PRODUCT MANUAL

# ABB i-bus® KNX

## JRA/S x.x.4.2, x.x.7.2
## Blind/Shutter Actuator

# Table of contents

# 1 About this document

## 1.1 Using the product manual

This manual provides detailed technical information on the function, installation and programming of the ABB i-bus® KNX device.

## 1.2 Legal disclaimer

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## 1.3 Explanation of symbols

| | |
|---|---|
| 1.<br>2.<br>⇨ | Instructions in specified sequence and result |
| ▶ | Individual actions |
| a) | Priorities |
| 1) | Processes run by the device in a specific sequence |
| • | List level 2 |
| – | List level 2 |

Tab. 1: Explanation of symbols

Notes and warnings are represented as follows in this manual:

**DANGER**
This symbol is a warning about electrical voltage and indicates high-risk hazards that will definitely result in death or serious injury unless avoided.

**DANGER**
Indicates high-risk hazards that will definitely result in death or serious injury unless avoided.

**WARNING**
Indicates medium-risk hazards that could result in death or serious injury unless avoided.

**CAUTION**
Indicates low-risk hazards that could result in slight or moderate injury unless avoided.

**CAUTION**
Indicates a risk of malfunctions or damage to property and equipment, but with no risk to life and limb.

**Example**
For use in application, installation and programming examples

**Note**
For use in tips on use and operation

## 1.4 2D code

The packaging and the device are labeled with a 2D code. These codes are used for unique identification of the device and include the following information:

- Link to the product page
- Order number
- Device serial number

The 2D codes can be read using any mobile device with an appropriate 2D code reader.

By scanning the 2D codes with the ABB Product Scanner, you can open additional digital services.

# 2 Safety

## 2.1 General safety instructions

- Protect the device from moisture, dirt and damage during transport, storage and operation.
- Operate the device only in a closed housing (distribution board).
- Operate the device only within the specified technical data.
- Mounting, installation, commissioning and maintenance must be carried out only by qualified electricians.
- Disconnect device from the supply of electrical power before mounting.

## 2.2 Qualification of the specialist personnel

Programming the device requires detailed specialist knowledge – particularly about the ETS commissioning software – through KNX training courses.

## 2.3 Proper use

Device types JRA/S x.230.4.2 and x.230.7.2 are intended to be used to activate 230 V AC blind or shutter drives in a KNX environment.

# 3 Product overview

## 3.1 Device description

The devices are modular installation devices (MDRC) in pro*M* design. They are designed for installation in electrical distribution boards and small housings with a 35 mm mounting rail (according to EN 60715).

The devices are KNX-certified and can be used as products in a KNX system
→ EU declaration of conformity.

The devices are powered via the bus (ABB i-bus® KNX) and require no additional auxiliary voltage.

The connection to the bus (ABB i-bus® KNX) is made via a KNX bus connection terminal on the front of the housing.

The connections at the inputs or outputs are made via screw terminals
→ terminal designation on the housing.

The software application Engineering Tool Software (ETS) is used for physical address assignment and parameterization.

### 3.1.1 Membrane keypad

Depending on the product variant, the devices can be operated manually using the membrane keypad.

**Note**
The safety functions as well as operation using the i-bus® Tool have a higher priority than the *Manual operation* mode. An output cannot be operated using the membrane keypad if it is blocked by a safety function or can be operated using the i-bus® Tool. If the safety function is canceled in *Manual operation* operating mode, the output reacts corresponding to its parameterization.

## 3.2 Product name description

The table below lists the product name descriptions of all devices in the product family.

| Abbreviation | Description | | |
|---|---|---|---|
| JRA | Blind/Shutter Actuator | | |
| /S | MDRC | | |
| x. | 2 | = | 2-fold |
| | 4 | = | 4-fold |
| | 8 | = | 8-fold |
| | 12 | = | 12-fold |
| x. | 24 | = | 24 V DC |
| | 230 | = | 230 V AC |
| x. | 2 | = | manual operation |
| | 4 | = | Travel detection, binary input |
| | 5 | = | Travel detection, manual operation |
| | 7 | = | 3 limit switches, travel detection, binary input, manual operation |
| x | x | = | Version number (x = 1, 2, etc.) |

Tab. 2: Product name description

## 3.3 Ordering details

| Description | MB | Type | Order no. | Packaging unit [pcs.] | Weight (incl. packaging) [kg] |
|---|---|---|---|---|---|
| Blind/Shutter Actuator | 4 | JRA/S 4.230.4.2 | 2CDG110292R0011 | 1 | 0.368 |
| Blind/Shutter Actuator | 8 | JRA/S 8.230.4.2 | 2CDG110293R0011 | 1 | 0.638 |
| Blind/Shutter Actuator | 4 | JRA/S 4.230.7.2 | 2CDG110294R0011 | 1 | 0.477 |

Tab. 3: Ordering details

## 3.4 Connections

The devices have the following connections:

- depending on the device type, 4 or 8 outputs for activating 230 V AC blind or shutter drives
- depending on the device type, 8 or 16 inputs for the acquisition of floating binary signals (two physical binary inputs per device input)
- 1 KNX bus connection

### 3.4.1 Inputs

**Note**
The largest and most extensive device in the product family is described below as an example.

| Function | a1 | a2 | b1 | b2 | c1 | c2 | d1 | d2 | e1 | e2 | f1 | f2 | g1 | g2 | h1 | h2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Blind/shutter (2-button) | x | | x | | x | | x | | x | | x | | x | | x | |
| Blind/shutter | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Switch | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Scenes | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

Tab. 4: Functions of the inputs

### 3.4.2 Outputs

**Note**
The largest and most extensive device in the product family is described below as an example.

| Function | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| Blind | x | x | x | x | x | x | x | x |
| Shutter | x | x | x | x | x | x | x | x |

Tab. 5: Functions of the outputs

## 3.5 Product family

The product family described in this document includes the following devices:

| Device type | Name | Features |
|---|---|---|
| JRA/S 4.230.4.2 | Blind/Shutter Actuator | travel detection, binary input, 4-fold, 230 V AC, MDRC |
| JRA/S 8.230.4.2 | Blind/Shutter Actuator | travel detection, binary input, 8-fold, 230 V AC, MDRC |
| JRA/S 4.230.7.2 | Blind/Shutter Actuator | 3 limit switches, travel detection, binary input, manual operation, 4-fold, 230 V AC, MDRC |

Tab. 6: Product family

### 3.5.1 Dimension drawing

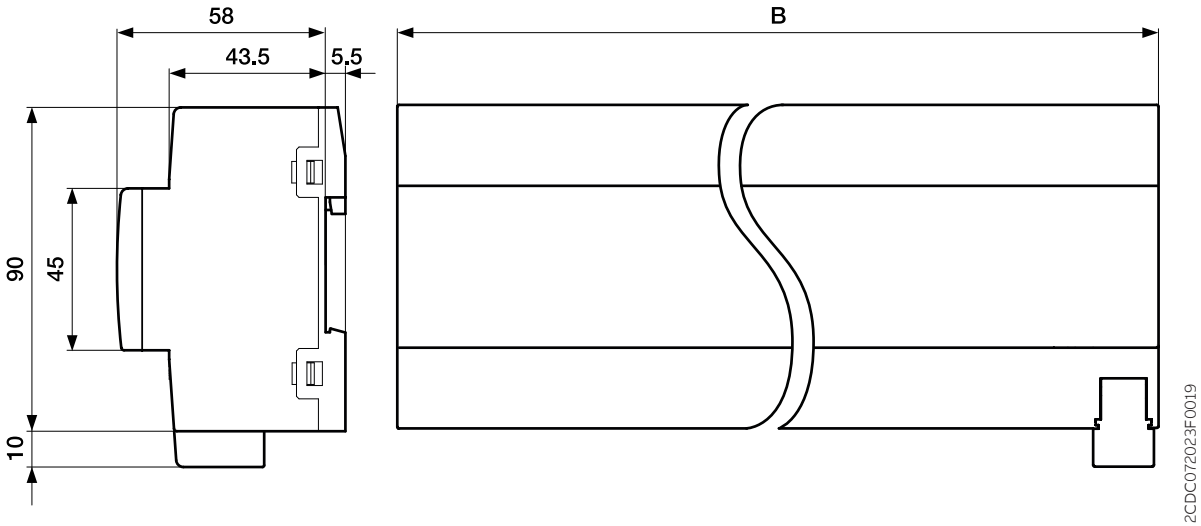


Fig. 1: Dimension drawing for product family

| Device type | B |
|---|---|
| JRA/S 4.230.4.2 | 6 space units, 105 mm |
| JRA/S 8.230.4.2 | 12 space units, 210 mm |
| JRA/S 4.230.7.2 | 8 space units, 140 mm |

Tab. 7: Device width (space units/millimeters)

## 3.5.2 Connection diagram

**Note**
The connection variants are explained in the following based on examples.

### 3.5.2.1 JRA/S x.230.4.2 connection variant

The connection diagram below applies by way of example to the following devices:

| Device type | Name | Features |
|---|---|---|
| JRA/S 4.230.4.2 | Blind/Shutter Actuator | travel detection, binary input, 4-fold, 230 V AC, MDRC |
| JRA/S 8.230.4.2 | Blind/Shutter Actuator | travel detection, binary input, 8-fold, 230 V AC, MDRC |

Tab. 8: Product family

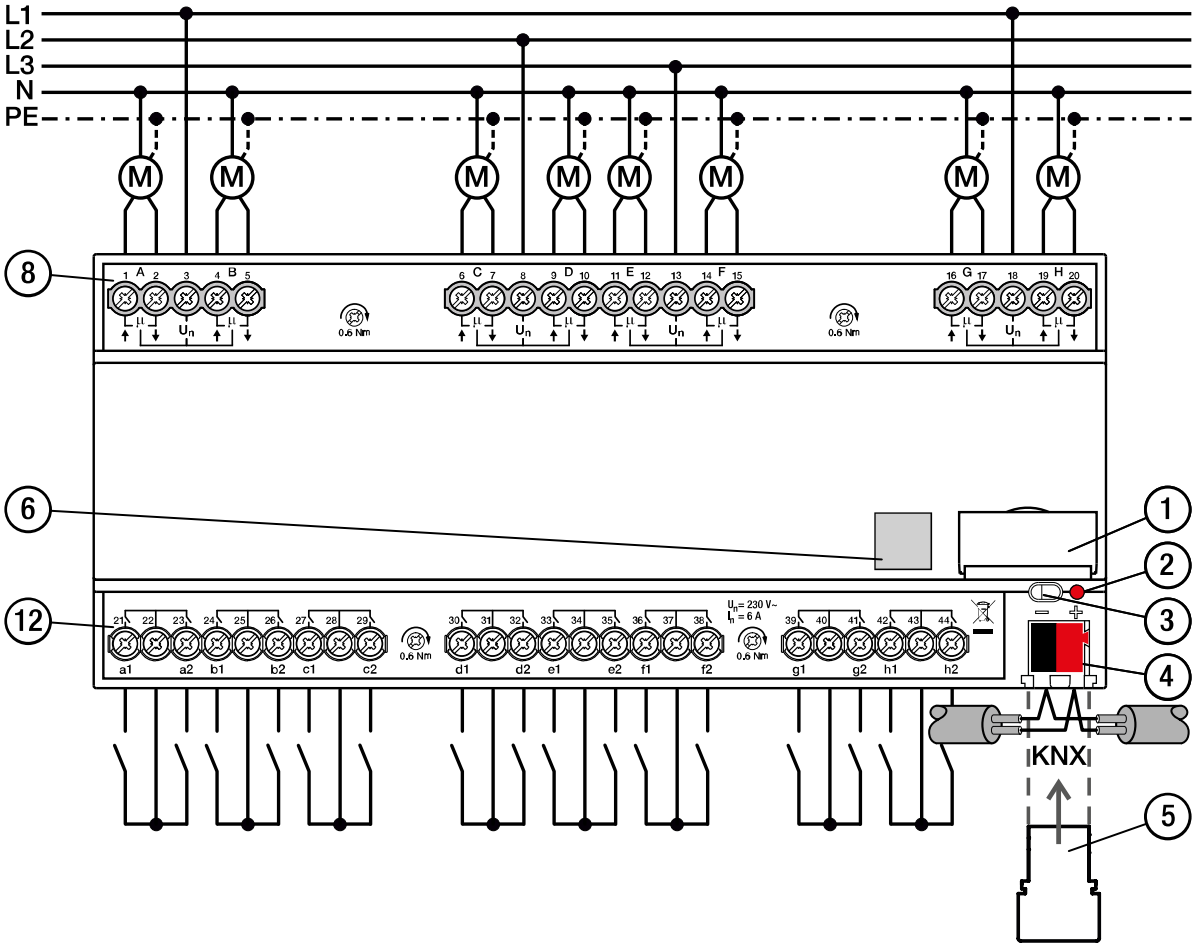


Fig. 2: JRA/S x.230.4.2 connection variant

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**Legend**

**1** Labeling field
**2** *Programming* LED
**3** *Programming* button
**4** KNX bus connection terminal
**5** Cover cap
**6** 2D code
**8** Output
**12** Binary Input

### 3.5.2.2 JRA/S 4.230.7.2 connection variant

The connection diagram below applies by way of example to the following devices:

| Device type | Name | Features |
|---|---|---|
| JRA/S 4.230.7.2 | Blind/Shutter Actuator | 3 limit switches, travel detection, binary input, manual operation, 4-fold, 230 V AC, MDRC |

Tab. 9: Product family

**Note**
Relay output for activation of first lower end position: Terminal 3, 8, 11, 16
Relay output for activation of second lower end position: Terminal 2, 7, 10, 15

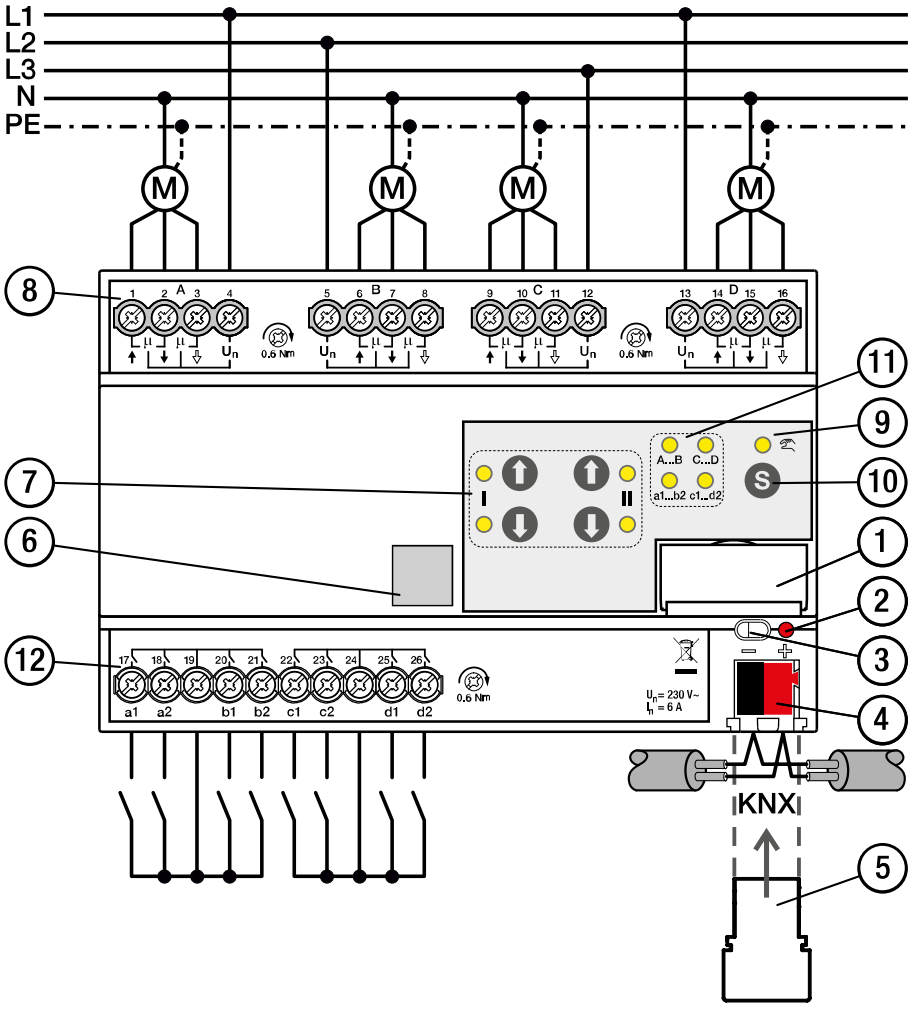


Fig. 3: JRA/S 4.230.7.2 connection variant

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**Legend**

**1** Labeling field
**2** *Programming* LED
**3** *Programming* button
**4** KNX bus connection terminal
**5** Cover cap
**6** 2D code
**7** *Input* Button/LED
**8** Output
**9** *Manual operation* LED
**10** *S* button
**11** *Group* LED
**12** Binary Input

9AKK108464A0577

## 3.5.3 Operating and display elements

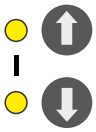
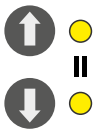
**Note**
The largest and most extensive device in the product family is described below as an example.

| Operating control/LED | Description/function | Display |
|---|---|---|
|  *Programming* button/LED | Assignment of the physical address | LED on: Device in programming mode |

Tab. 10: Operating and display elements

### 3.5.3.1 Manual mode

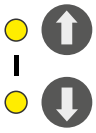
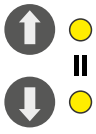
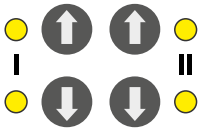
**Note**
Device type x.230.4.2 has no membrane keypad.

| Operating control/LED | Description/function | Display |
|---|---|---|
|  <br>*S button* / *Manual operation* LED | Short button push < 2 s: Selection of group<br>Button push 2 … 5 s: Changeover to *KNX operation*<br>Long button push > 5 s: Selection of all outputs → Central operation via membrane keypad, Page 177 | LED on: *Manual operation* active<br>LED off: *KNX operation* active |
|  <br>*Output group* LED | | LED on: Group selected<br>LED off: Group not selected |
|  <br>*Input group* LED | | LED on: Group selected<br>LED off: Group not selected |
|  <br>*Output I* button/LED | First output of group (A/C)<br>Top button:<br>• Long button push > 1 s: up<br>• Short button push < 1 s: stop/slat adjustment<br>Bottom button:<br>• Long button push > 1 s: down<br>• Short button push < 1 s: stop/slat adjustment | Top LED on and bottom LED off: upper end position<br>Top LED off and bottom LED on: lower end position<br>Top and bottom LEDs off: Intermediate position<br>Top LED flashing (1 Hz) and bottom LED off: Up movement<br>Top LED off and bottom LED flashing (1 Hz): Down movement<br>Top LED flashing (1 Hz) and bottom LED flashing (1 Hz): Output blocked<br>Top LED flashing (5 Hz) and bottom LED flashing (5 Hz): Output active<br>(after the group is changed or after change to *Manual operation* operating mode) |
|  <br>*Output II* button/LED | Second output of group (B/D)<br>Top button:<br>• Long button push > 1 s: up<br>• Short button push < 1 s: stop/slat adjustment<br>Bottom button:<br>• Long button push > 1 s: down<br>• Short button push < 1 s: stop/slat adjustment | Top LED on and bottom LED off: upper end position<br>Top LED off and bottom LED on: lower end position<br>Top and bottom LEDs off: Intermediate position<br>Top LED flashing (1 Hz) and bottom LED off: Up movement<br>Top LED off and bottom LED flashing (1 Hz): Down movement<br>Top LED flashing (1 Hz) and bottom LED flashing (1 Hz): Output blocked<br>Top LED flashing (5 Hz) and bottom LED flashing (5 Hz): Output active<br>(after the group is changed or after change to *Manual operation* operating mode) |
|  <br>*Input* button/LED | Button without function | Binary contact status indicator (depending on selected group)<br>Top LED I on: Contact to input a1/c1 closed<br>Bottom LED I on: Contact to input a2/c2 closed<br>Top LED II on: Contact to input b1/d1 closed<br>Bottom LED II on: Contact to input b2/d2 closed<br>LED flashing (1 Hz): Input blocked |

Tab. 11: Operating and display elements

### 3.5.3.2 KNX operation

**Note**
Device type x.230.4.2 has no membrane keypad.

| Operating control/LED | Description/function | Display |
|---|---|---|
|  <br>*S button* / *Manual operation* LED | Short button push < 2 s: Selection of group<br>Button push 2 … 5 s: Change to *Manual operation* | LED on: *Manual operation* active<br>LED off: *KNX operation* active<br>LED flashing (1 Hz): Device connected to i-bus® Tool, *Manual operation* blocked<br>LED flashing (1 Hz) while button pressed: *Manual operation* not enabled or blocked |
|  <br>*Output group* LED | | LED on: Group selected<br>LED off: Group not selected |
|  <br>*Input group* LED | | LED on: Group selected<br>LED off: Group not selected |
|  <br>*Output I* button/LED | First output of group (A/C)<br>Button without function | Top LED on and bottom LED off: upper end position<br>Top LED off and bottom LED on: lower end position<br>Top and bottom LEDs off: Intermediate position<br>Top LED flashing (1 Hz) and bottom LED off: Up movement<br>Top LED off and bottom LED flashing (1 Hz): Down movement<br>Top LED flashing (1 Hz) and bottom LED flashing (1 Hz): Output blocked, or controlled by i-bus® Tool<br>Top LED flashing (5 Hz) and bottom LED flashing (5 Hz): Output active<br>(after the group is changed or after change to *KNX operation*) |
|  <br>*Output II* button/LED | Second output of group (B/D)<br>Button without function | Top LED on and bottom LED off: upper end position<br>Top LED off and bottom LED on: lower end position<br>Top and bottom LEDs off: Intermediate position<br>Top LED flashing (1 Hz) and bottom LED off: Up movement<br>Top LED off and bottom LED flashing (1 Hz): Down movement<br>Top LED flashing (1 Hz) and bottom LED flashing (1 Hz): Output blocked, or controlled by i-bus® Tool<br>Top LED flashing (5 Hz) and bottom LED flashing (5 Hz): Output active<br>(after the group is changed or after change to *KNX operation*) |
|  <br>*Input* button/LED | Button without function | Binary contact status indicator (depending on selected group)<br>Top LED I on: Contact to input a1/c1 closed<br>Bottom LED I on: Contact to input a2/c2 closed<br>Top LED II on: Contact to input b1/d1 closed<br>Bottom LED II on: Contact to input b2/d2 closed<br>LED flashing (1 Hz): Input blocked |

Tab. 12: Operating and display elements

## 3.5.4 Technical data

### 3.5.4.1 General technical data

| | | JRA/S 4.230.4.2<br>JRA/S 8.230.4.2 | JRA/S 4.230.7.2 |
|---|---|---|---|
| **Device** | Dimensions | 90 × 105 × 63.5 mm (H x W x D)<br>90 × 210 × 63.5 mm (H x W x D) | 90 × 140 × 63.5 mm (H x W x D) |
| | Mounting width in space units | 4 modules, 17.5 mm each<br>8 modules, 17.5 mm each | 8 modules, 17.5 mm each |
| | Weight | 0.275 kg<br>0.525 kg | 0.378 kg |
| | Mounting position | Any | Any |
| | Mounting variant | 35 mm mounting rail | 35 mm mounting rail |
| | Design | pro*M* | pro*M* |
| | Degree of protection | IP 20 | IP 20 |
| | Protection class | II | II |
| | Overvoltage category | III | III |
| | Overload protection | Yes | Yes |
| | Reverse voltage protection | Yes | Yes |
| | Short-circuit proof | Yes | Yes |
| | Pollution degree | 2 | 2 |
| **Materials** | Housing | Polycarbonate, Makrolon FR6002, halogen free | Polycarbonate, Makrolon FR6002, halogen free |
| **Material note** | Fire classification | Flammability V-0 | Flammability V-0 |
| **Electronics** | Rated voltage, bus | 30 V DC | 30 V DC |
| | Voltage range, bus | 21 … 31 V DC | 21 … 31 V DC |
| | Current consumption, bus | < 12 mA | < 12 mA |
| | Power loss, device | ≤ 3.85 W<br>≤ 7.45 W | ≤ 3.85 W |
| | Power loss, bus | ≤ 0.25 W | ≤ 0.25 W |
| | Power loss, relay output 6 A | ≤ 0.9 W | ≤ 0.9 W |
| | KNX safety extra low voltage | SELV | SELV |
| **Connections** | Connection type, KNX bus | Plug-in terminal | Plug-in terminal |
| | Cable diameter, KNX bus | 0.6 … 0.8 mm, solid | 0.6 … 0.8 mm, solid |
| | Connection type, inputs/outputs | Screw terminal with universal head (PZ 1) | Screw terminal with universal head (PZ 1) |
| | Pitch | 6.35 mm | 6.35 mm |
| | Tightening torque, screw terminals | 0.5 … 0.6 Nm | 0.5 … 0.6 Nm |
| | Conductor cross-section, flexible | 1 × (0.2 … 4 mm²) / 2 × (0.2 … 1.5 mm²) | 1 × (0.2 … 4 mm²) / 2 × (0.2 … 1.5 mm²) |
| | Conductor cross section, rigid | 1 × (0.2 … 6 mm²) / 2 × (0.2 … 1.5 mm²) | 1 × (0.2 … 6 mm²) / 2 × (0.2 … 1.5 mm²) |
| | Conductor cross section with wire end ferrule without plastic sleeve | 1 × (0.25 … 4 mm²) / 2 × (0.25 … 0.75 mm²) | 1 × (0.25 … 4 mm²) / 2 × (0.25 … 0.75 mm²) |
| | Conductor cross section with wire end ferrule with plastic sleeve | 1 × (0.25 … 2.5 mm²) | 1 × (0.25 … 2.5 mm²) |
| | Dimensions of wire end ferrule plastic sleeve | ≤ 4.4 × 8 mm | ≤ 4.4 × 8 mm |
| | Conductor cross section with TWIN wire end ferrule | 1 × (0.5 … 2.5 mm²) | 1 × (0.5 … 2.5 mm²) |
| | Length, (TWIN) wire end ferrule contact pin | 8 mm | 8 mm |
| | Stripping length for KNX terminal | 6 mm | 6 mm |
| | Stripping length for load terminal | 8 mm | 8 mm |
| **Certificates and declarations** | CE declaration of conformity | → 9AKK108468A8276 | → 9AKK108468A8276 |
| **Ambient condition** | Operation | −5 … +45 °C | −5 … +45 °C |
| | Transport | −25 … +70 °C | −25 … +70 °C |
| | Storage | −25 … +55 °C | −25 … +55 °C |
| | Humidity | ≤ 95% | ≤ 95% |
| | Condensation allowed | No | No |
| | Atmospheric pressure | ≥ 80 kPa (corresponds to air pressure at 2,000 m above sea level) | ≥ 80 kPa (corresponds to air pressure at 2,000 m above sea level) |

### 3.5.4.2 Outputs Blind Shutter 6 A

| | | JRA/S 4.230.4.2<br>JRA/S 8.230.4.2 | JRA/S 4.230.7.2 |
|---|---|---|---|
| **Rated values** | Number of outputs | 4<br>8 | 4 |
| | Rated voltage $U_n$ | 230 V AC | 230 V DC |
| | Rated current $I_n$ (per group) | 6A | 6A |
| | Rated frequency | 50 / 60 Hz | 50 / 60 Hz |
| | Relay type | Bi-stable | Bi-stable |
| **Switching currents** | AC-1 operation (cos φ = 0.8) at 230 V | ≤ 6 A | ≤ 6 A |
| | AC-3 operation (cos φ = 0.45) at 230 V | ≤ 6 A | ≤ 6 A |
| | AC-1 operation (cos φ = 0.8) at 400 V | ≤ 6 A | ≤ 6 A |
| | AC-3 operation (cos φ = 0.45) at 400 V | ≤ 6 A | ≤ 6 A |
| | Switching current at 5 V AC | ≥ 100 mA | ≥ 100 mA |
| | Switching current at 12 V AC | ≥ 10 mA | ≥ 10 mA |
| | Switching current at 24 V AC | ≥ 1 mA | ≥ 1 mA |
| | Switching current at 24 V DC (resistive load) | ≤ 6 A | ≤ 6 A |
| **Switching capacity** | Switching capacity at min. 5 V AC | ≤ 0.5 W | ≤ 0.5 W |
| | Switching capacity at min. 12 V AC | ≤ 0.12 W | ≤ 0.12 W |
| | Switching capacity at min. 24 V AC | ≤ 0.024 W | ≤ 0.024 W |
| **Service life** | Mechanical service life | ≥ $10^7$ switching operations | ≥ $10^7$ switching operations |
| | AC-1 operation (cos φ = 0.8) | ≥ $10^5$ switching operations | ≥ $10^5$ switching operations |
| | AC-3 operation (cos φ = 0.45) | ≥ $10^5$ switching operations | ≥ $10^5$ switching operations |
| **Switching operations** | Switching operations per minute when one relay switches | ≤ 1000 | ≤ 700 |
| | Switching operations per minute when all relays switch | ≤ 250<br>≤ 125 | ≤ 175 |
| **Inrush current** | Inrush current $I_{peak}$ (150 µs) | ≤ 100 A | ≤ 100 A |
| | Inrush current $I_{peak}$ (250 µs) | ≤ 80 A | ≤ 80 A |
| | Inrush current $I_{peak}$ (600 µs) | ≤ 50 A | ≤ 50 A |

#### 3.5.4.2.1 Load table

| Load type | Symbol | Max. load |
|---|---|---|
| Rated motor power | Ⓜ | 1,380 W |

Tab. 13: Load table

### 3.5.4.3 Inputs - contact scanning

| | | JRA/S 4.230.4.2<br>JRA/S 8.230.4.2 | JRA/S 4.230.7.2 |
|---|---|---|---|
| **Rated values** | Number of inputs | 8<br>16 | 8 |
| **Contact scanning** | Scanning current | ≤ 1 mA | ≤ 1 mA |
| | Scanning voltage | ≤ 35 V DC | ≤ 35 V DC |
| **Cable length** | Between sensor and device input, one-way | ≤ 100 m | ≤ 100 m |

# 4 Functional overview

## 4.1 Device functions

The devices have mutually electromechanically interlocked switching relays with which the following functions can be implemented:

- Activation of 230 V AC blind or shutter drives (JRA/S x.230.4.2, JRA/S x.230.7.2)

The inputs are used for coupling floating binary signals (signal contacts).

Device type JRA/S x.230.7.2 only:
On-site operation of the outputs is possible by manual operation. The status of the outputs is indicated via LEDs.

### 4.1.1 Overview

| Functions | JRA/S x.x.4.2 | JRA/S x.x.7.2 |
|---|---|---|
| **Manual operation** | | |
| Membrane keypad | | x |
| Enable/block manual operation | | x |
| Automatically reset manual operation | | x |
| **Drive activation** | | |
| Blind | x | x |
| Shutter | x | x |
| Ventilation flap | | |
| Travel detection | x | x |
| Reversing time | x | x |
| Run time delay & minimum run time | x | x |
| Change direction of rotation | x | x |
| Dead times | x | x |
| Reference movement | x | x |
| Calibration movement | x | x |
| Separate activation of two lower end positions | | x |
| **Function Safety** | | |
| Weather alarms & central safeties | x | x |
| Forced operation | x | x |
| Individual safeties | x | x |
| **Function Automatic sun protection** | | |
| Block direct commands | x | x |
| Anti-glare protection | x | x |
| Heating/cooling | x | x |
| Overheating protection | x | x |
| **Function Scenes** | | |
| Recall and save KNX scenes | x | x |
| **Special functions** | | |
| Function Sector control | x | x |
| Function Working position | x | x |
| Function Logic | x | x |
| Function Threshold | x | x |
| Sending and switching delay | x | x |
| Reaction on KNX voltage failure/recovery | x | x |
| Status messages | x | x |
| i-bus® Tool | x | x |
| Binary inputs | x | x |

Tab. 13: Functional overview JRA/S x.x.4.2, JRA/S x.x.7.2

## 4.2 Function diagram

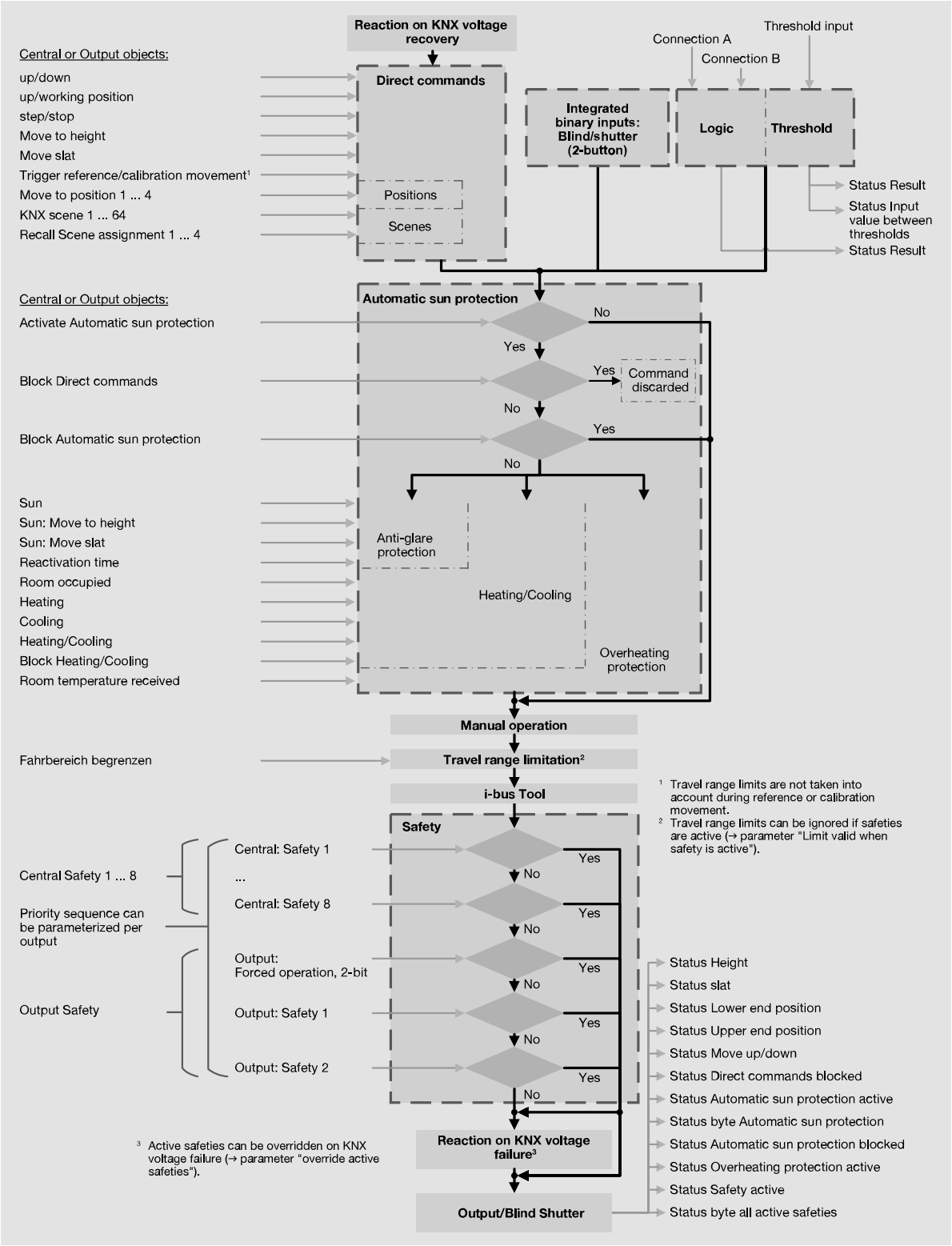



Fig. 4: Function diagram JRA/S x.x.4.x, x.x.7.x

## 4.3 Device applications

The following device applications are available for the devices described in this document:

| Device type | Device application | Max. number of group addresses | Max. number of secure group addresses | Max. number of secure partners |
|---|---|---|---|---|
| JRA/S 4.230.4.2 | Blind, binary input, 4f/… | 2000 | 2000 | 400 |
| JRA/S 8.230.4.2 | Blind, binary input, 8f/… | 2000 | 2000 | 400 |
| JRA/S 4.230.7.2 | Blind, 3 limit switches, 4f/… | 2000 | 2000 | 400 |

Tab. 14: Device applications

**Note**
… = current version number of the application.
See software information on the website, → www.abb.com/knx.

## 4.4 Applications

### 4.4.1 Overview

Each device output can be assigned a specific application (→ parameter *Output X application*). Settings for this are made in the corresponding parameter window.

The following applications are available for each output:
- Blind application
  For connecting a blind motor.
- Shutter application
  For connecting the motor of a shutter, ventilation flap, window drive, zipscreen or fabric awning.

Each device input can be assigned a specific application (→ parameter *Input x application*). Settings for this are made in the corresponding parameter window.

The following applications are available for each input:
- → Blind/shutter application (2-button operation), Page 21
- → Blind/shutter application (1-button operation), Page 21
- → Switch application (1-button operation), Page 22
- → Scenes application, Page 22

When the contacts connected to the physical device inputs are operated, the devices send telegrams on the bus (ABB i-bus® KNX) via the application-specific Group Objects.

**Note**
If the application *Blind/shutter (2-button)* is used, an internal connection is established with the outputs (input a1/a2 with output A, input b1/b2 with output B, etc.). The corresponding outputs can be directly operated with contacts that are connected to the device inputs.

#### 4.4.1.1 Distinction between short and long operation

The devices react to the rising or falling edge that is triggered by operating one of the contacts connected to the device input. Each time an edge is triggered, the devices send telegrams to the Group Objects that are enabled for the input.

If you wish to distinguish between short and long operation (e.g. for the execution of different events), you need to specify, in the parameters, how long a connected contact must be operated for in order to be recognized as a long operation.

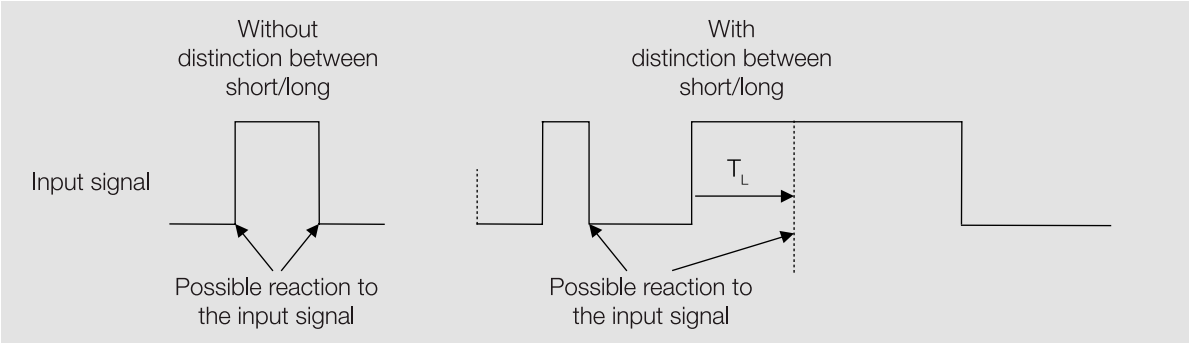



Fig. 5: Distinguishing between short/long operation

**Note**
$T_L$ is the time from which a long operation is detected.

## 4.4.2 Blind/shutter application (2-button operation)

Settings for this are made in the following parameter window:
- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]*

The *Blind/shutter (2-button)* application can be used to operate blinds, shutters and awnings etc. with two buttons/switches connected to the inputs. If an event occurs on the input, the application-specific Group Objects send move telegrams on the bus (ABB i-bus® KNX).

The up and down movements are each executed with a separate button/switch.

**Note**
In 2-button operation, two adjacent inputs are combined. For this reason, 2-button operation is only available for inputs a1, b1, c1, d1, e1, f1, g1 and h1 (depending on the device variant).

The operating mode (blind operation or shutter operation) can be set in the parameter *Operating mode*. Depending on the operating mode, the setting for the blind/shutter reaction on short and long operation is made in the following parameters:
- *Blind operation*
- *Shutter operation*

Depending on the operating mode, the following Group Objects are available to operate the blind/shutter:
- *Up/down*
- *Step/stop*
- *Stop*

**Note**
If the application *Blind/shutter (2-button)* is used, an internal connection is established with the outputs (input a1/a2 with output A, input b1/b2 with output B, etc.). The corresponding outputs can be directly operated with contacts that are connected to the device inputs.

## 4.4.3 Blind/shutter application (1-button operation)

Settings for this are made in the following parameter window:
- Parameter window *Input x:* \ Parameter window *Blind/shutter*

The *Blind/shutter (1-button)* application can be used to operate blinds, shutters and awnings etc. with a button/switch connected to the input. If an event occurs on the input, the application-specific Group Objects send move telegrams on the bus (ABB i-bus® KNX).

The up and down movements are executed with a button/switch.

The operating mode (blind operation or shutter operation) can be set in the parameter *Operating mode*. Depending on the operating mode, the setting for the blind/shutter reaction on short and long operation is made in the following parameters:
- *Blind operation*
- *Shutter operation*

Depending on the operating mode, the following Group Objects are available to operate the blind/shutter:
- *Up/down*
- *Step/stop*
- *Stop*
- *Status Upper end position*
- *Status Lower end position*
- *Status Move*

### 4.4.4 Switch application (1-button operation)

Settings for this are made in the following parameter window:
- Parameter window *Input x:* \ Parameter window *Switch* / Switch 2

The *Switch (1-button)* application can be used to send a switch telegram on the bus (ABB i-bus® KNX) with one of the contacts connected to the input.

The following Group Objects are available:
- *Switch*

The telegram value can be specified in the following parameters:
- *Reaction on opening the contact*
- *Reaction on closing the contact*
- *Reaction on short operation*
- *Reaction on long operation*

### 4.4.5 Scenes application

Settings for this are made in the following parameter window:
- Parameter window *Input x:* \ Parameter window *Scenes*

The *Scenes* application can be used to recall or save one of 64 possible KNX scenes using a contact connected to the input. If an event occurs on the input, the following Group Object sends a scene telegram on the bus (ABB i-bus® KNX):
- *Scene 1 ... 64*

Additional KNX devices can be incorporated in a scene. It is a prerequisite that all the KNX devices incorporated are parameterized with the same scene number and that scene recall is via the same group address.

**No distinction between short and long operation**

If there is no distinction between short and long operation (→ parameter *Distinction between short and long operation*), operating the contact recalls the scene (1 … 64) defined in the parameter *Scene number*.
The reaction is defined in the parameter *Scene*:

- *Send*: The recalled scene number is sent on the bus (ABB i-bus® KNX) and the corresponding scene is executed on all incorporated KNX devices.
- *Save*: The present values (e.g. input or output state, contact positions, blind position) of all incorporated KNX devices are saved in the recalled scene number. The values in the scene number are overwritten.

**Distinction between short and long operation**

If there is a distinction between short and long operation (→ parameter *Distinction between short and long operation*), a short operation on the contact recalls the scene (1 … 64) defined in the parameter *On short operation: Scene number*. The recalled scene number is sent on the bus (ABB i-bus® KNX) and the corresponding scene is executed on all incorporated KNX devices.
The reaction on long operation is defined in the parameter *Reaction on long operation*:

- *Save scene*: The present values (e.g. input or output state, contact positions, blind position) of all incorporated KNX devices are saved in the recalled scene number. The values in the scene number are overwritten.
- *Recall another scene*: The scene number specified in the parameter *On long operation: Scene number* is recalled. The recalled scene number is sent on the bus (ABB i-bus® KNX) and the corresponding scene is executed on all incorporated KNX devices.

#### 4.4.5.1 Structure of 1-byte Scene telegram

A 1-byte Scene telegram contains the Scene number (1 … 64) and information about whether to recall or save the Scene.

Telegram value:

- 0 … 63 = Recall Scene x (x = 1 … 64)
- 128 … 191 = Save Scene x (x = 1 … 64)

More information: → Table of values, Group Object "Scene 1 ... 64", Page 196.

## 4.5 Functions

### 4.5.1 Function Safety

The function *Safety* can be used to move the blind/shutter to a defined position and block operation.

The parameter *Enable function: Safety* enables the function *Safety* for the whole device. The parameter *Use function Safety* activates or deactivates the function *Safety* individually for each output.

The safeties (e.g. *Wind*, *Rain*, *Frost*, *Block* and *Forced operation*) have priority over all other functions. Exception: In the event of a KNX voltage failure, the active safeties are overridden (→ parameter *Override active safeties*).

To fine-tune the control of the blind/shutter when several safeties are active, the order of priority of safeties can be customized for each output, in the parameter *Priority x safety*.

When a safety is active, the blind/shutter executes the reaction defined in the parameter *Priority x reaction* (exception → Forced operation 2 bit, Page 24) and operation of the corresponding output is blocked. The reaction of the blind/shutter when an active safety is withdrawn is specified in the parameter *Reaction on withdrawal of safeties*.

**Note**
The safety with the highest priority always takes precedence. If a safety with a higher priority is active, then reactions or revocations of lower priorities are ignored. Operation of the corresponding output is blocked until all active safeties are reset.

#### 4.5.1.1 Central safety

Settings for this are made in the following parameter window:
- Parameter window *Central safety*

The device has eight central safety Group Objects, each of which can be used individually.

The central safety Group Objects are enabled with the parameter *Enable "Safety x"*. The central safety Group Objects apply to the whole device and can be assigned to an output with the parameter *Priority x safety*, → Assignment of safeties and priorities, Page 25.

The parameter *"Safety x" description* can be used to define an individual description for each enabled central safety Group Object, e.g. wind alarm, rain alarm, frost alarm. The description is shown when assigning safeties and priorities in the parameter *Priority x reference* → Assignment of safeties and priorities, Page 25.

The parameter *"Safety x" cyclical monitoring* can be used to set up cyclical monitoring for each central safety Group Object. If the central safety Group Object in question does not receive a telegram within the time that is set here, the corresponding safety is activated.

**Note**
The monitoring cycle in the device should be at least quadruple the cyclical sending time of the sending device. As a result, the reactions set will not be triggered immediately if a signal is missing, e.g. due to high bus load.

#### 4.5.1.2 Output safety

Settings for this are made in the following parameter window:
- Parameter window *Output X* \ Parameter window *Safety*

Each output has three safety Group Objects: two for custom use and one for 2-bit forced operation.

The safety Group Objects on the output are enabled using the following parameters:
- *Enable Group Object "Output safety x"*
- *Enable Group Object "Output forced operation 2 bit"*

The parameter *Description* can be used to define an individual description for each enabled safety Group Object on the output. The description is shown when assigning safeties and priorities in the parameter *Priority x reference* → Assignment of safeties and priorities, Page 25.

##### 4.5.1.2.1 Forced operation 2 bit

Settings for this are made in the following parameter window:
- Parameter window *Output X* \ Parameter window *Safety*

With 2-bit forced operation, two states are specified that are set if forced operation is activated. Forced operation is activated or deactivated with bit 1. The defined state is set with bit 0.

| Bit 1 | Bit 0 | State of forced operation |
|---|---|---|
| 0 | 0 | Forced operation deactivated |
| 0 | 1 | Forced operation deactivated |
| 1 | 0 | Forced operation activated, state "UP" |
| 1 | 1 | Forced operation activated, state "DOWN" |

Tab. 15: Coding of 2-bit forced operation

The blind/shutter and slat positions of the states are defined in the following parameters:
- *Height (%) forced operation "X"*
- *Slat (%) forced operation "X"*

**Note**
Travel range limits are not taken into account with forced operation.

**Example**
Forced operation can be used to move the blind/shutter to the upper end position and to block operation so as not to endanger the cleaning personnel while cleaning the windows.

#### 4.5.1.3 Assignment of safeties and priorities

Settings for this are made in the following parameter window:
- Parameter window *Output X* \ Parameter window *Safety*

To fine-tune the control of the blind/shutter when several safeties are active, the order of priority of safeties can be customized for each output, in the parameter *Priority x safety*.

Each output has eight safety priorities. Each priority can be assigned to one of the enabled safety Group Objects (central, output or forced operation).

The parameter *Priority x reference* displays the individual description of the safety Group Object as defined in the following parameters:
- *"Safety x" description*
- *Description*

If the priority is assigned to a safety Group Object that is not enabled, the parameter *Priority x reference* displays an error message.

**Note**
The safety with the highest priority always takes precedence. If a safety with a higher priority is active, then reactions or revocations of lower priorities are ignored. Operation of the corresponding output is blocked until all active safeties are reset.

### 4.5.2 Function Automatic sun protection

Settings for this are made in the following parameter window:
- Parameter window *Output X* \ Parameter window *Automatic sun protection*

The function *Automatic sun protection* can be used to implement fully automatic room shading solutions depending on the sunshine. Together with other KNX components (in particular with the Shutter Control Unit JSB/S), the device can be used to establish easy-to-use Automatic sun protection control.

The parameter *Enable function: Automatic sun protection* enables the function *Automatic sun protection* for the whole device. The parameter *Use function Automatic sun protection* activates or deactivates the function *Automatic sun protection* individually for each output. The parameter *Reacts to central Group Objects* is used to define whether the function *Automatic sun protection* reacts to telegrams from central Group Objects.

For more information, see:
→ Automatic operation, Page 189

#### 4.5.2.1 Function Anti-glare protection

**Note**
The function *Anti-glare protection* is a component of the function *Automatic sun protection* and cannot be used as a standalone function.

The function *Anti-glare protection* controls the automatic movement of the blind/shutter and the slats depending on the sunshine. Information about sunshine (sun = 1 and sun = 0) can be determined via an external sensor and received via the following Group Objects:
- *Sun* (Central)
- *Sun*

**Note**
- Sun = 0: no sunshine
- Sun = 1: sunshine

The parameter *Sun = x reaction to anti-glare protection* is used to define how the blind/shutter and slats react when the function *Anti-glare protection* is active. The blind/shutter and slats are moved automatically via the output itself.

The blind/shutter and slats can also be directly activated by the following Group Objects:
- *Sun: Move to height* (Central)
- *Sun: Move to height*
- *Sun: Move slat* (Central)
- *Sun: Move slat*

**Note**
Whether an action is actually performed depends on the active priorities, → Priorities, Page 181.

#### 4.5.2.2 Function Heating/Cooling

**Note**
The function *Heating/Cooling* is a component of the function *Automatic sun protection* and cannot be used as a standalone function.

The function *Heating/Cooling* supports room air conditioning through automatic blind/shutter control if the room is vacant.

The function *Heating/Cooling* is enabled with the parameter *Enable function: Heating/cooling*.

**Example**
Automatic blind/shutter control with heating:
When sun = 1, the blind/shutter is opened fully to help the sunshine warm up the room. When sun = 0, the blind/shutter is closed fully to prevent the room from cooling.
Automatic blind/shutter control with cooling:
When sun = 1, the blind/shutter is closed fully to prevent the sunshine from warming up the room.
When sun = 0, the blind/shutter is opened fully to help cool the room.

When the room is occupied, the function *Anti-glare protection* is active.

Information about occupancy status can be determined via an external sensor and received via the following Group Objects:
- *Room occupied* (Central)
- *Room occupied*

**Note**
- Room occupied = 0: the room is vacant
- Room occupied = 1: the room is occupied

Information about the room operating mode (*Heating* or *Cooling*) is received from an external device, via the following Group Objects (→ Parameter *Control via Group Objects*):
- *Heating* (Central)
- *Heating*
- *Cooling* (Central)
- *Cooling*
- *Heating/cooling*

These Group Objects are used for changing over between heating and cooling in the function *Heating/Cooling*.

The following parameters are used to define how the blind/shutter and slats react when the function *Heating/Cooling* is active:
- *Sun = x reaction on heating*
- *Sun = x reaction on cooling*

**Note**
- Sun = 0: no sunshine
- Sun = 1: sunshine

**Note**
Whether an action is actually performed depends on the active priorities, → Priorities, Page 181.

The Group Object *Block heating/cooling* can be used to block the function *Heating/Cooling*.

**Overheating protection on heating**

Overheating protection prevents the room from overheating in *Heating* mode when the function *Heating/Cooling* is active and sun = 1. Overheating protection is enabled with the parameter *Enable overheating protection on heating*.

The following parameters are used to define the limit temperature and hysteresis:
- *Overheating protection active when sun = 1 and room temperature is greater than*
- *Hysteresis*

The parameter *Reaction on overheating protection* defines how the blind/shutter reacts when overheating protection is active.

**Changeover between the functions Anti-glare protection and Heating/Cooling**

If room occupied = 0, the function *Heating/Cooling* is active. If room occupied = 1, the function *Anti-glare protection* is active. The functions change over if the room occupancy status changes.

The parameter *Delay if room occupied = x* can be used to set a delay time. If a delay time is set, change over takes place after the delay time has elapsed. Using a delay time helps to prevent immediate changeover when someone briefly enters or leaves the room.

## 4.5.3 Function Scenes

Settings for this are made in the following parameter window:
- Parameter window *Output X* \ Parameter window *Scenes*

The function *Scenes* can be used to define how the output reacts when KNX scenes are recalled. When a KNX scene is recalled via the bus (ABB i-bus® KNX), an output-specific scene assignment takes place. The scene assignment saves the positions to which the blind/shutter and slats move during scene recall.

The parameter *Enable function: Scenes* enables the function *Scenes* for the whole device. The parameter *Use function Scenes* activates or deactivates the function *Scenes* individually for each output.

Each output has 16 scene assignments. Each scene assignment can be assigned to one of 64 possible KNX scenes. The reaction of the blind/shutter and the slats when a scene assignment takes place is specified in the following parameters:
- *Scene assignment x height (%)*
- *Scene assignment x slat (%)*
- *Scene assignment x delay*

Additional KNX devices can be incorporated in a KNX scene. Prerequisite: all the KNX devices incorporated are parameterized with the same KNX scene, and scene recall is via the same group address.

**Scene recall**

A Scene is recalled via the following Group Objects:
- *KNX scenes 1 … 64* (Central)
  A KNX scene is received via this central Group Object. All the incorporated outputs and KNX devices execute the scene assignments to which this KNX scene is assigned. Depending on the telegram value, the current positions of the blind/shutter and slats for all the incorporated outputs and KNX devices can be saved in the KNX scene.
- *KNX scenes 1 … 64*
  This Group Object receives a KNX scene. The output executes the scene assignment that is assigned to this KNX scene. Depending on the telegram value, the current positions of the blind/shutter and slats on the output can be saved in the KNX scene.
- *Recall scene assignment x*
  The scene assignment x (x = 1 … 4) for the output is recalled directly via these 1-bit Group Objects. For the scene assignment to be recalled directly, there must be no KNX scene received on the bus (ABB i-bus® KNX).

**Note**
Whether an action is actually performed depends on the active priorities, → Priorities, Page 181.

### 4.5.3.1 Structure of 1-byte Scene telegram

A 1-byte Scene telegram contains the Scene number (1 … 64) and information about whether to recall or save the Scene.

Telegram value:
- 0 … 63 = Recall Scene x (x = 1 … 64)
- 128 … 191 = Save Scene x (x = 1 … 64)

More information: → Table of values, Group Object "Scene 1 ... 64", Page 196.

## 4.5.4 Function Logic

Settings for this are made in the following parameter window:
- Parameter window *Logic/threshold*
  - Parameter window *Logic/threshold configuration*
  - Parameter window *Logic/Threshold x*

The function *Logic* can be used across all devices and independently of other functions. Depending on the device variant, there are up to 16 individually parameterizable logic functions available; they are enabled in groups of four (→ parameter *Enable groups: Logic/threshold x-y*).

The following logic functions are available:
- AND
- OR
- Exclusive OR
- GATE
- 1 bit Inverter

Two input Group Objects and one result Group Object are available for the AND, OR, exclusive OR and GATE logic functions:
- *Connection A*
- *Connection B*
- *Status Result [Logic]*

One input Group Object and one result Group Object are available for the 1 bit Inverter:
- *Connection A*
- *Status Result [Logic]*

The result is calculated when a value is received on one of the input Group Objects. The result can be output on the Group Object *Status Result [Logic]* or can be linked to an output in the following parameter:
- *Output X reacts to*

**Note**
If the ETS app *ABB Update Copy Convert* is used to execute the *Channel Exchange* function, the logic/threshold assignments (→ parameter *Output X reacts to*) are not exchanged. The assignments must be manually adjusted after exchanging channels.

The result is dependent on the logic function selected and the values in the input Group Objects.

| Logic function | Connection A | Connection B | Result | Explanation |
|---|---|---|---|---|
| AND | 0 | 0 | 0 | The result is 1 if each input value is 1. |
| | 0 | 1 | 0 | |
| | 1 | 0 | 0 | |
| | 1 | 1 | 1 | |
| OR | 0 | 0 | 0 | The result is 1 if at least one of the input values is 1. |
| | 0 | 1 | 1 | |
| | 1 | 0 | 1 | |
| | 1 | 1 | 1 | |
| Exclusive OR | 0 | 0 | 0 | The result is 1 if an odd number of input values is 1. |
| | 0 | 1 | 1 | |
| | 1 | 0 | 1 | |
| | 1 | 1 | 0 | |
| GATE | Blocked | 0 | - | The input value (connection B) is processed only if the GATE is open. The value is ignored if the GATE is blocked. |
| | Blocked | 1 | - | |
| | Open | 0 | 0 | |
| | Open | 1 | 1 | |
| 1 bit Inverter | 0 | - | 1 | The input value (connection A) is inverted. |
| | 1 | - | 0 | |

Tab. 16: Results of the logic functions

## 4.5.5 Function Threshold

Settings for this are made in the following parameter window:

- Parameter window *Logic/threshold*
  - Parameter window *Logic/threshold configuration*
  - Parameter window *Logic/Threshold x*

The function *Threshold* can be used independently of other functions. The function *Threshold* compares a value received on the threshold input with the threshold values set in the parameters *Upper threshold* and *Lower threshold*.

One of the "threshold input" Group Objects is used as the threshold input, based on the setting in the parameter *Data point type of Group Object "Threshold input"*. A separate Group Object is available for each data point type.

A result can be defined in the following parameters depending on whether the value on the threshold input is above or below the thresholds:

- *Result if upper threshold is exceeded*
- *Result if lower threshold is dropped below*

The following parameters can be used to define how long a threshold must be exceeded before the function outputs a result:

- *Minimum duration of the overshoot*
- *Minimum duration of the undershoot*

The result can be output on the Group Object *Status Result [threshold]* or can be linked to an output in the following parameter:

- *Output X reacts to*

**Note**
If the ETS app *ABB Update Copy Convert* is used to execute the *Channel Exchange* function, the logic/threshold assignments (→ parameter *Output X reacts to*) are not exchanged. The assignments must be manually adjusted after exchanging channels.

#### Monitor range between thresholds

The parameter *Monitor range between thresholds* can be used to define whether the range between the upper and lower thresholds is monitored and an evaluation is output on the Group Object *Status Input value between thresholds*.

The parameter *Minimum dwell time between the thresholds* is used to define how long the value received at the threshold input must be between the thresholds before an evaluation occurs.

**Modifying thresholds via the KNX bus**

The thresholds set in ETS can be changed via the bus (ABB i-bus® KNX). The setting is made in the following parameter:

- *Change thresholds via Group Objects*

The modified thresholds are received on separate Group Objects via the bus (ABB i-bus® KNX). A separate Group Object is available for each data point type, based on the setting in the parameter *Data point type of Group Object "Threshold input"*.

The parameter *Overwrite thresholds on download* defines whether the thresholds changed via the bus (ABB i-bus® KNX) are overwritten with the thresholds set in ETS during an application download.

## 4.5.6 Function Sector control

The function *Sector control* can be used to influence the output's reaction, by using a sector call via the bus (ABB i-bus® KNX). With a sector call, the blind/shutter and slats move to the positions that are sent with the sector telegram.

The parameter *Enable function: Sector control* enables the function *Sector control* for the whole device. The parameter *Output X sector* assigns the output to a sector (0 … 2048).

**Note**
If sector = 0, the output is not assigned to any sector. The output does not react to a sector telegram.

The sector call comes from a central controller (e.g. a weather unit) via the Group Object *Sector control*. The Group Object can be used to execute all automatic, direct, safety and scene commands. The sector telegram contains sector information, the address of the called sector, a command, and command-dependent optional parameters. All outputs assigned to this sector will react to the sector telegram.

## 4.5.7 Function Working position (shading position)

Some blind types can be moved down with open or half-open slats so as not to darken the room when moving the blind. The function *Working position* can be used to operate these types of blind.

The function *Working position* is a range limitation between the upper end position and the first lower end position, in which the blind and slats cannot be fully closed. The use of the function *Working position* is defined with the parameter *Slat moves down in working position*.

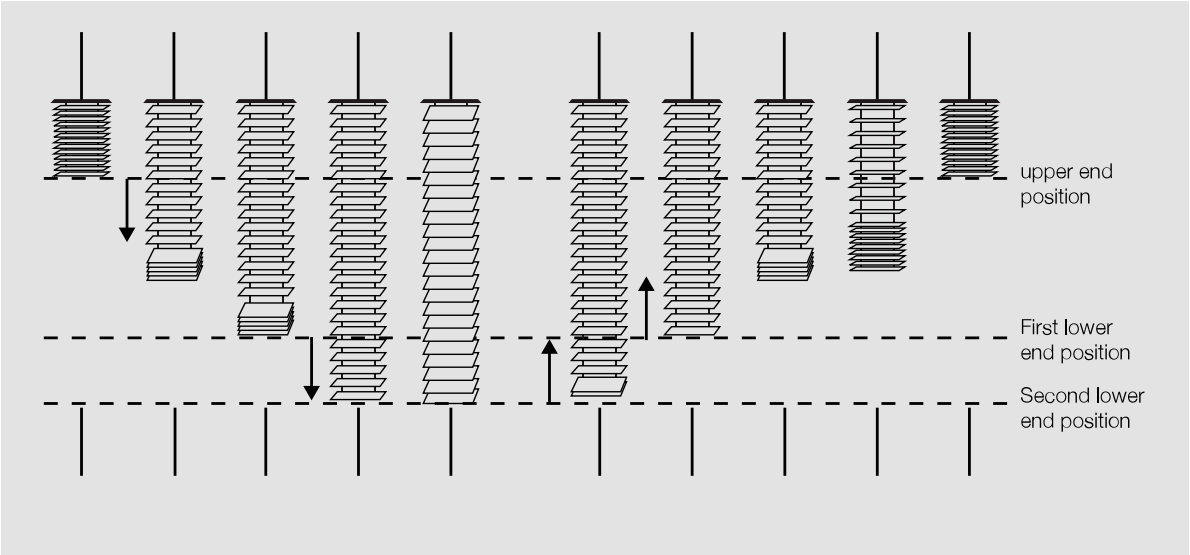



Fig. 6: Working position

**Working position blinds**

Defines the range between the upper end position and a position that is just above the physical lower end position, typically 99 %. This position is the first lower end position. The physical lower end position (100 %) is the second lower end position. When the blind moves down out of the range between the upper end position and the first lower end position, the slats are moved to the working position.

**Working position slats**

This is preset by the blind mechanism and is typically between 40 % and 60 %. The adjustment time of the slats (from 0 % to working position or from working position to 0 %) must be entered in the parameter *Adjustment time from 0% to working position* to ensure precise calculation of the position.

**First lower end position**

If the blind is between the upper end position and the first lower end position, the slats can only be closed as far as the working position of the slats.

With the product variant x.x.4.2, the first lower end position is defined in the parameter *Height working position*. With the product variant x.x.7.2, the first lower end position is activated via the corresponding relay output (terminal 3, 8, 11, 16 → JRA/S 4.230.7.2 connection variant, Page 12).

**Second lower end position**

The second lower end position defines the position at which the blind is fully closed (100 %). The slats can be fully closed in the range between the first lower end position and the second lower end position.

**Example**
Upper end position = 0 %
First lower end position (parameter *Height working position*) = 99 %
Second lower end position = 100 %
Working position of slat (parameter *Slat working position*) = 60 %

- If the blind is moved down in the range 0 % … 98 %, the slats are moved to the position 60 % (= working position). If the blind is in the range 0 % … 99 %, the slats can be closed to maximum 60 %.
- If the blind is moved down in the range 99 % … 100 %, the slats are moved to the position 100 %. If the blind is in the range 99 % … 100 %, the slats can be fully closed.
- If the blind is moved down out of position 99 %, the slats are moved to the position 100 %.

If the function *Working position* is used for a blind actuator without 3-end position activation, the second lower end position is activated based on travel detection.

With the product variant x.x.7.2, the second lower end position is activated via the corresponding relay output (terminal 2, 7, 10, 15 → JRA/S 4.230.7.2 connection variant, Page 12).

If the function *Working position* is used, the following points must be observed:
- The status Height 100 % is not clearly defined. 100 % may correspond to the first lower end position or the second lower end position.
- The LED indicator *lower end position* on the membrane keypad is not clearly defined. The indicator may correspond to the first lower end position or the second lower end position.
- When the blind is in the working position, all slat commands will be limited to the working position of the slats.

**Note**
If the function *Working position* is used, the range between the first lower end position and the second lower end position can only be approached via the *Up/down* (central) or *Up/down* Group Objects. Travel telegrams from all other Group Objects are limited to the first lower end position.

## 4.6 Integration into i-bus® Tool

i-bus® Tool can be used to read the data from connected devices. It can also be used to simulate values and test the following functions:
- Function of the physical inputs and outputs

If there is no communication between the devices and i-bus® Tool, the simulated values cannot be sent on the bus.

For more information → parameter *i-bus® Tool access*.

i-bus® Tool can be downloaded free of charge from the company homepage (www.abb.com/knx).

### 4.6.1 Master-Reset via the i-bus® Tool

The i-bus® Tool function *Master-Reset* can be used to restore a device to the state it was in after the last ETS download. During a Master-Reset, all relay contacts are opened, all saved values (e.g. travel times, staircase lighting times, counter readings, thresholds) are reset, and the device restarts.

To perform a Master-Reset:
1. Open the "Settings" menu.
2. Enable the function "Master-Reset".
3. Open the "Connect to device" menu.
4. Enter the physical address of the device.
5. Click the *Master-Reset* button.
   ⇨ The Master-Reset is executed; there is no feedback from the device.

**Note**
A Master-Reset can be done at any time, regardless of the setting in the parameter *i-bus® Tool access*.

# 4.7 Special operating states

## 4.7.1 Reaction on KNX voltage failure

KNX voltage failure describes the failure of the KNX voltage, e.g. due to a power failure.

The reaction of the outputs on KNX voltage failure can be specified in the output parameters.

## 4.7.2 Reaction after KNX voltage recovery

KNX voltage recovery is the state that exists after the KNX voltage is restored. The device will restart after KNX voltage recovery.

After the restart, all relay contacts will be opened in order to establish a defined contact position. The time set in the following parameter elapses before the device performs another action:

- *Sending and switching delay after KNX voltage recovery*

The reaction of the outputs after the sending and switching delay elapses can be specified in the output parameters.

## 4.7.3 Reaction on ETS reset

ETS reset can be performed in ETS using the Commissioning menu item, in the function *Reset device* (from ETS version 6 *Restart device*).

The device application will restart after ETS reset.

After the restart, all relay contacts will be opened in order to establish a defined contact position. The time set in the following parameter elapses before the device performs another action:

- *Sending and switching delay after KNX voltage recovery*

The reaction of the outputs after the sending and switching delay elapses can be specified in the output parameters.

## 4.7.4 Reaction during download

**Note**
The device will no longer operate after the application is uninstalled or the download is canceled.

▸ Download again.

Downloading describes loading a modified or updated device application onto the device. The device is not ready to operate during a download. The device will restart after the update.

After the restart, all relay contacts will be opened in order to establish a defined contact position. The time set in the following parameter elapses before the device performs another action:

- *Sending and switching delay after KNX voltage recovery*

The reaction of the outputs after the sending and switching delay elapses can be specified in the output parameters.

# 5 Mounting and installation

## 5.1 Information about mounting

**DANGER – Severe injuries due to touch voltage**
Electric feedback from different phase conductors can cause contact voltages and lead to serious injuries.
- Operate the device only in a closed housing.
- Disconnect all phases before working on the electrical connection.

The device can be mounted in any position as required on a 35 mm mounting rail.

The connection to the bus (ABB i-bus® KNX) is made using the KNX bus connection terminal supplied.

The connections at the inputs or outputs are made via screw terminals
→ terminal designation on the housing.

**Note**
The maximum permissible current consumption on a KNX line must not be exceeded.
- During planning and installation, ensure that the KNX line is correctly dimensioned. The device has a maximum current consumption of 12 mA.

## 5.2 Mounting on mounting rail

**Note**
No additional tools are required for mounting on a mounting rail.

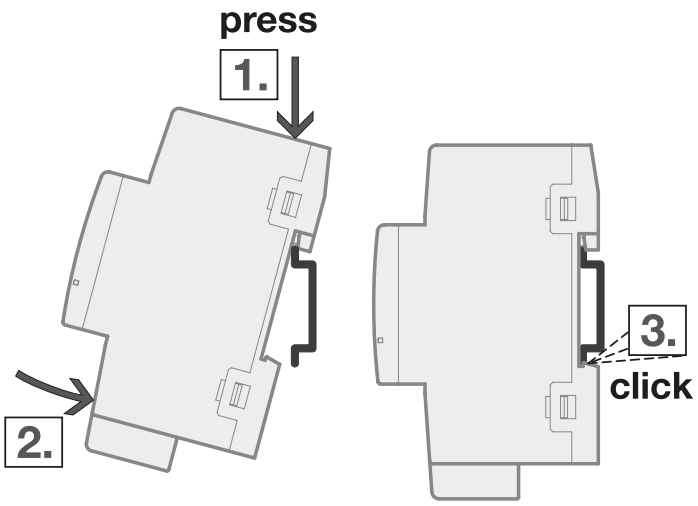



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Fig. 7: Mounting on mounting rail

1. Place the mounting rail holder on the upper edge of the mounting rail and push down.
2. Push the lower part of the device toward the mounting rail until the mounting rail holder engages.
   ⇨ The device is now mounted on the mounting rail.
3. Relieve the pressure on the top of the housing.

# 6 Commissioning

## 6.1 Prerequisites for commissioning

A PC with ETS and a connection to the bus (ABB i-bus® KNX), e.g. via a KNX interface, are required to commission the device.

- Required ETS version: 5.0 or higher
- Product-specific device application: installed → Device applications, Page 20

**Note**
See software information on the website → www.abb.com/knx.

## 6.2 Secure commissioning with KNX DATA Secure

**Note**
KNX DATA Secure is supported by ETS version 5.5.0 or later. ETS version 6 or later is recommended when using KNX DATA Secure. Using older ETS versions can cause errors in project planning, problems during commissioning, or problems when diagnosing group addresses and devices.

This device meets the KNX DATA Secure standard (→ KNX DATA Secure, Page 191). To commission the device securely, note the following points:

- It is essential to assign a project password if a KNX DATA Secure device is imported into a project. This protects the project against unauthorized access and encrypts the data communication on the bus (ABB i-bus® KNX).
  - Without a password setup, none of the devices in the project can be operated as KNX DATA Secure devices. This means the security of the whole project will be that of a conventional KNX network (KNX plain).
  - The project password must be kept in a safe place. Access to the project is not possible without it. Not even the KNX Association or ABB AG will be able to access it.
- Commissioning a KNX DATA Secure device requires a commissioning key (FDSK = Factory Default Setup Key).
  - The FDSK is attached to the device in duplicate as a removable sticker. The stickers should be removed from the device and kept in a safe place.
  - On the first download, a window opens in ETS, prompting the user to enter the FDSK. Alternatively, the FDSK can be read in with a QR scanner.
  - The FDSKs for all of the KNX DATA Secure devices incorporated in the project can be entered in advance in ETS, → Project overview, "security" tab.
  - After commissioning, ETS assigns new keys. The FDSK will be required again only if the device was reset to its factory settings (e.g. if the device is to be used as a KNX DATA Secure device in a different system with a different ETS project).

## 6.3 Commissioning overview

After the KNX voltage is activated for the first time, the following factory settings will be selected automatically:

- Physical address of the device: 15.15.255
- Device application: preloaded
- Manual operation: enabled

The device can be programmed only using ETS.

**Note**
The device application can be re-downloaded if necessary. Downloads may take longer after a device application is uninstalled or when changing applications.

## 6.4 Putting the device into operation

**CAUTION**
Setting a reversing time that is too short can damage the connected drive.
- Observe the technical data of the connected drive.

1. Connect the device to the bus (ABB i-bus® KNX).
2. Switch on KNX voltage.
   ⇨ All relay contacts are open.
3. Switch on supply voltage for the connected loads.

⇨ Device is ready for operation.

## 6.5 Assignment of the physical address

**Note**
If it is set in ETS that the device application is to be downloaded during programming, the download will begin after assignment of the physical address.

Triggering assignment of the physical address via ETS:
1. Press the *Programming* button.
   ⇨ Programming mode active. The *Programming* LED lights up.
2. Start programming process in ETS.

⇨ Physical address is assigned. Device restarts.

**Note**
The device performs an ETS reset during assignment of the physical address. All states are reset.

## 6.6 Software/device application

### 6.6.1 Download reaction

Depending on the PC, it can take up to 90 seconds for the progress bar to appear during a download.

Using an interface that supports download via "long frames" (e.g. USB/S 1.2 or IPR/S 3.5.1) can greatly shorten the download time.

### 6.6.2 Copying, exchanging and converting

The following functions can be performed with the ETS app *ABB Update Copy Convert*:
- *Update*: Changes the device application to a higher or lower version while retaining the current configurations
- *Convert*: Adopts a configuration from an identical or compatible source device
- *Copy channel*: Copies a channel configuration to other channels on a multichannel device
- *Channel exchange*: Exchanges configurations between two channels on a multichannel device
- *Import/export*: Saves and reads device configurations as external files

The ETS app *ABB Update Copy Convert* can be downloaded free of charge from the KNX Shop → www.KNX.org.

**Note**
If the ETS app *ABB Update Copy Convert* is used to execute the *Channel Exchange* function, the logic/threshold assignments (→ parameter *Output X reacts to*) are not exchanged. The assignments must be manually adjusted after exchanging channels.

## 6.7 Restoring factory settings on a device

✓ Before a reset, the device must be connected to the bus (ABB i-bus® KNX).
1. Disconnect the device from the bus (ABB i-bus® KNX).
2. Press and hold the *Programming* button.
3. Connect the device to the bus (ABB i-bus® KNX).
   ⇨ The *Programming* LED flashes at 1 Hz; the device executes the Master-Reset.
4. When the *Programming* LED flashes at 5 Hz, release the *Programming* button.

⇨ The *Programming* LED is off; the device's factory settings have been restored (→ Commissioning overview, Page 36).

# 7 Parameters

## 7.1 General

**Note**
ETS (Engineering Tool Software) is used to parameterize the device.

The following sections describe the device parameters based on the parameter windows. The parameter windows have a dynamic design. Parameters are shown or hidden depending on parameterization and function.

The default values for the parameters are underlined, e.g.:
*no (checkbox cleared)*
yes (checkbox ticked)

**Note**
The default values in the device application can vary from the values stated in the product manual depending on the product variant.

**Note**
The largest and most extensive device in the product family is described below as an example.

### 7.1.1 Prerequisites for visibility

In the "Prerequisites for visibility" the ETS settings and product variants necessary to display a parameter window/parameter/Group Object are listed. If no "Prerequisites for visibility" are specified, parameter windows/parameters/Group Objects are always shown or the prerequisites are given by the higher-level parameter window.

The "Prerequisites for visibility" are structured as follows:
- Parameter windows: all necessary prerequisites
- Parameters: Settings in other parameter windows, higher-level parameters, product variant required
- Group Objects: all necessary prerequisites

# 7.2 Parameter windows

## 7.2.1 Parameter window Configuration

The following settings can be made in this parameter window:

- Enable outputs
- Define application for each output
- Define application for each input
- Enable functions *Logic* and *Threshold*
- Enable device-specific functions

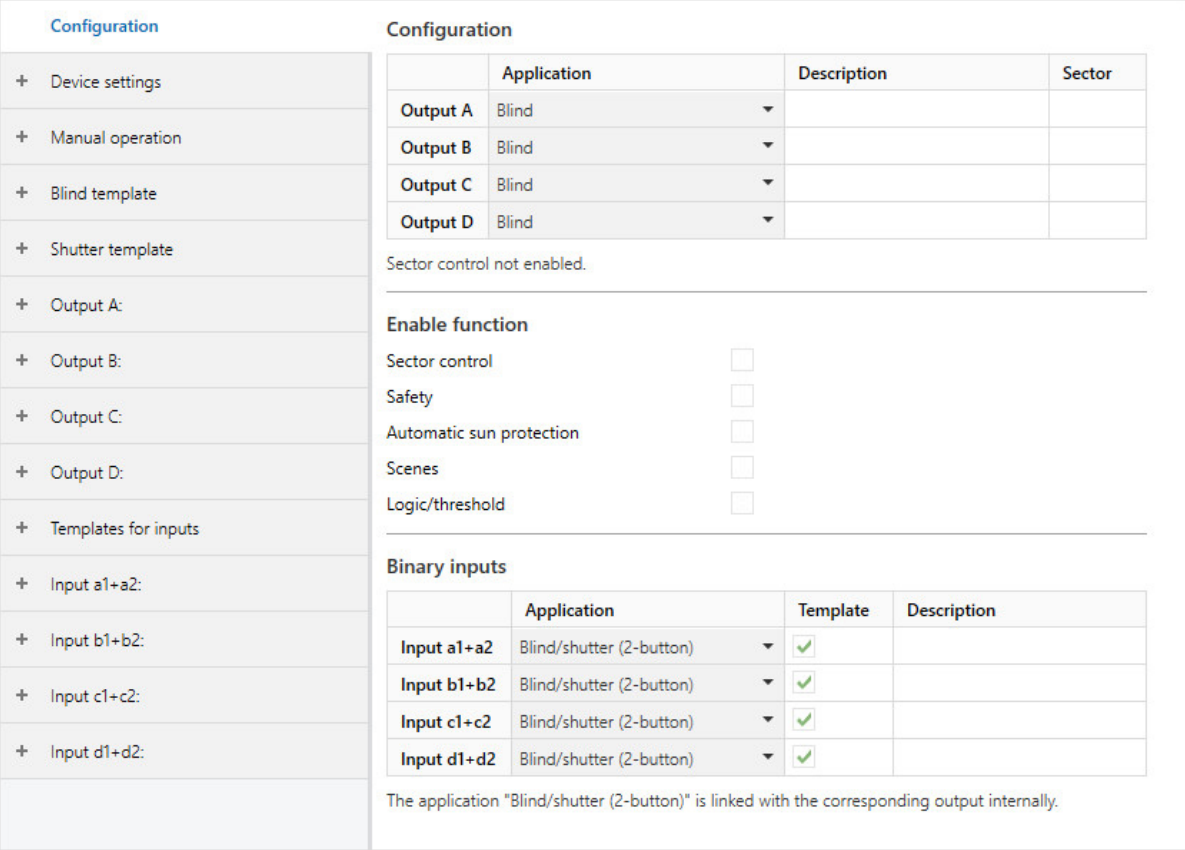



Fig. 8: Parameter window Configuration

**This parameter window includes the following parameters:**

→ Output X application, Page 41
→ Output X description, Page 41
→ Output X sector, Page 41
→ Enable function: Sector control, Page 42
→ Enable function: Safety, Page 42
→ Enable function: Automatic sun protection, Page 42
→ Enable function: Scenes, Page 42
→ Enable function: Logic/threshold, Page 43
→ Input x application, Page 43
→ Input x template, Page 43
→ Input x description, Page 44

### 7.2.1.1 Output X application

This parameter is used to define which application is used.

| Option | |
|---|---|
| *Blind* | For connecting a blind motor.<br><br>The following dependent parameter windows are shown:<br>• *Output X*<br>• *Basic settings [blind, shutter]*<br>• *Drive / blind/shutter*<br><br>The following dependent parameters are shown:<br>• *Output X description*<br><br>The following dependent Group Objects are displayed:<br>• *Up/down*<br>• *Step/stop* |
| *Shutter* | For connecting a shutter, ventilation flap, window drive, zipscreen or fabric awning motor.<br><br>The following dependent parameter windows are shown:<br>• *Output X*<br>• *Basic settings [blind, shutter]*<br>• *Drive / blind/shutter*<br><br>The following dependent parameters are shown:<br>• *Output X description*<br><br>The following dependent Group Objects are displayed:<br>• *Up/down*<br>• *Stop* |
| *Deactivated* | The output is deactivated. |

### 7.2.1.2 Output X description

This parameter is used to define an individual description for a channel, an input or an output. The description is displayed at the following points:
- In the name of the corresponding parameter window
- In the name of the corresponding Group Objects

| Option | |
|---|---|
| *Free text entry* | Maximum 24 ASCII characters; the maximum number of characters may vary for other character formats. |

**Prerequisites for visibility**
- Parameter window *Configuration* \ Parameter *Output X application* \ all options except *Deactivated*

### 7.2.1.3 Output X sector

This parameter assigns the output to a sector (0 … 2048).

**Note**
If sector = 0, the output is not assigned to any sector. The output does not react to a sector telegram.

| Option |
|---|
| *0 … 2048* |

**Prerequisites for visibility**
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Sector control* \ Option *Yes*

### 7.2.1.4 Enable function: Sector control

This parameter enables the function *Sector control*.

More information: → Function Sector control, Page 31.

| Option | |
|---|---|
| *No* | The function is not enabled. |
| *Yes* | The following dependent parameters are shown:<br>• *Output X sector*<br><br>The following dependent Group Objects are displayed:<br>• *Sector control* |

### 7.2.1.5 Enable function: Safety

This parameter enables the function *Safety*.

More information: → Function Safety, Page 23.

| Option | |
|---|---|
| *No* | The function is not enabled. |
| *Yes* | The following dependent parameter windows are shown:<br>• *Central safety*<br>• *Safety* |

### 7.2.1.6 Enable function: Automatic sun protection

This parameter enables the function *Automatic sun protection*.

More information: → Function Automatic sun protection, Page 25.

| Option | |
|---|---|
| *No* | The function is not enabled. |
| *Yes* | The following dependent parameter windows are shown:<br>• *Automatic sun protection* |

### 7.2.1.7 Enable function: Scenes

This parameter enables the function *Scenes*.

More information: → Function Scenes, Page 28.

| Option | |
|---|---|
| *No* | The function is not enabled. |
| *Yes* | The following dependent parameter windows are shown:<br>• *Scenes* |

### 7.2.1.8 Enable function: Logic/threshold

This parameter enables the functions *Logic* and *Threshold*. The functions *Logic* and *Threshold* are configured in the parameter window *Logic/threshold*.

The functions *Logic* and *Threshold* can be used independently or linked with an output.

More information: → Function Logic, Page 29, → Function Threshold, Page 30.

| Option | |
|---|---|
| *No* | The functions *Logic* and *Threshold* are not enabled. |
| *Yes* | The following dependent parameter windows are shown:<br>• *Logic/threshold*<br>• *Logic/threshold configuration* |

### 7.2.1.9 Input x application

This parameter is used to define which application is used.

**Note**
Two physical binary inputs, x = a1/a2, b1/b2, etc. are enabled per device input. Each physical binary input can be assigned an individual application. When using the application *Blind/shutter (2-button)*, two adjacent physical binary inputs are combined (a1 and a2, b1 and b2, etc.).

**Note**
If the application *Blind/shutter (2-button)* is used, an internal connection is established with the outputs (input a1/a2 with output A, input b1/b2 with output B, etc.). The corresponding outputs can be directly operated with contacts that are connected to the device inputs.

| Option | |
|---|---|
| *Switch* | The following dependent parameter windows are shown:<br>• *Switch*<br><br>The following dependent Group Objects are displayed:<br>• *Switch* |
| *Blind/shutter* | The following dependent parameter windows are shown:<br>• *Blind/shutter* |
| *Blind/shutter (2-button)* | The following dependent parameter windows are shown:<br>• *Blind/shutter [2-button]* |
| *Scenes* | The following dependent parameter windows are shown:<br>• *Scenes*<br><br>The following dependent Group Objects are displayed:<br>• *Scene 1 … 64* |
| *Deactivated* | The input is deactivated. |

### 7.2.1.10 Input x template

This parameter is used to define whether the settings for the application are adopted from the template or each parameter is set individually.

| Option | |
|---|---|
| *No* | The parameters can be set individually. |
| *Yes* | The settings for the parameters are adopted from the template. |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Input x application* \ all options except *Deactivated*

### 7.2.1.11 Input x description

This parameter is used to define an individual description for a channel, an input or an output. The description is displayed at the following points:

- In the name of the corresponding parameter window
- In the name of the corresponding Group Objects

| Option | |
|---|---|
| *Free text entry* | Maximum 24 ASCII characters; the maximum number of characters may vary for other character formats. |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Input x application* \ all options except *Deactivated*

## 7.2.2 Parameter window Device settings

The following settings can be made in this parameter window:

- Set sending and switching delay
- Set telegram rate limit
- Enable central and device-specific Group Objects

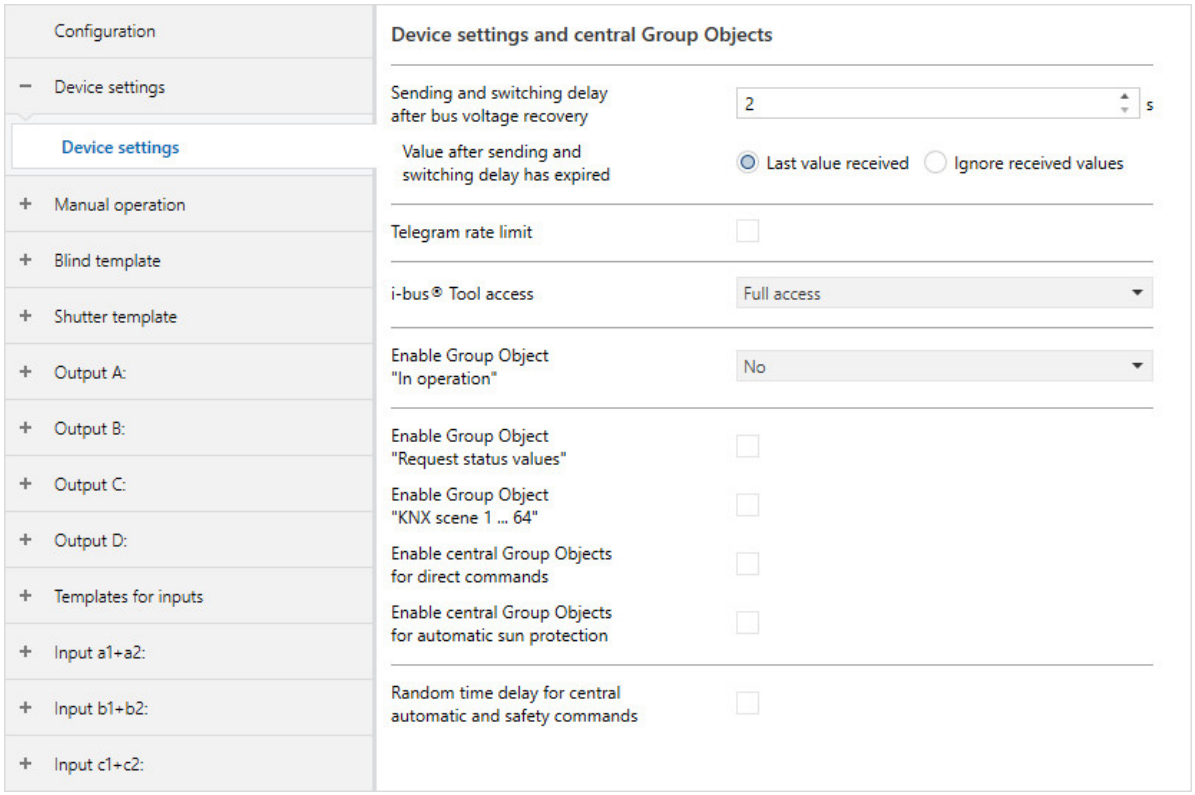



Fig. 9: Parameter window Device settings

**This parameter window includes the following parameters:**

### 7.2.2.1 Sending and switching delay after KNX voltage recovery

This parameter is used to define the sending and switching delay after KNX voltage recovery.

More information: → Sending or switching delay, Page 193.

**Note**
The device draws energy for switching the outputs via the bus (ABB i-bus® KNX). After application of the KNX voltage or after KNX voltage recovery, it takes about 10 … 30 seconds before sufficient energy is available to switch all relays simultaneously.
The first relay is not switched until the device has stored sufficient energy to place all outputs in a defined contact position if there is a KNX voltage failure.

**Note**
After KNX voltage recovery, the device waits for the sending delay time to elapse before sending telegrams on the bus (ABB i-bus® KNX).

| Option |
|---|
| *2 … 60 s* |

### 7.2.2.2 Value after sending and switching delay has expired

This parameter is used to define the values that are applicable at the inputs and outputs after expiration of the sending and switching delay.

More information: → Sending or switching delay, Page 193.

| Option | |
|---|---|
| *Last value received* | The inputs and outputs react to the last value that was received during the sending and switching delay. If no value was received during the sending and switching delay, the reaction after KNX voltage recovery set in the device parameters applies. |
| *Ignore received values* | The state of the inputs and outputs remains unchanged until a new value is received after the delay has elapsed. |

### 7.2.2.3 Telegram rate limit

This parameter is used to define whether the number of telegrams sent by the device will be limited. The fewer telegrams sent, the lower the bus load will be.

More information: → Telegram rate limit, Page 193.

| Option | |
|---|---|
| *No* | The number of telegrams is not limited. |
| *Yes* | The following dependent parameters are shown:<br>• *Maximum number of sent telegrams*<br>• *In period* |

### 7.2.2.4 Maximum number of sent telegrams

This parameter is used to define the number of telegrams sent within a period that can be set.

The period is defined in the parameter *In period*.

More information: → Telegram rate limit, Page 193.

| Option |
|---|
| *0 … 20 … 100* |

**Prerequisites for visibility**

- Parameter window *Device settings* \ Parameter *Telegram rate limit* \ Option *Yes*

### 7.2.2.5 In period

This parameter is used to define the period during which the device sends telegrams. The telegrams are sent as quickly as possible at the start of a period.

More information: → Telegram rate limit, Page 193.

**Note**
The telegram rate limit is deactivated when the value 0 is selected.

| Option |
|---|
| *0 … 1 … 59 s* |

**Prerequisites for visibility**

- Parameter window *Device settings* \ Parameter *Telegram rate limit* \ Option *Yes*

### 7.2.2.6 i-bus® Tool access

This parameter is used to define whether the device can be accessed via i-bus® Tool.

More information: → Integration into i-bus® Tool, Page 33.

| Option | |
|---|---|
| *No access* | Access via the i-bus® Tool is deactivated. A Master-Reset via the i-bus® Tool is possible. |
| *Read only* | Values can be displayed via the i-bus® Tool. A Master-Reset via the i-bus® Tool is possible. |
| *Full access* | Values can be displayed and changed via the i-bus® Tool. A Master-Reset via the i-bus® Tool is possible. |

### 7.2.2.7 Enable Group Object "In operation"

This parameter enables the Group Object *In operation*.

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes, send value 0 cyclically* | The Group Object is enabled and cyclically sends the value 0.<br><br>The following dependent parameters are shown:<br>• *Sending cycle*<br><br>The following dependent Group Objects are displayed:<br>• *In operation* |
| *Yes, send value 1 cyclically* | The Group Object is enabled and cyclically sends the value 1.<br><br>The following dependent parameters are shown:<br>• *Sending cycle*<br><br>The following dependent Group Objects are displayed:<br>• *In operation* |

### 7.2.2.8 Sending cycle

This parameter is used to define the cycle in which the Group Object *In operation* sends a telegram.

| Option |
| --- |
| *00:00:01 … 00:10:00 … 18:12:15 hh:mm:ss* |

**Prerequisites for visibility**

- Parameter window *Device settings* \ Parameter *Enable Group Object "In operation"* \ Option *Yes, send value 0 cyclically / Yes, send value 1 cyclically*

### 7.2.2.9 Enable Group Object "Request status values"

This parameter enables the Group Object *Request status values*.

All status messages of the device can be requested using the Group Object *Request status values* and sent on the bus (ABB i-bus® KNX).

| Option | |
| --- | --- |
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Request status values* |

### 7.2.2.10 Enable Group Object "KNX scene 1… 64" [Central]

This parameter enables the central Group Object *KNX scenes 1 … 64*.

More information: → Function Scenes, Page 28.

All outputs assigned to the Scene can be activated together with the central Group Object.

**Note**
Observe the maximum number of switching cycles per minute when using central Group Objects → Technical data.

| Option | |
| --- | --- |
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *KNX scenes 1 … 64* |

### 7.2.2.11 Enable central Group Objects for direct commands

This parameter enables the central Group Objects for direct commands. All assigned outputs can be activated together using the central Group Objects, → parameter *Output reacts to central direct commands*.

More information: → Direct operation, Page 190.

**Note**
Observe the maximum number of switching cycles per minute when using central Group Objects → Technical data.

| Option | |
|---|---|
| *No* | The Group Objects will not be enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Up/down*<br>• *Up/working position*<br>• *Step/stop*<br>• *Move to height*<br>• *Move slat* |

### 7.2.2.12 Enable central Group Objects for automatic sun protection

This parameter enables the central Group Objects for automatic sun protection. All assigned outputs can be activated together using the central Group Objects (→ parameter *Reacts to central Group Objects*).

More information: → Automatic operation, Page 189.

**Note**
Observe the maximum number of switching cycles per minute when using central Group Objects → Technical data.

| Option | |
|---|---|
| *No* | The Group Objects will not be enabled. |
| *Yes* | The following dependent parameters are shown:<br>• *Poll Group Objects after restart*<br>• *Control via Group Objects*<br><br>The following dependent Group Objects are displayed:<br>• *Activate automatic sun protection*<br>• *Sun*<br>• *Sun: Move to height*<br>• *Sun: Move slat*<br>• *Block automatic sun protection*<br>• *Block direct commands*<br>• *Room occupied*<br>• *Room temperature received*<br>• *Heating*<br>• *Cooling* |

### 7.2.2.13 Poll Group Objects after restart

This parameter is used to define whether the values for the central Automatic sun protection Group Objects are polled and updated after KNX voltage recovery, download or ETS reset.

More information: → Value Read, Page 194.

> **Note**
> To update the Group Objects after KNX voltage recovery, download or ETS reset, the read flags must be set for the corresponding Group Objects of the sending device.

| Option |
|---|
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Device settings* \ Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*

### 7.2.2.14 Control via Group Objects

This parameter is used to define which Group Object receives the room operating mode (*Heating* or *Cooling*).

These Group Objects are used for changing over between heating and cooling in the function *Heating/Cooling*.

More information: → Function Heating/Cooling, Page 26.

| Option | |
|---|---|
| *"Heating" and "Cooling"* | The following dependent Group Objects are displayed:<br>• *Heating*<br>• *Cooling* |
| *"Heating/cooling" and "Block heating/cooling"* | The following dependent Group Objects are displayed:<br>• *Heating/cooling*<br>• *Block heating/cooling* |

**Prerequisites for visibility**

- Parameter window *Device settings* \ Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*

### 7.2.2.15 Random time delay for central automatic and safety commands

**Note**
If all the drives start up at once due to a central command, load peaks occur. When the blind or shutter applications are used and a random time delay is active, you can specify a range within which drive activation is staggered, thus preventing load peaks.

This parameter is used to activate the random time delay for central automatic and safety commands.

For more information, see:
→ Group Objects Central – Automatic, Page 149
→ Group Objects Central – Safety, Page 152

| Option | |
|---|---|
| *No* | The time delay is not enabled. |
| *Yes* | The central automatic and safety commands are executed with a time delay. The outputs are switched at different times within a specified period (load distribution). This time period is specified in the shown parameters.<br><br>The following dependent parameters are shown:<br>• *Minimum*<br>• *Maximum* |

### 7.2.2.16 Minimum

This parameter is used to define the minimum delay time (→ parameter *Random time delay for central automatic and safety commands*).

**Example**
- Random time delay is active.
- Minimum = 1 s
- Maximum = 4 s
- A central command to move all blinds/shutters is received.

The device does not react immediately. Within 1 s (= minimum) and 4 s (= maximum) of receiving the direct command, all outputs are switched at different times. The motors do not start simultaneously and there are no load peaks.

| Option |
|---|
| *0 … 1 … 15 s* |

**Prerequisites for visibility**
- Parameter window *Device settings* \ Parameter *Random time delay for central automatic and safety commands* \ Option *Yes*

### 7.2.2.17 Maximum

This parameter is used to define the maximum delay time (→ parameter *Random time delay for central automatic and safety commands*).

**Example**
- Random time delay is active.
- Minimum = 1 s
- Maximum = 4 s
- A central command to move all blinds/shutters is received.

The device does not react immediately. Within 1 s (= minimum) and 4 s (= maximum) of receiving the direct command, all outputs are switched at different times. The motors do not start simultaneously and there are no load peaks.

| Option |
| --- |
| *0 … 2 … 15 s* |

**Prerequisites for visibility**
- Parameter window *Device settings* \ Parameter *Random time delay for central automatic and safety commands* \ Option *Yes*

## 7.2.3 Parameter window Manual operation

The following settings can be made in this parameter window:
- Enable operating state *Manual operation*
- Automatically reset the device to operating state *KNX operation*

More information: → Manual operation, Page 177.

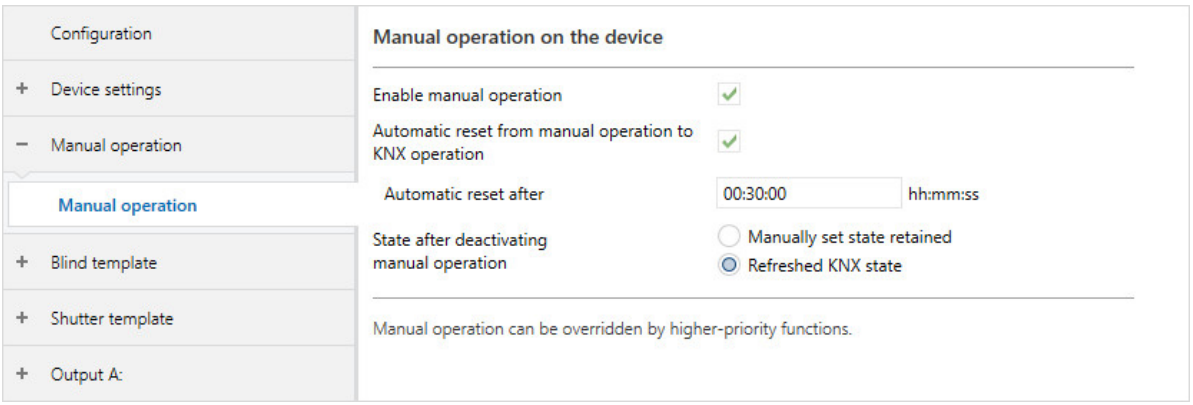



Fig. 10: Parameter window Manual operation

**This parameter window includes the following parameters:**

→ Enable manual operation, Page 53
- → Automatic reset from manual operation to KNX operation, Page 53
  - → Automatic reset after, Page 54
- → State after deactivating manual operation, Page 54

### 7.2.3.1 Enable manual operation

This parameter is used to enable the manual operation of the device.

More information: → Manual operation, Page 177.

| Option | |
|---|---|
| *No* | The manual operation of the device is not enabled. |
| *Yes* | The following dependent parameters are shown:<br>• *Automatic reset from manual operation to KNX operation*<br>• *State after deactivating manual operation*<br><br>The following dependent Group Objects are displayed:<br>• *Enable/Block Manual operation*<br>• *Deactivate manual operation*<br>• *Status Manual operation* |

### 7.2.3.2 Automatic reset from manual operation to KNX operation

This parameter is used to define whether the device is reset from the operating state *Manual operation* to the operating state *KNX operation* after an adjustable time.

| Option | |
|---|---|
| *No* | Automatic reset is deactivated. |
| *Yes* | The following dependent parameters are shown:<br>• *Automatic reset after* |

**Prerequisites for visibility**
- Parameter window *Manual operation* \ Parameter *Enable manual operation* \ Option *Yes*

### 7.2.3.3 Automatic reset after

This parameter is used to define the time after which the device is automatically reset to the operating state *KNX operation*.

After the *Manual operation* button is pressed, the device remains in the operating state *Manual operation* until the button is pressed again or the set time expires.

| Option |
| --- |
| *00:00:30 … 00:30:00 … 18:12:15 hh:mm:ss* |

**Prerequisites for visibility**

- Parameter window *Manual operation* \ Parameter *Automatic reset from manual operation to KNX operation* \ Option *Yes*

### 7.2.3.4 State after deactivating manual operation

This parameter is used to define the state of the outputs after deactivating manual operation.

| Option | |
| --- | --- |
| *Manually set state retained* | The manually set state remains active. |
| *Refreshed KNX state* | The manually set state is overwritten. The refreshed KNX state is used, → Refreshed KNX state, Page 193. |

**Prerequisites for visibility**

- Parameter window *Manual operation* \ Parameter *Enable manual operation* \ Option *Yes*

## 7.2.4 Parameter window Central safety

The following settings can be made in this parameter window:
- Enable central safety Group Objects
- Set cyclical monitoring

More information: → Central safety, Page 24.

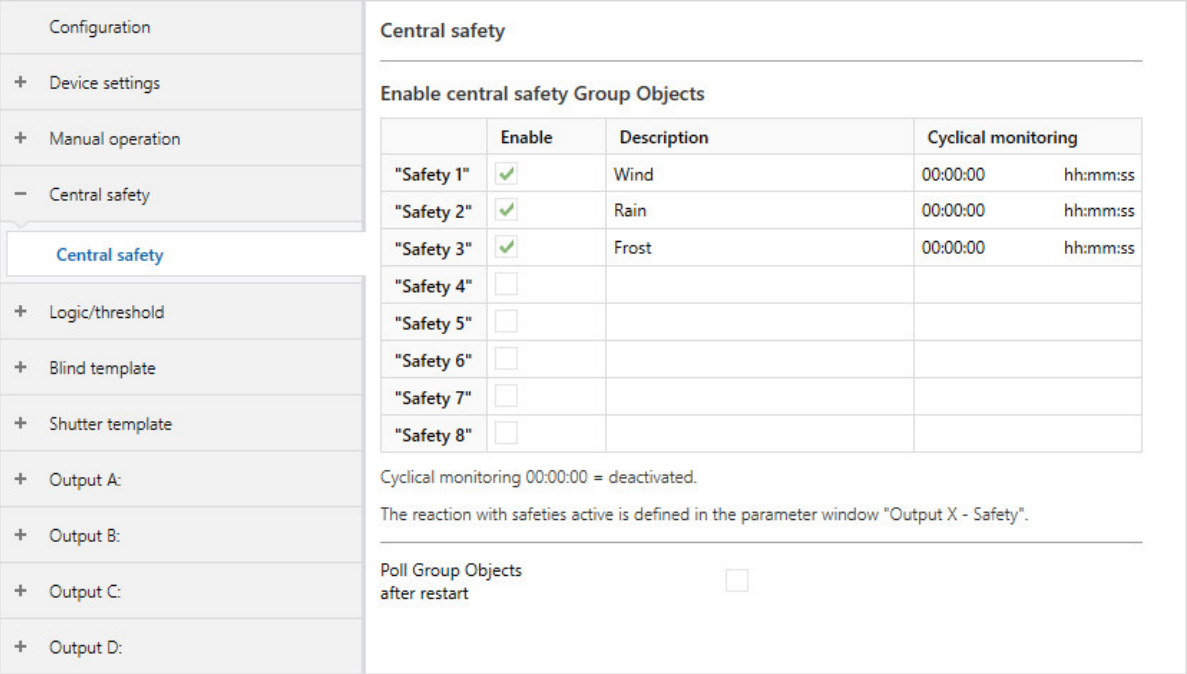



Fig. 11: Parameter window Central safety

**This parameter window includes the following parameters:**

→ Enable "Safety x", Page 55
- → "Safety x" description, Page 56
- → "Safety x" cyclical monitoring, Page 56

→ Poll Group Objects after restart, Page 56

**Prerequisites for visibility**
- Parameter window *Configuration* \ Parameter *Enable function: Safety* \ Option *Yes*

### 7.2.4.1 Enable "Safety x"

This parameter is used to enable the central safety Group Objects.

More information: → Central safety, Page 24.

| Option | |
|---|---|
| *No* | The Group Objects will not be enabled. |
| *Yes* | The following dependent parameters are shown:<br>• *"Safety x" description*<br>• *"Safety x" cyclical monitoring*<br><br>The following dependent Group Objects are displayed:<br>• *Safety x* |

### 7.2.4.2 "Safety x" description

This parameter is used to specify an individual description for each central safety Group Object. The description is displayed at the following points:

- In the name of the corresponding Group Object
- As a fixed option in the parameter *Priority x reference*

| Option | |
|---|---|
| *Free text entry* | Maximum 24 ASCII characters; the maximum number of characters may vary for other character formats. |

**Prerequisites for visibility**

- Parameter window *Central safety* \ Parameter *Enable "Safety x"* \ Option *Yes*

### 7.2.4.3 "Safety x" cyclical monitoring

This parameter is used to activate the cyclical monitoring and to define the monitoring cycle for the safety Group Objects. If the monitoring cycle is specified with the value 00:00:00, the cyclical monitoring is deactivated.

More information: → Cyclical monitoring, Page 194.

**Note**
The monitoring cycle in the device should be at least quadruple the cyclical sending time of the sending device. As a result, the reactions set will not be triggered immediately if a signal is missing, e.g. due to high bus load.

| Option |
|---|
| *00:00:00 … 12:00:00 hh:mm:ss* |

**Prerequisites for visibility**

- Parameter window *Central safety* \ Parameter *Enable "Safety x"* \ Option *Yes*

### 7.2.4.4 Poll Group Objects after restart

This parameter is used to define whether the values for the safety Group Objects are polled and updated after KNX voltage recovery, download or ETS reset.

More information: → Value Read, Page 194.

**Note**
To update the Group Objects after KNX voltage recovery, download or ETS reset, the read flags must be set for the corresponding Group Objects of the sending device.

| Option | |
|---|---|
| *No* | The safety Group Objects are not polled after KNX voltage recovery or download. |
| *Yes* | The safety Group Objects send a Value Read to the sending Group Objects after KNX voltage recovery or download. If alarms are present, the parameterized results are run, → Value Read, Page 194. |

## 7.2.5 Parameter window Logic/threshold

The functions *Logic* and *Threshold* can be set individually for each output in the subordinate parameter windows.

### 7.2.5.1 Parameter window Logic/threshold configuration

The following settings can be made in this parameter window:
- Enable functions *Logic* and *Threshold* in groups of four
- Define and assign reaction of the outputs

The functions *Logic* and *Threshold* can be used independently or linked with an output.

**Note**
If the ETS app *ABB Update Copy Convert* is used to execute the *Channel Exchange* function, the logic/threshold assignments (→ parameter *Output X reacts to*) are not exchanged. The assignments must be manually adjusted after exchanging channels.

For more information, see:
→ Function Logic, Page 29
→ Function Threshold, Page 30

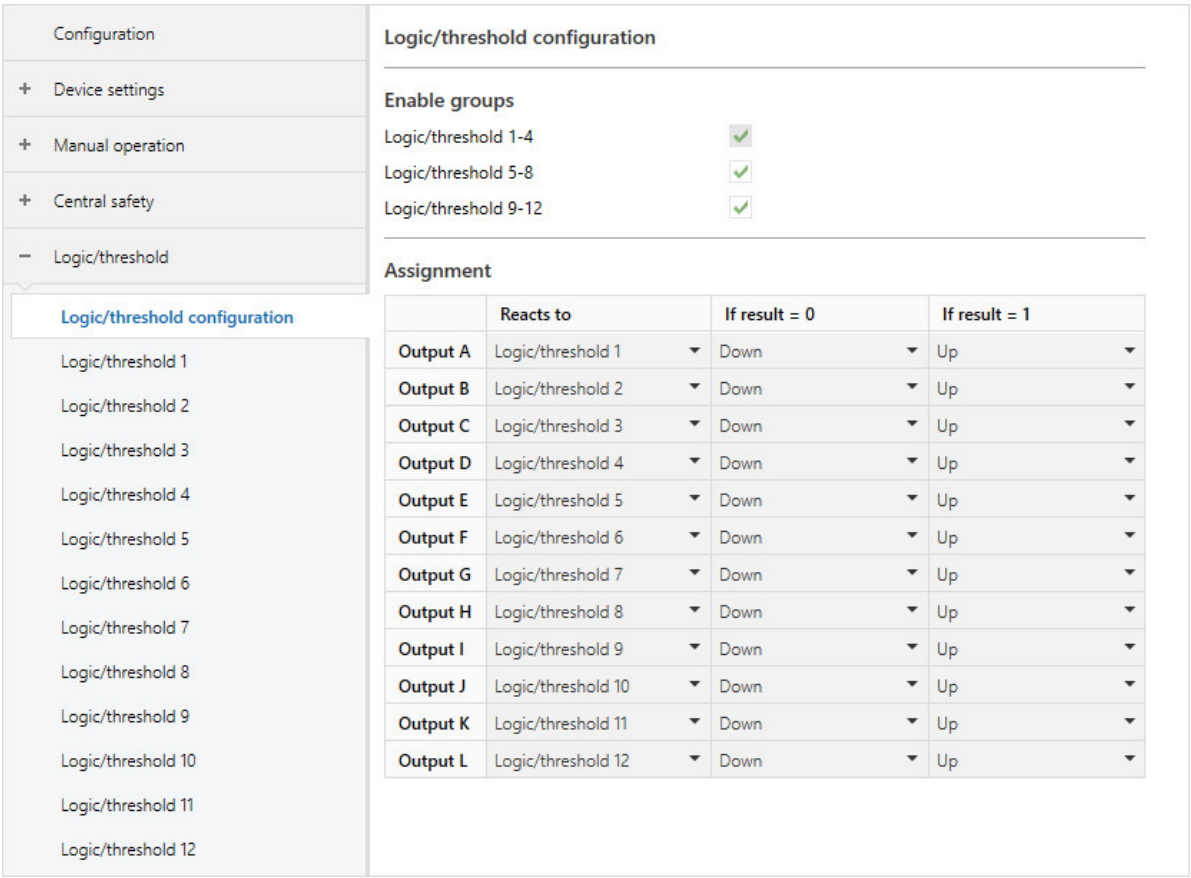



Fig. 12: Parameter window Logic/threshold configuration

**This parameter window includes the following parameters:**

→ Enable groups: Logic/threshold x-y, Page 58
→ Output X reacts to, Page 58
→ Output X if result = x, Page 58

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*

#### 7.2.5.1.1 Enable groups: Logic/threshold x-y

This parameter enables the functions *Logic* and *Threshold* in groups of four.

The functions *Logic* and *Threshold* are configured in the parameter window *Logic/Threshold x*.

| Option | |
|---|---|
| *No* | The logic/threshold groups are not enabled |
| *Yes* | The following dependent parameter windows are shown:<br>• *Logic/Threshold x* |

#### 7.2.5.1.2 Output X reacts to

This parameter is used to define whether the output reacts to the result of a Logic or Threshold function.

**Note**
If the ETS app *ABB Update Copy Convert* is used to execute the *Channel Exchange* function, the logic/threshold assignments (→ parameter *Output X reacts to*) are not exchanged. The assignments must be manually adjusted after exchanging channels.

| Option | |
|---|---|
| *None* | The output does not react to the result of a *Logic* or Threshold function. |
| *Logic/Threshold x* | The output reacts to the result of the function *Logic/Threshold x*.<br>The reaction of the output is defined in the parameter *Output X if result = x*.<br><br>The following dependent parameters are shown:<br>• *Output X if result = x* |

#### 7.2.5.1.3 Output X if result = x

This parameter is used to define how output X reacts when the result of the function *Logic/threshold* is x.

| Option | |
|---|---|
| *No reaction* | If the blind/shutter is moving, it will continue until reaching the target position. If the blind/shutter is at rest, its position will remain unchanged. |
| *Up* | Acts like an Up telegram on the Group Object *Up/down*. |
| *Down* | Acts like a Down telegram on the Group Object *Up/down*. |
| *Working position* | The positions defined in the working position are adopted.<br>The positions are specified with the following parameters:<br>• *Height working position*<br>• *Slat working position* |
| *Stop* | Acts like a Stop telegram on one of the following Group Objects:<br>• *Step/stop*<br>• *Stop* |
| *Position x* | The predefined position x (x = 1 … 4) is adopted.<br>The predefined positions are specified with the following parameters:<br>• *Height position x*<br>• *Slat position x*<br>• *Height working position*<br>• *Slat working position* |
| *Scene assignment x* | The positions defined in scene assignment x (x = 1 … 16) are adopted.<br>The positions are specified with the following parameters:<br>• *Scene assignment x height (%)*<br>• *Scene assignment x slat (%)* |

### Prerequisites for visibility

- Parameter window *Configuration* \ Parameter *Output X application* \ all options except *Deactivated*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Output X reacts to* \ all options except *None*

### 7.2.5.2 Parameter window Logic/Threshold x

The following settings can be made in this parameter window:
- Parameterize function *Logic*
- Parameterize function *Threshold*

The functions *Logic* and *Threshold* can be used independent of other functions. The results of the functions *Logic* and *Threshold* can be linked with any outputs (→ parameter *Output X reacts to*) and/or sent on the bus (ABB i-bus® KNX).

For more information, see:
→ Function Logic, Page 29
→ Function Threshold, Page 30

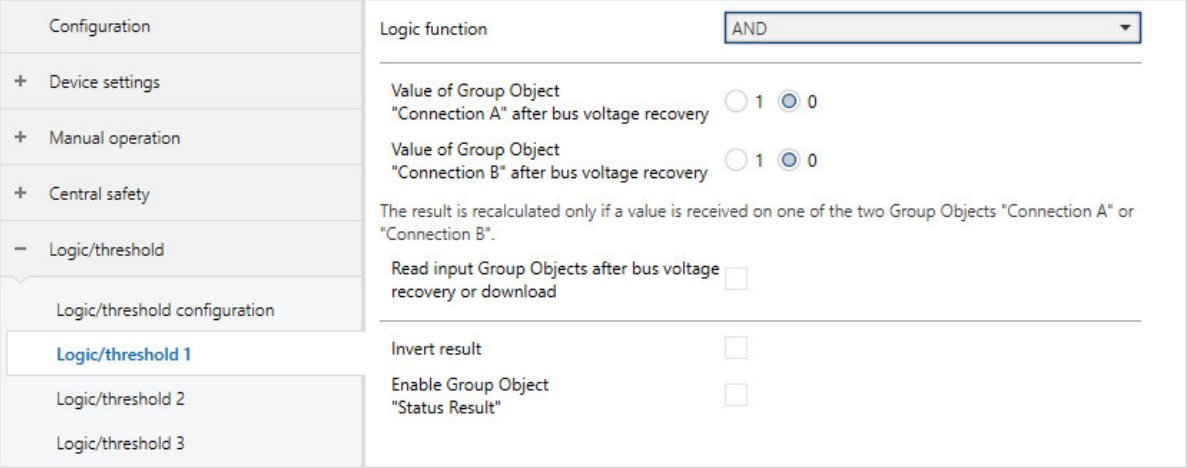



Fig. 13: Parameter window Logic/threshold x

**This parameter window includes the following parameters:**

→ Logic function, Page 61
→ GATE blocks if Group Object "Connection A" equals, Page 62
→ Value of Group Object "Connection A" after bus voltage recovery, Page 62
→ Value of Group Object "Connection B" after bus voltage recovery, Page 62
→ Read input Group Objects after KNX voltage recovery and download, Page 63
→ Invert result, Page 63
→ Enable Group Object "Status Result", Page 63
→ Send value of Group Object "Status Result", Page 63
→ Data point type of Group Object "Threshold input", Page 64
→ Upper threshold, Page 64
→ Lower threshold, Page 65
→ Change thresholds via Group Objects, Page 66
→ Change thresholds via i-bus® Tool, Page 66
→ Overwrite thresholds on download, Page 66
→ Result if upper threshold is exceeded, Page 67
→ Minimum duration of the overshoot, Page 67
→ Monitor range between thresholds, Page 67
→ Minimum dwell time between the thresholds, Page 67
→ Result if lower threshold is dropped below, Page 68
→ Minimum duration of the undershoot, Page 68
→ Read input Group Objects after KNX voltage recovery and download, Page 68
→ Enable Group Objects "Status Result", "Status Input value between thresholds", Page 69
→ Send value of Group Objects "Status Result", "Status Input value between thresholds", Page 69

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*

### 7.2.5.2.1 Logic function

This parameter is used to define whether one of the logic functions or the threshold function is used.

| Option | |
|---|---|
| *None* | The logic function is not used. |
| *AND* | The logic function *AND* is used. The result is 1 if each input value is 1.<br><br>The following dependent parameters are shown:<br>• *Value of Group Object "Connection A" after bus voltage recovery*<br>• *Value of Group Object "Connection B" after bus voltage recovery*<br>• *Read input Group Objects after KNX voltage recovery and download*<br>• *Invert result*<br>• *Enable Group Object "Status Result"*<br><br>The following dependent Group Objects are displayed:<br>• *Connection A*<br>• *Connection B* |
| *OR* | The logic function *OR* is used. The result is 1 if at least one of the input values is 1.<br><br>The following dependent parameters are shown:<br>• *Value of Group Object "Connection A" after bus voltage recovery*<br>• *Value of Group Object "Connection B" after bus voltage recovery*<br>• *Read input Group Objects after KNX voltage recovery and download*<br>• *Invert result*<br>• *Enable Group Object "Status Result"*<br><br>The following dependent Group Objects are displayed:<br>• *Connection A*<br>• *Connection B* |
| *Exclusive OR* | The logic function *exclusive OR* is used. The result is 1 if an odd number of input values is 1.<br><br>The following dependent parameters are shown:<br>• *Value of Group Object "Connection A" after bus voltage recovery*<br>• *Value of Group Object "Connection B" after bus voltage recovery*<br>• *Read input Group Objects after KNX voltage recovery and download*<br>• *Invert result*<br>• *Enable Group Object "Status Result"*<br><br>The following dependent Group Objects are displayed:<br>• *Connection A*<br>• *Connection B* |
| *GATE* | The logic function *GATE* is used. If the GATE is open (connection A), the most recent value sent to the input (connection B) remains as the result.<br>If the GATE is blocked (connection A), the value that the result had before the block is retained. After enabling, the result corresponds to the value of the input (connection B).<br><br>The following dependent parameters are shown:<br>• *GATE blocks if Group Object "Connection A" equals*<br>• *Value of Group Object "Connection A" after bus voltage recovery*<br>• *Value of Group Object "Connection B" after bus voltage recovery*<br>• *Read input Group Objects after KNX voltage recovery and download*<br>• *Invert result*<br>• *Enable Group Object "Status Result"*<br><br>The following dependent Group Objects are displayed:<br>• *Connection A*<br>• *Connection B* |
| *1 bit Inverter* | The logic function *1 bit Inverter* is used. If the value 1 is present at the input, the result = 0. If the value 0 is present at the input, the result = 1.<br><br>The following dependent parameters are shown:<br>• *Read input Group Objects after KNX voltage recovery and download*<br>• *Enable Group Object "Status Result"*<br><br>The following dependent Group Objects are displayed:<br>• *Connection A* |
| *Threshold* | The function *Threshold* is used.<br>More information: → Function Threshold, Page 30. |

#### 7.2.5.2.2 GATE blocks if Group Object "Connection A" equals

This parameter is used to define the telegram value on the Group Object *Connection A* for which the GATE is blocked. If the GATE is blocked, telegrams received on the Group Object *Connection B* are ignored.

| Option |
|---|
| *1* |
| *0* |

**Prerequisites for visibility**

- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *GATE*

#### 7.2.5.2.3 Value of Group Object "Connection A" after bus voltage recovery

This parameter is used to define the value that is written to the *Connection A* Group Object after KNX voltage recovery.

| Option | |
|---|---|
| *1* | The value 1 is written to the Group Object and the result of the function *Logic* is calculated. |
| *0* | The value 0 is written to the Group Object and the result of the function *Logic* is calculated. |

**Prerequisites for visibility**

- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *AND* / *OR* / *Exclusive OR* / *GATE*

#### 7.2.5.2.4 Value of Group Object "Connection B" after bus voltage recovery

This parameter is used to define the value that is written to the *Connection B* Group Object after KNX voltage recovery.

| Option | |
|---|---|
| *1* | The value 1 is written to the Group Object and the result of the function *Logic* is calculated. |
| *0* | The value 0 is written to the Group Object and the result of the function *Logic* is calculated. |

**Prerequisites for visibility**

- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *AND* / *OR* / *Exclusive OR* / *GATE*

#### 7.2.5.2.5 Read input Group Objects after KNX voltage recovery and download

This parameter is used to define whether the following input Group Objects are read after KNX voltage recovery or download:
- Connection A
- Connection B

> **Note**
> To update the Group Objects after KNX voltage recovery, download or ETS reset, the read flags must be set for the corresponding Group Objects of the sending device.

| Option | |
|---|---|
| *No* | The input Group Objects are not read. |
| *Yes* | The input Group Objects are read. The result of the function *Logic* is re-calculated. |

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *AND* / *OR* / *Exclusive OR* / *GATE* / *1 bit Inverter*

#### 7.2.5.2.6 Invert result

This parameter is used to define whether the result of the function *Logic* is output inverted.

| Option |
|---|
| *No* |
| *Yes* |

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *AND* / *OR* / *Exclusive OR* / *GATE*

#### 7.2.5.2.7 Enable Group Object "Status Result"

This parameter enables the following Group Object:
- *Status Result [Logic]*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent parameters are shown:<br>• *Send value of Group Object "Status Result"*<br><br>The following dependent Group Objects are displayed:<br>• *Status Result [Logic]* |

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *AND* / *OR* / *Exclusive OR* / *GATE* / *1 bit Inverter*

#### 7.2.5.2.8 Send value of Group Object "Status Result"

This parameter is used to define when the value of the following Group Object is sent on the bus (ABB i-bus® KNX):
- *Status Result [Logic]*

> **Note**
> Sending on request can be triggered by the reception of a telegram with the value 0 or 1 on Group Object *Request status values*.

| Option | |
|---|---|
| *No, update only* | The value is updated but is not sent. |
| *On change* | The value is sent on a change. |
| *On request* | The value is sent on request. |
| *On change or on request* | The value is sent on change or on request. |
| *After receiving input value* | The value is sent on the input Group Objects after reception of a telegram. The result is recalculated due to the reception of a telegram on the input Group Objects; the result does not necessarily need to change. |
| *After receiving input value or on request* | The value is sent on the input Group Objects after reception of a telegram or on request. The result is recalculated due to the reception of a telegram on the input Group Objects; the result does not necessarily need to change. |

**Prerequisites for visibility**

- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Enable Group Object "Status Result"* \ Option *Yes*

#### 7.2.5.2.9 Data point type of Group Object "Threshold input"

This parameter is used to define the data point type that is received via the Group Object "Threshold input" and evaluated.

| Option | |
|---|---|
| *Percent (DPT 5.001)* | The following dependent Group Objects are displayed:<br>• *Threshold input* |
| *Counter pulses (DPT 5.010)* | The following dependent Group Objects are displayed:<br>• *Threshold input* |
| *Counter pulses (DPT 7.001)* | The following dependent Group Objects are displayed:<br>• *Threshold input* |
| *Temperature (DPT 9.001)* | The following dependent Group Objects are displayed:<br>• *Threshold input* |
| *Lux (DPT 9.004)* | The following dependent Group Objects are displayed:<br>• *Threshold input* |
| *Wind (DPT 9.005)* | The following dependent Group Objects are displayed:<br>• *Threshold input* |
| *mA (DPT 9.021)* | The following dependent Group Objects are displayed:<br>• *Threshold input* |
| *A (DPT 14.019)* | The following dependent Group Objects are displayed:<br>• *Threshold input* |
| *W (DPT 14.056)* | The following dependent Group Objects are displayed:<br>• *Threshold input* |
| *kW (DPT 9.024)* | The following dependent Group Objects are displayed:<br>• *Threshold input* |
| *Wh (DPT 13.010)* | The following dependent Group Objects are displayed:<br>• *Threshold input* |
| *kWh (DPT 13.013)* | The following dependent Group Objects are displayed:<br>• *Threshold input* |

**Prerequisites for visibility**

- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *Threshold*

#### 7.2.5.2.10 Upper threshold

This parameter is used to define the upper threshold. Default values and units depend on the option selected in the *Data point type of Group Object "Threshold input"* parameter.

| Option | |
|---|---|
| *0 ... 50 ... 100 %* | Upper threshold on selection of DPT 5.001. |
| *0 ... 200 ... 255* | Upper threshold on selection of DPT 5.010. |
| *0 ... 40000 ... 65535* | Upper threshold on selection of DPT 7.001. |
| *-100 ... 22 ... 250°C* | Upper threshold on selection of DPT 9.001. |
| *0 ... 400 ... 100,000 lux* | Upper threshold on selection of DPT 9.004. |
| *0 ... 8 ... 100 m/s* | Upper threshold on selection of DPT 9.005. |
| *0 ... 16000 ... 240000mA* | Upper threshold on selection of DPT 9.021. |
| *0 ... 16 ... 24A* | Upper threshold on selection of DPT 14.019. |
| *0 ... 4000 ... 10000 W* | Upper threshold on selection of DPT 14.056. |
| *0 ... 3 ... 10 kW* | Upper threshold on selection of DPT 9.024. |
| *0 ... 10000 ... 2147483647 Wh* | Upper threshold on selection of DPT 13.010. |
| *0 ... 10000 ... 2147483647 kWh* | Upper threshold on selection of DPT 13.013. |

**Prerequisites for visibility**

- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *Threshold*

### 7.2.5.2.11 Lower threshold

This parameter is used to define the lower threshold. Default values and units depend on the option selected in the *Data point type of Group Object "Threshold input"* parameter.

| Option | |
|---|---|
| *0 ... 20 ... 100 %* | Lower threshold on selection of DPT 5.001. |
| *0 ... 100 ... 255* | Lower threshold on selection of DPT 5.010. |
| *0 ... 10000 ... 65535* | Lower threshold on selection of DPT 7.001. |
| *-100 ... 18 ... 250°C* | Lower threshold on selection of DPT 9.001. |
| *0 ... 100 ... 100,000 lux* | Lower threshold on selection of DPT 9.004. |
| *0 ... 4 ... 100 m/s* | Lower threshold on selection of DPT 9.005. |
| *0 ... 1000 ... 240000mA* | Lower threshold on selection of DPT 9.021. |
| *0 ... 1 ... 24A* | Lower threshold on selection of DPT 14.019. |
| *0 ... 40 ... 10000 W* | Lower threshold on selection of DPT 14.056. |
| *0 ... 1 ... 10 kW* | Lower threshold on selection of DPT 9.024. |
| *0 ... 10000 ... 2147483647 Wh* | Lower threshold on selection of DPT 13.010. |
| *0 ... 10000 ... 2147483647 kWh* | Lower threshold on selection of DPT 13.013. |

**Prerequisites for visibility**

- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *Threshold*

#### 7.2.5.2.12 Change thresholds via Group Objects

This parameter is used to define whether the thresholds set in ETS can be changed via the corresponding Group Objects.

| Option | |
|---|---|
| *No* | The values cannot be changed via Group Objects. |
| *Yes* | The values can be changed via Group Objects.<br>The Group Objects shown are dependent on the setting in the parameter *Data point type of Group Object "Threshold input"*.<br><br>The following dependent parameters are shown:<br>• *Overwrite thresholds on download*<br><br>The following dependent Group Objects are displayed:<br>• *Change upper threshold* (DPT 13.010)<br>*Change lower threshold* (DPT 13.010)<br>• *Change upper threshold* (DPT 13.013)<br>*Change lower threshold* (DPT 13.013)<br>• *Change upper threshold* (DPT 14.019)<br>*Change lower threshold* (DPT 14.019)<br>• *Change upper threshold* (DPT 14.056)<br>*Change lower threshold* (DPT 14.056)<br>• *Change upper threshold* (DPT 5.001)<br>*Change lower threshold* (DPT 5.001)<br>• *Change upper threshold* (DPT 5.010)<br>*Change lower threshold* (DPT 5.010)<br>• *Change upper threshold* (DPT 7.001)<br>*Change lower threshold* (DPT 7.001)<br>• *Change upper threshold* (DPT 9.001)<br>*Change lower threshold* (DPT 9.001)<br>• *Change upper threshold* (DPT 9.004)<br>*Change lower threshold* (DPT 9.004)<br>• *Change upper threshold* (DPT 9.005)<br>*Change lower threshold* (DPT 9.005)<br>• *Change upper threshold* (DPT 9.021)<br>*Change lower threshold* (DPT 9.021)<br>• *Change upper threshold* (DPT 9.024)<br>*Change lower threshold* (DPT 9.024) |

**Prerequisites for visibility**

- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *Threshold*

#### 7.2.5.2.13 Change thresholds via i-bus® Tool

This parameter is used to define whether the thresholds set in ETS can be changed via i-bus® Tool.

| Option |
|---|

**Prerequisites for visibility**

- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *Threshold*

#### 7.2.5.2.14 Overwrite thresholds on download

This parameter is used to define whether the thresholds are overwritten while downloading the application to the device.

| Option | |
|---|---|
| *No* | The existing values in the device are not overwritten. |
| *Yes* | The existing values in the device are overwritten with the values defined in ETS. |

**Prerequisites for visibility**

- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*
    Or
  - Parameter *Change thresholds via i-bus® Tool* \ Option Yes

#### 7.2.5.2.15 Result if upper threshold is exceeded

This parameter is used to define the result of the function *Threshold* when the value received at the threshold input exceeds the upper threshold.

The result can be linked with any output within the device or output on the following Group Object:
- *Status Result [threshold]*

| Option | |
|---|---|
| *Unchanged* | The result of the function *Threshold* remains unchanged. |
| *1* | The result of the function *Threshold* is 1. |
| *0* | The result of the function *Threshold* is 0. |

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *Threshold*

#### 7.2.5.2.16 Minimum duration of the overshoot

This parameter is used to define how long the value received at the threshold input must exceed the threshold before the result of the function *Threshold* is updated.

| Option |
|---|
| *00:00:00 … 18:12:15 hh:mm:ss* |

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *Threshold*

#### 7.2.5.2.17 Monitor range between thresholds

This parameter is used to define whether the range between the thresholds is monitored and evaluated.

| Option | |
|---|---|
| *No* | The range between the thresholds is not monitored and evaluated. |
| *Yes* | The following dependent parameters are shown:<br>• *Minimum dwell time between the thresholds* |

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *Threshold*

#### 7.2.5.2.18 Minimum dwell time between the thresholds

This parameter is used to define how long the value received at the threshold input must be between the thresholds before an evaluation occurs.

| Option |
|---|
| *00:00:00 … 18:12:15 hh:mm:ss* |

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Monitor range between thresholds* \ Option *Yes*

#### 7.2.5.2.19 Result if lower threshold is dropped below

This parameter is used to define the result of the function *Threshold* when the value received at the threshold input falls below the lower threshold.

The result can be linked with any output within the device or output on the following Group Object:
- *Status Result [threshold]*

| Option | |
|---|---|
| *Unchanged* | The result of the function *Threshold* remains unchanged. |
| *1* | The result of the function *Threshold* is 1. |
| *0* | The result of the function *Threshold* is 0. |

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *Threshold*

#### 7.2.5.2.20 Minimum duration of the undershoot

This parameter is used to define how long the value received at the threshold input must undershoot the threshold before the result of the function *Threshold* is updated.

| Option |
|---|
| *00:00:00 … 18:12:15 hh:mm:ss* |

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *Threshold*

#### 7.2.5.2.21 Read input Group Objects after KNX voltage recovery and download

This parameter is used to define whether the "Threshold input" Group Objects are read after KNX voltage recovery or download, → parameter *Data point type of Group Object "Threshold input"*.

**Note**
To update the Group Objects after KNX voltage recovery, download or ETS reset, the read flags must be set for the corresponding Group Objects of the sending device.

| Option | |
|---|---|
| *No* | The input Group Objects are not read. |
| *Yes* | The input Group Objects are read. The result of the function *Threshold* is re-calculated. |

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *Threshold*

#### 7.2.5.2.22 Enable Group Objects "Status Result", "Status Input value between thresholds"

This parameter enables the following Group Objects:
- *Status Result [threshold]*
- *Status Input value between thresholds*

> **Note**
> This Group Object *Status Input value between thresholds* is available only if, in the parameter *Monitor range between thresholds*, the option *Yes* is selected.

| Option | |
|---|---|
| *No* | The Group Objects will not be enabled. |
| *Yes* | The following dependent parameters are shown:<br>• *Send value of Group Objects "Status Result", "Status Input value between thresholds"*<br><br>The following dependent Group Objects are displayed:<br>• *Status Result [threshold]*<br>• *Status Input value between thresholds* |

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *Threshold*

#### 7.2.5.2.23 Send value of Group Objects "Status Result", "Status Input value between thresholds"

This parameter is used to define when the values of the following Group Objects are sent on the bus (ABB i-bus® KNX):
- *Status Result [threshold]*
- *Status Input value between thresholds*

> **Note**
> Sending on request can be triggered by the reception of a telegram with the value 0 or 1 on Group Object *Request status values*.

| Option | |
|---|---|
| *No, update only* | The value is updated but is not sent. |
| *On change* | The value is sent on a change. |
| *On request* | The value is sent on request. |
| *On change or on request* | The value is sent on change or on request. |
| *After receiving input value* | The value is sent on the input Group Objects after reception of a telegram. The result is recalculated due to the reception of a telegram on the input Group Objects; the result does not necessarily need to change. |
| *After receiving input value or on request* | The value is sent on the input Group Objects after reception of a telegram or on request. The result is recalculated due to the reception of a telegram on the input Group Objects; the result does not necessarily need to change. |

**Prerequisites for visibility**
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Enable Group Objects "Status Result", "Status Input value between thresholds"* \ Option *Yes*

## 7.2.6 Parameter window Blind template

In this parameter window, the functions can be set for all blind outputs.

The parameterization options in the template and in the parameter windows for the blind outputs are identical.

**Note**
For each output, you can decide whether to use the parameterization from the template (→ parameter *Parameter setting*). The individual setting for an output is made in the respective parameter window.

## 7.2.7 Parameter window Shutter template

In this parameter window, the functions can be set for all shutter outputs.

The parameterization options in the template and in the parameter windows for the shutter outputs are identical.

**Note**
For each output, you can decide whether to use the parameterization from the template (→ parameter *Parameter setting*). The individual setting for an output is made in the respective parameter window.

## 7.2.8 Parameter window Output X

**Note**
An individual description can be added to the name of the parameter window, → parameter *Output X description*.

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Output X application* \ all options except *Deactivated*

### 7.2.8.1 Parameter window Basic settings [blind, shutter]

> **Note**
> If several outputs are to be set to the same values, parameterization can be performed in the template.

The following settings can be made in this parameter window:

- Connection with the central Group Objects
- Enable function-specific Group Objects
- Define reaction during fault
- Define predefined positions
- Define predefined working position

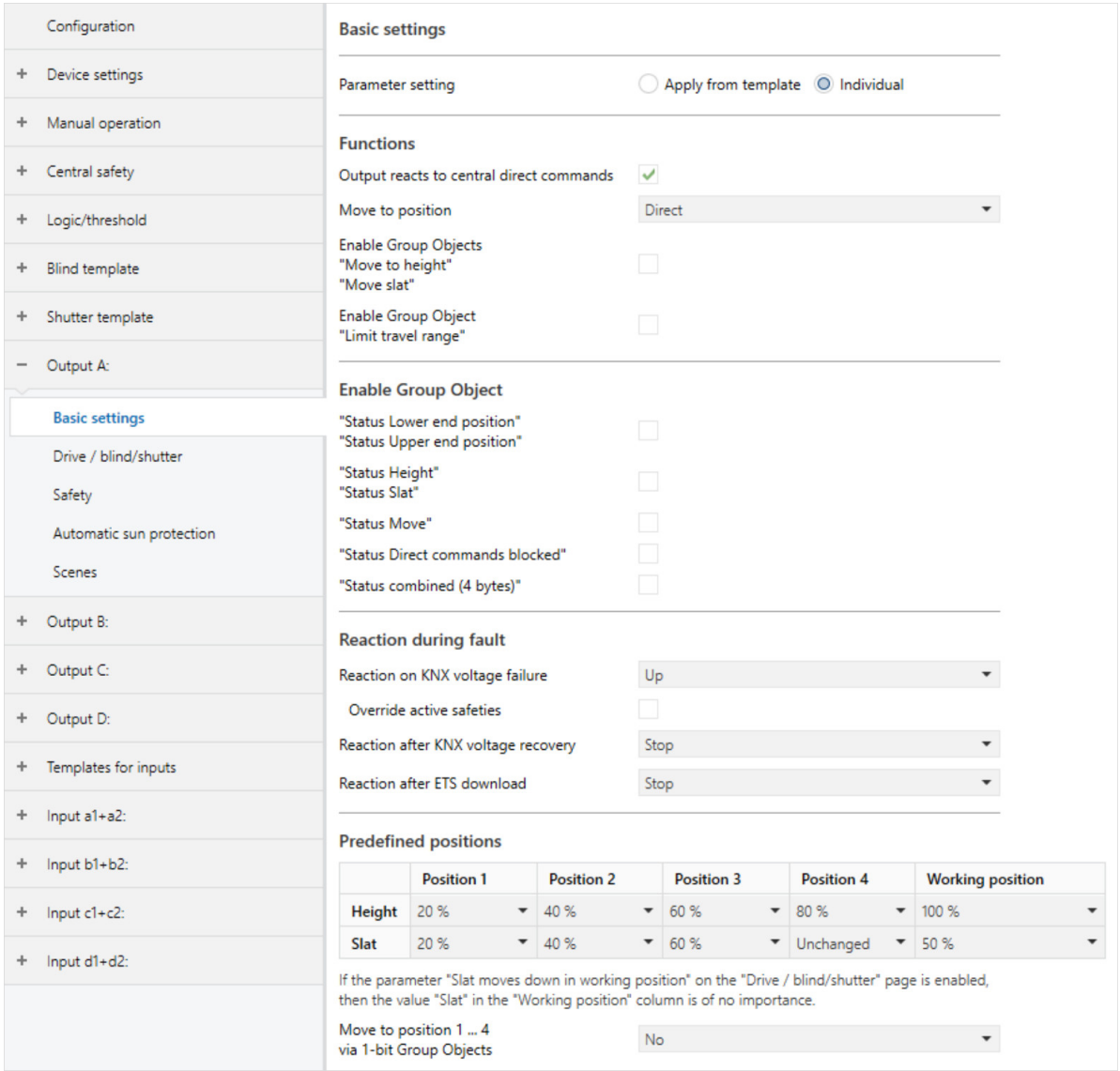



Fig. 14: Parameter window Basic settings

**This parameter window includes the following parameters:**



**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*

#### 7.2.8.1.1 Parameter setting

This parameter is used to define whether the settings for the parameter window are adopted from the template or each parameter is set individually.

| Option | |
|---|---|
| *Apply from template* | The settings for the parameters are adopted from the template. |
| *Individual* | The parameters can be set individually. |

#### 7.2.8.1.2 Output reacts to central direct commands

This parameter is used to define whether the output reacts to central direct commands, → parameter *Enable central Group Objects for direct commands*.

More information: → Direct operation, Page 190.

| Option |
|---|
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.3 Move to position

This parameter is used to define how the blind/shutter is moved to the target position.

> **Note**
> If the function *Working position* is used, positions cannot be indirectly approached via the lower end position.

More information: → Direct and indirect movement to the position, Page 185.

| Option | |
|---|---|
| *Direct* | The Blind/Shutter is moved directly to the target position. |
| *Indirectly via upper end position* | The Blind/Shutter is moved to the upper end position first, then to the target position. |
| *Indirectly via lower end position* | The Blind/Shutter is moved to the lower end position first, then to the target position. |
| *Indirectly via shortest way* | The Blind/Shutter is moved to the closer end position first, then to the target position. |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.4 Enable Group Objects "Move to height", "Move slat"

This parameter enables the following Group Objects:

- *Move to height*
- *Move slat*

> **Note**
> This Group Object *Move slat* is available only if, in the parameter *Output X application*, the option *Blind* is selected.

| Option | |
|---|---|
| *No* | The Group Objects will not be enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Move to height*<br>• *Move slat* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.5 Enable Group Object "Limit travel range"

This parameter enables the following Group Object:
- *Limit travel range*

> **Note**
> Travel range limits are not taken into account during reference or calibration movements.

More information: → Travel range limit, Page 186.

| Option | |
|---|---|
| *No* | The travel range is not limited. |
| *Yes* | The following dependent parameters are shown:<br>• *Upper limit*<br>• *Lower limit*<br>• *Move to limitation on activation*<br>• *Refresh KNX state on deactivation*<br>• *Limitation valid when safety is active*<br><br>The following dependent Group Objects are displayed:<br>• *Limit travel range* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.6 Upper limit

This parameter is used to define the upper limit for the travel range limit.

More information: → Travel range limit, Page 186.

| Option |
|---|
| *0 … 100 %* |

**Prerequisites for visibility**
- Parameter window *Basic settings [blind, shutter]* \ Parameter *Enable Group Object "Limit travel range"* \ Option *Yes*

#### 7.2.8.1.7 Lower limit

This parameter is used to define the lower limit for the travel range limit.

More information: → Travel range limit, Page 186.

| Option |
|---|
| *0 … 80 …100 %* |

**Prerequisites for visibility**
- Parameter window *Basic settings [blind, shutter]* \ Parameter *Enable Group Object "Limit travel range"* \ Option *Yes*

#### 7.2.8.1.8 Move to limitation on activation

This parameter is used to define whether the blind/shutter is moved to the upper or lower limit when travel range limit is activated.

**Note**
Selecting the option *Yes* moves the blind/shutter to whichever limit is closer when the travel range limit is activated.

**Note**
The positions can be limited by the working position → Function Working position (shading position), Page 31.

More information: → Travel range limit, Page 186.

| Option |
| --- |
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Basic settings [blind, shutter]* \ Parameter *Enable Group Object "Limit travel range"* \ Option *Yes*

#### 7.2.8.1.9 Refresh KNX state on deactivation

This parameter is used to define whether the blind/shutter is moved to the refreshed KNX state when the travel range limit is deactivated.

More information: → Refreshed KNX state, Page 193.

| Option |
| --- |
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Basic settings [blind, shutter]* \ Parameter *Enable Group Object "Limit travel range"* \ Option *Yes*

#### 7.2.8.1.10 Limitation valid when safety is active

This parameter is used to define whether travel range limit also applies when a safety is active.

More information: → Travel range limit, Page 186.

| Option |
| --- |
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Basic settings [blind, shutter]* \ Parameter *Enable Group Object "Limit travel range"* \ Option *Yes*

#### 7.2.8.1.11 Restore active limitation after KNX voltage recovery or ETS reset

This parameter is used to define whether the limitation that was active before KNX voltage failure or ETS reset is reactivated after KNX voltage recovery.

| Option |
|---|
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Basic settings [blind, shutter]* \ Parameter *Enable Group Object "Limit travel range"* \ Option *Yes*

#### 7.2.8.1.12 Enable Group Object "Status Upper end position", "Status Lower end position"

This parameter enables the following Group Objects:

- *Status Upper end position*
- *Status Lower end position*

| Option | |
|---|---|
| *No* | The Group Objects will not be enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Status Upper end position*<br>• *Status Lower end position* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.13 Enable Group Object "Status Height", "Status Slat"

This parameter enables the following Group Objects:

- *Status Height*
- *Status Slat*

**Note**

This Group Object *Status Slat* is available only if, in the parameter *Output X application*, the option *Blind* is selected.

| Option | |
|---|---|
| *No* | The Group Objects will not be enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Status Height*<br>• *Status Slat* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.14 Enable Group Object "Status Move"

This parameter enables the following Group Object:
- *Status Move*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Status Move* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.15 Enable Group Object "Status Direct commands blocked"

This parameter enables the following Group Object:
- *Status Direct commands blocked*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Status Direct commands blocked* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.16 Enable Group Object "Status combined (4 bytes)"

This parameter enables the following Group Object:
- *Status combined (4 bytes)*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Status combined (4 bytes)* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.17 Reaction on KNX voltage failure

This parameter is used to define how the blind/shutter reacts on KNX voltage failure.

**Note**
The safety functions have priority over all other functions and priorities.
More information: → Priorities, Page 181.

**Note**
If, in the parameter *Reaction on KNX voltage failure*, the option *Up* or *Down* is selected, then travel range limits are not taken into account.

| Option | |
|---|---|
| *No reaction* | If the blind/shutter is moving, it will continue until reaching the target position. If the blind/shutter is at rest, its position will remain unchanged. |
| *Up* | Acts like an Up telegram on the Group Object *Up/down*. |
| *Down* | Acts like a Down telegram on the Group Object *Up/down*. |
| *Stop* | Acts like a Stop telegram on one of the following Group Objects:<br>• *Step/stop*<br>• *Stop* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.18 Override active safeties

**CAUTION – Damage or injuries if the active safeties are overridden**
If the active safeties are overridden, the reaction on KNX voltage failure is given the highest priority. The connected drive may react unexpectedly. Sudden movements of the peripherals (e.g. blind/shutter, ventilation flap, blind) may crush body parts or cause damage to property.
▸ Deactivate override before working on peripherals.

This parameter is used to define whether the active safeties are overridden in the event of KNX voltage failure.

| Option | |
|---|---|
| *No* | The active safeties are not overridden. |
| *Yes* | The active safeties are overridden. The reaction defined in the parameter *Reaction on KNX voltage failure* is given the highest priority, → Priorities, Page 181. |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.19 Reaction after KNX voltage recovery

This parameter is used to define how the blind/shutter reacts after KNX voltage recovery.

**Note**
If the function *Logic* or the function *Threshold* is connected to the output, an unexpected blind/shutter direction change may occur after KNX voltage recovery and after ETS download.
▸ Select option *Stop*.

| Option | |
|---|---|
| *No reaction* | If the blind/shutter is moving, it will continue until reaching the target position. If the blind/shutter is at rest, its position will remain unchanged. |
| *Up* | Acts like an Up telegram on the Group Object *Up/down*. |
| *Down* | Acts like a Down telegram on the Group Object *Up/down*. |
| *Working position* | The positions defined in the working position are adopted.<br>The positions are specified with the following parameters:<br>• *Height working position*<br>• *Slat working position* |
| *Stop* | Acts like a Stop telegram on one of the following Group Objects:<br>• *Step/stop*<br>• *Stop* |
| *Position x* | The predefined position x (x = 1 … 4) is adopted.<br>The predefined positions are specified with the following parameters:<br>• *Height position x*<br>• *Slat position x*<br>• *Height working position*<br>• *Slat working position* |
| *Scene assignment x* | The positions defined in scene assignment x (x = 1 … 16) are adopted.<br>The positions are specified with the following parameters:<br>• *Scene assignment x height (%)*<br>• *Scene assignment x slat (%)* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

### 7.2.8.1.20 Reaction after ETS download

This parameter is used to define the Blind/Shutter reaction after an ETS download.

**Note**

If the function *Logic* or the function *Threshold* is connected to the output, an unexpected blind/shutter direction change may occur after KNX voltage recovery and after ETS download.

▸ Select option *Stop*.

| Option | |
|---|---|
| *No reaction* | If the blind/shutter is moving, it will continue until reaching the target position. If the blind/shutter is at rest, its position will remain unchanged. |
| *Up* | Acts like an Up telegram on the Group Object *Up/down*. |
| *Down* | Acts like a Down telegram on the Group Object *Up/down*. |
| *Working position* | The positions defined in the working position are adopted.<br>The positions are specified with the following parameters:<br>• *Height working position*<br>• *Slat working position* |
| *Stop* | Acts like a Stop telegram on one of the following Group Objects:<br>• *Step/stop*<br>• *Stop* |
| *Position x* | The predefined position x (x = 1 … 4) is adopted.<br>The predefined positions are specified with the following parameters:<br>• *Height position x*<br>• *Slat position x*<br>• *Height working position*<br>• *Slat working position* |
| *Scene assignment x* | The positions defined in scene assignment x (x = 1 … 16) are adopted.<br>The positions are specified with the following parameters:<br>• *Scene assignment x height (%)*<br>• *Scene assignment x slat (%)* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.21 Height position x

This parameter is used to define the height for the predefined position x.

More information: → Predefined positions, Page 190.

| Option |
| --- |
| *Unchanged* |
| *0 … 100 %* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.22 Slat position x

This parameter is used to define the slat position for the predefined position x.

More information: → Predefined positions, Page 190.

| Option |
| --- |
| *Unchanged* |
| *0 … 100 %* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.23 Height working position

This parameter is used to define the first lower end position.

**Note**
If, in the parameter *Slat moves down in working position*, the option *No* is selected, the value is treated as a predefined position.

For more information, see:
→ Predefined positions, Page 190
→ Function Working position (shading position), Page 31

| Option |
| --- |
| *Unchanged* |
| *0 … 100 %* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.24 Slat working position

This parameter defines the slat position in the working position.

For more information, see:
→ Predefined positions, Page 190
→ Function Working position (shading position), Page 31

**Note**
If, in the parameter *Slat moves down in working position*, the option *No* is selected, the value is treated as a predefined position.
If, in the parameter *Slat moves down in working position*, the option *Yes* is selected, the value is ignored.

| Option |
|---|
| *Unchanged* |
| *0 … 100 %* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.1.25 Move to position 1 … 4 via 1-bit Group Objects

This parameter is used to define whether the predefined positions x (x = 1 … 4) can be adopted via separate Group Objects.

More information: → Predefined positions, Page 190.

| Option | |
|---|---|
| *No* | The predefined positions cannot be adopted via separate Group Objects. |
| *1 Group Object for 1 position* | Each predefined position can be adopted via a separate Group Object.<br>The following dependent Group Objects are displayed:<br>• *Move to position x* |
| *1 Group Object for 2 positions* | Two predefined positions can be adopted via a combined Group Object.<br>The following dependent Group Objects are displayed:<br>• *Move to position x/y* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]* \ Parameter *Parameter setting* \ Option *Individual*

### 7.2.8.2 Parameter window Drive / blind/shutter

**Note**
If several outputs are to be set to the same values, parameterization can be performed in the template.

The following settings can be made in this parameter window:

- Set travel times for drive
- Set adjustment times and slat adjustment (*Blind* application only)
- Set blind/shutter type (*Shutter* application only)
- Define how the function *Working position* is used

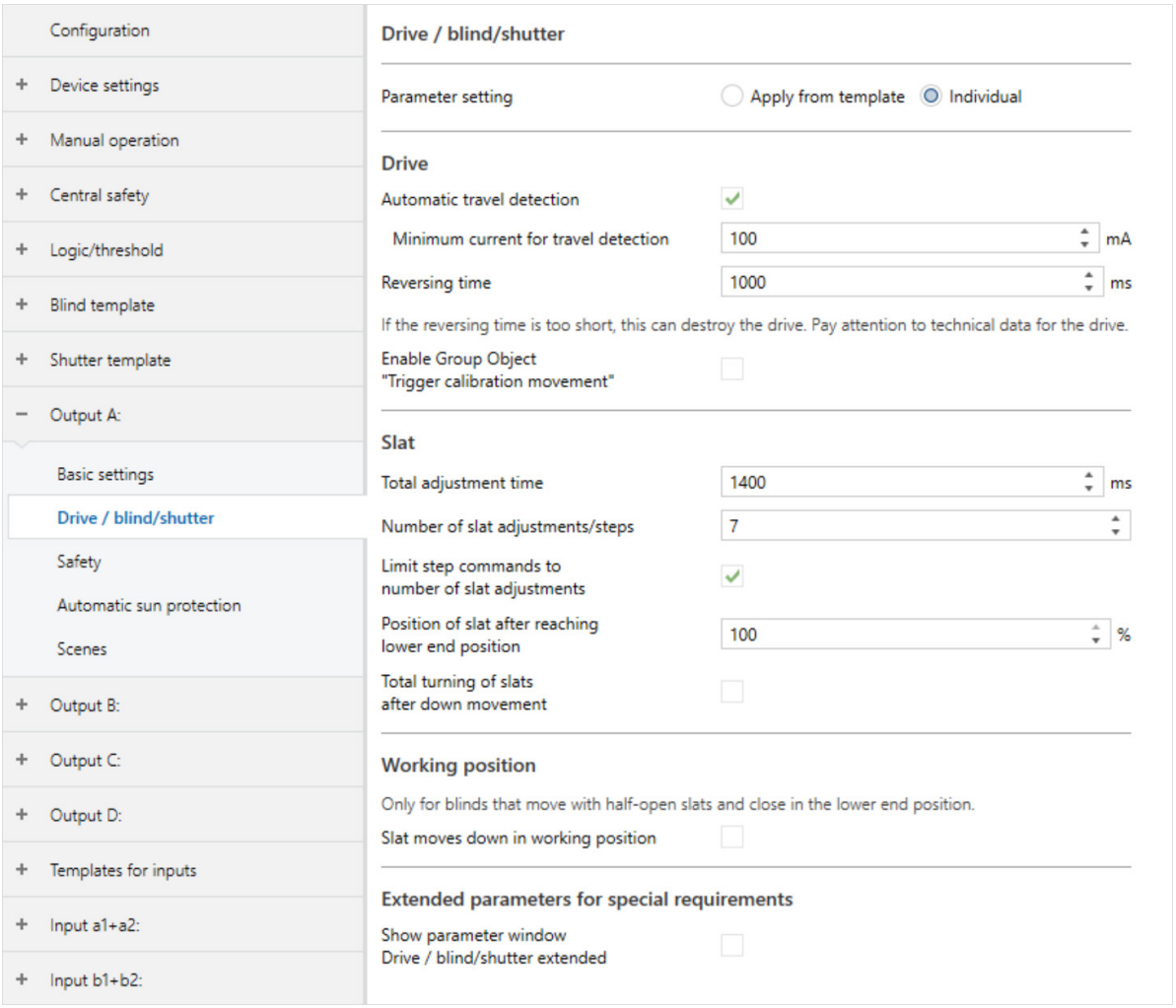



Fig. 15: Parameter window Drive / blind/shutter

**This parameter window includes the following parameters:**



**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*

### 7.2.8.2.1 Parameter setting

This parameter is used to define whether the settings for the parameter window are adopted from the template or each parameter is set individually.

| Option | |
|---|---|
| *Apply from template* | The settings for the parameters are adopted from the template. |
| *Individual* | The parameters can be set individually. |

#### 7.2.8.2.2 Automatic travel detection

This parameter is used to define whether automatic travel detection is used.

> **Note**
> When using electronic drives with a permanently applied power supply, automatic travel detection is not possible because the power is not drawn via the relay contacts of the device. When using electronic drives of this type, travel times must be determined and entered manually. Electronic drives with soft start or soft stop are not suitable for controlling via the device.

More information: → Automatic travel detection, Page 183.

| Option | |
|---|---|
| *No* | The following dependent parameters are shown:<br>• *Travel time up*<br>• *Travel time down*<br>• *Disconnect output from power after*<br>• *Enable Group Object "Trigger reference movement up/down"* |
| *Yes* | The following dependent parameters are shown:<br>• *Minimum current for travel detection*<br>• *Enable Group Object "Trigger calibration movement"* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.2.3 Minimum current for travel detection

In this parameter, the minimum current (standby current for electronic drives) is taken from the data sheet of the drive.

More information: → Automatic travel detection, Page 183.

| Option |
|---|
| *50 … 100 … 2000 mA* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Automatic travel detection* \ Option *Yes*

#### 7.2.8.2.4 Travel time up

This parameter is used to set how long the blind/shutter takes to move from the lower end position (100 %) to the upper end position (0 %). The travel time must be measured manually.

> **Note**
> Physical and weather-related circumstances (frost, UV radiation, long-term use or use of heavy Blind/Shutter types) mean that differing total travel times may result for a complete movement from the lower end position to the upper end position (Up) and from the upper end position to the lower end position (Down). The total travel times can be set separately to permit exact positioning of the Blind/Shutter.

| Option |
|---|
| *1 … 60 … 600 s* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Automatic travel detection* \ Option *No*

#### 7.2.8.2.5 Travel time down

This parameter is used to set how long the blind/shutter takes to move from the upper end position (0 %) to the lower end position (100 %). The travel time must be measured manually.

**Note**
Physical and weather-related circumstances (frost, UV radiation, long-term use or use of heavy Blind/Shutter types) mean that differing total travel times may result for a complete movement from the lower end position to the upper end position (Up) and from the upper end position to the lower end position (Down). The total travel times can be set separately to permit exact positioning of the Blind/Shutter.

| Option |
|---|
| *1 … 60 … 600 s* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Automatic travel detection* \ Option *No*

#### 7.2.8.2.6 Disconnect output from power after

This parameter is used to define when the output is deenergized after the upper or lower end position is reached.

**Note**
The drive deenergizes by means of the integrated limit switches after reaching a physical end position. An overrun time can be set so that the end position is reliably reached. When the drive is switched off, the voltage remains applied for a short time so as to move the drive to the end position in a defined manner. The position calculated in the device is the basis for determining the end position.

| Option |
|---|
| *End position, no overrun* |
| *End position + 2 % overrun* |
| *End position + 5 % overrun* |
| *End position + 10 % overrun* |
| *End position + 20 % overrun* |
| *Total travel time + 10 % overrun* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Automatic travel detection* \ Option *No*

#### 7.2.8.2.7 Reversing time

**CAUTION**
Setting a reversing time that is too short can damage the connected drive.
▸ Observe the technical data of the connected drive.

This parameter is used to set the duration of the reversing time.

**Note**
The reversing time is the required pause while the Blind/Shutter changes direction. The device must be deenergized during this period.

**Note**
If KNX voltage failure occurs, a reversing time of 1 second is always used. During operation with KNX voltage present, the value that was set applies.

| Option |
|---|
| *50 ... 1000 ... 5000 ms* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Parameter setting* \ Option *Individual*

### 7.2.8.2.8 Swap direction of rotation up/down

This parameter is used to swap the control of the relays (direction of rotation of the motor up/down).

**Note**
If the blind/shutter moves down when an up telegram is received (or vice versa), the motor is connected incorrectly. The error can be corrected with this parameter, but it is generally recommended to swap the conductors at the terminals.

| Option |
|---|
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Parameter setting* \ Option *Individual*

### 7.2.8.2.9 Enable Group Object "Trigger calibration movement"

This parameter enables the following Group Object:

- *Trigger calibration movement*

More information: → Calibration movement, Page 183.

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Trigger calibration movement* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Automatic travel detection* \ Option *Yes*

#### 7.2.8.2.10 Enable Group Object "Trigger reference movement up/down"

This parameter enables the following Group Object:
- *Trigger reference movement up/down*

More information: → Reference movement, Page 182.

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent parameters are shown:<br>• *Position after reference movement*<br><br>The following dependent Group Objects are displayed:<br>• *Trigger reference movement up/down* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Automatic travel detection* \ Option *No*

#### 7.2.8.2.11 Position after reference movement

This parameter is used to define the blind/shutter position after a reference movement.

| Option | |
|---|---|
| *Remain in reference position* | The Blind/Shutter remains in the "Upper end position" or "Lower end position" as the reference position. |
| *Move to position before reference movement* | The Blind/Shutter is moved to the position it was in before the reference movement. |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Enable Group Object "Trigger reference movement up/down"* \ Option *Yes*

#### 7.2.8.2.12 Total adjustment time

This parameter is used to set the total duration for slat turning.

**Note**
The duration of the total adjustment time must be determined manually.

**Note**
The device cannot process times shorter than 50 ms.

| Option |
|---|
| *50 … 1,400 … 60,000 ms* |

**Prerequisites for visibility**
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.2.13 Number of slat adjustments/steps

This parameter is used to define the number of slat adjustments required to adjust the slats from fully open to fully closed.

| Option |
| --- |
| *1 … 7 … 60* |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.2.14 Limit step commands to number of slat adjustments

This parameter is used to define whether the execution of step commands is limited to the number of slat adjustments set in the parameter *Number of slat adjustments/steps*.

**Note**
By selecting the option *No*, the blind can be lowered with "Unlimited Steps" (continuously repeating the step command). If the function *Working position* is used, the blind can be moved beyond the first lower end position using "Unlimited Steps".

| Option |
| --- |
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.2.15 Position of slat after reaching lower end position

The slats are closed after the blind/shutter reaches the lower end position (100 %). This parameter is used to define a deviating slat position after reaching the lower end position.

- 100 %: The function is deactivated, the slats are closed
- 1 … 99 %: The slats will be moved to the corresponding intermediate position
- 0 %: The slats are open

| Option |
| --- |
| *0 … 100 %* |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.2.16 Total turning of slats after down movement

This parameter is used to define whether the slats are fully adjusted after a down movement of the blind/shutter.

**Note**
This function is required mainly to release jammed slats between the panes of a window.

**Note**
The turning of the slats can be limited by the working position → Function Working position (shading position), Page 31.

| Option | |
|---|---|
| *No* | The slats are not adjusted after a down movement. |
| *Yes* | The slats are fully adjusted once (closed – open – closed) after a down movement. The slats are not adjusted if a down movement is interrupted by a stop command. |

**Prerequisites for visibility**
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.2.17 Slat moves down in working position

This parameter is used to define the use of blind types that can be moved with open or half-open slats.

More information: → Function Working position (shading position), Page 31.

| Option | |
|---|---|
| *No* | The settings in the following parameters are treated as predefined positions:<br>• *Height working position*<br>• *Slat working position* |
| *Yes* | The following dependent parameters are shown:<br>• *Adjustment time from 0% to working position*<br><br>The following dependent Group Objects are displayed:<br>• *Up/working position* |

**Prerequisites for visibility**
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.2.18 Adjustment time from 0% to working position

This parameter is used to set how long it takes for the slats to adjust from 0 % to the working position.

More information: → Function Working position (shading position), Page 31.

| Option |
|---|
| *50 … 800 … 60000 ms* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Slat moves down in working position* \ Option *Yes*

#### 7.2.8.2.19 Type

This parameter is used to define the blind/shutter type used.

| Option | |
|---|---|
| *Shutter* | The following dependent parameters are shown:<br>• *Allow step commands* |
| *Zipscreen* | The following dependent parameters are shown:<br>• *Additional overrun time for up/down*<br>• *Additional overrun time with safeties*<br>• *Send status messages* |
| *Fabric awning* | The following dependent parameters are shown:<br>• *Fabric tensioning* |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Shutter*
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.2.20 Allow step commands

This parameter is used to define whether the shutter can be moved with step commands.

| Option | |
|---|---|
| *No* | The shutter cannot be moved with step commands.<br><br>The following dependent Group Objects are displayed:<br>• *Stop* |
| *Yes* | The following dependent parameters are shown:<br>• *Step time*<br><br>The following dependent Group Objects are displayed:<br>• *Step/stop* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Type* \ Option *Shutter*

#### 7.2.8.2.21 Step time

This parameter is used to define the duration of a step command.

| Option |
|---|
| *50 … 1000 … 10000 ms* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Allow step commands* \ Option *Yes*

#### 7.2.8.2.22 Additional overrun time for up/down

This parameter is used to define an additional overrun time. The additional overrun time only applies to movements to the upper or lower end position and is added to the time specified in the parameter *Disconnect output from power after*.

**Example**
In strong winds, automatic overload tripping may switch off the drive of a zipscreen. An additional overrun time ensures that the zipscreen is moved to the end position in a controlled way when the drive restarts.

| Option |
| --- |
| *None* |
| *0.5 x travel time* |
| *1 x travel time* |
| *2 x travel time* |
| *3 x travel time* |
| *4 x travel time* |
| *5 x travel time* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Type* \ Option *Zipscreen*

### 7.2.8.2.23 Additional overrun time with safeties

This parameter is used to define an additional overrun time. The additional overrun time only applies when safeties are active, to movements to the upper or lower end position, and is added to the time defined in the parameter *Disconnect output from power after*.

**Example**
In strong winds, automatic overload tripping may switch off the drive of a zipscreen. An additional overrun time ensures that the zipscreen is moved to the end position in a controlled way when the drive restarts.

| Option |
| --- |
| *None* |
| *0.5 x travel time* |
| *1 x travel time* |
| *2 x travel time* |
| *3 x travel time* |
| *4 x travel time* |
| *5 x travel time* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Type* \ Option *Zipscreen*

### 7.2.8.2.24 Send status messages

This parameter is used to define when the status messages of the zipscreen are sent.

| Option |
| --- |
| *After travel time has expired* |
| *After additional overrun time has expired* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Type* \ Option *Zipscreen*

#### 7.2.8.2.25 Fabric tensioning

This parameter is used to define whether to tension the blind/shutter.

More information: → Fabric tensioning, Page 189.

| Option | |
|---|---|
| *No* | The blind fabric is not tensioned. |
| *After each down movement* | The blind fabric is tensioned after each down movement.<br><br>The following dependent parameters are shown:<br>• *Duration* |
| *After reaching lower end position* | The blind fabric is tensioned after reaching the lower end position.<br><br>The following dependent parameters are shown:<br>• *Duration* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Type* \ Option *Fabric awning*

#### 7.2.8.2.26 Duration

This parameter is used to set the duration of the tensioning time.

More information: → Fabric tensioning, Page 189.

| Option |
|---|
| *50 … 1000 … 10000 ms* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Fabric tensioning* \ Option *After each down movement* / *After reaching lower end position*

#### 7.2.8.2.27 Show parameter window drive / blind/shutter extended

This parameter unhides the parameter window *Drive / blind/shutter extended*.

| Option | |
|---|---|
| *No* | The parameter window is not shown. |
| *Yes* | The following dependent parameter windows are shown:<br>• *Drive / blind/shutter extended* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Parameter setting* \ Option *Individual*

### 7.2.8.3 Parameter window Drive / blind/shutter extended

**Note**
If several outputs are to be set to the same values, parameterization can be performed in the template.

The following settings can be made in this parameter window:
- Set drive properties
- Set dead times
- Set slat functions (*Blind* application only)

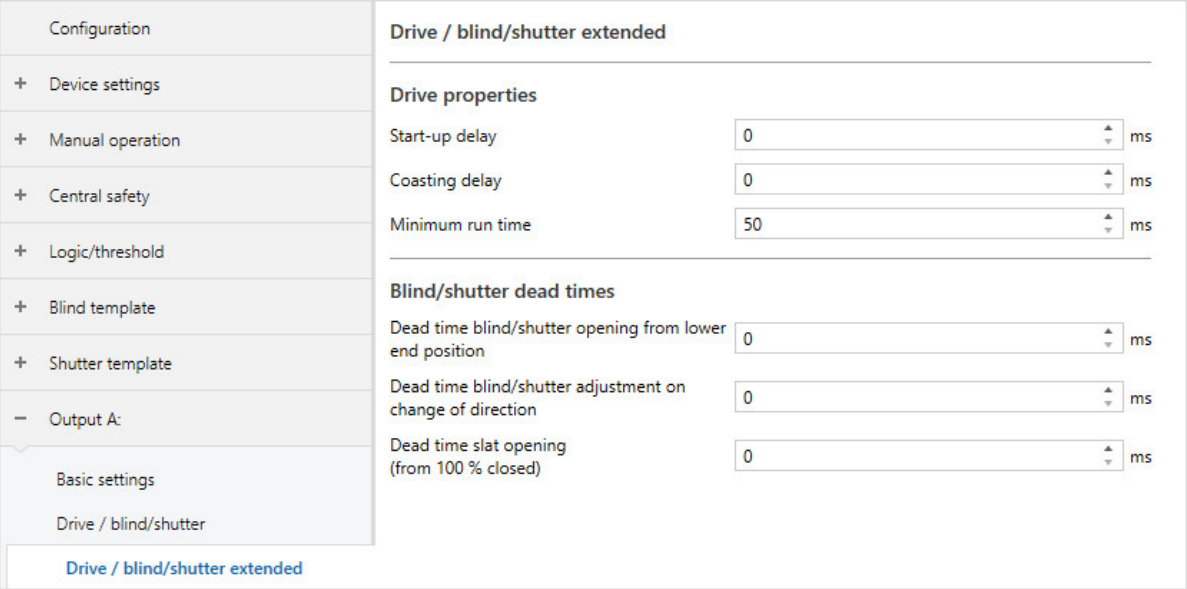



Fig. 16: Parameter window Drive / blind/shutter extended

**This parameter window includes the following parameters:**
→ Start-up delay, Page 95
→ Coasting delay, Page 96
→ Minimum run time, Page 96
→ Dead time blind/shutter opening from lower end position, Page 96
→ Dead time blind/shutter adjustment on change of direction, Page 96
→ Dead time slat movement (from 100 % closed), Page 97

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Show parameter window drive / blind/shutter extended* \ Option *Yes*

#### 7.2.8.3.1 Start-up delay

This parameter is used to define the duration of the start-up delay.

More information: → Start-up and coasting delay and minimum run time, Page 187.

| Option |
| --- |
| *0 … 999 ms* |

#### 7.2.8.3.2 Coasting delay

This parameter is used to define the duration of the coasting delay.

More information: → Start-up and coasting delay and minimum run time, Page 187.

| Option |
| --- |
| *0 … 999 ms* |

#### 7.2.8.3.3 Minimum run time

**CAUTION**
Setting a minimum run time that is too short can damage the connected drive.
- Observe the technical data of the connected drive.

This parameter is used to set the minimum run time for the drive.

More information: → Start-up and coasting delay and minimum run time, Page 187.

| Option |
| --- |
| *50 … 600 ms* |

#### 7.2.8.3.4 Dead time blind/shutter opening from lower end position

**Note**
If the function *Working position* is used, the position information relates to the second lower end position → Function Working position (shading position), Page 31.

This parameter is used to set the dead time compensation for blind/shutter opening. The "Blind/shutter opening" dead time describes the time between the reception of the up command and the start of blind/shutter opening.

More information: → Dead times, Page 188.

**Example**
1. The Blind/Shutter is in the lower end position (= 100 %).
2. The telegram value 50 % is received.
   ⇨ The motor shaft starts turning. The Blind/Shutter remains unchanged in the lower end position.
3. The visible upward movement of the Blind/Shutter starts after the dead time has elapsed.
   ⇨ The Blind/Shutter does not reach the required position 50 %.

⇨ Due to the compensation set, the motor shaft turns for longer and the Blind/Shutter moves to the required position 50 %.

| Option |
| --- |
| *0 … 5,000 ms* |

#### 7.2.8.3.5 Dead time blind/shutter adjustment on change of direction

This parameter is used to set the dead time compensation for blind/slat adjustment after a direction change. The "Blind/shutter adjustment" dead time describes the time between the reception of a direction changing movement command and the execution of the movement command.

More information: → Dead times, Page 188.

**Example**

1. The blind/shutter is open (= 50 %).
2. The "Blind/Shutter down" telegram is received.
   ⇨ The blind/shutter closes to 60 %.
3. The "Blind/Shutter up" telegram is received (direction change).
   ⇨ The blind/shutter opens to 55 %.

⇨ Due to the compensation set, the motor shaft turns for longer and the blind/shutter moves to the required position.

| Option |
| --- |
| *0 … 5,000 ms* |

### 7.2.8.3.6 Dead time slat movement (from 100 % closed)

This parameter is used to set the dead time compensation for slat opening from the closed position (= 100 %). The "Slat opening" dead time describes the time between the reception of the open command and the start of slat opening.

More information: → Dead times, Page 188.

**Example**

1. The slats are closed (= 100 %).
2. The "Open slat" telegram is received.
   ⇨ The motor shaft starts turning. The slats remain closed and unchanged.
3. The visible slat opening starts after the dead time has elapsed.
   ⇨ The slat does not reach the required position.

⇨ Due to the compensation set, the motor shaft turns for longer and the slat moves to the required position.

| Option |
| --- |
| *0 … 5,000 ms* |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*

### 7.2.8.4 Parameter window Safety

**Note**
If several outputs are to be set to the same values, parameterization can be performed in the template.

The following settings can be made in this parameter window:
- Enable safety Group Objects of the output
- Assign safeties and priorities
- Define reaction on active safety

For more information, see:
→ Output safety, Page 24
→ Assignment of safeties and priorities, Page 25

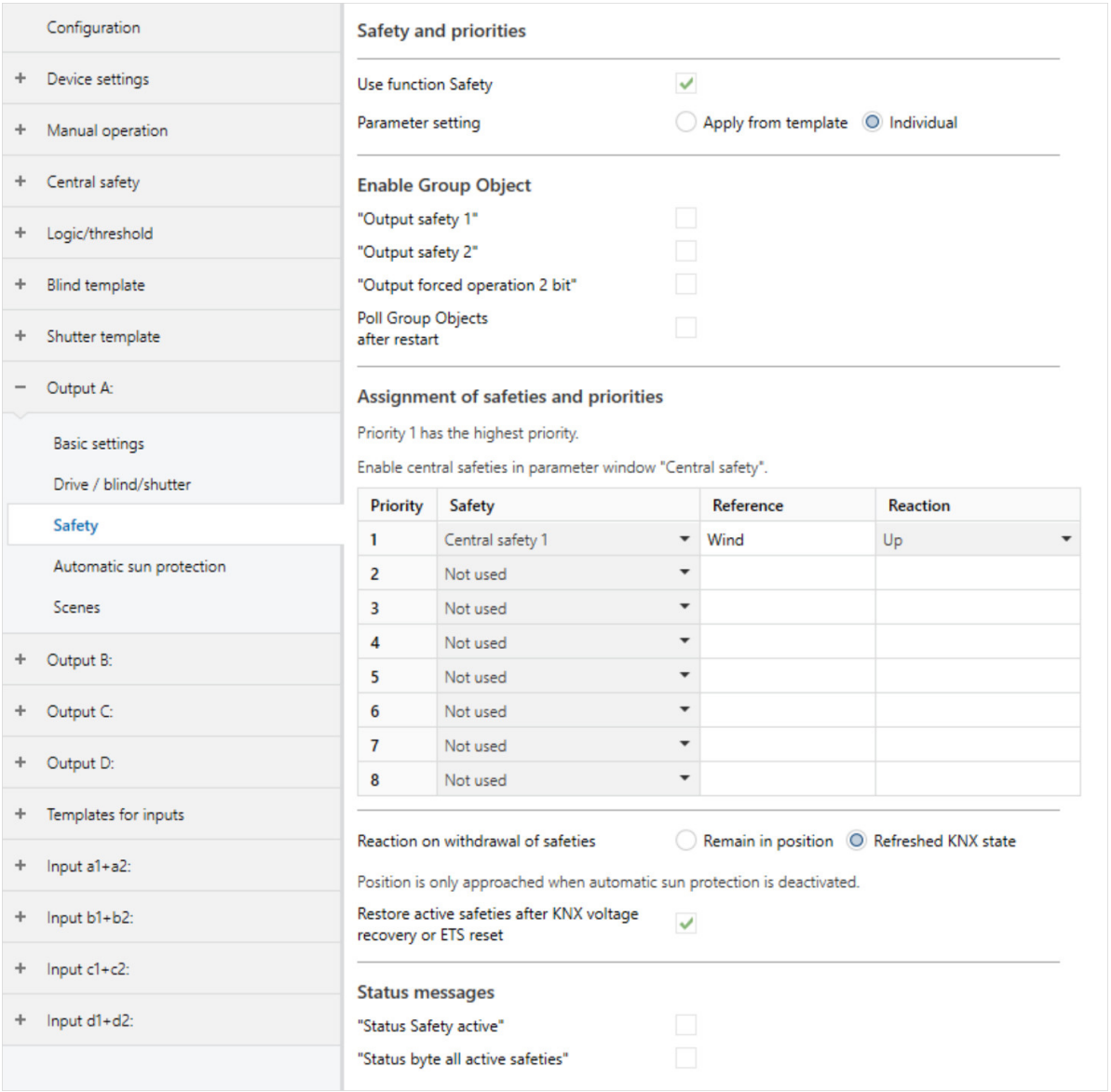



Fig. 17: Parameter window Safety

**This parameter window includes the following parameters:**



**Prerequisites for visibility**

- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Safety* \ Option *Yes*

### 7.2.8.4.1 Use function Safety

This parameter is used to activate the use of the function *Safety* for the output.

| Option | |
|---|---|
| *No* | Use of the function is not activated. |
| *Yes* | The following dependent parameters are shown:<br>• *Parameter setting* |

### 7.2.8.4.2 Parameter setting

This parameter is used to define whether the settings for the parameter window are adopted from the template or each parameter is set individually.

| Option | |
|---|---|
| *Apply from template* | The settings for the parameters are adopted from the template. |
| *Individual* | The parameters can be set individually.<br><br>The following dependent parameters are shown:<br>• *Enable Group Object "Output safety x"*<br>• *Enable Group Object "Output forced operation 2 bit"*<br>• *Poll Group Objects after restart*<br>• *Priority x safety*<br>• *Priority x reference*<br>• *Priority x reaction*<br>• *Reaction on withdrawal of safeties*<br>• *Restore active safeties after KNX voltage recovery or ETS reset*<br>• *Status messages "Status Safety active"*<br>• *Status messages "Status byte all active safeties"* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Use function Safety* \ Option *Yes*

#### 7.2.8.4.3 Enable Group Object "Output safety x"

This parameter enables the following Group Object:
- *Output safety x*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent parameters are shown:<br>• *Description*<br><br>The following dependent Group Objects are displayed:<br>• *Output safety x* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.4.4 Description

This parameter is used to specify an individual description for the following Group Objects:
- *Output safety x*

The description is displayed at the following points:
- In the name of the corresponding Group Object
- As a fixed option in the parameter *Priority x reference*

| Option | |
|---|---|
| *Free text entry* | Maximum 24 ASCII characters; the maximum number of characters may vary for other character formats. |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Enable Group Object "Output safety x"* \ Option *Yes*

#### 7.2.8.4.5 Enable Group Object "Output forced operation 2 bit"

This parameter enables the following Group Object:
- *Output forced operation 2 bit*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent parameters are shown:<br>• *Description*<br>• *Height (%) forced operation "X"*<br>• *Slat (%) forced operation "X"*<br><br>The following dependent Group Objects are displayed:<br>• *Output forced operation 2 bit* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.4.6 Description

This parameter is used to specify an individual description for the following Group Object:
- *Output forced operation 2 bit*

The description is displayed at the following points:
- In the name of the corresponding Group Object
- As a fixed option in the parameter *Priority x reference*

| Option | |
|---|---|
| *Free text entry* | Maximum 24 ASCII characters; the maximum number of characters may vary for other character formats. |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Enable Group Object "Output forced operation 2 bit"* \ Option *Yes*

### 7.2.8.4.7 Height (%) forced operation "X"

This parameter is used to define the position to which the blind/shutter is moved when forced operation "X" is active.

**Note**
Whether an action is actually performed depends on the active priorities, → Priorities, Page 181.

| Option |
|---|
| *0 … 100 %* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Enable Group Object "Output forced operation 2 bit"* \ Option *Yes*

### 7.2.8.4.8 Slat (%) forced operation "X"

This parameter is used to define the position to which the slats are moved when forced operation "X" is active.

**Note**
Whether an action is actually performed depends on the active priorities, → Priorities, Page 181.

| Option |
|---|
| *0 … 100 %* |

**Prerequisites for visibility**
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*
- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Enable Group Object "Output forced operation 2 bit"* \ Option *Yes*

#### 7.2.8.4.9 Poll Group Objects after restart

This parameter is used to define whether the values for the safety Group Objects are polled and updated after KNX voltage recovery, download or ETS reset.

More information: → Value Read, Page 194.

> **Note**
> To update the Group Objects after KNX voltage recovery, download or ETS reset, the read flags must be set for the corresponding Group Objects of the sending device.

| Option | |
|---|---|
| *No* | The safety Group Objects are not polled after KNX voltage recovery or download. |
| *Yes* | The safety Group Objects send a Value Read to the sending Group Objects after KNX voltage recovery or download. If alarms are present, the parameterized results are run, → Value Read, Page 194. |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.4.10 Priority x safety

This parameter is used to define the order of priority of the enabled safety Group Objects.

> **Note**
> The safety with the highest priority always takes precedence. If a safety with a higher priority is active, then reactions or revocations of lower priorities are ignored. Operation of the corresponding output is blocked until all active safeties are reset.

More information: → Assignment of safeties and priorities, Page 25.

| Option |
|---|
| *Not used* |
| *Central safety x* |
| *Output safety x* |
| *Output forced operation 2 bit* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.4.11 Priority x reference

The options are set and fixed to the descriptions that were defined in the following parameters:

- *"Safety x" description*
- *Description*

| Option | |
|---|---|
| *Fixed* | The setting is taken from the specifications in other parameters and cannot be changed here. |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Priority x safety* \ all options except *Not used*

### 7.2.8.4.12 Priority x reaction

This parameter is used to define how the blind/shutter reacts when a safety is active.

> **Note**
> Whether an action is actually performed depends on the active priorities, → Priorities, Page 181.

| Option | |
|---|---|
| *Up* | Acts like an Up telegram on the Group Object *Up/down*. |
| *Down* | Acts like a Down telegram on the Group Object *Up/down*. |
| *Working position* | The positions defined in the working position are adopted.<br>The positions are specified with the following parameters:<br>• *Height working position*<br>• *Slat working position* |
| *Stop* | Acts like a Stop telegram on one of the following Group Objects:<br>• *Step/stop*<br>• *Stop* |
| *Complete movement* | If the blind/shutter is moving, it will continue until reaching the target position. If the blind/shutter is at rest, its position will remain unchanged. |
| *Position x* | The predefined position x (x = 1 … 4) is adopted.<br>The predefined positions are specified with the following parameters:<br>• *Height position x*<br>• *Slat position x*<br>• *Height working position*<br>• *Slat working position* |
| *Scene assignment x* | The positions defined in scene assignment x (x = 1 … 16) are adopted.<br>The positions are specified with the following parameters:<br>• *Scene assignment x height (%)*<br>• *Scene assignment x slat (%)* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Priority x safety* \ all options except *Not used*

### 7.2.8.4.13 Reaction on withdrawal of safeties

This parameter is used to define how the blind/shutter reacts when safeties are withdrawn.

More information: → Function Safety, Page 23.

> **Note**
> The safety with the highest priority always takes precedence. If a safety with a higher priority is active, then reactions or revocations of lower priorities are ignored. Operation of the corresponding output is blocked until all active safeties are reset.

| Option | |
|---|---|
| *Remain in position* | If the blind/shutter is moving, it will continue until reaching the target position. If the blind/shutter is at rest, its position will remain unchanged. |
| *Refreshed KNX state* | The blind/shutter is moved to the position defined by the refreshed KNX state, → Refreshed KNX state, Page 193.<br>Telegrams received on the following Group Objects while a safety is active are not taken into consideration:<br>• *Up/down* (Central)<br>• *Up/down*<br>• *Step/stop* (Central)<br>• *Step/stop* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.4.14 Restore active safeties after KNX voltage recovery or ETS reset

This parameter is used to define whether the safeties that were active before KNX voltage failure or ETS reset are reactivated after KNX voltage recovery.

| Option |
|---|
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.4.15 Status messages "Status Safety active"

This parameter enables the following Group Object:

- *Status Safety active*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Status Safety active* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.4.16 Status messages "Status byte all active safeties"

This parameter enables the following Group Object:

- *Status byte all active safeties*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Status byte all active safeties* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Parameter setting* \ Option *Individual*

### 7.2.8.5 Parameter window Automatic sun protection

**Note**
If several outputs are to be set to the same values, parameterization can be performed in the template.

The following settings can be made in this parameter window:
- Parameterize function *Automatic sun protection*
- Parameterize function *Anti-glare protection*
- Parameterize function *Heating/Cooling*

For more information, see:
→ Function Automatic sun protection, Page 25
→ Function Anti-glare protection, Page 26
→ Function Heating/Cooling, Page 26

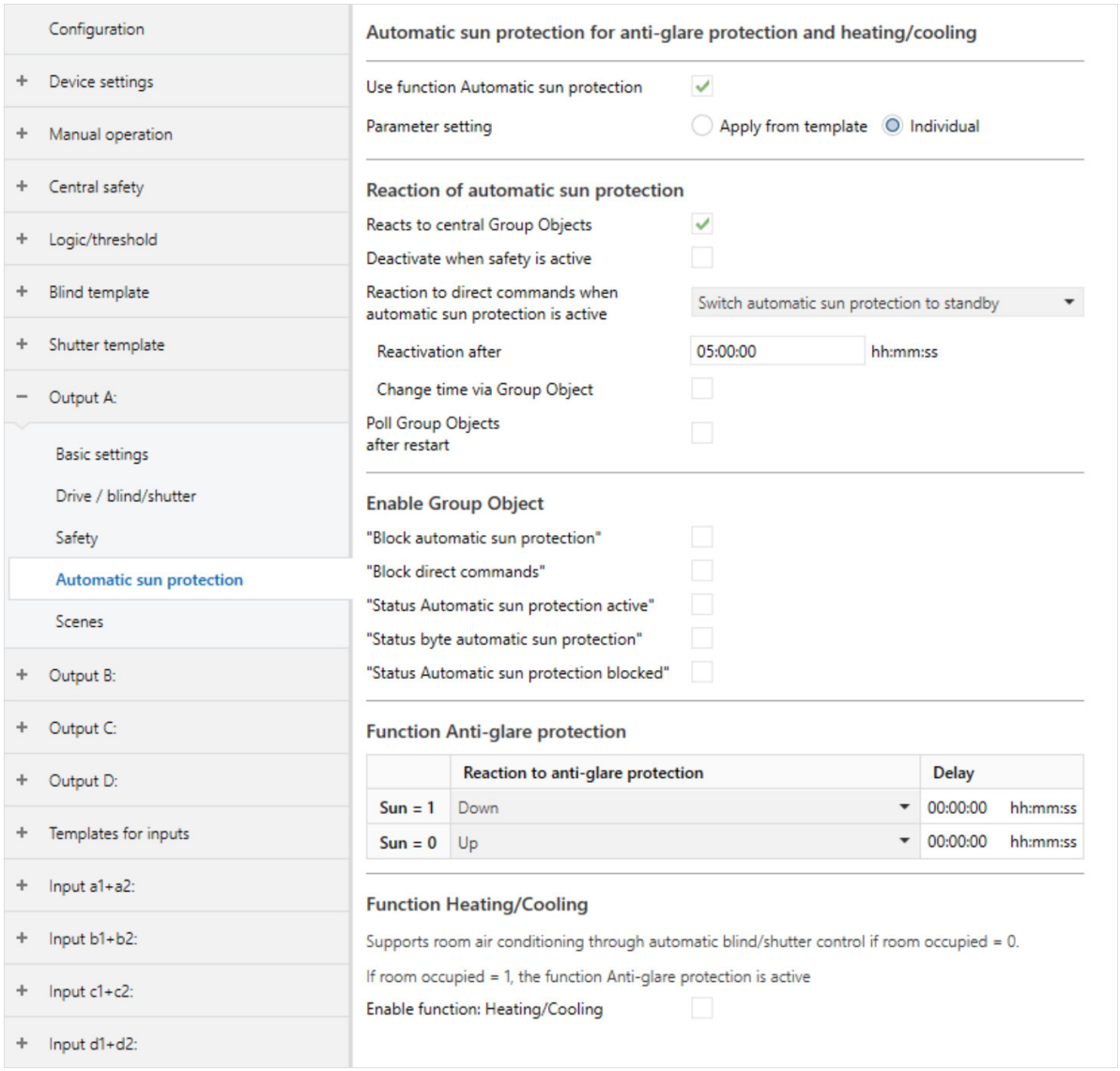



Fig. 18: Parameter window Automatic sun protection

**This parameter window includes the following parameters:**



**Prerequisites for visibility**

- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*

### 7.2.8.5.1 Use function Automatic sun protection

This parameter is used to activate the use of the function *Automatic sun protection* for the output.

More information: → Function Automatic sun protection, Page 25.

| Option | |
|---|---|
| *No* | Use of the function is not activated. |
| *Yes* | The following dependent parameters are shown:<br>• *Parameter setting*<br><br>The following dependent Group Objects are displayed:<br>• *Activate automatic sun protection*<br>• *Sun* |

#### 7.2.8.5.2 Parameter setting

This parameter is used to define whether the settings for the parameter window are adopted from the template or each parameter is set individually.

| Option | |
|---|---|
| *Apply from template* | The settings for the parameters are adopted from the template. |
| *Individual* | The parameters can be set individually.<br><br>The following dependent parameters are shown:<br>• *Reacts to central Group Objects*<br>• *Deactivate when safety is active*<br>• *Reaction to direct commands when automatic sun protection is active*<br>• *Poll Group Objects after restart*<br>• *Enable Group Object "Block automatic sun protection"*<br>• *Enable Group Object "Block direct commands"*<br>• *Enable Group Object "Status Automatic sun protection active"*<br>• *Enable Group Object "Status byte automatic sun protection"*<br>• *Enable Group Object "Status Automatic sun protection blocked"*<br>• *Sun = x reaction to anti-glare protection*<br>• *Sun = x delay*<br>• *Enable function: Heating/cooling* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Safety* \ Parameter *Use function Automatic sun protection* \ Option *Yes*

#### 7.2.8.5.3 Reacts to central Group Objects

This parameter is used to define whether the function *Automatic sun protection* reacts to telegrams from central Group Objects, → parameter *Enable central Group Objects for automatic sun protection*.

More information: → Function Automatic sun protection, Page 25.

| Option |
|---|
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.5.4 Deactivate when safety is active

This parameter is used to define whether the function *Automatic sun protection* is deactivated when a safety is active.

More information: → Function Automatic sun protection, Page 25.

| Option | |
|---|---|
| *No* | The function *Automatic sun protection* remains active in the background. After all active safeties are withdrawn, the current position from the function *Automatic sun protection* applies. |
| *Yes* | When a safety is activated, the function *Automatic sun protection* is deactivated. The function *Automatic sun protection* can be reactivated via the bus (ABB i-bus® KNX) when all active safeties have been withdrawn. |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.5.5 Reaction to direct commands when automatic sun protection is active

This parameter is used to define how the function *Automatic sun protection* reacts to direct commands when the function is active.

For more information, see:
→ Automatic operation, Page 189
→ Direct operation, Page 190

| Option | |
|---|---|
| *Ignore direct commands* | Direct commands are not executed. |
| *Deactivate automatic sun protection* | When a direct command is received, the function *Automatic sun protection* is deactivated. The function is reactivated via the Group Object *Activate automatic sun protection*.<br>If, in the parameter *Sun = x reaction to anti-glare protection*, the option *Only slat via Group Object* is selected, the function *Automatic sun protection* is not deactivated when the following direct commands are received, and the status of the automatic sun protection remains active:<br>• Up<br>• Down<br>• Position height |
| *Switch automatic sun protection to standby* | When a direct command is received, the function *Automatic sun protection* switches to Standby. The function *Automatic sun protection* is reactivated via the bus (ABB i-bus® KNX) or automatically after a specified time has elapsed, → parameter *Reactivation after*.<br>If, in the parameter *Sun = x reaction to anti-glare protection*, the option *Only slat via Group Object* is selected, the function *Automatic sun protection* does not switch to Standby when the following direct commands are received, and the status of the automatic sun protection remains active:<br>• Up<br>• Down<br>• Position height<br><br>The following dependent parameters are shown:<br>• *Reactivation after*<br>• *Change time via Group Object* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.5.6 Reactivation after

This parameter is used to define the time after which the function *Automatic sun protection* is reactivated out of Standby.

| Option |
|---|
| *00:10:00 … 05:00:00 … 18:12:15 hh:mm:ss* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Reaction to direct commands when automatic sun protection is active* \ Option *Switch automatic sun protection to standby*

#### 7.2.8.5.7 Change time via Group Object

This parameter is used to define whether the reactivation time set in the function *Automatic sun protection* (→ parameter *Reactivation after*) can be changed via a Group Object.

| Option | |
|---|---|
| *No* | The set reactivation time cannot be changed. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Reactivation time* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Reaction to direct commands when automatic sun protection is active* \ Option *Switch automatic sun protection to standby*

#### 7.2.8.5.8 Poll Group Objects after restart

This parameter is used to define whether the values for the enabled Automatic sun protection Group Objects are polled and updated after KNX voltage recovery, download or ETS reset.

More information: → Value Read, Page 194.

> **Note**
> To update the Group Objects after KNX voltage recovery, download or ETS reset, the read flags must be set for the corresponding Group Objects of the sending device.

| Option |
|---|
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.5.9 Enable Group Object "Block automatic sun protection"

This parameter enables the following Group Object:

- *Block automatic sun protection*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Block automatic sun protection* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.5.10 Enable Group Object "Block direct commands"

This parameter enables the following Group Object:

- *Block direct commands*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Block direct commands* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.5.11 Enable Group Object "Status Automatic sun protection active"

This parameter enables the following Group Object:
- *Status Automatic sun protection active*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Status Automatic sun protection active* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.5.12 Enable Group Object "Status byte automatic sun protection"

This parameter enables the following Group Object:
- *Status byte automatic sun protection*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Status byte automatic sun protection* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.5.13 Enable Group Object "Status Automatic sun protection blocked"

This parameter enables the following Group Object:
- *Status Automatic sun protection blocked*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Status Automatic sun protection blocked* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.5.14 Sun = x reaction to anti-glare protection

This parameter is used to define how the blind/shutter reacts if sun = x when the function *Automatic sun protection* is active.

**Note**
- Sun = 0: no sunshine
- Sun = 1: sunshine

**Note**
Whether an action is actually performed depends on the active priorities, → Priorities, Page 181.

More information: → Function Anti-glare protection, Page 26.

| Option | |
|---|---|
| *No reaction* | If the blind/shutter is moving, it will continue until reaching the target position. If the blind/shutter is at rest, its position will remain unchanged. |
| *Up* | Acts like an Up telegram on the Group Object *Up/down*. |
| *Down* | Acts like a Down telegram on the Group Object *Up/down*. |
| *Working position* | The positions defined in the working position are adopted.<br>The positions are specified with the following parameters:<br>• *Height working position*<br>• *Slat working position* |
| *Stop* | Acts like a Stop telegram on one of the following Group Objects:<br>• *Step/stop*<br>• *Stop* |
| *Height and slat via Group Object* | The required blind/shutter and slat positions are received via separate Group Objects.<br><br>The following dependent Group Objects are displayed:<br>• *Sun: Move to height*<br>• *Sun: Move slat* |
| *Only slat via Group Object* | The required slat position is received via a separate Group Object. The blind/shutter can be moved with direct commands.<br><br>The following dependent Group Objects are displayed:<br>• *Sun: Move slat* |
| *Position x* | The predefined position x (x = 1 … 4) is adopted.<br>The predefined positions are specified with the following parameters:<br>• *Height position x*<br>• *Slat position x*<br>• *Height working position*<br>• *Slat working position* |
| *Scene assignment x* | The positions defined in scene assignment x (x = 1 … 16) are adopted.<br>The positions are specified with the following parameters:<br>• *Scene assignment x height (%)*<br>• *Scene assignment x slat (%)* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Parameter setting* \ Option *Individual*

### 7.2.8.5.15 Sun = x delay

This parameter is used to define the delay time after which the blind/shutter is moved into position if sun = x.

**Example**
The delay when sun = 0 can serve to avoid unnecessary position changes due to brief periods of sunshine on cloudy days.
The delay when sun = 1 can serve to avoid unnecessary position changes due to brief periods of shadow on cloudy days.

**Note**
- Sun = 0: no sunshine
- Sun = 1: sunshine

More information: → Function Anti-glare protection, Page 26.

| Option |
|---|
| *00:00:00 … 12:00:00 hh:mm:ss* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Parameter setting* \ Option *Individual*

### 7.2.8.5.16 Enable function: Heating/cooling

This parameter enables the function *Heating/Cooling*.

More information: → Function Heating/Cooling, Page 26.

| Option | |
|---|---|
| *No* | The function is not enabled. |
| *Yes* | The following dependent parameters are shown:<br>• *Control via Group Objects*<br>• *Delay if room occupied = x*<br>• *Sun = x reaction on heating*<br>• *Sun = x reaction on cooling*<br>• *Enable overheating protection on heating*<br><br>The following dependent Group Objects are displayed:<br>• *Room occupied* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Parameter setting* \ Option *Individual*

### 7.2.8.5.17 Control via Group Objects

This parameter is used to define which Group Object receives the room operating mode (*Heating* or *Cooling*).

These Group Objects are used for changing over between heating and cooling in the function *Heating/Cooling*.

More information: → Function Heating/Cooling, Page 26.

| Option | |
|---|---|
| *"Heating" and "Cooling"* | The following dependent Group Objects are displayed:<br>• *Heating*<br>• *Cooling* |
| *"Heating/cooling" and "Block heating/cooling"* | The following dependent Group Objects are displayed:<br>• *Heating/cooling*<br>• *Block heating/cooling* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Enable function: Heating/cooling* \ Option *Yes*

### 7.2.8.5.18 Delay if room occupied = x

This parameter is used to define the delay time after which the function *Heating/Cooling* reacts to a room being occupied or vacant.

More information: → Function Heating/Cooling, Page 26.

| Option |
|---|
| *00:00:00 … 01:40:00 hh:mm:ss* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Enable function: Heating/cooling* \ Option *Yes*

### 7.2.8.5.19 Sun = x reaction on heating

This parameter is used to define how the blind/shutter reacts if sun = x when the function *Heating* is active.

**Note**
- Sun = 0: no sunshine
- Sun = 1: sunshine

**Note**
Whether an action is actually performed depends on the active priorities, → Priorities, Page 181.

More information: → Function Heating/Cooling, Page 26.

| Option | |
|---|---|
| *No reaction* | If the blind/shutter is moving, it will continue until reaching the target position. If the blind/shutter is at rest, its position will remain unchanged. |
| *Up* | Acts like an Up telegram on the Group Object *Up/down*. |
| *Down* | Acts like a Down telegram on the Group Object *Up/down*. |
| *Working position* | The positions defined in the working position are adopted.<br>The positions are specified with the following parameters:<br>• *Height working position*<br>• *Slat working position* |
| *Stop* | Acts like a Stop telegram on one of the following Group Objects:<br>• *Step/stop*<br>• *Stop* |
| *Height and slat via Group Object* | The required blind/shutter and slat positions are received via separate Group Objects.<br><br>The following dependent Group Objects are displayed:<br>• *Sun: Move to height*<br>• *Sun: Move slat* |
| *Only slat via Group Object* | The required slat position is received via a separate Group Object. The blind/shutter can be moved with direct commands.<br><br>The following dependent Group Objects are displayed:<br>• *Sun: Move slat* |
| *Position x* | The predefined position x (x = 1 … 4) is adopted.<br>The predefined positions are specified with the following parameters:<br>• *Height position x*<br>• *Slat position x*<br>• *Height working position*<br>• *Slat working position* |
| *Scene assignment x* | The positions defined in scene assignment x (x = 1 … 16) are adopted.<br>The positions are specified with the following parameters:<br>• *Scene assignment x height (%)*<br>• *Scene assignment x slat (%)* |

**Prerequisites for visibility**
- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Enable function: Heating/cooling* \ Option *Yes*

### 7.2.8.5.20 Sun = x reaction on cooling

This parameter is used to define how the blind/shutter reacts if sun = x when the function *Cooling* is active.

**Note**
- Sun = 0: no sunshine
- Sun = 1: sunshine

**Note**
Whether an action is actually performed depends on the active priorities, → Priorities, Page 181.

More information: → Function Heating/Cooling, Page 26.

| Option | |
|---|---|
| *No reaction* | If the blind/shutter is moving, it will continue until reaching the target position. If the blind/shutter is at rest, its position will remain unchanged. |
| *Up* | Acts like an Up telegram on the Group Object *Up/down*. |
| *Down* | Acts like a Down telegram on the Group Object *Up/down*. |
| *Working position* | The positions defined in the working position are adopted.<br>The positions are specified with the following parameters:<br>• *Height working position*<br>• *Slat working position* |
| *Stop* | Acts like a Stop telegram on one of the following Group Objects:<br>• *Step/stop*<br>• *Stop* |
| *Height and slat via Group Object* | The required blind/shutter and slat positions are received via separate Group Objects.<br><br>The following dependent Group Objects are displayed:<br>• *Sun: Move to height*<br>• *Sun: Move slat* |
| *Only slat via Group Object* | The required slat position is received via a separate Group Object. The blind/shutter can be moved with direct commands.<br><br>The following dependent Group Objects are displayed:<br>• *Sun: Move slat* |
| *Position x* | The predefined position x (x = 1 … 4) is adopted.<br>The predefined positions are specified with the following parameters:<br>• *Height position x*<br>• *Slat position x*<br>• *Height working position*<br>• *Slat working position* |
| *Scene assignment x* | The positions defined in scene assignment x (x = 1 … 16) are adopted.<br>The positions are specified with the following parameters:<br>• *Scene assignment x height (%)*<br>• *Scene assignment x slat (%)* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Enable function: Heating/cooling* \ Option *Yes*

### 7.2.8.5.21 Sun = x delay

This parameter is used to define the delay time after which the blind/shutter is moved into position if sun = x.

**Example**
The delay when sun = 0 can serve to avoid unnecessary position changes due to brief periods of sunshine on cloudy days.
The delay when sun = 1 can serve to avoid unnecessary position changes due to brief periods of shadow on cloudy days.

**Note**
- Sun = 0: no sunshine
- Sun = 1: sunshine

More information: → Function Heating/Cooling, Page 26.

| Option |
|---|
| *00:00:00 … 12:00:00 hh:mm:ss* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Enable function: Heating/cooling* \ Option *Yes*

#### 7.2.8.5.22 Enable overheating protection on heating

This parameter enables overheating protection.

More information: → Function Heating/Cooling, Page 26.

| Option | |
|---|---|
| *No* | The function is not enabled. |
| *Yes* | The following dependent parameters are shown:<br>• *Overheating protection active when sun = 1 and room temperature is greater than*<br>• *Hysteresis*<br>• *Reaction on overheating protection*<br>• *Enable Group Object "Status Overheating protection active"*<br><br>The following dependent Group Objects are displayed:<br>• *Room temperature received* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Enable function: Heating/cooling* \ Option *Yes*

#### 7.2.8.5.23 Overheating protection active when sun = 1 and room temperature is greater than

This parameter is used to define the maximum room temperature. If this temperature is exceeded under the following conditions, overheating protection is activated:

- Overheating protection enabled
- Function *Heating/Cooling* active
- Room operating mode = *Heating*
- Sun = 1

More information: → Function Heating/Cooling, Page 26.

| Option |
|---|
| *21 … 25 … 50 °C* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Enable overheating protection on heating* \ Option *Yes*

#### 7.2.8.5.24 Hysteresis

This parameter is used to define the single-sided hysteresis for the room temperature, → parameter *Overheating protection active when sun = 1 and room temperature is greater than*.

**Example**

- Overheating protection active from room temperature > 25 °C
- Hysteresis = 3 K

The overheating protection is activated if the room temperature exceeds 22 °C.

More information: → Hysteresis, Page 191.

| Option |
|---|
| *1 … 3 … 5 K* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Enable overheating protection on heating* \ Option *Yes*

### 7.2.8.5.25 Reaction on overheating protection

This parameter is used to define how the blind/shutter reacts when overheating protection is active.

> **Note**
> Whether an action is actually performed depends on the active priorities, → Priorities, Page 181.

More information: → Function Heating/Cooling, Page 26.

| Option | |
|---|---|
| *No reaction* | If the blind/shutter is moving, it will continue until reaching the target position. If the blind/shutter is at rest, its position will remain unchanged. |
| *Up* | Acts like an Up telegram on the Group Object *Up/down*. |
| *Down* | Acts like a Down telegram on the Group Object *Up/down*. |
| *Working position* | The positions defined in the working position are adopted.<br>The positions are specified with the following parameters:<br>• *Height working position*<br>• *Slat working position* |
| *Stop* | Acts like a Stop telegram on one of the following Group Objects:<br>• *Step/stop*<br>• *Stop* |
| *Position x* | The predefined position x (x = 1 … 4) is adopted.<br>The predefined positions are specified with the following parameters:<br>• *Height position x*<br>• *Slat position x*<br>• *Height working position*<br>• *Slat working position* |
| *Scene assignment x* | The positions defined in scene assignment x (x = 1 … 16) are adopted.<br>The positions are specified with the following parameters:<br>• *Scene assignment x height (%)*<br>• *Scene assignment x slat (%)* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Enable overheating protection on heating* \ Option *Yes*

### 7.2.8.5.26 Enable Group Object "Status Overheating protection active"

This parameter enables the following Group Object:

- *Status Overheating protection active*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Status Overheating protection active* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Automatic sun protection* \ Parameter *Enable overheating protection on heating* \ Option *Yes*

### 7.2.8.6 Parameter window Scenes

**Note**
If several outputs are to be set to the same values, parameterization can be performed in the template.

The following settings can be made in this parameter window:
- Enable scene assignments
- Create and assign KNX scenes

More information: → Function Scenes, Page 28.

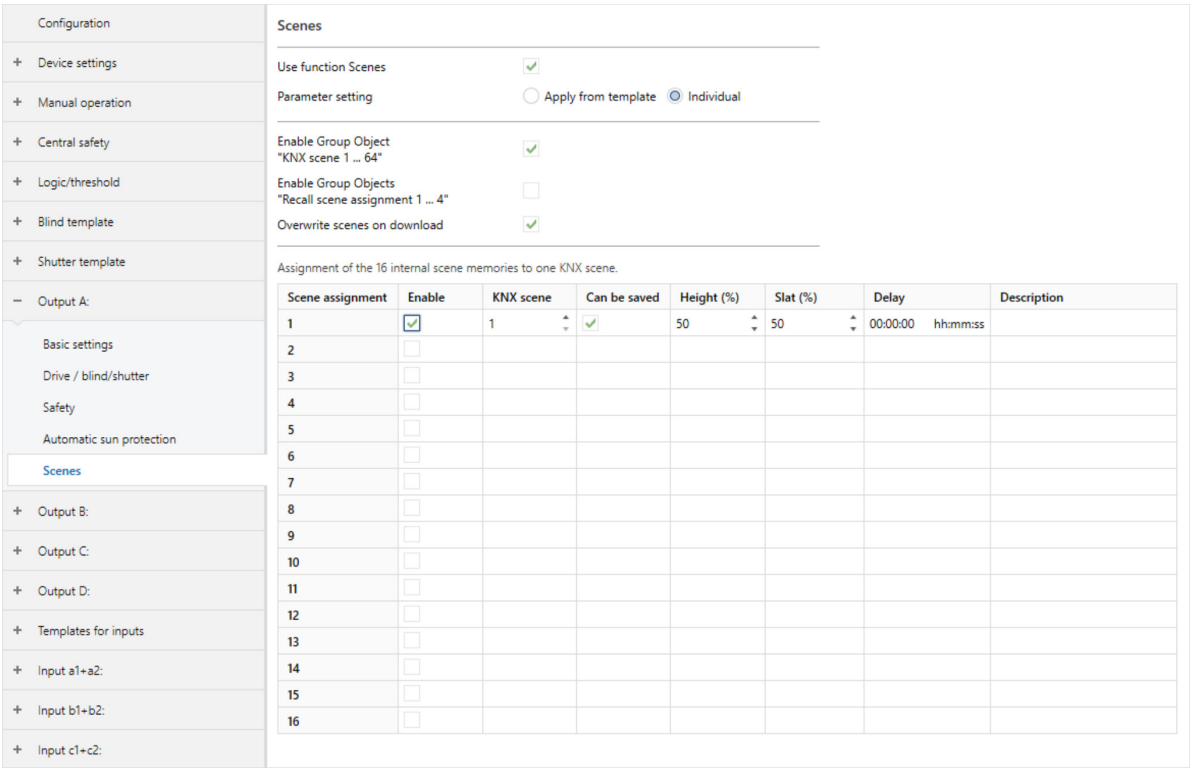



Fig. 19: Parameter window Scenes

**This parameter window includes the following parameters:**

→ Use function Scenes, Page 118
- → Parameter setting, Page 118
  - → Enable Group Object "KNX scene 1 … 64", Page 118
  - → Enable Group Objects "Recall scene assignment 1 … 4", Page 118
  - → Overwrite scenes on download, Page 119
  - → Enable scene assignment x, Page 119
    - → Scene assignment x KNX scene, Page 119
    - → Scene assignment x can be saved, Page 119
    - → Scene assignment x height (%), Page 120
    - → Scene assignment x slat (%), Page 120
    - → Scene assignment x delay, Page 120

**Prerequisites for visibility**
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Scenes* \ Option *Yes*

#### 7.2.8.6.1 Use function Scenes

This parameter is used to activate the use of the function *Scenes* for the output.

| Option | |
|---|---|
| *No* | Use of the function is not activated. |
| *Yes* | The following dependent parameters are shown:<br>• *Parameter setting* |

#### 7.2.8.6.2 Parameter setting

This parameter is used to define whether the settings for the parameter window are adopted from the template or each parameter is set individually.

| Option | |
|---|---|
| *Apply from template* | The settings for the parameters are adopted from the template. |
| *Individual* | The parameters can be set individually.<br><br>The following dependent parameters are shown:<br>• *Enable Group Object "KNX scene 1 … 64"*<br>• *Enable Group Objects "Recall scene assignment 1 … 4"*<br>• *Overwrite scenes on download*<br>• *Enable scene assignment x* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Scenes* \ Parameter *Use function Scenes* \ Option *Yes*

#### 7.2.8.6.3 Enable Group Object "KNX scene 1 … 64"

This parameter enables the following Group Object:

- *KNX scenes 1 … 64*

| Option | |
|---|---|
| *No* | The Group Object is not enabled. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *KNX scenes 1 … 64* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Scenes* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.6.4 Enable Group Objects "Recall scene assignment 1 … 4"

This parameter is used to define whether it is possible to recall the scene assignment 1 … 4 also via the following Group Objects:

- *Recall scene assignment x*

| Option | |
|---|---|
| *No* | It is not possible to recall Scene assignment 1 … 4 via additional Group Objects. |
| *Yes* | The following dependent Group Objects are displayed:<br>• *Recall scene assignment x* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Scenes* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.6.5 Overwrite scenes on download

This parameter is used to define whether the Scenes saved in the device are overwritten during a download.

| Option |
|---|
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Scenes* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.6.6 Enable scene assignment x

This parameter enables scene assignment x (x = 1 … 16).

More information: → Function Scenes, Page 28.

| Option | |
|---|---|
| *No* | Scene assignment x is not enabled. |
| *Yes* | The following dependent parameters are shown:<br>• *Scene assignment x KNX scene*<br>• *Scene assignment x can be saved*<br>• *Scene assignment x height (%)*<br>• *Scene assignment x slat (%)*<br>• *Scene assignment x delay* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Scenes* \ Parameter *Parameter setting* \ Option *Individual*

#### 7.2.8.6.7 Scene assignment x KNX scene

This parameter assigns KNX scene x to scene assignment x.

More information: → Function Scenes, Page 28.

| Option |
|---|
| *1 … 64* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Scenes* \ Parameter *Enable scene assignment x* \ Option *Yes*

#### 7.2.8.6.8 Scene assignment x can be saved

This parameter is used to define whether the current values of all incorporated KNX devices can be saved in the assigned KNX scene.

More information: → Structure of 1-byte Scene telegram, Page 23.

| Option |
|---|
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Scenes* \ Parameter *Enable scene assignment x* \ Option *Yes*

#### 7.2.8.6.9 Scene assignment x height (%)

This parameter is used to define the blind/shutter position when scene assignment x is recalled.

More information: → Function Scenes, Page 28.

> **Note**
> The positions can be limited by the working position → Function Working position (shading position), Page 31.

| Option |
| --- |
| *0 … 50 … 100 %* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Scenes* \ Parameter *Enable scene assignment x* \ Option *Yes*

#### 7.2.8.6.10 Scene assignment x slat (%)

This parameter is used to define the slat position when scene assignment x is recalled.

More information: → Function Scenes, Page 28.

> **Note**
> The positions can be limited by the working position → Function Working position (shading position), Page 31.

| Option |
| --- |
| *0 … 50 … 100 %* |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*
- Parameter window *Output X* \ Parameter window *Scenes* \ Parameter *Enable scene assignment x* \ Option *Yes*

#### 7.2.8.6.11 Scene assignment x delay

This parameter is used to define a delay time. When the scene assignment x is recalled, the assignment is executed after the delay time has elapsed.

More information: → Function Scenes, Page 28.

| Option |
| --- |
| *00:00:00 … 12:00:00 hh:mm:ss* |

**Prerequisites for visibility**

- Parameter window *Output X* \ Parameter window *Scenes* \ Parameter *Enable scene assignment x* \ Option *Yes*

## 7.2.9 Parameter window Templates for inputs

In this parameter window, the functions can be set for all inputs.

The parameterization options in the template and in the parameter windows for the inputs are identical.

In the subordinate parameter windows, the applications can be set for all inputs. The application settings from the template apply to each input on which the corresponding application is used.

The parameter *Input x template* is used to define whether the settings for the application are adopted from the template or each parameter is set individually.

The parameterization options in the template and in the parameter windows for the inputs are identical. The following parameter windows are available in the template:

- Blind/shutter (2-button operation)
- Blind/shutter (1-button operation)
- Switch (1-button operation)
- Scenes

## 7.2.10 Parameter window Input x:

**Note**
An individual description can be added to the name of the parameter window, → parameter *Input x description*.

### 7.2.10.1 Parameter window Blind/shutter [2-button]

**Note**
In 2-button operation, two adjacent inputs are combined. For this reason, 2-button operation is only available for inputs a1, b1, c1, d1, e1, f1, g1 and h1 (depending on the device variant).

**Note**
If several inputs are to be set to the same values, parameterization can be performed in the parameter window *Templates for inputs*.

The following settings can be made in this parameter window:
- Parameterize input for blind or shutter control in 2-button operation
- Define reaction on events on input

More information: → Blind/shutter application (2-button operation), Page 21.

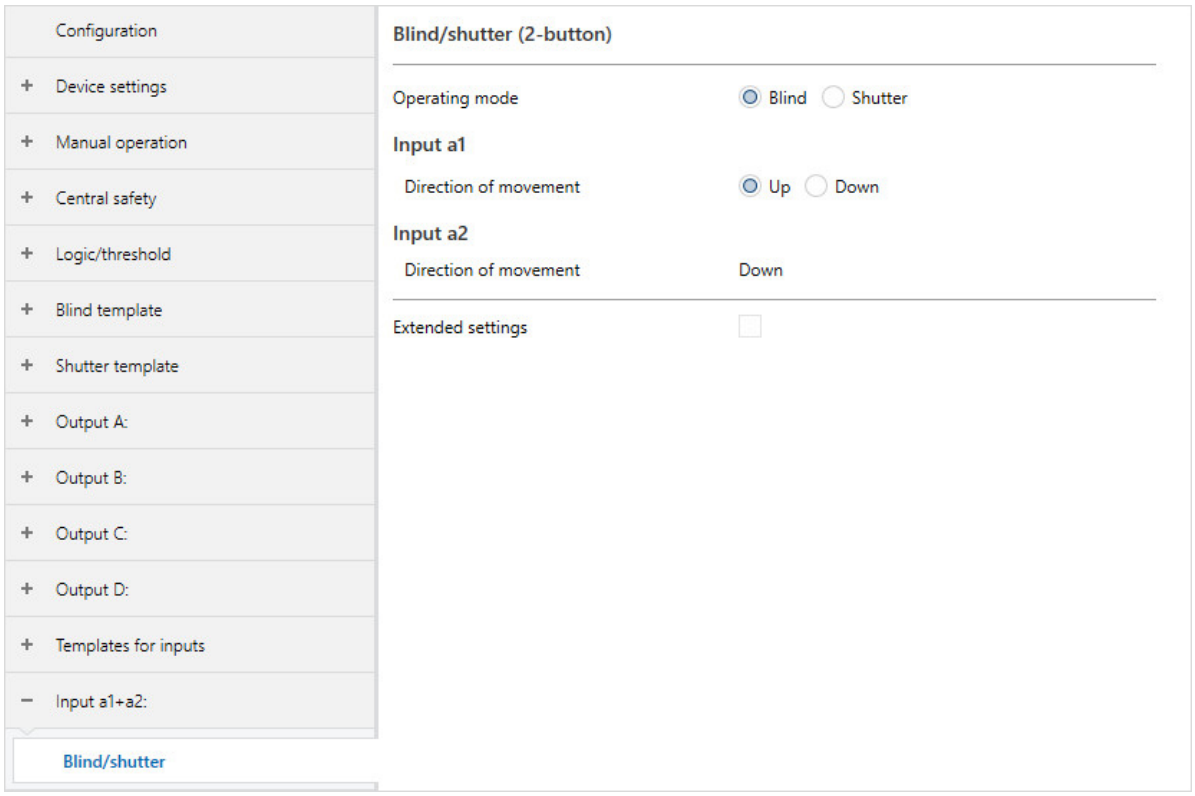



Fig. 20: Parameter window Blind/shutter (2-button operation)

**This parameter window includes the following parameters:**



**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Input x application* \ Option *Blind/shutter (2-button)*

### 7.2.10.1.1 Operating mode

This parameter is used to define the operating mode.

| Option | |
|---|---|
| *Blind* | For connecting a blind motor.<br><br>The following dependent Group Objects are displayed:<br>• *Up/down*<br>• *Step/stop* |
| *Shutter* | For connecting a shutter, ventilation flap, window drive, zipscreen or fabric awning motor.<br><br>The following dependent Group Objects are displayed:<br>• *Up/down*<br>• *Stop* |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Input x template* \ Option *No*

### 7.2.10.1.2 Direction of movement

This parameter is used to define the direction of movement of the blind/shutter or the adjustment direction of the slats.

| Option | |
|---|---|
| *Up* | The blind/shutter is moved up or the slats are opened. |
| *Down* | The blind/shutter is moved down or the slats are closed. |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Input x template* \ Option *No*

#### 7.2.10.1.3 Extended settings

This parameter is used to display the extended settings for the parameter window.

> **Note**
> The modified settings for the dependent parameters are only valid if the dependent parameters are shown.

| Option | |
|---|---|
| *No* | The extended settings are not shown. The corresponding parameters are used with the default values. Changes to the default values are discarded. |
| *Yes* | The extended settings are shown. The default values for the corresponding parameters can be changed.<br><br>The following dependent parameters are shown:<br>• *Blind operation*<br>• *Shutter operation*<br>• *Contact type*<br>• *Long operation after*<br>• *Interference suppression filter*<br>• *Block input* |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Input x template* \ Option *No*

#### 7.2.10.1.4 Blind operation

The type of blind/shutter operation is defined using this parameter.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *Short: step/stop, long: move* | On long operation the blind/shutter is moved to an end position. On short operation the movement is stopped. If the blind/shutter is stationary, on short operation the slats are adjusted one step per operation. |
| *Short: move, long: Step/stop* | On short operation the blind/shutter is moved to an end position. On long operation the movement is stopped. If the blind/shutter is stationary, on long operation the slats are adjusted one step per telegram. Telegrams are sent for as long as the operation lasts.<br><br>The following dependent parameters are shown:<br>• *Cycle for sending the step/stop telegram* |
| *Only move* | On operation the blind/shutter is moved. On release the movement is stopped. |
| *Slat adjustment only* | On operation the slats are adjusted. On release the slat adjustment is stopped.<br><br>The following dependent parameters are shown:<br>• *Cycle for sending the step/stop telegram* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]*
  - Parameter *Operating mode* \ Option *Blind*
  - Parameter *Extended settings* \ Option *Yes*

#### 7.2.10.1.5 Cycle for sending the step/stop telegram

This parameter is used to define the cycle for sending the step/stop telegram while the contact connected to the input is operated. The telegram is sent on long operation, then using the cycle defined until operation ends.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option |
|---|
| *00.3 ... 00.5 ... 10.0 ss.f* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]* \ Parameter *Blind operation* \ Option *Short: move, long: Step/stop / Slat adjustment only*

#### 7.2.10.1.6 Shutter operation

The type of blind/shutter operation is defined using this parameter.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *Short: stop, long: move* | On long operation the blind/shutter is moved to an end position. On short operation the movement is stopped. |
| *Only move* | On operation the blind/shutter is moved. On release the movement is stopped.<br><br>The following dependent parameters are shown:<br>• *Stop movement* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]*
  - Parameter *Operating mode* \ Option *Shutter*
  - Parameter *Extended settings* \ Option *Yes*

#### 7.2.10.1.7 Stop movement

This parameter is used to define the event on the input for which the movement of the blind/shutter is stopped.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *On release* | The movement of the blind/shutter is stopped on release of the contact. |
| *On next operation* | The movement of the blind/shutter is stopped on the next operation of the contact.<br><br>The following dependent Group Objects are displayed:<br>• *Status Upper end position*<br>• *Status Lower end position*<br>• *Status Move* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]* \ Parameter *Shutter operation* \ Option *Only move*

#### 7.2.10.1.8 Contact type

This parameter is used to set the type of contact connected to the input.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *NO contact* | The relay contact is closed with an On telegram (1) and opened with an Off telegram (0). |
| *NC contact* | The relay contact is opened with an On telegram (1) and closed with an Off telegram (0). |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]* \ Parameter *Extended settings* \ Option *Yes*

#### 7.2.10.1.9 Long operation after

This parameter is used to define the time from which operation of a connected contact (e.g. button/switch) is interpreted as long operation.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

| Option |
|---|
| *00.3 … 00.4 … 30.0 ss.f* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]* \ Parameter *Extended settings* \ Option *Yes*

#### 7.2.10.1.10 Interference suppression filter

This parameter is used to define the time for suppressing interference on the input. An operation is only detected if the signal received on the input remains constant for the time defined. In this way, interfering signals or undesirable, multiple edges (e.g. due to the contact bouncing) are detected and filtered out.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

| Option |
|---|
| *12 … 30 … 150 ms* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]* \ Parameter *Extended settings* \ Option *Yes*

#### 7.2.10.1.11 Block input

This parameter is used to define the telegram value with which the input is blocked.

> **Note**
> When the input is blocked, events on the input are ignored. When the block is canceled, the present status of the inputs (connected contacts open or closed) applies.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *Deactivated* | The input cannot be blocked. |
| *On value 1* | The input is blocked when a telegram with the value 1 is received on the dependent Group Object. The block is removed when a telegram with the value 0 is received.<br><br>The following dependent parameters are shown:<br>• *State after ETS download or KNX voltage recovery*<br><br>The following dependent Group Objects are displayed:<br>• *Block* |
| *On value 0* | The input is blocked when a telegram with the value 0 is received on the dependent Group Object. The block is removed when a telegram with the value 1 is received.<br><br>The following dependent parameters are shown:<br>• *State after ETS download or KNX voltage recovery*<br><br>The following dependent Group Objects are displayed:<br>• *Block* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]* \ Parameter *Extended settings* \ Option *Yes*

#### 7.2.10.1.12 State after ETS download or KNX voltage recovery

This parameter is used to define the state of the input after ETS download or KNX voltage recovery.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *Last state* | The last known state is set. |
| *Blocked* | The input is blocked. |
| *Enabled* | The input is enabled. |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]* \ Parameter *Block input* \ Option *On value 1* / *On value 0*

### 7.2.10.2 Parameter window Blind/shutter

**Note**
If several inputs are to be set to the same values, parameterization can be performed in the parameter window *Templates for inputs*.

The following settings can be made in this parameter window:
- Parameterize input for blind or shutter control in 1-button operation
- Define reaction on events on input

More information: → Blind/shutter application (1-button operation), Page 21.

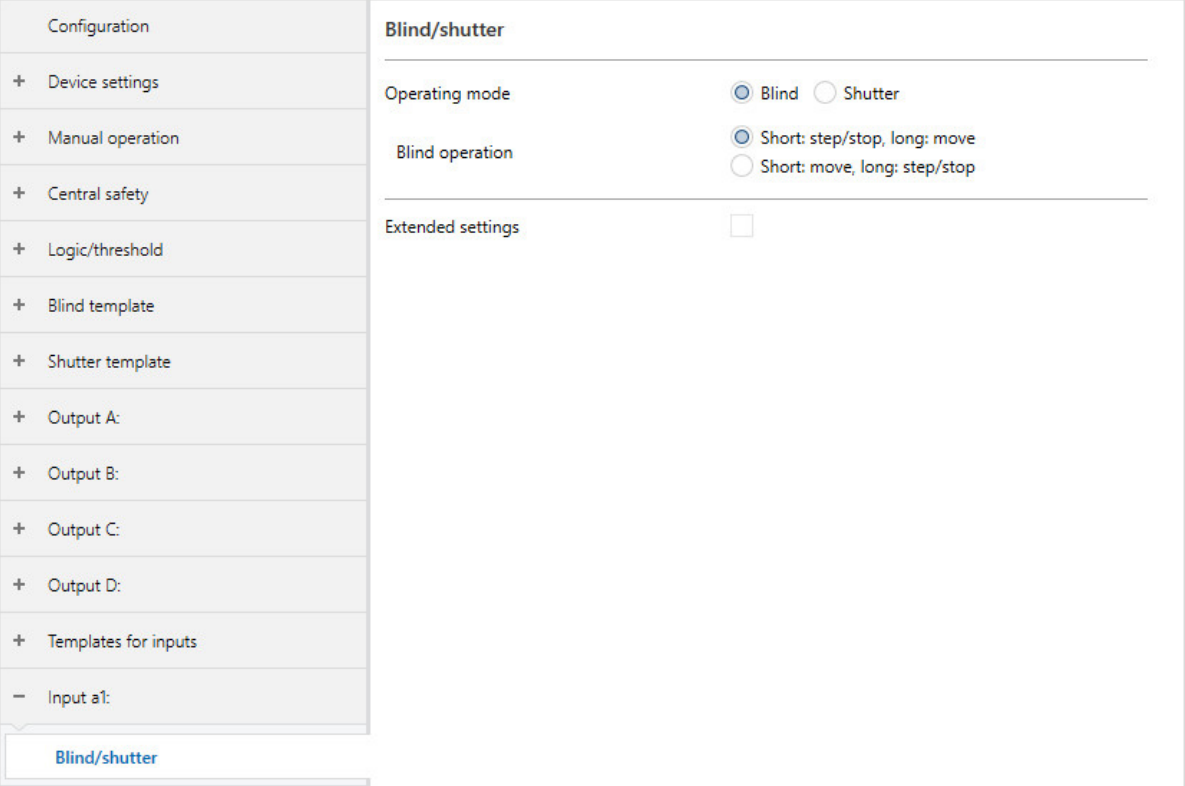



Fig. 21: Parameter window Blind/shutter (1-button operation)

**This parameter window includes the following parameters:**

→ Operating mode, Page 129
- → Blind operation, Page 129
  - → Cycle for sending the step/stop telegram, Page 129
- → Shutter operation, Page 130
  - → Stop movement, Page 130

→ Extended settings, Page 130
- → "Movement" direction change after, Page 131
- → "Slat" direction change after, Page 131
- → Contact type, Page 131
- → Long operation after, Page 132
- → Interference suppression filter, Page 132
- → Block input, Page 133
  - → State after ETS download or KNX voltage recovery, Page 133

**Prerequisites for visibility**
- Parameter window *Configuration* \ Parameter *Input x application* \ Option *Blind/shutter*

#### 7.2.10.2.1 Operating mode

This parameter is used to define the operating mode.

| Option | |
|---|---|
| *Blind* | For connecting a blind motor.<br><br>The following dependent parameters are shown:<br>• *Blind operation*<br><br>The following dependent Group Objects are displayed:<br>• *Up/down*<br>• *Step/stop*<br>• *Status Upper end position*<br>• *Status Lower end position*<br>• *Status Move* |
| *Shutter* | For connecting a shutter, ventilation flap, window drive, zipscreen or fabric awning motor.<br><br>The following dependent parameters are shown:<br>• *Shutter operation*<br><br>The following dependent Group Objects are displayed:<br>• *Up/down*<br>• *Stop*<br>• *Status Upper end position*<br>• *Status Lower end position* |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Input x template* \ Option *No*

#### 7.2.10.2.2 Blind operation

The type of blind/shutter operation is defined using this parameter.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *Short: step/stop, long: move* | On long operation the blind/shutter is moved in the opposite direction to the last movement. On short operation the movement is stopped. If the blind/shutter is stationary, on short operation the slats are adjusted one step per operation. If the slats are not in an end position, the direction of the slat adjustment is dependent on the last direction of movement of the blind/shutter. |
| *Short: move, long: Step/stop* | On short operation the blind/shutter is moved in the opposite direction to the last movement. On long operation the movement is stopped. If the blind/shutter is stationary, on long operation the slats are adjusted one step per operation. If the slats are not in an end position, the direction of the slat adjustment is dependent on the last direction of movement of the blind/shutter.<br><br>The following dependent parameters are shown:<br>• *Cycle for sending the step/stop telegram* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter* \ Parameter *Operating mode* \ Option *Blind*

#### 7.2.10.2.3 Cycle for sending the step/stop telegram

This parameter is used to define the cycle for sending the step/stop telegram while the contact connected to the input is operated. The telegram is sent on long operation, then using the cycle defined until operation ends.

| Option |
|---|
| *00.3 … 00.5 … 10.0 ss.f* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter* \ Parameter *Blind operation* \ Option *Short: move, long: Step/stop*

#### 7.2.10.2.4 Shutter operation

The type of blind/shutter operation is defined using this parameter.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *Short: stop, long: move* | On long operation the blind/shutter is moved in the opposite direction to the last movement. On short operation the movement is stopped. |
| *Only move* | On operation the blind/shutter is moved in the opposite direction to the last movement.<br><br>The following dependent parameters are shown:<br>• *Stop movement* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter* \ Parameter *Operating mode* \ Option *Shutter*

#### 7.2.10.2.5 Stop movement

This parameter is used to define the event on the input for which the movement of the blind/shutter is stopped.

| Option | |
|---|---|
| *On release* | The movement of the blind/shutter is stopped on release of the contact. |
| *On next operation* | The movement of the blind/shutter is stopped on the next operation of the contact.<br><br>The following dependent Group Objects are displayed:<br>• *Status Move* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter* \ Parameter *Shutter operation* \ Option *Only move*

#### 7.2.10.2.6 Extended settings

This parameter is used to display the extended settings for the parameter window.

> **Note**
> The modified settings for the dependent parameters are only valid if the dependent parameters are shown.

| Option | |
|---|---|
| *No* | The extended settings are not shown. The corresponding parameters are used with the default values. Changes to the default values are discarded. |
| *Yes* | The extended settings are shown. The default values for the corresponding parameters can be changed.<br><br>The following dependent parameters are shown:<br>• *"Movement" direction change after*<br>• *"Slat" direction change after*<br>• *Contact type*<br>• *Long operation after*<br>• Signal type<br>• *Interference suppression filter*<br>• *Block input*<br>• Input button |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Input x template* \ Option *No*

#### 7.2.10.2.7 "Movement" direction change after

This parameter is used to define the time after which a direction change is possible. If, after a stop telegram, an operation occurs after the defined time has elapsed, the blind/shutter is moved in the opposite direction to the previous operation.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option |
| --- |
| *00.0 … 59.9 ss.f* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter* \ Parameter *Extended settings* \ Option *Yes*

#### 7.2.10.2.8 "Slat" direction change after

This parameter is used to define the time after which a direction change is possible. If, after a stop telegram, an operation occurs after the defined time has elapsed, the slats are adjusted in the opposite direction to the previous operation.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option |
| --- |
| *01.0 … 05.0 … 59.9 ss.f* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter*
  - Parameter *Operating mode* \ Option *Blind*
  - Parameter *Extended settings* \ Option *Yes*

#### 7.2.10.2.9 Contact type

This parameter is used to set the type of contact connected to the input.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
| --- | --- |
| *NO contact* | The relay contact is closed with an On telegram (1) and opened with an Off telegram (0). |
| *NC contact* | The relay contact is opened with an On telegram (1) and closed with an Off telegram (0). |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter* \ Parameter *Extended settings* \ Option *Yes*

#### 7.2.10.2.10 Long operation after

This parameter is used to define the time from which operation of a connected contact (e.g. button/ switch) is interpreted as long operation.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

| Option |
| --- |
| *00.3 … 00.4 … 30.0 ss.f* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter* \ Parameter *Extended settings* \ Option *Yes*

#### 7.2.10.2.11 Interference suppression filter

This parameter is used to define the time for suppressing interference on the input. An operation is only detected if the signal received on the input remains constant for the time defined. In this way, interfering signals or undesirable, multiple edges (e.g. due to the contact bouncing) are detected and filtered out.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

| Option |
| --- |
| *12 … 30 … 150 ms* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter* \ Parameter *Extended settings* \ Option *Yes*

### 7.2.10.2.12 Block input

This parameter is used to define the telegram value with which the input is blocked.

**Note**
When the input is blocked, events on the input are ignored. When the block is canceled, the present status of the inputs (connected contacts open or closed) applies.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *Deactivated* | The input cannot be blocked. |
| *On value 1* | The input is blocked when a telegram with the value 1 is received on the dependent Group Object. The block is removed when a telegram with the value 0 is received.<br><br>The following dependent parameters are shown:<br>• *State after ETS download or KNX voltage recovery*<br><br>The following dependent Group Objects are displayed:<br>• *Block* |
| *On value 0* | The input is blocked when a telegram with the value 0 is received on the dependent Group Object. The block is removed when a telegram with the value 1 is received.<br><br>The following dependent parameters are shown:<br>• *State after ETS download or KNX voltage recovery*<br><br>The following dependent Group Objects are displayed:<br>• *Block* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter* \ Parameter *Extended settings* \ Option *Yes*

### 7.2.10.2.13 State after ETS download or KNX voltage recovery

This parameter is used to define the state of the input after ETS download or KNX voltage recovery.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *Last state* | The last known state is set. |
| *Blocked* | The input is blocked. |
| *Enabled* | The input is enabled. |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Blind/shutter* \ Parameter *Block input* \ Option *On value 1* / *On value 0*

### 7.2.10.3 Parameter window Switch

**Note**
If several inputs are to be set to the same values, parameterization can be performed in the parameter window *Templates for inputs*.

The following settings can be made in this parameter window:
- Parameterize input as a switch sensor input in 1-button operation
- Define reaction on events on input

More information: → Switch application (1-button operation), Page 22.

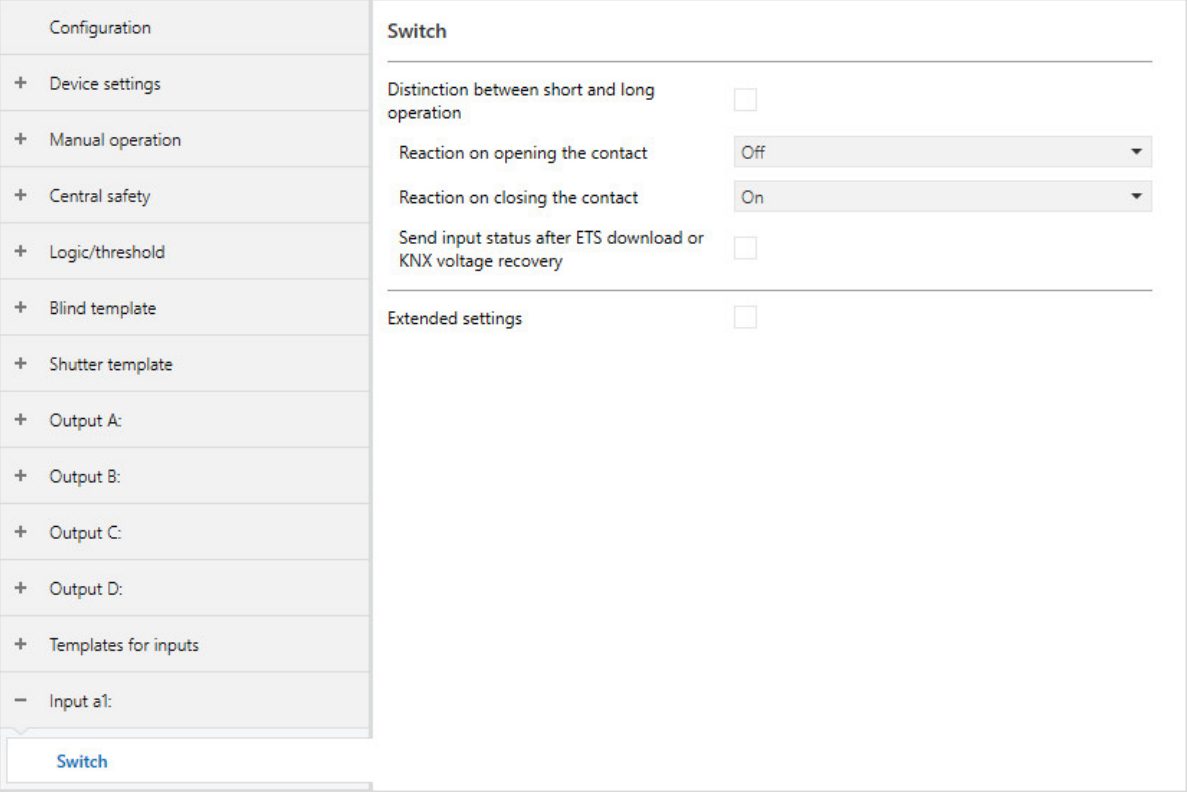



Fig. 22: Parameter window Switch (1-button operation)

**This parameter window includes the following parameters:**

→ Distinction between short and long operation, Page 135
- → Reaction on opening the contact, Page 135
- → Reaction on closing the contact, Page 135
- → Send input status after ETS download or KNX voltage recovery, Page 136
- → Reaction on short operation, Page 136
- → Reaction on long operation, Page 136

→ Extended settings, Page 137
- → Contact type, Page 137
- → Long operation after, Page 137
- → Interference suppression filter, Page 138
- → Block input, Page 138
  - → State after ETS download or KNX voltage recovery, Page 139

**Prerequisites for visibility**
- Parameter window *Configuration* \ Parameter *Input x application* \ Option *Switch*

#### 7.2.10.3.1 Distinction between short and long operation

This parameter is used to define whether a distinction is made between short and long operation of the contact connected (e.g. button/switch).

More information: → Distinction between short and long operation, Page 20.

| Option | |
|---|---|
| *No* | The following dependent parameters are shown:<br>• *Reaction on opening the contact*<br>• *Reaction on closing the contact*<br>• *Send input status after ETS download or KNX voltage recovery* |
| *Yes* | The following dependent parameters are shown:<br>• *Reaction on short operation*<br>• *Reaction on long operation* |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Input x template* \ Option *No*

#### 7.2.10.3.2 Reaction on opening the contact

This parameter is used to define how the device reacts on opening the contact connected to the input.

| Option | |
|---|---|
| *On* | The device sends a switch telegram with the value 1 to the application-specific Group Object for the input. |
| *Off* | The device sends a switch telegram with the value 0 to the application-specific Group Object for the input. |
| *Toggle* | The device sends a switch telegram to the application-specific Group Object for the input. If the value 0 was sent last, the value 1 is sent. If the value 1 was sent last, the value 0 is sent. |
| *No reaction* | |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Switch* \ Parameter *Distinction between short and long operation* \ Option *No*

#### 7.2.10.3.3 Reaction on closing the contact

This parameter is used to define how the device reacts on closing the contact connected to the input.

| Option | |
|---|---|
| *On* | The device sends a switch telegram with the value 1 to the application-specific Group Object for the input. |
| *Off* | The device sends a switch telegram with the value 0 to the application-specific Group Object for the input. |
| *Toggle* | The device sends a switch telegram to the application-specific Group Object for the input. If the value 0 was sent last, the value 1 is sent. If the value 1 was sent last, the value 0 is sent. |
| *No reaction* | |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Switch* \ Parameter *Distinction between short and long operation* \ Option *No*

#### 7.2.10.3.4 Send input status after ETS download or KNX voltage recovery

This parameter is used to define whether the status of the input (connected contact open or closed) is sent on the bus (ABB i-bus® KNX) after ETS download or KNX voltage recovery.

| Option |
|---|
| *No* |
| *Yes* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Switch* \ Parameter *Distinction between short and long operation* \ Option *No*

#### 7.2.10.3.5 Reaction on short operation

This parameter is used to define how the device reacts on short operation of the contact connected to the input.

| Option | |
|---|---|
| *On* | The device sends a switch telegram with the value 1 to the application-specific Group Object for the input. |
| *Off* | The device sends a switch telegram with the value 0 to the application-specific Group Object for the input. |
| *Toggle* | The device sends a switch telegram to the application-specific Group Object for the input. If the value 0 was sent last, the value 1 is sent. If the value 1 was sent last, the value 0 is sent. |
| *No reaction* | |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Switch* \ Parameter *Distinction between short and long operation* \ Option *Yes*

#### 7.2.10.3.6 Reaction on long operation

This parameter is used to define how the device reacts on long operation of the contact connected to the input.

| Option | |
|---|---|
| *On* | The device sends a switch telegram with the value 1 to the application-specific Group Object for the input. |
| *Off* | The device sends a switch telegram with the value 0 to the application-specific Group Object for the input. |
| *Toggle* | The device sends a switch telegram to the application-specific Group Object for the input. If the value 0 was sent last, the value 1 is sent. If the value 1 was sent last, the value 0 is sent. |
| *No reaction* | |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Switch* \ Parameter *Distinction between short and long operation* \ Option *Yes*

### 7.2.10.3.7 Extended settings

This parameter is used to display the extended settings for the parameter window.

**Note**
The modified settings for the dependent parameters are only valid if the dependent parameters are shown.

| Option | |
|---|---|
| *No* | The extended settings are not shown. The corresponding parameters are used with the default values. Changes to the default values are discarded. |
| *Yes* | The extended settings are shown. The default values for the corresponding parameters can be changed.<br><br>The following dependent parameters are shown:<br>• *Contact type*<br>• *Long operation after*<br>• *Interference suppression filter*<br>• *Block input* |

**Prerequisites for visibility**
- Parameter window *Configuration* \ Parameter *Input x template* \ Option *No*

### 7.2.10.3.8 Contact type

This parameter is used to set the type of contact connected to the input.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *NO contact* | The relay contact is closed with an On telegram (1) and opened with an Off telegram (0). |
| *NC contact* | The relay contact is opened with an On telegram (1) and closed with an Off telegram (0). |

**Prerequisites for visibility**
- Parameter window *Input x:* \ Parameter window *Switch*
  - Parameter *Distinction between short and long operation* \ Option *Yes*
  - Parameter *Extended settings* \ Option *Yes*

### 7.2.10.3.9 Long operation after

This parameter is used to define the time from which operation of a connected contact (e.g. button/switch) is interpreted as long operation.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option |
|---|
| *00.3 … 00.4 … 30.0 ss.f* |

**Prerequisites for visibility**
- Parameter window *Input x:* \ Parameter window *Switch*
  - Parameter *Distinction between short and long operation* \ Option *Yes*
  - Parameter *Extended settings* \ Option *Yes*

### 7.2.10.3.10 Interference suppression filter

This parameter is used to define the time for suppressing interference on the input. An operation is only detected if the signal received on the input remains constant for the time defined. In this way, interfering signals or undesirable, multiple edges (e.g. due to the contact bouncing) are detected and filtered out.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option |
|---|
| *12 … 30 … 150 ms* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Switch* \ Parameter *Extended settings* \ Option *Yes*

### 7.2.10.3.11 Block input

This parameter is used to define the telegram value with which the input is blocked.

**Note**
When the input is blocked, events on the input are ignored. When the block is canceled, the present status of the inputs (connected contacts open or closed) applies.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *Deactivated* | The input cannot be blocked. |
| *On value 1* | The input is blocked when a telegram with the value 1 is received on the dependent Group Object. The block is removed when a telegram with the value 0 is received.<br><br>The following dependent parameters are shown:<br>• *State after ETS download or KNX voltage recovery*<br><br>The following dependent Group Objects are displayed:<br>• *Block* |
| *On value 0* | The input is blocked when a telegram with the value 0 is received on the dependent Group Object. The block is removed when a telegram with the value 1 is received.<br><br>The following dependent parameters are shown:<br>• *State after ETS download or KNX voltage recovery*<br><br>The following dependent Group Objects are displayed:<br>• *Block* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Switch* \ Parameter *Extended settings* \ Option *Yes*

### 7.2.10.3.12 State after ETS download or KNX voltage recovery

This parameter is used to define the state of the input after ETS download or KNX voltage recovery.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *Last state* | The last known state is set. |
| *Blocked* | The input is blocked. |
| *Enabled* | The input is enabled. |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Switch* \ Parameter *Block input* \ Option *On value 1* / *On value 0*

### 7.2.10.4 Parameter window Scenes

**Note**
If several inputs are to be set to the same values, parameterization can be performed in the parameter window *Templates for inputs*.

The following settings can be made in this parameter window:
- Recall or store scenes
- Define reaction on events on input

More information: → Scenes application, Page 22.

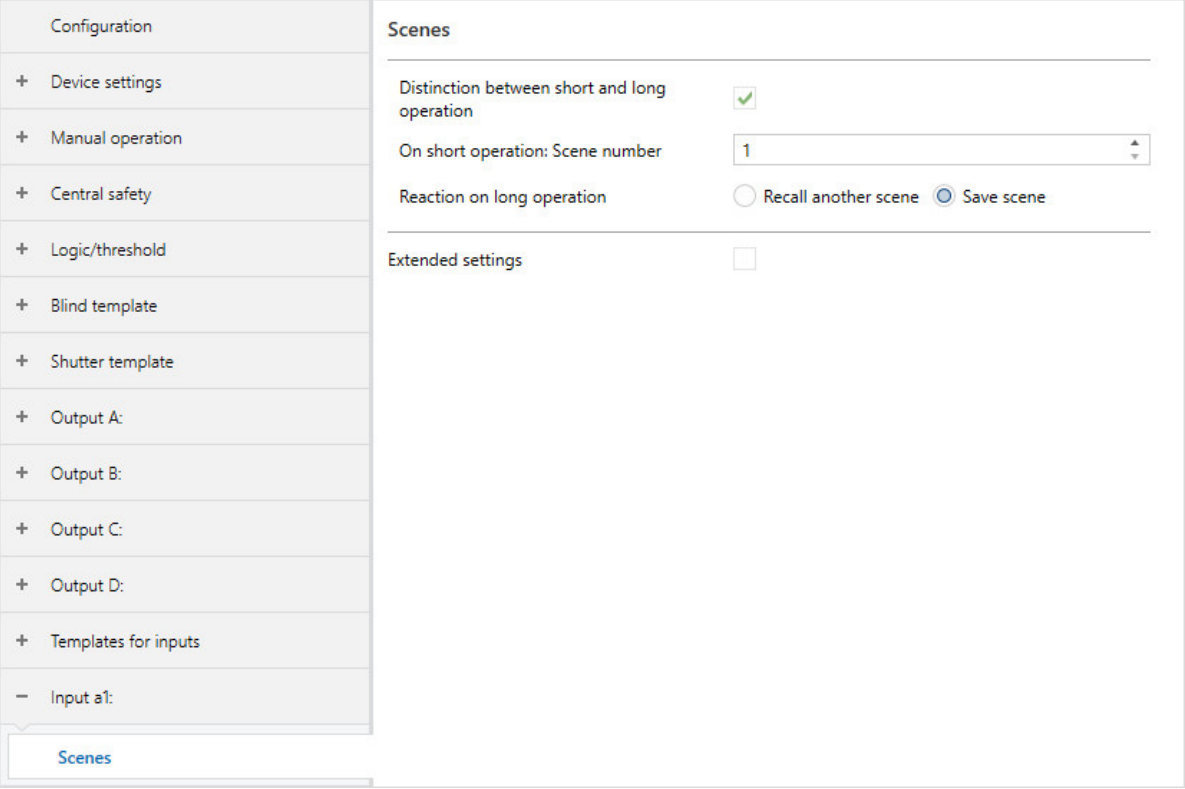



Fig. 23: Parameter window Scenes

**This parameter window includes the following parameters:**

→ Distinction between short and long operation, Page 141
- → On short operation: Scene number, Page 141
- → Reaction on long operation, Page 141
  - → On long operation: Scene number, Page 141
- → Scene number, Page 142
- → Scene, Page 142

→ Extended settings, Page 142
- → Contact type, Page 143
- → Long operation after, Page 143
- → Interference suppression filter, Page 143
- → Block input, Page 144
  - → State after ETS download or KNX voltage recovery, Page 144

**Prerequisites for visibility**
- Parameter window *Configuration* \ Parameter *Input x application* \ Option *Scenes*

#### 7.2.10.4.1 Distinction between short and long operation

This parameter is used to define whether a distinction is made between short and long operation of the contact connected (e.g. button/switch).

More information: → Distinction between short and long operation, Page 20.

| Option | |
|---|---|
| *No* | The following dependent parameters are shown:<br>• *Scene number*<br>• *Scene* |
| *Yes* | The following dependent parameters are shown:<br>• *On short operation: Scene number*<br>• *Reaction on long operation* |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Input x template* \ Option *No*

#### 7.2.10.4.2 On short operation: Scene number

This parameter is used to define which scene number is recalled on short operation of the contact connected to the input.

| Option |
|---|
| *1 … 64* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Scenes* \ Parameter *Distinction between short and long operation* \ Option *Yes*

#### 7.2.10.4.3 Reaction on long operation

This parameter is used to define how the device reacts on long operation of the contact connected to the input.

| Option | |
|---|---|
| *Save scene* | The actual values for all KNX devices integrated are saved in the scene number recalled (→ parameter *On short operation: Scene number*). The values in the scene number are overwritten. |
| *Recall another scene* | Another scene is recalled.<br><br>The following dependent parameters are shown:<br>• *On long operation: Scene number* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Scenes* \ Parameter *Distinction between short and long operation* \ Option *Yes*

#### 7.2.10.4.4 On long operation: Scene number

This parameter is used to define which scene number is recalled on long operation of the contact connected to the input.

| Option |
|---|
| *1 … 64* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Scenes* \ Parameter *Reaction on long operation* \ Option *Recall another scene*

#### 7.2.10.4.5 Scene number

This parameter is used to define which scene number is recalled on operation of the contact connected to the input.

| Option |
|---|
| *1 … 64* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Scenes* \ Parameter *Distinction between short and long operation* \ Option *No*

#### 7.2.10.4.6 Scene

This parameter is used to define how the device reacts when a scene number is recalled.

| Option | |
|---|---|
| *Send* | The scene number recalled (→ parameter *Scene number*) is sent on the bus (ABB i-bus® KNX). The corresponding scene is executed on all KNX devices integrated. |
| *Save* | The actual values for all KNX devices integrated are saved in the scene number recalled (→ parameter *Scene number*). The values in the scene number are overwritten. |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Scenes* \ Parameter *Distinction between short and long operation* \ Option *No*

#### 7.2.10.4.7 Extended settings

This parameter is used to display the extended settings for the parameter window.

**Note**
The modified settings for the dependent parameters are only valid if the dependent parameters are shown.

| Option | |
|---|---|
| *No* | The extended settings are not shown. The corresponding parameters are used with the default values. Changes to the default values are discarded. |
| *Yes* | The extended settings are shown. The default values for the corresponding parameters can be changed.<br><br>The following dependent parameters are shown:<br>• *Contact type*<br>• *Long operation after*<br>• *Interference suppression filter*<br>• *Block input* |

**Prerequisites for visibility**

- Parameter window *Configuration* \ Parameter *Input x template* \ Option *No*

#### 7.2.10.4.8 Contact type

This parameter is used to set the type of contact connected to the input.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *NO contact* | The relay contact is closed with an On telegram (1) and opened with an Off telegram (0). |
| *NC contact* | The relay contact is opened with an On telegram (1) and closed with an Off telegram (0). |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Scenes* \ Parameter *Extended settings* \ Option *Yes*

#### 7.2.10.4.9 Long operation after

This parameter is used to define the time from which operation of a connected contact (e.g. button/ switch) is interpreted as long operation.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

> **Note**
> The default option depends on the selection in the parameter *Reaction on long operation*.

| Option |
|---|
| *00.3 … 00.4 … 30.0 ss.f* |
| *00.3 … 03.0 … 30.0 ss.f* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Scenes*
  - Parameter *Distinction between short and long operation* \ Option *Yes*
  - Parameter *Extended settings* \ Option *Yes*

#### 7.2.10.4.10 Interference suppression filter

This parameter is used to define the time for suppressing interference on the input. An operation is only detected if the signal received on the input remains constant for the time defined. In this way, interfering signals or undesirable, multiple edges (e.g. due to the contact bouncing) are detected and filtered out.

> **Note**
> A change to the default value for this parameter is only valid if the extended settings are active.

| Option |
|---|
| *12 … 30 … 150 ms* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Scenes* \ Parameter *Extended settings* \ Option *Yes*

### 7.2.10.4.11 Block input

This parameter is used to define the telegram value with which the input is blocked.

**Note**
When the input is blocked, events on the input are ignored. When the block is canceled, the present status of the inputs (connected contacts open or closed) applies.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *Deactivated* | The input cannot be blocked. |
| *On value 1* | The input is blocked when a telegram with the value 1 is received on the dependent Group Object. The block is removed when a telegram with the value 0 is received.<br><br>The following dependent parameters are shown:<br>• *State after ETS download or KNX voltage recovery*<br><br>The following dependent Group Objects are displayed:<br>• *Block* |
| *On value 0* | The input is blocked when a telegram with the value 0 is received on the dependent Group Object. The block is removed when a telegram with the value 1 is received.<br><br>The following dependent parameters are shown:<br>• *State after ETS download or KNX voltage recovery*<br><br>The following dependent Group Objects are displayed:<br>• *Block* |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Scenes* \ Parameter *Extended settings* \ Option *Yes*

### 7.2.10.4.12 State after ETS download or KNX voltage recovery

This parameter is used to define the state of the input after ETS download or KNX voltage recovery.

**Note**
A change to the default value for this parameter is only valid if the extended settings are active.

| Option | |
|---|---|
| *Last state* | The last known state is set. |
| *Blocked* | The input is blocked. |
| *Enabled* | The input is enabled. |

**Prerequisites for visibility**

- Parameter window *Input x:* \ Parameter window *Scenes* \ Parameter *Block input* \ Option *On value 1* / *On value 0*

# 8 Group Objects

## 8.1 Overview of Group Objects

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| Enable/Block Manual operation | Central – Manual operation: | DPT 1.003 | 1 bit | C W |
| Activate automatic sun protection | Central – Automatic | DPT 1.003 | 1 bit | C W T U |
| Activate automatic sun protection | Output X – Automatic: | DPT 1.003 | 1 bit | C W T U |
| Block automatic sun protection | Central – Automatic: | DPT 1.002 | 1 bit | C W T U |
| Block automatic sun protection | Output X – Automatic: | DPT 1.002 | 1 bit | C W T U |
| Block direct commands | Central – Automatic: | DPT 1.002 | 1 bit | C W T U |
| Block direct commands | Output X – Automatic: | DPT 1.002 | 1 bit | C W T U |
| Block heating/cooling | Central – Automatic: | DPT 1.002 | 1 bit | C W T U |
| Block heating/cooling | Output X – Automatic: | DPT 1.002 | 1 bit | C W T U |
| Block | Input x – Blind/shutter: | DPT 1.003 | 1 bit | C W |
| Block | Input x – Scene: | DPT 1.003 | 1 bit | C W |
| Block | Input x – Switch: | DPT 1.003 | 1 bit | C W |
| Block | Input x+y – Blind/shutter: | DPT 1.003 | 1 bit | C W |
| Change lower threshold | Logic/threshold x – Threshold: | DPT 13.010 | 4 bytes | C W |
| Change lower threshold | Logic/threshold x – Threshold: | DPT 13.013 | 4 bytes | C W |
| Change lower threshold | Logic/threshold x – Threshold: | DPT 14.019 | 4 bytes | C W |
| Change lower threshold | Logic/threshold x – Threshold: | DPT 14.056 | 4 bytes | C W |
| Change lower threshold | Logic/threshold x – Threshold: | DPT 5.001 | 1 byte | C W |
| Change lower threshold | Logic/threshold x – Threshold: | DPT 5.010 | 1 byte | C W |
| Change lower threshold | Logic/threshold x – Threshold: | DPT 7.001 | 2 bytes | C W |
| Change lower threshold | Logic/threshold x – Threshold: | DPT 9.001 | 2 bytes | C W |
| Change lower threshold | Logic/threshold x – Threshold: | DPT 9.004 | 2 bytes | C W |
| Change lower threshold | Logic/threshold x – Threshold: | DPT 9.005 | 2 bytes | C W |
| Change lower threshold | Logic/threshold x – Threshold: | DPT 9.021 | 2 bytes | C W |
| Change lower threshold | Logic/threshold x – Threshold: | DPT 9.024 | 2 bytes | C W |
| Change upper threshold | Logic/threshold x – Threshold: | DPT 13.010 | 4 bytes | C W |
| Change upper threshold | Logic/threshold x – Threshold: | DPT 13.013 | 4 bytes | C W |
| Change upper threshold | Logic/threshold x – Threshold: | DPT 14.019 | 4 bytes | C W |
| Change upper threshold | Logic/threshold x – Threshold: | DPT 14.056 | 4 bytes | C W |
| Change upper threshold | Logic/threshold x – Threshold: | DPT 5.001 | 1 byte | C W |
| Change upper threshold | Logic/threshold x – Threshold: | DPT 5.010 | 1 byte | C W |
| Change upper threshold | Logic/threshold x – Threshold: | DPT 7.001 | 2 bytes | C W |
| Change upper threshold | Logic/threshold x – Threshold: | DPT 9.001 | 2 bytes | C W |
| Change upper threshold | Logic/threshold x – Threshold: | DPT 9.004 | 2 bytes | C W |
| Change upper threshold | Logic/threshold x – Threshold: | DPT 9.005 | 2 bytes | C W |
| Change upper threshold | Logic/threshold x – Threshold: | DPT 9.021 | 2 bytes | C W |
| Change upper threshold | Logic/threshold x – Threshold: | DPT 9.024 | 2 bytes | C W |
| Connection A | Logic/threshold x – Logic: | DPT 1.002 | 1 bit | C W |
| Connection B | Logic/threshold x – Logic: | DPT 1.002 | 1 bit | C W |
| Cooling | Central – Automatic: | DPT 1.003 | 1 bit | C W T U |
| Cooling | Output X – Automatic: | DPT 1.003 | 1 bit | C W T U |
| Deactivate manual operation | Central – Manual operation: | DPT 1.017 | 1 bit | C W |
| Heating | Central – Automatic: | DPT 1.003 | 1 bit | C W T U |
| Heating | Output X – Automatic: | DPT 1.003 | 1 bit | C W T U |
| Heating/cooling | Central – Automatic: | DPT 1.100 | 1 bit | C W T U |
| Heating/cooling | Output X – Automatic: | DPT 1.100 | 1 bit | C W T U |
| In operation | Central – General: | DPT 1.002 | 1 bit | C R T |
| KNX scenes 1 … 64 | Central – Direct: | DPT 18.001 | 1 byte | C W |
| KNX scenes 1 … 64 | Output X – Direct: | DPT 18.001 | 1 byte | C W |
| Limit travel range | Output X – Restriction: | DPT 1.003 | 1 bit | C W |
| Move slat | Central – Direct: | DPT 5.001 | 1 byte | C W |
| Move slat | Output X – Direct: | DPT 5.001 | 1 byte | C W |
| Move to height | Central – Direct: | DPT 5.001 | 1 byte | C W |
| Move to height | Output X – Direct: | DPT 5.001 | 1 byte | C W |
| Move to position x | Output X – Direct: | DPT 1.017 | 1 bit | C W |
| Move to position x/y | Output X – Direct: | DPT 1.022 | 1 bit | C W |
| Output forced operation 2 bit | Output X – Safety: | DPT 2.001 | 2 bit | C W |
| Output safety x | Output X – Safety: | DPT 1.005 | 1 bit | C W |
| Reactivation time | Output X – Automatic: | DPT 7.005 | 2 byte | C W |
| Recall scene assignment x | Output X – Direct: | DPT 1.017 | 1 bit | C W |
| Request status values | Central – General: | DPT 1.017 | 1 bit | C W |
| Room occupied | Central – Automatic: | DPT 1.018 | 1 bit | C W T U |

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| Room occupied | Output X – Automatic: | DPT 1.018 | 1 bit | C W |
| Room temperature received | Central – Automatic: | DPT 9.001 | 2 byte | C W T U |
| Room temperature received | Output X – Automatic: | DPT 9.001 | 2 byte | C W T U |
| Safety x | Central – Safety: | DPT 1.005 | 1 bit | C W T U |
| Scene 1 … 64 | Input x – Scene: | DPT 18.001 | 1 byte | C T |
| Sector control | Central – General: | nonDPT | 6 byte | C W |
| Status Automatic sun protection active | Output X – Automatic: | DPT 1.011 | 1 bit | C R T |
| Status Automatic sun protection blocked | Output X – Automatic: | DPT 1.011 | 1 bit | C R T |
| Status byte all active safeties | Output X – Safety: | nonDPT | 1 byte | C R T |
| Status byte automatic sun protection | Output X – Automatic: | nonDPT | 1 byte | C R T |
| Status combined (4 bytes) | Output X – Direct | 241,800 | 4 byte | C R T |
| Status Direct commands blocked | Output X – Direct: | DPT 1.011 | 1 bit | C R T |
| Status Height | Output X – Direct: | DPT 5.001 | 1 byte | C R T |
| Status Input value between thresholds | Logic/threshold x – Threshold: | DPT 1.002 | 1 bit | C R T |
| Status Lower end position | Input x – Blind/shutter: | DPT 1.002 | 1 bit | C W U |
| Status Lower end position | Input x+y – Blind/shutter: | DPT 1.002 | 1 bit | C W U |
| Status Lower end position | Output X – Direct: | DPT 1.011 | 1 bit | C R T |
| Status Manual operation | Central – Manual operation: | DPT 1.011 | 1 bit | C R T |
| Status Move | Input x – Blind/shutter: | DPT 1.002 | 1 bit | C W U |
| Status Move | Input x+y – Blind/shutter: | DPT 1.002 | 1 bit | C W U |
| Status Move | Output X – Direct: | DPT 1.011 | 1 bit | C R T |
| Status Overheating protection active | Output X – Automatic: | DPT 1.011 | 1 bit | C R T |
| Status Result [Logic] | Logic/threshold x – Logic: | DPT 1.002 | 1 bit | C R T |
| Status Result [threshold] | Logic/threshold x – Threshold: | DPT 1.002 | 1 bit | C R T |
| Status Safety active | Output X – Safety: | DPT 1.011 | 1 bit | C R T I |
| Status Slat | Output X – Direct: | DPT 5.001 | 1 byte | C R T |
| Status Upper end position | Input x – Blind/shutter: | DPT 1.002 | 1 bit | C W U |
| Status Upper end position | Input x+y – Blind/shutter: | DPT 1.002 | 1 bit | C W U |
| Status Upper end position | Output X – Direct: | DPT 1.011 | 1 bit | C R T |
| Step/stop | Central – Direct: | DPT 1.007 | 1 bit | C W |
| Step/stop | Input x – Blind/shutter: | DPT 1.007 | 1 bit | C W T U |
| Step/stop | Input x+y – Blind/shutter: | DPT 1.007 | 1 bit | C W T U |
| Step/stop | Output X – Direct: | DPT 1.007 | 1 bit | C W |
| Step/stop | Output X – Direct: | DPT 1.007 | 1 bit | C W |
| Stop | Input x – Blind/shutter: | DPT 1.017 | 1 bit | C W T U |
| Stop | Input x+y – Blind/shutter: | DPT 1.017 | 1 bit | C W T U |
| Stop | Output X – Direct: | DPT 1.007 | 1 bit | C W |
| Sun | Central – Automatic: | DPT 1.002 | 1 bit | C W T U |
| Sun | Output X – Automatic: | DPT 1.002 | 1 bit | C W T U |
| Sun: Move slat | Central – Automatic: | DPT 5.001 | 1 byte | C W T U |
| Sun: Move slat | Output X – Automatic: | DPT 5.001 | 1 byte | C W T U |
| Sun: Move to height | Central – Automatic: | DPT 5.001 | 1 byte | C W T U |
| Sun: Move to height | Output X – Automatic: | DPT 5.001 | 1 byte | C W T U |
| Switch | Input x – Switch: | DPT 1.001 | 1 bit | C W T U |
| Threshold input | Logic/threshold x – Threshold: | DPT 13.010 | 4 bytes | C W T U |
| Threshold input | Logic/threshold x – Threshold: | DPT 13.013 | 4 bytes | C W T U |
| Threshold input | Logic/threshold x – Threshold: | DPT 14.019 | 4 bytes | C W T U |
| Threshold input | Logic/threshold x – Threshold: | DPT 14.056 | 4 bytes | C W T U |
| Threshold input | Logic/threshold x – Threshold: | DPT 5.001 | 1 byte | C W T U |
| Threshold input | Logic/threshold x – Threshold: | DPT 5.010 | 1 byte | C W T U |
| Threshold input | Logic/threshold x – Threshold: | DPT 7.001 | 2 bytes | C W T U |
| Threshold input | Logic/threshold x – Threshold: | DPT 9.001 | 2 bytes | C W T U |
| Threshold input | Logic/threshold x – Threshold: | DPT 9.004 | 2 bytes | C W T U |
| Threshold input | Logic/threshold x – Threshold: | DPT 9.005 | 2 bytes | C W T U |
| Threshold input | Logic/threshold x – Threshold: | DPT 9.021 | 2 bytes | C W T U |
| Threshold input | Logic/threshold x – Threshold: | DPT 9.024 | 2 bytes | C W T U |
| Trigger calibration movement | Output X – Direct: | DPT 1.017 | 1 bit | C W |
| Trigger reference movement up/down | Output X – Direct: | DPT 1.008 | 1 bit | C W |
| Up/down | Central – Direct: | DPT 1.008 | 1 bit | C W |
| Up/down | Input x – Blind/shutter: | DPT 1.008 | 1 bit | C W T U |
| Up/down | Input x+y – Blind/shutter: | DPT 1.008 | 1 bit | C W T U |
| Up/down | Output X – Direct: | DPT 1.008 | 1 bit | C W |
| Up/working position | Central – Direct: | DPT 1.008 | 1 bit | C W |
| Up/working position | Output X – Direct: | DPT 1.008 | 1 bit | C W |

## 8.2 Group Objects Central – General

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **In operation** | **Central – General:** | **DPT 1.002** | **1 bit** | **C R T** |

This Group Object cyclically sends an In operation telegram on the bus (ABB i-bus® KNX). The sending cycle is set in the parameter *Sending cycle*.
The telegram value depends on the setting in the parameter *Enable Group Object "In operation"*.

Telegram value:
- 1 = Device in operation
- 0 = Device in operation

**Note**
Readiness can be monitored by another KNX device using this Group Object. If a telegram is not received, the sending device could be faulty or the bus cable to the transmitting device could be interrupted.

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable Group Object "In operation"* \ Option *Yes, send value 0 cyclically / Yes, send value 1 cyclically*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Request status values** | **Central – General:** | **DPT 1.017** | **1 bit** | **C W** |

If a telegram is received on this Group Object, the values of the Status Group Objects are sent on the bus (ABB i-bus® KNX).

Telegram value:
- 1 = Send status values
- 0 = Send status values

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable Group Object "Request status values"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Sector control** | **Central – General:** | **nonDPT** | **6 byte** | **C W** |

This Group Object is used to receive a sector call via the bus (ABB i-bus® KNX).
The sector telegram contains sector information, the address of the called sector, a command, and command-dependent optional parameters.

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Sector control* \ Option *Yes*

## 8.3 Group Objects Central – Direct

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **KNX scenes 1 … 64** | **Central – Direct:** | **DPT 18.001** | **1 byte** | **C W** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central scene commands:
- *Scene assignment x KNX scene*

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a central scene telegram.
More information: → Function Scenes, Page 28.

Telegram value:
- 0 … 63 = Recall scene x (x = 1 … 64)
- 128 … 191 = Save scene x (x = 1 … 64)

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable Group Object "KNX scene 1… 64" [Central]* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Up/down** | **Central – Direct:** | **DPT 1.008** | **1 bit** | **C W** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central direct commands:
- *Output reacts to central direct commands*

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the central direct command for moving the blind/shutter. If no further move commands (e.g. stop) are received, the blind/shutter will move to the following positions:
- Upper or lower end position (if the function *Working position* is used: second lower end position → Function Working position (shading position), Page 31)
- Upper or lower limit if a travel range limit is active

Telegram value:
- 1 = Down
- 0 = Up

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for direct commands* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Up/working position** | **Central – Direct:** | **DPT 1.008** | **1 bit** | **C W** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central direct commands:
- *Output reacts to central direct commands*

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the central direct command for moving the blind/shutter. If no further move commands (e.g. stop) are received, the blind/shutter will move to the following positions:
- Upper or first lower end position
- Upper or lower limit if a travel range limit is active

**Note**
If the lower limit of the travel range limit is below the first lower end position, the blind/shutter moves to the first lower end position.

Telegram value:
- 1 = Down
- 0 = Up

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for direct commands* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Step/stop** | **Central – Direct:** | **DPT 1.007** | **1 bit** | **C W** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central direct commands:
- *Output reacts to central direct commands*

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the central direct command to stop the movement or to change the slat position.

**Note**
If the function *Working position* is used, this Group Object can only close the slats as far as the "working position" position, → Function Working position (shading position), Page 31. The blind can be moved beyond the first lower end position using unlimited steps.

Telegram value:
- 1 = Stop / close slats
- 0 = Stop / open slats

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for direct commands* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Move to height** | **Central – Direct:** | **DPT 5.001** | **1 byte** | **C W** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central direct commands:
- *Output reacts to central direct commands*

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the central direct command for moving the blind/shutter to a defined position.
More information: → Specifics when moving to 100 % position via 1-byte Group Objects, Page 186.

Telegram value:
- 0 % = Upper end position
- 1 … 99 % = Intermediate position
- 100 % = Lower end position

**Note**
If the function *Working position* is used, this Group Object can only move the blind as far as the first lower end position, → Function Working position (shading position), Page 31. In this case, the telegram value 100 % corresponds to the first lower end position.

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

**Note**
The slat position after moving the blind/shutter corresponds to the slat position before moving the blind/shutter. If a telegram is received on the following Group Objects during the movement, after the blind/shutter is moved the slats are set according to the value received:
- *Move slat* (Central)
- *Move slat*

**Note**
If the slat position was set manually via one of the following Group Objects, this setting will be discarded after the blind/shutter is moved:
- *Step/stop* (Central)
- *Step/stop*

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for direct commands* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Move slat** | **Central – Direct:** | **DPT 5.001** | **1 byte** | **C W** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central direct commands:
- *Output reacts to central direct commands*

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the central direct command for adjusting the slats to a defined position.
The slats are positioned after the movement is ended.

**Note**
If the function *Working position* is used, this Group Object can only close the slats as far as the "working position" position, → Function Working position (shading position), Page 31.

Telegram value:
- 0 % = Fully open
- 1 … 99 % = Intermediate position/working position
- 100 % = Fully closed

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for direct commands* \ Option *Yes*

# 8.4 Group Objects Central – Automatic

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Activate automatic sun protection** | **Central – Automatic** | **DPT 1.003** | **1 bit** | **C W T U** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central automatic commands:
- *Reacts to central Group Objects*

This Group Object is used to activate or deactivate the function *Automatic sun protection* via the bus (ABB i-bus® KNX).
More information: → Function Automatic sun protection, Page 25.

Telegram value:
- 1 = Activate automatic sun protection, deactivate direct operation
- 0 = Deactivate automatic sun protection, activate direct operation

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Sun** | **Central – Automatic:** | **DPT 1.002** | **1 bit** | **C W T U** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central automatic commands:
- *Reacts to central Group Objects*

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the sunshine information (sun = 1 or sun = 0) for activating the function *Automatic sun protection*.
More information: → Function Anti-glare protection, Page 26.

Telegram value:
- 1 = Sunshine (sun = 1)
- 0 = No sunshine (sun = 0)

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Sun: Move to height** | **Central – Automatic:** | **DPT 5.001** | **1 byte** | **C W T U** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central automatic commands:
- *Reacts to central Group Objects*

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the direct activation of the blind/shutter position.
More information: → Function Anti-glare protection, Page 26.

Telegram value:
- 0 % = Upper end position
- 1 % … 99 % = Intermediate position
- 100 % = Lower end position

**Note**
If the function *Working position* is used, this Group Object can only move the blind as far as the first lower end position, → Function Working position (shading position), Page 31. In this case, the telegram value 100 % corresponds to the first lower end position.

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Sun: Move slat** | **Central – Automatic:** | **DPT 5.001** | **1 byte** | **C W T U** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central automatic commands:
- *Reacts to central Group Objects*

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the direct activation of the slat position.
More information: → Function Anti-glare protection, Page 26.

**Note**
If the function *Working position* is used, this Group Object can only close the slats as far as the "working position" position, → Function Working position (shading position), Page 31.

Telegram value:
- 0 % = Open slats
- 1 % … 99 % = Intermediate position/working position
- 100 % = Close slats

**Note**
The slats are positioned only after the blind/shutter reaches the target position.

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Block automatic sun protection** | **Central – Automatic:** | **DPT 1.002** | **1 bit** | **C W T U** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central automatic commands:
- *Reacts to central Group Objects*

This Group Object is used to block or unblock, via the bus (ABB i-bus® KNX), the function *Automatic sun protection*.
More information: → Function Automatic sun protection, Page 25.

Telegram value:
- 1 = Block function *Automatic sun protection*
- 0 = Unblock function *Automatic sun protection*

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Block direct commands** | **Central – Automatic:** | **DPT 1.002** | **1 bit** | **C W T U** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central automatic commands:
- *Reacts to central Group Objects*

This Group Object is used to block or unblock direct commands via the bus (ABB i-bus® KNX).
More information: → Direct operation, Page 190.

**Note**
Blocking or unblocking via this Group Object is only possible if the function *Automatic sun protection* is active.

Telegram value:
- 1 = Block direct commands
- 0 = Unblock direct commands

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Room occupied** | **Central – Automatic:** | **DPT 1.018** | **1 bit** | **C W T U** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central automatic commands:
- *Reacts to central Group Objects*

This Group Object is used to receive the occupancy status (person in the room) via the bus (ABB i-bus® KNX).
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- 1 = Room occupied/person in room
- 0 = Room vacant

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Room temperature received** | **Central – Automatic:** | **DPT 9.001** | **2 byte** | **C W T U** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central automatic commands:
- *Reacts to central Group Objects*

This Group Object is used to receive the room temperature via the bus (ABB i-bus® KNX).
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- −273 … 670760 °C

Prerequisites for visibility
- Parameter window *Device settings* \ Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Heating** | **Central – Automatic:** | **DPT 1.003** | **1 bit** | **C W T U** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central automatic commands:
- *Reacts to central Group Objects*

This Group Object is used to receive the room operating mode via the bus (ABB i-bus® KNX).
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- 1 = Heating
- 0 = No heating

Prerequisites for visibility
- Parameter window *Device settings*
  - Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*
  - Parameter *Control via Group Objects* \ Option *"Heating" and "Cooling"*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Cooling** | **Central – Automatic:** | **DPT 1.003** | **1 bit** | **C W T U** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central automatic commands:
- *Reacts to central Group Objects*

This Group Object is used to receive the room operating mode via the bus (ABB i-bus® KNX).
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- 1 = Cooling
- 0 = No cooling

Prerequisites for visibility
- Parameter window *Device settings*
  - Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*
  - Parameter *Control via Group Objects* \ Option *"Heating" and "Cooling"*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Heating/cooling** | **Central – Automatic:** | **DPT 1.100** | **1 bit** | **C W T U** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central automatic commands:
- *Reacts to central Group Objects*

This Group Object is used to receive the room operating mode via the bus (ABB i-bus® KNX).
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- 1 = Heating
- 0 = Cooling

Prerequisites for visibility
- Parameter window *Device settings*
  - Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*
  - Parameter *Control via Group Objects* \ Option *"Heating/cooling" and "Block heating/cooling"*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Block heating/cooling** | **Central – Automatic:** | **DPT 1.002** | **1 bit** | **C W T U** |

**Note**
All assigned outputs can be activated together with the central Group Objects. For each output, the following parameter can be used to specify whether the output reacts to central automatic commands:
- *Reacts to central Group Objects*

This Group Object is used to block or unblock, via the bus (ABB i-bus® KNX), the function Heating/Cooling.
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- 1= Block heating/cooling
- 0= Unblock heating/cooling

Prerequisites for visibility
- Parameter window *Device settings*
  - Parameter *Enable central Group Objects for automatic sun protection* \ Option *Yes*
  - Parameter *Control via Group Objects* \ Option *"Heating/cooling" and "Block heating/cooling"*

## 8.5 Group Objects Central – Safety

**Note**
An individual description can be added to the names of the Group Objects, → parameter *"Safety x" description*.

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Safety x** | **Central – Safety:** | **DPT 1.005** | **1 bit** | **C W T U** |

These Group Objects are used to receive central safety alarms via the bus (ABB i-bus® KNX).
More information: → Central safety, Page 24.

Telegram value:
- 1 = Alarm (safety active)
- 0 = No alarm (safety inactive)

**Note**
Prerequisites for automatically updating Group Objects:
- Parameter *Poll Group Objects after restart* \ Option *Yes*
- The read flag is set for the sending Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Safety* \ Option *Yes*
- Parameter window *Central safety* \ Parameter *Enable "Safety x"* \ Option *Yes*

## 8.6 Group Objects Manual operation

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Manual operation** | **Central – Manual operation:** | **DPT 1.011** | **1 bit** | **C R T** |

This Group Object sends the status of the *Manual operation* mode on the bus (ABB i-bus® KNX).
Telegram value:
- 1 = Manual operation active
- 0 = Manual operation inactive

Prerequisites for visibility
- Parameter window *Manual operation* \ Parameter *Enable manual operation* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Enable/Block Manual operation** | **Central – Manual operation:** | **DPT 1.003** | **1 bit** | **C W** |

This Group Object is used to enable or block *Manual operation* mode.
If *Manual operation* mode is active, it will be deactivated and blocked with telegram value 0. If *Manual operation* mode was deactivated and blocked via this Group Object, the only way to reactivate it is via this Group Object.
Telegram value:
- 1 = Enable Manual operation
- 0 = Deactivate and block Manual operation

Prerequisites for visibility
- Parameter window *Manual operation* \ Parameter *Enable manual operation* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Deactivate manual operation** | **Central – Manual operation:** | **DPT 1.017** | **1 bit** | **C W** |

This Group Object receives, via the bus (ABB i-bus® KNX), the command to deactivate Manual operation.
Telegram value:
- 1 = Deactivate Manual operation
- 0 = Deactivate Manual operation

Prerequisites for visibility
- Parameter window *Manual operation* \ Parameter *Enable manual operation* \ Option *Yes*

# 8.7 Group Objects Logic/threshold

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Connection A** | **Logic/threshold x – Logic:** | **DPT 1.002** | **1 bit** | **C W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), an input value for the function *Logic*.

Telegram value:
- 1 = Logically true
- 0 = Logically false

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the sending Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *AND / OR / Exclusive OR / GATE / 1 bit Inverter*

| | | | | |
|---|---|---|---|---|
| **Connection B** | **Logic/threshold x – Logic:** | **DPT 1.002** | **1 bit** | **C W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), an input value for the function *Logic*.

Telegram value:
- 1 = Logically true
- 0 = Logically false

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the sending Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x* \ Parameter *Logic function* \ Option *AND / OR / Exclusive OR / GATE*

| | | | | |
|---|---|---|---|---|
| **Status Result [Logic]** | **Logic/threshold x – Logic:** | **DPT 1.002** | **1 bit** | **C R T** |

This Group Object sends the result of the function *Logic* on the bus (ABB i-bus® KNX).

Telegram value:
- 1 = Logically true
- 0 = Logically false

**Note**
The result can be inverted,→ parameter *Invert result*.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *AND / OR / Exclusive OR / GATE / 1 bit Inverter*
  - Parameter *Enable Group Object "Status Result"* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Status Input value between thresholds** | **Logic/threshold x – Threshold:** | **DPT 1.002** | **1 bit** | **C R T** |

This Group Object sends the value 1 on the bus (ABB i-bus® KNX) if the input value for the function *Threshold* is between the thresholds.

Telegram value:
- 1 = Input value is between the thresholds (logically true)
- 0 = Input value is not between the thresholds (logically false)

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Monitor range between thresholds* \ Option *Yes*
  - Parameter *Enable Group Objects "Status Result", "Status Input value between thresholds"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Threshold input** | **Logic/threshold x – Threshold:** | **DPT 13.010** | **4 bytes** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the input value for the function *Threshold*.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 2147483647 Wh

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Wh (DPT 13.010)*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Threshold input** | **Logic/threshold x – Threshold:** | **DPT 13.013** | **4 bytes** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the input value for the function *Threshold*.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 2147483647 kWh

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *kWh (DPT 13.013)*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Threshold input** | **Logic/threshold x – Threshold:** | **DPT 14.019** | **4 bytes** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the input value for the function *Threshold*.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 24 A

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *A (DPT 14.019)*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Threshold input** | **Logic/threshold x – Threshold:** | **DPT 14.056** | **4 bytes** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the input value for the function *Threshold*.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 10000 W

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *W (DPT 14.056)*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Threshold input** | **Logic/threshold x – Threshold:** | **DPT 5.001** | **1 byte** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the input value for the function *Threshold*.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
0 … 100 %

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Percent (DPT 5.001)*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Threshold input** | **Logic/threshold x – Threshold:** | **DPT 5.010** | **1 byte** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the input value for the function *Threshold*.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 255

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Counter pulses (DPT 5.010)*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Threshold input** | **Logic/threshold x – Threshold:** | **DPT 7.001** | **2 bytes** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the input value for the function *Threshold*.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 65535

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Counter pulses (DPT 7.001)*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Threshold input** | **Logic/threshold x – Threshold:** | **DPT 9.001** | **2 bytes** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the input value for the function *Threshold*.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- −273 … 670760 °C

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Temperature (DPT 9.001)*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Threshold input** | **Logic/threshold x – Threshold:** | **DPT 9.004** | **2 bytes** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the input value for the function *Threshold*.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 670760 lux

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Lux (DPT 9.004)*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Threshold input** | **Logic/threshold x – Threshold:** | **DPT 9.005** | **2 bytes** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the input value for the function *Threshold*.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 100 m/s

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Wind (DPT 9.005)*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Threshold input** | **Logic/threshold x – Threshold:** | **DPT 9.021** | **2 bytes** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the input value for the function *Threshold*.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 240000 mA

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *mA (DPT 9.021)*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Threshold input** | **Logic/threshold x – Threshold:** | **DPT 9.024** | **2 bytes** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the input value for the function *Threshold*.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 10 kW

**Note**
Prerequisites for automatically updating the Group Object:
- Parameter *Read input Group Objects after KNX voltage recovery and download* \ Option *Yes*
- The read flag is set for the Group Object

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *kW (DPT 9.024)*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change upper threshold** | **Logic/threshold x – Threshold:** | **DPT 13.010** | **4 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the upper threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 2147483647 Wh

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Wh (DPT 13.010)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change upper threshold** | **Logic/threshold x – Threshold:** | **DPT 13.013** | **4 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the upper threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 2147483647 kWh

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *kWh (DPT 13.013)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change upper threshold** | **Logic/threshold x – Threshold:** | **DPT 14.019** | **4 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the upper threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 24 A

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *A (DPT 14.019)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change upper threshold** | **Logic/threshold x – Threshold:** | **DPT 14.056** | **4 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the upper threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 10000 W

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *W (DPT 14.056)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change upper threshold** | **Logic/threshold x – Threshold:** | **DPT 5.001** | **1 byte** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the upper threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 100 %

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Percent (DPT 5.001)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change upper threshold** | **Logic/threshold x – Threshold:** | **DPT 5.010** | **1 byte** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the upper threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 255

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Counter pulses (DPT 5.010)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change upper threshold** | **Logic/threshold x – Threshold:** | **DPT 7.001** | **2 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the upper threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 65535

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Counter pulses (DPT 7.001)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change upper threshold** | **Logic/threshold x – Threshold:** | **DPT 9.001** | **2 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the upper threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- −273 … 670760 °C

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Temperature (DPT 9.001)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change upper threshold** | **Logic/threshold x – Threshold:** | **DPT 9.004** | **2 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the upper threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 670760 lux

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Lux (DPT 9.004)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change upper threshold** | **Logic/threshold x – Threshold:** | **DPT 9.005** | **2 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the upper threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 100 m/s

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Wind (DPT 9.005)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change upper threshold** | **Logic/threshold x – Threshold:** | **DPT 9.021** | **2 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the upper threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 240000 mA

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *mA (DPT 9.021)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change upper threshold** | **Logic/threshold x – Threshold:** | **DPT 9.024** | **2 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the upper threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 10 kW

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *kW (DPT 9.024)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change lower threshold** | **Logic/threshold x – Threshold:** | **DPT 13.010** | **4 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the lower threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 2147483647 Wh

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Wh (DPT 13.010)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change lower threshold** | **Logic/threshold x – Threshold:** | **DPT 13.013** | **4 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the lower threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 2147483647 kWh

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *kWh (DPT 13.013)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change lower threshold** | **Logic/threshold x – Threshold:** | **DPT 14.019** | **4 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the lower threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 24 A

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *A (DPT 14.019)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change lower threshold** | **Logic/threshold x – Threshold:** | **DPT 14.056** | **4 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the lower threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 10000 W

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *W (DPT 14.056)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change lower threshold** | **Logic/threshold x – Threshold:** | **DPT 5.001** | **1 byte** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the lower threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 100 %

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Percent (DPT 5.001)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change lower threshold** | **Logic/threshold x – Threshold:** | **DPT 5.010** | **1 byte** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the lower threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 255

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Counter pulses (DPT 5.010)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change lower threshold** | **Logic/threshold x – Threshold:** | **DPT 7.001** | **2 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the lower threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 65535

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Counter pulses (DPT 7.001)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change lower threshold** | **Logic/threshold x – Threshold:** | **DPT 9.001** | **2 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the lower threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- −273 … 670760 °C

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Temperature (DPT 9.001)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change lower threshold** | **Logic/threshold x – Threshold:** | **DPT 9.004** | **2 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the lower threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 670760 lux

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Lux (DPT 9.004)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change lower threshold** | **Logic/threshold x – Threshold:** | **DPT 9.005** | **2 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the lower threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 100 m/s

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *Wind (DPT 9.005)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change lower threshold** | **Logic/threshold x – Threshold:** | **DPT 9.021** | **2 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the lower threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 240000 mA

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *mA (DPT 9.021)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Change lower threshold** | **Logic/threshold x – Threshold:** | **DPT 9.024** | **2 bytes** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a new value for the lower threshold.
The data point type for the Group Object depends on the option selected in the parameter *Data point type of Group Object "Threshold input"*.

Telegram value:
- 0 … 10 kW

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Data point type of Group Object "Threshold input"* \ Option *kW (DPT 9.024)*
  - Parameter *Change thresholds via Group Objects* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Result [threshold]** | **Logic/threshold x – Threshold:** | **DPT 1.002** | **1 bit** | **C R T** |

This Group Object sends the result of the function *Threshold* on the bus (ABB i-bus® KNX).

Telegram value:
- Dependent on the settings in the following parameters:
  - *Result if upper threshold is exceeded*
  - *Result if lower threshold is dropped below*

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Enable function: Logic/threshold* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/threshold configuration* \ Parameter *Enable groups: Logic/threshold x-y* \ Option *Yes*
- Parameter window *Logic/threshold* \ Parameter window *Logic/Threshold x*
  - Parameter *Logic function* \ Option *Threshold*
  - Parameter *Enable Group Objects "Status Result", "Status Input value between thresholds"* \ Option *Yes*

# 8.8 Group Objects Output X – Direct

**Note**
An individual description can be added to the names of the Group Objects, → parameter *Output X description*.

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Up/down** | **Output X – Direct:** | **DPT 1.008** | **1 bit** | **C W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the direct command for moving the blind/shutter. If no further move commands (e.g. stop) are received, the blind/shutter will move to the following positions:
- Upper or lower end position (if the function *Working position* is used: second lower end position → Function Working position (shading position), Page 31)
- Upper or lower limit if a travel range limit is active

Telegram value:
- 1 = Down
- 0 = Up

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Up/working position** | **Output X – Direct:** | **DPT 1.008** | **1 bit** | **C W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the direct command for moving the blind/shutter. If no further move commands (e.g. stop) are received, the blind/shutter will move to the following positions:
- Upper or first lower end position
- Upper or lower limit if a travel range limit is active

**Note**
If the lower limit of the travel range limit is below the first lower end position, the blind/shutter moves to the first lower end position.

Telegram value:
- 1 = Down
- 0 = Up

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Slat moves down in working position* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Step/stop** | **Output X – Direct:** | **DPT 1.007** | **1 bit** | **C W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the command to stop the movement or to change the slat position.

**Note**
If the function *Working position* is used, this Group Object can only close the slats as far as the "working position" position, → Function Working position (shading position), Page 31. The blind can be moved beyond the first lower end position using unlimited steps.

Telegram value:
- 1 = Stop / close slats
- 0 = Stop / open slats

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Stop** | **Output X – Direct:** | **DPT 1.007** | **1 bit** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the command to stop the movement.

Telegram value:
- 1 = Stop
- 0 = Stop

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Shutter*
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter* \ Parameter *Allow step commands* \ Option *No*

| | | | | | |
|---|---|---|---|---|---|
| **Step/stop** | **Output X – Direct:** | **DPT 1.007** | **1 bit** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the command to stop the movement or to move the blind/shutter using step commands.

Telegram value:
- 1 = Stop/step
- 0 = Stop/step

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Shutter*
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter*
  - Parameter *Type* \ Option *Shutter*
  - Parameter *Allow step commands* \ Option *Yes*

| | | | | | |
|---|---|---|---|---|---|
| **Move to height** | **Output X – Direct:** | **DPT 5.001** | **1 byte** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the direct command for moving the blind/shutter to a defined position.
More information: → Specifics when moving to 100 % position via 1-byte Group Objects, Page 186.

Telegram value:
- 0 % = Upper end position
- 1 … 99 % = Intermediate position
- 100 % = Lower end position

**Note**
If the function *Working position* is used, this Group Object can only move the blind as far as the first lower end position, → Function Working position (shading position), Page 31. In this case, the telegram value 100 % corresponds to the first lower end position.

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

**Note**
The slat position after moving the blind/shutter corresponds to the slat position before moving the blind/shutter. If a telegram is received on the following Group Objects during the movement, after the blind/shutter is moved the slats are set according to the value received:
- *Move slat* (Central)
- *Move slat*

**Note**
If the slat position was set manually via one of the following Group Objects, this setting will be discarded after the blind/shutter is moved:
- *Step/stop* (Central)
- *Step/stop*

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Objects "Move to height", "Move slat"* \ Option *Yes*

| | | | | | |
|---|---|---|---|---|---|
| **Move slat** | **Output X – Direct:** | **DPT 5.001** | **1 byte** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the direct command for adjusting the slats to a defined position.
The slats are positioned after the movement is ended.

**Note**
If the function *Working position* is used, this Group Object can only close the slats as far as the "working position" position, → Function Working position (shading position), Page 31.

Telegram value:
- 0 % = Fully open
- 1 … 99 % = Intermediate position/working position
- 100 % = Fully closed

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]*
  - Parameter *Parameter setting* \ Option *Individual*
- Parameter *Enable Group Objects "Move to height", "Move slat"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Trigger reference movement up/down** | **Output X – Direct:** | **DPT 1.008** | **1 bit** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the command to perform a reference movement.
More information: → Reference movement, Page 182.

Telegram value:
- 1 = Reference movement to lower end position
- 0 = Reference movement to upper end position

**Note**
The reference movement cannot be performed while a safety is active.
The following actions will interrupt an active reference movement:
- Activation of a safety
- Receipt of a direct command
- Activation of manual operation

A reference movement can be performed even if direct operation is blocked. Travel range limits are ignored during the reference movement.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Automatic travel detection* \ Option *No*
  - Parameter *Enable Group Object "Trigger reference movement up/down"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Trigger calibration movement** | **Output X – Direct:** | **DPT 1.017** | **1 bit** | **C** | **W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the command to perform a calibration movement.
More information: → Calibration movement, Page 183.

Telegram value:
- 1 = Trigger calibration movement
- 0 = Trigger calibration movement

**Note**
The calibration movement cannot be performed while a safety is active.
The following actions will interrupt an active calibration movement:
- Activation of a safety
- Receipt of a direct command
- Activation of manual operation

A calibration movement can be performed even if direct operation is blocked. Travel range limits are ignored during the calibration movement.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*
- Parameter window *Output X* \ Parameter window *Drive / blind/shutter*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Automatic travel detection* \ Option *Yes*
  - Parameter *Enable Group Object "Trigger calibration movement"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Move to position x** | **Output X – Direct:** | **DPT 1.017** | **1 bit** | **C** | **W** |

These Group Objects are used to receive, via the bus (ABB i-bus® KNX), the direct command for moving the blind/shutter and slats to a predefined position.
More information: → Predefined positions, Page 190.

Telegram value:
- 1 = Move to position x
- 0 = Move to position x

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Move to position 1 … 4 via 1-bit Group Objects* \ Option *1 Group Object for 1 position*

| Function | Group Object name | Data point type | Length | Flags | |
|---|---|---|---|---|---|
| **Move to position x/y** | **Output X – Direct:** | **DPT 1.022** | **1 bit** | **C** | **W** |

These Group Objects are used to receive, via the bus (ABB i-bus® KNX), the direct command for moving the blind/shutter and slats to a predefined position.
More information: → Predefined positions, Page 190.

Telegram value:
- 1 = Move to position y
- 0 = Move to position x

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Move to position 1 … 4 via 1-bit Group Objects* \ Option *1 Group Object for 2 positions*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Upper end position** | **Output X – Direct:** | **DPT 1.011** | **1 bit** | **C R T** |

This Group Object sends the information, via the bus (ABB i-bus® KNX), as to whether the blind/shutter is at the upper end position → Send behavior of the status Group Objects, Page 193.

Telegram value:
- 1 = Blind/shutter in upper end position
- 0 = Blind/shutter not in upper end position

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Status Upper end position", "Status Lower end position"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Lower end position** | **Output X – Direct:** | **DPT 1.011** | **1 bit** | **C R T** |

This Group Object sends the information, via the bus (ABB i-bus® KNX), as to whether the blind/shutter is at the lower end position → Send behavior of the status Group Objects, Page 193.

Telegram value:
- 1 = Blind/shutter in lower end position
- 0 = Blind/shutter not in lower end position

**Note**
If the function *Working position* is used, the status is not clearly defined. The status may correspond to the first lower end position or the second lower end position, → Function Working position (shading position), Page 31.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Status Upper end position", "Status Lower end position"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Height** | **Output X – Direct:** | **DPT 5.001** | **1 byte** | **C R T** |

This Group Object sends the height of the blind/shutter on the bus (ABB i-bus® KNX), → Send behavior of the status Group Objects, Page 193.

Telegram value:
- 0 % = Upper end position
- 1 % … 99 % = Intermediate position
- 100 % = Lower end position

**Note**
If the function *Working position* is used, the status Height 100 % is not defined. 100 % may correspond to the first lower end position or the second lower end position, → Function Working position (shading position), Page 31.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Status Height", "Status Slat"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Slat** | **Output X – Direct:** | **DPT 5.001** | **1 byte** | **C R T** |

This Group Object sends the position of the slats on the bus (ABB i-bus® KNX), → Send behavior of the status Group Objects, Page 193.

Telegram value:
- 0 % = Slats open
- 1 % … 99 % = Intermediate position/working position
- 100 % = Slats closed

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind*
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Status Height", "Status Slat"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Move** | **Output X – Direct:** | **DPT 1.011** | **1 bit** | **C R T** |

This Group Object sends the information, via the bus (ABB i-bus® KNX), as to whether the blind/shutter is in motion → Send behavior of the status Group Objects, Page 193.

Telegram value:
- 1 = Blind/shutter in motion
- 0 = Blind/shutter not in motion

**Note**
This Group Object can be used to synchronize animations in visualization applications with the actual blind/shutter motion.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Status Move"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Direct commands blocked** | **Output X – Direct:** | **DPT 1.011** | **1 bit** | **C R T** |

This Group Object sends the information, via the bus (ABB i-bus® KNX), as to whether the blind/shutter can be operated with direct commands → Send behavior of the status Group Objects, Page 193.
More information: → Direct operation, Page 190.

Telegram value:
- 1 = Operation with direct commands enabled
- 0 = Operation with direct commands blocked

**Note**
This Group Object can be used to display on an external control unit that operability via direct commands is not possible.

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Status Direct commands blocked"* \ Option *Yes*

| Status combined (4 bytes) | Output X – Direct | 241,800 | 4 byte | C R T |
|---|---|---|---|---|

This Group Object sends detailed information about the device status on the bus (ABB i-bus® KNX).

Telegram value:
Byte 1:
- Blind/shutter position
  - 0 … 100 %

Byte 2:
- Slat position
  - 0 … 100 %

Bytes 3 and 4:
- Bit 0: Upper end position reached
  - 1 = Logically true
  - 0 = Logically false
- Bit 1: Lower end position reached
  - 1 = Logically true
  - 0 = Logically false
- Bit 2: Position working position reached
  - 1 = Logically true
  - 0 = Logically false
- Bit 3: Status Blind/shutter
  - 1 = Target position reached
  - 0 = Target position not reached
- Bit 4: Blind/shutter target position cannot be reached
  - 1 = Logically true
  - 0 = Logically false
- Bit 5: Slat target position cannot be reached (e.g. slat range restricted by active working position)
  - 1 = Logically true
  - 0 = Logically false
- Bit 6: At least one central Safety is active
  - 1 = Logically true
  - 0 = Logically false
- Bit 7: Forced operation active
  - 1 = Logically true
  - 0 = Logically false
- Bit 8: At least one local output Safety is active
  - 1 = Logically true
  - 0 = Logically false
- Bit 9: Manual operation active
  - 1 = Logically true
  - 0 = Logically false
- Bits 10 - 13: Not used
  - Telegram value is always 0
- Bit 14: Blind/shutter position valid
  - 1 = Logically true
  - 0 = Logically false
- Bit 15: Slat position valid
  - 1 = Logically true
  - 0 = Logically false

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Status combined (4 bytes)"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **KNX scenes 1 … 64** | **Output X – Direct:** | **DPT 18.001** | **1 byte** | **C W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a Scene telegram.
More information: → Function Scenes, Page 28.

Telegram value:
- 0 … 63 = Recall scene x (x = 1 … 64)
- 128 … 191 = Save scene x (x = 1 … 64)

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Scenes* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Scenes*
  - Parameter *Use function Scenes* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "KNX scene 1 … 64"* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Recall scene assignment x** | **Output X – Direct:** | **DPT 1.017** | **1 bit** | **C W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), a Scene assignment.
More information: → Function Scenes, Page 28.

Telegram value:
- 1 = Recall scene assignment x (x = 1 … 4)
- 0 = Recall scene assignment x (x = 1 … 4)

**Note**
With the functions *Safety* or *Automatic sun protection*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Scenes* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Scenes*
  - Parameter *Use function Scenes* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Objects "Recall scene assignment 1 … 4"* \ Option *Yes*
  - Parameter *Enable scene assignment x* \ Option *Yes*

## 8.9 Group Objects Output X – Restriction

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Limit travel range** | **Output X – Restriction:** | **DPT 1.003** | **1 bit** | **C W** |

This Group Object is used to activate or deactivate the travel range limit via the bus (ABB i-bus® KNX).
More information: → Travel range limit, Page 186.

Telegram value:
- 1 = Activate limitation
- 0 = Deactivate limitation

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Output X application* \ Option *Blind / Shutter*
- Parameter window *Output X* \ Parameter window *Basic settings [blind, shutter]*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Limit travel range"* \ Option *Yes*

# 8.10 Group Objects Output X – Safety

**Note**
An individual description can be added to the names of the Group Objects, → parameter *Description*.

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Output safety x** | **Output X – Safety:** | **DPT 1.005** | **1 bit** | **C W** |

These Group Objects are used to receive output-specific safety alarms via the bus (ABB i-bus® KNX).
More information: → Output safety, Page 24.

Telegram value:
- 1 = Alarm (safety active)
- 0 = No alarm (safety inactive)

**Note**
Prerequisite for automatically updating Group Objects:
- Parameter *Poll Group Objects after restart* \ Option *Yes*
- The read flag is set for the sending Group Object

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Safety* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Safety*
  - Parameter *Use function Safety* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Output safety x"* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Output forced operation 2 bit** | **Output X – Safety:** | **DPT 2.001** | **2 bit** | **C W** |

This Group Object is used to activate or deactivate 2-bit forced operation via the bus (ABB i-bus® KNX).
More information: → Output safety, Page 24.

Telegram value (bit 1 | bit 0):
- 0 | 0 = Forced operation inactive
- 0 | 1 = Forced operation inactive
- 1 | 0 = Forced operation active "UP"
- 1 | 1 = Forced operation active "DOWN"

**Note**
Prerequisite for automatically updating the Group Object:
- Parameter *Poll Group Objects after restart* \ Option → Yes, Page 000
- The read flag is set for the sending Group Object

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Safety* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Safety*
  - Parameter *Use function Safety* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Output forced operation 2 bit"* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Status Safety active** | **Output X – Safety:** | **DPT 1.011** | **1 bit** | **C R T I** |

This Group Object sends the Safety status of the output on the bus (ABB i-bus® KNX), → Send behavior of the status Group Objects, Page 193.
More information: → Function Safety, Page 23.

**Note**
This Group Object contains no information about the type or priority of the Safety. If the output is blocked by an active Safety, this Group Object sends the value 1.

Telegram value:
- 1 = Safety active
- 0 = Safety inactive

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Safety* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Safety*
  - Parameter *Use function Safety* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Status messages "Status Safety active"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status byte all active safeties** | **Output X – Safety:** | **nonDPT** | **1 byte** | **C R T** |

This Group Object sends the status of all priorities on the bus (ABB i-bus® KNX), → Send behavior of the status Group Objects, Page 193.
More information: → Function Safety, Page 23.

Telegram value:
- Bit 0: Priority 1
  - 1 = Active
  - 0 = Inactive
- Bit 1: Priority 2
  - 1 = Active
  - 0 = Inactive
- Bit 2: Priority 3
  - 1 = Active
  - 0 = Inactive
- Bit 3: Priority 4
  - 1 = Active
  - 0 = Inactive
- Bit 4: Priority 5
  - 1 = Active
  - 0 = Inactive
- Bit 5: Priority 6
  - 1 = Active
  - 0 = Inactive
- Bit 6: Priority 7
  - 1 = Active
  - 0 = Inactive
- Bit 7: Priority 8
  - 1 = Active
  - 0 = Inactive

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Safety* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Safety*
  - Parameter *Use function Safety* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Status messages "Status byte all active safeties"* \ Option *Yes*

## 8.11 Group Objects Output X – Automatic

> **Note**
> An individual description can be added to the names of the Group Objects, → parameter *Output X description*.

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Activate automatic sun protection** | **Output X – Automatic:** | **DPT 1.003** | **1 bit** | **C W T U** |

This Group Object is used to activate or deactivate the function *Automatic sun protection* via the bus (ABB i-bus® KNX).
More information: → Function Automatic sun protection, Page 25.

Telegram value:
- 1 = Activate automatic sun protection, deactivate direct operation
- 0 = Deactivate automatic sun protection, activate direct operation

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*

| Sun | Output X – Automatic: | DPT 1.002 | 1 bit | C W T U |
|---|---|---|---|---|

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the sunshine information (sun = 1 or sun = 0) for activating the function *Automatic sun protection*.
More information: → Function Anti-glare protection, Page 26.

Telegram value:
- 1 = Sunshine (sun = 1)
- 0 = No sunshine (sun = 0)

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Sun: Move to height** | **Output X – Automatic:** | **DPT 5.001** | **1 byte** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the direct activation of the blind/shutter position.
More information: → Function Anti-glare protection, Page 26.

Telegram value:
- 0 % = Upper end position
- 1 % … 99 % = Intermediate position
- 100 % = Lower end position

**Note**
If the function *Working position* is used, this Group Object can only move the blind as far as the first lower end position, → Function Working position (shading position), Page 31. In this case, the telegram value 100 % corresponds to the first lower end position.

**Note**
With the function *Safety*, a telegram does not necessarily result in a reaction.

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Sun = x reaction to anti-glare protection* \ Option *Height and slat via Group Object*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Sun: Move slat** | **Output X – Automatic:** | **DPT 5.001** | **1 byte** | **C W T U** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the direct activation of the slat position.
More information: → Function Anti-glare protection, Page 26.

**Note**
If the function *Working position* is used, this Group Object can only close the slats as far as the "working position" position, → Function Working position (shading position), Page 31.

Telegram value:
- 0 % = Open slats
- 1 % … 99 % = Intermediate position/working position
- 100 % = Close slats

**Note**
With the function *Safety*, a telegram does not necessarily result in a reaction.

**Note**
The slats are positioned after the blind/shutter reaches the target position.

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Sun = x reaction to anti-glare protection* \ Option *Height and slat via Group Object / Only slat via Group Object*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Block automatic sun protection** | **Output X – Automatic:** | **DPT 1.002** | **1 bit** | **C W T U** |

This Group Object is used to block or unblock, via the bus (ABB i-bus® KNX), the function *Automatic sun protection*.
More information: → Function Automatic sun protection, Page 25.

Telegram value:
- 1 = Block function *Automatic sun protection*
- 0 = Unblock function *Automatic sun protection*

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Block automatic sun protection"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Block direct commands** | **Output X – Automatic:** | **DPT 1.002** | **1 bit** | **C W T U** |

This Group Object is used to block or unblock direct commands via the bus (ABB i-bus® KNX).
More information: → Direct operation, Page 190.

**Note**
Blocking or unblocking via this Group Object is only possible if the function *Automatic sun protection* is active.

Telegram value:
- 1 = Block direct commands
- 0 = Unblock direct commands

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ all options except *Deactivated*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Block direct commands"* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Reactivation time** | **Output X – Automatic:** | **DPT 7.005** | **2 byte** | **C W** |

This Group Object is used to receive, via the bus (ABB i-bus® KNX), the changed reactivation time for the function *Automatic sun protection*, → parameter *Reactivation after*.

Telegram value:
- 0 … 65535 s

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Reaction to direct commands when automatic sun protection is active* \ Option *Switch automatic sun protection to standby*
  - Parameter *Change time via Group Object* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Room occupied** | **Output X – Automatic:** | **DPT 1.018** | **1 bit** | **C W** |

This Group Object is used to receive the occupancy status (person in the room) via the bus (ABB i-bus® KNX).
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- 1 = Room occupied/person in room
- 0 = Room vacant

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable function: Heating/cooling* \ Option *Yes*

| | | | | |
|---|---|---|---|---|
| **Heating** | **Output X – Automatic:** | **DPT 1.003** | **1 bit** | **C W T U** |

This Group Object is used to receive the room operating mode via the bus (ABB i-bus® KNX).
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- 1 = Heating
- 0 = No heating

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable function: Heating/cooling* \ Option *Yes*
  - Parameter *Control via Group Objects* \ Option *"Heating" and "Cooling"*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Cooling** | **Output X – Automatic:** | **DPT 1.003** | **1 bit** | **C W T U** |

This Group Object is used to receive the room operating mode via the bus (ABB i-bus® KNX).
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- 1 = Cooling
- 0 = No cooling

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable function: Heating/cooling* \ Option *Yes*
  - Parameter *Control via Group Objects* \ Option *"Heating" and "Cooling"*

| | | | | |
|---|---|---|---|---|
| **Heating/cooling** | **Output X – Automatic:** | **DPT 1.100** | **1 bit** | **C W T U** |

This Group Object is used to receive the room operating mode via the bus (ABB i-bus® KNX).
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- 1 = Heating
- 0 = Cooling

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable function: Heating/cooling* \ Option *Yes*
  - Parameter *Control via Group Objects* \ Option *"Heating/cooling" and "Block heating/cooling"*

| | | | | |
|---|---|---|---|---|
| **Block heating/cooling** | **Output X – Automatic:** | **DPT 1.002** | **1 bit** | **C W T U** |

This Group Object is used to block or unblock, via the bus (ABB i-bus® KNX), the function Heating/Cooling.
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- 1= Block heating/cooling
- 0= Unblock heating/cooling

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable function: Heating/cooling* \ Option *Yes*
  - Parameter *Control via Group Objects* \ Option *"Heating/cooling" and "Block heating/cooling"*

| | | | | |
|---|---|---|---|---|
| **Room temperature received** | **Output X – Automatic:** | **DPT 9.001** | **2 byte** | **C W T U** |

This Group Object is used to receive the room temperature via the bus (ABB i-bus® KNX).
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- −273 … 670760 °C

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable function: Heating/cooling* \ Option *Yes*
  - Parameter *Enable overheating protection on heating* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Automatic sun protection active** | **Output X – Automatic:** | **DPT 1.011** | **1 bit** | **C R T** |

This Group Object sends the status of the automatic sun protection (active or inactive) on the bus (ABB i-bus® KNX), → Send behavior of the status Group Objects, Page 193.
More information: → Function Automatic sun protection, Page 25.

Telegram value:
- 1 = Automatic sun protection active
- 0 = Automatic sun protection inactive

**Note**
This Group Object can be used to display the status of the Automatic sun protection on an external control unit.

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Status Automatic sun protection active"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status byte automatic sun protection** | **Output X – Automatic:** | **nonDPT** | **1 byte** | **C R T** |

This Group Object sends the status of the automatic sun protection components as an 8-bit value on the bus (ABB i-bus® KNX), → Send behavior of the status Group Objects, Page 193.
More information: → Function Automatic sun protection, Page 25.

Telegram value:
- → Status byte automatic sun protection, Page 198

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Status byte automatic sun protection"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Automatic sun protection blocked** | **Output X – Automatic:** | **DPT 1.011** | **1 bit** | **C R T** |

This Group Object sends the status of the automatic sun protection (unblocked or blocked) on the bus (ABB i-bus® KNX), → Send behavior of the status Group Objects, Page 193.
More information: → Function Automatic sun protection, Page 25.

Telegram value:
- 1 = Automatic sun protection blocked
- 0 = Automatic sun protection unblocked

**Note**
This Group Object can be used to display the status of the Automatic sun protection on an external control unit.

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable Group Object "Status Automatic sun protection blocked"* \ Option *Yes*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Overheating protection active** | **Output X – Automatic:** | **DPT 1.011** | **1 bit** | **C R T** |

This Group Object sends the status of the overheating protection (active or inactive) on the bus (ABB i-bus® KNX), → Send behavior of the status Group Objects, Page 193.
More information: → Function Heating/Cooling, Page 26.

Telegram value:
- 1 = Overheating protection active
- 0 = Overheating protection inactive

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Output X application* \ Option *Blind / Shutter*
  - Parameter *Enable function: Automatic sun protection* \ Option *Yes*
- Parameter window *Output X* \ Parameter window *Automatic sun protection*
  - Parameter *Use function Automatic sun protection* \ Option *Yes*
  - Parameter *Parameter setting* \ Option *Individual*
  - Parameter *Enable function: Heating/cooling* \ Option *Yes*
  - Parameter *Enable overheating protection on heating* \ Option *Yes*
  - Parameter *Enable Group Object "Status Overheating protection active"* \ Option *Yes*

## 8.12 Group Objects Input x – Blind/shutter

**Note**
An individual description can be added to the names of the Group Objects, → parameter *Input x description*.

**Note**
The set W-flag is used to synchronize the latest telegram sent if multiple control units are in use. The Group Objects can be written via the bus (ABB i-bus® KNX) without affecting the internally connected output.

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Up/down** | **Input x – Blind/shutter:** | **DPT 1.008** | **1 bit** | **C W T U** |
| This Group Object sends, via the bus (ABB i-bus® KNX), the command to move the blind/shutter.<br>Telegram value:<br>• 1 = Down<br>• 0 = Up<br>Prerequisites for visibility<br>• Parameter window *Configuration* \ Parameter *Input x application* \ Option *Blind/shutter* | | | | |
| **Step/stop** | **Input x – Blind/shutter:** | **DPT 1.007** | **1 bit** | **C W T U** |
| This Group Object sends, via the bus (ABB i-bus® KNX), the command to stop the movement or to change the slat position.<br>Telegram value:<br>• 1 = Stop / close slats<br>• 0 = Stop / open slats<br>Prerequisites for visibility<br>• Parameter window *Configuration*<br>– Parameter *Input x application* \ Option *Blind/shutter*<br>– Parameter *Input x template* \ Option *No*<br>• Parameter window *Input x:* \ Parameter window *Blind/shutter* \ Parameter *Operating mode* \ Option *Blind* | | | | |
| **Stop** | **Input x – Blind/shutter:** | **DPT 1.017** | **1 bit** | **C W T U** |
| This Group Object sends, via the bus (ABB i-bus® KNX), the command to stop the movement.<br>Telegram value:<br>• 1 = Stop<br>• 0 = Stop<br>Prerequisites for visibility<br>• Parameter window *Configuration*<br>– Parameter *Input x application* \ Option *Blind/shutter*<br>– Parameter *Input x template* \ Option *No*<br>• Parameter window *Input x:* \ Parameter window *Blind/shutter* \ Parameter *Operating mode* \ Option *Shutter* | | | | |
| **Status Upper end position** | **Input x – Blind/shutter:** | **DPT 1.002** | **1 bit** | **C W U** |
| This Group Object receives the information, via the bus (ABB i-bus® KNX), as to whether the blind/shutter is at the upper end position.<br>Telegram value:<br>• 1 = Blind/shutter in upper end position<br>• 0 = Blind/shutter not in upper end position<br>Prerequisites for visibility<br>• Parameter window *Configuration* \ Parameter *Input x application* \ Option *Blind/shutter* | | | | |
| **Status Lower end position** | **Input x – Blind/shutter:** | **DPT 1.002** | **1 bit** | **C W U** |
| This Group Object receives the information, via the bus (ABB i-bus® KNX), as to whether the blind/shutter is at the lower end position.<br>Telegram value:<br>• 1 = Blind/shutter in lower end position<br>• 0 = Blind/shutter not in lower end position<br>Prerequisites for visibility<br>• Parameter window *Configuration* \ Parameter *Input x application* \ Option *Blind/shutter* | | | | |

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Move** | **Input x – Blind/shutter:** | **DPT 1.002** | **1 bit** | **C W U** |

This Group Object receives the information, via the bus (ABB i-bus® KNX), as to whether the blind/shutter is in motion.

Telegram value:
- 1 = Blind/shutter in motion
- 0 = Blind/shutter not in motion

**Note**
This Group Object can be used to synchronize animations in visualization applications with the actual blind/shutter motion.

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Input x application* \ Option *Blind/shutter*
  - Parameter *Input x template* \ Option *No*
- Parameter window *Input x:* \ Parameter window *Blind/shutter*
  - Parameter *Operating mode* \ Option *Shutter*
  - Parameter *Shutter operation* \ Option *Only move*
  - Parameter *Stop movement* \ Option *On next operation*

| | | | | |
|---|---|---|---|---|
| **Block** | **Input x – Blind/shutter:** | **DPT 1.003** | **1 bit** | **C W** |

This Group Object blocks or enables input x.

Telegram value:
- Depends on the setting in the parameter *Block input*

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Input x application* \ Option *Blind/shutter*
  - Parameter *Input x template* \ Option *No*
- Parameter window *Input x:* \ Parameter window *Blind/shutter*
  - Parameter *Extended settings* \ Option *Yes*
  - Parameter *Block input* \ all options except *Deactivated*

| | | | | |
|---|---|---|---|---|
| **Up/down** | **Input x+y – Blind/shutter:** | **DPT 1.008** | **1 bit** | **C W T U** |

This Group Object sends, via the bus (ABB i-bus® KNX), the command to move the blind/shutter.

Telegram value:
- 1 = Down
- 0 = Up

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Input x application* \ Option *Blind/shutter (2-button)*

| | | | | |
|---|---|---|---|---|
| **Step/stop** | **Input x+y – Blind/shutter:** | **DPT 1.007** | **1 bit** | **C W T U** |

This Group Object sends, via the bus (ABB i-bus® KNX), the command to stop the movement or to change the slat position.

Telegram value:
- 1 = Stop / close slats
- 0 = Stop / open slats

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Input x application* \ Option *Blind/shutter (2-button)*
  - Parameter *Input x template* \ Option *No*
- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]* \ Parameter *Operating mode* \ Option *Blind*

| | | | | |
|---|---|---|---|---|
| **Stop** | **Input x+y – Blind/shutter:** | **DPT 1.017** | **1 bit** | **C W T U** |

This Group Object sends, via the bus (ABB i-bus® KNX), the command to stop the movement.

Telegram value:
- 1 = Stop
- 0 = Stop

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Input x application* \ Option *Blind/shutter (2-button)*
  - Parameter *Input x template* \ Option *No*
- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]* \ Parameter *Operating mode* \ Option *Shutter*

| | | | | |
|---|---|---|---|---|
| **Status Upper end position** | **Input x+y – Blind/shutter:** | **DPT 1.002** | **1 bit** | **C W U** |

This Group Object receives the information, via the bus (ABB i-bus® KNX), as to whether the blind/shutter is at the upper end position.

Telegram value:
- 1 = Blind/shutter in upper end position
- 0 = Blind/shutter not in upper end position

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Input x application* \ Option *Blind/shutter*
  - Parameter *Input x template* \ Option *No*
- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]*
  - Parameter *Operating mode* \ Option *Shutter*
  - Parameter *Shutter operation* \ Option *Only move*
  - Parameter *Stop movement* \ Option *On next operation*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Lower end position** | **Input x+y – Blind/shutter:** | **DPT 1.002** | **1 bit** | **C W U** |

This Group Object receives the information, via the bus (ABB i-bus® KNX), as to whether the blind/shutter is at the lower end position.

Telegram value:
- 1 = Blind/shutter in lower end position
- 0 = Blind/shutter not in lower end position

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Input x application* \ Option *Blind/shutter*
  - Parameter *Input x template* \ Option *No*
- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]*
  - Parameter *Operating mode* \ Option *Shutter*
  - Parameter *Shutter operation* \ Option *Only move*
  - Parameter *Stop movement* \ Option *On next operation*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Status Move** | **Input x+y – Blind/shutter:** | **DPT 1.002** | **1 bit** | **C W U** |

This Group Object receives the information, via the bus (ABB i-bus® KNX), as to whether the blind/shutter is in motion.

Telegram value:
- 1 = Blind/shutter in motion
- 0 = Blind/shutter not in motion

**Note**
This Group Object can be used to synchronize animations in visualization applications with the actual blind/shutter motion.

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Input x application* \ Option *Blind/shutter*
  - Parameter *Input x template* \ Option *No*
- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]*
  - Parameter *Operating mode* \ Option *Shutter*
  - Parameter *Shutter operation* \ Option *Only move*
  - Parameter *Stop movement* \ Option *On next operation*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Block** | **Input x+y – Blind/shutter:** | **DPT 1.003** | **1 bit** | **C W** |

This Group Object blocks or enables input x+y.

Telegram value:
- Depends on the setting in the parameter *Block input*

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Input x application* \ Option *Blind/shutter (2-button)*
  - Parameter *Input x template* \ Option *No*
- Parameter window *Input x:* \ Parameter window *Blind/shutter [2-button]*
  - Parameter *Extended settings* \ Option *Yes*
  - Parameter *Block input* \ all options except *Deactivated*

## 8.13 Group Objects Input x – Switch

**Note**
An individual description can be added to the names of the Group Objects, → parameter *Input x description*.

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Switch** | **Input x – Switch:** | **DPT 1.001** | **1 bit** | **C W T U** |

This Group Object sends a switch telegram on the bus (ABB i-bus® KNX).

Telegram value:
- 1 = On
- 0 = Off

Prerequisites for visibility
- Parameter window *Configuration* \ Parameter *Input x application* \ Option *Switch*

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Block** | **Input x – Switch:** | **DPT 1.003** | **1 bit** | **C W** |

This Group Object blocks or enables input x.

Telegram value:
- Depends on the setting in the parameter *Block input*

Prerequisites for visibility
- Parameter window *Configuration*
  - Parameter *Input x application* \ Option *Switch*
  - Parameter *Input x template* \ Option *No*
- Parameter window *Input x:* \ Parameter window *Switch*
  - Parameter *Extended settings* \ Option *Yes*
  - Parameter *Block input* \ all options except *Deactivated*

# 8.14 Group Objects Input x – Scenes

> **Note**
> An individual description can be added to the names of the Group Objects, → parameter *Input x description*.

| Function | Group Object name | Data point type | Length | Flags |
|---|---|---|---|---|
| **Scene 1 … 64** | **Input x – Scene:** | **DPT 18.001** | **1 byte** | **C T** |
| This Group Object sends a scene telegram on the bus (ABB i-bus® KNX).<br>The scene telegram includes the scene number and information about whether the scene is recalled or saved.<br>Telegram value:<br>• 0 … 63 = Recall scene x (x = 1 … 64)<br>• 128 … 191 = Save scene x (x = 1 … 64)<br>Prerequisites for visibility<br>• Parameter window *Configuration* \ Parameter *Input x application* \ Option *Scenes* | | | | |
| **Block** | **Input x – Scene:** | **DPT 1.003** | **1 bit** | **C W** |
| This Group Object blocks or enables input x.<br>Telegram value:<br>• Depends on the setting in the parameter *Block input*<br>Prerequisites for visibility<br>• Parameter window *Configuration*<br>– Parameter *Input x application* \ Option *Scenes*<br>– Parameter *Input x template* \ Option *No*<br>• Parameter window *Input x:* \ Parameter window *Scenes*<br>– Parameter *Extended settings* \ Option *Yes*<br>– Parameter *Block input* \ all options except *Deactivated* | | | | |

# 9 Operation

## 9.1 Manual operation

**Note**
Device type x.230.4.2 has no membrane keypad.

**Note**
The KNX power supply must be established to operate the device in *Manual operation* mode. Manual operation is deactivated in the event of KNX voltage failure.

*Manual operation* mode permits on-site operation of the devices using a membrane keypad.

The relays of the outputs can be switched manually. In addition, the movement position of the blind/shutter is displayed. The relay status display is shown in groups of two contiguous outputs.

In the as-delivered state, Manual operation is enabled and can be activated via the *S button* on the membrane keypad.

**Note**
The safety functions as well as operation using the i-bus® Tool have a higher priority than the *Manual operation* mode. An output cannot be operated using the membrane keypad if it is blocked by a safety function or can be operated using the i-bus® Tool. If the safety function is canceled in *Manual operation* operating mode, the output reacts corresponding to its parameterization.

**Note**
When Manual operation is active, the outputs will continue to react to KNX commands until they are switched via Manual operation. If an output has been switched via Manual operation, incoming KNX commands will be processed in the background and no longer executed until Manual operation is deactivated.
More information: → State after deactivating manual operation, Page 54.

The device is in *KNX operation* after connection to the bus (ABB i-bus® KNX), KNX voltage recovery, ETS download or ETS reset. The *Manual operation* LED is off.

### 9.1.1 Central operation via membrane keypad

All outputs can be jointly operated via the membrane keypad. When all the outputs are selected, all movements can be stopped or all blinds/shutters moved to end positions. Slat adjustment is not possible.

**Stop all movements**
1. Press and hold the *S button* (> 5 seconds).
   ⇨ Outputs selected. Zone LEDs light up.
2. Short press any *Output* button (< 1 second).
   ⇨ Movements stopped.

⇨ First output group selected. Manual mode is exited; the devices are in KNX operation.

**Move all blinds/shutters to upper end position**
1. Press and hold the *S button* (> 5 seconds).
   ⇨ Outputs selected. Zone LEDs light up.
2. Press and hold the top button *Output I* or *Output II* (> 1 second).
   ⇨ Blinds/shutters move to upper end position.

⇨ First output group selected. Manual mode is exited; the devices are in KNX operation.

**Move all blinds/shutters to lower end position**

1. Press and hold the *S button* (> 5 seconds).
   ⇨ Outputs selected. Zone LEDs light up.
2. Press and hold the bottom button *Output I* or *Output II* (> 1 second).
   ⇨ Blinds/shutters move to lower end position.

⇨ First output group selected. Manual mode is exited; the devices are in KNX operation.

**Note**
The safety functions as well as operation using the i-bus® Tool have a higher priority than the *Manual operation* mode. An output cannot be operated using the membrane keypad if it is blocked by a safety function or can be operated using the i-bus® Tool. If the safety function is canceled in *Manual operation* operating mode, the output reacts corresponding to its parameterization.

## 9.1.2 Activating manual operation

▸ Press and hold *S*-button for 2 … 5 seconds.
⇨ *Manual operation* LED lights up. Manual operation is active.

**Note**
If Manual operation is not enabled (→ parameter *Enable manual operation*) or is blocked via the Group Object *Enable/Block Manual operation*, then *Manual operation* mode cannot be activated.

## 9.1.3 Blocking manual operation

*Manual operation* mode can be blocked via the Group Object *Enable/Block Manual operation*. If *Manual operation* mode was blocked via this Group Object, the only way to reactivate it is via this Group Object.

## 9.1.4 Deactivate manual operation

*Manual operation* mode can be deactivated in various ways:

- Press and hold *S*-button for 2 … 5 seconds.
- Automatically after a time set in the parameter *Automatic reset from manual operation to KNX operation*.
- By a download. After the download is complete, the devices are in KNX operation.
- Via the Group Object *Deactivate manual operation*.

# 10 Maintenance and cleaning

## 10.1 Maintenance

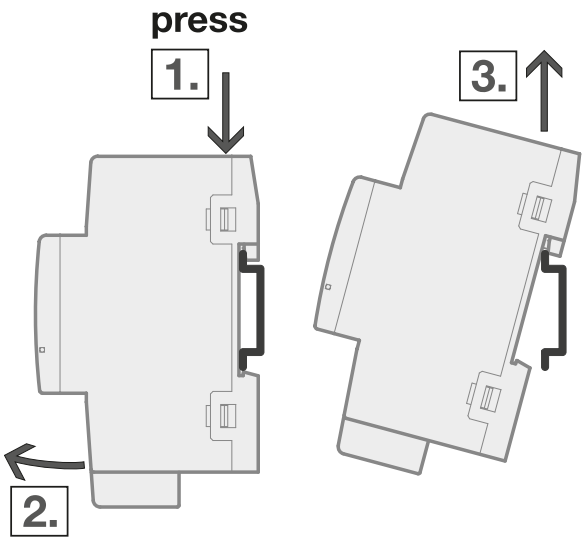
The devices are maintenance-free if used properly. In the event of damage, e.g. during transport and/or storage, repairs are not allowed to be carried out.

## 10.2 Cleaning

1. Disconnect devices from the electrical power supply before cleaning.
2. Clean dirty devices using a dry cloth or a slightly damp cloth.

# 11 Removal and disposal

## 11.1 Removal




2CDC072012F0015

Fig. 24: Removing from the mounting rail

1. Press on the top of the device.
2. Release the bottom of the device from the mounting rail.
3. Lift the device up and off the mounting rail.

## 11.2 Environment

Consider environmental protection.

Electrical and electronic devices must not be disposed of as domestic waste.

The device contains valuable resources that can be recycled. Therefore, please take the device to a suitable recycling center. All packaging materials and devices are provided with markings and test seals for proper disposal. Always dispose of packaging material and electrical devices or their components at collection points or disposal companies authorized for this purpose. The products comply with the statutory requirements, particularly the law on electrical and electronic equipment and the REACH regulation. (EU directive 2012/19/EU WEEE and 2011/65/EU RoHS) (EU REACH regulation and the law implementing the regulation (EC) no.1907/2006)

# 12 Planning and application

## 12.1 Priorities

### 12.1.1 Priorities for Shutter Actuator

a) Safeties → parameter *Priority x safety*
b) KNX voltage failure
c) i-bus®-Tool
d) Operating mode *Manual operation*
e) Operating mode *KNX operation* (direct operation or automatic operation)
f) KNX voltage recovery

The active safeties can be overridden on a KNX voltage failure, → parameter *Override active safeties*.

**CAUTION – Damage or injuries if the active safeties are overridden**
If the active safeties are overridden, the reaction on KNX voltage failure is given the highest priority. The connected drive may react unexpectedly. Sudden movements of the peripherals (e.g. blind/ shutter, ventilation flap, blind) may crush body parts or cause damage to property.
- ▸ Deactivate override before working on peripherals.

## 12.2 Basic knowledge

### 12.2.1 Drive and blind/shutter settings

#### 12.2.1.1 Travel times

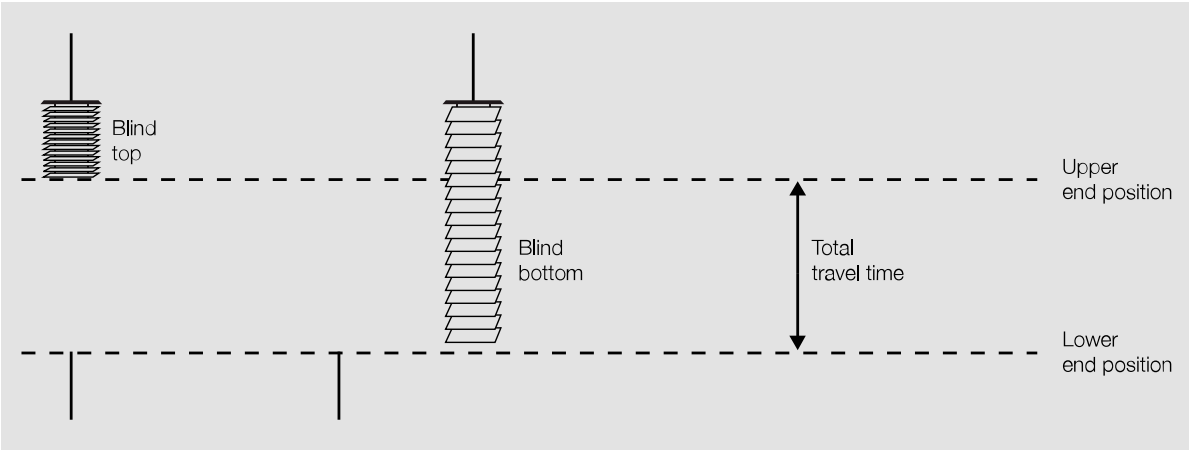



Fig. 25: Function diagram of travel times

The total travel time is the time that the blind/shutter requires to move from the lower to the upper end position (Up) or from the upper to the lower end position (Down). Total travel times for up and down movements can be determined separately and set in ETS.

If the device receives a travel telegram, then the appropriate output is switched and the blind/shutter is moved in the required direction.

The blind/shutter is moved until the output receives a stop telegram or the end position is reached. The limit switch switches the drive off when the upper or lower end position is reached. The corresponding output contact remains closed until the parameterized travel time elapses.

If the travel time is extended by an overrun time, the voltage will be switched off only after this overrun time expires.

If a value not equal to 100 % is set in the parameter *Position of slat after reaching lower end position*, the overrun time is not taken into account. The slats move to the parameterized position after reaching the lower end position.

#### 12.2.1.1.1 Manual determination of travel time

To determine the travel time, the travel times are measured from the lower to the upper end positions and vice-versa, e.g. using a stopwatch or the i-bus® Tool (stopwatch function with up/down telegrams). The measured values are then entered in the parameters *Travel time up* and *Travel time down*.

For position movements, automatic control or status messages, precise travel times are the basis for exact calculation and positioning of the blind/shutter.

The device continuously determines the current position of the blind/shutter and the slats based on the individual movements.

Temperature fluctuations and aging processes can cause slight inaccuracies in determining the position. In order to maintain high position accuracy, the position is updated in the device's memory when an end position is reached.

##### 12.2.1.1.1.1 Reference movement

The reference movement moves the blind/shutter to a defined reference position. Starting from the reference position, the movements to position (1 … 99 %) are calculated based on the entered travel times (→ parameters *Travel time up* and *Travel time down*).

If the end positions are not routinely reached during operation, a reference movement should be carried out occasionally (e.g. according to a fixed schedule).

If a blind/shutter is moved to an end position by manual operation, this movement is evaluated as a reference movement.

The reference movement cannot be performed while a safety is active. After the withdrawal of the safety, the reference movement is not performed automatically.

The following actions will interrupt an active reference movement:
- Activation of a safety
- Receipt of a direct command
- Activation of manual operation

A reference movement can be performed even if direct operation is blocked. Travel range limits are not taken into account during a reference movement.

After a download, KNX voltage recovery or ETS reset, the reference position and the blind/shutter position are unknown. The following methods are available for acquiring the reference position:

**Reference movement via Group Object *Trigger reference movement up/down***

If the reference movement takes place via the Group Object *Trigger reference movement up/down*, the device executes a reference movement to the upper or lower end position.

After the reference movement, the blind/shutter is moved to the position defined in the parameter *Position after reference movement*.

**Reference movement via move telegrams**

If the reference position or the blind/shutter position is unknown, the device reacts to move telegrams as follows:

- Up telegram 1 bit: Reference movement to upper end position. The blind/shutter then stays at the reference position.
- Down telegram 1 bit: Reference movement to lower end position. The blind/shutter then stays at the reference position.
- Position telegram 1 byte (0 … 99 %): Reference movement to upper end position. The blind/shutter is then moved to the position received in the position telegram.
- Position telegram 1 byte (100 %): The movement to the lower end position is evaluated as a reference movement.

**Note**
For the first reference movement after a download, KNX voltage recovery or ETS reset, the set travel time (→ parameters *Travel time up*, *Travel time down*) + 20 % overrun is used as the travel time. For all other reference movements, a 20 % overrun time is always added to the total travel time, to ensure that the end position is reached.

#### 12.2.1.1.2 Automatic travel detection

When automatic travel detection is used, the blind/shutter can be precisely positioned. This shortens commissioning time as there is no need for manual measurement of travel times. Travel detection is also more accurate than specifying travel times using manually measured values. Changes in the length of the blind/shutter due to external influences (e.g. frost, UV rays or the use of heavy blind/shutter types) are compensated during operation.

Travel times are automatically and continuously measured during operation. For each complete up or down movement from end position to end position, travel times are measured separately via current detection and saved in the device in a fail-safe manner so that they are not lost in the event of KNX voltage failure.

When using electronic drives, the standby current of the drive must be entered in the parameter *Minimum current for travel detection* in order to guarantee precise travel detection.

The first travel time after commissioning is measured via a calibration movement.

**Note**
When using electronic drives with a permanently applied power supply, automatic travel detection is not possible because the power is not drawn via the relay contacts of the device. When using electronic drives of this type, travel times must be determined and entered manually. Electronic drives with soft start or soft stop are not suitable for controlling via the device.

##### 12.2.1.1.2.1 Calibration movement

When commissioning the device, the travel times are unknown. To acquire the travel times, a calibration movement must be performed using travel detection. The travel times are measured separately via current detection and saved in the device in a fail-safe manner so that they are not lost in the event of KNX voltage failure.

**Note**
After a download, KNX voltage recovery or ETS reset, the blind/shutter position is unknown. After receiving the first move telegram, the device performs an automatic reference movement:
- If the first travel telegram is a movement to the lower end position, this is evaluated as a reference movement.
- In all other cases, the device performs a reference movement to the upper end position. The blind/shutter is then moved to the position received in the travel telegram.

If a calibration movement is triggered simultaneously for two outputs with a common infeed, a full calibration movement is first performed for the first output, and then for the second.

If the end positions are not routinely reached during operation, a calibration movement should be carried out occasionally (e.g. according to a fixed schedule).

The calibration movement cannot be performed while a safety is active. After the withdrawal of the safety, the calibration movement is not performed automatically.

The following actions will interrupt an active calibration movement:
- Activation of a safety
- Receipt of a direct command
- Activation of manual operation

A calibration movement can be performed even if direct operation is blocked. Travel range limits are not taken into account during a calibration movement.

The following methods are available for the calibration movement:

**Calibration via Group Object *Trigger calibration movement***

If the Group Object *Trigger calibration movement* is used for the calibration, the device automatically performs the following movements:
1) Move to upper end position (moves to reference position)
2) Move to upper end position (measures travel time up)
3) Move to upper end position (measures travel time up)

The travel times are saved in the device; the blind/shutter is moved to the last known position before the calibration movement.

**Note**
If the calibration is started from the lower end position, three complete end position movements and in some cases a position movement are performed. Long travel times or heavy blinds/shutters can cause the drive motor to overheat.

**Note**
Calibration can also be done via the i-bus® Tool function *Trigger reference movement*.

**Calibration via Group Object *Up/down***

If the Group Object *Up/down* is used for the calibration, the following separate individual movements must be manually triggered:
- Move to upper or lower end position (e.g. up, moves to reference position)
- Move to opposite end position (e.g. down, measures travel time down)
- Move to opposite end position (e.g. up, measures travel time up)

The travel times are saved in the device; the blind/shutter remains in the last position adopted.

**Note**
To prevent the motor from overheating, do not trigger individual movements immediately one after the other.

**Note**
When the travel times are unknown and a move command is received on a 1-bit Group Object, the device executes this calibration method automatically.

**Calibration via position telegrams**

When the travel times are unknown and a move command is received on a 1-byte Group Object (Height 0 … 100 %), the device executes the following movements automatically:
1) Move to upper end position (moves to reference position)
2) Move to upper end position (measures travel time up)
3) Move to upper end position (measures travel time up)

The travel times are saved in the device; the blind/shutter is moved to the position received in the position telegram.

**Note**
If the calibration is started from the lower end position, three complete end position movements and in some cases a position movement are performed. Long travel times or heavy blinds/shutters can cause the drive motor to overheat.

### 12.2.1.2 Direct and indirect movement to the position

The parameter *Move to position* can be used to define how the blind/shutter should move to the target position in response to a move telegram.

- Direct: The blind/shutter is moved directly from its current position to the target position.
- Indirect: The blind/shutter is moved to the target position via an end position. You can define whether the blind/shutter is to move to the target position via the upper, lower or closer end position. On reaching an end position, the reference position is updated in the device memory.

**Note**
If the function *Working position* is used, positions cannot be indirectly approached via the lower end position.

### 12.2.1.3 Position 0 % ... 100 %

**Note**
Blind/shutter positions or slat positions can be blocked by priorities, travel range limits, active safeties or active functions.

**Blind/shutter positions**

The blind/shutter can be moved to any position from 0 % … 100 %. The percentages refer to the position of the blind/shutter between the upper and lower end positions.

- 0 % = Upper end position
- 1 % … 99 % = Intermediate position
- 100 % = Lower end position

The following Group Objects are available for precise positioning of the blind/shutter:
- *Move to height* and *Move to height* (Central)
- If the function *Automatic sun protection* is used: *Sun: Move to height* and *Sun: Move to height* (Central)
- If predefined positions are used: *Move to position x* or *Move to position x/y*
- If the function *Scenes* is used: *KNX scenes 1 … 64*, *KNX scenes 1 … 64* (Central) and *Recall scene assignment x*
- If the function *Sector control* is used: *Sector control*

**Slat adjustment**

The slats can be adjusted to any position from 0 % … 100 %. The percentages refer to the opening degree of the slats.

- 0 % = Fully closed
- 1 % … 99 % = Intermediate position
- 100 % = Fully open

The following Group Objects are available for precise positioning of the slats:
- *Move slat* and *Move slat* (Central)
- If the function *Automatic sun protection* is used: *Sun: Move slat* and *Sun: Move slat* (Central)
- If predefined positions are used: *Move to position x* or *Move to position x/y*
- If the function *Scenes* is used: *KNX scenes 1 … 64*, *KNX scenes 1 … 64* (Central) and *Recall scene assignment x*
- If the function *Sector control* is used: *Sector control*

#### 12.2.1.3.1 Specifics when moving to 100 % position via 1-byte Group Objects

Implementing the function *Working position* makes the 100 % position correspond to the first lower end position.

If the blind/shutter is moved to the 100 % position via a 1-byte Group Object, the set overrun times (→ parameters, *Disconnect output from power after*, *Additional overrun time for up/down* and *Additional overrun time with safeties*) are ignored even if the function *Working position* is not used. When the position reaches 100 %, the output is immediately de-energized; the device does not recognize the movement as an end position movement.

Other factors (e.g. weather conditions or the aging processes of the blind/shutter) can contribute to changes in travel times and to less precise positioning. With longer term operation, to ensure precise movement to the 100 % position, the following movements should be carried out regularly:
- Move to end position via 1-bit Group Objects
- Reference or calibration movement

### 12.2.1.4 Travel range limit

**Note**
The positions can be limited by the working position → Function Working position (shading position), Page 31.

The Group Object *Limit travel range* can be used to activate or deactivate travel range limit. When travel range limit is active, the blind/shutter can only be moved within the limits defined in the following parameters:
- *Upper limit*
- *Lower limit*

The limitation applies to direct commands and automatic commands.

The parameter *Move to limitation on activation* is used to define whether the blind/shutter is moved to the upper or lower limit when travel range limit is activated. Selecting the option *Yes* moves the blind/shutter to the limit that is closer when travel range limit is activated.

**Example**
- The blind/shutter is in position 50 %.
- Upper limit = 20 %, lower limit = 95 %.
- Travel range limit is activated.
- The blind/shutter will move to the 20 % position (closest limit)

The parameter *Limitation valid when safety is active* is used to define whether travel range limit also applies when a safety is active. When selecting the option *Yes*, note that due to the travel range limit, the scene assignments or positions defined in the parameter *Priority x reaction* cannot be adopted.

**Example**
The travel range limit can be used to activate windows or skylights as well. The travel range for local operation by the room users is limited to 0 … 20 %, whereas the complete range is available to the janitor.

**Note**
If, in the parameter *Reaction on KNX voltage failure*, the option *Up* or *Down* is selected, then travel range limits are not taken into account.

**Note**
Travel range limits are not taken into account during reference or calibration movements.

#### 12.2.1.5 Start-up and coasting delay and minimum run time

Some drives attain their full power only after a start-up delay of a few milliseconds or continue moving for a few milliseconds after switch-off (coasting delay). For some applications, it is necessary to compensate delay times during start-up and coasting of the drive, e.g. to position the blinds/shutters exactly. The delay times can be set in the parameters *Start-up delay* and *Coasting delay*.

The minimum run time for the drive can be set in the parameter *Minimum run time*.

**CAUTION**
Setting a minimum run time that is too short can damage the connected drive.
- ▸ Observe the technical data of the connected drive.

### 12.2.1.6 Blind/shutter control with slat adjustment

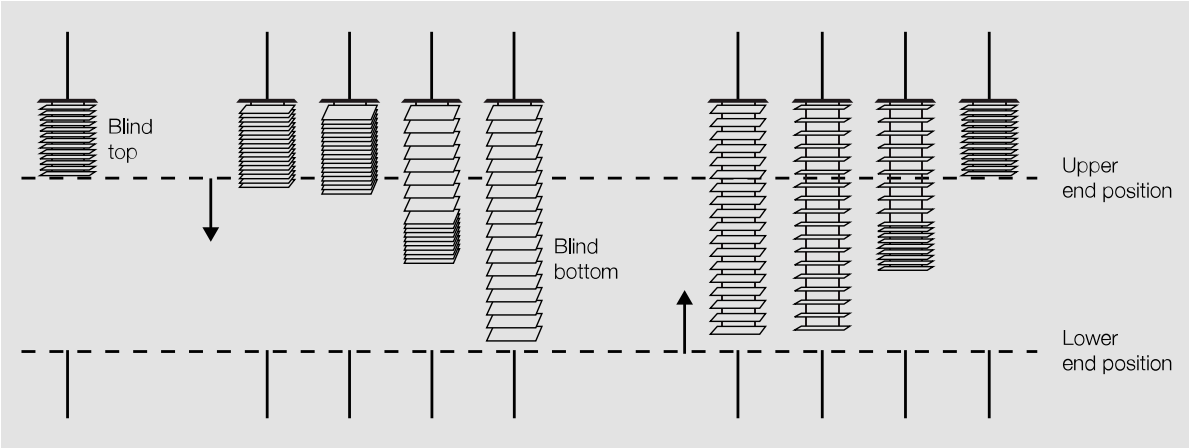



Fig. 26: Blind/shutter control with slat adjustment

With conventional blind types, during a down movement the slats close and the blind/shutter is lowered. The slats are opened and the blind/shutter is raised during an up movement. After the blind/shutter moves up, the slats are usually open. Exception → Function Working position (shading position), Page 31.

To adjust the slats to a specific angle, short movements can be executed. The parameter *Total adjustment time* is used to set the time required for the slats to open from 0 % to 100 % or to close from 100 % to 0 %. The duration of the total adjustment time must be determined manually. The parameter *Number of slat adjustments/steps* is used to set the number of step commands required for the slats to open from 0 % to 100 % or to close from 100 % to 0 %. The number of step commands is distributed across the total adjustment time.

If, in the parameter *Limit step commands to number of slat adjustments*, the option *No* is selected, the blind can be lowered with "Unlimited Steps" (continuously repeating the step command). If the function *Working position* is used, the blind can be moved beyond the first lower end position using "Unlimited Steps".

### 12.2.1.7 Dead times

**CAUTION – Malfunctions**
Incorrect settings in the parameters can cause malfunctions.
- ▸ Observe the technical data of the connected drive.

Dead times can occur in the mechanism for sun protection systems due to the following factors:
- Aging processes, e.g. mechanical load
- Natural dead times during direction change
- Blind/shutter opening from lower end position (100 %)
- Slat opening from the closed position (100 %)

These dead times can prevent the set positions from being reached precisely. The dead times can be compensated in the device parameters.

The "Blind/shutter opening" dead time describes the time between the reception of the up command and the start of blind/shutter opening.

The "Slat opening" dead time describes the time between the reception of the open command and the start of slat opening.

The "Blind/shutter adjustment" dead time describes the time between the reception of a direction changing movement command and the execution of the movement command.

The "Slat adjustment" dead time describes the time between the reception of a direction changing movement command and the execution of the movement command.

#### 12.2.1.8 Fabric tensioning

The purpose of fabric tensioning is to tauten or tension textile blinds/shutters (e.g. the sheet of an articulated arm awning). The blind/shutter is stopped at the end of a down movement and then moved in the opposite travel direction for the time set in the parameter *Duration*.

If fabric tensioning is active, it is triggered by the following move telegrams:
- Direct telegrams
- Automatic telegrams
- Manual operation
- Safety telegrams

The following points must be taken into account:
- The move telegrams must be present for longer than the set duration for fabric tensioning.
- The duration of fabric tensioning must be shorter than the total travel time for the down movement.
- If a travel telegram is received during active fabric tensioning, a position value that is reduced by the fabric tensioning duration will be reported back.

The fabric tensioning duration influences the calculation of the blind/shutter position and the status Group Objects. The current blind/shutter position value is reported back to the device after fabric tensioning.

**Example**
Calculation of the position value:
- Total down movement time: 60 s = 100 %
- Duration of travel telegram: 30 s = 50 %
- Duration of tensioning/slot positioning: 0.5 s = (100 % × 0.5 s / 60 s) = 0.8 %

Position value: 50 % − 0.8 % = 49.2 %

## 12.2.2 Automatic operation

Automatic operation refers to automatic blind control via the function *Automatic sun protection*. In automatic mode, the blind/shutter and slats are moved via automatic commands. Automatic commands can also be received via central Group Objects, → parameter *Reacts to central Group Objects*.

For more information, see:
→ Group Objects Central – Automatic, Page 149
→ Group Objects Output X – Automatic, Page 168

Automatic operation can be activated or deactivated via the following Group Objects:
- *Activate automatic sun protection* (Central)
- *Activate automatic sun protection*

When automatic operation is active, the blind/shutter is controlled by automatic commands.

When automatic operation is deactivated, the output does not react to automatic commands and can only be controlled by direct commands. Movements initiated by automatic commands are completed when automatic operation is deactivated.

Automatic operation can be blocked or unblocked via the following Group Objects:
- *Block automatic sun protection* (Central)
- *Block automatic sun protection*

When automatic operation is blocked, the output does not react to automatic commands and automatic sun protection cannot be activated via Group Objects. To activate automatic sun protection, automatic operation must be unblocked.

The parameter *Reaction to direct commands when automatic sun protection is active* is used to define how the function *Automatic sun protection* reacts to direct commands when the function is active.

**Note**
A reference movement interrupts automatic operation. Incoming automatic commands are executed after the reference movement is completed.

## 12.2.3 Direct operation

Direct operation is on-site operation, e.g. via buttons in the room. During direct operation, the blind/shutter and slats are moved via direct commands. Direct commands can also be received via central Group Objects, → parameter *Output reacts to central direct commands*.

For more information, see:
→ Group Objects Central – Direct, Page 147
→ Group Objects Output X – Direct, Page 161

Direct operation can be blocked via the following Group Objects:
- *Block direct commands* (Central)
- *Block direct commands*

If direct operation is blocked, the output does not react to direct commands.

The parameter *Reaction to direct commands when automatic sun protection is active* is used to define how the function *Automatic sun protection* reacts to direct commands when the function is active.

**Note**
Operability via direct commands is not possible in the following cases:
- A safety is active, → Function Safety, Page 23
- Automatic sun protection is active and direct commands are ignored, → parameter *Reaction to direct commands when automatic sun protection is active*
- Direct commands are blocked, → Group Objects *Block direct commands* (Central) or *Block direct commands*
- The device is in the *Manual operation* operating mode
- The sending and switching delay after KNX voltage recovery is active

## 12.2.4 Predefined positions

Each output has four predefined blind/shutter and slat positions plus one predefined working position (→ Function Working position (shading position), Page 31).

The predefined positions can be used as a template for positioning blinds/shutters and slats in specific installation situations, e.g. after KNX voltage recovery → parameter *Reaction after KNX voltage recovery*.

The predefined positions are specified with the following parameters:
- *Height position x*
- *Slat position x*
- *Height working position*
- *Slat working position*

The parameter *Move to position 1 … 4 via 1-bit Group Objects* is used to define whether the predefined positions 1 … 4 can also be directly adopted via separate Group Objects. Depending on the selection in the parameter, four Group Objects (one for each position) or two Group Objects (one for positions 1 and 2, and one for positions 3 and 4) are enabled:

- *Move to position x*
- *Move to position x/y*

**Note**
The positions can be limited by the working position → Function Working position (shading position), Page 31.

## 12.2.5 Hysteresis

The hysteresis indicates the difference by which a value must change before there is a reaction to the value change (e.g. switch on the heating if temperature drops below setpoint). Hysteresis prevents frequent switching in response to minimal changes. A differentiation is made between single-sided and double-sided hysteresis.

**Example**
Single-sided hysteresis:

- Setpoint temperature = 22 °C
- Hysteresis = 4 K

The heating is switched on if an actual temperature drops below 18 °C and switched off if an actual temperature exceeds 22 °C.

Double-sided hysteresis:

- Setpoint temperature = 22 °C
- Hysteresis = 4 K

The heating is switched on if an actual temperature drops below 20 °C and switched off if an actual temperature exceeds 24 °C.

## 12.2.6 KNX DATA Secure

**Note**
KNX DATA Secure is supported by ETS version 5.5.0 or later. ETS version 6 or later is recommended when using KNX DATA Secure. Using older ETS versions can cause errors in project planning, problems during commissioning, or problems when diagnosing group addresses and devices.

KNX DATA Secure is an encryption technology that guarantees data protection in a KNX twisted pair network. KNX DATA Secure uses a longer KNX telegram format (long frames) to transmit the authenticated and encrypted data. The longer KNX telegram format has no impact on the reaction time of devices.

KNX DATA Secure is based on end-to-end encryption that ensures all data exchanged between KNX devices are encrypted and can only be read by authorized users. In conventional KNX networks (KNX plain), data are sent unencrypted on the bus. The data can be read by anyone with access to the bus and can be intercepted or manipulated by unauthorized persons.

Using KNX DATA Secure protects transmitted data against unauthorized access, ensures data integrity and minimizes potential security risks. KNX DATA Secure helps to increase security and privacy in KNX-based smart home or building automation systems. Standard KNX devices that only support KNX plain can be used in the same installation and on the same media with the help of a suitable coupler.

To use KNX DATA Secure devices in the KNX system must support KNX DATA Secure encryption technology. Both the KNX devices and the KNX installation must be configured accordingly, → Secure commissioning with KNX DATA Secure, Page 36.

A KNX DATA Secure product is identifiable by the KNX DATA Secure logo on the packaging or the product itself. This logo indicates that the product meets the KNX DATA Secure security standard. The product should also be listed in the KNX product database.

For more information, see:
→ ABB documentation "KNX DATA Secure"
→ https://www.knx.org/knx-en/for-professionals/benefits/knx-secure/index.php

## 12.2.7 Network (cyber) security

The industry is increasingly faced with cyber security risks. To increase the stability, security and robustness of its solutions, ABB has introduced cyber security robustness tests as part of the product development process.

In addition, the sections below include guidelines and mechanisms that you can use to improve the security of KNX systems.

### 12.2.7.1 Preventing unauthorized access

The basis for any protection concept is the careful shielding of the system against unauthorized access. The following points must be taken into consideration when planning and installing a KNX system:

- Only authorized persons (installers, custodians, users) should be allowed to have physical access to the KNX system.
- Sub-distributions with KNX devices should be closed, or in rooms to which only authorized persons have access.
- If available, use the anti-theft features on the KNX devices.
- All components in a KNX system should be permanently installed and protected from unauthorized access.
- The bus cable (ABB i-bus® KNX) should not be visible inside or outside the building. Cables outdoors are an increased risk. Physical access should be made particularly difficult here.
- Devices installed in areas with limited protection (e.g. outdoor areas, underground parking lots, restrooms, etc.) should be designed using a line coupler as a separate line.
- If possible, KNX DATA Secure should be used for data transmission in KNX networks (→ KNX DATA Secure, Page 191).
- The system should be divided into security segments that are based on the available security functions of the devices used. This is done by using segment couplers.

### 12.2.7.2 IP cabling inside the building

For building automation, use a separate LAN or WiFi network with its own hardware (routers, switches, etc.). Regardless of the KNX system, apply the usual security mechanisms for IP networks:

- MAC filter
- Encryption of wireless networks
- Usage of strong passwords, and password protection against access by unauthorized persons

### 12.2.7.3 Using filter tables

Filter tables in line couplers prevent attackers from gaining access to the KNX system as a whole. It is strongly recommended to maintain filter tables in line couplers and IP routers, and as far as possible, to avoid operating line couplers and IP routers in "forward all" mode.

### 12.2.8 Sending or switching delay

No telegrams are sent on the bus during the sending or switching delay (ABB i-bus® KNX).

Telegrams received (e.g. requests from a visualization system) are sent to the outputs after the sending or switching delay expires. The state of the outputs is set according to the settings in the ETS application or the telegram values of the Group Objects.

Time sequences (e.g. staircase lighting time) are started immediately during the sending or switching delay. If, at the time of reception, the staircase lighting time is shorter than the remaining sending or switching delay, the staircase lighting time elapses during the sending or switching delay. After the sending or switching delay has elapsed, there is no switching command; the staircase lighting is not switched on.

**Note**
The sending or switching delay includes the device initialization time.

### 12.2.9 Send behavior of the status Group Objects

The status Group Objects send telegrams on the bus (ABB i-bus® KNX) on change or on request.

- On change: When the value of the Group Object changes, the Group Object sends a telegram with the new value.
- On request: When status values are requested via the Group Object *Request status values*, all status Group Objects send telegrams with the current values.

### 12.2.10 Telegram rate limit

The bus load generated by the device can be limited using the telegram rate limit. This limit relates to all telegrams sent by the device.

The device counts the number of telegrams sent within the parameterized period. As soon as the maximum number of sent telegrams is reached, no further telegrams are sent on the bus (ABB i-bus® KNX) until the end of the period. A new period commences automatically at the end of the previous period. The telegram counter is reset to zero. Telegrams can be sent again. The Group Object always sends the current telegram value.

The first period (break time) is not precisely predefined. The break time can be anywhere between 0 seconds and the parameterized period. The subsequent periods correspond to the parameterization.

**Example**
- Number of telegrams = 20
- Maximum number of telegrams per period = 5
- Period = 5 s

The device immediately sends 5 telegrams. The next 5 telegrams are sent after a maximum of 5 seconds. From this point, a further 5 telegrams are sent via the bus (ABB i-bus® KNX) every 5 seconds.

### 12.2.11 Refreshed KNX state

If an input or an output is blocked by device-specific functions (e.g. manual operation, alarms, block, forced operation, switching delay), it will not react to telegrams received via the bus (ABB i-bus® KNX) while the block is active.

While a block is active, the device processes the telegrams received in the background. Active functions (e.g. staircase lighting, logic, position, brightness value) are executed in the background, but the results are not sent. The actual value is sent to the input or output when the block is canceled.

If the input or output has not received any telegrams via the bus (ABB i-bus® KNX) while a block is active, the input or output will assume the state it was in before the block.

### 12.2.12 Value Read

Using the command "Value Read" the value of the state of a group address in a Group Object can be read. A Group Object can only reply if the "Read" flag is set. The group address first in the Group Object (sending group address) is always sent. The reply is only sent once and can only be understood by the Group Object that triggered the "Value Read" command. The value received is written to the reading Group Object.

### 12.2.13 Cyclical monitoring

The reception of a telegram on a Group Object can be monitored using cyclical monitoring. If a telegram is not received on the Group Object within a parameterizable time (monitoring cycle), the sending device may be faulty or the bus cable to the sending device may be interrupted.

Depending on the device, the reaction to the loss of a telegram can be set in the application-specific parameters or the corresponding alarm is triggered.

After the receipt of a telegram, ETS download or KNX voltage recovery (ABB i-bus® KNX), the monitoring cycle is restarted.

**Note**
The monitoring cycle in the device should be at least quadruple the cyclical sending time of the sending device. As a result, the reactions set will not be triggered immediately if a signal is missing, e.g. due to high bus load.

# 13 Appendix

## 13.1 Scope of delivery

The device is supplied together with the following components:

- 1 x blind actuator
- 1 x installation and operating instructions
- 1 x KNX bus connection terminal (red/black)
- 1 x cover cap

## 13.2 Table of values, Group Object "Scene 1 ... 64"

The following table contains the telegram code of the 64 Scenes. Each 8-bit Scene is indicated in hexadecimal and binary codes. The 8-bit value is sent when a Scene is recalled/stored.
x = Value 1
Empty = Value 0

| Bit no. | | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-bit value | Hexadecimal | Recall/store | Not defined | Binary number codes | Binary number codes | Binary number codes | Binary number codes | Binary number codes | Binary number codes | Scene number | Recall A<br>Store S<br>No reaction – |
| 0 | 00 | | | | | | | | | 1 | A |
| 1 | 01 | | | | | | | | x | 2 | A |
| 2 | 02 | | | | | | | x | | 3 | A |
| 3 | 03 | | | | | | | x | x | 4 | A |
| 4 | 04 | | | | | | x | | | 5 | A |
| 5 | 05 | | | | | | x | | x | 6 | A |
| 6 | 06 | | | | | | x | x | | 7 | A |
| 7 | 07 | | | | | | x | x | x | 8 | A |
| 8 | 08 | | | | | x | | | | 9 | A |
| 9 | 09 | | | | | x | | | x | 10 | A |
| 10 | 0A | | | | | x | | x | | 11 | A |
| 11 | 0B | | | | | x | | x | x | 12 | A |
| 12 | 0C | | | | | x | x | | | 13 | A |
| 13 | 0D | | | | | x | x | | x | 14 | A |
| 14 | 0E | | | | | x | x | x | | 15 | A |
| 15 | 0F | | | | | x | x | x | x | 16 | A |
| 16 | 10 | | | | x | | | | | 17 | A |
| 17 | 11 | | | | x | | | | x | 18 | A |
| 18 | 12 | | | | x | | | x | | 19 | A |
| 19 | 13 | | | | x | | | x | x | 20 | A |
| 20 | 14 | | | | x | | x | | | 21 | A |
| 21 | 15 | | | | x | | x | | x | 22 | A |
| 22 | 16 | | | | x | | x | x | | 23 | A |
| 23 | 17 | | | | x | | x | x | x | 24 | A |
| 24 | 18 | | | | x | x | | | | 25 | A |
| 25 | 19 | | | | x | x | | | x | 26 | A |
| 26 | 1A | | | | x | x | | x | | 27 | A |
| 27 | 1B | | | | x | x | | x | x | 28 | A |
| 28 | 1C | | | | x | x | x | | | 29 | A |
| 29 | 1D | | | | x | x | x | | x | 30 | A |
| 30 | 1E | | | | x | x | x | x | | 31 | A |
| 31 | 1F | | | | x | x | x | x | x | 32 | A |
| 32 | 20 | | | x | | | | | | 33 | A |
| 33 | 21 | | | x | | | | | x | 34 | A |
| 34 | 22 | | | x | | | | x | | 35 | A |
| 35 | 23 | | | x | | | | x | x | 36 | A |
| 36 | 24 | | | x | | | x | | | 37 | A |
| 37 | 25 | | | x | | | x | | x | 38 | A |
| 38 | 26 | | | x | | | x | x | | 39 | A |
| 39 | 27 | | | x | | | x | x | x | 40 | A |
| 40 | 28 | | | x | | x | | | | 41 | A |
| 41 | 29 | | | x | | x | | | x | 42 | A |
| 42 | 2A | | | x | | x | | x | | 43 | A |
| 43 | 2B | | | x | | x | | x | x | 44 | A |
| 44 | 2C | | | x | | x | x | | | 45 | A |
| 45 | 2D | | | x | | x | x | | x | 46 | A |
| 46 | 2E | | | x | | x | x | x | | 47 | A |
| 47 | 2F | | | x | | x | x | x | x | 48 | A |
| 48 | 30 | | | x | x | | | | | 49 | A |
| 49 | 31 | | | x | x | | | | x | 50 | A |
| 50 | 32 | | | x | x | | | x | | 51 | A |
| 51 | 33 | | | x | x | | | x | x | 52 | A |
| 52 | 34 | | | x | x | | x | | | 53 | A |
| 53 | 35 | | | x | x | | x | | x | 54 | A |
| 54 | 36 | | | x | x | | x | x | | 55 | A |
| 55 | 37 | | | x | x | | x | x | x | 56 | A |
| 56 | 38 | | | x | x | x | | | | 57 | A |
| 57 | 39 | | | x | x | x | | | x | 58 | A |
| 58 | 3A | | | x | x | x | | x | | 59 | A |
| 59 | 3B | | | x | x | x | | x | x | 60 | A |
| 60 | 3C | | | x | x | x | x | | | 61 | A |
| 61 | 3D | | | x | x | x | x | | x | 62 | A |
| 62 | 3E | | | x | x | x | x | x | | 63 | A |

| Bit no. | | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-bit value | Hexadecimal | Recall/store | Not defined | Binary number codes | Binary number codes | Binary number codes | Binary number codes | Binary number codes | Binary number codes | Scene number | Recall A<br>Store S<br>No reaction – |
| 63 | 3F | | | x | x | x | x | x | x | 64 | A |
| 64 | 40 | | x | | | | | | | – | – |
| 65 | 41 | | x | | | | | | x | – | – |
| 66 | 42 | | x | | | | | x | | – | – |
| 67 | 43 | | x | | | | | x | x | – | – |
| 68 | 44 | | x | | | | x | | | – | – |
| 69 | 45 | | x | | | | x | | x | – | – |
| 70 | 46 | | x | | | | x | x | | – | – |
| 71 | 47 | | x | | | | x | x | x | – | – |
| 72 | 48 | | x | | | x | | | | – | – |
| 73 | 49 | | x | | | x | | | x | – | – |
| 74 | 4A | | x | | | x | | x | | – | – |
| 75 | 4B | | x | | | x | | x | x | – | – |
| 76 | 4C | | x | | | x | x | | | – | – |
| 77 | 4D | | x | | | x | x | | x | – | – |
| 78 | 4E | | x | | | x | x | x | | – | – |
| 79 | 4F | | x | | | x | x | x | x | – | – |
| 80 | 50 | | x | | x | | | | | – | – |
| 81 | 51 | | x | | x | | | | x | – | – |
| 82 | 52 | | x | | x | | | x | | – | – |
| 83 | 53 | | x | | x | | | x | x | – | – |
| 84 | 54 | | x | | x | | x | | | – | – |
| 85 | 55 | | x | | x | | x | | x | – | – |
| 86 | 56 | | x | | x | | x | x | | – | – |
| 87 | 57 | | x | | x | | x | x | x | – | – |
| 88 | 58 | | x | | x | x | | | | – | – |
| 89 | 59 | | x | | x | x | | | x | – | – |
| 90 | 5A | | x | | x | x | | x | | – | – |
| 91 | 5B | | x | | x | x | | x | x | – | – |
| 92 | 5C | | x | | x | x | x | | | – | – |
| 93 | 5D | | x | | x | x | x | | x | – | – |
| 94 | 5E | | x | | x | x | x | x | | – | – |
| 95 | 5F | | x | | x | x | x | x | x | – | – |
| 96 | 60 | | x | x | | | | | | – | – |
| 97 | 61 | | x | x | | | | | x | – | – |
| 98 | 62 | | x | x | | | | x | | – | – |
| 99 | 63 | | x | x | | | | x | x | – | – |
| 100 | 64 | | x | x | | | x | | | – | – |
| 101 | 65 | | x | x | | | x | | x | – | – |
| 102 | 66 | | x | x | | | x | x | | – | – |
| 103 | 67 | | x | x | | | x | x | x | – | – |
| 104 | 68 | | x | x | | x | | | | – | – |
| 105 | 69 | | x | x | | x | | | x | – | – |
| 106 | 6A | | x | x | | x | | x | | – | – |
| 107 | 6B | | x | x | | x | | x | x | – | – |
| 108 | 6C | | x | x | | x | x | | | – | – |
| 109 | 6D | | x | x | | x | x | | x | – | – |
| 110 | 6E | | x | x | | x | x | x | | – | – |
| 111 | 6F | | x | x | | x | x | x | x | – | – |
| 112 | 70 | | x | x | x | | | | | – | – |
| 113 | 71 | | x | x | x | | | | x | – | – |
| 114 | 72 | | x | x | x | | | x | | – | – |
| 115 | 73 | | x | x | x | | | x | x | – | – |
| 116 | 74 | | x | x | x | | x | | | – | – |
| 117 | 75 | | x | x | x | | x | | x | – | – |
| 118 | 76 | | x | x | x | | x | x | | – | – |
| 119 | 77 | | x | x | x | | x | x | x | – | – |
| 120 | 78 | | x | x | x | x | | | | – | – |
| 121 | 79 | | x | x | x | x | | | x | – | – |
| 122 | 7A | | x | x | x | x | | x | | – | – |
| 123 | 7B | | x | x | x | x | | x | x | – | – |
| 124 | 7C | | x | x | x | x | x | | | – | – |
| 125 | 7D | | x | x | x | x | x | | x | – | – |

| Bit no. | | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-bit value | Hexadecimal | Recall/store | Not defined | Binary number codes | Binary number codes | Binary number codes | Binary number codes | Binary number codes | Binary number codes | Scene number | Recall A<br>Store S<br>No reaction – |
| 126 | 7E | | x | x | x | x | x | x | | – | – |
| 127 | 7F | | x | x | x | x | x | x | x | – | – |
| 128 | 80 | x | | | | | | | | 1 | W |
| 129 | 81 | x | | | | | | | x | 2 | W |
| 130 | 82 | x | | | | | | x | | 3 | W |
| 131 | 83 | x | | | | | | x | x | 4 | W |
| 132 | 84 | x | | | | | x | | | 5 | W |
| 133 | 85 | x | | | | | x | | x | 6 | W |
| 134 | 86 | x | | | | | x | x | | 7 | W |
| 135 | 87 | x | | | | | x | x | x | 8 | W |
| 136 | 88 | x | | | | x | | | | 9 | W |
| 137 | 89 | x | | | | x | | | x | 10 | W |
| 138 | 8A | x | | | | x | | x | | 11 | W |
| 139 | 8B | x | | | | x | | x | x | 12 | W |
| 140 | 8C | x | | | | x | x | | | 13 | W |
| 141 | 8D | x | | | | x | x | | x | 14 | W |
| 142 | 8E | x | | | | x | x | x | | 15 | W |
| 143 | 8F | x | | | | x | x | x | x | 16 | W |
| 144 | 90 | x | | | x | | | | | 17 | W |
| 145 | 91 | x | | | x | | | | x | 18 | W |
| 146 | 92 | x | | | x | | | x | | 19 | W |
| 147 | 93 | x | | | x | | | x | x | 20 | W |
| 148 | 94 | x | | | x | | x | | | 21 | W |
| 149 | 95 | x | | | x | | x | | x | 22 | W |
| 150 | 96 | x | | | x | | x | x | | 23 | W |
| 151 | 97 | x | | | x | | x | x | x | 24 | W |
| 152 | 98 | x | | | x | x | | | | 25 | W |
| 153 | 99 | x | | | x | x | | | x | 26 | W |
| 154 | 9A | x | | | x | x | | x | | 27 | W |
| 155 | 9B | x | | | x | x | | x | x | 28 | W |
| 156 | 9C | x | | | x | x | x | | | 29 | W |
| 157 | 9D | x | | | x | x | x | | x | 30 | W |
| 158 | 9E | x | | | x | x | x | x | | 31 | W |
| 159 | 9F | x | | | x | x | x | x | x | 32 | W |
| 160 | A0 | x | | x | | | | | | 33 | W |
| 161 | A1 | x | | x | | | | | x | 34 | W |
| 162 | A2 | x | | x | | | | x | | 35 | W |
| 163 | A3 | x | | x | | | | x | x | 36 | W |
| 164 | A4 | x | | x | | | x | | | 37 | W |
| 165 | A5 | x | | x | | | x | | x | 38 | W |
| 166 | A6 | x | | x | | | x | x | | 39 | W |
| 167 | A7 | x | | x | | | x | x | x | 40 | W |
| 168 | A8 | x | | x | | x | | | | 41 | W |
| 169 | A9 | x | | x | | x | | | x | 42 | W |
| 170 | AA | x | | x | | x | | x | | 43 | W |
| 171 | AB | x | | x | | x | | x | x | 44 | W |
| 172 | AC | x | | x | | x | x | | | 45 | W |
| 173 | AD | x | | x | | x | x | | x | 46 | W |
| 174 | AE | x | | x | | x | x | x | | 47 | W |
| 175 | AF | x | | x | | x | x | x | x | 48 | W |
| 176 | B0 | x | | x | x | | | | | 49 | W |
| 177 | B1 | x | | x | x | | | | x | 50 | W |
| 178 | B2 | x | | x | x | | | x | | 51 | W |
| 179 | B3 | x | | x | x | | | x | x | 52 | W |
| 180 | B4 | x | | x | x | | x | | | 53 | W |
| 181 | B5 | x | | x | x | | x | | x | 54 | W |
| 182 | B6 | x | | x | x | | x | x | | 55 | W |
| 183 | B7 | x | | x | x | | x | x | x | 56 | W |
| 184 | B8 | x | | x | x | x | | | | 57 | W |
| 185 | B9 | x | | x | x | x | | | x | 58 | W |
| 186 | BA | x | | x | x | x | | x | | 59 | W |
| 187 | BB | x | | x | x | x | | x | x | 60 | W |
| 188 | BC | x | | x | x | x | x | | | 61 | W |
| 189 | BD | x | | x | x | x | x | | x | 62 | W |
| 190 | BE | x | | x | x | x | x | x | | 63 | W |

| Bit no. | | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-bit value | Hexadecimal | Recall/store | Not defined | Binary number codes | Binary number codes | Binary number codes | Binary number codes | Binary number codes | Binary number codes | Scene number | Recall A<br>Store S<br>No reaction – |
| 191 | BF | x | | x | x | x | x | x | x | 64 | W |
| 192 | C0 | x | x | | | | | | | – | – |
| 193 | C1 | x | x | | | | | | x | – | – |
| 194 | C2 | x | x | | | | | x | | – | – |
| 195 | C3 | x | x | | | | | x | x | – | – |
| 196 | C4 | x | x | | | | x | | | – | – |
| 197 | C5 | x | x | | | | x | | x | – | – |
| 198 | C6 | x | x | | | | x | x | | – | – |
| 199 | C7 | x | x | | | | x | x | x | – | – |
| 200 | C8 | x | x | | | x | | | | – | – |
| 201 | C9 | x | x | | | x | | | x | – | – |
| 202 | CA | x | x | | | x | | x | | – | – |
| 203 | CB | x | x | | | x | | x | x | – | – |
| 204 | CC | x | x | | | x | x | | | – | – |
| 205 | CD | x | x | | | x | x | | x | – | – |
| 206 | CE | x | x | | | x | x | x | | – | – |
| 207 | CF | x | x | | | x | x | x | x | – | – |
| 208 | D0 | x | x | | x | | | | | – | – |
| 209 | D1 | x | x | | x | | | | x | – | – |
| 210 | D2 | x | x | | x | | | x | | – | – |
| 211 | D3 | x | x | | x | | | x | x | – | – |
| 212 | D4 | x | x | | x | | x | | | – | – |
| 213 | D5 | x | x | | x | | x | | x | – | – |
| 214 | D6 | x | x | | x | | x | x | | – | – |
| 215 | D7 | x | x | | x | | x | x | x | – | – |
| 216 | D8 | x | x | | x | x | | | | – | – |
| 217 | D9 | x | x | | x | x | | | x | – | – |
| 218 | DA | x | x | | x | x | | x | | – | – |
| 219 | DB | x | x | | x | x | | x | x | – | – |
| 220 | DC | x | x | | x | x | x | | | – | – |
| 221 | DD | x | x | | x | x | x | | x | – | – |
| 222 | DE | x | x | | x | x | x | x | | – | – |
| 223 | DF | x | x | | x | x | x | x | x | – | – |
| 224 | E0 | x | x | x | | | | | | – | – |
| 225 | E1 | x | x | x | | | | | x | – | – |
| 226 | E2 | x | x | x | | | | x | | – | – |
| 227 | E3 | x | x | x | | | | x | x | – | – |
| 228 | E4 | x | x | x | | | x | | | – | – |
| 229 | E5 | x | x | x | | | x | | x | – | – |
| 230 | E6 | x | x | x | | | x | x | | – | – |
| 231 | E7 | x | x | x | | | x | x | x | – | – |
| 232 | E8 | x | x | x | | x | | | | – | – |
| 233 | E9 | x | x | x | | x | | | x | – | – |
| 234 | EA | x | x | x | | x | | x | | – | – |
| 235 | EB | x | x | x | | x | | x | x | – | – |
| 236 | EC | x | x | x | | x | x | | | – | – |
| 237 | ED | x | x | x | | x | x | | x | – | – |
| 238 | EE | x | x | x | | x | x | x | | – | – |
| 239 | EF | x | x | x | | x | x | x | x | – | – |
| 240 | F0 | x | x | x | x | | | | | – | – |
| 241 | F1 | x | x | x | x | | | | x | – | – |
| 242 | F2 | x | x | x | x | | | x | | – | – |
| 243 | F3 | x | x | x | x | | | x | x | – | – |
| 244 | F4 | x | x | x | x | | x | | | – | – |
| 245 | F5 | x | x | x | x | | x | | x | – | – |
| 246 | F6 | x | x | x | x | | x | x | | – | – |
| 247 | F7 | x | x | x | x | | x | x | x | – | – |
| 248 | F8 | x | x | x | x | x | | | | – | – |
| 249 | F9 | x | x | x | x | x | | | x | – | – |
| 250 | FA | x | x | x | x | x | | x | | – | – |
| 251 | FB | x | x | x | x | x | | x | x | – | – |
| 252 | FC | x | x | x | x | x | x | | | – | – |
| 253 | FD | x | x | x | x | x | x | | x | – | – |
| 254 | FE | x | x | x | x | x | x | x | | – | – |
| 255 | FF | x | x | x | x | x | x | x | x | – | – |

Tab. 18: Code table 8-bit Scene

# 13.3 Status byte automatic sun protection

| Bit no. | | | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|
| Bit no. | 8-bit value | | | | | | | | | |
| 0-2 | 0 | Automatic sun protection inactive | - | - | - | - | - | 0 | 0 | 0 |
| 0-2 | 1 | Automatic sun protection active | - | - | - | - | - | 0 | 0 | 1 |
| 0-2 | 2 | Automatic sun protection in standby | - | - | - | - | - | 0 | 1 | 0 |
| 0-2 | 3 | Automatic sun protection overridden by higher priorities | - | - | - | - | - | 0 | 1 | 1 |

| Bit no. | | | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|
| Bit no. | 8-bit value | | | | | | | | | |
| 3-5 | 0 | Automatic sun protection inactive | - | - | 0 | 0 | 0 | - | - | - |
| 3-5 | 1 | Anti-glare protection active | - | - | 0 | 0 | 1 | - | - | - |
| 3-5 | 2 | Cooling active | - | - | 0 | 1 | 0 | - | - | - |
| 3-5 | 3 | Heating active | - | - | 0 | 1 | 1 | - | - | - |
| 3-5 | 4 | Overheating protection active | - | - | 1 | 0 | 0 | - | - | - |
| 6 | 0 | Sun = 0 | - | 0 | - | - | - | - | - | - |
| 6 | 1 | Sun = 1 | - | 1 | - | - | - | - | - | - |
| 7 | - | Not used | - | - | - | - | - | - | - | - |

Tab. 19: Status byte automatic sun protection

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