- The rotary switch on the type B GENIUS door lock is used, if desired, to define the lock or door status that should trigger the optional signal output.
- Via an external relay (a 24 V DC coupling relay, available as a KFV accessory) connected to terminal 7, the GENIUS door lock can be linked to other systems, e.g. alarm systems and hinged door drives.

Fig. 1: Rotary switch

<table>
<thead>
<tr>
<th>Position</th>
<th>Status</th>
<th>Comments</th>
</tr>
</thead>
</table>
|          | The lock is fully locked and the door is shut. | • For use in conjunction with alarm systems.  
  › Terminal 7 is connected to negative (−) ground. |
|          | The door is shut | • For use in conjunction with monitoring by a porter.  
  › Terminal 7 is connected to negative (−) ground. |
|          | The latch is drawn into the cylinder operated lock | • For use in conjunction with a hinged door drive.  
  › Terminal 7 is connected to negative (−) ground. |
|          | Can be used to arm/disarm a connected alarm system | • Controlled using a 2-channel infra-red access key*  
  › In order to keep the alarm system armed in the event of a power failure, the terminal is connected to negative/gound when the alarm is disarmed.  
  › Alarm disarmed = terminal 7 = negative – relay on  
  › Alarm armed = terminal 7 = high resistance – relay off  
  › The break contact of the relay must be used to switch on the alarm system. |

*See GENIUS operating instructions for details of how to do this
Installation
Fitting the GENIUS door lock

The GENIUS door lock is supplied pre-installed. It only needs to be screwed in for retrofitting or replacement purposes.

![Fig. 2: Fitting the GENIUS door lock](image)

Fitting the power supply

- The power supply ensures that the GENIUS door lock is supplied with the right voltage.
- Its casing is designed to be fitted on a standard DIN EN 60715 mounting rail.
- One power supply can supply one GENIUS door lock and one KFV access control (wireless, transponder, infra-red or fingerprint scanner) system.
- The power supply comes with a permanent connection. An easily-accessible means of disconnecting it must be integrated into the power supply circuit.

![Fig. 3: Power supply](image)

Fitting cables

Various types of cable are available for connecting the power supply to the GENIUS door lock. Each cable is marked with a band to show where it must be plugged into the GENIUS door lock.

**Important:**

- When routing cables behind the face plate, ensure that they are not vulnerable to damage from the drive rod or other moving parts.
- The shield must be connected to earth on the power supply side. On the GENIUS side, connection of the shield is not necessary.
GENIUS door lock connections

<table>
<thead>
<tr>
<th>Connections</th>
<th>Type A</th>
<th>Type B</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, B, C, D</td>
<td>✓</td>
<td></td>
<td>Connection for infra-red eye, which sends infra-red signals to the GENIUS door lock</td>
</tr>
<tr>
<td>B, C, D, 2</td>
<td>✓</td>
<td></td>
<td>Connection for the KFV fingerprint scanner</td>
</tr>
<tr>
<td>0, 1</td>
<td>✓</td>
<td></td>
<td>Switching between day/night mode</td>
</tr>
<tr>
<td>2, 3</td>
<td>✓ ✓</td>
<td></td>
<td>Operating voltage 24 V DC&lt;br&gt;Terminal 2 = + (positive)&lt;br&gt;Terminal 3 = – (negative)</td>
</tr>
<tr>
<td>4</td>
<td>✓ ✓</td>
<td></td>
<td>External &quot;unlock&quot; signal.&lt;br&gt;In both operating modes, if +24 V DC is applied to this terminal for ≥ 1 s, the door will be opened</td>
</tr>
<tr>
<td>7</td>
<td>✓</td>
<td></td>
<td>Indicating door/lock status.&lt;br&gt;A rotary switch is used to define the status in which a signal is triggered (optional signal output, max. 20 mA)</td>
</tr>
</tbody>
</table>

Cable types

**Type F**
Always used together with type B.

![Fig. 5: Cable type F (for connection to Genius)](image)

**Type B**
Always used together with type F.

![Fig. 6: Cable type B (for connection to KFV power supply)](image)
**Type K**

![Cable type K](image)

Fig. 7: Cable type K (connects Genius to power supply)

<table>
<thead>
<tr>
<th>Cable no.</th>
<th>Band colour</th>
<th>Cable colour</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Black</td>
<td>Grey</td>
<td>Switching between day/night mode</td>
</tr>
<tr>
<td>1</td>
<td>Brown</td>
<td>Yellow</td>
<td>Switching between day/night mode</td>
</tr>
<tr>
<td>4</td>
<td>Yellow</td>
<td>Green</td>
<td>External &quot;unlock&quot; signal</td>
</tr>
<tr>
<td>7</td>
<td>Violet</td>
<td>Pink</td>
<td>Indicating door/lock status</td>
</tr>
<tr>
<td>– /3</td>
<td>Blue</td>
<td>Brown</td>
<td>Operating voltage (-) negative</td>
</tr>
<tr>
<td>+ /2</td>
<td>Red</td>
<td>White</td>
<td>Operating voltage (+) 24 V DC</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>Blue</td>
<td>Shield</td>
</tr>
</tbody>
</table>

**Type E**

![Cable type E](image)

Fig. 8: Cable type E (connects Genius - type A only- to power supply)

<table>
<thead>
<tr>
<th>Cable no.</th>
<th>Band colour</th>
<th>Cable colour</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Yellow</td>
<td>Green</td>
<td>External &quot;unlock&quot; signal</td>
</tr>
<tr>
<td>–</td>
<td>Blue</td>
<td>Brown</td>
<td>Operating voltage (-) negative</td>
</tr>
<tr>
<td>+</td>
<td>Red</td>
<td>White</td>
<td>Operating voltage (+) 24 V DC</td>
</tr>
<tr>
<td>– /3</td>
<td>White</td>
<td>Blue</td>
<td>Shield</td>
</tr>
</tbody>
</table>

**Cable plugs for the GENIUS door lock**

- To facilitate installation of the GENIUS door lock, the plug can be removed by pulling it upwards.
- There are letters on the plug to indicate where the various cables should be plugged in.

**GENIUS type A**

![GENIUS type A](image)

**GENIUS type B**

![GENIUS type B](image)

Fig. 9: Cable plugs for the GENIUS door lock
Cable links

Visible cable link

- The visible cable link should be fitted to the inside of the door on the hinge side.
- If this cable link is used, unhinging the door leaf requires substantial effort.

![Visible cable link](image)

Fig. 10: Visible cable link

Concealed cable links

100° and 180° concealed cable link

- The casing is fitted in the door frame or leaf.
- Allows the door leaf to be unhinged where cable types B/F are used.

![Concealed cable link, not disconnectable](image)

Fig. 11: Concealed cable link, not disconnectable

This cable link is used for routing cables invisibly in the door rebate.

![Concealed cable link](image)

Fig. 12: Concealed cable link

100° and 180° concealed cable link, disconnectable

Cable link is easy to disconnect using the plug connector in the area of the rebate.

- The casing is fitted in the door frame or leaf.
- The disconnectable cable link permits easy unhinging of the door leaf.

![Concealed cable link, disconnectable](image)

Fig. 13: Concealed cable link, disconnectable
Fitting the door contact

**Important**: Do not allow the magnet to come directly into contact with the face plate as this can permanently magnetise the face plate or the drive rod behind it.

- The GENIUS door lock uses an integrated door contact (reed sensor) to detect whether the door is open or shut.
- The reed sensor is triggered by a counter part (magnet) that must be fitted on the frame side. This magnet is vital to the correct functioning of the GENIUS door lock.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Round magnet bush</td>
</tr>
<tr>
<td>2</td>
<td>Oval magnet bush</td>
</tr>
<tr>
<td>3</td>
<td>Adhesive magnet bush</td>
</tr>
</tbody>
</table>

**Fig. 14: Available magnet bushes**

- The magnet must be positioned centrally in relation to the reed sensor (vertical tolerance: ±1 mm).
- The distance (airgap) between the locking rail/face plate must be 4 mm (tolerance ±3 mm).

**Fig. 15: Position of reed sensor in relation to magnet**

- If using striker plates for timber doors, the magnet and holder can be fitted directly in the frame.
- If using striker plates for PVC or aluminium doors, a single AS23xx striker plate (without backing) must be fitted in the area of the reed sensor together with a plastic component, with magnet, suitably sized to fit the hole.
- If the GENIUS door lock is used in conjunction with inactive leaf hardware, 1 mm-thick magnets must be bonded in place exactly opposite the reed sensor, because no holes may be made in the inactive leaf hardware.
  - Degrease the rail on the inactive leaf hardware in the area where the magnets are to be applied.
  - Determine the necessary positions and number of magnets. If necessary, used several magnets one on top of the other.
  - Mark the desired magnet position, remove the backing film from the magnet, and stick it in place.
Fitting an internal release push-button (optional)

The internal release push-button can be used to open the door without a conventional key.

› Connect the cable (length: 750 mm) to terminals 2 and 4 on the GENIUS door lock.

› Drill an 18 mm (without anchor) or 20 mm (with anchor) drill hole.
  Supplied with an anchor for "snap-in" installation.

Anti-intruder advice: To effectively prevent intruders from operating the push-button from the outside, it should be ensured that any glass panes and infill panels in the door are suitably burglar-resistant.

Fitting the infra-red eye (optional)

The infra-red eye acts as a receiver for the infra-red code transmitted by an infra-red access key or infra-red master key. It comes with an installation anchor suitable for use in any door material.

› Drill a hole of diameter 20 mm (tolerance ±0.2 mm).

› Push the infra-red eye into the anchor, guiding the cable (length: 750 mm) in first.

› Guide the cable from the infra-red eye to the GENIUS door lock and connect it to the terminals on the (4-pin) plug on the GENIUS door lock.
Wiring diagram for type A GENIUS door lock

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>230 V AC supply cable (L; N; PE)</td>
</tr>
<tr>
<td>2</td>
<td>Power supply</td>
</tr>
<tr>
<td>3</td>
<td>Wireless receiver (optional)</td>
</tr>
<tr>
<td>4</td>
<td>External unlocking feature (optional)</td>
</tr>
<tr>
<td>5</td>
<td>Max. line length 50 m (external unlocking feature)</td>
</tr>
<tr>
<td>6</td>
<td>Max. line length 13 m (from GENIUS door lock to power supply)</td>
</tr>
<tr>
<td>7</td>
<td>Internal release push-button (optional)</td>
</tr>
<tr>
<td>8</td>
<td>Type A GENIUS door lock</td>
</tr>
</tbody>
</table>
Wiring diagram for type B GENIUS door lock

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>230 V AC supply line (L; N; PE)</td>
</tr>
<tr>
<td>2</td>
<td>Power supply</td>
</tr>
<tr>
<td>3</td>
<td>Wireless receiver (optional)</td>
</tr>
<tr>
<td>4</td>
<td>External unlocking feature (optional)</td>
</tr>
<tr>
<td>5</td>
<td>Max. line length 50 m (external unlocking feature)</td>
</tr>
<tr>
<td>6</td>
<td>Time switch (optional)</td>
</tr>
<tr>
<td>7</td>
<td>Max. line length 13 m (from GENIUS door lock to power supply)</td>
</tr>
<tr>
<td>8</td>
<td>24 V DC coupling relay (optional)</td>
</tr>
<tr>
<td>9</td>
<td>Infra-red eye (optional)</td>
</tr>
<tr>
<td>10</td>
<td>Internal release push-button (optional)</td>
</tr>
<tr>
<td>11</td>
<td>Type B GENIUS door lock</td>
</tr>
</tbody>
</table>
**Technical specifications**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative humidity</td>
<td>20 % bis 80 %</td>
</tr>
<tr>
<td>Ambient temperature in door</td>
<td>− 10 bis + 45 °C</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Width 16 mm, length approx. 252 mm, depth 49 mm + width of face plate</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>24 V DC max. 500 mA</td>
</tr>
<tr>
<td>Cable types</td>
<td>Type LIYCY</td>
</tr>
<tr>
<td></td>
<td>Ambient temperature, non-fixed</td>
</tr>
<tr>
<td></td>
<td>Ambient temperature, fixed</td>
</tr>
</tbody>
</table>

**Liability**

**Intended use**

Any use of this product that is not in accordance with its intended use, or any adaptation of or modification to the product and its associated components for which our express consent has not been obtained, is strictly prohibited. We accept no liability whatsoever for any material losses or injury to people caused by failure to comply with this stipulation.

**Product liability**

Our products are warranted – subject to correct installation and proper use – for a period of one year from the date of receipt by a company (according to our general terms and conditions) or as otherwise agreed, and for a period of two years for end consumers, in accordance with statutory provisions. As part of our ongoing improvements, we reserve the right to replace individual components or entire products. CONSEQUENTIAL losses resulting from defects are excluded from the warranty within the limits of the law. The warranty shall become void if modifications that are unauthorized by us or have not been described in this documentation are performed on the product and/or individual components, or if the product and/or individual components is/are dismantled or partly dismantled, and the defect is due to the changes made.

**Exclusion of liability**

The product and its components are subject to stringent quality controls. As a result, they function reliably and safely when used correctly. Our liability for consequential losses and/or claims for damages is excluded, except in the case of wilful misconduct or gross negligence, or where we are responsible for injury to life, limb or health. Strict liability under the German Product Liability Act (Produkthaftungsgesetz) remains unaffected. Liability for the culpable violation of significant contractual obligations also remains unaffected; liability in this case is limited to losses that are specific to the contract and that could have been foreseen. The above regulations do not imply a change in the burden of proof to the detriment of the consumer.

**EU Declaration of Conformity**

We, KFV KG, declare under our own responsibility that this product complies with the provisions of Directives 2008/108/EC and 2006/95/EC of the Council of the European Union.

**Environmental protection**

Although our products do not fall within the scope of the German Electrical and Electronic Equipment Act (ElektroG), KFV will continue to meet the requirements of this Act and will endeavour to completely eliminate the use of substances that are hazardous to the environment as soon as this becomes technically feasible. Electrical products should not be disposed of as household waste.

**Feedback on documentation**

We welcome your comments and suggestions on how to improve our documentation. Please send us your feedback by e-mail to dokumentation@kfv.de.
PRÜFBERICHT - TEST REPORT
Elektromagnetische Verträglichkeit (EMV) - Electromagnetic Compatibility (EMC)

ANTRAGSTELLER - APPLICANT
Firma - Company: KFV Karl Fliether GmbH & Co. KG
Anschrift - Address: Siemansstr. 10
                        D - 42551 Velbert
Anwesende - Witness(es): Herr Kowatzick

PRÜFLING (EUT) - EQUIPMENT UNDER TEST
Gerätebez. - Equipment: Elektromechanischer Türverschluss - Electromechanical door lock
Modell/Typ - Model/Type: Genius / A-Öffner (GEN AS*, GEP EP*, ZEM F10*)
Fertigungs Nr. - Serial No.: #1018143050907

PRÜFUNG - TEST
Anlieferung - Arrival of EUT:
04.06.2013
Meßtermin(e) - Date of measurement:
04. - 06.06.2013
Prüfungsgrundlage - Standards:
- Störaussendung - Emission:
  EN 61000-6-3:2007+A1:2011
  Klasse B - class B
  EN 61000-3-3:2008
- Störfestigkeit - Immunity:
  EN 61000-6-2:2005
Ergebnisse - Results:
Anforderungen erfüllt - Passed
Details siehe Zusammenfassung - Details see test result summary
Bemerkungen - Remarks:
Ein Prüfplan wurde vorgelegt.
The test plan was presented.
Durchführung - Performed by:
Dipl.-Ing. Th. W. Stein

PRÜFBERICHT - TEST REPORT
Identifikationsnummer - Identification No.:
FS-1306-238552-002
Datum des Prüfberichts - Date of Report:
10.06.2013
bearbeitet von - Provided by:
Dipl.-Ing. Th. W. Stein
Prüfer - Person responsible
Unterschrift - Signature
überprüft von - Approved by:
Dipl.-Ing. P. Lukas
Prüfer - Person responsible
Unterschrift - Signature

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Last update: 01.08.2013

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