The Universal Binary Sensor is a wireless module that makes it possible to organize the functionality of any sensor with a binary output by allowing it to communicate with the wireless network (Z-Wave) and the FIBARO building intelligence system. Moreover, the module allows for wireless communication between the system and the DS18B20 temperature sensors. The device can service up to four binary temperature sensors and up to four DS18B20 temperature sensors. The Sensor was designed for installation in the housing element of the safety system the device is transparent for parametric alarm lines.

**Technical data**

Supply voltage: 9-32V DC +10%
Input: 2 potential-free inputs, 1 digital input 1 wire
Output: 2 potential-free outputs
Maximum current carrying capacity of outputs: 150mA
Maximum voltage at output contacts: 30V DC / 12V AC +3%
Operating temperature: 0 - 40 °C
Number of servicing temperature sensors: 4
Measurement range: -50°C - +120°C
Radio protocol: Z-Wave
Radio frequency: 868.4 MHz for EU, 914.4 MHz for US/AS/NZ/BRA
Range: up to 30 m in buildings (depending on the construction materials) up to 50 m in the field
Dimensions (W x H x D): 27.3 x 14.5 x 12 mm

**II. Sensor Installation**

1. Before the installation make sure to switch off the alarm system or any other system to which the device is to be connected.
2. Connect the FIBARO Sensor according to the diagram 1.
3. Place the Fibaro Sensor in the sensor housing.
4. Arrange the antenna (instructions can be found below the diagrams).

**EXPLANATION OF CONDUCTOR MARKINGS:**

- **P** – power supply conductor red
- **GND** – ground conductor, blue
- **OUT1** – output no. 1 assigned to input IN1
- **OUT2** – output no. 2 assigned to input IN2
- **TP** – (TEMP, POWER) – power supply conductor of the DS18B20 temperature sensor, white
- **ANT** – antenna, black
- **OUT1** – output no. 1 assigned to input IN1
- **OUT2** – output no. 2 assigned to input IN2
- **B** – maintenance button (used to add devices to and remove devices from the system)

**ANTENNA ARRANGEMENT INSTRUCTIONS:**

- Lay down the antenna as far as possible from metal antennas (construction materials), metal walls, metal doors, etc.
- The antenna should be at least 3 m from the radio signal source.
- The antenna should not be placed in a window or in a place where it will be exposed to direct sunlight.

**Diagram 1 – general**

**Diagram 2 – connection to a regular alarm line**

**Diagram 3 – connection to a parametric alarm line**

**Diagram 4 – connection to DS18B20 sensors**

**Diagram 5 – example connection to a precipitation sensor**

**III. Fibaro Sensor start-up**

1. Installation of the Universal Binary Sensor Module

**STEP 1**

Connect the device according to the electrical diagram shown in figure 1. Engagement of the FIBARO Sensors (see figure 3). The Fibaro protocol (see figure 5) shall enter into the programming mode only in the case of a 1-wire line (terminals TP and TD).

**STEP 2**

The Fibaro Module must be in the range of the Home Center 2 controller, because the procedure of inclusion to the FIBARO system requires direct communication with the controller.

**STEP 3**

Recognition of B button, which allows for proper inclusion of device.

**STEP 4**

Setting the Home Center 2 controller to the inclusion or exclusion mode (see Home Center 2 controller instructions).

**STEP 5**

The Fibaro Sensor is added to the network by quickly pressing the B button three times (the button is located in the center of the device).

**STEP 6**

Correct inclusion of the device to the network will be signaled by the LED on the device. The device will be represented by the appropriate icons in the Home Center 2 controller.

**Diagram 6 – connection to the alarm system hub**
Device parameters:

Parameter no. 1
Input 1 alarm cancellation delay. Additional delay after an alarm from input 1 has ceased. This parameter allows you to specify additional time, after which the input 1 alarm is cancelled once its condition has ceased.

Parameter no. 2
Input 2 cancelation delay. Additional delay after an alarm from input 2 has ceased. The parameter allows you to specify additional time, after which the input 2 alarm is cancelled once its condition has ceased.

Parameter no. 3
Type of inputs. By default: 1 – INPUT_NC (Normal Close). Possible parameter settings:
- 0 – INPUT_NO (Normal Open)
- 1 – INPUT_NC (Normal Close)
- 2 – INPUT_MONOSTABLE
- 3 – INPUT_BISTABLE

Parameter no. 4
Type of input no. 1. By default: 1 – INPUT_NC (Normal Close) Possible parameter settings:
- 0 – INPUT_NO (Normal Open)
- 1 – INPUT_NC (Normal Close)
- 2 – INPUT_MONOSTABLE
- 3 – INPUT_BISTABLE

Parameter no. 5
Type of parameter setting for alarm frame no. 1, activated via input no. 1. This parameter allows you to specify the type of alarm frame to be triggered in response to certain commands (BASE_S/C). Default value: 255 – BASIC SET

Possible parameter settings:
- 0 – Frame ALARM GENERIC
- 1 – Frame ALARM SMOKE
- 2 – Frame ALARM GAS
- 3 – Frame ALARM WATER
- 4 – Frame ALARM HEAT
- 5 – Frame ALARM CO2
- 255 – Control frame BASIC SET

Parameter no. 6
Type of temperature control frame for alarm frame no. 2, activated via input no. 1. This parameter allows you to specify the type of alarm frame to be triggered in response to certain commands (BASE_S/C). Default value: 255 – BASIC SET

Possible parameter settings:
- 0 – Frame ALARM GENERIC
- 1 – Frame ALARM SMOKE
- 2 – Frame ALARM GAS
- 3 – Frame ALARM WATER
- 4 – Frame ALARM HEAT
- 5 – Frame ALARM CO2
- 255 – Control frame BASIC SET

Parameter no. 7
Value of the parameter specifying the forced level of dimensioning output opening blind sections when certain "on" / "off" command is received. In the case of alarm frames the alarm priority is specified. Default value: 1 – 100 and 255
Possible parameter settings: (1 – 100) and 255
Value of 255 makes it possible to activate the device when using the Dimmer module it means activating the device and setting the output to the previously stored condition, e.g. when Dimmer is set to 30%, deactivated, and then activated using command 255, it will automatically be set to the previous condition, i.e. 30%.

Parameter no. 8
Value of the parameter specifying the forced level of dimensioning output opening blind sections when certain "on" / "off" command is received. In the case of alarm frames the alarm priority is specified. Default value: 1 – 100 and 255
Possible parameter settings: (1 – 100) and 255
Value of 255 makes it possible to activate the device when using the Dimmer module it means activating the device and setting the output to the previously stored condition, e.g. when Dimmer is set to 30%, deactivated, and then activated using command 255, it will automatically be set to the previous condition, i.e. 30%.

Parameter no. 9
Scene ID is assigned in the following manner:
- On – 1 for scene no. 1
- On – 2 for scene no. 2
- Off – 1 for scene no. 1
- Off – 2 for scene no. 2

NOTE: Information concerning alarm validation or activation commands for devices associated from alarm groups are always sent.

Parameter no. 10
Interval between successive readings of temperature from all sensors connected to the device. Default value: 1 minute
Possible parameter settings:
- 1 – 24 hours

NOTE: Taking temperature readings from the sensor does not result in sending a temperature condition report to the central hub.

Parameter no. 11
Interval between forcing to send report concerning the temperature condition. The forced report is sent immediately, regardless of the reading of temperature from the sensor, irrespective of the settings of parameter no. 4 and 5. Default value: 20s
Possible parameter settings:
- 0 – Off
- 205 – On

NOTE: Sending the temperature condition report is not always possible due to the remaining value does not correctly recognize information on smoke detector alarm.

VI Additional functionality

Alarms frame sending

The Fibaro system makes it possible to set the device’s reaction to alarms events (reaction to the frame SENSOR_ALARM_ALARM). The device may be configured to send frame messages for any of the types of alarms described. Parameter no. 11 should correctly declare the type of alarm frame for each configured channel. For example, if a smoke detector connected to input IN1 the user should declare the frame type 1 – ALARM SMOKE (value of 1 should be entered) to ensure that the remaining devices will correctly recognize information on smoke detector alarm.

VI Sensor operation

The Fibaro Sensor may be operated with the following operators:
- button (forward and backward)
- Any compatible smart phone (e.g. Home Center Hub or FIBARO Bridge) as well as the FIBARO cloud service (e.g. IFTTT)

VII Procedure to be followed in the case of interference

The device does not react to programmed transmitter:
- Make sure that the maximum range was not exceeded and that there are no obstacles along the signal path which could impair the signal, e.g. metal surfaces, ferromagnetic components or metal)).

VI. 2.0 The device is set in the normal condition. If the device is in the automatic programming mode, possibly” repeat the programming process.

IX GUARANTEE

1. The guarantee is provided by FIBARO GROUP Sp. z o.o. with its seat in Poznan, in conformity with the terms of the agreement in force between FIBARGROUP Sp. z o.o. and its customers, under the name of FIBARO. The guarantee may be purchased for the Device from 12 months from the date of its purchase.

2. The manufacturer shall be responsible for defects, of charge, of repair or replacing (at the new device) the one which does not enjoy the guarantee obligations. In this case, the device with new or regenerated components, that are free of defects and in good condition, shall be transmitted to the original owner for the Device shall be transmitted to the original owner and in its condition as this shall be transmitted to the original owner.

3. The manufacturer shall not be liable for damages caused by incorrect connection, inappropriate usage of the device, or the use of accessories not conforming to the manufacturer’s designations. The guarantee shall not cover:
- damages resulting from opening or changing the device in any way.
- damages resulting from using the device in any way.
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