



ekey net

en **SPECIFICATIONS**

ekey net 4.3

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1 General

ekey biometric systems GmbH operates a quality management system in compliance with EN ISO 9001:2008 and is certified accordingly.

1.1 Note

These software specifications form a component of the product. Ensure that they are stored in a safe place. Please contact your dealer for further information about the product.

1.2 Product liability and limitation of liability

Safe operation and function of the devices can be impaired in the following situations. Liability due to malfunctioning is transferred to the operator/user in such cases:

- The system devices are not installed, used, maintained and cleaned in accordance with the instructions.
- The system devices are not used within the scope of proper use.
- Unauthorised modifications are carried out on the system devices by the operator.

These operating instructions are not subject to updating. Subject to optical and technical modifications, any liability for errors and misprints is excluded.

1.3 Warranty and manufacturer's warranty

Our general terms and conditions apply as valid at the date of purchase. See <http://www.ekey.net>. ekey biometric systems GmbH provides a 24-month warranty from the date of purchase for material or processing defects. This warranty is only valid in the country where the product was purchased. The product may only be used with original ekey spare parts and accessories.

2 Notices, symbols and abbreviations



NOTICE


Denotes additional information and useful tips.



ATTENTION

Denotes possible property damage which cannot result in injuries.

Symbols:

- 1. Step-by-step instructions
-  Reference to sections of these instructions
- Listing without specified order, 1st level
- ekey home FS OM* Product names

Abbreviations and terminology

CCP	Composite control panel
CP	Control panel
CV LAN	Converter LAN
FAR	False Acceptance Rate
FRR	False Rejection Rate
FS	Finger scanner
HTTP	HyperText Transfer Protocol
IN	integra
IPC	Inter-Process Communication
MSMQ	Microsoft Message Queueing Service
OM	Outlet-mounted
UDP	User Datagram Protocol
WM	Wall-mounted
Fingerprint	The biometric information extracted from the fingerprint
RS485 bus	2-core serial bus for the transfer of data between <i>ekey net finger scanners</i> , <i>ekey net control panels</i> and an <i>ekey net CV LAN</i> .

3 Architecture

3.1 General

An *ekey net* system consists of an *ekey net master server* and at least one *ekey net terminal server*. A maximum of 10 *ekey net terminal servers* are permitted. An *ekey net terminal server* usually represents a location.

The *ekey net master server* administers a database. The *ekeynetadmin* application enables editing of the database.

The *ekey net master server* must be able to access all computers involved in administration (*ekeynetadmin*), and all *ekey net terminal servers* in the network. Routing must take place in both directions. The computer names must be mutually resolvable via DNS.

Each *ekey net terminal server* can have up to a maximum of 20 *ekey net CV LANs* assigned to it. It must be able to access its assigned *ekey net CV LANs* in the network. Routing must take place in both directions.

Each *ekey net CV LAN* can have a maximum of eight devices assigned to it on the RS485 bus. However, no more than 80 finger scanners may be present in the whole *ekey net* system.

Configuration variants per <i>ekey net CV LAN</i>	Finger scanners	Control panels
Mixed operation, Atmel FS & Authentec FS	Not permitted	Not permitted
Maximum number of CPs and FSs	4	4
Maximum number of CPs as CCP and FSs	1	7
Maximum number of FSs with FS matching	4	4
Maximum number of FSs with server matching	1	4

Table 1: Device configuration on the *ekey net CV LAN*



NOTICE

The *ekey net CV WIEG* and *ekey net CV CD* devices are also classed as a control panel.

3.2 Components

3.2.1 Server components

Windows service	Description
<i>ekey communication server</i>	Routes communication in both directions between the <i>ekey net CV LAN</i> on one side and the <i>ekey net terminal server</i> , <i>ConfigConverter</i> and <i>ModuleUpdate</i> on the other side. Communication with the <i>ekey net CV LAN</i> is performed via UDP and communication with the other components via MSMQ.
<i>ekey net master server</i>	Central database server. Administers all <i>ekey net terminal servers</i> (maximum of 10). Is administered with <i>ekeynetadmin</i> . Only one instance may be present in the system.
<i>ekey net terminal server</i>	Administers one or more (maximum of 20) <i>ekey net CV LAN</i> buses.
<i>ekey service guard</i>	Monitors the <i>ekey communication server</i> , <i>ekey net master server</i> and <i>ekey net terminal server</i> services.

Table 2: Server components

3.2.2 Administration and utility components

Component	Description
ConfigConverter.exe	Configuration and firmware update for <i>ekey net CV LAN</i>
EkeyInfo.exe	Utility program for diagnostics and info
ekeynetadmin.exe	Administration of <i>ekey net</i>
ekeynetcursorfill.exe	Utility program
ekeynetinstallterminalserver.exe	Utility program for setting up the <i>ekey net terminal server</i> service
ekeyNetRestore.exe	Utility program for restoring the <i>ekey net</i> database
ModuleUpdate.exe	Utility program for updating the firmware of the <i>ekey net</i> devices

Table 3: Administration and utility components

3.2.3 Component communication

Component	Communication partner	Protocol
<i>ekey net master server</i>	<i>ekey net terminal server</i>	MSMQ
	ekeynetadmin	MSMQ
	External app via <i>ekey net sdk</i>	IPC
<i>ekey net terminal server</i>	<i>ekey net master server</i>	MSMQ
	Browser	http
	<i>ekey communication server</i>	MSMQ
<i>ekey communication server</i>	<i>ekey net terminal server</i>	MSMQ
	ConfigConverter	MSMQ
	ModuleUpdate	MSMQ
	<i>ekey net CV LAN</i>	UDP
<i>ekey net CV LAN</i>	Devices on the RS485 bus (FS, CP, <i>ekey net CV WIEG</i> , <i>ekey net CV CD</i>)	RS485
	<i>ekey communication server</i>	UDP
ekeynetadmin	<i>ekey net master server</i>	MSMQ
ConfigConverter	<i>ekey communication server</i>	MSMQ
ModuleUpdate	<i>ekey communication server</i>	MSMQ

Table 4: Component communication

3.3 Licence variants

ekey net is available in different licence variants, which define the scope of services offered by the *ekey net* system. The licence variant selected applies to the entire *ekey net* system. It is not possible to run parts of *ekey net* with different licence variants. For example, it is not possible to add an *ekey net* light or com licence key to an *ekey net* business installation.

Licence variant	Description
<i>ekey net light</i>	For private users or small installations with a restricted functional scope.
<i>ekey net com</i>	Only for print applications and time recording.
<i>ekey net business</i>	Unrestricted full version.

Table 5: Licence variants for *ekey net*



For details of the differences between the licence variants, see Table 9: Functional limits, page 15.



NOTICE

Licensing was first introduced with *ekey net 4.0*. If an older version of *ekey net* or *ekey TOCAnet* is updated to *ekey net 4.x*, it is automatically run as *ekey net business*.

Switching between licence models

It is only possible to switch to a different licence model, or perform a "licence upgrade", from *ekey net light* and *ekey net com* to *ekey net business*. The licence model of *ekey net business* cannot be switched to that of *ekey net light* or *ekey net com*. Nor can *ekey net light* be switched to *ekey net com* or vice versa.

4 System requirements

4.1 General minimum requirements

Requirement	Details	Dependency
TCP/IP	All computers involved in the <i>ekey net</i> system must be equipped with TCP/IP v4-capable network interface cards. TCP/IP v4 must be activated. <i>ekey net</i> does not support TCP/IP v6.	Network communication
Name resolution (DNS)	It must be possible to mutually resolve the names (NetBIOS and DNS name) of all computers used in the <i>ekey net</i> system via DNS.	MSMQ, DNS
Routing	It must be possible to access all computers involved in the <i>ekey net</i> system in both directions via TCP and UDP.	MSMQ, UDP, HTTP
Local time on the computer	All computers involved in the <i>ekey net</i> system must be run with the same system time. Deviations of ± 3 s between the computers are not tolerated.	<i>ekey net</i> services, ekeynetadmin

Table 6: General minimum requirements

4.2 Computer minimum requirements

- x86 or x64 processor with at least 1.0 GHz
- 256 MB RAM
- 40 GB hard disk with at least 200 MB memory space available
- Ethernet port with at least 10 Mbit/s

4.3 Supported operating systems

Operating system	Minimum Service Pack level
Windows XP x86	SP3
Windows XP x64	SP3
Windows Vista x86	SP1
Windows Vista x64	SP1
Windows 7 x86	SP1
Windows 7 x64	SP1
Windows 8 x86	
Windows 8 x64	
Windows 8.1 x86	
Windows 8.1 x64	
Windows Server 2003 x86	SP2
Windows Server 2003 x64	SP2
Windows Server 2003 R2 x86	SP2
Windows Server 2003 R2 x64	SP2
Windows Server 2008 x86	SP2
Windows Server 2008 x64	SP2
Windows Server 2008 R2 x64	SP1
Windows Server 2012 x64	
Windows Server 2012 R2 x64	

Table 7: Supported operating systems



ATTENTION

Virtualisation solutions, such as those offered by VMware and Microsoft, are not supported. If ekey net is operated in such an environment, ekey does not provide any support.

4.4 Supported devices on the RS485 bus

Device	Part no.	light	com	business
<i>ekey net FS ENROLL ONLY RFID</i>	801973	x	x	x
<i>PKE net FS L OM 2.0 verify v2.1</i>	801879		x	
<i>PKE net FS M OM 2.0 identify v2.1</i>	801878		x	
<i>Feller RFID reader v2.1</i>	700266	x	x	x
<i>ekey net FS S OM E RFID REL v2.1</i>	801994	x	x	x
<i>ekey net FS S OM REL v2.1</i>	801991	x	x	x
<i>ekey net FS S OM v2.1</i>	801985	x	x	x

Device	Part no.	light	com	business
<i>ekey net FS S OM E RFID v2.1</i>	801988	x	x	x
<i>ekey net FS S OM I v2.1</i>	801997	x	x	x
<i>ekey net FS S OM I RFID v2.1</i>	802000	x	x	x
<i>ekey net FS S WM 2.1 REL</i>	802003	x	x	x
<i>ekey net FS S WM 2.1 RFID REL</i>	802006	x	x	x
<i>ekey net FS S WM 2.1 RFID</i>	802022	x	x	x
<i>ekey net FS M OM E RFID REL v2.1</i>	801995	x	x	x
<i>ekey net FS M OM REL v2.1</i>	801992	x	x	x
<i>ekey net FS M OM v2.1</i>	801986	x	x	x
<i>ekey net FS M OM E RFID v2.1</i>	801989	x	x	x
<i>ekey net FS M OM I v2.1</i>	801998	x	x	x
<i>ekey net FS M OM I RFID v2.1</i>	802001	x	x	x
<i>ekey net FS M WM v2.1 REL</i>	802004	x	x	x
<i>ekey net FS M WM 2.1 RFID REL</i>	802007	x	x	x
<i>ekey net FS M WM 2.1 RFID</i>	802023	x	x	x
<i>ekey net FS L OM E RFID REL v2.1</i>	801996	x	x	x
<i>ekey net FS L OM REL v2.1</i>	801993	x	x	x
<i>ekey net FS L OM v2.1</i>	801987	x	x	x
<i>ekey net FS L OM E RFID v2.1</i>	801990	x	x	x
<i>ekey net FS L OM I v2.1</i>	801999	x	x	x
<i>ekey net FS L OM I RFID v2.1</i>	802002	x	x	x
<i>ekey net FS L WM 2.1 REL</i>	802005	x	x	x
<i>ekey net FS L WM 2.1 RFID REL</i>	802008	x	x	x
<i>ekey net FS L WM 2.1 RFID</i>	802024	x	x	x

Device	Part no.	light	com	business
<i>Feller net FS S OM III</i>	700209	x	x	x
<i>Feller net FS M OM III</i>	700211	x	x	x
<i>Feller net FS L OM III</i>	700213	x	x	x
<i>Feller net FS S OM III indoor</i>	700208	x	x	x
<i>Feller net FS M OM III indoor</i>	700210	x	x	x
<i>Feller net FS L OM III indoor</i>	700212	x	x	x
<i>ekey net FS ENROLL ONLY</i>	801601	x	x	x
<i>ekey net FS S WM 2.0</i>	801570	x	x	x
<i>ekey net FS S WM 2.0 REL</i>	801576	x	x	x
<i>ekey net FS S WM 2.0 RFID</i>	801573	x	x	x
<i>ekey net FS S WM 2.0 RFID REL</i>	801579	x	x	x
<i>ekey net FS M WM 2.0</i>	801571	x	x	x
<i>ekey net FS M WM 2.0 RFID</i>	801574	x	x	x
<i>ekey net FS M WM 2.0 REL</i>	801577	x	x	x
<i>ekey net FS M WM 2.0 RFID REL</i>	801580	x	x	x
<i>ekey net FS L WM 2.0</i>	801572	x	x	x
<i>ekey net FS L WM 2.0 RFID</i>	801575	x	x	x
<i>ekey net FS L WM 2.0 REL</i>	801578	x	x	x
<i>ekey net FS L WM 2.0 RFID REL</i>	801581	x	x	x
<i>ekey CV CLOCKDATA</i>	801525	x	x	x
<i>Feller RFID reader</i>	700166	x	x	x
<i>PKE net FS L OM verify</i>	801473		x	
<i>PKE net FS M OM identify</i>	801508		x	
<i>ekey net FS S OM I</i>	801494	x	x	x

Device	Part no.	light	com	business
<i>ekey net FS S OM I RFID</i>	801497	x	x	x
<i>ekey net FS M OM I</i>	801495	x	x	x
<i>ekey net FS M OM I RFID</i>	801498	x	x	x
<i>ekey net FS L OM I</i>	801496	x	x	x
<i>ekey net FS L OM I RFID</i>	801499	x	x	x
<i>Feller net CP DRM 4</i>	700165	x		x
<i>ekey net CP DRM 4</i>	801325	x		x
<i>ekey net FS S IN 2.0</i>	801378	x	x	x
<i>ekey net FS M IN 2.0</i>	801379	x	x	x
<i>ekey net FS L IN 2.0</i>	801380	x	x	x
<i>ekey net FS S IN RFID 2.0</i>	801381	x	x	x
<i>ekey net FS M IN RFID 2.0</i>	801382	x	x	x
<i>ekey net FS L IN RFID 2.0</i>	801383	x	x	x
<i>ekey net FS S OM RFID REL</i>	801320	x	x	x
<i>ekey net FS S OM REL</i>	801317	x	x	x
<i>ekey net FS M OM RFID REL</i>	801321	x	x	x
<i>ekey net FS anth set</i>	800494	x	x	x
<i>ekey net FS M OM REL</i>	801318	x	x	x
<i>ekey net FS L OM RFID REL</i>	801322	x	x	x
<i>ekey net S L OM REL</i>	801319	x	x	x
<i>ekey net CP mini 1</i>	800774	x		x
<i>ekey net CP mini 2</i>	801193	x		x
<i>ekey net EM mini 3</i>	801226	x		x
<i>PCB CP integra net programmed</i>	800728	x		x

Device	Part no.	light	com	business
<i>ekey net CP WM 3</i>	800340	x		x
<i>ekey net CP WM 3 lock</i>	801144	x		x
<i>ekey net CV WIEG</i>	800777		x	x
<i>ekey net L FS WM AN</i>	800736	x	x	x
<i>ekey net L FS WM WH</i>	800737	x	x	x
<i>ekey net L FS WM AN RFID</i>	801009	x	x	x
<i>ekey net L FS WM WH RFID</i>	801010	x	x	x
<i>ekey net FS L IN without IO</i>	800729	x	x	x
<i>ekey net FS L OM</i>	801313	x	x	x
<i>ekey net FS L OM RFID</i>	801316	x	x	x
<i>ekey net FS M WM AN</i>	800327	x	x	x
<i>ekey net FS M WM WH</i>	800328	x	x	x
<i>ekey net FS M WM AN RFID</i>	801005	x	x	x
<i>ekey net FS M WM WH RFID</i>	801006	x	x	x
<i>ekey net FS M IN</i>	800634	x	x	x
<i>ekey net FS M OM</i>	801312	x	x	x
<i>ekey net FS M OM RFID</i>	801315	x	x	x
<i>ekey net FS S WM AN</i>	800765	x	x	x
<i>ekey net FS S WM WH</i>	800766	x	x	x
<i>ekey net FS S WM AN RFID</i>	801007	x	x	x
<i>ekey net FS S WM WH RFID</i>	801008	x	x	x
<i>ekey net FS S IN</i>	800764	x	x	x
<i>ekey net FS S OM</i>	801311	x	x	x
<i>ekey net FS S OM RFID</i>	801314	x	x	x

Device	Part no.	light	com	business
<i>Feller net CP WM 3</i>	700090	x		x
<i>Feller net FS L OM</i>	700087	x	x	x
<i>Feller net FS L OM indoor</i>	700086	x	x	x
<i>Feller net FS M OM</i>	700085	x	x	x
<i>Feller net FS M OM indoor</i>	700084	x	x	x
<i>Feller net FS S OM</i>	700083	x	x	x
<i>Feller net FS S OM indoor</i>	700082	x	x	x
<i>PCB FSB net FS L</i>	800918	x	x	x
<i>PCB FSB net FS M</i>	800917	x	x	x
<i>PCB FSB net FS S</i>	800916	x	x	x
<i>ekey CV LAN</i>	800506	x	x	x
<i>Feller CV LAN</i>	700091	x	x	x

Table 8: Supported devices



NOTICE

In the 'light' variant, as *ekey net FS L light*, L finger scanners are incorporated with just 200 finger scans.

Data sheets for the devices

The latest data sheets for the *ekey net* devices can be found on the ekey website via the following link: <http://www.ekey.net/downloads/cat/Datenblatt>.

4.5 Wiring of the devices on the RS485 bus

RS485 wiring must be performed as follows:

- The individual devices are connected to one another in series.
- There are a maximum of eight devices on the bus.
- The total cable length must not exceed 500 m.
- Spurs must not exceed 5 m in length.
- Only the final device on the RS485 bus (with the exception of the *ekey net CV LAN* itself) must be terminated. No other device may be terminated.

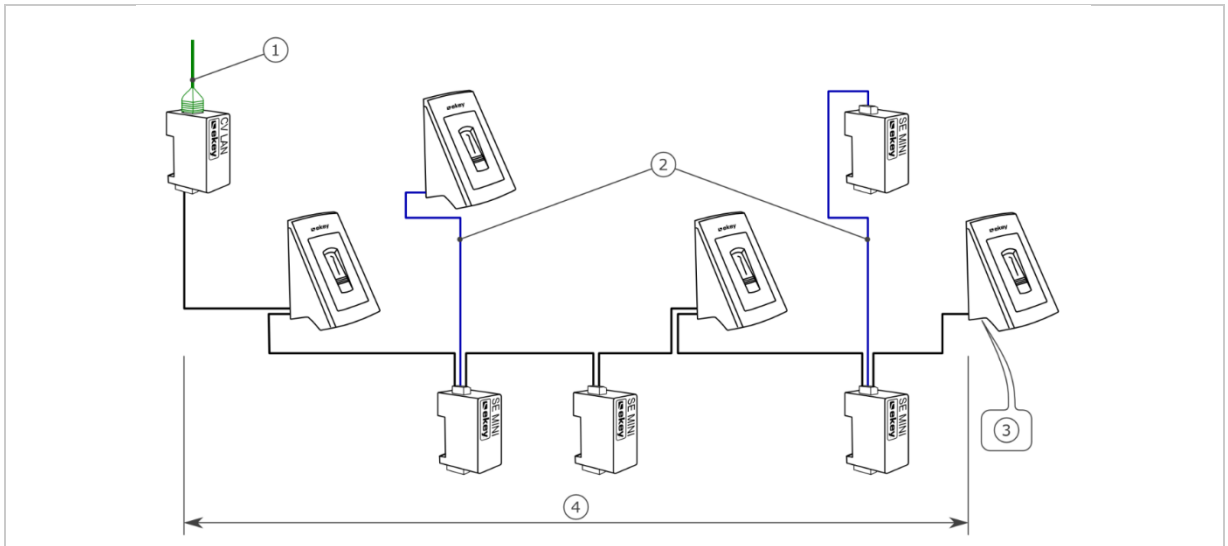


Fig. 1: Example of RS485 wiring

- 1 RJ45 network connection
- 2 Spurs (max. 5 m)
- 3 Termination must be activated at the final device on the bus
- 4 The maximum cable length must not exceed 500 m



ATTENTION

Star-type wiring is not permitted, as it will result in non-defined device behaviour.

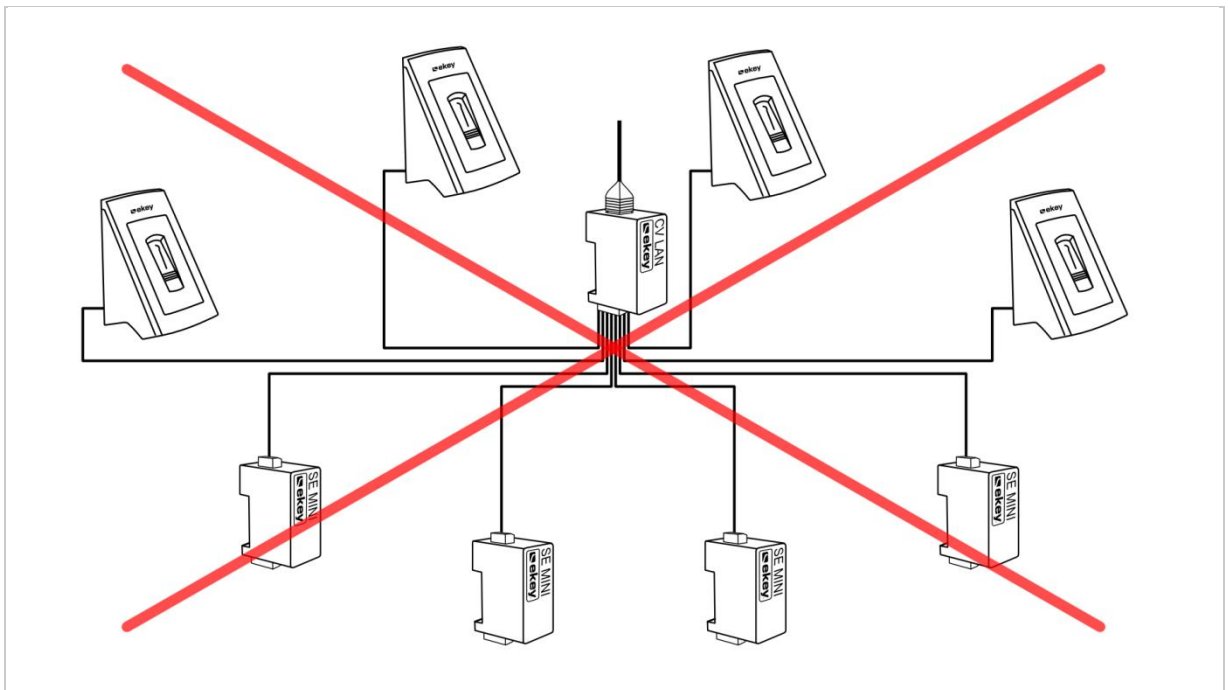


Fig. 2: Impermissible RS485 star-type wiring

5 Functional limits

Function	Product variant		
	business	light	com
Maximum number of time zones	UNLIMITED	3	1
Maximum number of user groups	UNLIMITED	1	UNLIMITED
Maximum number of terminal groups	UNLIMITED	1	UNLIMITED
Maximum number of locations per VPN	10	10	10
Maximum number of <i>ekey net terminal servers</i>	10	10	10
Maximum number of CV LANs per <i>ekey net terminal server</i>	20	20	20
Mixed operation, Atmel FS + Authentec FS on one CV LAN	Not permitted	Not permitted	Not permitted
Maximum number of CPs + FSs per CV LAN	4 + 4	4 + 4	4 + 4
Maximum number of FSs with FS matching per CV LAN	4	4	4
Maximum number of FSs with server matching per CV LAN	1	1	1
Maximum number of finger scanners in the system	80	80	80
Maximum number of users in the system	4.000	4.000	4.000
Access	YES	YES	NO
Maximum number of entries per time zone	31	12	1
Attendance list	YES	NO	NO
Calendar	UNLIMITED	1	NONE
Easy mode	YES	YES	YES
Doorman mode	YES	NO	NO
RFID	YES	YES	YES
WIEGAND	YES	NO	YES
Initial settings can be changed	YES	NO (pre-defined)	YES (restricted)
Customer-specific device definition	YES	NO	NO
CSV logging	YES	Positive only	YES
ekey reporting	YES	NO	NO
ODBC logging	YES	NO	YES
HTML logging	YES	NO	YES
UDP logging	YES	YES	YES

Function	Product variant		
Time-controlled operation	YES	NO	NO
Time-controlled anti pass back	YES	YES	NO
Maximum number of relays that can be switched with one finger	2	2	0
Opening via web interface with one-time PIN	YES	YES	NO
Offline capability	Restricted	Restricted	Restricted
Daytime switching operation with or without first entry	YES	YES	NO
Zone switching operation(s)	YES	YES	NO
Public holidays calendar	YES	YES	YES

Table 9: Functional limits

6 Dismantling and disposal



Pursuant to Directive 2002/96/EC of the European Parliament and Council of 27 January 2003 on the sale, return and environmentally friendly disposal of electrical and electronic equipment (WEEE) supplied after 13/08/2005, electrical and electronic equipment is to be recycled and may not be disposed of with household waste. As disposal regulations within the EU can differ from country to country, please contact your dealer for further information as necessary.

7 Declaration of conformity

ekey biometric systems GmbH hereby declares that the product conforms to the relevant provisions of the Electromagnetic Compatibility Directive 2004/108/EC of the European Union. The complete text of the declaration of conformity can be downloaded from <http://www.ekey.net/downloads>.

8 Copyright

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