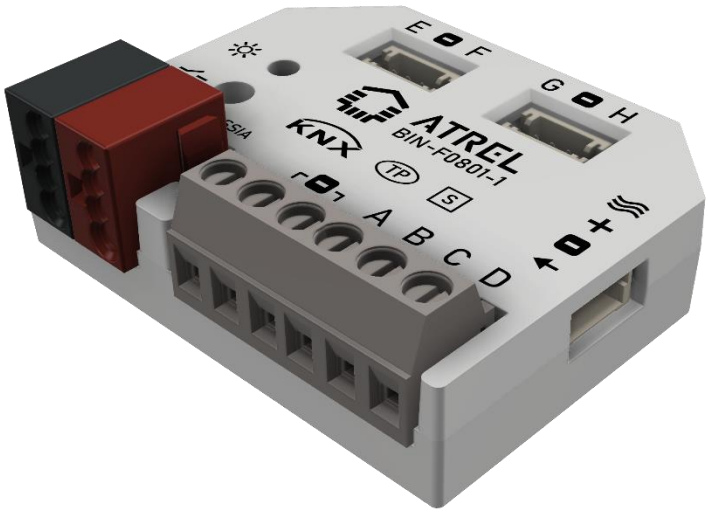

User manual

Configuring the BIN-F0801-1 device

Version 1.0

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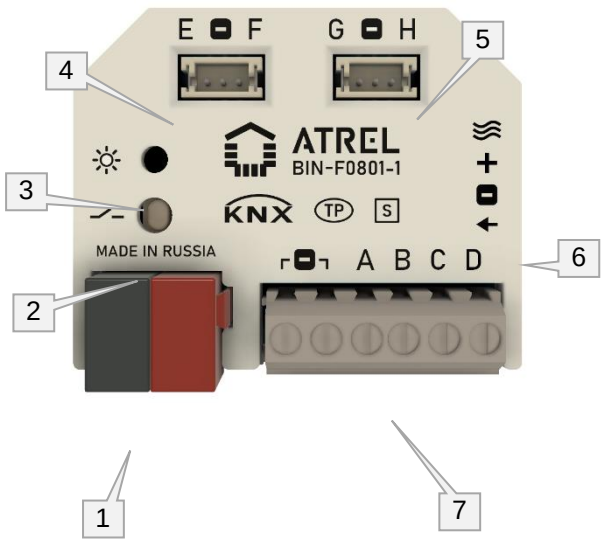
1. Introduction

1.1 Purpose and functionality

A module of binary inputs/outputs, temperature sensors and a leak sensor in a compact housing for installation in a mounting box (sub-cabinet)

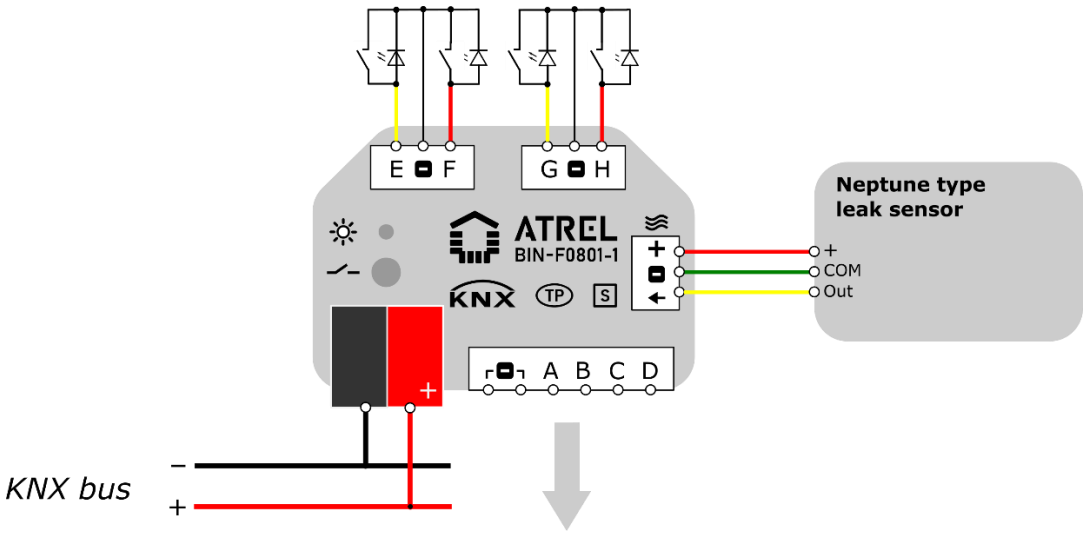
- Up to 8 binary inputs
  - Short/long press
  - Switch mode
  - Pulse counter
  - Activation of scenes
  - Working with a dimmer
  - Sending numeric constants
  - Curtain management
- Up to 8 LED outputs
- Up to 4 NTC temperature sensors
- Up to 4 loops with digital temperature sensors (up to 4 sensors on each loop, with the function of averaging, maximum, minimum values)
- Up to 4 light sensors
- Up to 4 digital humidity sensors
- Connection of a passive sound source of the "piezoelectric emitter" type
- Connector for connection of a leak sensor of the “Neptune” type
- 4 thermostats
- 20 logic modules with a choice of one of 31 functions for each
- Powered by KNX bus

1.2 Device and controls



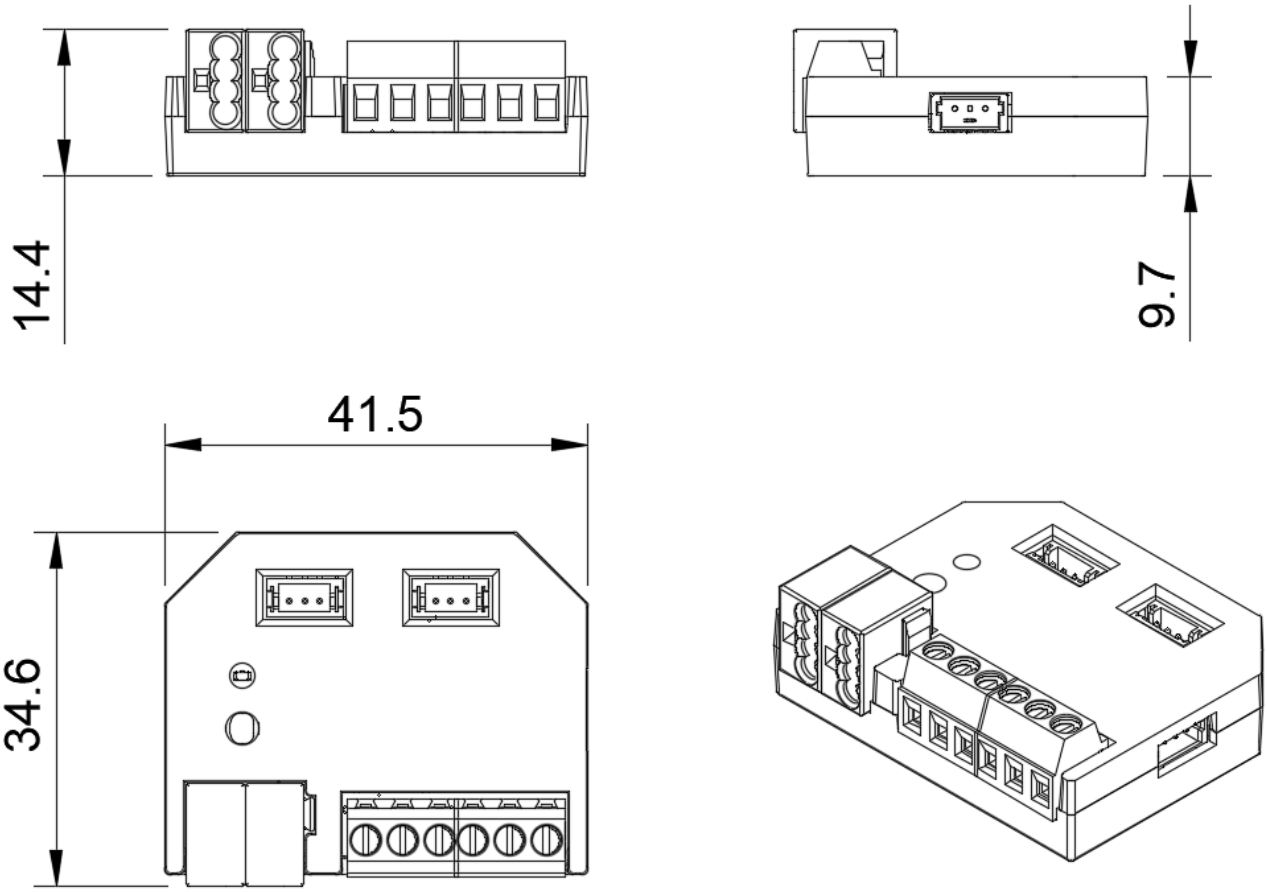
1. Terminals for connecting the KNX bus
2. Programming button
3. Programming indication
4. Cable connector E, F channels
5. Cable connector G, H channels
6. Connector of the "Neptun" type leak sensor
7. Screw terminal block

1.3. Installation and connections



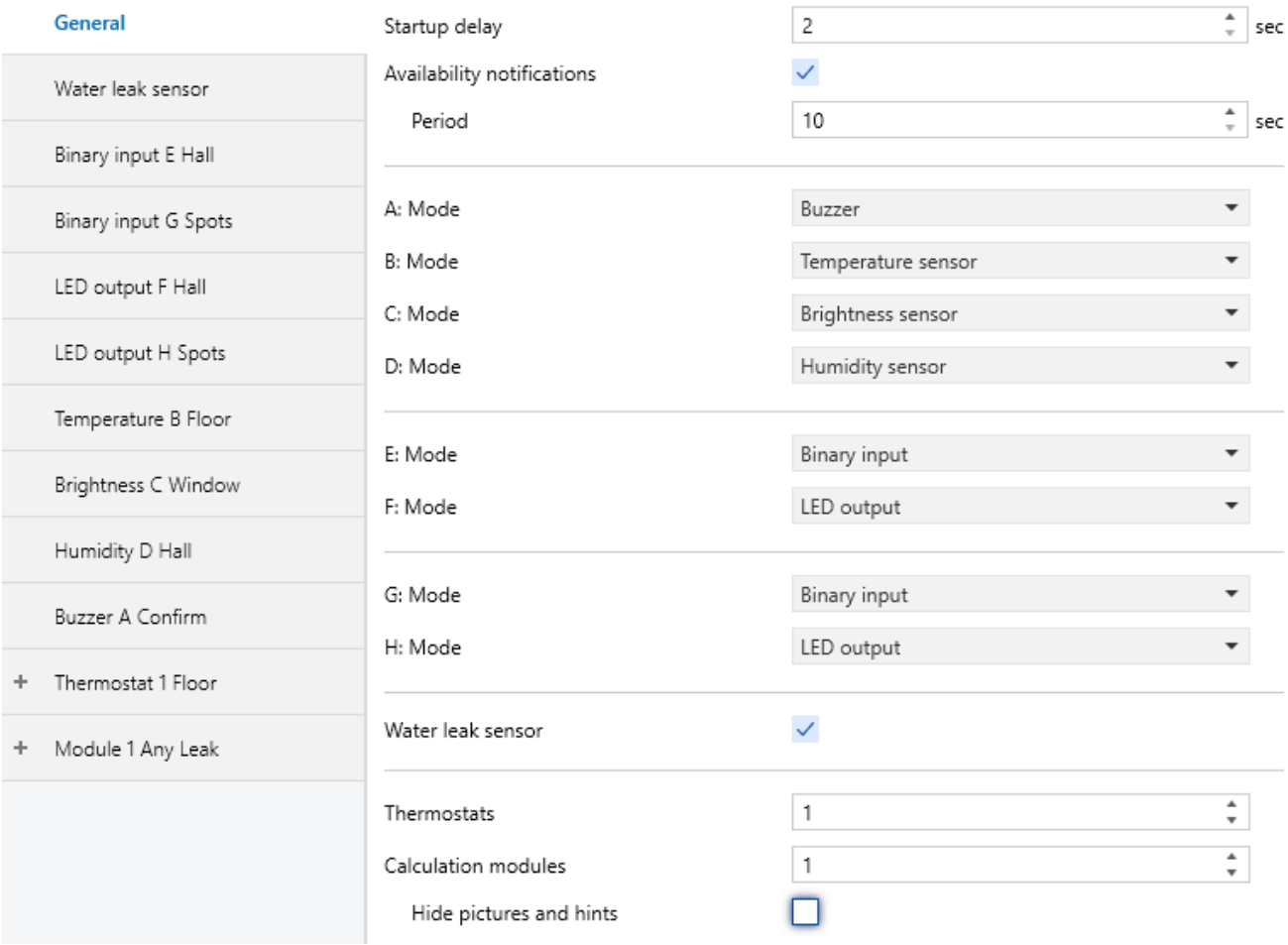
Terminal	Picture	ETS	Purpose	Accessory, note
A, B, C, D 2*		Binary input	A "dry contact" type input for connecting a switch, a button	
A, B, C, D 2*	NTC	Temperature sensor	Input for an analog temperature sensor of the NTC type	NTC-S0101-1 NTC-S0130-1 NTC-S0130-2 NTC-S0101-3
A, B, C, D 1*, 2*		LED output	Output for LED type indicator, permissible current up to 2mA	
A, B, C, D 1*, 2*	Humidity	Humidity sensor	Digital humidity sensor input	OWH-S0102-1
A, B, C, D 1*, 2*	Digital t	Temperature sensor	Digital temperature sensor input	OWR-S0130-1
A 2*	BUZZER	Buzzer	Output for a passive piezo sound emitter (2000-6000 Gz)	BUZ-S2000-1 BUZ-S4000-1
A, B, C, D 1*, 2*	Light	Light sensor	Digital light sensor input	

1.4. Dimensions



2. Configuring

2.1. Parameters. General



«Startup delay»
Possible values: {2...60} seconds.

The device starts to be active after the specified number of seconds after power is turned on.

«Availability notifications», «Period»
Possible values: {Off/On}, Possible values: {10...600} seconds.

The «Notification. Alive» object becomes available, which transmits "1" with the specified period.

«A: Mode»
Possible values: {«Disabled», «Binary input», «LED output», «Temperature sensor», «Brightness sensor», «Humidity sensor», «Buzzer»}

- «Disabled»: terminal is not configured for use
- «Binary input**»:** terminal is configured as an input for connecting a button or switch. See Chapter 2.3. Configuring binary input channel.
- «LED output**»** - terminal is configured as an output for controlling an LED or other low-power consumer.
- «Temperature sensor**»:** terminal is configured as an input for connecting an analog or digital temperature sensor (set of sensors).
- «Brightness sensor**»:** terminal is configured as an input for connecting a digital light sensor (set of sensors).

- «Humidity sensor**»:** terminal A is configured as an input for connecting a digital humidity sensor (set of sensors).
- «Buzzer**»**: terminal is configured as an output for controlling a piezoelectric passive buzzer.

«B: Mode»
Possible values: {«Disabled», «Binary input», «LED output», «Temperature sensor», «Brightness sensor», «Humidity sensor»}

The principles of setting like the "A: Mode" parameter

«C: Mode»
Possible values: {«Disabled», «Binary input», «LED output», «Temperature sensor», «Brightness sensor», «Humidity sensor»}

The principles of setting like the "A: Mode" parameter

«D: Mode»
Possible values: {«Disabled», «Binary input», «LED output», «Temperature sensor», «Brightness sensor», «Humidity sensor»}

The principles of setting like the "A: Mode" parameter

«E: Mode»
Possible values: {«Disabled», «Binary input», «LED output»}

- «Disabled»: terminal is not configured for use
- «Binary input**»:** terminal is configured as an input for connecting a button or switch. See Chapter 2.3. Configuring binary input channel.
- «LED output**»** - terminal is configured as an output for controlling an LED or other low-power consumer. See Chapter 2.4. Configuring LED output channel

«F: Mode»
Possible values: {«Disabled», «Binary input», «LED output»}

The principles of setting like the "E: Mode" parameter

«G: Mode»
Possible values: {«Disabled», «Binary input», «LED output»}

The principles of setting like the "E: Mode" parameter

«H: Mode»
Possible values: {«Disabled», «Binary input», «LED output»}

The principles of setting like the "E: Mode" parameter

«Leak sensor»
Possible values: {Off/On}

The connector for connecting a wired leak sensor of the "Neptun" type is activated. The Leak Sensor channel becomes available for configuration. The setup is described in Chapter 2.8. Configuring the leak sensor input channel.

«Thermostats»
Possible values: {0…4}

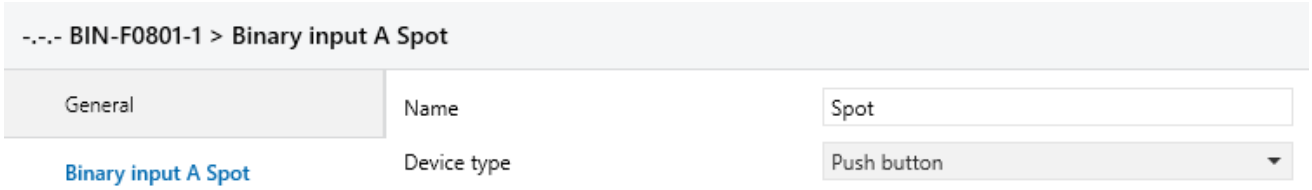
The number of thermostats available for configuration. Setting up each of them is described in Chapter 2.9. Configuring thermostat

«Calculation modules»
Possible values: {0…20}

The number of calculation modules available for configuration. The configuration of each of them is described in Chapter 2.10. Configuring calculation module

2.3. Parameters. Configuring binary input channel

The configuration of any of the binary inputs is performed uniformly.



«Name»
Possible values: String up to 20 characters long

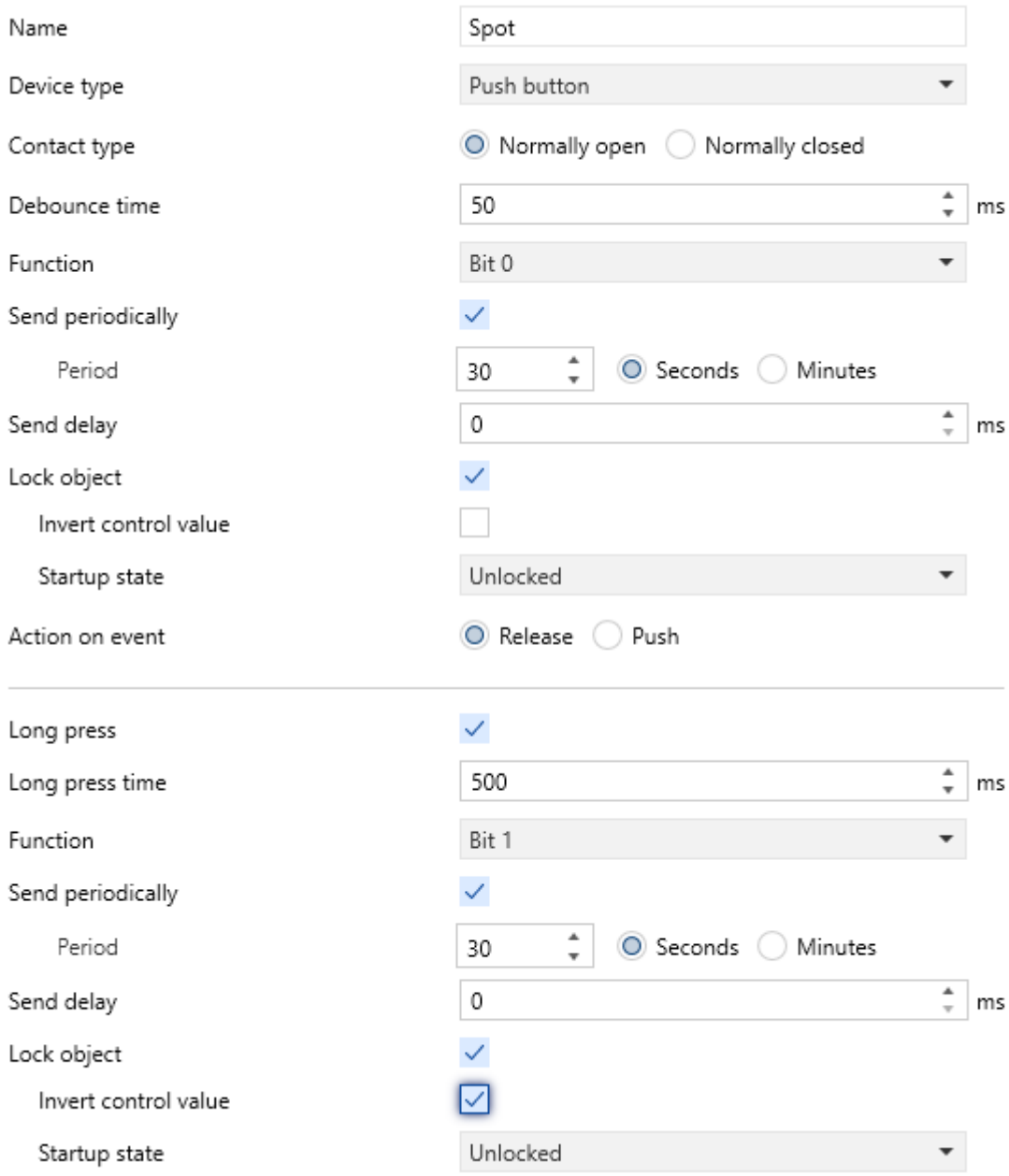
The name of the channel is displayed in the header of the settings tab and the communication objects corresponding to the channel

«Device type»
Possible values: {«Push button», «Switch», «Pulse counter»}
Defines the type of device connected to the binary input channel and the scheme of working with it

Device type: «Button»

A dry contact or a device simulating it (an open collector) with automatic return to the initial position is connected to the binary input channel, the result is an action determined by the channel function.
+Communication objects

- Binary input, short press (data type depends on the settings)
- Binary input, long press (data type depends on the settings)



«Contact type»
Possible values: {«Normally open», «Normally closed»}

The parameter determines the initial position of the button. The device will perform an action defined by the settings when exiting this position or when entering.

«Debounce time»
Possible values: {0…50…250} milliseconds

The time of stabilization of the input state when the contact is closed or opened

«Function»
Possible values: {«No action», «Bit 0», «Bit 1», «Toggle bit 0/1», «Switching with return to initial state», «Shutter control», «Dimmer control», «Scene», «Scene storing», «Percentage, %», «Temperature, °C», «Relative humidity, %», «1-byte integer constant», «2-bytes integer constant»}

- **«No action»:** device does not perform any actions for a short press of the button, but an action for a long press of the button can be determined.
- **«Bit 0»:** value "0" will be sent to the KNX bus
- **«Bit 1»:** value "1" will be sent to the KNX bus
- **«Toggle bit 0/1»:** value opposite to the current state of the object will be sent to the KNX bus.

  «Startup value»
  Possible values: {«0», «1», «Stored value»}

  Channel status at device startup

- **«Switching with return to initial state»**: value opposite to the initial state will be sent to the KNX bus, then when the button is released, the original value will be sent again

  «Startup value»
  Possible values: {«0», «1»}

  When the button is pressed, the value opposite to the initial value is sent to the bus, when released, the specified initial value is sent.

- **«Shutter control»:** set of settings and communication objects for managing shutter/blinds

  «Shutter command»
  Possible values: {«Up», «Down», «Up/Down», «Stop/Step Up», «Stop/Step Down», «Stop/Step Up/Down»}
  +Communication object: «Shutter move direction » DPT_UpDown [1.008] (when {«Up», «Down», «Up/Down», «Stop/Step Up»)
  +Communication object: «Shutter stop/step» DPT_Step [1.007] (when «Stop/Step Up», «Stop/Step Down», « Stop/Step Up/Down»)

  «Stop on next click»
  With the values "Up", "Down" and "Up/Down" parameter "Shutter command"
  Possible values: {Off/On}
  +Communication object: «Shutter stop» DPT_Trigger [1.017]

  Reactivation causes the stop command ("1") to be sent to an additional communication object.

  «Position control of shutter/blinds»
  With the values "Up/Down" and "Stop/Step Up/Down" parameter "Shutter command"
  Possible values: {Off/On}
  +Communication object: «Shutter position» DPT_Scale [5.001]

  An object that takes the current position of the curtains and allows you to determine the necessary direction of movement when activating an action (Up or down)

- **«Dimmer control»**: set of settings and communication objects for dimmer control

  «Dimmer command»
  Possible values: {«Off», «On», «On/Off», «Brighter», «Darker», « Brighter/Darker»}
  +Communication object: «Dimming» DPT_Control_Dimming [3.007] (for parameter values «Brighter», «Darker», « Brighter/Darker»)
  +Communication object: «Dimmer switch» DPT_Switch [1.001] (for parameter values {«Off», «On», «Off/On»)

«Step size»
With the values «Brighter», «Darker», «Brighter/Darker» parameter «Dimmer command»
Possible values: {100%, 50%, 25%, 12.5%, 6.25%, 3.125%, 1.5625%}

«Send periodically»
For values other than 100% of the parameter «Step size»
Possible values: {Off/On}

Enabling the mode of periodic sending of the step value with the specified period.

«Step period»
Possible values: {100 ms, 200 ms, 300 ms, 500 ms, 1 sec, 2 sec, 3 sec, 5 sec}

«Stop on next click»
With the values «Brighter», «Darker», « Brighter/Darker» parameter «Dimmer command»
Possible values: {Off/On}

Enabling the option to send a stop brightness change command when the binary input is reactivated

«Dimmer status monitoring»
With the values «On/Off» и «Brighter/Darker» параметра «Dimmer command»
Possible values: {Off/On}
+Communication object: «Dimming status» DPT_Scale [5.001]

An object that accepts the current state of the dimmer and allows you to define the necessary command when activating an action.

- **«Scene»:** scene number defined by the "Scene" parameter will be sent to the KNX bus

  «Scene»
  Possible values: {1…64}

- **«Scene storing»**: scene number defined by the "Scene" parameter with the "Record" flag will be sent to the KNX bus

  «Scene»
  Possible values: {1…64}

- **«Percentage, %»**: percentage constant defined by the "Value" parameter will be sent to the KNX bus

  «Value»
  Possible values: {0…100} %

- **«Temperature, °C»**: temperature constant defined by the "Value" parameter will be sent to the KNX bus

  «Value»
  Possible values: {-100,0…0…100,0} °C

- «Relative humidity, %»: humidity constant defined by the "Value" parameter will be sent to the KNX bus

  «Value»
  Possible values: {0…100} %

- **«1-byte integer constant»**: 1-byte integer constant defined by the "Value" parameter will be sent to the KNX bus

«Value»
Possible values: {0…255}

- **«2-bytes integer constant»**: 2-bytes integer constant defined by the "Value" parameter will be sent to the KNX bus

«Value»
Possible values: {0…65535}

«Send on startup»
With the values «Toggle bit 0/1», «Switching with return to initial state» of parameter «Function»
Possible values: {Off/On}

Sending the value of the "Startup value" parameter to the bus when starting the Device.

«Send periodically»
Possible values: {Off/On}

«Period»
Possible values: {10…240} seconds or {1...240} minutes

«Delay in sending»
Possible values: {0…6000} milliseconds

The time for which the sending of the generated command will be postponed. When forming the next command before the expiration of this time, the previous one will be reset, and the countdown will start again

«Lock object»
Possible values: {Off/On}
+Communication object «Lock» DPT_Switch [1.001]

«Invert control value»
Possible values: {Off/On}

«Startup state»
Possible values: {«Unlocked», «Locked», «Last state»}

«Action on event»
Possible values: {«Release», «Push»}

«Long press»
Possible values: {Off/On}

Enabling the functionality of the binary input channel response to long button clicks

«Long press time»
Possible values: {100...500…6000} milliseconds

Time that the button must be pressed to recognize the "Long press" event

«Function»
Possible values: {«Bit 0», «Bit 1», «Toggle bit 0/1», «Switching with return to initial state», «Shutter control», «Dimmer control», «Scene», «Scene storing», «Percentage, %», «Temperature, °C», «Relative humidity, %», «1-byte integer constant», «2-bytes integer constant»}

Actions of the long press are like the functions of the short press, except for the features associated with stopping the curtains and dimmer.

«Delay in sending»
Possible values: {0…6000} milliseconds

Time for which the sending of the generated command will be postponed. When forming the next command before the expiration of this time, the previous one will be reset, and the countdown will start again

«Lock object»
Possible values: {Off/On}
+Communication object «Lock» DPT_Switch [1.001]

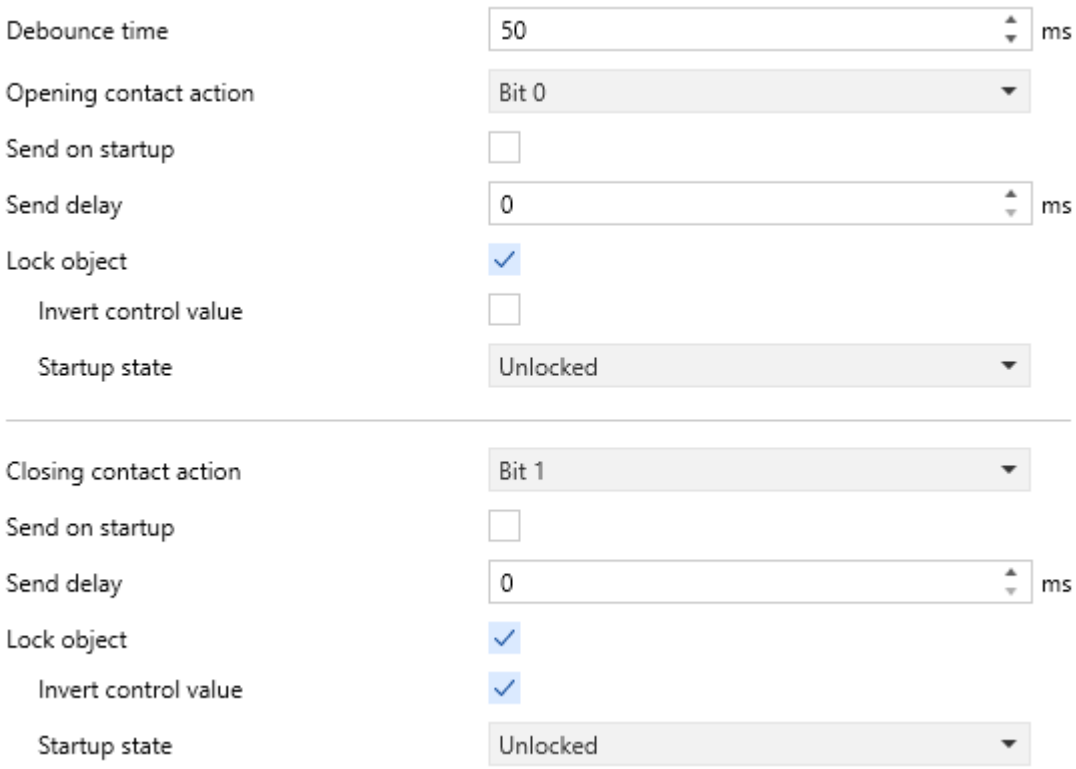
«Invert control value»
Possible values: {Off/On}

«Startup state»
Possible values: {«Unlocked», «Locked», «Last state»}

Device type: «Switch»

A dry contact or a device simulating it with fixation in each of the two positions is connected to the binary input channel, the results are actions determined for closing and opening. Contact closing corresponds to the falling edge of the input signal, the opening corresponds to the rising edge.
+Communication objects

- Binary input, contact opening (data type depends on the settings)
- Binary input, contact closing (data type depends on the settings)



«Debounce time»
Possible values: {0…50…250} milliseconds

The time of stabilization of the input state when the contact is closed or opened

«Opening contact action»
Possible values: {«No action», «Bit 0», «Bit 1», «Toggle bit 0/1», «Scene», «Percentage, %», «Temperature, °C», «Relative humidity, %», «1-byte integer constant», «2-bytes integer constant»}

«Send on startup»
Possible values: {Off/On}
Sending the configured value to the bus when the Device is started.

«Delay in sending»
Possible values: {0…6000} milliseconds

Time for which the sending of the generated command will be postponed. When forming the next command before the expiration of this time, the previous one will be reset, and the countdown will start again

«Lock object»
Possible values: {Off/On}
+Communication object «Lock» DPT_Switch [1.001]

«Invert control value»
Possible values: {Off/On}

«Startup state»
Possible values: {«Unlocked», «Locked», «Last state»}

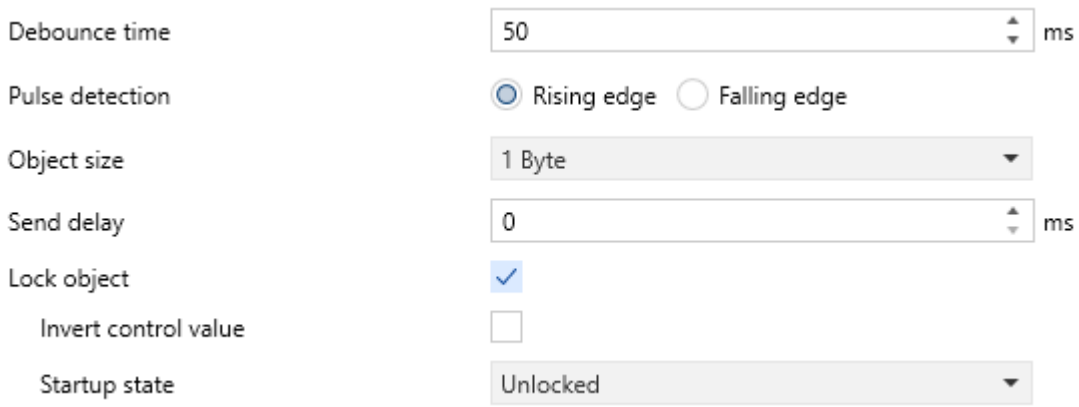
«Closing contact action»
Possible values: {«No action», «Bit 0», «Bit 1», «Toggle bit 0/1», «Scene», «Percentage, %», «Temperature, °C», «Relative humidity, %», «1-byte integer constant», «2-bytes integer constant»}

Configuring is like the section «Opening contact action»

Device type: «Pulse counter»

A dry contact or a device simulating it is connected to the binary input channel, the result is the number of transitions from the "closed" to "open" state or from the "open" to "closed" state. A special reset object can be used to reset to the value 0.
+ Communication objects:

- "Pulse counter " (Size depends on settings)
- "Pulse counter reset" (1-bit DPT_Trigger)



«Debounce time»
Possible values: {0…50…250} milliseconds

«Pulse detection»
Possible values: {«Rising edge», «Falling edge»}

The event by which the Device increases the counter, in the case of using a button or switch, the "Rising edge" setting corresponds to the opening of contacts and the "Falling edge" to the closure.

«Object size»
Possible values: {«1 Byte», «2 Bytes», «4 Bytes»}

Defines the type of object containing the number of counted pulses.

- 1 Byte – the communication object "Pulse counter 1 byte" is added (DPT_Value_1_Ucount [5.010])
- 2 Bytes – the communication object "Pulse counter 2 bytes" is added (DPT_Value_2_Ucount [7.001])
- 4 Bytes – the communication object "Pulse counter 4 bytes" is added (DPT_Value_4_Ucount [12.001])

«Send delay»
Possible values: {0…6000} milliseconds

The delay in sending each next value to the KNX bus, when each next pulse arrives, the delay starts again.

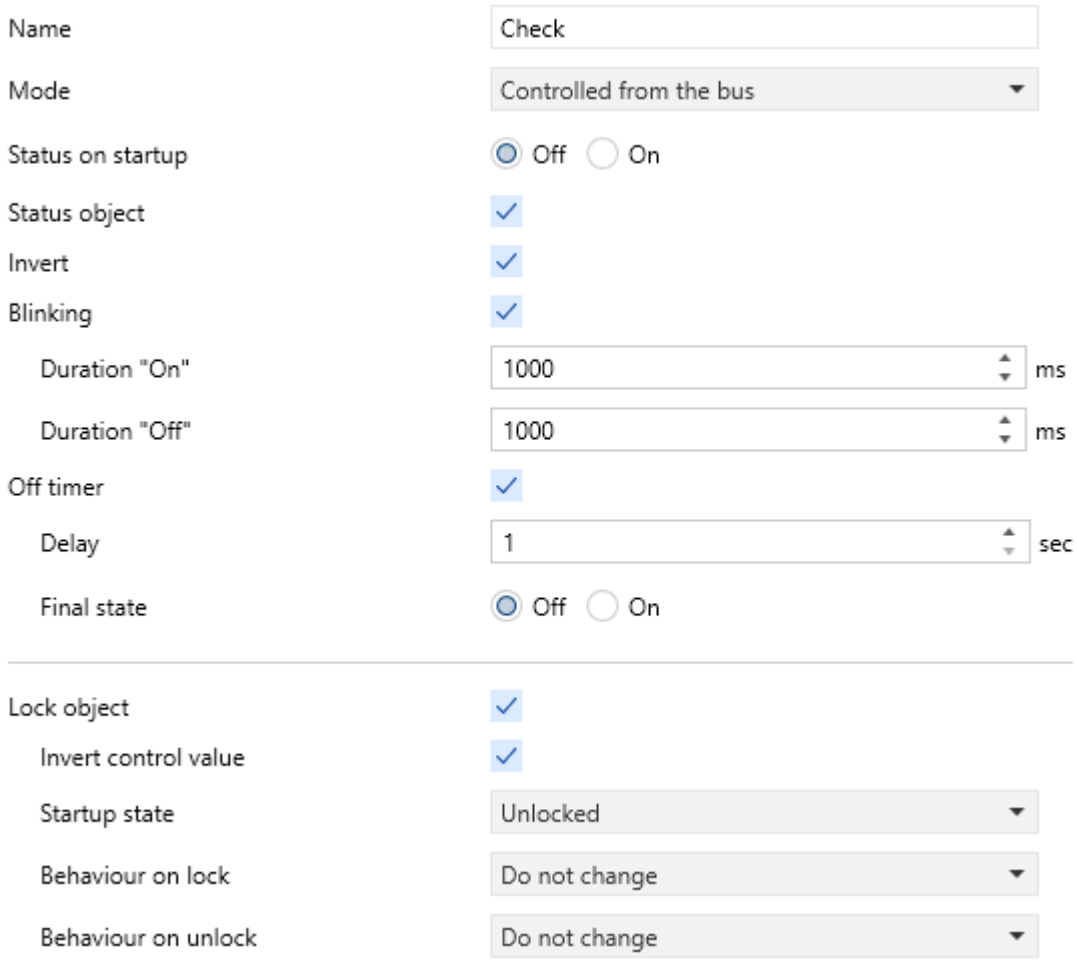
«Lock object»
Possible values: {Off/On}

«Invert control value»
Possible values: {Off/On}

«Startup state»
Possible values: {«Unlocked», «Locked», «Last state»}

2.4. Parameters. Configuring LED output channel

An LED or other low-power consumer with a consumption current of up to 2mA can be connected to any of the eight outputs of A....H.



«Name»
Possible values: String up to 20 characters long

The name of the channel is displayed in the header of the settings tab and the communication objects corresponding to the channel

«Mode»
Possible values: {«Permanent on», «Blinking», «Controlling from the bus»}

- «Permanent on»: without control objects, the signal is constantly sent to the output of the device.
- «Blinking»: without control objects, with the ability to activate the status object. The signal is sent to the output of the device with a period according to the settings described below.

  «Duration “On” »
  Possible values: {100…1000…10000} milliseconds

  Duration of the "On" phase

  «Duration “Off” »
  Possible values: {100…1000…10000} milliseconds

  Duration of the "Off" phase

«Status object»
Possible values: {Off/On}
+Communication object (DPT_State)

- «Controlling from the bus»: activation and deactivation is performed using an additional communication facility. "Switching" (DPT_Switch)

  «State on startup»
  Possible values: {Off/On}

  «Status object»
  Possible values: {Off/On}

  «Invert»
  Possible values: {Off/On}

  «Blinking»
  Possible values: {Off/On}

  In the activated state, the LED flashes with the set phase durations

  «Duration "On" »
  Possible values: {100…1000…10000} milliseconds

  The time in milliseconds during which the LED lights up.

  «Duration "Off »
  Possible values: {100…1000…10000} milliseconds

  The time in milliseconds during which the LED does light down.

  «Off timer»
  Possible values: {Off/On}

  Enabling the mode in which the output is automatically deactivated after a set period

  «Delay»
  Possible values: {1…255} seconds

«Final state»
Available only if the "Flashing" and "Off Timer" modes are enabled.
Possible values: {«Off», «On»}

The state to which the output will be set after the time of the Off timer has expired, regardless of the flashing phase in effect at that time.

«Lock object»
Possible values: {Off/On}

«Invert control value»
Possible values: {Off/On}

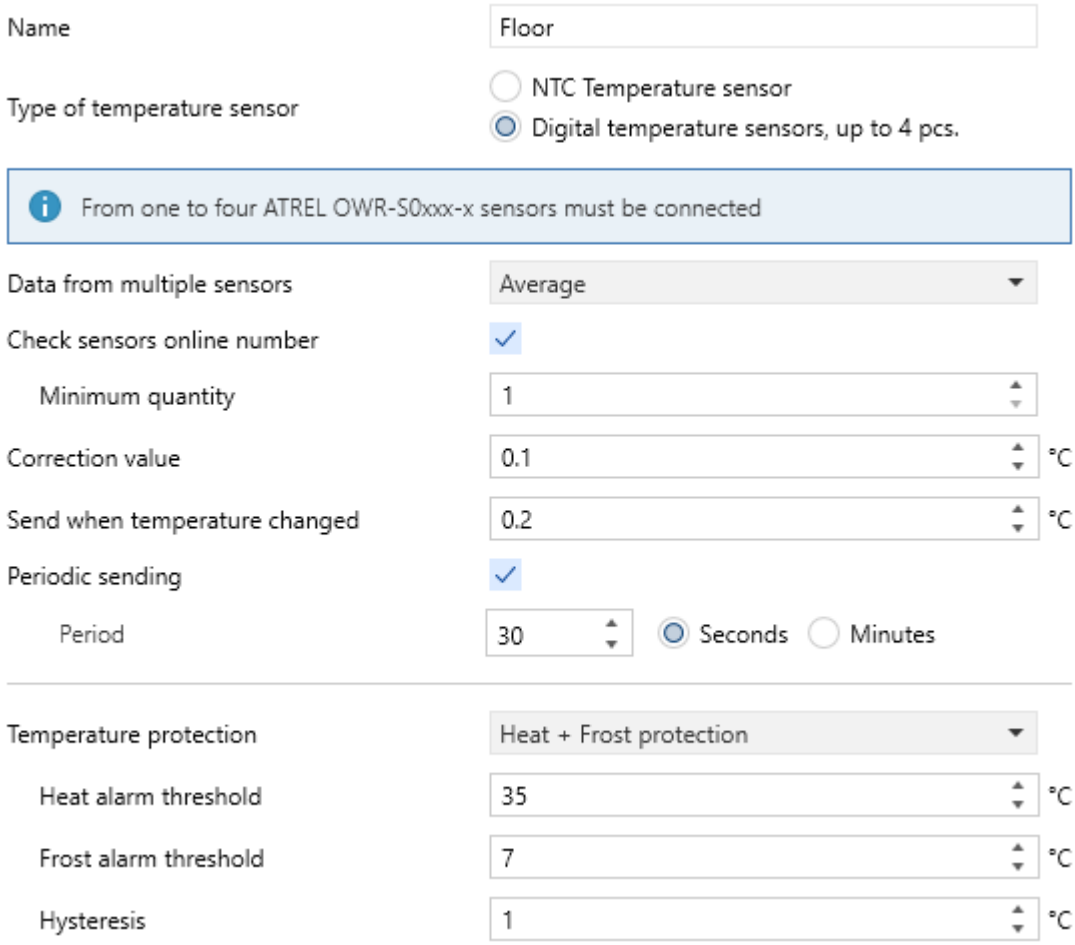
«Startup state»
Possible values: {«Unlocked », «Locked», «Last state»}

«Behavior on lock»
Possible values: {«Off», «On», «Do not change»}

«Behavior on unlock»
Possible values: {«Off», «On», «Do not change», «Value before locking»}

2.5. Parameters. Configuring temperature sensor channel

The device allows you to connect two types of temperature sensors to each of the four inputs A....D: an analog NTC sensor manufactured by Atrel (in any of the three versions) and from one to four digital sensors connected via a two-wire circuit and combined into a loop. If there is more than one digital sensor in the loop, the Device outputs an aggregated value from all sensors operating on the loop as a temperature value according to the function selected in the settings. This allows both to obtain a more accurate temperature value for the room, and to increase the reliability of the system by a multiple of the number of sensors. In case of failure of any sensor (or several), the channel continues to work using data from the rest.



«Name»
Possible values: String up to 20 characters long

The name of the channel is displayed in the header of the settings tab and the communication objects corresponding to the channel

«Type of temperature sensor»
Possible values: {«NTC temperature sensor», «Digital temperature sensors, up to 4 pcs»}

- NTC temperature sensor - 1 NTC temperature sensor must be connected to the input
- Digital temperature sensors, up to 4 pcs – from 1 to 4 digital temperature sensors OWR-Sxxxx-x must be connected to the input

«Data from multiply sensors »
Only for the «Type of temperature sensor» value « Digital temperature sensors, up to 4 pcs»
Possible values: {«Average», «Minimum», «Maximum», «Trim extreme values»}

The setting affects the measurement result only if more than 1 digital sensor is connected to the loop. The result is a function of all sensor values on the loop.

- «Average» – the result is the arithmetic mean of all sensors on the loop
- «Minimum» – the result is the minimum value of all sensors on the loop
- «Maximum» - the result is the maximum value of all sensors on the loop
- «Trim extreme values» - the result is the average value of all sensors on the loop, except for one sensor with a minimum value and one sensor with a minimum value. If the number of sensors on the loop is less than three, it is just an arithmetic mean.

«Check sensors online number»
Only for the «Type of temperature sensor» value «Digital temperature sensors, up to 4 pcs»
Possible values: {Off/On}

Parameter for enabling the function of monitoring the number of sensors operating on the loop

«Minimum quantity »
Possible values: {1…4}

If the number of sensors on the loop is less than the specified number, then the value "1" will be set in the communication object "Sensor error", otherwise "0".

«Correction value»
Possible values: {-10…0…10} °C

«Send when temperature changed»
Possible values: {0…0.2…10} °C

«Periodic sending»
Possible values: {Off/On}

«Period»
Possible values: {10…60…240} seconds or {1...5...240} minutes

The period for sending values. The countdown starts from the moment the first value is received or the next value is sent, initiated by exceeding the minimum absolute difference from the previous one.

«Temperature protection»
Possible values: {«None», «Heat protection», «Frost protection», «Heat + frost protection»}

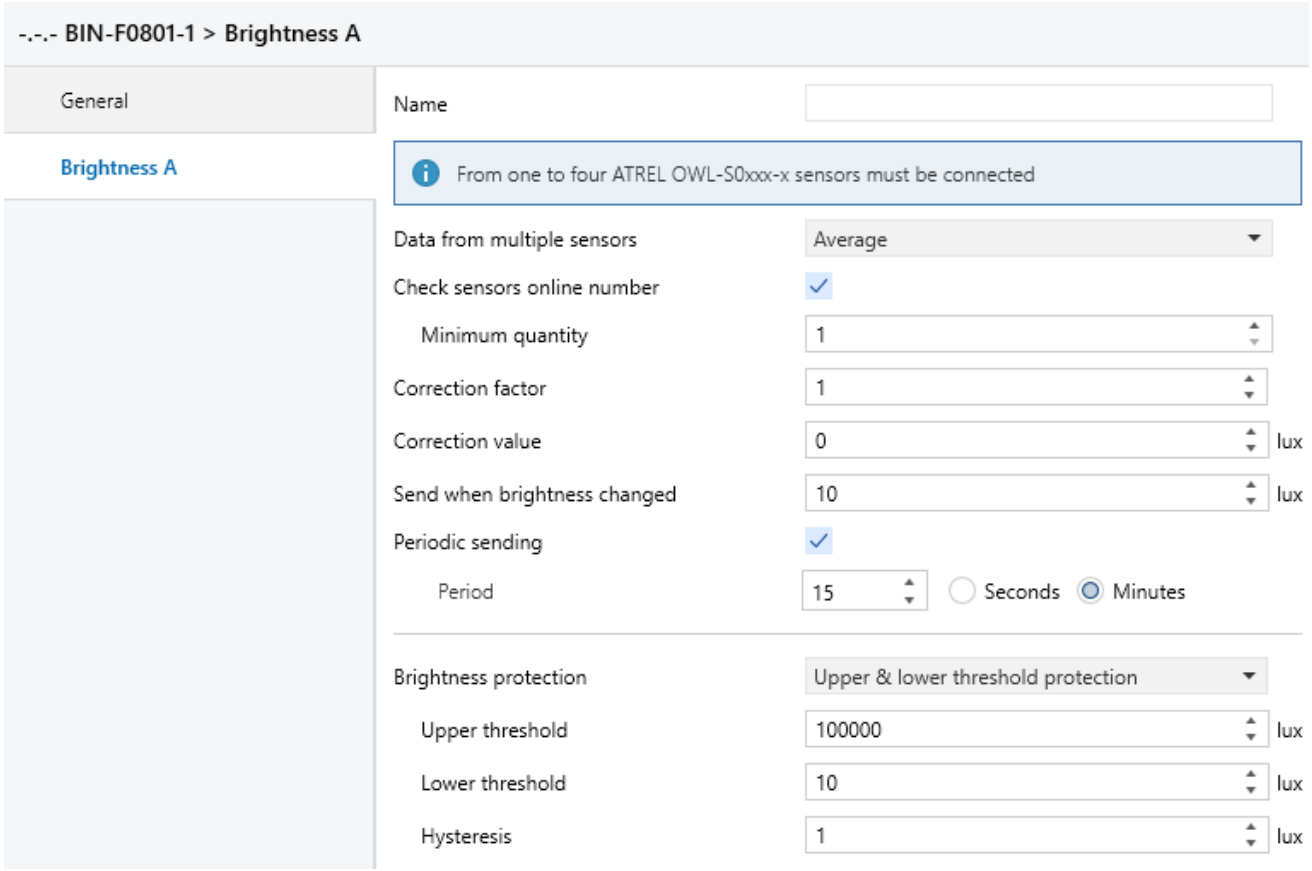
«Heat alarm threshold»
Possible values: {0…35…50} °C

«Frost alarm threshold »
Possible values: {0…7…50} °C

«Hysteresis»
Possible values: {0…1…50} °C

2.6. Parameters. Configuring light sensor channel

Device allows you to connect to each of the four inputs A....D from one to four specialized digital light sensors Atrel OWL-S0110-1 combined in a loop. If there is more than one digital sensor in the loop, the Device outputs an aggregated value from all sensors operating on the loop as the illumination value according to the function selected in the settings. This allows both to obtain a more accurate illumination value for the room, and to increase the reliability of the system by a multiple of the number of sensors. In case of failure of any sensor (or several), the channel continues to work using data from the rest.



«Name»
Possible values: String up to 20 characters long

The name of the channel is displayed in the header of the settings tab and the communication objects corresponding to the channel

«Data from multiply sensors »
Only for the «Type of temperature sensor» value « Digital temperature sensors, up to 4 pcs»
Possible values: {«Average», «Minimum», «Maximum», «Trim extreme values»}

The setting affects the measurement result only if more than 1 digital sensor is connected to the loop. The result is a function of all sensor values on the loop.

- «Average» – the result is the arithmetic mean of all sensors on the loop
- «Minimum» – the result is the minimum value of all sensors on the loop
- «Maximum» - the result is the maximum value of all sensors on the loop
- «Trim extreme values» - the result is the average value of all sensors on the loop, except for one sensor with a minimum value and one sensor with a minimum value. If the number of sensors on the loop is less than three, it is just an arithmetic mean.

«Check sensors online number»
Only for the «Type of temperature sensor» value «Digital temperature sensors, up to 4 pcs»
Possible values: {Off/On}

Parameter for enabling the function of monitoring the number of sensors operating on the loop

«Minimum quantity »
Possible values: {1…4}

If the number of sensors on the loop is less than the specified number, then the value "1" will be set in the communication object "Sensor error", otherwise "0".

«Correction factor»
Possible values: {0,1…1…10}

The coefficient by which the value obtained from the sensors will be multiplied to compensate for a possible error caused by external factors

«Correction value»
Possible values: {-5000…0…5000} lux

The value that will be added to the value received from the sensors to compensate for a possible error caused by external factors. The operation is applied after multiplication by the "Correction factor"

«Send when brightness changed»
Possible values: {0…10…1000} lux

The minimum absolute difference relative to the value previously sent to the KNX bus at which the current sensor value will be sent to the KNX bus

«Periodic sending»
Possible values: {Off/On}

Enabling the periodic mode of sending sensor values regardless of the "Send when brightness changes" setting

«Period»
Possible values: {10…60…240} seconds or {1...5...240} minutes

The period for sending values. The countdown starts from the moment the first value is received or the next value is sent, initiated by exceeding the minimum absolute difference from the previous one.

«Protection by brightness level»
Possible values: {«None», «Upper threshold protection», «Lower threshold protection », «Upper & Lower threshold protection»}

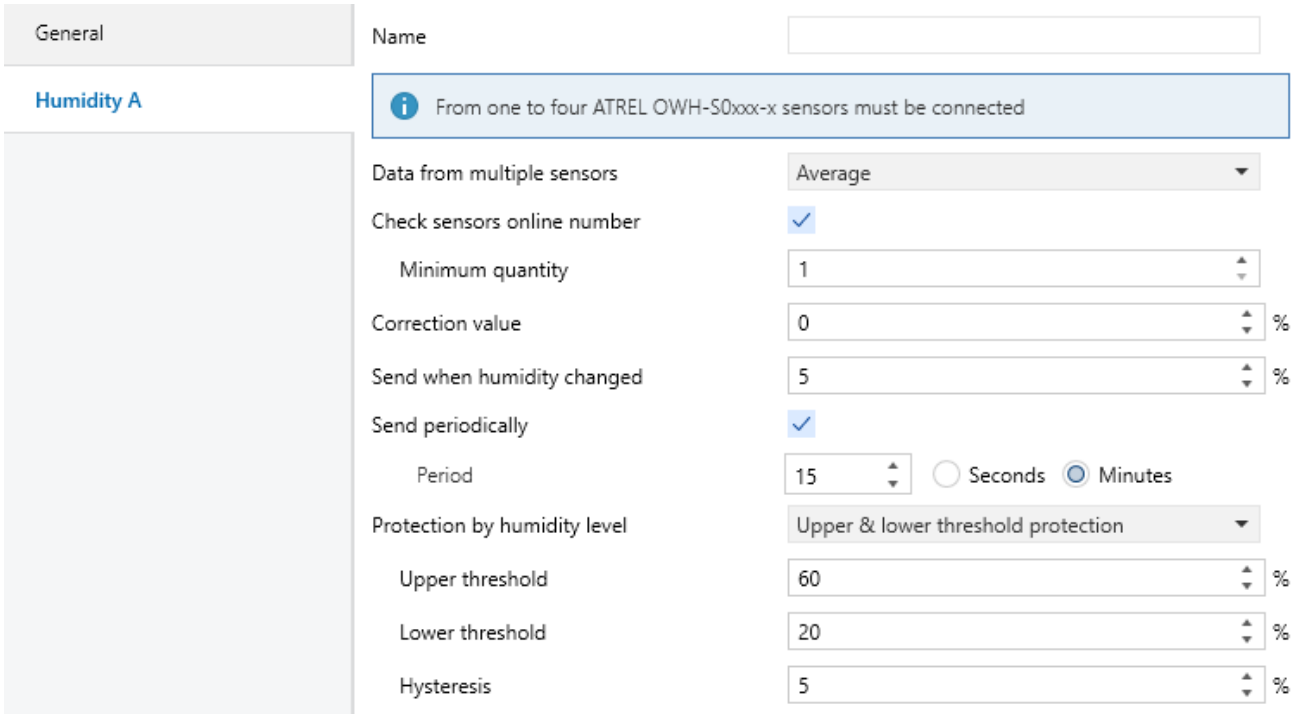
«Upper threshold»
Possible values: {0…100000…200000} lux

«Lower threshold»
Possible values: {0…10…200000} lux

«Hysteresis»
Possible values: {0…1…10000}

2.4. Parameters. Configuring humidity sensor channel

The device allows you to connect to each of the four inputs A....D from one to four specialized digital humidity sensors Atrel OWH-S0110-1 combined in a loop. If there is more than one digital sensor in the loop, the Device outputs an aggregated value from all sensors operating on the loop as a humidity value according to the function selected in the settings. This allows both to obtain a more accurate humidity value for the room, and to increase the reliability of the system by a multiple of the number of sensors. In case of failure of any sensor (or several), the channel continues to work using data from the rest.



«Name»
Possible values: String up to 20 characters long

The name of the channel is displayed in the header of the settings tab and the communication objects corresponding to the channel

«Data from multiply sensors »
Only for the «Type of temperature sensor» value « Digital temperature sensors, up to 4 pcs»
Possible values: {«Average», «Minimum», «Maximum», «Trim extreme values»}

The setting affects the measurement result only if more than 1 digital sensor is connected to the loop. The result is a function of all sensor values on the loop.

- «Average» – the result is the arithmetic mean of all sensors on the loop
- «Minimum» – the result is the minimum value of all sensors on the loop
- «Maximum» - the result is the maximum value of all sensors on the loop
- «Trim extreme values» - the result is the average value of all sensors on the loop, except for one sensor with a minimum value and one sensor with a minimum value. If the number of sensors on the loop is less than three, it is just an arithmetic mean.

«Check sensors online number»
Only for the «Type of temperature sensor» value «Digital temperature sensors, up to 4 pcs»
Possible values: {Off/On}

Parameter for enabling the function of monitoring the number of sensors operating on the loop

«Minimum quantity »
Possible values: {1…4}

If the number of sensors on the loop is less than the specified number, then the value "1" will be set in the communication object "Sensor error", otherwise "0".

«Correction value»
Possible values: {-5000…0…5000} lux

The value that will be added to the value received from the sensors to compensate for a possible error caused by external factors. The operation is applied after multiplication by the "Correction factor"

«Send when brightness changed»
Possible values: {0…10…1000} lux

The minimum absolute difference relative to the value previously sent to the KNX bus at which the current sensor value will be sent to the KNX bus

«Periodic sending»
Possible values: {Off/On}

Enabling the periodic mode of sending sensor values regardless of the "Send when brightness changes" setting

«Period»
Possible values: {10…60…240} seconds or {1...5...240} minutes

The period for sending values. The countdown starts from the moment the first value is received or the next value is sent, initiated by exceeding the minimum absolute difference from the previous one.

«Protection by humidity level»
Possible values: {«None», «Upper threshold protection», «Lower threshold protection », «Upper & Lower threshold protection»}

«Upper threshold»
Possible values: {0…20…100} %

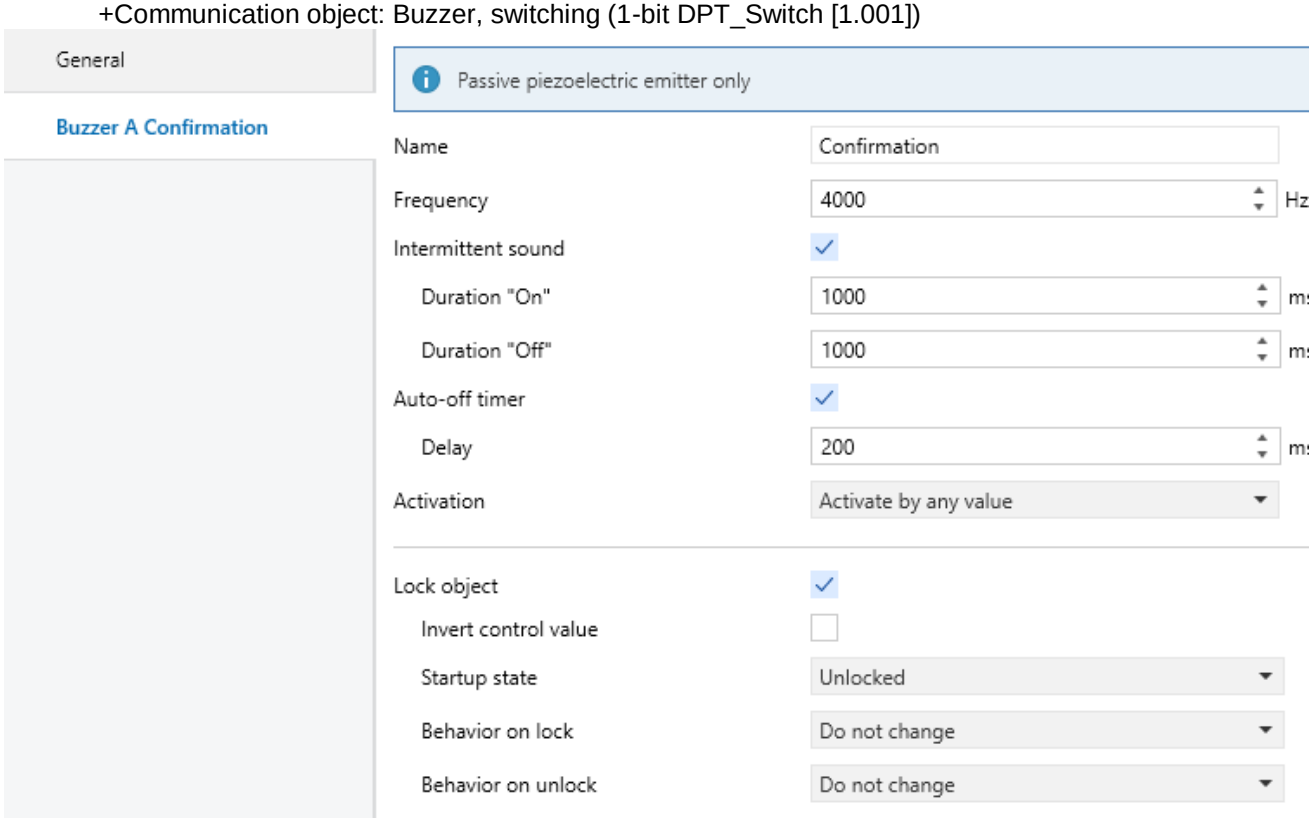
«Lower threshold»
Possible values: {0…60…100} %

«Hysteresis»
Possible values: {0…5…50} %

2.7. Parameters. Configuring buzzer output

Connection of the buzzer is allowed only to terminal A. The buzzer model can only be of the passive piezoelectric type with a resonant frequency from 2 to 6 kHz.

+Communication object: Buzzer, switching (1-bit DPT_Switch [1.001])



«Name»
Possible values: A string limited to 20 characters.

The name of the channel to facilitate work with communication objects.

«Frequency»
Possible values: {2000…4000…6000} Hz

The frequency of the buzzer sound. The resonance frequency of the buzzer Atrel BUZ-S4000-1 is 4000Hz, Atrel BUZ-S2000-1 is 2000Hz.

«Intermittent sound»
Possible values: {Off/On}

«On» - activation of the mode in which the buzzer emits an intermittent signal instead of a constant one. The duration of the sound/silence phases is set below.

«Duration «On»
Possible values: {100…1000…10000} milliseconds

Duration of the buzzer sound phase in intermittent sound mode

«Duration «Off»
Possible values: {100…1000…10000} milliseconds

Duration of the buzzer silence phase in intermittent sound mode

«Auto-off timer»
Possible values: {Off/On}

Enabling the buzzer auto-off mode. It is valid only for cases when the buzzer is turned on using the bus communication object.

«Delay»
Possible values: {100…1000…60000} milliseconds

The time after which the buzzer will be automatically turned off. Short duration values are mainly used to confirm commands.

«Invert the control»
When the "Auto-off timer" parameter is set to "Off"
Possible values: {Off/On}

Inverting the control value from the buzzer activation communication object. When the value is "On", the buzzer turns on with a value of 0, Off turns off with a value of 1.

«Activation»
When the "Auto-off timer" parameter is set to "On"
Possible values: {« Activate with the value "1"», « Activate with the value "0"», « Activate by any value»}

The parameter explicitly defines the value of the communication object «Buzzer. Switching" at which the buzzer starts work. It is possible to set the buzzer to activate at any (0 and 1) value of the incoming telegram. In this case, it is not possible to turn off the buzzer using a communication object and occurs only after the specified time specified in the "Delay" parameter has elapsed.

«Lock object»
Possible values: {Off/On}

+Communication object. Lock» (1-bit DPT_Enable [1.003]) which allows you to block the activation of the buzzer

«Invert control value»
Possible values: {Off/On}

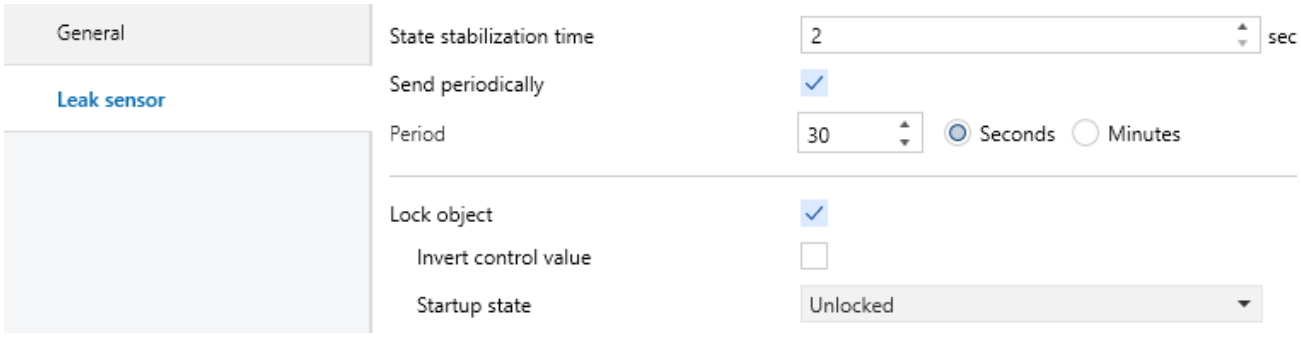
«Startup state»
Possible values: {«Unlocked», «Locked», «Last state»}

«Behavior on lock»
Possible values: {«Off», «On», «Do not change»}

«Behavior on unlock»
Possible values: {«Off», «On», «Do not change»}

2.8. Parameters. Configuring leak sensor input

The device allows you to connect a wired sensor of the type "Neptun" SW-005, SW-007. The connection is made through a specially dedicated connector on the side surface of the Device and the supplied adapter with three 10cm-long conductors in the color scheme corresponding to the conductors of the «Neptune» sensor. It is necessary to connect by observing the colors of the conductors: "green"-"green", "red"-"red", "yellow"-"yellow"



«State stabilization time»
Possible values: {2…60} sec

«Send periodically»
Possible values: {Off/On}

Enabling the periodic mode of sending the status of the leak sensor.

«Period»
Possible values: {10…30…240} seconds or {1...240} minutes

«Lock objects»
Possible values: {Off/On}

+ Communication objects «Lock leak sensor» DPT_Enable

«Invert control value»
Possible values: {Off/On}

When "On", the channel is blocked in the current state and stops responding to the actual state of the sensor

«Startup state»
Possible values: {«Unlocked», «Locked», «Last state»}

The status of the leak sensor channel lock mode when starting or restarting the device

2.9. Parameters. Configuring thermostat

The device allows you to set up and use up to 4 thermostats with two modes in each (Heating and Cooling) and rules for switching between them. To set up any thermostat channel, see the file "User Manual. Configuring thermostat"

2.10. Parameters. Configuring Calculation module

To configure any of the 20 calculation modules, see the file "User Manual. Configuring the calculation module"

3. Communication objects

3.1. General

ID	Name		Type	Flags
Conditions				
Description				
1	Notification. Alive	O	DPT_Trigger	CT
When activating the "Availability notifications"				
Sending "1" with the specified period				
2	Water leak sensor. Water leak alarm	O	DPT_Alarm	RCT
With the "Water leak alarm" parameter set to "On"				
3	Water leak alarm. Lock	I	DPT_Enable	CW
With the parameters "Water leak alarm", "Lock" set to "On"				
292	Buzzer. Switch	I	DPT_Switch	CW
When the parameter "A: Mode" is set to "Buzzer"				
293	Buzzer. Lock	I	DPT_Enable	CW
When the parameter "A: Mode" is set to "Buzzer" and «Lock object» to «On»				
654	Debug information	O	DPT_String_ASCII	RCT
Hidden				

3.2 Binary input channel

N is the value corresponding to the channel: for "A" - 0, for "B" - 1, and so on

ID	Name		Type	Flags
Conditions				
Description				
4+24*N	Binary input X, short press. Switching	O	DPT_Switch	CRT
Button: when selecting a function «Bit 0», «Bit 1», «Toggle 0/1», «Switching with return to initial state»				
Sending the value 0 or 1 of the button when pressing and/or releasing				
4+24*N	Binary input X, short press. Dimmer switch	O	DPT_Switch	CRT
Button: when selecting a function «Dimmer control», Commands: «Off», «On», «On/Off»				
4+24*N	Binary input X, short press. Shutter move direction	O	DPT_UpDown	CRT
Button: when selecting a function «Shutter control»				
4+24*N	Binary input X, short press. Shutter stop/step	O	DPT_Step	CRT
Button: when selecting a function «Shutter control»				
4+24*N	Binary input X, contact opening. Switching	O	DPT_Switch	CRT
Switch: when selecting a function «Bit 0», «Bit 1», «Toggle 0/1»				
5+24*N	Binary input X, short press. Lock	I	DPT_Switch	CW
Button: when selecting a function «Lock object»				
5+24*N	Binary input X, contact opening. Lock	I	DPT_Switch	CW
Switch: when selecting a function «Lock object»				
6+24*N	Binary input X, short press. Scene	O	DPT_SceneNumber	CRT
Button: when selecting a function «Scene»				
6+24*N	Binary input X, short press. Scene storing	O	DPT_SceneControl	CRT
Button: when selecting a function «Scene storing»				
6+24*N	Binary input X, contact opening. Scene	O	DPT_SceneNumber	CRT
Switch: when selecting a function «Scene»				
7+24*N	Binary input X, short press. Dimming	O	DPT_Control_Dimming	CT
Button: when selecting a function «Dimmer control»				
8+24*N	Binary input X, short press. Dimming status	I	DPT_Scaling	CW
Button: when selecting a function «Dimmer»				

9+24*N	Binary input X, short press. Shutter position	I	DPT_Scaling	CW
Button: when selecting a function «Shutter control»				
9+24*N	Binary input X, short press. Shutter stop	O	DPT_Trigger	CT
Button: when selecting a function «Shutter control»				
10+24*N	Binary input X, short press. 1-byte integer constant	O	DPT_Value_1_Ucount	CT
Button: when selecting a function «1-byte integer constant»				
10+24*N	Binary input X, contact opening. 1-byte integer constant	O	DPT_Value_1_Ucount	CT
Switch: when selecting a function «1-byte integer constant»				
11+24*N	Binary input X, short press. 1-byte percent constant	O	DPT_Scaling	CT
Button: when selecting a function «Percentage, %»				
11+24*N	Binary input X, contact opening. 1-byte percent constant	O	DPT_Scaling	CT
Switch: when selecting a function «Percentage, %»				
12+24*N	Binary input X, short press. 2-bytes integer constant	O	DPT_Value_2_Ucount	CT
Button: when selecting a function «2-bytes integer constant»				
12+24*N	Binary input X, contact opening. 2-bytes integer constant	O	DPT_Value_2_Ucount	CT
Switch: when selecting a function «2-bytes integer constant»				
13+24*N	Binary input X, short press. Temperature °C	O	DPT_Value_Temp	CT
Button: when selecting a function «Температура °C»				
13+24*N	Binary input X, contact opening. Temperature °C	O	DPT_Value_Temp	CT
Switch: when selecting a function «Температура °C»				
14+24*N	Binary input X, short press. Humidity %	O	DPT_Value_Humidity	CT
Button: when selecting a function « Relative humidity, % »				
14+24*N	Binary input X, contact opening. Humidity %	O	DPT_Value_Humidity	CT
Switch: when selecting a function « Relative humidity, %»				
15+24*N	Binary input X, long press. Switching	O	DPT_Switch	CRT
Button: when selecting a function «Bit 0», «Bit 1», «Toggle 0/1», «Switching with return to initial state»				
15+24*N	Binary input X, long press. Shutter move direction	O	DPT_UpDown	CRT
Button: when selecting a function for long press «Shutter control»				
15+24*N	Binary input X, long press. Вкл/Off диммера	O	DPT_Switch	CRT
Button: when selecting a function for long press «Dimmer»				
15+24*N	Binary input X, long press. Shutter stop/step	O	DPT_Step	CRT
Button: when selecting a function for long press «Shutter control»				
15+24*N	Binary input X, contact closing. Switching	O	DPT_Switch	CRT
Switch: when selecting a function «Bit 0», «Bit 1», «Toggle 0/1»				
16+24*N	Binary input X, long press. Lock	I	DPT_Switch	CW
Button: when selecting a function for long press «Lock object»				
16+24*N	Binary input X, contact closing. Lock	I	DPT_Switch	CW
Switch: when selecting a function «Lock object»				
17+24*N	Binary input X, long press. Scene	O	DPT_SceneNumber	CRT
Button: when selecting a function for long press «Scene»				
17+24*N	Binary input X, contact closing. Scene	O	DPT_SceneNumber	CRT
Switch: when selecting a function «Scene»				
17+24*N	Binary input X, long press. Scene storing	O	DPT_SceneControl	CRT
Button: when selecting a function for long press «Scene storing»				
18+24*N	Binary input X, long press. Dimming	O	DPT_Control_Dimming	CT
Button: when selecting a function for long press «Dimmer»				
19+24*N	Binary input X, long press. Dimming status	I	DPT_Scaling	CW
Button: when selecting a function for long press «Dimmer»				

20+24*N	Binary input X, long press. Shutter position	I	DPT_Scaling	CW
Button: when selecting a function for long press «Shutter control»				
21+24*N	Binary input X, long press. Shutter stop	O	DPT_Trigger	CT
Button: when selecting a function for long press «Shutter control»				
21+24*N	Binary input X, long press. Dimmer stop	O	DPT_Switch	CT
Switch: when selecting a function «Dimmer»				
22+24*N	Binary input X, long press. 1-byte integer constant	O	DPT_Value_1_Ucount	CT
Button: when selecting a function for long press «1-byte integer constant»				
22+24*N	Binary input X, contact closing. 1-byte integer constant	O	DPT_Value_1_Ucount	CT
Switch: when selecting a function «1-byte integer constant»				
23+24*N	Binary input X, long press. Scale	O	DPT_Scaling	CT
Button: when selecting a function for long press «Scale»				
23+24*N	Binary input X, contact closing. Scale	O	DPT_Scaling	CT
Switch: when selecting a function «Scale»				
24+24*N	Binary input X, long press. 2-bytes integer constant	O	DPT_Value_2_Ucount	CT
Button: when selecting a function for long press « 2-bytes integer constant»				
24+24*N	Binary input X, contact closing. 2-bytes integer constant	O	DPT_Value_2_Ucount	CT
Switch: when selecting a function «2-bytes integer constant»				
25+24*N	Binary input X, long press. Temperature °C	O	DPT_Value_Humidity	CT
Button: when selecting a function for long press «Temperature °C»				
25+24*N	Binary input X, contact closing. Temperature °C	O	DPT_Value_Humidity	CT
Switch: when selecting a function «Temperature °C»				
25+24*N	Binary input X, long press. Humidity %	O	DPT_Value_Temp	CT
Button: when selecting a function for long press «Humidity, %»				
25+24*N	Binary input X, contact closing. Humidity %	O	DPT_Value_Temp	CT
Switch: when selecting a function «Relative humidity, %»				
26+24*N	Binary input X, Pulse counter 1 byte	O	DPT_Value_1_Ucount	CT
Pulse counter: when selecting «Object size» = «1 byte»				
27+24*N	Binary input X, Pulse counter 2 bytes	O	DPT_Value_2_Ucount	CT
Pulse counter: when selecting «Object size» = «2 bytes»				
28+24*N	Binary input X, Pulse counter 4 bytes	O	DPT_Value_4_Ucount	CT
Pulse counter: when selecting «Object size» = «4 bytes»				
29+24*N	Binary input X, Reset pulse counter	I	DPT_Reset	CW
Pulse counter: Always				
Reset pulse counter				

3.3 LED output channel

N is the value corresponding to the channel: for "A" - 0, for "B" - 1, and so on

ID	Name	Type		Flags
Conditions				
Description				
212+4*N	*LED X. Switch*	O	DPT_Switch	CW
Always				
213+4*N	*LED X. State*	I	DPT_State	RCT
With the "Status Object" parameter set to "On"				
214+4*N	*LED X. Permanent on*	I	DPT_Switch	CW
When the "Blinking" parameter is set to "On"				
215+4*N	*LED X. Lock*	I	DPT_Enable	CW
With the "Lock Object" parameter set to "On"				

3.4 Temperature sensor channel

N is the value corresponding to the channel: for "A" – 0, for "B" - 1, for "C" - 2, for "D" – 3

ID	Name	Type		Flags
Conditions				
Description				
244+4*N	Temperature sensor X. Temperature value, °C	O	DPT_Value_Temp	RCT
Always				
245+4*N	Temperature sensor X. Sensor error	O	DPT_Alarm	RCT
Always				
246+4*N	Temperature sensor X. Alert: Temperature under threshold	O	DPT_Alarm	RCT
Depending on the "Temperature protection" parameter				
247+4*N	Temperature sensor X. Alert: Temperature over threshold	O	DPT_Alarm	RCT
Depending on the "Temperature protection" parameter				

3.5 Brightness sensor channel

N is the value corresponding to the channel: for "A" – 0, for "B" - 1, for "C" - 2, for "D" – 3

ID	Name	Type		Flags
Conditions				
Description				
260+4*N	Brightness sensor X. Brightness value, lux	O	DPT_Value_Lux	RCT
Always				
261+4*N	Brightness sensor X. Sensor error	O	DPT_Alarm	RCT
Always				
262+4*N	Brightness sensor X. Alert: Brightness under threshold	O	DPT_Alarm	RCT
Depending on the "Brightness protection" parameter				
263+4*N	Brightness sensor X. Alert: Brightness over threshold	O	DPT_Alarm	RCT
Depending on the "Brightness protection" parameter				

3.6 Humidity sensor channel

N is the value corresponding to the channel: for "A" – 0, for "B" - 1, for "C" - 2, for "D" – 3

ID	Name	Type		Flags
Conditions				
Description				
276+4*N	Humidity sensor X. Relative humidity, %	O	DPT_Value_Humidity	RCT
Always				
277+4*N	Humidity sensor X. Sensor error	O	DPT_Alarm	RCT
Always				
278+4*N	Humidity sensor X. Alert: Humidity under threshold	O	DPT_Alarm	RCT
Depending on the "Humidity protection" parameter				
279+4*N	Humidity sensor X. Alert: Humidity over threshold	O	DPT_Alarm	RCT
Depending on the "Humidity protection" parameter				

3.7. Communication module

For a description of the communication objects of any of the calculation modules, see the file "User Manual. Configuring calculation module".

4. Appendixes

4.1 Appendix 1. Terms