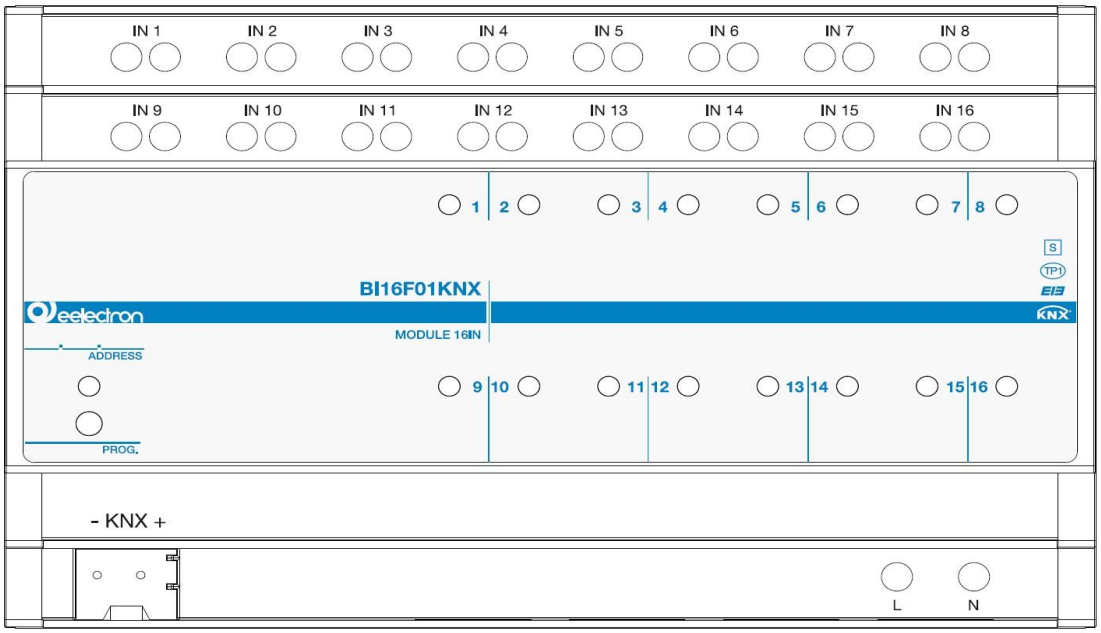
Product Handbook



BI16F01KNX	Digital Inputs DIN Module

Document Version**:** **2**
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Exclusion of responsibility:
Although the correctness of the data contained within this document has been verified, it is not possible to exclude the presence of errors or typos; Eelectron, therefore, assumes no responsibility in this regard. Any corrections required will be included in updates of this manual.

The following symbols will be used in the manual:

Symbol for relevant information

Important warning symbol

DISPOSAL: the crossed-out bin symbol indicates that the product at the end of its useful life must be collected separately from other waste. At the end of use, the user must undertake to deliver the product to a suitable separate collection centre or to return it to the retailer when purchasing a new product. Adequate separate collection for subsequent start-up of the discarded equipment for recycling helps to avoid possible negative effects on the environment and on health and promotes the reuse and/or recycling of the materials of which the equipment is made.

1. Introduction

This manual is intended for use by KNX® installers and describes the functions and parameters of the DIN BI16F01KNK module, also explaining how to change the settings and configurations through the ETS software tool.
The BI16F01KNK device is a module with 16 digital inputs or for clean contact configurable if necessary with line terminator (EOL resistor) for the detection of wiring interruption. Each input can be associated with a direct command to other KNX modules as explained in this manual, but also with the display of a status by means of the LEDs - one for each input - on the front panel of the device.

The BI16F01KNX device was created as an interface for the generation of commands, manual via a button or automatic given by clean contacts, such as those of relays or sensors, directed towards KNX actuator units.

2. Product overview

The BI16F01KNK module is designed for use in domestic installations and in civil buildings (offices, hotels, etc.) and can work both as a command collection device for one or more output modules, and as a display ("indicator light" function) status of the inputs by means of the 16 LEDs available.

In addition to the KNX bus, the device is powered by the 230 V AC mains to allow long-distance connections. For KNX programming, the connection to the bus is sufficient

General inputs configurations

The inputs of the module can be configured in two ways:

- “standard” clean contact digital inputs;
- EOL resistor, i.e. connection terminal of the end of line resistor (1.8 kohm).

The inputs in "standard" mode can be connected to buttons, switches and in general clean contacts (for example relay outputs of other modules).
The inputs can be configured for:

- 1-bit commands: load activation/deactivation commands (ON/OFF/TOGGLE) from external button with short press or with differentiation of long and short press;
- 1 byte commands (0-255 or HVAC commands or % value commands);
- the sending of long action related telegrams on the same short action address or on a different group address;
- cyclic sending commands;
- sequences (3 mixed object commands 1 bit/1 byte) with different group addresses - in short and long press mode or in toggle mode;
- Dimming management (with single button or double button);
- roller shutter management (with single button or double button);
- command sequences with 1 bit to manage the switching on/off of lights or rows of lights;
- RGB colour setting at fixed value (short press) or colour change (long press); selectable 1 byte or 3 byte datapoint;
- MUR/DND (Make Up Room/Do Not Disturb), function with built-in logics;
- Loop function between values to send a sequence of 1 byte values step by step.

Indicator LED

Each input is associated with a status and indicator LED on the upper part of the module, whose activity can be configured by ETS as described in the following pages.

3. Installation warnings

The device can be used for permanent indoor installations in dry places and is intended for mounting on DIN bar in LV distribution electrical panels.

ATTENTION

- The device must be installed maintaining a minimum distance of 4 mm between the non SELV voltage lines (>50V DC or > 25 VAC) and the cables connected to the EIB/KNX bus and to the inputs.
- The device must not be connected to live cables of a 230VAC power line except for the specifically available power input (L N).
- The appliance must be installed and commissioned by an enabled installer.
- The regulations in force concerning safety and accident prevention must be observed.
- The device must not be opened. Any defective devices must be sent to the competent office.
- The design of the systems and the commissioning of the equipment must always comply with the mandatory standards and directives of the country in which the products

will be used. The KNX bus allows remote commands to be sent to the system actuators. Always check that the execution of remote commands does not create dangerous situations and that the user is always notified of which commands can be activated remotely.

- The device must be installed in low voltage distribution panels ensuring the IP20 degree of protection by means of the dedicated covers supplied with the electrical panels.

For information visit the website www.eelectron.com

4. General Parameters

The setting of the device using the ETS software tool will be described below, with the premise that the choice of one or more options will make the related functions and options available, changing the appearance of the panel and the menu items.

Delayed transmission upon switch on

Settable value: 3 ÷ 15 seconds

With this parameter it is possible to set a delay on the transmission of telegrams following switching on or reset of the device, selecting the time beyond which the device can send telegrams.

In systems with a large number of devices, this delay makes it possible to avoid a situation whereby, in the event of a power failure or shutdown, upon restart, all the devices simultaneously engage the bus, generating excessive data traffic on the bus and causing a reduction in communication performance on the system.

If there are many devices that require the sending of telegrams after switching on, this delay must be programmed in order to minimise traffic peaks.

The detection of inputs and the value of the communication objects are updated in accordance with the expiry of the transmission delay. At the end of programming with ETS, the device behaves as it does when switching on, applying the delay (if set).

Global enable object

Settable value: disabled / enabled

Through this parameter it is possible to enable or disable all the inputs at the same time with a single command, saving commands and bus engagement.

General alarm telegram

Settable value: Telegram 0 / Telegram 1

Through this parameter it is possible to define to which telegram value to associate the general alarm corresponding to the absence of 230Vac mains voltage.

General alarm cyclical sending

Settable value: none / 12 hours

Through this parameter it is possible to enable / disable the cyclical sending of the alarm status; more precisely, the **Alarm cyclical sending** parameter concerns the periodic sending of the status telegram defined in the previous parameter, according to the following table.

KNX PARAMETER	SETTINGS
Alarm cyclical sending	No cyclic sending 1 minute – 12 hours
If active, it is used to send the status telegram cyclically, which can be “alarm” or “no alarm”, according to the set periodicity. **No cyclic sending** Disables the cyclic sending function. **Cyclical sending** Determines the periodic sending of the telegram after: 1 minute 2 minutes 5 minutes 10 minutes 15 minutes 30 minutes 45 minutes 1 hour 2 hours 3 hours 4 hours 5 hours 6 hours 8 hours 12 hours	

Economy mode: LEDs off if buttons are inactive

Settable value: never switch off / 15 min

Through this parameter it is possible to save energy by establishing whether the status LEDs relating to the inputs must show their condition constantly (for example if the input has received an activation command, stay on) or if they should go off after a certain time has elapsed from the last activation.

KNX PARAMETER	SETTINGS
Economy mode: LEDs off if buttons are inactive	never switch OFF 1 – 15 minutes

never switch OFF

The LED associated with each input remains lit as long as the active input condition determined by the settings in the ETS page of each input continues.

Economy mode

The status LED lights up when the input is activated and turns off after the lesser of the active condition maintaining time and the interval defined by the drop-down menu, which includes the following times:

1 minute
2 minutes
3 minutes
4 minutes
5 minutes
6 minutes
7 minutes
8 minutes
9 minutes
10 minutes
11 minutes
12 minutes
13 minutes
14 minutes
15 minutes

Example 1: **Economy mode: LEDs off if buttons are inactive active and time set at 5 minutes; input 1 with Function set in activation on closing contact.**
If the input reopens before 5 minutes, the LED turns off upon reopening. If the input reopens after a time greater than 5 minutes, the LED goes out in any case after this time has elapsed from closing.

Virtual holder (automatic presence function)

Settable value: disabled / enabled

Through this parameter it is possible to associate the Virtual holder function to the module. Clicking on the enabled option button, the presence detection function is activated, which is used to subject the operation to the possible presence of persons detected by the dedicated sensor.

Enabling the function results in a reduction of the available logics, from 16 to 11.

5. Management of inputs

The module has 16 digital inputs for dry contacts (without voltage): two of them can function as analogue for the reading of temperature probes.
The following table describes the available functions.

The EOL resistor function can be associated to the active inputs (therefore with a function other than Nothing), which is set from the ETS page **Digital inputs> Function> Input type**.

KNX PARAMETER	SETTINGS
Input type	standard contact EOL resistor
Defines how the device will manage the condition of the associated digital input. **standard contact** The input will be read as associated with a clean contact. **EOL resistor** The input will be considered as equipped with a line termination resistor.	

Based on the function chosen for the input, additional items will appear under **Input type** which are:

- Alarm telegram;
- Cyclical alarm sending.

The following table applies to the **Alarm telegram** parameter.

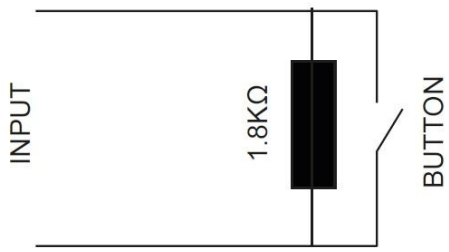
KNX PARAMETER	SETTINGS
Alarm telegram	telegram "0" telegram "1"
It is used to manage an alarm telegram in the event of an anomaly (line cut, cable interrupted) in the state of the input. **Telegram "0"** The occurrence of the anomaly will result in the sending of a telegram of value 0. **Telegram "1"** The occurrence of the anomaly will result in the sending of a telegram of value 1.	

KNX PARAMETER	SETTINGS
Alarm cyclical sending	No cyclic sending 1 minute – 12 hours
If active, it is used to send a status telegram cyclically, which can be "alarm" or "no alarm", according to the set periodicity. **No cyclic sending** Disables the cyclic sending function. **Cyclical sending** Determines the periodic sending of the telegram after: 1 minute 2 minutes 5 minutes 10 minutes 15 minutes 30 minutes 45 minutes 1 hour 2 hours 3 hours 4 hours 5 hours 6 hours 8 hours 12 hours	

6. Input with EOL resistor

Each of the 16 inputs can be configured by software as an EOL resistor; this mode is used to insert a terminating resistor of the input line in order to detect the interruption of the cables due to accidents or malicious cutting.

The resistor has a value such as to determine, with the input contact open, a voltage falling within a specific window on the input itself; where the cables are interrupted, this voltage will go out of the window and the condition will be read in order to be used as an event that triggers the relative alarm.



The EOL resistor mode can be set separately for each input as required and the relative reading of the input contact will only apply to the inputs set.

7. Digital input

Each **Digital Input** from IN1 to IN16 can be configured to perform one of the following functions available in the drop-down menu on the corresponding page:

- nothing (inactive and therefore ignored even if connected and receiving signals);
- activation on closing contact;
- activation on closing/opening contact;
- activation on short and long contact closing;
- dimming;
- roller shutter and Venetian blinds;
- scene;
- command sequences (on short and long contact closure);
- command sequences (toggle function);
- command sequences (1 bit);
- counter input
- set RGB colour;
- MUR/DND (make room/do not disturb);
- Loop among values (1 Byte).

The setting is performed separately for each input from the page **ETS Digital Inputs**, by clicking on the corresponding name.
Each mode has a specific ETS page, as described below.

For each input in the respective ETS page it is possible, by typing it in the **Input name** box, to assign a name to the input itself, which can mnemonically facilitate identification in the building (for example "entrance light button"). This box is present for all the modes associated with the digital inputs.

All the functions that can be associated with the inputs are subject to the enable/disable parameter (and with the object); therefore they are valid if the parameter is "enable" (enabled). The relevant setting is performed individually for each input from the respective ETS page.

Object enable / disable

Regardless of the function chosen, the relevant ETS page makes the **Object enable/disable** parameter available for each input; the setting allows activation of the object <Input x> Enable Input, 1 bit, which allows enabling of the selected input within the scene.

KNX PARAMETER	SETTINGS
Object enable/disable	Disabled enabled
If enabled, this parameter makes available in the ETS page, below it, the items **Initial enable state** and **Enable activation telegram**. **Initial enable state** disabled = after the configuration download, the initial status is "disabled" enabled = after the configuration download, the initial status is "enabled" **Enable activation telegram** telegram "0" = activation occurs at telegram "0" telegram "0" = activation occurs at telegram "1"	

The communication object "enable/disable" is used to activate/deactivate the reading of the input.

<Input x> Enable Input	1 bit – Disable/Enable | CW

Activation on closing contact

It is used to configure the sending of telegrams when the input is closed; the device can also be configured to send periodic messages with repeat.

KNX PARAMETER	SETTINGS
Contact type	Normally open Normally closed
It defines how the device will interpret the condition of the digital input. **Normally open** The input will be considered active if it is closed. **Normally closed** The input will be considered active if it is opened.	

For each digital input there is a debouncing function which is used to avoid false switching, ignoring, after the first activation, for a period of time that can be specified in the drop-down menu, **Debounce time for inputs reading**, between 0 and 1,000 milliseconds.

It is also possible to assign the cyclic (periodic) sending of telegrams to the digital inputs when they are active; as long as the input remains active, the telegram, with size and value selected on the same ETS page, is sent cyclically. The parameter setting defines the time interval between two consecutive submissions. The possible values are subject to the choice of the "short" or "long" option for the setting **Long or short cyclic times**, according to the following table.

KNX PARAMETER	SETTINGS	
	Long short cyclic times	
	short	**long**
Cyclic sending when contact opened/closed	Never 0.3 s. 0.4 s. 0.5 s. 0.8 s. 1.0 s. 1.2 s. 1.5 s. 2.0 s. 3.0 s. 5.0 s. 8.0 s. 10 s.	Never 30 seconds 45 seconds 1 minute 2 minutes 3 minutes 4 minutes 5 minutes 10 minutes 15 minutes 30 minutes 45 minutes 60 minutes 4 hours 12 hours 24 hours

The parameter shown on the ETS page is **Cyclic sending when contact closed** if Type of contact is "normally open" and **Cyclic sending when contact opened** if Type of contact is set as "normally closed".

The telegram transmitted as a consequence of the activation of the input, regardless of whether single or cyclic sending is envisaged, is set with the associated Telegram option, according to the following table.

KNX PARAMETER	SETTINGS
Associated telegram	1 bit 1 bytes

1 bit

The logic state 0 or 1 is transmitted.

1 bytes

1 byte is transmitted containing the value that can be selected from the drop-down menu that appears under this option when it is selected, i.e .:

- value 0÷255 (unsigned generic int)
- value 0÷100% (percentage in steps of 5%)
- HVAC mode (DPT_HVACMode 20.102)

For each item in the drop-down menu, on the ETS page it appears under the setting **Value associated with opening** if the input is set as normally closed or **Value associated with closing** if the input is set as normally open. In all cases, the drop-down menu offers alternatives relating to the setting made in the **Associated telegram**, according to the table.

KNX PARAMETER	SETTINGS
Value associated with opening **Value associated with closing**	
Value 0÷255	0÷255
Value 0÷100%	0÷100 %
HVAC mode	Auto comfort standby economy building protection (antifreeze/high temperatures)

From the ETS page it is possible, with the setting **Command associated with closure**, to define the action that the activation of the corresponding input determines.

KNX PARAMETER	SETTINGS
Command associated with closure/opening	Off On toggles

The parameter is Command associated with closure if the input is set as "normally open" and becomes Command associated with opening if the input is instead set as "normally closed".

on
Send an activation telegram.

off
Send a deactivation telegram

toggle
Sends a telegram that imposes the inversion of the associated user's state.

By choosing the toggle option, the **Feedback object** parameter described in the following table becomes available on the ETS page.

KNX PARAMETER	SETTINGS
Feedback object	disabled enabled
If enabled, this parameter displays an additional communication object (<Input x> Feedback) which determines the sending, by the actuator receiving the command, of a feedback telegram to check whether the requested operation has been carried out or not. The telegram transmits the state of the actuator.	

Activation on closing / opening contact

It is used to configure the sending of telegrams when the input is active, on both "open" and closed "conditions and therefore following changes in state.
The parameters are identical to the choice “Activation on closing contact”; "Contact type" is missing and the "Command associated with closure" and "Command associated with opening" settings are simultaneously present because activation will occur following the occurrence of both conditions. For the settings, what has already been explained applies.
The page also makes available the **Feedback object** parameter already displayed for "Activation on closing contact" and the **Communication object on opening** parameter, described below.

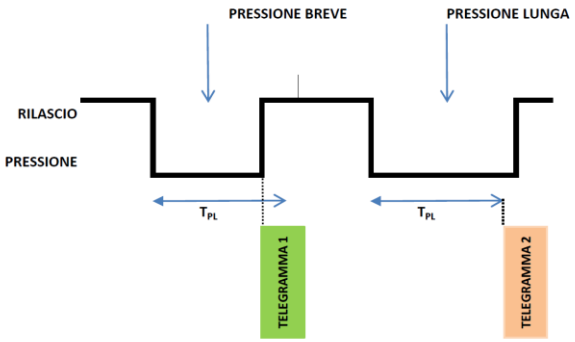
KNX PARAMETER	SETTINGS
Communication object on opening	disabled enabled
If enabled, this parameter is used to send the closing and opening commands on two different objects, respectively "<Input x> Closure Action" and "<Input x> Opening Action".	

Activation on short and long contact closing

With this input mode of operation it is possible to differentiate the actions based on the activation duration of the input itself. The distinction between "short closing" and "long closing" is defined by the parameter **Minimum time long closure**, according to the following table.

KNX PARAMETER	SETTINGS
Minimum time long closure	0.3 s 0.4 s 0.5 s 0.8 s 1 s 1.2 s 1.5 s 2 s 3 s 5 s 8 s 10 s
The time set from the drop-down menu is the time after which the BI16F01KNX device believes that activation is to be considered prolonged.	

It is possible to set the sending of telegrams with different values on the short and long closure or to decide to send commands only on one of these events.



When the button is pressed, the time count starts; if the button is released before the time exceeds the time T_{PL}, the device executes the command associated with the "short closing" event and if, instead, the timeout T_{PL} expires and the button is still being pressed, the command associated with the "long closing" event is executed.
The parameters and transmission modes of the telegrams that can be managed through the "Command associated with short closure" and "Command associated with long closure" settings are the same as those relating to the "Activation on pressing/release" configuration except for the cyclical send function, which is not foreseen here.

Dimming

With this mode of operation of the inputs it is possible to control adjustment of the light through a dimming module using the short and long press of buttons connected to the input itself.
Each button uses 2 communication objects:

- 1-bit objects for ON/OFF commands associated with short pressing.
- 4-bit objects for brightness adjustment associated with long pressing.

The "Minimum time long closure" parameter is the same as explained for "Activation on short and prolonged contact closure"; for this and for the setting "Feedback object" what has already been explained applies.
Two further parameters are available on the page, namely "Dimming adjustment mode" and "Dimming adjustment step", which define the behaviour associated with prolonged pressing according to the following table.

KNX PARAMETER	SETTINGS
Dimming adjustment mode	brighter darker brighter/darker
brighter Each time the input is activated, the dimming controls the increase in brightness according to the setting of **Dimming adjustment step**. **darker** Each time the input is activated, the dimming controls the decrease in brightness according to the setting of **Dimming adjustment step**. **brighter/darker** Each time the input is activated, the dimming reverses the progression of brightness by one step or in full according to the parameter setting **Dimming adjustment step**.	
Dimming adjustment step	Maximum/minimum brightness 1/2 brighter/darker ÷ 1/64 brighter/darker
Maximum/minimum brightness It sets the progressive adjustment from minimum to maximum and vice-versa depending on whether "Dimming adjustment mode" is "brighter" or "darker". **1/2 brighter/darker ÷ 1/64 brighter/darker** It sets the precision of the variation, which will occur depending on whether "Dimming adjustment mode" is "brighter" or "darker".	

Example 1: **Set the dimming control so that when the button is pressed the brightness gradually goes from minimum to maximum.**	
PARAMETER	**VALUE**
Dimming adjustment mode	brighter
Dimming adjustment step	Maximum/minimum brightness

Example 2: **Set the dimming control so that when the button is pressed, the brightness increases by 1/4.**	
PARAMETER	**VALUE**
Dimming adjustment mode	brighter
Dimming adjustment step	1/4 brighter, darker

Roller shutters and Venetian Blinds

Through this function it is possible to control motorised roller shutters and Venetian blinds using the short and long press of the buttons. Each input uses 2 communication objects:

- 1-bit STEP/STOP objects associated with short pressing;
- 1-bit UP/DOWN objects associated with long pressing.

For the settings common to all the other input operating modes, what has already been explained applies. The following table applies to the **Command drive shutter** parameter.

KNX PARAMETER	SETTINGS
Command drive shutter	move up move down move up/move down
It defines the movement direction of the roller shutter associated with the prolonged action on the input. **move up** Each time the input is activated, the module commands the total opening of the roller shutter. **move down** Each time the input is activated, the module commands the roller shutter to close. **move up/move down** Each time the input is activated, the module moves the roller shutter in the direction preceding the one performed following the last activation: if the previous closing of the input raised the roller shutter, further activation will lower it and vice-versa.	

Scene

In this configuration page it is possible to set the button for the management of the scenes: storage and execution of the scenes.
These two behaviours (storage and execution) are performed through two different actions: short closing and long closing of the input.

Saving by long closing can be enabled through the parameter **Minimum time long closure** and the related drop-down menu common to the other modes that is used to set the minimum activation duration of the input to be considered as prolonged closing (activation).
The following table applies to the scene settings.

KNX PARAMETER	SETTINGS
Scene number	1 ÷ 64
This parameter sets the value of the scene to be stored/executed (one per channel). As the output devices (i.e. the actuators, etc.) can generally manage different scenes, each identified by a value (which varies from 0 to 63) it is crucial to set this parameter correctly so that it corresponds to the number set on the actuators.	
Storing the scene with a long press	disabled/enabled
If disabled, the long closing is ignored and no telegram is sent on the bus; if enabled, when long closing occurs, a scene storage telegram is sent on the bus.	
Enable/disable object Sending of scene saving	disabled/enabled
If this parameter is enabled, there is a communication object (size = 1 bit) to enable/disable the sending of the "save scene" telegram from the bus. When this object receives a telegram "1", the function associated with the long closing of the input (sending of telegram for scene storage) is enabled, while when it receives a telegram "0" with prolonged closing no command is sent.	

Sequence commands

This function is used to associate sequences of different commands on the bus to the closing.

For each input, this function can be associated with the combination "short and long closing" or with the "switching" function.
The sequence consists of 3 commands (A-B-C) which can each be sized as 1 bit or 1 byte. Once their size (1 bit / 1 byte) has been defined, it is possible to associate different values to each element of the sequence or to decide to send commands only on one of the two events. The waiting time between one command and the next is defined - between 1 and 255 seconds - through the **Delay between two commands** parameter.
Each communication object can be linked to a different group address.
For example, it is possible to define a sequence as proposed in the following table.

object	dimension	short closing (switching 1)	long closing (switching 2)
A	1 bit	ON (towards actuators)	OFF (towards actuators)
B	1 bytes	100% (towards dimming)	0% (towards dimming)
C	1 bytes	COMFORT (towards thermostats)	ECONOMY (towards thermostats)

Commands in sequence (1 bit)

This function is used to send 1-bit command sequences on multiple objects. The sequence can be defined on 2 or 3 objects. Each time the button connected to the input is pressed, the next step of the defined sequence is sent.

KNX PARAMETER	SETTINGS
Number of objects	2, 3
This parameter sets and defines the number of 1-bit objects that will be visible and that will send the values 0 or 1 on the bus	
Number of steps in the sequence	2 ÷ 4 if the number of objects is 2

	2 ÷ 8 if the number of objects is 3
It indicates the number of steps that compose the sequence.	
Long closure to restart sequence	disabled/enabled
It is used to associate to the long closure of the input the action of restarting the sequence at step zero	
Restart function	Restart and send first step Send long press step and restart
Restart and send first step The long press determines the sending of step 1 **Send long press step and restart** The long press causes the next step to be sent and brings the sequence to the initial step.	
Value step long press	<Different combinations of values of objects a, b, c>
It defines what happens when a long press is performed (it depends on the "Restart function" parameter)	
Send only changed objects if value changes	disabled/enabled
This parameter defines whether, in the passage from one step to the next, all the values associated with one-bit objects must always be sent or only those that change.	
Value step <x>	Combinations of on and off on 2 or 3 1-bit objects
It determines the combination associated with a step in the sequence using 2 or 3 1-bit objects.	

Counter input

With this function it is possible to use the events at the corresponding input as a trigger for a counter and then to count them, for example to activate functions and send telegrams when a certain number of them occur.

Using the Counter Input function, it is possible to count the pulses of a contact connected to the input for which the function was activated.
The corresponding ETS page offers the options and parameters described below.
The **Software filter frequency** parameter is used to manage a software filter to count 2 pulses that are too close together as a single pulse; this is necessary when the contact connected to the input has a bounce for a certain time. The parameter is therefore used to introduce and customise any debouncing at the input for which the counter Input function is activated.

KNX PARAMETER	SETTINGS
Software filter frequency	No filter 20Hz ÷ 1 kHz
Allows software events to be filtered according to the specified frequency. **No filter** it does not activate the filter via software, while by choosing one of the values from the drop-down menu it is possible to choose a filter frequency of: 20 Hz 50 Hz 100 Hz 200 Hz 500 Hz 1 kHz	

Using the **Counter input size** parameter it is possible to define the counter input size (1, 2 or 4 Bytes), the initial value and the final value; in particular, the final value, i.e. the maximum number of events that can be counted before the overflow, depends on the choice made in the Counter Input Size drop-down menu.

KNX PARAMETER	SETTINGS
Counter input size	1 bytes 2 bytes 4 bytes
It is used to choose the counter input size, i.e. the maximum number of events that can be counted.	

The possibility of configuring the counter with a size from 1 to 4 bytes enables counting from a few to numerous events, therefore from short periods of time to whole days, offering maximum versatility for the monitoring of all types of events.

KNX PARAMETER	SETTINGS
End counter value	1÷255 1÷65535 1÷4294967295
It is used to decide at which value the counter should stop.	

The initial value can be set starting from 0 and up to one unit less than the final one.

Using the parameter "Condition of increase counter" it is possible to define whether to count only the rising and falling edges or both.

It is possible to associate the sending on the bus of a 1 bit or 1 Byte value each time the counter reaches the final value (overflow).
The counter can be reset via a 1-bit input object.

Set RGB colours

This function is used to briefly press the button connected to the corresponding input with a command on the bus to set an RGB colour through an RGB driver for LED lighting. The “RGB object type” parameter defines whether the command is sent with a single 3-byte object or with 3 1-byte objects. It is also possible to enable a function associated with the long press that is used to change the colour associated with the short press. During the long press, a colour transition takes place which is sent on the bus and upon release the selected colour is stored; this means that from now on, every time a short press is performed, the new colour is sent on the bus. When the device is turned off, the last selected colour is kept in memory. The "Enable colour sending during transition" option

is used to send all colour transitions during a long press so that each colour can be viewed on another device.

MUR/DND

This function is used to configure an input to send 1-bit commands with DND (do not disturb), MUR (make up room) or to restore both base signals. The action is set through the drop-down menu **Associated command** which is made available on the ETS page.
The choice of the “Associated command” parameter

KNX PARAMETER	SETTINGS
Start counter value	0÷255 0÷65535 0÷4294967294
It is used to decide whether the counter should start from zero or from a value that will be defined by the appropriate box.	

(“cmd” column of the following table) defines which values are sent on the 2 1-bit objects.

KNX PARAMETER	SETTINGS
Condition of increase counter	Rising edge Falling edge Rising and falling edge
It is used to set at which event the counter will be triggered.	

cmd	Action	DND	MUR	Note
MUR	enable	0	1	Obj. MUR send “1” Obj. DND send “0”
MUR	disab.	-	0	Obj. MUR send “0”
MUR	toggle	MUR enable/disable In sequence		
DND	enable	1	0	Obj. MUR send “0” Obj. DND send “1”
DND	disab.	0	-	Obj. DND send “0”
DND	toggle	DND enable/disable In sequence		
Loop		0	1	Loop in sequence between these 3 sets of values.
		1	0	
		0	0	

The **Reset all** setting (default) sends a "0" command on both the MUR and DND objects, disabling the respective functions.

The **Additional object** parameter is also available on the ETS page, which is used to associate a colour to each of the 3 states (active DND, active MUR, inactive MUR and DND); this colour is sent on the bus using a 3Byte DPT object 232.600 RGB value 3x (0...255).
The following table summarises the parameter setting.

KNX PARAMETER	SETTINGS
Additional object	None RGB
None does not activate any additional objects while clicking on **RGB** the setting appears on the page **Colour associated with...** in whose box it is possible to write the hexadecimal equivalent of the colour to be associated with the action for which the additional object has been enabled (MUR, DND, loop) or to select the colour from the palette that appears by clicking on the button with the four coloured squares. The setting **Colour associated with "reset all"** is also made available where, in the same way as those just described, the colour of the light displayed following the reset command is set.	

Values in loop (1 byte)

With this function it is possible to configure an input to send a 1-byte value in sequence. The sequence consists of a number of values between 3 and 9. Each time the input is activated (according to the "Active edge" setting), a value is sent following the order set in ETS: from the first (A) to the last (I). The number of values sent depends on the setting of the "Number of elements (values)" parameter.
The following two items are made available for this mode.

<Input x> Command Value	1 byte – 0..255| CW
This object is dedicated to sending the step-by-step sequence.	
< Input x> Value State:	1 byte – 0..255| CRT
This object is used to receive a value from the bus; if it corresponds to a value set in the sequence, it takes the sequence itself to the corresponding step.	

8. Global objects

The following communication object is available for the global functions, relating to the inputs:

<Global> Enable	1 bit - Enable/Disable | CRT

There is also an object <General no Line/Lack voltage> which allows the sending of an alarm telegram in case of detection of a 230VAC power failure.

<General> No Line/Voltage	1 bit - No Alarm/Alarm | CRT

In this condition, the BI16F01KNX device is still able to communicate on the bus and send the telegram, but it cannot read the status of the inputs.

9. Logics

The module allows the association of 16 logics. For a description of the logics present and how to use them, consult the Application Note on the website called "Logic Functions".
It should be noted that if the Virtual Holder function (described below) is enabled in **General Parameters**, the available logics start from 5; then they become 11 instead of 16. The communication objects available in this case become those from 5 onwards (see table at the end of this document).

10. Virtual holder (automatic presence function)

The Virtual Holder function is activated by enabling the **Use virtual holder** parameter on the General Parameters page, i.e. by clicking on the "yes" option button.
The typical field of application is the hotel room where, using this function, it is possible not to install the badge-holder pocket of the access control system.

This logic module provides a series of parameters and communication objects which, when suitably configured, make it possible to recognise whether a person is occupying the room or not.

The entry of one or more persons into the room is recognised when the door is opened; if upon the next closing the presence of the guest is still detected, the logic module considers the guest as being in the room. To make this logic function, the following are at least required:

- a door contact for each door of the room, which must be detected by a KNX device that sends the value “0” on the bus when the door is closed and the value 1 when the door is opened;
- at least one presence detector for each area, KNX or conventional with clean contact output to be connected to a KNX input (this device must send the value "1" on the bus when the presence is detected and the value 0 when the presence is no longer detected) possibly also of the BI16F01KNX.

For a description of the "Virtual Holder" function and its methods of use, consult the Application Note called "Virtual Holder" on the website.

11. Communication objects available for the module

The following table shows the communication objects available in the BI16F01KNX; for the purpose of brevity, each category is shown, therefore a set of objects per input, a set of objects per logic and so on, it being understood that what has been explained, for example, for input 1 applies to 2, 3 ... 16 and the same for the logic. The indices are the default ones if other objects with a similar index are not active.

Number	Name	Object Function	Length	Priority	Flags	Type of Datum (DPT)
0	<Global> Enable	Enable/Disable	1 Bit	Low	CW	DPT_Enable
2	<General> No Line/Voltage	No Alarm/Alarm	1 Bit	Low	CRT	DPT_Alarm
4	<Input 1> Counter		1÷4 byte	Low	CRT	
5	<Input 1> Counter Reset		1 bit	Low	CW	
4	<Input 1> Counter	4 Bytes	4 Bytes	Low	RCT	DPT_Value_4_Ucount
4	<Input 1> RGB	3 Bytes	3 Bytes	Low	RCT	DPT_Colour_RGB
4	<Input 1> Counter	2 Bytes	2 Bytes	Low	RCT	DPT_Value_2_Ucount
4	<Input 1> Counter	1 Byte	1 Byte	Low	RCT	DPT_Value_1_Ucount
4	<Input 1> Red	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
4	<Input 1> Closure Action	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
4	<Input 1> Opening Action	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
4	<Input 1> Closure Action	0-100%	1 Byte	Low	RCT	DPT_Scaling
4	<Input 1> Opening Action	0-100%	1 Byte	Low	RCT	DPT_Scaling
4	<Input 1> Closure Action	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode
4	<Input 1> Opening Action	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode
4	<Input 1> Closure Action - Opening	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
4	<Input 1> Closure Action - Opening	0-100%	1 Byte	Low	RCT	DPT_Scaling
4	<Input 1> Closure Action - Opening	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode
4	<Input 1> Short Closure	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
				Low		
4	<Input 1> Short Closure	0-100%	1 Byte	Low	RCT	DPT_Scaling
4	<Input 1> Short Closure	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode
4	<Input 1> Short - Long Closure	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
4	<Input 1> Short - Long Closure	0-100%	1 Byte	Low	RCT	DPT_Scaling
4	<Input 1> Short - Long Closure	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode
4	<Input 1> Recall/Store Scene	Scene	1 Byte	Low	RCT	DPT_SceneControl
4	<Input 1> Sequence Command A 0-255	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
4	<Input 1> Sequence Command A 0-100%	0-100%	1 Byte	Low	RCT	DPT_Scaling
4	<Input 1> Sequence Command A HVAC Mode	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode

4	<Input 1> Sequence Command A 0-255 Toggle	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
4	<Input 1> Sequence Command A 0-100% Toggle	0-100%	1 Byte	Low	RCT	DPT_Scaling
4	<Input 1> Sequence Command A HVAC Mode Toggle	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode
4	<Input 1> Closure Action	Off/On	1 Bit	Low	RWCT	DPT_Switch
4	<Input 1> Opening Action	Off/On	1 Bit	Low	RWCT	DPT_Switch
4	<Input 1> Closure Action - Opening	Off/On	1 Bit	Low	RWCT	DPT_Switch
4	<Input 1> Short Closure	Off/On	1 Bit	Low	RWCT	DPT_Switch
4	<Input 1> Short - Long Closure	Off/On	1 Bit	Low	RWCT	DPT_Switch
4	<Input 1> Dimming On/Off	Off/On	1 Bit	Low	RWCT	DPT_Switch
4	<Input 1> Object A	Off/On	1 Bit	Low	RCT	DPT_Switch
4	<Input 1> Roller Blinds - Up/Down	Up/Down	1 Bit	Low	RWCT	DPT_UpDown
4	<Input 1> Sequence Command A Off/On	Off/On	1 Bit	Low	RCT	DPT_Switch
4	<Input 1> Sequence Command A Off/On Toggle	Off/On	1 Bit	Low	RCT	DPT_Switch
4	<Input 1> Make Up Room (MUR)	Off/On	1 Bit	Low	RWCT	DPT_Switch
5	<Input 1> Green	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
5	<Input 1> Long Closure	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
5	<Input 1> Long Closure	0-100%	1 Byte	Low	RCT	DPT_Scaling
5	<Input 1> Long Closure	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode
5	<Input 1> Opening Action	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
5	<Input 1> Opening Action	0-100%	1 Byte	Low	RCT	DPT_Scaling
5	<Input 1> Opening Action	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode
5	<Input 1> Sequence Command B 0-255	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
5	<Input 1> Sequence Command B 0-100%	0-100%	1 Byte	Low	RCT	DPT_Scaling
5	<Input 1> Sequence Command B HVAC Mode	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode
5	<Input 1> Sequence Command B 0-255 Toggle	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
5	<Input 1> Sequence Command B 0-100% Toggle	0-100%	1 Byte	Low	RCT	DPT_Scaling
5	<Input 1> Sequence	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode

	Command B HVAC Mode Toggle					
5	<Input 1> Loop - Command Value	Loop Value Output	1 Byte	Low	RCT	DPT_Value_1_Ucount
5	<Input 1> Dimming Control	Brighter/Darker	4 Bit	Low	RCT	DPT_Control_Dimming
5	<Input 1> Long Closure	Off/On	1 Bit	Low	RWCT	DPT_Switch
5	<Input 1> Opening Action	Off/On	1 Bit	Low	RWCT	DPT_Switch
5	<Input 1> Object B	Off/On	1 Bit	Low	RCT	DPT_Switch
5	<Input 1> Roller Blinds - Step/Stop	Step/Stop	1 Bit	Low	RCT	DPT_Step
5	<Input 1> Sequence Command B Off/On	Off/On	1 Bit	Low	RCT	DPT_Switch
5	<Input 1> Sequence Command B Off/On Toggle	Off/On	1 Bit	Low	RCT	DPT_Switch
5	<Input 1> Send Scene Learning	Disable/Enable	1 Bit	Low	WC	DPT_Enable
5	<Input 1> Counter Reset	Reset	1 Bit	Low	WC	DPT_Reset
5	<Input 1> Do Not Disturb (DND)	Off/On	1 Bit	Low	RWCT	DPT_Switch
6	<Input 1> RGB Additional Object	3 Bytes	3 Bytes	Low	RCT	DPT_Colour_RGB
6	<Input 1> Blue	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
6	<Input 1> Sequence Command C 0-255	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
6	<Input 1> Sequence Command C 0-100%	0-100%	1 Byte	Low	RCT	DPT_Scaling
6	<Input 1> Sequence Command C HVAC Mode	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode
6	<Input 1> Sequence Command C 0-255 Toggle	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
6	<Input 1> Sequence Command C 0-100% Toggle	0-100%	1 Byte	Low	RCT	DPT_Scaling
6	<Input 1> Sequence Command C HVAC Mode Toggle	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode
6	<Input 1> Out Overflow Counter	0-255	1 Byte	Low	RCT	DPT_Value_1_Ucount
6	<Input 1> Out Overflow Counter	0-100%	1 Byte	Low	RCT	DPT_Scaling
6	<Input 1> Out Overflow Counter	HVAC Mode	1 Byte	Low	RCT	DPT_HVACMode
6	<Input 1> Loop - Value Status	Loop Value Feedback	1 Byte	Low	WC	DPT_Value_1_Ucount

6	<Input 1> Sequence Command C Off/On	Off/On	1 Bit	Low	RCT	DPT_Switch
6	<Input 1> Sequence Command C Off/On Toggle	Off/On	1 Bit	Low	RCT	DPT_Switch
6	<Input 1> Feedback	Off/On	1 Bit	Low	CW	DPT_Switch
6	<Input 1> Feedback	Off/On	1 Bit	Low	CW	DPT_Switch
6	<Input 1> Feedback	Off/On	1 Bit	Low	CW	DPT_Switch
6	<Input 1> Feedback	Off/On	1 Bit	Low	CW	DPT_Switch
6	<Input 1> Feedback	Up/Down	1 Bit	Low	CW	DPT_UpDown
6	<Input 1> Object C	Off/On	1 Bit	Low	RCT	DPT_Switch
6	<Input 1> Out Overflow Counter	Off/On	1 Bit	Low	RCT	DPT_Switch
7	<Input 1> Enable Input	Disable/Enable	1 Bit	Low	WC	DPT_Enable
9	<Input 1> Alarm	No Alarm/Alarm	1 Bit	Low	CRT	DPT_Alarm
100	<Logic 1> Output 4Byte Count	Output 4Byte Count	4 Bytes	Low	RCT	DPT_Value_4_Count
100	<Logic 1> Output 4Byte UCount	Output 4Byte UCount	4 Bytes	Low	RCT	DPT_Value_4_Ucount
100	<Logic 1> Output 4Byte Float	Output 4Byte Float	4 Bytes	Low	RCT	DPT_Value_Power
100	<Logic 1> Surveillance Input	Input 4Byte Count	4 Bytes	Low	WC	DPT_Value_4_Count
100	<Logic 1> Surveillance Input	Input 4Byte UCount	4 Bytes	Low	WC	DPT_Value_4_Ucount
100	<Logic 1> Surveillance Input	Input 4Byte Float	4 Bytes	Low	WC	DPT_Value_Power
100	<Logic 1> Output 2Byte Count	Output 2Byte Count	2 Bytes	Low	RCT	DPT_Value_2_Count
100	<Logic 1> Output 2Byte UCount	Output 2Byte UCount	2 Bytes	Low	RCT	DPT_Value_2_Ucount
100	<Logic 1> Output 2Byte Float	Output 2Byte Float	2 Bytes	Low	RCT	DPT_Value_Temp
100	<Logic 1> Temperature Input	Value °C	2 Bytes	Low	WC	DPT_Value_Temp
100	<Logic 1> Temperature Input	Value °C	2 Bytes	Low	WC	DPT_Value_Temp
100	<Logic 1> Surveillance Input	Input 2Byte Count	2 Bytes	Low	WC	DPT_Value_2_Count
100	<Logic 1> Surveillance Input	Input 2Byte UCount	2 Bytes	Low	WC	DPT_Value_2_Ucount
100	<Logic 1> Surveillance Input	Input 2Byte Float	2 Bytes	Low	WC	DPT_Value_Temp
100	<Logic 1> Output	1 Byte	1 Byte	Low	RCT	DPT_Value_1_Ucount
100	<Logic 1> Count Output	Count Output	1 Byte	Low	RCT	DPT_Value_1_Count

100	<Logic 1> Ucount Output	Ucount Output	1 Byte	Low	RCT	DPT_Value_1_Ucount
100	<Logic 1> % Value Output	Value %	1 Byte	Low	RCT	DPT_Scaling
100	<Logic 1> % Value Input	Value %	1 Byte	Low	WC	DPT_Scaling
100	<Logic 1> Surveillance Input	Count Input	1 Byte	Low	WC	DPT_Value_1_Count
100	<Logic 1> Surveillance Input	Input UCount	1 Byte	Low	WC	DPT_Value_1_Ucount
100	<Logic 1> Output	1 Bit	1 Bit	Low	RCT	DPT_Bool
100	<Logic 1> Output	Logic	1 Bit	Low	RCT	DPT_Bool
100	<Logic 1> Bit Output	Bit Output	1 Bit	Low	RCT	DPT_Bool
100	<Logic 1> Surveillance Input	Bit Input	1 Bit	Low	WC	DPT_Switch
100	<Logic 1> Semiautomatic Command	Off/On	1 Bit	Low	WC	DPT_Switch
100	<VH> Room Reserved	Room Reserved	1 Bit	Low	WC	DPT_Bool
101	<Logic 1> Input	4 Bytes	4 Bytes	Low	WC	DPT_Value_Power
101	<Logic 1> Input A 4Byte Count	Input A 4Byte Count	4 Bytes	Low	WC	DPT_Value_4_Count
101	<Logic 1> Input A 4Byte UCount	Input A 4Byte UCount	4 Bytes	Low	WC	DPT_Value_4_Ucount
101	<Logic 1> Input A 4Byte Float	Input A 4Byte Float	4 Bytes	Low	WC	DPT_Value_Power
101	<Logic 1> Status Input	Input 4Byte Count	4 Bytes	Low	WC	DPT_Value_4_Count
101	<Logic 1> Status Input	Input 4Byte UCount	4 Bytes	Low	WC	DPT_Value_4_Ucount
101	<Logic 1> Status Input	Input 4Byte Float	4 Bytes	Low	WC	DPT_Value_Power
101	<Logic 1> Input	2 Bytes	2 Bytes	Low	WC	DPT_Value_Temp
101	<Logic 1> Input A 2Byte Count	Input A 2Byte Count	2 Bytes	Low	WC	DPT_Value_2_Count
101	<Logic 1> Input A 2Byte UCount	Input A 2Byte UCount	2 Bytes	Low	WC	DPT_Value_2_Ucount
101	<Logic 1> Input A 2Byte Float	Input A 2Byte Float	2 Bytes	Low	WC	DPT_Value_Temp
101	<Logic 1> Setpoint Input	Value °C	2 Bytes	Low	WC	DPT_Value_Temp
101	<Logic 1> Relative Humidity Input	Humidity	2 Bytes	Low	WC	DPT_Value_Humidity
101	<Logic 1> Status Input	Input 2Byte Count	2 Bytes	Low	WC	DPT_Value_2_Count
101	<Logic 1> Status Input	Input 2Byte UCount	2 Bytes	Low	WC	DPT_Value_2_Ucount
101	<Logic 1> Status Input	Input 2Byte Float	2 Bytes	Low	WC	DPT_Value_Temp
101	<Logic 1> Input	1 Byte	1 Byte	Low	WC	DPT_Value_1_Ucount
101	<Logic 1> Input A Count	Input A Count	1 Byte	Low	WC	DPT_Value_1_Count
101	<Logic 1> Input A UCount	Input A UCount	1 Byte	Low	WC	DPT_Value_1_Ucount

101	<Logic 1> Input HVAC	Comf/Standby/Eco/Protection	1 Byte	Low	WC	DPT_HVACMode
101	<Logic 1> Status Input	Count Input	1 Byte	Low	WC	DPT_Value_1_Count
101	<Logic 1> Status Input	Input UCount	1 Byte	Low	WC	DPT_Value_1_Ucount
101	<Logic 1> Input	1 Bit	1 Bit	Low	WC	DPT_Bool
101	<Logic 1> Input	Logic	1 Bit	Low	WC	DPT_Bool
101	<Logic 1> Input A	Logic	1 Bit	Low	WC	DPT_Bool
101	<Logic 1> Input A Bit	Input A Bit	1 Bit	Low	WC	DPT_Bool
101	<Logic 1> Input Speed 1	Off/On	1 Bit	Low	WC	DPT_Switch
101	<Logic 1> Output Speed 1	Off/On	1 Bit	Low	RCT	DPT_Switch
101	<Logic 1> Status Input	Bit Input	1 Bit	Low	WC	DPT_Switch
101	<Logic 1> Presence Command	Off/On	1 Bit	Low	WC	DPT_Switch
101	<VH> Global Enabling	Enable Remote Input (Global Enabling)	1 Bit	Low	WC	DPT_Bool
102	<Logic 1> Input B 4Byte Count	Input B 4Byte Count	4 Bytes	Low	WC	DPT_Value_4_Count
102	<Logic 1> Input B 4Byte UCount	Input B 4Byte UCount	4 Bytes	Low	WC	DPT_Value_4_Ucount
102	<Logic 1> Input B 4Byte Float	Input B 4Byte Float	4 Bytes	Low	WC	DPT_Value_Power
102	<Logic 1> Input B 2Byte Count	Input B 2Byte Count	2 Bytes	Low	WC	DPT_Value_2_Count
102	<Logic 1> Input B 2Byte UCount	Input B 2Byte UCount	2 Bytes	Low	WC	DPT_Value_2_Ucount
102	<Logic 1> Input B 2Byte Float	Input B 2Byte Float	2 Bytes	Low	WC	DPT_Value_Temp
102	<Logic 1> Regulation Temperature Input	Value °C	2 Bytes	Low	WC	DPT_Value_Temp
102	<Logic 1> Measured Lighting	Lux	2 Bytes	Low	WC	DPT_Value_Lux
102	<Logic 1> Input B Count	Input B Count	1 Byte	Low	WC	DPT_Value_1_Count
102	<Logic 1> Input B UCount	Input B UCount	1 Byte	Low	WC	DPT_Value_1_Ucount
102	<Logic 1> Input B	Logic	1 Bit	Low	WC	DPT_Bool
102	<Logic 1> Input B Bit	Input B Bit	1 Bit	Low	WC	DPT_Bool
102	<Logic 1> Heat./Cool. Input	Heat./Cool.	1 Bit	Low	WC	DPT_Heat_Cool
102	<Logic 1> Input Speed 2	Off/On	1 Bit	Low	WC	DPT_Switch
102	<Logic 1> Output Speed 2	Off/On	1 Bit	Low	RCT	DPT_Switch
102	<Logic 1> Reset Input	Off/On	1 Bit	Low	WC	DPT_Switch
102	<VH> Presence Output	Presence Output	1 Bit	Low	RCT	DPT_Bool
103	<Logic 1> Input C 4Byte Count	Input C 4Byte Count	4 Bytes	Low	WC	DPT_Value_4_Count

103	<Logic 1> Input C 4Byte UCount	Input C 4Byte UCount	4 Bytes	Low	WC	DPT_Value_4_Ucount
103	<Logic 1> Input C 4Byte Float	Input C 4Byte Float	4 Bytes	Low	WC	DPT_Value_Power
103	<Logic 1> Input C 2Byte Count	Input C 2Byte Count	2 Bytes	Low	WC	DPT_Value_2_Count
103	<Logic 1> Input C 2Byte UCount	Input C 2Byte UCount	2 Bytes	Low	WC	DPT_Value_2_Ucount
103	<Logic 1> Input C 2Byte Float	Input C 2Byte Float	2 Bytes	Low	WC	DPT_Value_Temp
103	<Logic 1> Dew Point Temperature Output	Value °C	2 Bytes	Low	RCT	DPT_Value_Temp
103	<Logic 1> Lighting setpoint	Lux	2 Bytes	Low	WC	DPT_Value_Lux
103	<Logic 1> Input C Count	Input C Count	1 Byte	Low	WC	DPT_Value_1_Count
103	<Logic 1> Input C UCount	Input C UCount	1 Byte	Low	WC	DPT_Value_1_Ucount
103	<Logic 1> Output Valve %	Value %	1 Byte	Low	RCT	DPT_Scaling
103	<Logic 1> Output Heat. Valve %	Value %	1 Byte	Low	RCT	DPT_Scaling
103	<VH> HVAC Output	Output HVAC	1 Byte	Low	RCT	DPT_HVACMode
103	<Logic 1> Input C Bit	Input C Bit	1 Bit	Low	WC	DPT_Bool
103	<Logic 1> Input Speed 3	Off/On	1 Bit	Low	WC	DPT_Switch
103	<Logic 1> Output Speed 3	Off/On	1 Bit	Low	RCT	DPT_Switch
103	<Logic 1> Alarm Output	Off/On	1 Bit	Low	RCT	DPT_Switch
104	<Logic 1> Input D 4Byte Count	Input D 4Byte Count	4 Bytes	Low	WC	DPT_Value_4_Count
104	<Logic 1> Input D 4Byte UCount	Input D 4Byte UCount	4 Bytes	Low	WC	DPT_Value_4_Ucount
104	<Logic 1> Input D 4Byte Float	Input D 4Byte Float	4 Bytes	Low	WC	DPT_Value_Power
104	<Logic 1> Input D 2Byte Count	Input D 2Byte Count	2 Bytes	Low	WC	DPT_Value_2_Count
104	<Logic 1> Input D 2Byte UCount	Input D 2Byte UCount	2 Bytes	Low	WC	DPT_Value_2_Ucount
104	<Logic 1> Input D 2Byte Float	Input D 2Byte Float	2 Bytes	Low	WC	DPT_Value_Temp
104	<Logic 1> Input D Count	Input D Count	1 Byte	Low	WC	DPT_Value_1_Count
104	<Logic 1> Input D UCount	Input D UCount	1 Byte	Low	WC	DPT_Value_1_Ucount
104	<Logic 1> Output Cool. Valve %	Value %	1 Byte	Low	RCT	DPT_Scaling
104	<Logic 1> % Value Output	Value %	1 Byte	Low	RCT	DPT_Scaling
104	<Logic 1> Brightness Output	Value 0-100%	1 Byte	Low	RCT	DPT_Scaling
104	<VH> Additional Output	Additional Output	1 Byte	Low	RCT	DPT_Value_1_Ucount

104	<VH> Additional Output	Additional Output	1 Byte	Low	RCT	DPT_Scaling
104	<VH> Additional Output	Additional Output	1 Byte	Low	RCT	DPT_SceneNumber
104	<Logic 1> Input D Bit	Input D Bit	1 Bit	Low	WC	DPT_Bool
104	<Logic 1> Enable/Disable Input	Disable/Enable	1 Bit	Low	WC	DPT_Enable
104	<Logic 1> Command Output	Off/On	1 Bit	Low	RCT	DPT_Switch
106	<VH> Presence Client (Type 1)	<VH> Presence Client (Type 1)	1 bit	Low	CRT	DPT_Bool
107	<VH> Signalling Client (Type1)	Signalling Client (Type1)	1 bit	Low	CW	DPT_Bool
108	<VH> Presence Service (Type2)	Presence Service (Type2)	1 bit	Low	CRT	DPT_Bool
109	<VH> Service Signalling (Type2)	Service Signalling (Type2)	1 bit	Low	CW	DPT_Bool
110	<VH> Presence Maintenance (Type3)	Presence Maintenance (Type3)	1 bit	Low	CRT	DPT_Bool
111	<VH> Maintenance Signalling (Type3)	Maintenance Signalling (Type3)	1 bit	Low	CW	DPT_Bool