TR22D01KNX	**Transponder Reader - 13.5MHz**
TH22D01KNX	**Transponder Holder - 13.5MHz**

USER MANUAL

Translation of the original instructions

Version: **1.1**

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VERSION	DATE	CHANGES
1.0	**24/01/2023**	-
1.0	**15/Jan/2024**	added “Configuration and Commissioning” updated “Global Objects” updated link “Logics”

Any information inside this manual can be changed without advice.

This handbook can be download freely from the website:
www.eelectron.com

Exclusion of liability:
Despite checking that the contents of this document match the hardware and software, deviations cannot be completely excluded. We therefore cannot accept any liability for this.
Any necessary corrections will be incorporated into newer versions of this manual.

Symbol for relevant information

Symbol for warning

DISPOSAL : The crossed-out bin symbol on the equipment or packaging means the product must not be included with other general waste at the end of its working life. The user must take the worn product to a sorted waste centre, or return it to the retailer when purchasing a new one. An efficient sorted waste collection for the environmentally friendly disposal of the used device, or its subsequent recycling, helps avoid the potential negative effects on the environment and people's health, and encourages the re-use and/or recycling of the construction materials.

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1. Purpose of the manual

This manual is intended for use by KNX® installers and describes the functions and parameters of the products **TR22D01KNX – KNX transponder reader and TH22D01KNX – KNX transponder holder** and how to change the settings and configurations using the ETS software tool.
For the technical characteristics of the device, please refer to the datasheet of the device itself.

2. Products overview

The Synchronicity series devices dedicated to access control management are KNX® devices and use RFID - MIFARE® technology.
Reader and transponder holder must be powered with an auxiliary voltage of 12-24V AC or 12-32V DC and must be connected to the KNX bus. The products are intended to be installed with the plexiglass covers.
The transponder is read by placing it in front of the reader, at a maximum distance of 20 mm; in the case of the transponder pocket, the card is inserted into a compartment from the top of the device.
The color of the RGB bar of the reader indicates that the card has been recognized and shows different colors (configurable) for signaling states or anomalies such as:

ACTION	DEFAULT COLOR
Recognized card (welcome)	green
Card removed (goodbye)	blue
Wrong plant code	orange
Card ID not recognized	red
Incorrect date (expired validity)	yellow
Wrong time of day (Time of entry prohibited)	magenta
Incorrect day of the week (Day of entry forbidden)	blue-cyan
Invalid card access	white
No accesses (counter function)	purple

It is also possible to differentiate seven access levels with different associable actions, the levels are:
- Guest
- Service
- Maintenance
- Installer
- Security
- Assistance
- Administrator

The Synchronicity KNX® range is mounted in 2 or 3 modules box and is compliant with main standards such as British, German, Italian.

The device includes the KNX communication interface, two inputs for potential-free contacts and two relays:
- Relay 1 (OUT1) lock control or general use
- Relay 2 (OUT2) courtesy light or general use

3. Installation instructions

The device can be used for permanent internal installations in dry places.

WARNING

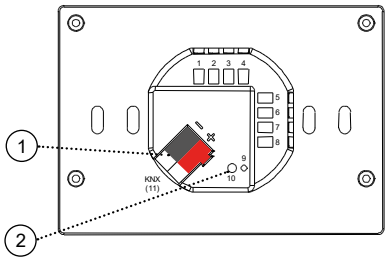
- Device must be installed keeping a minimum distance of 4 mm between electrical power line non-SELV (for example: mains) and input or EIB/KNX bus cables.
- The device must not be connected to 230V cables.
- The device must be mounted and commissioned by an authorized installer.
- The applicable safety and accident prevention regulations must be observed.
- The device must not be opened. Any faulty devices should be returned to manufacturer.
- For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.
- KNX bus allows you to remotely send commands to the system actuators. Always make sure that the execution of remote commands do not lead to hazardous situations, and that the user always has a warning about which commands can be activated remotely.
- Plexiglass covers must be handled with care to prevent the plexiglass from being damaged or broken.
- Place the device away from metal parts that can compromise the radio signal.

For information visit: www.eelectron.com.

4. Configuration and commissioning

The configuration and commissioning of the device is made with the ETS® (Engineering Tool Software). For the configuration of the device parameters the corresponding application program or the whole eelectron® product database must be loaded in the ETS® program.

The commissioning of the device requires the following steps:
- connect the bus KNX (1)
- turn on the bus power supply
- press the programming button (2); the red programming LED (visible through the device lens) turns ON
- download into the device the physical address and the configuration with the ETS® program



5. General parameters

Communication objects involved:

“<General> Heartbeat”	1 Bit	CRT
“<General> Power On Event”	1 Bit	CRT
“<General> Input”	8 Bytes	CWTU / CW
“<General> Input date”	3 Bytes	CWTU / CW
“<General> Input hour”	3 Bytes	CWTU / CW

KNX PARAMETER	SETTINGS
Delay in sending telegrams on power-up	5 ÷ 15 seconds
Through this parameter it is possible to set the telegram transmission delay after switch-on by selecting the time beyond which the device is authorized to send telegrams. In large systems after a power outage or shut down, this delay avoids generating excessive traffic on the bus, causing slow performance or a transmission crash. If there are several devices that require telegrams to be sent on the bus after a reset, these delays must be programmed to prevent traffic congestion during the initialization phase. Input detection and object values are updated at the end of the transmission delay time At the end of ETS programming, the device behaves as it did after it was switched on.	
Heartbeat (periodic alive notification)	nothing periodic on request
The parameter allows you to notify a hierarchically superior control or supervision system of your existence / correct online activity. The notification can take place spontaneously (periodically - settable period value) or following a query (upon request). The value of the 1-bit notification telegram can be set.	
Telegram value	off / on / toggle
Defines the value of the 1 bit notification telegram. The toggle value is not available for “on demand” configuration.	
Period - time unit	seconds / minutes / hours
Defines the measurement unit of the notification time interval. This parameter is not available for “on demand” configuration.	
Period - time value	1 ... 255
Defines the notification interval time. This parameter is not available for the “on demand” configuration.	
Date time format	Date and Time / DateTime
The Date and Time format corresponds to 2 distinct 3 Byte objects / the DateTime format corresponds to 1 8 byte object.	
Request time at power ON	no / yes
By selecting “yes”, the device will send the date and time update request to the connected group address on the bus.	
Outputs	individual / coupled
Defines the configuration for the relay outputs: if “single” the two outputs are independent, if “combined” the relays are managed via interlock logic.	
Virtual holder	disabled / enabled
By setting this parameter, it is possible to enable a “virtual holder”, i.e. a logical function that automatically recognizes the presence of a person in a room. This feature can be used in hotels or similar installations and requires connection to other devices (see “Virtual Holder”).	

General alarms

Communication objects involved:

“<General> Unsupported Card Alarm”	1 Bit	CRT
“<General> Alarm Reset”	1 Bit	CW

In this page it is possible to configure the behavior of the device in the event of three different alarms. For the glass removed and paper not supported alarms, it is possible to set the activation of the buzzer.
Three independent objects are available for sending a 1-bit telegram with the possibility of cyclical sending, and a common alarm reset object.

KNX PARAMETER	SETTINGS
Unsupported card alarm	disabled / enabled
Generates an alarm if a card not encoded with the 9025 RFID Mifare system approaches.	
Unsupported card telegram	telegram “0” telegram “1”
Establishes the one-bit telegram sent on the “<General>Not Supported Card Alarm” object in the event of an alarm.	
Unsupported card cyclic sending	never / 1,5,10,30 min / 1,2,6,12 h
Defines the time interval for cyclical sending of the “<General>Not Supported Card Alarm” object.	
Reset alarm telegram	telegram “0” telegram “1”
Establishes the one-bit telegram sent on the “<General>Reset Alarm” object to reset the enabled general alarms.	

6. Access Control

Please refer to the “Access control” user manual.

The functions “Buzzer” and “Led Top” are not available.

7. LEDs-RGB Led

Please refer to the “LEDs-RGB Led” user manual.

In the TH22D01KNX – KNX transponder holder device the “LEDs” function is not available.

In the TR22D01KNX device – KNX transponder reader the RGB “Access control” function is not available.

In both devices , the functions “physical size”, “colour loop”, “internal sensor feedback” and “temporary function” are not available.

8. Sinlge relay and Relays with interlock

Please refer to the “Single relay and Relays with interlock ” user manual.

In the devices described, the "Relay status at power OFF" parameter cannot be configured; in the event of a drop in the auxiliary voltage, the contact of the relays is open.

9. Digital Input

Please refer to the "Digital input" user manual.

In the devices described, the "EoI resistance input" and "Counter input" functions are not available.

10. Logics

Please refer to the "Logics" user manual.

In the devices described, the logical expression can have a maximum of 24 characters.

If the "Virtual holder" function is enabled, logic functions from one to four are no longer available.

Functions available:

- **bit no transfer function;**
- **byte no transfer function;**
- **NOT, AND, OR, NAND, NOR, XOR, XNOR;**
- **bit to byte conversion;**
- **byte to bit conversion;**
- **byte threshold;**
- **2 bytes float threshold;**
- **4 bytes float threshold;**
- **proportional fancoil;**
- **proportional / speed fancoil conversion;**
- **dew point humidistat;**
- **surveillance;**
- **constant illuminance;**
- **expression**

11. Virtual Holder

Please refer to the "Virtual Holder" user manual.

12. Global Objects

The following communication objects are available for global functions:

OBJECTS RELATING TO ALL OUTPUTS

"<Global All > Lock"	1 bit	CW
This object can be used to manage the block function for multiple outputs and then subordinate the different blocks to this global function.		

OBJECTS RELATING TO SINGLE RELAYS

"<Global Single> Scene"	1 Byte	CW
Object used to manage scenarios for multiple outputs subordinating the different blocks to this global function.		
"<Global Single> Dyn Scene"	1 bit	CW
Object used to enable / disable dynamic scenarios.		
"<Global Single> Command"	11 bit	CW
Object used to manage global On/Off commands on single relays; in the parameters it is possible to associate the telegram received on this object for the logic function (if enabled) or as command.		

13. Behaviour on bus failure, recovery and download

Behaviour on bus voltage failure

On failure of bus voltage no actions are executed by the device; behaviour of controlled actuators must be set using their own parameters.

Behaviour on bus voltage recovery

On bus voltage recovery all the communication objects are set to 0 except for objects for which a parameter is defined for the initial value.

Wrong application download

If the wrong ETS application is downloaded then KNX/EIB led starts blinking and device is not operative on the bus. A power reset must be done or the correct ETS application must be downloaded.