

ekey finger scanner integra 2.0 on A1001



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Test Document



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1 Introduction

ekey was founded in 2002 in Austria. ekey's offers a wide range of products includes finger scanners for doors, gates, alarm systems, and time recording.

The internationally operating company currently has 90 employees at its 5 locations in Austria, Germany, Liechtenstein/Switzerland, Italy, and Slovenia, and exports its products to over 70 countries, which makes up 73% of its business. ekey's main sales markets include Spain and the USA, in addition to Austria, Germany, Switzerland, Slovenia, and Italy.

As ekey is strongly used in the DACH region, we received a request from our Sales to see if their biometric reader could work with the Axis A1001.

This document shows how to connect a configure one reader on the AXIS A1001.

2 System Overview

Below is a list of components that were used for the test setup made when producing this document:

- AXIS A1001 Door Controller (with AXIS Entry Manager)
- 101791 ekey net FS S IN RFID Fingerscanner integra 40 Finger
- 101688 ekey Dekorelement FS IN RFID ED Edelstahl (not used)
- 101690 ekey RFID-Karte MIFARE 2k Logo MIFARE DESFire EV1, 2048 Bytes Speicher (not used)
- 101164 ekey net SE REG 4 Steuereinheit REG 4 Relais (not used)
- 100340 ekey net CV LAN RS-485 ekey net converter LAN
- 170001 ekey net business 1 1 License FS business
- 101700 ekey NT SN 230 VAC/12 VDC, 800 mA PSU
- 100669 ekey net CV WIEG RS-485 ekey net converter Wiegand

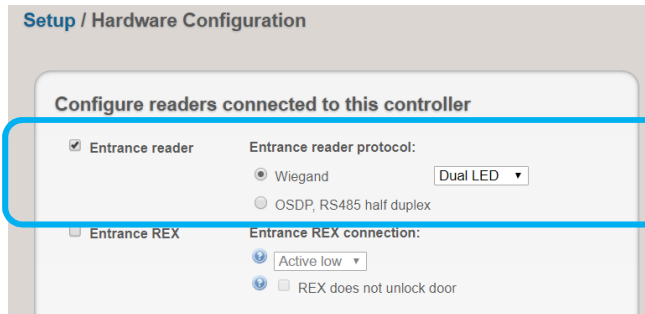
3 Version Controller A1001

Overview

Product name	AXIS A1001 Network Door Controller
Controller name	Test-Left-Links
MAC address	AC:CC:8E:24:9E:32
IP address	192.168.200.131
Firmware version	1.60.0.1 Upgrade

4 Configuration A1001

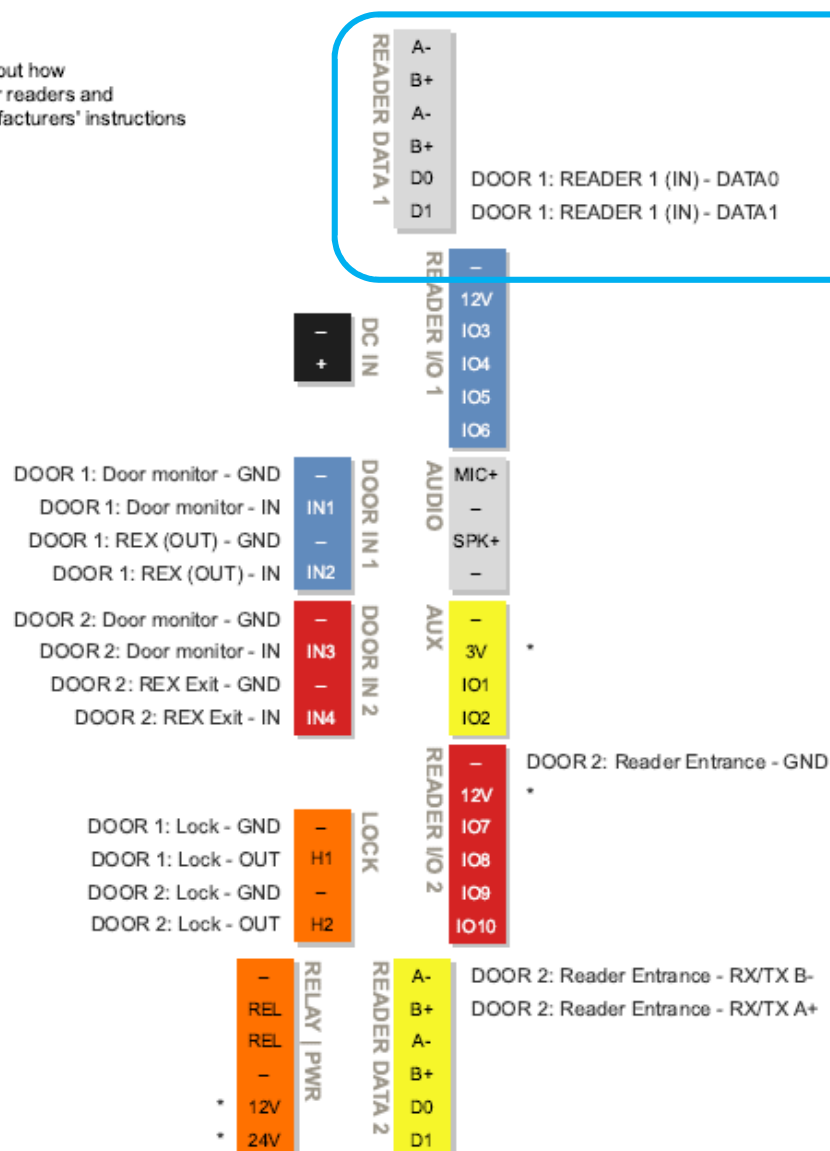
At this test the ekey net CV was connected to Reader(bus)1 as a Wiegand reader.



5 Connections A1001

Reader was connected on Reader(bus)1, the typical (further) gives an idea how to connect it on Reader(bus)1.

* For information about how to connect power for readers and locks, see the manufacturers' instructions

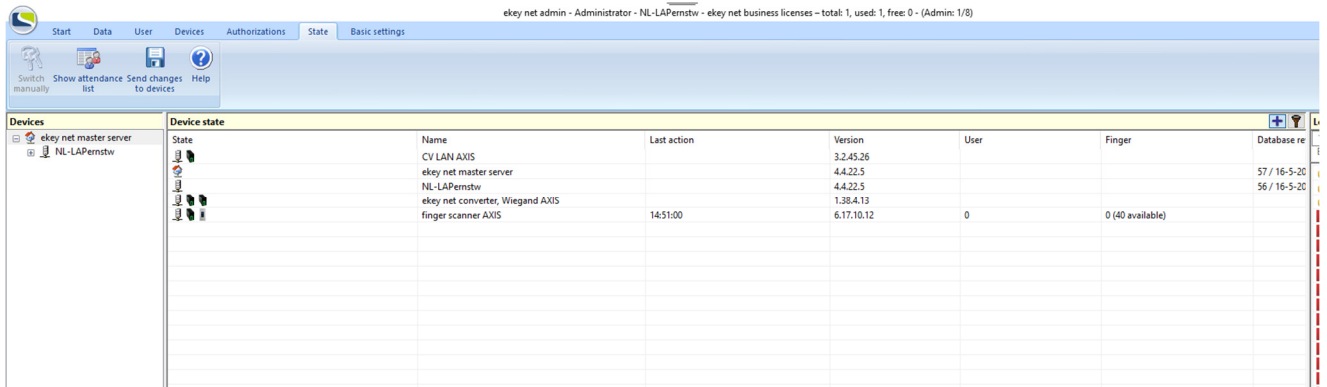


6 Configure Cards and formats A1001

No changes made, everything is default.

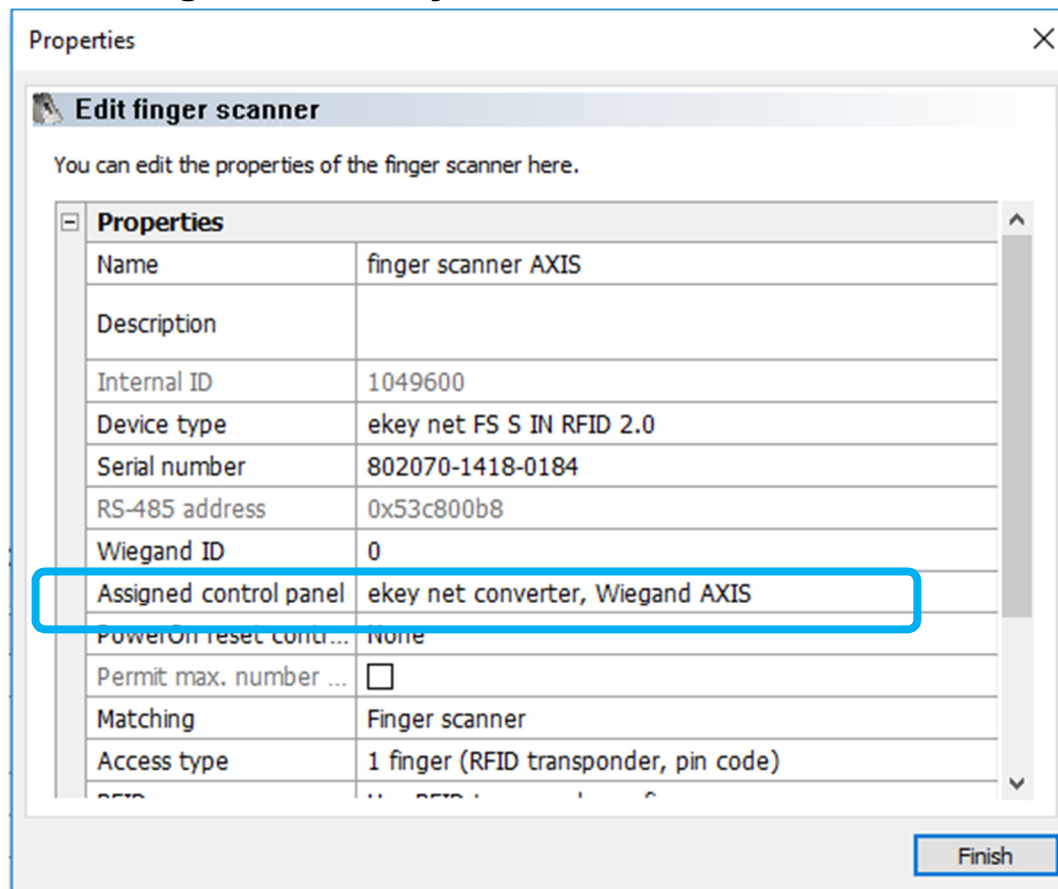
7 Version ekey equipment

Note: Please make sure that the right firmware is used.



State	Name	Last action	Version	User	Finger	Database re
	CV LAN AXIS		3.2.45.26			
	ekey net master server		4.4.22.5			57 / 16-5-20
	NL-LAPernstw		4.4.22.5			56 / 16-5-20
	ekey net converter, Wiegand AXIS		1.35.4.13			
	finger scanner AXIS	14:51:00	6.17.10.12	0	0 (40 available)	

8 Configuration ekey devices



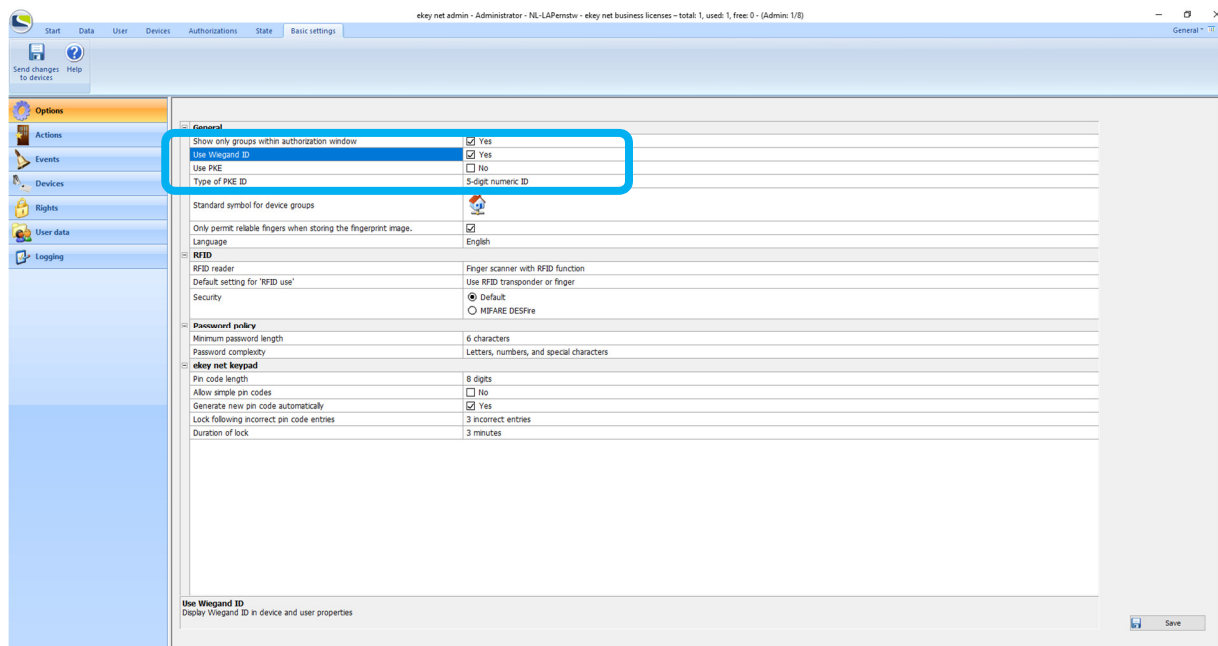
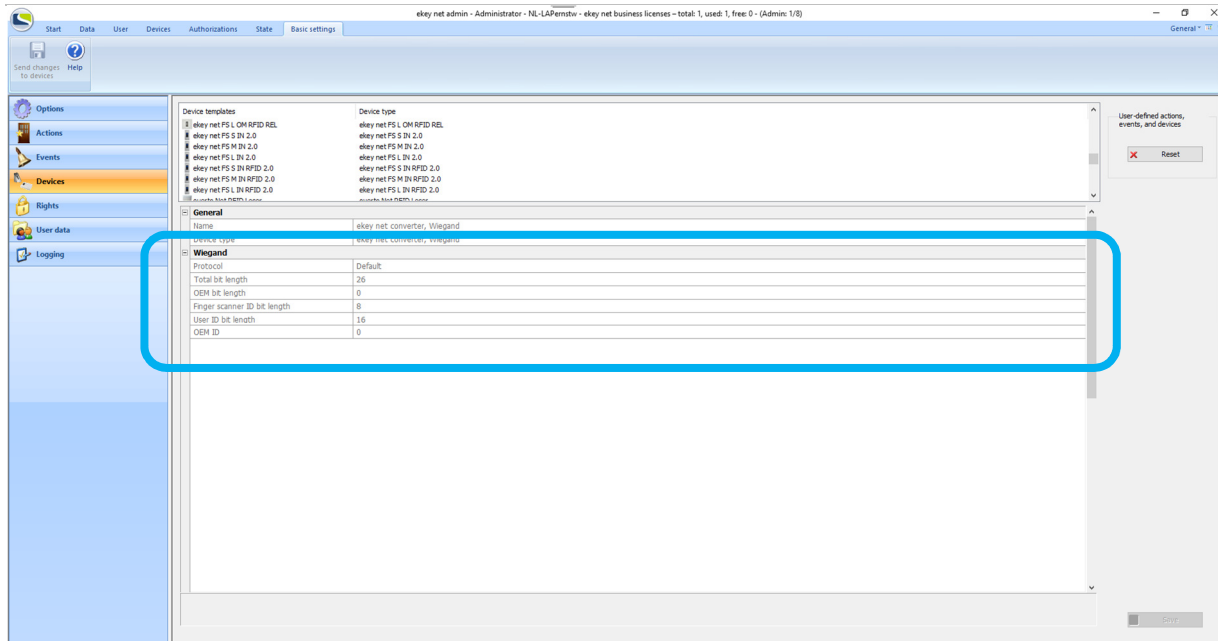
Properties [X]

Edit finger scanner

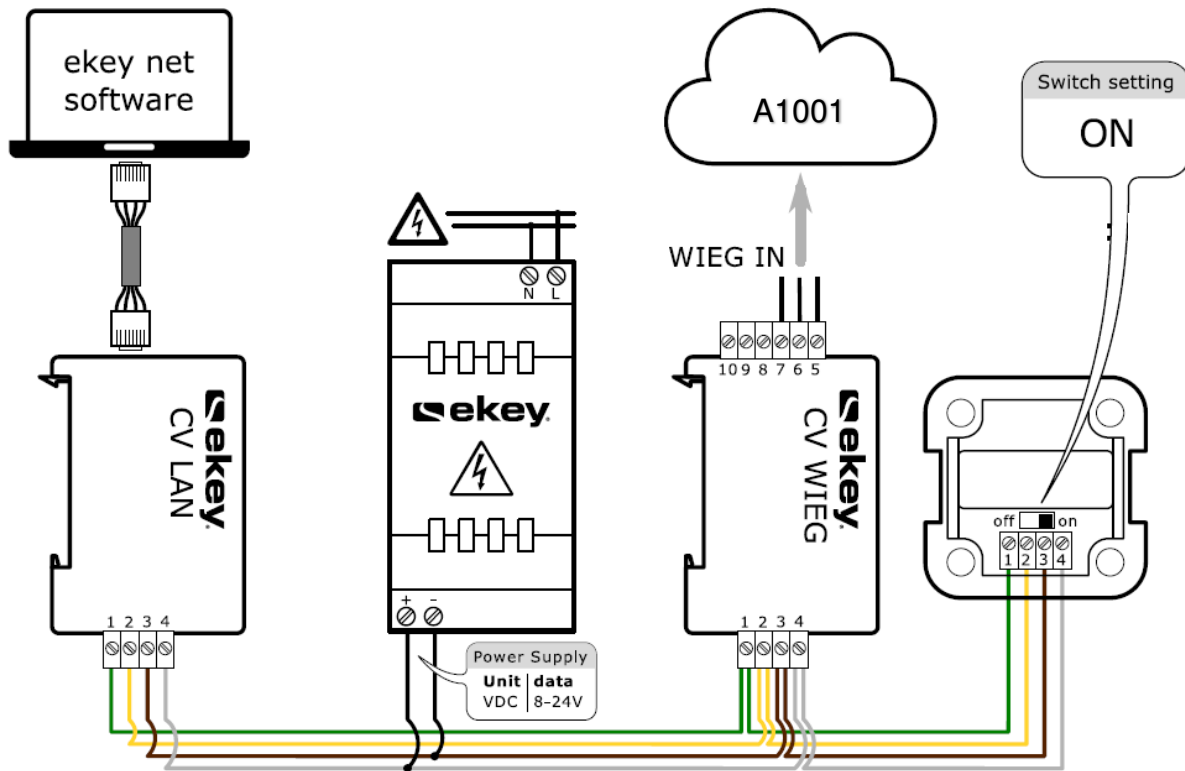
You can edit the properties of the finger scanner here.

Properties	
Name	finger scanner AXIS
Description	
Internal ID	1049600
Device type	ekey net FS S IN RFID 2.0
Serial number	802070-1418-0184
RS-485 address	0x53c800b8
Wiegand ID	0
Assigned control panel	ekey net converter, Wiegand AXIS
PowerOn reset cond...	None
Permit max. number ...	<input type="checkbox"/>
Matching	Finger scanner
Access type	1 finger (RFID transponder, pin code)

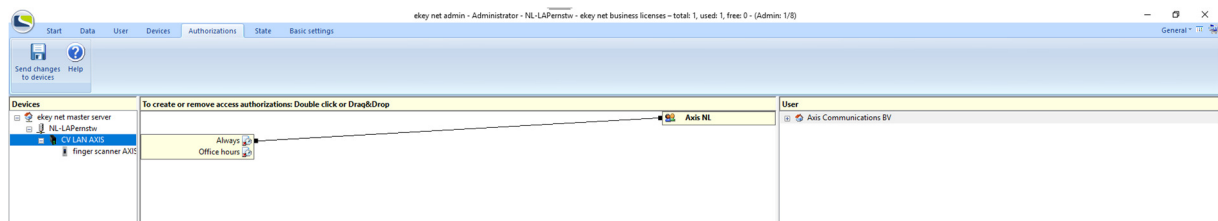
Finish



9 Connections ekey



10 Access Management ekey



Properties

- Edit user
- Store finger
- Store RFID transponder
- Store pin code
- Additional user data**

Additional user data

Please enter additional user data here.

Westerhoff, Ernst

Properties	
Name	Westerhoff, Ernst
Description	
Internal ID	103
Wiegand user ID	2908
State	<input checked="" type="radio"/> Active (0/2 fingers available) <input type="radio"/> Deactivated
Validity period	
Valid from	
Valid until	
Additional user data	
Staff ID	

Back Next Finish

Properties

- Edit user
- Store finger
- Store RFID transponder
- Store pin code
- Additional user data**

Additional user data

Please enter additional user data here.

Janssen, Jan

Properties	
Name	Janssen, Jan
Description	
Internal ID	101
Wiegand user ID	7585
State	<input checked="" type="radio"/> Active (0/2 fingers available) <input type="radio"/> Deactivated
Validity period	
Valid from	
Valid until	
Additional user data	
Staff ID	

Back Next Finish

11 Access Management AXIS Entry Manager / A1001

Edit user

First name Ernst

Last name Westerhoff

Credential: Card, PIN

PIN PIN

Facility code 0

Card number 2908

Retrieve card Door 1 Wiegand : Reader Entrance

Valid from MM/DD/YYYY

Valid until MM/DD/YYYY

Suspend credential

Cancel Save

Edit user

First name Jan

Last name Janssen

Credential: Card, PIN

PIN 1233

Facility code 0

Card number 7585

Retrieve card Door 1 Wiegand : Reader Entrance

Valid from MM/DD/YYYY

Valid until MM/DD/YYYY

Suspend credential

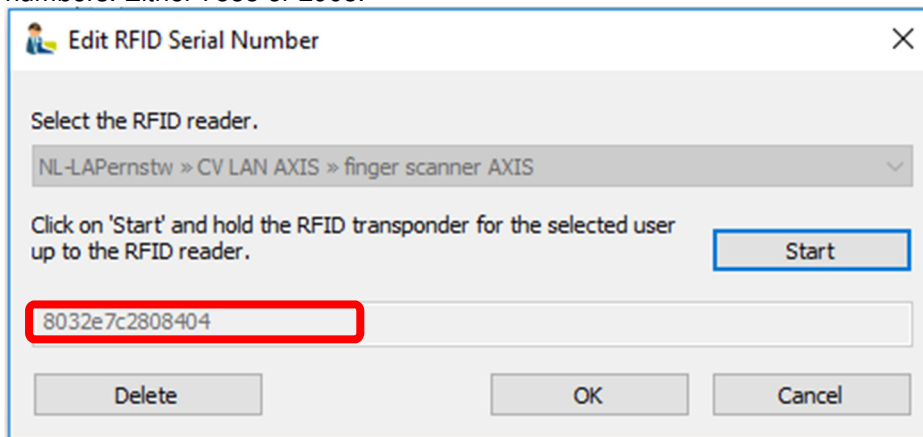
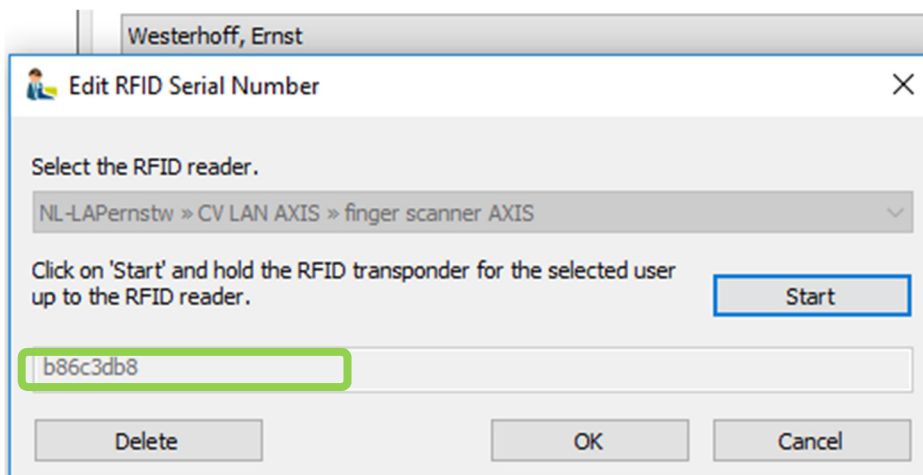
Cancel Save

12 Cards used for testing

ekey finger scanner integra 2.0 can also be used reading RFID, ISO14443A or Mifare DESFire EV1.

We tested it with two cards, which both “belong” to the two mentioned persons. The card numbers (UID/CSN) can be enrolled in the system, like we do with AXIS Entry Manager / A1001.

In fact, you can see the RFID as an eleventh finger. If you present the card, it will give the same Wiegand numbers. Either 7585 or 2908.

13 Reader compatibility

Card (used: Inepro SCR708.G + Software)					Axis A4011-E		HID RK40(EKTN)**		ekey finger scanner integra 2.0	
Name	Technology	Number UID	CSN (decimal)	32bit decimal ID	Raw	Card Number	Raw	Card Number	Raw	Card Number
Efteling Bosrijk	Mifare Classic 1K	B83D6CB8	3094101432	3094101432	b86c3db8	3094101432	b86c3db8	3094101432	b86c3db8	n.a.
Axis Democard	Mifare DESFire EV1 2K	048480C2E73280	36084768001000452	3269703168	04847fc2e73280	none	c2808404	3263202308	8032e7c28	n.a.
							**921NTNTEK00000			

14 Event log

No copy made, but works like normal card readers.

15 Reader Behaviour

STATUS	Light	Beeper/Buzzer	Remark
DEFAULT (LOCK) MODE:	Reader Orange	No beeper/Buzzer	
ACCESS/UNLOCK:	Green	beeper/Buzzer	
NO ACCESS:	Red	beeper/Buzzer	
DOOR FORCED OPEN:	Nothing	No beeper/Buzzer	
DOOR OPEN TOO LONG:	Nothing	No beeper/Buzzer	

16 Test procedure

1. Configuration of the reader in ekey software
2. Connected as described
3. Added user Ernst Westerhoff, Wiegand 2908
4. Present finger, Ernst Westerhoff
5. Add to user in AXIS Entry Number, card number 2908
6. Present finger, Ernst Westerhoff
7. Access
8. Added user Jan Janssen, Wiegand 7585
9. Present finger, Jan Janssen
10. Add to user in AXIS Entry Number, card number 7585
11. Present finger, Jan Janssen
12. Access
13. Present card, Ernst Westerhoff
14. Access, card number 2908
15. Present card, Jan Janssen
16. Access, card number 7585

17 Remarks

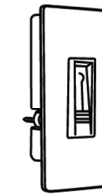
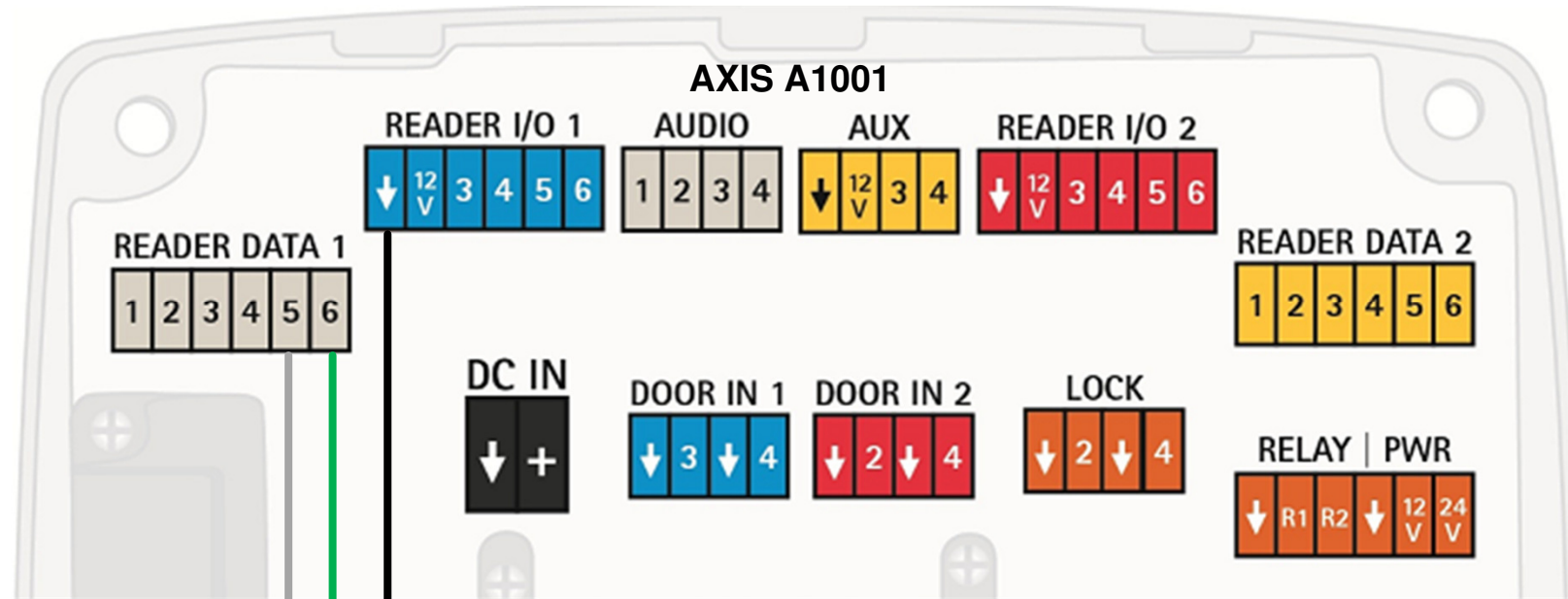
1. The tested reader is no longer available for further tests.
2. Authorisation must be done also in ekey software
3. Using Mifare Classic cards, makes the RFID part compatible
4. Configure Cards and formats in the A1001 and or in ekey could make the integration on a card level better, we used the standards
5. Using power of the A1001 (when using PoE) for the ekey equipment, could be too much when using a lock, this must be calculated.

18 Results

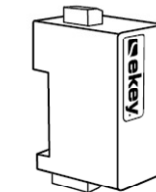
As seen in this document it works.

19 Attachments

Typical and Datasheets (on the site all other documents are available).

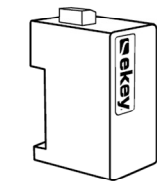


PIN	DESCRIPTION
4	RS485 (Clamp 1) - green
5	RS485 (Clamp 2) - yellow
7	Power supply FS - brown
8	Power supply FS - white



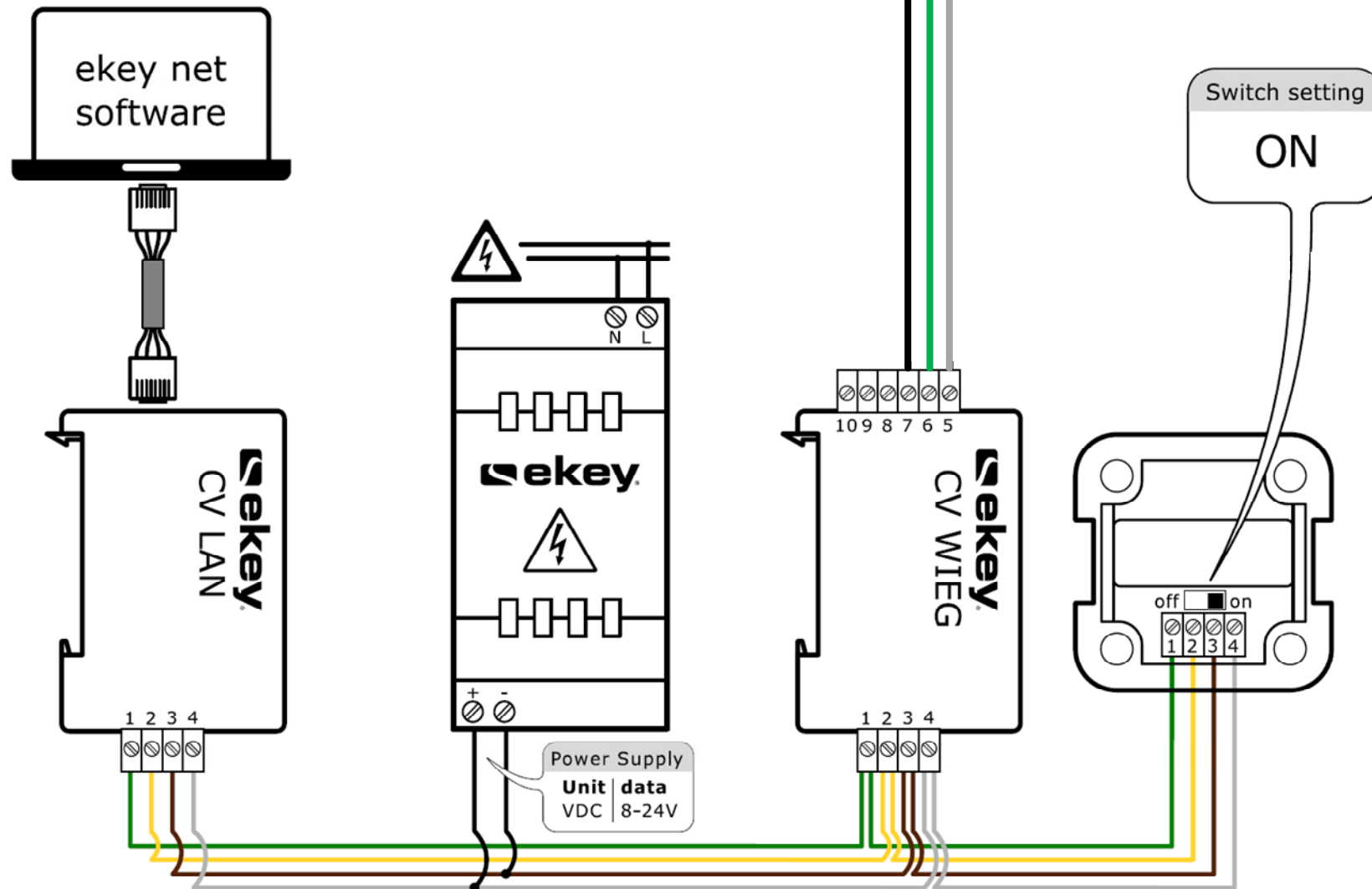
CV WIEG

PIN	DESCRIPTION
1	RS485 (Clamp 1)
2	RS485 (Clamp 2)
3	Power supply FS
4	Power supply FS
5	WIEGAND D0
6	WIEGAND D1
7	GND
8	unused
9	unused
10	unused



CV LAN

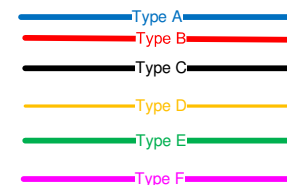
PIN	DESCRIPTION
1	RS485 (Clamp 1)
2	RS485 (Clamp 2)
3	Power supply FS
4	Power supply FS
IP-address (default settings)	
192.168.1.250	



Legenda

Type A, Cable RS-485 (OSDP), J-Y(ST) Y 2x2x0,6mm² (minimum), Anixter # T8723-LSNH at the end of the bus 12VDC!

Type B, Like Belden 9540, 24 AWG, 10 stranded (7x32) tinned copper conductors, Anixter # B9540 or ADI CABS8/1C/SO/ABr,

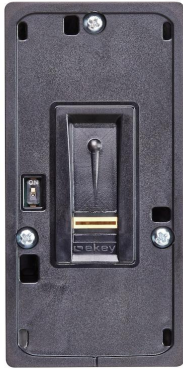


Connection A1001 – ekey finger scanner integra 2.0

Version: 0	Status: Design	Date: 16 May 2018
		Project: n.v.t.
		Drawn by: Ernst Westerhoff RSE
Doc. Name: Connection-A1001-ekey-finger-scanner-Wiegand-EW20180216-v0		System: AXIS Entry Manager

Data sheet

Wednesday, 05/16/2018



Part no.	101251
Product name	ekey net FS S IN E RFID Finger scanner integra 40 fingers
EAN Code	9120022225630
Customs tariff number	8471 9000
Weight	0.194 kg
Discontinued part	

The ekey net finger scanner S integra 2.0 for electricians with an RFID function is a biometric sensor terminal for the registration of fingerprints by means of an RF line sensor from Authentec. Up to 40 fingerprints and cards can be stored. This finger scanner doubles up as an RFID terminal that can be used with RFID cards. This ekey net finger scanner is used to identify authorized users and subsequently open building doors, workplace doors, garage doors, etc. The finger scanner is intended for use in both domestic and business applications. The ekey net finger scanner S integra 2.0 E RFID is designed for fixed mounting on immobile components, such as masonry, and for use in unprotected outdoor areas. To operate the finger scanner, you will also need a matching design element, a compatible control panel, an ekey net converter LAN, a suitable power supply, the full ekey net software, and RFID cards.

Technical specifications

Operating data	
Supply type	DC
Max. rated voltage supply	24 V
Min. rated voltage supply	8 V
Voltage supply rating	12 V
Max. current consumption	300 mA
Min. current consumption	85 mA
Current consumption rating	90 mA
Max. power	3 W
Min. power	1 W
Power rating	1 W

Min. operating temperature	-25 °C
Max. operating temperature	70 °C
Max. humidity	90 %rel
IP code	IP54
Suitable for unprotected outdoor area	Yes
Suitable for protected outdoor area	Yes
Number of fingers	40
FAR	1:10 000 000
FRR	1:100
Detection time	1 s
Number of cards	40
B1_Nennspannung_Toleranz	10 %
B1_Signalisierung	Acoustic Visual
Mechanical data	
Makeup	integra
Mounting type	In-wall mounting
Min. mounting height	155 cm
Width	45.5 mm
Length, height	91.5 mm
Depth	18.2 mm
Material	A4 stainless steel
Surface	Polished
Color	Steel-gray
UV-resistant	Yes
Shock resistance	100 m/s ²
Vibration resistance	10 m/s ²
Sensor	
Sensor type	Finger line sensor
Sensor technology	RF
Resolution	500 DPI
Speed	4 cm/s

RFID

RFID carrier frequency	13,56MHz
RFID range	20 mm
RFID standards	ISO14443A ISO14443B ISO15693
RFID encryption	MIFARE DESFire EV1

RS-485 communication

RS485 quantity	1
RS485 baud rate	230,5KBit/s
RS485 network	Single master
RS485 cable length	500 m
RS485 cable type	Half-duplex
RS485 protocol ekey internal	ekey net
RS485 encryption	Yes

Maximum length of connection lines

Power supply	30 m
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Conformities

Standards	EN61000-6-2 EN61000-6-3 EN60068
Directives	CE2004/108/EG RoHs2011/65/EU

Data sheet

Wednesday, 05/16/2018



Part no.	100340
Product name	ekey net CV LAN RS-485 ekey net converter LAN
EAN Code	9120022223407
Customs tariff number	8473 3080
Weight	0.2 kg

The ekey net converter LAN RS-485 converts the internal ekey RS-485 protocol into a UDP protocol. This converter is used to send data to the ekey net system via LAN. This converter is intended for use in both domestic and business applications. The ekey net converter LAN RS-485 is designed for DIN rail mounting in a distribution box on a 35 mm DIN rail and for use in protected interior areas. As a component of the ekey net access control system, the ekey net converter LAN RS-485 can only be used in conjunction with this particular system.

Technical specifications

Operating data

Supply type	DC
Max. rated voltage supply	24 V
Min. rated voltage supply	8 V
Current consumption rating	42 mA
Power rating	1 W
Min. operating temperature	0 °C
Max. operating temperature	70 °C
Max. humidity	90 %rel
IP code	IP20
Display	None

Mechanical data

Makeup	DIN-rail mounted
Mounting type	DIN rail In control panel WM

Width	25 mm
Length, height	60 mm
Depth	42 mm
Material	PC plastic
Surface	Uncoated
Color	Black
Ethernet communication	
Ethernet quantity	1
Ethernet protocol	UDP
Connection	10BaseT 100BaseTX
Ethernet connector	RJ45 Buchse
RS-485 communication	
RS485 quantity	1
RS485 baud rate	230,5KBit/s
RS485 network	Single master
RS485 cable length	500 m
RS485 cable type	Half-duplex
RS485 protocol ekey internal	ekey net
RS485 encryption	Yes
Wiegand communication	
Wiegand communication type	Bidirectional
Maximum length of connection lines	
Outputs	100 m
Inputs	500 m
Power supply	500 m
Conformities	
Standards	EN61000-6-2 EN61000-6-3
Directives	CE2004/108/EG RoHs2011/65/EU

Data sheet

Wednesday, 05/16/2018



Part no.	100669
Product name	ekey net CV Wiegand RS-485 ekey net converter Wiegand
EAN Code	9120022224084
Customs tariff number	8473 3080
Weight	0.205 kg

The ekey net converter Wiegand RS-485 converts the internal ekey RS-485 protocol into a Wiegand protocol. This converter is used to send data in the Wiegand protocol in one direction from the ekey net system to a Wiegand system, usually for the purpose of access control. The transmission of the data is initiated when authorized access is recognized on an ekey net finger scanner. This converter is intended for use in both domestic and business applications. The ekey net converter Wiegand RS-485 is designed for DIN rail mounting in a distribution box on a 35 mm DIN rail and for use in protected interior areas. As a component of the ekey net access control system, the ekey net converter Wiegand RS-485 can only be used in conjunction with this particular system.

Technical specifications

Operating data	
Supply type	DC
Max. rated voltage supply	24 V
Min. rated voltage supply	8 V
Current consumption rating	34 mA
Power rating	1 W
Min. operating temperature	0 °C
Max. operating temperature	70 °C
Max. humidity	90 %rel
IP code	IP20
Display	None
Mechanical data	
Makeup	DIN-rail mounted

Mounting type	DIN rail In control panel WM
Width	25 mm
Length, height	60 mm
Depth	42 mm
Material	PC plastic
Surface	Uncoated
Color	Black
RS-485 communication	
RS485 quantity	1
RS485 baud rate	230,5KBit/s
RS485 network	Single master
RS485 cable length	500 m
RS485 cable type	Half-duplex
RS485 protocol ekey internal	ekey net
RS485 encryption	Yes
Wiegand communication	
Wiegand quantity	1
Wiegand communication type	Unidirectional
Wiegand protocol	26 bit Pyramid Costum
Configurable Wiegand protocol	Yes
Maximum length of connection lines	
Outputs	10 m
Inputs	500 m
Power supply	500 m
Conformities	
Standards	EN61000-6-2 EN61000-6-3
Directives	CE2004/108/EG RoHs2011/65/EU