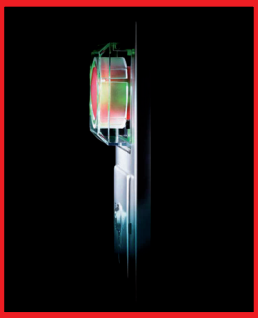
Escape door control unit
Type 720-40



Operating and Installation Instructions

ASSA ABLOY

ASSA ABLOY, the global leader in door opening solutions

D0060000

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Content

Description

Innovation

In developing the new generation of FT, particular importance was attached to:

- Forward-thinking innovation
- Versatile range of uses
- Operational and functional elements integrated into a compact design
- Wide range of functions due to networking of devices
- Options for integration into building and risk management systems
- High operational reliability
- Less time and effort to install and configure the system

General

Doors along escape routes – emergency exit doors – must be easy to open from inside without additional tools at all times. Their locks must therefore have a panic function so that the pre-locked bolt retracts if the inner handle is activated. On the other hand, the doors should be locked for safety reasons. In many cases, this leads to problems in administrative buildings, department stores, industrial plants and other similar buildings. It is no longer possible to effectively monitor the doors in question.

To gain control of this situation with a justifiable amount of effort, systems are installed that electrically lock the doors, monitor their locking status and report their opening or unlocking.

To ensure that such systems can be opened in an emergency, they are – save in exceptional circumstances – always equipped with an emergency switch which when activated immediately deactivates the electric lock, enabling people to pass through the door, and triggers an alarm.

The locking elements must hold the door closed with sufficient force and reliably unlock in an emergency even if pre-loaded.

Such systems must also provide certain control functions so that they can be temporarily or continually released if necessary.

The emergency release of the door through a fire alarm system, if available, must also be possible.

Functions of the 720-40

Overview

- Direct release of the escape door using an emergency button
- Indirect release of the escape door using a central emergency-cutout switch
- Unlocking of the escape door (for example, by a fire alarm system)
- Permanent unlocking using the key pushbutton or an external contact such as a timer switch
- Temporary release using the key pushbutton or externally connected button
- Escape door locking status signalled by the door status indicator
- Alarm status indicated by an optical and audible signal

Stand-alone function

- Commissioning and configuration on the device
- Can be extended with an E/A module 901-20
- Implementation of a wire-interconnected interlock function

Networked version

- Commissioning and configuration using the FTmanager
- Configuration on the device
- Can be extended with an E/A module 901-20
- Up to 120 devices can be connected to the TSB Controller
- Delayed release after EMERGENCY-OPEN is actuated (special function)

Operating elements

The escape door control unit 720-40 can be operated using the following elements:

- Flush-mounted escape door terminal 1380 With key-operated switch
- 1380-01
  - 1380-03
  - 1380-04
  - 1380-06
- 1385ES1
- Terminal module 1337-10 / -11 / -12
- Terminal module 1370-10
- Operating unit 1332-10 / 11
- Operating unit 1332-70

General

Introduction

ASSA ABLOY Sicherheitstechnik GmbH's extensive experience and state-of-the-art production and testing procedures ensure the device is highly reliable.

These operating and installation instructions have been compiled for skilled electricians and trained personnel. They are designed to enable you to install and operate the device safely, and fully exploit the permitted range of uses the control terminal has to offer.
They also provide information about how key components work.

Signs and symbols in these instructions

The signs and symbols in these operating instructions are designed to help you use the devices and instructions quickly and safely.

Note
This symbol indicates additional information which is useful when handling devices.

Warning about a general hazard
This warning symbol indicates tasks where different causes may lead to hazards or impair device functions.

1. **Procedural steps**
The specified sequence of steps will make it easier for you to use the device safely and correctly.

✓ **Result**
This indicates a description of where the end result of a sequence of steps.

Packaging and storage

Our devices are carefully packed to ensure adequate protection during shipment. When you receive your device, you must check it and the packaging to ensure it is complete and undamaged.

Risk of injury
The device must not be used if it is damaged.
Damaged cables and plug connections also represent a safety hazard and must not be used.

Environmental protection	Packaging materials must be recycled. In doing so, you must comply with local environmental protection regulations.
Intended use	The device is designed to create an escape door control system. It can be operated as a stand-alone control unit or within a building network. It is not intended for any other use.
Warranty	We provide a warranty for this device valid from the date of purchase in accordance with statutory/country-specific regulations. If any damage occurs, the device will be repaired or a replacement supplied. Any damage caused through natural wear, overloading or incorrect use is excluded from the warranty.

Mounting

Regulations

- During electrical installation, the German Electrical Engineering Association (VDE) and local electricity company regulations must be observed.
- It must be possible to disconnect the device from the power supply circuit using an easily accessible energy-isolation device.
- Electric locking systems can only be used on smoke or fire doors if the door's product use certification states such systems can be used. Systems must be installed as required by the certification. Exception: elements which can also be fitted to previously manufactured fire barriers.

Mounting methods

The device is designed for the following mounting methods:

- Central mounting in distribution cabinets.
- On-site mounting in a standard installation distributor.

To this end, the device is integrated into housing for top hat rail mounting (T"35) and distributor installation.

Installation and connection

General information

Electrical installation

Note
Ensure the correct connection is used!
The warranty shall be void if the incorrect connection is used.

The following table lists the power consumption of the devices that can be connected to the control unit.

Locking elements
Note
For a description and connection diagrams for the locking elements, please see document D00470.

Operating elements

Device	Power consumption type at 24 V	Max. number
Escape door terminal 1380	105 mA	4
Escape door terminal 1370-10	55 mA	7
Terminal module 1385ES1	-	
Terminal module 1337-10	100 mA	4
Terminal module 1337-11	100 mA	4
Terminal module 1337-12	100 mA	4
Operating unit 1332-10	100 mA	4
Operating unit 1332-11	100 mA	4
Operating unit 1332-70	100 mA	4

Providing a power supply

A low safety voltage between +12V -15% and +24V +15% must be supplied to operate the device in accordance with DIN 60 950.

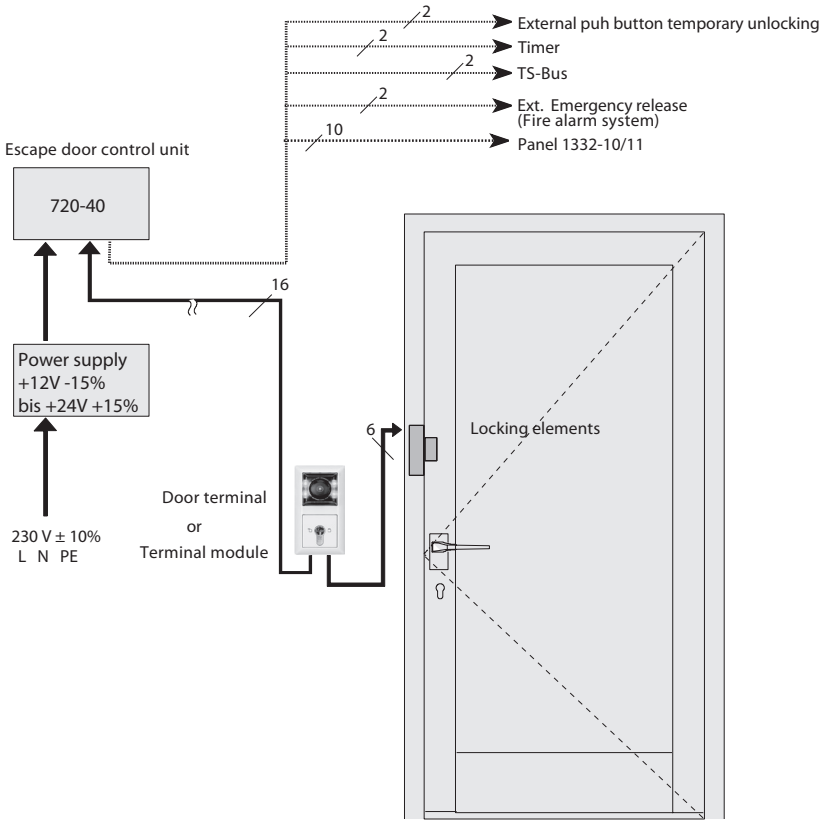
Control circuits

Description	Value
Length	max. 300 m
Length of cabling to the locking element	max. 100 m
Cable cross-section	Choose a cable which will ensure the voltage in the locking unit is at a maximum of 10% under the locking unit's specified rated operating voltage when it is working to full capacity and while taking into account all other losses such as potential voltage drop in the feed cable.

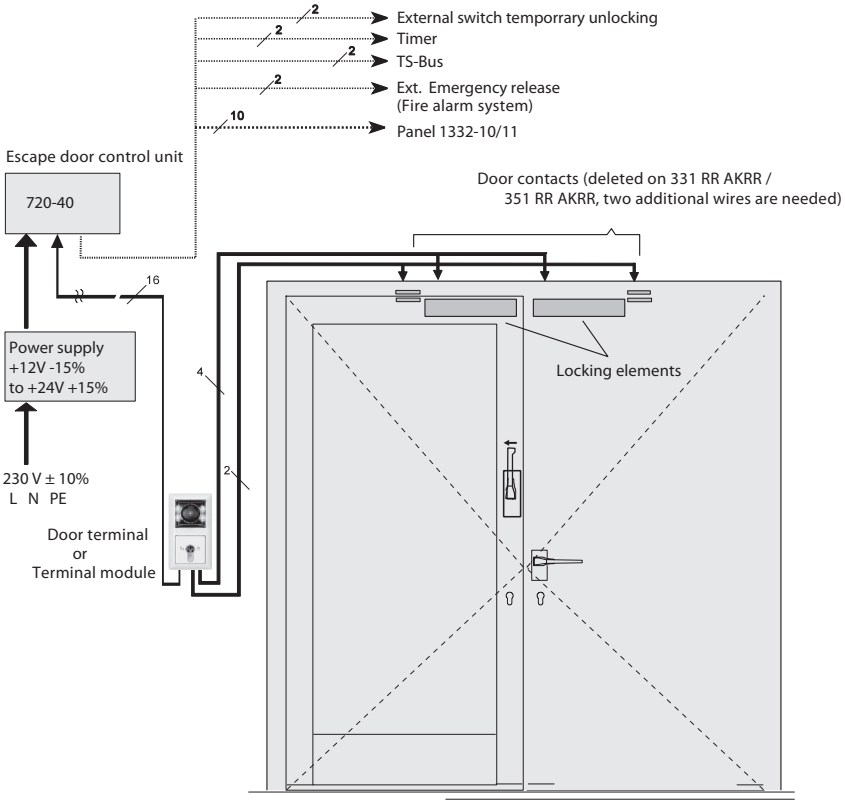
Bus cables

Description	Value
Length	max. 1000 m
Resistance to bus devices	max. 65 Ω
Special considerations	Use separate cable
Type	JY (St) Y
Cable cross-section	Min. 0,28 mm²Ideally 0,5 mm² Only use one wire in each cable Do not connect wires in parallel

For a single-leaf escape door with an escape or swing electric strike (cable diagram)



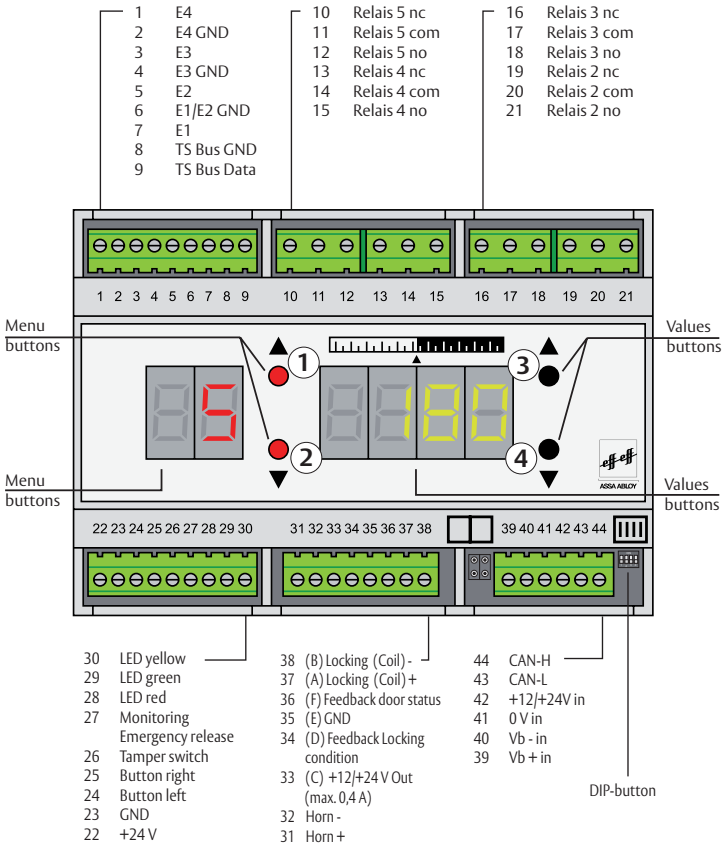
For a double-leaf escape door with a flat holding magnet (cable diagram)



Note

On double-leaf doors, a locking element must be used for each leaf. All escape door locking elements from the ASSA ABLOY range can be used.
When using flat holding magnets, ensure that a minimum headroom of 200 cm is provided!

Terminal assignment



DIP switch
All switches are set to the OFF position by the factory

Switch	Function	OFF	ON
1.	Hi-O: Bus termination	No function assigned:	
2	Hi-O: Group	Reserved for extension at a later date	
3	TS bus: Master/Slave	**Slave** (For stand-alone operation without E/A extension and networked operation)	Master with Address 1 *) (For stand-alone operation with E/A extension)
4	Configuration mode (set according to hardware if no key switch is used)	OFF	ON

*) If an E/A extension is used, this must be assigned to address '2'.

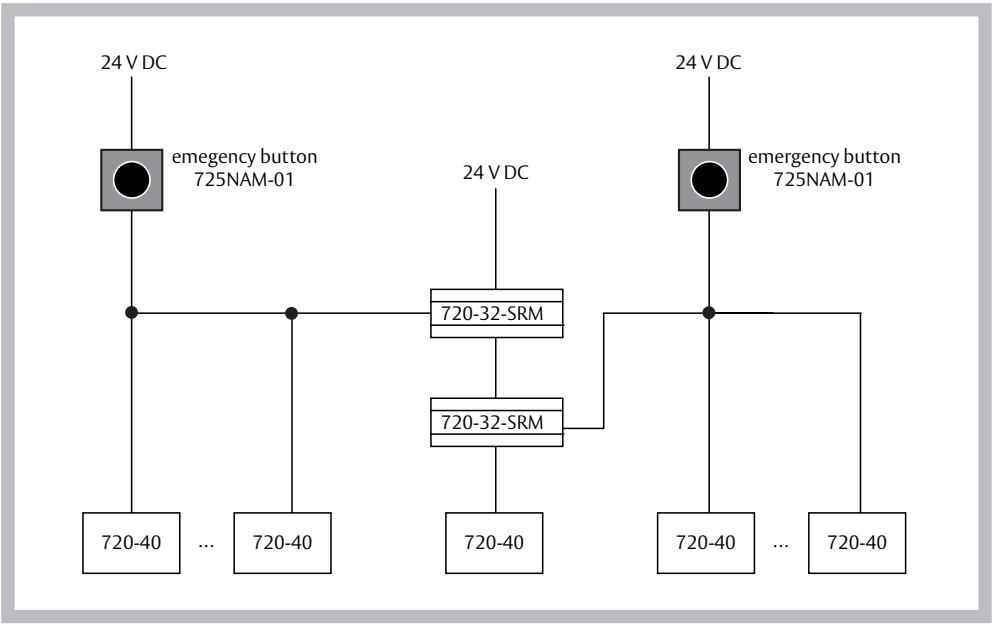
Safety relay module 720-32-SRM—F00

This is a safety relay with forcibly guided contacts (self-monitoring).

Functions

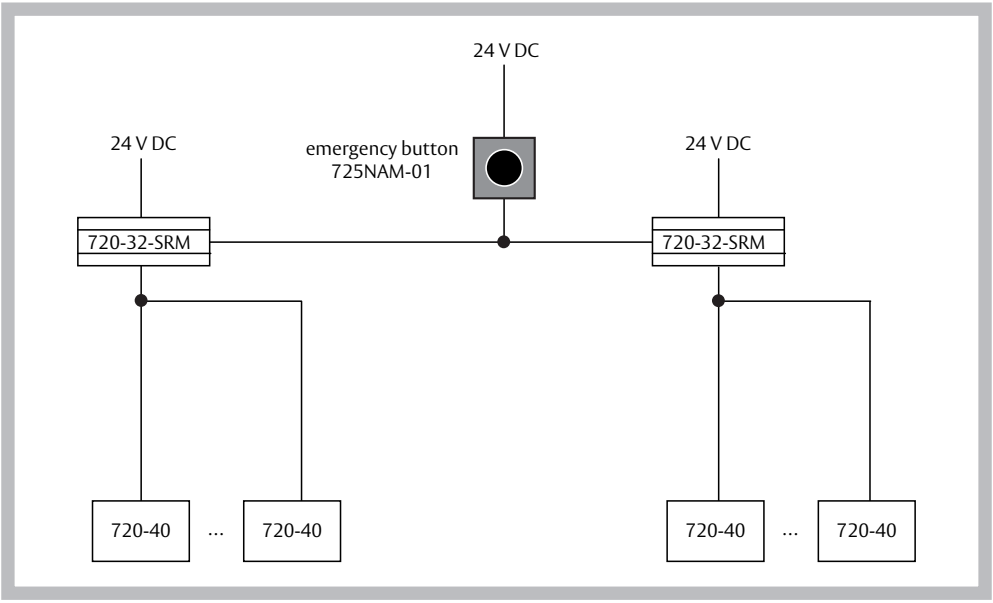
Logical connection of multiple central emergency-open power circuits

- For joint exit doors leading outdoors from two different building sections.



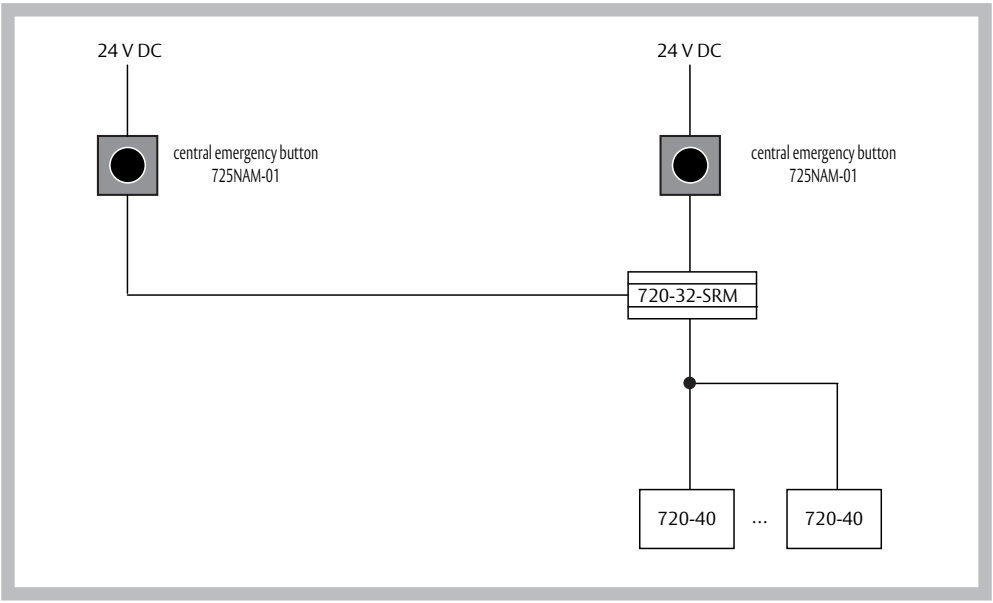
Releasing more than 19 escape door control units via a central emergency button

– In the event of more than 19 escape door control units, the central emergency button's switching capacity is exceeded.



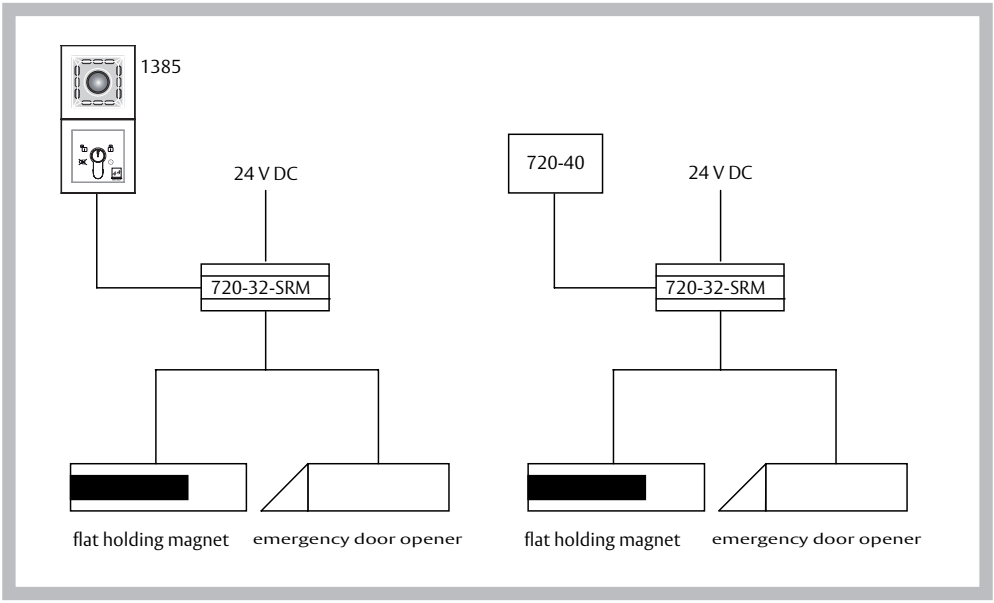
Bridging greater cable lengths for central, higher-level emergency buttons

- In practice, both a station-related emergency button and emergency buttons in the security centre are required.

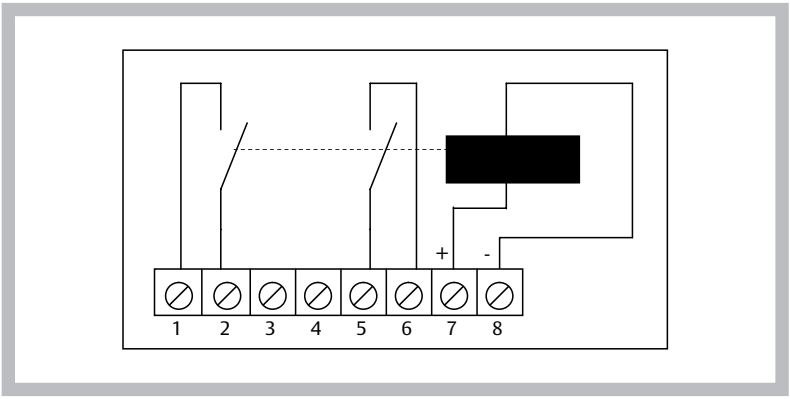


Controlling several locking elements

- To connect additional locking elements to an escape door control unit.



Connections



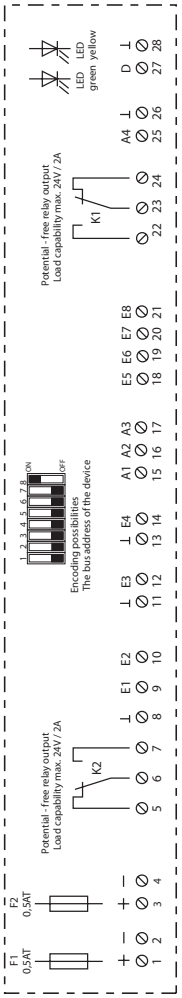
Technical data

Description	Value
Load on the contacts	max. 30 VDC, 2A
Inductor operating voltage	24 VDC
Voltage range	20 – 30 VDC residual ripple 5%

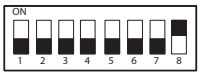
E/A extension module 901-20

The escape door control unit 720-40 can be extended with E/A extension module 901-20 to include further switching operations.

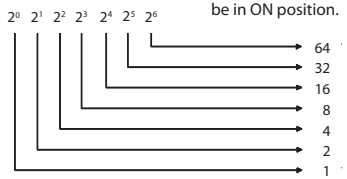
Circuit diagram



E1-E8 = Inputs / Signal = Low Active (0V)
A1-A4 = Outputs - Open Collector / Mass switching (0V)
(Voltage drop observed!)
K1 = Potential-free relay output
Load capability max. 24V / 2A (resistive load)
K2 = Potential-free relay output
Load capability: max. 24V / 2A (resistive load)



Button 8 must be in ON position.



Note:
It may only be connected a power supply.

Voltage supply

12 V-Akku or 12 V DC, controlled

12 V DC ±10 %, Ripple max. 50 %
12 V AC ±10 %
Only clip 1 and 2: 24 V DC, controlled

Configuration using the 720-40

DIP switch	networked	stand-alone
1.	Address	off
2		on
3		Profile number
4		
5		off
6		off
7		off
8	Networked operating mode = on	Stand-alone operating mode = off
Note:	A TS bus controller is required.	The 720-40 must be set to master operation (DIP 3 = on).

Note
If configuration is carried out using FTManager, profile '0' (called functions templates in FTManager) must always be selected, as this is the only place that changes can be saved.

Profiles when using the 720-40 (stand-alone)

Profile	DIP switch		Function
	3	4	
0	off	off	Link to higher level systems (factory setting)
1	off	on	Door drive
2	on	off	Door control
3	on	on	Interlock

Terminal assignments 901-20

Profile 0 - Link to higher level systems

Connections	Description	Connections	Description
E1	Fire alarm system (inverse)	K1	Released/locked signal
E2	Intrusion alarm system/ interlock	K2	Alarm signal (inverse)
E3	Clock	A1	-
E4	Lock	A2	-
E5	Unlock	A3	-
E6	Unlock with delay	A4	-
E7	Temporary release		

Connections	Description	Connections	Description
E8	-		

Profile 1 - Door drive

Connections	Description	Connections	Description
E1	Fire alarm system (inverse)	**K1**	Door drive – automatic operation
E2	Intrusion alarm system/interlock	**K2**	Door drive - activation
E3	Clock	**A1**	-
E4	Lock	**A2**	-
E5	Unlock	**A3**	-
E6	Unlock with delay	**A4**	-
E7	Temporary release		
E8	-		

Profile 2 - Door control

Connections	Description	Connections	Description
E1	Fire alarm system (inverse)	**K1**	Electric strike/ motorized lock
E2	Intrusion alarm system/interlock	**K2**	Holding magnet
E3	Clock	**A1**	-
E4	Lock	**A2**	-
E5	Unlock	**A3**	-
E6	Unlock with delay	**A4**	-
E7	Temporary release		
E8	-		

Profile 3 - Interlock

Connections	Description	Connections	Description
E1	Fire alarm system (inverse)	K1	Door is interlocked
E2	Intrusion alarm system/interlock	K2	Door is interlocked (inverse)
E3		A1	Block interlock
E4		A2	
E5		A3	
E6		A4	
E7			
E8			

Wire-interconnected interlock

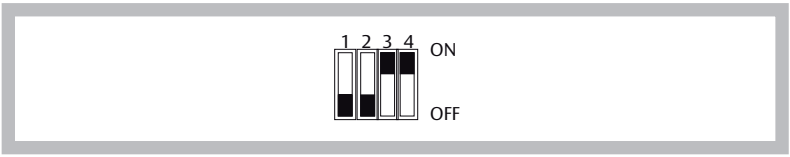
This is a basic interlock door system with an emergency exit function without a central bus master (stand-alone).

Function
As soon as a door is temporarily released or unlocked, the corresponding door (several doors also possible) is blocked and thus cannot be opened.
If the released door is not opened before the pre-set temporary release time has elapsed, it is automatically locked again.

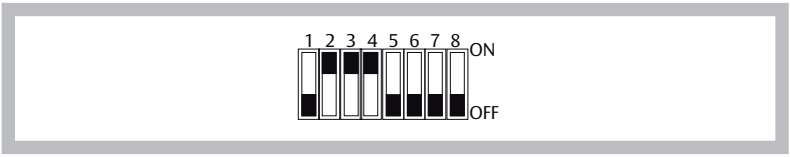
Note
The escape route is assured using a fail-unlocked operating principle, i.e. in the event of a power failure, or unlocking by a fire alarm system or an EMERGENCY-OPEN switch, locking elements are disengaged and all doors can be opened at the same time.

Prerequisites:

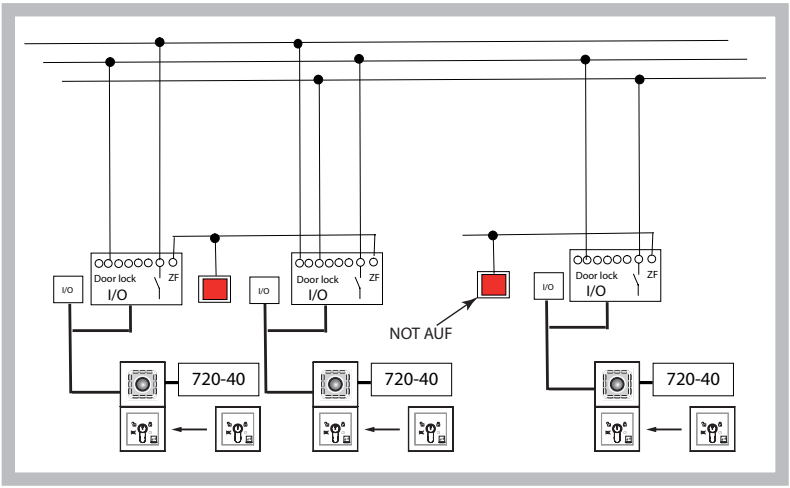
- Device 720-40 is in stand-alone mode (DIP switch 3 = ON).



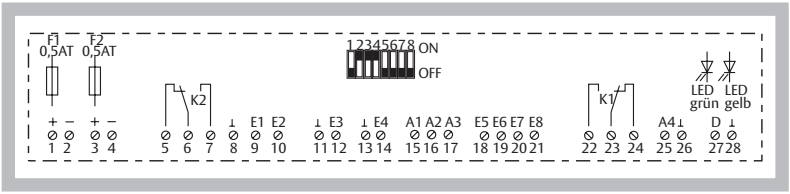
- E/A extension modules 901-20 are set to set profile '3' (also see 'Terminal assignments 901-20, profile '3')



Circuit diagram overview



Terminal assignments 901-20



Output functions (A1 to A4)

- Block interlock. The corresponding door(s) is/are blocked.

Output function K1 and K2

- 'Door blocked' and 'Door closed and locked' indicators.

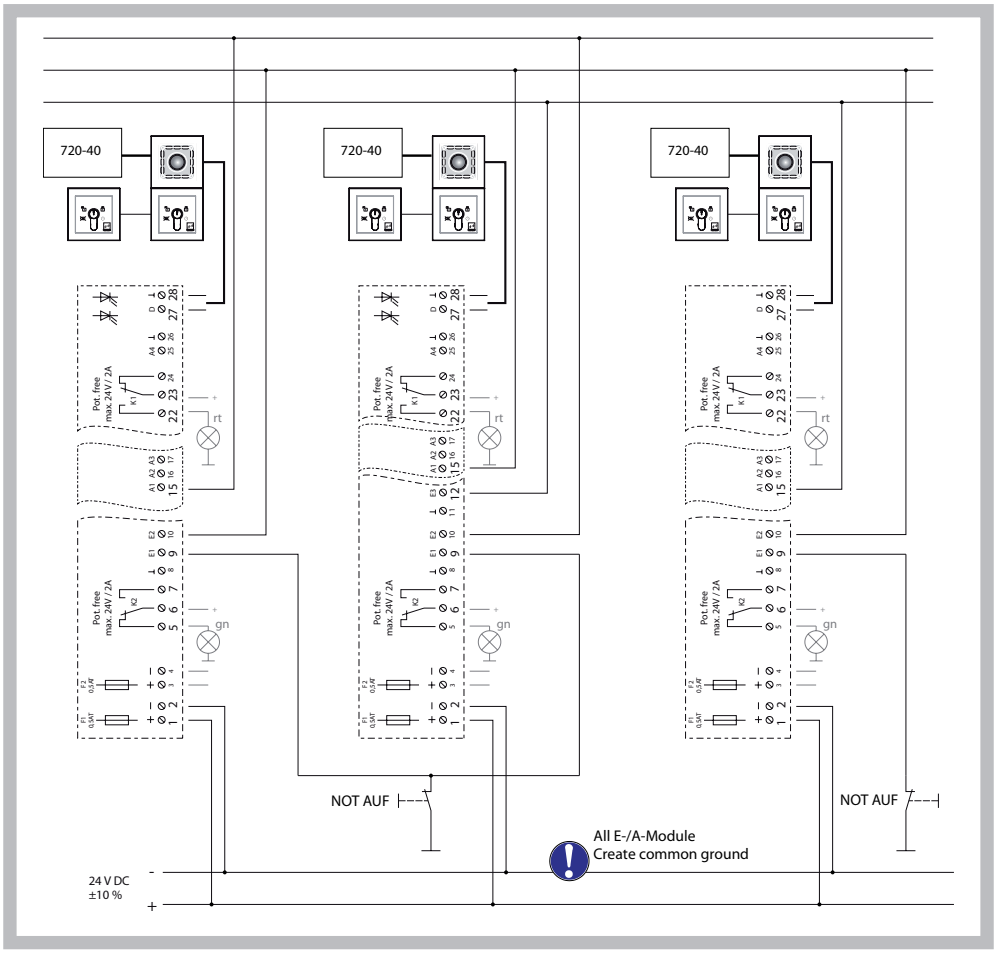
Input function E1

- Emergency release (for opening interlock in the event of a fault). The door is released in emergency mode and an alarm is triggered.

Input functions (E2 to E8)

- Block door.

Detailed circuit diagram (example of use)



Commissioning

Note
The installation and operation of electric locking devices on doors in escape routes are subject to building inspection authority regulations. Compliance must be ensured by both the fitter and the operator.

General

Before initial commissioning:

1. Check that all elements, including those which disengage the locking device and its electrical connections, have been duly installed and function correctly.
2. Have technical specialists check that the locking system for escape doors has been properly installed and functions correctly.
3. Install the 'FT Manager' software and check that it functions correctly (only with networked systems).

Switch on or resumption of power supply

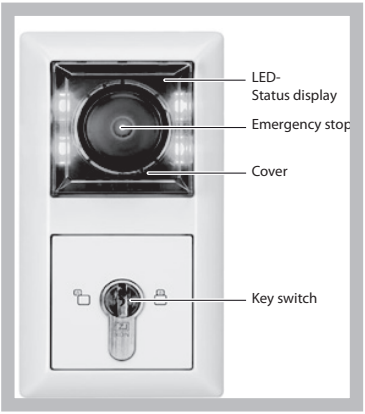
When the system is turned on or following a power supply failure, the position of the external emergency switch and the status of all control inputs are queried and evaluated. The resultant system switching status is then directly dependent on these input parameters.
If an alarm is triggered after the system is switched on and the cause cannot be immediately identified, the cause can be established by looking at the LED colour combination on the escape door control unit (see table in the 'Signals' section).

Operation

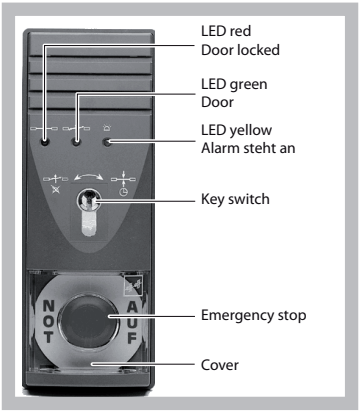
Operating elements

The following devices act as switch and display devices for the escape door control unit.
For detailed information, please see the device-specific operating and installation instructions.

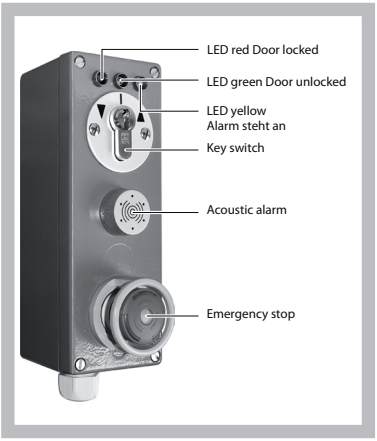
Escape door terminal 1380



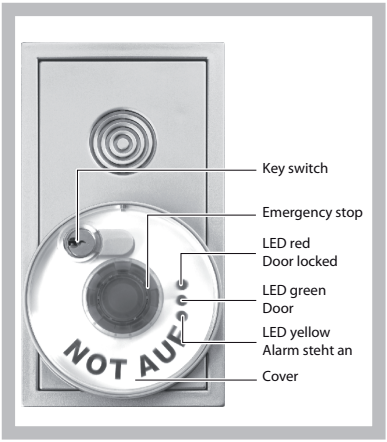
Escape door terminal 1337-10/-11



Escape door terminal 1337-12

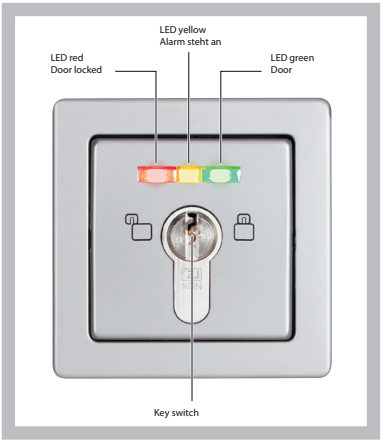


Escape door module 1370-10



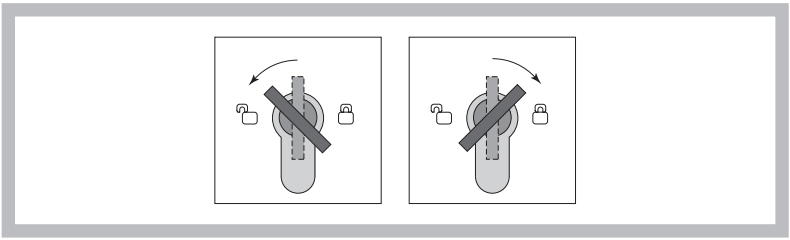
Operating unit 1332-10 / -11

Operating unit 1332-70



Switching functions

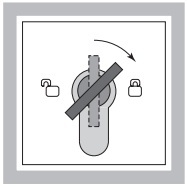
The key switch for the door terminal or terminal module has two key functions, which – depending on the initial status – trigger different switching operations.



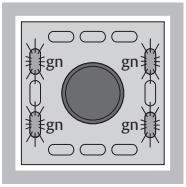
Temporary release

The locked door can be unlocked for the pre-set temporary release time.

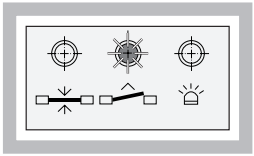
- The door can be opened during the temporary release time.
- The door can remain open for the duration of the door monitoring time.
- Once the door monitoring time is exceeded, the pre-alarm is triggered.
- The times can be set (see the 'Changing times' section).



1. Turn the key to the right.



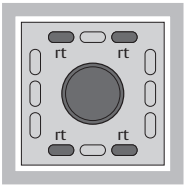
✓ The four green LEDs flash.



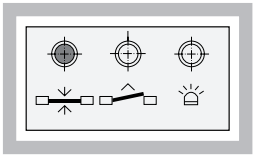
✓ The green LED flashes.

✓ The door is unlocked and can be opened.

2. Close the door within the pre-set door monitoring time.



✓ The four red LEDs light up.



✓ The red LED lights up.

✓ The door is locked.

Pre-alarm

The pre-alarm is a reminder signal.

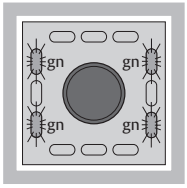
- This signal is time-limited.
- The times can be set (see the 'Changing times' section).

Pre-conditions for a pre-alarm:

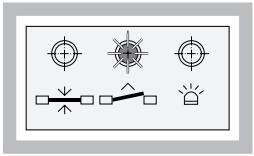
✓ After a temporary release, the opened door is not closed again within the pre-set temporary release time.

✓ The door is not closed after a permanent release and a subsequent pre-set temporary release time have ended.

If the door is closed during the pre-alarm time, the pre-alarm ends and the door is locked.



✓ The four green LEDs flash.



✓ The green LED flashes.

✓ The reminder signal is an audible intermittent signal.

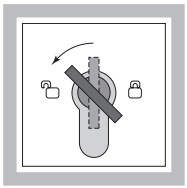
✓ After the pre-alarm time has elapsed, an alarm is triggered.

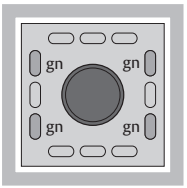
Note

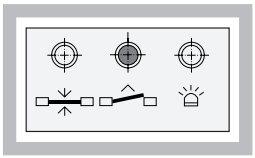
Any alarm triggered (e.g. by the emergency button being pressed) during a temporary release or pre-alarm time will be evaluated and signalled!

Permanent release

The door can be freely passed through and held open.
The same function can also be triggered by an external button – for example in a central control and monitoring panel.
Permanent unlocking can also be triggered by an external switch with a permanent contact, for example by a switching timer.







1. Turn the key to the left.	✓ The four green LEDs light up.	✓ The green LED lights up.

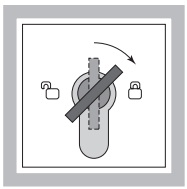
✓ The door is unlocked and can be opened.

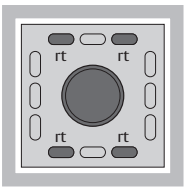
Locking

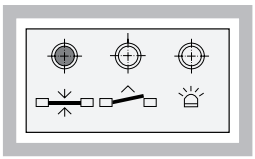
The door can be locked from the status ‘unlocked’:

Prerequisites:
✓ The door is closed.
✓ There is no alarm signal present.

The command is not executed if the door is open.







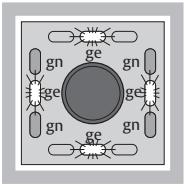
1. Turn the key to the right.	✓ The four red LEDs light up.	✓ The red LED lights up.

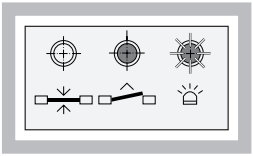
✓ The door is locked.

Danger alarm

The danger alarm is triggered when:

- The emergency button is pressed
- Activated by a fire alarm system





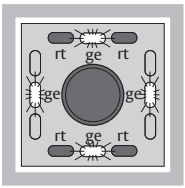
✓ The green LEDs light up. ✓ The yellow LEDs flash.	✓ The green LED lights up. ✓ The yellow LED flashes.

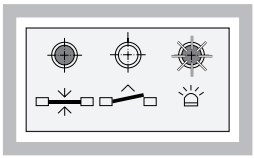
✓ The door is immediately unlocked.
✓ An audible danger alarm signal is emitted.

Tamper alarm

The tamper alarm is triggered:

- When the emergency button protective cover is opened
- By a door contact when a door is forced open
- When the cover on the key switch module is removed
- When the locking element is tampered with





✓ The red LEDs light up. ✓ The yellow LEDs flash.	✓ The red LED lights up. ✓ The yellow LED flashes.

✓ An audible tamper alarm signal is emitted.

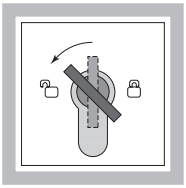
Note
In the event of a 'tamper alarm' the door remains locked.
If a cover is re-closed or replaced, the LED display and the audible alarm remain.

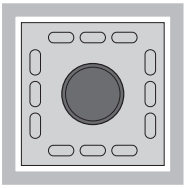
Multi-alarm (1380)

Several alarm statuses can be evaluated and signalled at the same time (only 1380).

Note
If the cause of the alarm is still present after the alarm has been acknowledged, the green LEDs continue to flash in pairs in a diagonal sequence.
The door can only be locked again when all alarm statuses have been reset and the causes of the alarm have been remedied.

Acknowledging the alarm and alarm cause indicator





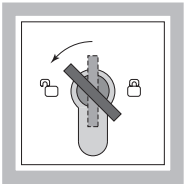
1. Turn the key to the left.
✓ The alarm is acknowledged.

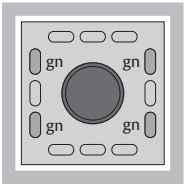
✓ The .....

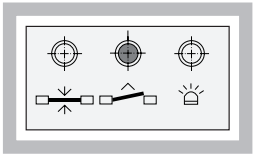
The alarm signal is indicated by an LED sequence pattern (see separate operating instructions for the 1380).

Resetting the alarm

This is displayed for as long as an alarm is present.







1. Turn the key to the left.
✓ The alarm is acknowledged.

✓ The four green LEDs light up.

✓ The green LED lights up.

While an alarm is present, this is displayed by an LED sequence pattern (see separate operating instructions for the modules used).

1. Eliminate the cause of the alarm.
2. Now turn to key to the right to re-lock the door.

Overview of mode indicators

On the operating devices.

Red	Green	Yellow	Horn	Status
Lights up				Locked
Flashes 1:1				Locked, door closed
Lights up		Flashes 1:1	On 1:1	Locked and alarm
	Lights up			Unlocked
	Flashes 1:1			Unlocked Alarm criterion exists
	Lights up	Flashes 1:1	On 1:1	Unlocked and alarm
	Flashes 9:1			Temporarily released
	Flashes 9:1	Flashes 1:1	The signal interval shortens in accordance with the time that has passed	Temporarily released Time exceeded

Configuration

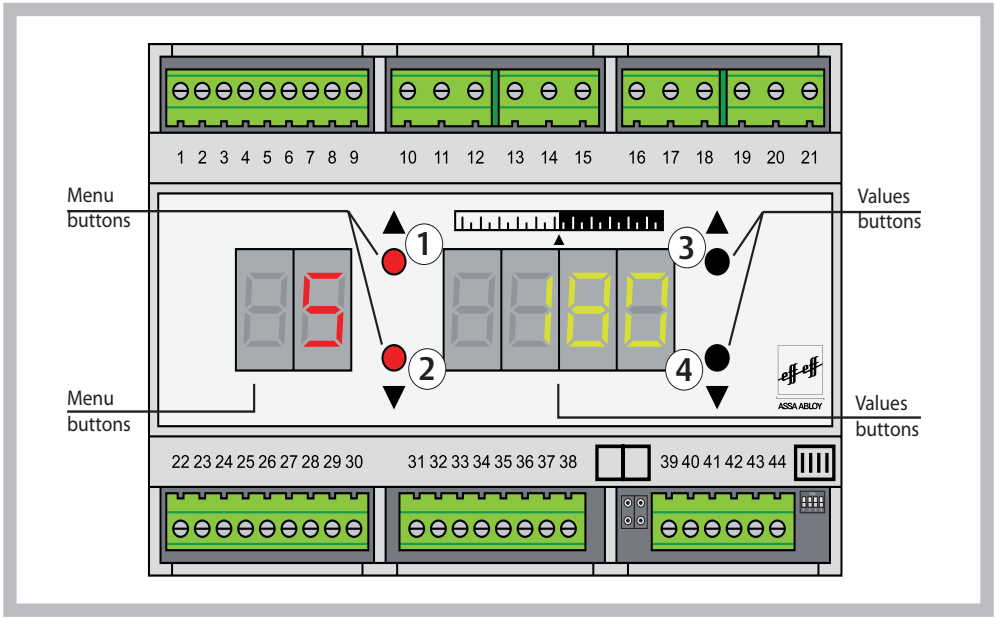
Note

The device can be configured as follows:

- Basic configuration can be conducted on the device itself using four buttons that are accessible once the housing cover has been removed.
- FT Manager (see separate operating instructions) can be used to conduct a more comprehensive complete configuration.

On the 720-40

Overview of circuit boards



Operation

- Buttons 1 and 2 are used to change the menu items (next/previous).
- Buttons 3 and 4 are used to set the values (up/down).

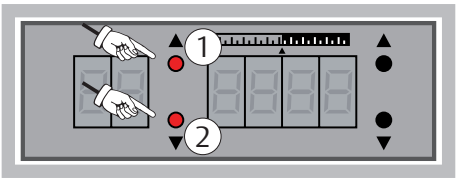
Display

- Two-digit LED display for displaying the menu item.
- Four-digit LED display for displaying the adjustable values.

Note

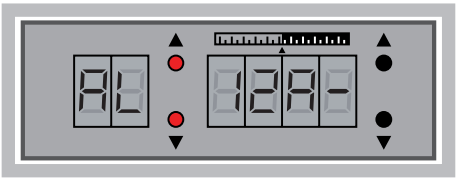
Only basic configuration can be conducted on the device itself.

Starting the configuration mode



1. Press menu button 1 or 2.

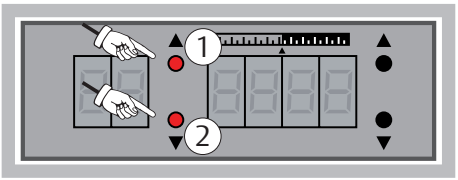
No alarm is triggered!



✓ The configuration mode is started.

If an alarm criterion is present, this is indicated by the four-digit LED display (no display = no alarm cause).

Advancing through menu items



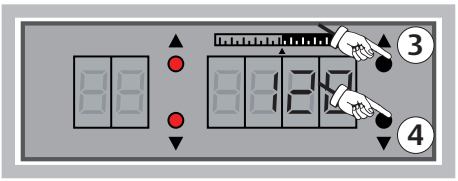
Menu buttons

1. Press button 1 to display the previous menu.
2. Press button 2 to display the next menu.

Note

There is only one menu level available. This means all menu items can be navigated through by pressing menu buttons 1 and 2 (next/previous).

Defining settings in the menu



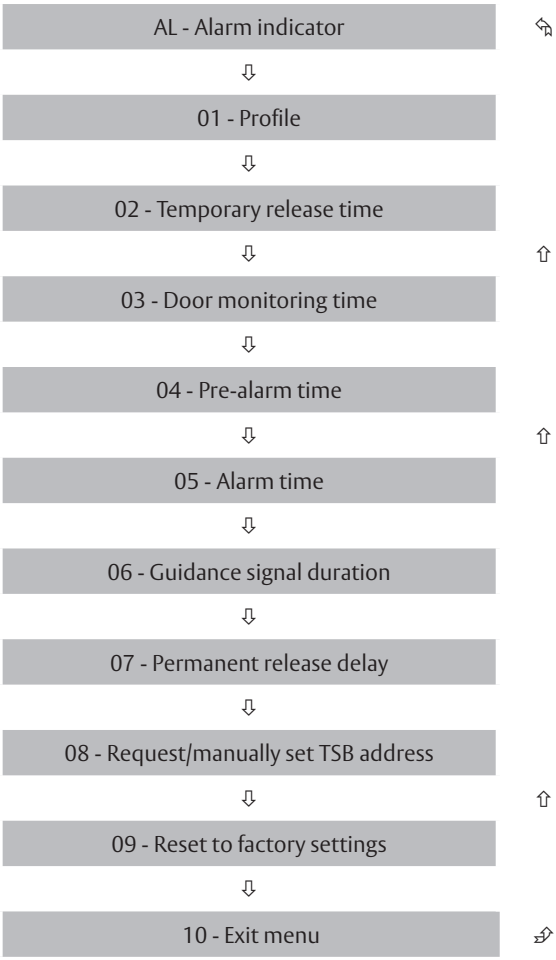
Value buttons

1. Press button 3 to increase the set value.
2. Press button 4 to decrease the set value.

Note

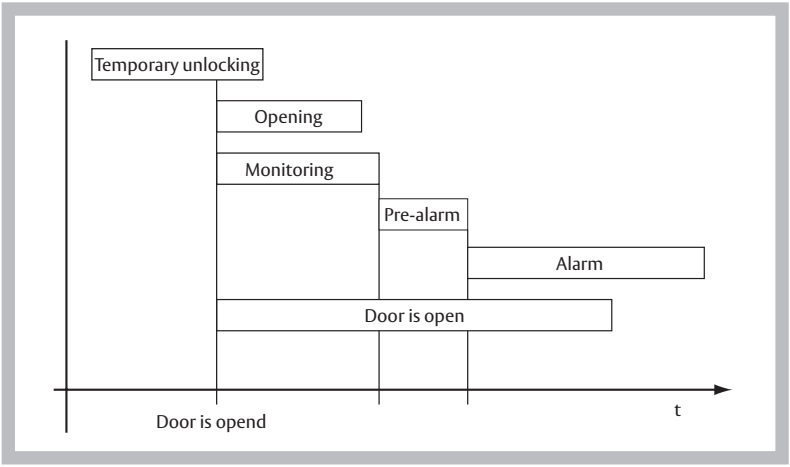
When setting or changing a value, the new value is automatically accepted when you navigate to the next menu item or exit the configuration mode.

Menu structure



Menu items	Menu item display	Value display	Description
Starting the configuration mode			1. Press any menu button. ✓ Configuration mode starts and the alarm indicator follows.
AL - Alarm indicator			If an alarm is present, this is constantly displayed (see the 'Signals' section). If there are several alarms, these are displayed in priority order rather than simultaneously. Use the value buttons to navigate through the alarm signals. If when navigating, no button is pressed for a minute, the alarm with the highest priority will be displayed. This also applies if an alarm is added while navigating.
01 Profile		 	Different profiles (0 to 11) can be selected with optimised default settings (see the 'Profile settings' section).

Times
The following diagram shows the temporal relations between the individual system settings.



[Temporary release]
This can be used to specify the temporary release time (input in seconds).
The door can be used once during this time.

[Hold open]
This can be used to specify how long the door can be held open, e.g. using a holding magnet (input in seconds).

[Monitoring]
This can be used to specify the door monitoring time, which starts after the door is opened (input in seconds).

[Max. permanent opening]
This can be used to specify how long the door can be permanently unlocked before an alarm is triggered.
The door can be freely used during all this time.
After this time period has elapsed, the door is automatically locked again.
The time is entered in hours and minutes (format - HH:MM) up to a maximum of 23h and 59min.
If you enter 00:00, there will be no time restriction on the permanent unlocking.

[Pre-alarm]
This can be used to specify the pre-alarm time (input in seconds).
The pre-alarm merely serves as a reminder to signal that an alarm is imminent.
If an open door is closed again within the pre-alarm time, no alarm is triggered.

[Alarm signal]
This can be used to specify how long an alarm should sound (input in seconds).

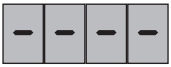
[Guidance signal]
This can be used to specify how long a guidance signal should sound (input in seconds).

[Permanent release delay]
To prevent the accidental activation of the permanent unlocking mode, the door must be
actuated for the set time (input in seconds).
This can therefore be used to specify how long permanent release activation should be delayed after it is switched on.

- "cancel" If you want to cancel the configuration data input without saving.

- " safe" If you want to save all configuration data settings.

Menu items	Menu item display	Value display	Description
02 Temporary release time		 	The door locks at the end of the temporary release time if it remains closed. Range between 1 and 255 seconds.
03 Door monitoring time		 	The door monitoring time starts after the door has been temporarily released and opened. Range between 0 and 3600 seconds.
04 Pre-alarm time		 	Duration of the pre-alarm before the device triggers the alarm. Range between 0 and 255 seconds.
05 Alarm time		 	After the alarm time has elapsed, the audible signal device is switched off. Range between 0 and 255 seconds.
06 Guidance signal duration		 	Duration of the guidance signal. Range between 0 and 255 seconds.
07 Permanent release delay		 	When the permanent release has been switched on, the function is only activated after this set time. Range between 0 and 255 seconds.

Menu items	Menu item display	Value display	Description
08 Request/ manually set TSB address		 	✓ On selecting the menu, the currently set address is displayed (001 to 127). 1. The address can be changed using the value buttons.
		If the device still has the factory setting (no address yet allocated), the following is possible. 2. Hold down both value buttons at the same time for at least five seconds. ✓ An address request is triggered. ✓ The value indicator '----' flashes. ✓ The TSB controller issues and displays a new address. If no new address is issued by the TSB controller within 50 seconds, the original address is re-accepted (value indicator with address value flashes).	
9 Reset to factory settings		 	1. Hold down both value buttons at the same time for at least five seconds. ✓ The device is reset to the factory settings.
10 Exit menu			1. Exit the menu.

Automatically exiting configuration mode

If no input is made for one minute while in configuration mode, the device automatically switches to operational mode and the display is switched off.

Profile settings

The available profiles are optimised default settings, which you can access.

Configuration using FT Manager

To make changes, you must always select profile '00' (called functions templates in FTManager) as it is the only place where changes can be saved.

Note

Profile '00' is set by default when the device is delivered.

Temporary release, tamper loop – factory setting

To control an escape route door with temporary release and operating element 1380, 1332-10/11.

Inputs	Function	Outputs	Function
E1	External temporary release	Relay 1	Alarm (inverse)
E2	Timer contact – closes, opens	Relay 2	Door closed and locked
E3	Intruder alarm system	Relay 3	Electric strike/motorised lock
E4	Fire alarm system (inverse)	Relay 4	Door drive – activation

	Function
Tamper monitoring	As a detection loop (inverse)
inverse	The input is closed during operation and an output relay is activated. On a signal, the contact opens and the relay drops.

Temporary release, tamper contact 1337-xx
To control an escape route door with temporary release and operating element 1337-xx, 1332-70

Inputs	Function	Outputs	Function
E1	External temporary release	Relay 1	Alarm (inverse)
E2	Timer contact – closes, opens	Relay 2	Door closed and locked
E3	Intruder alarm system	Relay 3	Electric strike/motorised lock
E4	Fire alarm system (inverse)	Relay 4	Door drive – activation

	Function
Tamper monitoring	As alarm contact (closer)
inverse	The input is closed during operation and an output relay is activated. On a signal, the contact opens and the relay drops.

Temporary release, tamper loop, emergency power
To control an escape route door with temporary release, emergency power function monitoring and operating element 1380, 1332-10/11.

Inputs	Function	Outputs	Function
E1	External temporary release	Relay 1	Alarm (inverse)
E2	Emergency power mode (inverse)	Relay 2	Door closed and locked
E3	Fault – emergency power supply (inverse)	Relay 3	Electric strike/motorised lock
E4	Fire alarm system (inverse)	Relay 4	Door drive – activation

	Function
Tamper monitoring	As a detection loop (inverse)
inverse	The input is closed during operation and an output relay is activated. On a signal, the contact opens and the relay drops.

Temporary release, tamper contact 1337-xx, emergency power
To control an escape route door with temporary release, emergency power function monitoring and operating element 1337-xx, 1332-70.

Inputs	Function	Outputs	Function
E1	External temporary release	Relay 1	Alarm (inverse)
E2	Emergency power mode (inverse)	Relay 2	Door closed and locked
E3	Fault – emergency power supply (inverse)	Relay 3	Electric strike/motorised lock
E4	Fire alarm system (inverse)	Relay 4	Door drive – activation

	Function
Tamper monitoring	As alarm contact (closer)
inverse	The input is closed during operation and an output relay is activated. On a signal, the contact opens and the relay drops.

1-contact, tamper loop – factory setting
To control an escape route door with 1-contact operation and operating element 1380, 1332-10/11.

Inputs	Function	Outputs	Function
E1	1-contact – lock, temporary release, acknowledge alarm	Relay 1	Alarm (inverse)
E2	Timer contact – closes, opens	Relay 2	Door closed and locked
E3	Intruder alarm system	Relay 3	Electric strike/motorised lock
E4	Fire alarm system (inverse)	Relay 4	Door drive – activation

	Function
Tamper monitoring	As a detection loop (inverse)
inverse	The input is closed during operation and an output relay is activated. On a signal, the contact opens and the relay drops.

1-contact, tamper contact, 1337-xx

To control an escape route door with 1-contact operation and operating element 1337-xx, 1332-70.

Inputs	Function	Outputs	Function
E1	1-contact – lock, temporary release, acknowledge alarm	Relay 1	Alarm (inverse)
E2	Timer contact – closes, opens	Relay 2	Door closed and locked
E3	Intruder alarm system	Relay 3	Electric strike/motorised lock
E4	Fire alarm system (inverse)	Relay 4	Door drive – activation

	Function
Tamper monitoring	As alarm contact (closer)
inverse	The input is closed during operation and an output relay is activated. On a signal, the contact opens and the relay drops.

1-contact, tamper loop, emergency power
To control an escape route door with 1-contact operation, emergency power function monitoring and operating element 1380, 1332-10/11.

Inputs	Function	Outputs	Function
E1	1-contact – lock, temporary release, acknowledge alarm	Relay 1	Alarm (inverse)
E2	Emergency power mode (inverse)	Relay 2	Door closed and locked
E3	Fault – emergency power supply (inverse)	Relay 3	Electric strike/motorised lock
E4	Fire alarm system (inverse)	Relay 4	Door drive – activation

	Function
Tamper monitoring	As a detection loop (inverse)
inverse	The input is closed during operation and an output relay is activated. On a signal, the contact opens and the relay drops.

1-contact, tamper contact 1337-xx, emergency power
To control an escape route door with 1-contact operation, emergency power function monitoring and operating element 1337-xx, 1332-70.

Inputs	Function	Outputs	Function
E1	1-contact – lock, temporary release, acknowledge alarm	Relay 1	Alarm (inverse)
E2	Emergency power mode (inverse)	Relay 2	Door closed and locked
E3	Fault – emergency power supply (inverse)	Relay 3	Electric strike/motorised lock
E4	Fire alarm system (inverse)	Relay 4	Door drive – activation

	Function
Tamper monitoring	As alarm contact (closer)
inverse	The input is closed during operation and an output relay is activated. On a signal, the contact opens and the relay drops.

Temporary release, SW time delay, tamper loop
To control an escape route door with temporary release, SW time delay and operating element 1380, 1332-10/11.

Inputs	Function	Outputs	Function
E1	External temporary release	Relay 1	Alarm (inverse)
E2	Timer contact – closes, opens	Relay 2	Door closed and locked
E3	Intruder alarm system	Relay 3	Electric strike/motorised lock
E4	Fire alarm system (inverse)	Relay 4	Door drive – activation

	Function
Tamper monitoring	As a detection loop (inverse)
inverse	The input is closed during operation and an output relay is activated. On a signal, the contact opens and the relay drops.

Temporary release, SW time delay, tamper contact 1337-xx
To control an escape route door with temporary release, SW time delay and operating element 1337-xx, 1332-70.

Inputs	Function	Outputs	Function
E1	External temporary release	Relay 1	Alarm (inverse)
E2	Timer contact – closes, opens	Relay 2	Door closed and locked
E3	Intruder alarm system	Relay 3	Electric strike/motorised lock
E4	Fire alarm system (inverse)	Relay 4	Door drive – activation

	Function
Tamper monitoring	As alarm contact (closer)
inverse	The input is closed during operation and an output relay is activated. On a signal, the contact opens and the relay drops.

Temporary release, SW time delay, tamper loop, emergency power
To control an escape route door with temporary release, SW time delay, emergency power function monitoring and operating element 1380, 1332-10/11.

Inputs	Function	Outputs	Function
E1	External temporary release	Relay 1	Alarm (inverse)
E2	Emergency power mode (inverse)	Relay 2	Door closed and locked
E3	Fault – emergency power supply (inverse)	Relay 3	Electric strike/motorised lock
E4	Fire alarm system (inverse)	Relay 4	Door drive – activation

	Function
Tamper monitoring	As a detection loop (inverse)
inverse	The input is closed during operation and an output relay is activated. On a signal, the contact opens and the relay drops.

Temporary release, SW time delay, tamper contact 1337-xx, emergency power

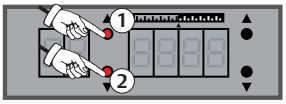
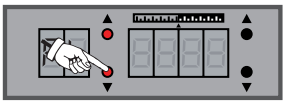
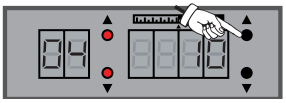
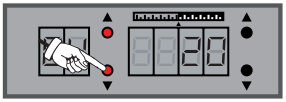
To control an escape route door with temporary release, SW time delay, emergency power function monitoring and operating element 1337-xx, 1332-70.

Inputs	Function	Outputs	Function
E1	External temporary release	Relay 1	Alarm (inverse)
E2	Emergency power mode (inverse)	Relay 2	Door closed and locked
E3	Fault – emergency power supply (inverse)	Relay 3	Electric strike/motorised lock
E4	Fire alarm system (inverse)	Relay 4	Door drive – activation

	Function
Tamper monitoring	As alarm contact (closer)
inverse	The input is closed during operation and an output relay is activated. On a signal, the contact opens and the relay drops.

Example configuration

The following procedure serves as an example of how you use the menu and value buttons on the device to set and save the pre-alarm time as 20 seconds.

Menu items	Display	Description
Starting the configuration mode		1. Press any menu button.
AL - Alarm indicator		2. Press menu button 2 four times until menu  is displayed.
04 Pre-alarm time		3. Use the value buttons to set the desired value (20 seconds).
		4. Press menu button 2 to move to the next menu.
05 Alarm time		5. Do not navigate or make any entries for more than a minute. ✓ The device automatically switches to operating mode and the display is switched off.

Special function

Delayed release after the EMERGENCY-OPEN button is presses

Concept

If a terminal with an EMERGENCY-OPEN button is used instead of an operating unit, this can be used to locally request an indirect release and alert the main control centre's security staff to check the doors by means of an alarm. This ensures hazardous situations are detected more quickly and enhances operational reliability.

The EMERGENCY-OPEN delay postpones an EMERGENCY-OPEN request for a specified time, so that security staff can check and decide whether or not it is legitimate.
The EMERGENCY button on doors thus serves here as an alarm device.

Note

The EMERGENCY-OPEN delay may only be used on escape routes where there is a permanently manned control centre and an EMERGENCY-OPEN control panel (indirect unlocking).

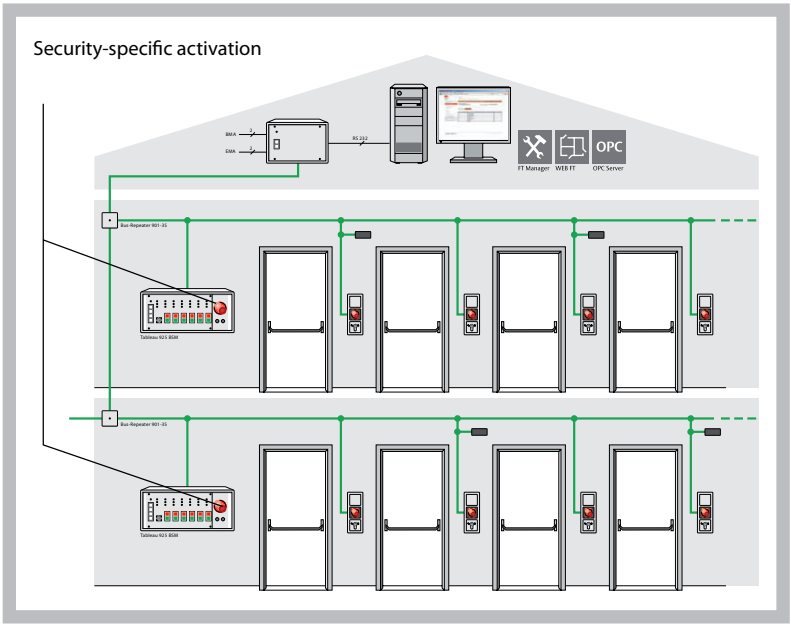
Operational sequence

1. EMERGENCY-OPEN button is pressed.
✓ An audible alarm is triggered but the door remains locked.
✓ The display flashes red.
✓ An audible alarm is emitted on the bus control panel in the permanently manned control centre.

The operator now decides whether the EMERGENCY-OPEN request is legitimate. If so, the door can be opened using the centrally-controlled EMERGENCY-OPEN button (indirect release).

If the special 'Delayed unlocking after EMERGENCY-OPEN activation' function has been selected in FTManager or set using a profile (see), you can re-trigger the delay time one or more times (depending on the configuration).), you can r
trigger the delay time one or more times (depending on the configuration).
If you do not do this, the door automatically opens after the set delay time.

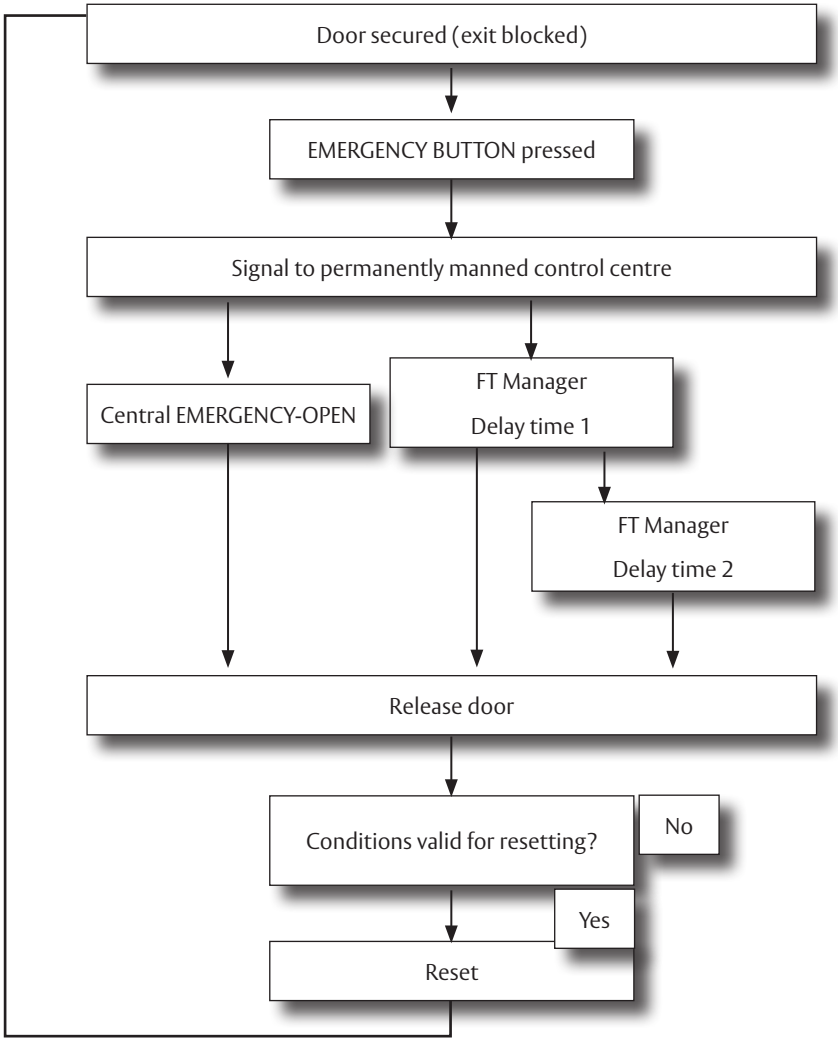
Schematic diagram



Note

Security-related doors are unlocked on the bus control panel in the permanently manned control centre and not at the doors themselves!

Flowchart


Door secured (exit blocked)
EMERGENCY BUTTON pressed
Signal to permanently manned control centre
Central EMERGENCY-OPEN
FT Manager
Delay time 1
FT Manager
Delay time 2
Release door
Conditions valid for resetting?
No
Yes
Reset

Check list – Checks before initial commissioning

Components

The individual components should be appropriately checked.

Description	Yes	No
Does the installed locking element comply with the guidelines for electronic locking systems in escape route doors?	❑	❑
Do the controls comply with the guidelines for electronic locking systems in escape route doors?	❑	❑
Does the operating device comply with the guidelines for electronic locking systems in escape route doors?	❑	❑
Do you have the fitting and installation instructions?	❑	❑
Do you have the form for checking the locking system for escape doors before initial commissioning?	❑	❑
In the case of external power supply to the locking system or parts thereof: Does the power supply unit comply with EN 60 950 (does it feature the CE mark)?	❑	❑

Installation

The general installation conditions should be checked.

Description	Yes	No
The locking element does not restrict the door headroom to less than 200 cm?	❑	❑
Does the emergency button position comply with local building legislation specifications and the guidelines for electrical locking devices for doors in escape routes?	❑	❑
Is the 'EMERGENCY BUTTON' sign present and correctly affixed?	❑	❑
If the locking unit is installed on fire and/or smoke doors: Do the locking element's position and installation method comply with the door manufacturer's verification of suitability specifications?	❑	❑

Function

Locking

1. Close the door
2. Activate the locking element.

Description	Yes	No
Is the red indicator on the operating element illuminated?	❑	❑
Is the door securely locked? (test manually)	❑	❑

Temporary release

1. Activate the temporary release.

Description	Yes	No
Is the green LED on 720-40 flashing 9:1?	❑	❑
Is the door unlocked? (Test manually)	❑	❑

Pre-alarm

1. Open the door and keep open.

Description	Yes	No
After the door monitoring time ends, does an audible alarm sound as an audible intermittent signal, which becomes shorter in accordance with the amount of time that has passed?	❑	❑
On 720-40 is the yellow LED flashing 1:1 and the green LED flashing 9:1?	❑	❑

2. Close the door

Description	Yes	No
Is the door securely locked? (test manually)	❑	❑
Is the red LED on 720-40 illuminated?	❑	❑

3. Activate the temporary release.
4. Open the door and keep it open for longer than the pre-alarm time.

Description	Yes	No
Has the danger alarm (audible alarm signal) been triggered?	❑	❑
Is the yellow LED on 720-40 flashing 1:1?	❑	❑
Is the green LED on 720-40 illuminated?	❑	❑

5. Close the door
6. Reset the alarm.

Description	Yes	No
Is the green LED on 720-40 illuminated?	❑	❑
Is the door unlocked? (Test manually)	❑	❑

7. Activate the locking system.

Permanent release

1. Activate the permanent release.

Description	Yes	No
Is the door unlocked? (Test manually)	❑	❑
Can the door be opened without using considerable effort?	❑	❑
Is the green LED on 720-40 illuminated?	❑	❑

Danger alarm

1. Activate the locking system.
2. Press the emergency button on the operating element or the control panel (in the case of indirect release).

Description	Yes	No
Is the door released without a delay?	❑	❑
Can the door be opened without using considerable effort?	❑	❑
Is the yellow LED on 720-40 flashing 1:1?	❑	❑
Is the green LED on 720-40 illuminated?	❑	❑
Is the audible alarm signal activated?	❑	❑
Is the emergency button flashing?	❑	❑

3. Unlock the emergency button.
4. Reset the alarm.

Description	Yes	No
Is the green LED on 720-40 illuminated?	❑	❑
Does the audible alarm signal switch off?	❑	❑
Is the emergency button illuminated?	❑	❑

Tamper alarm on the key switch module

1. Activate the locking system.
2. Remove the cover from the key switch module.

Description	Yes	No
Is the red LED on 720-40 illuminated?	❑	❑
Is the yellow LED on 720-40 flashing 1:1?	❑	❑
Does the audible alarm signal remain active?	❑	❑
Does the door remain locked? (Test manually)	❑	❑

3. Replace the cover on the key switch module.

Description	Yes	No
Is the red LED on 720-40 illuminated?	❑	❑
Is the yellow LED on 720-40 flashing 1:1?	❑	❑
Does the audible alarm signal remain active?	❑	❑
Does the door remain locked? (Test manually)	❑	❑

4. Reset the alarm.

If a danger alarm system such as a fire alarm system is activated.

1. Activate the locking system.

Description	Yes	No
Is the red LED on 720-40 illuminated?	❑	❑
Is the door securely locked? (Test manually)	❑	❑

2. Open the fail-unlocked loop in the danger alarm system.

Description	Yes	No
Is the door released without a delay?	❑	❑
Can the door be opened without using considerable effort?	❑	❑
Is the green LED on 720-40 illuminated?	❑	❑
Is the yellow LED on 720-40 flashing 1:1?	❑	❑
Is the audible alarm signal activated?	❑	❑

3. Reset the alarm on the key switch.
4. Close the fail-unlocked loop in the danger alarm system.

Description	Yes	No
Is the red LED on 720-40 illuminated?	❑	❑
Does the audible alarm signal switch off?	❑	❑

Maintenance

Annual inspection

A technical specialist must:

1. carry out an annual inspection of escape route doors with electric locking systems.
2. issue an inspection certificate, which the building operator must submit to the building inspection authorities if required.

Note

These instructions are standard specifications. As the use of escape route locking systems is regulated by the individual states, the applicable state building legislation and inspection regulations for technical systems must be observed.

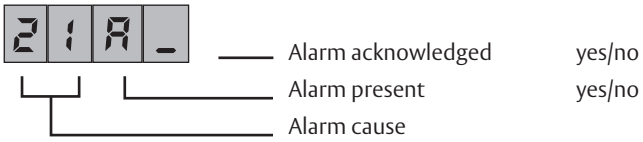
Maintenance

The escape door control unit is maintenance-free. If faults which are not caused by faulty installation or fitting occur during operation or during one of the compulsory inspections, the device in question should be taken out of service immediately and sent to the manufacturer to be checked.
The maintenance-free nature of the devices does not release building operators from their obligation to regularly inspect escape door locking systems.

Messages

Alarm/Information on 720-40

If you remove the device's housing, you can use the alarm numbers shown to allocate the corresponding alarms and messages.



Alarm number	Alarm/Information	Priority
11	Emergency button pressed	1.
12	Fire alarm system	1.
21	Protective cover opened	2
22	By a door contact when a door is forced open	2
23	When the cover on the key switch module is removed	2
24	When the locking element is tampered with	2
25	Door open for too long	2
31	Device or E/A module offline	3
32	Central EMERGENCY-OPEN activated	3
33	Centrally operated release	3

Alarm number	Status
	Alarm present
	Alarm not present
	Alarm has been acknowledged
	Alarm has not been acknowledged

Technical data

Note
The power supply unit must comply with the limits established in IEC/EN 60950 with regards to limited capacity power sources. The maximum output rating must be limited to 100 W.
In the case of power supplies >100 W, a pre-fuse rated at 4 A for 24 V DC or 8 A for 12 V DC must be provided.

Escape door control unit

Electrical data

Description	Value
Input voltage range (ext. power supply)	12 V DC -15% to 24 V DC +15% Controlled DC voltage (Low safety voltage)
max. intrinsic current consumption at 12 V DC	Approx. 150 mA
max. Intrinsic current consumption at 24 V DC	Approx. 100 mA
Input voltage range (Terminals X2/3, X4/1,3,5,7)	Low– Active (0V)
Input voltage range (Terminal X2/5)	+12 V -15% to +24 V +15% Controlled DC voltage (Low safety voltage)
Contact loading capacity (relay) with ohmic load (X5, X6)	30 V / 1 A
Contact loading capacity (relay) with inductive load (X5, X6)	30 V / 1 A
Contact loading capacity output Locking element (X2/1,2)	max. 2 A (secured with PTC)
Protective measure	Low safety voltage
Protection rating according to DIN/EN 60529	IP30

Mechanical data

Description	Value
Operating temperature range	-20°C to +40°C
Storage temperature range	-20°C to +60°C
Environmental conditions	Relative humidity 0 – 95%, Non-condensating
Installation dimensions	159 x 90/42 mm Top hat rail housing, 9 modules

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