

## The Products



## Product List

**DRIVES AND ACCESSORIES**  
**CONTROL UNITS AND ACCESSORIES**

04.2020

Valid from 2020-04-01

#### IMPORTANT NOTE

Although we have done everything we can to ensure that the date and information within this document is correct and up-to-date as possible, we cannot guarantee that there are not any errors. Be aware that the information and data contained in this document can be altered without prior and notice.

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In pursuance of our policy of continuing product improvement, the equipment described in this publication is subject to changes without notification.

For offers, deliveries and performances our general terms and conditions shall apply exclusively.

By pasting this product list, previous editions become invalid.

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1

Information

2

Chain Drives

3

Spindle Drives

4

Rack and Pinion Drives

5

Locking Drives

6

SHEV – Compact Control Units

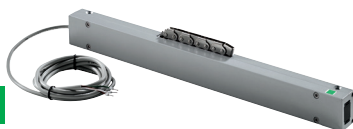
7

Information (EPD Values)

**BDC Eco**



**BDC Uni**



**BDC Pro**



**BDS Eco**



**BDS Uni**



**BDR Uni**



**BDL Uni**



**BCR**



### BTR - Simply BeTter

We are a German manufacturer of window automation for controlled natural ventilation and smoke and heat exhaust ventilation (SHEV) located in Thierhaupten, Bavaria.

With over 50 years of experience in the market, we produce high quality products for a fair price, shipped worldwide in no time. Our aim is to make German quality affordable to guarantee a comfortable climate and safety in the case of fire. We deliver from stock to reduce delivery times and ship our products worldwide, wherever a project needs to be realized. Trusting in BTR products means simply trusting in the better products.

### Smoke and heat exhaust ventilation (SHEV)

In case of a fire, most people die because of the smoke and not because of the flames. Smoke inhalation causes most fire deaths. Furthermore, smoke blocks the clear sight, hindering a fast flight out of the building and make firefighting more difficult. Smoke and heat exhaust ventilation systems (SHEVS) saves lives and supports firefighters. SHEVS release toxic smoke by making use of a simple physical phenomena: heat rises. Through ventilation openings e.g. opened windows in the upper building area, hot gases can escape. Openings in the lower floor allows fresh air to enter the building, allowing breathing and a clear sight.

### Natural ventilation

A present hygienic air exchange is vital for a healthy and pleasant stay in a room and for effective working, learning or resting. Controlled natural ventilation uses the outside air as natural resource and enables air exchange automatically. The autonomous system regulates oxygen levels, temperature and humidity to ensure a pleasant room climate. In addition, it protects the building from mould and saves energy costs.

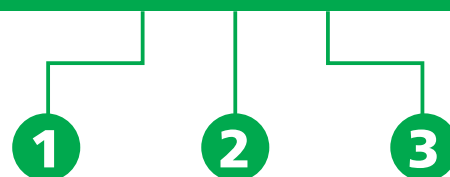
**BTR Control Units** control the system reliable and **BTR Drives** move the windows whenever needed.

**BDC Uni 300 24V****Explanation: BTR product naming**

|          |                            |                                          |          |                            |                                                                                       |
|----------|----------------------------|------------------------------------------|----------|----------------------------|---------------------------------------------------------------------------------------|
| <b>1</b> | <b>B</b>                   | = BTR                                    | <b>4</b> | <b>ECO<br/>UNI<br/>PRO</b> | = Economic<br>= Universal<br>= Professional                                           |
| <b>2</b> | <b>D</b>                   | = Drive                                  | <b>5</b> | <b>300</b>                 | = Stroke length [mm]                                                                  |
| <b>3</b> | <b>C<br/>S<br/>R<br/>L</b> | = Chain<br>= Spindle<br>= Rack<br>= Lock | <b>6</b> | <b>24V DC<br/>230V AC</b>  | = Rated voltage<br>[24 V DC (19 V ... 28 V)]<br>= Rated voltage<br>[230 V AC / 50 Hz] |

**BDB****Explanation: BTR product naming**

|          |          |                                                    |
|----------|----------|----------------------------------------------------|
| <b>1</b> | <b>B</b> | = BTR                                              |
| <b>2</b> | <b>D</b> | = Drive                                            |
| <b>3</b> | <b>B</b> | = Bracket<br>• Casement Bracket<br>• Frame Bracket |

**BCR****Explanation: BTR product naming**

|          |                |                                                                       |
|----------|----------------|-----------------------------------------------------------------------|
| <b>1</b> | <b>B</b>       | = BTR                                                                 |
| <b>2</b> | <b>C</b>       | = Control Unit                                                        |
| <b>3</b> | <b>R<br/>V</b> | = RWA (SHEV – smoke and<br>heat exhaust ventilation)<br>= Ventilation |

### LIST OF ABBREVIATIONS

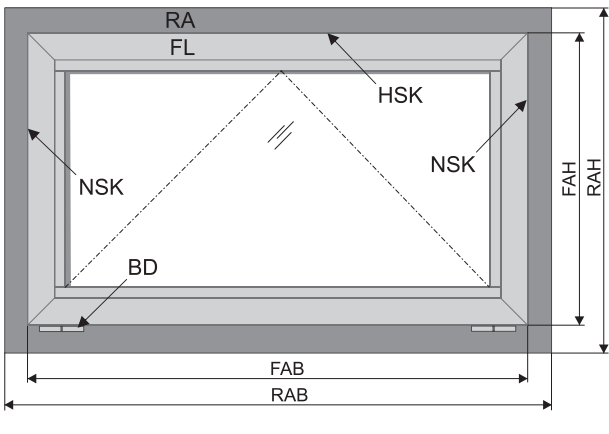
|             |                                                    |
|-------------|----------------------------------------------------|
| A2          | Stainless Steel                                    |
| aP          | Surface mounting                                   |
| WxHxD       | Width x Height x Depth                             |
| DIN         | German Institute for Standardisation               |
| E6/C-0      | Anodised finish                                    |
| EN          | European standard                                  |
| FAB         | Overall width of casement                          |
| FAH         | Overall height of casement                         |
| FL          | Opening casement                                   |
| FM          | Casement assembly                                  |
| FÜ          | Casement overlap                                   |
| HS          | Free space                                         |
| HSK         | Main closing edge<br>(parallel to hinge side)      |
| KLB         | Clamping area                                      |
| KW-Diagramm | Force path diagram                                 |
| L           | Left handed version                                |
| LxWxH       | Length x Width x Height                            |
| net         | Prices are not discountable                        |
| NSK         | Auxillary closing edge<br>(sideways on hinge side) |
| PAF         | Parallel opening window                            |
| PIM         | Profile-integrated installation                    |
| PR          | Transom assembly                                   |
| R           | Right handed version                               |
| RA          | Window frame                                       |
| RAL         | Central European Colour Standard                   |
| RM          | Frame assembly                                     |
| RWA         | SHEV –<br>smoke and heat exhaust ventilation       |
| Solo        | Solo drive                                         |
| SYNC        | Synchronizes running drive systems                 |
| Tandem      | 2 drives with run monitoring                       |
| uP          | Flash mounting                                     |
| Z           | Drive model with feedback contact<br>(CLOSE)       |

### SCALE UNITS

|      |                                     |
|------|-------------------------------------|
| °C   | Degree Celsius                      |
| A    | Amps.                               |
| Ah   | Amp-hours                           |
| DEG  | Degree angle                        |
| Kg   | Kilograms                           |
| m    | Metres                              |
| min  | Minutes                             |
| mm   | Millimetres                         |
| N    | Newton                              |
| Pcs. | Pieces                              |
| s    | Seconds                             |
| V    | Volts                               |
| Vpp  | Residual ripple (Voltage Peak-Peak) |
| PU   | Packaging units                     |
| W    | Watts                               |

### FIGURES

|    |                                    |
|----|------------------------------------|
| €  | Euro                               |
| AC | Alternating current (50Hz / 60Hz)  |
| DC | Direct current                     |
| ED | Switching time (related to 10 min) |
| F  | Stroke force                       |
| I  | Electrical current                 |
| L  | Length                             |
| ME | Module space unit (1 ME = 23 mm)   |
| NO | Normal open contact                |
| NC | Normal close contact               |
| P  | Electric power                     |
| s  | Stroke                             |
| t  | Thickness of material              |
| U  | Electric voltage                   |
| Um | Change over contact                |
| v  | Speed                              |



ABBREVIATIONS WINDOWS

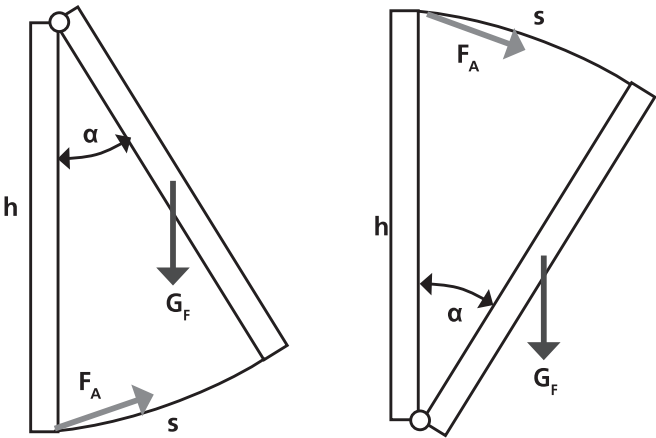
|     |                            |
|-----|----------------------------|
| RA  | Window frame               |
| FL  | Casement / Casement frame  |
| HSK | Main closing edge          |
| NSK | Side closing edge          |
| BD  | Sash hinge                 |
| FAB | Overall width of casement  |
| FAH | Overall height of casement |
| RAB | Window frame width         |
| RAH | Window frame height        |
| RLB | Throat width               |
| RLH | Throat height              |

USEFUL CALCULATIONS

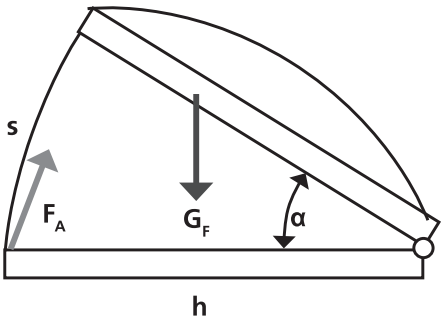
Casement weight:  $G_f [Kg] = FAB [m] * FAH [m] * Glass\ thickness [mm] * 2,5 [Kg/m^2] * 1,1$

Weight force:  $F_g [N] = G_f [Kg] * 9,81 [m/s^2]$

Drive force: top & bottom hung window



Roof window / Roof light



$F_A [N] = G_f [Kg] * 9,81 [m/s^2] * s [mm] * 0,54 / h [mm]$

$F_A [N] = G_f [Kg] * 9,81 [m/s^2] * 0,54$

Drive stroke if window height and opening angle are known:  
 $s [mm] = \sqrt{2 * h^2 [mm] * (1 - \cos\alpha[DEG])}$

Opening angle if height and stroke are known:  
 $\alpha [DEG] = \cos^{-1} (1 - s^2 [mm] / 2 / h^2 [mm])$



1

2

Chain Drives

3

4

5

6

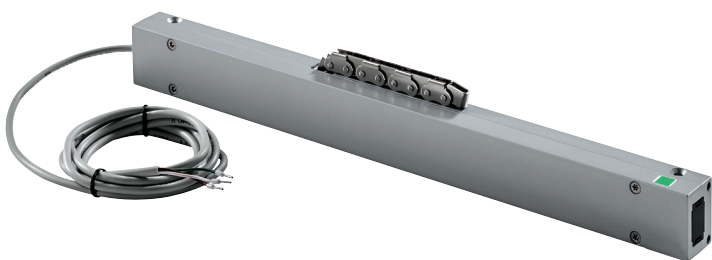
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**BDC Eco**

### BDC Eco - CHAIN DRIVE

|                     |                                      |
|---------------------|--------------------------------------|
| ■ Model             | 24 V DC<br>230 V AC                  |
| ■ Pulling force     | max. 300 N                           |
| ■ Pushing force     | max. 300 N                           |
| ■ Stroke length     | 100 mm<br>200 mm<br>300 mm<br>400 mm |
| ■ Speed             | 12,5 mm/s                            |
| ■ Housing (WxHxL)   | 60 x 35 x 387 mm                     |
| ■ Opening mechanism | Nickel-plated steel chain            |
| ■ Protection rating | IP 32                                |



**BDC Uni**

### BDC Uni - CHAIN DRIVE

|                     |                           |
|---------------------|---------------------------|
| ■ Model             | 24 V DC                   |
| ■ Pulling force     | max. 200 N                |
| ■ Pushing force     | max. 200 N                |
| ■ Stroke length     | 300 mm                    |
| ■ Speed             | 8 mm/s                    |
| ■ Housing (WxHxL)   | 42 x 30 x 432 mm          |
| ■ Opening mechanism | Nickel-plated steel chain |
| ■ Protection rating | IP 20                     |



**BDC Pro**

### BDC Pro - CHAIN DRIVE

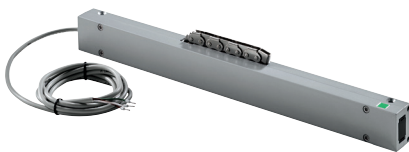
|                     |                                                    |
|---------------------|----------------------------------------------------|
| ■ Model             | 24 V DC<br>230 V AC                                |
| ■ Pulling force     | max. 250 N                                         |
| ■ Pushing force     | max. 250 N                                         |
| ■ Stroke length     | 400 mm<br>600 mm<br>800 mm                         |
| ■ Speed             | 8 - 13,5 mm/s<br>depends on stroke                 |
| ■ Housing (WxHxL)   | 42 x 26mm,<br>length depends on stroke             |
| ■ Opening mechanism | Rigid back stainless steel<br>sidebow roller chain |
| ■ Protection rating | IP 32                                              |



#### PRODUCT FEATURES: BDC Eco

- For **natural ventilation**
- Aluminium housing, anodised finish
- Nickel-plated steel chain
- Slim line body that suits concealed fitting within frame profiles
- Stroke length adjustable with DIP switch

#### BDC Eco



#### PRODUCT FEATURES: BDC Uni

- For **natural ventilation**
- Aluminium housing in RAL 9006 or RAL 9016
- Nickel-plated steel chain
- Slim line body that suits concealed fitting within frame profiles
- Rigid drive mounting on frame without brackets
- The programming of the drives in multi-drive occurs at factory
- Programmable parameters of Intelligent Control Electronics
  - Synchronised multi-operation and sequence control without add. devices
  - Electronic soft-start, soft-close and soft-stop
  - Stroke, force, speed
  - Rebate control
- Integrated plug solution

#### BDC Uni



#### PRODUCT FEATURES: BDC Pro

- For **natural ventilation** and **smoke and heat exhausting systems (SHEVS)**
- Aluminium housing, anodised finish
- High-quality stainless steel sidebow roller chain, without protruding rivet heads
- Slim line body that suits concealed fitting within frame profiles
- Rigid drive mounting on frame without brackets
- Programmable parameters of Intelligent Control Electronics
  - Synchronised multi-operation and sequence control without add. devices
  - Electronic soft-start, soft-close and soft-stop
  - Stroke, force, speed
  - Rebate control

#### BDC Pro

### FASSADE

#### Bottom-hung

|                               |                               |                    |                    |                               |                    |
|-------------------------------|-------------------------------|--------------------|--------------------|-------------------------------|--------------------|
|                               |                               |                    |                    |                               |                    |
| BDC Eco<br>BDC Uni<br>BDC Pro | BDC Eco<br>BDC Uni<br>BDC Pro | BDC Uni<br>BDC Pro | BDC Uni<br>BDC Pro | BDC Eco<br>BDC Uni<br>BDC Pro | BDC Uni<br>BDC Pro |

#### Top-hung

|                               |                               |                    |                    |                               |                    |
|-------------------------------|-------------------------------|--------------------|--------------------|-------------------------------|--------------------|
|                               |                               |                    |                    |                               |                    |
| BDC Eco<br>BDC Uni<br>BDC Pro | BDC Eco<br>BDC Uni<br>BDC Pro | BDC Uni<br>BDC Pro | BDC Uni<br>BDC Pro | BDC Eco<br>BDC Uni<br>BDC Pro | BDC Uni<br>BDC Pro |

#### Side-hung

|                               |                               |                    |                    |                               |                    |
|-------------------------------|-------------------------------|--------------------|--------------------|-------------------------------|--------------------|
|                               |                               |                    |                    |                               |                    |
| BDC Eco<br>BDC Uni<br>BDC Pro | BDC Eco<br>BDC Uni<br>BDC Pro | BDC Uni<br>BDC Pro | BDC Uni<br>BDC Pro | BDC Eco<br>BDC Uni<br>BDC Pro | BDC Uni<br>BDC Pro |

#### Projected top-hung

|                    |                    |  |  |  |  |
|--------------------|--------------------|--|--|--|--|
|                    |                    |  |  |  |  |
| BDC Uni<br>BDC Pro | BDC Uni<br>BDC Pro |  |  |  |  |

### ROOF

#### Bottom-hung

|                    |                    |
|--------------------|--------------------|
|                    |                    |
| BDC Eco<br>BDC Pro | BDC Eco<br>BDC Pro |

#### Top-hung

|                    |                    |
|--------------------|--------------------|
|                    |                    |
| BDC Eco<br>BDC Pro | BDC Eco<br>BDC Pro |

#### Sky-light

|         |
|---------|
|         |
| BDC Pro |

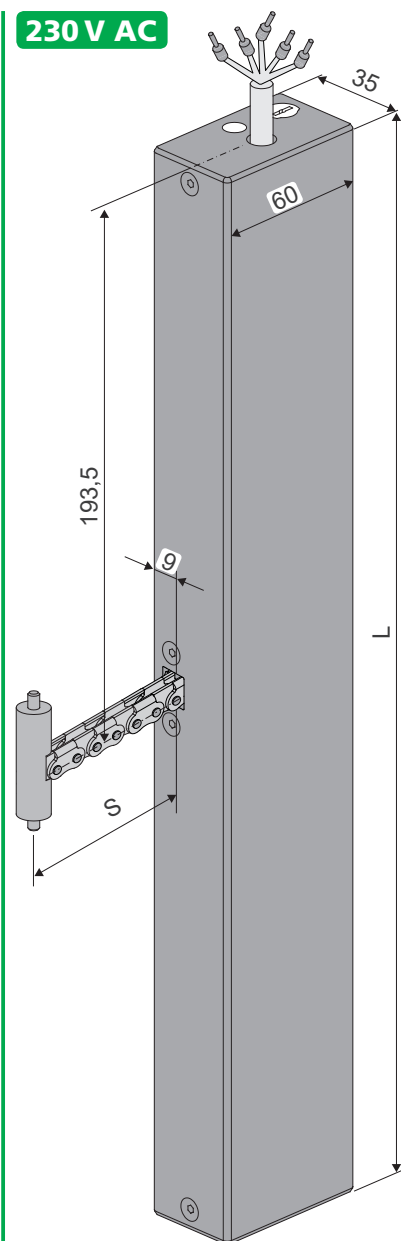


- Application: natural ventilation
- Aluminium housing, anodised finish
- Nickel-plated steel chain
- Internal cut-off switch
- Stroke length adjustable with DIP switch
- The casement bracket and the frame bracket are included

## ORDER DATA

| s [mm]                | L [mm] | Version       | Finish | Part.-No. |
|-----------------------|--------|---------------|--------|-----------|
| 100 + 200 + 300 + 400 | 387    | BDC Eco 230 V | E6/C-0 | 10.100    |

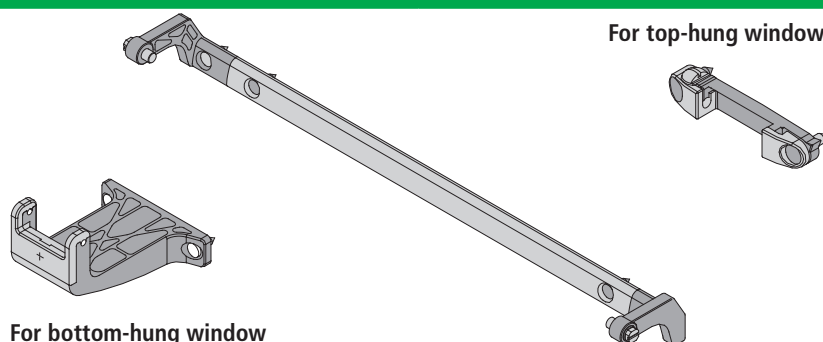
## 230 V AC



## TECHNICAL DATA

|                      |                           |                                                              |
|----------------------|---------------------------|--------------------------------------------------------------|
| <b>U<sub>N</sub></b> | Rated voltage             | 230 V AC (50 Hz)                                             |
| <b>I<sub>N</sub></b> | Rated current             | 0,13 A                                                       |
| <b>I<sub>A</sub></b> | Cut-off current           | 0,2 A                                                        |
| <b>P<sub>N</sub></b> | Rated power               | 25 W                                                         |
| <b>DC</b>            | Duty cycle                | 5 cycles (ED 30 % - ON: 3 min. / OFF: 7 min.)                |
|                      | Protection rating         | IP 32                                                        |
|                      | Ambient temperature range | -5 °C ... +60 °C                                             |
| <b>F<sub>Z</sub></b> | Pulling force max.        | 300 N                                                        |
| <b>F<sub>A</sub></b> | Pushing force max.        | 300 N                                                        |
| <b>F<sub>H</sub></b> | Pullout force             | 1.800 N (fastening depended)                                 |
|                      | Chain                     | Nickel-plated steel chain                                    |
|                      | Connecting cable          | non-halogen, grey - 5 x 0,5 mm <sup>2</sup> , ~ 3 m          |
| <b>v</b>             | Speed                     | ↗ 12,5 mm/s    ↘ 8,0 mm/s                                    |
| <b>s</b>             | Stroke                    | 100 mm + 200 mm + 300 mm + 400 mm adjustable with DIP switch |
|                      | Sound pressure level:     | ≤ 70 dB (A)                                                  |

## Bracket-Set



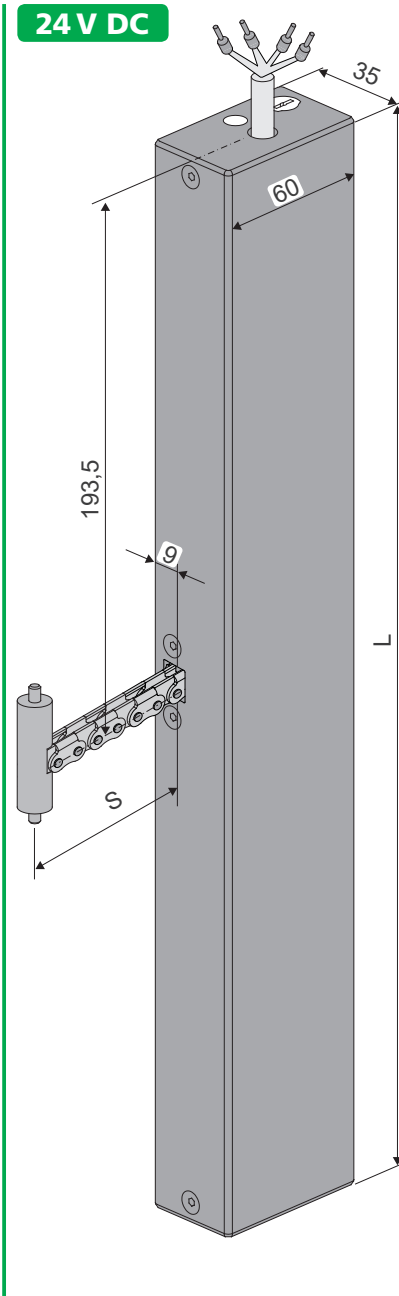


- Application: natural ventilation
- Aluminium housing, anodised finish
- Nickel-plated steel chain
- Internal cut-off switch
- Stroke length adjustable with DIP switch
- The casement bracket and the frame bracket are included

### ORDER DATA

| s [mm]                | L [mm] | Version      | Finish | Part.-No. |
|-----------------------|--------|--------------|--------|-----------|
| 100 + 200 + 300 + 400 | 387    | BDC Eco 24 V | E6/C-0 | 10.101    |

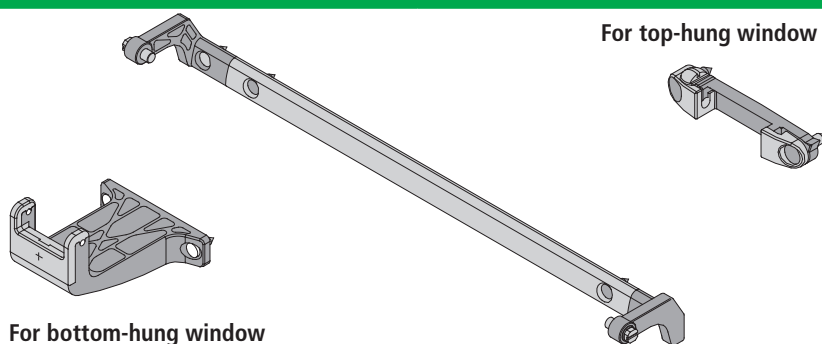
### 24 V DC



### TECHNICAL DATA

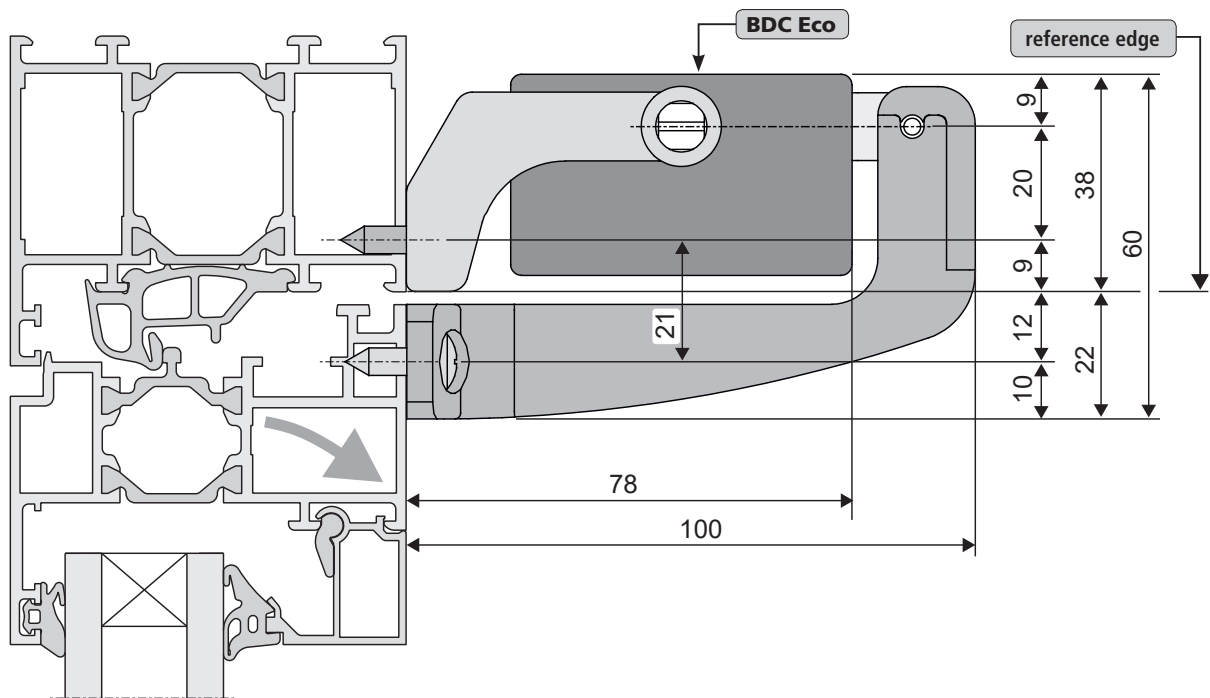
|                      |                           |                                                              |
|----------------------|---------------------------|--------------------------------------------------------------|
| <b>U<sub>N</sub></b> | Rated voltage             | 24V DC (19 V ... 28 V)                                       |
| <b>I<sub>N</sub></b> | Rated current             | 0,8 A                                                        |
| <b>I<sub>A</sub></b> | Cut-off current           | 1,0 A                                                        |
| <b>P<sub>N</sub></b> | Rated power               | 24 W                                                         |
| <b>DC</b>            | Duty cycle                | 5 cycles (ED 30 % - ON: 3 min. / OFF: 7 min.)                |
|                      | Protection rating         | IP 32                                                        |
|                      | Ambient temperature range | -5 °C ... +60 °C                                             |
| <b>F<sub>Z</sub></b> | Pulling force max.        | 300 N                                                        |
| <b>F<sub>A</sub></b> | Pushing force max.        | 300 N                                                        |
| <b>F<sub>H</sub></b> | Pullout force             | 1.800 N (fastening depended)                                 |
|                      | Chain                     | Nickel-plated steel chain                                    |
|                      | Connecting cable          | non-halogen, grey - 4 x 0,5 mm <sup>2</sup> , ~ 3 m          |
| <b>v</b>             | Speed                     | ✕ 12,5 mm/s    ↷ 8,0 mm/s                                    |
| <b>s</b>             | Stroke                    | 100 mm + 200 mm + 300 mm + 400 mm adjustable with DIP switch |
|                      | Sound pressure level:     | ≤ 70 dB (A)                                                  |

### Bracket-Set



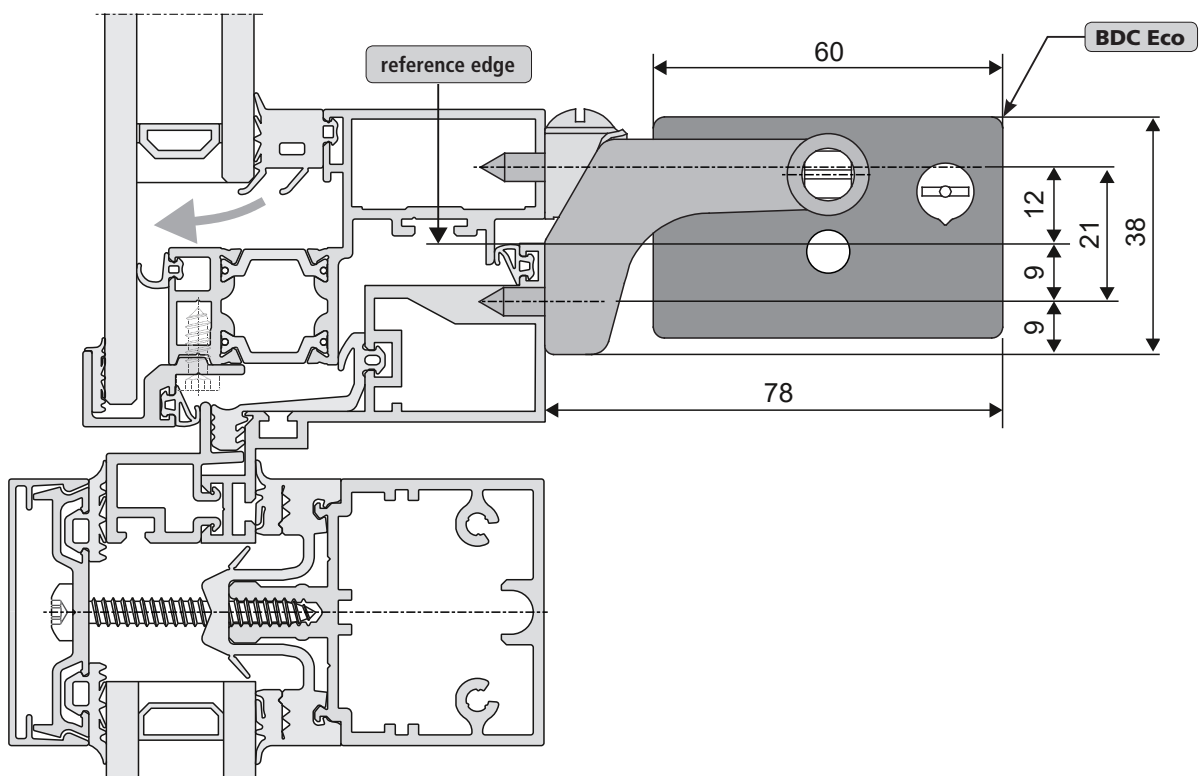
## TYPICAL APPLICATIONS

**Bottom-hung inward opening windows**  
On the window frame - main closing edge - swiveling drive mounting



View on aluminium window

**Top-hung outward opening windows**  
On the window frame - main closing edge - swiveling drive mounting



View on aluminium window



- Application: natural ventilation
- Internal intelligent control electronics
- The programming of the drives in multi-drive occurs at factory
- Integrated plug solution

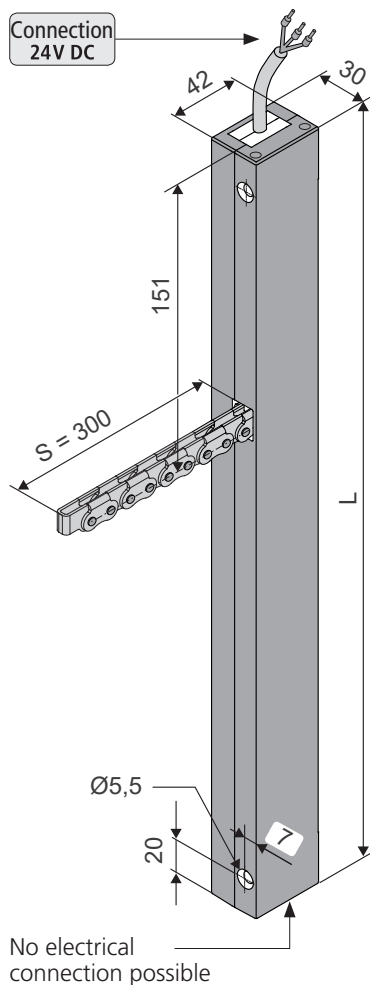
#### Options

- Programmable special functions

### ORDER DATA

| s [mm] | L [mm] | Version         | Finish   | Part.-No.     |
|--------|--------|-----------------|----------|---------------|
| 300    | 432    | BDC Uni 300 24V | RAL 9006 | <b>10.200</b> |
| 300    | 432    | BDC Uni 300 24V | RAL 9016 | <b>10.201</b> |

### 24 V DC

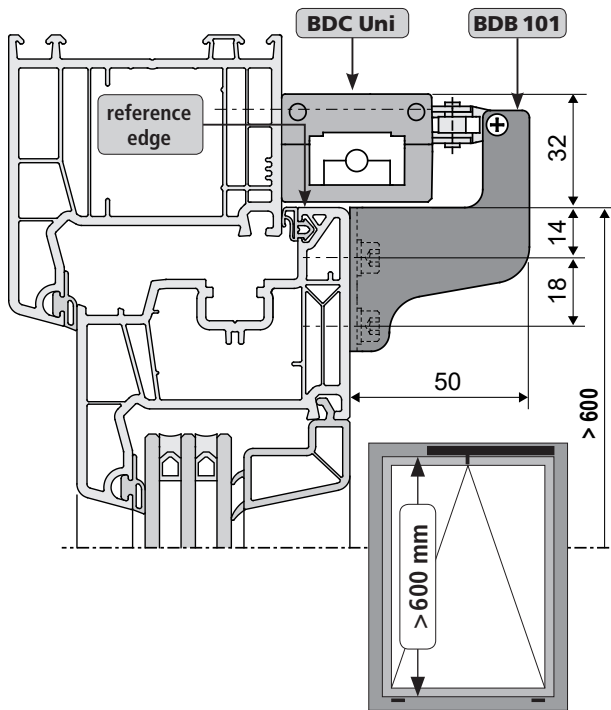


### TECHNICAL DATA

|                      |                           |                                                     |
|----------------------|---------------------------|-----------------------------------------------------|
| <b>U<sub>N</sub></b> | Rated voltage             | 24V DC (19 V ... 28 V)                              |
| <b>I<sub>N</sub></b> | Rated current             | 0,8 A                                               |
| <b>I<sub>A</sub></b> | Cut-off current           | 1,0 A                                               |
| <b>P<sub>N</sub></b> | Rated power               | 17 W                                                |
| <b>DC</b>            | Duty cycle                | 5 cycles (ED 30 % - ON: 3 min. / OFF: 7 min.)       |
|                      | Protection rating         | IP 20                                               |
|                      | Ambient temperature range | -5 °C ... +60 °C                                    |
| <b>F<sub>Z</sub></b> | Pulling force max.        | 200 N                                               |
| <b>F<sub>A</sub></b> | Pushing force max.        | 200 N                                               |
| <b>F<sub>H</sub></b> | Pullout force             | 1.400 N (fastening depended)                        |
|                      | Chain                     | Steel, nickel plated                                |
|                      | Connecting cable          | non-halogen, grey - 3 x 0,5 mm <sup>2</sup> , ~ 2 m |
| <b>v</b>             | Speed                     | 8,0 mm/s                                            |
| <b>s</b>             | Stroke                    | 300 mm                                              |
|                      | Sound pressure level:     | ≤ 70 dB (A)                                         |

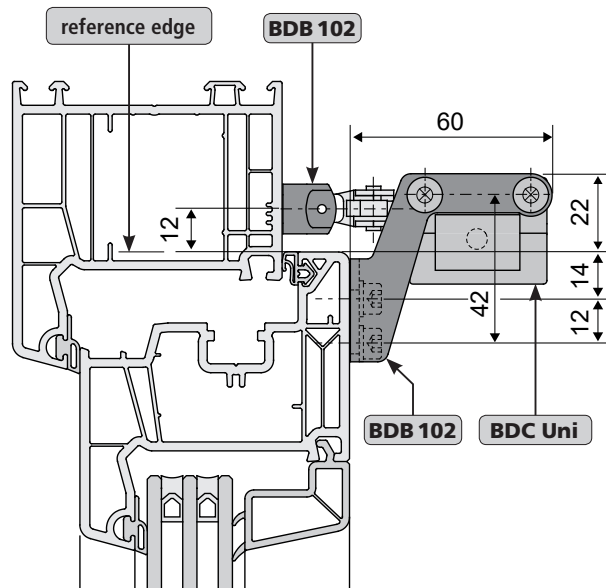
**TYPICAL APPLICATIONS**

**RM, rigid drive mounting directly on the window frame  
Bottom-hung - inward opening**



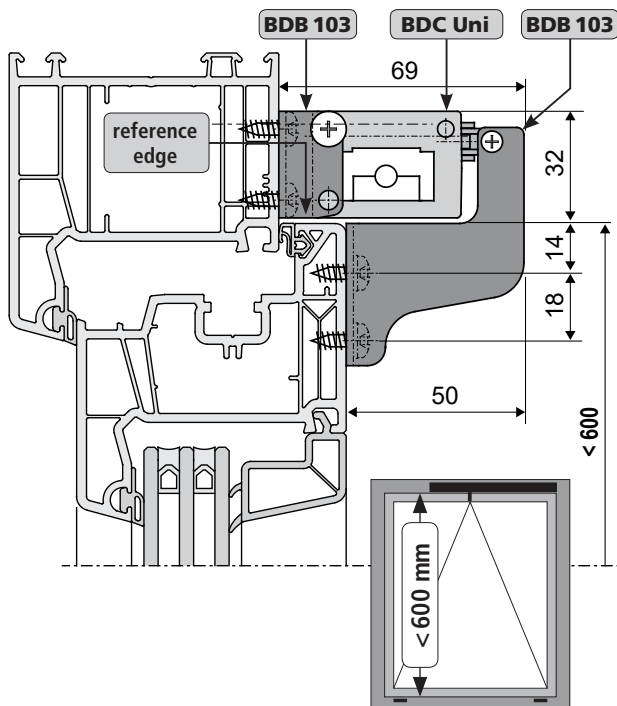
View on PVC window

**FM, rigid drive mounting on the casement  
Bottom-hung - inward opening**



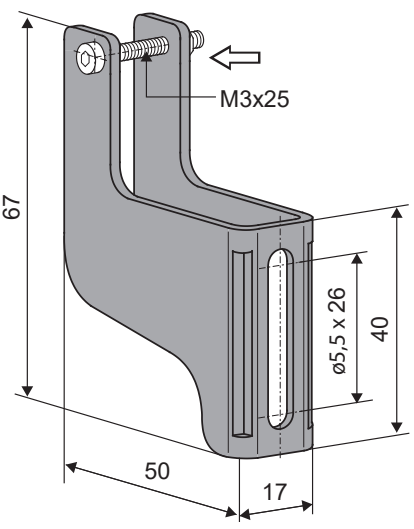
View on PVC window

**RM, swiveling drive mounting on the window frame  
Bottom-hung - inward opening**

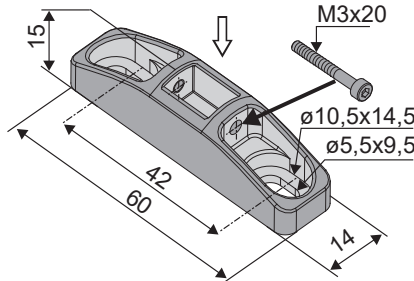
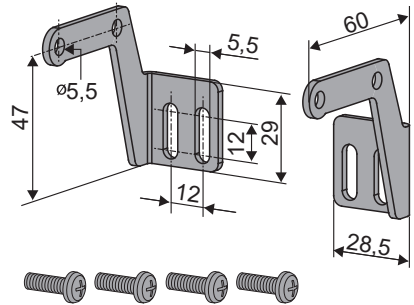


View on PVC window

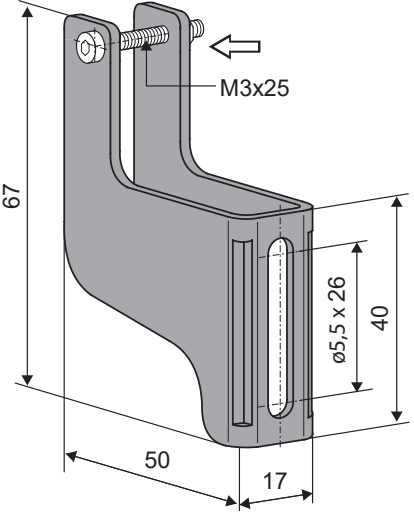
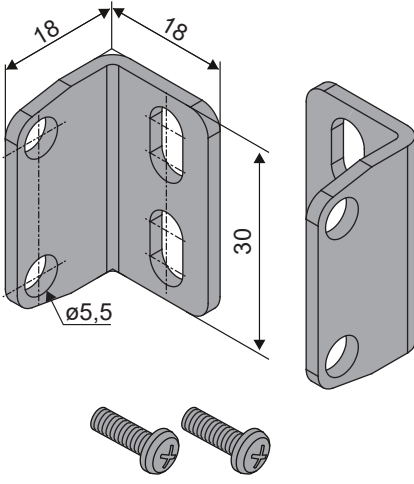
### Bracket-Set BDB101

| Article | BDB 101                                                                                                          | Part.-No.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |  <p><b>Casement bracket</b></p> | <p><b>10.250</b></p> <p><b>Application</b><br/> <b>Surface mounting of the drives</b> on the frame profiles of inward opening windows. For rigid direct fixing of drives <b>BDC Uni</b>. The maximum height of window casement is 800 mm.</p> <p>⇓ Chain fixing in direction of the arrow</p> <p><b>Material / Finish</b><br/>           Stainless steel, vibratory grinding</p> <p><b>Feature / Equipment</b><br/>           1x Screw M3x25 with nut</p> |

### Bracket-Set BDB102

| Article | BDB 102                                                                                                                                                                                                                            | Part.-No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |  <p><b>Casement bracket</b></p>  <p><b>Frame bracket</b></p> | <p><b>10.251</b></p> <p><b>Application</b><br/> <b>Surface mounting of the drives</b> on the casement profiles of inward opening windows. For rigid fixing of drives <b>BDC Uni</b>.<br/> <b>or</b><br/> <b>Surface mounting of the drives</b> on the frame profiles of outward opening windows. For rigid fixing of drives <b>BDC Uni</b>.</p> <p>⇓ Chain fixing in direction of the arrow</p> <p><b>Material / Finish</b><br/> <b>Casement bracket:</b> Cast aluminum<br/> <b>Frame bracket:</b> Stainless steel, vibratory grinding</p> <p><b>Feature / Equipment</b><br/> <b>Casement bracket:</b> 1x Screw M3x20<br/> <b>Frame bracket:</b> 4x Thread-forming Torx screws M5x10</p> |

## Bracket-Set BDB103

| Article | BDB 103                                                                                                                                                                                                                         | Part.-No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |  <p><b>Casement bracket</b></p>  <p><b>Frame bracket</b></p> | <p><b>10.252</b></p> <p><b>Application</b><br/> <b>Surface mounting of the drives</b> on the frame profiles of inward opening windows. For swivelling fixing of drives <b>BDC Uni</b>. The maximum height of window casement is 800 mm.</p> <p>⇓ Chain fixing in direction of the arrow</p> <p><b>Material / Finish</b><br/> <b>Casement bracket:</b> Stainless steel, vibratory grinding<br/> <b>Frame bracket:</b> Stainless steel, vibratory grinding</p> <p><b>Feature / Equipment</b><br/> <b>Casement bracket:</b> 1x Screw M3x20<br/> <b>Frame bracket:</b> 2x Thread-forming Torx screws M5x10</p> |



- Application: natural ventilation and smoke and heat exhausting systems (SHEVS)
- Internal intelligent control electronics
- The programming of the drives in multi-drive occurs at factory
- High-quality stainless steel sidebow roller chain, without protruding rivet heads

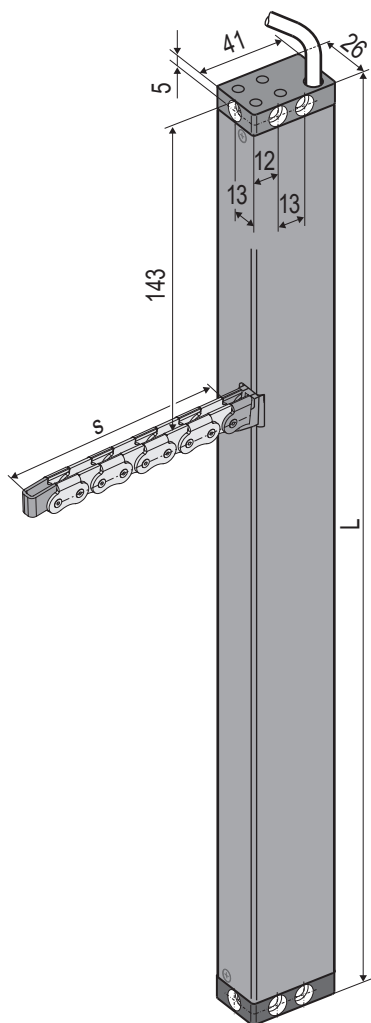
#### Options

- Programmable special functions

### ORDER DATA

| s [mm] | L [mm] | Version          | Finish | Part.-No.     |
|--------|--------|------------------|--------|---------------|
| 400    | 430    | BDC Pro 400 24 V | E6/C-0 | <b>10.300</b> |
| 600    | 545    | BDC Pro 600 24 V | E6/C-0 | <b>10.301</b> |
| 800    | 625    | BDC Pro 800 24 V | E6/C-0 | <b>10.302</b> |

### 24 V DC



### TECHNICAL DATA

|                      |                           |                                                                                                                                                                                                                    |         |          |          |         |           |          |         |           |          |
|----------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------|----------|---------|-----------|----------|---------|-----------|----------|
| <b>U<sub>N</sub></b> | Rated voltage             | 24V DC (19 V ... 28 V)                                                                                                                                                                                             |         |          |          |         |           |          |         |           |          |
| <b>I<sub>N</sub></b> | Rated current             | 0,8 A                                                                                                                                                                                                              |         |          |          |         |           |          |         |           |          |
| <b>I<sub>A</sub></b> | Cut-off current           | 1,0 A                                                                                                                                                                                                              |         |          |          |         |           |          |         |           |          |
| <b>P<sub>N</sub></b> | Rated power               | 17 W                                                                                                                                                                                                               |         |          |          |         |           |          |         |           |          |
| <b>DC</b>            | Duty cycle                | 5 cycles (ED 30 % - ON: 3 min. / OFF: 7 min.)                                                                                                                                                                      |         |          |          |         |           |          |         |           |          |
|                      | Protection rating         | IP 32                                                                                                                                                                                                              |         |          |          |         |           |          |         |           |          |
|                      | Ambient temperature range | -5 °C ... +60 °C                                                                                                                                                                                                   |         |          |          |         |           |          |         |           |          |
| <b>F<sub>Z</sub></b> | Pulling force max.        | 250 N                                                                                                                                                                                                              |         |          |          |         |           |          |         |           |          |
| <b>F<sub>A</sub></b> | Pushing force max.        | s > 600 mm only for pulling application                                                                                                                                                                            |         |          |          |         |           |          |         |           |          |
|                      |                           |                                                                                                                                                                                                                    |         |          |          |         |           |          |         |           |          |
| <b>F<sub>H</sub></b> | Pullout force             | 1.800 N (fastening depended)                                                                                                                                                                                       |         |          |          |         |           |          |         |           |          |
|                      | Chain                     | Stainless steel, without protruding rivet heads. Simple connection to casement brackets. Small bending radii allow maximum opening angles of small windows.                                                        |         |          |          |         |           |          |         |           |          |
|                      | Connecting cable          | non-halogen, grey - 3 x 0,5 mm <sup>2</sup> , ~ 3 m                                                                                                                                                                |         |          |          |         |           |          |         |           |          |
| <b>v</b>             | Speed                     | <table> <tr> <td>s = 400</td> <td>8,0 mm/s</td> <td>8,0 mm/s</td> </tr> <tr> <td>s = 600</td> <td>12,0 mm/s</td> <td>8,0 mm/s</td> </tr> <tr> <td>s = 800</td> <td>13,5 mm/s</td> <td>8,0 mm/s</td> </tr> </table> | s = 400 | 8,0 mm/s | 8,0 mm/s | s = 600 | 12,0 mm/s | 8,0 mm/s | s = 800 | 13,5 mm/s | 8,0 mm/s |
| s = 400              | 8,0 mm/s                  | 8,0 mm/s                                                                                                                                                                                                           |         |          |          |         |           |          |         |           |          |
| s = 600              | 12,0 mm/s                 | 8,0 mm/s                                                                                                                                                                                                           |         |          |          |         |           |          |         |           |          |
| s = 800              | 13,5 mm/s                 | 8,0 mm/s                                                                                                                                                                                                           |         |          |          |         |           |          |         |           |          |
| <b>s</b>             | Stroke                    | 400 mm + 600 mm + 800 mm                                                                                                                                                                                           |         |          |          |         |           |          |         |           |          |
|                      | Sound pressure level:     | ≤ 70 dB (A)                                                                                                                                                                                                        |         |          |          |         |           |          |         |           |          |



- Application: natural ventilation
- Internal intelligent control electronics
- Parallel connection up to 8 drives in one group
- High-quality stainless steel sidebow roller chain, without protruding rivet heads

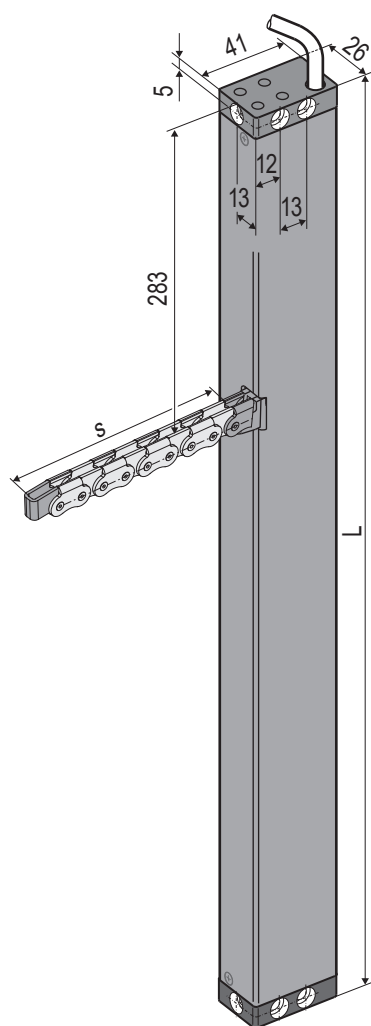
#### Options

- Programmable synchronised run (max. 4 drives) and special functions  
The programming of the drives in multi-drive occurs at factory

### ORDER DATA

| s [mm] | L [mm] | Version          | Finish | Part.-No.     |
|--------|--------|------------------|--------|---------------|
| 400    | 570    | BDC Pro 400 230V | E6/C-0 | <b>10.303</b> |
| 600    | 685    | BDC Pro 600 230V | E6/C-0 | <b>10.304</b> |
| 800    | 765    | BDC Pro 800 230V | E6/C-0 | <b>10.305</b> |

### 230 V AC

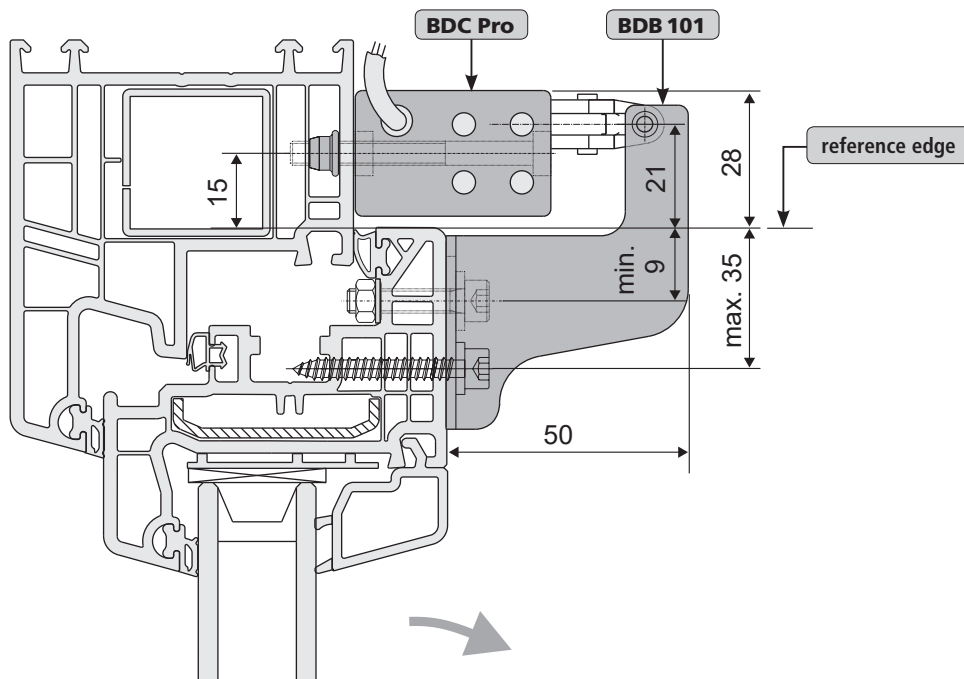


### TECHNICAL DATA

|                      |                           |                                                                                                                                                             |
|----------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>U<sub>N</sub></b> | Rated voltage             | 230 V AC (50 Hz)                                                                                                                                            |
| <b>I<sub>N</sub></b> | Rated current             | 0,13 A                                                                                                                                                      |
| <b>I<sub>A</sub></b> | Cut-off current           | 0,2 A                                                                                                                                                       |
| <b>P<sub>N</sub></b> | Rated power               | 30 W                                                                                                                                                        |
| <b>DC</b>            | Duty cycle                | 5 cycles (ED 30 % - ON: 3 min. / OFF: 7 min.)                                                                                                               |
|                      | Protection rating         | IP 32                                                                                                                                                       |
|                      | Ambient temperature range | -5 °C ... +60 °C                                                                                                                                            |
| <b>F<sub>Z</sub></b> | Pulling force max.        | 250 N                                                                                                                                                       |
| <b>F<sub>A</sub></b> | Pushing force max.        | s > 600 mm only for pulling application                                                                                                                     |
|                      |                           |                                                                                                                                                             |
| <b>F<sub>H</sub></b> | Pullout force             | 1.800 N (fastening depended)                                                                                                                                |
|                      | Chain                     | Stainless steel, without protruding rivet heads. Simple connection to casement brackets. Small bending radii allow maximum opening angles of small windows. |
|                      | Connecting cable          | non-halogen, grey - 6 x 0,75 mm <sup>2</sup> , ~ 3 m                                                                                                        |
| <b>v</b>             | Speed                     | ✕ 8,0 mm/s    ↷ 8,0 mm/s                                                                                                                                    |
| <b>s</b>             | Stroke                    | 400 mm + 600 mm + 800 mm                                                                                                                                    |
|                      | Sound pressure level:     | ≤ 70 dB (A)                                                                                                                                                 |

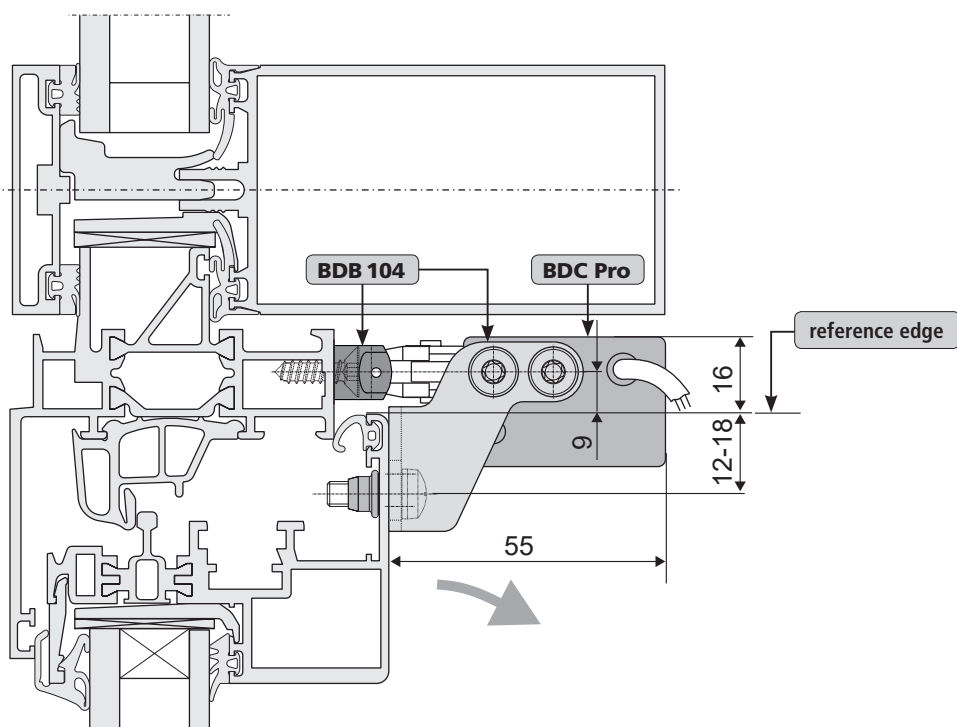
## TYPICAL APPLICATIONS

RM, rigid drive mounting directly on the window frame - Bottom-hung - inward opening



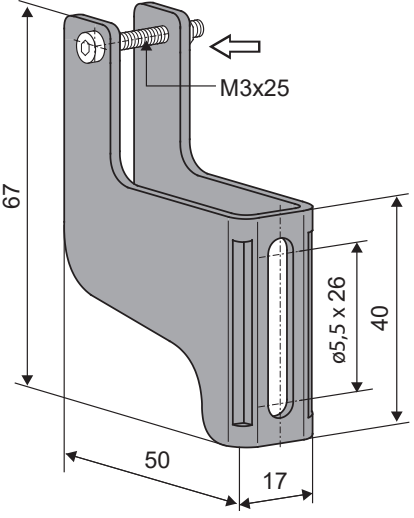
View on PVC window

RM, rigid drive mounting on the casement - Bottom-hung - inward opening

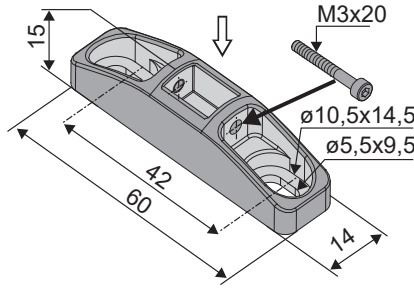
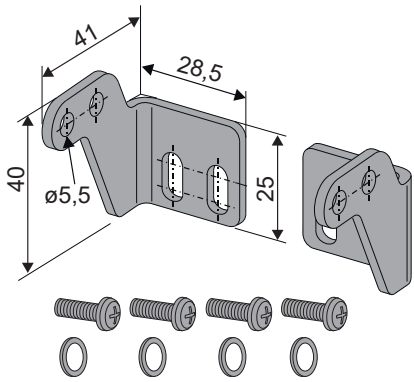


View on aluminium window

## Bracket-Set BDB101

| Article | BDB 101                                                                                                   | Part.-No.                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |  <p>Casement bracket</p> | <p><b>Application</b><br/> <b>Surface mounting of the drives</b> on the frame profiles of inward opening windows. For rigid direct fixing of drives <b>BDC Pro</b>. The maximum height of window casement is 800 mm.</p> <p>⇓ Chain fixing in direction of the arrow</p> <p><b>Material / Finish</b><br/> Stainless steel, vibratory grinding</p> <p><b>Feature / Equipment</b><br/> 1x Screw M3x25 with nut</p> <p><b>10.250</b></p> |

## Bracket-Set BDB104

| Article | BDB 104                                                                                                                                                                                                              | Part.-No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |  <p>Casement bracket</p>  <p>Frame bracket</p> | <p><b>Application</b><br/> <b>Surface mounting of the drives</b> on the casement profiles of inward opening windows. For rigid fixing of drives <b>BDC Pro</b>.<br/> <b>or</b><br/> <b>Surface mounting of the drives</b> on the frame profiles of outward opening windows. For rigid fixing of drives <b>BDC Pro</b>.</p> <p>⇓ Chain fixing in direction of the arrow</p> <p><b>Material / Finish</b><br/> <b>Casement bracket:</b> Cast aluminum<br/> <b>Frame bracket:</b> Stainless steel</p> <p><b>Feature / Equipment</b><br/> <b>Casement bracket:</b> 1x Screw M3x20<br/> <b>Frame bracket:</b> 4x Thread-forming Torx screws M5x10<br/> 4x Washer A 5,3</p> <p><b>10.350</b></p> |



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Spindle Drives

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Eco  
Uni  
Pro



**BDS Eco**

### BDS Eco - SPINDLE DRIVE

- Model 230 V AC
- Pulling force max. 500 N
- Pushing force max. 500 N
- Stroke length 300 mm
- Speed 7 mm/s
- Housing (WxHxL) 63,5 x 80 mm, length depends on stroke
- Opening mechanism aluminium spindle tube
- Protection rating IP 55



**BDS Uni**

### BDS Uni - SPINDLE DRIVE

- Model 24 V DC  
230 V AV
- Pulling force max. 800 N
- Pushing force max. 800 N
- Stroke length 100 - 750 mm ( 24 V DC)  
300 - 750 mm (230 V AC)
- Speed 7 mm/s
- Housing (WxHxL) 43 x 76 mm, length depends on stroke
- Opening mechanism aluminium spindle tube
- Protection rating IP 54



**BDS Eco**

## PRODUCT FEATURES: BDS Eco

- For **natural ventilation** as single-drive
- Robust corrosion-resistant design
- Aluminium housing, anodised finish
- Easy installation due to lateral dovetail guidance
- Phosphated steel spindle, aluminium spindle tube anodised finish, damped end positions
- Limit switch to protect against overload



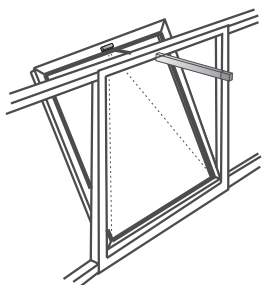
**BDS Uni**

## PRODUCT FEATURES: BDS Uni

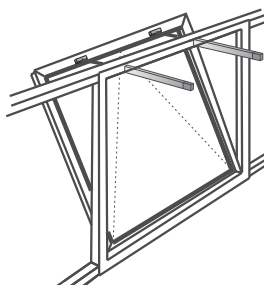
- For **natural ventilation** and **smoke and heat exhausting systems** (SHEVS)
- Robust corrosion-resistant design
- Aluminium housing, anodised finish - with plastic end caps
- Easy installation due to lateral dovetail guidance
- Phosphated steel spindle, aluminium spindle tube anodised finish, damped end positions
- Available in 24 V DC and 230 V AC
- Limit switch to protect against overload

### FASSADE

#### Bottom-hung

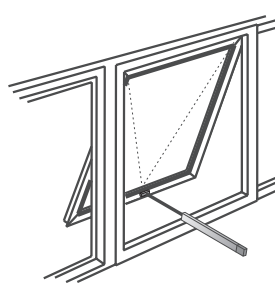


BDS Eco  
BDS Uni

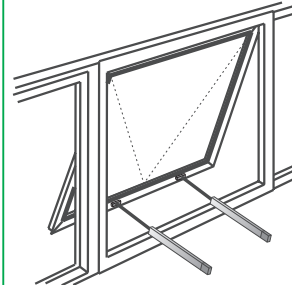


BDS Uni

#### Top-hung

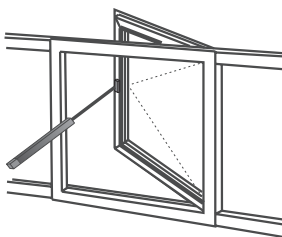


BDS Eco  
BDS Uni

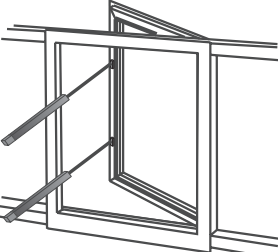


BDS Uni

#### Side-hung



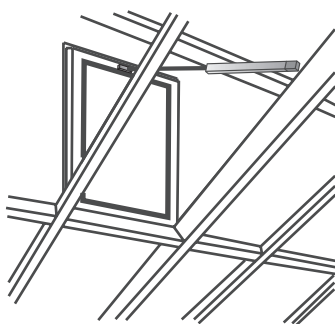
BDS Eco  
BDS Uni



BDS Uni

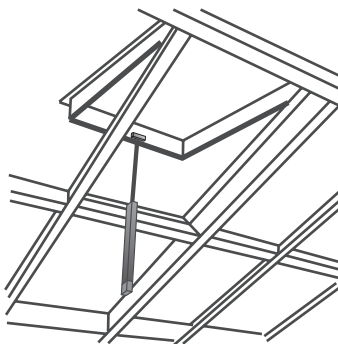
### ROOF

#### Bottom-hung



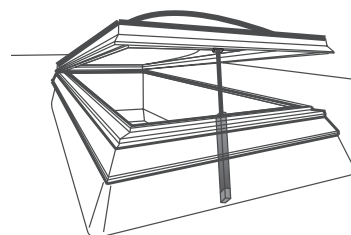
BDS Eco  
BDS Uni

#### Top-hung



BDS Eco  
BDS Uni

#### Sky-light



BDS Eco  
BDS Uni

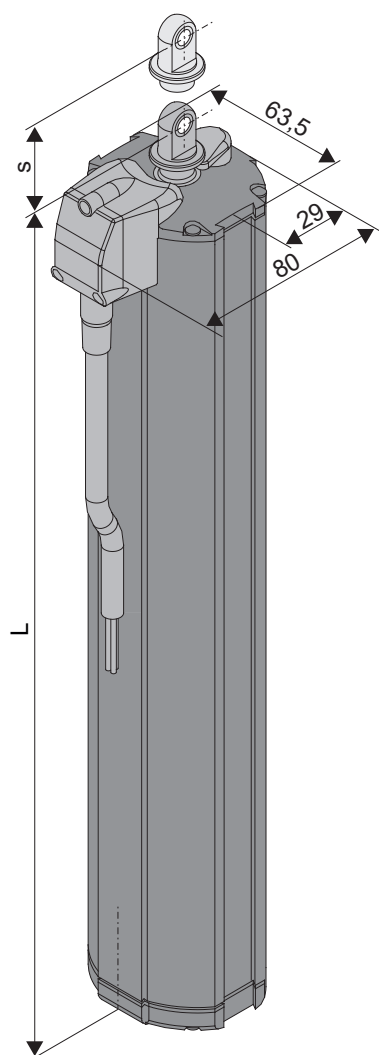


- Application: natural ventilation as single-drive
- Limit switch opening and closing (Microswitch)
- Preferably application for sky-light
- The casement bracket and the frame bracket are included

## ORDER DATA

| s [mm] | L [mm] | Version           | Finish | Part.-No. |
|--------|--------|-------------------|--------|-----------|
| 300    | 419    | BDS Eco 300 230 V | E6/C-0 | 20.100    |

## 230 V AC

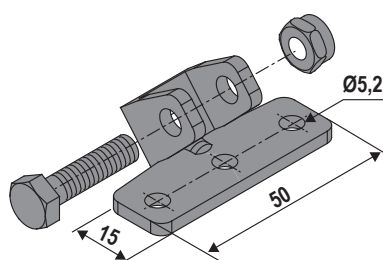


## TECHNICAL DATA

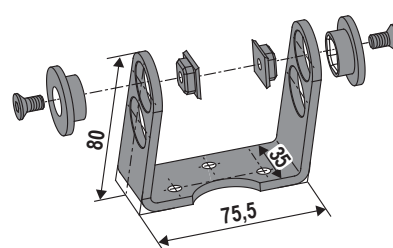
|                      |                           |                                                        |
|----------------------|---------------------------|--------------------------------------------------------|
| <b>U<sub>N</sub></b> | Rated voltage             | 230 V AC (50 Hz)                                       |
| <b>I<sub>N</sub></b> | Rated current             | 0,12 A                                                 |
| <b>I<sub>A</sub></b> | Cut-off current           | 0,2 A                                                  |
| <b>P<sub>N</sub></b> | Rated power               | 5 W                                                    |
| <b>DC</b>            | Duty cycle                | 5 cycles (ED 30 % - ON: 3 min. / OFF: 7 min.)          |
|                      | Protection rating         | IP 55                                                  |
|                      | Ambient temperature range | -10 °C ... +40 °C                                      |
| <b>F<sub>Z</sub></b> | Pulling force max.        | 500 N                                                  |
| <b>F<sub>A</sub></b> | Pushing force max.        | 500 N                                                  |
| <b>F<sub>H</sub></b> | Pullout force             | 3.000 N (fastening depended)                           |
|                      | Spindle tube              | Aluminium                                              |
|                      | Connecting cable          | non-halogen, grey - 4 x 0,75 mm <sup>2</sup> , ~ 1,2 m |
| <b>v</b>             | Speed                     | 7,0 mm/s  7,0 mm/s                                     |
| <b>s</b>             | Stroke                    | 300 mm                                                 |
|                      | Sound pressure level:     | ≤ 70 dB (A)                                            |

## Bracket-Set

## Casement bracket

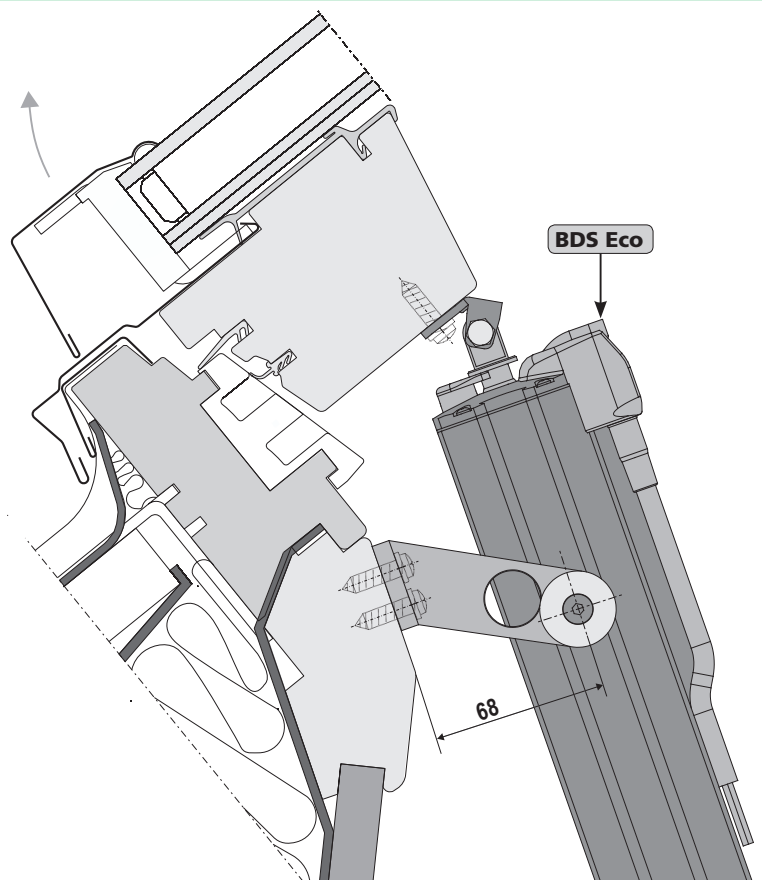


## Frame bracket



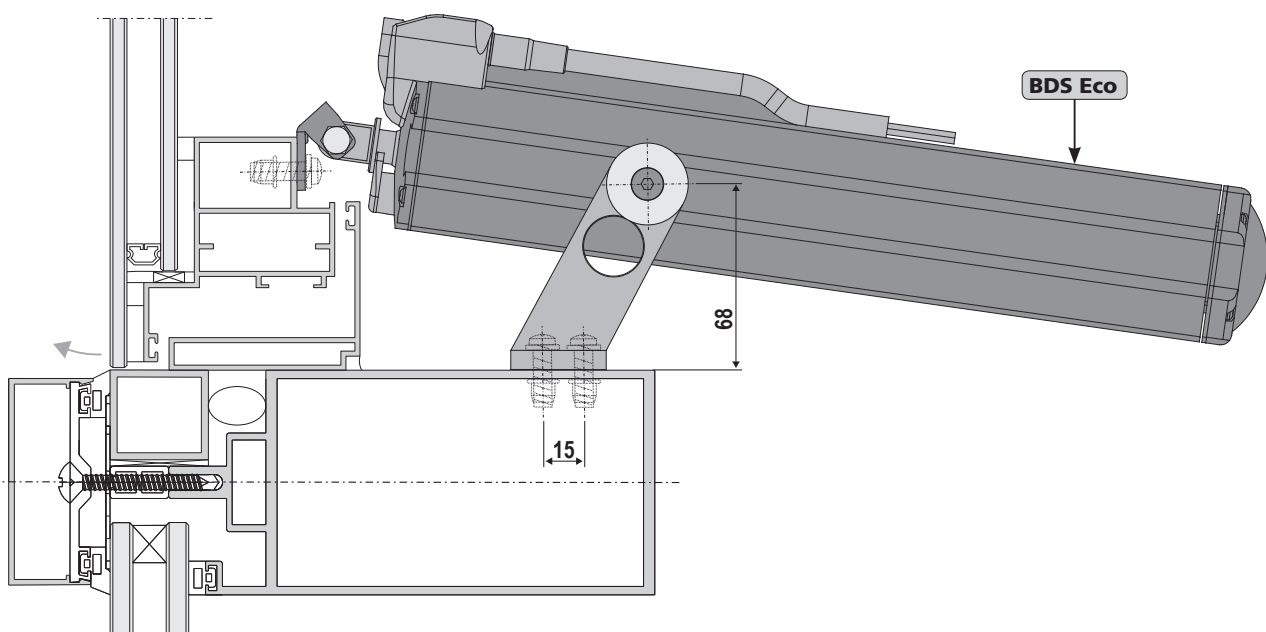
**TYPICAL APPLICATIONS**

RM, roof window - outward opening - HSK



View on wooden window

RM, top-hung casement - outward opening - HSK



View on aluminium window



- Application: natural ventilation and SHEV
- Cut-off via limit switch
- **Potential free NC contact for closed end position feedback (max. 24 V, 500 mA)**
- Preferably application for sky-light

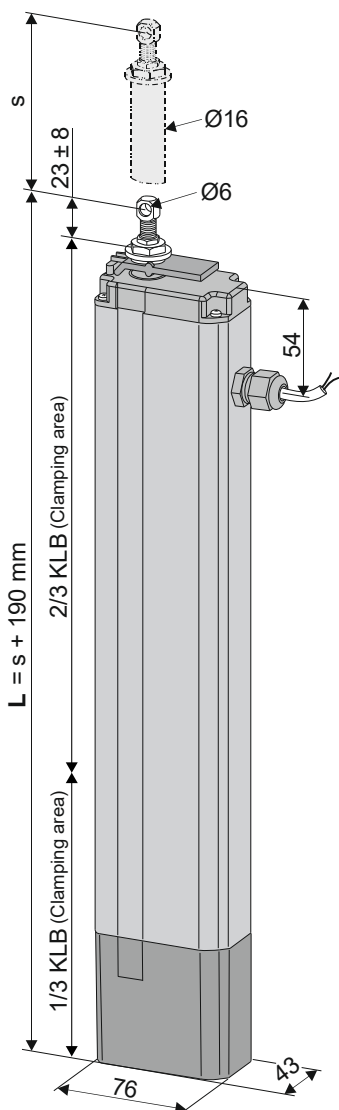
#### Options

- Rear suspension (only up to 500 mm stroke possible)
- Stroke reduction
- Protection rating IP65

### ORDER DATA

| s [mm] | L [mm] | Version          | Finish | Part.-No.     |
|--------|--------|------------------|--------|---------------|
| 300    | 490    | BDS Uni 300 24 V | E6/C-0 | <b>20.200</b> |
| 500    | 690    | BDS Uni 500 24 V | E6/C-0 | <b>20.202</b> |
| 750    | 940    | BDS Uni 750 24 V | E6/C-0 | <b>20.204</b> |

### 24 V DC



### TECHNICAL DATA

|                      |                           |                                                      |
|----------------------|---------------------------|------------------------------------------------------|
| <b>U<sub>N</sub></b> | Rated voltage             | 24 V DC (19 V ... 28 V)                              |
| <b>I<sub>N</sub></b> | Rated current             | 0,8 A                                                |
| <b>I<sub>A</sub></b> | Cut-off current           | 1,0 A                                                |
| <b>P<sub>N</sub></b> | Rated power               | 20 W                                                 |
| <b>DC</b>            | Duty cycle                | 5 cycles (ED 30 % - ON: 3 min. / OFF: 7 min.)        |
|                      | Protection rating         | IP 54                                                |
|                      | Ambient temperature range | -5 °C ... +60 °C                                     |
| <b>F<sub>Z</sub></b> | Pulling force max.        | 800 N                                                |
| <b>F<sub>A</sub></b> | Pushing force max.        |                                                      |
| <b>F<sub>H</sub></b> | Pullout force             | 3.000 N (fastening depended)                         |
|                      | Spindle tube              | Aluminium                                            |
|                      | Connecting cable          | non-halogen, grey - 4 x 0,75 mm <sup>2</sup> , ~ 1 m |
| <b>v</b>             | Speed                     | 7,0 mm/s                                             |
| <b>s</b>             | Stroke                    | 300 mm + 500 mm + 750 mm                             |
|                      | Sound pressure level:     | ≤ 70 dB (A)                                          |



- Application: natural ventilation as single-drive
- Cut-off via limit switch
- **Potential free NC contact for closed end position feedback (max. 24 V, 500 mA)**
- Parallel connection up to 8 drives in one group
- Preferably application for sky-light

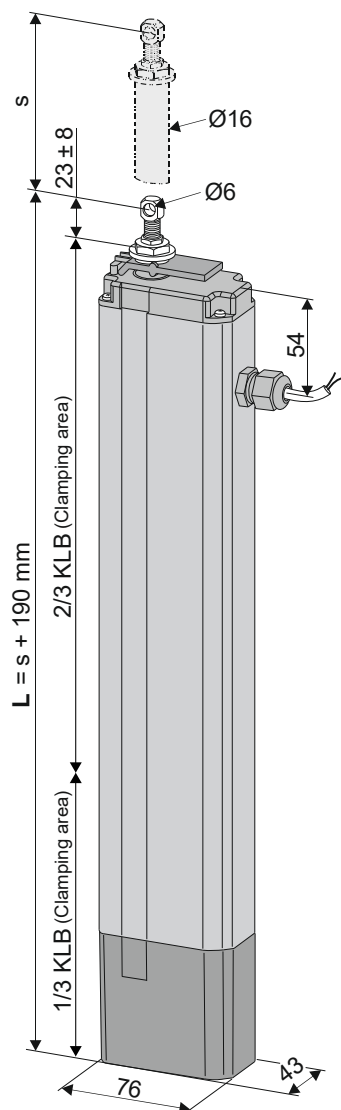
#### Options

- Rear suspension (only up to 500 mm stroke possible)
- Stroke reduction (for  $s < 300$  mm)
- Protection rating IP65

### ORDER DATA

| s [mm] | L [mm] | Version           | Finish | Part.-No.     |
|--------|--------|-------------------|--------|---------------|
| 300    | 490    | BDS Uni 300 230 V | E6/C-0 | <b>20.201</b> |
| 500    | 690    | BDS Uni 500 230 V | E6/C-0 | <b>20.203</b> |
| 750    | 940    | BDS Uni 750 230 V | E6/C-0 | <b>20.205</b> |

### 230 V AC

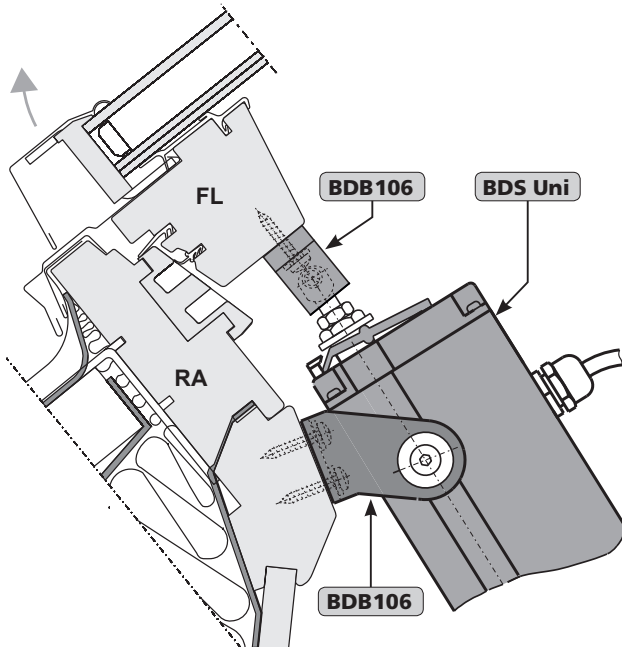


### TECHNICAL DATA

| <b>U<sub>N</sub></b> | Rated voltage             | 230 V AC (50 Hz))                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>I<sub>N</sub></b> | Rated current             | 0,12 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>I<sub>A</sub></b> | Cut-off current           | 0,2 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>P<sub>N</sub></b> | Rated power               | 5 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>DC</b>            | Duty cycle                | 5 cycles (ED 30 % - ON: 3 min. / OFF: 7 min.)                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|                      | Protection rating         | IP 54                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|                      | Ambient temperature range | -5 °C ... +60 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>F<sub>Z</sub></b> | Pulling force max.        | 800 N                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>F<sub>A</sub></b> | Pushing force max.        | <table border="1"> <caption>Pushing force data from graph</caption> <thead> <tr> <th>Stroke S (mm)</th> <th>Force F (N) (2/3 KLB)</th> <th>Force F (N) (1/3 KLB)</th> </tr> </thead> <tbody> <tr> <td>400</td> <td>800</td> <td>800</td> </tr> <tr> <td>500</td> <td>700</td> <td>700</td> </tr> <tr> <td>600</td> <td>600</td> <td>600</td> </tr> <tr> <td>700</td> <td>500</td> <td>500</td> </tr> <tr> <td>750</td> <td>350</td> <td>350</td> </tr> </tbody> </table> | Stroke S (mm) | Force F (N) (2/3 KLB) | Force F (N) (1/3 KLB) | 400 | 800 | 800 | 500 | 700 | 700 | 600 | 600 | 600 | 700 | 500 | 500 | 750 | 350 | 350 |
| Stroke S (mm)        | Force F (N) (2/3 KLB)     | Force F (N) (1/3 KLB)                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 400                  | 800                       | 800                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 500                  | 700                       | 700                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 600                  | 600                       | 600                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 700                  | 500                       | 500                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 750                  | 350                       | 350                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>F<sub>H</sub></b> | Pullout force             | 3.000 N (fastening depended)                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|                      | Spindle tube              | Aluminium                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|                      | Connecting cable          | non-halogen, grey - 6 x 0,75 mm <sup>2</sup> , ~ 1 m                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>v</b>             | Speed                     | 7,0 mm/s                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>s</b>             | Stroke                    | 300 mm + 500 mm + 750 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|                      | Sound pressure level:     | ≤ 70 dB (A)                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |                       |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

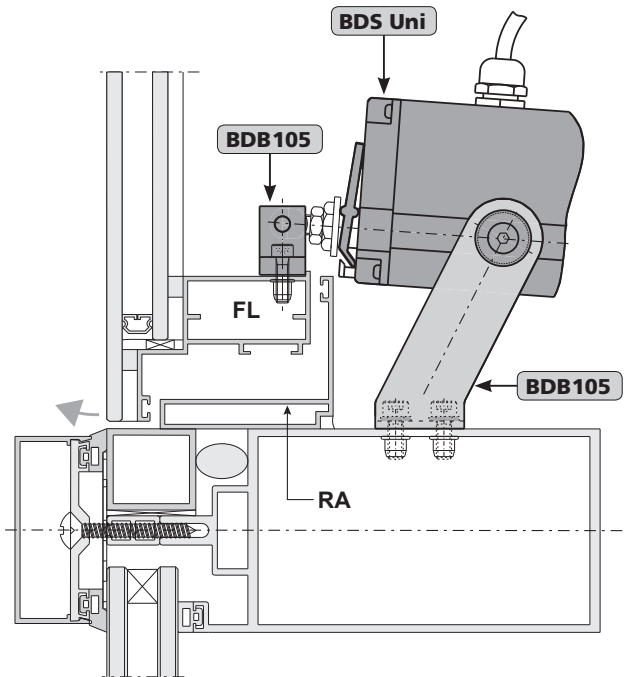
## TYPICAL APPLICATIONS

RM, roof window - outward opening - HSK



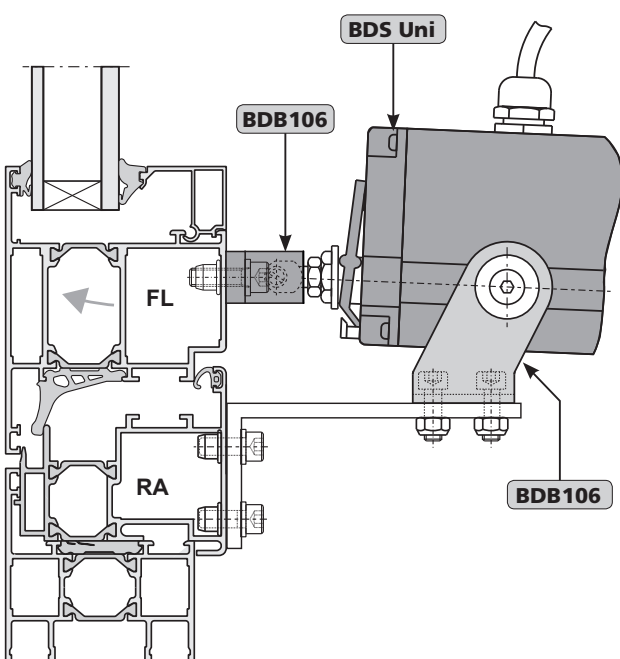
View on wooden window

RM, top-hung casement - outward opening - HSK



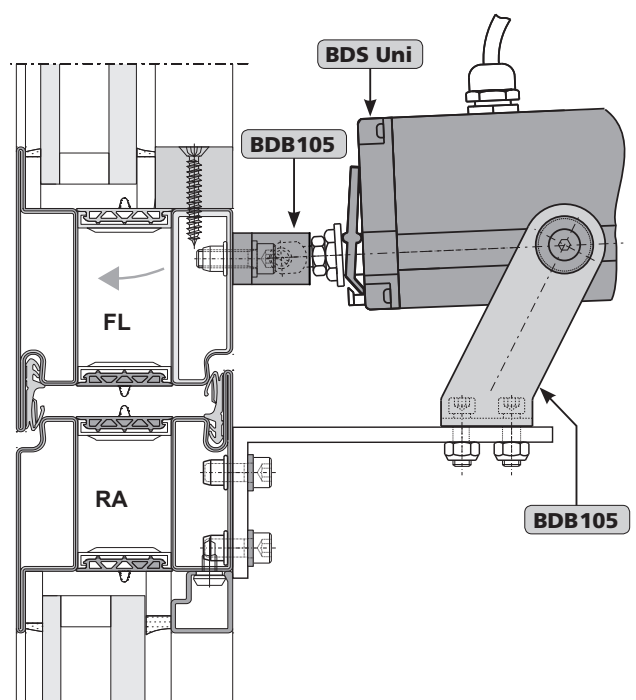
View on aluminium window

RM, top-hung casement - outward opening - HSK



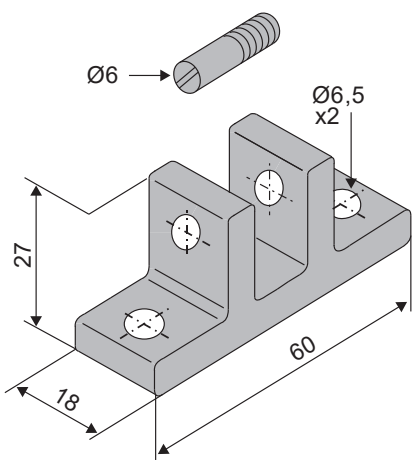
View on aluminium window

RM, top-hung casement - outward opening - HSK

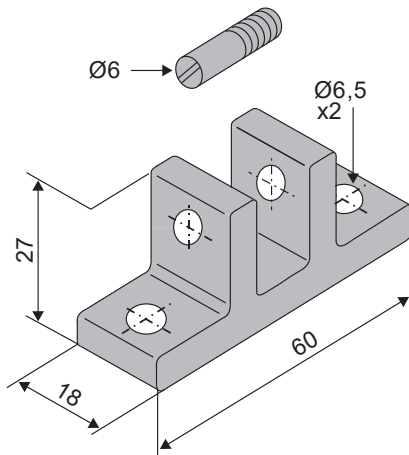
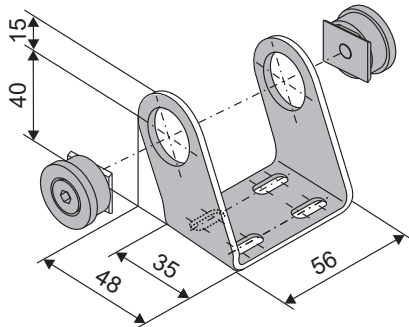


View on steel window

### Bracket-Set BDB105

| Article | BDB 105                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Part.-No.     |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|         |  <p><b>Casement bracket</b></p> <p><b>Frame bracket</b></p> | <p><b>Application</b><br/> <b>Surface mounting of the drives</b> on the frame profiles of outward opening windows. For swivelling fixing of drives <b>BDS Uni</b>.<br/> The space in between clamp axis and fixing level is <b>75 mm</b>.</p> <p><b>Material / Finish</b><br/> <b>Casement bracket:</b> Aluminum<br/> <b>Frame bracket:</b> Steel galvanized</p> <p><b>Feature / Equipment</b><br/> <b>Casement bracket:</b> 1x Threaded pin Ø6 mm<br/> <b>Frame bracket:</b> 2x Terminal screws</p> | <b>20.250</b> |

## Bracket-Set BDB106

| Article                                                                                                                     | BDB 106 | Part.-No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div></div> <p><b>Casement bracket</b></p> |         | <p><b>Application</b></p> <p><b>Surface mounting of the drives</b> on the frame profiles of outward opening windows. For swivelling fixing of drives <b>BDS Uni</b>. The space in between clamp axis and fixing level is <b>40 mm</b>.</p> <p><b>Material / Finish</b></p> <p><b>Casement bracket:</b> Aluminum<br/><b>Frame bracket:</b> Steel, powdercoated (RAL 9006-silver)</p> <p><b>Feature / Equipment</b></p> <p><b>Casement bracket:</b> 1x Threaded pin Ø6 mm<br/><b>Frame bracket:</b> 2x Terminal screws</p> |
| <div></div> <p><b>Frame bracket</b></p>   |         | <p><b>20.251</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



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Rack and Pinion Drives

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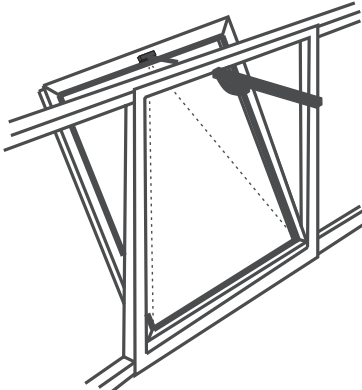
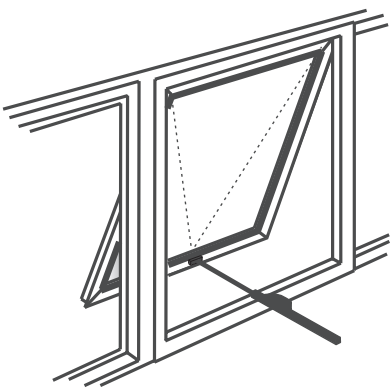
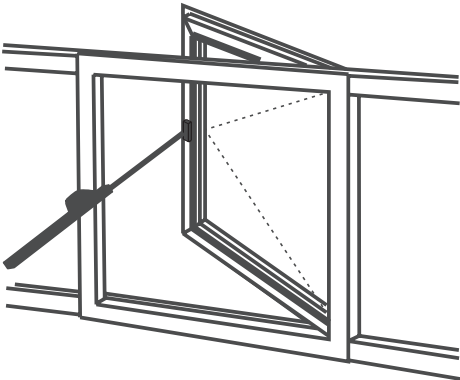
**BDR Uni**

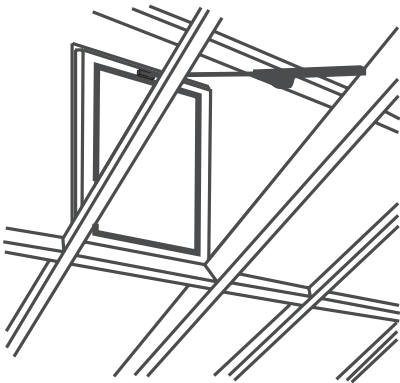
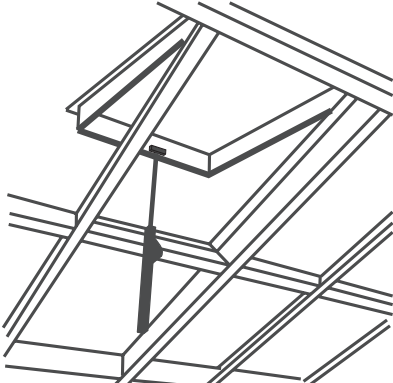
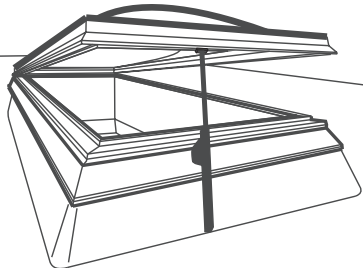
## BDR Uni - RACK AND PINION DRIVE

|                     |                                                                               |
|---------------------|-------------------------------------------------------------------------------|
| ■ Model             | 24 V DC                                                                       |
| ■ Pulling force     | max. 550 N                                                                    |
| ■ Pushing force     | max. 550 N                                                                    |
| ■ Stroke length     | 100 mm<br>200 mm<br>300 mm<br>400 mm<br>500 mm<br>600 mm<br>750 mm<br>1000 mm |
| ■ Speed             | 6 mm/s                                                                        |
| ■ Housing (WxHxL)   | 30 x 30 mm, length depends on stroke                                          |
| ■ Motor-gear-unit   | 40 x 113 x 156 mm                                                             |
| ■ Opening mechanism | rack is made of chromated stainless steel                                     |
| ■ Protection rating | IP 54                                                                         |

## PRODUCT FEATURES: BDR Uni

- For **natural ventilation** and **smoke and heat exhausting systems** (SHEVS)
- Robust corrosion-resistant design
- Slim natural anodised aluminium housing (30 x 30 mm)
- Grey plastic housing for motor-gear unit
- Easy installation due to adjustable clamp ring as front suspension
- Chromated stainless steel rack with end position dampening

| FASSADE                                                                                                                                |                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <div>Bottom-hung</div> <div></div> <div>BDR Uni</div> | <div>Top-hung</div> <div></div> <div>BDR Uni</div> |
| <div>Side-hung</div> <div></div> <div>BDR Uni</div>  |                                                                                                                                      |

| ROOF                                                                                                                                     |                                                                                                                                       |                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <div>Bottom-hung</div> <div></div> <div>BDR Uni</div> | <div>Top-hung</div> <div></div> <div>BDR Uni</div> | <div>Sky-light</div> <div></div> <div>BDR Uni</div> |

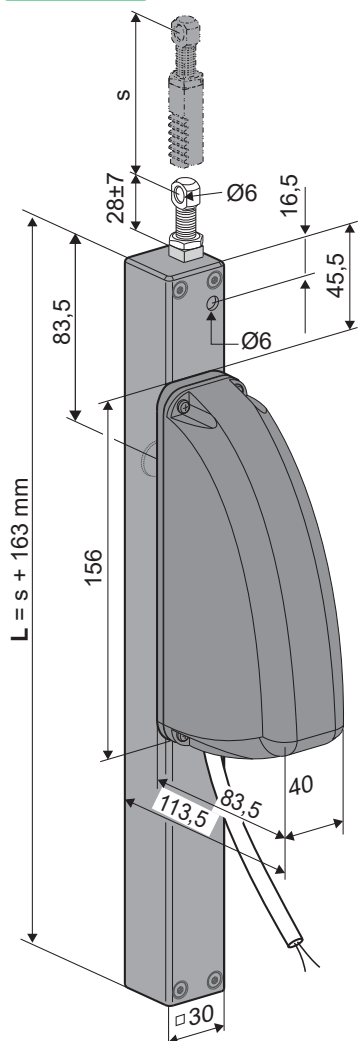


- Application: natural ventilation and smoke and heat exhausting systems (SHEVS)
- Internal load dependend cut-off switch
- Drillings for front suspension

### ORDER DATA

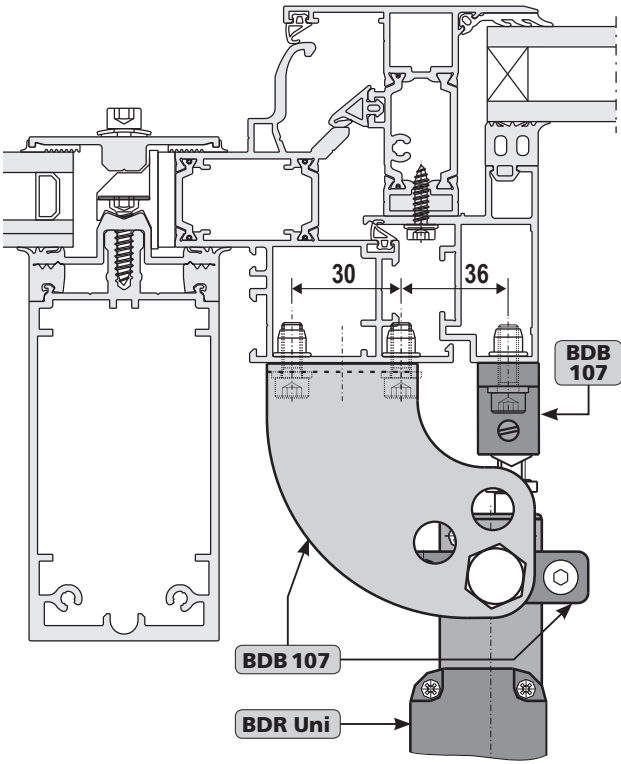
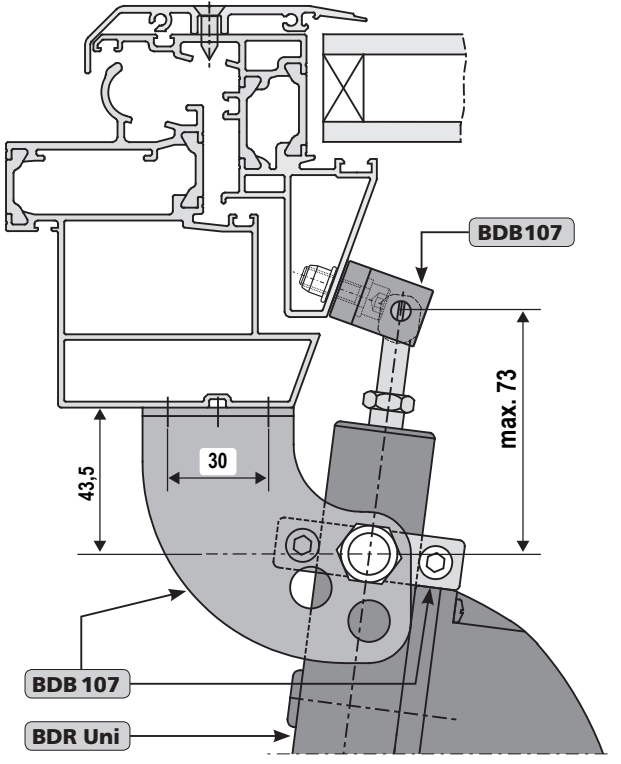
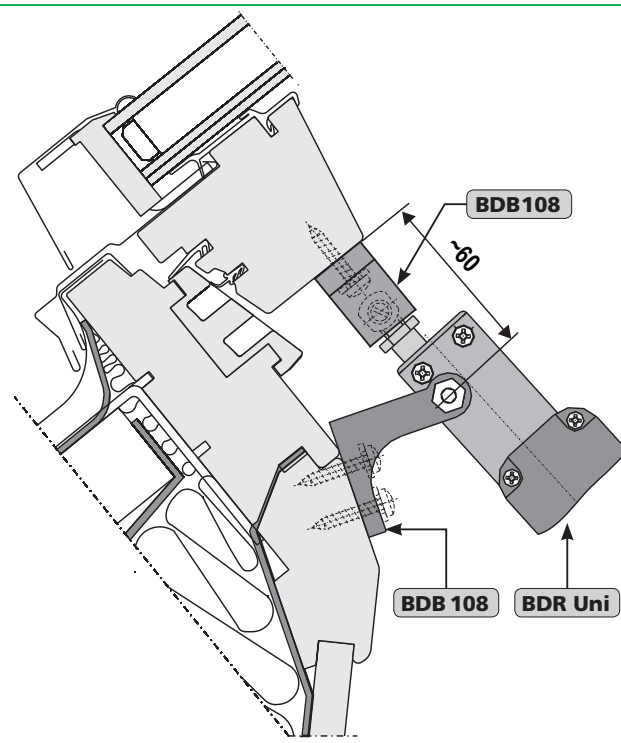
| s [mm] | L [mm] | Version          | Finish | Part.-No.     |
|--------|--------|------------------|--------|---------------|
| 100    | 263    | BDR Uni 100 24V  | E6/C-0 | <b>30.200</b> |
| 200    | 363    | BDR Uni 200 24V  | E6/C-0 | <b>30.201</b> |
| 300    | 463    | BDR Uni 300 24V  | E6/C-0 | <b>30.202</b> |
| 400    | 563    | BDR Uni 400 24V  | E6/C-0 | <b>30.203</b> |
| 500    | 663    | BDR Uni 500 24V  | E6/C-0 | <b>30.204</b> |
| 600    | 763    | BDR Uni 600 24V  | E6/C-0 | <b>30.205</b> |
| 750    | 913    | BDR Uni 750 24V  | E6/C-0 | <b>30.206</b> |
| 1000   | 1163   | BDR Uni 1000 24V | E6/C-0 | <b>30.207</b> |

### 24 V DC

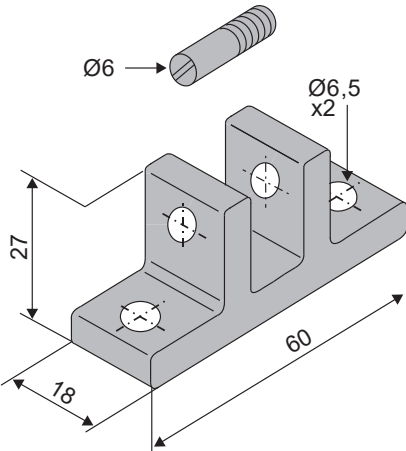
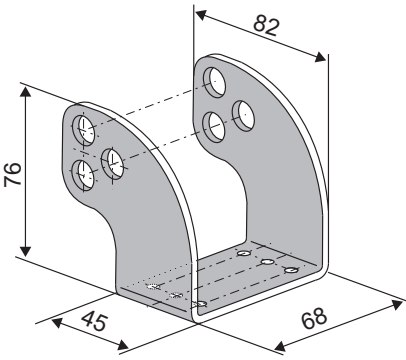
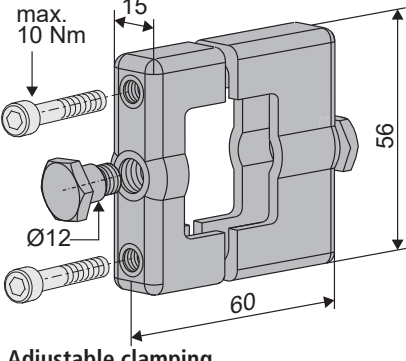


### TECHNICAL DATA

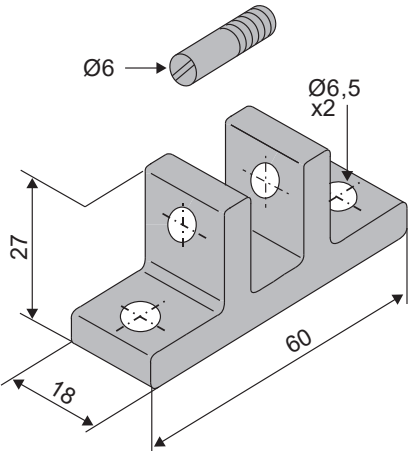
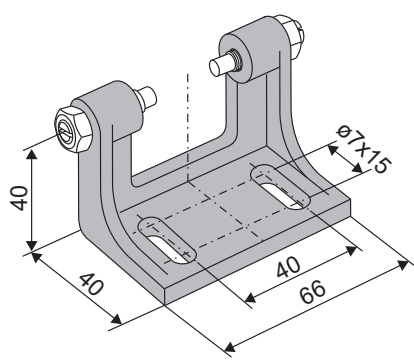
|                      |                           |                                                                        |
|----------------------|---------------------------|------------------------------------------------------------------------|
| <b>U<sub>N</sub></b> | Rated voltage             | 24V DC (19 V ... 28 V)                                                 |
| <b>I<sub>N</sub></b> | Rated current             | 0,6 A                                                                  |
| <b>I<sub>A</sub></b> | Cut-off current           | 0,8 A                                                                  |
| <b>P<sub>N</sub></b> | Rated power               | 15 W                                                                   |
| <b>DC</b>            | Duty cycle                | 5 cycles (ED 30 % - ON: 3 min. / OFF: 7 min.)                          |
|                      | Protection rating         | IP 54                                                                  |
|                      | Ambient temperature range | -5 °C ... +60 °C                                                       |
| <b>F<sub>Z</sub></b> | Pulling force max.        | 550 N                                                                  |
| <b>F<sub>A</sub></b> | Pushing force max.        |                                                                        |
| <b>F<sub>H</sub></b> | Pullout force             | 3.000 N (fastening depended)                                           |
|                      | Chain                     | Stainless steel                                                        |
|                      | Connecting cable          | non-halogen, grey - 2 x 0,75 mm <sup>2</sup> , ~ 1 m                   |
| <b>v</b>             | Speed                     | 6,0 mm/s                                                               |
| <b>s</b>             | Stroke                    | 100 mm + 200 mm + 300 mm + 400 mm + 500 mm + 600 mm + 750 mm + 1000 mm |
|                      | Sound pressure level:     | ≤ 70 dB (A)                                                            |

| TYPICAL APPLICATIONS                                                                                                   |                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| RM, roof window - outward opening - HSK                                                                                | RM, roof window - outward opening - HSK                                                                                            |
|  <p>30 36 BDB 107 BDR Uni</p>        |  <p>BDB 107 max. 73 43.5 30 BDB 107 BDR Uni</p> |
| View on aluminium window                                                                                               | View on aluminium window                                                                                                           |
| RM, roof window - outward opening - HSK                                                                                |                                                                                                                                    |
|  <p>BDB 108 ~60 BDB 108 BDR Uni</p> |                                                                                                                                    |
| View on wood window                                                                                                    |                                                                                                                                    |

### Bracket-Set BDB107

| Article | BDB 107                                                                                                                                                                                                                                                                                                                                               | Part.-No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |  <p><b>Casement bracket</b></p>  <p><b>Frame bracket</b></p>  <p><b>Adjustable clamping</b></p> | <p><b>30.250</b></p> <p><b>Application</b><br/> <b>Surface mounting of the drives</b> on the frame profiles of outward opening windows. For drives <b>BDR Uni</b> with <b>front swivelling suspension</b> with bore <b>Ø6 mm</b>.<br/> The pin of the casement bracket is threaded.</p> <p><b>Material / Finish</b><br/> <b>Casement bracket:</b> Aluminum<br/> <b>Frame bracket:</b> Stainless steel<br/> <b>Adjustable clamping:</b> Aluminium (Clamping)<br/> Stainless stell (Collar screws)</p> <p><b>Feature / Equipment</b><br/> <b>Casement bracket:</b> 1x Threaded pin Ø6 mm<br/> <b>Frame bracket:</b> 6x Drilled holes Ø12,5 mm<br/> <b>Adjustable clamping:</b> 2x Collar screw Ø12mm, G1/8<br/> 2x Cylinder head screw M6x50</p> |

## Bracket-Set BDB108

| Article | BDB 108                                                                                                                                                                                                                         | Part.-No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |  <p><b>Casement bracket</b></p>  <p><b>Frame bracket</b></p> | <p><b>30.251</b></p> <p><b>Application</b><br/> <b>Surface mounting of the drives</b> on the frame profiles of outward opening windows. For drives <b>BDR Uni</b> with <b>front swivelling suspension</b> with bore <b>Ø6 mm</b>.<br/> The pin of the casement bracket is threaded.</p> <p><b>Material / Finish</b><br/> <b>Casement bracket:</b> Aluminum<br/> <b>Frame bracket:</b> Stainless steel, vibratory grinding</p> <p><b>Feature / Equipment</b><br/> <b>Casement bracket:</b> 1x Threaded pin Ø6 mm<br/> <b>Frame bracket:</b> 2x Grub screws M8<br/> 2x Nuts M8</p> |



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Locking Drives

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LOCKING  
DRIVES

Uni



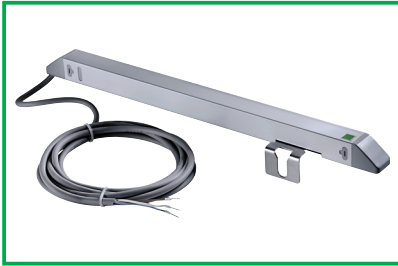
### BDL Uni - LOCKING DRIVE

|                     |                                           |
|---------------------|-------------------------------------------|
| ■ Model             | 24 V DC                                   |
| ■ Pulling force     | max. 600 N                                |
| ■ Breakout force    | max. 1000 N                               |
| ■ Stroke length     | 18 mm                                     |
| ■ Runtime           | 5 mm/s                                    |
| ■ Housing (WxHxL)   | 26 x 26 x 415 mm                          |
| ■ Coupling adapter  | Locking angle                             |
| ■ Opening mechanism | rack is made of chromated stainless steel |
| ■ Protection rating | IP 32                                     |

### PRODUCT FEATURES: BDL Uni

- For **natural ventilation** and **smoke and heat exhausting systems** (SHEVS)
- Mounting on the window frame or casement frame profiles of inward or outward opening windows, depending of the window locking hardware and used coupling adapter
- **Coupling adapter activates the multi-point locking systems of the windows via additional locking roller**
- Robust corrosion-resistant design in a aluminium housing
- Concealed cable terminals and internal push button for setting the running direction
- Coupling adapter customizable for project-specific or profile-specific demands

**BDL Uni**

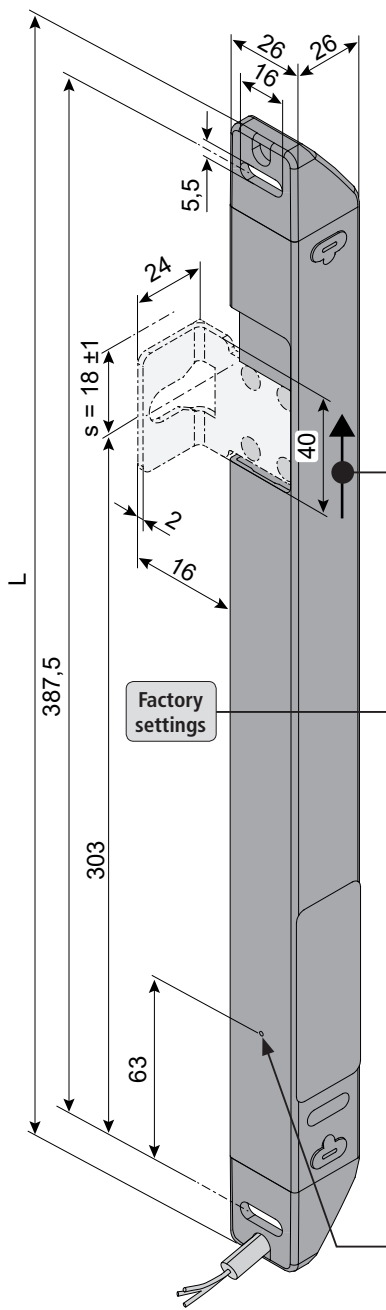


- Application: natural ventilation and smoke and heat exhausting systems (SHEVS)
- Surface mounting on the on the main closing edge (HSK) or side closing edge (NSK) of the window frame profiles (RM) of inward opening windows
- Locking drives for existing locking bar
- Running direction adjustable
- Coupling adapter customizable for project-specific or profile-specific demands

## ORDER DATA

| s [mm] | L [mm] | Version      | Finish | Part.-No. |
|--------|--------|--------------|--------|-----------|
| 18     | 415    | BDL Uni 24 V | E6/C-0 | 40.200    |

## 24 V DC

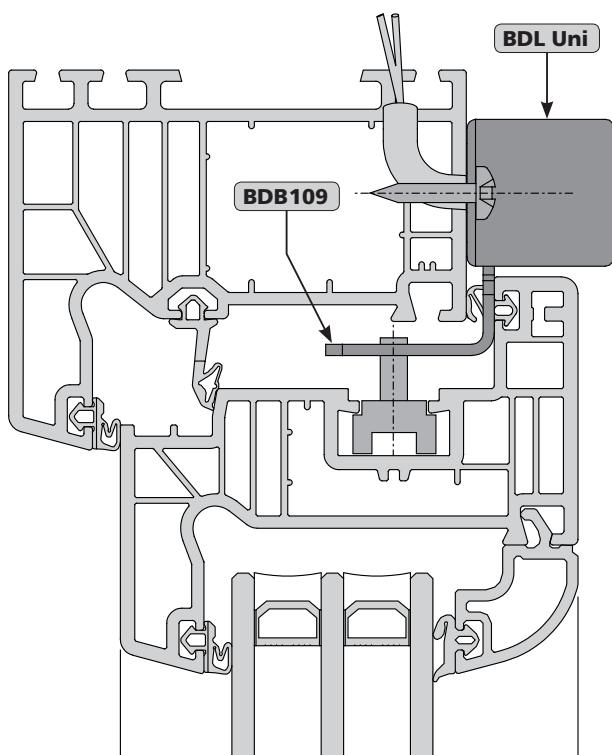


## TECHNICAL DATA

|                      |                           |                                                     |
|----------------------|---------------------------|-----------------------------------------------------|
| <b>U<sub>N</sub></b> | Rated voltage             | 24 V DC (19 V ... 28 V)                             |
| <b>I<sub>N</sub></b> | Rated current             | 0,6 A                                               |
| <b>I<sub>A</sub></b> | Cut-off current           | ~ 1,0 A                                             |
| <b>P<sub>N</sub></b> | Rated power               | 15 W                                                |
| <b>DC</b>            | Duty cycle                | 5 cycles (ED 30 % - ON: 3 min. / OFF: 7 min.)       |
|                      | Protection rating         | IP 32                                               |
|                      | Ambient temperature range | -5 °C ... +60 °C                                    |
| <b>F<sub>A</sub></b> | Pulling force max.        | ~ 600 N                                             |
| <b>F<sub>L</sub></b> | Breakout force max.       | ~ 1.000 N                                           |
| <b>F<sub>H</sub></b> | Pullout force             | 1.500 N                                             |
|                      | Housing                   | Aluminium                                           |
|                      | Connecting cable          | non-halogen, grey - 3 x 0,5 mm <sup>2</sup> , ~ 3 m |
| <b>t</b>             | Running time              | ~ 5,0 s                                             |
| <b>s</b>             | Stroke                    | ~ 18 mm (± 1)                                       |
|                      | Sound pressure level:     | ≤ 70 dB (A)                                         |

**TYPICAL APPLICATIONS**

RM - inward opening

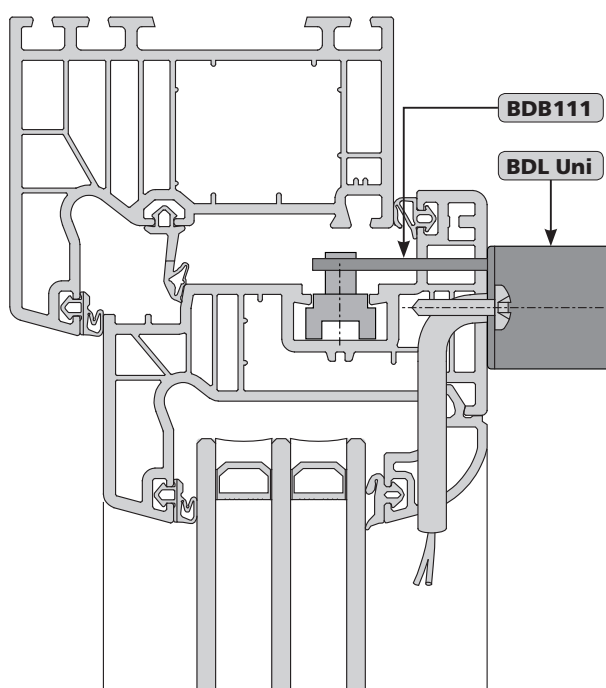


**Mounted dimensions of the coupling adapter**

| Coupling Adapter<br>BDB 109 | Coupling Adapter<br>BDB 110 |
|-----------------------------|-----------------------------|
|                             |                             |

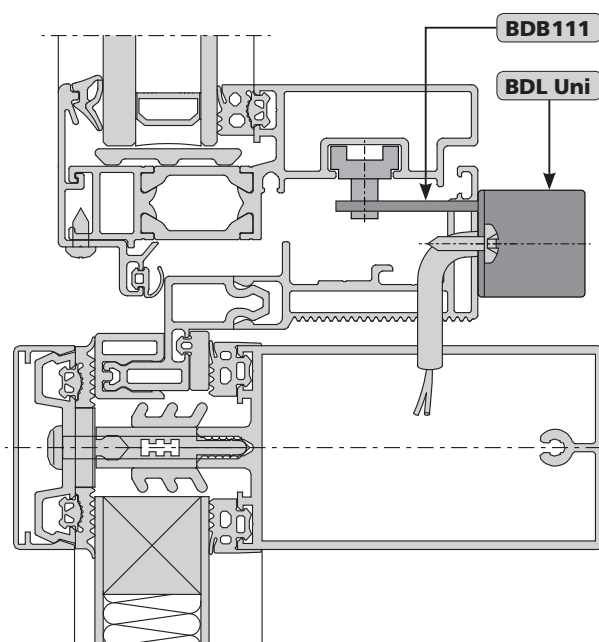
View on PVC window

FM - inward opening



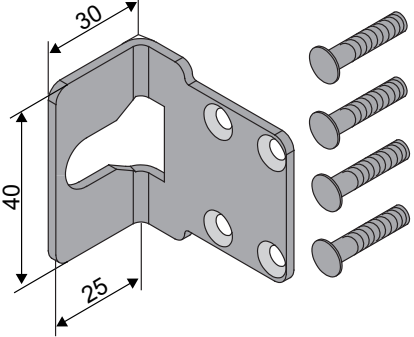
View on PVC window

RM - outward opening

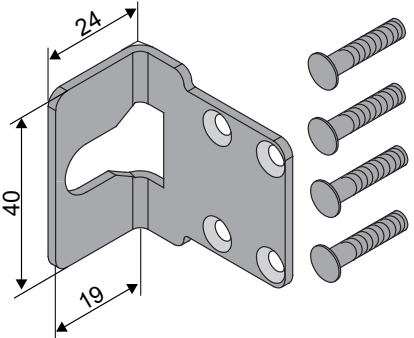


View on aluminium window

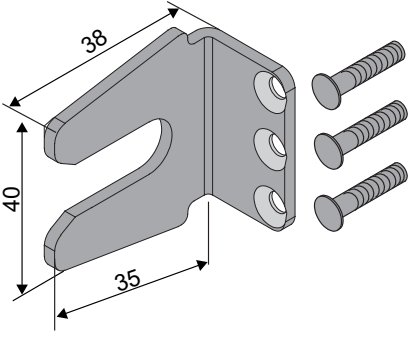
## Bracket-Set BDB109

| Article | BDB 109                                                                                                                                                                                                                                                                                                                                                                                                                                  | Part.-No.     |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|         |  <p><b>Application</b><br/>Surface mounting of the locking drives BDL Uni on the window frame profiles of inward opening windows.</p> <p><b>Coupling adapter - 22 mm</b><br/>the length of this adapter is 30 mm.</p> <p><b>Material / Finish</b><br/>Stainless steel</p> <p><b>Feature / Equipment</b><br/>1x Coupling adapter<br/>4x Screws M4x16</p> | <b>40.250</b> |

## Bracket-Set BDB110

| Article | BDB 110                                                                                                                                                                                                                                                                                                                                                                                                                             | Part.-No.     |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|         |  <p><b>Application</b><br/>Surface mounting of the locking drives BDL Uni on the frame profiles of inward opening windows.</p> <p><b>Coupling adapter - 16 mm</b><br/>the length of this adapter is 24 mm.</p> <p><b>Material / Finish</b><br/>Stainless steel</p> <p><b>Feature / Equipment</b><br/>1x Coupling adapter<br/>4x Screws M4x16</p> | <b>40.251</b> |

## Bracket-Set BDB111

| Article | BDB 111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Part.-No.     |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|         |  <p><b>Application</b><br/>Surface mounting of the locking drives BDL Uni on the case-ment profiles of inward opening windows or of the frame profiles of outward opening projected top-hung windows.</p> <p><b>Coupling adapter - 28,5 mm</b><br/>the length of this adapter is 38 mm.</p> <p><b>Material / Finish</b><br/>Stainless steel</p> <p><b>Feature / Equipment</b><br/>1x Coupling adapter<br/>3x Screws M4x16</p> | <b>40.252</b> |



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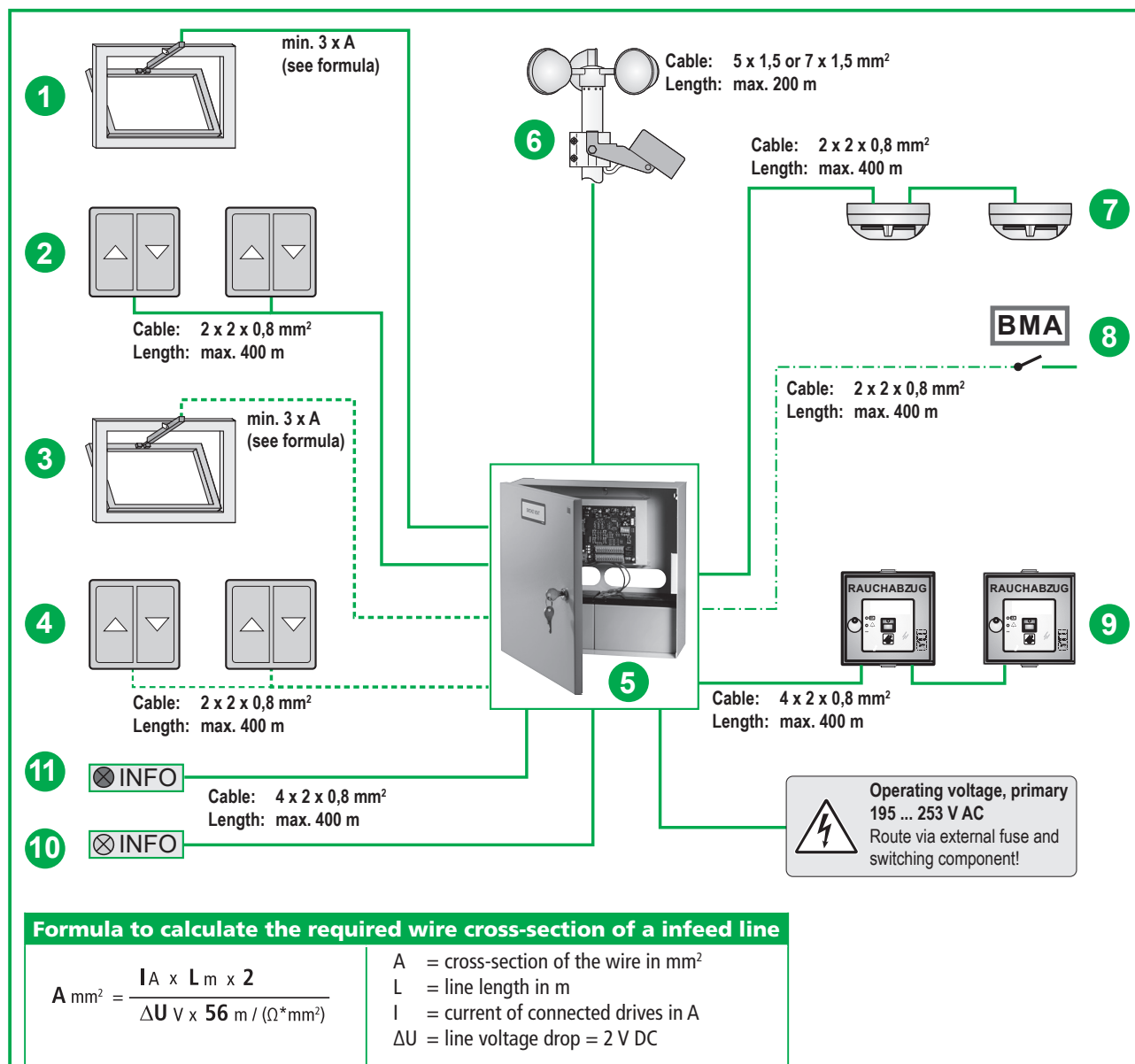
6

**SHEV – Compact Control Units**

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4 A  
8 A  
12 A



### Legend

- 1** Output for drive line 1, 24 V DC for smoke and heat exhausting and natural ventilation
- 2** Input for ventilation line 1 (max. 10 vent buttons)
- 3** Output for drive line 2 (only available for **BCR 8A** and **BCR 12A**)
- 4** Input for ventilation line 2 (max. 10 vent buttons) (only available for **BCR 8A** and **BCR 12A**)
- 5** Housing of Control Unit
- 6** Connections for wind and rain sensor (disabled in case of alarm and power loss)
- 7** Input for smoke detectors (max. 10)
- 8** Input for signal from external fire alarm system (alternative connection) to smoke detectors
- 9** Input for Break-glass Units (HSE – max. 10)
- 10** Output for signal transduction 1 (alarm release)
- 11** Output for signal transduction 2 (collective fault)

----- only available for **BCR 8A** and **BCR 12A**

## Control Unit BCR2 A - 0101

| Article                                                                           | Application:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Part.-No.     |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|  | <b>Compact Control Unit</b> for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.                                                                                                                                                                                                                                                                                                                                                                                                           | <b>60.100</b> |
|                                                                                   | <b>Technical Data</b> (Rated values)<br>Operating voltage: 230 V AC (195 – 253 V AC, 50 / 60 Hz)<br>Max. power consumption: 128 W<br>Output voltage: 24 V DC (20 – 28 V DC / 0,5 Vpp)<br>Output current: <b>2,0 A</b><br>Ambient temperature range: 5°C ... + 40°C<br>Protection rating: IP30<br>Housing: Surface mounting, steel sheet, RAL 7035 (light grey)<br>Dimensions (WxHxD): 316 x 305 x 112 mm<br>Connection terminals: 1,5 mm <sup>2</sup> / Drives: 2,5 mm <sup>2</sup> (rigid wire)<br>Motherboard: 1 SHEV group / 1 Vent group | <b>2 A</b>    |

## Feature / Equipment

- Cable entry from above / below / behind
- Prepared for **2** maintenance-free backup batteries **2x 12 V / 2,3 Ah** (Part. Nr. 60.304)

## Control Unit BCR4 A - 0101

| Article                                                                             | Application:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Part.-No.     |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|  | <b>Compact Control Unit</b> for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.                                                                                                                                                                                                                                                                                                                                                                                                           | <b>60.101</b> |
|                                                                                     | <b>Technical Data</b> (Rated values)<br>Operating voltage: 230 V AC (195 – 253 V AC, 50 / 60 Hz)<br>Max. power consumption: 276 W<br>Output voltage: 24 V DC (20 – 28 V DC / 0,5 Vpp)<br>Output current: <b>4,0 A</b><br>Ambient temperature range: 5°C ... + 40°C<br>Protection rating: IP30<br>Housing: Surface mounting, steel sheet, RAL 7035 (light grey)<br>Dimensions (WxHxD): 316 x 305 x 112 mm<br>Connection terminals: 1,5 mm <sup>2</sup> / Drives: 2,5 mm <sup>2</sup> (rigid wire)<br>Motherboard: 1 SHEV group / 1 Vent group | <b>4 A</b>    |

## Feature / Equipment

- Cable entry from above / below / behind
- Prepared for **2** maintenance-free backup batteries **2x 12 V / 2,3 Ah** (Part. Nr. 60.304)

### Control Unit BCR8A - 0102

| Article                                                                           | Application:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Part.-No.     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|  | <b>Compact Control Unit</b> for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.                                                                                                                                                                                                                                                                                                                                                                                                            | <b>60.102</b> |
|                                                                                   | <b>Technical Data</b> (Rated values)<br>Operating voltage: 230 V AC (195 – 253 V AC, 50 / 60 Hz)<br>Max. power consumption: 299 W<br>Output voltage: 24 V DC (20 – 28 V DC / 0,5 Vpp)<br>Output current: <b>8,0 A</b><br>Ambient temperature range: 5°C ... + 40°C<br>Protection rating: IP30<br>Housing: Surface mounting, steel sheet, RAL 7035 (light grey)<br>Dimensions (WxHxD): 316 x 305 x 112 mm<br>Connection terminals: 1,5 mm <sup>2</sup> / Drives: 2,5 mm <sup>2</sup> (rigid wire)<br>Motherboard: 1 SHEV group / 2 Vent groups | <b>8 A</b>    |

#### Feature / Equipment

- Cable entry from above / below / behind
- Prepared for **2** maintenance-free backup batteries **2x 12 V / 7 Ah** (Part. Nr. 60.305)

### Control Unit BCR12A - 0102

| Article                                                                             | Application:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Part.-No.     |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|  | <b>Compact Control Unit</b> for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.                                                                                                                                                                                                                                                                                                                                                                                                             | <b>60.103</b> |
|                                                                                     | <b>Technical Data</b> (Rated values)<br>Operating voltage: 230 V AC (195 – 253 V AC, 50 / 60 Hz)<br>Max. power consumption: 460 W<br>Output voltage: 24 V DC (20 – 28 V DC / 0,5 Vpp)<br>Output current: <b>12,0 A</b><br>Ambient temperature range: 5°C ... + 40°C<br>Protection rating: IP30<br>Housing: Surface mounting, steel sheet, RAL 7035 (light grey)<br>Dimensions (WxHxD): 316 x 305 x 112 mm<br>Connection terminals: 1,5 mm <sup>2</sup> / Drives: 2,5 mm <sup>2</sup> (rigid wire)<br>Motherboard: 1 SHEV group / 2 Vent groups | <b>12 A</b>   |

#### Feature / Equipment

- Cable entry from above / below / behind
- Prepared for **2** maintenance-free backup batteries **2x 12 V / 7 Ah** (Part. Nr. 60.305)

### WR-Set Type BCR – Wind and Rain Sensor Set

| Article                                                                           | Application:                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Part.-No.     |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|  | <b>Sensors</b> for wind and rain to work directly with a SHEV Control Unit, for closing and blocking the natural ventilation under bad weather conditions.                                                                                                                                                                                                                                                                                                           | <b>60.303</b> |
|                                                                                   | <b>Technical Data</b> (Rated values)<br>Rated voltage: 24V DC (+/- 20%)<br><b>Rain sensor</b><br>Contact: heated sensor surface, switch-off delay approx. 5 min.<br>Current consumption: 1 Change-over switch, max. 48 V / 5A<br>Housing: <150 mA<br>Dimensions (WxHxD): Surface mounting, ABS black with stainless steel bracket<br>Connection cable: 100 x 85 x 172 mm<br>Volt free contac: Non-halogen cable, approx. 4 m<br>1 Change-over switch, max. 48 V / 1A |               |
|                                                                                   | <b>Wind sensor</b><br>Measuring principle: Anemometer with 3 impact resistant wind cups (PA6)<br>Dimensions: Pulse generator<br>Connection cable: 250 x 250 x 80 mm<br>Non-halogen cable, approx. 4 m                                                                                                                                                                                                                                                                |               |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |

#### Feature / Equipment

- Set including: Wind sensor, rain sensor, clamp ring, aluminium bracket for pole or wall mounting, without mounting screws

### Accumulators

| Article                                                                             | Application:                                                                                                                                                                                                                   |                                            |           |                    |               |            |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------|--------------------|---------------|------------|
|  | <b>Accumulator</b> for maintenance of standby operation of SHEV Control Units over a period of 72 hours of main power supply loss.                                                                                             |                                            |           |                    |               |            |
|                                                                                     | <b>Technical Data</b> (Rated values)<br>Type: Lead storage battery<br>Output voltage: 12 V DC<br>Lifetime: 4 years (normal conditions)<br>Connections: blade terminals 4,8 mm<br>Housing: plastic, impact- and break-resistant |                                            |           |                    |               |            |
|                                                                                     | <b>Options</b>                                                                                                                                                                                                                 |                                            |           |                    |               |            |
|                                                                                     | <table> <tr> <th>For Control Units with backup power supply</th><th>Part.-No.</th></tr> <tr> <td>2,2 / 2,3 Ah, 12 V</td><td><b>60.304</b></td></tr> <tr> <td>7 Ah, 12 V</td><td><b>60.305</b></td></tr> </table>               | For Control Units with backup power supply | Part.-No. | 2,2 / 2,3 Ah, 12 V | <b>60.304</b> | 7 Ah, 12 V |
| For Control Units with backup power supply                                          | Part.-No.                                                                                                                                                                                                                      |                                            |           |                    |               |            |
| 2,2 / 2,3 Ah, 12 V                                                                  | <b>60.304</b>                                                                                                                                                                                                                  |                                            |           |                    |               |            |
| 7 Ah, 12 V                                                                          | <b>60.305</b>                                                                                                                                                                                                                  |                                            |           |                    |               |            |

#### Feature / Equipment

- Maintenance free operation, long lasting durability, hight charging performance and long-cycle stability
- Disposal due to local, national or international rules (WEEE)
- **Note:** Always 2 batteries are required per Control Unit!

### Ventilation button 24 V

| Article                                                                           | Application:                                                                                                                                                                                                                                                                                                                                                                           | Part.-No.     |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|  | <b>Ventilation button</b> for connection to the ventilation inputs of SHEV or Natutal Ventilation Control Units.                                                                                                                                                                                                                                                                       | <b>60.302</b> |
|                                                                                   | <b>Technical Data</b> (Rated values)<br>Contact type: 2 NO push buttons<br>Switching capacity: 230 V AC / 10 A<br>Housing: plastic, white (similar to RAL 9016)<br>Dimensions (WxHxD):<br>Surface mounting: 81 x 81 x 54 mm<br>Flush mounting: 81 x 81 x 11 mm<br>Connections: Plug-in terminal 1,5 mm <sup>2</sup> (rigid wire)<br>Protection rating: IP20<br>Functions: OPEN / CLOSE |               |

#### Feature / Equipment

- Push buttons **without** mechanical locking, stop function when both buttons are pushed

### HSE – Break-glass Unit main control panel

| Article                                                                                            | Application:                                                                                                                                                                                               |                                      |                                 |
|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------|
| <div>ABS</div>  | <b>Break-glass Unit</b> with indicators and buttons for the manual control of the „Emergency OPEN“ and „Emergency CLOSE“ functions of a SHEV group, for connection in the detector line of a Control Unit. |                                      |                                 |
|                                                                                                    | <b>Technical Data</b> (Rated values)                                                                                                                                                                       |                                      |                                 |
|                                                                                                    | Operating voltage:                                                                                                                                                                                         |                                      | 24 V DC                         |
|                                                                                                    | Ambient temperature range:                                                                                                                                                                                 |                                      | -5°C ... + 40°C                 |
|                                                                                                    | Housing:                                                                                                                                                                                                   |                                      | Surface mounting, plastic (ABS) |
| Dimensions (WxHxD):                                                                                |                                                                                                                                                                                                            | 130 x 130 x 32 mm                    |                                 |
| Connections:                                                                                       |                                                                                                                                                                                                            | Screw terminal, 1,0 mm² (rigid wire) |                                 |
| Protection rating:                                                                                 |                                                                                                                                                                                                            | IP41                                 |                                 |
| Display:                                                                                           |                                                                                                                                                                                                            | Emergency OPEN, power, fault         |                                 |
| Control elements:                                                                                  |                                                                                                                                                                                                            | Buttons for Emergency OPEN / CLOSE   |                                 |
| <b>Options</b>                                                                                     |                                                                                                                                                                                                            |                                      |                                 |
| For Control Units with backup power supply                                                         |                                                                                                                                                                                                            |                                      | <b>Part.-No.</b>                |
| HSE grey                                                                                           | similar to RAL 7035                                                                                                                                                                                        |                                      | <b>60.200</b>                   |
| HSE red                                                                                            | similar to RAL 3000                                                                                                                                                                                        |                                      | <b>60.201</b>                   |
| HSE orange                                                                                         | similar to RAL 2011                                                                                                                                                                                        |                                      | <b>60.202</b>                   |

#### Feature / Equipment

- Lockable, glazed door (including key)
- Connection to the detector line input

### Optical smoke detector

| Article                                                                           | Application:                                                                                                                                                                                                                                                                                                                                                                            | Part.-No.     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|  | <b>Optical smoke detector</b> for the automatic early detection of fire and controlling of the „Emergency OPEN“ function via a detector line of SHEV Control Units.                                                                                                                                                                                                                     | <b>60.300</b> |
|                                                                                   | <b>Technical Data</b> (Rated values)<br>Measuring element: photo electric / scattered light principle<br>Operating voltage: 8,5 – 33 V DC<br>Standby current: < 100 µA<br>Housing: Surface mounting, plastic (ABS), pearl white<br>Dimensions (WxHxD): Ø 100 x 50 mm<br>Connections: Screw terminals 1,0 mm <sup>2</sup> (rigid wire)<br>Protection rating: IP23D<br>Display: Alarm LED |               |

#### Feature / Equipment

- Fire algorithms for avoiding false alarms, automatic alarm threshold tracking
- According to EN 54-7, Connection to the **detector line input**

### FAS Interface-Module

| Article                                                                             | Application:                                                                                                                                                                                                                                                                                                                                       | Part.-No.     |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|  | <b>Module</b> for the automatic control of the „Emergency OPEN“ function via volt free contact of a fire alarm system.                                                                                                                                                                                                                             | <b>60.301</b> |
|                                                                                     | <b>Technical Data</b> (Rated values)<br>Operating voltage: 24 V DC<br>Standby consumption: <10 mA<br>Ambient temperature range: 0 ... +40 °C<br>Housing: without, equipped circuit board<br>Dimensions (WxHxD): 27 x 19 x 13 mm<br>Connections: Screw terminal 1,5 mm <sup>2</sup> (rigid wire)<br>FAS contact: Normal OPEN switch at alarm status |               |

#### Feature / Equipment

- For connection to detector line input of SHEV Control Units, with line monitoring between Control Unit and module.

### Drive line end module

| Article                                                                           | Application:                                                                                                                                                                                                                                                          | Part.-No.     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|  | <b>Module</b> for installation in the last or only junction box for the line monitoring of drive line.                                                                                                                                                                | <b>60.306</b> |
|                                                                                   | <b>Technical Data</b> (Rated values)<br>Operating voltage: 24V DC (+/-5%)<br>Standby consumption: <10 mA<br>Ambient temperature range: 0 ... +70 °C<br>Housing: without, equipped circuit board<br>Dimensions (WxHxD): 27 x 19 x 13 mm<br>Connections: 3 single cores |               |

#### Feature / Equipment

- For connection into **drive line** of SHEV Control Units.

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Information (EPD Values)

| EPD Values    |                                    |                                 |                                    |                                  |                                                  |                                    |                                  |                                       |                                |                                     |
|---------------|------------------------------------|---------------------------------|------------------------------------|----------------------------------|--------------------------------------------------|------------------------------------|----------------------------------|---------------------------------------|--------------------------------|-------------------------------------|
|               | GWP<br>(green-house<br>potential)  | Ozone<br>depletion<br>potential | Acidifi-<br>cation<br>potential    | Eutrophi-<br>cation<br>potential | Photo-<br>chemical<br>oxidation<br>potential     | Abiotic<br>depletion<br>- elements | Abiotic<br>depletion<br>- fossil | Primary<br>energy<br>not<br>renewable | Primary<br>energy<br>renewable | Fresh-<br>water<br>consump-<br>tion |
|               | (GWP 100)                          | (ODP)                           | (AP)                               | (EP)                             | (POCP)                                           | (ADP <sub>el</sub> )               | (ADP <sub>fos</sub> )            | (PE <sub>n reg</sub> )                | (PE <sub>reg</sub> )           | (H <sub>2</sub> O)                  |
|               | kg CO <sub>2</sub> -<br>equivalent | kg R11-<br>equivalent           | kg SO <sub>2</sub> -<br>equivalent | kg PO <sub>4</sub> <sup>3-</sup> | kg C <sub>2</sub> H <sub>4</sub> -<br>equivalent | kg Sb-<br>equivalent               | MJ                               | MJ                                    | MJ                             | m <sup>3</sup>                      |
| Drives        |                                    |                                 |                                    |                                  |                                                  |                                    |                                  |                                       |                                |                                     |
| BDC Eco       |                                    |                                 |                                    |                                  |                                                  |                                    |                                  |                                       |                                |                                     |
| BDC Uni       | 1,30E+01                           | 6,05E-06                        | 4,65E-02                           | 3,53E-03                         | -3,80E-03                                        | 1,74E-03                           | 7,65E+03                         | 1,54E+02                              | 5,71E+01                       | 6,72E+01                            |
| BDC Pro 24 V  | 1,30E+01                           | 6,05E-06                        | 4,65E-02                           | 3,53E-03                         | -3,80E-03                                        | 1,74E-03                           | 7,65E+03                         | 1,54E+02                              | 5,71E+01                       | 6,72E+01                            |
| BDC Pro 230 V | 2,30E+01                           | 1,07E-07                        | 8,20E-02                           | 6,24E-03                         | -6,70E-03                                        | 3,06E-03                           | 1,35E+04                         | 2,73E+02                              | 1,01E+02                       | 1,19E+02                            |
| BDS Eco       | 3,83E+00                           | 1,78E-08                        | 1,37E-02                           | 1,04E-03                         | -1,12E-03                                        | 5,11E-04                           | 2,25E+03                         | 4,54E+01                              | 1,68E+01                       | 1,98E+01                            |
| BDS Uni 24 V  | 1,53E+01                           | 7,12E-08                        | 5,47E-02                           | 4,16E-03                         | -4,47E-03                                        | 2,04E-03                           | 9,00E+03                         | 1,82E+02                              | 6,72E+01                       | 7,90E+01                            |
| BDS Uni 230 V | 3,83E+00                           | 1,78E-08                        | 1,37E-02                           | 1,04E-03                         | -1,12E-03                                        | 5,11E-04                           | 2,25E+03                         | 4,54E+01                              | 1,68E+01                       | 1,98E+01                            |
| BDR Uni       | 1,15E+01                           | 5,34E-08                        | 4,10E-02                           | 3,12E-03                         | -3,35E-03                                        | 1,53E-03                           | 6,75E+03                         | 1,36E+02                              | 5,04E+01                       | 5,93E+01                            |
| BDL Uni       | 1,15E+01                           | 5,34E-08                        | 4,10E-02                           | 3,12E-03                         | -3,35E-03                                        | 1,53E-03                           | 6,75E+03                         | 1,36E+02                              | 5,04E+01                       | 5,93E+01                            |

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**LCA prepared by:** Life Cycle Engineering Experts  
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64295 Darmstadt, Germany

**Declaration holder:** BTR GmbH.

The declaration is based on the PCR (Product Category Rules) document „Building Components for Smoke and Heat Control Systems“ No. PCR-RW-1.1:2013.

LCA calculations were based on the „cradle to grave“ life cycle including all upstream processes (e.g. raw material extraction, etc.).

The reference service life has been specified to 25 years. The calculation of the life cycle scenarios is based on a service life of **50 years** per electrical device.

The life cycle was modelled using the sustainability software tool „GaBi6“ for the development of Life Cycle Assessments. For the consideration of the impact categories the characterisation factors of the ELCD (European Reference Life Cycle Database) were used.

In accordance with the REACH candidate list, no substances of very high concern are contained.

| EPD Values    |                                       |                                 |                                    |                                  |                                                  |                                    |                                  |                                       |                                |                                     |
|---------------|---------------------------------------|---------------------------------|------------------------------------|----------------------------------|--------------------------------------------------|------------------------------------|----------------------------------|---------------------------------------|--------------------------------|-------------------------------------|
|               | GWP<br>(green-<br>house<br>potential) | Ozone<br>depletion<br>potential | Acidifi-<br>cation<br>potential    | Eutrophi-<br>cation<br>potential | Photo-<br>chemical<br>oxidation<br>potential     | Abiotic<br>depletion<br>- elements | Abiotic<br>depletion<br>- fossil | Primary<br>energy<br>not<br>renewable | Primary<br>energy<br>renewable | Fresh-<br>water<br>consump-<br>tion |
|               | (GWP 100)                             | (ODP)                           | (AP)                               | (EP)                             | (POCP)                                           | (ADP <sub>el</sub> )               | (ADP <sub>fos</sub> )            | (PE <sub>n reg</sub> )                | (PE <sub>reg</sub> )           | (H <sub>2</sub> O)                  |
|               | kg CO <sub>2</sub> -<br>equivalent    | kg R11-<br>equivalent           | kg SO <sub>2</sub> -<br>equivalent | kg PO <sub>4</sub> <sup>3-</sup> | kg C <sub>2</sub> H <sub>4</sub> -<br>equivalent | kg Sb-<br>equivalent               | MJ                               | MJ                                    | MJ                             | m <sup>3</sup>                      |
| Control Units |                                       |                                 |                                    |                                  |                                                  |                                    |                                  |                                       |                                |                                     |
| BCR 2A        | 4,31E+01                              | 6,03E-06                        | 3,85E+02                           | 3,48E+01                         | 2,46E+01                                         | 6,07E-02                           | 4,65E+02                         | 5,89E+02                              | 1,36E+02                       | 2,12E+01                            |
| BCR 4A        | 4,31E+01                              | 6,03E-06                        | 3,85E+02                           | 3,48E+01                         | 2,46E+01                                         | 6,07E-02                           | 4,65E+02                         | 5,89E+02                              | 1,36E+02                       | 2,12E+01                            |
| BCR 8A        | 1,72E+02                              | 2,41E-05                        | 1,54E+03                           | 1,39E+02                         | 9,84E+01                                         | 2,43E-01                           | 1,86E+03                         | 2,36E+03                              | 5,44E+02                       | 8,49E+01                            |
| BCR 12A       | 1,72E+02                              | 2,41E-05                        | 1,54E+03                           | 1,39E+02                         | 9,84E+01                                         | 2,43E-01                           | 1,86E+03                         | 2,36E+03                              | 5,44E+02                       | 8,49E+01                            |
| Controllers   |                                       |                                 |                                    |                                  |                                                  |                                    |                                  |                                       |                                |                                     |
| HSE           | 7,18E-02                              | 1,00E-08                        | 6,42E-01                           | 5,81E-02                         | 4,10E-02                                         | 1,01E-04                           | 7,75E-01                         | 9,82E-01                              | 2,27E-01                       | 3,54E-02                            |

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9000032701 - V0.1 - KW14.2020