INTERRA

Developer of Uniqueness

KNX Air Quality Multi Sensor

Product Manual

PM2403060230AEN

Contents

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1. Content of The Document

This document contains the specifications of Interra's ITR404-1X1X KNX Air Quality Multi Sensor product and the project context. This document applies to all products involved as a common information base and is binding on KNX system equipment involved in the project. Changes are permitted only in coordination with the product management.

2. Product Description

ITR404-1X1X is an advanced air quality monitoring system designed to provide real-time insights into indoor air quality via the KNX bus. By detecting air quality issues early, users can take preventive measures to maintain a healthy living environment and mitigate potential health risks. With features including digital input, analog input, logic channels, converters and an indoor air quality index display, the device offers informative monitoring capabilities with controlling home automation.

The sensor is equipped BOSCH BME680 chip to measure various parameters such as VOC (Volatile Organic Compounds), CO2 (Carbon Dioxide), pressure, humidity, and temperature. These measurements are crucial for assessing air quality levels and identifying potential sources of indoor air pollution.

Users have the flexibility to customize alarm thresholds based on predefined parameters. When air quality levels deviate from the set thresholds, the device triggers alarms to alert users, allowing them to take prompt actions to improve air quality(for example climate control/ shutter control/ fan control etc.).

Installation and setup are straightforward, making it suitable for various indoor environments such as homes, offices, computer rooms, warehouses, and more. The device can be strategically placed in areas prone to air quality issues, providing comprehensive coverage throughout the space.

By integrating seamlessly with the KNX system, users can conveniently monitor and manage indoor air quality alongside other smart building functionalities, enhancing overall comfort and well-being.

2.1. Technical Information

The following table shows the technical information of the Interra KNX Air Quality Multi Sensor.

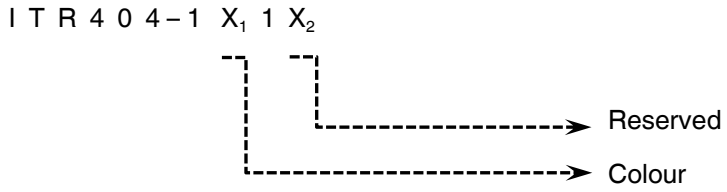
Product Code	ITR404-1X1X
Power supply	KNX power supply
Current consumption	6 mA (Alarm condition)
LED indicators	1 x Programming LED
Buttons	1 x Programming button
Connection cable	0,25 mm^2 – 1,5 mm^2
Type of protection	Flush Mounted: IP 20 Surface Mounted: IP 44
Temperature range	Operation (0°C…40°C) Storage (-10°C…75°C)
Maximum air humidity	< 90 RH
Colour	White, Anthracite
Dimensions	70 × 41,8 mm (Φ x H)
Certification	KNX Certificate
Configuration	Via ETS Software

2.2. Functional Descriptions

The most outstanding features of ITR404-1X1X are:

- In Operation notification.
- The device is capable of detecting inputs and measuring inputs analogically.
- The device is capable of measuring air quality.
- It can provide alarm output from group objects with different data point types.
- The device has the capability to self-calibrate, and you can select the calibration consistency from the ETS parameters.
- Disable, digital/analog input, converter and logic features are available.
- ITR404-1X1X have 2 logic function blocks and can be set in the logical relation AND/OR/XOR. Each block can control 5 output objects.
- Via 2 digital inputs and 1 digital/analog input, external devices can be connected.
- Switch sensor, switch/dimming sensor, shutter sensor, value/forced operation, scene control, RGB colour control and HVAC mode selection control can be made with buttons that are connected to the inputs

2.3. Model and Variations



X_1 : Colours	
0	White
1	Anthracite

Table 1: KNX Air Quality Multi Sensor Colours

3. ETS Parameters

3.1. General

When the KNX Air Quality Multi Sensor is attached to the project from the ETS program, a configuration setting must be made primarily before loading, depending on the model to be programmed. When entering the “GENERAL” in the parameter page, the configuration screen will appear shown above. As previously mentioned, all models can be configured via an ETS file thus the programmers can work flexibly.

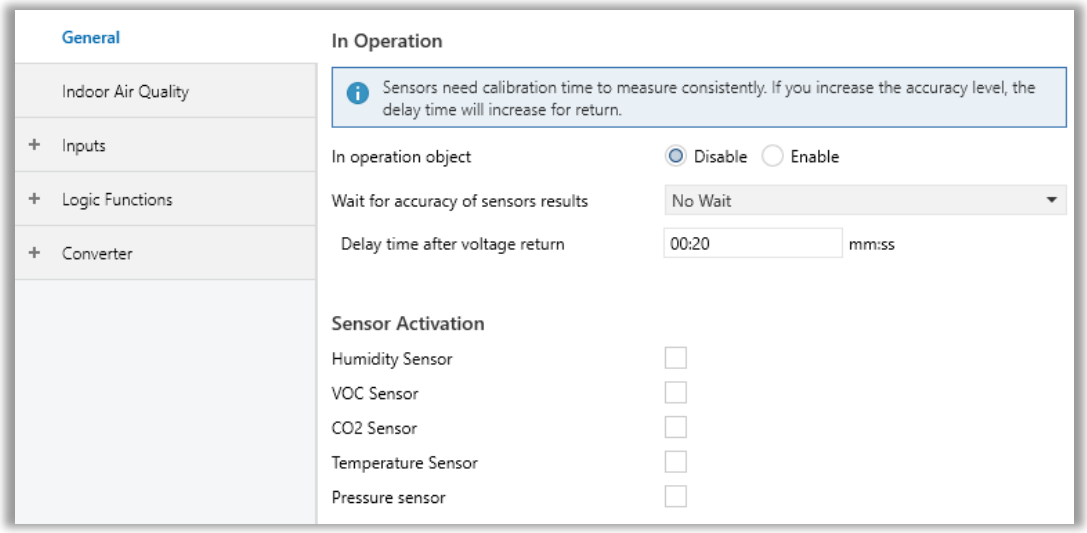


Fig. 1: General Parameter Configuration Page

3.1.A. Enable in Operation

This function has an important role to detect whether the device is working or not. By enabling the “Enable in operation” parameter, it is possible to know if the device is working properly. The value set in “in operation send” parameter is sent with a preset time via the “In Operation” object. If this telegram is received periodically, it shows that the device is working properly. Since the period time is in minutes, it is better to keep the period time higher in order not to increase the bus line traffic.

3.1.1. Parameters List

PARAMETER	DESCRIPTION	VALUES
In operation object	This parameter is used to determine the existence of the KNX Air Quality Multi Sensor on the KNX bus line. The cyclic telegram can be monitored by an external KNX device. If a telegram is not received, the device may be defective or the KNX cable to the transmitting device may be interrupted. **Disable:** The group object is not enabled. **Enable:** The group object is enabled.	**Disable** Enable
In operation Output Polarity[1]	This parameter is used to determine the send value of the “General - In operation” group object on the KNX bus line.	Alive value 0 **Alive value 1**
In operation send interval (min)[1]	This parameter is used to set the cyclically sending time interval value of the “General - In operation” group object.	1…**5**… 255
Wait for accuracy of sensors results	Sensor requires a calibration period before accurate readings can be obtained. This calibration period allows the sensor to stabilize and adjust to its environment, ensuring reliable data acquisition. There are three predefined calibration modes: low, medium and high accuracy, as well as a customizable option where the user can manually set the waiting time according to their specific requirements.	No Wait Low accuracy Medium accuracy High accuracy
Delay time after voltage recovery (sec)	This parameter is used to determine the delay time after voltage recovery in seconds. When in a delayed state, the Air Quality Multi Sensor does not send any KNX telegrams. Incoming telegrams are received and updated in the background. The updated values are only executed when the wait state ends and then sent according to the parametrization.	**2**…60
Humidity Sensor	This checkbox enables or disables the humidity sensor. When selected, the sensor will measure the moisture content in the environment, providing data on relative humidity.	**Unchecked** Checked

VOC Sensor	Selecting this checkbox activates the Volatile Organic Compound (VOC) sensor. It detects various gases emitted from sources like paints, cleaning agents, and building materials, helping to assess indoor air quality.	**Unchecked** Checked
CO2 Sensor	Enabling this checkbox activates the Carbon Dioxide (CO2) sensor. It measures the concentration of CO2 in the air, which is essential for monitoring indoor air quality and ventilation effectiveness.	**Unchecked** Checked
Temperature Sensor	When this checkbox is checked, the temperature sensor becomes active. It measures the ambient temperature, providing valuable data for environmental monitoring and climate control systems.	**Unchecked** Checked
Pressure Sensor	Checking this checkbox activates the pressure sensor. It measures atmospheric pressure, which is useful for weather forecasting, altitude estimation, and indoor navigation applications.	**Unchecked** Checked

[*1] This parameter is only visible when the parameter “Enable in operation” is set to “Yes”.

3.2. Indoor Air Quality Multi Sensor

The users can make many settings related to the KNX Air Quality Multi Sensor via ETS software. Many features such as water alarm delay, status LED, alarm LED, to reset alarm with an object and buzzer etc. can be controlled with this tab.

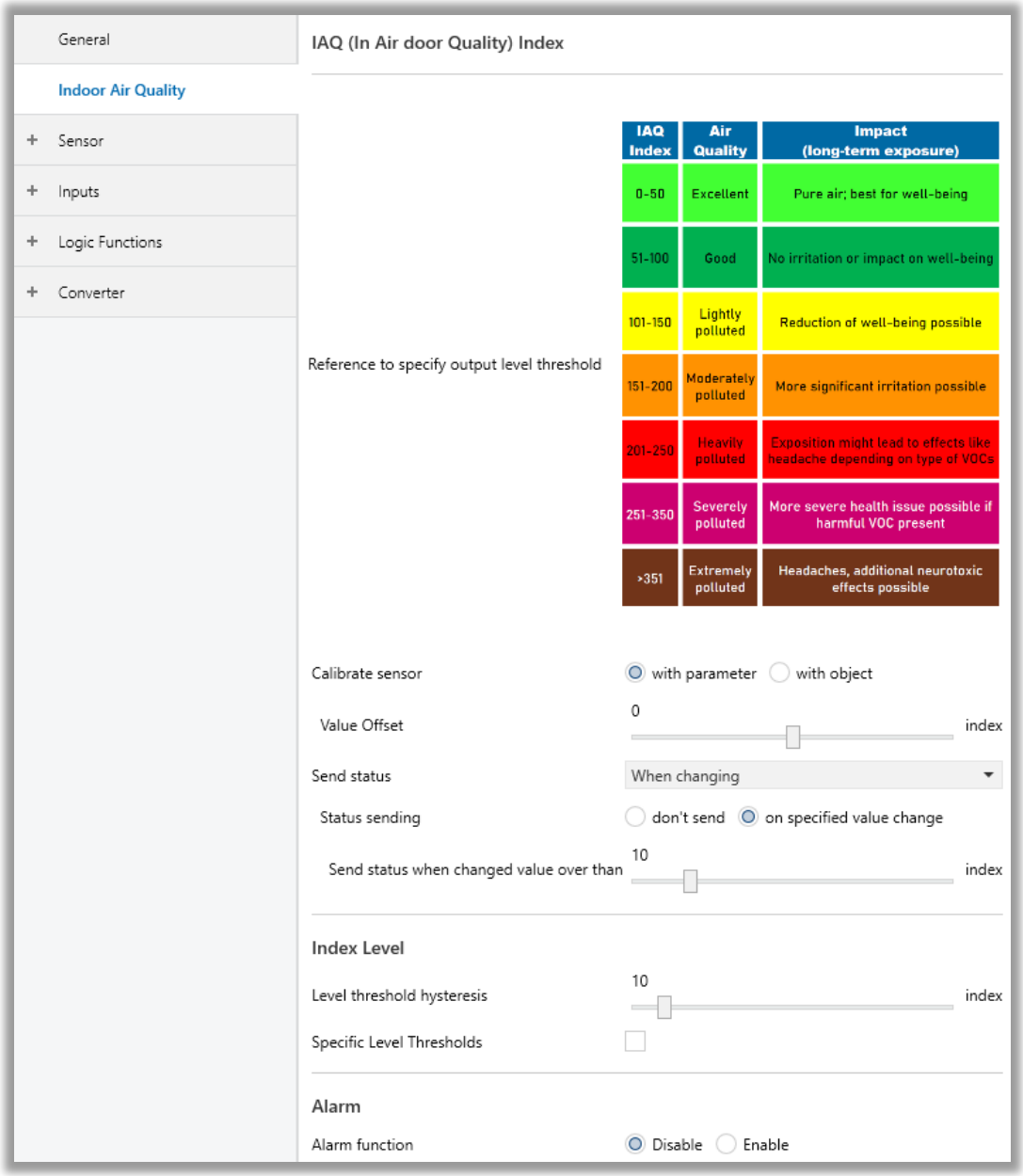


Fig. 2: Indoor Air Quality Multi Sensor Configuration Page

IAQ Index	Air Quality	Impact (long-term exposure)
0-50	Excellent	Pure air; best for well-being
51-100	Good	No irritation or impact on well-being
101-150	Lightly polluted	Reduction of well-being possible
151-200	Moderately polluted	More significant irritation possible
201-250	Heavily polluted	Exposition might lead to effects like headache depending on type of VOCs
251-350	Severely polluted	More severe health issue possible if harmful VOC present
>351	Extremely polluted	Headaches, additional neurotoxic effects possible

Table 2: KNX Air Quality Multi Sensor IAQ Index Table

3.2.1. Parameters List

PARAMETER	DESCRIPTION	VALUES
IAQ (In Air door Quality) Index		
Calibrate sensor	(**with parameter**) Defined Offset Value: Create a fixed offset directly from parameter settings. (**with object**) Instant Offset with Group Object: Utilize real-time offset adjustments during calibration using group objects.	**With parameter** With object
-> Value Offset[1]	This parameter is used to determine the offset value of the Air Quality sensor.	-100…**0**…100
Send status	**When Changing:** This option initiates the transmission of sensor data to the KNX bus when there is a change in the sensor output. It sends data only when there is a modification in the sensor readings. **Periodically:** With this option, sensor data is periodically sent to the KNX bus at regular intervals, regardless of changes in the sensor readings. Data transmission occurs based on a predefined time interval, facilitating continuous monitoring and data exchange on the KNX bus. **Periodically and Changing:** Combining the functionalities of both "When Changing" and "Periodically" options, this setting ensures comprehensive data transmission to the KNX bus. Sensor data is sent both at regular intervals and when there is a change in the sensor output. This approach provides robust monitoring capabilities, ensuring that sensor data is promptly transmitted based on changes in the sensor readings and at scheduled intervals for consistent data updates on the KNX bus.	**When changing** Periodically Periodically and changing
-> Period of sending[2]	This parameter sets the sending period of the IAQ index value in seconds.	00:05…**05:00**…59:59

-> Status sending[3]	"Don't Send" Option: With this setting, the sensor data is not transmitted over the KNX BUS line when there is a change in the value. "On Specified Value Change" Option: When this option is selected, the sensor data is only sent over the KNX BUS line if the value exceeds a predefined threshold.	**Don't send** On specified value change
-> Send status when changed value over than[3,4]	This parameter refers to a threshold value set by the user. When the sensor data exceeds this predefined threshold, the device will initiate the transmission of status updates or notifications over the KNX BUS line.	1…**10**…50
Index Level		
Level threshold hysteresis	The level hysteresis parameter is used to smooth out level changes when the sensor reaches specific data values. It's an adjustment setting aimed at reducing the sensitivity to minor fluctuations in sensor readings.	0…**10**…100
Specific Level Thresholds	It makes it possible to change Threshold values.	**Unchecked** Checked
-> "Excellent -> Good"[5]	Threshold value determined for level transition from Excellent -> Good	10…**50**…600
-> "Good -> Lightly polluted"[5]	Threshold value determined for level transition from Good -> Lightly polluted	10…**100**…600
-> "Lightly polluted -> Moderately polluted"[5]	Threshold value determined for level transition from Lightly polluted -> Moderately polluted	10…**150**…600
-> "Moderately polluted -> Heavily polluted"[5]	Threshold value determined for level transition from Moderately polluted -> Heavily polluted	10…**200**…600
-> "Heavily polluted -> Severely polluted"[5]	Threshold value determined for level transition from Heavily polluted -> Severely polluted	10…**250**…600
-> "Severely polluted -> Extremely polluted"[5]	Threshold value determined for level transition from Severely polluted -> Extremely polluted	10…**350**…600
Alarm		
Alarm function	This parameter determines whether an alarm should be activated when the sensor output exceeds a	**Disable**

	predefined threshold value. When enabled, the sensor will trigger an alarm or alert notification when the sensor readings surpass the specified threshold.	Enable
-> Alarm threshold[6]	The alarm threshold parameter defines a specific value or range in sensor readings that, when surpassed, triggers the activation of an alarm or alert.	10…**200**…600
-> Alarm hysteresis[6]	The alarm hysteresis parameter is a setting that introduces a buffer zone around the alarm threshold in sensor readings. This buffer zone, known as hysteresis, helps prevent rapid toggling of the alarm system when sensor data fluctuates around the threshold value.	0…**25**…100
-> Send alarm status[6]	When Changing: This option triggers an alarm when the alarm status changes. It sends an alarm only when there is a modification in the alarm condition, such as transitioning from an alarmed to a non-alarmed state or vice versa. Periodically: This option triggers alarms at regular intervals, regardless of changes in alarm status. Alarms are sent based on a predefined time interval, ensuring periodic monitoring and alerting. Periodically and Changing: This option combines the functionalities of both "When Changing" and "Periodically" options. Alarms are sent both at regular intervals and when there is a change in the alarm status. This provides comprehensive monitoring, ensuring that alarms are triggered promptly based on changes in the alarm condition and at scheduled intervals for regular check-ins.	**When changing** Periodically Periodically and changing
-> Period of sending[7]	This parameter sets the sending period of the alarm in seconds.	00:05…**05:00**…59:59
Alarm output type[6]	You can define different data point types for alarm output.	Alarm (DPT 1.005) Switch (DPT 1.001) Shutter Up/Down (DPT 1.008) Fan stage (DPT 5.100)

		Percentage (DPT 5.001) Scene Number (DPT 17.001) Pulses (DPT 7.001)
-> Polarity of alarm object[8]	Invert Alarm State	**Alarm when bigger than threshold** Alarm wen lower than threshold
-> When alarm Off to On[9]	his parameter determines the action to be taken when the alarm transitions from the off state to the on state. Users can define specific data point types and send custom values corresponding to this transition.	Off Level 1…5 0...100 1…255 0…65535
-> When alarm On to Off[9]	This parameter governs the action to be executed when the alarm switches from the on state to the off state. Similar to the previous parameter, users can specify data point types and send tailored values for this transition.	Off Level 1…5 0...100 1…255 0…65535

[*1] This parameter is only visible when the parameter “Calibrate sensor” is set to “with parameter”.

[*2] This parameter is only visible when the parameter “Send status” is set to “When changing” or “Periodically and Changing”.

[*3] This parameter is only visible when the parameter “Send status” is set to “Periodically” or “Periodically and Changing”.

[*4] This parameter is only visible when the parameter “Status sending” is set to “on specified value change”.

[*5] This parameter is only visible when the parameter “Specific Level Thresholds” is set to “Checked”.

[*6] This parameter is only visible when the parameter “Alarm function” is set to “Enable”.

[*7] This parameter is only visible when the parameter “Send alarm status” is set to “Periodically” or “Periodically and Changing”.

[*8] This parameter is only visible when the parameter “Alarm output type” is set to “Alarm (DPT 1.005)” or “Switch (DPT 1.001)” or “Shutter Up/Down (DPT 1.008)”.

[*9] This parameter is only visible when the parameter “Alarm output type” is set to “Fan stage (DPT 5.100)” or “Percentage (DPT 5.001)” or “Scene Number (DPT 17.001)” or “Pulses (DPT 7.001).

3.3. Sensor

In this section, the locking feature of the water flood detector is mentioned. Locking feature suspend to send group objects.

3.3.1. Humidity / VOC Sensor / CO2 Sensor / Temperature / Pressure Sensor

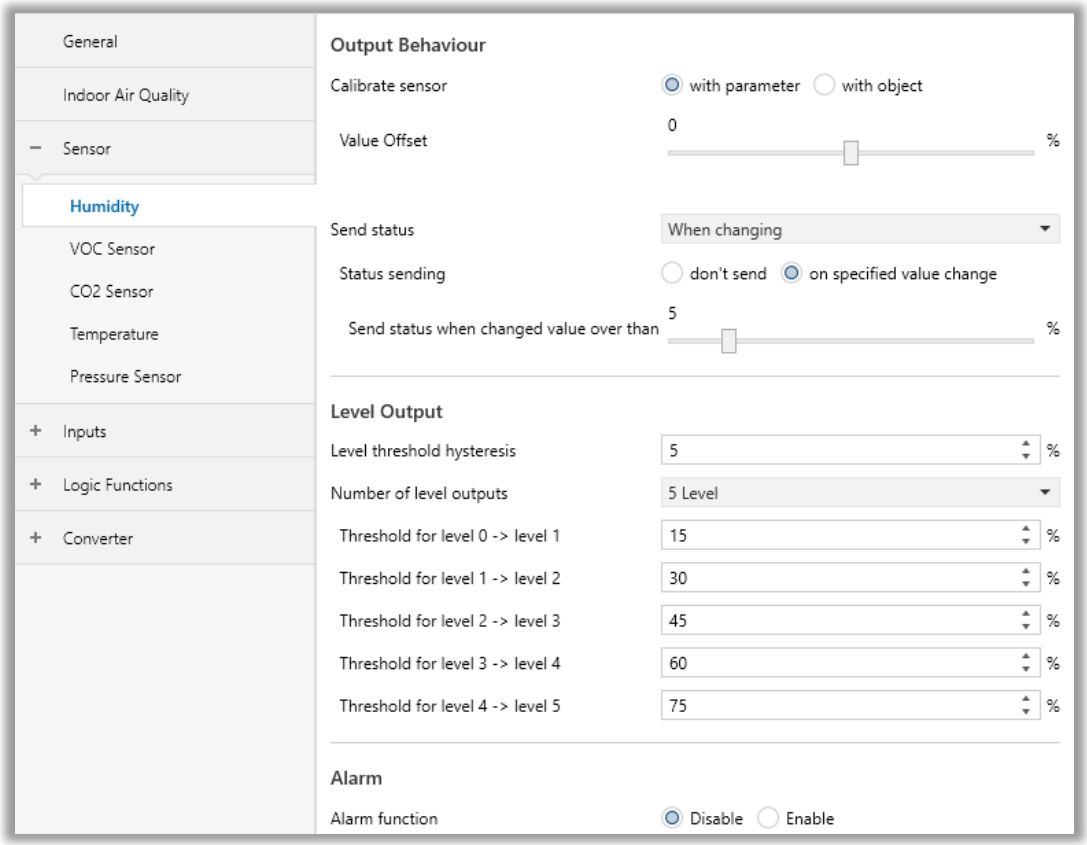


Fig. 3: Sensor Parameter Configuration Page

Level	Recommendation	TVOC [ppm]
Unhealty	Use only if unavoidable / Intense ventilation necessary	2.2 - 5.5
Poor	Intensified ventilation / airing necessary Search for sources	0.66 - 2.2
Moderate	Intensified ventilation / airing recommended Search for sources	0.22 - 0.66
Good	Ventilation / airing recommended	0.065 - 0.22
Excellent	Target value	0 - 0.065

Table 3: KNX Air Quality Multi Sensor VOC Index Table

CO_2 [ppm]	Air Quality
2100	BAD Heavily contaminated indoor air Ventilation required
2000	
1900	
1800	
1700	
1600	
1500	MEDIOCRE Contaminated indoor air Ventilation recommended
1400	
1300	
1200	
1100	
1000	FAIR
900	
800	GOOD
700	
600	EXCELLENT
500	
400	

Table 4: KNX Air Quality Multi Sensor CO_2 Index Table

3.3.1.1. Parameters List

PARAMETER	DESCRIPTION	VALUES
Output Behaviour		
Calibrate sensor	(with parameter) Defined Offset Value: Create a fixed offset directly from parameter settings. (with object) Instant Offset with Group Object: Utilize real-time offset adjustments during calibration using group objects.	**With parameter** With object
-> Value Offset[1]	This parameter is used to determine the offset value of the sensor.	-100…**0**…100
Send status	**When Changing:** This option initiates the transmission of sensor data to the KNX bus when there is a change in the sensor output. It sends data only when there is a modification in the sensor readings. **Periodically:** With this option, sensor data is periodically sent to the KNX bus at regular intervals, regardless of changes in the sensor readings. Data transmission occurs based on a predefined time interval, facilitating continuous monitoring and data exchange on the KNX bus. **Periodically and Changing:** Combining the functionalities of both "When Changing" and "Periodically" options, this setting ensures comprehensive data transmission to the KNX bus. Sensor data is sent both at regular intervals and when there is a change in the sensor output. This approach provides robust monitoring capabilities, ensuring that sensor data is promptly transmitted based on changes in the sensor readings and at scheduled intervals for consistent data updates on the KNX bus.	**When changing** Periodically Periodically and changing
-> Period of sending[2]	This parameter sets the sending period of the sensor output in seconds and minutes.	00:05…**05:00**…59:59

-> Status sending[3]	"Don't Send" Option: With this setting, the sensor data is not transmitted over the KNX BUS line when there is a change in the value. "On Specified Value Change" Option: When this option is selected, the sensor data is only sent over the KNX BUS line if the value exceeds a predefined threshold.	**Don't send** On specified value change
-> Send status when changed value over than[3,4]	This parameter refers to a threshold value set by the user. When the sensor data exceeds this predefined threshold, the device will initiate the transmission of status updates or notifications over the KNX BUS line.	1…**10**…50
Level Output		
Level threshold hysteresis	The level hysteresis parameter is used to smooth out level changes when the sensor reaches specific data values. It's an adjustment setting aimed at reducing the sensitivity to minor fluctuations in sensor readings.	0…**5**…25
Number of level outputs	The number of levels parameter determines the maximum number of levels that can be configured for the sensor output. This parameter allows users to specify the range of levels that can be defined and utilized in the sensor.	2…5 Level
Threshold for level X -> level X + 1	Threshold value determined for level transition from Level X to Level X+1 (X=0...4)	0…100 %
Alarm		
Alarm function	This parameter determines whether an alarm should be activated when the sensor output exceeds a predefined threshold value. When enabled, the sensor will trigger an alarm or alert notification when the sensor readings surpass the specified threshold.	**Disable** Enable
-> Alarm threshold[5]	The alarm threshold parameter defines a specific value or range in sensor readings that, when surpassed, triggers the activation of an alarm or alert.	10…**200**…600

-> Alarm hysteresis[5]	The alarm hysteresis parameter is a setting that introduces a buffer zone around the alarm threshold in sensor readings. This buffer zone, known as hysteresis, helps prevent rapid toggling of the alarm system when sensor data fluctuates around the threshold value.	0…**25**…100
-> Polarity of alarm object[5]	Invert Alarm State	**Alarm when bigger than threshold** Alarm when lower than threshold
-> Send alarm status[5]	When Changing: This option triggers an alarm when the alarm status changes. It sends an alarm only when there is a modification in the alarm condition, such as transitioning from an alarmed to a non-alarmed state or vice versa. Periodically: This option triggers alarms at regular intervals, regardless of changes in alarm status. Alarms are sent based on a predefined time interval, ensuring periodic monitoring and alerting. Periodically and Changing: This option combines the functionalities of both "When Changing" and "Periodically" options. Alarms are sent both at regular intervals and when there is a change in the alarm status. This provides comprehensive monitoring, ensuring that alarms are triggered promptly based on changes in the alarm condition and at scheduled intervals for regular check-ins.	**When changing** Periodically Periodically and changing
-> Period of sending[6]	This parameter sets the sending period of the sensor alarm in seconds and minutes.	00:05…**05:00**…59:59
-> When alarm Off to On[7]	This parameter determines the action to be taken when the alarm transitions from the off state to the on state. Users can define specific data point types and send custom values corresponding to this transition.	Off Level 1…5 0...100 1…255 0…65535
-> When alarm On to Off[7]	This parameter governs the action to be executed when the alarm switches from the on state to the off state. Similar to the previous parameter, users can	Off Level 1…5

	specify data point types and send tailored values for this transition.	0...100 1…255 0…65535

[*1] This parameter is only visible when the parameter “Calibrate sensor” is set to “with parameter”.

[*2] This parameter is only visible when the parameter “Send status” is set to “When changing” or “Periodically and Changing”.

[*3] This parameter is only visible when the parameter “Send status” is set to “Periodically” or “Periodically and Changing”.

[*4] This parameter is only visible when the parameter “Status sending” is set to “on specified value change”.

[*5] This parameter is only visible when the parameter “Alarm function” is set to “Enable”.

[*6] This parameter is only visible when the parameter “Send alarm status” is set to “Periodically” or “Periodically and Changing”.

[*7] This parameter is only visible when the parameter “Alarm output type” is set to “Fan stage (DPT 5.100)” or “Percentage (DPT 5.001)” or “Scene Number (DPT 17.001)” or “Pulses (DPT 7.001).

3.4. Inputs

Interra KNX Air Quality Multi Sensor has 3digital inputs. By connecting buttons to digital inputs, you can choose the lighting, curtains/blinds, RGB LEDs, dim devices etc. you want to control. You can control the devices by making the necessary configurations via the KNX Binary Input.

3.4.1. Input – Switch Sensor

In this section, it is explained how to control the related automation unit via the KNX Air Quality Multi Sensor by switching via buttons connected to digital inputs. Detailed information on the relevant parameter configurations is described in the table below.

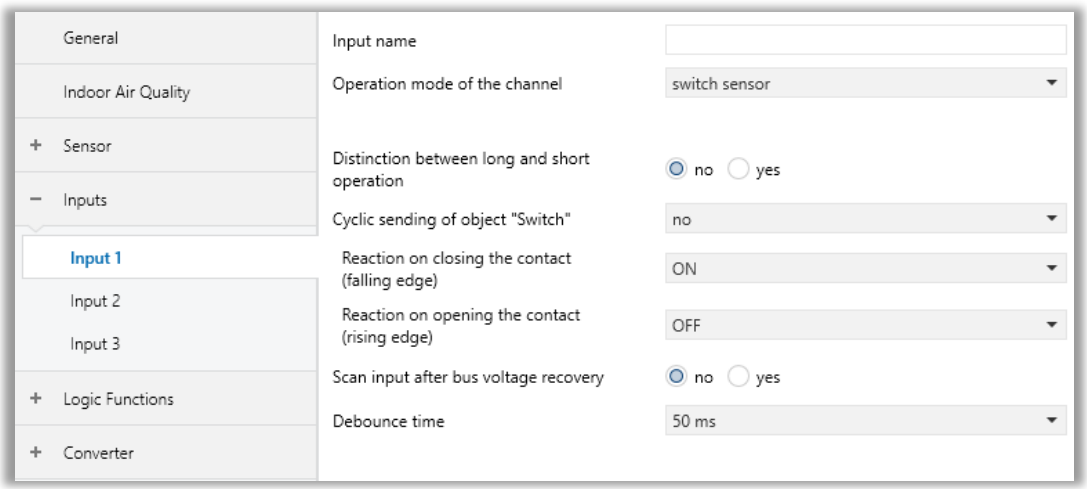


Fig. 4: Input – Switch Sensor Configuration Page

3.4.1.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Operation Mode of the channel	This parameter is used to determine the input x operation mode. If no function is selected, the input x will not be used. For other choices, all functionalities are configured separately.	**No function** Switch sensor Switch/dimming sensor Shutter sensor Value/forced operation Control scene RGB colour control Mode selection Command sequence Counter RGBW control
Input Name	This parameter is used to type an input name. The name can consist of up to 40 characters.	**40 bytes allowed**
Distinction between short and long operation	This parameter is used to set if the input differentiates between short and long operations. With the option “yes”, after opening/closing of the contact, it must, first of all, be ascertained if a short or long operation has occurred here. Only thereafter will a possible reaction be triggered.	**No** Yes
-> Connected contact type[1]	This parameter is used to specify the contact type that is connected to the KNX Air Quality Multi Sensor input x.	Normally closed **Normally open**
-> Cyclic sending of object “Switch”[1]	This parameter is visible if there is no distinction between short and long operations. The communication object “Switch” can be sent cyclically. If the parameter “always” is set, the object sends cyclically on the bus, regardless of its value. Should the parameter value “if telegram switch = ON” or “if telegram switch = OFF” be set, the corresponding object value is sent cyclically.	**No** If “Switch” = OFF If “Switch” = ON always
-> Reaction on closing the contact[2] **(rising edge)**	This parameter is visible if there is no distinction between short and long operations. For each edge,	**No reaction** ON

	you can set if the object value is to be switched ON, OFF or TOGGLE, or if no reaction should occur. If cyclical sending has been parameterized, it is possible by setting the parameter value “terminate cyclic sending” with an operation of the input, to stop cyclic sending without a new object value being sent.	OFF TOGGLE
-> Reaction on opening the contact[2] **(Falling edge)**	This parameter is visible if there is no distinction between short and long operations. For each edge, you can set if the object value is to be switched ON, OFF or TOGGLE, or if no reaction should occur. If cyclical sending has been parameterized, it is possible by setting the parameter value “terminate cyclic sending” with an operation of the input, to stop cyclic sending without a new object value being sent.	**No reaction** ON OFF TOGGLE
-> Telegram is repeated every[3]	This parameter is visible if the cyclical transmission is active. The send cycle time describes the time used between two cyclically transmitted telegrams	00:00:005…**00:00:500** …01:05:535
-> Scan input after bus voltage recovery	This parameter is used to determine the scanning of the inputs when the bus voltage has been recovered.	**No** Yes
-> Reaction on short operation[1]	This parameter is visible if there is a distinction between short and long operations. It is used to determine the short press operation sending the value of the input x.	**No reaction** ON OFF TOGGLE
-> Reaction on long operation[1]	This parameter is visible if there is a distinction between short and long operations. It is used to determine the long-press operation sending the value of the input x.	**No reaction** ON OFF TOGGLE
-> Long operation after[1]	This parameter is used to determine long operation detection after the button press operation. For making a long operation, the button should be pressed at least the configured value.	00:00.005…**00:00.500** …01:05.535
-> Number of object for short/long operation[1]	This parameter is used to determine the object count to use for short and long operations. **1 object:** short and long operations will proceed with the same object.	**1 object** 2 object

	2 object: Short and long operations will proceed with 2 different objects.	
Debounce time	This parameter is used to determine the debounce time. Debouncing prevents unwanted multiple operations of the input, e.g., due to bouncing of the contact.	10 ms 20 ms 30 ms 40 ms **50 ms** 70 ms 100 ms 150 ms

[*1] This parameter is only visible when the parameter “Distinction between long and short operation” is set to “Yes”.

[*2] This parameter is only visible when the parameter “Distinction between long and short operation” is set to “No”.

[*3] This parameter is only visible when the parameter “Cyclic sending of object “Switch”” is set to “if “Switch” = ON” or “if “Switch” = ON” or “always”.

3.4.2. Input – Switch / Dimming Sensor

In this section, it is explained how to control the unit of lighting unit through the KNX Air Quality Multi Sensor, both by switching and dimming, via the buttons connected to the digital inputs. Detailed information on the relevant parameter configurations is described in the table below. Make sure that the lighting unit to be controlled has a dimming feature.

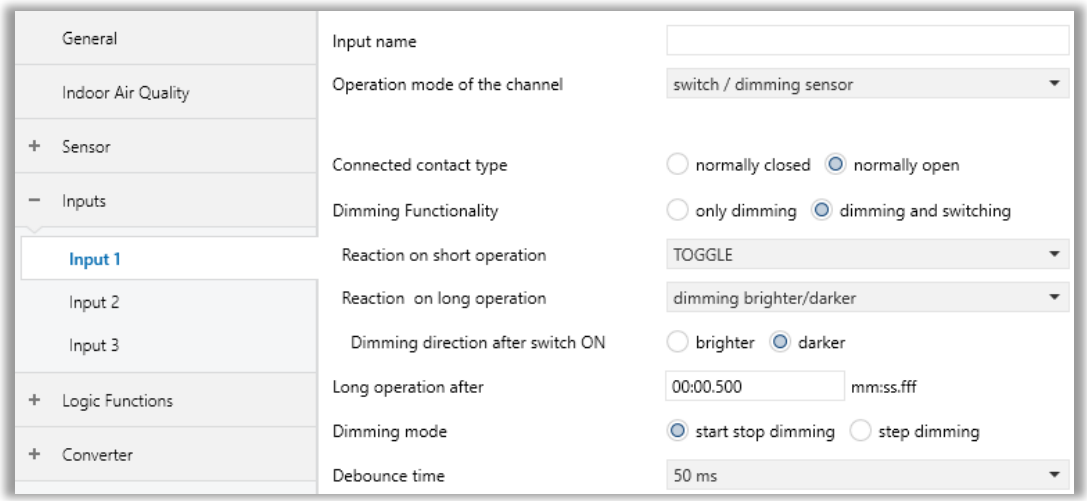


Fig. 5: Input – Switch / Dimming Sensor Configuration Page

3.2.2.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Operation Mode of the channel	This parameter is used to determine the input x operation mode. If no function is selected, the input x will not be used. For other choices, all functionalities are configured separately.	**No function** Switch sensor Switch/dimming sensor Shutter sensor Value/forced operation Control scene RGB colour control Mode selection Command sequence Counter RGBW control
Input Name	This parameter is used to type an input name. The name can be consisting of 40 characters.	**40 bytes allowed**
Connected contact type	This parameter is used to specify the contact type that is connected to the KNX Air Quality Multi Sensor input x.	Normally closed **Normally open**
Dimming functionality	This parameter is used to define if the lighting can only be dimmed “Only dimming” or if additional switching is also permitted “Dimming and switching”. In this case, a long button press dims and a short button push switch.	**Only dimming** Dimming and switching
-> Reaction on operation[1]	This parameter is visible if the “Only dimming” dimming functionality is set. A distinction is not made between short and long operations here.	Dimming brighter Dimming darker **Dimming brighter/darker**
-> Reaction on short operation[2]	This parameter is visible if there is a distinction between short and long operations. It is used to determine the short press operation sending the value of the input x.	**No reaction** ON OFF TOGGLE
-> Reaction on long operation[2]	This parameter is visible if there is a distinction between short and long operations. It is used to determine the long-press operation sending the value of the input x.	Dimming brighter Dimming darker

		Dimming brighter/darker
-> Dimming direction after switch ON[3]	This parameter is used to determine the dimming direction when the switch object is ON on long operation.	**Brighter** Darker
-> Long operation after[2]	This parameter is used to determine long operation detection after the button press operation. For making a long operation, the button should be pressed at least the configured value.	00:00.005…**00:00.500** …01:05.535
Dimming mode	This parameter is used to determine the dimming mode. Normal “Start-stop-dimming” starts the dimming process with a telegram BRIGHTER or DARKER and ends the dimming process with a STOP telegram. Cyclic sending of the telegram is not necessary in this case. With “Dimming steps”, the dimming telegram is sent cyclically during a long operation. The STOP telegram ends the dimming process at the end of the operation.	**Start-stop dimming** Step Dimming
-> Brightness change on every sent telegram[4]	This parameter is only visible with “Dimming steps”. This parameter is set to change the brightness (in per cent), which is cyclically sent with every dimming telegram.	%100 %50 **%25** %12.5 %6.25 %3.125 %1.563
-> Sending cycle time: Telegram is repeated every[4]	This parameter is used to determine the sending cycle time. The dimming telegram is sent cyclically during a long operation if “Dimming steps” is set. The cycle time for sending corresponds with the time interval between two telegrams during cyclical sending.	0.3s, 0.4s, **0.5s**, 0.6s, 0.8s, 1s, 1.2s, 1.5s, 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 10s,
Debounce time	This parameter is used to determine the debounce time. Debouncing prevents unwanted multiple operations of the input, e.g., due to bouncing of the contact.	10 ms, 20 ms, 30 ms, 40 ms, **50 ms,** 70 ms, 100 ms, 150 ms

[*1] This parameter is only visible when the parameter “Dimming Functionality” is set to “Only dimming”.

[*2] This parameter is only visible when the parameter “Dimming Functionality” is set to “Dimming and switching”.

[*3] This parameter is only visible when the parameter “Reaction on long operation” is set to “Dimming brighter/darker”.

[*4] This parameter is only visible when the parameter “Dimming mode” is set to “Step dimming”.

3.4.3. Input – Shutter Sensor

In this section, it is explained how to control a shutter/blind unit via the buttons connected to the digital inputs via the KNX Air Quality Multi Sensor. Detailed information on the relevant parameter configurations is described in the table below.

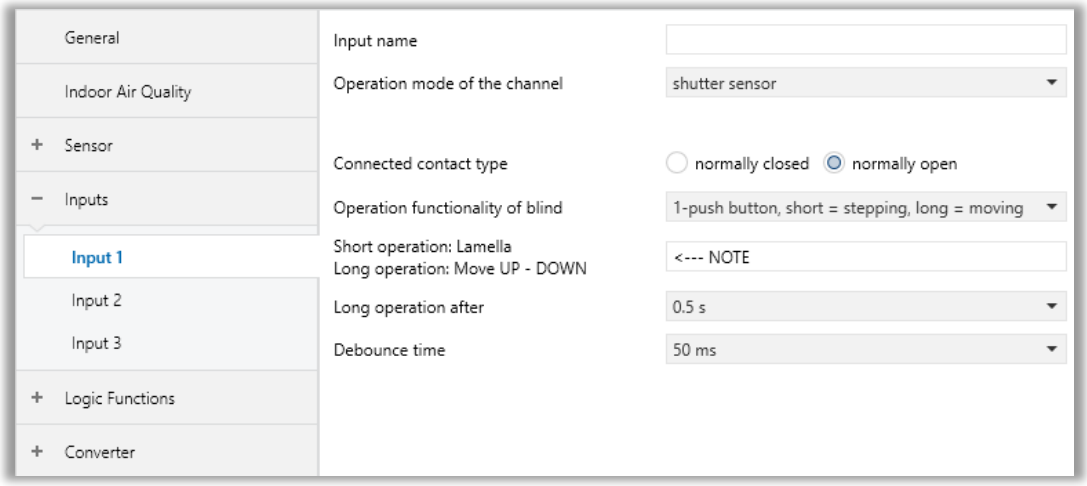


Fig. 6: Input – Shutter Sensor Configuration Page

3.4.3.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Operation Mode of the channel	This parameter is used to determine the input x operation mode. If no function is selected, the input x will not be used. For other choices, all functionalities are configured separately.	**No function** Switch sensor Switch/dimming sensor Shutter sensor Value/forced operation Control scene RGB colour control Mode selection Command sequence Counter RGBW control
Input Name	This parameter is used to type an input name. The name can be consisting of 40 characters.	**40 bytes allowed**
Connected contact type	This parameter is used to specify the contact type that is connected to the KNX Air Quality Multi Sensor input x.	Normally closed **Normally open**
Operation Functionality of blind	This parameter is used to determine long operation detection after the button press operation. For making a long operation, the button should be pressed at least the configured value.	**1-push-button, short = stepping, long = moving** 1-push-button, short = moving, long = stepping 1-push-button-operation 1-switch button operation 2-push-button, standard 2-switch-operation, moving 2-push-button, moving 2-push-button, stepping

1-push-button, short = stepping, long = moving		
Short Operation: Lamella **Long Operation: Move UP / DOWN**	NOTE	NOTE
Long operation after	This parameter is used to determine long operation detection after the button press operation. For making a long operation, the button should be pressed at least the configured value.	0.3s, 0.4s, **0.5s**, 0.6s, 0.8s, 1s, 1.2s, 1.5s, 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 10s,
1-push-button, short = moving, long = stepping		
Short Operation: Move UP / DOWN **Long Operation: Lamella**	NOTE	NOTE
Long operation after	This parameter is used to determine long operation detection after the button press operation. For making a long operation, the button should be pressed at least the configured value.	0.3s, 0.4s, **0.5s**, 0.6s, 0.8s, 1s, 1.2s, 1.5s, 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 10s,
"STOP/Lamella adj." is repeated every	This parameter is used to determine the time between two telegrams is set. This parameter is visible in operations in which the object "STOP/lamella adjustment" is sent cyclically on the bus during a long operation.	0.3s, 0.4s, **0.5s**, 0.6s, 0.8s, 1s, 1.2s, 1.5s, 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 10s,
1-push button operation		
On Every operation in success: **UP – STOP – DOWN - STOP**	NOTE	NOTE
1-switch button operation		
On operation: UP – DOWN **End of operation: STOP**	NOTE	NOTE
2-push button operation, standard		

Short Operation: STOP – Lamella UP / DOWN **Long Operation: Move UP / DOWN**	NOTE	NOTE
Reaction on short operation	This parameter is visible if there is a distinction between short and long operations. It is used to determine the short press operation sending the value of the input x.	**Stop / lamella up** Stop / lamella down
Reaction on long operation	This parameter is visible if there is a distinction between short and long operations. It is used to determine the long-press operation sending the value of the input x.	**Move up** Move down
Long operation after	This parameter is used to determine long operation detection after the button press operation. For making a long operation, the button should be pressed at least the configured value.	0.3s, 0.4s, **0.5s**, 0.6s, 0.8s, 1s, 1.2s, 1.5s, 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 10s,
2-switch operation, moving		
On Operation: Moving **End of Operation: STOP**	NOTE	NOTE
Reaction on operation	This parameter is used to determine the reaction when an operation occurs. A distinction is not made between short and long operations here.	**Move up** Move down
2-push button operation, moving		
On Operation: Moving **End of Operation: STOP**	NOTE	NOTE
Reaction on operation	This parameter is used to determine the reaction when an operation occurs. A distinction is not made between short and long operations here.	**Move up** Move down
2-push-button operation, stepping		
On Operation: Stepping	NOTE	NOTE

Reaction on operation	This parameter is used to determine the reaction when an operation occurs. A distinction is not made between short and long operations here.	**Stop / Lamella up** Stop / Lamella down
Debounce time	This parameter is used to determine the debounce time. Debouncing prevents unwanted multiple operations of the input, e.g. due to bouncing of the contact.	10 ms 20 ms 30 ms 40 ms **50 ms** 70 ms 100 ms 150 ms

3.4.3.2. The Functionality of Each Function

1 push button: Short Press = stepping, Long Press = moving	
Short Operation	Stop/ Lamella Adjustment
Long Operation	Toggle between “Move Up” and “Move Down”
1 push button: Short Press = moving, Long Press = stepping	
Short Operation	Toggle between “Move Up” and “Move Down”
Long Operation	Stop/Lamella Adjustment (Sent Cyclically as the button is kept pressed)
1 push button operation: Press: moving, Long Press Disabled	
On Operation	Following signals are sent in order on each press. → Move UP → Stop/Lamella Adj. Up → Move Down → Stop/Lamella Adj. Down →
1 switch Operation: Moving, Long Press Disabled	
Press Operation	Toggle between “Move Up” and “Move Down”
Release Operation	Stop/Lamella Adjustment
2 Push Button Operation: Standard	
Short Operation	“Stop/Lamella Adj. Down” or Stop/Lamella Adj. Up (Whichever is chosen as the parameter)
Long Operation	“Move Up” or “Move Down” (Whichever is chosen as the parameter)
2 Switch Operation: Moving, Long Press Disabled	
Press Operation	“Move Up” or “Move Down” (Whichever is chosen as the parameter)
Release Operation	“Stop/Lamella Adj. Down” or “Stop/Lamella Adj. Up” (Whichever is chosen)
2 Push Button Operation: Moving, Long Press Disabled	
On Operation	Whichever sequence is selected as the parameter; “ → Move Up → Stop/Lamella Adj. Up → “ or “ → Move Down → Stop/Lamella Adj. Down → “
2 Push Button Operation: Stepping, Long Press Disabled	
On Operation	Whichever signal is selected as the parameter, is sent cyclically as the button is kept pressed; “Stop/Lamella Adj. Up” or “Stop/Lamella Adj. Down”

3.4.4. Input Value / Forced Operation

In this section, it is explained how to control an automation unit via KNX Air Quality Multi Sensor via a value/forced via buttons connected to digital inputs. Detailed information on the relevant parameter configurations is described in the table below.

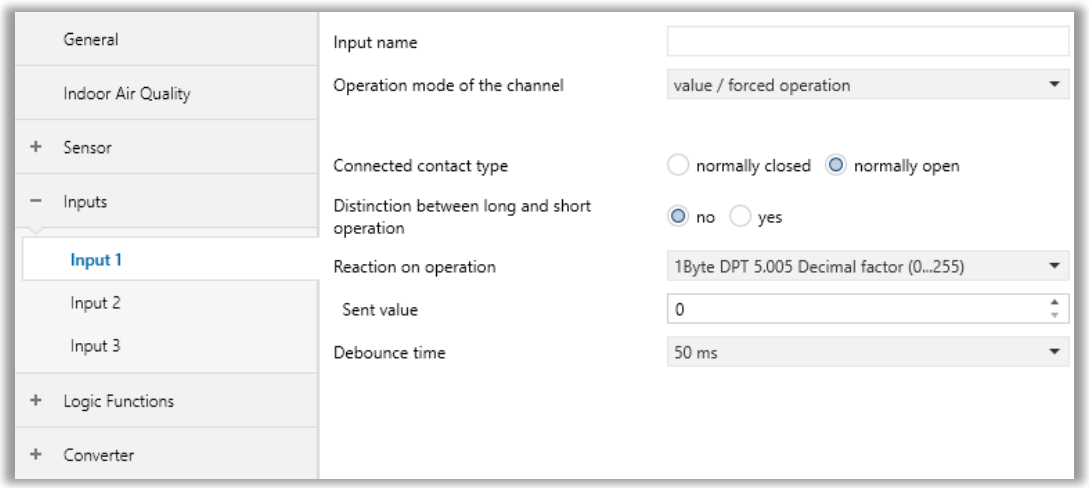


Fig. 7: Input – Value / Forced Operation Configuration Page

3.4.4.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Operation Mode of the channel	This parameter is used to determine the input x operation mode. If no function is selected, the input x will not be used. For other choices, all functionalities are configured separately.	**No function** Switch sensor Switch/dimming sensor Shutter sensor Value/forced operation Control scene RGB colour control Mode selection Command sequence Counter RGBW control
Input Name	This parameter is used to type an input name. The name can be consisting of 40 characters.	**40 bytes allowed**
Connected contact type	This parameter is used to specify the contact type that is connected to the KNX Air Quality Multi Sensor input x.	Normally closed **Normally open**
Distinction between short and long operation	This parameter is used to set if the input differentiates between short and long operations. With the option “yes”, after opening/closing of the contact, it must, first of all, be ascertained if a short or long operation has occurred here. Only thereafter will a possible reaction be triggered.	**No** Yes
Reaction on operation	This parameter is visible if there is a distinction between short and long operations. It is used to determine the short press operation sending the value of the input x.	**2-bit DPT 2.001 Switch Control** 1-byte DPT 5.001 Percent (0…100%) 1-byte DPT 5.005 Decimal factor (0…255) 1-byte DPT 17.001 Scene Number 2-byte DPT 7.600 Colour temperature(Kelvin)

		2-byte DPT 9.001 Temperature (˚C) 2-byte DPT 9.004 Brightness (Lux) 3-byte DPT 232.600 RGB value 3x (0…255)
-> Sent value	This parameter is used to determine the sending value to the bus when a short operation occurs.	Values depend on DPT selection.
Long operation after	This parameter is used to determine long operation detection after the button press operation. For making a long operation, the button should be pressed at least the configured value.	00:00.200…**00:00.400** …01:05.000
Reaction on long operation[1]	This parameter is visible if there is a distinction between short and long operations. It is used to determine the long-press operation sending the value of the input x.	**2-bit DPT 2.001 Switch Control** 1-byte DPT 5.001 Percent (0…100%) 1-byte DPT 5.005 Decimal factor (0…255) 1-byte DPT 17.001 Scene Number 2-byte DPT 7.600 Color temperature(Kelvin) 2-byte DPT 9.001 Color temperature (˚C) 2-byte DPT 9.004 Brightness (Lux) 3-byte DPT 232.600 RGB value 3x (0…255)
-> Sent value[1]	This parameter is used to determine the sending value to the bus when a long operation occurs.	Values depends on DPT selection.
Debounce time	This parameter is used to determine the debounce time. Debouncing prevents unwanted multiple operations of the input, e.g., due to bouncing of the contact.	10 ms 20 ms 30 ms 40 ms **50 ms** 70 ms 100 ms 150 ms

[*1] This parameter is only visible when the parameter “Distinction between long and short operation” is set to “Yes”.

3.4.5. Input – Control Scene

In this section, it is explained how to control the related automation unit via the KNX Air Quality Multi Sensor by triggering a scenario via buttons connected to digital inputs. Detailed information on the relevant parameter configurations is described in the table below.

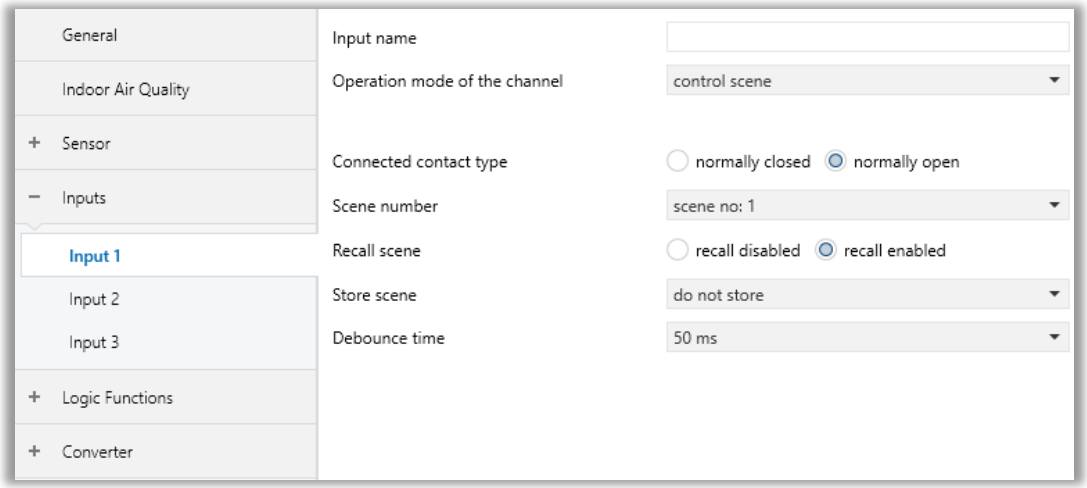


Fig. 8: Input – Control Scene Configuration Page

3.4.5.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Operation Mode of the channel	This parameter is used to determine the input x operation mode. If no function is selected, the input x will not be used. For other choices, all functionalities are configured separately.	**No function** Switch sensor Switch/dimming sensor Shutter sensor Value/forced operation Control scene RGB colour control Mode selection Command sequence Counter RGBW control
Input Name	This parameter is used to type an input name. The name can be consisting of 40 characters.	**40 bytes allowed**
Connected contact type	This parameter is used to specify the contact type that is connected to the KNX Air Quality Multi Sensor input x.	Normally closed **Normally open**
Scene Number	This parameter is used to configure the scene number to send to the KNX when a short press operation occurs.	**Scene no.1**…Scene no.64
Recall scene	This parameter is used to determine the recall of the scene. If this parameter is selected as “recall enabled” the configured scene number will be called.	Recall disabled **Recalled enabled**
Store Scene	This parameter is used to determine whether to store or not store the related scene. **On long operation:** The scene will be stored after a long operation. **With “Store scene” obj. value = 1:** The scene will be stored on operation if the Store scene object value is 1. **On long operation (“Store scene” obj. value = 1):** The scene will be stored on long operation if the Store scene object is 1.	**Do not store** On long operation With “Store scene” obj value = 1 On long operation (“Store scene” obj value = 1)
Debounce time	This parameter is used to determine the debounce time. Debouncing prevents unwanted multiple operations of the input, e.g., due to bouncing of the contact.	10 ms, 20 ms, 30 ms, 40 ms, **50 ms,** 70 ms, 100 ms, 150 ms

3.4.6. Input – RGB Colour Control

In this section, it is explained how to control an RGB LED device through the buttons connected to the digital inputs via the KNX Air Quality Multi Sensor. Detailed information on the relevant parameter configurations is described in the table below.

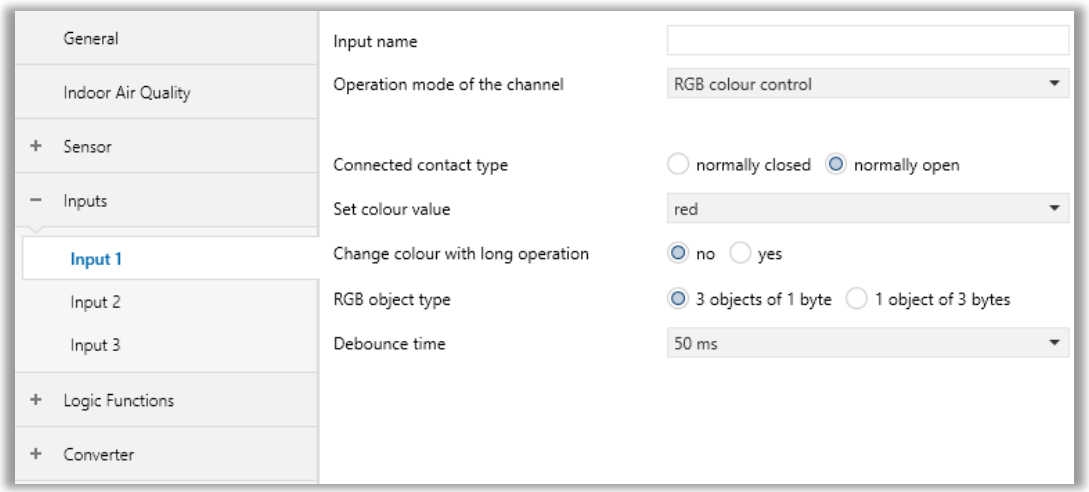


Fig. 9: Input – RGB Colour Control Configuration Page

3.4.6.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Operation Mode of the channel	This parameter is used to determine the input x operation mode. If no function is selected, the input x will not be used. For other choices, all functionalities are configured separately.	**No function** Switch sensor Switch/dimming sensor Shutter sensor Value/forced operation Control scene RGB colour control Mode selection Command sequence Counter RGBW control
Input Name	This parameter is used to type an input name. The name can be consisting of 40 characters.	**40 bytes allowed**
Connected contact type	This parameter is used to specify the contact type that is connected to the KNX Air Quality Multi Sensor input x.	Normally closed **Normally open**
Set colour value	This parameter is used to set RGB colours according to the configured values.	**Red** Orange Yellow Green-yellow Green Green-cyan Cyan Blue-cyan Blue Blue-magenta Red-magenta white
Change colour with long operation	This parameter is used to enable or disable the colour changing with long press operation.	**No** Yes

Long operation after[1]	This parameter is used to determine long operation detection after the button press operation. For making a long operation, the button should be pressed at least the configured value.	00:00.005…**00:00.500** …01:05.535
RGB object type	This parameter is used to determine the RGB colour object type.	**Three object of one byte** one object of three bytes
Debounce time	This parameter is used to determine the debounce time. Debouncing prevents unwanted multiple operations of the input, e.g., due to bouncing of the contact.	10 ms 20 ms 30 ms 40 ms **50 ms** 70 ms 100 ms 150 ms

[*1] This parameter is only visible when the parameter “Change colour with long operation” is set to “Yes”.

3.4.7. Input – Mode Selection

In this section, it is explained how to control the operating modes of an HVAC unit via the buttons connected to the digital inputs via the KNX Air Quality Multi Sensor. Detailed information on the relevant parameter configurations is described in the table below.

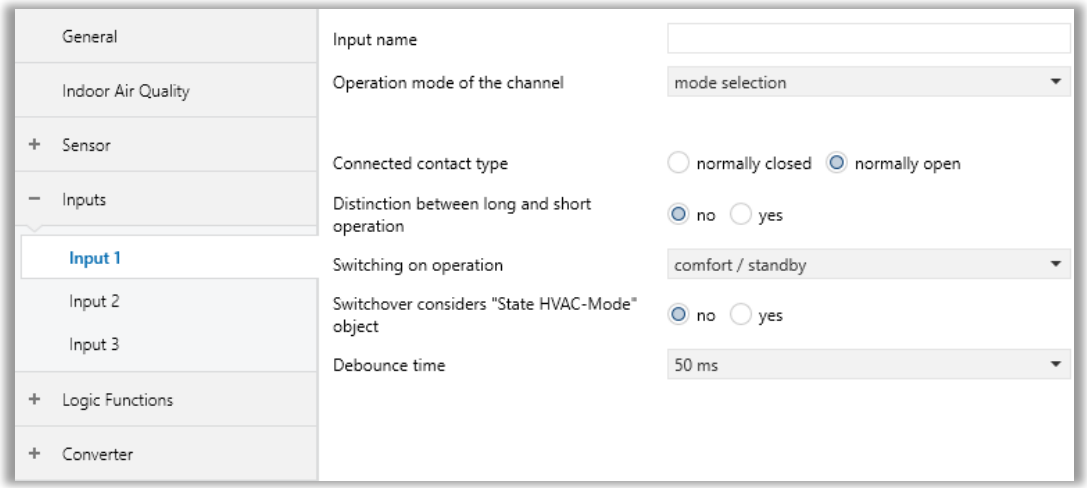


Fig. 10: Input – Mode Selection Configuration Page

3.2.7.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Operation Mode of the channel	This parameter is used to determine the input x operation mode. If no function is selected, the input x will not be used. For other choices, all functionalities are configured separately.	**No function** Switch sensor Switch/dimming sensor Shutter sensor Value/forced operation Control scene RGB colour control Mode selection Command sequence Counter RGBW control
Input Name	This parameter is used to type an input name. The name can be consisting of 40 characters.	**40 bytes allowed**
Connected contact type	This parameter is used to specify the contact type that is connected to the KNX Air Quality Multi Sensor input x.	Normally closed **Normally open**
Distinction between short and long operation	This parameter is used to set if the input differentiates between short and long operations. With the option “yes”, after opening/closing of the contact, it must, first of all, be ascertained if a short or long operation has occurred here. Only thereafter will a possible reaction be triggered.	**No** Yes
-> Reaction on short operation[1] **Switching on operation[2]**	This parameter is visible if there is a distinction between short and long operations. It is used to determine the short press operation sending the value of the input x.	**Comfort / standby** Comfort / economy Comfort / standby / economy Comfort / standby / economy / frost
-> Reaction on long operation[1]	This parameter is visible if there is a distinction between short and long operations. It is used to determine the long-press operation sending the value of the input x.	**Comfort / standby** Comfort / economy Comfort / standby / economy

		Comfort / standby / economy / frost
Long operation after[1]	This parameter is used to determine long operation detection after the button press operation. For making a long operation, the button should be pressed at least the configured value.	00:00.005…**00:00.500** …01:05.535
Switchover considers "State HVAC-Mode" object	This parameter is used to enable the HVAC-Mode state object to change the current HVAC mode via KNX.	**No** Yes
Debounce time	This parameter is used to determine the debounce time. Debouncing prevents unwanted multiple operations of the input, e.g., due to bouncing of the contact.	10 ms 20 ms 30 ms 40 ms **50 ms** 70 ms 100 ms 150 ms

[*1] This parameter is only visible when the parameter "Distinction between long and short operation" is set to "Yes".

[*2] This parameter is only visible when the parameter "Distinction between long and short operation" is set to "No".

3.4.8 Input – Command Sequence

In this section, it is explained how the command sequence function works. Up to 4 commands are attainable with either 1-bit, 1-byte (percentage) or 1-byte (0..255) objects. Each press event toggles through the used commands (Object A, B, C, D) via the assigned buttons. Detailed information on the relevant parameter configurations is described in the table below.

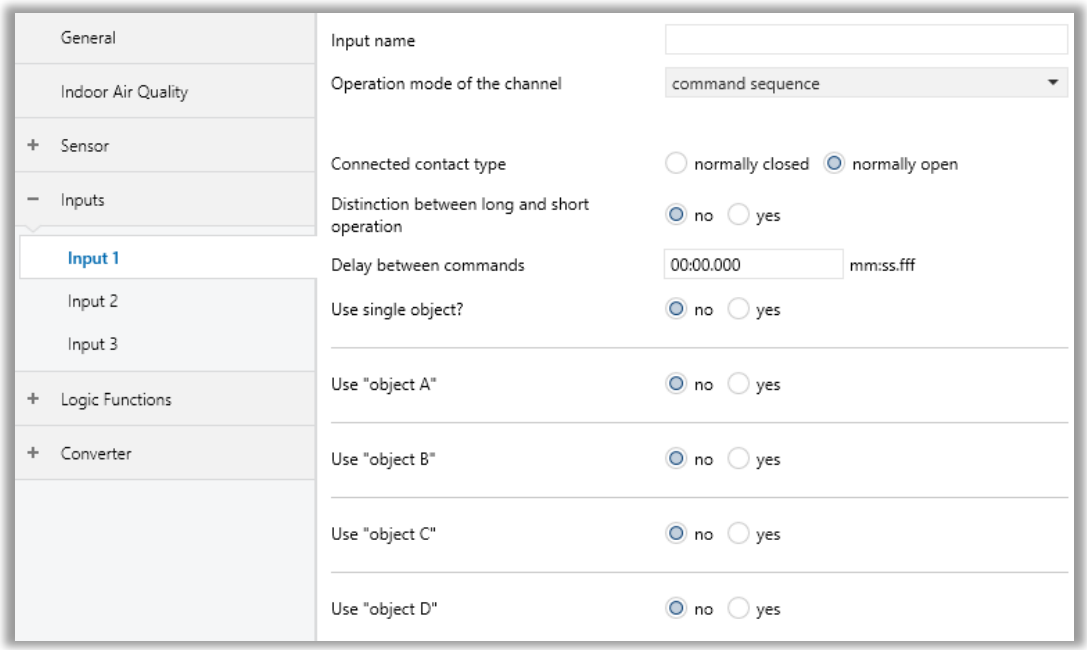


Fig. 11: Input – Command Sequence Configuration Page

3.4.6.2. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Operation Mode of the channel	This parameter is used to determine the input x operation mode. If no function is selected, the input x will not be used. For other choices, all functionalities are configured separately.	**No function** Switch sensor Switch/dimming sensor Shutter sensor Value/forced operation Control scene RGB colour control Mode selection Command sequence Counter RGBW control
Input Name	This parameter is used to type an input name. The name can be consisting of 40 characters.	**40 bytes allowed**
Connected contact type	This parameter is used to specify the contact type that is connected to the KNX Air Quality Multi Sensor input x.	Normally closed **Normally open**
Distinction between short and long operation	This parameter is used to set if the input differentiates between short and long operations. With the option “yes”, after opening/closing of the contact, it must, first of all, be ascertained if a short or long operation has occurred here. Only thereafter will a possible reaction be triggered.	**No** Yes
Delay between commands	This parameter is visible if there is a distinction between short and long operations. It is used to determine the short press operation sending the value of the input x.	**00:00.000**…00:20.000
Long operation after	This parameter is used to determine long operation detection after the button press operation. For making a long operation, the button should be pressed at least the configured value.	00:00.005…**00:00.500** …01:05.535

Use single object?	This parameter decides whether each object is sent to a single object or objects assigned to each command.	**No** Yes
-> Value Amount	This parameter is used to determine the debounce time. Debouncing prevents unwanted multiple operations of the input, e.g., due to bouncing of the contact.	2 **3** 4
-> Data type	This parameter is used to determine the sending value to the bus when a short operation occurs.	Values depends on DPT selection.
Use “object X”	This parameter is used to enable each command object when they are set to yes.	**No** Yes
-> Data type	This parameter is used to determine the sending value to the bus when a short operation occurs.	Values depends on DPT selection.

3.4.9. Input – Counter

In this section, it is explained how to count input pulses on the KNX Air Quality Multi Sensor. Detailed information on the relevant parameter configurations is described in the table below.

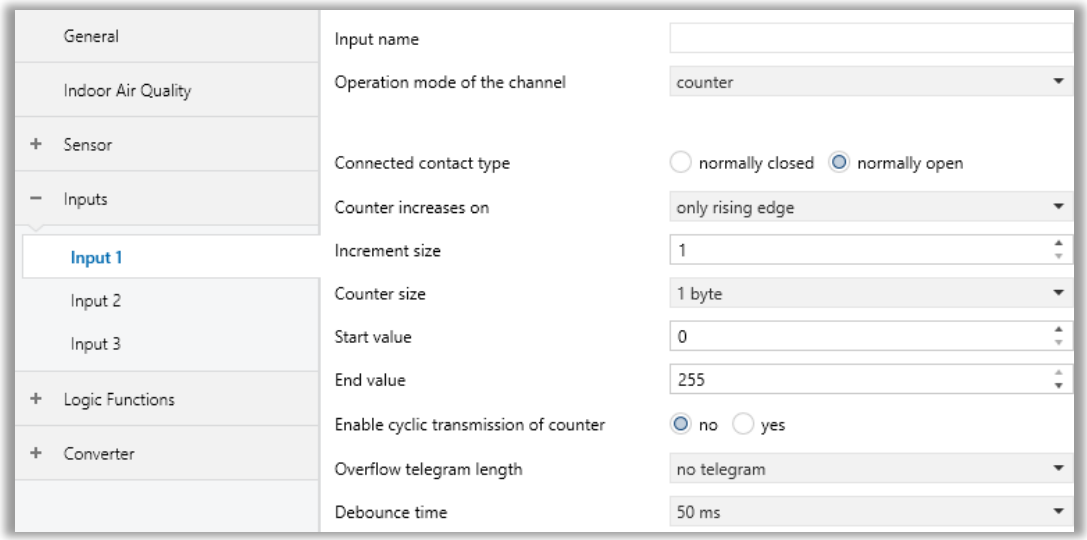


Fig. 12: Input – Counter Configuration Page

3.4.9.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Operation Mode of the channel	This parameter is used to determine the input x operation mode. If no function is selected, the input x will not be used. For other choices, all functionalities are configured separately.	**No function** Switch sensor Switch/dimming sensor Shutter sensor Value/forced operation Control scene RGB colour control Mode selection Command sequence Counter RGBW control
Input Name	This parameter is used to type an input name. The name can be consisting of 40 characters.	**40 bytes allowed**
Connected contact type	This parameter is used to specify the contact type that is connected to the KNX Air Quality Multi Sensor input x.	Normally closed **Normally open**
Counter increases on	This parameter is used to set how the input pulse is to be generated.	**Only rising edge** Only falling edge Both edges
Increment size	This parameter is used to assign the increment size when a press event occurs.	**1**…255
Counter size	This parameter is used to determine long operation detection after the button press operation. For making a long operation, the button should be pressed at least the configured value.	1 byte **2 byte** 4 byte
Start Value	This parameter is used to set the initial value of the counter after a reset or failure.	Values depends on DPT selection.
End Value	This parameter is used to set the end value of the counter.	Values depends on DPT selection.

Enable cyclic transmission of counter	This parameter is used to determine if the counter value is sent cyclically on the bus	**No** Yes
-> Repeated transmit cycle period	This parameter is used to determine the sending value to the bus when a short operation occurs.	00:00.005…**00:00.500** …01:05.535
Overflow telegram length	This parameter is used to set the length of the overflow telegram which will be sent to the bus when the counter value exceeds the end value set in the parameter list.	**No telegram** 1 bit 1 byte
-> Overflow telegram value	This parameter is used to determine the sending value to the bus when a short operation occurs.	Values depends on DPT selection.
Debounce time	This parameter is used to determine the debounce time. Debouncing prevents unwanted multiple operations of the input, e.g., due to bouncing of the contact.	10 ms 20 ms 30 ms 40 ms **50 ms** 70 ms 100 ms 150 ms

3.4.10. Input – RGBW control

In this section, it is explained how to control an RGBW device through the buttons connected to the digital inputs via the KNX Air Quality Multi Sensor. Detailed information on the relevant parameter configurations is described in the table below.

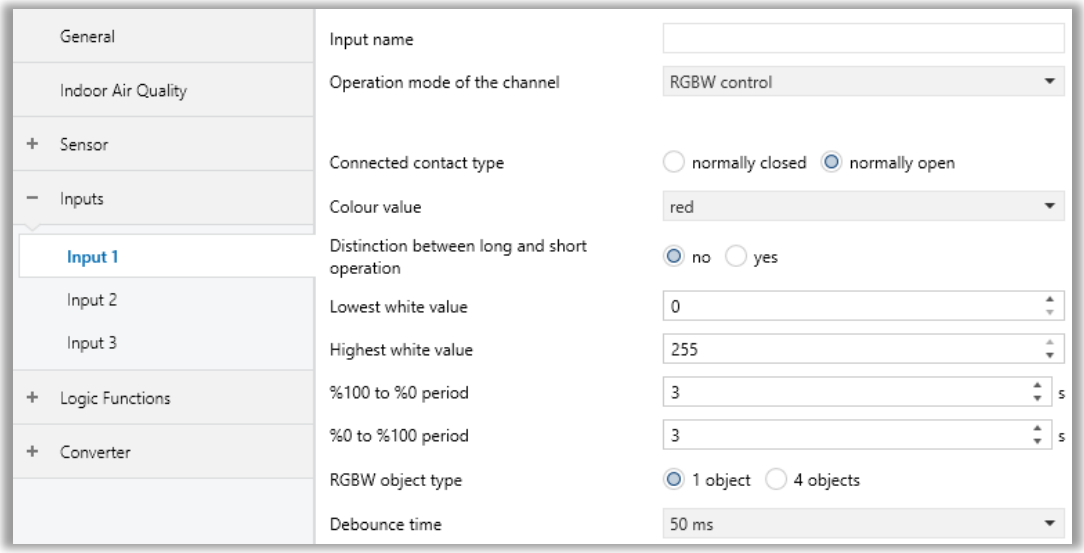


Fig. 13: Input – RGBW Control Configuration Page

3.4.10.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Operation Mode of the channel	This parameter is used to determine the input x operation mode. If no function is selected, the input x will not be used. For other choices, all functionalities are configured separately.	**No function** Switch sensor Switch/dimming sensor Shutter sensor Value/forced operation Control scene RGB colour control Mode selection Command sequence Counter RGBW control
Input Name	This parameter is used to type an input name. The name can be consisting of 40 characters.	**40 bytes allowed**
Connected contact type	This parameter is used to specify the contact type that is connected to the KNX Air Quality Multi Sensor input x.	Normally closed **Normally open**
Set colour value	This parameter is used to set RGB colours according to the configured values.	**Red** Orange Yellow Green-yellow Green Green-cyan Cyan Blue-cyan Blue Blue-magenta Red-magenta white
Change colour with long operation	This parameter is used to enable or disable the colour changing with long press operation.	**No** Yes

Long operation after	This parameter is used to determine long operation detection after the button press operation. For making a long operation, the button should be pressed at least the configured value.	00:00.005…**00:00.500** …01:05.535
Lowest white value	This parameter is set to the lowest white value.	**0**..254
Highest white value	This parameter is set to the highest white value.	1…**255**
%100 to %0 period	This parameter is used to set how long it takes to go from 100% to 0%.	1s...**3s**…10s
%0 to %100 period	This parameter is used to set how long it takes to go from 0% to 100%.	1s...**3s**…10s
Object type	This parameter is used to determine the RGB colour object type.	**1 object** 4 objects
Debounce time	This parameter is used to determine the debounce time. Debouncing prevents unwanted multiple operations of the input, e.g., due to bouncing of the contact.	10 ms 20 ms 30 ms 40 ms **50 ms** 70 ms 100 ms 150 ms

3.5. Logic Channels

This section describes the logical function modules of the Interra KNX Air Quality Multi Sensor. With the logical function blocks on the KNX Binary Input, a logical expression can be created with the ambient temperature, the brightness level of the environment, whether there is a presence detection in the environment, the data coming through the local digital inputs or external inputs, and various 'TRUE' or 'FALSE' results can be obtained. actions can be taken and scenarios can be triggered.

3.5.1. Logic Channels – General

This section describes the general parameters of the logical association module of the Interra KNX Air Quality Multi Sensor. Parameters must be configured separately for each logic block.

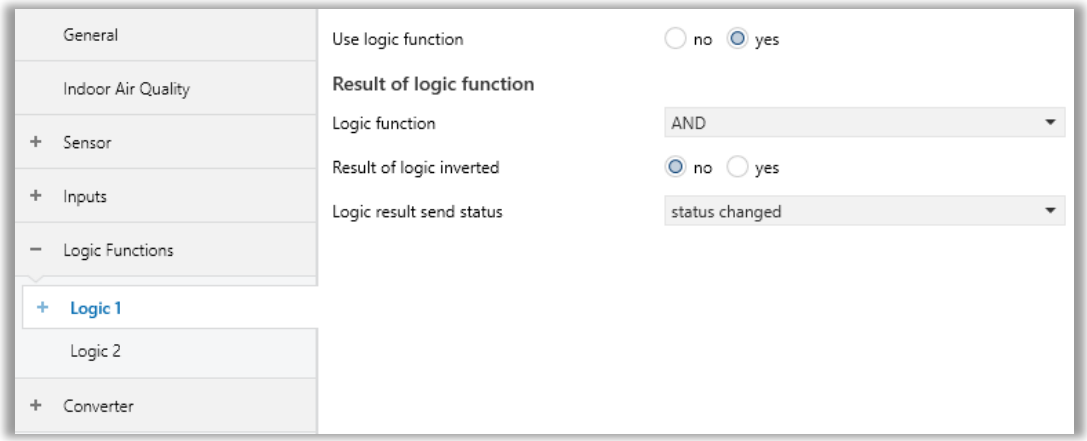


Fig. 14: Logic Functions – General Configuration Page

3.5.1.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Use Logic Function	This parameter is used to enable or disable the related logic function gate.	**No** Yes
Logic Function	This parameter is used to determine the logical relation of the parameterized logic inputs. **AND:** All inputs are put into the 'AND' operation. **OR:** All inputs are put into the 'OR' operation. **XOR:** All inputs are put into the 'XOR' operation.	**AND** OR XOR
Result of Logic Inverted	This parameter is used to invert or not invert the calculated logic function block. If it is selected as yes for example, when the logic function gate output is 'TRUE', the output will be 'FALSE'. Vice versa also applies.	**No** Yes
Logic result send status	This parameter is used to determine the logic function block result sending status to the KNX bus.	**Status changed** Status is TRUE Status is FALSE Status changed and periodically Status is TRUE periodically Status is FALSE periodically

3.5.2. Logic Functions – Internals Inputs

This section describes the input parameters of the logical association module of the Interra KNX Air Quality Multi Sensor. Parameters must be configured separately for each logic block.

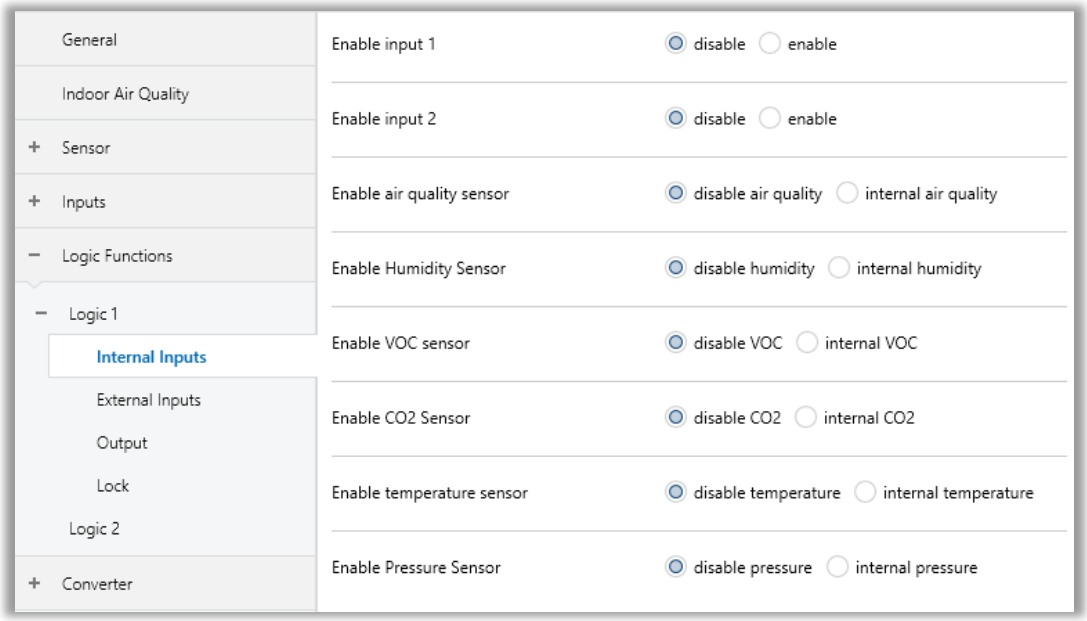


Fig. 15: Logic Functions – Internal Inputs Configuration Page

3.5.2.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Enable Input 1	This parameter is used to enable or disable input 1 for logic function block as input	**Disable** Enable
->> Contact Input Status	This parameter is used to determine when a press occurs on the local input is accounted as TRUE or FALSE.	**Pressed TRUE else FALSE** Pressed FALSE else TRUE
Enable Input 2	This parameter is used to enable or disable input 2 for logic function block as input.	**Disable** Enable
->> Contact Input Status	This parameter is used to determine when a press occurs on the local input is accounted as TRUE or FALSE.	**Pressed TRUE else FALSE** Pressed FALSE else TRUE
Enable Air Quality Sensor	This parameter is used to enable or disable the Air Quality Sensor.	**Disable Air Quality Multi Sensor** Internal Air Quality Multi Sensor
->> Threshold Air Quality Sensor	This parameter is used to determine the threshold value.	1…**200**…255
->> Internal Air Quality sensor status	This parameter is used to determine when the Air Quality sensor value is accounted as TRUE or FALSE.	**Under lower = FALSE, above upper is TRUE** Under lower = TRUE, above upper is FALSE
Enable Humidity Sensor	This parameter is used to enable or disable the humidity sensor.	**Disable** Enable
->> Threshold humidity	This parameter is used to determine the threshold value.	1…**40**…100

->> Internal humidity sensor status	This parameter is used to determine when the humidity sensor value is accounted as TRUE or FALSE.	**Under lower = FALSE, above upper is TRUE** Under lower = TRUE, above upper is FALSE
Enable VOC sensor	This parameter is used to enable or disable the VOC sensor.	**Disable VOC** Internal VOC
->> Threshold VOC (x0.01) ppm	This parameter is used to determine the threshold value.	1…**100**…1200
->> VOC status	This parameter is used to determine when the VOC sensor value is accounted as TRUE or FALSE.	**Under lower = FALSE, above upper is TRUE** Under lower = TRUE, above upper is FALSE
Enable CO2 sensor	This parameter is used to enable or disable the CO2 sensor.	**Disable CO2** Internal CO2
->> Threshold CO2 (x10) ppm	This parameter is used to determine the threshold value.	1…**120**…255
->> Internal CO2 sensor status	This parameter is used to determine when the CO2 sensor value is accounted as TRUE or FALSE.	**Under lower = FALSE, above upper is TRUE** Under lower = TRUE, above upper is FALSE
Enable Temperature Sensor	This parameter is used to enable or disable the temperature sensor. KNX temperature: The internal temperature sensor will be used as temperature logic input.	**Disable Temperature** Internal temperature
-> Threshold temperature upper	This parameter is used to determine the lower threshold temperature value.	-300…**260**…700
-> Threshold temperature lower	This parameter is used to determine the upper threshold temperature value.	-300…**220**…700

-> Temperature status	This parameter is used to determine when the ambient temperature value is accounted as TRUE or FALSE.	**In range is TRUE, else FALSE** Out range is TRUE, else FALSE Under lower is TRUE, above upper is FALSE Under lower is FALSE, above upper is TRUE
-> Change temperature threshold via bus	This parameter is used to change the temperature threshold value via a KNX bus object.	**No** Yes
Enable Pressure Sensor	This parameter is used to enable or disable the pressure sensor.	**Disable pressure** Internal pressure
->> Threshold pressure (x1000 Pa)	This parameter is used to determine the threshold value.	1…**150**…255
->> Internal pressure sensor status	This parameter is used to determine when the pressure sensor value is accounted as TRUE or FALSE.	**Under lower = FALSE, above upper is TRUE** Under lower = TRUE, above upper is FALSE

3.5.3. Logic Functions – External Inputs

This section describes the external inputs parameters of the logical association module of the Interra KNX Binary Input. Parameters must be configured separately for each logic block.

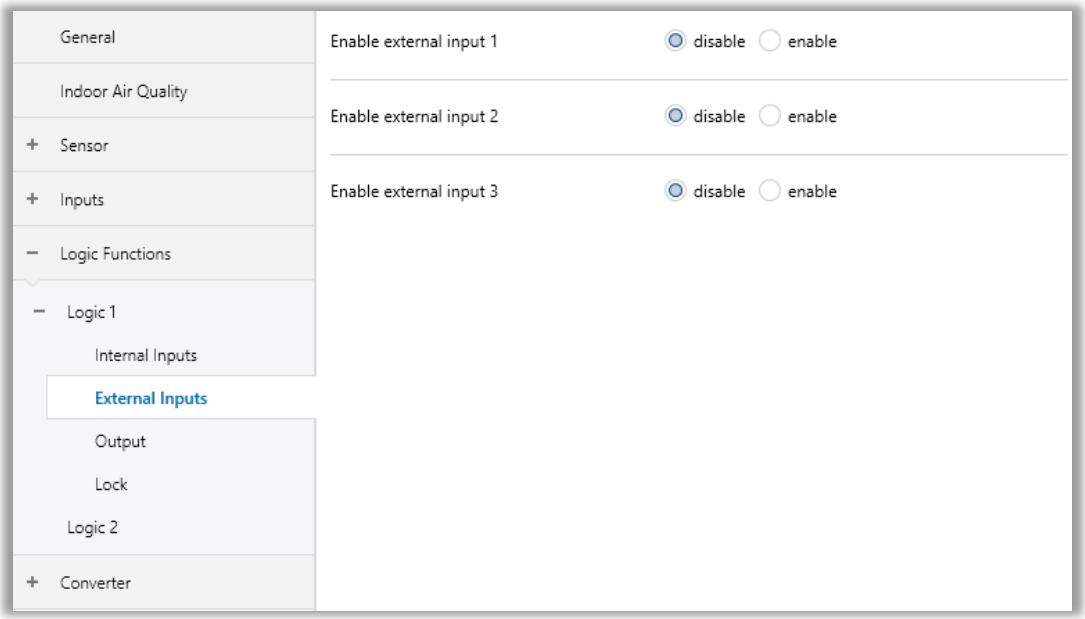


Fig. 16: Logic Functions – External Inputs Configuration Page

3.5.3.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Enable External Input 1	This parameter is used to enable or disable input 1 for logic function block as input	**Disable** enable
->> External Input type	This parameter is used to determine the external input type of the enabled input 1 object.	**1-bit value('1'/'0')** 1-byte threshold (0..255) 2-byte threshold (0..65535) 2-byte float threshold (-50C..100C) 4-byte threshold (0..4294967295)
->> External Input Threshold Value	This parameter is used to determine the external input threshold value to evaluate the input status as TRUE or FALSE.	**0**…255 **0**…65535 -500…0…1000 0…10000…4294967295
External input status	This parameter is used to determine the input status as TRUE or FALSE according to the value. (This is visible if the input is not selected as 1 bit)	**TRUE if input value >= threshold else FALSE** FALSE if input value <= threshold else TRUE
Enable Input 2	This parameter is used to enable or disable input 2 for logic function block as input	**Disable** enable
->> Contact Input Status	This parameter is used to determine when a press occurs on the local input is accounted as TRUE or FALSE.	**Pressed TRUE else FALSE** Pressed FALSE else TRUE
Enable Input 3	This parameter is used to enable or disable input 1 for logic function block as input	**Disable** enable
->> Contact Input Status	This parameter is used to determine when a press occurs on the local input is accounted as TRUE or FALSE.	**Pressed TRUE else FALSE** Pressed FALSE else TRUE
->> Contact Input Status	This parameter is used to determine when a press occurs on the local input is accounted as TRUE or FALSE.	**Pressed TRUE else FALSE** Pressed FALSE else TRUE

3.5.4. Logic Functions – Output General

This section describes the general parameters of the logic output functions. The property of each respective output channel is set by configuring the parameters in this section. Also, repetitive sending of output values can be set here.

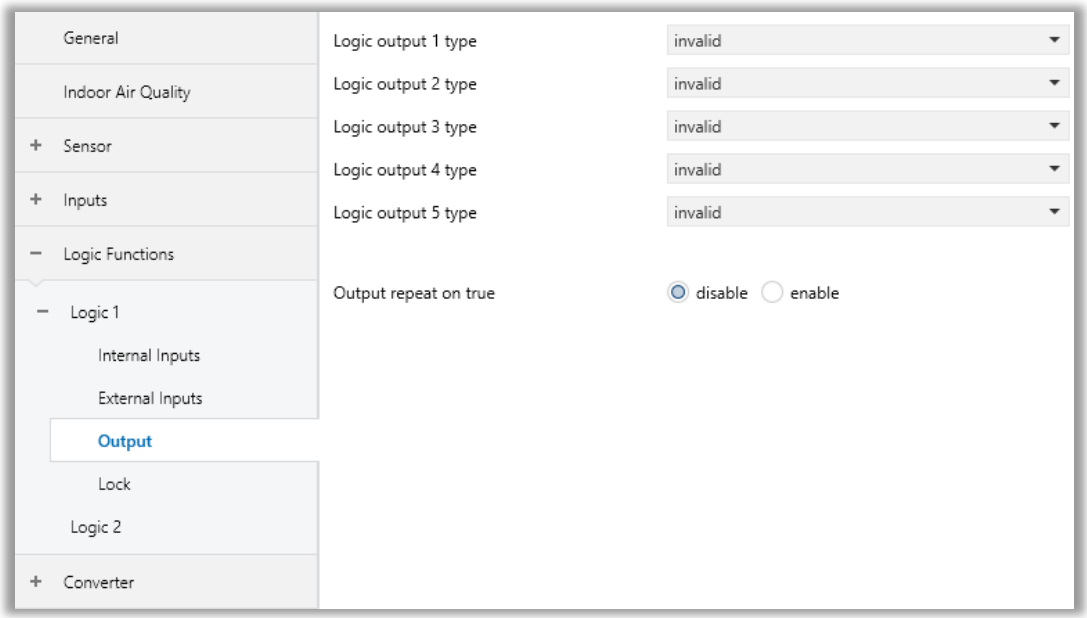


Fig. 17: Logic Functions – Output General Configuration Page

3.5.4.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Logic Output X type (1...5)	This parameter is used to specify the related logic output x channel functionality. If this parameter is selected as invalid, the related output channel will not be used. Other selected options will be configured separately.	**Invalid** Switch controller Dim controller Shutter controller Alarm controller Percentage control. Sequence control. Scene controller String controller Threshold controller
Output repeat on true	This parameter is used to enable or disable the output repeating time for all output channels when the logic gate state is true.	**Disable** Enable
-> Repeated time interval	This parameter is used to determine the repeated time for all enabled output channels to send output channel values when the logic gate state is true.	**0**…65535

3.5.5. Logic Functions – Outputs 1-5

This section describes parameter configurations for each logic output channel. Although the working principle is the same for all output channels, only the type of values to be sent changes depending on the selected output functionality. For this reason, parameters are described in a common table about only one feature.

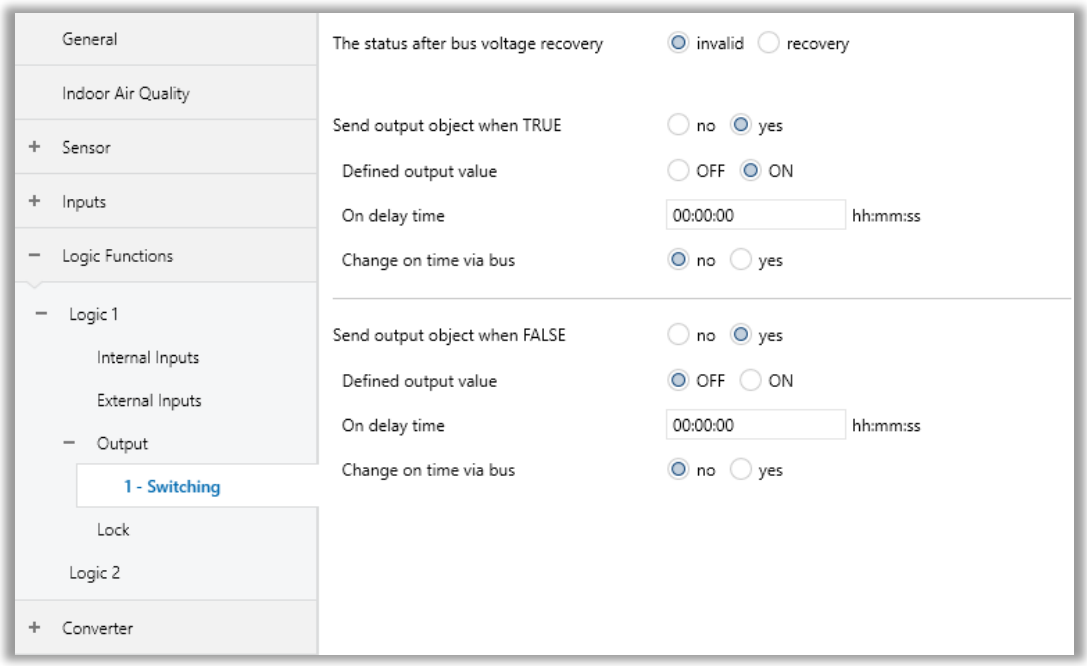


Fig. 18: Logic Functions – Output: Dimming Configuration Page

3.5.5.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
The status after bus voltage recovery	This parameter is used to determine the logic output channel x status after bus voltage recovery.	**Invalid** Defined Recovery
-> Recovery Defined Value	This parameter is used to determine the output channel x value when the bus voltage has been recovered.	**On**…Off **%0**…%100 **Up**…Down **No alarm**…alarm **Stop**…start **Scene no.1**…scene no.64 14 bytes string **0**…65535
Send output object when TRUE	This parameter is used to enable or disable the sending output object when the logic gate is true.	**No** yes
-> Defined Output Value	This parameter is used to determine the logic output channel x defined value when the logic gate is true.	**On**…Off %0…**%100** **Up**…Down No alarm…**alarm** Stop…**start** Scene no.1…**scene no64** 14 bytes string 0…**65535**
-> On Delay Time	This parameter is used to determine the on-delay time of the related logic output channel x when the logic gate is true.	**00:00:00**…18:12:15
-> Change on Time Via Bus	This parameter is used to enable or disable the on-delay time object for changing the delay time on the true state.	**No** yes

Send output object when FALSE	This parameter is used to enable or disable the sending output object when the logic gate is false.	**No** yes
-> Defined Output Value	This parameter is used to determine the logic output channel x defined value when the logic gate is false.	On…**Off** **%0**…%100 **Up**…Down **No alarm**…alarm **Stop**…start **Scene no. 1** … scene no64 14 bytes string **0**…65535
-> On Delay Time	This parameter is used to determine the on-delay time of the related logic output channel x when the logic gate is false.	**00:00:00**…18:12:15
-> Change on Time Via Bus	This parameter is used to enable or disable the on-delay time object for changing the delay time on the false state.	**No** yes

3.5.6. Logic Functions – Lock

In this section, the locking feature of the logic functions is mentioned. The locking feature is for each logic function gate and is configured separately. Since there are 5 different logic function gates in the KNX binary input device, a separate configuration is required for each. Since the parameter page for each section is the same, only 1 is explained in this section.

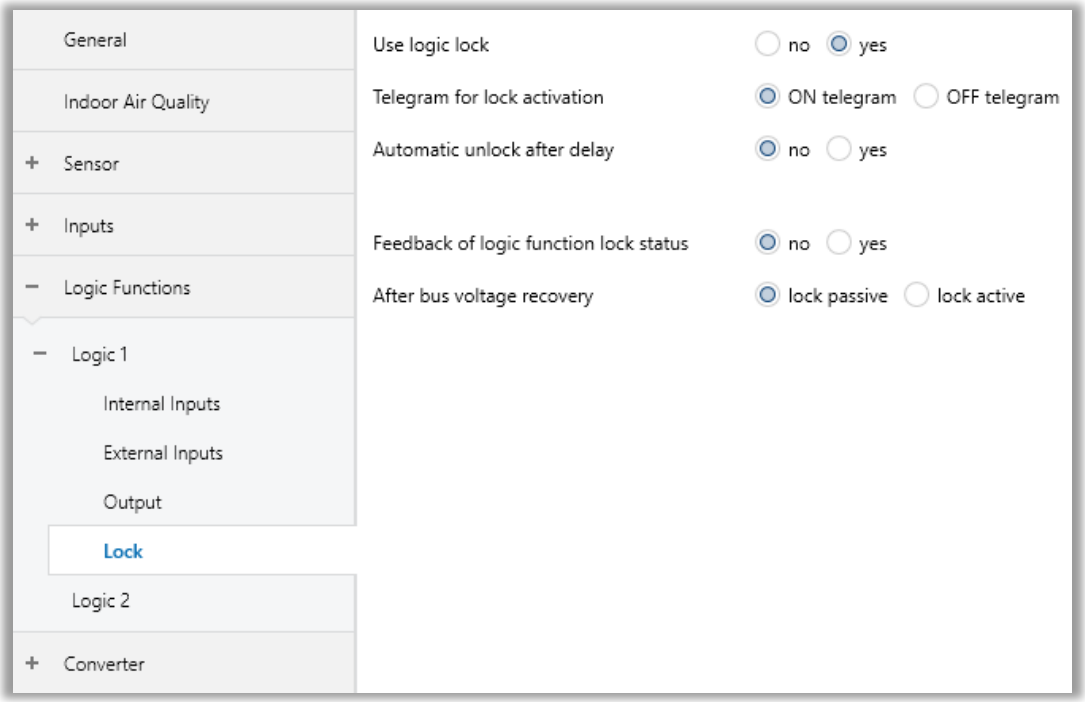


Fig. 19: Logic Functions – Lock Configuration Page

3.5.6.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Use Logic Lock	This parameter is used to lock the related logic function gate.	**No** Yes
Telegram for Lock Activation	This parameter is used to determine the telegram value that locks the related logic function gate.	**On telegram** Off telegram
Automatic Unlock After Delay	This parameter is used to enable or disable the automatic unlock to unlock the logic gate after a while.	**No** Yes
->> Automatic unlock time	This parameter is used to determine the automatically unlock period to unlock the logic function gate.	00:00:00…**00:00:05**... 18:12:15
Feedback of logic function lock status	This parameter is used to enable or disable the feedback of the logic lock status object.	**No** Yes
After Bus Voltage Recovery	This parameter is used to determine the logic function gate lock status after the bus voltage recovery.	**Lock Passive** Lock Active

3.6. Additional Functions – Converters

This section describes the converter function modules of the KNX Air Quality Multi Sensor. There are 2 type of converter function:

- Gate forwarding
- Format converter

3.6.1. Converters – Gate Forwarding / Format Converter

Gate forwarding is that if the input value that is specified in parameter receive, send the value that is specified in parameter to bus. The users can configure the input and output's values and data types.

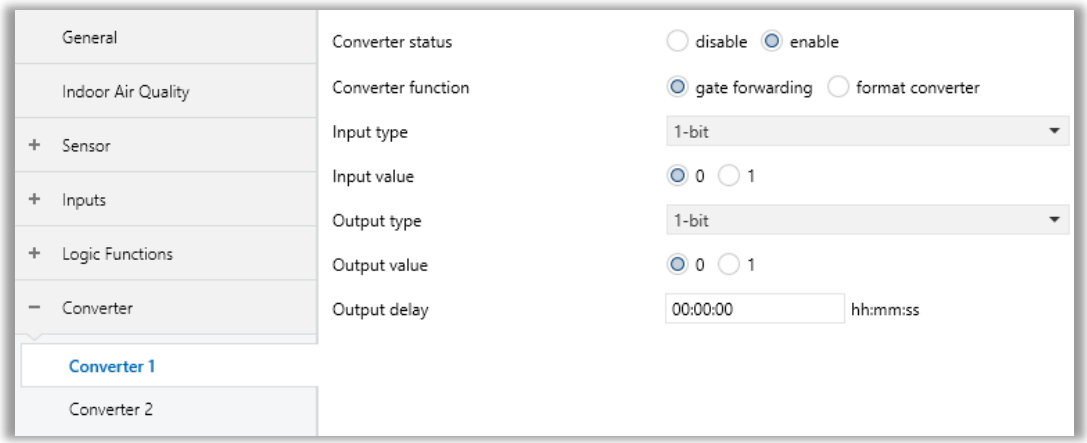


Fig. 20: Logics – Gate Forwarding Configuration Page

Format converter, converts the value from a data type to another data type. For example; 1-bit input object to 1-byte output object.

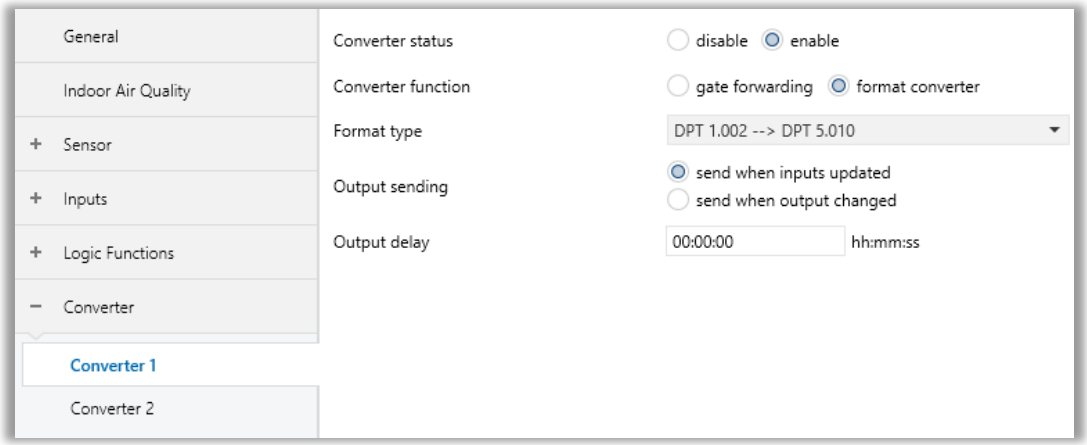


Fig. 21: Logics – Format Converter Configuration Page

4.12.1.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Converter status	This parameter is used to enable or disable the converter features.	**Disable** Enable
Converter function	This parameter determines the function type of converter module.	**Gate Forwarding** Format Converter
-> Input type[1]	This parameter determines the data type of input object that must be received to output to the bus.	**1-bit** 2-bits 1-byte 2-bytes 1-byte logic 2-bytes logic 1-byte threshold 2-bytes threshold
-> Input value[1]	This parameter determines the input value that must be received to output to the bus.	Values depend on DPT selection.
-> Calculation value[1,2]	This parameter determines the value that will do the arithmetic operation with the input value.	Values depend on DPT selection.
-> Output type[1]	This parameter determines the data type of output object.	**1-bit** 2-bits 1-byte 2-bytes
-> Output value[1]	This parameter determines the value of output to be sent.	Values depend on DPT selection.
-> Output behaviour[1,3]	This parameter determines the logic value of 0 and 1.	**0: false / 1: true** 1: false / 0: true
-> Format type[4]	This parameter determines which data type will be converted to another data type.	**DPT 1.002 → DPT 5.010**

		8*DPT 1.002 → DPT 5.010 DPT 5.010 → 8*DPT 1.002 DPT 5.010 → DPT 7.001 DPT 232.600(RGB) → 3*DPT 5.010 3*DPT 5.010 → DPT 232.600(RGB) DPT 251.600(RGBW) → 4*DPT 5.010 4*DPT 5.010 → DPT 251.600(RGBW)
-> Output sending[4]	This parameter determines when the output value is sent.	**Send when inputs updated** Send when output changed
-> Output delay	This parameter determines the delay time of sending the output value. The output value is sent after the time in this parameter.	**00:00:00**….18:12:15

[*1] This parameter is visible when the function “Converted function” is set to “Gate forwarding”.

[*2] This parameter is visible when the function “Calculation type” is **not** set to “Disabled”.

[*3] This parameter is visible when the function “Input type” is set to “1-Byte logic”, “2-Byte logic”, “1-Byte threshold”, “2-Byte threshold”.

[*4] This parameter is visible when the function “Converted function” is set to “Format converter”.

4. ETS Objects List & Descriptions

The KNX Water Flood Detector can communicate via the KNX bus line. In this section, the group objects of the KNX Air Quality Multi Sensor is described. Which of these group objects are visible and capable of being linked with group addresses are explained in sub-sections.

No	Name	Function	DTP Type	Length	Flags				
					C	R	W	T	U
1	General	In operation	1.002	1 bit	X	X		X	
2	IAQ Value	Value Output (Index)	9.008	2 bytes	X	X		X	
3	IAQ Calibration	Calibration Input (offset value)	9.008	2 bytes	X		X		
4	IAQ Level	Output Level Excellent	1.001	1 bit	X	X		X	
5	IAQ Level	Output Level Good	1.001	1 bit	X	X		X	
6	IAQ Level	Output Level Lightly polluted	1.001	1 bit	X	X		X	
7	IAQ Level	Output Level Moderately polluted	1.001	1 bit	X	X		X	
8	IAQ Level	Output Level Heavily polluted	1.001	1 bit	X	X		X	
9	IAQ Level	Output Level Severely polluted	1.001	1 bit	X	X		X	
10	IAQ Level	Output Level Extremely polluted	1.001	1 bit	X	X		X	
11	IAQ Alarm	Alarm Output	1.001	1 bit	X	X		X	
			1.005	1 bit	X	X		X	
			1.008	1 bit	X	X		X	
			5.001	1 byte	X	X		X	

			5.100	1 byte	X	X		X	
			7.001	2 bytes	X	X		X	
			17.001	1 byte	X	X		X	
12	Humidity Value	Value Output (%)	9.007	2 byte	X	X		X	
13	Humidity Calibration	Calibration Input (offset value)	6.001	1 byte	X		X		
14	Humidity Level	Output Level 0	1.001	1 bit	X	X		X	
15	Humidity Level	Output Level 1	1.001	1 bit	X	X		X	
16	Humidity Level	Output Level 2	1.001	1 bit	X	X		X	
17	Humidity Level	Output Level 3	1.001	1 bit	X	X		X	
18	Humidity Level	Output Level 4	1.001	1 bit	X	X		X	
19	Humidity Level	Output Level 5	1.001	1 bit	X	X		X	
20	Humidity Alarm	Alarm Output	1.001	1 bit	X	X		X	
			1.005	1 bit	X	X		X	
			1.008	1 bit	X	X		X	
			5.001	1 byte	X	X		X	
			5.100	1 byte	X	X		X	
			7.001	2 bytes	X	X		X	
			17.001	1 byte	X	X		X	
21	VOC Value	Value Output (ppm)	9.008	2 bytes	X	X		X	
22	VOC Calibration	Calibration Input (offset value)	9.008	2 bytes	X		X		
23	VOC Level	Output Level 0	1.001	1 bit	X	X		X	
24	VOC Level	Output Level 1	1.001	1 bit	X	X		X	

25	VOC Level	Output Level 2	1.001	1 bit	X	X		X	
26	VOC Level	Output Level 3	1.001	1 bit	X	X		X	
27	VOC Level	Output Level 4	1.001	1 bit	X	X		X	
28	VOC Level	Output Level 5	1.001	1 bit	X	X		X	
29	VOC Alarm	Alarm Output	1.001	1 bit	X	X		X	
			1.005	1 bit	X	X		X	
			1.008	1 bit	X	X		X	
			5.001	1 byte	X	X		X	
			5.100	1 byte	X	X		X	
			7.001	2 bytes	X	X		X	
			17.001	1 byte	X	X		X	
30	CO2 Value	Value Output (ppm)	9.008	2 bytes	X	X		X	
31	CO2 Calibration	Calibration Input (value offset)	9.008	2 bytes	X		X		
32	CO2 Level	Output Level 0	1.001	1 bit	X	X		X	
33	CO2 Level	Output Level 1	1.001	1 bit	X	X		X	
34	CO2 Level	Output Level 2	1.001	1 bit	X	X		X	
35	CO2 Level	Output Level 3	1.001	1 bit	X	X		X	
36	CO2 Level	Output Level 4	1.001	1 bit	X	X		X	
37	CO2 Level	Output Level 5	1.001	1 bit	X	X		X	
38	CO2 Alarm	Alarm Output	1.001	1 bit	X	X		X	
			1.005	1 bit	X	X		X	
			1.008	1 bit	X	X		X	

			5.001	1 byte	X	X		X	
			5.100	1 byte	X	X		X	
			7.001	2 bytes	X	X		X	
			17.001	1 byte	X	X		X	
39	Temperature Value	Value Output (°C)	9.001	2 bytes	X	X		X	
40	Temperature Calibration	Calibration Input (offset value)	9.001	2 bytes	X		X		
41	Temperature Level	Output Level 0	1.001	1 bit	X	X		X	
42	Temperature Level	Output Level 1	1.001	1 bit	X	X		X	
43	Temperature Level	Output Level 2	1.001	1 bit	X	X		X	
44	Temperature Level	Output Level 3	1.001	1 bit	X	X		X	
45	Temperature Level	Output Level 4	1.001	1 bit	X	X		X	
46	Temperature Level	Output Level 5	1.001	1 bit	X	X		X	
47	Temperature Alarm	Alarm Output	1.001	1 bit	X	X		X	
			1.005	1 bit	X	X		X	
			1.008	1 bit	X	X		X	
			5.001	1 byte	X	X		X	
			5.100	1 byte	X	X		X	
			7.001	2 bytes	X	X		X	
			17.001	1 byte	X	X		X	
48	Pressure Value	Value Output (Pa)	9.006	2 bytes	X		X		
49	Pressure Calibration	Calibration Input (value offset)	9.006	2 bytes	X		X		

50, 55, 60	Input 1...3	Block	1.003	1 bit	X		X		
51, 56, 61	Input 1...3	Switch	1.001	1 bit	X		X	X	
		Shutter UP/DOWN	1.008	1 bit	X		X	X	
		Forced Operation – Switch	2.001	2 bits	X			X	
		Forced Operation – Percent	5.001	1 byte	X			X	
		Forced Operation – Decimal	5.005	1 byte	X			X	
		Forced Operation – Scene	17.001	1 byte	X			X	
		Forced Operation – Colour	7.600	2 bytes	X			X	
		Forced Operation – Temperature	9.001	2 bytes	X			X	
		Forced Operation – Brightness	9.004	2 bytes	X			X	
		Forced Operation – RGB	232.600	3 bytes	X			X	
		8-bit Scene	18.001	1 byte	X			X	
		RGB Colour	232.600	3 bytes	X	X		X	
		Mode selection	20.102	1 byte	X	X		X	
		Sequence	1.001	1 bit	X	X		X	
			5.010	1 byte	X	X		X	
			5.001	1 byte	X	X		X	
			20.102	1 byte	X	X		X	
		Sequence A	1.001	1 bit	X	X		X	

		Sequence A (0…255)	5.010	1 byte	X	X		X	
		Sequence A (0…100%)	5.001	1 byte	X	X		X	
		Sequence A HVAC	20.102	1 byte	X	X		X	
		Counter value	5.010	1 byte	X	X		X	
			7.001	2 bytes	X	X		X	
			12.001	4 bytes	X	X		X	
		Percent value (RGBW)	251.600	6 bytes	X			X	
		Red Colour	5.010	1 byte	X	X		X	
52, 57, 62	Input 1...3	Dimming	3.007	4 bits	X			X	
		STOP/ lamella adjustment	1.007	1 bit	X			X	
		Store scene	1.003	1 bit	X	X	X		
		Green Colour	5.010	1 byte	X	X		X	
		HVAC-Mode State	20.102	1 byte	X		X		
		Sequence B	1.001	1 bit	X	X		X	
		Sequence B (0…255)	5.010	1 byte	X	X		X	
		Sequence B (0…100%)	5.001	1 byte	X	X		X	
		Sequence B HVAC	20.102	1 byte	X	X		X	
		Reset Counter	1.001	1 bit	X		X		
	Input 1...3- long	Switch	1.001	1 bit	X	X	X	X	X
		Forced operation – Switch	2.001	2 bits	X			X	
		Forced operation – Percent	5.001	1 byte	X			X	
		Forced operation – Decimal	5.005	1 byte	X			X	

		Forced operation – Scene	17.001	1 byte	X			X	
		Forced operation – Colour	7.600	2 bytes	X			X	
		Forced operation – Temperature	9.001	2 bytes	X			X	
		Forced operation – Brightness	9.004	2 bytes	X			X	
		Forced operation – RGB	232.600	3 bytes	X			X	
53, 58, 63	Input 1...3	Overflow	1.001	1 bit	X			X	
			5.010	1 byte	X			X	
		Blue Colour	5.010	1 byte	X	X		X	
		Upper limit position	1.002	1 bit	X		X		
		Sequence C	1.001	1 bit	X	X		X	
		Sequence C (0…255)	5.010	1 byte	X	X		X	
		Sequence C (0…100%)	5.001	1 byte	X	X		X	
		Sequence C HVAC	20.102	1 byte	X	X		X	
54, 59, 64	Input 1...3	White Colour	5.010	1 byte	X	X		X	
		Lower limit position	1.002	1 bit	X		X		
		Sequence D	1.001	1 bit	X	X		X	
		Sequence D (0…255)	5.010	1 byte	X	X		X	
		Sequence D (0…100%)	5.001	1 byte	X	X		X	
		Sequence D HVAC	20.102	1 byte	X	X		X	
65, 93,	Logic 1...2:	Lock	1.001	1 bit	X		X		
66, 94	Logic 1...2:	Feedback of lock	1.001	1 bit	X	X		X	

72, 100	Logic 1…2: Input	Temperature threshold lower	9.004	2 bytes	X		X		
73, 101	Logic 1…2: Input	Temperature threshold upper	9.004	2 bytes	X		X		
74, 75, 76/ 102, 103, 104	Logic 1…2: Input: 1…3	External input	1.001	1 bit	X		X		X
			5.010	1 byte	X		X		X
			7.001	2 bytes	X		X		X
			9.001	2 bytes	X		X		X
			12.001	4 bytes	X		X		X
77, 105	Logic 1…2: Output	Result status	1.002	1 bit	X			X	
78, 81, 84, 87, 90/ 106, 109, 112, 115, 118	Logic 1…2: Output: 1…5	Switching	1.001	1 bit	X	X		X	
		Absolute Dimming	5.001	1 byte	X	X		X	
		Shutter	1.008	1 bit	X	X		X	
		Alarm	1.005	1 bit	X	X		X	
		Sequence	1.010	1 bit	X	X		X	
		Scene	17.001	1 byte	X	X		X	
		String (14 byte)	16.000	14 bytes	X	X		X	
		Threshold	7.001	2 bytes	X	X		X	
79, 82, 85, 88, 91 /107, 110, 113, 116, 119	Logic 1…2: Output: 1…5	Delay time on TRUE state	7.005	2 bytes	X		X		

80, 83, 86, 92, 95 / 108, 111, 114, 117, 120	Logic 1…2: Output: 1...5	Delay time on FALSE state	7.005	2 bytes	X		X		
121, 132	Converter 1…2	Disabling	1.003	1 bit	X		X		
122, 133	Converter 1…2	Status	1.003	1 bit	X	X		X	
123, 134	Converter 1…2	Input Bit	1.001	1 bit	X		X		
		Input 2Bit	2.001	2 bits	X		X		
		Input Byte	5.010	1 byte	X		X		
		Input 2Bytes	7.001	2 bytes	X		X		
		Input RGB	232.600	3 bytes	X		X		
		Input RGBW	251.600	6 bytes	X		X		
123, 124, 125, 126, 127, 128, 129, 130/ 134, 135, 136, 137, 138, 139, 140, 141	Converter 1…2	Input Bit: 0 / 1 / 2 / 3 / 4 / 5 / 6 / 7	1.001	1 bit	X		X		

124, 135	Converter 1…2	Output Red	5.001	1 byte	X		X		
		Input Red	5.001	1 byte	X		X		
124, 125, 126, 127, 128, 129, 130, 131/ 135, 136, 137, 138, 139, 140, 141, 142	Converter 1…2	Output Bit: 0 / 1 / 2 / 3 / 4 / 5 / 6 / 7	1.002	1 bit	X	X		X	
125, 136	Converter 1…2	Output: Green	5.001	1 byte	X		X		
		Input: Green	5.001	1 byte	X		X		
126, 137	Converter 1…2	Output: Blue	5.001	1 byte	X		X		
		Input: Blue	5.001	1 byte	X		X		
127, 138	Converter 1…2	Output: White	5.001	1 byte	X		X		
		Input: White	5.001	1 byte	X		X		
131, 142	Converter 1…2	Output Bit	1.001	1 bit	X	X		X	
		Output 2Bit	2.001	2 bits	X	X		X	
		Output Byte	5.010	1 byte	X	X		X	
		Output 2Bytes	7.001	2 bytes	X	X		X	
		Output RGB	232.600	3 bytes	X	X		X	
		Output RGBW	251.600	6 bytes	X	X		X	

4.1. General Objects

This section describes the "general" group objects and their properties. General group objects, as the name suggests, indicate the general characteristics of the KNX Air Quality Multi Sensor.

Object Number	Object Name	Function	Type	Flags
1	**General**	**In Operation**	**1 bit**	**CRT**
This object is used to monitor the presence of the device on the KNX bus line regularly. However, monitoring telegrams can be sent cyclically on the KNX bus line. DPT: 1.002 (boolean)				

4.2. Indoor Air Quality Multi Sensor Objects

This section describes the "Indoor Air Quality Multi Sensor" group objects and their properties. Indoor Air Quality Multi Sensor group objects, as the name suggests, indicate the general characteristics of the KNX Air Quality Multi Sensor.

Object Number	Object Name	Function	Type	Flags
2	**IAQ Value**	**Value Output (Index)**	**2 bytes**	**CRT**
This object is used to send the measurement value that is measured by the sensor after calibrating it. Each measurement value can be calibrated via “Adjustment factor” parameter or “Calibration” object. Depending on the parameter configuration, the calculated data can be sent to the bus line periodically or according to the amount of change. DPT: 9.008 (parts/million (ppm))				
3	**IAQ Calibration**	**Calibration Input (offset value)**	**2 bytes**	**CW**
This object is used to calibrate the measurement output by measuring the actual measurement value via an external device and then writing this value to the object. When KNX Air Quality Multi Sensor received the value, calibrate its measurement output automatically. *This object is used to calculate the adjustment factor. The adjustment factor can’t be zero or negative. Thus, you mustn’t enter input value with opposite sign than the current measurement to calculate adjustment factor properly. DPT: 9.008 (parts/million (ppm))				
4	**IAQ Level**	**Output Level Excellent**	**1 bit**	**CRT**
The group object indicates that the Indoor Air Quality Index sensor output is at the 'Excellent' level based on the threshold value in the parameter. DPT: 1.001 (switch)				
5	**IAQ Level**	**Output Level Good**	**1 bit**	**CRT**
The group object indicates that the Indoor Air Quality Index sensor output is at the 'Good ' level based on the threshold value in the parameter. DPT: 1.001 (switch)				
6	**IAQ Level**	**Output Level Lightly polluted**	**1 bit**	**CRT**
The group object indicates that the Indoor Air Quality Index sensor output is at the 'Lightly polluted' level based on the threshold value in the parameter. DPT: 1.001 (switch)				

7	**IAQ Level**	**Output Level Moderately polluted**	**1 bit**	**CRT**

The group object indicates that the Indoor Air Quality Index sensor output is at the ‘Moderately polluted' level based on the threshold value in the parameter.
DPT: 1.001 (switch)

8	**IAQ Level**	**Output Level Heavily polluted**	**1 bit**	**CRT**

The group object indicates that the Indoor Air Quality Index sensor output is at the ‘Heavily polluted ' level based on the threshold value in the parameter.
DPT: 1.001 (switch)

9	**IAQ Level**	**Output Level Severely polluted**	**1 bit**	**CRT**

The group object indicates that the Indoor Air Quality Index sensor output is at the ‘Severely polluted ' level based on the threshold value in the parameter.

DPT: 1.001 (switch)

10	**IAQ Level**	**Output Level Extremely polluted**	**1 bit**	**CRT**

The group object indicates that the Indoor Air Quality Index sensor output is at the ‘Extremely polluted ' level based on the threshold value in the parameter.
DPT: 1.001 (switch)

11	**IAQ Level**	**Alarm Output**	**1 bit / 1 byte / 2 byte**	**CRT**

The sensor reports whether it has transitioned to an alarm state or not, using various data point types and selected values.
DPT: 1.001 (switch) / 1.005 (alarm) / 1.008 (up/down) / 5.001 (percentage (0..100%)) / 5.100 (fan stage (0..255)) / 7.001 (pulses) / 17.001 (scene number)

4.3. Humidity Objects

This section describes the "Humidity" group objects and their properties. Humidity group objects, as the name suggests, indicate the general characteristics of the KNX Air Quality Multi Sensor.

Object Number	Object Name	Function	Type	Flags
12	**Humidity Value**	**Value Output (%)**	**2 bytes**	**CRT**

This object is used to send the measurement value that is measured by the sensor after calibrating it. Each measurement value can be calibrated via “Adjustment factor” parameter or “Calibration” object. Depending on the parameter configuration, the calculated data can be sent to the bus line periodically or according to the amount of change.

DPT: 9.007 (humidity (%))

13	**Humidity Calibration**	**Calibration Input (offset value)**	**2 bytes**	**CW**

This object is used to calibrate the measurement output by measuring the actual measurement value via an external device and then writing this value to the object. When KNX Air Quality Multi Sensor received the value, calibrate its measurement output automatically.
*This object is used to calculate the adjustment factor. The adjustment factor can’t be zero or negative. Thus, you mustn’t enter input value with opposite sign than the current measurement to calculate adjustment factor properly.

DPT: 6.001 (percentage (-128..127))

14, 15, 16, 17, 18, 19	**Humidity Level**	**Output Level 0…5**	**1 bit**	**CRT**

The sensor indicates which level it is in based on the defined threshold values.
DPT: 1.001 (switch)

20	**Humidity Alarm**	**Alarm Output**	**1 bit / 1 byte / 2 byte**	**CRT**

The sensor reports whether it has transitioned to an alarm state or not, using various data point types and selected values.
DPT: 1.001 (switch) / 1.005 (alarm) / 1.008 (up/down) /
5.001 (percentage (0..100%)) / 5.100 (fan stage (0..255)) / 7.001 (pulses) / 17.001 (scene number)

4.4. VOC Sensor Objects

This section describes the "VOC Sensor" group objects and their properties. VOC Sensor group objects, as the name suggests, indicate the general characteristics of the KNX Air Quality Multi Sensor.

21	**VOC Value**	**Value Output (ppm)**	**2 bytes**	**CRT**

This object is used to send the measurement value that is measured by the sensor after calibrating it. Each measurement value can be calibrated via “Adjustment factor” parameter or “Calibration” object. Depending on the parameter configuration, the calculated data can be sent to the bus line periodically or according to the amount of change.

DPT: 9.008 (parts/million (ppm))

22	**VOC Calibration**	**Calibration Input (offset value)**	**2 bytes**	**CW**

This object is used to calibrate the measurement output by measuring the actual measurement value via an external device and then writing this value to the object. When KNX Air Quality Multi Sensor received the value, calibrate its measurement output automatically.

*This object is used to calculate the adjustment factor. The adjustment factor can’t be zero or negative. Thus, you mustn’t enter input value with opposite sign than the current measurement to calculate adjustment factor properly.

DPT: 9.008 (parts/million (ppm))

23, 24, 25, 26, 27, 28	**VOC Level**	**Output Level 0…5**	**1 bit**	**CRT**

The sensor indicates which level it is in based on the defined threshold values.

DPT: 1.001 (switch)

29	**VOC Alarm**	**Alarm Output**	**1 bit / 1 byte / 2 byte**	**CRT**

The sensor reports whether it has transitioned to an alarm state or not, using various data point types and selected values.

DPT: 1.001 (switch) / 1.005 (alarm) / 1.008 (up/down) / 5.001 (percentage (0..100%)) / 5.100 (fan stage (0..255)) / 7.001 (pulses) / 17.001 (scene number)

4.5. CO2 Sensor Objects

This section describes the "CO2 Sensor" group objects and their properties. CO2 Sensor group objects, as the name suggests, indicate the general characteristics of the KNX Air Quality Multi Sensor.

30	**CO2 Value**	**Value Output (ppm)**	**2 bytes**	**CRT**

This object is used to send the measurement value that is measured by the sensor after calibrating it. Each measurement value can be calibrated via “Adjustment factor” parameter or “Calibration” object. Depending on the parameter configuration, the calculated data can be sent to the bus line periodically or according to the amount of change.

DPT: 9.008 (parts/million (ppm))

31	**CO2 Calibration**	**Calibration Input (offset value)**	**2 bytes**	**CW**

This object is used to calibrate the measurement output by measuring the actual measurement value via an external device and then writing this value to the object. When KNX Air Quality Multi Sensor received the value, calibrate its measurement output automatically.

*This object is used to calculate the adjustment factor. The adjustment factor can’t be zero or negative. Thus, you mustn’t enter input value with opposite sign than the current measurement to calculate adjustment factor properly.

DPT: 9.008 (parts/million (ppm))

32, 33, 34, 35, 36, 37	**CO2 Level**	**Output Level 0…5**	**1 bit**	**CRT**

The sensor indicates which level it is in based on the defined threshold values.

DPT: 1.001 (switch)

38	**CO2 Alarm**	**Alarm Output**	**1 bit / 1 byte / 2 byte**	**CRT**

The sensor reports whether it has transitioned to an alarm state or not, using various data point types and selected values.

DPT: 1.001 (switch) / 1.005 (alarm) / 1.008 (up/down) / 5.001 (percentage (0..100%)) / 5.100 (fan stage (0..255)) / 7.001 (pulses) / 17.001 (scene number)

4.6. Temperature Objects

This section describes the "Temperature" group objects and their properties. Temperature group objects, as the name suggests, indicate the general characteristics of the KNX Air Quality Multi Sensor.

39	**Temperature Value**	**Value Output (°C)**	**2 bytes**	**CRT**

This object is used to send the measurement value that is measured by the sensor after calibrating it. Each measurement value can be calibrated via “Adjustment factor” parameter or “Calibration” object.

DPT: 9.001 (Temperature (°C))

40	**Temperature Calibration**	**Calibration Input (offset value)**	**2 bytes**	**CW**

This object is used to calibrate the measurement output by measuring the actual measurement value via an external device and then writing this value to the object. When KNX Air Quality Multi Sensor received the value, calibrate its measurement output automatically.
*This object is used to calculate the adjustment factor. The adjustment factor can’t be zero or negative. Thus, you mustn’t enter input value with opposite sign than the current measurement to calculate adjustment factor properly.

DPT: 9.001 (Temperature (°C))

41, 42, 43, 44, 45, 46	**Temperature Level**	**Output Level 0…5**	**1 bit**	**CRT**

The sensor indicates which level it is in based on the defined threshold values.
DPT: 1.001 (switch)

47	**Temperature Alarm**	**Alarm Output**	**1 bit / 1 byte / 2 byte**	**CRT**

The sensor reports whether it has transitioned to an alarm state or not, using various data point types and selected values.
DPT: 1.001 (switch) / 1.005 (alarm) / 1.008 (up/down) / 5.001 (percentage (0..100%)) / 5.100 (fan stage (0..255)) / 7.001 (pulses) / 17.001 (scene number)

4.7. Pressure Sensor Objects

This section describes the "Pressure Sensor” group objects and their properties. Pressure Sensor group objects, as the name suggests, indicate the general characteristics of the KNX Air Quality Multi Sensor.

48	**Pressure Value**	**Value Output (Pa)**	**2 bytes**	**CRT**

This object is used to send the measurement value that is measured by the sensor after calibrating it. Each measurement value can be calibrated via “Adjustment factor” parameter or “Calibration” object.

DPT: 9.006 (Pressure (Pa))

49	**Pressure Calibration**	**Calibration Input (offset value)**	**2 bytes**	**CW**

This object is used to calibrate the measurement output by measuring the actual measurement value via an external device and then writing this value to the object. When KNX Air Quality Multi Sensor received the value, calibrate its measurement output automatically.
*This object is used to calculate the adjustment factor. The adjustment factor can’t be zero or negative. Thus, you mustn’t enter input value with opposite sign than the current measurement to calculate adjustment factor properly.
DPT: 9.006 (Pressure (Pa))

4.8. Input Objects

In this section, Input X objects are described in the table below. In the first column name of the object, in the second column function name, the third column data type and fourth column the objects flags, information is given.

X: 1 … 3

Object Number	Object Name	Function	Type	Flags
50, 55, 60	**Input X**	**Block**	**1 bit**	**CW**
This object is used to block digital input functionality. DPT: 1.003 (enable)				
51, 56, 61	**Input X**	**Switch**	**1 bit**	**CWT**
This communication object changes in functionality depending on the selected input function. In accordance with the parameter setting, this communication object can be switched by actuation of the input to ON, OFF or TOGGLE. DPT: 1.001 (switch)				
51, 56, 61	**Input X**	**Shutter UP/DOWN**	**1 bit**	**CWT**
This communication object changes in functionality depending on the selected input function. This communication object sends a shutter motion telegram UP or DOWN on the bus. By receiving telegrams, the device also recognizes movement telegrams of another sensor, e.g. parallel operation. DPT: 1.008 (up/down)				
51, 56, 61	**Input X**	**Forced Operation**	**2 bits / 1 byte / 2 bytes/ 3 bytes**	**CT**
This communication object changes in functionality depending on the selected input function. This communication object sends a value on the bus with short operation when opening or closing of the contact. Depending on the configuration, the data type of this object changes. forced, percent value, decimal value, Scene number, temperature value, brightness value and percent value (RGB) can be performed on this object. DPT: According to parameter selection				

51, 56, 61	**Input X**	**8-bit Scene**	**1 byte**	**CT**

This communication object stores the value of the active scene number (1 - 64).
DPT: 18.001 (scene control)

51, 56, 61	**Input X**	**Mode selection**	**1 byte**	**CWT**

This object keeps the active HVAC state that can be toggled through press events.
Note: There can be up to 4 different HVAC state (comfort, standby, economy, building protection) selected and each press event toggles through the HVAC states that are set as available in the parameter list.
DPT: 20.102 (HVAC mode)

51, 56, 61	**Input X**	**Sequence**	**1 bit / 1 byte**	**CRT**

This object keeps the current command that can be toggled through press events. Used for “Single Object” parameter selection.
Note: Each state (State A, B, C, D) holds a different value with adjustable data length. Each press event puts the next available state’s data to the “Sequence” object.
DPT: According to parameter selection

51, 56, 61	**Input X**	**Sequence A**	**1 bit / 1 byte**	**CRT**

This object keeps the current command that can be toggled through press events. Used for “Multiple Object” parameter selection.
Note: Each object (Object A, B, C, D) holds a different value with adjustable data length. Each press event puts the next available state’s data to the “Sequence X” object and whichever object is holds the current state is sent to bus with its data.
DPT: According to parameter selection

51, 56, 61	**Input X**	**Counter value**	**1 byte / 2 bytes/ 4 bytes**	**CRT**

This object keeps the current value of the press counter.
DPT: According to parameter selection

51, 56, 61	**Input X**	**(RGB) Red Colour / RGB Colour**	**1 byte / 3 bytes**	**CRWTU**

This object either keeps the 1-Byte Red value of the RGB, or keeps the entire 3-Byte RGB value. Decision is made in the parameter list as either “1 object of 3 bytes” or 3 objects of 1 byte”.
DPT: 5.010 (counter pulses) / 232.600 (RGB value)

51, 56, 61	**Input X**	**(RGBW) Red Colour / Percent Value (RGBW)**	**6 bytes/ 1 byte**	**CRWTU**

If the “object type” is set to “1 object”, this object keeps the 6-Byte RGBW value, but, if the “object type” is set to “4 objects”, this object keeps the 1-Byte Red value of the RGBW.
DPT: 251.600 (RGBW value) / 5.010 (counter pulses)

52, 57, 62	**Input X**	**Switch - Long**	**1 bit**	**CRWTU**

This communication object changes in functionality depending on the selected input function. In accordance with the parameter setting, this communication object can be switched by actuation of the input to ON, OFF or TOGGLE.
DPT: 1.001 (switch)

52, 57, 62	**Input X**	**Forced Operation – Long**	**2 bit / 1 byte / 2 bytes/ 3 bytes**	**CT**

This communication object changes in functionality depending on the selected input function. This communication object sends a value on the bus with short operation when opening or closing of the contact. Depending on the configuration, the data type of this object changes. forced, percent value, decimal value, Scene number, temperature value, brightness value and percent value (RGB) can be performed on this object.
DPT: According to parameter selection

52, 57, 62	**Input X**	**Dimming**	**4 bits**	**CT**

This communication object changes in functionality depending on the selected input function. In accordance with the parameter setting, A long operation at the input has the effect that BRIGHTER or DARKER dim telegrams are sent via this communication object on the bus. A STOP telegram is sent and the cyclic sending of dim telegrams is stopped at the end of actuation with START-STOP-DIMMING.
DPT: 3.007 (dimming control)

52, 57, 62	**Input X**	**STOP / Lamella Adjustment**	**1 bit**	**CWT**

This communication object changes in functionality depending on the selected input function. This communication object sends a STOP telegram or slat adjustment.
DPT: 1.007 (step)

52, 57, 62	**Input X**	**Store Scene**	**1 bit**	**CRW**

This communication object, when active, decides whether to call or store the preset 8-bit scene number in the parameter list. When the store scene object is enabled the preset scene number is stored, but, when disabled preset scene number is called to be active.
DPT: 1.003 (enable)

52, 57, 62	**Input X**	**Green Colour (RGB)**	**1 byte**	**RWCTU**

This object keeps the 1-Byte green value of RGB if “3 objects of 1 Byte” option is selected in the parameter list.

DPT: 5.010 (counter pulses)

52, 57, 62	**Input X**	**Green Colour (RGBW)**	**1 byte**	**RWCTU**

If the “object type” is set to “4 objects”, this object keeps the 1-Byte Green value of the RGBW.

DPT: 5.010 (counter pulses)

52, 57, 62	**Input X**	**HVAC-Mode State**	**1 byte**	**CWTU**

This object takes the HVAC state changed via the bus.
Note: Whenever this object is updated from the bus, the HVAC state that this object holds will be considered as the valid HVAC state and press events will act as if the last HVAC state is what this object is updated with.
DPT: 20.102 (HVAC mode)

52, 57, 62	**Input X**	**Sequence B**	**1 bit / 1 byte**	**CRT**

This object keeps the current command that can be toggled through press events. Used for “Multiple Object” parameter selection.
Note: Each object (Object A, B, C, D) holds a different value with adjustable data length. Each press event puts the next available state’s data to the “Sequence X” object and whichever object is holds the current state is sent to bus with its data.
DPT: According to parameter selection

52, 57, 62	**Input X**	**Reset counter**	**1 bit**	**CW**

This object is used to reset the counter value to preset start value that can be set from parameter list.
DPT: According to parameter selection

53, 58, 63	**Input X**	**Overflow**	**1 bit / 1 byte**	**CT**

This object is sent to bus with the preset value from the parameter list when the counter value exceeds the preset end value of the counter.
DPT: 1.001 (switch) / 5.010 (counter pulses)

53, 58, 63	**Input X**	**Blue Colour (RGB)**	**1 byte**	**RWCTU**

This object keeps the 1-Byte green value of RGB if “3 objects of 1 Byte” option is selected in the parameter list.
DPT: 5.010 (counter pulses)

53, 58, 63	**Input X**	**Blue Colour (RGBW)**	**1 byte**	**RWCTU**

If the “object type” is set to “4 objects”, this object keeps the 1-Byte Green value of the RGBW.
DPT: 5.010 (counter pulses)

53, 58, 63	**Input X**	**Upper Limit Position**	**1 bit**	**CW**

This object is used for the shutter actuator indicates if it is in the lower limit position (“shutter/blind closed”). The object is intended for a 1-button operation. ‘0’ is no lower limit operation, ‘1’ lower end operation.
DPT: 1.002 (boolean)

53, 58, 63	**Input X**	**Sequence C**	**1 bit / 1 byte**	**CRT**

This object keeps the current command that can be toggled through press events. Used for “Multiple Object” parameter selection.
Note: Each object (Object A, B, C, D) holds a different value with adjustable data length. Each press event puts the next available state’s data to the “Sequence X” object and whichever object is holds the current state is sent to bus with its data.
DPT: According to parameter selection

54, 59, 64	**Input X**	**White Colour (RGBW)**	**1 byte**	**RWCTU**

If the “object type” is set to “4 objects”, this object keeps the 1-Byte White value of the RGBW.
Note: White value is the colour temperature.

DPT: 5.010 (counter pulses)

54, 59, 64	**Input X**	**Lower Limit Position**	**1 bit**	**CW**

This object is used for the shutter actuator indicates if it is in the lower limit position (“shutter/blind closed”). The object is intended for a 1-button operation. ‘0’ is no lower limit operation, ‘1’ lower end operation.
DPT: 1.002 (boolean)

54, 59, 64	**Input X**	**Sequence D**	**1 bit / 1 byte**	**CRT**

This object keeps the current command that can be toggled through press events. Used for “Multiple Object” parameter selection.
Note: Each object (Object A, B, C, D) holds a different value with adjustable data length. Each press event puts the next available state’s data to the “Sequence X” object and whichever object is holds the current state is sent to bus with its data.
DPT: According to parameter selection

4.9. Logic Objects

This section contains information about KNX objects and their properties related to the logic function channels. The types, flags and properties of the objects are explained in detail below. There are 2 identical logic channels in the device, so only one logical channel is described here. Please do not forget to take this into account.

X:1, 2

Object Number	Object Name	Function	Type	Flags
65, 93	**Logic X**	**Lock**	**1 bit**	**CW**

This object is used to set the logic lock status. “On” or “Off” telegram is received via this object.

According to selected parameter in ETS, it will be disabled when an “On” telegram is received from the KNX bus line, and when a “Disabled” telegram is received, the logic will continue working or vice versa.
DPT: 1.001 (switch)

66, 94	**Logic X**	**Feedback of lock**	**1 bit**	**CRT**

This object is used to watch alarm status. “On” or “Off” telegram is transmitted to KNX bus via this object when alarm status is changed over device.
It becomes visible when the "use logic lock" parameter is set to yes.
DPT: 1.001 (switch)

72, 100	**Logic X**	**Temperature Threshold Lower**	**2 bytes**	**CW**

This object is used to receive the temperature threshold lower value from the KNX bus line. The value read on this object is will be used as a new temperature threshold lower value. This object becomes visible when the "Change temperature via bus" parameter is set to yes.
DPT: 9.004 (lux)

73, 101	**Logic X**	**Temperature Threshold Upper**	**2 bytes**	**CW**

This object is used to receive the temperature threshold upper value from the KNX bus line. The value read on this object is will be used as a new temperature threshold upper value. This object becomes visible when the "Change temperature via bus" parameter is set to yes.
DPT: 9.004 (lux)

74, 75, 76 / 102, 103, 104	**Logic X**	**External Input – 1 / 2 / 3**	**1 bit / 1 byte / 2 byte / 4 byte**	**CWU**

This object is used to obtain external input 1 / 2 / 3 information from the KNX bus line. According to the ETS parameter configuration, the received values are accounted as TRUE or FALSE for this external input. For 1 bit configuration, there is only '1' or '0' values for calculating the input status. But for other input (such as 1 byte, etc.) the received value is compared to the external input value parameter.
DPT: According to parameter selection, DPT changes.

77, 105	**Logic X: Output**	**Result Status**	**1 bit**	**CRT**

This object is used to send the related logic function block's result status to the KNX bus line. According to the ETS parameter configuration, this value can be sent periodically, on change or only configured value. (TRUE or FALSE).
DPT: 1.002 (boolean)

78, 81, 84, 87, 90/ 106, 109, 112, 115, 118	**Logic X: Output: 1…5**	**Switching** **Absolute Dimming** **Shutter** **Alarm** **Sequence** **Scene** **String (14 byte)** **Threshold**	**1 bit** **1 byte** **2 bytes**	**CRT**

This object is used to send the related output object's value to the KNX bus line. When the logic function block's status changes, the sending value also can be configured separately. In addition, according to the output type, the object's value type will be changed.
DPT: According to parameter selection, DPT changes.

79, 82, 85, 88, 91/ 107, 110, 113, 116, 119	**Logic X**	**Delay Time on True State**	**2 bytes**	**CW**

This object is used to receive the ‘delay time on TRUE state’ value from the KNX bus line. When a new value is received from this object, the received value is used as the output on delay time for the TRUE state value. The configured parameter value will not be used anymore. This object becomes visible when the "Change on time via bus" parameter is set to Yes.
DPT: 7.005 (time (s))

80, 83, 86, 92, 95 / 108, 111, 114, 117, 120	**Logic X**	**Delay Time on False State**	**2 bytes**	**CW**

This object is used to receive the ‘delay time on FALSE state’ value from the KNX bus line. When a new value is received from this object, the received value is used as the output on delay time for the FALSE state value. The configured parameter value will not be used anymore. This object becomes visible when the "Change on time via bus" parameter is set to Yes.
DPT: 7.005 (time (s))

4.10. Converter Objects

In this section, converter objects are described in the table below. Converter group objects are used to make mathematical operations, data converting from different types. Up to 2 different converters can be configured.

In the first column name of the object, in the second column function name, the third column data type and fourth column the objects flags, information is given.

X: 1 … 2

Object Number	Object Name	Function	Type	Flags
121, 132	**Converter X**	**Disabling**	**1 bit**	**CW**
This object is used to set the converter status. “Enabled” or “Disabled” telegram is received via this object. For example, it will be disabled when an “Enabled” telegram is received from the KNX bus line, and when a “Disabled” telegram is received, the converter will continue working. DPT: 1.003 (enable)				
122, 133	**Converter X**	**Status**	**1 bit**	**CRT**
This object is used to watch converter status. “Enabled” or “Disabled” telegram is transmitted to KNX bus via this object when converter status is changed over device. DPT: 1.003 (enable)				

4.10.1. Converter – Gate Forwarding Objects

X: 1 … 2

Object Number	Object Name	Function	Type	Flags
123, 134	**Converter X**	**Input Bit** **Input 2Bit** **Input Byte** **Input 2Bytes**	**1 bit** **2 bits** **1 byte** **2 bytes**	**CW**
This object is used to input a value that needs to be converted. DPT: According to parameter selection, DPT changes				
131, 142	**Converter X**	**Output Bit** **Output 2Bit** **Output Byte** **Output 2Bytes**	**1 bit** **2 bits** **1 byte** **2 bytes**	**CRT**
This object is used to output the converted value. DPT: According to parameter selection, DPT changes				

4.10.2. Converter – Format Converter Objects

X: 1 … 2

Object Number	Object Name	Function	Type	Flags
123, 134 **123, 124, 125, 126, 127, 128, 129, 130/ 134, 135, 136, 137, 138, 139, 140, 141** **124, 135 / 125, 136 / 126, 137/ 127, 138**	**Converter X**	**Input Bit** **Input RGB** **Input RGBW** **Input Byte** **Input Bit: 0 / 1 / 2 / 3 / 4 / 5 / 6 / 7** **Input Red / Green / Blue / White**	**1 bit** **1 byte** **3 bytes** **6 bytes**	**CW**

This object is used to input a value that needs to be converted.

DPT: According to parameter selection, DPT changes

124, 125, 126, 127, 128, 129, 130, 131/ 135, 136, 137, 138, 139, 140, 141, 142 **124, 135/ 125, 136/ 126, 137/ 127, 138** **131,142**	**Converter X**	**Output Bit: 0 / 1 / 2 / 3 / 4 / 5 / 6 / 7** **Output Red / Green / Blue / White** **Output Byte** **Output RGB** **Output RGBW**	**1 bit** **1 byte** **3 bytes** **6 bytes**	**CRT**

This object is used to output the converted value.

DPT: According to parameter selection, DPT changes

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