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Technical Manual

KNX Transponder Holder

KNX EIB

GW 10 682
GW 12 682
GW 14 682

Summary

1 Introduction

This manual describes the functions of the device named GW1x682 "**Transponder holder unit**" and how to use the ETS configuration software to change the settings and configurations.

2 Application

The transponder holder GW1x682 is a KNX/EIB device that recognizes transponder cards and usually is placed inside Hotel rooms in order to activate its Energy Line, its Light Line and for communicating to the reception if the customer is in the room.

The device is equipped of three ON/OFF inputs free of potential, for instance in the controls of electro-locks or other functions (window contact, pull-cord pushbutton, do not disturb switch).

Two 24Vac Relays are also available, for example as electro-lock and/or courtesy light command or general purposes.

The transponder card is read placing the badge inside the holder unit.

In this manual is reported the device parametrization only, while about the installation of the transponder holder unit is recommended to follow the instruction manual guide.

2.1 Limits to the associations

The maximum number of logical associations that the device is able to memorize is 32; this means that the maximum number of logical connections between communication objects and group addresses is 32.

The maximum number of group addresses that the device is able to memorize is 35; this means that it is possible to associate the communication objects to a maximum of 35 group addresses.

3 "*Relay x Configuration*" Menu

This chapter describes parameters and communication objects for both outputs as reported in Fig. 3.1.

fig 3.1

3.1   Parameters

➢ **3.1.1 Function**
This determines the function associated to the Relay x; according to the value selected, the settings for the **Relay x** are:

• **General Purpose**
The Relay x can be used as a generic relay by the **Relay x** communication object.

• **Door Open**
The Relay 1 only is used to command the electro lock when a valid transponder card is recognized, the function is possible making a group address association in ETS within the **Door/Courtesy light** communication object and the **Valid Access** or **Access 1-2-3-4** of the transponder reader.

• **Courtesy light**
The Relay 2 only is used to command a courtesy light automatically (without group address association in ETS) when the Relay 1 is used in **Door Open** mode and its communication object **Door/Courtesy light** is associated to **Valid Access** or **Access 1-2-3-4** of the transponder reader as explained above.
Anyway the same function of courtesy light is possible also if the Relay 1 is not used in **Door open** mode, making a group address association in ETS by the **Courtesy Light** communication object associated to **Valid Access** or **Access 1-2-3-4** of the transponder reader.

➢ **3.1.2 Contact**
This parameter defines the type of contact on the Relay x:

• **Normally open**

• **Normally close**
If the Power supply is not applied to the transponder reader, the contact is open.

➢ **3.1.3 Mode**
This parameter defines the activation mode of the Relay x and the settings are:

• **Normal**
A switch ON/OFF command is carried out

- ***Timing***

A timed command is carried out according to the value selected on the **TimeBase** and **Factor parameters.**

At the end of the temporization a "deactivation" feedback is sent by the relative communication object; if this information of "deactivation" is not required, it's possible to disable it deleting the "T" flag of the relative communication object.

➢ *3.1.4 TimeBase*

In Timing mode this parameter defines the time base and the available values are: **250 mS**, **500 mS**, **1 Sec**, **1 Min** and **1 Hour**.

➢ *3.1.5 Factor*

In Timing mode this parameter defines the value that multiplied per the TimeBase defines the actuation time by a value from **1** to **255** .

NOTE: for security reasons, it is recommended to use one of these Relay for unlocking the door rather the relay of the Transponder reader because that device is installed out of the door and through an easy by-pass on the Relay the electro-lock is activated.

3.2 Communication objects

The communication objects activated by the **Relay x Configuration** are reported in Fg. 3.2:

Number	Name	Object Function	Length	C	R	W	T	U	Data Type	Priority
0	Door/Courtesy Light	1.001 DPT_Switch	1 bit	C	R	W	T	-		Low
1	Courtesy Light	1.001 DPT_Switch	1 bit	C	R	W	T	-		Low
0	Relay 1	1.001 DPT_Switch	1 bit	C	R	W	T	-		Low
1	Relay 2	1.001 DPT_Switch	1 bit	C	R	W	T	-		Low

Fig. 3.2

➢ *3.2.1 Door/Courtesy Light*

By this object the device is able to receive from the bus the command to activate the Relay 1.
The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).
If a **Normal** mode is activated, the standard format of the object is *1.001 DPT_Switch* and the dimension is 1 bit, instead in **Timing** mode the standard format change to *1.010 DPT_Start.*

➢ *3.2.2 Relay 1 and Relay 2*

By this object the device is able to receive from the bus the commands to activate/deactivate the relative Relay.
The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).
If a **Normal** mode is activated, the standard format of the object is *1.001 DPT_Switch* and the dimension is 1 bit, instead in **Timing** mode the standard format change to *1.010 DPT_Start.*

➢ *3.2.3 Courtesy Light*

By this object the device is able to receive from the bus the command to activate the Relay 2.
The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).
If a **Normal** mode is activated, the standard format of the object is *1.001 DPT_Switch* and the dimension is 1 bit, instead in **Timing** mode the standard format change to *1.010 DPT_Start.*

4 *"Input x Configuration" Menu*

These parameters define the mode to send commands ON/OFF on the bus KNX/EIB using the inputs and in the Fig. 4.1 is reported the main menu.
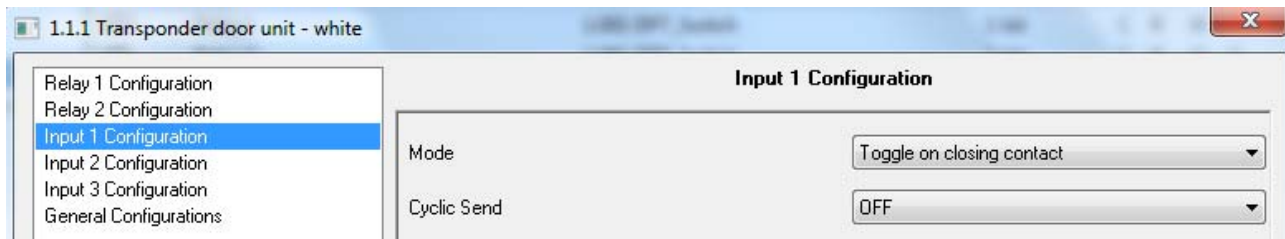

Fig. 4.1

4.1 Parameters

> ### *4.1.1 Mode*
> This defines which commands must be sent when the contacts free of potential are open and/or closed; the possibility are:
>
> - ### *ON on closing contact*
> An ON value is sent when the device detects an edge from open to close to the input x connected.
> No action is carried out when the device detects an edge from close to open.
>
> - ### *OFF on closing contact*
> An OFF value is sent when the device detects an edge from open to close to the input x connected.
> No action is carried out when the device detects an edge from close to open.
>
> - ### *ON on opening contact*
> An ON value is sent when the device detects an edge from close to open to the input x connected.
> No action is carried out when the device detects an edge from open to close.
>
> - ### *OFF on opening contact*
> An OFF value is sent when the device detects an edge from close to open to the input x connected.
> No action is carried out when the device detects an edge from open to close.
>
> - ### *ON on closing contact/OFF on opening contact*
> An ON value is sent when the device detects an edge from open to close to the input x connected and an OFF value is sent when the device detects an edge from close to open to the input x connected.
>
> - ### *OFF on closing contact/ON on opening contact*
> An ON value is sent when the device detects an edge from close to open to the input x connected and an OFF value is sent when the device detects an edge from open to close to the input x connected.
>
> - ### *Toggle on closing contact*
> Usually a normal open (NO) push-button is connected to the input x in order to send ON and OFF values when the device detects a change from open to close.
>
> - ### *Toggle on opening contact*
> Usually a normal close (NC) push-button is connected to the input x in order to send ON and OFF values when the device detects a change from close to open.

➢ *4.1.2 Cyclic Send*

The following options allow to activate or not the periodic sending for the input x:

- *OFF*

The cyclic send is no active and so the communication object is sent following the **Mode** selected only.

- *ON*

The communication object is sent following the **Mode** selected and cyclically according to the period configured by **Cycling Send Time (Min.)**.

➢ *4.1.3 Cycling Send Time (Min.)*

This parameter defines the period in minutes for the **Cyclic send** and are accepted values from *1* to *200*.

4.2 Communication objects

The communication objects activated by the **Input x Configuration** are reported in Fg. 4.2:

Number	Name	Object Function	Length	C	R	W	T	U	Data Type	Priority
14	Input 1	1.001 DPT_Switch	1 bit	C	R	W	T	-		Low
15	Input 2	1.001 DPT_Switch	1 bit	C	R	W	T	-		Low
16	Input 3	1.001 DPT_Switch	1 bit	C	R	W	T	-		Low

➢ *4.2.1 Input x*

These communication objects are sent as defined on the **Input x Configuration** Menu.
The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).
The standard format of the object is *1.001 DPT_Switch* and the dimension is 1 bit.

5 *"General Configurations" Menu*

This section defines the controls done on the transponder card inserted and on the Fig. 5.1 is reported the default window.
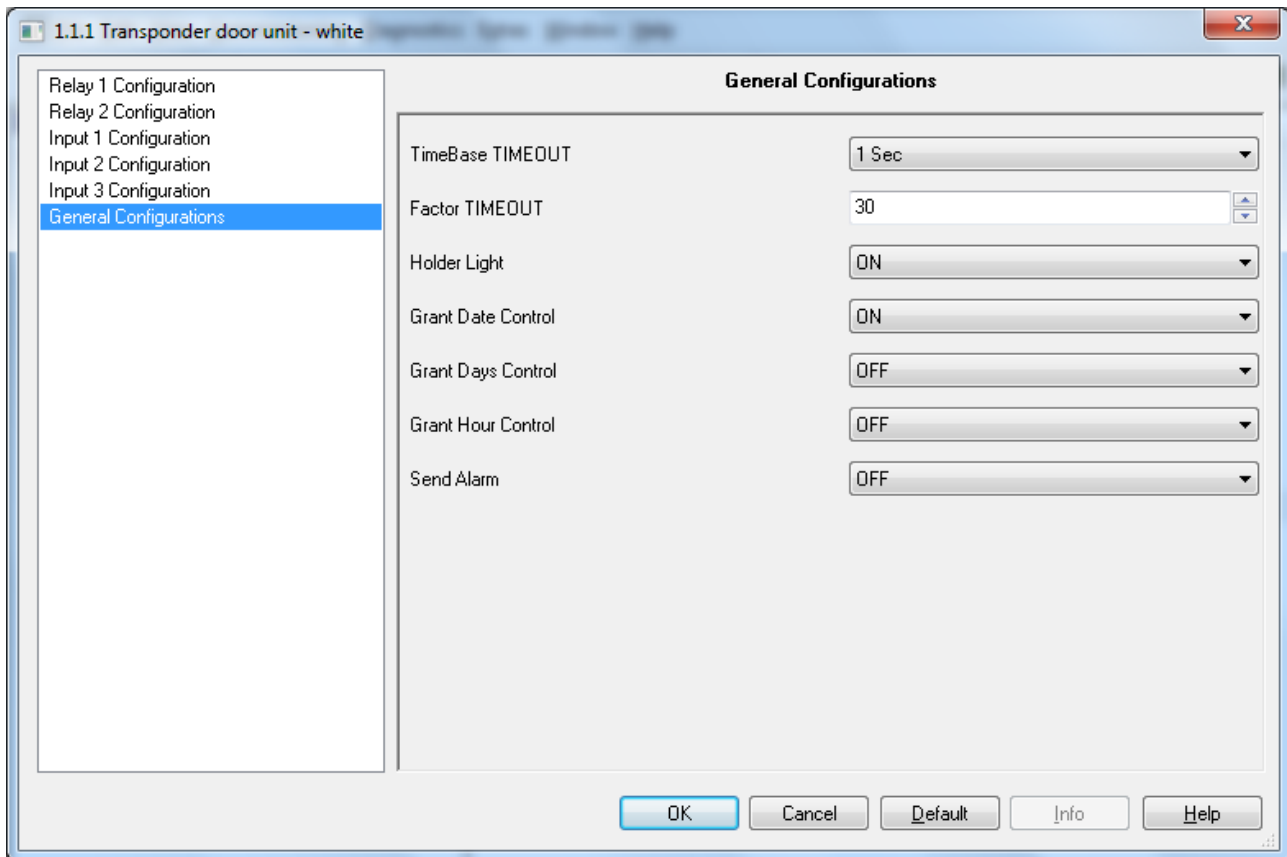

Fig. 5.1

5.1 Parameters

➢ *5.1.1 TimeBase TIMEOUT*

When a transponder card is extracted from the holder unit a timer is activated in order to delay the transmission of the "0" value for the following communication objects: *Energy Enabled*, *Room Light Enabled* and *Scene 1-2-3-4*.
This parameter defines the time base and the available values are: *250 mS*, *500 mS*, *1 Sec*, *1 Min* and *1 Hour*.

➢ *5.1.2 Factor TIMEOUT*

This parameter defines the value that multiplied per the TimeBase TIMEOUT defines the actuation time by a value from *1* to *255* .

➢ *5.1.3 Holder Light*

This parameter activates or not the back light on the transponder reader when the transponder card is not inserted.

- *OFF*

The Holder light is deactivated.

- *ON*

The holder light is activated with these behaviors:

- if a transponder card is not inserted the back light is turned on
- if a valid transponder card is inserted the back light is turned off
- if a transponder card not valid is inserted the back light blinks

➢ *5.1.4 Grant Date Control*

This parameter can activate on the device the control of the date in manner to validate the transponder cards read; the possibility are:

- *OFF*

In this case the Date control is deactivated, therefore a transponder card with the *Departure date* expired is considered as valid and the utilities are activated.

- *ON*

In this case the Date control is activated, therefore a transponder card with the *Departure date* expired is considered as no valid and the utilities are not activated.

➢ *5.1.5 Grant Days Control*

This parameter supported by the software GW Hotel (no GW Access) can activate on the device the week days control in manner to validate the transponder cards read; the possibility are:

- *OFF*

In this case the week days control is deactivated, therefore a transponder card able to access but during a different day respect to the *Active days* is considered as valid and the utilities are activated.

- *ON*

In this case the week days control is activated, therefore a transponder card able to access but during a different day respect to the *Active days* is considered as no valid and the utilities are not activated.

➢ *5.1.6 Grant Hour Control*

This parameter supported by the software GW Hotel (no GW Access) can activate on the device the hour control in manner to validate the transponder cards read; the possibility are:

- *OFF*

In this case the Hour control is deactivated, therefore a transponder card able to access but during a different hour respect to the *Active Hour access* is considered as valid and the utilities are activated.

- *ON*

In this case the Hour control is activated, therefore a transponder card able to access but during a different hour respect to the *Active Hour access* is considered as no valid and the utilities are not activated.

➢ *5.1.7 Send Alarm*

The transponder holder is powered by an external 12/24 Vac/dc and not from the bus KNX; this parameter activate the **Alarm** communication object that sends a value of "1" when the external Power supply back.

This function is very important when the control of Date, Days and Hour is activated, because after a Power fault the transponder reader lost both Date and Hour, thus the **Alarm** communication object can be used to update them using a specific KNX device.

To be informed that GW Hotel and GW Access can send only periodically Date and time but not automatically receiving the **Alarm** communication object.

- *OFF*

The communication object **Alarm** is not available.

- *ON*

The communication object **Alarm** is available.

5.2   Communication objects

The communication objects activated by the **General Configurations** are reported in Fig. 5.2:

Number	Name	Object Function	Length	C	R	W	T	U	Data Type	Priority
2	Enable Insert Card	1.003 DPT_Enable	1 bit	C	R	W	T	-		Low
3	Date	11.001 DPT_Date	3 Byte	C	R	W	T	-		Low
4	Time	10.001 DPT_Time	3 Byte	C	R	W	T	-		Low
5	Build Number	7.001 DPT_Value_2_UCount	2 Byte	C	R	W	T	-		Low
6	Guest Data	NO_DPT	10 Byte	C	R	W	T	-		Low
7	Access Code	15.000 DPT_Access_Data	4 Byte	C	R	W	T	-		Low
8	Scene 1	1.003 DPT_Enable	1 bit	C	R	W	T	-		Low
9	Scene 2	1.003 DPT_Enable	1 bit	C	R	W	T	-		Low
10	Scene 3	1.003 DPT_Enable	1 bit	C	R	W	T	-		Low
11	Scene 4	1.003 DPT_Enable	1 bit	C	R	W	T	-		Low
12	Energy Enabled	1.003 DPT_Enable	1 bit	C	R	W	T	-		Low
13	Room Light Enabled	1.003 DPT_Enable	1 bit	C	R	W	T	-		Low
17	Alarm	1.005 DPT_Alarm	1 bit	C	R	W	T	-		Low

Fig. 5.2

➤ 5.2.1 Enable Insert Card

Receiving a value of "1 " on this communication object is possible to simulate the insertion of valid a transponder card in the holder unit; this action generates the transmission of the objects **Energy Enabled** and **Room Light Enabled** with value of "1".
Receiving a value of "0" in this communication object is possible to simulate an extraction of the transponder card without considering the exit-time configured as TIMEOUT; this action generates the transmission of the objects **Energy Enabled** and **Room Light Enabled** with value of "0".
The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).
The standard format of the object is *1.001 DPT_Switch* and the dimension is 1 bit.

➤ 5.2.2 Date

By this communication object the device is able to receive a Date update from the bus KNX.
The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).
The standard format of the object is *11.001 DPT_Date* and the dimension is 3 byte.

➤ 5.2.3 Time

By this communication object the device is able to receive a Time update from the bus KNX.
The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).
The standard format of the object is *10.001 DPT_TimeOfDay* and the dimension is 3 byte.

➤ 5.2.4 Build Number

By this communication object the transponder holder receive from the bus KNX the installation number assigned through the software GW Hotel or GW Access by the *Access code* function.
During the generation of transponder cards, the programmer unit by GW Hotel or GW Access writes two codes: **Build Number** and **Guest Data** (explained on the paragraph 5.2.5), in fact when the device read a transponder card makes a double control on both Build Number and Guest Data.
The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).
The standard format of the object is *7.001 DPT_Value_2_Ucount* and the dimension is 2 byte.

➤ 5.2.5 Guest Data

By this communication object the transponder holder receive from the bus KNX the *password* generated through the software GW Hotel or GW Access.
The *password* includes a code for identifying the card and the expiration of: date, days and hours.
The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).
There is no standard format for this object and the dimension is 10 byte.

➤ *5.2.6 Access Code*

By this communication object the transponder holder sends on the bus KNX the transit identification, obviously when a transponder card that belongs to the installation is read.

The Access code can be received and stored in a log file on the software GW Hotel or GW Access.

The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).

The standard format of the object is *15.000 DPT_Access_Data* and the dimension is 4 byte*.*

➤ *5.2.7 Scene 1*

By this communication object the device send a value of "1" when a valid C*ustomer* transponder card is inserted.

A value of "0" is sent when the C*ustomer* transponder card is extracted and expired the exit timeout.

The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).

The standard format of the object is *1.003 DPT_Enable* and the dimension is 1bit*.*

➤ *5.2.8 Scene 2*

By this communication object the device send a value of "1" when a valid S*ervice* transponder card is inserted.

A value of "0" is sent when the S*ervice* transponder card is extracted and expired the exit timeout.

The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).

The standard format of the object is *1.003 DPT_Enable* and the dimension is 1bit*.*

➤ *5.2.9 Scene 3*

By this communication object the device send a value of "1" when a valid *Maintenance* transponder card is inserted.

A value of "0" is sent when the *Maintenance* transponder card is extracted and expired the exit timeout.

The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).

The standard format of the object is *1.003 DPT_Enable* and the dimension is 1bit*.*

➤ *5.2.10 Scene 4*

By this communication object the device send a value of "1" when a valid *Aid* transponder card is inserted.

A value of "0" is sent when the *Aid* transponder card is extracted and expired the exit timeout.

The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).

The standard format of the object is *1.003 DPT_Enable* and the dimension is 1bit*.*

➤ *5.2.11 Energy Enabled*

By this communication object the device send a value of "1" when any valid transponder card is inserted.

A value of "0" is sent when the transponder card is extracted and expired the exit timeout.

This communication object is also sent through the **Enable Insert Card** object (see paragraph 5.2.1)

The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).

The standard format of the object is *1.003 DPT_Enable* and the dimension is 1bit*.*

➤ *5.2.12 Room Light Enabled*

By this communication object the device send a value of "1" when any valid transponder card is inserted.

A value of "0" is sent when the transponder card is extracted and expired the exit timeout.

This communication object is also sent through the **Enable Insert Card** object (see paragraph 5.2.1)

The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).

The standard format of the object is *1.003 DPT_Enable* and the dimension is 1bit*.*

➤ *5.2.13 Alarm*

By this communication object the transponder Holder sends on the bus KNX a value of "1" when the external Power supply back; a value of "0" is never send.

The enabled flags are C (communication), R (read by bus), W (written by bus), T (transmission).

The standard format of the object is *1.003 DPT_Enable* and the dimension is 1 bit*.*