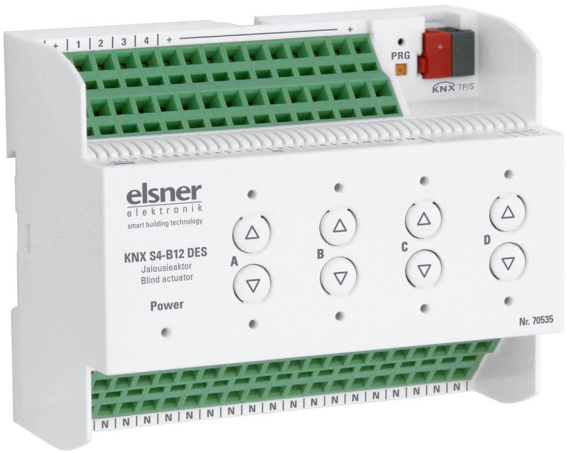
# KNX S4-B12 DES

## Actuator for 4 drives with 3 Limit Switches

Item number 70535

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**Installation and Adjustment**

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This manual is amended periodically and will be brought into line with new software releases. The change status (software version and date) can be found in the contents footer. If you have a device with a later software version, please check **www.elsner-elektronik.de** in the menu area "Service" to find out whether a more up-to-date version of the manual is available.

## Clarification of signs used in this manual

Safety advice.

Safety advice for working on electrical connections, components, etc.

**DANGER!** ... indicates an immediately hazardous situation which will lead to death or severe injuries if it is not avoided.

**WARNING!** ... indicates a potentially hazardous situation which may lead to death or severe injuries if it is not avoided.

**CAUTION!** ... indicates a potentially hazardous situation which may lead to trivial or minor injuries if it is not avoided.


**ATTENTION!** ... indicates a situation which may lead to damage to property if it is not avoided.

ETS In the ETS tables, the parameter default settings are marked by underlining.

# 1. Safety and usage instructions

Installation, testing, operational start-up and troubleshooting should only be performed by an authorised electrician.

**DANGER!**
**Risk to life from live voltage (mains voltage)!**
There are unprotected live components inside the device.
- Inspect the device for damage before installation. Only put undamaged devices into operation.
- Comply with the locally applicable directives, regulations and provisions for electrical installation.
- Immediately take the device or system out of service and secure it against unintentional switch-on if risk-free operation is no longer guaranteed.

Use the device exclusively for building automation and observe the operating instructions. Improper use, modifications to the device or failure to observe the operating instructions will invalidate any warranty or guarantee claims.
Operate the device only as a fixed-site installation, i.e. only in assembled condition and after conclusion of all installation and operational start-up tasks, and only in the surroundings designated for it.
Elsner Elektronik is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

## 1.1. Safety notice for automatic functions

**WARNING!**
**Risk of injury from automatically moving components!**
Parts of the system can be started by the automatic controls and be a danger to persons.
- No persons may remain in the travelling range of parts driven by an electric motor.
- Adhere to the relevant building regulations.
- Ensure that the return path/access to the building is not blocked if spending time outside the building (danger of being locked out).
- Correctly decommission the system for maintenance and cleaning work.

If there is a power outage, the system does not work. Therefore, shadings should be moved to a save position if there are anticipated weather conditions, for example, if this has not already been done by the automatic function (product protection).

If the power supply is removed, the connected drive switches off. When the power is restored, the consumer remains switched off until a new movement command is received by the actuator.

**For information on installation, maintenance, disposal, scope of delivery and technical data, please refer to the installation instructions.**

# 2. Description

The **KNX S4-B12 DES actuator** is an electronic control device for controlling up to 4 motors with 3 limit switches. A 230 V AC power supply is needed for the actuator and motors.

***Functions:***

- **4 motor outputs** each for one **motor with 3 limit switches** (shutters with working position)
- Switch panel with **4 switch pairs** and status LEDs
- **12 binary input** for use as manual or bus button
- **Position feedback** of the movement position
- **Position storage** (movement position) via 1-bit object (storage and call-up, e.g. by button)
- Controls through **internal or external automatic operation**
- Integrated **shading control** for each motor output
- **Scene control** for movement position with 16 scenes per motor
- Blocking objects and alarm messages have different **priorities** so that safety functions always have priority (e.g. wind blocking)
- **Manual or automatic control configuration** per time or communication object

# 3. Commissioning

Configuration is made using the KNX software as of ETS 5. The **product file** can be downloaded from the ETS online catalogue and the Elsner Elektronik website on **www.elsner-elektronik.de** in the “Service” menu.

After the bus voltage has been applied, the device will enter an initialisation phase lasting approx. 5 seconds. During this phase no information can be received or sent via the bus.

## 3.1. Addressing of the device at the bus

The equipment is delivered with the individual address 15.15.255. This can be changed via the ETS. There is a button and a control LED on the unit for this purpose.

# 3.2. LEDs

## 3.2.1. Display of operating status by the power LED

| behaviour | Colour | |
|---|---|---|
| On | Green | Normal mode<br>Bus connection/bus voltage present. |
| Flashes | Green | Normal mode<br>*No* bus connection/bus voltage present. |
| On | Orange | Device starts or is programmed via the ETS.<br>No automatic functions are being performed. |
| Flashes | Green (on), Orange (flashing) | Programming mode active. |

## 3.2.2. Status display with the channel LEDs

| behaviour | LED | |
|---|---|---|
| On | top | Motor in top position. |
| On | bottom | Motor in bottom position. |
| Flashes slowly | top | Motor moving up. |
| Flashes slowly | bottom | Motor moving down. |
| Flashes quickly | top | Motor in top position, blocking active. |
| Flashes quickly | bottom | Motor in bottom position (DOWN2), block active. |
| Flashes quickly | both simultaneously | Drive in intermediate position, block active. |
| Off | both | Drive in intermediate position. |
| "Running light" across all LEDs | all channels | Wrong application version was loaded. Use the version compatible with the device! |

# 3.3. Monitor safety functions

For KNX devices with safety functions (e.g. wind or rain block), a cyclical monitoring of the safety objects must be established. The ideal ratio is 1:3 (example: if the weather station sends a value every 5 minutes, the actuator must be configured for a monitoring period of 15 minutes).

# 4. Transfer protocol

## 4.1. List of all communication objects

***Abbreviations:***
*R Read*
*W Write*
*C Communication*
*T Transmit*
*DPT Data Point Type*

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 1 | Software version | Readable | R-C- | [217.1] DPT_Version | 2 Bytes |
| 50 | Input 1 - Extended | Input / Output | RWCT | [1.8] DPT_UpDown | 1 Bit |
| 51 | Input 1 - Short | Output | R-CT | [1.8] DPT_UpDown | 1 Bit |
| 52 | Input 1 - Switch | Input / Output | RWCT | [1.1] DPT_Switch | 1 Bit |
| 53 | Input 1 - Relative dimming | Input / Output | RWCT | [3.7] DPT_Control_Dimming | 4 Bit |
| 54 | Input 1 - Encoder 8 Bit | Output | R-CT | [5] 5.xxx | 1 Byte |
| 55 | Input 1 - Temperature encoder | Output | R-CT | [9.1] DPT_Value_Temp | 2 Bytes |
| 56 | Input 1 - Brightness encoder | Output | R-CT | [9.4] DPT_Value_Lux | 2 Bytes |
| 57 | Input 1 - Scene | Output | R-CT | [18.1] DPT_SceneControl | 1 Byte |
| 58 | Input 1 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 60 | Input 2 - Extended | Input / Output | RWCT | [1.8] DPT_UpDown | 1 Bit |
| 61 | Input 2 - Short | Output | R-CT | [1.8] DPT_UpDown | 1 Bit |
| 62 | Input 2 - Switch | Input / Output | RWCT | [1.1] DPT_Switch | 1 Bit |
| 63 | Input 2 - Relative dimming | Input / Output | RWCT | [3.7] DPT_Control_Dimming | 4 Bit |
| 64 | Input 2 - Encoder 8 Bit | Output | R-CT | [5] 5.xxx | 1 Byte |
| 65 | Input 2 - Temperature encoder | Output | R-CT | [9.1] DPT_Value_Temp | 2 Bytes |
| 66 | Input 2 - Brightness encoder | Output | R-CT | [9.4] DPT_Value_Lux | 2 Bytes |
| 67 | Input 2 - Scene | Output | R-CT | [18.1] DPT_SceneControl | 1 Byte |
| 68 | Input 2 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 70 | Input 3 - Extended | Input / Output | RWCT | [1.8] DPT_UpDown | 1 Bit |
| 71 | Input 3 - Short | Output | R-CT | [1.8] DPT_UpDown | 1 Bit |
| 72 | Input 3 - Switch | Input / Output | RWCT | [1.1] DPT_Switch | 1 Bit |
| 73 | Input 3 - Relative dimming | Input / Output | RWCT | [3.7] DPT_Control_Dimming | 4 Bit |
| 74 | Input 3 - Encoder 8 Bit | Output | R-CT | [5] 5.xxx | 1 Byte |
| 75 | Input 3 - Temperature encoder | Output | R-CT | [9.1] DPT_Value_Temp | 2 Bytes |
| 76 | Input 3 - Brightness encoder | Output | R-CT | [9.4] DPT_Value_Lux | 2 Bytes |
| 77 | Input 3 - Scene | Output | R-CT | [18.1] DPT_SceneControl | 1 Byte |
| 78 | Input 3 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 80 | Input 4 - Extended | Input / Output | RWCT | [1.8] DPT_UpDown | 1 Bit |
| 81 | Input 4 - Short | Output | R-CT | [1.8] DPT_UpDown | 1 Bit |
| 82 | Input 4 - Switch | Input / Output | RWCT | [1.1] DPT_Switch | 1 Bit |
| 83 | Input 4 - Relative dimming | Input / Output | RWCT | [3.7] DPT_Control_Dimming | 4 Bit |
| 84 | Input 4 - Encoder 8 Bit | Output | R-CT | [5] 5.xxx | 1 Byte |
| 85 | Input 4 - Temperature encoder | Output | R-CT | [9.1] DPT_Value_Temp | 2 Bytes |
| 86 | Input 4 - Brightness encoder | Output | R-CT | [9.4] DPT_Value_Lux | 2 Bytes |
| 87 | Input 4 - Scene | Output | R-CT | [18.1] DPT_SceneControl | 1 Byte |
| 88 | Input 4 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 100 | Channel A - Automatic or manual status | Output | R-CT | [1] 1.xxx | 1 Bit |
| 101 | Channel A - Manual long-term extended position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 102 | Channel A - Manual long-term closed position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 103 | Channel A - Manual short time | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 104 | Channel A - Manual movement position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 105 | Channel A - Manual blind position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 106 | Channel A - Manually move to shading position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 107 | Channel A - Manually move to closed position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 108 | Channel A - Automatic long-term extended position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 109 | Channel A - Automatic long-term closed position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 110 | Channel A - Automatic short time | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 111 | Channel A - Automatic movement position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 112 | Channel A - Automatic blind position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 113 | Channel A - Automatically move to shading position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 114 | Channel A - Automatically move to closed position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 115 | Channel A - Automatically move to position memory | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 116 | Channel A - Learn object position memory automatically | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 117 | Channel A - Switch from manual to automatic | Input | RWC- | [1] 1.xxx | 1 Bit |
| 118 | Channel A - Automatic blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 119 | Channel A - Current movement position | Output | R-CT | [5.1] DPT_Scaling | 1 Byte |
| 120 | Channel A - Current blind position | Output | R-CT | [5.1] DPT_Scaling | 1 Byte |
| 121 | Channel A - Status object | Output | R-CT | [1] 1.xxx | 1 Bit |
| 122 | Channel A - Call up / saving scenes | Input | RWC- | [18.1] DPT_SceneControl | 1 Byte |
| 123 | Channel A - Outdoor temperature blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 124 | Channel A - Outdoor temperature block measurement | Input | RWC- | [9.1] DPT_Value_Temp | 2 Bytes |
| 125 | Channel A - Outdoor temperature blocking status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 126 | Channel A - Twilight object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 127 | Channel A - Twilight measurement | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 128 | Channel A - Twilight status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 129 | Channel A - Time control | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 130 | Channel A - Inside temperature release object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 131 | Channel A - Inside temperature release measurement | Input | RWC- | [9.1] DPT_Value_Temp | 2 Bytes |
| 132 | Channel A - Inside temperature release setpoint | Input | RWC- | [9.1] DPT_Value_Temp | 2 Bytes |
| 133 | Channel A - Inside temperature release status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 134 | Channel A - Shading object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 135 | Channel A - Shading brightness measurement 1 | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 136 | Channel A - Shading brightness measurement 2 | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 137 | Channel A - Shading brightness measurement 3 | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 138 | Channel A - Shading threshold value | Input / Output | RWCT | [9.4] DPT_Value_Lux | 2 Bytes |
| 139 | Channel A - Shading threshold value 1 = + \| 0 = - | Input | RWC- | [1] 1.xxx | 1 Bit |
| 140 | Channel A - Shading threshold value + | Input | RWC- | [1] 1.xxx | 1 Bit |
| 141 | Channel A - Shading threshold value - | Input | RWC- | [1] 1.xxx | 1 Bit |
| 142 | Channel A - Shading status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 143 | Channel A - Shading position learning object | Input | RWC- | [1] 1.xxx | 1 Bit |
| 144 | Channel A - Azimuth | Input | RWC- | [9] 9.xxx | 2 Bytes |
| 145 | Channel A - Elevation | Input | RWC- | [9] 9.xxx | 2 Bytes |
| 161 | Channel A - Zero position reached | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 162 | Channel A - Zero position sensor disrupted | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 163 | Channel A - Master zero position status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 164 | Channel A - Master zero position command | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 165 | Channel A - Slave zero position status | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 166 | Channel A - Master zero position status | Input | RWC- | [1.1] DPT_Switch | 1 Bit |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 167 | Channel A - Master zero position command | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 168 | Channel A - Slave zero position status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 171 | Channel A - Blocking 1 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 172 | Channel A - Blocking 1 - Wind blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 173 | Channel A - Blocking 1 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 174 | Channel A - Blocking 1 - Wind blocking status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 175 | Channel A - Blocking 1 - Rain blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 176 | Channel A - Blocking 2 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 177 | Channel A - Blocking 2 - Wind blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 178 | Channel A - Blocking 2 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 179 | Channel A - Blocking 2 - Wind blocking status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 180 | Channel A - Blocking 2 - Rain blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 181 | Channel A - Blocking 3 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 182 | Channel A - Blocking 3 - Wind blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 183 | Channel A - Blocking 3 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 184 | Channel A - Blocking 3 - Wind blocking status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 185 | Channel A - Blocking 3 - Rain blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 186 | Channel A - Blocking 4 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 187 | Channel A - Blocking 4 - Wind blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 188 | Channel A - Blocking 4 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 189 | Channel A - Blocking 4 - Wind blocking status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 190 | Channel A - Blocking 4 - Rain blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 191 | Channel A - Blocking 5 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 192 | Channel A - Blocking 5 - Wind blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 193 | Channel A - Blocking 5 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 194 | Channel A - Blocking 5 - Wind blocking status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 195 | Channel A - Blocking 5 - Rain blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 196 | Channel A - Short time restriction | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 249 | Channel A - Local control temperature blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 250 | Input 5 - Extended | Input / Output | RWCT | [1.8] DPT_UpDown | 1 Bit |
| 251 | Input 5 - Short | Output | R-CT | [1.8] DPT_UpDown | 1 Bit |
| 252 | Input 5 - Switch | Input / Output | RWCT | [1.1] DPT_Switch | 1 Bit |
| 253 | Input 5 - Relative dimming | Input / Output | RWCT | [3.7] DPT_Control_Dimming | 4 Bit |
| 254 | Input 5 - Encoder 8 Bit | Output | R-CT | [5] 5.xxx | 1 Byte |
| 255 | Input 5 - Temperature encoder | Output | R-CT | [9.1] DPT_Value_Temp | 2 Bytes |
| 256 | Input 5 - Brightness encoder | Output | R-CT | [9.4] DPT_Value_Lux | 2 Bytes |
| 257 | Input 5 - Scene | Output | R-CT | [18.1] DPT_SceneControl | 1 Byte |
| 258 | Input 5 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 260 | Input 6 - Extended | Input / Output | RWCT | [1.8] DPT_UpDown | 1 Bit |
| 261 | Input 6 - Short | Output | R-CT | [1.8] DPT_UpDown | 1 Bit |
| 262 | Input 6 - Switch | Input / Output | RWCT | [1.1] DPT_Switch | 1 Bit |
| 263 | Input 6 - Relative dimming | Input / Output | RWCT | [3.7] DPT_Control_Dimming | 4 Bit |
| 264 | Input 6 - Encoder 8 Bit | Output | R-CT | [5] 5.xxx | 1 Byte |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 265 | Input 6 - Temperature encoder | Output | R-CT | [9.1] DPT_Value_Temp | 2 Bytes |
| 266 | Input 6 - Brightness encoder | Output | R-CT | [9.4] DPT_Value_Lux | 2 Bytes |
| 267 | Input 6 - Scene | Output | R-CT | [18.1] DPT_SceneControl | 1 Byte |
| 268 | Input 6 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 300 | Channel B - Status automatic or manual | Output | R-CT | [1] 1.xxx | 1 Bit |
| 301 | Channel B - Manual long-term extended position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 302 | Channel B - Manual long-term closed position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 303 | Channel B - Manual short time | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 304 | Channel B - Manual movement position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 305 | Channel B - Manual blind time | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 306 | Channel B - Manually move to shading position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 307 | Channel B - Manually move to closed position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 308 | Channel B - Automatic long-term extended position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 309 | Channel B - Automatic long-term closed position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 310 | Channel B - Automatic short time | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 311 | Channel B - Automatic movement position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 312 | Channel B - Automatic blind position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 313 | Channel B - Automatically move to shading position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 314 | Channel B - Automatically move to closed position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 315 | Channel B - Automatically move to shading position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 316 | Channel B - Learn object position memory automatically | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 317 | Channel B - Switch from manual to automatic | Input | RWC- | [1] 1.xxx | 1 Bit |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 318 | Channel B - Automatic blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 319 | Channel V - Current movement position | Output | R-CT | [5.1] DPT_Scaling | 1 Byte |
| 320 | Channel B - Current blind position | Output | R-CT | [5.1] DPT_Scaling | 1 Byte |
| 321 | Channel B - Status object | Output | R-CT | [1] 1.xxx | 1 Bit |
| 322 | Channel B - Call up / saving scenes | Input | RWC- | [18.1] DPT_SceneControl | 1 Byte |
| 323 | Channel B - Outdoor temperature blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 324 | Channel A - Outdoor temperature block measurement | Input | RWC- | [9.1] DPT_Value_Temp | 2 Bytes |
| 325 | Channel B - Outdoor temperature block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 326 | Channel B - Twilight object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 327 | Channel B - Twilight measurement | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 328 | Channel B - Twilight status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 329 | Channel B - Time control | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 330 | Channel B - Inside temperature release object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 331 | Channel B - Inside temperature release measurement | Input | RWC- | [9.1] DPT_Value_Temp | 2 Bytes |
| 332 | Channel B - Inside temperature release setpoint | Input | RWC- | [9.1] DPT_Value_Temp | 2 Bytes |
| 333 | Channel B - Inside temperature release status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 334 | Channel B - Shading object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 335 | Channel B - Shading brightness measurement 1 | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 336 | Channel B - Shading brightness measurement 2 | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 337 | Channel B - Shading brightness measurement 3 | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 338 | Channel B - Shading threshold value | Input / Output | RWCT | [9.4] DPT_Value_Lux | 2 Bytes |
| 339 | Channel B - Shading threshold value 1 = + \| 0 = - | Input | RWC- | [1] 1.xxx | 1 Bit |
| 340 | Channel B - Shading threshold value + | Input | RWC- | [1] 1.xxx | 1 Bit |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 341 | Channel B - Shading threshold value - | Input | RWC- | [1] 1.xxx | 1 Bit |
| 342 | Channel B - Shading status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 343 | Channel B - Shading position learning object | Input | RWC- | [1] 1.xxx | 1 Bit |
| 344 | Channel B - Azimut | Input | RWC- | [9] 9.xxx | 2 Bytes |
| 345 | Channel B - Elevation | Input | RWC- | [9] 9.xxx | 2 Bytes |
| 361 | Channel B - Zero position reached | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 362 | Channel B - Zero position sensor disrupted | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 363 | Channel B - Master zero position status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 364 | Channel B - Master zero position command | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 365 | Channel B - Slave zero position status | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 366 | Channel B - Master zero position status | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 367 | Channel B - Master zero position command | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 368 | Channel B - Slave zero position status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 371 | Channel B - Blocking 1 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 372 | Channel B - Blocking 1 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 373 | Channel B - Blocking 1 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 374 | Channel B - Blocking 1 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 375 | Channel B - Blocking 1 - rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 376 | Channel B - Blocking 2 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 377 | Channel B - Blocking 2 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 378 | Channel B - Blocking 2 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 379 | Channel B - Blocking 2 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 380 | Channel B - Blocking 2 - rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 381 | Channel B - Blocking 3 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 382 | Channel B - Blocking 3 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 383 | Channel B - Blocking 3 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 384 | Channel B - Blocking 3 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 385 | Channel B - Blocking 3 - rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 386 | Channel B - Blocking 4 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 387 | Channel B - Blocking 4 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 388 | Channel B - Blocking 4 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 389 | Channel B - Blocking 4 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 390 | Channel B - Blocking 4 - rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 391 | Channel B - Blocking 5 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 392 | Channel B - Blocking 5 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 393 | Channel B - Blocking 5 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 394 | Channel B - Blocking 5 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 395 | Channel B - Blocking 5 - rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 396 | Channel B - Short time limit | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 449 | Channel B - Local control blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 450 | Input 7 - Extended | Input / Output | RWCT | [1.8] DPT_UpDown | 1 Bit |
| 451 | Input 7 - Short | Output | R-CT | [1.8] DPT_UpDown | 1 Bit |
| 452 | Input 7 - Switch | Input / Output | RWCT | [1.1] DPT_Switch | 1 Bit |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 453 | Input 7 - Relative dimming | Input / Output | RWCT | [3.7] DPT_Control_Dimming | 4 Bit |
| 454 | Input 7 - Encoder 8 Bit | Output | R-CT | [5] 5.xxx | 1 Byte |
| 455 | Input 7 - Temperature encoder | Output | R-CT | [9.1] DPT_Value_Temp | 2 Bytes |
| 456 | Input 7 - Brightness encoder | Output | R-CT | [9.4] DPT_Value_Lux | 2 Bytes |
| 457 | Input 7 - Scene | Output | R-CT | [18.1] DPT_SceneControl | 1 Byte |
| 458 | Input 7 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 460 | Input 8 - Extended | Input / Output | RWCT | [1.8] DPT_UpDown | 1 Bit |
| 461 | Input 8 - Short | Output | R-CT | [1.8] DPT_UpDown | 1 Bit |
| 462 | Input 8 - Switch | Input / Output | RWCT | [1.1] DPT_Switch | 1 Bit |
| 463 | Input 8 - Relative dimming | Input / Output | RWCT | [3.7] DPT_Control_Dimming | 4 Bit |
| 464 | Input 8 - Encoder 8 Bit | Output | R-CT | [5] 5.xxx | 1 Byte |
| 465 | Input 8 - Temperature encoder | Output | R-CT | [9.1] DPT_Value_Temp | 2 Bytes |
| 466 | Input 8 - Brightness encoder | Output | R-CT | [9.4] DPT_Value_Lux | 2 Bytes |
| 467 | Input 8 - Scene | Output | R-CT | [18.1] DPT_SceneControl | 1 Byte |
| 468 | Input 8 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 500 | Channel C - Status automatic or manual | Output | R-CT | [1] 1.xxx | 1 Bit |
| 501 | Channel C - Manual long-term extended position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 502 | Channel C - Manual long-term closed position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 503 | Channel C - Manual short time | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 504 | Channel C - Manual movement position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 505 | Channel C - Manual blind time | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 506 | Channel C - Manually move to shading position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 507 | Channel C - Manually move to closed position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 508 | Channel C - Automatic long-term extended position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 509 | Channel C - Automatic long-term closed position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 510 | Channel C - Automatic short time | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 511 | Channel C - Automatic movement position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 512 | Channel C - Automatic blind position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 513 | Channel C - Automatically move to shading position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 514 | Channel C - Automatically move to closed position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 515 | Channel C - Automatically move to shading position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 516 | Channel C - Learn object position memory automatically | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 517 | Channel C - Switch from manual to automatic | Input | RWC- | [1] 1.xxx | 1 Bit |
| 518 | Channel C - Automatic blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 519 | Channel C - Current movement position | Output | R-CT | [5.1] DPT_Scaling | 1 Byte |
| 520 | Channel C - Current blind position | Output | R-CT | [5.1] DPT_Scaling | 1 Byte |
| 521 | Channel C - Status object | Output | R-CT | [1] 1.xxx | 1 Bit |
| 522 | Channel C - Call up / saving scenes | Input | RWC- | [18.1] DPT_SceneControl | 1 Byte |
| 523 | Channel C - Outdoor temperature blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 524 | Channel C - Outdoor temperature block measurement | Input | RWC- | [9.1] DPT_Value_Temp | 2 Bytes |
| 525 | Channel C - Outdoor temperature block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 526 | Channel C - Twilight object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 527 | Channel C - Twilight measurement | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 528 | Channel C - Twilight status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 529 | Channel C - Time control | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 530 | Channel C - Inside temperature release object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 531 | Channel C - Inside temperature release measurement | Input | RWC- | [9.1] DPT_Value_Temp | 2 Bytes |
| 532 | Channel C - Inside temperature release setpoint | Input | RWC- | [9.1] DPT_Value_Temp | 2 Bytes |
| 533 | Channel C - Inside temp release status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 534 | Channel C - Shading object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 535 | Channel C - Shading brightness measurement 1 | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 536 | Channel C - Shading brightness measurement 2 | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 537 | Channel C - Shading brightness measurement 3 | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 538 | Channel C - Shading threshold value | Input / Output | RWCT | [9.4] DPT_Value_Lux | 2 Bytes |
| 539 | Channel C - Shading threshold value 1 = + \| 0 = - | Input | RWC- | [1] 1.xxx | 1 Bit |
| 540 | Channel C - Shading threshold value | Input | RWC- | [1] 1.xxx | 1 Bit |
| 541 | Channel C - Shading threshold value - | Input | RWC- | [1] 1.xxx | 1 Bit |
| 542 | Channel C - Shading status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 543 | Channel C - Shading position learning object | Input | RWC- | [1] 1.xxx | 1 Bit |
| 544 | Channel C - Azimuth | Input | RWC- | [9] 9.xxx | 2 Bytes |
| 545 | Channel C - Elevation | Input | RWC- | [9] 9.xxx | 2 Bytes |
| 561 | Channel C - Zero position reached | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 562 | Channel C - Zero position sensor disrupted | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 563 | Channel C - Master zero position status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 564 | Channel C - Master zero position command | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 565 | Channel C - Slave zero position status | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 566 | Channel C - Master zero position status | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 567 | Channel C - Master zero position command | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 568 | Channel C - Slave zero position status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 571 | Channel C - Blocking 1 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 572 | Channel C - Blocking 1 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 573 | Channel C - Blocking 1 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 574 | Channel C - Blocking 1 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 575 | Channel C - Blocking 1 - Rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 576 | Channel C - Blocking 2 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 577 | Channel C - Blocking 2 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 578 | Channel C - Blocking 2 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 579 | Channel C - Blocking 2 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 580 | Channel C - Blocking 2 - Rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 581 | Channel C - Blocking 3 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 582 | Channel C - Blocking 3 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 583 | Channel C - Blocking 3 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 584 | Channel C - Blocking 3 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 585 | Channel C - Blocking 3 - Rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 586 | Channel C - Blocking 4 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 587 | Channel C - Blocking 4 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 588 | Channel C - Blocking 4 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 589 | Channel C - Blocking 4 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 590 | Channel C - Blocking 4 - Rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 591 | Channel C - Blocking 5 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 592 | Channel C - Blocking 5 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 593 | Channel C - Blocking 5 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 594 | Channel C - Blocking 5 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 595 | Channel C - Blocking 5 - Rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 596 | Channel C - Short time limit | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 649 | Channel C - Local control blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 650 | Input 9 - Extended | Input / Output | RWCT | [1.8] DPT_UpDown | 1 Bit |
| 651 | Input 9 - Short | Output | R-CT | [1.8] DPT_UpDown | 1 Bit |
| 652 | Input 9 - Switch | Input / Output | RWCT | [1.1] DPT_Switch | 1 Bit |
| 653 | Input 9 - Relative dimming | Input / Output | RWCT | [3.7] DPT_Control_Dimming | 4 Bit |
| 654 | Input 9 - Encoder 8 Bit | Output | R-CT | [5] 5.xxx | 1 Byte |
| 655 | Input 9 - Temperature encoder | Output | R-CT | [9.1] DPT_Value_Temp | 2 Bytes |
| 656 | Input 9 - Brightness encoder | Output | R-CT | [9.4] DPT_Value_Lux | 2 Bytes |
| 657 | Input 9 - Scene | Output | R-CT | [18.1] DPT_SceneControl | 1 Byte |
| 658 | Input 9 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 660 | Input 10 - Extended | Input / Output | RWCT | [1.8] DPT_UpDown | 1 Bit |
| 661 | Input 10 - Short | Output | R-CT | [1.8] DPT_UpDown | 1 Bit |
| 662 | Input 10 - Switch | Input / Output | RWCT | [1.1] DPT_Switch | 1 Bit |
| 663 | Input 10 - Relative dimming | Input / Output | RWCT | [3.7] DPT_Control_Dimming | 4 Bit |
| 664 | Input 10 - Encoder 8 Bit | Output | R-CT | [5] 5.xxx | 1 Byte |
| 665 | Input 10 - Temperature encoder | Output | R-CT | [9.1] DPT_Value_Temp | 2 Bytes |
| 666 | Input 10 - Brightness encoder | Output | R-CT | [9.4] DPT_Value_Lux | 2 Bytes |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 667 | Input 10 - Scene | Output | R-CT | [18.1] DPT_SceneControl | 1 Byte |
| 668 | Input 10 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 700 | Channel D - Status automatic or manual | Output | R-CT | [1] 1.xxx | 1 Bit |
| 701 | Channel D - Manual long-term extended position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 702 | Channel D - Manual long-term closed position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 703 | Channel D - Manual short time | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 704 | Channel D - Manual movement position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 705 | Channel D - Manual blind time | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 706 | Channel D - Manually move to shading position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 707 | Channel D - Manually move to closed position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 708 | Channel D - Automatic long-term extended position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 709 | Channel D - Automatic long-term closed position | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 710 | Channel D - Automatic short time | Input | RWC- | [1.8] DPT_UpDown | 1 Bit |
| 711 | Channel D - Automatic movement position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 712 | Channel D - Automatic blind position | Input | RWC- | [5.1] DPT_Scaling | 1 Byte |
| 713 | Channel D - Automatically move to shading position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 714 | Channel D - Automatically move to closed position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 715 | Channel D - Automatically move to shading position | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 716 | Channel D - Learn object position memory automatically | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 717 | Channel D - Switch from manual to automatic | Input | RWC- | [1] 1.xxx | 1 Bit |
| 718 | Channel D - Automatic blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 719 | Channel D - Current movement position | Output | R-CT | [5.1] DPT_Scaling | 1 Byte |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 720 | Channel D - Current blind position | Output | R-CT | [5.1] DPT_Scaling | 1 Byte |
| 721 | Channel D - Status object | Output | R-CT | [1] 1.xxx | 1 Bit |
| 722 | Channel D - Call up / saving scenes | Input | RWC- | [18.1] DPT_SceneControl | 1 Byte |
| 723 | Channel D - Outdoor temperature blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 724 | Channel D - Outdoor temperature block measurement | Input | RWC- | [9.1] DPT_Value_Temp | 2 Bytes |
| 725 | Channel D - Outdoor temperature block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 726 | Channel D - Twilight object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 727 | Channel D - Twilight measurement | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 728 | Channel D - twilight status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 729 | Channel D - Time control | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 730 | Channel D - Inside temp release object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 731 | Channel D - Inside temp release measurement | Input | RWC- | [9.1] DPT_Value_Temp | 2 Bytes |
| 732 | Channel D - Inside temp release setpoint | Input | RWC- | [9.1] DPT_Value_Temp | 2 Bytes |
| 733 | Channel D - Inside temp release status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 734 | Channel D - Shading object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 735 | Channel D - Shading brightness measurement 1 | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 736 | Channel D - Shading brightness measurement 2 | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 737 | Channel D - Shading brightness measurement 3 | Input | RWC- | [9.4] DPT_Value_Lux | 2 Bytes |
| 738 | Channel D - Shading threshold value | Input / Output | RWCT | [9.4] DPT_Value_Lux | 2 Bytes |
| 739 | Channel D - Shading threshold value 1 = + \| 0 = - | Input | RWC- | [1] 1.xxx | 1 Bit |
| 740 | Channel D - Shading threshold value + | Input | RWC- | [1] 1.xxx | 1 Bit |
| 741 | Channel D - Shading threshold value - | Input | RWC- | [1] 1.xxx | 1 Bit |
| 742 | Channel D - Shading status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 743 | Channel D - Shading position learning object | Input | RWC- | [1] 1.xxx | 1 Bit |
| 744 | Channel D - Azimut | Input | RWC- | [9] 9.xxx | 2 Bytes |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 745 | Channel D - Elevation | Input | RWC- | [9] 9.xxx | 2 Bytes |
| 761 | Channel D - Zero position reached | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 762 | Channel D - Zero position sensor disrupted | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 763 | Channel D - Master zero position status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 764 | Channel D - Master zero position command | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 765 | Channel D - Slave zero position status | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 766 | Channel D - Master zero position status | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 767 | Channel D - Master zero position command | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 768 | Channel D - Slave zero position status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 771 | Channel D - Blocking 1 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 772 | Channel D - Blocking 1 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 773 | Channel D - Blocking 1 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 774 | Channel D - Blocking 1 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 775 | Channel D - Blocking 1 - Rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 776 | Channel D - Blocking 2 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 777 | Channel D - Blocking 2 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 778 | Channel D - Blocking 2 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 779 | Channel D - Blocking 2 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 780 | Channel D - Blocking 2 - Rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 781 | Channel D - Blocking 3 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 782 | Channel D - Blocking 3 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 783 | Channel D - Blocking 3 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 784 | Channel D - Blocking 3 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 785 | Channel D - Blocking 3 - Rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 786 | Channel D - Blocking 4 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 787 | Channel D - Blocking 4 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 788 | Channel D - Blocking 4 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 789 | Channel D - Blocking 4 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 790 | Channel D - Blocking 4 - Rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 791 | Channel D - Blocking 5 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 792 | Channel D - Blocking 5 - Wind block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 793 | Channel D - Blocking 5 - Wind blocking measurement | Input | RWC- | [9.5] DPT_Value_Wsp | 2 Bytes |
| 794 | Channel D - Blocking 5 - Wind block status | Output | R-CT | [1.1] DPT_Switch | 1 Bit |
| 795 | Channel D - Blocking 5 - Rain block object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 796 | Channel D - Short-time restriction | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 849 | Channel D - Local control blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 850 | Input 11 - Extended | Input / Output | RWCT | [1.8] DPT_UpDown | 1 Bit |
| 851 | Input 11 - Short | Output | R-CT | [1.8] DPT_UpDown | 1 Bit |
| 852 | Input 11 - Switch | Input / Output | RWCT | [1.1] DPT_Switch | 1 Bit |
| 853 | Input 11 - Relative dimming | Input / Output | RWCT | [3.7] DPT_Control_Dimming | 4 Bit |
| 854 | Input 11 - Encoder 8 Bit | Output | R-CT | [5] 5.xxx | 1 Byte |
| 855 | Input 11 - Temperature encoder | Output | R-CT | [9.1] DPT_Value_Temp | 2 Bytes |

| No. | Text | Function | Flags | DPT type | Size |
|---|---|---|---|---|---|
| 856 | Input 11 - Brightness encoder | Output | R-CT | [9.4] DPT_Value_Lux | 2 Bytes |
| 857 | Input 11 - Scene | Output | R-CT | [18.1] DPT_SceneControl | 1 Byte |
| 858 | Input 11 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |
| 860 | Input 12 - Extended | Input / Output | RWCT | [1.8] DPT_UpDown | 1 Bit |
| 861 | Input 12 - Short | Output | R-CT | [1.8] DPT_UpDown | 1 Bit |
| 862 | Input 12 - Switch | Input / Output | RWCT | [1.1] DPT_Switch | 1 Bit |
| 863 | Input 12 - Relative dimming | Input / Output | RWCT | [3.7] DPT_Control_Dimming | 4 Bit |
| 864 | Input 12 - Encoder 8 Bit | Output | R-CT | [5] 5.xxx | 1 Byte |
| 865 | Input 12 - Temperature encoder | Output | R-CT | [9.1] DPT_Value_Temp | 2 Bytes |
| 866 | Input 12 - Brightness encoder | Output | R-CT | [9.4] DPT_Value_Lux | 2 Bytes |
| 867 | Input 12 - Scene | Output | R-CT | [18.1] DPT_SceneControl | 1 Byte |
| 868 | Input 12 - Blocking object | Input | RWC- | [1.1] DPT_Switch | 1 Bit |

# 5. Parameter setting

The default settings of the parameter are labelled by an underscore.

## 5.1. General settings

First set the general parameters for the bus communication (telegram rate, transmission delay). Additionally, you can indicate if for the programming of scenes all, or only the changed settings are applied to the bus.

| | |
|---|---|
| Maximum telegram rate | 1 • 2 • 5 • 10 • 20 telegrams per second |
| Send delay of threshold values after voltage returns | 5 s ... 2 h |
| Send delay of switching and status outputs after voltage returns | 5 s ... 2 h |
| For the use of scenes: | |
| Application when programming | all parameters • only changed parameters |

### 5.1.1. Local operation

The Up/Down buttons on the device are firmly assigned to the channels A-D. For blocking manual operation, blocking objects can be set for the button pairs (communication objects "Channel X local operation blocking object").

| | |
|---|---|
| Local button Channel A Use blocking object | No • Yes |
| Local button Channel B Use blocking object | No • Yes |
| Local button Channel C Use blocking object | No • Yes |
| Local button Channel D Use blocking object | No • Yes |

**Note:** If monitoring periods or movement range limits are used, operation via the local buttons is not possible in case of a bus voltage supply failure.

## 5.2. Inputs

Set the parameters for inputs 1, 2, 3 and 4. The additional inputs are designated by default for operating the devices on the outputs (channels A-D), and are therefore parameterized directly in the settings of the output channels (see *Button inputs*, page 44) or (see *General part*, page 46).

***Configuration options for inputs:***

Input 1 • Bus button

Input 2 • Bus button

| | |
|---|---|
| Input 3 | • Bus button |
| Input 4 | • Bus button |
| Input 5 | • Actuator button for output channel A<br>• Bus button<br>• For drives also zero position sensor |
| Input 6 | • Actuator button for output channel A<br>• Bus button |
| Input 7 | • Actuator button for output channel B<br>• Bus button<br>• For drives also zero position sensor |
| Input 8 | • Actuator button for output channel B<br>• Bus button |
| Input 9 | • Actuator button for output channel C<br>• Bus button<br>• For drives also zero position sensor |
| Input 10 | • Actuator button for output channel C<br>• Bus button |
| Input 11 | • Actuator button for output channel D<br>• Bus button<br>• For drives also zero position sensor |
| Input 12 | • Actuator button for output channel D<br>• Bus button |

| Operating mode | |
|---|---|
| Use input 1 | No • as bus button |
| Use input 2 | No • as bus button |
| Use input 3 | No • as bus button |
| Use input 4 | No • as bus button |
| Use input 5 and 6 | See parameterization channel A – button inputs |
| Use input 7 and 8 | See parameterization channel B – button inputs |
| Use input 9 and 10 | See parameterization channel C – button inputs |
| Use input 11 and 12 | See parameterization channel D – button inputs |

## Input as bus button

If an input is used as a free bus button, it will send a previously set value to the bus when activated. In the program file of the actuator different parameters are integrated for frequently needed bus functions. Thus, the inputs can easily be configured as a switch, drive control, dimmer for sending values and for the scene calls.

| | |
|---|---|
| Bus function | • Switch<br>• Selector switch<br>• Shutter<br>• Blind<br>• Awning<br>• Window<br>• Dimmer<br>• 8 bit encoder<br>• Temperature encoder<br>• Brightness encoder<br>• Scenes |

***Input as switch:***

If a button with switch function is assigned to the input, select the bus function "Switch" and specify which value is sent when pressing/releasing the button and when it will be sent.

| Function | **Switch** |
|---|---|
| Command when pressing the button | • send 0<br>• send 1<br>• do not send telegram |
| Command when releasing the button | • send 0<br>• send 1<br>• do not send telegram |
| Send value | • no change<br>• for change to 1<br>• for change to 0<br>• for change and cyclical<br>• for change to 1 and cyclical<br>• for change to 0 and cyclical |
| Cycle<br>*(if sent cyclical)* | 5 s • 10 s • 30 s • 1 min • 2 min • 5 min • 10 min • 20 min • 30 min • 1 h • 2 h |

The input can be blocked using a blocking object. Set what is transmitted to the bus when (de)activating blocking.
For active blocking there is *no* cyclical transmission.

| Use blocking object | No • **Yes** |
|---|---|
| Once when activating the blocking | • send 0<br>• send 1<br>• do not send telegram |
| Once when deactivating the blocking | • send 0<br>• send 1<br>• do not send telegram<br>• send current state |

***Input as changeover switch:***

If a button with switch function is assigned to the input, select the bus function "Changeover Switch" and specify if the button should switch when pressed/released.

| Function | **Changeover Switch** |
|---|---|
| Command when pressing the button | • Switching<br>• do not send telegram |
| Command when releasing the button | • Switching<br>• do not send telegram |

The input can be blocked using a blocking object. For active blocking there is *no bus communication*.

| Use blocking object | No • Yes |
|---|---|

***Input to shutter, blinds, awning or window control:***

If the input to the drive control is used via the bus, select the bus function "shutter", "awning", "blinds" or "window" and specify the button function and control mode.

| Function | **Shutter / blinds / awning / window** | |
|---|---|---|
| Button function | Up • Down<br>Up • Down • Up/ Down<br>Retract • Extend • Retract/Extend<br>Open • Closed • Open/Closed | (shutter)<br>(blinds)<br>(awning)<br>(window) |
| Control mode* | • Standard<br>• Standard inverted<br>• Comfort mode<br>• Dead man's switch | |

*A detailed description of the setting options for the individual control modi can be found in the general part of chapter *Control modi for drive control*, page 46.

The input can be blocked using a blocking object. For active blocking there is *no bus communication*.

| Use blocking object | No • Yes |
|---|---|

***Input as dimmer:***

If the input is used as a dimmer, select the bus function "Dimmer" and specify the button function, time interval (switching/dimming) and if requested, the repeat interval for a long button press.

| Function | **Dimmer** |
|---|---|
| Button function | brighter • darker • brighter/darker |
| Time between switching and dimming (in 0.1 s) | 1...50; 5 |

| | |
|---|---|
| Repeat the dimm command | no • yes |
| Repeat the dimm command<br>for a long button press<br>*(if dimm command is repeated)* | every 0.1 s • every 2 sec; every 0,5 sec |
| Dim by<br>*(if dimm command is repeated)* | 1,50% • 3% • 6 % • 12,50% • 25% • 50% |

The input can be blocked using a blocking object. For active blocking there is *no bus communication*.

| | |
|---|---|
| Use blocking object | No • Yes |

***Input 8 bit encoder:***

If the input is to be used as an 8bit encoder, select the "8 bit encoder" bus function and specify which value will be sent.

| | |
|---|---|
| Function | **8 bit encoder** |
| Value | 0...255 |

The input can be blocked using a blocking object. For active blocking there is *no bus communication*.

| | |
|---|---|
| Use blocking object | No • Yes |

***Input as temperature encoder:***

If the input is used as a temperature encoder, then choose the bus function "Temperature encoder" and specify which value between -30°C and +80°C will be sent.
By sending a temperature value, the target value of the temperature control may be changed for example.

| | |
|---|---|
| Function | **Temperature encoder** |
| Temperature in 0.1°C | -300...800; 200 |

The input can be blocked using a blocking object. For active blocking there is *no bus communication*.

| | |
|---|---|
| Use blocking object | No • Yes |

***Input as brightness encoder:***

If the input is assigned and shall be used as a brightness encoder (e.g. threshold value of a sun sensor), select "brightness encoder" and specify which value will be sent.

| | |
|---|---|
| Function | **Brightness encoder** |
| Brightness in klux | 0...100; 20 |

The input can be blocked using a blocking object. For active blocking there is *no bus communication*.

| | |
|---|---|
| Use blocking object | No • Yes |

***Input for scene control:***

If scenes are called and saved with the input, then choose the "Scenes" bus function and specify the saving, time difference (call/save) and scene number.

| Function | **Scenes** |
|---|---|
| Button operation | • without saving<br>• with saving |
| Time between calling and saving in 0.1 seconds<br>*(only if selected "with saving")* | 1...50; 10 |
| Scene No. | 0...127 |

The input can be blocked using a blocking object. For active blocking there is *no bus communication*.

| Use blocking object | No • Yes |
|---|---|

# 5.3. Outputs

- General specifications for the connected drive (see *Channel settings*, page 31)
- Control functions: Movement range limit, blocking, type of automatic (see *Control*, page 32)
- Automatic functions: Automatic can be specified externally or internally (see *Automatic - internal for shading*, page 39)
- Scenes: Movement positions (see *Button inputs*, page 44)
- Button inputs: Configuration as actuator button, bust button or for zero position sensor (see *Button inputs*, page 44)

## 5.3.1. Channel settings

Set the general specifications for the drive.

***Runtime:***
The runtime between the end positions is the basis for moving into intermediate positions (e.g. for movement range limits and scenes). You can enter the runtime numerically here (in seconds).

| Runtime UP in sec | 1 ... 320; 65 |
|---|---|
| Runtime DOWN in sec | 1 ... 320; 60 |

***Step setting of slats:***
Step time x step number determines the turning time of the slats.

| Step time in 10 ms | 1 ... 100; 20 |
|---|---|
| Step number slats | 1 ... 255; 5 |

If the short time command for shutters (step command) is used only for slat adjustment, but not for positioning the curtain, the following parameter is set to "Yes".

| | |
|---|---|
| Allow step commands only for slat adjustment | no • yes |

***Break time:***
The required break times during a change of direction of the drive should be adjusted according to the specifications of the motor manufacturer.

| | |
|---|---|
| Break time for a change of direction in 0.1 sec | 5 ... 100; 10 |

***Reference movement:***
With the regular movement to the two end positions, the runtime and zero position are adjusted again. This is especially important for the automatic runtime determination. Therefore, it can be set here after how many movements before a positioning movement a reference movement will be performed. The reference movement is always in the direction of the secure position (retracting when shading, closing windows).

| | |
|---|---|
| Perform a reference movement | no • yes |

| | |
|---|---|
| Perform a reference movement | **yes** |
| for more than movements before an auto positioning movement | 1 ... 255; 10 |

***Status object and drive position:***
The status and current position can be sent to the bus. By sending of 1, the status object indicates that the retracted or closed position has been exited and it is suitable for example for monitoring windows.
The exact drive position can be sent on the bus if required. The variable delay ensures that the bus is not blocked by too many data packets during a longer movement. The position can also be transmitted cyclically.

| | |
|---|---|
| Use status object | no • yes |
| Use drive position feedback | no • yes |
| Position transmit delay after change in 0.1 s *(only for feedback)* | 0...50; 10 |
| Transmit drive position cyclically *(only for feedback)* | no • 5 s • 10 s • ... • 2 h |

***Scenes:***
Here the scene menu is activated for this output channel.

| | |
|---|---|
| Use scenes | no • yes |

See *Scenes:*, page 32.

## 5.3.1.1. Control

Set the behaviour of the drive here.

***Movement range limit:***

The operating range limit is used in order to avoid that two units collide with each other (e.g. an awning and a window which is about to open).

One of two drive mechanisms is prioritised and is parameterised as master and the other one as slave. By means of zero position sensors, both actuators know the own current status and the current status of the other one. This one is either "in a safe position" or "not in a safe position". The safe position is reached as soon as the drive mechanism is in a sector where a collision is not possible (for an awning, for example, this might be an extension of 0 to 30%). In order to report the safe position of the drive mechanism, either a zero position sensor (e.g. final position switch or light barrier) may be connected at an input of the actuator (this must be set in the example, if the awning is used as slave 30% may be open, at position 31% it should be mounted), or the actuator receives the message of its zero position sensor by the bus (see graphic in chapter *Connection options for zero position sensors* in the general part).

Before the drive mechanism of the master actuator is moved, the slave actuator receives the command to move its drive mechanism to the safe position. As a consequence, the slave remains in safe position or it moves back if it is not within the safe range.

The master actuator knows from the communication object „Slave zero position status" whether the drive mechanism connected to the slave actuator is already in a safe position (then the master moves immediately) or not (then the master waits). Only if the master actuator is informed that the slave drive mechanism is in a safe position, it moves its drive mechanism beyond its own safe position.

Example:

*The ventilation with the window shall take priority over the shading with the awning. Therefore, the window is parameterised as master, the awning as slave. Both are provided with a zero position sensor which reports whether the drive mechanism is in a safe position or not.*

*The awning is now extended and the window shall be opened. The window knows the status of the awning ("not safe position") and therefore submits a master command to the awning. This is the signal for the awning, to retract a little bit. As soon as the awning has reached a safe position, there is an according feedback signal of the zero position sensor of the awning. Only now the window opens.*

**Master and slave regularly exchange their positions ("safe" or "not safe"). By means of the monitoring period, you may adjust the frequency of information retrieval. The selected period should be shorter than the period which the monitored drive mechanism needs to travel from the limit of the safe range (last reported safe position) to a position where there is risk of collision.**

If the drive mechanism does not receive a master/slave or zero position object, it moves to the safe position. The same holds true for a bus voltage breakdown or for a malfunction message from the zero position sensor (is valid for the parameterisation as master and as slave).

Without movement range limitation:

| | |
|---|---|
| Use movement range limit | **no** |
| Behaviour following a failure of the bus power supply | • no action<br>• Stop<br>• Up command<br>• Down1 command<br>• Down2 command |
| Behaviour on bus voltage restoration and after programming | • no action<br>• Up command<br>• Down1 command<br>• Down2 command |

With movement range limit:
Set if the zero position sensor of the drive is directly connected to the actuator (input channel) or if the zero position is received via the bus (communication object).

| | |
|---|---|
| Use movement range limit | **yes** |
| Zero position sensor connected as | • communication object<br>• input channel |
| Actuator is | master • slave |

Actuator as master:

| | |
|---|---|
| Actuator is | **master** |
| Send repetition for master command in sec | 1 ... 255; 10 |
| Monitoring period for slave status (and zero position) object in sec | 1 ... 255; 10 |

Actuator as slave:

| | |
|---|---|
| Actuator is | **slave** |
| Send repetition for slave commands in sec | 1 ... 255; 10 |
| Monitoring period for master status (and zero position) object in sec | 1 ... 255; 10 |
| Movement position for slave in % if input "Master zero position command" = 1 | 0 ... 100 |

Reference travel direction:

If the travel range is limited, the direction of the reference travel is fixed (safe position). The direction can be set without limiting the travel range.

| | |
|---|---|
| Direction of reference travel | in safe position |

***Blocking objects:***
The output channel can be blocked in case of rain, wind or other events. The manual operation is then not possible. Blocking and monitoring are configured here first. For setting the individual blocks, separate menu items "Blocking X" will appear (see chapter *Block – blocking objects*, page 36, *Block – wind blocking*, page 37 and *Block – rain blocking*, page 38).

The priorities of the blocking objects correspond to the sequence listed (Block 1 has the highest priority, Block 5 the lowest).

| | |
|---|---|
| Use Block 1 (high priority) | • no<br>• yes, with blocking object<br>• yes, as wind blocking<br>• yes, as rain blocking |
| Use block 2 | • no<br>• yes, with blocking object<br>• yes, as wind blocking<br>• yes, as rain blocking |
| Use block 3 | • no<br>• yes, with blocking object<br>• yes, as wind blocking<br>• yes, as rain blocking |
| Use block 4 | • no<br>• yes, with blocking object<br>• yes, as wind blocking<br>• yes, as rain blocking |
| Use Block 5 (low priority) | • no<br>• yes, with blocking object<br>• yes, as wind blocking<br>• yes, as rain blocking |
| Use monitoring of blocking objects | No • Yes |
| Monitoring period for blocking objects *(only if using monitoring of the blocking objects)* | 5s... • 2 h; 5 min |
| Behaviour if a blocking object is not received *(only if blocking object monitoring is used)* | • Stop<br>• Up command<br>• Down command |

***Short time restriction:***
If short time restriction is active, only short time movement commands are still possible manually. If the function "Allow step commands only for blind adjustment" is activated simultaneously, (see *Channel settings*, page 31) only the slats can still be adjusted by hand but no longer the movement position of the shutter.
Restriction is active for object value 1.

| | |
|---|---|
| Use short time limit | no • yes |
| Value of the object in front of 1. communication and bus voltage restoration *(if short time restriction is used)* | 0 • 1 |

***Automatic reset:***
With the manual operation the automatic of the drive is deactivated. Here it is set when the automatic is reactivated.

| | |
|---|---|
| Manual switches to automatic after | • expiry of a waiting period<br>• reception of an object<br>• expiration of a waiting period or receipt of an object |
| Waiting period in min<br>*(if "Expiration of a waiting period" was chosen)* | 1...255; 20 |
| Switch to automatic for an object value<br>*(if "Receipt of an object" was chosen)* | 0 • 1 • 0 or 1 |

***Automatic blocking object:***
With the automatic blocking object, the automatic can be deactivated for a short term (e.g. if present or during speeches in conference rooms).
Here it is also specified in which mode the channel is found when the voltage returns, i.e. after a power failure. The mode (manual or automatic) is send as a status object to the bus.

| | |
|---|---|
| Use automatic blocking object | no • yes |
| Operating mode after power returns | • Automatic<br>• Manual |
| Send status object | • 1 for automatic \| 0 for manual<br>• 0 for automatic \| 1 for manual |
| Send delay of the status output Automatic or Manual in 0.1 sec | 0...50 |

***Type of automatic:***
The automatic for the connected drive can be specified externally, however all the settings can also be configured internally. If "internal automatic" is chosen, a separate menu item "Automatic" (see chapter *Automation - external*, page 39 or *Scenes*, page 43) appears.

| | |
|---|---|
| Type of automatic | external automatic • internal automatic |

## Block – blocking objects

The menu item only appears if a block with blocking object was configured for "control". Here it is specified was happens for object value 1 and 0. Via the free blocking object, a fire alarm scenario may be configured for example (create escape routes by retracting the shading, smoke extraction via windows). This can prevent being locked out on the patio (opened window contact of the patio door blocks the shutter in front of the door).

| | |
|---|---|
| Designation | Block 1 ... 5<br>[free text] |
| If blocking object has value =1 | • no action<br>• stop<br>• up command • down1 command<br>• down2 command<br>• approach intermediate position<br>• approach slat position |
| *Position in % (only if by using a block, a specific position is achieved)* | 0...100 |
| *Slat position in % (only if by using a block, a specific shutter position is achieved)* | 0...100 |
| If blocking object has value =0 | |
| For manual operation before and after blocking | • no action<br>• move into last position |
| For automatic operation after blocking | follow automatic |
| Value of the object before the 1st communication and bus voltage return | 0...1 |

## Block – wind blocking

The menu item only appears if a wind blocking was configured for "control". The input object "wind blocking" is linked with the output object of a wind sensor. The input can be a 1bit object (smaller or larger than a threshold value), as well as a 16bit object (measurement value).

| | |
|---|---|
| Designation | Wind blocking<br>[free text] |
| Type of input object | 1 bit • 16 bit |

1 bit input object:

| | |
|---|---|
| Type of input object | **1 bit** |
| If blocking object has value =1 | • no action<br>• stop<br>• up command • down1 command<br>• down2 command<br>• approach intermediate position<br>• approach slat position |
| *Position in % (only if by using a block, a specific position is achieved)* | 0...100 |
| *Slat position in % (only if by using a block, a specific shutter position is achieved)* | 0...100 |
| Waiting period in secure position in min after blocking | 1...255; 5 |
| Behaviour after waiting period | |

| | |
|---|---|
| For manual operation before and after blocking | • no action<br>• move into last position |
| For automatic operation after blocking | follow automatic |

16 bit input object:

| | |
|---|---|
| Type of input object | **16 bit** |
| As of wind speed in m/s<br>blocking | 2...30; 5 |
| If blocking is active | • no action<br>• stop<br>• up command • down1 command<br>• down2 command<br>• approach intermediate position<br>• approach slat position |
| Waiting period in secure position in min after blocking | 1...255; 5 |
| Behaviour after waiting period | |
| For manual operation before and after blocking | • no action<br>• move into last position |
| For automatic operation after blocking | follow automatic |
| Send current blocking status | no • yes |

## Block – rain blocking

The menu item only appears if a rain blocking was configured for "control". The input object "rain blocking" is linked with the output object of a rain sensor.

| | |
|---|---|
| Designation | rain blocking<br>[free text] |
| If blocking object has value =1 | • no action<br>• stop<br>• up command • down1 command<br>• down2 command<br>• approach intermediate position<br>• approach slat position |
| *Position in % (only if by using a block, a specific position is achieved)* | 0...100 |
| *Slat position in % (only if by using a block, a specific shutter position is achieved)* | 0...100 |
| Waiting period in secure position in min after blocking | 1...255; 5 |
| Behaviour after waiting period | |
| For manual operation before and after blocking | • no action<br>• move into last position |
| For automatic operation after blocking | follow automatic |

## 5.3.1.2. Automation - external

The 'External automation' menu item appears if the external automation is selected in 'Control'. In this case, the position memory can be activated for the automatic movement. The position set here can be overwritten via a learning object at any time. The memorised position can be retrieved again at a later time.

| | |
|---|---|
| Use position memory | no • yes |

| | |
|---|---|
| Position specification | • shading position<br>• closed position<br>• intermediate position<br>• slat position |
| Position in % | 0...100 |
| Use learning object for new shading position | no • yes |
| *Transfer when programming (when learning object is used)* | • all parameters<br>• changed parameters only |

## 5.3.1.3. Automatic - internal for shading

The menu item "Automatic internal" appears if internal automatic is selected for "control". The internal automatic functions take into account the brightness/position of the sun, outdoor and indoor temperature and allow a time and dimming control. A shading position can be specified or taught.

To be able to fully utilize the internal shading automatic, information about brightness/twilight, outdoor and indoor temperature, time and position of the sun must be present in the bus system.

***Outdoor temperature block:***

The input object "outdoor temperature block" is linked with the output object of a temperature sensor. The input object can be a 1bit object (smaller or larger than a threshold value), as well as a 16bit object (measurement value).

| | |
|---|---|
| Use automatic blocking object | no • yes |

| | |
|---|---|
| Use automatic blocking object | **yes** |
| Type of temperature input object | 1 bit • 16 bit |

1 bit input object:

| | |
|---|---|
| Type of temperature input object | **1 bit** |

Shading is allowed if the bit is 0 and blocked if the bit is 1.

16 bit input object:

| | |
|---|---|
| Type of temperature input object | **16 bit** |
| Threshold value in 0.1°C | -300 ... 800; 50 |

| | |
|---|---|
| Hysteresis in 0.1°C | 1 ... 100; 20 |
| Send current blocking status | no • yes |

Shading is allowed
if the measurement value is larger than the threshold value+hysteresis
and blocked
if the measurement value is smaller than or equal to the threshold value.

***Twilight/time control:***

The time control is provided via a communication object. The input object "twilight control" is linked with the output object of a brightness sensor. A 1bit object (smaller or larger than a threshold value), as well as a 16bit object (measurement value) can be used for the twilight control.

| | |
|---|---|
| Use twilight/time control | • no<br>• only twilight control<br>• only time control<br>• both (OR linking) |

| | |
|---|---|
| Use twilight/time control | **only twilight control / both** |
| Type of twilight object | 1 bit • 16 bit |

16 bit input object:

| | |
|---|---|
| Type of twilight object | **16 bit** |
| Twilight threshold value in lux | 1 ... 1000; 10 |
| Switching delay | 1 minute |
| Send current twilight status | no • yes |

***Indoor temperature release:***

The input object "indoor temperature release" is linked with the output object of a temperature sensor. The input object can be a 1bit object (smaller or larger than a threshold value), as well as a 16bit object (measurement value or target and actual value).

| | |
|---|---|
| Use inside temperature release | no • yes |

| | |
|---|---|
| Type of input object | 1 bit • 16 bit • 16 bit target/actual temperature |

16 bit input object:

| | |
|---|---|
| Type of input object | **16 bit** |
| Threshold value in 0.1°C | -300 ... 800; 200 |
| Hysteresis in 0.1°C | 0 ... 100; 20 |
| Send current blocking status | no • yes |

16 bit input object (target/actual temperature):
For this function the target value and actual value (measurement values) are imported from the 16bit object and evaluated.

| | |
|---|---|
| Type of input object | **16 bit target/actual temperature** |
| Target value (SW) – actual value (MW) Difference in 0.1°C | 1 ... 100; 20 |
| Hysteresis in 0.1°C | 0 ... 100; 20 |
| Send current blocking status | no • yes |

Shading is allowed if the measurement value is greater than or equal to the target value+difference
and blocked if the measurement value is smaller than the target value+hysteresis difference.

### *Automatic shading:*

The automatic shading evaluates the input objects "brightness" and "position of the sun" of a weather station. The moving position for the automatic shading is specified here as well.

| | |
|---|---|
| Use automatic shading | no • yes |

Brightness:
---
For controlling brightness, a 1bit object (smaller or larger than a threshold value), as well as two or three 16bit objects (measurement values, e.g. East, South and West sun) can be used.

| | |
|---|---|
| Type of shading input | 1 x 1 bit • 1 x 16 bit • 2 x 16 bit • 3 x 16 bit |

1 x 1 bit input object:
Set the delay times for shading (prevents constant opening and closing when light conditions change quickly).

| | |
|---|---|
| Type of shading input | **1 x 1 bit** |
| Drive up delay in min | 0 ... 255; 12 |
| Departure delay in min | 0 ... 30; 1 |

1 x 16 bit, 2 x 16 bit or 3 x 16 bit as an input object:
The brightness threshold value can be specified per parameter or communication object. For several brightness measurement values (2 x 16 bit or 3 x 16 bit) only the maximum brightness value is compared to the threshold value.

| | |
|---|---|
| Type of shading input | **1 x 16 bit • 2 x 16 bit • 3 x 16 bit** |
| Shading threshold specification per | parameter • communication object |

Threshold value per parameter:
Set the threshold value and delay times for shading (prevents constant opening and closing when light conditions change quickly).

| Shading threshold specification per | **Parameter** |
|---|---|
| Shading threshold value in klux | 1 ... 100; 30 |
| Drive up delay in min | 0 ... 255; 12 |
| Drive down delay in min | 0 ... 30; 1 |
| Send current shading status | No • Yes |

Threshold value per communication object:
The threshold value is received via the communication object and can be changed additionally (e.g. button for "more sensitive" and "less sensitive"). Set the delay times for shading here (prevents constant opening and closing when light conditions change quickly).

| Shading threshold specification per | **communication object** |
|---|---|
| The value communicated last shall be retained | • not<br>• after voltage returns<br>• after voltage returns and programming |
| Start threshold value in klux<br>valid until 1st communication | 0 ... 100; 30 |
| Type of limit value change | • Absolute value with a 16bit comm. object<br>• Lifting/lowering with a comm. object<br>• Lifting/lowering with two comm. objects |
| Increments in klux<br>*(only when "lifting/lowering with comm. object")* | 1 ... 5; 2 |
| Drive up delay in min | 0 ... 255; 12 |
| Drive down delay in min | 0 ... 30; 1 |
| Send current shading status | no • yes |

Position of the sun:
---

| Assess position of the sun | no • yes |
|---|---|

| Assess position of the sun | **yes** |
|---|---|
| Position of the sun is defined via | • Discreet value of azimuth and elevation<br>• Directions<br>(regarding azimuth and elevation) |

Defining position of sun via values:
Enter the range (direction and height) in which the sun must be located for the shading to be active.

| Position of the sun is defined via | **discreet value of azimuth and elevation** |
|---|---|
| Azimuth from | 0 ... 360 |

| | |
|---|---|
| Azimuth to | 0 ... 360 |
| Elevation from | 0 ... 90 |
| Elevation to | 0 ... 90 |

Defining position of the sun via directions:
Enter the direction in which the sun must be positioned so that the shading is active.

| | |
|---|---|
| Position of the sun is defined via | **directions (regarding azimuth and elevation)** |
| Directions | • East (azimuth: 0° ... 180°)<br>• South east (azimuth: 45° ... 225°)<br>• South (azimuth: 90° ... 270°)<br>• South west (azimuth: 135° ... 315°)<br>• West (azimuth: 180° ... 360°) |

| | |
|---|---|
| Position specification | • shading position<br>• closed position<br>• intermediate position<br>• slat position |
| Movement position in % | 0...100; 75 |
| Slat position in % | 0...100; 75 |

**Use teaching object for new shading position**: The curtain position it can be specified numerically or taught manually. For teaching set "use teaching object: Yes" and the "channel X shading position teaching object" is used for saving the position reached. Saving occurs for value = 1 and can for example be realized via a button linked to the teaching object. Numerical specifications already set are overwritten by the teaching object.

## 5.3.1.4. Scenes

**A group address for scenes** must be filed in the KNX system to control the scenes. The input object 'Channel X: call/save scenes' of the actuator is linked to this group address.

A scene is **called**, then the **scene number** is communicated to the actuator. The movement position saved for this scene number in the actuator is then taken.
If the scene **saving** function is used, then the current movement position is saved for this scene number in the actuator.

The 'Scenes' menu item of the actuator is only shown if 'Use scenes: yes' was selected in the settings for the drive channel. Every drive can **have up to 16 scene save points** for movement positions.

Activate a scene save point.

| | |
|---|---|
| Use scene X | no • **yes** |

Assign a scene number to the scene save point. Use this scene number to call/save the movement position stored in the actuator. Make sure that every scene number is used only once per drive channel.

| | |
|---|---|
| Scene number | 0...127 |

Set the movement position. If it is allowed to save scenes via the bus, this position only applies after the ETS download until the first manual saving. Afterwards, the new movement position saved in the actuator is used.

| | |
|---|---|
| Position specification | • shading position<br>• closed position<br>• intermediate position<br>• slat position |
| Position in % | 0...100; 50 |

### 5.3.1.5. Button inputs

The inputs 1, 2, 3 and 4 are designated by default for operating the devices on the outputs (channels), and are therefore parametrized directly in the settings of the output channels. They can be used as actuator button or bus button, for connected drives the inputs 5, 7, 9 and 11 can be used *alternatively* for zero position sensors.

| Operating mode | |
|---|---|
| Use input 5 / 7 / 9 / 11 | • no<br>• as a bus button<br>• as an actuator switch<br>• as a zero position sensor |
| Use input 6 / 8 / 10 / 12 | • no<br>• as a bus button<br>• as an actuator switch |

### Input as bus button

The settings correspond to input 1/2/3/4 (see *Input as bus button*, page 27)

### Input as actuator button

If this channel is used for the input to the control of the drive, then specify the button function and the control mode.

| | |
|---|---|
| Button function | Up • Down |
| Control mode* | • Standard<br>• Standard inverted<br>• Comfort mode<br>• Dead man's switch |

*A detailed description of the setting options for the individual control modi can be found in the chapter *Control modi for drive control*, page 46.

The input can be blocked using a blocking object. No operation is possible for an active block.

| | |
|---|---|
| Use blocking object | No • Yes |

If monitoring periods or movement range limits are used, no operation via the local button is possible in case of a bus voltage failure.

## Input as zero position sensor

The zero position sensor is used for the movement range limit of the respective drive (see *Channel settings*, page 31). In case of a defect zero position sensor a malfunctioning message can be sent to the bus.

| | |
|---|---|
| Send malfunction message when zero position sensor is defective | No • Yes |

# 6. General part

## 6.0.1. Output channel with drive

### Control modi for drive control

If inputs are used as buttons for operating shading or windows, then different control modi can be set.

| | |
|---|---|
| Control mode | • Standard<br>• Standard inverted<br>• Comfort mode<br>• Dead man's switch |

***Standard:***

If briefly operated, the drive will move incrementally or stops. If operated longer, the drive will move up to the end position. The time difference between "short" and "long" is set individually.

| Control mode | **Standard** |
|---|---|
| Behavior during button operation:<br>short = stop/increment long = Up or Down | |
| Time between short and long<br>in 0.1 seconds | 1...50; 10 |

***Standard inverted:***

When pushed shortly, the drive moves up to the end position. When pushed for longer, the drive moves incrementally or stops. The time difference between "short" and "long" and the repeat interval is set individually.

| Control mode | **Standard inverted** |
|---|---|
| Behavior during button operation:<br>short = Up or Down long = Stop/Step | |
| Time between short and long<br>in 0.1 seconds | 1...50; 10 |
| Repeat the step command<br>for a long button press | every 0.1 s • every 2 sec; every 0.5 sec |

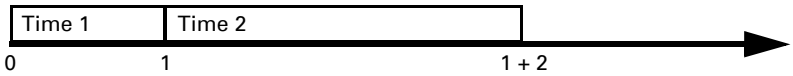
***Comfort mode:***

In the **comfort mode** actuating the button briefly, a bit longer and long will trigger different responses of the drive. The time intervals are set individually.

**Short actuation** (shorter than Time 1): The drive is positioned step-wise and stopped.
**Holding it slightly longer** (longer than Time 1, but shorter than Time 1+2): Drive running. Drive stops when the button is released.

**Long holding** (release after Time 1+2 runs out): Drive moves independently to the end position. The movement can be interrupted by a short tap.

*Abb. 1*
*Time interval comfort mode diagram*




| | |
|---|---|
| *Point in time 0:* | *Actuate of button, start of time 1* |
| *Release before time 1 expired:* | *step (or stop if drive is moving)* |
| *Point in time 1:* | *End of time 1, start of time 2*<br>*Moving command* |
| *Release after time 1 expired but before time 2 expires:* | *Stop* |
| *Release after time 1 + 2 expired:* | *Move into end position* |

| Control mode | **Comfort mode** |
|---|---|
| Behavior during button operation:<br>Button is pushed and<br>released before time 1 expired = stop/step<br>held longer than time 1 = Up or Down<br>released between time 1 and 1-2= stop<br>released after time 1 +2 = no more stop | |
| Time 1 | 0.0s ... • 2 s; 0.4 s |
| Time 2 | 0 s • 2 s; 2 s |

***Dead man's switch:***

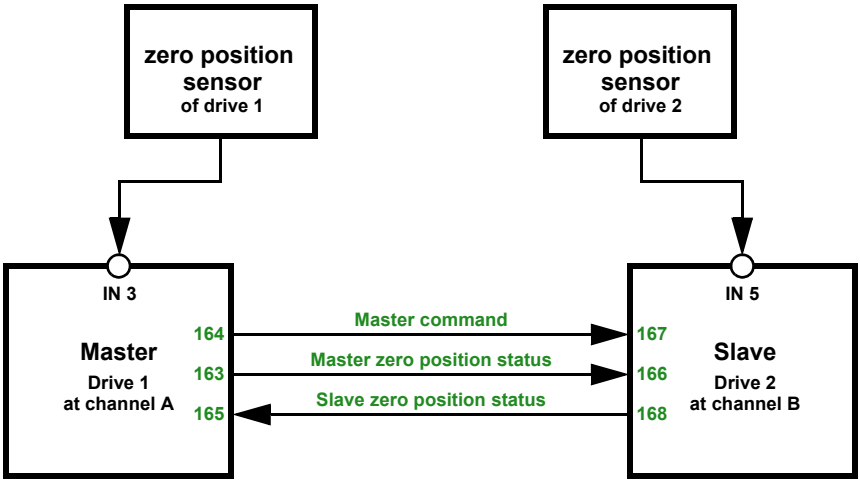
The drive moves as soon as the button is actuated and stops as soon as the button is released.

| Control mode | **Dead man's switch** |
|---|---|
| Behavior during button operation:<br>Push button = Up or Down command<br>Release button = Stop command | |

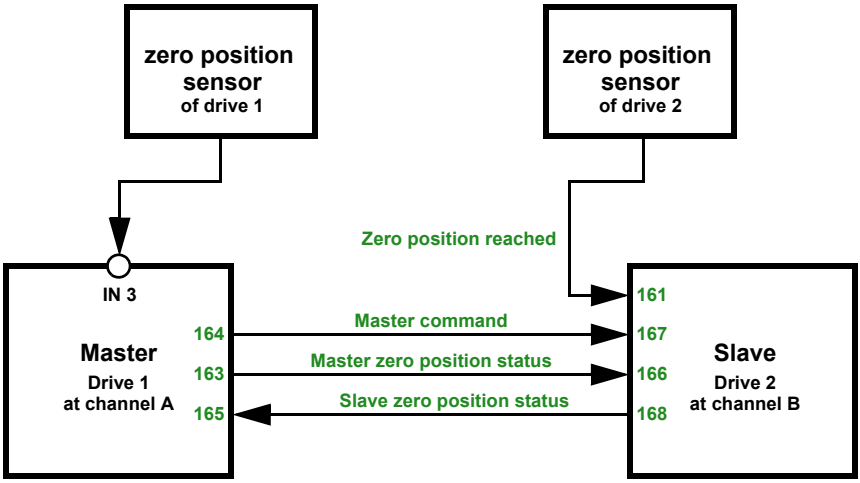
## 6.0.2. Connection option for zero position sensors

See also section *Movement Range Limit* in chapter *Control*, page 32. The examples and the communication object numbers refer to the mutual master-slave coupling of drives at the output channel A and channel B.

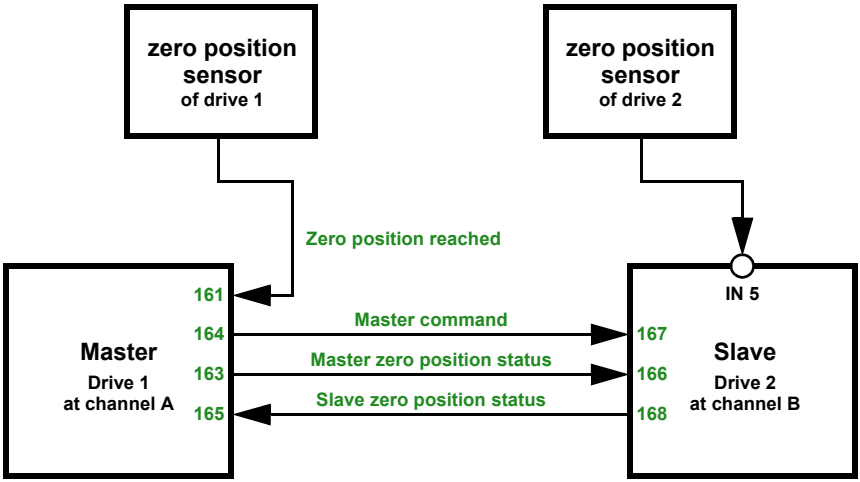
***Drive channel A is Master, zero position sensor at input 3 of the actuator, drive channel B is Slave, zero position sensor at input 5 of the actuator:***



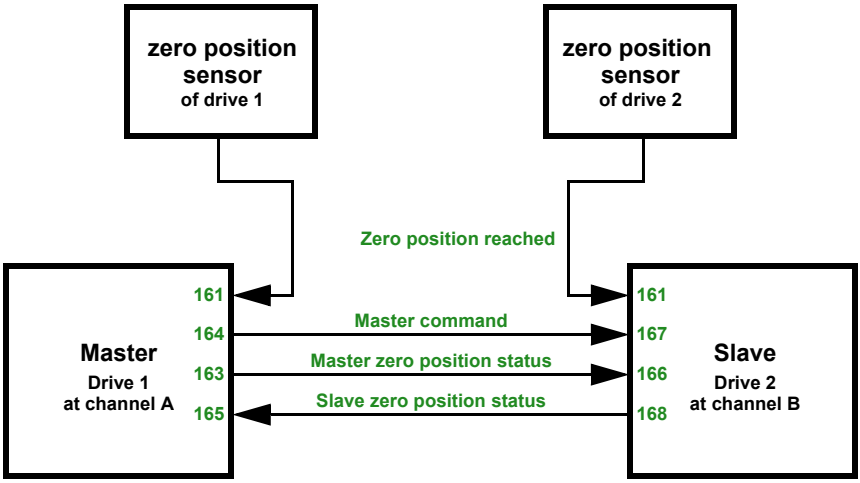

***Drive channel A is Master, zero position sensor at input 3 of the actuator, drive channel B is Slave, zero position sensor via bus:***



***Drive channel A is Master, zero position sensor via bus, drive channel B is Slave, zero position sensor at input 5 of the actuator:***




***Drive channel A is Master, zero position sensor via bus, drive channel B is Slave, zero position sensor via bus:***



## Questions about the product?

You can reach the technical service of Elsner Elektronik under
**Tel. +49 (0) 70 33 / 30 945-250** or
**service@elsner-elektronik.de**

We need the following information to process your service request:

- Type of appliance (model name or item number)
- Description of the problem
- Serial number or software version
- Source of supply (dealer/installer who bought the device from Elsner Elektronik)

For questions about KNX functions:

- Version of the device application
- ETS version used for the project

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**Elsner Elektronik GmbH** Control and Automation Engineering

Sohlengrund 16
75395 Ostelsheim
Germany

Phone +49 (0) 70 33 / 30 945-0 info@elsner-elektronik.de
Fax +49 (0) 70 33 / 30 945-20 www.elsner-elektronik.de