# GIRA

Push button sensor 3 basic 1-gang F100
Push button sensor 3 basic 2-gang F100
Push button sensor 3 basic 3-gang F100

Order No.  2021 xx
Order No.  2022 xx
Order No.  2023 xx

# GIRA

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# 1 Product definition

## 1.1 Product catalogue

Product name: Push button sensor 3 basic 1-gang F100 / Push button sensor 3 basic 2-gang F100 / Push button sensor 3 basic 3-gang F100

Use: Sensor

Design: UP (concealed)

Order No. 2021 xx / 2022 xx / 2023 xx

## 1.2 Function

When its buttons are pushed, the push button sensor basic sends telegrams to the KNX / EIB, depending on the parameter settings in the loaded application program. These can be, for instance, telegrams for switching or pushbutton control, for dimming or for controlling blinds. It is also possible to program value transmitter functions such as dimming value transmitters or light scene extensions.

The push button sensor basic F100 consists of up to 3 control surfaces, depending on the device variant. The control concept of a control surface can be configured in ETS for the functions "Switching", "Dimming", "Blind", "Value transmitter" and "Scene extension". The control concept is defined as "Rocker". With the rocker function, one control surface is divided into two actuation pressure points with the same basic function.

The push button sensor basic is equipped with blue status LEDs on each side of a control surface (left & right), which are always controlled in the same way. The status LEDs can either be switched on or off permanently, or can function as a status indicator for a button or rocker.

The white operation LED can optionally serve as an orientation light. If no or a wrong application has been loaded into the pushbutton sensor with the ETS, the operation LED flashes with a frequency of approx. 0.75 Hz to indicate an error, and in this case the pushbutton sensor does not work.
The operation-LED switches off automatically when the status-LED above lights up.

The device's programming mode is indicated by a separate programming LED, which is located on the front below the decorative covers directly adjacent to the programming button. In this manner the device can be commissioned easily with the ETS even in the installed state. Project planning and commissioning of the device is performed using the ETS 3.0d with Patch A or newer versions.

The push button sensor basic must be plugged onto the flush-mounted bus coupling unit 3 (see Accessories). Only the combination of this bus coupling unit and the pushbutton sensor cover results in a functional unit.
Plugging the pushbutton sensor onto a flush-mounted bus coupling unit 1 or 2 (older generation) is not intended, and as a result the device combination will not function.

## 1.3 Accessories

| | |
|---|---|
| Bus coupler 3 | Order No. 2008 00 |
| Inscription sheet (9x) | Order No. 2871 .. |
| Inscription sheet (21x) | Order No. 2872 .. |
| Inscription sheet (33x) | Order No. 2873 .. |

## 2 Installation, electrical connection and operation

## 2.1 Safety instructions

**Electrical equipment may only be installed and fitted by electrically skilled persons. The applicable accident prevention regulations must be observed.**

**Failure to observe the instructions may cause damage to the device and result in fire and other hazards.**

**Make sure during the installation that there is always sufficient insulation between the mains voltage and the bus. A minimum distance of at least 4 mm must be maintained between bus conductors and mains voltage cores.**

**The device may not be opened or operated outside the technical specifications.**
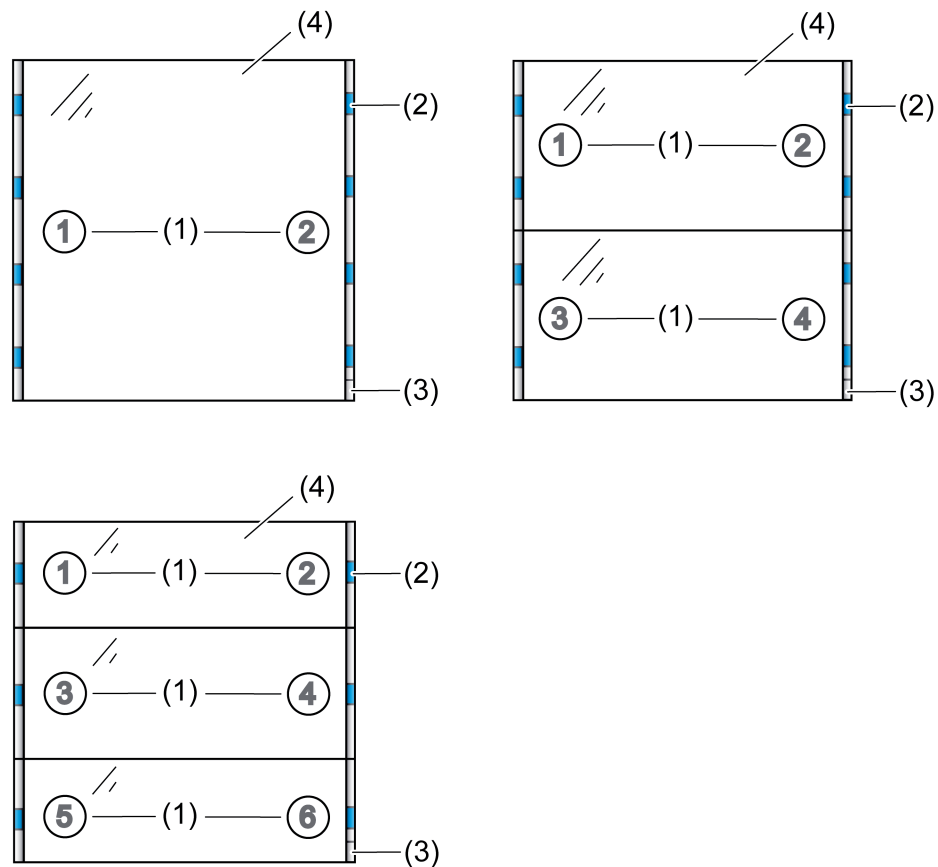
## 2.2 Device components



Figure 1: Device components of push button sensors 3 basic F100

(1) Control surfaces
(1 x rocker switch with actuation point on left and right)
(2) Status LED blue
(per rocker always controlled identically)
(3) Operation LED white
The operation-LED switches off automatically when the status-LED above lights up.
(4) transparent inscription fields


Dimensions:
Width (W): 70 mm / Height (H): 70 mm / Depth (D): 13 mm
ⓘ Specifications without flush-mounted bus coupling unit, without fastening brackets and without design frame.


ⓘ Neutral inscription panels are included with the devices as part of the scope of supply. If necessary, individual labels can be created using optionally available labelling sheets (see Accessories) and labelling software, or on the Internet at marking.gira.com.

## 2.3 Fitting and electrical connection

**Mounting and connecting the device**
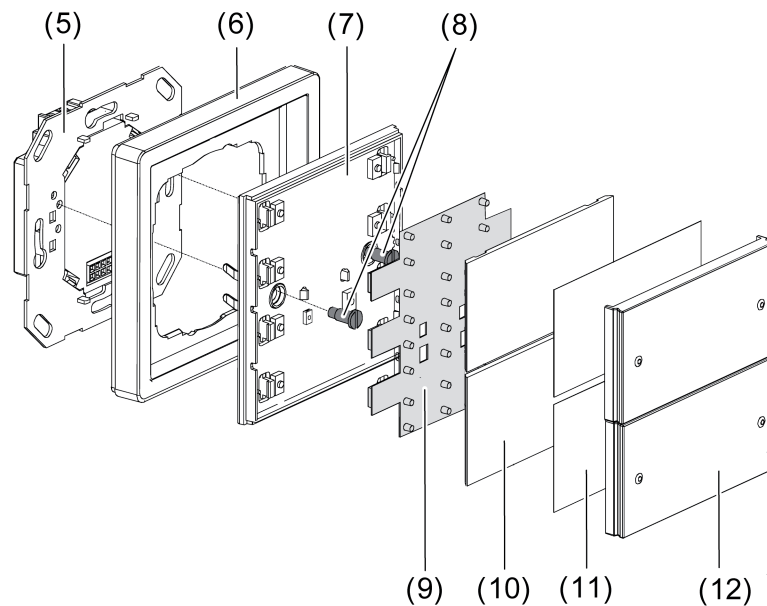


Figure 2: Device fitting using the example of a push button sensor 3 basic 2-gang F100

(5) Flush-mounted bus coupling unit 3 with supporting frame
(6) Design frame
(7) Pushbutton sensor cover
(8) Fit bolts for anti-theft protection (included with the pushbutton sensor cover)
(9) ESD protection mat
(10) Rocker support
(11) Inscription panel
(12) Rocker cover (transparent)

The pushbutton sensor cover must be plugged onto a flush-mounted bus coupling unit 3. Anti-dismantling protection is provided by screwing to the supporting frame of the bus coupling unit.

- Connect the bus coupling unit (5) with the KNX/EIB bus cable and fasten in place in an appliance box.
- Remove the rocker covers (12) and inscription panels (11) from the pushbutton sensor cover (7). Then pry out rocker support (10) carefully using a small screwdriver.
- Raise ESD protection mat (9).
- Position the design frame (6) in front of the bus coupling unit and carefully plug the pushbutton sensor cover into the bus coupling unit.
- Screw the pushbutton sensor cover to the supporting frame of the bus coupling unit. Use the screws (8) provided.
- Apply ESD protection mat carefully.
- ⓘ Proper function is not guaranteed without an ESD protection mat. The pushbutton sensor can be destroyed or irreparably damaged by electrostatic discharge when it is operated!
- If necessary, label the inscription signs. Optionally the separately available labelling sheets (see Accessories) can be used.

- Finally, mount the rocker support together with the rocker covers and the labelling panels by snapping them on.

ⓘ Before final fitting of the rocker support and rocker covers, the physical address has to be loaded into the device  (see page 9).

## 2.4 Commissioning

**Loading the physical address and application software**

The commissioning of the device is basically confined to programming of the physical address and the application data with the ETS.

Project planning and commissioning of the device using the ETS 3.0d with Patch A or newer versions.

The device is connected and ready for operation.

An appropriate device must be created and configured in the ETS project.
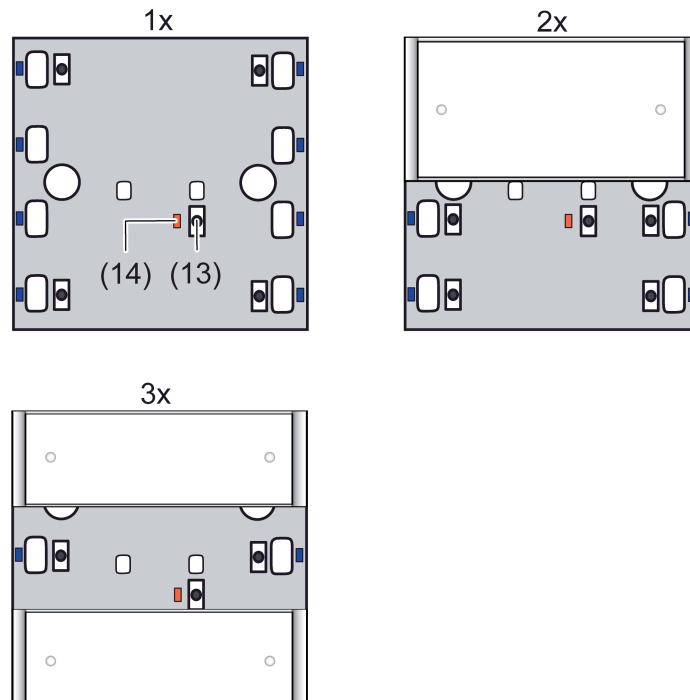


Figure 3: Arrangement of the programming button and LED on the front of the device

The programming button is located on the front of the device behind a labelling panel (Figure 3). Before final fitting of the rocker support and rocker covers, the physical address has to be loaded into the device.

- Detach the control surface over the programming button/LED, if the rocker support and rocker covers are already fitted.
- Activating Programming mode: press the programming button (13).
  The programming LED (14) lights up red.
- Program the physical address with the help of the ETS.
  The programming LED goes out.
- Load the application data into the device using the ETS.
- Mount control surface(s).

ℹ️  If the device was programmed with incorrect application data, then operation LED flashes slowly. In this case, the device will not function after start-up.

## 2.5 Operation

**Operating areas**

The push button sensor 3 basic F100 consists of up to 3 control surfaces, depending on the device variant. The control concept of a control surface can be configured in ETS for the functions "Switching", "Dimming", "Blind", "Value transmitter" and "Scene extension". The control concept is defined as "Rocker". With the rocker function, one control surface is divided into two actuation pressure points with the same basic function.

The push button sensor 3 basic F100 is equipped with two status LEDs per control surface (left & right), which are always controlled identically. The LEDs can be switched on continuously - as an orientation light, for example - or also switched off - for example in bedrooms.

The operation LED of the pushbutton sensor can be permanently on or off. The operation-LED switches off automatically when the status-LED above lights up.
The operation LED indicates an incorrectly loaded application program or an unprogrammed state as supplied.

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## 3 Technical data

**General**

| | |
|---|---|
| Protection class | III |
| Mark of approval | KNX/EIB |
| Ambient temperature | -5 ... +45 °C |
| Storage/transport temperature | -20 ... +70 °C |

**KNX/EIB supply**

| | |
|---|---|
| KNX medium | TP |
| Commissioning mode | S-mode |
| Rated voltage | DC 21 ... 32 V SELV (Via bus coupler 3) |
| Power consumption | typical 150 mW (Via bus coupler 3) |
| Connection mode | 10 pole male connector strip |

# 4 Software description

## 4.1 Software specification

| | |
|---|---|
| ETS search paths: | - push button / push button, 1fold / Push button sensor 3 basic 1-gang F100<br>- push button / push button, 2fold / Push button sensor 3 basic 2-gang F100<br>- push button / push button, 3fold / Push button sensor 3 basic 3-gang F100 |
| Configuration: | S mode standard |
| PEI type: | "00"$_{Hex}$ / "0" $_{Dec}$ |
| PEI connector: | No PEI! Electrical connection via 10pole pin contact strip exclusively with a bus coupling unit 3. |

**Applications for push button sensor 3 basic 1-gang F100:**

| No. | Short description | Name | Version | from mask version |
|---|---|---|---|---|
| 1 | Basic pushbutton sensor application with 1 control surface. | Push button sensor 3 basic 1-gang 10D111 | 1.1 for ETS3.0 Version d onwards | 705 |

**Applications for push button sensor 3 basic 2-gang F100:**

| No. | Short description | Name | Version | from mask version |
|---|---|---|---|---|
| 1 | Basic pushbutton sensor application with 2 control surfaces. | Push button sensor 3 basic 2-gang 10D211 | 1.1 for ETS3.0 Version d onwards | 705 |

**Applications for push button sensor 3 basic 3-gang F100:**

| No. | Short description | Name | Version | from mask version |
|---|---|---|---|---|
| 1 | Basic pushbutton sensor application with 3 control surfaces. | Push button sensor 3 basic 3-gang 10D311 | 1.1 for ETS3.0 Version d onwards | 705 |

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## 4.2 Software "Push button sensor 3 basic"

### 4.2.1 Scope of functions

**Scope of functions**

General:
- Function of operation LED and status LED configurable.


"Switching" function:
- Rocker function
- Command on actuating the buttons configurable (ON, OFF, TOGGLE).


"Dimming" function:
- Rocker function
- Command on actuating the rocker configurable (lighter - ON, darker - OFF).
- Time between switching and dimming can be set.


"Blind" function:
- Rocker function
- Command on actuating the rocker configurable (UP, DOWN).
- Time between short-time and long-time commands can be set.


"Value transmitter" and "Scene extension" functions:
- Rocker function
- Command on pressing the rocker configurable (values 0...255 / 0...100 % or scene numbers).

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### 4.2.2 Notes on software

**ETS project design and commissioning**

For configuration and commissioning of the device, ETS3.0 from Version "d" Patch "A" onwards or ETS4 is required. Through use of these ETS version, advantages are gained with regard to the programming process and the parameter presentation.
The necessary product database is offered in the *.VD4 format.

**Device combination with a bus coupling unit 3**

The pushbutton sensor must be plugged onto the flush-mounted bus coupling unit 3 (see Accessories). Only the combination of this bus coupling unit and the pushbutton sensor cover results in a functional unit. The device configuration is not programmed into the bus coupling unit. Therefore it is possible to operate devices that have already been put into operation on any desired third-generation bus coupling units. This can simplify commissioning significantly, because programming of the devices no longer has to be performed on the same bus coupling unit that the pushbutton sensor will later be plugged onto in the building.

ⓘ  Plugging the pushbutton sensor onto a flush-mounted bus coupling unit 1 or 2 (older generation) is not possible in some cases, and generally not intended, and as a result the device combination will not function.

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## 4.2.3 Object table

Number of communication objects:    Depends on the device variant and the set function.
max. 6

Number of addresses (max):    100

Number of assignments (max):    100

Dynamic table management    No

Maximum table length    ---

## Objects for "switching"

| Function: | Switching | | | | |
|---|---|---|---|---|---|
| Object | Function | Name | Type | DPT | Flag |
| ⊑↵ 0, 2, 4 | Switching | Rocker 1-3 [1] | 1-bit | 1.xxx | C, W, T |

Description    1-bit object for transmission of switching telegrams (ON, OFF).

## Objects for "dimming"

| Function: | Switching | | | | |
|---|---|---|---|---|---|
| Object | Function | Name | Type | DPT | Flag |
| ⊑↵ 0, 2, 4 | Switching | Rocker 1-3 [1] | 1-bit | 1.xxx | C, W, T |

Description    1-bit object for transmission of switching telegrams (ON, OFF).

| Function: | Dimming | | | | |
|---|---|---|---|---|---|
| Object | Function | Name | Type | DPT | Flag |
| ⊑↵ 8, 10, 12 | Dimming | Rocker 1-3 [1] | 4-bit | 3.007 | C, W, T |

Description    4-bit object for relative brightness adjustment between 0% and 100 %.

## Objects for "Venetian blind"

| Function: | Venetian blind | | | | |
|---|---|---|---|---|---|
| Object | Function | Name | Type | DPT | Flag |
| ⊑↵ 0, 2, 4 | Short time operation | Rocker 1-3 [1] | 1-bit | 1.007 | C, -, T |

Description    1-bit object for short-time operation of a blind or roller shutter.

| Function: | Venetian blind | | | | |
|---|---|---|---|---|---|
| Object | Function | Name | Type | DPT | Flag |
| ⊑↵ 8, 10, 12 | Long-time operation | Rocker 1-3 [1] | 1-bit | 1.008 | C, -, T |

Description    1-bit object for long-time operation of a blind or roller shutter.

1: The number of rockers or buttons depends on the planned device variant.

**Objects for "value transmitter"**

| Function: | Value transmitter | | | | |
|---|---|---|---|---|---|
| Object | Function | Name | Type | DPT | Flag |
| ⬚↵ 0, 2, 4 | Value | Rocker 1-3 [1] | 1 byte | 5.xxx | C, -, T |

Description    1-byte object for the transmission of values from 0 to 255 (0 ... 100 %).

**Objects for "scene extension"**

| Function: | Scene extension | | | | |
|---|---|---|---|---|---|
| Object | Function | Name | Type | DPT | Flag |
| ⬚↵ 0, 2, 4 | Scene extension | Rocker 1-3 [1] | 1 byte | 18.001 | C, -, T |

Description    1-byte object for recalling or for storing a scene.

1: The number of rockers or buttons depends on the planned device variant.

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## 4.2.4 Parameters

| Description | Values | Comment |
|---|---|---|
| □┙ General | | |
| Light period of status LED for button-press indicator | 1 sec<br>2 sec<br>**3 sec**<br>4 sec<br>5 sec | This parameter defines the switch-on time the status LED is lit up to indicate actuation. The setting concerns all status LEDs whose function is set to "Button-press display". |
| Function of operation LED / Labelling field illumination | Always OFF<br><br>**Always ON** | Specifies the state of the operation LED or the labelling field illumination. |
| □┙ Rocker 1 | | |
| Function | No function<br>**Switching**<br>Dimming<br>Venetian blind<br>Value transmitter<br>Scene extension | This parameter is used to define the basic function of the rocker. |

These parameters are only visible for the function "Switching"...

| Function of status LED | Always OFF | Specifies the control of the status LED. |
|---|---|---|
| | Always ON | |
| | **Button-press display** | |
| | Status display<br>(of the switching object) | |
| | Inverted status display<br>(of the switching display) | |
| Command on pressing left rocker | No function<br><br>**ON**<br><br>OFF<br><br>TOGGLE | Defines the command when the left rocker button is pressed. |
| Command on pressing right rocker | No function<br><br>ON<br><br>**OFF**<br><br>TOGGLE | Defines the command when the right rocker button is pressed. |

These parameters are only visible for the function "Dimming"...

| Function of status LED | Always OFF | Specifies the control of the status LED. |
|---|---|---|
| | Always ON | |
| | **Button-press display** | |
| | Status indicator (of the switching object) | |
| | Inverted status indicator (of the switching object) | |
| Command on pressing rocker | **Left brighter (ON), right darker (OFF)** | Defines the command when the rocker button is pressed. |
| | Left darker (ON), right brighter (OFF) | |
| Time between switching and dimming | 0.3 s<br>**0.4 s**<br>0.5 s<br>0.7 s<br>1.0 s | Defines the time between between a switching and a dimming telegram. |

These parameters are only visible for the function "Venetian blind"...

| Function of status LED | Always OFF | Specifies the control of the status LED. |
|---|---|---|
| | Always ON | |
| | **Button-press display** | |
| Command on pressing rocker | **Left rocker: UP / Right rocker: DOWN** | Defines the command when the rocker button is pressed. |
| | Left rocker: DOWN / Right rocker: UP | |
| Time between short-time and long-time command | 0.3 s<br>**0.4 s**<br>0.5 s<br>0.7 s<br>1.0 s | Defines the time between a short-time and a long-time telegram. |

These parameters are only visible for the function "Value transmitter"...

| Function of status LED | Always OFF | Specifies the control of the status LED. |
|---|---|---|
| | Always ON | |
| | **Button-press display** | |

| | | |
|---|---|---|
| Command on pressing rocker | **Value transmitter 0...255**<br><br>Value transmitter 0…100 % | A button configured as "Value transmitter" permits selecting whether the values to be transmitted are interpreted as integers from 0 to 255 or as a percentage from 0 % to 100 %. The following parameters and their settings depend on this distinction. |
| Value, left rocker (0...255) | 0...**255** | Defines the value when the left rocker button is pressed.<br><br>ⓘ  Only for "Command on pressing the rocker = Value transmitter 0...255"! |
| Value, right rocker (0...255) | **0**...255 | Defines the value when the right rocker button is pressed.<br><br>ⓘ  Only for "Command on pressing the rocker = Value transmitter 0...255"! |
| Value, left rocker (0...100 %) | 0...**100** | Defines the value when the left rocker button is pressed.<br><br>ⓘ  Only for "Command on pressing the rocker = Value transmitter 0...100 %"! |
| Value, right rocker (0...100 %) | **0**...100 | Defines the value when the right rocker button is pressed.<br><br>ⓘ  Only for "Command on pressing the rocker = Value transmitter 0...100 %"! |

These parameters are only visible for the function "Scene extension"...

| | | |
|---|---|---|
| Function of status LED | Always OFF<br><br>Always ON<br><br>**Button-press display** | Specifies the control of the status LED. |
| Command on pressing rocker | **Scene extension without storage function**<br><br>Scene extension with storage function | With a rocker configured as a "Scene extension", there is the option of choosing whether only scenes are loaded or whether a storage function is possible. |
| Scene number, left rocker (1...64) | **1**...64 | Defines the scene number when the left rocker button is pressed. |

| Scene number, right rocker (1...64) | 1...**2**...64 | Defines the scene number when the right rocker button is pressed. |
|---|---|---|

□↵ For rocker 2...n see rocker 1.

# 5 Appendix

## 5.1 Index

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