

CYLINDER SC MANUAL

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1.0 PRODUCT DESCRIPTION

1.1 ORDER CODE

Z4.xx.aaa-iii.MP
Z4.xx.Aaaa.MP

- xx represents the housing profile (not used for Euro profile cylinders)
- aaaa represents the external housing length
- iiiii represents the internal housing length

See Section 3.0 VERSIONS or SimonsVoss price list 2013 for other version designations.

1.2 PRODUCT DESCRIPTION

The SimonsVoss Digital Locking System 3060 is an electronic version of a mechanical locking system with the functions of a typical access control system. Digital Locking Cylinder 3061 and Digital Half Cylinder 3061 are a main component in this locking and access control system where radio communication replaces the mechanical authentication of a conventional key.

This product description contains the different locking cylinders. Their product designs and functions are very similar in many respects. Any differences between the two products and different versions are pointed out in the corresponding sections.

'Locking cylinder' is taken to mean both 'locking cylinder' and 'half cylinder' in this document unless explicitly stated otherwise or taken out of context.

Data are transmitted for authentication by means of a smart card based on the RFID standards MIFARE© Classic, Mifare© Plus or MIFARE© DESFire.

Refer to the respective manuals for details about smart card products (SC). This description mentions the smart card cylinder, but does not describe it in any detail.

The locking cylinder is supplied in different models and profile standards, such as DIN 18252, EN1303 and EN 15684 (see Section 3.1 HOUSING VERSIONS), so that almost any lock anywhere in the world could be retrofitted with this cylinder. Digital Locking Cylinder 3061 has much to offer – greater security, greater flexibility, lower costs, network-ready without any wiring on the door or frame and less time and effort required for installation.

Digital Locking Cylinder 3061 is powered by two batteries in a redundant system. Cylinders operate as stand-alone components thanks to this integrated power supply, which also means there is no need to wire doors. An intelligent battery warning system also provides greater reliability (Section 7.0 Battery Warnings).

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The SimonsVoss system elements are not configured before delivery from the factory. They are first assigned to a locking system during initial programming (see Section 4.0 PROGRAMMING). This makes it easier for stock keeping and makes product management simpler.

Thanks to modularity, all locking cylinders are seamlessly integrated into the SimonsVoss System 3060 and, like all SimonsVoss components, they can be programmed using the locking plan software. If the system is extended at a later stage, cylinders can be networked without wiring and managed in an online, interconnected system.

The cylinders can be used as an off-line and online model and can be integrated into a virtual network (VN). Refer to the G2 manual for more details.

1.2 USE

In the standard cylinder, the outer knob turns freely while the inside knob mechanism is firmly engaged. Doors can also only be opened or locked on the outside using an authorised medium. Hold the smart card in front of the outer knob or reader knob. If the card is authorised, an audible signal will sound twice, the LED will flash blue twice and the cylinder will engage.

Turn the outer knob in the direction of locking or opening. You have about 5 sec to do so. The engage interval can be configured in the software as required. A single signal will then sound and the outer knob will rotate freely again. Ensure that the locking cylinder's outer knob turns freely again after the knob has engaged.

! If the user has a smart card which is not authorised for use at that particular moment due to the time zone plan, a single audible signal will sound and the LED will flash red once. The cylinder will not engage, the outside cylinder continues to rotate freely and the door cannot be opened.

Opening and locking from the inside (.FD version only)

Doors fitted with the .FD version can also only be opened or locked on the inside using an authorised smart card.

1.3 PREREQUISITES

The following products are required as a minimum to use the cylinder:

- LSM 3.2 or higher
- Smart CD.MP
- Optional: WaveNet Knob (network inside)

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2.0 WARNING

2.1 SAFETY

- Only trained specialists may fit the cylinder or change the battery.
- Do **not** allow the cylinder to come into contact with oil, paint, acids or other aggressive substances.
- Only use batteries which have been approved by SimonsVoss.
- The batteries used in Digital Locking Cylinder 3061 may pose a fire or burn hazard if handled incorrectly. Do not recharge, open, heat or burn these batteries. Do **not** short-circuit.
- Dispose of old and used batteries **in the proper manner** and store them **out of children's reach**.
- **Damage** may be caused to the locking cylinder if you reverse the polarity
- **Always** replace both batteries when changing batteries.
- Do not touch the contacts on the new batteries with your hands when replacing the old ones. Use clean gloves free of fat or grease to handle the battery.
- The cylinder must always be operated with two batteries!
- The FD cylinder must **always** be operated with **four** batteries. Two batteries each are fitted into both the inside and the outer knob in this version
- When replacing the batteries, make sure that the electronics are not subject to mechanical load and are not damaged in any other way.
- When replacing the batteries, make sure that the electronics do not come into contact with moisture.
- Only use the SimonsVoss installation/battery key (Z4.KEY) to replace the battery.
- The .WP version should always be used when the electronic side may come into contact with damp.
- The inside knob of the cylinder (non-electronic side) is not secured into position when supplied to ensure easy installation. You can use the installation tool to fasten the bayonet ring into position once installation in the door is complete.
- Both knobs are locked into position in the FD version, thus allowing you to programme them in the packaging.
- Only use the installation/battery key (Z4.KEY) to disassemble the inside knob in the FD version or replace the battery.
- SimonsVoss Technologies AG accepts no liability for damage caused to doors or components due to incorrect fitting or installation.

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- Access through a door may be blocked due to incorrectly installed or incorrectly programmed cylinders. SimonsVoss AG is not liable for consequences of incorrect installation, such as blocked access to injured persons, physical damage or any other losses.
- The SimonsVoss locking cylinder may only be used for its intended purpose: opening and locking doors. No other use is permitted.
- When used in combination with panic locks, you must ensure that all parts of the locking system are fully functional and the mortise lock panic function is guaranteed to work after installation.
- Modifications or further technical developments cannot be excluded.
- This documentation has been compiled in accordance with the best knowledge available to us. However, errors cannot be ruled out. No liability is accepted in such cases.
- Should there be differences in the content of other language versions of this documentation, the German version applies in cases of doubt.
- As a precaution, people who have electronic medical implants, such as pacemakers or hearing aids, should consult their doctor regarding any possible risks posed by radio component assemblies (13.56 MHz).

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3.0 VERSIONS

3.1 HOUSING VERSIONS

	Comfort cylinder	Anti-panic Cylinder	Half cylinder	FD cylinder
Euro profile cylinder	X	X	X	X
British oval (BO)	X			X
Scandinavian oval (SO)			X	
Scand. round (RS)			X	
Swiss round (SR)	X		X	

No special attention is given to the British oval cylinder in the rest of the manual as it is handled in the same way as the Euro profile cylinder (the only difference is certain versions are not available, as indicated in the table above).

3.2 COMFORT CYLINDER VERSIONS

3.2.1 Comfort version (CO)

The CO version is a locking cylinder with a reader on one side and yes/no authorisation. The inside mechanism is permanently engaged, so that the door can always be opened from the inside without a medium.

3.3 FREELY ROTATING CYLINDER VERSIONS

3.3.1 Freely rotating version (FD)

The FD version is a freely rotating locking cylinder with a reader on both sides and yes/no authorisation. An authorised medium is required to operate the cylinder from either side.

3.3.2 Multi-point version (.MR)

Design similar to standard version but the cam features fixed points where it positions itself when disengaged. This version is particularly suitable for mechanisms such as very smooth-running locks with multi-point locking systems.

Please observe the lock manufacturer's declaration of conformity when combining multi-point locks with a panic function.

Available from an installation length of 35-30 mm.

3.3.3 Weatherproof version (.WP)

In its WP version, the whole locking cylinder is sealed, so that its protection rating increases to IP66. This version is thus suitable if the electronics side is fitted outdoors or the cylinder is fitted outdoors (on an outside gate or garage door, for instance) as the electronics knob can come into contact with moisture.

Available from an installation length of 30-35 mm.

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3.4 HALF CYLINDER VERSIONS

The half cylinder is available from an installation length of 30-10.

3.4.1 Half cylinder version (.HZ)

The HZ version is a cylinder with yes/no authorisation which has been specially developed for components such as key switches.

3.4.2 Detachable knob version (DK)

Design similar to the standard version but the knob can also be detached. The version is ideal for installation behind cover plates on key switches, for example.

3.4.3 Multi-point version (.MR)

Design similar to standard version but the cam features fixed points where it positions itself when disengaged. This version is ideal for components such as key switches which require little force to switch them.

It is also possible to detach the knob in this version and thus install the cylinder behind cover plates.

3.5 ANTI-PANIC CYLINDER VERSIONS (AP2)

The anti-panic cylinder is available from an installation length of 30-30.

A cylinder with an anti-panic function must be fitted to all doors in which the lock's panic function may be adversely affected by the position of the cam (please consult the lock manufacturer's declaration of conformity to check compatibility). This version contains an integrated spring mechanism which places the locking cam in a non-critical position, meaning a panic lock's panic function cannot be blocked.

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3.5.1 General information

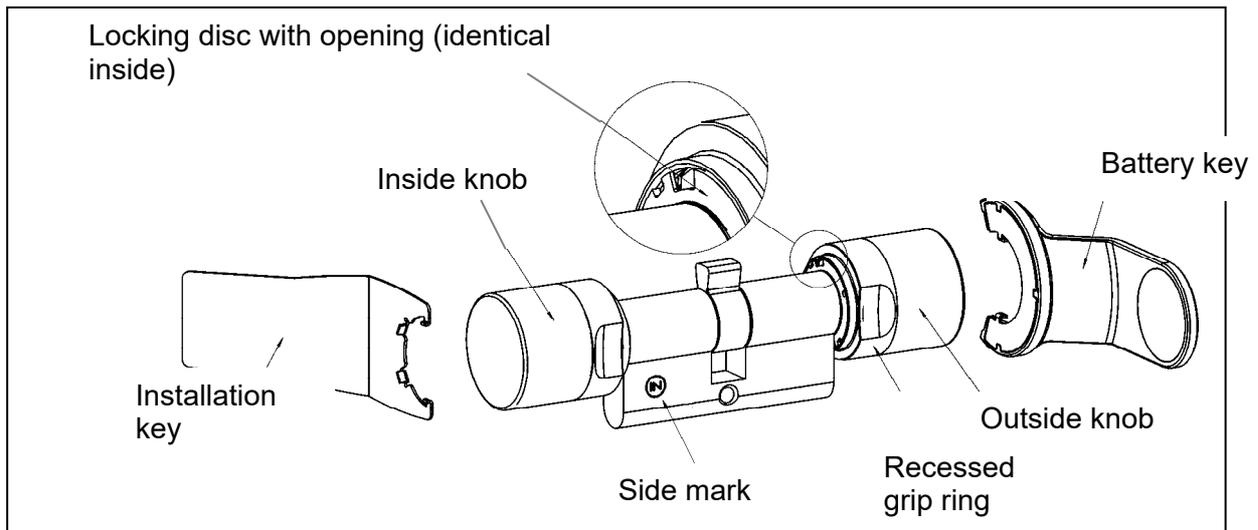


Figure 1: Cylinder Type AP2.FD

The following aspects should be taken into consideration for doors along rescue routes which have been installed after April 1, 2003 (locks as per DIN EN 179 or DIN EN 1125):

- All Series 3061 cylinders may be used for all locks where their approval states that the locking cylinder has no impact on the lock's function.
- Series 3061 cylinder type .AP2 (anti-panic cylinder) must be used for all locks where the locking cylinder cam position affects the lock's function. This must be stated in the lock manufacturer's approval.

Important: Due to the structural design of panic locks, it is **not** permitted to turn the locking cylinder knob to the stop position when the door is locked since this may affect the lock's panic function.

Note: European standard EN 179, Appendix C, stipulates that all components in a lock device must be checked to ensure that they are in satisfactory working order at intervals no greater than one month as part of emergency exit locking device maintenance.

3.5.2 Freely rotating version (.AP2.FD)

This version is freely rotating and features a reader on one side (reader electronics in the outer knob), thus enabling it to be read from the outside using a smart card or smart tag. The inside knob does not feature integrated electronics, but does also engage when a booking is performed on the outside.

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You should also select this version if the knob may block use of the panic bar. Please detach the inside knob and do not use in such cases.

3.5.3 Version with reader on both sides (.AP2.BL)

This version is freely rotating and features a reader on both sides (reader electronics in the outer and inside knob), thus enabling it to be read from the outside and inside using a smart card or smart tag.

3.6 SWISS ROUND COMFORT CYLINDER VERSIONS

It is always possible to detach both knobs in this cylinder version.

3.6.1 Comfort version (CO)

The Swiss Round CO version is a locking cylinder with a reader on one side and yes/no authorisation. The inner side mechanism is permanently engaged, so that the door can always be opened from the inside without a medium.

3.7 SWISS ROUND HALF CYLINDER VERSIONS

The knob is detachable for all versions of this cylinder.

3.7.1 Half cylinder version (.HZ)

The Swiss Round HZ version is a cylinder with yes/no authorisation which has been specially developed for components such as key switches.

3.7.2 Multi-point version (.MR)

Design similar to standard version but the cam features fixed points where it positions itself when disengaged. This version is particularly suitable for very smooth-running locks with multi-point locking systems.

Please observe the lock manufacturer's declaration of conformity when combining multi-point locks with a panic function.

3.8 SCANDINAVIAN OVAL CYLINDER VERSIONS

3.8.1 Standard version (.SO)

The Scandinavian oval HZ version is a cylinder with yes/no authorisation which has been specially developed for Scandinavian locks.

3.8.2 Weatherproof version (.WP)

In its WP version, the whole Scandinavian oval cylinder is sealed, so that it features an enhanced protection rating of IP66. This version is thus suitable when the cylinder is fitted outdoors, on an outside gate or garage door, for instance, i.e. the electronic knob is exposed to rain and other climatic conditions.

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3.9 SCANDINAVIAN ROUND CYLINDER VERSIONS

3.9.1 Half cylinder version (.HZ)

The Scandinavian round HZ version is a cylinder with yes/no authorisation which has been specially developed for Scandinavian locks.

3.9.2 Weatherproof version (.WP)

In its WP version, the whole cylinder is sealed, so that it features an enhanced protection rating of IP66. This version is thus suitable when the cylinder is fitted outdoors, on an outside gate or garage door, for instance, i.e. the electronic knob is exposed to rain and other climatic conditions.

3.10 GENERAL VERSIONS

The versions featured in the section below are available for all the aforementioned versions unless stated otherwise in the previous sections.

3.10.1 ZK version (.ZK)

Design similar to standard version but with access logging and time zone control.

Access event logging The locking cylinder logs up to 3,072 of the most recent access events with the date, time and transponder ID (TID). The data can be read via the network using the programming device.

Time zone control Locking cylinders can be programmed in such a way that authorised transponders are only authorised for access at specific times. There are 100 (+1) time zone groups available per area, such as the outer perimeter, within the different time zone schedules.

3.10.2 WP version (.WP)

The electronic knob is sealed in the WP version of the half, comfort and anti-panic cylinders, thus providing an enhanced protection rating of IP66. This version is thus suitable when the electronics side is fitted outdoors, i.e. the electronic knob is exposed to rain, for example. You must ensure that no water can enter through the door.

3.10.3 Brass version (.MS)

The locking cylinder can be supplied with a stainless steel or brass colour finish.

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3.10.4 WaveNet version (.WN)

The WaveNet version is fitted with a special network cap and electronics (Lock Node Inside). This network cap enables the locking device to be networked directly, thus allowing programming tasks to be managed centrally.

The network function can be retrofit at any time without needing to replace the cylinder.

3.10.5 WaveNetManager version (.WNM)

The WNM version is fitted with a special network cap and electronics (Lock Node Inside). This network cap enables the locking device to be networked directly, thus allowing programming tasks to be managed centrally. The auto-configuration option makes basic network configuration much easier.

3.10.6 Extra length

All double knob cylinders are available with an overall length of up to 140 mm or a maximum of 90 mm on one side. Longer lengths can be supplied on request.

All half cylinders are available with an overall length of up to 100 mm or a maximum of 90 mm on the outside. Longer lengths can be supplied on request.

3.11 EXAMPLES OF LOCKING CYLINDER USE

CO (ZK)	HZ (ZK)	FD (ZK)	AP2 (ZK)
Entrance doors	Garage doors	Passageway doors	Anti-panic doors ^{*1}
Apartment entrance	Key switches	Connecting doors	Escape doors ^{*1}
Office doors			
Connecting doors			

Table 1. Examples of locking cylinder use

*1 See Sections 3.5 and 5.3, industrial standards EN 179 and EN 1125, and the lock manufacturers' data sheets or declarations of conformity for more information.

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4.0 PROGRAMMING

The description is based on LSM Version 3.2.

4.1 PROGRAMMING AND CONFIGURATION

See 'LSM' and 'G2 Protocols' manuals for more information.

You must always select the G2 Protocol generation when programming the lock system.

The screenshot shows a configuration window with the following fields and options:

- Name:** Schließanlage
- Als übergreifende Schließebene nutzen:** keine
- Beschreibung:** (empty text area)
- Protokollgeneration:**
 - G1
 - G2
 - G2+G1
 - G1 Tid automatisch zuweisen
 - Virtuelles Netzwerk

Figure 1: Input mask for new lock system

Select as 'G2 card cylinder' type when configuring locking cylinder.

The screenshot shows a configuration window with the following fields and options:

- Seriennummer:** L-00001
- Auto:**
- Tür:** keine
- Typ:** G2 Kartenzylinder
- Schließungs ID:** 0

Figure 2: Input mask for new lock

The following locking cylinder configuration options are available:

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Figure 3: G2 card cylinder configuration menu

4.1.1 Access control

This is only possible in the .ZK version. The 3,072 most recent smart card or smart tag access events are logged in the locking device with the date, time and transponder ID (TID).

4.1.2 Time zone control

This is only possible in the .ZK version. A time zone plan can be uploaded and smart cards and smart tags are then approved or blocked according to their time zone group. There are up to 100 different time zone groups available.

You can use a time zone plan (time zone group 5) to configure a time-controlled switch-over.

4.1.3 Logging unauthorised attempted access events

As a general rule, only locking events using authorised media are logged. If you also wish to record attempts to open the door with non-authorised media, you need to select this option. Unauthorised attempted access events include:

- Attempted access without authorisation
- Attempted access outside the pre-set time zone
- Attempted access using an expired time stamp (expiry date)

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As a general rule, only media belonging to the locking system are logged, i.e. they must feature the same locking system ID (SID).

4.1.4 Flip flop

When flip flop mode is activated, the locking cylinder changes its status from engaged to disengaged or vice versa each time it is activated using a medium. Pulse mode (default setting) is switched off and the pulse duration no longer plays a role. This mode is recommended if doors are to be used freely without media during the day, for instance.

4.1.5 No audible battery warnings

Select this field if you do not wish the locking cylinder to emit audible battery warnings (in a hospital, for instance).

Important: in such a case, users will not hear any audible feedback signals in locking devices when the battery is failing. If you use this disable function, we recommend reading the cylinder on a regular basis or replacing batteries at specific intervals, with the actual frequency of checks or replacement depending on how often the door is used.

4.1.6 Time switch-over

This is only possible in the .ZK version. A time zone plan needs to be uploaded before activating a time switch-over. This allows the locking cylinder to remain unlocked during the indicated times (in Time Zone Group 5 - Locking). During the day, users can open the door when required by just turning the knob, but they can only open it with an authorised medium at night.

! Warning: The lock does not automatically lock after the knob has disengaged.

If you select the time switch-over, the following options are available to you in the 'Time-controlled switch-over' box:

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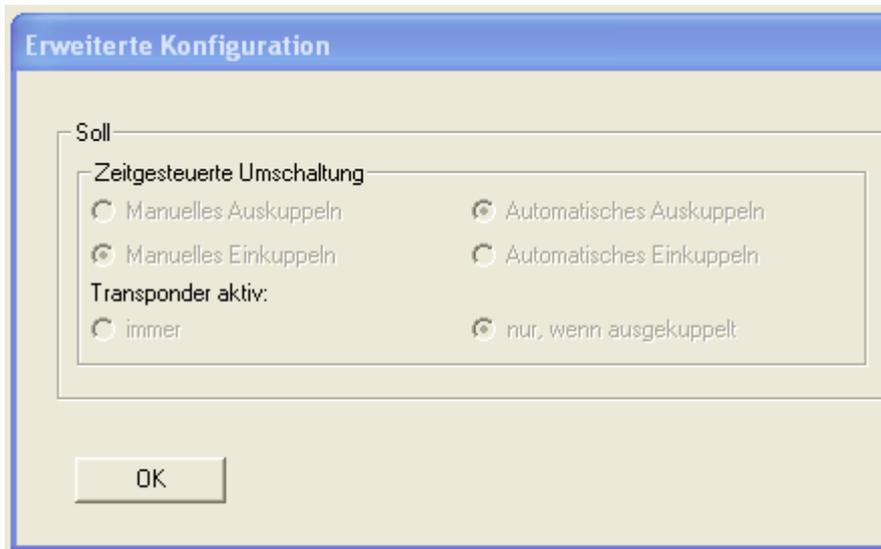


Figure 4: Time switch-over

1. Manual disengage
The locking cylinder does **not** automatically disengage after the pre-set time interval until an authorised medium makes a booking after this point in time.
2. Automatic disengage (default setting)
The locking cylinder disengages automatically after the point in time specified in the time zone plan.
3. Manual engage (default setting)
The locking cylinder does not engage automatically after the pre-set point in time until an authorised medium makes a booking after this time.
4. Automatic engage
As a general rule, the locking cylinder does not automatically engage at the pre-set point in time, but when first activated by an authorised medium after this time. If you specifically want the locking cylinder to engage automatically at the pre-set time, then select this option.
5. Transponder active
Always:
As a general rule, a medium cannot be used during the release interval. However, if you wish the door also to be closed when required (when everybody has left the building, for example), select this option. This allows the time switch-over to be interrupted manually.
Only if disengaged:
Media are not active during the release interval in this operating mode, i.e. the cylinder is engaged.

4.1.7 No audible programming feedback signals

You should check this field if you do not want audible programming feedback signals to be emitted while you are programming a locking cylinder, for example.

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This function is particularly advantageous when programming or importing a readout via the network as the audible signal from the locking cylinder cannot be heard as a general rule due to distance.

4.1.8 Pulse length

The cylinder is pre-set to engage for about 5 seconds. The time that it engages can be variably configured between 1 and 25 seconds. This does **not** result in a shorter battery life.

4.2 SETTINGS

In the case of a G2 cylinder, setting data are saved in the firmware, and are read and entered into the data base during initial programming.

Schließung:	000000K	Tür:	SV_Haupteingang G2												
Produkt:	G2 Kartenzylinder														
Seriennummer:	000000K														
Attribute für Schließzylinder		Daten													
Bestelldaten:	Z4.30-30.MP.G2.ZK	Gerätekategorie	G2 Kartenzylinder												
Außenmaß	<input type="text" value="30"/> mm	PHI	000000K												
Innenmaß	<input type="text" value="30"/> mm	Profile Release	13												
<table border="1"> <thead> <tr> <th></th> <th>Beschreibung</th> </tr> </thead> <tbody> <tr> <td>MP</td> <td>Mifare Pur</td> </tr> <tr> <td>ZK</td> <td>Zutrittskontrolle / Zeitzonesteuerung</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>			Beschreibung	MP	Mifare Pur	ZK	Zutrittskontrolle / Zeitzonesteuerung								
	Beschreibung														
MP	Mifare Pur														
ZK	Zutrittskontrolle / Zeitzonesteuerung														

Figure 5: G2 setting

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4.3 STATUS MESSAGES

The LSM software displays the status featured in the locking cylinder since the last readout or communication between the cylinder and the LSM software via WaveNet. The LSM software is not able to configure these data; it can only read them.

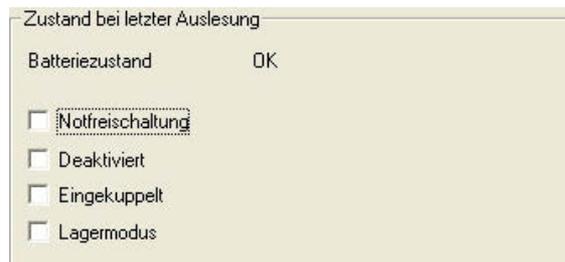


Figure 6: G2 status menu

4.3.1 Battery status

The following statuses are displayed or distinguished here, depending on the current battery capacity:

- OK:
Battery status is OK; cylinder is in normal operating mode (no action required)
- Critical:
Battery Warning Level 1: please replace batteries promptly
- Emergency battery active:
Battery Warning Level 2: please replace batteries immediately
- Freeze mode:
If Battery Warning Level 2 is not heeded, the cylinder automatically switches to freeze mode. Once in this mode, only the system administrator may activate and operate the locking device.

See Section 7.0 BATTERY WARNINGS for more information

4.3.2 Emergency release active

Locking cylinders can be permanently engaged automatically using an automated command from the programming software if a SimonsVoss network has been installed. As a general rule, this signal is emitted by a fire alarm system and can be interpreted by the LSM (if configured accordingly).

4.3.3 Deactivated

The programming software automatically checks this box if the locking cylinder is deactivated via the SimonsVoss network. Deactivation can be disabled again via the network.

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4.3.4 Time-limited opening active

This box is checked in the case of a programmed time switch-over if the cylinder has been engaged by the automatic time switch-over.

4.3.5 Engaged

This box is checked in the case of a programmed time switch-over or flip-flop mode if the locking cylinder is engaged.

4.3.6 Storage mode

This function is not currently in use.

5.0 INSTALLATION

5.1 GENERAL INSTRUCTIONS

Note: Batteries are **already** installed when the cylinder is delivered.

- When installing the digital locking cylinder, ensure that there are no sources of interference in the surrounding area.
- The locking cylinder housing may only project a maximum of 3 mm from the door in outdoor areas; a profile cylinder escutcheon or fitting should be used if necessary.
- You must not strike the knobs when installing the cylinder.
- Both knobs are locked into place with a bayonet mount.
- The digital cylinder is supplied ready for installation.
- Programme the digital cylinder **before** installation.
- The cylinder can be installed or removed using both the installation/battery key and the installation tool (non-electronic knobs only).

5.2 INSTALLING THE COMFORT CYLINDER

1. Carefully remove the cylinder from its packaging.
2. You can identify the inside knob by the black ring between the knob and the profile cylinder housing.
3. Remove the inside knob (non-electronic side) from the housing. It is in place on the cylinder but **not locked** into position.
4. Insert the cylinder through the lock from the outside towards the inside and fasten into the mortise lock with the fastening screw.
Important: tighten the fastening screw firmly by hand. If you tighten the fastening screw too firmly, this may cause the locking cylinder to malfunction in the lock (e.g. it may jam).
5. Replace the inside knob while holding the outer knob firmly and turn it anti-clockwise until the inside knob locks into the indents on the flange.
Important: turning the bayonet disc when not installed may prevent the knob from

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being fastened into position. In such a case, use the installation/battery key to push the disc back into its original position.

6. Place the installation/battery key in such a way that its two teeth engage into the outer knob; if necessary, turn the knob until both teeth lock into the knob. Lock the knob into position again by rotating it 30° in an anti-clockwise direction.

5.3 INSTALLING ANTI-PANIC CYLINDER 2

5.3.1 Anti-Panic Cylinder 2, type: FD (AP2.FD)

1. Carefully remove the cylinder from its packaging.
2. You can identify the electronic knob by the black ring between the knob and the profile cylinder housing.
3. Remove the inside knob to fit the outside one.
4. Remove the inside knob (non-electronic side) from the housing. It is in place on the cylinder but **not locked** into position.
5. Insert the cylinder through the lock from the outside towards the inside and fasten into the mortise lock with the fastening screw.
Important: tighten the fastening screw firmly by hand. If you tighten the fastening screw too firmly, this may cause the locking cylinder to malfunction in the lock (e.g. it may jam).
6. Replace the knob and turn in an anti-clockwise direction until the inside knob grips into the indents in the flange.
Important: turning the bayonet disc when not installed may prevent the knob from being fastened into position. In such a case, use the installation tool to turn the disc to the open position.
7. Place the installation key in such a way that its two teeth engage into the inside knob; if necessary, turn the knob until both teeth lock into the knob. Lock the knob into position again by rotating it 30° in an anti-clockwise direction.

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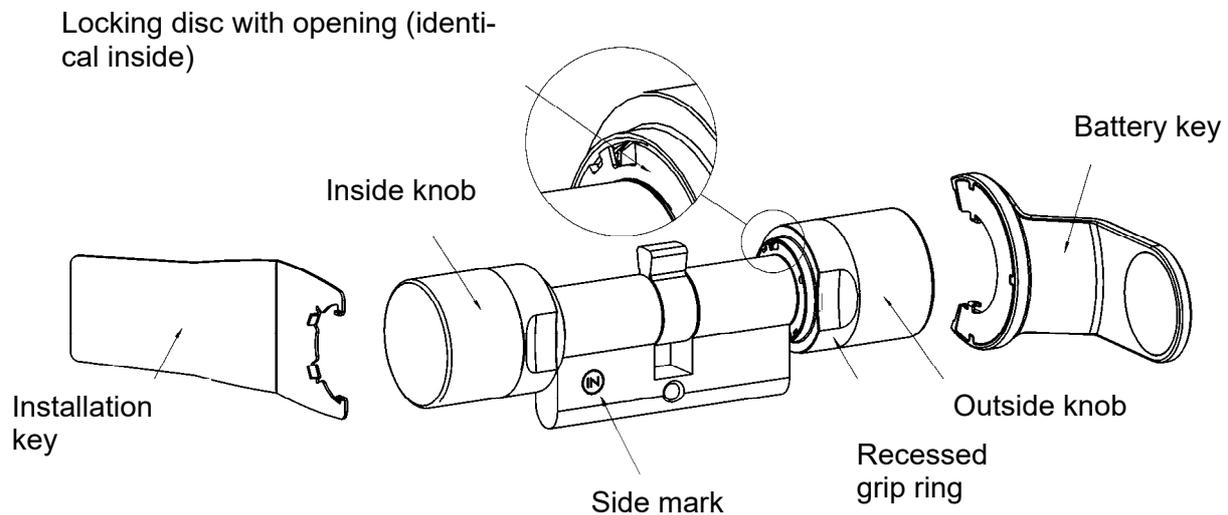


Figure 7: Cylinder Type AP2.FD

5.3.2 Installing Anti-Panic Cylinder 2, type: BL (AP2.BL)

1. Carefully remove the cylinder from its packaging.
2. You can identify the inside knob by a black ring between the knob and the profile cylinder housing.
3. Remove the outer knob to fit the inside one.
4. Place the installation/battery key in such a way that its two teeth lock into the outer knob. If necessary, turn the knob until both teeth engage into the locking disc. Important: the tool must be placed flat on the inside front surface of the knob to ensure that it can engage into the locking disc.
5. Hold the outer knob firmly and carefully turn the installation/battery key about 30° in a clockwise direction (until you hear a click).
6. Remove the installation/battery key and detach the knob. Important: do not rotate the bayonet disc any further once you have removed it as the flange for the battery contact may come loose. In such a case, re-press the flange firmly against the knob and re-close the bayonet disc.
7. Insert the cylinder through the lock from the inside towards the outside and fasten into the mortise lock with the fastening screw. Important: tighten the fastening screw firmly by hand. If you tighten the fastening screw too firmly, this may cause the locking cylinder to malfunction in the lock (e.g. it may jam).
8. Replace the knob and turn in an anti-clockwise direction until the outer knob grips into the indents in the flange.

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Important:

Turning the bayonet disc when it is detached may prevent the knob being fastened; if this is the case, use the installation tool to turn the disc back to its original position (marks).

9. Place the installation key on the outer knob in such a way that the two teeth lock into the outer knob; if necessary, turn the knob until both teeth engage into the locking disc. Lock the knob into position again by rotating it 30° in an anti-clockwise direction.
10. Important: wait a minimum of 30 sec. before operating for the first time.

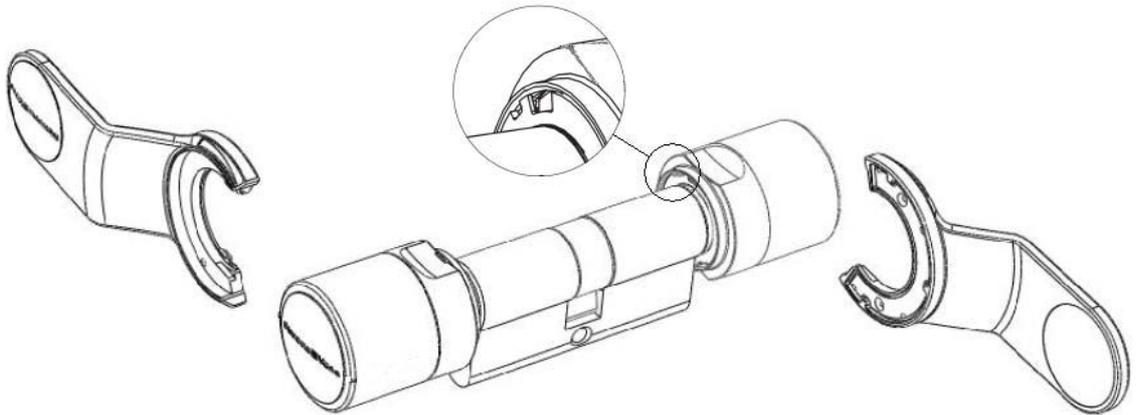


Figure 8: Cylinder type AP2.BL

5.3.3 Functional test for Anti-Panic Cylinder 2

- To check that the anti-panic cylinder (AP2) functions correctly in an anti-panic lock, you must verify that the cam moves easily and that the door opens correctly after installation using the procedure described below.
- Carry out the test in the direction of escape.
- The tests must be repeated whenever the cylinder has been repositioned or the fastening screw turned.
- You will need an authorised smart card or smart tag to carry out the test.
- Draw the deadbolt in before the test.

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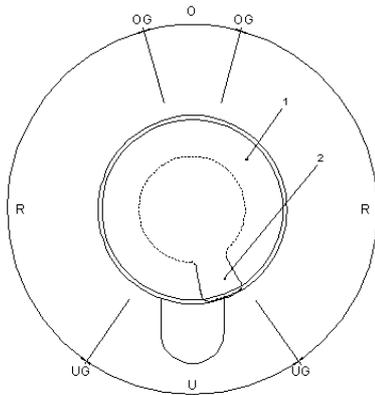


Figure 9: Functional test for Anti-Panic Cylinder

U section: No restore force on the cam
 R section: Restore section - restore force acts towards U section
 O section: Top dead point - deadbolt throw - no restore force on the cam

OG: Top threshold section
 UG: Lower threshold section

1: Knob
 2: Cam position (concealed)

With the cylinder engaged, first turn the knob in the direction of locking as far as the deadbolt throw in the "R" section: You will feel the restoring force. When you release the knob in this position, it must turn back to the 'U' section of its own accord.

1. Engage the lock and check the restore force. To do so, turn the engaged knob in the direction of locking through the "R" section and into the "O" section. The deadbolt extends. There is no restore force in the "O" section.
2. If the knob continues to moves in the same direction and slightly over the threshold between the "O" and "R" section, the deadbolt will fully extend. The restore force must turn the knob automatically from this point as far as the "U" section if it is released.

! If the knob does not automatically rotate as far as the "U" section, either the fastening screw has been tightened too firmly or the lock has been aligned incorrectly. The test is to be repeated after the fault has been eliminated.

! Note: a fastening screw which has been tightened too firmly acts as a brake on the restoring force mechanism.

3. Lock the door and check that the lock functions correctly by pressing the handle or panic bar in the direction of escape. The deadbolt must spring back and it must be possible to open the door.

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- ! If the deadbolt does not draw back when the handle is turned or the handle catches, either the locking cylinder or the lock is incorrectly aligned or the lock is defective. The test is to be repeated after the fault has been eliminated as described above.

If the lock should not function correctly after testing, please contact the SimonsVoss hotline.

Note: European standard EN 179, Appendix C, stipulates that all components in a lock device must be checked to ensure that they are in satisfactory working order at intervals no greater than one month as part of emergency exit locking device maintenance.

5.4 INSTALLING HALF CYLINDER TYPE: DK AND MR

The knob, including the inside tube, can be removed from the cylinder housing to install the DK (detachable knob) and MR (multi-point) versions. The procedure is described below. The following instructions are only necessary in the case of components such as key switches if the half cylinder cannot be installed using the fastening screw.

5.4.1 Disassembly

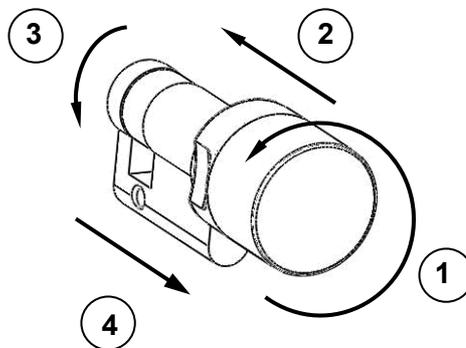


Figure 10: Half Cylinder DK and MR

If you need to disassemble the half cylinder, please proceed as follows:

1. Using a tool such as a screwdriver, grip into the two slots in the plastic disc between the knob and the housing and turn the tool while applying a little pressure. This breaks the disc.
2. Remove the remains of the plastic disc.
3. Engage cylinder using an authorised smart card or smart tag.
4. While the knob is engaged, turn it anti-clockwise until it will turn no more (e.g. towards the lock when installed or holding the cam bit with your hand when not installed; see Step 1 in the diagram).
5. Press knob towards profile cylinder housing until it stops (you will hear it **click**. If necessary, move knob backwards and forwards several times until you hear a click; see Step 2 in the diagram).

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6. If needed, engage the cylinder once more using an authorised smart card or smart tag.
7. While the knob is engaged, turn it anti-clockwise and apply pressure against the stop position (see Step 3 in the diagram).
8. While applying pressure, pull the knob (including inside tube) from the housing (see Step 4 in the diagram).

! You must not strike the knob during installation. Do not allow the cylinder to come into contact with oil, paint or acids.

! Pull knob with inside tube from the housing in a horizontal direction only.

5.4.2 Installation

You will find the required plastic discs in the supplied package.

1. Remove the metal discs on the inside tube and push a plastic disc onto it instead.
2. Push the removed metal discs onto the inside tube, so that a plastic disc and a varying number of metal discs, depending on the half cylinder type, are on the inner tube.
3. Push the inner tube knob into the housing until it stops.
4. Engage cylinder using an authorised smart card or smart tag.
5. While the knob is engaged, press it gently against the housing while turning clockwise at the same time until the inside tube clicks into place in the housing.

Tip: check that the tube has locked into position correctly by pulling the knob while turning it backwards and forwards.

When installing, ensure that only one plastic disc and the same number of metal discs are on the inner tube as when you took it apart. The plastic disc must be placed directly on the knob.

! Check that it has locked into position correctly by pulling the knob gently while turning it backwards and forwards.

! You will find the required plastic discs in the supplied package.

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5.4.3 Functional test

1. Engage half cylinder using a smart card or smart tag and turn the knob in the locking and opening direction with the door open. The knob must be able to rotate easily when you do so.
2. Close the door and repeat the process. If the half cylinder should be stiff, you need to align the door or modify the strike plate.

As a general rule, you should also do this when installing the cylinder in a key switch, for example.

5.5 INSTALLING A FREELY ROTATING CYLINDER

1. Carefully remove the cylinder from its packaging.
2. You can identify the inside knob by a black ring between the knob and the profile cylinder housing.
3. Remove the outer knob to fit the inside one.
4. Place the installation/battery key in such a way that its two teeth lock into the outer knob. If necessary, turn the knob until both teeth engage into the locking disc.
Important: the installation/battery key must be placed flat on the inside front surface of the knob to ensure that it can engage into the locking disc.
5. Hold the outer knob firmly and carefully turn the installation tool about 30° in a clockwise direction until it will go no further and you hear a click.
6. Remove the tool and detach the knob.
Important: do not rotate the bayonet disc any further once you have removed it as the flange for the battery contact may come lose.
7. Insert the cylinder through the lock from the inside towards the outside and fasten into the mortise lock with the fastening screw.
Important: tighten the fastening screw firmly by hand. If you tighten the fastening screw too firmly, this may cause the locking cylinder to malfunction in the lock (e.g. it may jam).
8. Replace the knob and turn in an anti-clockwise direction until the outer knob grips into the indents in the flange.

Important:

Turning the bayonet disc when it is detached may prevent the knob being fastened; if this is the case, use the installation tool to turn the disc back to its original position (marks).

Do not rotate the bayonet disc any further in a clockwise direction as the battery contact flange may come loose. In such a case, re-press the flange firmly against the knob and re-close the bayonet disc.

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9. Place the installation/battery key in such a way that its two teeth engage into the outer knob; if necessary, turn the knob until both teeth lock into the knob. Press the knob against the door and lock the knob again by turning it about 30° in an anti-clockwise direction (until you hear a click).
10. Important: wait a minimum of 30 sec. before operating for the first time.

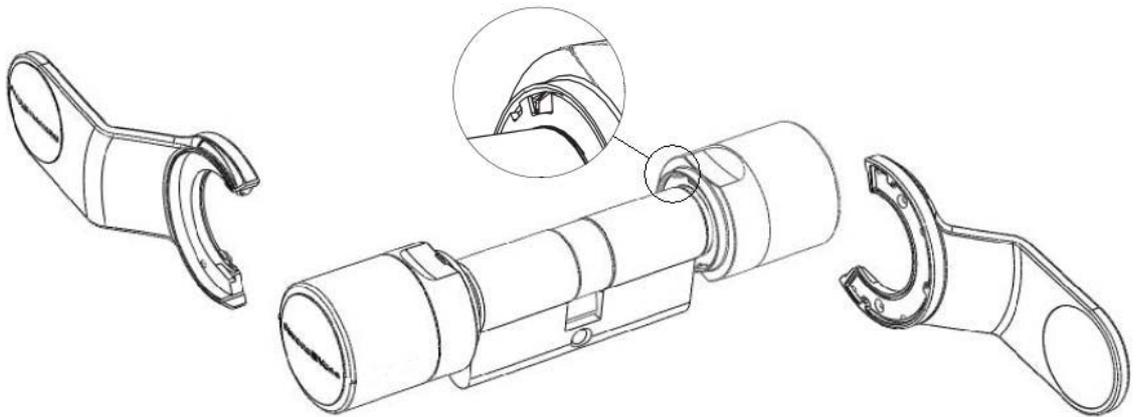


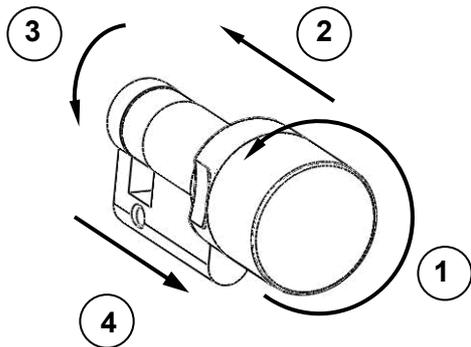
Figure 11: Cylinder type FD

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5.6 INSTALLING A SWISS ROUND CYLINDER

Both cylinder knobs and a fitting need to be removed from doors when installing a Swiss round cylinder.

The inside knob is removed and re-fitted in the same way as Half Cylinder DK / MR; see Section 5.4 INSTALLING HALF CYLINDER Type: DK and MR.



(Diagram shown as example for explanation purposes only)

Figure 12: Disassembling Swiss round cylinder

1. Carefully remove the cylinder from its packaging.
2. Using a tool such as a screwdriver, grip into the two slots in the plastic disc between the outer knob (electronics side) and the housing and turn the tool while applying a little pressure. This breaks the disc.
3. Remove the remains of the plastic disc.
4. Engage cylinder using an authorised smart card or smart tag.
5. While the outer knob is engaged, turn it anti-clockwise until it will turn no more (e.g. towards the lock when installed or holding the cam bit with your hand when not installed; see Step 1 in the diagram).
6. Press knob towards housing until it stops (you will hear a **click**. If necessary, move knob backwards and forwards several times until you hear a click; see Step 2 in the diagram).
7. If needed, engage the cylinder once more using an authorised smart card or smart tag.
8. While the outer knob is engaged, turn it anti-clockwise and apply pressure against the stop position (see Step 3 in the diagram).
9. While applying pressure, pull the outer knob (including inside tube) from the housing (see Step 4 in the diagram).
10. Remove the door fittings if necessary.
11. Loosen headless screw on inside knob with an Allen key; do not undo the screw completely.
12. Unscrew inside knob in an anti-clockwise direction
13. Push the cylinder through the lock and fasten in the mortise lock with the fastening screw.
14. Mount the fittings again.
15. Replace inside knob again and tighten in a clockwise direction until you can turn no further.

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16. Re-fasten headless screw until you can turn no further.
17. External side: remove the metal discs on the inside tube and push a plastic disc onto it instead. You will find the required plastic discs in the supplied package.
18. Push the removed metal discs onto the inside tube, so that a plastic disc and a varying number of metal discs, depending on the cylinder type, are on the inner tube.
19. Carefully push inner tube with the outer knob through the fitting and into the housing from the outside until it stops.
20. Engage cylinder using an authorised smart card or smart tag.
21. While the outer knob is engaged, press it gently against the housing while turning clockwise at the same time until the inside tube clicks into place in the housing.

Tip: check that the tube has locked into position correctly by pulling the knob while turning it backwards and forwards.

When installing, ensure that only one plastic disc and the same number of metal discs are on the inner tube as when you took it apart. The plastic disc must be placed directly on the knob.

5.7 INSTALLING A SWISS ROUND HALF CYLINDER

These installation tasks are only necessary if you cannot fit the cylinder by fastening it with the screw.

1. Carefully remove the cylinder from its packaging.
2. Using a tool such as a screwdriver, grip into the two slots in the plastic disc between the knob and the housing and turn the tool while applying a little pressure. This breaks the disc.
3. Remove the remains of the plastic disc.
4. Engage cylinder using an authorised smart card or smart tag.
5. While the outer knob is engaged, turn it anti-clockwise until it will turn no more (e.g. towards the lock when installed or holding the cam bit with your hand when not installed; see Step 1 in the diagram).
6. Press knob towards housing until it stops (you will hear a **click**. If necessary, move knob backwards and forwards several times until you hear a click; see Step 2 in the diagram).
7. If needed, engage the cylinder once more using an authorised smart card or smart tag.
8. While the outer knob is engaged, turn it anti-clockwise and apply pressure against the stop position (see Step 3 in the diagram).
9. While applying pressure, pull the outer knob (including inside tube) from the housing (see Step 4 in the diagram).
10. Remove the door fittings if necessary.
11. Push the cylinder through the lock and fasten in the mortise lock with the fastening screw.
12. Mount the fittings again.
13. Remove the metal discs on the inside tube and push a plastic disc onto it instead. You will find the required plastic discs in the supplied package.

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14. Push the removed metal discs onto the inside tube, so that a plastic disc and a varying number of metal discs, depending on the cylinder type, are on the inner tube.
15. Carefully push inner tube with the knob through the fitting and into the housing from the outside until it stops.
16. Engage cylinder using an authorised smart card or smart tag.
17. While the knob is engaged, press it gently against the housing while turning clockwise at the same time until the inside tube clicks into place in the housing.

Tip: check that the tube has locked into position correctly by pulling the knob while turning it backwards and forwards.

When installing, ensure that only one plastic disc and the same number of metal discs are on the inner tube as when you took it apart. The plastic disc must be placed directly on the knob.

5.8 INSTALLING THE SCANDINAVIAN OVAL CYLINDER

1. Push the outside version of the cylinder through the door from the outside, so that the adapter grips into the lock.
2. Place the installation key on the inside version of the cylinder in such a way that its two teeth engage into the inside knob; if necessary, turn the knob until both teeth lock into the locking disc.
Important: the tool must be placed flat on the inside front surface of the knob to ensure that the tool can lock into the locking disc.
3. Hold the knob firmly and carefully turn the tool about 30° in a clockwise direction (until you hear a click). Remove the knob.
4. Push the inside version of the cylinder through the door from the inside, so that the adapter grips into the lock.
5. Push two M5 screws through the designated holes in the inside version from the inside and through the lock and fasten firmly to the outside version.
6. Replace the inside cylinder knob and turn it anti-clockwise until the inside knob locks into the indents on the flange.
Important: turning the bayonet disc when not installed may prevent the knob from being fastened into position. In such a case, push the disc back into the original position using the installation tool.
7. Place the installation key in such a way that the two teeth on the installation tool engage into the inside knob; if necessary, turn the knob until both teeth lock into the locking disc. Lock the knob into position again by rotating it 30° in an anti-clockwise direction.

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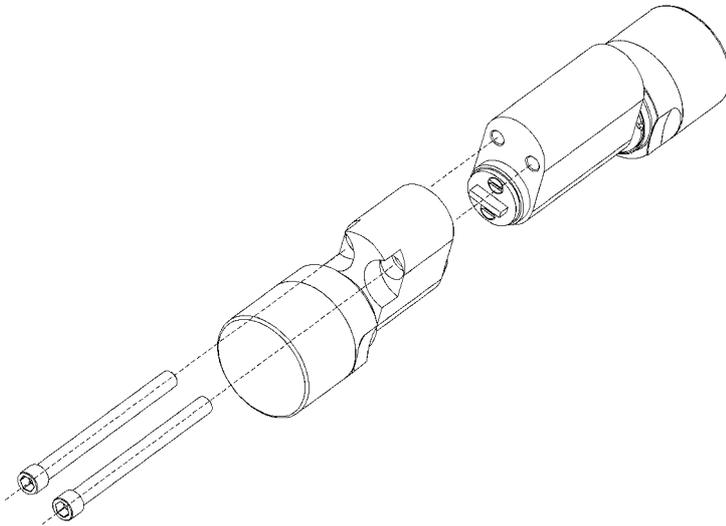


Figure 13: Installing the Scandinavian oval cylinder

5.9 INSTALLING THE SCANDINAVIAN ROUND CYLINDER

1. Push the outside version of the cylinder through the door from the outside, so that the adapter grips into the lock.
2. Place the installation key on the inside version of the cylinder in such a way that its two teeth engage into the inside knob; if necessary, turn the knob until both teeth lock into the locking disc.
Important: the tool must be placed flat on the inside front surface of the knob to ensure that the tool can lock into the locking disc.
3. Hold the knob firmly and carefully turn the tool about 30° in a clockwise direction (until you hear a click). Remove the knob.
4. Push the inside version of the cylinder through the door from the inside, so that the adapter grips into the lock.
5. Push four M5 screws through the designated holes in the inside version from the inside and through the lock and fasten firmly to the outside version.
6. Replace the inside cylinder knob and turn it anti-clockwise until the inside knob locks into the indents on the flange.
Important: turning the bayonet disc when not installed may prevent the knob from being fastened into position. In such a case, push the disc back into the original position using the installation tool.
7. Place the installation key in such a way that the two teeth on the installation tool engage into the inside knob; if necessary, turn the knob until both teeth lock into the locking disc. Lock the knob into position again by rotating it 30° in an anti-clockwise direction.

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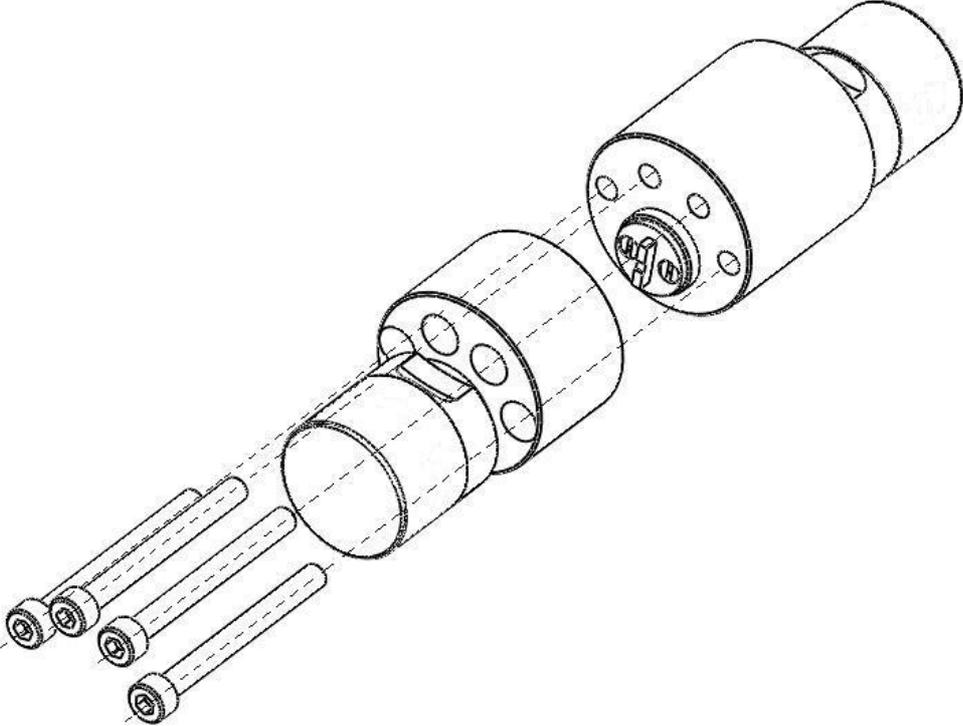


Figure 14: Installing the Scandinavian round cylinder

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6.0 AUDIBLE SIGNALS / BATTERY WARNINGS

6.1 AUDIBLE SIGNALS

Signal type	Meaning	Action required
2 short audible signals while LED flashes blue twice briefly before engaging and a short audible signal after disengaging:	Normal activation	None
1 short audible signal + LED flashes red briefly twice	Not authorised	None
<i>Battery Warning Level 1:</i> 8 short audible signals + LED flashes red briefly 8x before engaging:	Batteries will soon be empty.	Replace batteries in the cylinder
<i>Battery Warning Level 2:</i> 8 short audible signals for 30 seconds + LED flashes red briefly twice with a one-second break between each signal.	Emergency battery warning: batteries are almost completely empty.	Replace batteries in the cylinder <u>immediately</u>.

Table 1: Audible signals

6.2 BATTERY WARNINGS

	Warning Level 1:	Warning Level 2:	Freeze mode
<u>Cylinder SC:</u>	LED also flashes red 8 times briefly before engaging	LED flashes red briefly twice for 30 seconds before engaging	LED flashes red once and blue once
	<i>Up to 300 access events or up to 30 days</i>	<i>Up to 200 access events or up to 20 days</i>	<i>Battery change: activate with battery replacement card</i>

Table 2: Battery warning levels

Once Battery Warning Level 2 has been emitted for the first time, the cylinder can be opened a maximum of 200 more times. After reaching this number of opening operations or after about 20 days, the cylinder automatically switches to freeze mode.

Only the lock system administrator can gain access in freeze mode. User smart cards and smart tags are no longer valid (more information in Section 7.0, FREEZE MODE).

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7.0 FREEZE MODE

In freeze mode, an audible signal (alert signal) will sound if an attempt is made to open a cylinder using an authorised smart card or smart tag and the cylinder will not engage. Once in this mode, only the locking system administrator may gain access; follow the procedure below in such a case:

- Programme the G2 battery replacement card.
- Deactivate freeze mode using the G2 battery replacement card.
Important: this permanently eliminates freeze mode. You **must** change the batteries immediately afterwards to ensure **no further battery warnings** are emitted.
- Use an authorised smart card or smart tag to engage the locking cylinder and open the door.
- Replace the batteries
- Use an authorised smart card or smart tag to open the locking cylinder to test that it functions perfectly.

! Important:
Only use the G2 battery replacement card to deactivate freeze mode and then immediately replace the cylinder batteries. Misuse may lead to complete battery discharge and, consequently, a possible complete failure of the cylinder.

8.0 BATTERY REPLACEMENT

You can identify the inside knob by the black ring between the knob and the profile cylinder housing.

1. Place the battery/installation key on the electronic knob in such a way that its two teeth lock into the openings in the locking disc; if necessary, turn the knob until both teeth engage into the knob.
Important: the installation/battery key must be placed flat on the inside front surface of the recessed grip ring to ensure that it can engage into the locking disc.
2. Hold the electronic knob firmly and carefully turn the installation/battery key about 30° in a clockwise direction (until you hear a click).
3. Remove battery/installation key from the knob.
4. Push recessed grip ring backwards towards the door, so that it comes away from the knob.
5. Hold recessed grip ring and turn knob anti-clockwise about 10° and remove.
6. Carefully press the battery holder together where you see three small arrows, so that the antenna bracket disengages.
7. Carefully fold the antenna bracket out; do not apply any mechanical force to it.
8. Optional: if a network card has been fitted, carefully remove it from the holder.
9. Remove the top battery from the holder.
10. Turn the knob 180°, so that you can remove the second battery. The battery will then automatically drop from the holder.

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11. Insert the new batteries into the holder at the same time with the positive poles next to each other; change the batteries as quickly as possible. Use clean gloves free of fat or grease to handle new batteries.
12. Optional: if there is a network card as described in Step 8, you should now re-insert it.
13. Carefully lock the antenna bracket back into place. In doing so, ensure that both sides lock firmly into place.

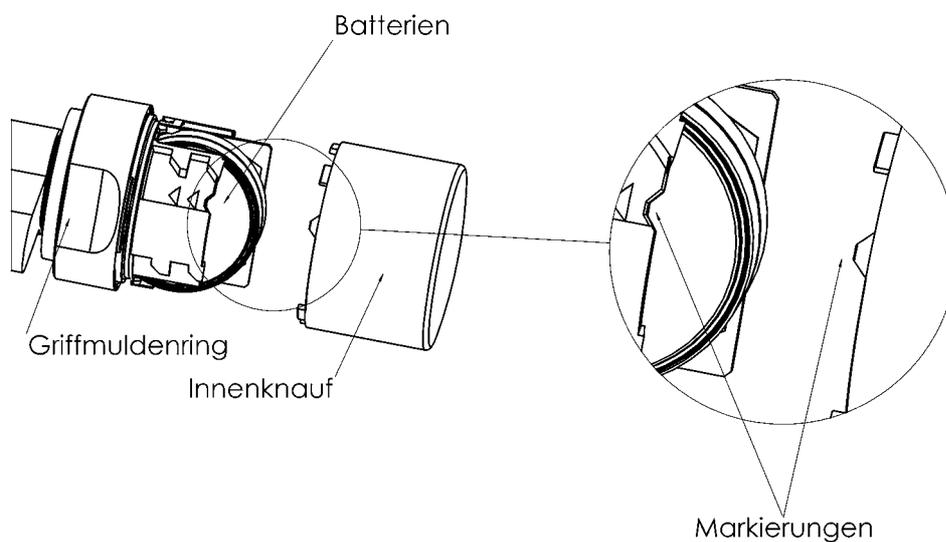


Figure 15: Battery replacement

14. Replace the knob cover (align the three triangle marks as in the diagram) and fasten by turning in a clockwise direction (about 10°).
15. Push recessed grip ring back onto the knob, so that the knob and ring close together in a flush fit.
16. Place the battery/installation key on the knob in such a way that its two teeth lock into the openings in the locking disc; if necessary, turn the knob until both teeth engage into the knob.
17. Lock the knob into place again by turning it about 30° in an anti-clockwise direction (until you hear a click).

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9.0 BATTERY REPLACEMENT IN .FD AND AP2.BL

Two additional batteries are also fitted into the outer knob in cylinder versions FD and AP2.BL. Battery replacement in the inside knob is described in 8.0 BATTERY REPLACEMENT. Always replace both batteries when changing batteries (inside and outer knob). Proceed as follows:

1. Place the battery/installation key on the outer knob in such a way that its two teeth lock into the openings in the locking disc; if necessary, turn the knob until both teeth engage into the knob.
Important: the installation/battery key must be placed flat on the inside front surface of the recessed grip ring to ensure that it can engage into the locking disc.
2. Hold the outer knob firmly and carefully turn the battery/installation key about 30° in a clockwise direction (until you hear a click).
3. Remove battery/installation key from the knob.
4. Remove the outer knob completely.
5. Hold the knob firmly and place the battery/installation key in such a way that the two teeth engage into the openings in the locking disc and carefully turn the battery/installation key a further 5° in a clockwise direction.
6. Remove battery/installation key from the knob.
7. Carefully remove flange from the knob.
8. Carefully remove both batteries from the knob.
9. Insert the new batteries into the knob at the same time with the positive poles next to each other; change the batteries as quickly as possible. You must wear clean gloves free of fat or grease to handle new batteries. Ensure you don't damage the ribbon cable when doing so.
10. Replace the flange, so that it is flush when it closes into place.
11. Hold the knob firmly and place the battery/installation key in such a way that the two teeth engage into the openings in the locking disc and carefully turn the battery/installation key 5° in an anti-clockwise direction. The two marks and the LED in the grip elements are now aligned at the same height.
12. Re-inset the knob into the cylinder and turn while applying a little pressure until the knob re-engages into the cylinder
13. Place the battery/installation key on the inside knob in such a way that its teeth engage into the openings in the locking disc; if necessary, turn the knob until the teeth lock into the knob.
14. Close the knob again by turning it about 30° in an anti-clockwise direction (until you hear a click). Dispose of old batteries immediately, store them out of children's reach, do not open and do not throw into a fire.

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10.0 ACCESSORIES

10.1 TOOL

In addition to the installation tool, an installation/battery key is also included in the supply package. You can use this tool to install or remove outside knobs and replace batteries. The installation/battery key is required for both knobs in cylinder versions FD and .AP2.BL.

10.2 BATTERY SET

A new set of batteries can be ordered, which contains ten CR2450 batteries. Only ever use batteries approved by SimonsVoss.

10.3 KNOBS

The following knobs are available for the non-electronic side of the SC cylinder (Euro profile cylinder and British oval):

- Z4.KNAUF1
- Z4.KNAUF2
- Z4.KNAUF4

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11.0 DATA SHEET

Profile cylinder	Basic length	Outside 30 mm, inside 30 mm (WP 35 mm) Installation lengths in 5 mm increments up to 140 mm overall length (max. 90mm on one side), special lengths on request
Batteries	Type Manufacturer Quantity Battery life	CR 2450 3V Sony, Panasonic, Varta 2 batteries 4 batteries (.FD / .AP2.BL) up to 65,000 operations or 6 years on standby (without VN and ac- cess lists on the smart card)
Ambient conditions	Operating temperature Storage temperature Protection rating	-25 °C to +65 °C) -40 °C to +70 °C (temporary) 0 °C to +30 °C (long-term) IP54 (when installed) WP versions: IP66 knob FD.WP versions: IP66
Features		up to 3,000 access events can be stored (ZK) Network-ready directly with integrated Lock Node (WN/WNM) Lock Node can be retrofitted Time zone groups: 100 Max. number of users per cylinder: up to 64,000 (depending on the card configuration) Different permanent/open modes
Knobs	Material Colour Diameter Length	Knob: Plastic Grip: Zinc die cast Plated in stainless steel look 31 mm about 39 mm (from front surface of profile)
MS cylinder knobs	Material Colour Diameter Length	Knob: Plastic Grip: Zinc die cast Plated in brass look 31 mm about 39 mm (from front surface of profile)

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12.0 Data sheet for half cylinders

Profile cylinder - Euro profile cylinder - Swiss Round	Basic length	Outside 30 mm, inside 10 mm Installation lengths in 5 mm increments Overall length up to 100 mm (outside max. 90 mm). Greater lengths on request.
Profile cylinder - Scandinavian oval - Scandinavian Round	Basic length	Outside 41.3 mm Installation lengths in 5 mm increments Up to 86.3 mm overall length Special lengths on request
Batteries	Type Manufacturer Quantity Voltage Battery life	CR 2450 Sony, Panasonic, Varta 2 batteries 3 volts up to 65,000 operations or 6 years on standby (without VN and access lists on the smart card)
Ambient conditions	Operating Temperature Storage temperature Protection rating	-25 °C to +65 °C -40 °C to +70 °C (short term) 0 °C to +30 °C (long-term) IP54 (when installed) WP versions: IP66 (knob) SO/RS.WP versions: IP66
Features (WN/WNM)		Up to 3,000 access events can be stored (ZK) Network-ready directly with integrated Lock Node Lock Node can be retrofitted Time zone groups: 100 Max. number of users per cylinder: up to 64,000 (depending on the card configuration) Different permanent/open modes
Knobs	Material Colour Diameter Length	Plastic Plated in stainless steel look 31 mm about 39 mm (from front surface of profile)

CYLINDER SC MANUAL

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