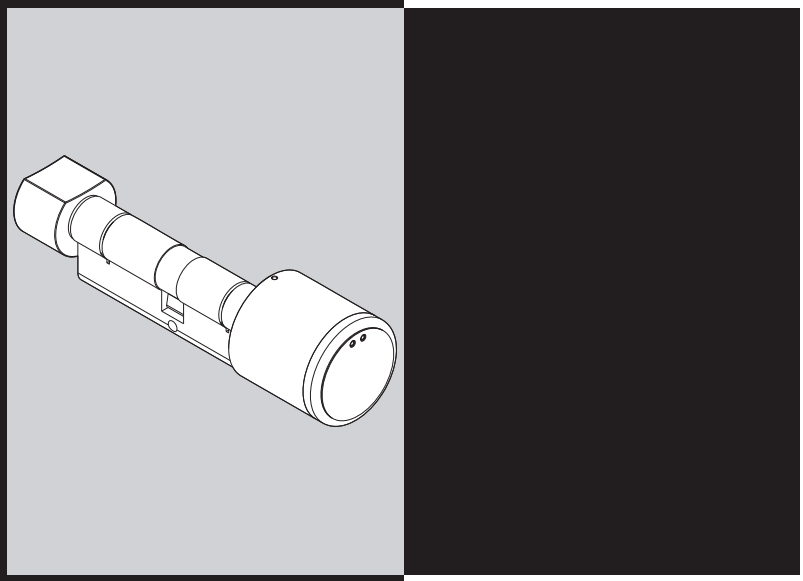


DORMA

Installation Manual
XS-Cylinder offline and
XS-Cylinder online

Contents

The information provided in these installation instructions may be modified without prior notification.
All previous versions cease to be valid with the publication of these instructions.
The information in these installation instructions has been compiled in good faith and based on the best knowledge available to us. DORMA accepts no liability for the correctness and completeness of the details provided.
In particular, DORMA cannot accept liability for any consequential damages due to incorrect or incomplete information.
The recommendations for installation made in this manual are based on the assumption that prevailing basic conditions are favourable. DORMA accepts no liability for the perfect functioning of XS Cylinder in external, non system environments.
Despite every effort to prevent mistakes, they can never be completely avoided. Therefore, we would be grateful to receive notification of any errors or omissions.
DORMA accepts no liability for the information included in this document being free of protected third party rights. DORMA does not provide any licences for its own or third party patents or other protected rights with this document.

DORMA Time + Access GmbH
Postfach 21 01 85
53156 Bonn
http://www.dorma time access.de
E Mail info@dorma time access.de

Z. Nr.: 1054G 00 B5 EN
Stand: 06/12 V1.00

1.1 Correct Use

The XS Cylinder is a locking unit comprising an XS Read module, a profile cylinder adapter and either a mechanical knob or a second XS Read module.
Only components approved by DORMA may be used.
The XS Cylinder is designed for installation in DIN locks with Euro profile cylinders. Check each individual combination in advance before using with self locking anti panic locks.
The XS Cylinder may only be used for locking and unlocking doors. The XS Cylinder is designed for interior applications.
The XS Cylinder is designed to be used in place of a standard lock cylinder and is not intended as a replacement for a knob or handle.

Use for any other purpose than that described is not permit ted.

Mandatory legal regulations must be observed and may mean that use on doors that are subject to special requirements is not permitted.

The **XS-Cylinder online** is categorised as class 2 radio equipment according to R&TTE directive 1999/5/EC.
The frequency bands are not harmonised.
In some countries, use may not be permitted or may be subject to restrictions.
Cf. Technical Data.

1.2 Further Sources of Information

Further documents are available on request.

User Manual XS-Manager
Describes the configuration of the XS Components.

Planner Manual
Examples of cross system solutions.

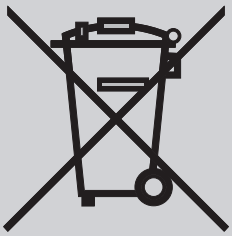
XS-Radio Network Service Manual
This manual describes the planning, installation, operation and troubleshooting/diagnostics for an XS Radio network and its components.

1.3 Disposal

The device was manufactured using recyclable materials and components.
When disposing of the device and the packaging, please ensure environmentally friendly recycling.

Information for EU Countries
European Directive 2002/96 EC applies to this device.
This means that this product must not be disposed of with normal household waste. We, the manufacturer, will take back our electric and electronic products and dispose of them for you free of charge. Correct disposal of your old equipment protects people and the environment from possible harmful consequences.

Batteries
This device requires lithium batteries for operation.
According to European directive 2006/66/EC, disposable and rechargeable batteries must not be disposed of with normal household waste.
Please check your local regulations for separate disposal of batteries. Correct disposal of batteries protects people and the environment from possible harmful consequences.



1.4 Description of Functions

XS Cylinder is built into door locks in place of a mechanical locking cylinder. The cylinder is powered by batteries.
XS Cylinder reads ID card data using a contactless process. XS Cylinder authorisations are checked in different ways, depending on the type of operating mode. The different operating modes are as follows:

Offline:
In offline mode, an internal database is used to check authorisations.

Access on Card (AoC):
Access permissions are saved onto the ID card. The ID card user retrieves the current permissions from a central, online 'AoC station' and these permissions are then transmitted to the ID card.

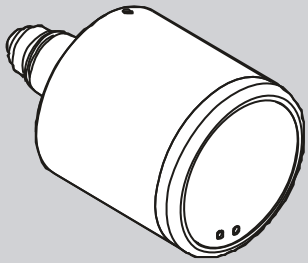
Online:
In online mode, the XS Cylinder is connected to an access control system via the XS Traffic Point radio node. Permissions are checked by the access control system.

Data reconciliation for offline mode and initialisation is performed via an IrDA interface. Communication with this interface is via a PDA or netbook/notebook.
The XS Manager communication software installed there allows data to be exchanged between the XS Cylinder and the access control software on the PC (host).

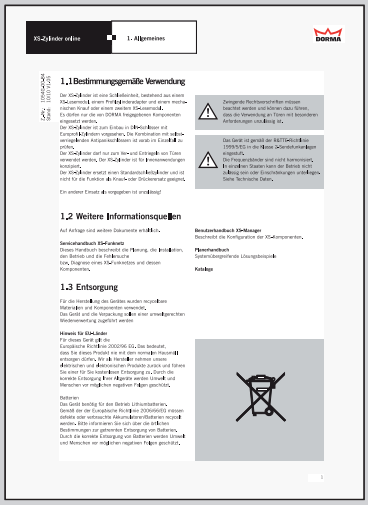
1.5 Supply Package

A 1x XS Read module (XS CM)
B 1x quick guide

A



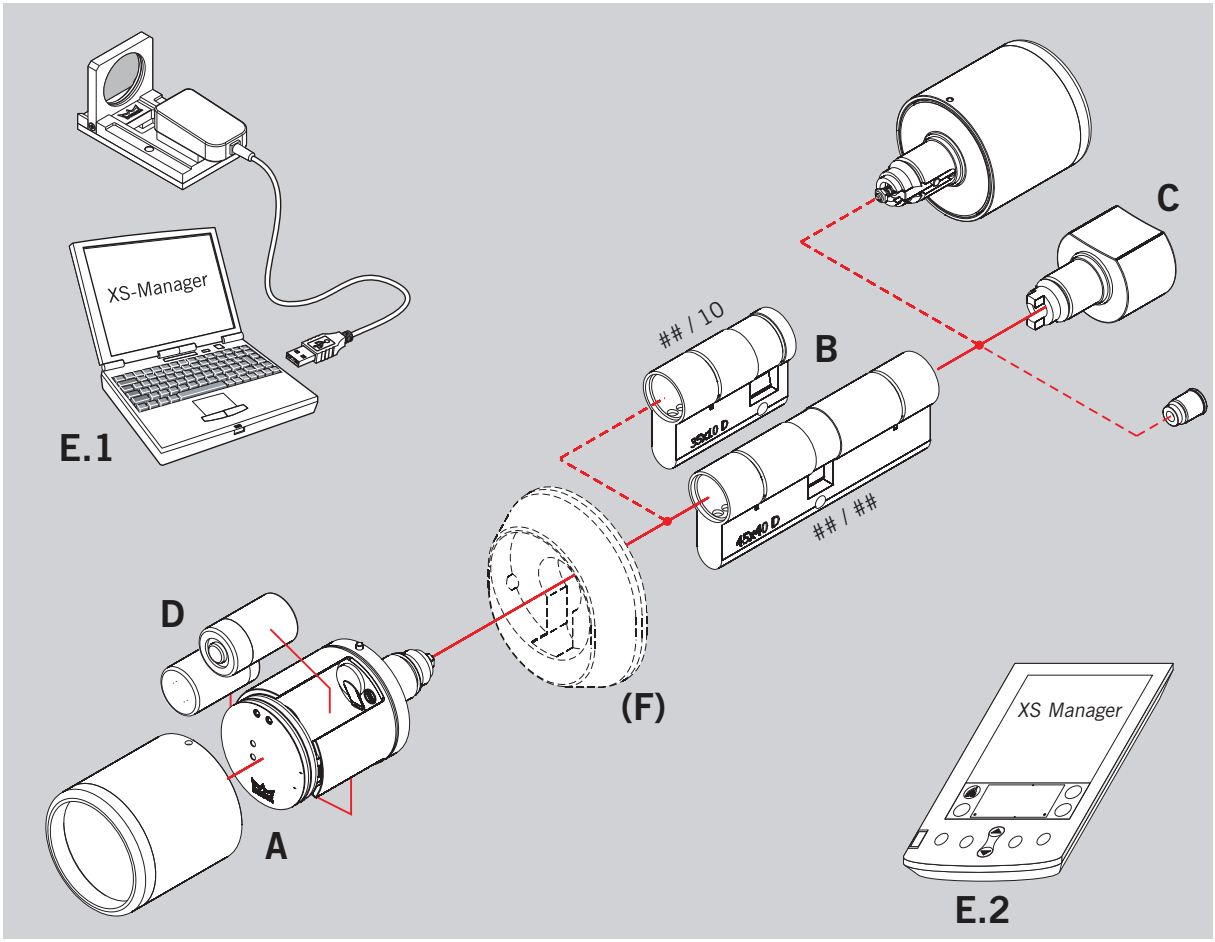
B



1.6 Required for installation

A 1x XS Read module (XS CM)
B 1x XS Cylinder adapter
C 1x Knob or 2. XS Read module (XS CM)
or XS SP
D 1x Battery set, order no. 19154000

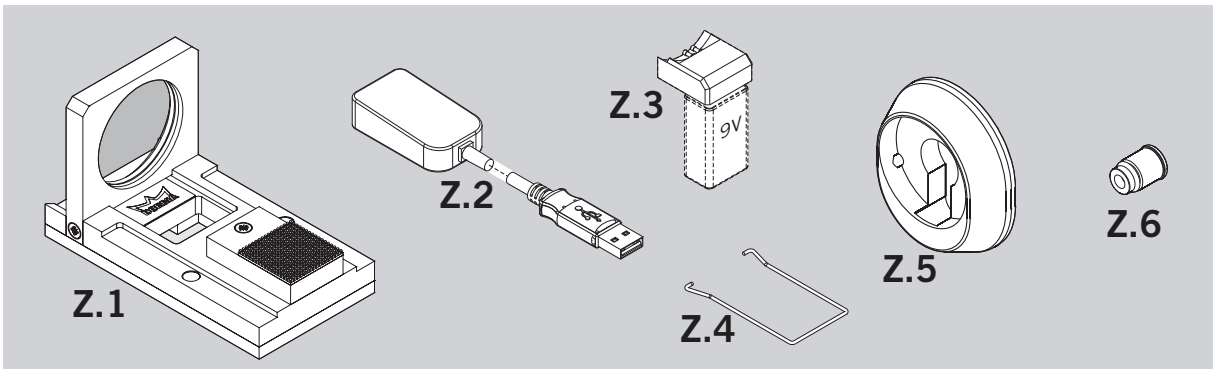
E.1 Notebook / Netbook with XS-Manager
IrDA / USB adapter
XS Service Adapter Premium
or
E.2 PDA with XS Manager
(F) optionaly protect rosette



1.7 Accessories

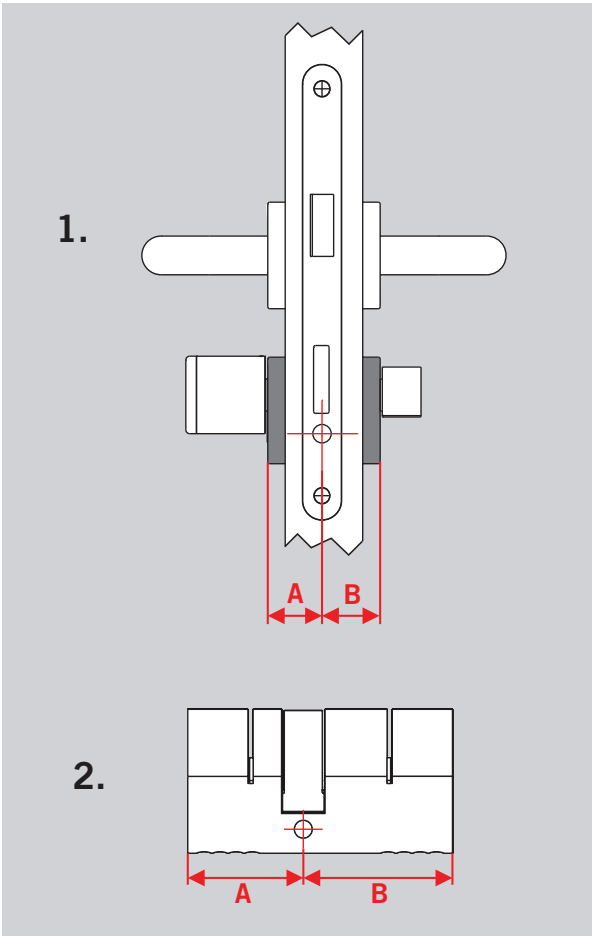
Z.1 XS Serviceadapter Premium, order no. 19190006
Z.2 IrDA / USB adapter, order no. 19190007
Z.3 XS CPT, order no. 19190005
with 9V battery L6R, order no. 1900001712124

Z.4 XS CBC, order no. 19154001
Z.5 XS P, order no. 19190004
Z.6 XS SP, order no. 19180004



2.1 Preparation

1. Measure the thickness of the door, including fittings or rosettes.
2. Ensure that the basic length of XS Cylinder adapter is matched to the measured thickness.

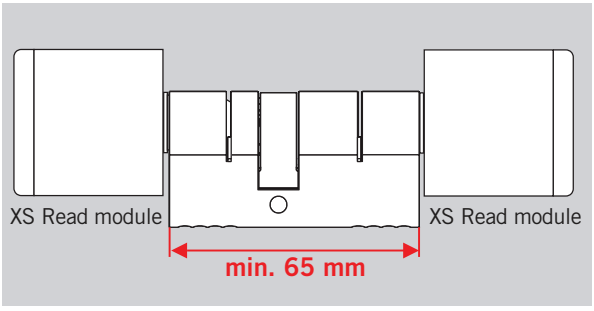


The cylinder adapter must be selected so that itis flush with the fittings. If the cylinder adapter selected is too short, then the assem bled cylinder system will not operate smoothly.

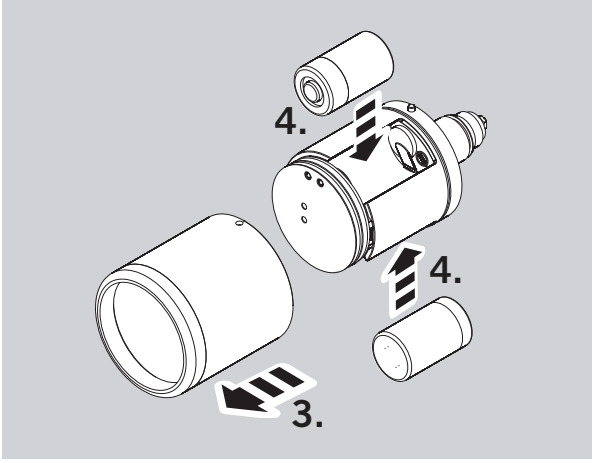
The cylinder adapter must be at least 65mm long if two read moduls are being used simultaneously.

The XS Cylinder must not be lubricated with grease, graphite or oils containing graphite or silicon.
See section on Lubrication.

3. pull off the cover of the XS Read module
4. Insert the batteries.
   Check the polarity of the batteries.
   The XS Read module will flash briefly once red and green if the batteries are inserted correctly.



The XS Reader module casing is loosely attached when the reader is delivered.
It must be unlocked at a later stage using XS Manager and can be removed with the battery replacement tool (XS CBC).



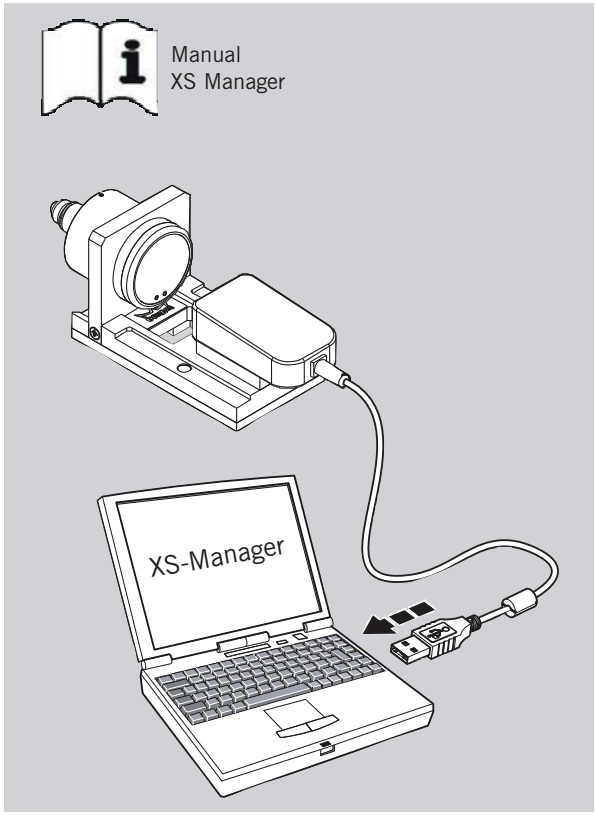
Only ever use unused, brand new batteries!

In order to ensure that the system operates without problems we recommend that only batteries of type **Duracell Ultra CR2 3V** be used.

Rechargeable batteries and disposable batteries with differing voltage must not be used.

2.2 Initialisation

In order to fully install the XS Cylinder and put it into operation, a PDA or netbook/notebook is required with IrDA interface and XS Manager installed.
Before a XS Read module can be put into operation, it must be configured and initialised.
In order to do this, the door must be created in the host system and the data synchronised with XS Manager. During initialisation, the XS Read module is assigned a unique identification number. For XS Cylinder online, the radio parmeters are also set.
Once the XS Read module has been initialised, it must be loaded with the access data (e.g. ID card numbers of autho rised ID cards) from the host system.
The XS Read module is then ready for use.

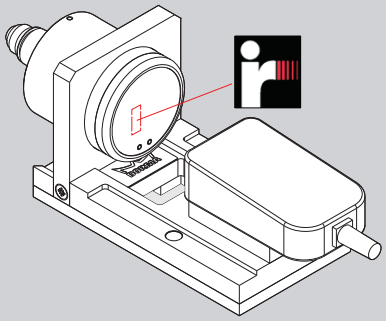


Functions
The XS Manager is required for functions such as:
Declutching
The XS Cylinder turns freely, no locking procedures possible
Removal
The XS Read module can be removed from the cylinder adapter
Changing batteries
The cover of the XS Read module can be removed
Transfer of access permission data

2.3 Setting Up the IrDA Connection

The XS Manager application must be started first.
Then the XS Read module must be activated (see Chapter 2.4).
The green LED will flash briefly to show that the system has been activated.
The red LED will then flash when communication is established via the IrDA interface.
It may take a few seconds for the two systems to recognise each other.

Manual
XS Manager



2.4 Activating the XS-Read module

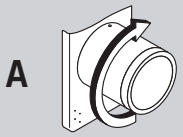
In the absence of activity, the XS Read module goes into standby mode automatically. The time can be configured.
For the IrDA connection and locking procedures, the XS Read module must be activated in one of the following ways:

A) Turning
If the XS Read module is installed on the cylinder adapter, the XS Read module can be activated by turning.

Activation by turning may only be possible to a limited extent if the unit is fitted to a steel door.

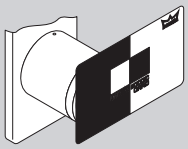
B) Automatic / with card or transponder tag

C) Magnet

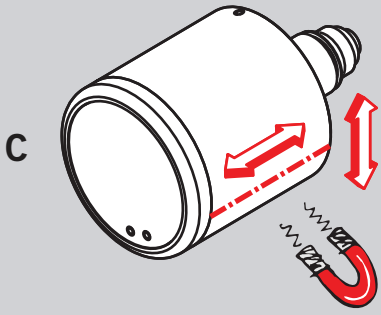


A

approx. 1.5 turns

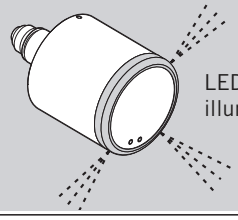


B



C

2.5 Visible and acoustic signals



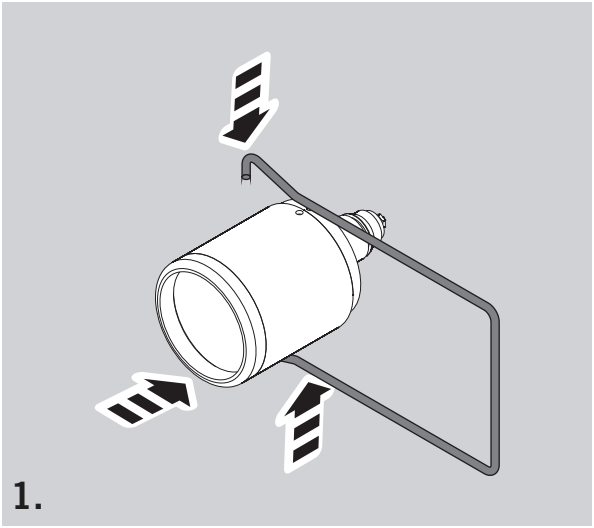
Function	Signals		Note
	visible (LED)	acoustic	
Positive booking	1x G		access granted
Positive booking in Battery Warning Level 1	5x R	2x Biep	access granted
Positive booking in Battery Warning Level 2	5x R	2x Biep	access delayed by 3s
Positive booking in Battery Warning Level 3	5x R	2x Biep	access delayed by 6s
Negative booking	1x R	1x Biep	access denied
Office unlocked	2x G		access permanently granted
IrDA-Connection	R		Connection established with the XS Manager
Motor jammed	3s R		
Tampering attempt	G ↔ R		
After changing Batteries	G → R		
Reading modul is activated	1x G		Activation by turning or via magnet
End of activation	1x R		

= flashes = lights approx. 1s

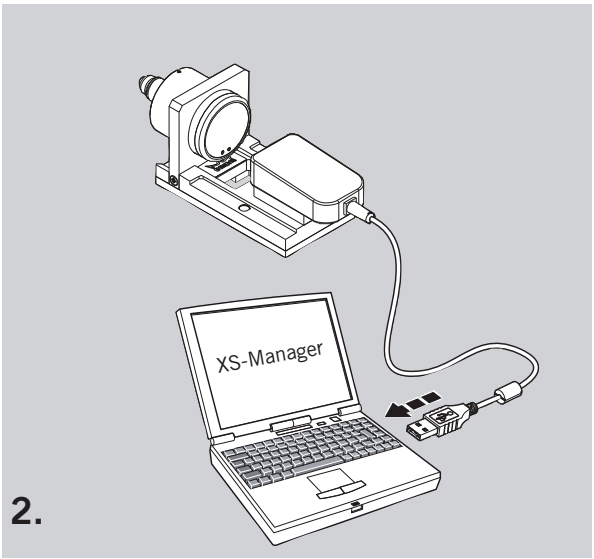
R = red
G =green

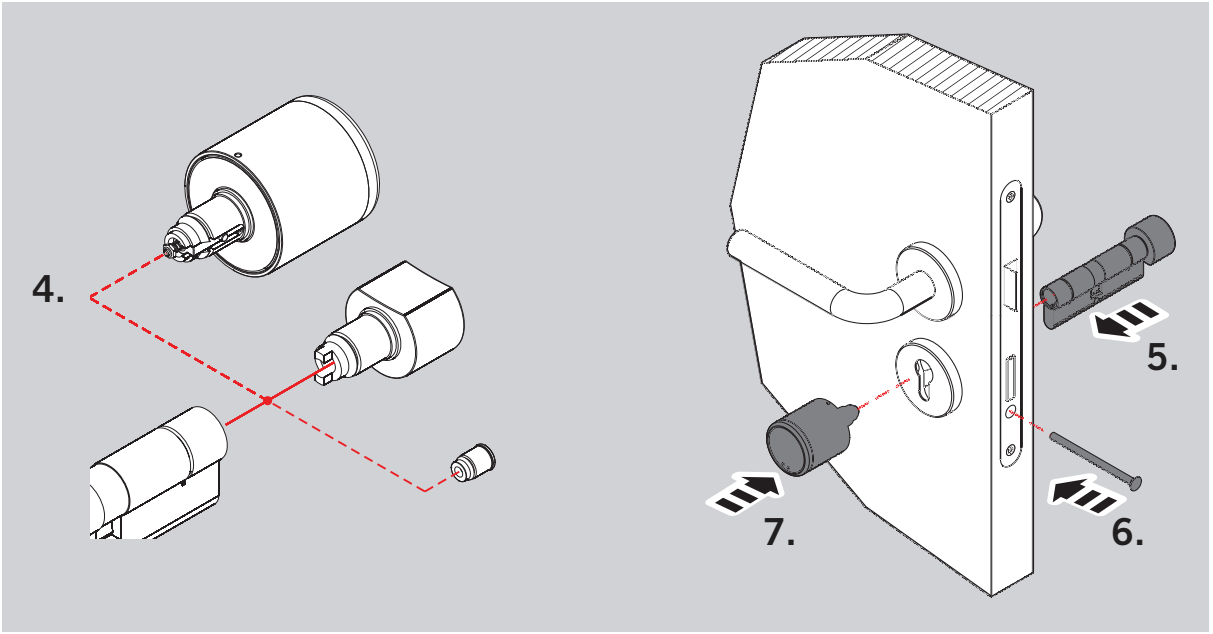
2.6 Final installation

1. Use the XS CBC to press in the stop pins. Place the casing over the XS Reader module so that the stop pins latch into position correctly.
2. Establish contact between XS Manager and the XS Reader module
   → Lock stop pins into position.
   → Activate disengage mode.
3. Remove any existing locking cylinder (no diagram)
4. Place the XS knob, a second XS Reader module or an XS blind plug (XS SP) on the XS Cylinder adapter
5. Carefully insert the XS Cylinder through the escutcheon and into the lock
6. Fasten the XS Cylinder adapter with fixing screw
7. Place the XS Reader module on the XS Cylinder adapter



The cylinder must not be exposed to any clamping forces, e.g. as could be caused by overtightening a forend screw.
To ensure the correct functioning and longevity of the XS Cylinder, it is essential that the door be set up in accordance with DIN require ments and that it closes properly.





3.1 Batteries

3.1.1 Changing the batteries

1. Establish a connection between the XS Manager and the XS Read module
   → Activate Battery Change mode
   The cover of the XS Read module is unlock.
2. Using the battery changing tool, carefully press in the stop pins and at the same time pull off the cover of the XS Read module.

This procedure must be completed within a maximum time of 30 s, because, for security reasons, the XS Cylinder will re engage the stop pins after this time.

3. Remove “dead” Batteries.

The low battery detection system only works correctly if the XS Manager is held towards the battery removal position, the manufacturer‘s recommended batteries are used, and the XS Read module is not fitted with new batteries for at least 30 s after removing the old ones. After changing batteries it is necessary to finalise the process by selecting Declutch mode using the XS Manager.

4. Wait 30 seconds.
5. Insert new batteries.
   Check the polarity of the batteries.
   The XS Read module will flash briefly once red and green if the batteries are inserted correctly.
6. Replace the cover. The stop pins must engage properly.
7. Establish a connection between the XS Manager and the XS Read module
   → Activate Declutch mode.
   → Lock the stop pins

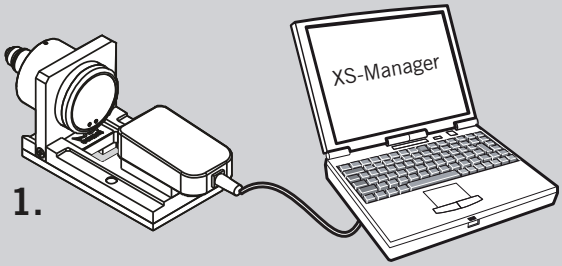
Only ever use unused, brand new batteries!

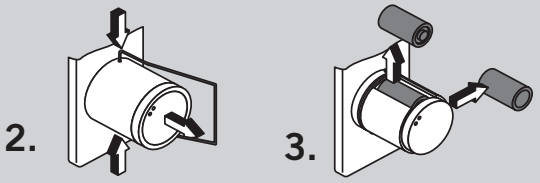
In order to ensure that the system operates without problems we recommend that only batteries of type Duracell Ultra CR2 3V be used.

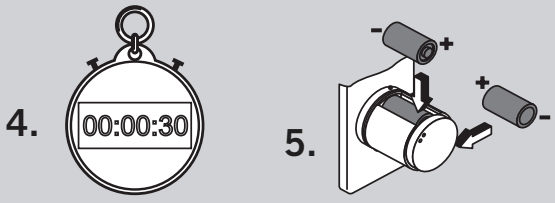
Rechargeable batteries and disposable batteries with differing voltage must not be used.

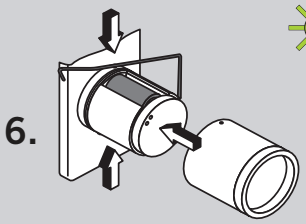
We recommend lubricating the XS Cylinder adapter when you replace the battery.
See section on Care..

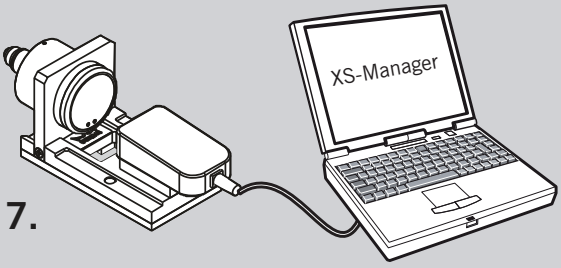
Manual
XS Manager











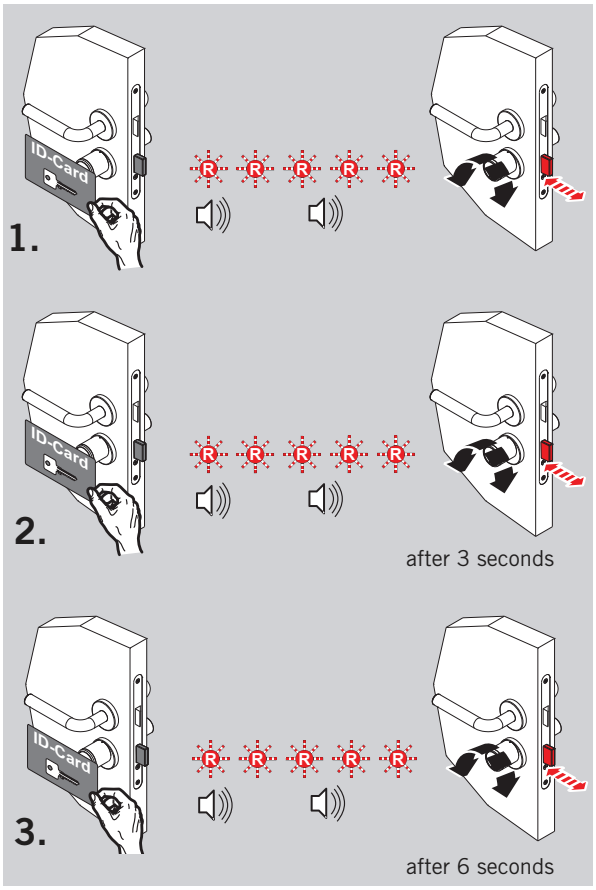
3.1.2 Battery warnings

The XS Read module will provide indication that the batteries are nearly „empty“ by a series of varying signals (flash red five times and, possibly, delayed unlocking of the door).
There are three stages to this process:

Stage 1:
When a badge is held in front of the XS Read module, the lock permission is issued as programmed.
The LED will also flash five times when the door is unlocked.

Stage 2:
If the battery capacity is further reduced, then there will also be a delay of 3 seconds before the XS Read module unlocks the door. The signal is the same as stage 1

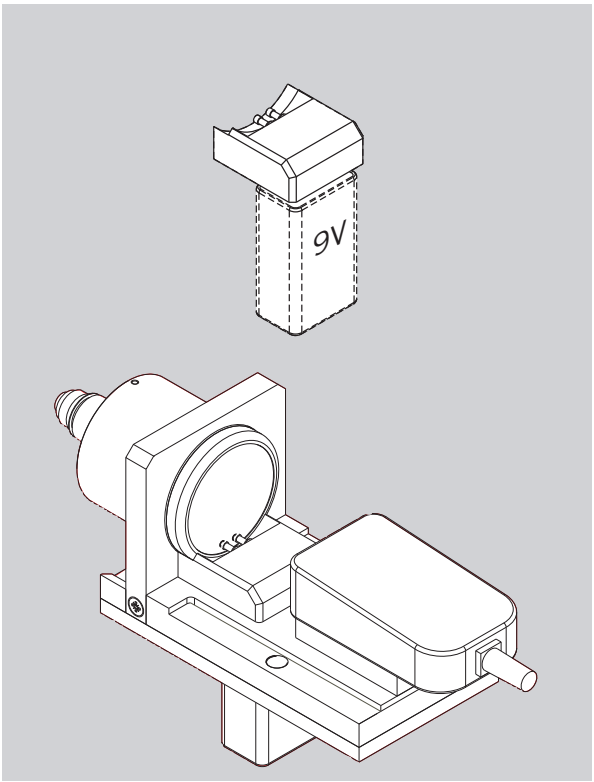
Stage 3:
If the battery capacity is further reduced, then there will also be a delay of 6 seconds before the XS Read module unlocks the door. The signal is the same as stage 1.



Batteries must be replaced immediately with new ones as soon as any of the battery warnings occurs.

3.1.3 Emergency power supply

If the batteries are very low or completely discharged, then it will be necessary to supply power externally using an XS emergency power supply (XS CPT). Press the contact pins on the XS emergency power supply onto the gold contacts on the XS Read module.
The XS Manager can then be moved into the battery changing position.



3.2 Fitting and removal

3.6.1 Removal

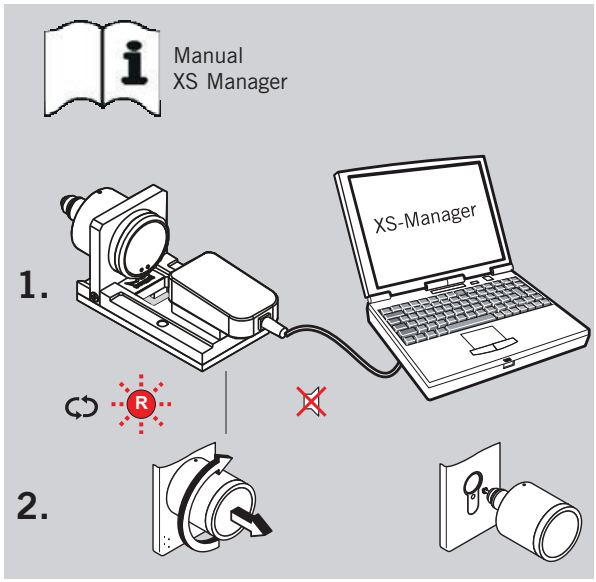
1. Establish a connection between the XS Manager and the XS Read module.
   → Activate Assembly/Disassembly mode

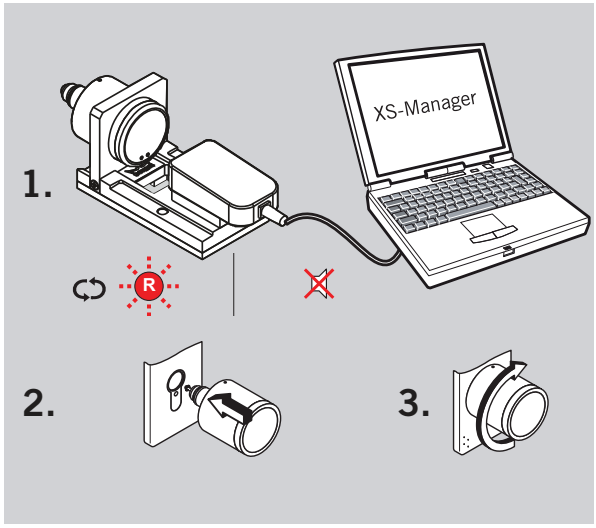
2. Turn the XS Read module, pulling gently, until it can be removed.

3.6.2 Fitting

1. Establish a connection between the XS Manager and the XS Read module.
   → Activate Declutch mode

2. Insert the XS Read module
3. Turn the XS Read module, pressing gently, until the XS Read module stops.





3.3 Cleaning

If the XS Reader module is dirty, you can clean it with a soft, damp cloth.

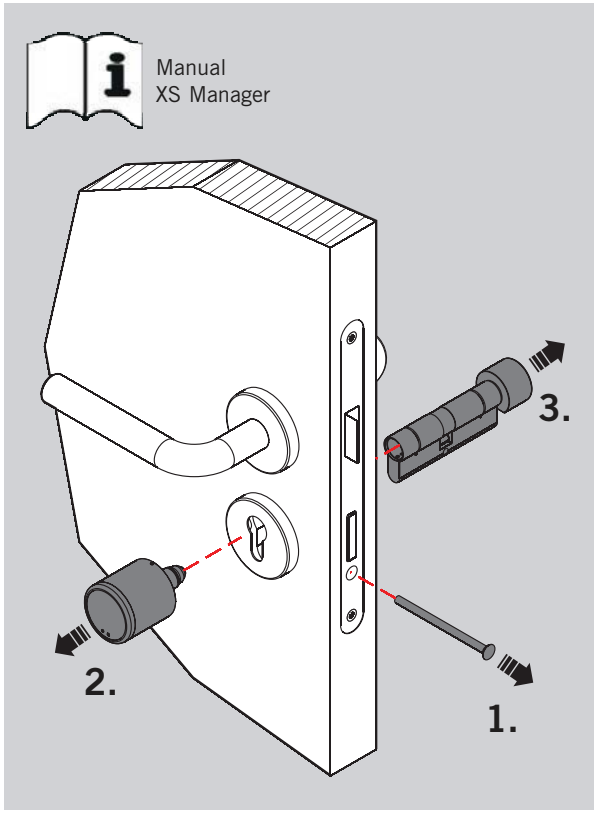
Do not use an aggressive cleaning agent as you may damage the surface of the XS Reader module.

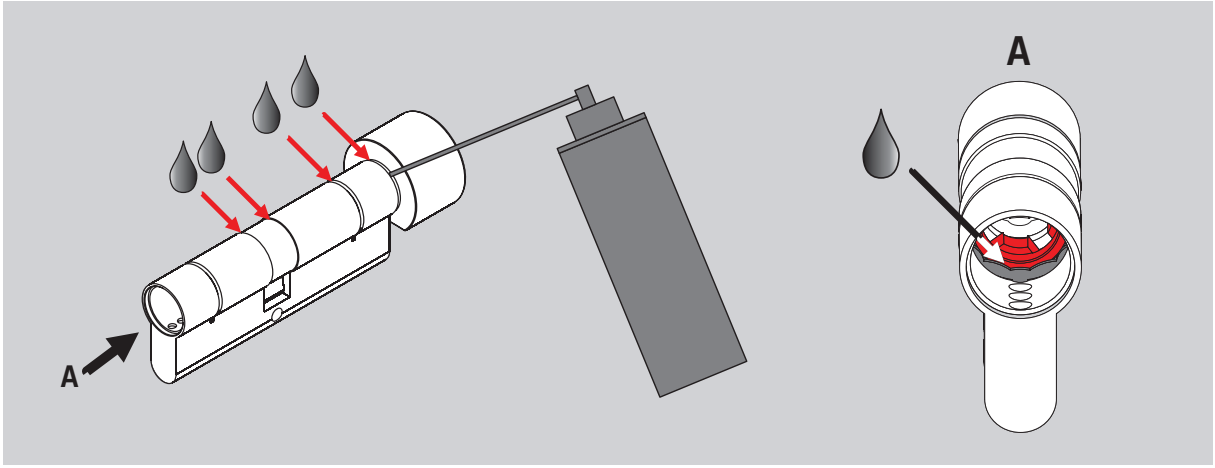
3.4 Lubrication

The XS Cylinder adapter should be treated with a special lubricant on a regular basis (e.g. AEMA Cleaner GL5, Interflon Fin Super).
You will need to remove the XS Cylinder adapter before lubrication.
It is best to apply lubricant whenever you replace the battery to save time and effort on maintenance.
Remove any excess lubricant by wiping with a cloth.

Do not lubricate with grease, graphite or oils containing graphite or silicon.

Follow the lubricant manufacturer's safety instructions and directions for use.





Use with badges with lock permissions
(cards or transponder attachments).

4.1 Short-term locking

1.Hold the badge in front of the XS Read module.
Green flashing and the sound of the motor indicate that:
the XS Read module is in Opening mode.
2. Turn the XS Read module and carry out the locking procedure. The XS Read module will go into standby 5 seconds (factory default) after operating the XS Read module. This means that the XS Read module can be turned freely. Allow at least 6 seconds between consecutive bookings.

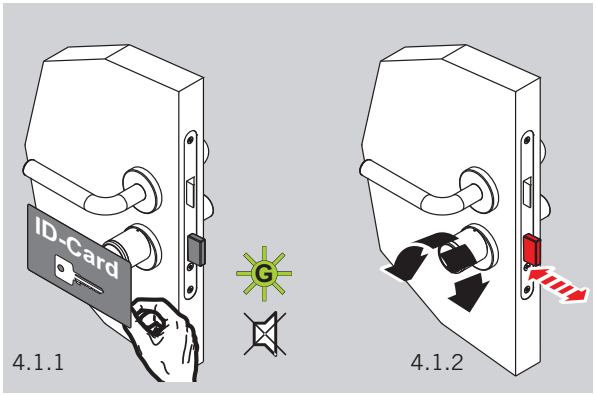
4.2 Permanent locking - office release

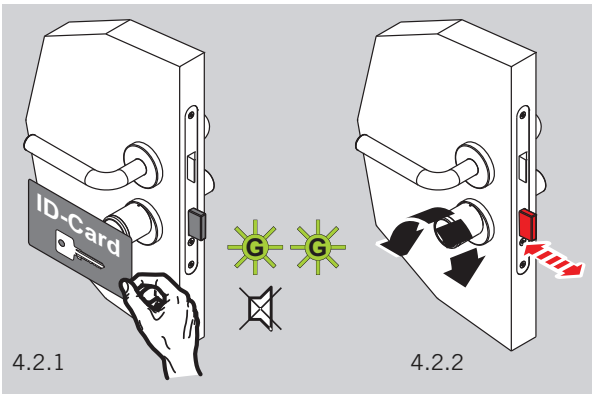
1. Hold the badge in front of the XS Read module for 3 s. Two green flashes and the sound of the motor indicate that: the lock cylinder is permanently released.
2. Turn the XS Read module and carry out the locking procedure.

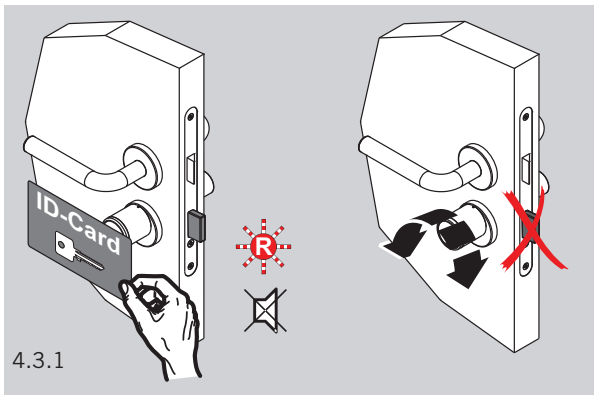
The lock cylinder is permanently in “open/close” mode, meaning the door can be opened and closed without a badge.

4.3 Reset permanent locking - office release

1. Hold authorised badge in front of the XS Read module. Red flashing and the sound of the motor indicate that: the “permanent locking” function has been reset.



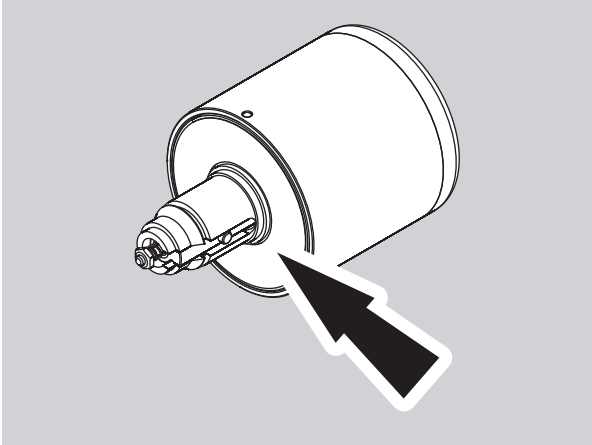




If the XS Read module does not react when a badge is held in front of it, then turn the XS Read module fairly quickly by 1.5 turns if it turns freely, or, if the clutch is engaged, then move it back and forth. Hold the badge in front of the XS Read module immediately after moving it. The LED will briefly flash green when the unit is ready to read. If no badge is detected within 2.5s, then the red LED will flash briefly to indicate that the unit is no longer ready to read.

5.1 Nameplate

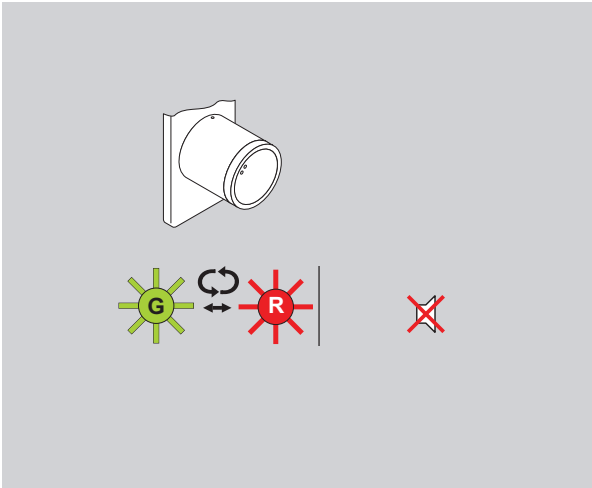
The nameplate is on the rear of the XS Reader module. The read procedure and the operating mode are printed in plain text on the nameplate.



5.2 Tampering indicator

If any attempt is made to operate the internal clutch mechanism without electronic authorisation, then this will be detected by the XS Read module.

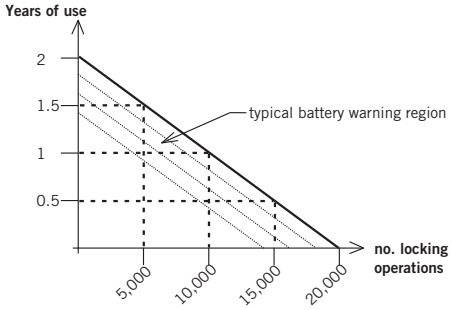
The LED will flash alternately red/green to provide an alert of any tampering attempt.
The tampering attempt will be logged in the event memory for the XS Read module in order to provide retrievable evidence of the unauthorised attempt to gain access, be it successful or otherwise.
The tampering attempt will, to a large extent, be counteracted by the XS Read module drive.



5.3 XS-Cylinder offline

Supply voltage
2 Batteries
Typ Duracell Ultra CR2 Lithium 3V

Batteries
Operating life at room temperature (20°C)
Typical no. locking cycles: 20,000
Typical battery life if not operated 2 years
The number of cycles specified relates to reading the UID from the respective badge type. Different configurations of reader properties can reduce the number of cycles by up to 40%.



Data retention
Voltage free in internal EEPROM

Interfaces
Infrared (IrDA), max. 115KBd
Range: 2 20 cm
Reception angel: 15°

Signals
1 x LED (red, green)
1 x acoustic

Durability
min. 50.000 locking cycles
as per DIN EN 1303

Activation
Automatically by proximity of a badge or by turning.
Activation by turning may only be possible to a limited extent if the unit is fitted to a steel door.

No. permissions
2000

Reader systems
HITAG (HITAG1,HITAG2,EM4102,EM4450)
Transmission frequency: 125kHz
Read distance: 2cm [1)]
LEGIC
Transmission frequency: 13,56MHz
Read distance: 1cm [1)]
MIFARE
Transmission frequency: 13,56MHz
Read distance: 1cm [1)]

[1)] With reference badge in credit card format

Operating and storage temperature
20°C to +65°C

Protection rating
IP66

Dimensions
ø 40 mm x T 41 mm (T 76mm with spindel)

Casing colour
stainless steel or brass look; reader cover: anthracite

Weight
174g with batteries

Door dimensions
For DIN mortise locks with Backset >35 mm, for inwards opening doors. DIN left and DIN right can be used.
Door thickness incl. Fittings 40 110 mm

General design
Complies with the Radio Equipment and Telecommunications Terminal Equipment Act (FTEG) and Directive 1999/5/EC (R&TTE).

The EC Declaration of Conformity is available for download at **www.dorma.com/XS-documentation**.

CE

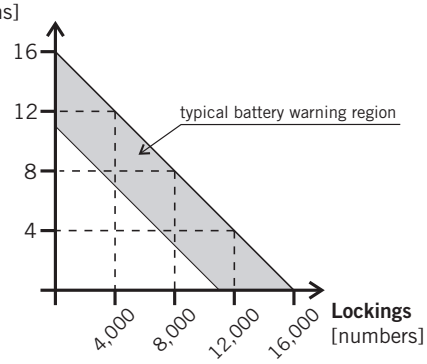
We reserve the right to make technical modifications and improvements to promote the progress of our equipment.

5.4 XS-Cylinder online

Supply voltage
2 Batteries
Typ Duracell Ultra CR2 Lithium 3V

Batteries
Operating life at room temperature (20°C)
Typical no. locking cycles:
HITAG/EM 16,000
Typical battery life if not operated
HITAG/EM 16 months
Power consumption during booking operations and, consequently, the number of cycles reached may differ by up to 40%, depending on the configuration and read proce dure.
The specified maximum values apply to the simplest configuration type, reading UIDs at room temperature. Firmware downloads, diagnosis mode, log readouts and similar also reduce the maximum number of cycles attainable.

Lifetime
[months]



Data retention
Voltage free in internal EEPROM

Interfaces
Infrared (IrDA), max. 115KBd
Range: 2 20 cm
Reception angel: 15°

Radio, max. 57.600KBd
Frequencies: 863 870MHz
Range: 10m

Durability
min. 50.000 locking cycles
as per DIN EN 1303

Activation
Automatically by proximity of a badge or by turning.
Activation by turning may only be possible to a limited extent if the unit is fitted to a steel door.

No. permissions
Depending on the acces control system.

Reader systems
HITAG (HITAG1,HITAG2,EM4102,EM4450)
Transmission frequency: 125kHz
Read distance: 2cm [1)]

[1)] With reference badge in credit card format

Operating and storage temperature
20°C to +65°C

Protection rating
IP66

Dimensions
ø 40 mm x T 41 mm (T 76mm with spindel)

Casing colour
stainless steel or brass look; reader cover: anthracite

Gewicht
174g with batteries

Door dimensions
For DIN mortise locks with Backset >35 mm, for inwards opening doors. DIN left and DIN right can be used.
Door thickness incl. Fittings 40 110 mm

General design
Complies with the Radio Equipment and Telecommunications Terminal Equipment Act (FTEG) and Directive 1999/5/EC (R&TTE).

The EC Declaration of Conformity is available for download at **www.dorma.com/XS-documentation**.

CE

We reserve the right to make technical modifications and improvements to promote the progress of our equipment.

Use of the device is permitted in the countries listed below.

AT	BE	BG	CZ	CY
DK	EE	FI	FR	DE
GR	IE	IT	LV	LT
LU	MT	NL	PL	PT
RO	SK	SI	ES	SE
GB	HU	IS	LI	NO
CH				
ISO 3166 Code				

We reserve the right to make technical modifications and improvements to promote the progress of our equipment.

DORMA Time + Access GmbH Postfach 21 01 85 • D 53156 Bonn • Mainzer Straße 36 52 • D 53179 Bonn
Tel. +49 (0) 2 28/85 54 0 • Fax +49 (0) 2 28/85 84 1 75 • www.dorma time access.de

DORMA GmbH + Co. KG Postfach 40 09 • D 58247 Ennepetal • DORMA Platz 1 • D 58256 Ennepetal
Tel. +49 (0) 23 33 / 793 0 • Fax +49 (0) 23 33 / 79 34 95 • www.dorma.com