

| Binary Inputs N 26xDx1

KNX Use Cases



Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

Features

- **Binary inputs N 262 with 4 or 8 potential-free contacts** serve as an interface for operating KNX systems by means of potential-free binary signals detected by conventional switches, push-buttons and window/door contacts, for example. In addition, the binary inputs are used to detect switching or system states, or to count pulses.
- Internally generated pulsed polling voltage for connecting potential-free contacts
- **Binary inputs N 263 with 4 or 8 wide-range inputs for AC/DC 10...230 V** serve as an interface for operating KNX systems by means of conventional voltage-loaded push-buttons, switches, motion detectors, room temperature controllers
- Separate ground connection for each channel in case of the wide-range voltage inputs
- Test contacts for voltage testing for each channel in case of the wide-range voltage inputs
- Maintenance-free terminals for time-saving line installation
- for connecting and looping through solid, stranded and fine-stranded conductors, 0.5 to 2.5 mm²
- Clear arranged direct operation and status display on the front by means of film keyboard and LEDs for simulating input states during commissioning, without connecting conventional push-buttons, switches or potential-free contacts
- Power supply for electronics only from KNX bus voltage
- Extensive operating and control functions such as switching, dimming, solar protection control, sending different values, scene and effect control, color temperature control, forced control, group control, multiple actuation etc.
- Detection and counting pulses with threshold monitoring and difference counting for two neighboring channels
- Logic operations per input



**Download the technical
documentation and product
database for the ETS:**

[N 262](#)

[N 263](#)

Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

KNX Use Cases

Use Cases

- 1.- Office room with dimmed lighting, solar protection and evaluation of window contacts for climate control
- 2.- Commerce with DALI lighting: Tunable White and effects
- 3.- Building hall with counting people function and automatic lighting control
- 4.- System Integrator wants to test, without wiring, the commissioned functions

You will learn device functions through practical case scenarios

The use of the functions in each Use Case is only an example to know the device. These functions are combinable and can be used not only in another Use Case, but also in other applications not represented here

One ETS project with the configured Use Cases is available and, in this document, each use case indicates with an * where to find the required parameters

Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

Structure

For each Use Case you will find three pages

- Page 1 of 3
 - Requirements, what the customer is asking for
 - Proposal, what we can offer
- Page 2 of 3
 - Solution, how we meet the demanded requirements
 - Notes, where to find the parameters in the ETS project
- Page 3 of 3
 - Other related features of the binary inputs, what else could be achieved with the devices
 - Other options for the Use Case, what other products we have for the solution

Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

1.- Office room with dimmed lighting, solar protection and evaluation of window contacts for climate control

Requirements

- Manual dimming control of four lights with four conventional push buttons
- Adapt the dimming curve to the lights, which in this case require a smooth curve
- Manual control of four blinds with four conventional push buttons
- Evaluation of four windows
 - If a window is open, the VRF system must be stopped

Proposal

- 2 x Binary Input [N 262D51](#)
- Binary Input [N 262D31](#)
- Universal dimmer [N 554D31](#)
- Solar protection actuator [N 543D31](#)
- Touch Control TC5 [UP 205/21](#)
- 4 x Door/window contact [S 290](#)
- VRF KNX Interface



Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

1.- Office room with dimmed lighting, solar protection and evaluation of window contacts for climate control

Manual dimming control of four lights with four conventional push buttons

- The push buttons are connected to the binary input, which has their channels configured as pairwise* with the dimming function**

Adapt the dimming curve to the lights, which in this case require a smooth curve

- The dimming curve is configured*** and acts like a correction factor. Lamps can therefore be dimmed brighter/darker in the medium dimming range in order to adapt the dimming quality of LEDs, for example, to the dimming behavior of incandescent lamps

Manual control of four blinds with four conventional push buttons

- The push buttons are connected to the binary input, which has their channels configured as pairwise* with the solar protection function****

Evaluation of four windows: If a window is open, the VRF system must be stopped

- Four windows with normally open contacts S 290 are connected to the binary input, which send the windows status***** to a logic function configured in the TC5 room unit*****. If one of the windows is open, then the TC5 stops the VRF system

Check out the ETS Project -> Use Case 1

*1.1.1 -> Device Settings -> Function channels
A+B/C+D/E+F/G+H

**1.1.1 -> Channels A+B/C+D/E+F/G+H -> Function, objects ->
Function channels

***1.1.5 -> A/B/C/D Dimming -> Normal mode -> Dimming curve

****1.1.2 -> Channels A+B/C+D/E+F/G+H Function, objects ->
Function channels

*****1.1.1 -> Input 2

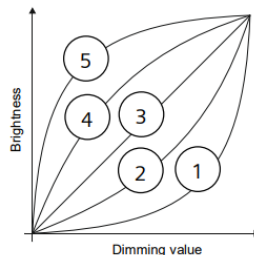
*****1.1.3 Channel A/B/C/D -> Function, objects -> Function
channels

*****1.1.4 Logic function -> No.1

Dimming curves

The following settings are possible:

- **Smooth 2:**
Setting of a dimming curve, see curve (1)
- **Smooth 1:**
Setting of a dimming curve, see curve (2)
- **Linear:**
Setting of a dimming curve, see curve (3)
- **Progressive 1:**
Setting of a dimming curve, see curve (4)
- **Progressive 2:**
Setting of a dimming curve, see curve (5)
- **User-defined:**



Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

1.- Office room with dimmed lighting, solar protection and evaluation of window contacts for climate control

Other related features of the Binary Input N 262

- One channel for dimming, instead of two. The conventional button would work as a toggle switch for switching/dimming the light
- One channel for solar protection, instead of two. The conventional button would work as a toggle switch to move the blind up/down
- Scene. To call scenes configured in the TC5 room unit
- Sequence to switch the lamps on/off in succession
- Multi-touch to switch the lamps on/off at short intervals when the switch is pressed several times

Other options for the Use Case

- Binary Input [N 263D51](#) or [N 263D31](#) , when AC/DC 10...230 V is required instead of potential free
- KNX/DALI Gateway [N 141/xx](#) if DALI ECGs are used
- Switch-/Dim Actuators [N 536Dx1](#) 4 x AC 230 V, 1...10 V

Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

2.- Commerce with DALI lighting: Tunable White and effects

Requirements

- Manual dimming and color temperature control of two group of lights with four conventional push buttons
- Two scenes and two effects with the lights, all of them called from conventional push buttons

Proposal

- Binary Input [N 262D51](#)
- Binary Input [N 262D31](#)
- KNX/DALI Gateway [N 141/03](#)



Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

2.- Commerce with DALI lighting: Tunable White and effects

Manual dimming and color temperature control of two group of lights with four conventional push buttons

- Two push buttons are connected to the binary input, which has their channels configured as pairwise* with the dimming function**
- Two push buttons are connected to the binary input, which has their channels configured as single*** with the color temperature control function****. One push button will “warm” and the other will “cool” the color temperature to the limits configured in the KNX/DALI Gateway*****

Two scenes and two effects with the lights, all of them called from conventional push buttons

- The push buttons are connected to the binary input, which has their channels configured as single, two for scene 1 and 2 and two for the effect controller function (start and stop)*****
- The scene and effects are configured in the KNX/DALI Gateway, having different lighting scenarios and sequences***** using dimming and/or color temperature values. This can be useful in [Human Centric Lighting applications](#)

Check out the ETS Project -> Use Case 2

*1.2.1 -> Device Settings -> Function channels A+B/C+D

**1.2.1 -> Channels A+B/C+D -> Function, objects -> Function channels

***1.2.1 -> Device Settings -> Function channels E+F/G+H

**1.2.1 -> Channels E+F/G+H-> Function, objects -> Function channels

*****1.2.3 -> Channel A -> Group 1/2 -> Color temperature

*****1.2.2 Channel A/B/C/D -> Function, objects -> Function channels

*****1.2.3 Scenes and Effect control

Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

2.- Commerce with DALI lighting: Tunable White and effects

Other related features of the Binary Input N 262

- One channel for dimming, instead of two. The conventional button would work as a toggle switch for switching/dimming the light
- Sequence to switch the lamps on/off in succession
- Multi-touch to switch the lamps on/off at short intervals when the switch is pressed several times
- Color temperature values could be also sent by short or long press

Other options for the Use Case

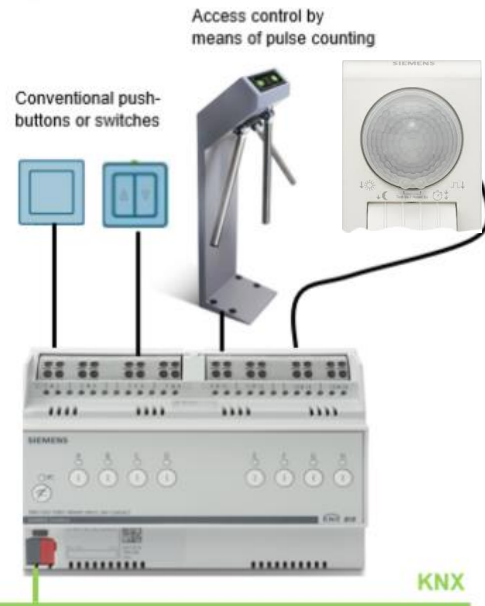
- Binary Input [N 263D51](#) or [N 263D31](#) , when AC/DC 10...230 V is required instead of potential free

Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

3.- Building hall with counting people function and automatic lighting control

Requirements

- Automatic control of one light with a conventional presence detector but with the possibility of manual override
- Individual and general manual switch on/off for the rest of the three lights
- Count the number of people entering and leaving the building, knowing at any given time, the exact number of people inside the building



Proposal

- Binary Input [N 262D51](#)
- Switching actuator [N 532D31](#)
- IP Control Center [N 152](#)



Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

3.- Building hall with counting people function and automatic lighting control

Automatic control of one light with a conventional presence detector but with the possibility of manual override

- A conventional presence detector has its relay connected to the binary input to switch the light on/off by motion detection*
- A push button connected to the binary input can override the movement by forcing the switching actuator**

Individual and general manual switch on/off for the rest of the three lights

- Four push buttons are connected to the binary input, which has its channels configured with the switching function to manually control the lights***

Count the number of people entering and leaving the building, knowing at any given time, the exact number of people inside the building

- The access turnstile closes its relays when people enter and leave the building. These relays are connected to the binary input, which can count the pulses (people) and generate a count difference that is actually the number of people inside the building****
- The KNX visualization can show the number of persons and display and send alarms if there are more than a certain number of persons

Check out the ETS Project -> Use Case 3

*1.3.1 -> Channel E -> Function, objects -> Function channel

**1.3.1 -> Channel F -> Function channel

**1.3.2 -> D Switching -> Override 1, Forced control

***1.3.1 Channels A/B/C/D -> Function, objects -> Function channels

****1.3.1 Channels G + H -> Function, objects -> Function channel and Differential counting

Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

3.- Building hall with counting people function and automatic lighting control

Other related features of the Binary Input N 262

- Dimming lights
- Tunable White
- Use counting limits directly in the binary input (Check Differential counting -> Above and below limit)

Other options for the Use Case

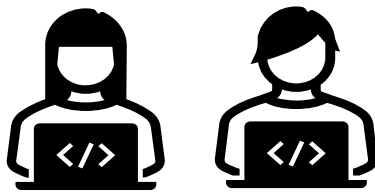
- Binary Input [N 263D51](#) or [N 263D31](#) , when AC/DC 10...230 V is required instead of potential free
- KNX/DALI Gateway [N 141/xx](#) if DALI ECGs are used
- Switch-/Dim Actuators [N 536Dx1](#) 4 x AC 230 V, 1...10 V

Binary inputs N 262, potential-free and N 263, AC/DC 10...230 V

4.- System Integrator wants to test, without wiring, the commissioned functions

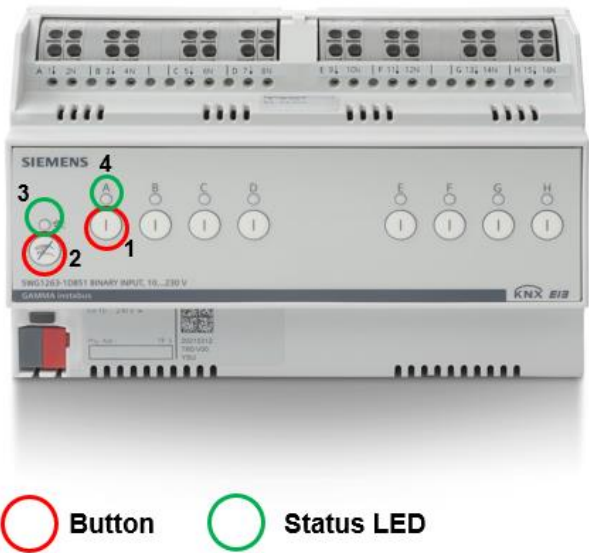
Requirements

- Test all the commissioned functions with the ETS but without need of any wiring



Proposal

- Any Binary Input [N 262](#) or [N 263](#)



Pos.	Operating or display elements	Function
1	Button, Channel state On/Off Channel A	Function according to the ETS configuration. In the delivery state, the "switching" function is active. Short or long pressing of push-buttons have a related effect.
2	Button, deactivate direct operation	Deactivate direct operation for all channels
3	Status LED, direct operation active	Status LED flashes when direct operation is active for at least one channel.
4	Status LED, channel A	Indicates the state (On/Off) of the respective channel. LED off: Direct operation is switched off. The contact of the channel is open / no voltage is present. LED lit: Direct operation is switched off. The contact of the channel is closed / voltage is present. LED flashes at short intervals: Direct operation is switched on. An open contact / no voltage is simulated for this channel. LED flashes at long intervals: Direct operation is switched on. A closed contact / voltage is simulated for this channel.

Key take-aways

Binary inputs N 262 with 4 or 8 potential-free contacts serve as an interface for operating KNX systems by means of potential-free binary signals

Binary inputs N 263 with 4 or 8 wide-range inputs for AC/DC 10...230 V serve as an interface for operating KNX systems by means of conventional voltage-loaded signals

Extensive operating and control functions such as switching, dimming, solar protection control, sending different values, scene and effect control, color temperature control, forced control, group control, multiple actuation etc.

Power supply for electronics only from KNX bus voltage



Detection and counting pulses with threshold monitoring and difference counting

Next actions

- I. Take a look at the technical documentation to see how complete the devices are
- II. Check the use cases having at the same time the demo project in ETS to understand the used functions
- III. Acquire the devices and download the parameters of the demo project to test directly the explained functions
- IV. Write down your doubts and opinions about this presentation and contact me
- V. Play with the devices and its parameters in the ETS, you will find other functions you are interested in so you can create your own Use Cases



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