Virtual Holder

USER MANUAL

Translation of the original instructions

Version: **1.0**

Date: **09/01/2023**

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VERSION	DATE	CHANGES
1.0	09/01/2023	-

Any information inside this manual can be changed without advice.

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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

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1. Virtual holder

Virtual holder is activated by enabling corresponded parameter in page "General Settings".

The application field is typically the hotel room where, by using this feature, you can remove the Holder for access control.

This logical module provides a set of parameters and communication objects that, suitably configured, allow you to set up whether a person is occupying the room.

Definitions:
- VH = Virtual Holder
- CO = Communication Object
- Welcome = event triggered when someone enters the room which was not occupied
- Goodbye = event triggered when the room goes in status "unoccupied"

How it works

When one or more people enter the room, that event is recognized by the door opening and if, after it is closed, the customer's presence is still identified, then the logical module decides that the client is in the room otherwise it determines that he is out of the room. The minimum set of sensors requested for this logic to work properly is:

- one door contact for each door of the room, this contact must be detected by a KNX device to send on the bus the value "0" when door is closed and value 1 when door is opened
- at least one presence detector for each area; this presence detector can be KNX or conventional with dry contact output to be connected a KNX input. This device must send on the bus the value "1" when presence is detected and value 0 when presence is not detected.

Communication Objects

<VH> Room Booked	1 bit	CW
By setting this CO to "1" the status of the VH is set to "room booked"; when set to "0" the status is "room not booked". The VH module can have different behavior if the room is booked or not; default value for this status can be set using the "Booked state after download" parameter.		
<VH> Signal for guest (Type1)	1 bit	CW
<VH> Signal for service (Type2)	1 bit	CRT
<VH> Signal for maintenance (Type3)	1 bit	CW
This COs can be used to communicate to the VH module who is entering the room. This can be achieved by using a KNX Access Control Reader (Synchronicity by eelectron) or by interfacing other access systems with KNX bus		
<VH> Presence for guest (Type1)	1 bit	CRT
<VH> Presence for service (Type2)	1 bit	CRT
<VH> Presence for maintenance (Type3)	1 bit	CRT
This COs can be used to send from VH module information about who entered the room to a supervisor or similar sw.		
<VH> Remote Inputs Enabled (Global Enable)	IN	1 bit
See paragraph Remote Sensor inputs (Global Enable).		
<VH> Presence Output	1 bit	CW

This CO send "1" when someone is detected inside the room (presence) and "0" when nobody is detected inside the room and the "presence wait time" has expired (absence).		
<VH> HVAC Output	1 byte	CRT
This CO is used to send HVAC commands in event of presence and absence. Commands can be set different if the room in booked or not and if the person who enter the room is guest, service or maintenance.		
<VH> Additional Output	1 byte	CRT
This CO is used to send commands in event of presence and absence. Commands can be set different if the room in booked or not and if the person who enter the room is guest, service or maintenance.		

General

Communication objects involved:

"<VH> Room Booked"	1 bit	CW
"<VH> Presence Output"	1 bit	CW
"<VH> HVAC Output"	1 byte	CRT
"<VH> Additional Output"	1 byte	CRT

KNX PARAMETER	SETTINGS
Presence wait time	1 min to 3 hours
This parameter set the "wait time" for the VH module. The "wait time" is the time triggered by the opening and consequent closing of the door. During this time the room is in "wait" mode and after this can go in "occupied" or "non occupaied" status. Use values for this parameter that are not too small to avoid not recognizing people in the room and not too big to avoid to keep room service active for too long after customers leave.	
Cyclic presence send time	No cyclic send, 1 min to 1 hour
Object <VH> Presence Output can be send cyclically if this parameter is set different from "No cyclic send". This CO send "1" when someone is detected inside the room (presence) and "0" when nobody is detected inside the room and the "presence wait time" has expired (absence).	
Presence sensor OFF latency	10 to 63 sec.
This parameter is related to the time set on the presence detector. The most of presence detectors keep the presence status for a configurable amount of seconds; set this parameter to the same value. It's recommended to set this time duration at the minimum. If the presence detector is a conventional one (dry contact output connected to a KNX input) this time duration is the relay time. If the knob of the conventional presence detector is set to 10 sec. then set this parameter to 10 sec. as well.	
Send welcome on unexpected presence	do not send / send
This parameter defines the behaviuor when the VH module detects a presence inside the room and is in "not occupied" status (unexpected presence). It's possibile to send or not the welcome event.	
Global enable state after download	disabled / enabled
See paragraph Remote Sensor inputs (Global Enable).	
Booked status after download	not booked / booked
Set the initial value for the object "<VH> Room Booked". By setting this CO to "1" the status of the VH is set to "room booked"; when set to "0" the status is "room not booked". The VH module can have different behavior if the room is booked or not; default value for this status can be set using the "Booked state after download" parameter.	

Absence with door open (deny= if door open presence is active)	allow / deny
This parameter defines the behavior when the VH module detects the open port. If the door remains open longer than the wait time, this parameter defines whether to keep the room in "occupied" state or not.	
Additional output type	value 0-255 value 0-100% scene
It is possible to enable an addititional CO to transmit on the bus a command linked to presence or absence events.	

Remote inputs

Communication objects involved:

"<VH> Remote Input x Door"	1 bit	CW
"<VH> Remote Input x Presence"	1 bit	CW
"<VH> Remote Input x Sniffer"	1 bit	CW

In this page the installer must set which type of sensor are linked to the VH module

KNX PARAMETER	SETTINGS
Remote input <x>	disabled door presence bus sniffer
disabled: non used door: set this option if the communication object <VH> Remote Input x Door is linked to a door contact KNX input. presence: set this option if the communication object <VH> Remote Input x Presence is linked to a presence detector KNX communication object. Bus sniffer: set this option if the communication object <VH> Remote Input x Sniffer is linked to a generic CO used in the room.	

Usage of the Bus Sniffer Option.

When a person occupies a room interacts with it. Turning on or off a light in the main room or in the bathroom gives indication of the presence of people inside the room. To reduce the risk of not correctly identifying the "occupied room" status, it is recommended to connect a "bus sniffer" input to all the 1 bit objects that can be sent to the bus only by the presence of a person in the room such as bathroom or mirror lights or window contact or bedside light, etc ....

WARNING ON REMOTE INPUT <X> CO

- a Remote Input CO (type door) must be connected only to one single door contant on/off telegram;
- a Remote Input CO (type presence) must be connected only to one single device with presence on/off telegram;
- a Remote Input CO (type bus sniffer) can be connected to more than one devices.

Local input	disabled door presence
Local input can be connected either to a door contact or conventional presence detector ; by setting this input as "digital input" and "activation press/release" it's possibile to send also telegram on the KNX bus for other purpouses.	

Guest (Type 1), Service (Type 2), Maintenance (Type 3)

Communication objects involved:

"<VH> Signal for guest (Type1)"	1 bit	CW
"<VH> Signal for service (Type2)"	1 bit	CRT
"<VH> Signal for maintenance (Type3)"	1 bit	CW
"<VH> Presence for guest (Type1)"	1 bit	CRT
"<VH> Presence for service (Type2)"	1 bit	CRT
"<VH> Presence for maintenance (Type3)"	1 bit	CRT

KNX PARAMETER	SETTINGS
HVAC booked goodbye	do not send comfort standby economy building protection
Defines the type of HVAC command to be sent via the "<VH> HVAC output" object for the Goodbye booked status.	
HVAC non-booked goodbye	do not send comfort standby economy building protection
Defines the type of HVAC command to be sent via the "<VH> HVAC output" object for the Goodbye not booked status.	
HVAC booked welcome	do not send comfort standby economy building protection
Defines the type of HVAC command to be sent via the "<VH> HVAC output" object for the Welcome booked status.	
HVAC non-booked welcome	do not send comfort standby economy building protection
Defines the type of HVAC command to be sent via the "<VH> HVAC output" object for the Welcome not booked status.	
Send additional booked goodbye	do not send / send
With this parameter it is possible to enable the sending via the object "<VH> Additional Output" of an additional scenario for the Goodbye status booked.	
Value additional booked goodbye	0...255 0-100% 1...64
Defines the value to be sent on the "<VH> Additional Output" object for the booked Goodbye status.	
Send additional non-booked goodbye	do not send / send
With this parameter it is possible to enable the sending via the object "<VH> Additional Output" of an additional scenario for the Goodbye status not booked.	
Value additional non-booked goodbye	0...255 0-100% 1...64
Defines the value to be sent on the "<VH> Additional Output" object for the non-booked Goodbye status.	
Send additional booked welcome	do not send / send

With this parameter it is possible to enable the sending via the object "<VH> Additional Output" of an additional scenario for the Welcome status booked.

Value additional booked welcome	0...255 0-100% 1...64
Defines the value to be sent on the "<VH> Additional Output" object for the booked Welcome status.	
Send additional non-booked welcome	do not send / send
With this parameter it is possible to enable the sending via the object "<VH> Additional Output" of an additional scenario for the Welcome status not booked.	
Value additional non-booked welcome	0...255 0-100% 1...64
Defines the value to be sent on the "<VH> Additional Output" object for the non-booked Welcome status.	

Remote Sensor Inputs (Global Enable)

Communication objects involved:

"<VH> Remote Inputs Enabled (Global Enable)"	1 bit	CW

This CO is used when there is a need to consider two adjacent rooms both as singles or as a single appurtenance (double room).
This possibility must be considered during installation, so communication objects must be connected as described below if you want to switch runtime from one configuration (2 single rooms) to another (one double room) and vice versa.

- It is necessary to activate and configure both "Virtual Holder" modules of the 2 single rooms.
- The principle is to connect the sensors (door, presence, and sniffer) of room 1 to room 2 and vice versa; however, the "Subordinate to Remote Inputs Enable" parameter for each single Remote Input should be properly configured.
- For sensors located in Room 1, this parameter must be set to "not subordinate" on room 1 "Virtual Holder" while should be "subordinated" to room 2 Virtual Holder
- The same principle must be applied to room 2 sensors that are "subordinate" only for the connections to room 1.
- Setting the value "1" on the "Remote Inputs Enable" object for the "Virtual Holder" of each room each module will consider all sensors connected to it; by setting this CO to "0" each "Virtual Holder" only
- considers the sensors connected to its "remote inputs" set as "not subordinate"

For a connection diagram of this function see Fig. 2.

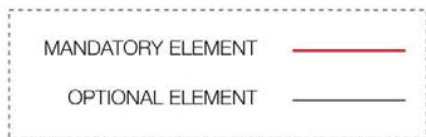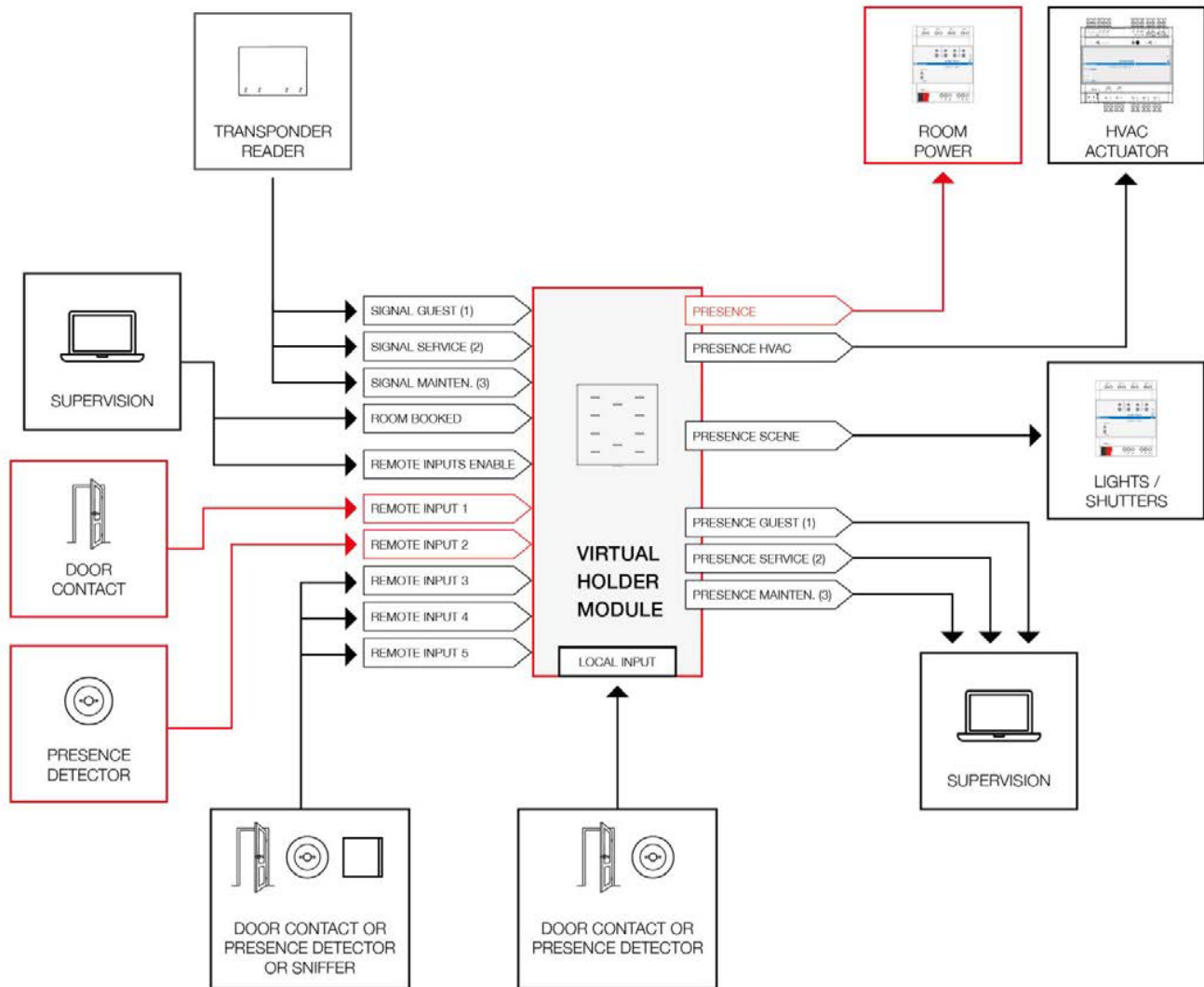**DIAGRAM OF LOGICAL CONNECTIONS FOR VIRTUAL HOLDER LOGIC MODULE**

DIAGRAM OF LOGICAL CONNECTIONS FOR REMOTE SENSOR INPUT ENABLE (GLOBAL ENABLE)