

SEPTEMBER 2019

Webinar “ABB-tacteo KNX Access Control”

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Webinar “ABB-tacteo KNX Access Control”

Agenda

Overview

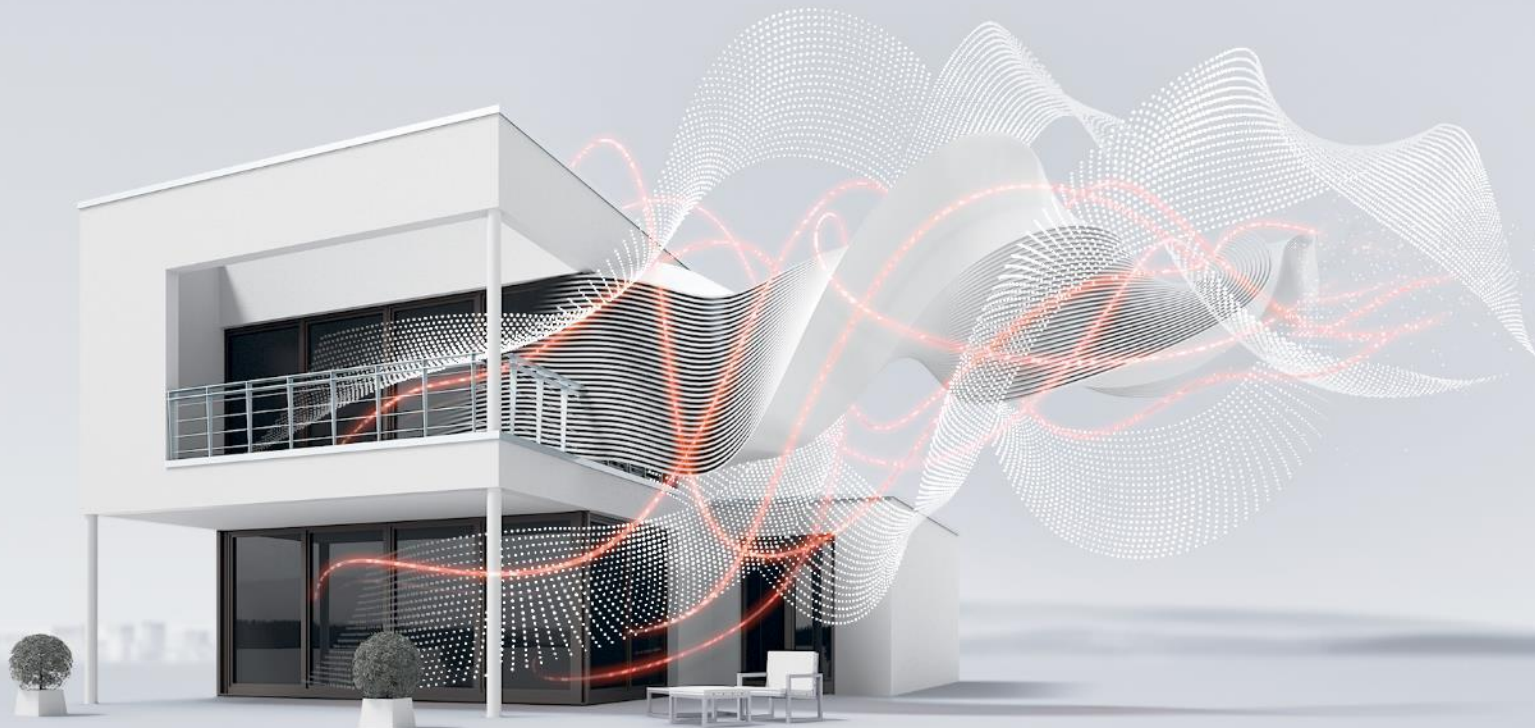
Tacteo Access Control Range

Software “MiniMAC”

System Architecture

Access Control References





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Overview

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Segmentation

Needs & trends in different market segments



- Hotels and hospitality
- Main need is guest management and comfort
- Energy Efficiency is an important trend, becoming more and more strategic



- Banks, factories, other tertiary
- Main need is security: the goal is granting centralized and controlled management of access to common and/or reserved areas

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Energy Efficiency and cost savings

Energy Efficiency and cost savings



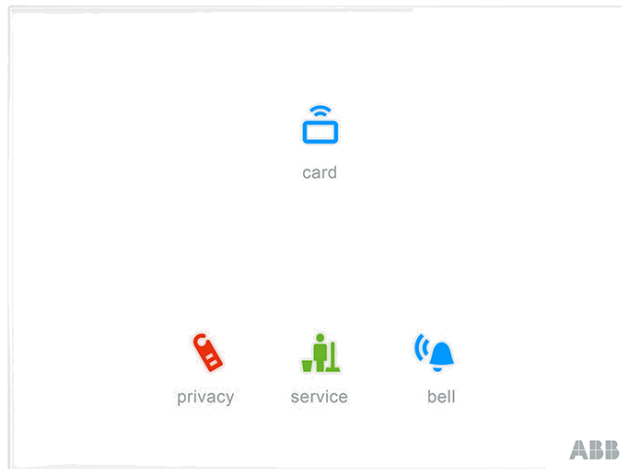
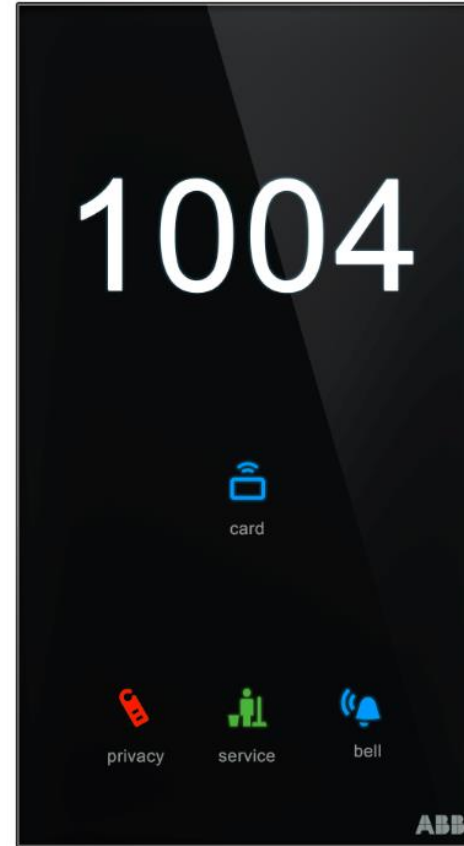
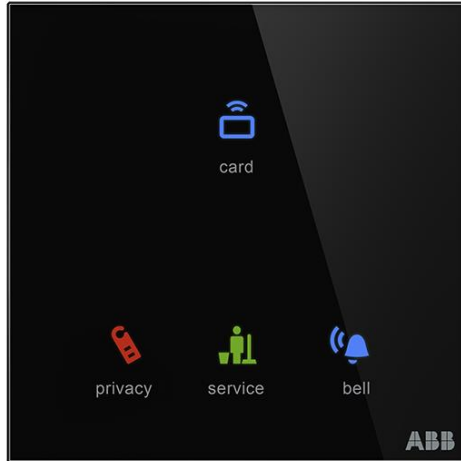
- Load activations (lighting, TV) only when guests are inside their rooms
- Smart and optimized management of room heating/cooling (comfort mode activation during check-in operation and when guests are in their rooms; standby/OFF mode activation during check-out and when guests are outside their rooms)

Value-added services



- Access control to services provided by hotels, such as wellness or fitness center
- Access control to hotel common areas (conference rooms, car parking/garage, ...)

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The Access Control solution integrated with KNX



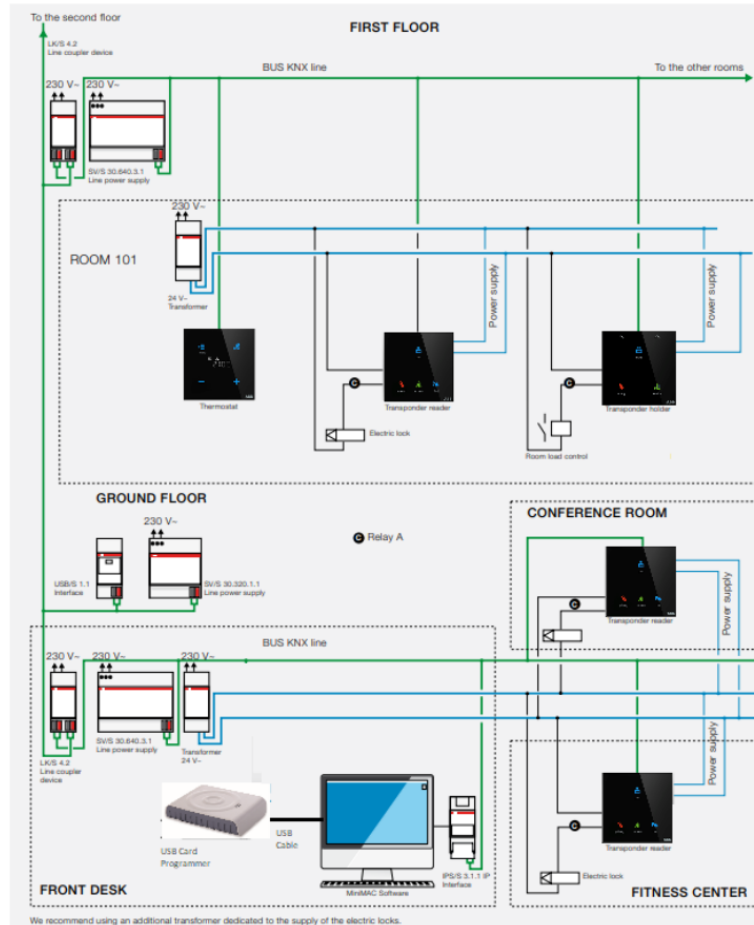
- Access control solution completely integrated into KNX building automation installations
- Every access control device installed into a KNX line and communicate with other KNX devices



- Commissioning in 2-steps:
 - 1) Programming devices by ETS
 - 2) System configuration by MiniMAC software → creating plant, devices configuration (White/black list, time range, extra accesses, ...)
- Card management, and installation supervision operated by MiniMAC software

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System architecture



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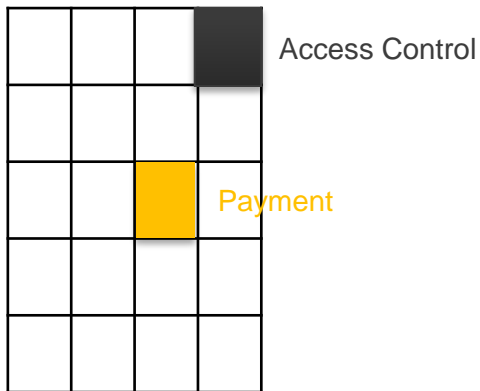
MIFARE technology



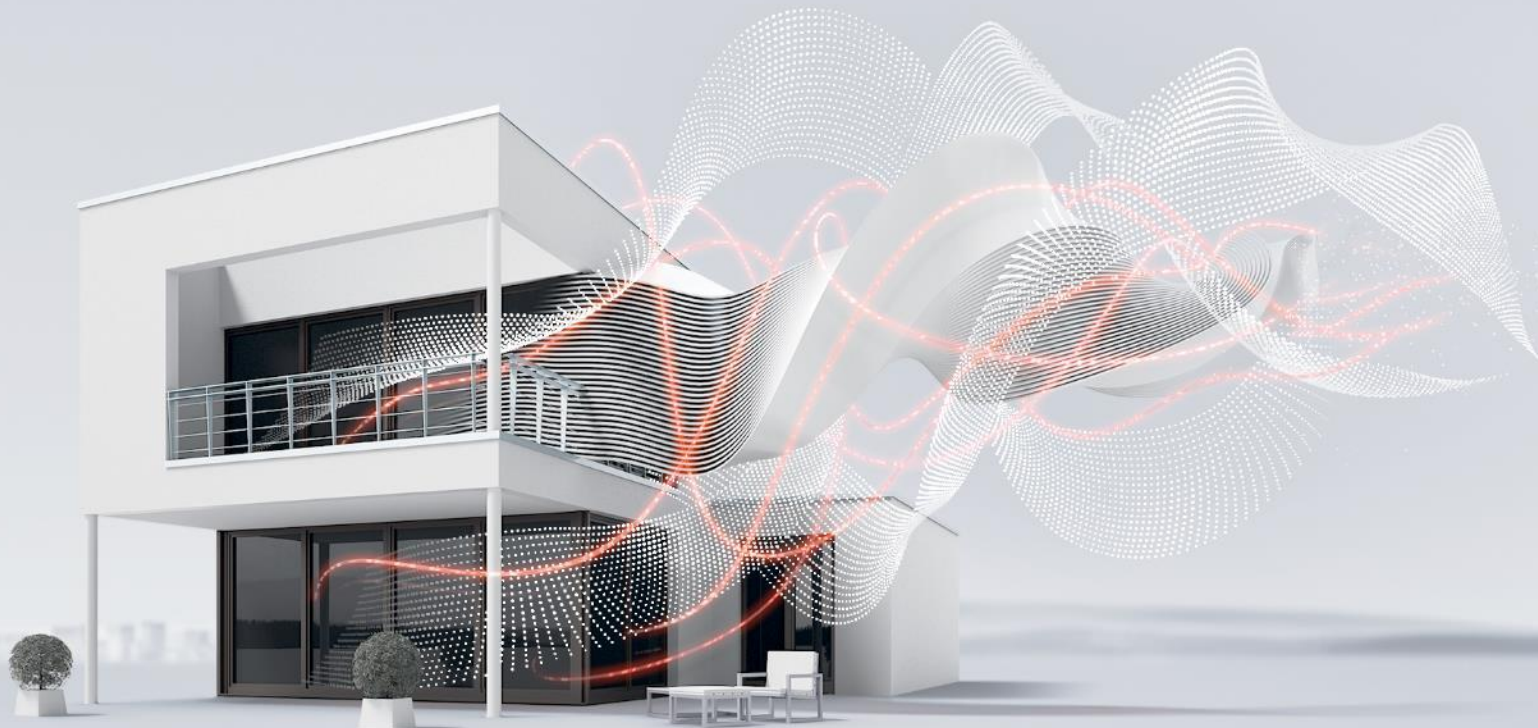
- Tacteo access control transponder reader is based on Mifare technology (13.56 MHz), which grants:
 - a better security, if necessary, through encryption
 - an higher speed when exchanging data
 - multi-application, since contactless card used for 13.56 MHz standard (ISO/IEC 14443), typically MIFARE® smartcards, are available with 16 separate memory sectors, that can be used for different applications (not only access control but also payment for example). In this way access control solution can be more easily integrated, when and if necessary, with customer applications and solutions already implemented, or to be implemented

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MIFARE technology



- Tacteo card reader and card holder support standard Mifare cards:
 - MIFARE Classic 1K EV1
 - MIFARE UltraLight
- Card programmer/reader writes/read into/from the first free memory block of transponder card
 - Integration with other third-party services/application is easier (they use other memory block in the card for their application)
 - Integration, when required, is up to the system integrator




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The range

Card reader – TLM/U

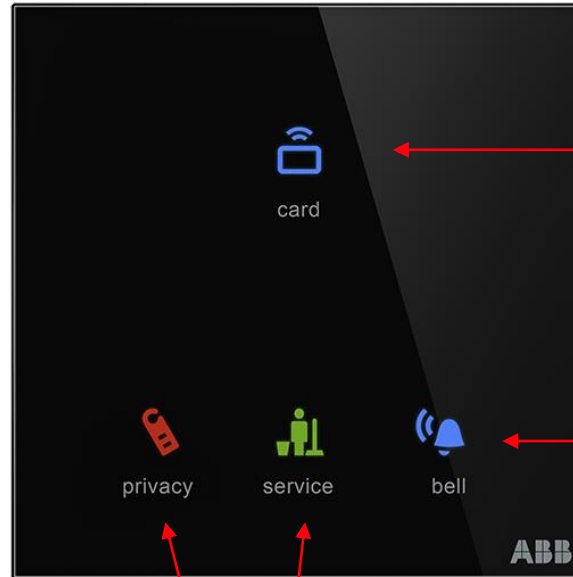
Overview and main functionalities

- KNX certified device 
- MiniMAC software needed for programming 

- 1 output channel with 4A@24V relay (for electric lock or courtesy light for example)
- Available in 3 dimensions



- Flush-mounting installation according to worldwide standard (VDE, Swiss, British Standard, NEMA, Italian)
- Additional power supply required (12...24 V AC/DC, SELV)




RGB icon with signaling related to card validation: access allowed/denied

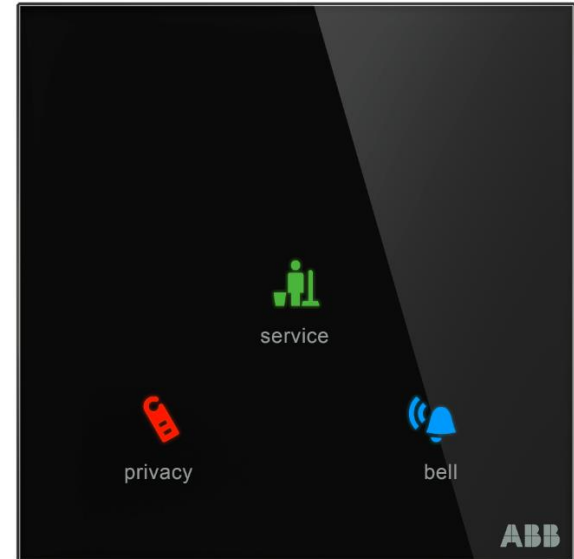
1 “touch” push-button (+ integrated RGB LED for status icon) for controlling external door-bell

RGB LED for status icons (make-up-room, do-not-disturb)

Room Outside Sensor – TA/U



Overview and main functionalities

- This device has the same functionalities of Card reader, but:
 - It has NOT card reader included (no access control capabilities)
 - MiniMAC software is NOT needed 
- Typical application: hotel where access control (or at least ABB Access Control) is not included in the installation but hotel owner/manager wants to have (integrate in one single device):
 - DND/MUR indication displayed outside room for hotel staff notification
 - bell capabilities (push-button) outside the room



Room Number + Card reader – TSM/U

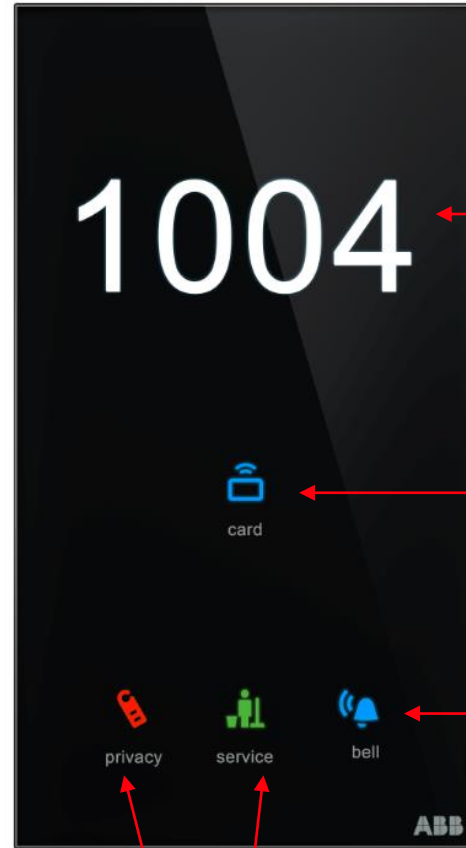
Overview and main functionalities

- KNX certified device 
- MiniMAC software needed for programming 
- 1 output channel with 4A@24V relay (for electric lock or courtesy light for example)

- Available in 1 dimension



- Flush-mounting installation according to worldwide standard (VDE, Swiss, British Standard, NEMA, Italian)
- Additional power supply required (12...24 V AC/DC, SELV)



Room Number indication (can be controlled by KNX)


RGB icon with signaling related to card validation: access allowed/denied

1 “touch” push-button (+ integrated RGB LED for status icon) for controlling external door-bell

RGB LED for status icons (make-up-room, do-not-disturb)

Room Number – TSN/U

Overview and main functionalities

- This device has the same functionalities of Room Number + Card reader, but:
 - It hasn't card reader included (no access control capabilities)
 - MiniMAC software is NOT needed 
- Typical application: hotel where access control (or at least ABB Access Control) is not included in the installation but hotel owner/manager wants to have (integrated in one single device):
 - display of room number outside room (and controlling room number ON/OFF by KNX)
 - DND/MUR indication displayed outside room for hotel staff notification
 - bell capabilities (push-button) outside the room



Access Control transponder reader

Output configuration

The output of transponder reader can be configured according to two different modalities:

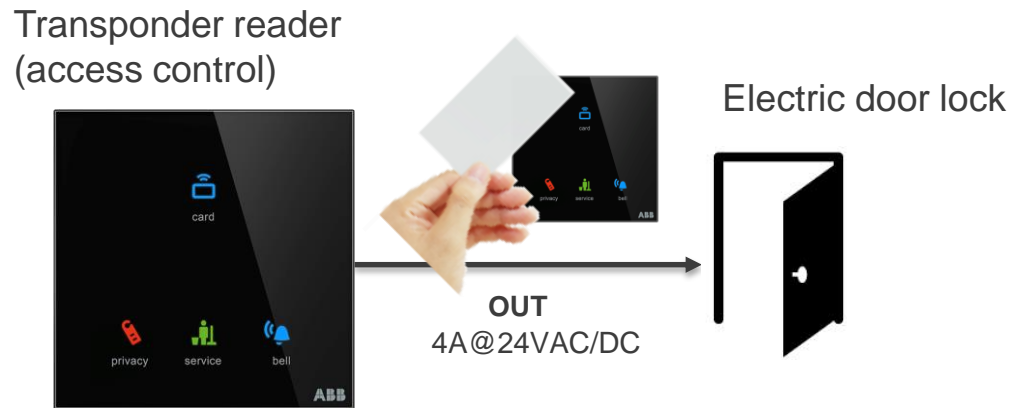
- “**Linked to card reader**”, receiving in this case switching commands from the device itself (according to transponder card validation). It’s moreover possible to switch the relay according to a standard KNX telegram received from the bus by a KNX device
- **Being a standard KNX Switch actuator output**, able to be controlled by every KNX-standard devices

1.1.161 TLM/U.1.1-CG C-Touch Card Reader - Room 1 > Actuator > Common parameter

+ Device settings	Application	<input type="radio"/> Switch actuator	<input checked="" type="radio"/> Linked to card reader
+ Function block 1	Output contact reaction	<input type="radio"/> Normally closed	<input checked="" type="radio"/> Normally open
+ Function block 2	Enable electric lock delay	<input type="radio"/> No	<input checked="" type="radio"/> Yes
+ Function block 3	Electric lock delay	<input type="text" value="00:00:03"/>	hh:mm:ss
- Actuator	Switch status	<input type="radio"/> deactivated	<input checked="" type="radio"/> activated
	Invert switch status	<input checked="" type="radio"/> deactivated	<input type="radio"/> activated
	Common parameter		
+ Card reader			
+ General functions			

Access Control transponder reader

Output configuration: linked to card reader



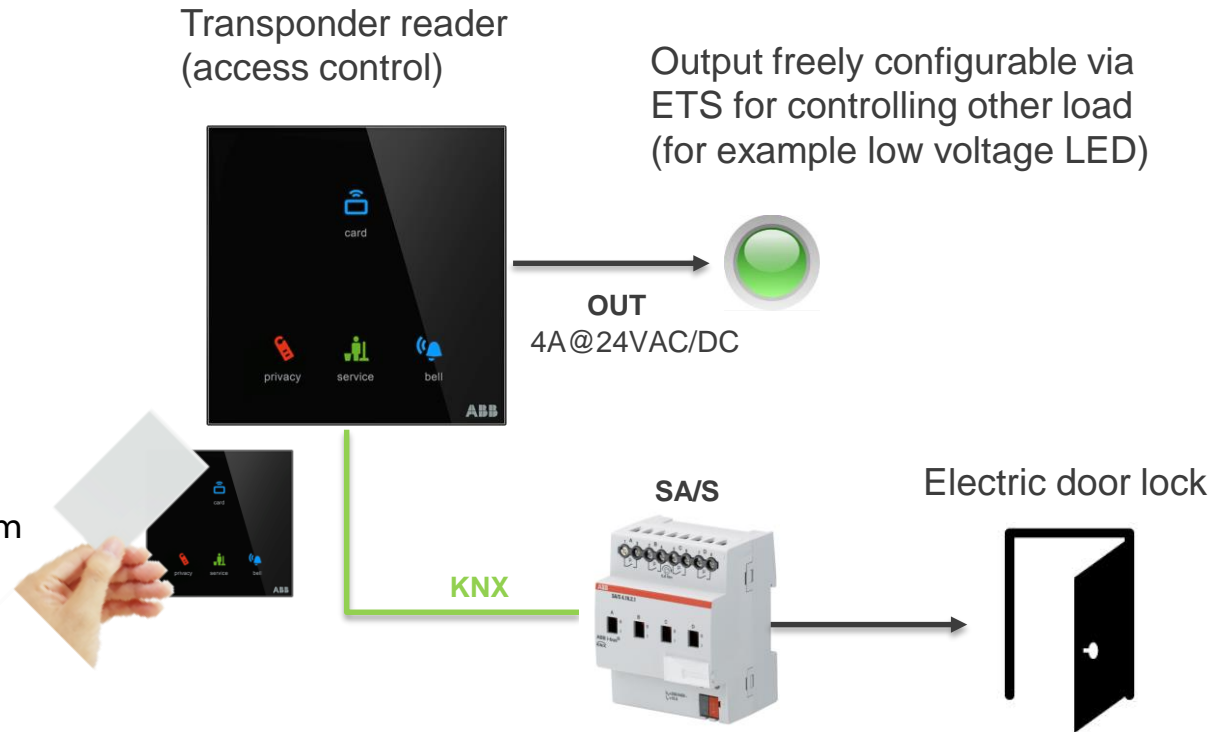
Transponder reader output is configured for opening/leaving closed electronic door lock (or courtesy light) while guest card is valid/not valid for access

Access Control transponder reader

Output configuration: Switch Actuator

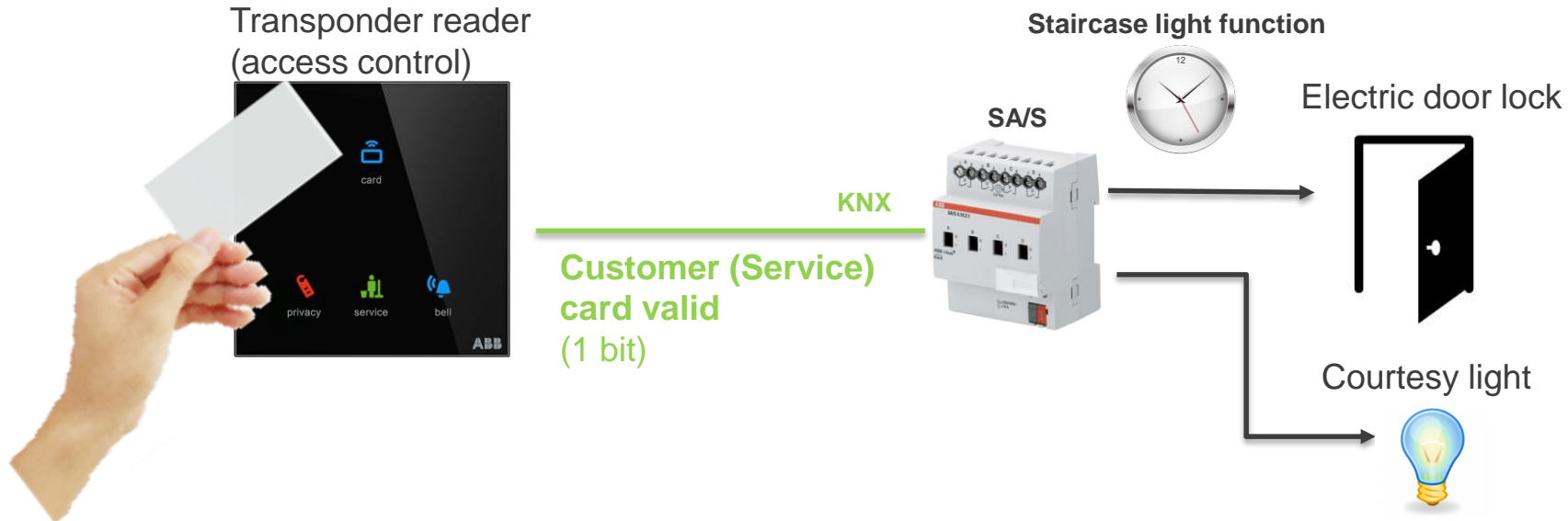
Electronic door lock is controlled by an external KNX actuator (SA/S) which receive from access control transponder reader, via KNX bus, information for opening/leaving closed the door

→ More secure solution, since the relay which controls door can be hid inside the room and not be short-circuited from outside



Access Control transponder reader

KNX functionalities on card validation



Through 1 bit KNX communication object sent on the bus on card validation event, transponder reader is able to communicate with other KNX devices (for example SA/S) which grants access to room, and activates courtesy light (or moreover they could realize other functions/control other loads)

It's possible to differentiate behavior between guest and services card validation (some loads activated when guest access the room, some others when staff access the room)

Access Control transponder reader

KNX functionalities on card validation

Transponder reader
(access control)



KNX

Customer (Services)
card valid scene
(1 byte scene)

Through 1 byte KNX communication object sent on the bus on card validation event, standard KNX scene can be triggered, for example from one Room Master able to control different kinds of load inside or outside the room

It's possible to differentiate behavior between guest and services card validation (one scenario activated when guest access the room, one other when staff access the room)

RM/S
Room Master



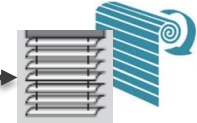
Electric door lock



Courtesy light



Shutters



Other loads



Access Control transponder reader

ETS Configuration

- Enabling/disabling 8 bit scenes:
 - On guest card acknowledgment
 - On service card acknowledgment

1.1.161 TLM/U.1.1-CG C-Touch Card Reader - Room 1 > Card reader > General parameter

+ Device settings	Led light	<input type="radio"/> dark <input checked="" type="radio"/> bright
+ Function block 1	Enable customer card valid scene	<input type="radio"/> no <input checked="" type="radio"/> yes
+ Function block 2	Scene number	1
+ Function block 3	Enable service card valid scene	<input type="radio"/> no <input checked="" type="radio"/> yes
- Actuator	Scene number	2
Common parameter		
- Card reader		
General parameter		
+ General functions		

Configuring number of Scene to be sent on specific event

Access Control transponder reader

ETS configuration

Configuring behavior of output (relay)

- Normally open/Normally closed contact
- Behaviour on bus voltage recovery
- Sending status telegram related to switching

1.1.161 TLM/U.1.1-CG C-Touch Card Reader - Room 1 > Actuator > Common parameter

+ Device settings	Application	<input checked="" type="radio"/> Switch actuator <input type="radio"/> Linked to card reader
+ Function block 1	Output contact reaction	<input type="radio"/> Normally closed <input checked="" type="radio"/> Normally open
+ Function block 2	Communication object value at bus voltage recovery	No value
+ Function block 3	Switch status	<input type="radio"/> deactivated <input checked="" type="radio"/> activated
- Actuator	Invert switch status	<input checked="" type="radio"/> deactivated <input type="radio"/> activated

Common parameter

Access Control transponder reader

ETS configuration

Configuring «Output» functionality

➤ Switch Actuator

- the output can be configured as a standard KNX output, freely programmable via ETS with group addresses
- Output is not linked to access control functions (card validation)

1.1.161 TLM/U.1.1-CG C-Touch Card Reader - Room 1 > Actuator > Common parameter

+ Device settings	Application	<input checked="" type="radio"/> Switch actuator <input type="radio"/> Linked to card reader
+ Function block 1	Output contact reaction	<input type="radio"/> Normally closed <input checked="" type="radio"/> Normally open
+ Function block 2	Communication object value at bus voltage recovery	No value ▼
+ Function block 3	Switch status	<input type="radio"/> deactivated <input checked="" type="radio"/> activated
- Actuator	Invert switch status	<input checked="" type="radio"/> deactivated <input type="radio"/> activated

Common parameter

Access Control transponder reader

ETS configuration

Configuring «Output» functionality

➤ Linked to card reader

- **the output is linked to access control (relay reacts on transponder card validation)**
- Additional functions → staircase lighting (Electric lock delay) for courtesy light or electric door lock

1.1.161 TLM/U.1.1-CG C-Touch Card Reader - Room 1 > Actuator > Common parameter

+ Device settings	Application	<input type="radio"/> Switch actuator	<input checked="" type="radio"/> Linked to card reader
+ Function block 1	Output contact reaction	<input type="radio"/> Normally closed	<input checked="" type="radio"/> Normally open
+ Function block 2	Enable electric lock delay	<input type="radio"/> No	<input checked="" type="radio"/> Yes
+ Function block 3	Electric lock delay	<input type="text" value="00:00:03"/>	hh:mm:ss
- Actuator	Switch status	<input type="radio"/> deactivated	<input checked="" type="radio"/> activated
	Invert switch status	<input checked="" type="radio"/> deactivated	<input type="radio"/> activated

Common parameter

Room number (TSN/U) - Card Reader with Room Number (TSM/U) ETS configuration

In the “Function Block 4” it is possible to configure the behavior of LED related to Room Number signaling, in particular brightness intensity or completely ON/OFF when the devices receive 1-bit telegram (ON/OFF) on the correspondent group object

1.1.1 TSM/U.2.1-CG C-Touch Card Reader and Room Number > Function block 4 > Common parameter

- + Device settings
- + Function block 1
- + Function block 2
- + Function block 3
- Function block 4
 - Room number LED
 - Common parameter
 - Extended parameters


Brightness for off:

Brightness for on:

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	S1: Switching	Input/Output			1 bit	C	-	W	T	U	switch	Low
19	S2: Switching	Input/Output			1 bit	C	-	W	T	U	switch	Low
27	S3: Switching	Input/Output			1 bit	C	-	W	T	U	switch	Low
35	L4: LED status	Input			1 bit	C	-	W	-	U	switch	Low
37	RL: Switch object	Input			1 bit	C	-	W	-	-	switch	Low
39	CR: Card Valid	Output			1 bit	C	R	-	T	U	switch	Low
40	CR: Date	Input			3 bytes	C	-	W	-	U	date	Low
41	CR: Time of the day	Input			3 bytes	C	-	W	-	U	time of day	Low
42	CR: Access data	Output			4 bytes	C	R	-	T	U	counter pu...	Low
43	CR: Customer card valid	Output			1 bit	C	R	-	T	U	switch	Low
44	CR: Service card valid	Output			1 bit	C	R	-	T	U	switch	Low

Card Holder programmable – TKM/U

Overview and main functionalities

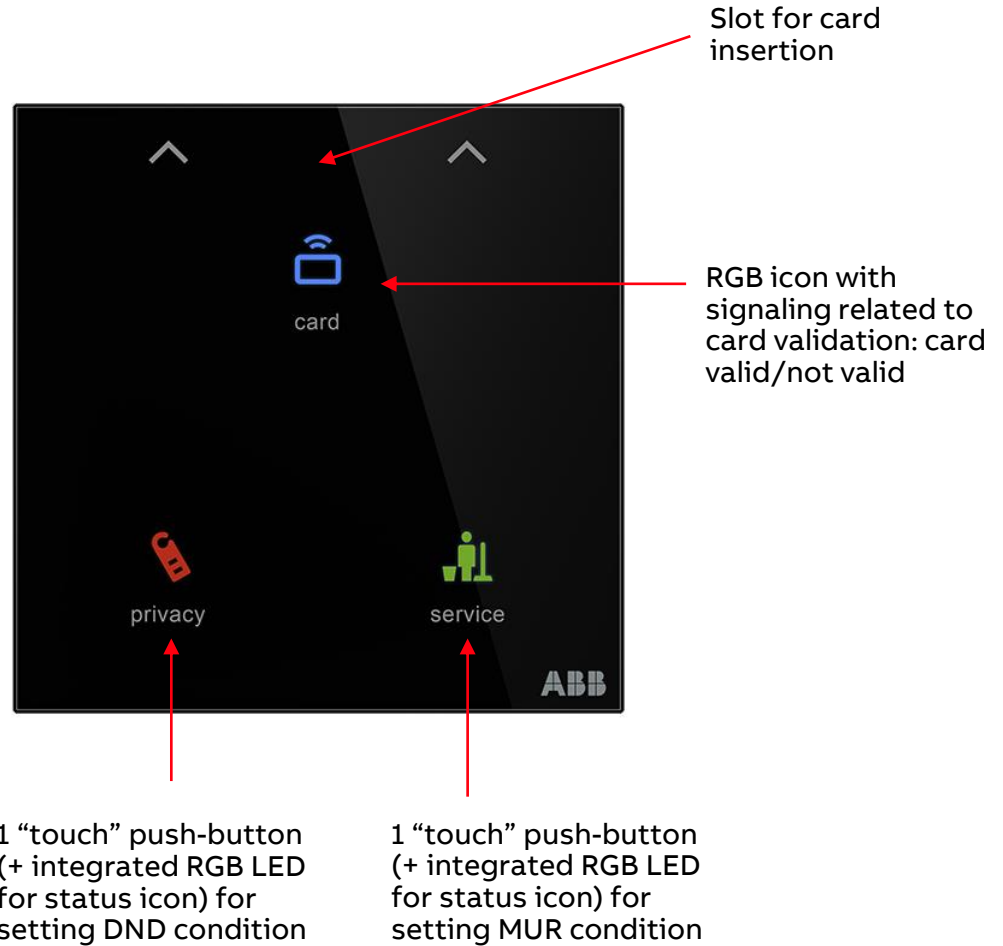
- KNX certified device 
- MiniMAC software needed for programming 

- 1 output channel with 4A@24V relay (for electric lock or courtesy light for example)

- Available in 2 dimensions




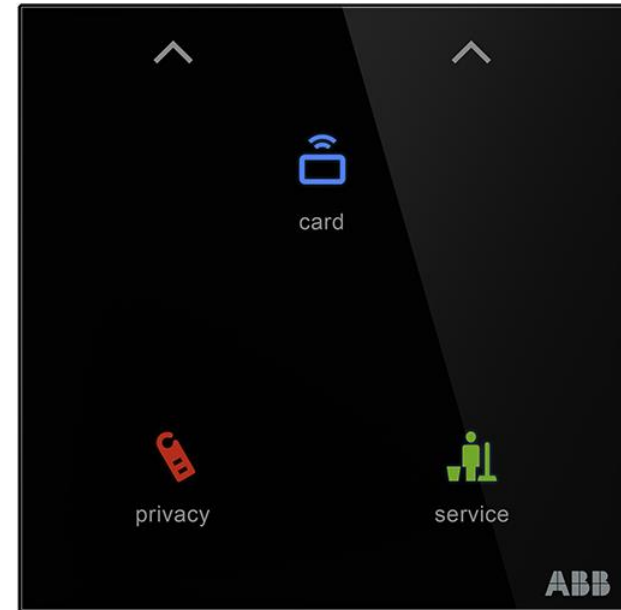
- Flush-mounting installation according to worldwide standard (VDE, Swiss, British Standard, NEMA, Italian)
- Additional power supply required (12...24 V AC/DC, SELV)



Card holder “universal” – TKK/U

Overview and main functionalities

- This card holder has the same functionalities of “programmable” Card Holder (KNX functionalities, 1 relay 4A@24V, RGB push-button)
- The only difference is represented by card validation scheme/logic:
 - This “universal” card holder includes MIFARE antenna but without access control capabilities (card validation). This means that every MIFARE card (also not programmed by MiniMAC access control software) is able to activate the relay of the output channel included in the device
- MiniMAC software is NOT needed 
- Typical application → hotel in which Access Control solution (relying on MIFARE technology) is provided by other company (i.e. Vingcard, Salto, ...), and ABB could nevertheless offer card holder for guest presence/absence scenes integrated on KNX



Access Control transponder holder

Output configuration

The output of transponder card-holder can be configured according to two different modalities:

- “**Linked to card holder**”, receiving in this case switching commands from the device itself (according to valid transponder card inserted/removed into/from the card holder)
- **Being a standard KNX Switch actuator output**, able to be controlled by every KNX-standard devices

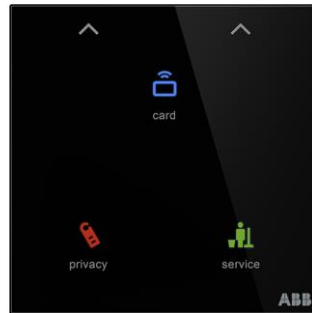
1.1.162 TKM/U.1.1-CG C-Touch Card Holder - Room 1 > Actuator > Common parameter

+ Device settings	Application	<input type="radio"/> Switch actuator	<input checked="" type="radio"/> Linked to card holder
+ Function block 1	Output contact reaction	<input type="radio"/> Normally closed	<input checked="" type="radio"/> Normally open
+ Function block 2	Enable electric lock delay	<input type="radio"/> No	<input checked="" type="radio"/> Yes
- Actuator	Electric lock delay	<input type="text" value="00:00:20"/>	hh:mm:ss
Common parameter	Switch status	<input type="radio"/> deactivated	<input checked="" type="radio"/> activated
+ Card holder	Invert switch status	<input checked="" type="radio"/> deactivated	<input type="radio"/> activated
+ General functions			

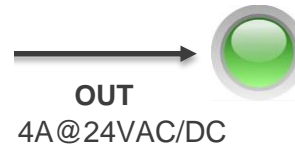
Access Control transponder holder

Output configuration: Switch Actuator

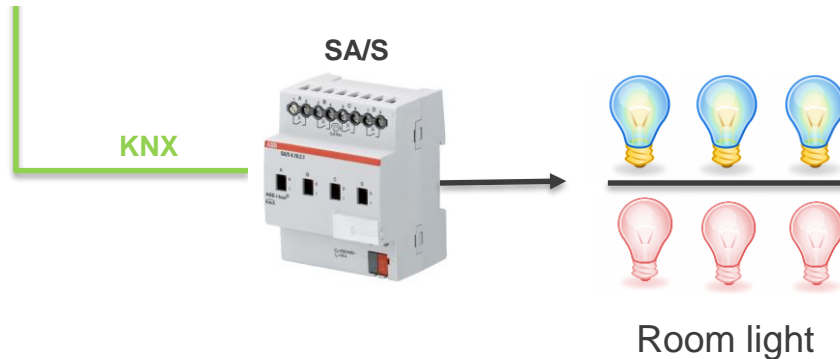
Transponder holder
(access control)



Output freely configurable via
ETS for controlling other load
(for example low voltage LED)



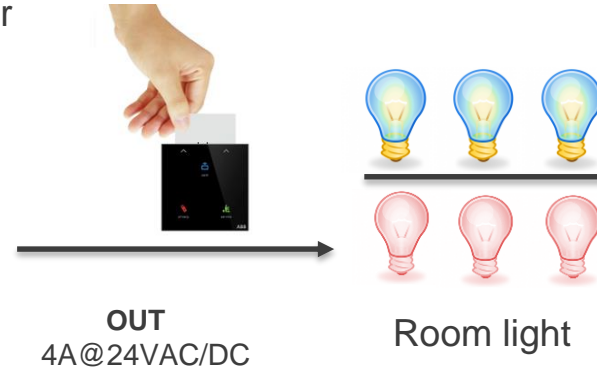
Room loads (e.g lights) are controlled by an external KNX actuator (SA/S) which receive from access control transponder holder, via KNX bus, information about switching ON/OFF lights



Access Control transponder holder

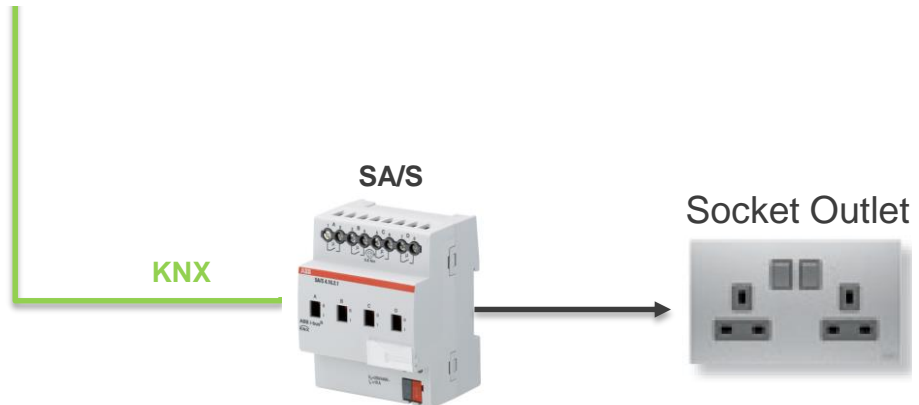
Output configuration: linked to card holder

Transponder holder
(access control)



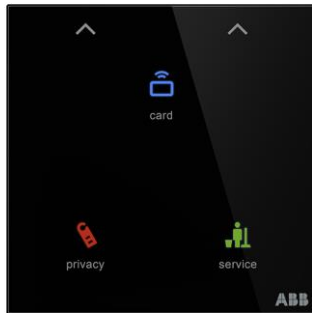
Transponder holder output is configured in order to react on transponder card insertion/removal

Additional loads can be switched ON/OFF on card insertion/removal using proper communication object available

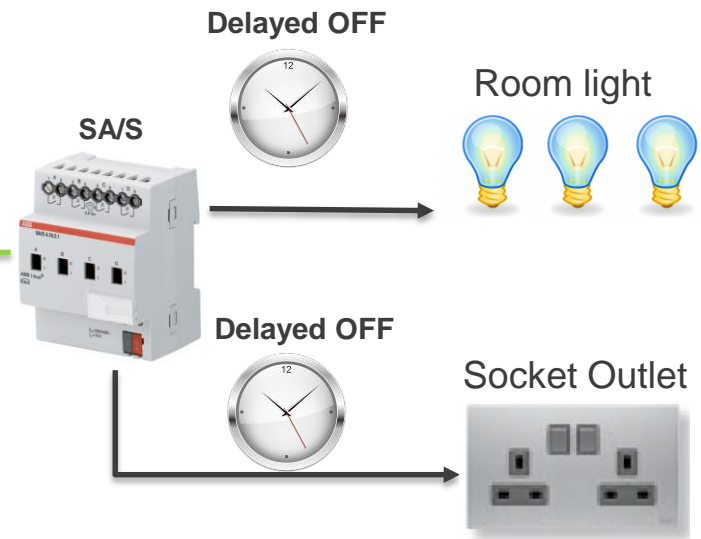


Access Control transponder holder (programmable – TKM/U) KNX functionalities on card insertion/removal

Transponder holder
(access control)



KNX
Guest (Service) card
insertion/removal
(1 bit)

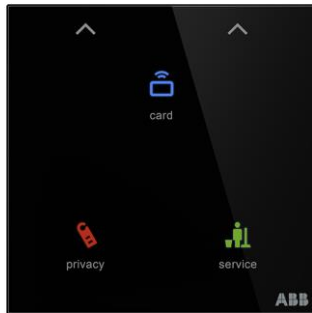


Through 1 bit KNX communication object sent on the bus on card insertion/removal event, transponder holder is able to communicate with other KNX devices (for example SA/S) which activate room loads (e.g. room light, socket outlet)

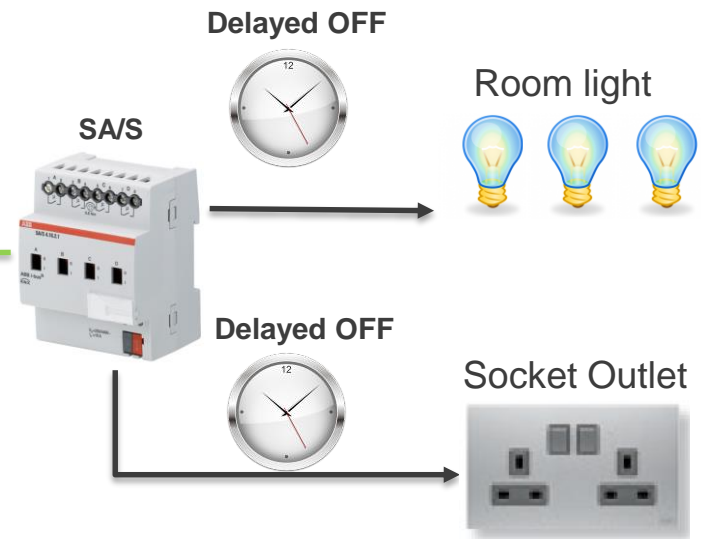
It's possible to differentiate behavior between guest and services card validation (some loads activated when guest is inside/outside the room, some others when staff is inside/outside the room)

Access Control transponder holder (universal – TKK/U) KNX functionalities on card insertion/removal

Transponder holder
(access control)



KNX
Guest (Service) Card
insertion/removal
(1 bit)



Through 1 bit KNX communication object sent on the bus on card insertion/removal event, transponder holder is able to communicate with other KNX devices (for example SA/S) which activate room loads (e.g. room light, socket outlet)

Access Control transponder holder (programmable – TKM/U) KNX functionalities on card insertion/removal

Transponder holder
(access control)



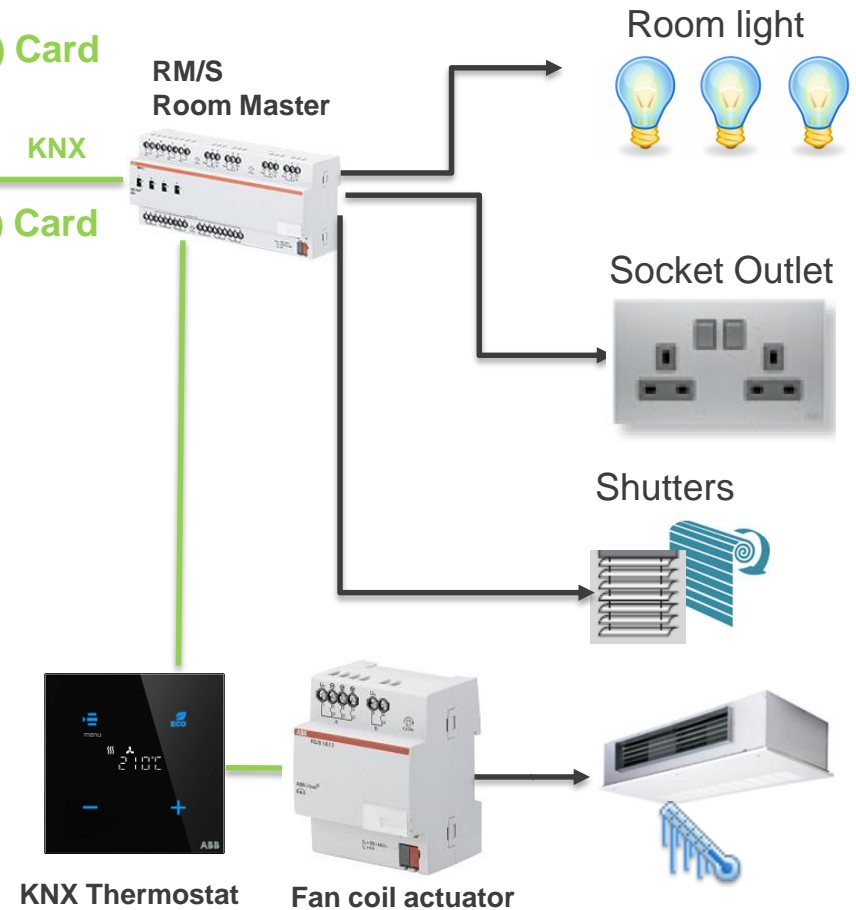
Guest (Services) Card
Insertion scene
(1 byte scene)

Guest (Services) Card
Removal scene
(1 byte scene)

KNX

Through 1 byte KNX communication object sent on the bus on card insertion/removal event, standard KNX scene can be triggered, for example from one Room Master able to control different kinds of load inside the room

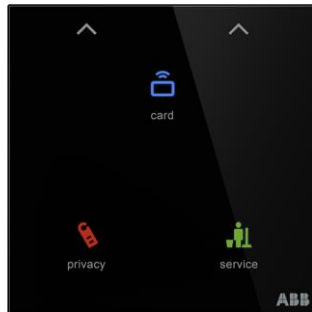
It's possible to differentiate behavior between guest and services cards insertion (one scene activated when guest insert/remove cards into/from the card-holder, one other when staff insert/remove cards into/from the card-holder)



Fan-coil

Access Control transponder holder (universal – TKK/U) KNX functionalities on card insertion/removal

Transponder holder
(access control)



Guest (Services)
Card Insertion scene
(1 byte scene)

Guest (Services)
Card Removal scene
(1 byte scene)

KNX

RM/S
Room Master



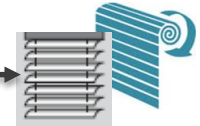
Room light



Socket Outlet



Shutters



Through 1 byte KNX communication object sent on the bus on card insertion/removal event, standard KNX scene can be triggered, for example from one Room Master able to control different kinds of load inside the room



KNX Thermostat



Fan coil actuator



Fan-coil

Access Control transponder holder (programmable – TKM/U) ETS Configuration

- Enabling/disabling 8 bit scenes:
 - On guest card insertion
 - On service card insertion
 - On guest card removal
 - On service card removal

1.1.162 TKM/U.1.1-CG C-Touch Card Holder - Room 1 > Card holder > General parameter

+ Device settings	Led light	<input type="radio"/> dark <input checked="" type="radio"/> bright
+ Function block 1	Insertion customer card scene	<input type="radio"/> no <input checked="" type="radio"/> yes
+ Function block 2	Scene number	3
- Actuator	Insertion service card scene	<input type="radio"/> no <input checked="" type="radio"/> yes
Common parameter	Scene number	4
- Card holder	Removal customer card scene	<input type="radio"/> no <input checked="" type="radio"/> yes
General parameter	Scene number	5
+ General functions	Removal service card scene	<input type="radio"/> no <input checked="" type="radio"/> yes
	Scene number	6

Configuring number of Scene to be sent on specific event

Access Control transponder holder (universal – TKK/U) ETS Configuration

- Enabling/disabling 8 bit scenes:
 - On card insertion
 - On card removal

1.1.1 TKK/U.1.1-CG C-Touch Conventional Card Holder > Card holder > General parameter

+ Device settings	Led light	<input type="radio"/> dark <input checked="" type="radio"/> bright
+ Function block 1	Insertion card scene	<input checked="" type="checkbox"/>
	Scene number	1
+ Function block 2	Removal card scene	<input checked="" type="checkbox"/>
- Actuator	Scene number	2
General parameter		
- Card holder		
General parameter		
- General functions		
	Channel 1	
	Channel 2	
	Channel 3	
	Channel 4	
	Channel 5	

Configuring number of Scene to be sent on specific event

Access Control transponder holder ETS configuration

Configuring behavior of output (relay)

- Normally open/Normally closed contact
- Behavior on bus voltage recovery
- Sending telegram status for switching

1.1.162 TKM/U.1.1-CG C-Touch Card Holder - Room 1 > Actuator > Common parameter

+ Device settings	Application	<input checked="" type="radio"/> Switch actuator <input type="radio"/> Linked to card holder
+ Function block 1	Output contact reaction	<input type="radio"/> Normally closed <input checked="" type="radio"/> Normally open
+ Function block 2	Communication object value at bus voltage recovery	No value
- Actuator	Switch status	<input type="radio"/> deactivated <input checked="" type="radio"/> activated
Common parameter	Invert switch status	<input checked="" type="radio"/> deactivated <input type="radio"/> activated

Access Control transponder holder ETS configuration

Configuring «Output» functionality

➤ Switch Actuator

- the output can be configured as a standard KNX output, freely programmable via ETS with group addresses
- Output is not linked to access control functions (card insertion/removal)

1.1.162 TKM/U.1.1-CG C-Touch Card Holder - Room 1 > Actuator > Common parameter

+ Device settings	Application	<input checked="" type="radio"/> Switch actuator <input type="radio"/> Linked to card holder
+ Function block 1	Output contact reaction	<input type="radio"/> Normally closed <input checked="" type="radio"/> Normally open
+ Function block 2	Communication object value at bus voltage recovery	No value ▼
- Actuator	Switch status	<input type="radio"/> deactivated <input checked="" type="radio"/> activated
Common parameter	Invert switch status	<input checked="" type="radio"/> deactivated <input type="radio"/> activated

Access Control transponder holder ETS configuration

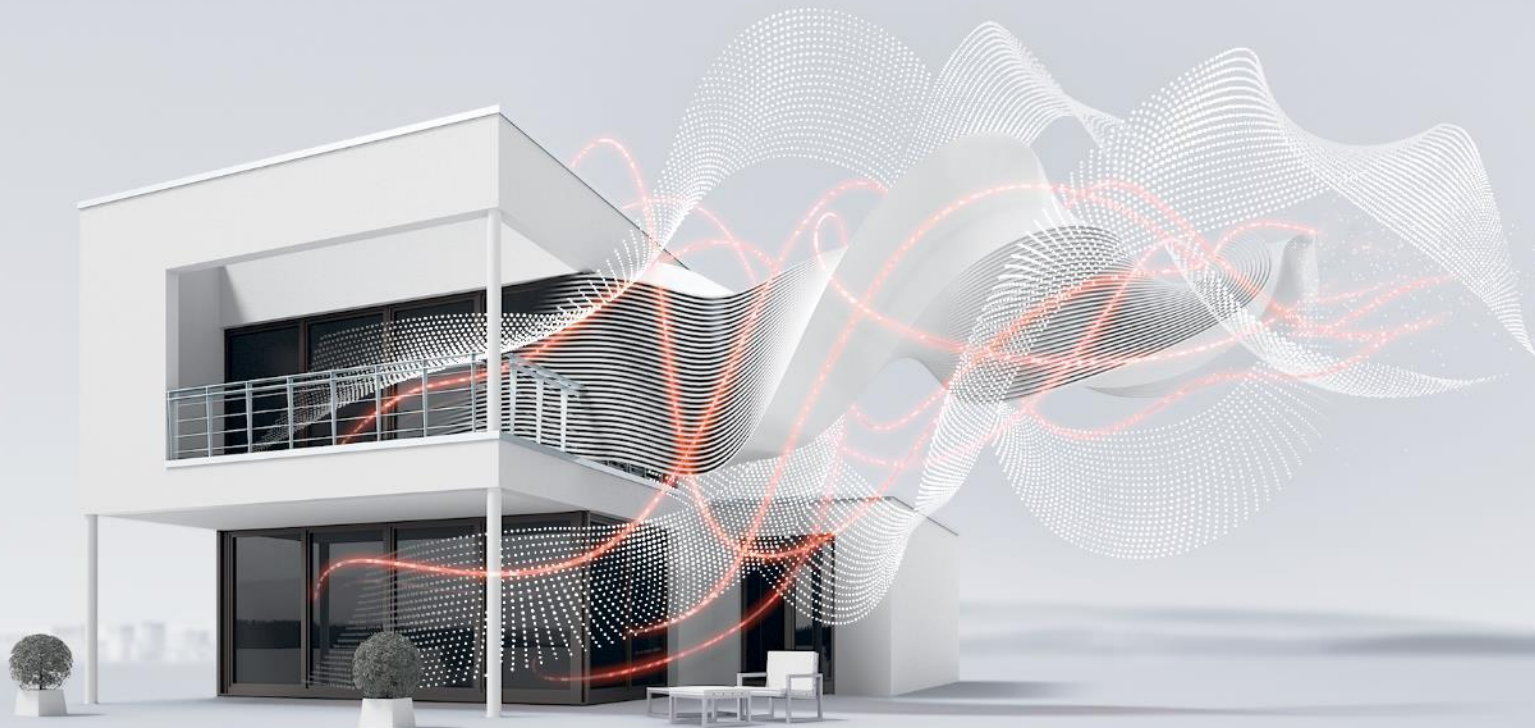
Configuring «Output» functionality

➤ Linked to card holder

- **the output is linked to access control (relay reacts on valid MIFARE transponder card insertion/removal)**
- Additional functions → delayed OFF (card removal delay)

1.1.162 TKM/U.1.1-CG C-Touch Card Holder - Room 1 > Actuator > Common parameter

+ Device settings	Application	<input type="radio"/> Switch actuator	<input checked="" type="radio"/> Linked to card holder
+ Function block 1	Output contact reaction	<input type="radio"/> Normally closed	<input checked="" type="radio"/> Normally open
+ Function block 2	Enable electric lock delay	<input type="radio"/> No	<input checked="" type="radio"/> Yes
- Actuator	Electric lock delay	<input type="text" value="00:00:20"/>	hh:mm:ss
Common parameter	Switch status	<input type="radio"/> deactivated	<input checked="" type="radio"/> activated
	Invert switch status	<input checked="" type="radio"/> deactivated	<input type="radio"/> activated



Webinar “ABB-tacteo KNX Access Control”

MiniMAC software

Access Control

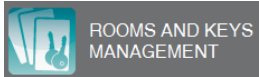
New software MiniMAC 4.1

- **Commissioning and configuration of the system**
- **Simplified and centralized management of hotel functionalities:**
 - Check-in/check-out
 - Program/delete cards on check-in/check-out
 - Room status overview at reception (dirty clean, minibar to fill, maintenance request, room not usable)
 - Access and room occupation history
 - Interfacing with PMS software (such as Oracle Fidelio, Protel)

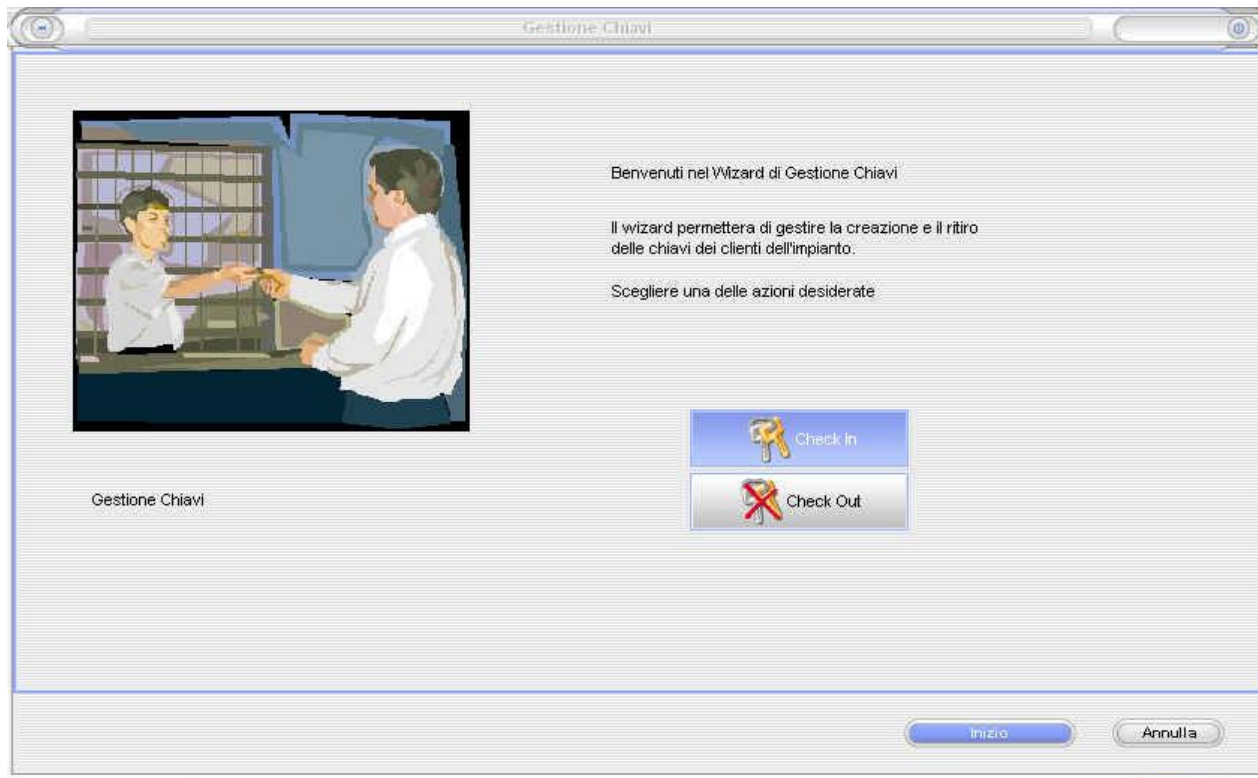
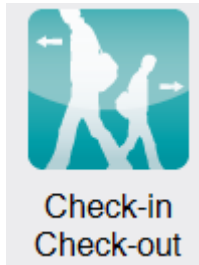


MiniMAC Functions

Check-in/Check-out

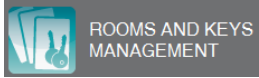


Wizard for programming/deleting key-card automatically associated to a room number

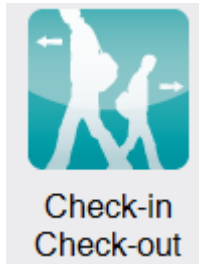


MiniMAC Functions

Check-in/Check-out: creating key-card



It's possible to specify the kind of card to be created (guest/staff)

A screenshot of a software wizard interface for key management. On the left, there is an illustration of a hotel employee at a desk handing a key to a guest. The main area contains the following text: 'Welcome in key management Wizard', 'wizard will guide you to the creation and the management of the keys', and 'Choose a desired action'. Below this text are two buttons: 'Check In' (with a key icon) and 'Check Out' (with a key icon and a red 'X' over it). At the bottom right, there are 'Start' and 'Undo' buttons.

Welcome in key management Wizard

wizard will guide you to the creation and the management of the keys

Choose a desired action

Key management

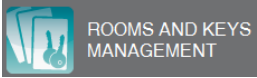
Check In

Check Out

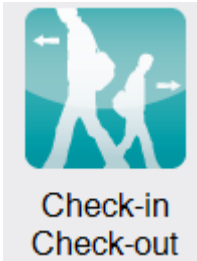
Start Undo

MiniMAC Functions

Check-in/Check-out: creating key-card



To be filled form with guest/staff data
Customer/staff assigned to groups



Key creation

Informazioni Cliente

Choose customer

Last Name: Carzaniga Title: Eng. First name: Diego

Address: _____

City: _____ ZIP: _____

Phone: _____ Mobile: _____

Fiscal Code/ VAT: _____

Notes: _____

Arrival date: 18/02/2019 Group: Guest Check-in without key

Departure date: 05/03/2019 System code: 237834 View also assigned rooms

Departure hour: 12:00:00 View only usable rooms

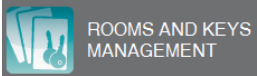
Room Number: 101 View only clean rooms

Advanced key access

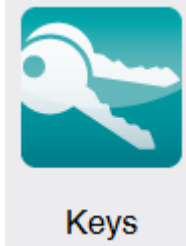
<< Previous Next >> Undo

MiniMAC Functions

Transponder card details



Detailed list of transponder card created and their characteristics



Navigation: First, Previous, Next, Last, New, Modify, Delete key, Undo, Save, Close

Actions: Read, POS, Delete key from DB, Blank key, Duplicate key, HW key, Update remote lists

Selected key

Filter by Key code:

Key code: Expiration date:

Group: Expiration hour:

System code:

Customer

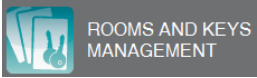
Last name: **diego** First name: **room 2**

Present keys | Accesses grant for selected key

Key code	Expiration date	Group	System Code	Key type	Pos	Associated person	Profile	Credit
1	16/04/2019 12:00:00	Guest	237834	Normal key	-	Diego Room 1	-	-
2	14/03/2019 12:00:00	Guest	237834	Normal key	-	diego room 2	-	-
3	23/07/2020 12:00:00	Staff	237834	Normal key	-	sguatti	-	-

MiniMAC Functions

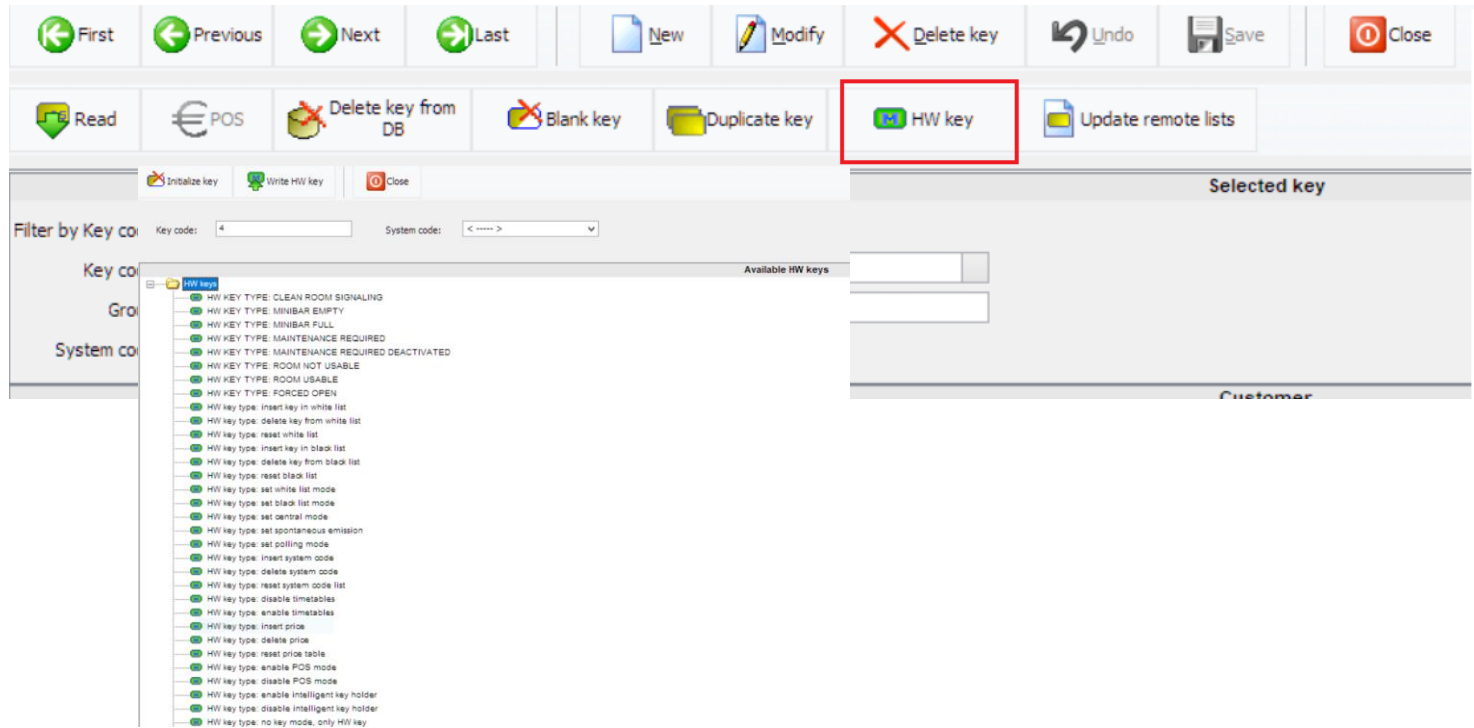
Special cards



Keys

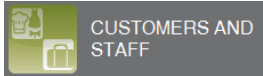
It's possible to create and manage:

- Special card for personnel, in order to notify room status
- Force open (not recommended)



MiniMAC Functions

Guest and Staff list



Customers



Employees

Available detailed list of:

- Guests
- Staff

← First ← Previous → Next → Last
📄 New
✎ Edit
✖ Delete
💾 Save
↶ Undo
📁 Save on file
🔴 Close

Customer detail

Filter Last Name

Last Name Title < --- > First Name

Address City ZIP

Phone number Mobile

VAT Notes

Related info

Associated keys Room identifier

Arrival date Arrival hour Departure date Departure hour

Filter settings

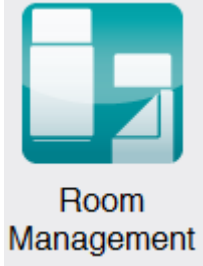
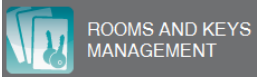
Show only checked-in customers

Available customers

Last Name	First Name	City	Phone	Arrival date	Departure date	Room Number	Key code
Diego	Room 1			15/02/2019 15:08:39	16/04/2019 12:00:00	101	1
▶ diego	room 2			15/02/2019 15:16:45	14/03/2019 12:00:00	102	2

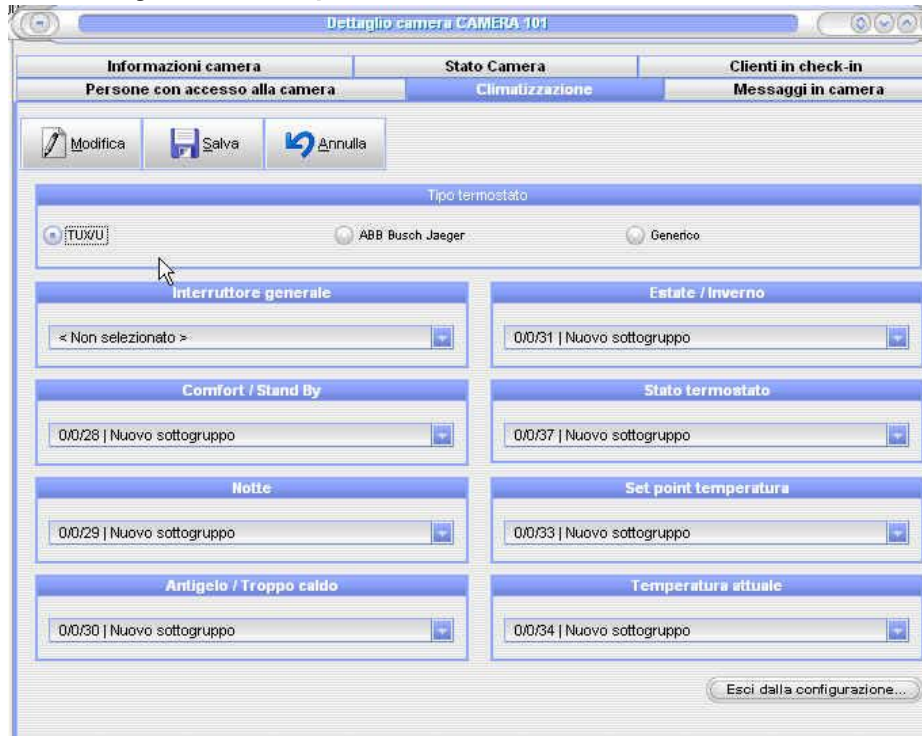
MiniMAC Functions

Room heating/cooling



Remote supervision and control (by reception) of room heating/cooling

Configuring heating/cooling supervision linking KNX group addresses (only for compatible thermostats)



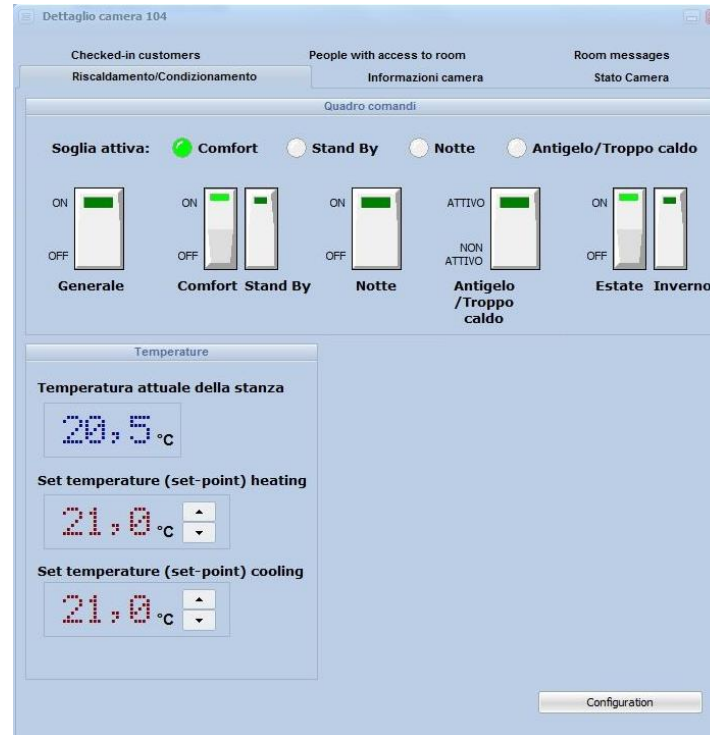
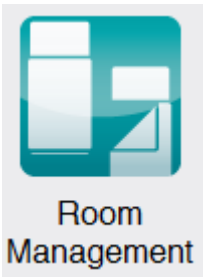
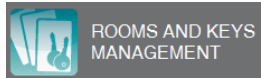
MiniMAC Functions

Room heating/cooling

Configuring set-point and operating mode

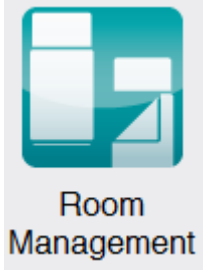
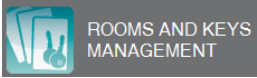
Viewing room temperature

Showing thermostat status (only on models that support it)



MiniMAC Functions

Room details



Detailed list of rooms:

- Situation (empty/occupied, make-up-room, cleaned, ...)
- Room type (number of rooms, floor, ...)

Situazione camere

Primo Prec. Succ. Ultimo Libera camera Dett. camera Aggiorna Chiudi

Filtra la camera selezionata

Ident.Camera Piano - Tipo camera - Letti Disponibilità - Presenza Pulizia - MiniBar Agibilità - Manutenzione Periodo Condizioni

Impostazioni filtro periodo

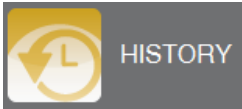
Arrivo: Dal giorno: 30/06/2005 Filtra su data iniziale Al giorno: 02/07/2005 Filtra su data finale

Partenza: Dal giorno: 30/06/2005 Filtra su data iniziale Al giorno: 02/07/2005 Filtra su data finale

Camere presenti												
Ident. camera	Piano	Letti	Spec.	Cod. tag	Cliente	Arrivo	Partenza	Presenza	Pulizia	Minibar	Manut.	Agibilità
• CAMERA 114	1	3	SI									
CAMERA 201	2	1	No	4554	togli cesare	27/06/2005 19.33.29	30/06/2005 12.00.00	Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 202	2	2	No					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 203	2	3	No					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 204	2	1	SI					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 205	2	2	SI					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 112	1	2	No					Vuota	Pulita	Rifornito	OK	Agibile
CAMERA 113	1	1	No					Vuota	Pulita	Rifornito	OK	Agibile
CAMERA 115	1	3	No					Vuota	Pulita	Rifornito	OK	Agibile
▶ CAMERA 211	2	2	No					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 212	2	2	SI					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 213	2	3	SI					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 214	2	1	No					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 215	2	2	No					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 301	3	1	No					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 302	3	2	No					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 303	3	3	No					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 304	3	1	SI					Vuota	Da ripulire	Rifornito	OK	Agibile
CAMERA 305	3	2	SI					Vuota	Da ripulire	Rifornito	OK	Agibile

MiniMAC Functions

Access history



Access History

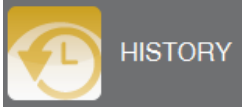
List of transponder reader and historical data related to access to hotel rooms (which card/user, when)

The screenshot shows a web-based interface for configuring and viewing access history. At the top, there is a toolbar with navigation buttons: First, Previous, Next, Last, Delete, Refresh, Save to file, and Close. Below the toolbar is a section titled "Access history configur" with tabs for Parameters, Period, Access type, and Conditions. The "Period" tab is active, showing date and time selection fields. Below this is an "Access list" table with columns for MAC name, Key code, Date and time, Success, and ASSOCIATED_NAME.

MAC name	Key code	Date and time	Success	ASSOCIATED_NAME
Reader - Room 1	1	15/02/2019 15:09:13	Yes	Diego Room 1
Reader - Room 2	1	15/02/2019 15:09:15	No	Diego Room 1
Reader - Room 1	1	15/02/2019 15:09:18	Yes	Diego Room 1
Reader - Room 2	1	15/02/2019 15:09:20	No	Diego Room 1
Wellness Reader	1	15/02/2019 15:09:40	No	Diego Room 1
Reader - Room 2	2	15/02/2019 15:17:30	Yes	diego room 2
Reader - Room 1	2	15/02/2019 15:17:35	No	diego room 2
Holder Room 1	2	15/02/2019 15:17:36	Yes	diego room 2
Reader - Room 2	2	15/02/2019 15:10:44	No	

MiniMAC Functions

Room history



Room
History

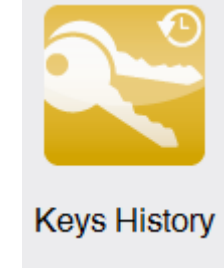
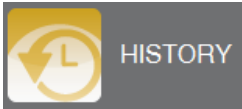
List of rooms and historical data on occupation

The screenshot shows the 'Storico camere' (Room History) interface. At the top, there are navigation buttons: 'Primo', 'Prec.', 'Succ.', 'Ultimo', 'Elimina', 'Aggiorna', 'Salva su file', and 'Chiudi'. Below these is a 'Configurazione filtro storico camere' section with tabs for 'Ident.camera', 'Chiave e titolare', 'Inizio occupazione camera', 'Fine occupazione camera', 'Durata occupazione camera', and 'Condizioni'. The 'Periodo' section includes date and time filters: 'Dal giorno: 24/06/2005', 'Al giorno: 01/07/2005', 'Dalle ore: 00.00.00', and 'Alle ore: 00.00.00'. There are also checkboxes for 'Filtra su data iniziale' (checked) and 'Filtra su data finale'. The main table, titled 'Elenco accessi alle camere', has the following columns: 'Ident. camera', 'Codice chiave', 'Titolare chiave', 'Inizio occupazione camera', 'Fine occupazione camera', and 'Durata occupazione camera'. The table contains 17 rows of data.

Ident. camera	Codice chiave	Titolare chiave	Inizio occupazione camera	Fine occupazione camera	Durata occupazione camera
CAMERA 211	123		27-06-2005 14:01:40	27-06-2005 14:02:00	0h 0'
CAMERA 211	423		27-06-2005 14:02:00	27-06-2005 14:02:30	0h 0'
CAMERA 401	7		29-06-2005 11:30:20	29-06-2005 11:30:50	0h 0'
CAMERA 304	62128		30-06-2005 13:08:50	30-06-2005 13:09:20	0h 0'
CAMERA 305	62128		30-06-2005 13:08:50	30-06-2005 13:09:20	0h 0'
CAMERA 401	62128		30-06-2005 13:08:50	30-06-2005 13:09:20	0h 0'
CAMERA 402	62128		30-06-2005 13:08:50	30-06-2005 13:09:20	0h 0'
CAMERA 403	62128		30-06-2005 13:08:50	30-06-2005 13:09:20	0h 0'
CAMERA 404	62128		30-06-2005 13:08:50	30-06-2005 13:09:20	0h 0'
CAMERA 405	62128		30-06-2005 13:08:50	30-06-2005 13:09:20	0h 0'
CAMERA 303	62128		30-06-2005 13:08:50	30-06-2005 13:09:30	0h 0'
CAMERA 318	62128		30-06-2005 13:09:00	30-06-2005 13:09:30	0h 0'
CAMERA 301	62128		30-06-2005 13:09:00	30-06-2005 13:09:30	0h 0'
CAMERA 302	62128		30-06-2005 13:09:00	30-06-2005 13:09:30	0h 0'
CAMERA 311	62128		30-06-2005 13:09:00	30-06-2005 13:09:30	0h 0'
CAMERA 312	62128		30-06-2005 13:09:00	30-06-2005 13:09:30	0h 0'
CAMERA 314	62128		30-06-2005 13:09:00	30-06-2005 13:09:40	0h 0'

MiniMAC Functions

Key-card history



List of transponder card and historical data operations performed (creation, cancellation, ...)

➔ Last
➔ Next
⬅ Previous
⬅ First
✖ Delete
🔄 Refresh
📁 Save to file
🔴 Close

Key history filter configuration

Key and key owner
Expiration date
Operation date
MiniMAC user
Conditions

Operation date

From day

To day

From hour

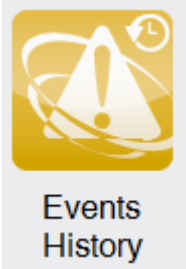
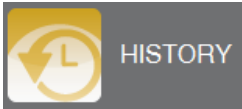
To hour

Filter by start date
 Filter by end date

Key description	Key code	Associated person	Expiration date	Key list		Operation description
				Date operation	MiniMAC user	
▶ Key type Normal/Service	8		22/08/2019 12:00:00	15/02/2019 15:06:14	Administrator	Reset key
Key type Normal/Service	4		27/06/2019 12:00:00	15/02/2019 15:06:28	Administrator	Reset key
Key type Normal/Service	7		13/06/2019 12:00:00	15/02/2019 15:06:47	Administrator	Reset key
HW KEY TYPE: FORCED OPEN	2		15/02/2019	15/02/2019 15:07:03	Administrator	Reset key
Key type Normal/Employee	5		23/05/2019 12:00:00	15/02/2019 15:07:55	Administrator	Reset key
Key type Normal/Employee	1	Diego Room 1	16/04/2019 12:00:00	15/02/2019 15:09:07	Administrator	Key creation
Key type Normal/Employee	2	diego room 2	12/03/2019 12:00:00	15/02/2019 15:10:24	Administrator	Key creation
Key type Normal/Employee	2	diego room 2	12/03/2019 12:00:00	15/02/2019 15:14:08	Administrator	Complete deletion
Key type Normal/Employee	2	diego room 2	18/04/2019 12:00:00	15/02/2019 15:15:00	Administrator	Key creation
Key type Normal/Employee	2		18/04/2019 12:00:00	15/02/2019 15:16:19	Administrator	Reset key
Key type Normal/Employee	2	Diego Room 1	18/04/2019 12:00:00	15/02/2019 15:16:38	Administrator	Deleted key from DB
Key type Normal/Employee	2	diego room 2	14/03/2019 12:00:00	15/02/2019 15:17:10	Administrator	Key creation
Key type Normal/Service	3	sguatti	23/07/2020 12:00:00	15/02/2019 15:18:55	Administrator	Key creation

MiniMAC Functions

Event history



List of all events/operations performed in access control installations by every MiniMAC user

← First
← Previous
Next →
Last →

✗ Delete
↻ Refresh
📁 Save to file
⌵ Close

Event history filter configuration

Parameters
Period
Research event description
Conditions:

Period

From day

To day

From hour

To hour

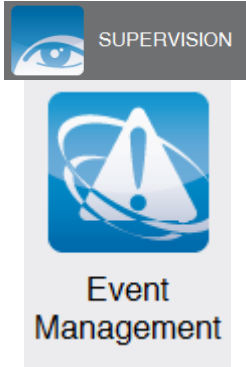
Filter on start date
 Filter on final date

Event list

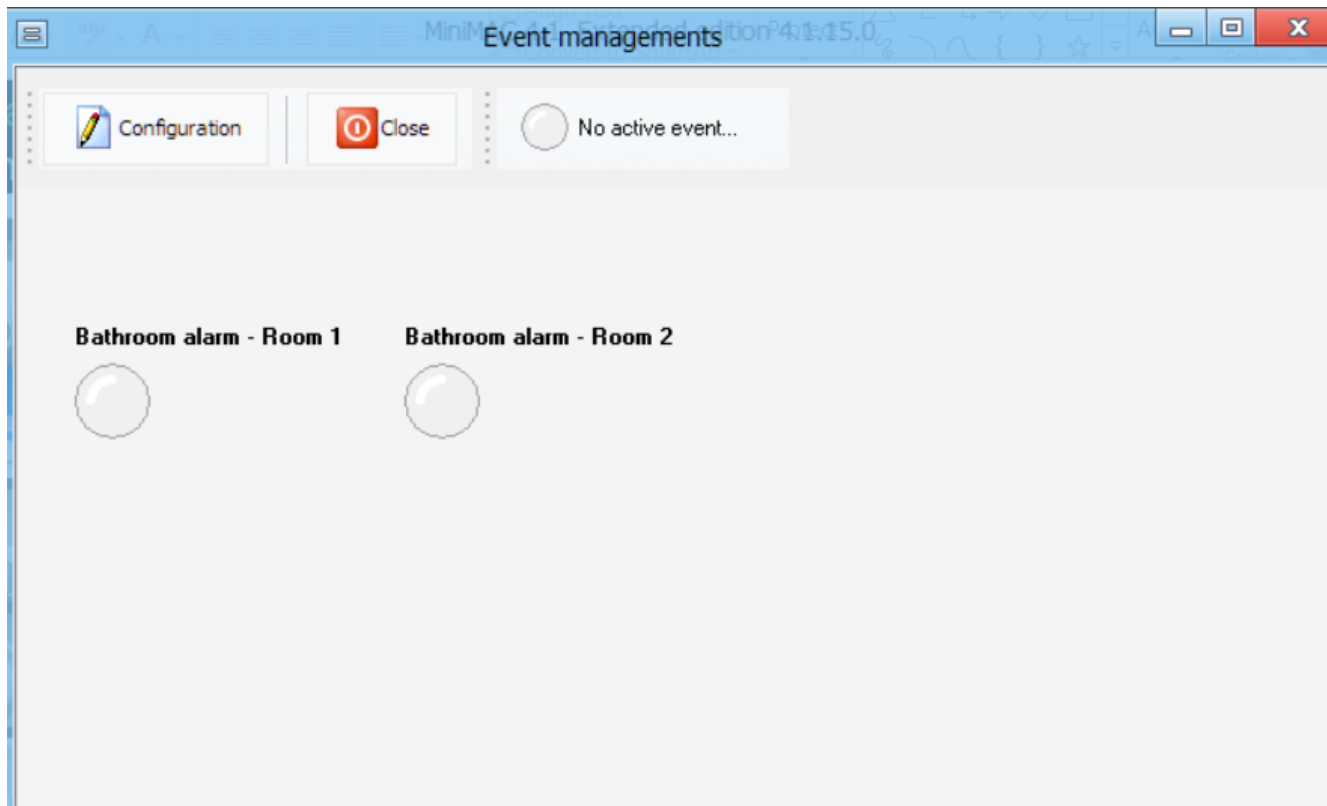
MiniMAC operator	Event datetime	Event type	Event source	Event description
▶ Administrator	18/02/2019 12:30:35	Keep in touch	Reader - Room 1	Over normal threshold
Administrator	18/02/2019 12:30:35	Keep in touch	Holder Room 1	Over normal threshold
Administrator	18/02/2019 12:30:35	Keep in touch	Reader - Room 2	Over normal threshold
Administrator	18/02/2019 12:30:35	Keep in touch	Holder - Room 2	Over normal threshold
Administrator	18/02/2019 12:30:35	Keep in touch	Wellness Reader	Over normal threshold
Administrator	18/02/2019 12:15:35	Keep in touch	Reader - Room 1	Over normal threshold
Administrator	18/02/2019 12:15:35	Keep in touch	Holder Room 1	Over normal threshold
Administrator	18/02/2019 12:15:35	Keep in touch	Reader - Room 2	Over normal threshold
Administrator	18/02/2019 12:15:35	Keep in touch	Holder - Room 2	Over normal threshold
Administrator	18/02/2019 12:15:35	Keep in touch	Wellness Reader	Over normal threshold
Administrator	18/02/2019 12:15:10	Login	Administrator	Login by Administrator in date 18/02/2019 at time 12:15:09

MiniMAC Functions

Event management



Visualization and control of events (1-bit) associated to alarms (for example bathroom alarm, technical alarm, fire alarm, ...)

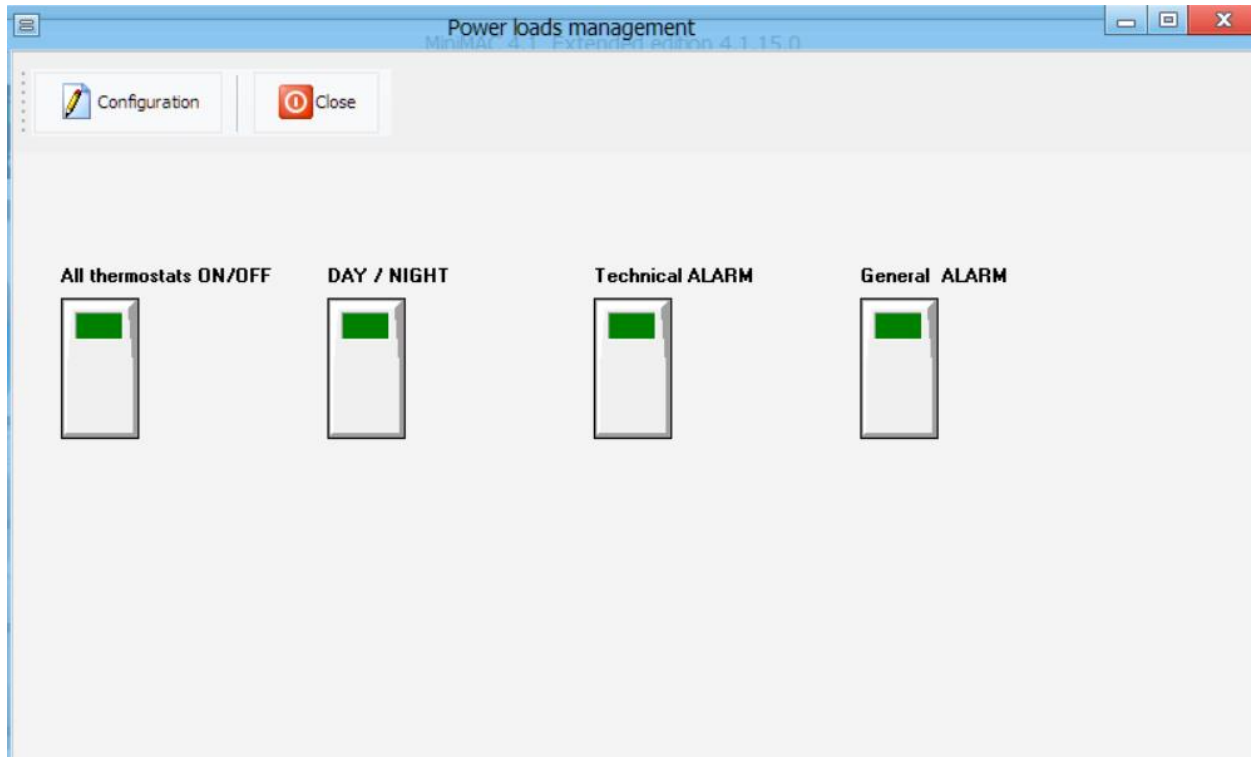


MiniMAC Functions

Load management

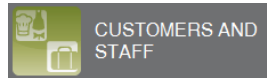


Visualization and control of loads (1-bit) into the installation
(for example lighting of common areas, electrical loads, air conditioning, irrigation, ...)



MiniMAC Functions

Users list



Users

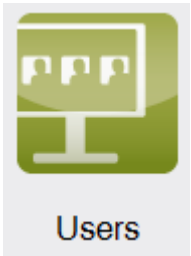
Available detailed list of all users of MiniMAC software

It's possible to create different users (user/administrator/front office), according to requirements:

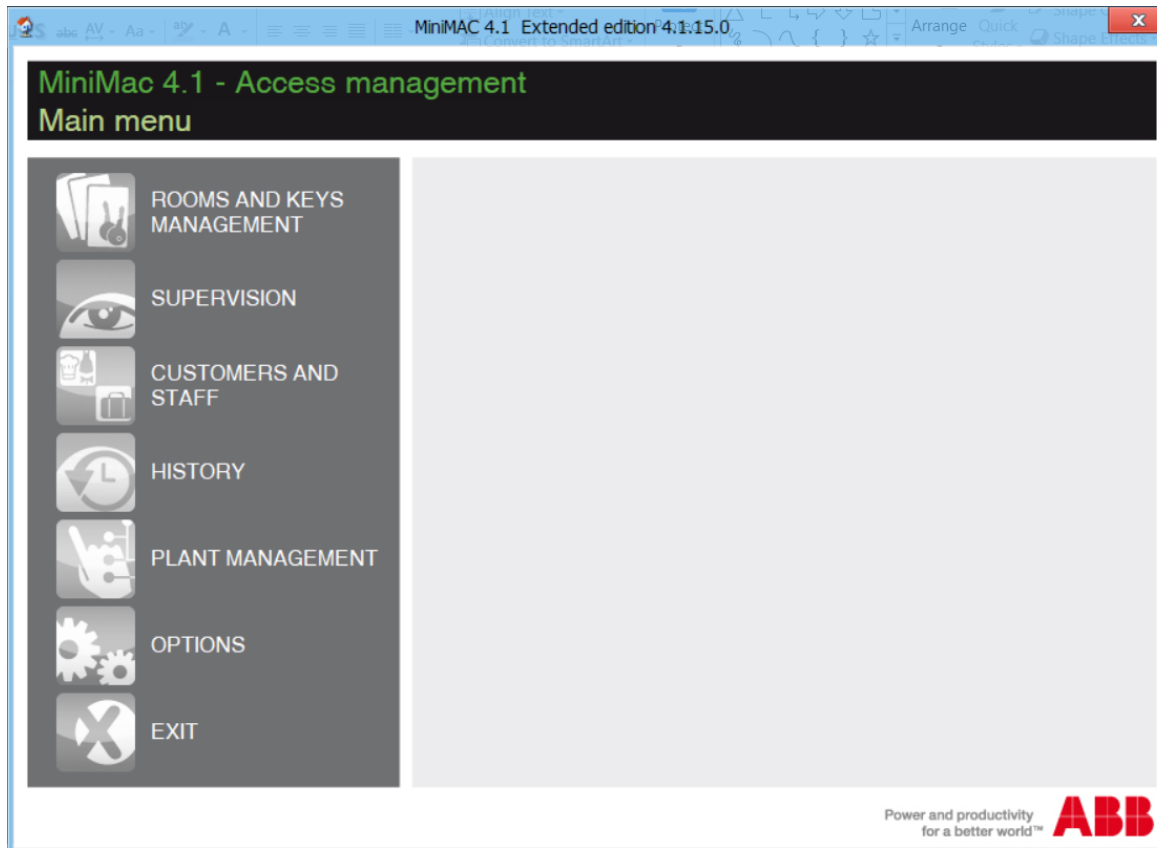
Username	Complete name	Description	Group
diego	Diego Carzaniga		Administrators
Administrator	Administrator		Administrators
users	users		Users
FO	FO		Front Office

MiniMAC Functions

Users list

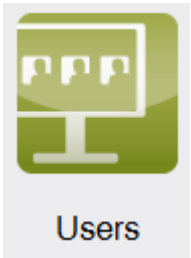


- User **Administrator**: it can access every menu:

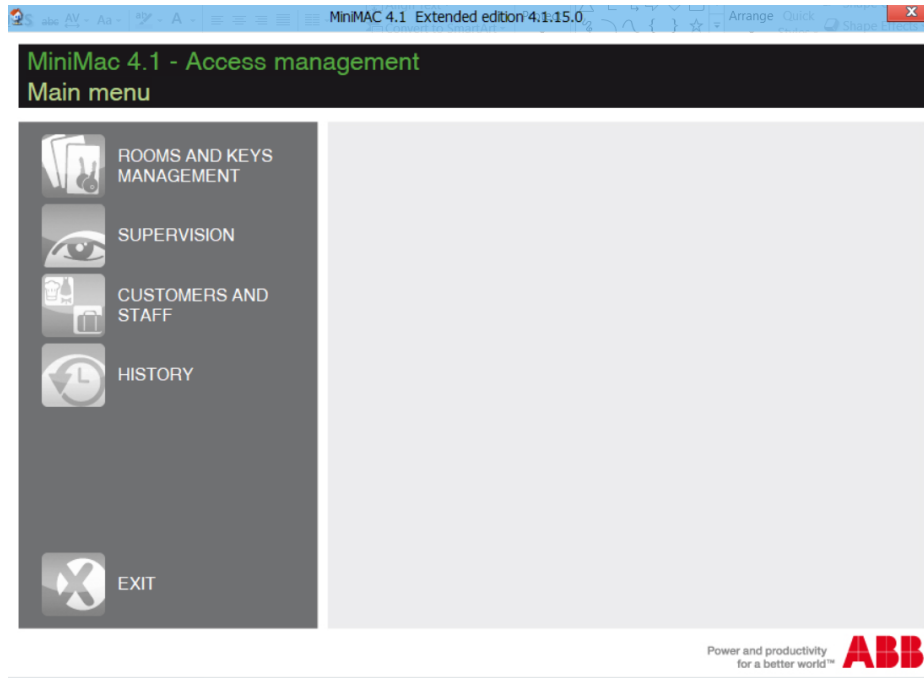


MiniMAC Functions

Users list

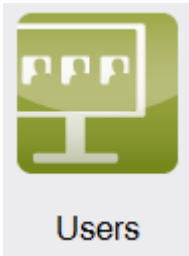


- user **users** has access to the following menus:
 - Rooms and keys management (all the operations are allowed with the exception of master card (HW key) creation and card delete from database)
 - Supervision (only visualization, no configuration)
 - Customers and staff (without the possibility to add new MiniMAC user)
 - History

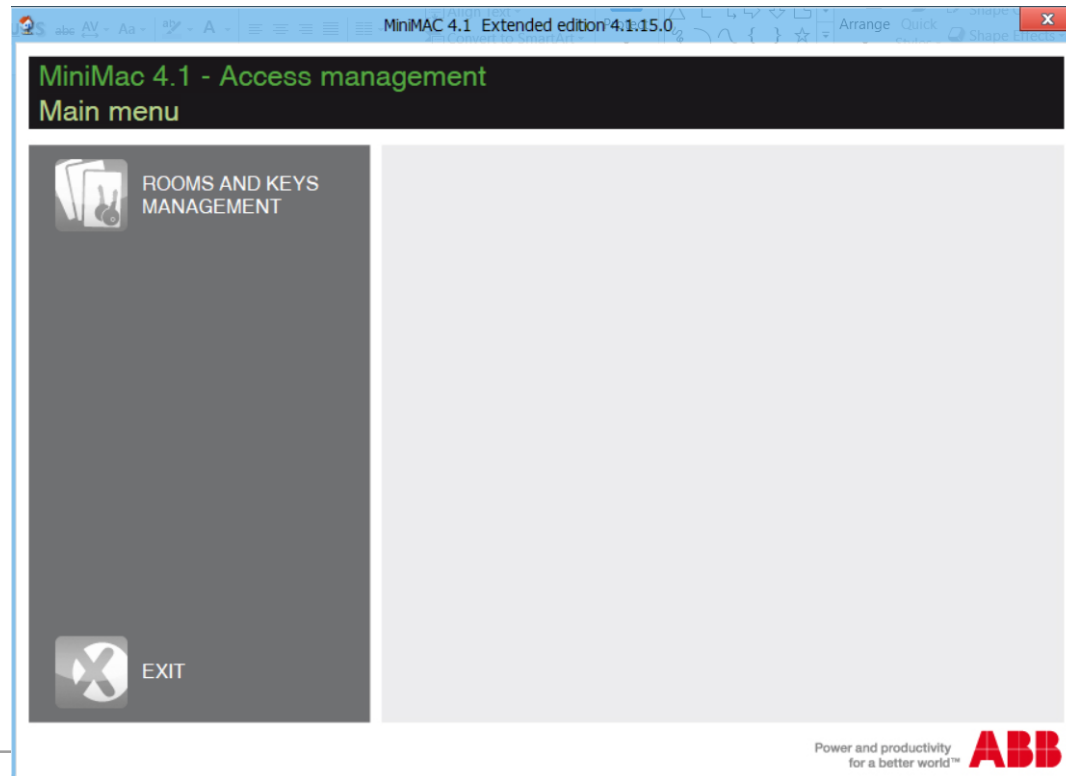


MiniMAC Functions

Users list

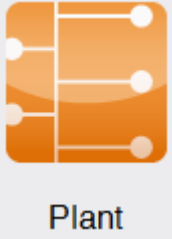


- user **Front Office** has access only to the following menu:
 - Rooms and keys management (only check-in/check-out and solo check-in e check-out and keys list with allowed operation card reading and deleting)



MiniMAC Functions

System Creation and Management



Creation of system architecture and configuration of devices

Available import from ETS function

The screenshot displays the MiniMAC software interface. At the top, there is a toolbar with various icons for navigation and management, including First, Previous, Next, Last, Insert, Edit, Delete, Save, Undo, Copy, Paste, Transfer, Close, New System, Import, Reload, Reset, Upload, Program System, Download, MAC / Time, Restart service, Disc., Connect, Backup DB, and Restore DB. Below the toolbar is a tree view on the left showing a hierarchy: Reader - Room 1 (selected), Holder Room 1, Reader - Room 2, Holder - Room 2, and Wellness Reader. The main area is titled 'MAC device properties' and contains several sections:

- General properties:** Name: Reader - Room 1; Description: (empty); Individual address: 1.1.161; 10 byte group address (DPT Access Data): 1.1.1; Clean room: 0; Usable room: 0; Minibar full: 0; Maintenance: 0; Card Inserted: 0.
- ABB Device:** TLM/U - TSM/U (MIFARE Tacteo card reader)
- Device picture:** Hotel Room; Room associated: Yes (selected).
- Enabled features:** Enabled (checked); Timetables enabled (unchecked); Access strategy: White List (selected), Black List, Central.
- Info read from MAC:** Firmware version: 4.0.29 - 29/01/2018; Keep in touch: 100% (green bar); Communication with MAC: BAD.

MiniMAC Functions

Groups and time-ranges



Groups

Access-control guests and staff are organized in groups (at least one existing in the plant)

Time-ranges can be created and associated to groups for every devices, in order to define and managed time-specific authorized access to some room/restricted areas

The screenshot shows the MiniMAC software interface. At the top, there are tabs for 'MAC device properties', 'White List', 'System code', 'Group - Timetables', and 'Room'. Below the tabs is a table with the following data:

Group name	Description
Guest	
Staff	

Below the table is a 'Timetables view' window. It displays a grid with days of the week on the vertical axis and hours (00 to 23) on the horizontal axis. The grid is color-coded: red for restricted access and green for authorized access. The green blocks represent authorized access for the 'Guest' group, occurring from 08:00 to 17:00 on Monday through Saturday.

MiniMAC Functions

Group and Extra accesses



Groups

In the Extra-Accesses tab, you can specify the list of devices which, for people belonging for the specific group, can be accessed automatically without specifying it at check-in

The screenshot shows the 'Groups' management interface. The 'Selected group' is 'Service Group A' with a 'Type' of 'Service'. The 'Description' is 'Service Group A'. The 'Extra accesses' tab is active, showing a table with columns for 'MAC Name', 'Room identifier', and 'Authorization type'. A dialog box titled 'Insertable MACs' is open, listing several devices with checkboxes for selection. The 'Wellness Transponder Reader 1.1.10 / Yes / White list' is selected.

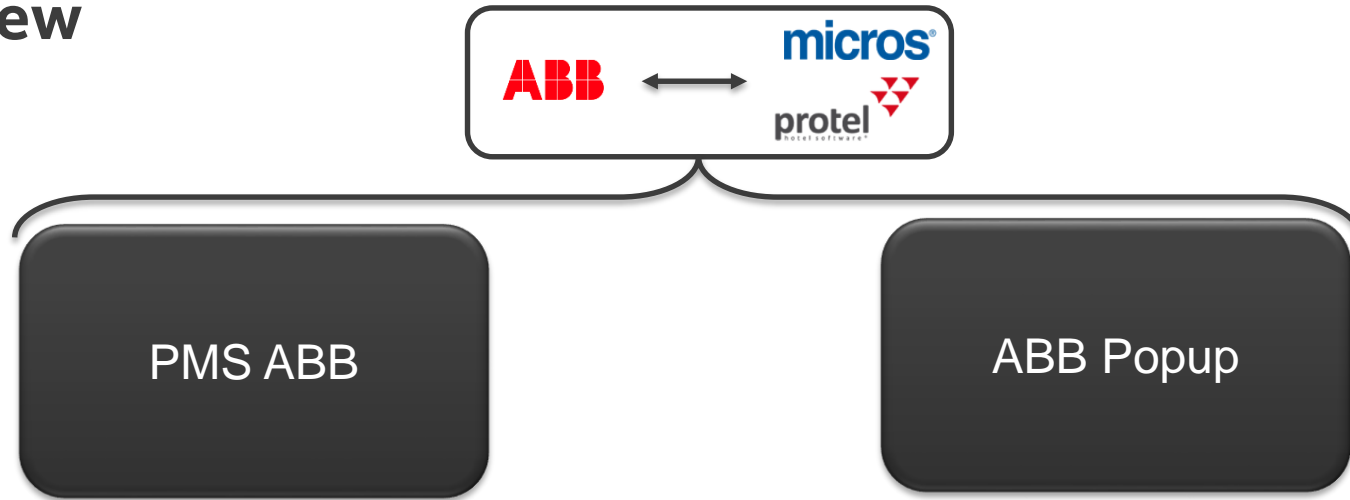
MAC Name	Room identifier	Authorization type

Insertable MACs

- Programmer 1.1.11 / Yes / White list
- Transponder reader - Room 1 1.1.1 / Yes / White list
- Transponder reader - Room 2 1.1.5 / Yes / White list
- Wellness Transponder Reader 1.1.10 / Yes / White list

Select All

MiniMAC-PMS Interface Overview



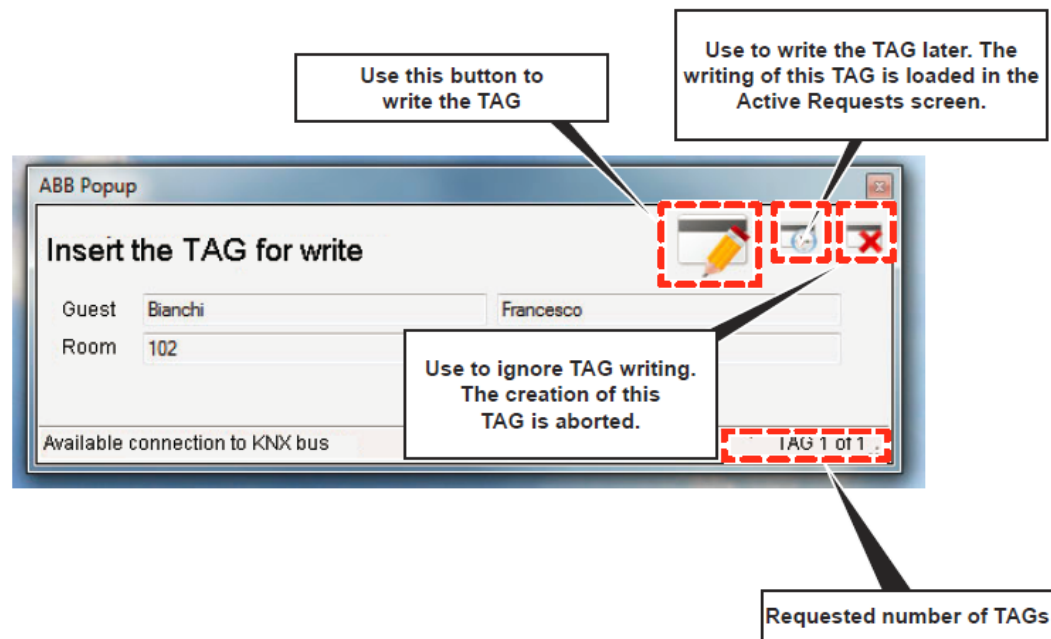
- Retrieves from Fidelio/Protel guest check-in data information and automatically fills up the MiniMAC check-in wizard
- Check-in operations are performed by Fidelio/Protel which communicates with MiniMAC through a two-clicks Pop-up in the tray bar of the PC
- MiniMAC software is necessary (installed in background) but staff at reception can use only PMS software (+ ABB Popup)

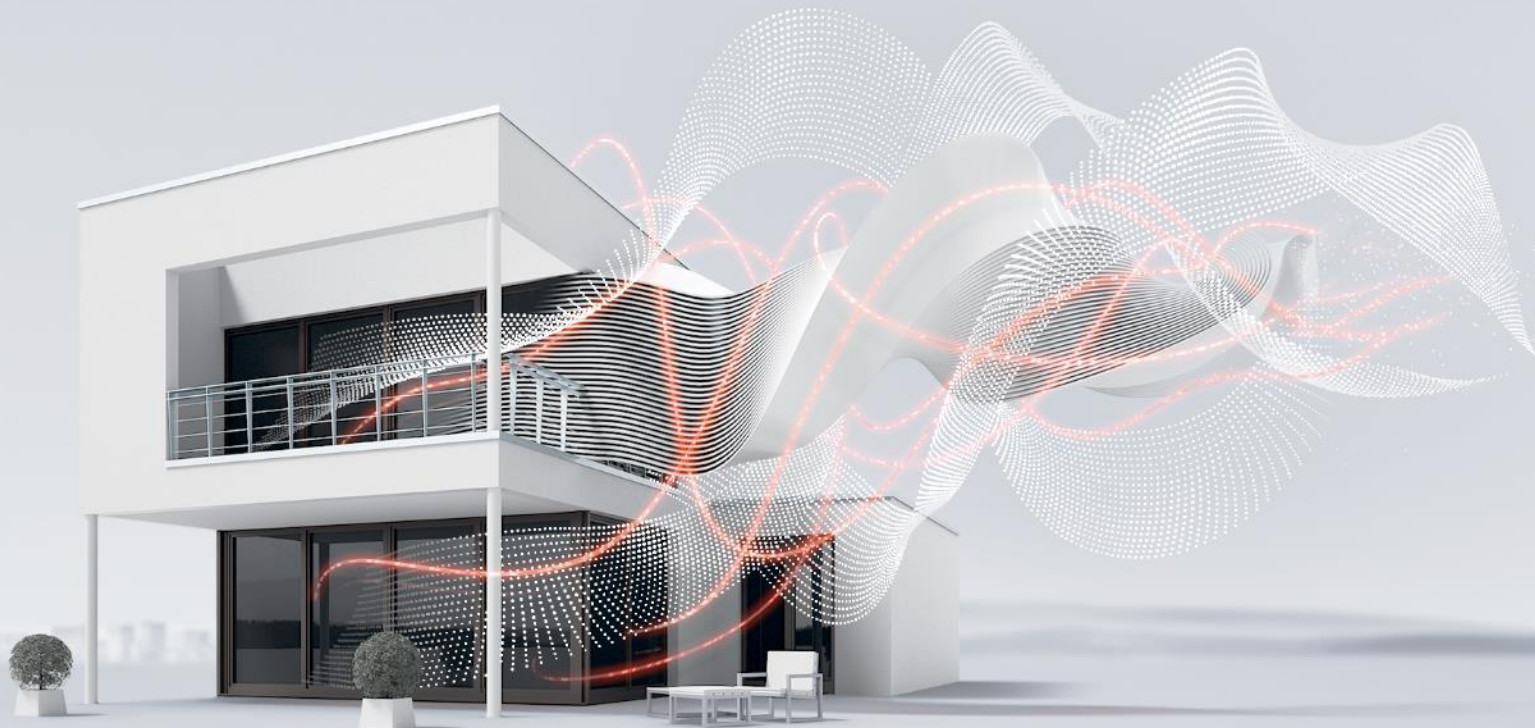
MiniMAC-PMS Interface

ABB Popup

The PopupClient is usually activated automatically by the service as soon as it detects one or more TAGs to be created.

This screen is only triggered by the service and cannot be recalled at user level. An example of customer TAG creation request is shown below





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System architecture

Access Control MiniMAC

- Tacteo transponder programming devices is a USB Programmer connected only to the PC where MiniMAC is installed
 - This is a difference compared to Millenium and Chiara-Mylos access control where the transponder programming device is a KNX device and therefore for programming transponder card, programming device must be connected to KNX bus. For Tacteo this does not happen: the programming device has only to be connected to the PC using USB cable



- Server/PC with MiniMAC installed has to be connected to access control installation

→ It's necessary to use KNX IP interface to connect MiniMAC server installation to access control system through KNX bus



Access Control

Choosing transponder cards for Tacteo Access Control

Devices belonging to Tacteo Access Control range are based on MIFARE technology (13,56 MHz)

– Every MIFARE standard card available on the market can be used with Tacteo access control devices. In particular supported cards are:

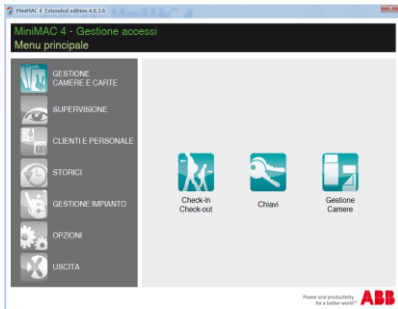
- MIFARE Classic 1K EV1
- MIFARE UltraLight

ABB includes in the catalogue some MIFARE cards (MIFARE Classic 1K EV1) that are tested specifically with ABB Access Control devices:

- TS/T 1: set of 10 MIFARE transponder cards (order code = 2CSY259412R2041)
- TS/T 1.1: set of 1000 MIFARE transponder cards (order code = 2CSY232175R2041)
- TS/T 1.X: set of MIFARE customized transponder cards (order code = 2CSY232185R2041)



Access Control MiniMAC



- MiniMAC 4.1 software is able to manage configuration and supervision of all access control devices for all ranges included in catalogue:
 - Chiara-Mylos (125 KHz)
 - Millenium (MIFARE)
 - Tacteo (MIFARE)
- But please remember that Chiara-Mylos, Millenium and Tacteo are based on different RFID technologies (125 kHz vs Mifare) and therefore mixed installations are not allowed.
- Even Millenium and Tacteo, although both based on MIFARE technology, have different encryption schemes and therefore they can't coexist in the same installation

Access Control

Additional Power supply

- All Tacteo access control devices belonging to the range require additional external power supply (12...24V AC/DC, SELV) which allow their working (for example unlocking of electric door lock) also when KNX bus voltage is down
- It's recommended using a dedicated power supply for electric door lock (not the same used for devices belonging to access control range)
- IMPORTANT → it's forbidden to use for access control devices transformers for discontinuos loads (therefore for example TS and TM from ABB range are not ok since they are used for discontinuous loads, such as doorbell, ...)
- For external supply it's recommended to use always stabilized SELV power supply
- For dimensioning access control installation in term of transformers/power supply (number and kind) you have to consider that every Tacteo device require 1W peak

ABB Access Control solution

Card reader and card-holder



N rooms in a hotel

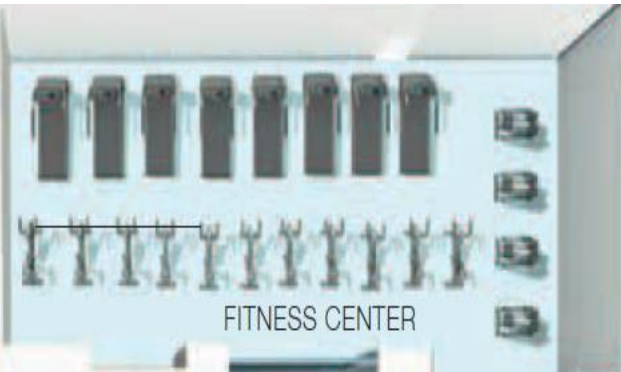
– 1 card reader per room (TLM/U or TSM/U if Room Number variant is needed)

– 1 programmable card-holder per room (TKM/U)

N x



N x



K common areas in a hotel

– 1 card reader (TLM/U) per every common area required to be controlled with access control (parking, gym, wellness center, conference room, main entrance, restaurant, ...)

K x

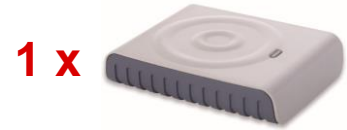


ABB Access Control solution

Common devices, accessories and software



1 USB Programmer (more than one only if customer clearly request to have different seats for transponder card creation at check-in)



1 MiniMAC 4.1 software license



A number of set of 10 MIFARE transponder cards able at least to cover the total number of rooms plus common areas

> $N/10 + K/10$
(N = number of rooms
K = common areas)



Third-party Access Control solution

Room outside sensor and card-holder



N rooms in a hotel

– 1 Room outside sensor per room (TA/U or TSN/U if Room Number variant is needed)

– 1 universal card-holder per room (TKK/U)

N x



N x



Access Control Range list of material KNX devices and accessories



KNX Power supply

- Number of KNX power supply according to standard KNX rules → every access control devices requires 10mA from KNX



Additional Power supply (12...24 V AC/DC)

- One Power Supply can be shared among different devices, dimensioning in term of 1W peak absorption from every device



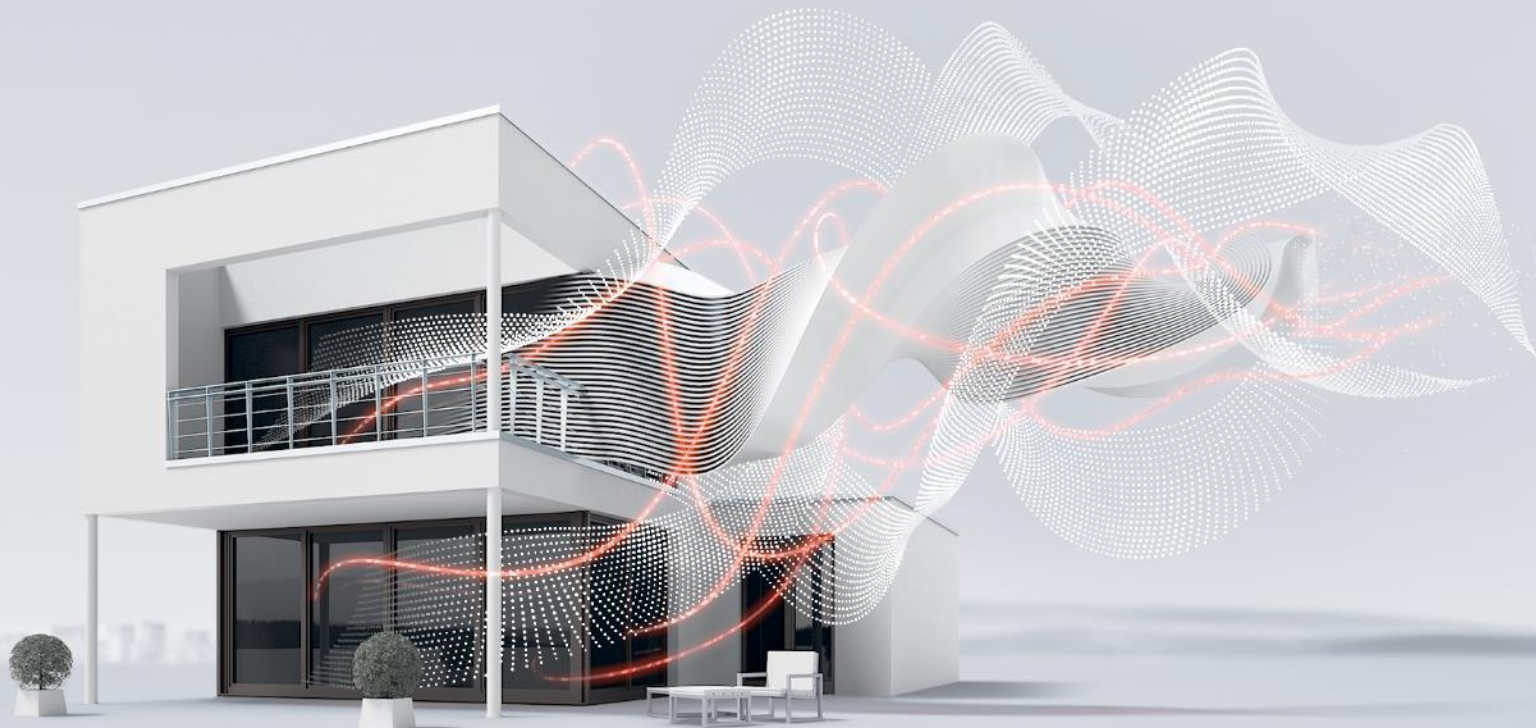
KNX Line coupler

- Number of KNX Line coupler (or IP Router) according to number of KNX lines and areas in hotel installation (obviously depending also by total number of other KNX devices installed)



KNX IP interface

- One KNX IP interface for connecting MiniMAC PC to the KNX bus (needed only for ABB access control installation)



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Overview ranges

Tacteo Access Control

Range overview



ABB Access Control installation (MiniMAC software)

Device type	Article number	Order code	Article name	Shape
CARD READER (outside the room)	TLM/U.1.1-CG	2CKA006300A1550	Room outside sensor with card reader	86x86
	TLM/U.2.1-CG	2CKA006300A1587	Room outside sensor with card reader	86x115
	TLM/U.3.1-CG	2CKA006300A1599	Room outside sensor with card reader	115x86
	OR			
	TSM/U.2.1-CG	2CKA006300A1555	Room outside sensor with card reader and room number	86x157
CARD HOLDER (inside the room)	TKM/U.1.1-CG	2CKA006300A1553	Card holder programmable	86x86
	TKM/U.3.1-CG	2CKA006300A1589	Card holder programmable	115x86
Software, cards, USB programmer	SW MiniMAC 4.1	2CSY258202R2051	MiniMAC Software	-
	TP/T 1	2CSY289621R3801	USB MIFARE Programmer	-
	TS/T 1	2CSY259412R2041	Set of 10 MIFARE transponder cards	-
	TS/T 1.1	2CSY232175R2041	Set of 1000 MIFARE transponder cards	-
Anti-removal devices	TZE/U.0.2.CK	2CSY245271S3601	Anti-removal device for squared, horizontal and Room Number devices (86x86, 115x86, 86x157)	-
	TZE/U.0.3.CK	2CSY233741S3611	Anti-removal device for vertical devices (86x115)	-

Tacteo Access Control

Range overview



Third-party Access Control installation

Device type	Article number	Order code	Article name	Shape
Room outside sensors (outside the room)	TA/U 3.1.1-CG	2CKA006300A1549	Room outside sensor	86x86
	TA/U 3.2.1-CG	2CKA006300A1585	Room outside sensor	86x115
	TA/U 3.3.1-CG	2CKA006300A1597	Room outside sensor	115x86
	OR			
	TSN/U.2.1-CG	2CKA006300A1603	Room outside sensor with room number	86x157
CARD HOLDER (inside the room)	TKK/U.1.1-CG	2CKA006300A1552	Card holder universal	86x86
	TKK/U.3.1-CG	2CKA006300A1588	Card holder universal	115x86
Cards	TS/T 1	2CSY259412R2041	Set of 10 MIFARE transponder cards	-
	TS/T 1.1	2CSY232175R2041	Set of 1000 MIFARE transponder cards	-
Anti-removal devices	TZE/U.0.2.CK	2CSY245271S3601	Anti-removal device for squared, horizontal and Room Number devices (86x86, 115x86, 86x157)	-
	TZE/U.0.3.CK	2CSY233741S3611	Anti-removal device for vertical devices (86x115)	-
	TZE/U.0.1.CK	2CKA006300A1633	Anti-removal device for TA/U Room outside sensor	

Webinar “ABB-tacteo KNX Access Control”

Training & Qualification Database

In this database you can find the complete online training portfolio for ABB Home and Building Automation

The database includes the following types of training content:

- Application Manuals
- E-Learnings
- Presentations
- Video tutorials
- Webinar slides and videos

www.abb.com/knx or <https://go.abb/ba-training>

→ Training and Qualification

→ Training Database

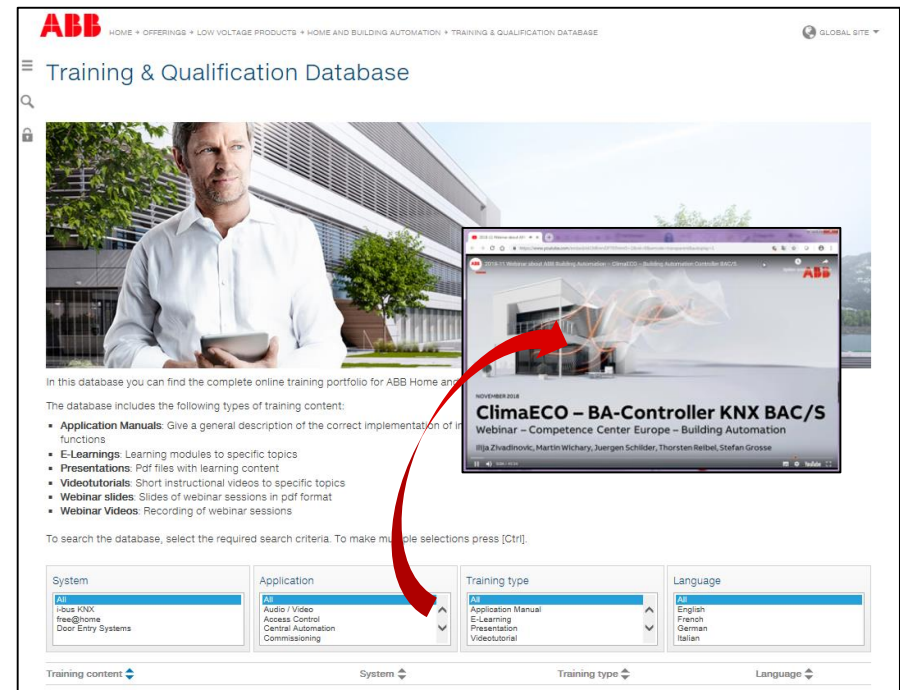


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Training & Qualification Database

In this database you can find the complete online training portfolio for ABB Home and Building Automation

The database includes the following types of training content:

- **Application Manuals:** Give a general description of the correct implementation of its functions
- **E-Learnings:** Learning modules to specific topics
- **Presentations:** Pdf files with learning content
- **Videotutorials:** Short instructional videos to specific topics
- **Webinar slides:** Slides of webinar sessions in pdf format
- **Webinar Videos:** Recording of webinar sessions

To search the database, select the required search criteria. To make multiple selections press [Ctrl].

System	Application	Training type	Language
All	All	All	All
Plus KNX	Audio / Video	Application Manual	English
Free@home	Access Control	E-Learning	French
Door Entry Systems	Central Automation	Presentation	German
	Commissioning	Videotutorial	Italian

Webinar “ABB-tacteo KNX Access Control”

Training & Qualification Calendar

In addition to the online modules and the traditional training programs offered by your local ABB sales team, we offer a variety of on-site trainings conducted by our specialists at different ABB training facilities

In this Training & Qualification Calendar you can find the educational events that are taking place during 2019

If you are interested in a training please click the training und you will be forwarded to register in “ABB MyLearning”

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→ Training and Qualification

→ Training Calendar



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Training & Qualification Calendar

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CERTIFIED KNX BASIC COURSE
Code : 9CSC007151-GLB-EN-20190218_22
Certified KNX Basic Course at ABB in Heidelberg, Germany, 5 days
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If you are interested in a training please [REGISTER HERE](#).

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System	Date	Location
All	All	Webinar
Door Entry Systems	January 2018	Heidelberg, Germany
Freephone	February 2018	Lödenscheld, Germany
Fire Alarm Systems	March 2018	S. Falomina (Rome), Italy
Libus KNX	April 2018	Vittuone (Milan), Italy

Content	Date	Location	Language
KNX for Commercial Building	05.04.2018 - 06.04.2018	Lödenscheld, Germany	EN
Building Automation Light + Building 2018	10.04.2018	Webinar	EN
KNX in Hotels	19.04.2018 - 20.04.2018	Heidelberg, Germany	EN
HVAC Automation	23.04.2018 - 24.04.2018	Heidelberg, Germany	EN

Webinar “ABB-tacteo KNX Access Control”

KNX Certified Trainings 2019

Certified KNX Courses in Heidelberg

- Basic Course : 21st to 25th October
- Followed by two day application training

And many more training courses in the calendar
“International Training Dates 2019”

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Webinar “ABB-tacteo KNX Access Control”

Next Webinar

The topic will be announced ...

Wednesday 16th October 2019

- Morning 09:00 am Europe Time (Berlin, UTC + 1h)
- Afternoon 03:00 pm Europe Time (Berlin, UTC + 1h)



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