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1. Introduction

This tab of the System Documentation contains general system explanations for all eLOCK products which extend beyond the installation / operating instructions, software documentation and product overview.

Supplementary general information is also provided in the introductory eLOCK brochure and in the eLOCK product overview on pages 13-41.

Unless explicitly stated otherwise, all information relates to the following systems

- eLOCK
- eLOCK AddDelete
- ES5000 plus

2. Signalling Concept

HEWI eLOCK has a general fittings signalling concept. Important operating states and fitting responses are signalled by optical and/or acoustic messages (signals).

Overview: Signalling per fitting type

The following signalling forms are available for the individual fitting types.

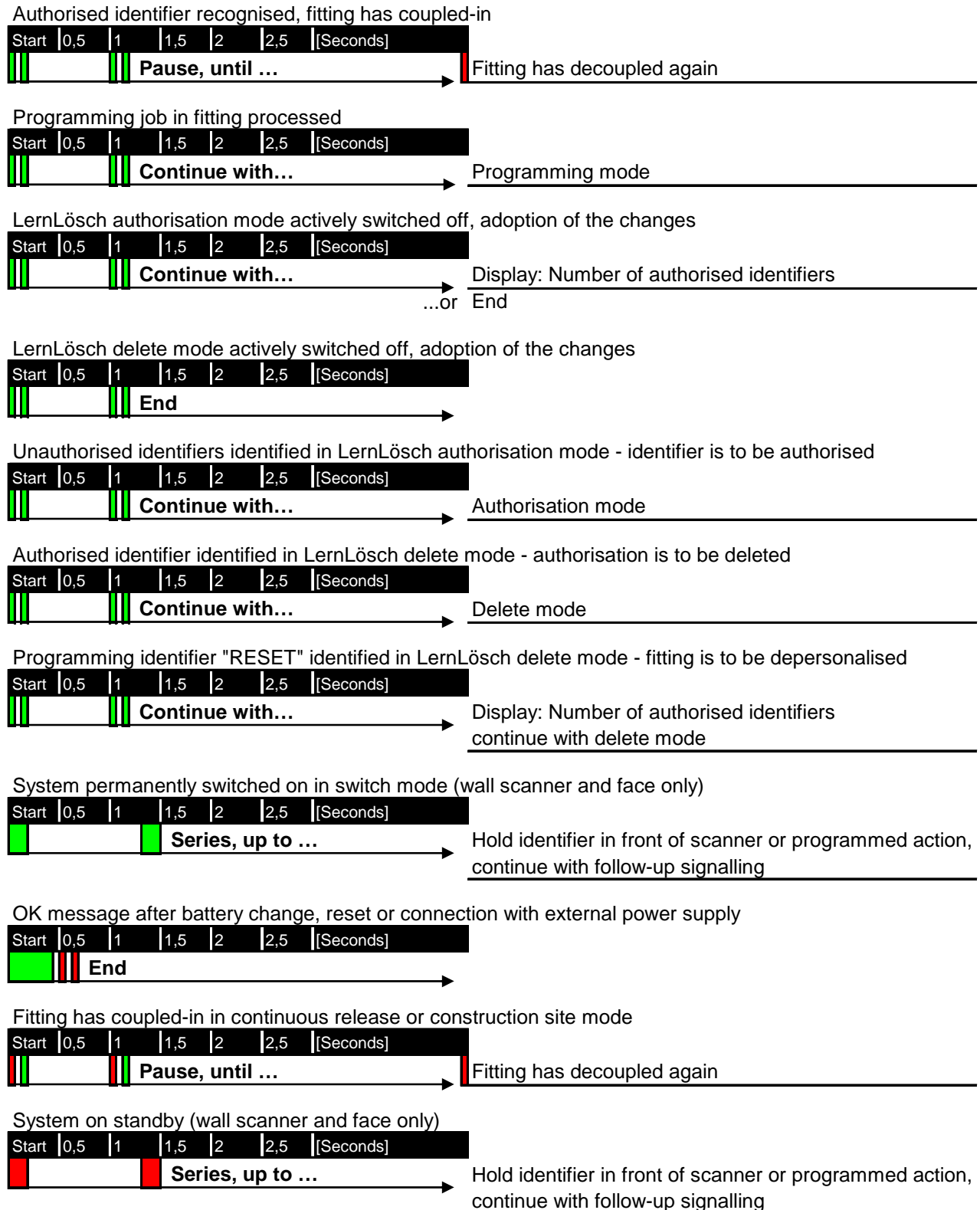
Fitting types	Visual signal	Acoustic signal
Double knob cylinder, one-sided authorisation check		x
Lock cylinder, authorisation check on both sides	x	
Double knob cylinder	x	
Half-cylinder	x	
Wall scanner	x	x
Comfort system		x
Framed door system	x	
Backplate fitting		x
External power supply (EPS)	x	x
Programming station		x
Handheld (PDA)	Display	

Figure 2-1: Signalling for fitting types

Fittings signalling messages/signals

Visual signals (fittings)

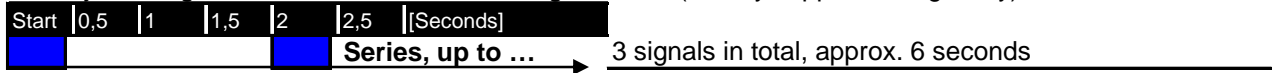
The light signals (colour, duration and time characteristic) of the eLOCK fittings with illuminated ring are shown.



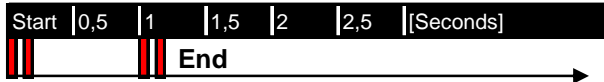
Battery warning, combined with controlled incorrect locking operations (battery supplied fittings only)



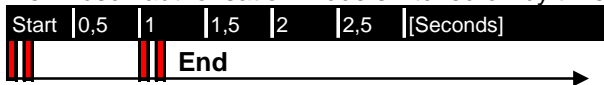
Battery warning in the APO, otherwise no fitting activities (battery supplied fittings only)



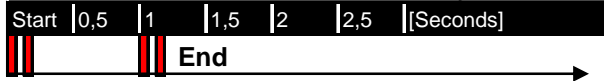
Unauthorised identifier detected



LernLöschen authorisation mode switched off by time out, no adoption of the changes



LernLöschen delete mode switched off by time out, no adoption of the changes



Already authorised identified detected in LernLöschen authorisation mode - incorrect operation



Programming identifier "DELETE" detected in LernLöschen authorisation mode - incorrect operation



Programming identifier "RESET" detected in LernLöschen authorisation mode - incorrect operation



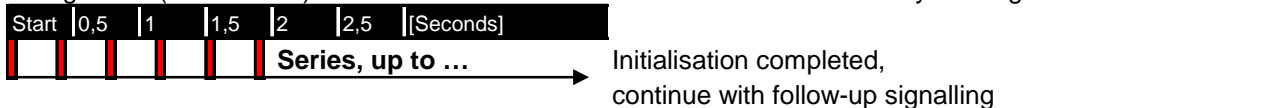
Unauthorised identifier detected in LernLöschen delete mode - incorrect operation



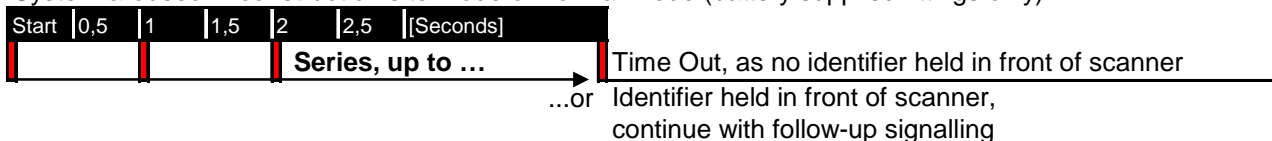
Programming identifier "DELETE" detected in LernLöschen authorisation mode - incorrect operation



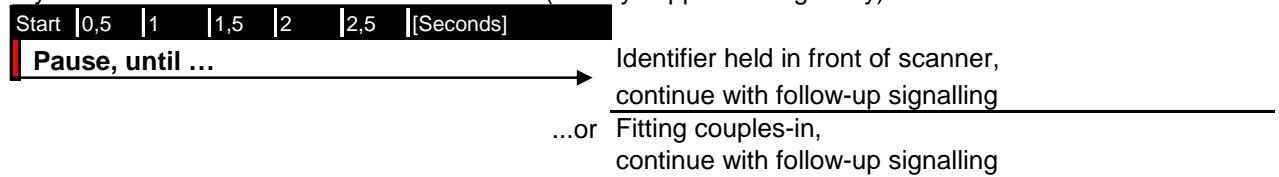
Assignment (initialisation) of the antennae of a wall scanner control is currently running



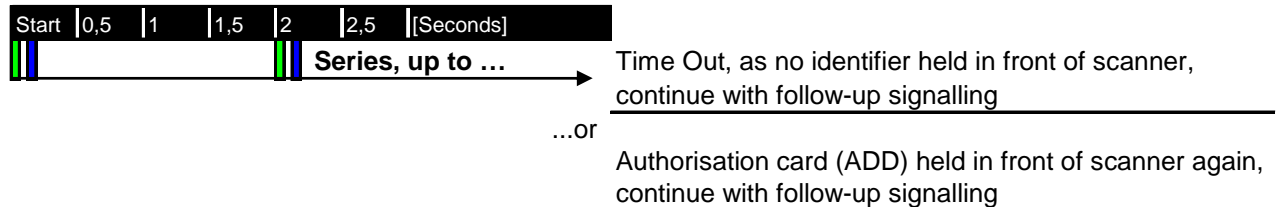
System aroused in construction site mode or normal mode (battery supplied fittings only)



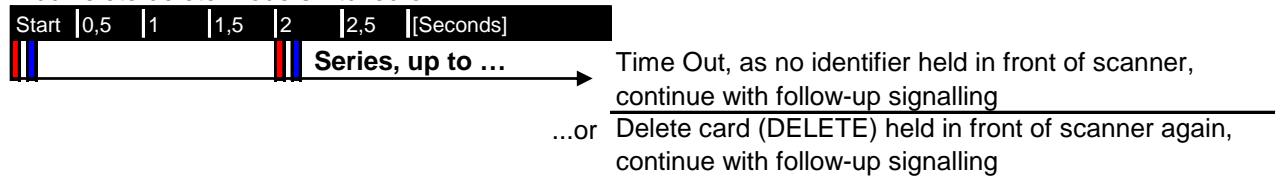
System aroused in continuous release mode (battery supplied fittings only)



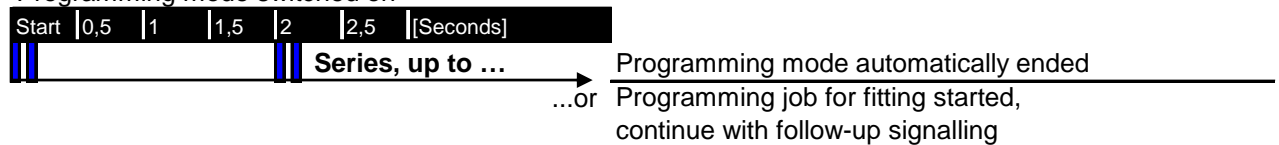
AddDelete authorisation mode switched on



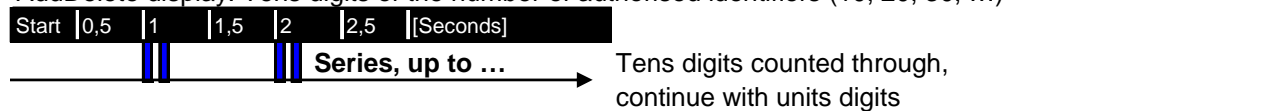
AddDelete delete mode switched on



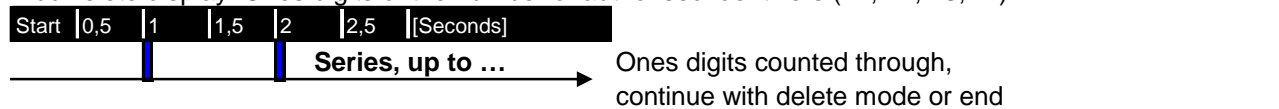
Programming mode switched on



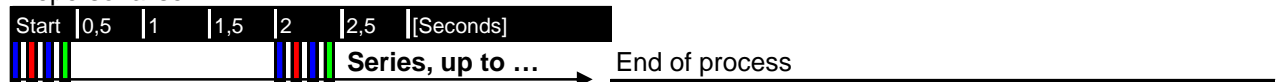
AddDelete display: Tens digits of the number of authorised identifiers (10, 20, 30, ...)



AddDelete display: Ones digits of the number of authorised identifiers (21, 22, 23, ...)



Depersonalise



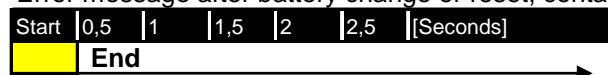
100 AddDelete authorisations assigned, authorisation of further identifiers not possible



System error, irreparable



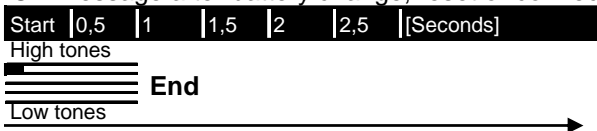
Error message after battery change or reset, contact HEWI Support



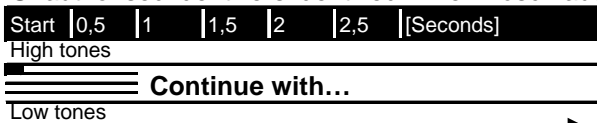
Acoustic signals (fittings)

The sound signals (level, duration and time characteristic) of the eLOCK fittings with acoustic signalling are shown.

OK message after battery change, reset or connection with external power supply

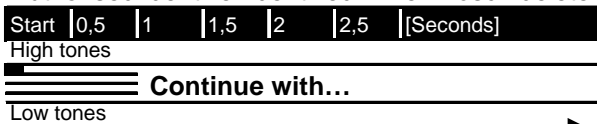


Unauthorised identifiers identified in LernLösch authorisation mode - identifier is to be authorised



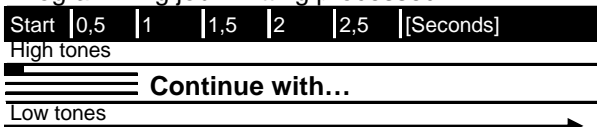
Authorisation mode

Authorised identifier identified in LernLösch delete mode - authorisation is to be deleted



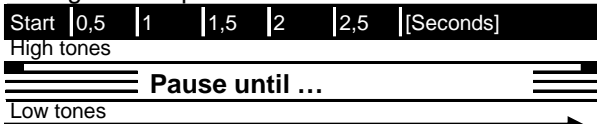
Delete mode

Programming job in fitting processed



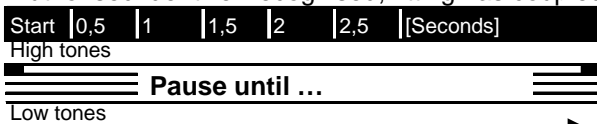
Programming mode

Fitting has coupled-in in continuous release or construction site mode



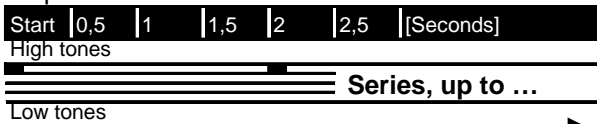
Fitting has decoupled again

Authorised identifier recognised, fitting has coupled-in



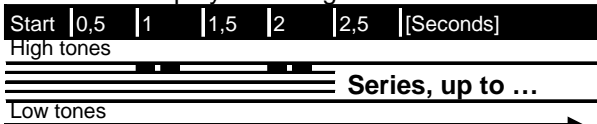
Fitting has decoupled again

Depersonalise



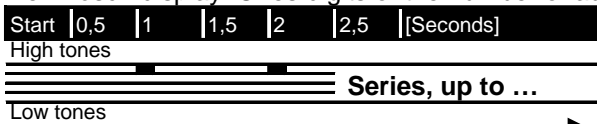
End of process

LernLösch display: Tens digits of the number of authorised identifiers (10, 20, 30, ...)

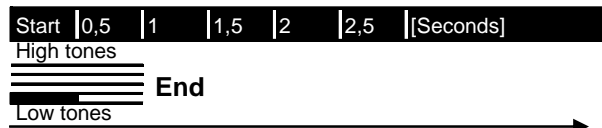


Tens digits counted through, continue with units digits

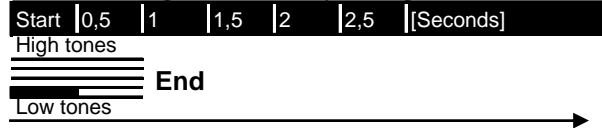
LernLösch display: Ones digits of the number of authorised identifiers (21, 22, 23, ...)



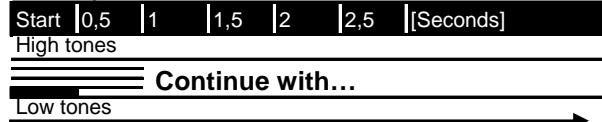
Ones digits counted through, continue with delete mode or end



Error message after battery change or reset, contact HEWI Support

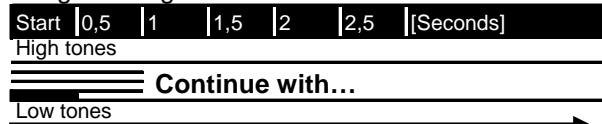


Already authorised identified detected in LernLöschen authorisation mode - incorrect operation



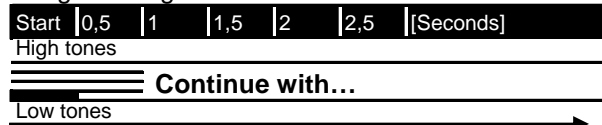
Authorisation mode

Programming identifier "DELETE" detected in LernLöschen authorisation mode - incorrect operation



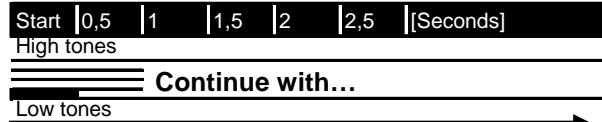
Authorisation mode

Programming identifier "RESET" detected in LernLöschen authorisation mode - incorrect operation



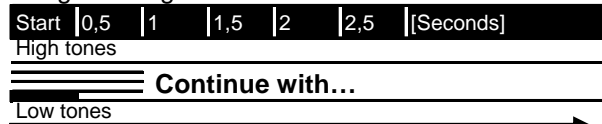
Authorisation mode

Unauthorised identifier detected in LernLöschen delete mode - incorrect operation



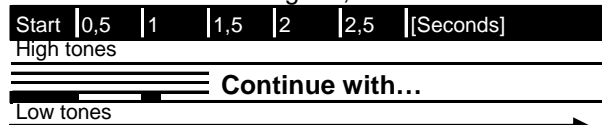
Delete mode

Programming identifier "DELETE" detected in LernLöschen authorisation mode - incorrect operation



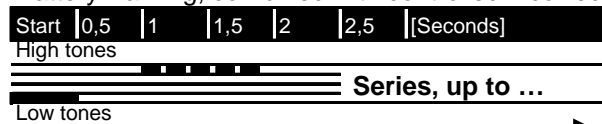
Delete mode

100 authorisations assigned, LernLöschen authorisation of further identifiers not possible



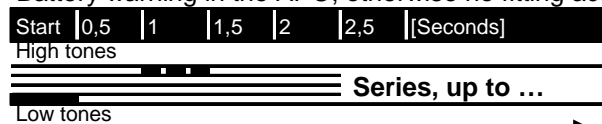
Authorisation mode

Battery warning, combined with controlled incorrect locking operations (battery supplied fittings only)



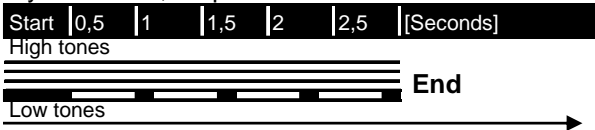
High tone sequence repeated 4 times, approx. 10 seconds

Battery warning in the APO, otherwise no fitting activities (battery supplied fittings only)

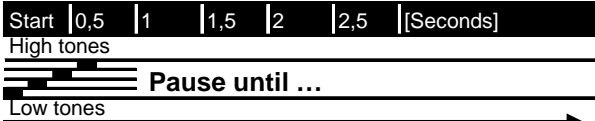


High tone sequence repeated 2 times, approx. 6 seconds

System error, irreparable

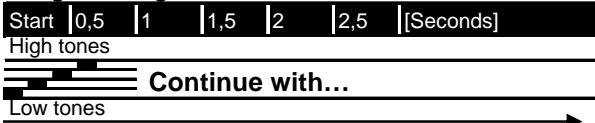


AddDelete authorisation mode switched on



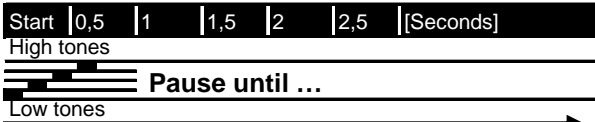
Pause until ...
Time Out, as no identifier held in front of scanner, continue with follow-up signalling
...or Programming identifier "ADD" held in front of scanner again, continue with follow-up signalling

Programming identifier "RESET" identified in AddDelete delete mode - fitting is to be depersonalised



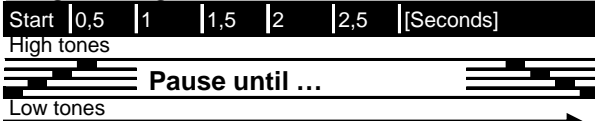
Continue with...
Display: Number of authorised identifiers, continue with delete mode

AddDelete delete mode switched on



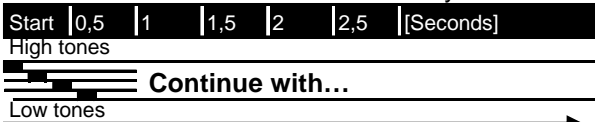
Pause until ...
Time Out, as no identifier held in front of scanner, continue with follow-up signalling
...or Programming identifier "DELETE" held in front of scanner again, continue with follow-up signalling

Programming mode switched on



Pause until ...
Programming mode automatically ended
...or Programming job for fitting started, continue with follow-up signalling

AddDelete authorisation mode actively switched off, adoption of the changes

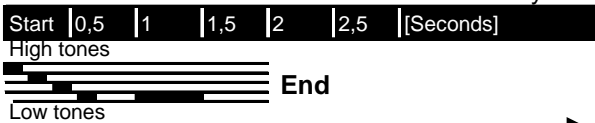


Continue with...
Signalling: Number of authorised identifiers
...or End

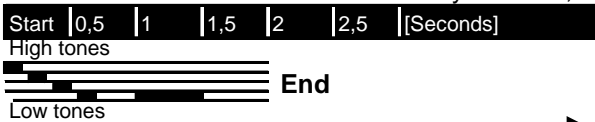
AddDelete delete mode actively switched off, adoption of the changes



AddDelete authorisation mode switched off by time out, no adoption of the changes



AddDelete delete mode switched off by time out, no adoption of the changes



External power supply (EPS) signalling messages/signals

eLOCK, eLOCK AddDelete signalling (EPS)

The EPS signals the current process step by means of sound and light signals in the MASTER/ADD, SYSTEM and IT LED fields.

	ADD Master	System	IT	Signal tone
1				—
	Place ADD/Master			
2				—
	ADD/Master taught			
3				—
	Connect fitting			
4				—
	Place IT			
5				—
	Authorisation check in process			
6				—
	Fitting switched on			
7				—
	Change battery			
8				—
	IT not authorised at the fitting			
9				— —
	ADD/Master not recognised			
10				— — —
	Fault in the fitting			
11				— — — —
	Fitting 30 sec. without response			
12				— — — —
	IT not placed for 30 sec.			
13				— — — — —
	Fitting does not belong to property			
14				— — — — —
	IT does not belong to property			
	— Long signal tone	 Battery warning sound	
	- Short signal tone		Light flashes	

ES5000 plus, ES5000 signalling (EPS)

The EPS signals the current process step by means of sound and light signals in the MASTER and SYSTEM LED fields.

	Master	System	Signal tone
1			—
	Place Master on to the charger		
2			—
	Transfer in process		
3			—
	Transfer completed		
4			
	Repeat activation*		
5			—
	Change battery		
6			—
	Master not recognised		

—	long signal tone	Battery warning sound
—	short signal tone		Light flashes

* Note!
 If activation was unsuccessful in the first step, this process is subsequently repeated. There is no signalling during this time, which can last for up to 20s max.

3. Battery warnings

All battery operated fittings have an integrated battery level monitoring. Battery warnings start automatically if the battery power is running low. If these warnings are ignored the battery concerned stops all activities.

Battery level monitoring

The different fitting states and responses resulting from the measured battery levels are schematically shown in the following.

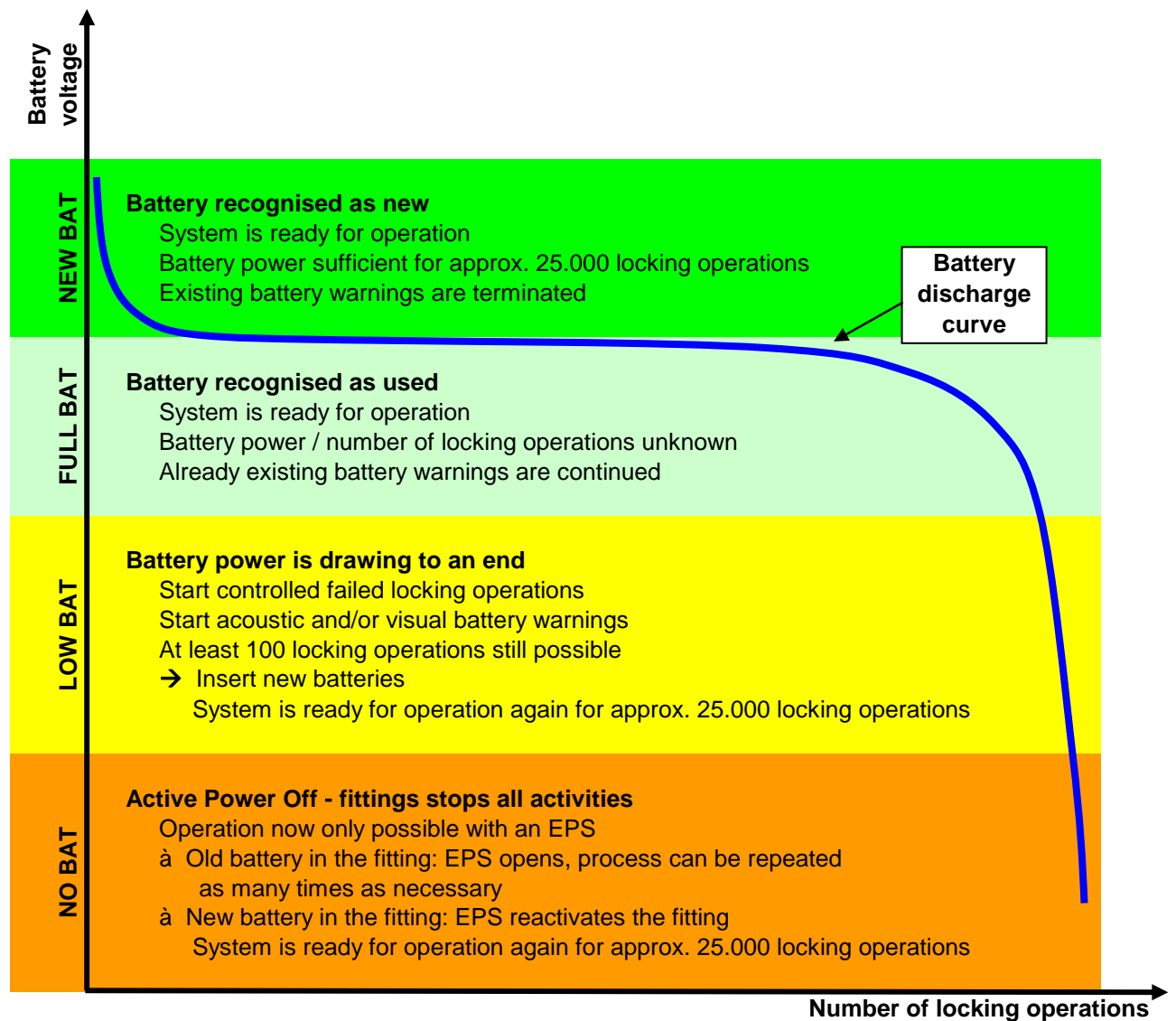


Figure 3-1: Battery discharge curve

Reactivating a fitting from Active Power Off

To reactivate (normal state) a fitting following deactivation due to LOW BAT (Active Power Off) an EPS must be carried out again AFTER the battery change. It is not sufficient to simply install a new battery!

Recognising a new battery

An operating voltage of at least 2.9 volt must exist (NEW BAT) for a new battery to be recognised as such and for current battery warnings to be ended. For batteries approved by HEWI for use in eLOCK fittings this corresponds to the operating voltage of new or briefly used batteries.

Signalling and failed locking operations (battery warnings)

Towards the end of the life of a battery (LOW BAT) the fittings begin to have controlled failed locking operations and battery warnings.



Figure 3-2: Visual signalling of the battery warning

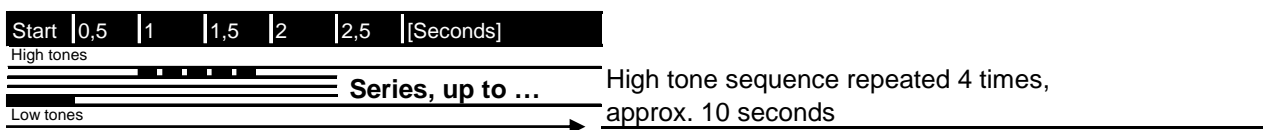


Figure 3-3: Acoustic signalling of the battery warning

Controlled failed locking operations

If a fitting has LOW BAT status a user must identify themselves three times before they can operate the fitting once. With the first two identifications the fitting responds with a battery warning only (see above). Not until the third identification can the fitting be operated.

4. Authorisation Check / Fitting Connection

Fittings can be operated in normal mode, construction site mode or in switch mode. Different identifiers are accepted depending on the mode.

Normal mode

Normal mode is the standard operating mode for programmed fittings.



Authorisation check

Identification at the fitting with an authorised IT is necessary before each fitting connection (switching on of the fitting).

Construction site mode

Construction site mode is the unprogrammed as delivered condition of the fittings. This condition can be reactivated in eLOCK fittings through depersonalisation and in eLOCK AddDelete fittings through the programming IT "RESET". As a result, the fittings lose all property-specific information, assignments and programming.



Authorisation check

Any HEWI IT is sufficient for identification at the fitting.

Fitting connection (normal mode and construction site mode)

The fittings respond different to an authorisation check depending on the fitting type



All fittings except comfort system → short-term release

The fitting is switched on for a few seconds and can be used. After the time which can be set via eLOCK Center has expired the fitting switches back off again.



Comfort system → permanent release

The comfort system switches its condition and retains it until the next identification.

Switch mode

In switch mode fittings are permanently switched on. This way, for example, visitors obtain unlimited access to public areas during defined times.



Authorisation check

If switch mode is activated there is not longer any individual authorisation check at the fitting.

Activation / deactivation of switch mode

Switch mode can be activated / deactivated manually or time controlled (only "TIME" version fittings) and is not possible from construction site mode.



Manual activation / deactivation

The switchover takes place by identification at the fitting with an authorised, specially programmed Switch IT.



Time-controlled activation / deactivation

Takes place automatically on the basis of the fitting time profiles programmed in the fitting. The activation and deactivation times are defined separately.



Interactions between manual / time-controlled

Manual and time-controlled actions can be combined.
Time-controlled actions can always be manually anticipated (earlier activation / deactivation), but can never be skipped.

Fault response

Following a power supply failure (electricity supply failure, empty battery, battery replacement) the fittings always switch back to the current set mode when the operating voltage is reinstated. This is the mode they would have had at the present time if there had not been any fault.

5. System Management

Functions and upgrades

eLOCK and eLOCK AddDelete

Staggered functions are available for eLOCK and eLOCK AddDelete which can be retrofitted at any time, even during running operations (upgrades). This enables each system to be initially set up for the current needs without excluding any functions for the future.

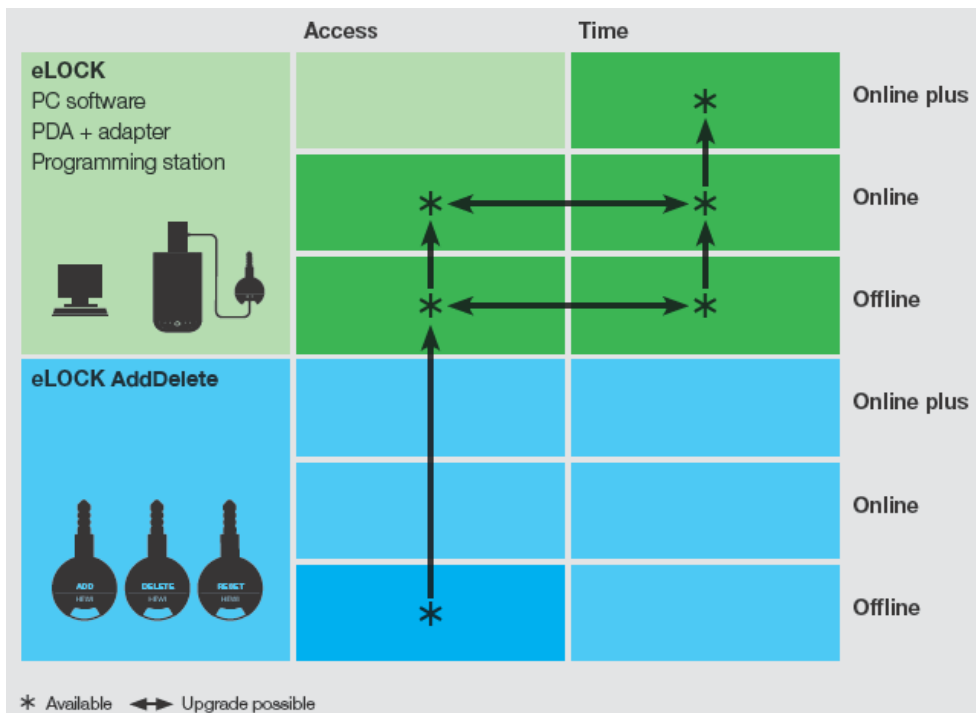


Figure 5-1: eLOCK / eLOCK AddDelete functions and upgrades

ES5000 plus, for enhancing existing ES5000 systems

ES5000 plus is available to enhance old existing ES5000 systems. The ES5000 plus range also offers staggered functions; however, there are no upgrades, Online plus or biometry (face) available.



Figure 5-2: ES5000 plus functions

Brief description of the modules

Access	Fitting version without evaluation of the identifier's time restrictions and without access documentation. Check of the identifier's expiry date (or day pass check with Online plus – see below).
Time	Fitting version with evaluation of the identifier's time restrictions and with time-controlled activation of the fittings (Switch mode).

Offline	<p>Authorisations and time zones are written directly on the identifiers, assignment or withdrawal takes place centrally at the programming station connected to the PC.</p> <p>Fitting information is transferred between the software and fittings via a mobile handheld (PDA).</p>
Online	<p>Authorisations and time zones as with Offline</p> <p>Fitting information is transferred directly from the software into the fittings.</p>
Online plus	<p>Authorisations, time zones and fitting information as with Online.</p> <p>In addition, with each identification at the Online plus fitting the identifiers receive a "Day Pass" with an adjustable validity period (from the current date) of between 1 and 31 days. Only identifiers with a valid day pass are authorised at the property's Online and Offline fittings – in addition to the individual authorisation check of the IT at the fitting. If identifiers with an expired day pass are refused a new day pass at Online plus fitting (e.g. after their loss has been reported), they are automatically blocked at all the property's fittings - including the Offline fittings.</p>

eLOCK systems with eLOCK Center management software

The whole lock system - offline or online - is controlled here by the eLOCK management software.

Authorisations and time zones are always written directly on the identifier, assignment or withdrawal of authorisations takes place centrally at the programming station connected to the PC.

Fitting information (assignment to protection zones, time, date, events lists, etc.) are either transferred

- Offline - between the software and fitting via a mobile handheld (PDA), or
- Online - directly from the management software into the fittings.

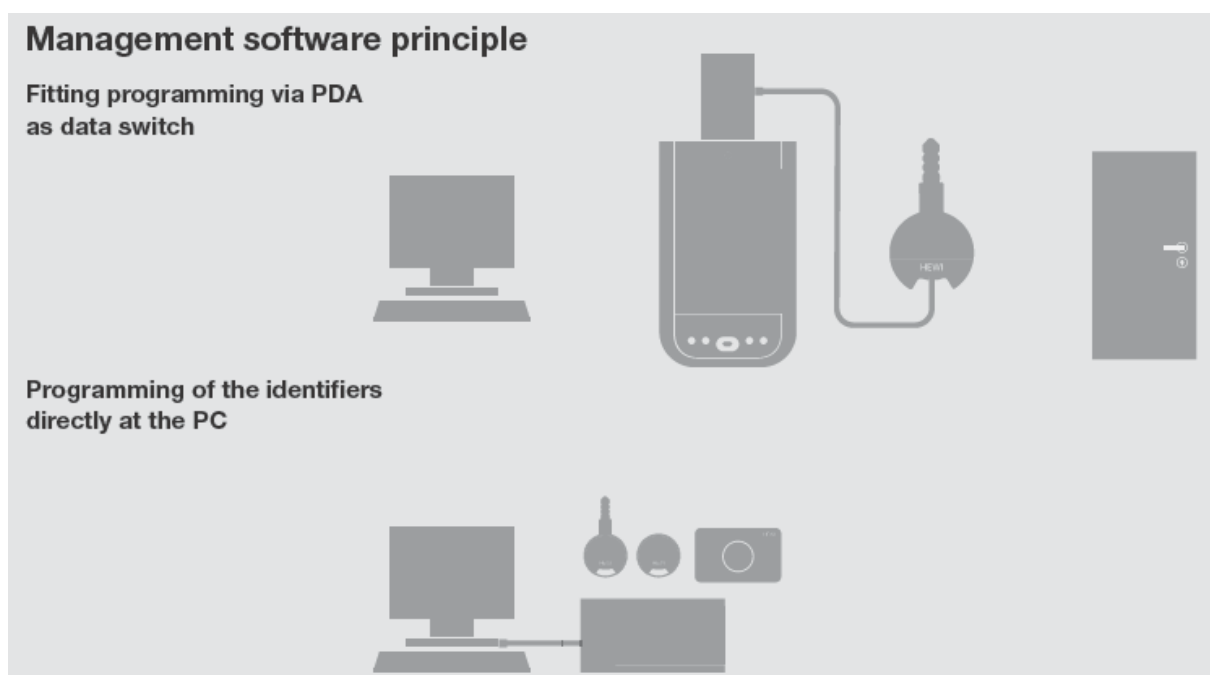


Figure 5-3: Functional diagram of a software-managed system (offline)







Detailed information on the management software is given in the Software tab of this manual


eLOCK AddDelete systems with programming IT

Here the whole lock system is controlled by special programming identifiers (IT). As no software and no additional equipment are required, this system is particularly suitable for new, entry level customers and for smaller systems.

Operating principle (eLOCK AddDelete)

The identifiers are "taught-in" (or deleted) directly in the fittings at which they are to be authorised (or no longer authorised). A programming set with 3 programming ITs in the form of keys or key fobs is available for this purpose:

		<p>"ADD" programming IT</p> <p>For teaching-in (authorising) existing identifiers at fittings and for assigning fittings to a programming set.</p>
		<p>"DELETE" programming IT</p> <p>For deleting authorisations of existing identifiers at fittings.</p>
		<p>"RESET" programming IT</p> <p>For deleting all authorised identifiers, reinstating the as delivered condition and activating construction site mode at fittings.</p>

	<p>Active programming confirmation</p> <p>All AddDelete programming processes must be started with the "ADD" or "DELETE" programming IT and for data transfer must be completed within 20 seconds after the last action with the same programming IT. If no confirmation is given the process is aborted and the changes are not adopted.</p>
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Fitting assignment to a programming set (eLOCK AddDelete)

Each fitting can always only be assigned to precisely one programming set and thereafter can only be programmed with the same set. A programming set is assigned using the "ADD" programming IT included in the set at the fitting and can only be cancelled by resetting the fitting with the "RESET" programming IT belonging to the set (see Reset Fitting).

- Start programming process by holding the "ADD" programming IT in front of or by inserting it into the fitting
- Authorise individual existing identifiers by holding them in front of or inserting them into the fitting or move directly to next step without action.
- Finish programming process to accept the changes by holding the "ADD" programming IT in front of or by inserting it into the fitting.



Fitting in construction site mode (as delivered condition)

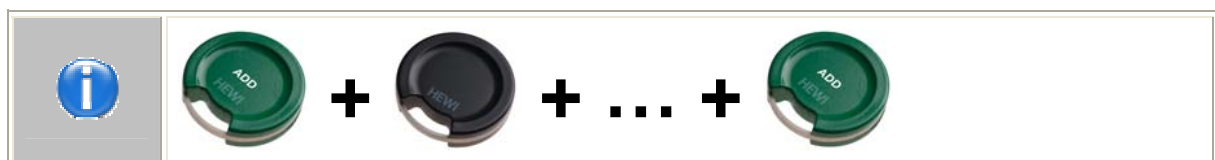
The fitting can be assigned to a programming set in construction site mode only.

All HEWI ITs are authorised at a fitting in construction site mode - even the "Reset" and "Delete" programming ITs function like normal identifiers when held in front of or inserted in the fitting.

Authorisation of existing identifiers at the fitting (eLOCK AddDelete)

For authorisation of identifiers, they are "taught" directly at the fitting.

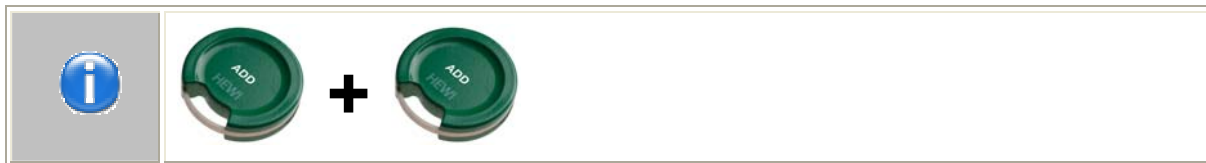
- Start programming process by holding the "ADD" programming IT in front of or by inserting it into the fitting
- Authorise individual, existing identifiers by holding them in front of or inserting them into the fitting
- Finish programming process to accept the changes by holding the "ADD" programming IT in front of or by inserting it into the fitting.



Start signalling of taught-in identifiers at the fitting (eLOCK AddDelete)

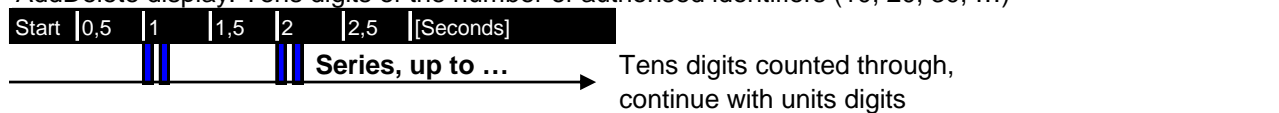
The number of identifiers "taught-in" at a fitting is signalled on request.

- Start programming process by holding the "ADD" programming IT in front of or by inserting it into the fitting
- Direct to the next step without action
- Finish programming process by holding the "ADD" programming IT in front of or by inserting it into the fitting. For signalling, see below or refer to the Signalling Concept chapter in this tab



Signalling of taught-in identifiers (eLOCK AddDelete)

AddDelete display: Tens digits of the number of authorised identifiers (10, 20, 30, ...)



AddDelete display: Ones digits of the number of authorised identifiers (21, 22, 23, ...)

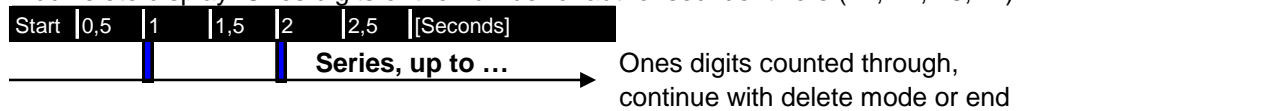


Figure 5-4: Visual signalling

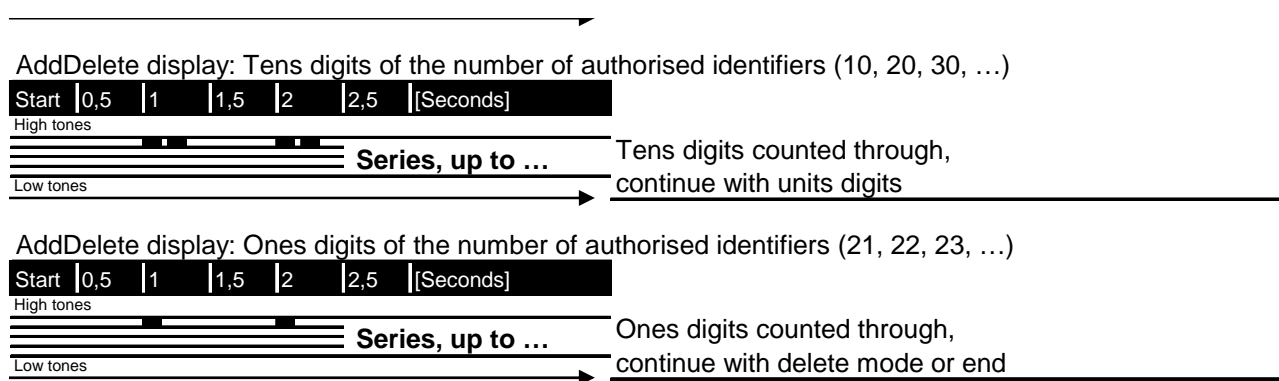


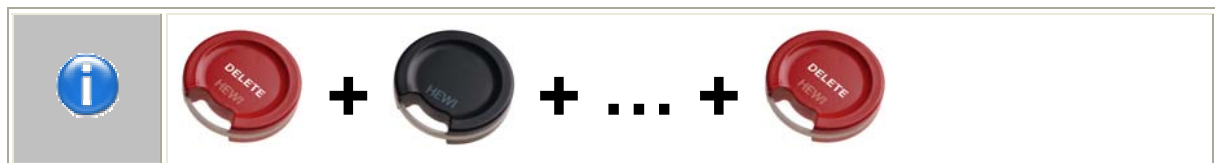
Figure 5-5: Acoustic signalling

The complete signalling is given in the Signalling Concept chapter in this tab

Delete existing identifiers at the fitting (eLOCK AddDelete)

Existing identifiers are deleted directly at the fitting to delete authorisations.

- Start programming process by holding the "DELETE" programming IT in front of or by inserting it into the fitting
- Delete individual, existing identifiers by holding them in front of or inserting them into the fitting
- Finish programming process to accept the changes by holding the "DELETE" programming IT in front of or by inserting it into the fitting.



Reset fitting and delete all identifiers (eLOCK AddDelete)

The fitting can be reset to delete the authorisations of unavailable identifiers. This simultaneously reinstates the as delivered condition and activates construction site mode.


- Start programming process by holding the "DELETE" programming IT in front of or by inserting it into the fitting
- Reset fitting by holding the "RESET" programming IT in front of or by inserting it into the fitting. To avoid accidentally resetting the number of taught in identifiers is automatically signalled (for signalling see above under: Signalling of the taught in identifiers or refer to the Signalling Concept chapter in this tab)
- Finish programming process to accept the changes by holding the "DELETE" programming IT in front of or by inserting it into the fitting.




Check whether a fitting has successfully been reset

The fitting is once again in construction site mode if the "Reset" and "Delete" programming ITs function like normal identifiers when held in front of or if inserted into the fitting.

System limits (eLOCK AddDelete)

	<p>Technical system limits</p> <p>Maximum 100 ITs per fitting possible</p> <p>Unlimited number of fittings per system possible</p>
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	<p>Sensible system limits (recommendation)</p> <p>No more than 25 ITs per fitting</p> <p>No more than 20 fittings per system</p> <p>Larger systems are difficult to manage with a AddDelete system without losing track of all the elements. Here it is advisable to use the software-controlled system.</p>
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For further information on eLOCK AddDelete please refer to the eLOCK AddDelete operating instructions.

6. System Tender Specification

The main system properties, essentially the same as the tender specification texts, are described in this chapter. General features are listed, divided according to system-specific and product group specific context. Supplementary, detailed, up-to-the-minute tender specification texts for the individual products are available on the internet under www.hewi.de.

General, system-specific features

Preliminary remarks (system-specific)

An electronic lock system based on RFID-125kHz transponder technology is described. All components fulfil the electromagnetic compatibility (EMC) requirements and conform to CE. The design and dimensions of the electronic cylinders conform to DIN 18252 as a supplementary standard to DIN EN 1303. The design and dimensions of the electronic locks conform to DIN 18251.

HEWI eLOCK solely uses writable, read-write transponder types. Non-writeable (read only) types allow identification via the Unic ID of the transponder only and for security reasons cannot be used for HEWI eLOCK.

The respective valid guidelines and building regulations must be taken into account for use at doors in escape and evacuation routes. Allowable use of a lock cylinder in panic locks according to DIN EN 179 and DIN EN 1125 is documented in the lock manufacturers' certificates.

Use in new build, structural alteration and renovation projects is possible without additional wiring or additional work to the doors.

Optional on site wiring must be laid with EMC conformity and according to VDE 0833 and VDE 0100.

The installation and assembly as well as the putting into service and programming must be carried out properly according to the professional standards and regulations. The contractor is liable for any damage due to incorrect or improper work.

General notes (system-specific)

HEWI's electronic lock system, the eLOCK series, is described in the following. The HEWI eLOCK fittings are operated via authorised HEWI eLOCK identifiers. The management and programming is carried out using the eLOCK Center management software. In the Offline system a PDA with CF adapter and the eLOCK Mobile PDA software are used to transfer data between the software and fitting.

Optionally, HEWI eLOCK AddDelete can be programmed using 3 programming keys, without additional software or programming equipment.

Transponder technology (system-specific)

HEWI eLOCK uses a writeable, passive (without own power supply) 125kHz RFID transponder type EM4450 for its identifiers.

The confirmation distance (identification distance) between the fitting antenna and HEWI eLOCK identifier is up to 8 cm depending on the antenna diameter, use conditions and transponder used.

Power supply (system-specific)

With the exception of the wall scanner and the Face facial recognition, all HEWI eLOCK fittings have an internal power supply (batteries); i.e. do not require any external power supply / wiring.

With the exception of the backplate fittings, all battery-powered HEWI eLOCK fittings each use a uniform, standard 3 volt lithium battery. Depending on the conditions of use the battery has a life of up to 30,000 locking operations or a standby time of up to 10 years.

Batteries are located on the protected side of lock cylinders, double-knob cylinders, the comfort system, backplate fittings and framed door system.

All battery-operated systems signal critical battery states through warning signals and controlled failed locking operations.

With the exception of backplate fittings, if the batteries are completely flat all HEWI eLOCK fittings can be supplied with energy from the outside using a mobile external power supply. The external power supply for backplate fittings on the other hand can be provided directly from the outside via a 9 volt block.

Lock authorisations and documentation (system-specific)

The assignment, change or withdrawal of lock authorisations also takes place in the offline system without physically going to or using the door. This applies in the same way to time restrictions of the identifiers (time zones and validity period). To this end the authorisation data is deposited on the identifier. The identifier is then programmed centrally at the programming station connected to the PC.

Unavailable (e.g. lost) identifiers are automatically blocked by generating and using a replacement identifier.

Unavailable identifiers can also be blocked at online and offline fittings without actually going to or using the doors. To this end an Online plus fitting must be available in the system.

Within a HEWI eLOCK system, freely definable, time zones for specific days (time restriction within which a lock authorisation applies) can be assigned for each identifier and if necessary be limited to specify types of days (weekdays, Saturday, Sunday/public holidays).

A permanent release (e.g. for visitor traffic) can be activated for all HEWI eLOCK fittings through identification with specially programmed identifiers. This permanent release can also be optionally activated by the fittings automatically at freely definable times on specific days and if necessary be limited on certain types of days (weekdays, public holidays).

The last 628 locking operations or attempts can be optionally read out. Here identifier number with date and time is saved. This logging can be optionally activated or deactivated individually for each door. The events list (log) is protected by a multi-level security concept.

The maximum numbers of the fittings of a HEWI eLOCK system is limited merely by the maximum size of the eLOCK Center database and is therefore has an order of size of well over 10 million fittings.

The maximum number of identifiers of a HEWI eLOCK system is limited by the capacity of this system's individual fittings and for standard fittings is 80,000 different identifiers, for which (e.g. in case of loss) 60 successors each can be generated, i.e. arithmetically 4.8 million identifiers.

From this the following system limits result:

- Each property: 65,000 fittings, any number of protection zones, 80,000 identifiers simultaneously.
- Each IT: 65,000 fittings, 96 (72 rigid plus 24 variable) or 456 rigid protection zones, 60 successors.
- Each standard fitting: 80,000 identifiers simultaneously, 30 variable protection zones.

Modularity and retrofitting capability (system-specific)

Fittings and identifiers can also be subsequently integrated in an existing system at any time without having to make changes to the existing products.

The HEWI eLOCK electronic lock system makes available optimised modules for different functional requirements, which can be activated according to the user's specific needs, even while a system is running.

The following modules are available for management of the HEWI eLOCK electronic lock system:

- HEWI eLOCK AddDelete system for programming the fittings using 3 programming keys, without additional software or programming equipment
- HEWI eLOCK system for managing and programming via the eLOCK Center management software and the eLOCK Mobile PDA software for data transfer between software and offline fittings.

Upgrade (subsequent activation) from the HEWI eLOCK AddDelete system to the HEWI eLOCK system is possible even while the system is running.

The following modules are available for all fittings of the HEWI eLOCK electronic lock system:

- Access: Simple YES/NO authorisation check of the identifier at the fitting, validity period of the identifier allowed as the only time limit.
- Time: Comprehensive authorisation check and documentation of the identifier at the fitting. Apart from the validity period of the identifier, they are also checked for specific day time zones as well as weekday and public holiday authorisation. In addition, all events can be stored in the fitting and automatic permanent release of the fittings can be realised (e.g. for visitor traffic).

Upgrade (subsequent activation) from access to time takes place while the system is running by activating time licences in eLOCK Center management software. The time licences are assigned to the required fittings, but can also be removed again if and when necessary and assigned to other fittings.

The following optional modules are available for fittings of the HEWI eLOCK electronic lock system:

- Offline: Without direct connection between electronic fittings and the management software
- Online: Direct connection between electronic fittings and the management software
- Online plus: Direct connection between electronic fittings and the management software. In addition the validity period of authorised identifiers is extended for an adjustable period (e.g. the present day) at these fittings on identification. ITs with an expired validity period are blocked at all fittings in the system (explicitly including at the offline fittings too). An Online Plus fitting can manage day passes for up to 80,000 different identifiers.

Upgrade (subsequent activation) from Offline to Online, Online to Online plus or Offline to Online plus possible even while the system is running.

Door-specific fitting solutions (system-specific)

The HEWI eLOCK electronic lock system ensures the whole property (building) is equipped throughout. To this end, special fitting solutions are available for the different door types.

The following HEWI eLOCK fittings are available for installation in internal and external doors:

- HEWI eLOCK cylinder (lock cylinder, double-knob cylinder)
- HEWI eLOCK backplate fitting

The following are available for installation in framed doors with narrow profiles:

- The HEWI eLOCK framed door system

The following are available for convenient operation of internal doors by simply pressing the lever handle:

- The HEWI eLOCK Comfort system

The following HEWI eLOCK fittings are available for controlling external mechatronic systems such as automatic doors, door openers, lifts, barriers, gates or similar:

- HEWI eLOCK single cylinders
- HEWI eLOCK Face (biometric face recognition)
- HEWI eLOCK wall scanner with external or internal antenna.

System Security (system-specific)

The standard electronic fittings are designed so that the controls can be mounted in the protected area (inside of the door/room) and the antennae for communication with the transponders can be mounted on the outside of the door/room. Data transfer between the antenna and controls takes place via a databus.

All sensitive data is transferred encrypted and is saved. This applies to all components and interfaces of the eLOCK Center management software via the PDA through to the fitting and identifier, both during programming and during the identification at the fitting itself. A crypto system with a block length of 128 bit is used for the encryption.

All HEWI eLOCK fittings fulfil protective class III according to DIN EN 61140 (VDE 0140-1) and therefore offer special protection against an electric shock.

General, product group specific features

Software (product group specific)

The eLOCK Center software is available as a stand-alone or multi-user Client Server solution and therefore has multi-user capability.

The eLOCK Center software has client capability; this means several lock systems can be managed with the same software installation.

Numerous wizards are available in the eLOCK Center software which

- guide the user through the program for seldom required functions
- automate the process for frequently used functions and
- ensure process protection for bulk transactions.

Special tools are available for data export from SAP, from eMail programmes and from servers for transferring master data from third party programs. A standardised wizard function for data import is available within eLOCK Center.

The eLOCK Center software has a stepped authorisation concept which is applied throughout the whole width and depth of the software. All menu items, accesses, organisational rights and programming functions can be restricted, from the whole topic block through to an individual menu item, both individually and freely combinable for user, property and client.

The eLOCK Center software enables clear, complete display of all relevant data on a fitting / an identifier in a single overview. In particular, this includes

- All assigned protection zones of a fitting
- All fittings of a protection zone
- All authorisations of a person or group of persons
- All persons in a group of persons
- All identifiers of a person, including the lost number
- All time restrictions of a person or group of persons
- All time-related programming of a fitting
- The precise modular design of a fitting including assigned time licences
- and much more.

Automatic copying and move functions are available for the assignment of authorisations for groups of persons, persons or individual ITs.

Numerous copying and move functions are available for the programming of protection zones or fittings.

Handheld / PDA / programming equipment (product group specific)

The data transfer between the eLOCK Center software and the fittings can be carried out with a standard handheld (PDA) with Windows Mobile 5 operating system and CF2 interface. Apart from the eLOCK Mobile PDA software, the only other accessory required is a HEWI eLOCK CF adapter.

The eLOCK Mobile software has a stepped authorisation concept which is applied throughout the whole width and depth of the software. All menu items, accesses, organisational rights and programming functions can be restricted, from the whole topic block through to an individual menu item, both individually and freely combinable for user, property and client.

To prevent misuse, a programming IT (MASTER) of the respective system is always required in addition to the handheld (PDA) to transfer data to a fitting.

The handheld (PDA) has a master key function with which each fitting in the PDA authorised system can be operated. To prevent abuse, a programming key (MASTER) of this system is always additionally required for such an operation. The master key function can be individually released for each user and is PIN protected.

The eLOCK Center software is the leading system within a HEWI eLOCK system. All security-relevant programming of the fittings, e.g. the assignment of protection zones or reading out the event memory can only be initiated (and documented) by the eLOCK Center software. To prevent misuse, the handheld (PDA) is essentially used for data transfer and cannot generate any independent changes to the lock plan or security concept.

Data transfer from the eLOCK Center software to the identifiers (programming the authorisations and time zones) takes place online via the programming station, which is centrally connected directly to the PC and is controlled by the eLOCK Center software.

Identifiers (product group specific)

All HEWI eLOCK identifiers are designed as passive identifiers, i.e. without their own power supply.

The HEWI eLOCK lock system provides identifiers of different types such as keys, key fobs, ISO transponder cards or customer-specific types.

If required, transponders of third party transponder systems can be integrated in the key, key fob and ISO transponder card types of identifier.

All HEWI eLOCK identifiers have a maximum validity period which can be set and adjusted using the eLOCK Center software.

Keys and key rings have a hole for fixing them to a key ring.

The confirmation distance between the fitting antenna and identifier (identification distance) is limited to 8 cm maximum to prevent accidental authorisation at a fitting (e.g. in passing) and to prevent listening in to or interception of communication.

A conventional identifier in key form with contacts is available in the HEWI eLOCK lock system for operating the lock cylinder, which can also be used in conjunction with plug protection plate fittings.

Proximity or non-contact identifiers of different types such as keys, key fobs, cards or customer-specific types are available in the HEWI eLOCK lock system. Identification at the fitting takes place by simply holding the identifier in front of the fitting antenna. Manual "waking" of the fittings is not necessary.

The HEWI eLOCK key has both a conventional identification path with contact for secure communication with the HEWI eLOCK cylinders, as well as an RFID transponder for non-contact communication with all other HEWI eLOCK fittings.

Cylinder (product group specific)

The following types of HEWI eLOCK cylinders are available:

- Lock cylinder
- Double knob cylinder
- Single cylinder.

Purely mechanical double and single cylinders are available within the HEWI eLOCK system.

All HEWI eLOCK cylinders are suitable for installation in doors with standard Euro locks and Euro fittings.

All cylinder housings of the HEWI eLOCK cylinders are chrome-plated as protection against weathering.

HEWI eLOCK lock cylinders can be used in conjunction with standard protection plate fittings.

The standard versions of HEWI eLOCK lock and double-knob cylinders can be operated from the inside without a transponder to prevent somebody from accidentally locking themselves in.

HEWI eLOCK lock and double-knob cylinders can be optionally operated on both sides with HEWI eLOCK identifiers.

Unauthorised keys or unconnected knobs can be freely turned. Keys and knobs can only be connected (switched on) after a positive authorisation check.

Depending on the cylinder model, the HEWI eLOCK cylinder is operated by inserting an authorised transponder key in the keyway or by holding an authorised HEWI eLOCK identifier in front of a knob to be switched on. Following a positive authorisation check the lock can be opened by turning the knob or by turning the inserted key in the lock.

The outer knob must be removed to dismantle the HEWI eLOCK double-knob cylinder. This is only possible from the inner side of the door and a special tool must be used.

For an external power supply it suffices to remove the cap of the outer knob. This is also possible from the outer side of the door.

HEWI eLOCK lock cylinders can be supplied for use in doors in escape routes with free-turning, non-connectable inner knob. These lock cylinders are specially intended for use in anti-panic locks which require a defined lock bit position.

All HEWI eLOCK cylinders are suitable for use in fire doors.

HEWI eLOCK single and double-knob cylinders signal authorised or unauthorised access attempts as well as system messages by means of green, red or blue light signals on an all-round illuminated ring at the front and on all sides.

All HEWI eLOCK cylinders are suitable for use in external building doors. Lock cylinders satisfy degree of protection IP21, double-knob and single cylinders satisfy degree of protection IP44 according to EN 60529.

All HEWI eLOCK cylinders are approved for used within the following temperature range

- Outer knob: -20 to +55°C
- Inner knob: 0 to +55°C

Depending on the programming of the authorised identifier, HEWI eLOCK cylinders either respond with an adjustable time short-term release or by activation/deactivation of the permanent release.

The knobs of the HEWI eLOCK cylinders are available with a stainless steel surface and in the HEWI colours.

Wall scanner (product group specific)

Wall scanners are operated with an external power supply within the range 12-24 volt direct voltage or 24 volt alternating voltage. The voltage type and level are automatically recognised.

Optionally, all HEWI eLOCK wall scanners (except the multiple property version) can be networked through TCP/IP via a LAN module. This also allows networking via the ethernet (intranet / internet).

HEWI eLOCK wall scanner controls, antennas, relays, LAN modules and power supplies are prepared for installation in flush-type boxes. Optionally, HEWI eLOCK wall scanner controls, relays, LAN modules and power supplies can also be supplied as a version for installation on mounting rails (top-hat rails).

Special spacer frames are available for surface installation of the wall scanners and antennas.

HEWI eLOCK wall scanners can be integrated in the standard series of the switch range manufacturers Gira, Merten, Jung and Berker. A special cover is available for this purpose.

HEWI eLOCK wall scanners can be integrated in Siedle intercom systems. A special cover is available for this purpose.

HEWI eLOCK wall scanners are optionally available with an external antenna (controls in protected inner area, antenna in outer area) or an internal antenna (controls and antenna integrated together).

Up to 6 antennas in total can be connected to each HEWI eLOCK wall scanner control.

Each HEWI eLOCK wall scanner has an internal relay (make contact/NO, max. 60 V (AC/DC); 2.0 A), and can be extended by two external relays (changeover contacts).

Special wall scanners are available through which up to 100 additional relays can be controlled for 4350 identifiers taught directly in the wall scanner.

HEWI eLOCK multi-property wall scanners can be simultaneously integrated in up to 4 systems - e.g. at jointly used entrance doors. The respective eLOCK Center software of a system can only access data of its own system, 80,000 identifiers can be authorised in each system. If a HEWI eLOCK multi-property wall scanner is integrated in more than 4 systems (up to 8 are possible) the maximum number of identifiers which can be authorised for this wall scanner reduces to 40,000 identifiers per system.

HEWI eLOCK antennas are available as versions for indoors (degree of protection IP21 according to EN 60529) or outdoor areas (degree of protection IP65 according to EN 60529).

All HEWI eLOCK wall scanner components are approved for use within the temperature range from -20 to +55°C.

The HEWI eLOCK wall scanner is operated by holding an authorised HEWI eLOCK identifier (all types) in front of it.

Depending on the programming of the authorised identifier the HEWI eLOCK wall scanners either respond with an adjustable time short-term release or by activation/deactivation of the permanent release.

HEWI eLOCK wall scanners signal authorised or unauthorised access attempts as well as system messages through green, red or blue light signals in an all-round illuminated ring towards the front as well as through additional sound signals.

HEWI eLOCK wall scanner cover caps are available in the HEWI colours.

Comfort system (product group specific)

The HEWI eLOCK Comfort system realises access organisation by decoupling or coupling in existing door lever handles on both sides. A change in condition is achieved by simply holding an authorised identifier in front of the antenna. There is no locking in the conventional sense by means of knobs or keys; mechanical unlocking and locking is no longer necessary.

In the HEWI eLOCK Comfort system the lever handles have no function when decoupled: They can be pressed but have no connection with the lock latch. In this condition the door cannot be opened with the lever handle.

In the HEWI eLOCK Comfort system the lever handles pull back the lock latch when pressed in a coupled condition. This enables the door to be opened using the lever handle as usual.

In the HEWI eLOCK Comfort system the lever handles remain decoupled or coupled until an authorised identifier is again held in front of the antenna. In addition, in the decoupled condition (door cannot be opened) the lever handles can always be coupled from the inside by pressing a button for one-off opening of the door. This ensures the door can always be accessed from the inside even if a person accidentally locks themselves in.

The HEWI eLOCK Comfort system has a lock latch which cannot be mechanically pressed in if the door levers are decoupled (blocked follower).

The HEWI eLOCK Comfort system can be used in conjunction with standard room fittings with continuous square spindle. The antennas can be mounted on all roses and backplates with Euro cylinder keyholes.

The HEWI eLOCK Comfort system is equipped with antennas on both sides so that the system can be operated by identification with an authorised identifier on both the inside and on the outside of the door.

The installed dimensions of the HEWI eLOCK Comfort system corresponds to those of a mortise lock according to DIN 18251, and is available in the following versions for rebated and butt doors:

- Square: 8 and 9mm, continuous lock follower
- Backset dimensions: 55, 60 and 65 mm
- Distance: 72 mm
- Forend shape: angular and round
- Forend width 20 and 24 mm
- Forend material: Stainless steel
- DIN direction: right and left-hand

The antenna covers of the HEWI eLOCK Comfort system are available in the HEWI colours.

The HEWI eLOCK Comfort system is approved for use within the temperature range from 0 to +55°C.

Backplate fitting (product group specific)

The following types of HEWI eLOCK backplate fittings are available:

Mechanical burglar protection:

- Standard
- Burglar protection class ES 2 according to DIN 18257 or class 3 to DIN EN 1906

Fitting type:

- Room fittings
- Entrance set (apartment door fitting)
- Half-set

HEWI eLOCK backplate fittings are suitable for installation in standard mortise locks according to DIN 18251.

HEWI eLOCK backplate fittings can be actuated from the inside without a transponder to prevent people from accidentally locking themselves in.

HEWI eLOCK backplate fittings are approved for use in fire doors. Test certificate and monitoring agreement are available.

The unconnected / not switched on knob of the eLOCK backplate fitting can be freely turned. The knob is not connected (switched on) until after a positive authorisation check.

The HEWI eLOCK backplate fitting is operated by holding an authorised HEWI eLOCK identifier in front of the antenna integrated in the fitting. Following a positive authorisation check the lock can be opened by turning the knob.

HEWI eLOCK backplate fittings are approved for use in the external doors of buildings.

HEWI eLOCK backplate fittings are approved for use within the following temperature range

- External backplate: -25 to +55°C
- Internal backplate: 0 to +55°C

Depending on the programming of the authorised identifier the HEWI eLOCK backplate fittings either respond with an adjustable time short-term release or by activation/deactivation of the permanent release.

HEWI eLOCK backplate fittings have automatic door thickness compensation of up to 10 mm and automatic compensation of the lock seat by means of a flexible Cf adapter.

HEWI eLOCK backplate fittings have a maintenance-free plain bearing in the backplate and can be combined with HEWI R technology lever handles.

The power supply for HEWI eLOCK backplate fittings is provided by a 6 volt CR2P lithium block. If the batteries are dead the fittings can be supplied from a 9 volt block external power supply on the outside.

The following HEWI eLOCK backplate fitting versions are available:

- Door thicknesses from 38.1 mm up to 80 mm, further dimensions available on request
- Distance 72, 88 and 92 mm

HEWI eLOCK backplate fittings are available in the HEWI colours.

Framed door system (product group specific)

HEWI eLOCK offers a special framed door solution without cylinder knob for narrow framed doors, which ensures jamming-free opening of the doors.

The HEWI eLOCK Framed Door system includes a self-locking lock which automatically locks when the door is closed. There is no locking in the conventional sense by means of knobs or keys; mechanical locking is no longer necessary.

In the HEWI eLOCK Framed Door system the inner lever handle is always coupled in. When the inner lever handle is pressed the latch and bolt are drawn back by the anti-panic function; the doors can always be opened from the inside.

The HEWI eLOCK Framed Door system realises access organisation through the short-term coupling-in of the otherwise idling outer lever handle after holding an authorised HEWI eLOCK identifier in front of the antenna. When the coupled in outer lever handle is pressed the latch and bolt are drawn back by the integrated anti-panic function. There is no unlocking in the conventional sense by means of knobs or keys; mechanical unlocking is no longer necessary.

In the HEWI eLOCK Framed Door system the outer lever handle has no function when decoupled: It can be pressed but has no connection with the lock latch and bolt. In this condition the door cannot be opened with the outer lever handle.

The HEWI eLOCK Framed Door system can be used in conjunction with standard room fittings with divided square spindle.

Optionally, the HEWI eLOCK Framed Door system can be opened in parallel via additional Euro form cylinders.

The following versions of the HEWI eLOCK Framed Door system are available for framed doors:

- Square: 9mm, divided lock follower
- Backset dimensions: 35 and 40 mm
- Distance: 92 mm
- Forend dimensions: 24 x 300 mm
- Lock strength according to DIN 18251 Class 3.

HEWI eLOCK Framed Door systems are approved for use in fire doors. Test certificate and monitoring agreement are available.

The HEWI Framed Door system is approved for use in doors in escape and evacuation routes with the usual anti-panic fittings available on the market, in particular it is certified as being approved for use according to DIN EN 179 and DIN EN 1125 with HEWI lever handles.

Depending on the programming of the authorised identifier the HEWI eLOCK Framed Door systems either respond with an adjustable time short-term release or by activation/deactivation of the permanent release.

The reading (scanning) and evaluation electronics of the HEWI eLOCK Framed Door System is fixed directly to the door frame above the lock.

HEWI eLOCK Framed Door systems are approved for use within the following temperature range

- External backplate: -25 to +55°C
- Internal backplate: 0 to +55°C

The cover caps of the HEWI eLOCK Framed Door systems' read/evaluation electronics are available in the HEWI colours.

Face biometrics module (product group specific)

HEWI eLOCK Face Biometrics modules have 3 cameras with which the faces of persons of different size can be detected.

HEWI eLOCK Face Biometrics modules have an LCD screen for communication with the user and for visual checking of the user's facial area scanned for the facial recognition.

The HEWI eLOCK Face Biometrics module is operated in two steps:

- First step: An integrated HEWI eLOCK wall scanner checks the identifier held in front of it to ensure it has valid access authorisation.
- Second step (if first step is positively completed): The face of the current identifier user is compared in the Face fitting with the facial data stored for this identifier in the face fitting. Each authorised identifier is assigned to precisely one user. Only this user receives a release in combination with this identifier.

The HEWI eLOCK Face Biometrics module is intended for direct connection to a 230 volt power supply.

Optionally HEWI eLOCK Face Biometrics modules can be networked through TCP/IP via a LAN module. This also allows networking via the ethernet (intranet / internet).

The HEWI eLOCK Face Biometrics module is provided with a control for installation in the protected inner area and a remote user interface.

Each HEWI eLOCK Face Biometrics module has an internal relay (make contact/NO, max. 60 V (AC/DC); 2.0 A), and can be extended by two external relays (changeover contacts).

The HEWI eLOCK Face Biometrics module is available for indoors (degree of protection IP21 according to EN 60529).

The HEWI eLOCK Face Biometrics module is approved for use within the temperature range from +5°C to +55°C.

Depending on the programming of the authorised identifier the HEWI eLOCK Face Biometrics modules either respond with an adjustable time short-term release or by activation/deactivation of the permanent release.

HEWI eLOCK Face Biometrics modules signal authorised or unauthorised access attempts as well as system messages through green, red or blue light signals in an illuminated ring.