



# Technical data

Black-out systems



***Der SonnenLichtManager***

Valid from 01.04.2019



## General information

### Technical data, valid from 01.04.2019.

The publication of this document supersedes all previous corresponding documents. Our general terms and conditions (GTC) can be viewed and downloaded on our homepage at <http://www.warema.de/agb>.

We reserve the right to make changes in the interest of technical progress. Particular care was taken in producing the text and graphics in this documentation. In spite of this, we cannot accept liability for any existing (printing) errors, mistakes or the consequences thereof.

Printing errors, changes and deviations from the technical specifications and product presentation are possible due to the individual structural conditions and apply to all the products included in this brochure.

Our products are individual or made-to-measure items and therefore cannot be exchanged or returned.

### Safety instructions

Please see detailed information in the technical data or in the installation and operating instructions.

### Imprint

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Germany

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# SunLight Management by WAREMA

## Because the sun cannot be controlled.

We at WAREMA are passionate about sunlight. We want everyone to be able to enjoy their preferred atmosphere of light and warmth at home and in their workplace. That is why we are developing a complete range of sun shading products for indoors and outdoors, as well as modern control systems and innovative technologies to enable exactly that.

As well as comfort, sustainability is especially important to us in this process. The intelligent sun shading control significantly reduces energy consumption for heating and artificial lighting. We offer the right package for everyone, whatever the individual requirements may be.





## Our service makes the difference

In order to ensure the best design and the highest quality, we develop and produce our products in Germany and place great value on optimum production conditions. Our demand for perfection is driven by our enthusiasm for engineering and our love of details. Advice and service are just as important to us. Whether before, during or after your purchase - our combined expert knowledge, a close-knit customer service network and comprehensive sales and planning support guarantee the best individual solution.

## An intelligent solution for every requirement



### Home Comfort

An individual atmosphere of well-being makes life more pleasant. WAREMA external venetian blinds, roller shutters and window awnings ensure the right mood lighting in the room and keep the heat out.



### Interior Design

Sunlight is good for you – in controlled doses. This is guaranteed by the internal sun shading solutions from WAREMA, which are ideally suited to your individual purpose.



### Outdoor Living

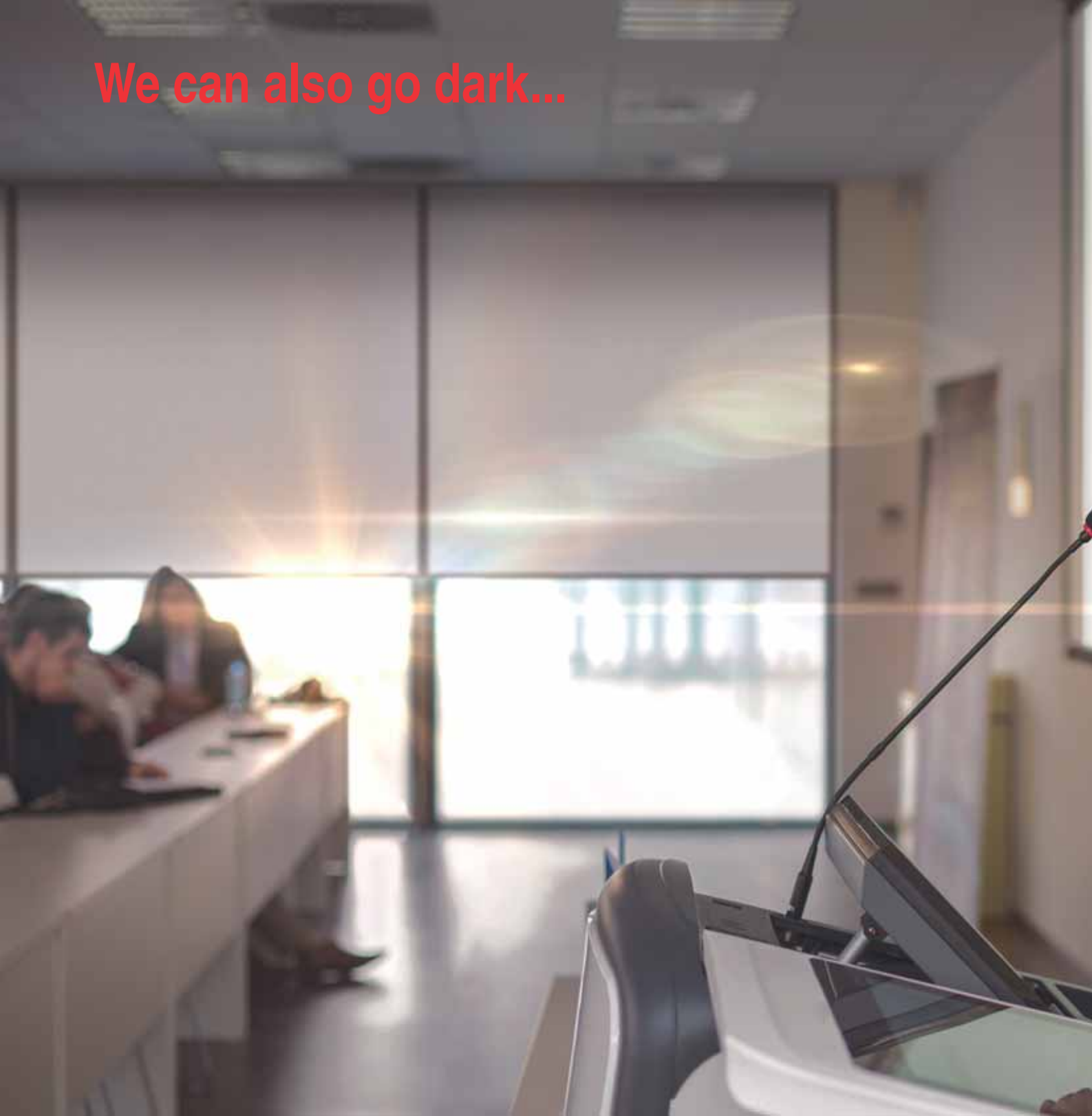
With awnings, sun sails or slat roofs you can use open spaces to relax and extend your living space to the outdoors. This makes your patio, conservatory or green oasis a space where you can live out and feel in.



### Smart Home

How convenient to be able to control your comfort at the touch of a button. Intelligent control systems take over operation almost completely, fully automatically and energy-efficiently. Life is easy with WAREMA!

**We can also go dark...**



**... and right up to 100 %.**

If a room needs to be completely blacked out for a certain application, you will find the perfect solutions at WAREMA.



Our highlights for you:



## Classrooms

Large windows fulfil the brightness requirement for an optimal learning environment. All the same, with our black-out systems, classrooms can be completely darkened if necessary.



## Meeting rooms

Perfect presentation possibilities can be created with our textile black-out systems – these reliably prevent a disruptive incidence of light on projection screens, for example.



## Laboratory spaces

Vertical black-out systems black out rooms to any desired level up to 100 %. For applications with increased requirements for resistance to cleaning and disinfection agents, they can be equipped with specialised fabric qualities.



# myWAREMA

## One platform. Everything at a glance.

Do you want to make your day-to-day work more effective and efficient? With our online platform myWAREMA, that is no problem. From order processing to software tools and even practical seminars, you will find everything at a glance. You can access your account at any time with the protection from your personal access data – even when you are on the move using a smartphone or tablet!

myWAREMA is convenient, fast and safe in its offering of optimum support for your day-to-day business and has since become a permanent component in the business routine of many of our customers. You will also benefit as a WAREMA partner from the many advantages of modern digital communication and our comprehensive online service.

Not registered yet? Sign up now at [my.warema.com](https://my.warema.com) and see it for yourself!





## Your benefits with myWAREMA

- Intuitive product configuration
- Fast and safe quotation and ordering processes
- Current delivery time information
- Comfortable account management
- Numerous interactive planning aids
- Perfect sales and advertising support
- Extensive range of seminars

## Do you have any questions?

Get in contact with our expert team.

Phone +49 9391 20-8080

[my@warema.com](mailto:my@warema.com)



### Innovative ordering platform

Shape your work routine to be more efficient. The order and quotation processing is possible practically effortlessly online thanks to an intuitive user guide and product configuration. With just one click you can find your personal quotation and order history at any time, as well as your individual conditions and so much more.



### Optimum sales support

Use our interactive software tools in the consultation, planning and sale of our sun shading systems. All programmes and planning aids are clearly designed. Optimise your processes!



### Promotionally effective presence

You can conveniently recall information on current advertising campaigns, practical sales documents as well as eye-catching photo material and templates online. Find the perfect advertising support for your sales success.



### Practical tutorials

Choose your desired seminar from our comprehensive and practical tutorial range and book conveniently and easily online. Qualified advanced training today is as simple as that!



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# The WAREMA Colour World

## Available for all powder-coated aluminium parts

Colour deviations are due to printing technology

Choose the perfect shade from over 200 attractive powder colours for the powder-coated aluminium parts such as guide rails, cover panels, profiles or boxes. The clearly arranged categories Highlight, Variation and Individual optimise your process of consultation and help to find the right colour for the individual sun shading system quickly and easily.

### Categories

#### Highlight

12 RAL and DB basic colours form the foundation of the WAREMA Colour World. We offer you selected standard colours, which satisfy all of the latest colour trends.

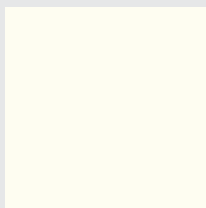
#### Variation

Make use of this opportunity to vary your design with a further 50 RAL basic colours and four surfaces. Any special colour concept can be realised.

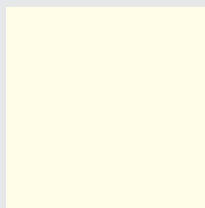
#### Individual

Over 200 additional colours complete the WAREMA Colour World and offer greater individuality. This means no wishes are left unfulfilled.

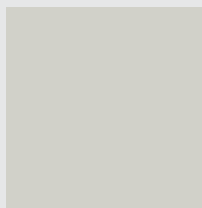
### Highlight Category



RAL 9016



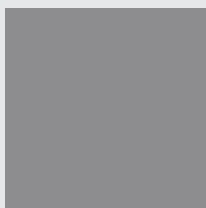
RAL 9010



RAL 7035



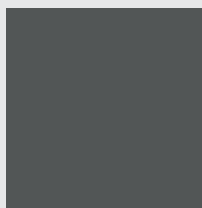
RAL 9006



RAL 9007



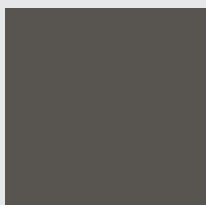
DB 702



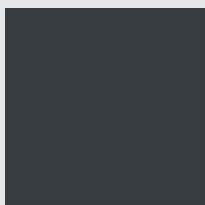
RAL 7012



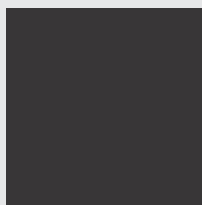
RAL 7015



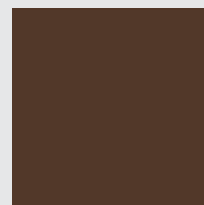
DB 703



RAL 7016



RAL 7021



RAL 8014

The displayed colours from the Highlight category form the basis of the WAREMA Colour World. The extended colour selection for the Variation and Individual categories can be found on the following page.





## Surface qualities

The various surfaces along with the comprehensive colour selection offer you the perfect opportunity to realise the individual wishes of customers. Choose from five surface qualities in order to perfectly optically adapt the gloss level and texture to the corresponding structural condition. The exceptional coating quality ensures longevity - independently tested by the German Quality Association for the Coating of Building Materials (GSB). The surface coating with chrome-free pretreatment is compliant with the directive GSB AL 631.

You can find more information at [www.warema.com](http://www.warema.com)



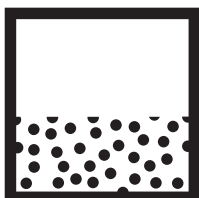
### Satin finish

Satin finish is a slightly glossy surface with a smooth finish and optimal light and weather resistance.



### Matt

A matt surface is distinguished by its smooth matt finish and optimal light and weather resistance.



### Fine texture

The fine text surface quality has striking effects and optimum light and weather resistance of the surface.



### Highly weather-resistant matt and fine texture

The highly weather-resistant surfaces in matt or fine texture are characterised by significantly improved weathering behaviour with regard to gloss retention, weathering, chalking and colour stability.

# The WAREMA Colour World

























































## Available for all powder-coated aluminium parts

Colour deviations are due to printing technology


### Variation Category

							
RAL 9003	RAL 9001	RAL 1015	RAL 1001	RAL 1019	RAL 7044	RAL 9002	RAL 7047
							
RAL 7038	RAL 7036	RAL 7004	RAL 7001	RAL 7040	RAL 7045	RAL 7042	RAL 7046
							
RAL 7037	RAL 7030	RAL 7039	RAL 7005	RAL 7043	RAL 7022	RAL 7024	RAL 7011
							
RAL 7031	RAL 5014	RAL 5007	RAL 5009	RAL 5010	RAL 5002	RAL 5011	RAL 6005
							
RAL 6009	RAL 3000	RAL 3003	RAL 3004	RAL 3009	RAL 8001	RAL 8003	RAL 8007
							
RAL 8011	RAL 8016	RAL 8017	RAL 8019	RAL 8022	RAL 8077	RAL 9011	RAL 9004
							
RAL 9005	RAL 9017						

## Individual Category

												
Trend Colour (DM 05)	Antique white marble	RAL 9018	W 4914	VEKA Spectral Light grey	RAL 9006	RAL 7004	RAL 9022	RAL 9007	W 4915	RAL 9023	DB 701	VEKA Spectral Dark grey
												
ALESTA Grey	DB 704	VEKA Spectral Brown	Sparkling Iron Effect medium	W 4916	RAL 7010	RAL 7048	WC 31	RAL 7023	RAL 7033	RAL 7009	RAL 7003	WC 32
												
RAL 7013	WC 33	RAL 6014	RAL 7329	W 7329	RAL 8019	ALESTA Brown	W 4918	W 4919	RAL 8017	Rusted Iron HWR	RAL 8028	RAL 8025
												
RAL 8008	RAL 8024	RAL 8003	RAL 8002	RAL 8015	Rust Metallic HWR	RAL 8001	RAL 1011	RAL 8023	RAL 8004	RAL 8029	RAL 8012	Rust-Brown Metallic
												
W 4922	RAL 7006	RAL 8000	RAL 1036	RAL 7008	RAL 1035	RAL 7032	Sable BL 961	Beige Metallic	Quartz 2 Satine	Desert Beige	RAL 1013	W 4800
												
RAL 1014	RAL 1002	RAL 1024	RAL 1027	RAL 1005	RAL 1012	W 4912	RAL 1016	RAL 1018	RAL 1023	RAL 1021	RAL 1032	RAL 1004
												
RAL 1003	RAL 1017	RAL 1006	RAL 1007	RAL 1037	RAL 1028	RAL 1033	RAL 1034	RAL 2000	RAL 2011	RAL 2003	RAL 2008	RAL 2009
												
RAL 2004	RAL 2010	RAL 2001	RAL 2012	RAL 3022	RAL 3012	RAL 2013	RAL 3033	RAL 3016	RAL 2002	RAL 3020	RAL 3001	RAL 3002
												
RAL 3013	RAL 3011	RAL 3032	RAL 3004	W 3005	RAL 3005	RAL 3007	RAL 3015	RAL 3014	RAL 3017	RAL 3018	RAL 3027	RAL 3031
												
RAL 4002	RAL 4004	RAL 4007	W 4911	RAL 4009	RAL 4001	RAL 4011	RAL 4005	RAL 4003	RAL 4010	RAL 4006	RAL 4008	W 4913 (DM 04)
												
RAL 4012	RAL 5022	RAL 5013	RAL 5003	RAL 5026	RAL 5000	RAL 5007	RAL 5023	RAL 5014	RAL 7000	RAL 5024	RAL 5012	RAL 5015
												
RAL 5005	RAL 5017	RAL 5019	RAL 5025	RAL 5001	W 4920	RAL 5008	W 4917	RAL 5004	RAL 6027	RAL 6034	RAL 6033	RAL 5018
												
RAL 5021	DB 502	RAL 5020	RAL 6004	DB 603	W 4921	ALESTA Green	RAL 6005	Trend Colour (DM 01)	RAL 6028	RAL 6036	RAL 6026	RAL 6000
												
RAL 6016	RAL 6029	RAL 6032	RAL 6024	RAL 6019	RAL 6021	RAL 6011	RAL 6035	RAL 6002	RAL 6001	RAL 6017	RAL 6018	RAL 6010
												
RAL 6025	RAL 6013	RAL 7002	RAL 7034	RAL 1020	RAL 1000	RAL 6003	RAL 6020	RAL 6007	RAL 6012	RAL 7026	RAL 6006	RAL 6022
												
RAL 6008	RAL 6015	WC 34	Trend Colour (DM 02)	Trend Colour (DM 03)	P7 Iron mica effect							

## Colours

Design no.	Curtain colour			Curtain suitable for use in		
		inside	outside	VDA 13	VDA ZIP	H-VDA
<b>Textile fabric</b>						
1000		White	Silver	●	–	●
1001		Grey	Silver	●	–	●
1002		Beige	Silver	●	–	●
1004		Black	Silver	●	–	●
1005		White	White	●	–	●
<b>Soltis B92</b>						
B92-1043		Brown	Silver	●	●	–
B92-1044		White	Silver	●	●	–
B92-1045		Silver-black	Silver	●	●	–
B92-1046		Silver	Silver	●	●	–
B92-2135		Sand beige	Silver	●	●	–
B92-2171		Pebble stone	Silver	●	●	–
<b>Glass fibre curtain</b>						
1200 <sup>1)</sup>		Grey	Silver	○	–	○

<sup>1)</sup> In contrast to textile fabrics and Soltis B92, glass fibre fabrics are subject to surcharge!  
Colour deviations are due to printing technology!

### Legend

- standard
- optional
- not possible

The black-out blinds are light-fast and infrared proof. Sealed welded pockets contain aluminium round profiles, which provide added stiffening. Fabric no. 1004 is perfectly suitable for darkrooms, laboratories and X-ray rooms. This and all other textile fabrics are flame resistant according to DIN 4102-1 B1.

The glass fibre fabric PTFE (polytetrafluorethylene) is laminated and classified as non-flammable according to DIN 4102-1 A2.

The Soltis B92 fabric is flame resistant according to DIN 4102-1 B1. Stiffener rods are not required when using this fabric in combination with VDA ZIP (zip system).





## CE mark

Motorised external and internal sun shading systems are subject to the Machinery Directive 2006/42/EC. An EC Declaration of Conformity is available for these products. All products subject to the Machinery Directive and/or the Construction Products Regulation have a CE label.



Manually operated internal sun shading systems are not subject to any of these two directives or regulations and therefore must not be marked with a CE label. External or internal sun shading systems correspond to the appropriate standard that regulates the details thereof: DIN EN 13659, DIN EN 13561 or DIN EN 13120.

## Durability

All WAREMA products are designed to be especially durable. All WAREMA products fulfil the durability classes 2 or 3 as standard, tested according to DIN EN 14201. All WAREMA external venetian blinds without exception fulfil the highest durability class (3) according to DIN EN 13659, with 10000 movements and a total of 20000 slat turns. Assuming two movement cycles per day, this is equivalent to a minimum expected durability of approximately 15 years.

## 230 V lines

All 230 V lines fulfil Euro class Fca. Special lines are to be requested if necessary.

## Notes

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Black-out blind VDA 13

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## Description

### Black-out blind VDA 13

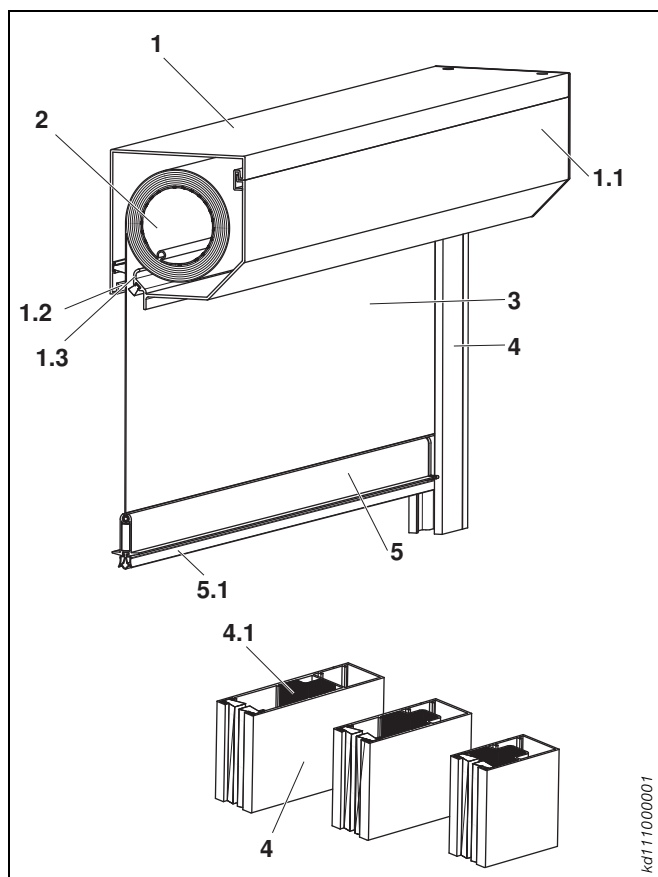


fig. 1: Structure of prefabricated black-out blind

- 1 Box**
  - 1.1 Inspection cover**
  - 1.2 Outlet gap with brush seal**
  - 1.3 Unwind strip**
- 2 Shaft**
- 3 Black-out blind**
- 4 Lateral guidance**
  - 4.1 Core profile**
- 5 End rail**
  - 5.1 Sealing strip**

### Application

For complete darkening of rooms, e.g. laboratories, X-ray rooms and operating theatres. Installation inside the room on vertical glass surfaces.

### Operation

#### Basic motor, 230 V, 50 Hz

LT50 with mechanical limit switch-off

#### Motor with connection for additional crank operation

(optional, only in connection with guide rail 90-28, box size 15 and cable exit vertical)

LT50 Motor with connection for additional crank operation with mechanical limit switch-off

#### With emergency retraction (optional)

P9/16CM with mechanical limit switch-off

#### EWFS radio motor, 230 V, 50 Hz (optional)

W-MP with electronic limit switch-off; EWFS Hand-held transmitter 1 channel comprised

#### WMS radio motor, 230 V, 50 Hz (optional)

WMS-MP with electronic limit switch-off; WMS Hand-held transmitter basic comprised

#### Attention: Limited drive possibilities with box size 9!

More information about the motors from page 79

### Crank

Crank rod with collapsible crank

Material: aluminium

Surface: C0 anodised, optional powder coating in RAL 9016 or C34 anodised

Detailed description of types of drive and operating types, Page 29.

### Box (1)

4 box sizes, closed on 4 sides

Material: aluminium, extruded; die-cast aluminium side covers

Dimensions: see cross-sections

Surface: powder-coated

Maximum box width 6000 mm.

Available as right or left rolling blind.

Concealed box cut edges.

#### Inspection cover (1.1)

Material: aluminium, extruded

Surface: powder-coated

#### Outlet gap with brush seal (1.2)

Dimensions (L): Brush seal 20 mm

Colour: black

#### Unwind strip (1.3)

Material: aluminium, extruded

Surface: powder-coated

### Box sizes

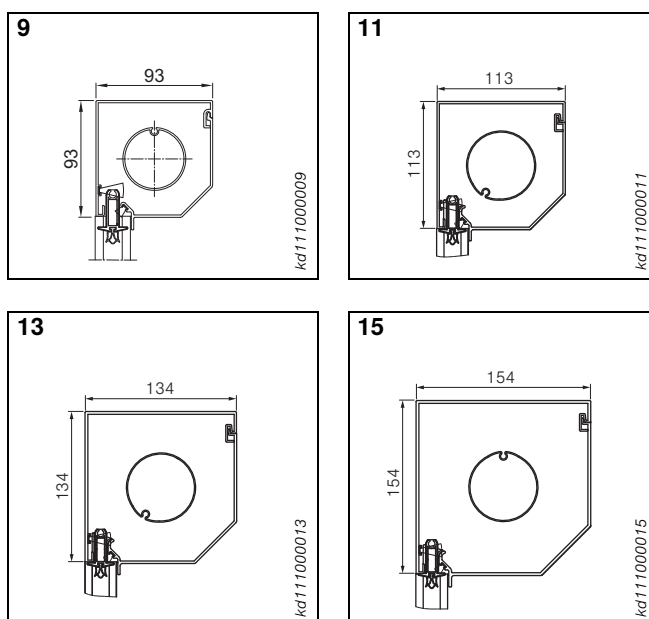


fig. 2: Box sizes



## Description

### Black-out blind VDA 13

#### Shaft (2)

Material:	aluminium (Ø50) with box size 9 and/or steel (Ø61 to 3500 mm, Ø78 mm to 3500 mm order width), for box size 11 – size 15
Material thickness:	1.5 mm at Ø50 mm 1 mm at Ø61 and 78 mm
Profile:	groove tube
Surface:	plain (aluminium), galvanised (steel)

#### Black-out blind (3)

100 % opaque, light-fast, infrared-safe

##### Textile fabric

flame-resistant according to DIN 4102-1 B1

Material:	base material made of Trevira CS, with bonded pockets to stiffen 3 x 10 mm spaced 750 mm or 400 mm for widths over 3500 mm.
Surface inside:	textile (coloured), according to current colour chart for WAREMA black-out blinds. See also colour overview page 12.
Surface outside:	PVC (silver or white)

##### Soltis B92

flame-resistant according to DIN 4102-1 B1

Material:	polyester fabric with PVC coating inside and outside. Stiffeners spaced 750 mm or 400 mm for widths over 3500 mm.
Surface inside:	coloured, according to current colour chart for WAREMA black-out blinds. See also colour overview page 12.
Surface outside:	silver
Fabric properties:	dirt-repellent, highly tear-resistant, high diagonal stability, resistant to UV rays

##### Glass fibre curtain

non-flammable according to DIN 4102-1 A2

Material:	laminated with PTFE (Polytetrafluorethylene), with bonded pockets to stiffen 3 x 10 mm spaced 690 mm or 400 mm for widths over 3000 mm (as in description for Soltis B92).
Surface inside:	grey, according to current colour chart for WAREMA black-out blinds. See also colour overview page 12.
Surface outside:	silver

##### Arrangement of stiffener rods

Right rolling blind on outside of curtain

Left rolling blind on inside of curtain

#### Lateral guidance (4)

##### Guide rails

with core profile and brush seal

Material:	aluminium, extruded
Dimensions (W x D):	depending on width 50 – 28 mm, 70 – 28 mm or 90 – 28 mm
Surface:	powder-coated

Construction limit values for each guide rail see page 22.

##### Core profile (4.1)

for guide rails

Material:	PVC, hard
Colour:	black

#### End rail (5)

Material:	aluminium, extruded
Surface:	powder-coated

A black-out I-rail is recommended for highly reflective surfaces to avoid light reflections.

#### Sealing strip (5.1)

for end rail

Material:	TPE
Colour:	black

#### Colours

Powder coating of the aluminium parts with chrome-free pre-treatment according to valid RAL CLASSIC colour chart (except camouflage and luminous colours) or in six DB colours as well as eight textured colours (W4914–W4921), four anodised-look colours (WC31–WC34) according to WAREMA Colour World (in WAREMA colour specification). Other colour specifications, special colours and anodisation are available on request at a surcharge. Curtain colours in accordance with WAREMA colour chart for black-out blinds. See also overview page 12. All visible plastic parts are black.

#### Accessories

##### Horizontal ceiling connection

for installation in suspended ceilings. For details, see page 36.

##### Black-out I-rail

as a rest for the end rail for flush and light-proof closure. For details see page 33 and 40.

##### Rear ventilation profiles

prevent heat accumulation between window and black-out blind for boxes and guide rails. For details see from page 37.

#### General information

All materials are resistant to UV rays and corrosion proof.

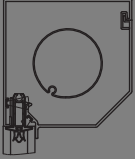
#### Order forms

Current order forms can be found in the Sun Shading Planner or on the customer portal.

## Construction limit values

### Black-out blind VDA 13

Use our free planning program at [www.sunshadingplanner.com](http://www.sunshadingplanner.com) to plan your sun shading systems – here you can configure the product and create a technical drawing to be integrated into your plans.

VDA 13	Limit values			Operating types and max. areas in m <sup>2</sup>						
	max. width in mm	max. height in mm	Max. area Individual unit in m <sup>2</sup>	Crank (box size 11 and up)	Motor (box size 9)	Motor (box size 11 and up)	EWFS/WMS radio motor (box size 11 and up)	Motor with connection for additional crank operation (guide rail 90-28, box size 15)	High-speed motor (box size 11 and up)	Motor with emergency retraction (max. W x H 2200 x 200 mm)
Textile fabric B1	4500 <sup>1)</sup>	6000 <sup>1)</sup>	12.0	6.0	8.0	35.0	35.0	35.0	12.0	4.8
Glass fibre curtain A2										
Soltis B92										
min. order width in mm				600	680	640	680	800	720	1455

<sup>1)</sup> The maximum construction limit values also depend on the width-to-height ratio. Please refer to the following table "Construction limit values for each box size".

#### Notes:

- A maximum of 3 curtains can be coupled.
- Coupling not possible when using box size 9!
- From box size 11 the coupling is infinitely adjustable to allow adjustment of simultaneous running of the blinds.
- If motor limit position recognition is used, the minimum order width increases by 170 mm. The motor limit position recognition is a low-voltage sensor for points of the path determined for each customer (the factory setting is the upper and lower limit position of the path of the curtain).
- For box size 9 the plug-in connector is mounted externally and therefore visible.

### Construction limit values for each box size

taking into account the width-to-height ratio

Box size	max. width in mm	max. height in mm		Shaft diameter in mm
	Textile/glass fibre curtain/Soltis B92	Textile/glass fibre curtain	Soltis B92	
9	3000	2600	2000	50
11	3500	4000	3400	61
13	3500	5000	4000	61
	4500			78
15	3500	6000	5000	61
	4500			78

### Max. order widths per guide rail in mm

Guide rail	max. order width VDA for textile fabric, glass fibre curtain and Soltis B92 in mm
50-28	2500
70-28	3500
90-28	from 3501

## Area diagram

## Black-out blind VDA 13 with textile and glass fibre curtain

Maximum dimensions for individual areas for textile and glass fibre curtain in mm

Height	Width																		max. width when using guide rail FSCH 50-28 ▶	
	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	
1500																				
1600																				
1700																				
1800																				
1900																				
2000																				
2100																				
2200																				
2300																				
2400																				
2500																				
2600		Box size 9																		
2700																				
2800																				
2900																				
3000																				
3100																				
3200																				
3300																				
3400																				
3500																				
3600																				
3700																				
3800																				
3900																				
4000		Box size 11																		
4100																				
4200																				
4300																				
4400																				
4500																				
4600																				
4700																				
4800																				
4900																				
5000		Box size 13*																		
5100																				
5200																				
5300																				
5400																				
5500																				
5600																				
5700																				
5800																				
5900																				
6000		Box size 15*																		

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## Area diagram

### Black-out blind VDA 13 with textile and glass fibre curtain

#### Maximum dimensions for individual areas for textile and glass fibre curtain in mm

Height	Width										max. width when using guide rail FSCH 70-28 ▶										▶ from 3501 mm guide rail FSCH 90-28									
	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500											
1500	max. width when using the shaft D50				max. width when using the shaft D61						max. width when using the shaft D78																			
1600																														
1700																														
1800																														
1900																														
2000																														
2100																														
2200																														
2300																														
2400																														
2500																														
2600	Box size 9										Box size 13 or 15*																			
2700																														
2800																														
2900																														
3000																														
3100																														
3200																														
3300																														
3400																														
3500																														
3600																														
3700																														
3800																														
3900																														
4000	Box size 11																													
4100																														
4200																														
4300																														
4400																														

Box size 3 or 15\*

Box size 3 or 15\*

\*From box size 13 the required box depends on the height as well as on the width (shaft size). Please also note the table "Construction limit values for each box size" on page 22.



## Area diagram

## Black-out blind VDA 13 with Soltis B92

## Maximum dimensions for individual areas in mm for Soltis B92

Height	Width																		max. width when using guide rail FSC 50-28 ▶	
	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	
1500																				
1600																				
1700																				
1800																				
1900																				
2000		Box size 9																		
2100																				
2200																				
2300																				
2400																				
2500																				
2600																				
2700																				
2800																				
2900																				
3000																				
3100																				
3200																				
3300																				
3400		Box size 11																		
3500																				
3600																				
3700																				
3800																				
3900																				
4000																				
4100																				
4200																				
4300																				
4400																				
4500																				
4600																				
4700																				
4800																				
4900																				
5000		Box size 13*																		
5100																				
5200																				
5300																				
5400																				
5500																				
5600																				
5700																				
5800																				
5900																				
6000		Box size 15*																		

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## Area diagram

### Black-out blind VDA 13 with Soltis B92

#### Maximum dimensions for individual areas in mm for Soltis B92

Height	max. width when using guide rail FSCH 70-28 ▶										▶ from 3501 mm guide rail FSCH 90-28									
	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	
1500	max. width when using the shaft D50						max. width when using the shaft D61										max. width when using the shaft D78			
1600																				
1700																				
1800																				
1900																				
2000	Box size 9																			
2100																				
2200																				
2300																				
2400																				
2500											Box size 13 or 15*									
2600																				
2700																				
2800																				
2900																				
3000																				
3100																				
3200																				
3300																				
3400	Box size 11																			
3500																				
3600																				
3700	Box size 13 or 15*																			
3800																				
3900																				
4000																				
4100																				
4200																				
4300																				
4400																				

\*From box size 13 the required box depends on the height as well as on the width (shaft size). Please also note the table "Construction limit values for each box size" on page 22.

## Dimension determination/order data

### Black-out blind VDA 13

#### Right rolling blind in the reveal

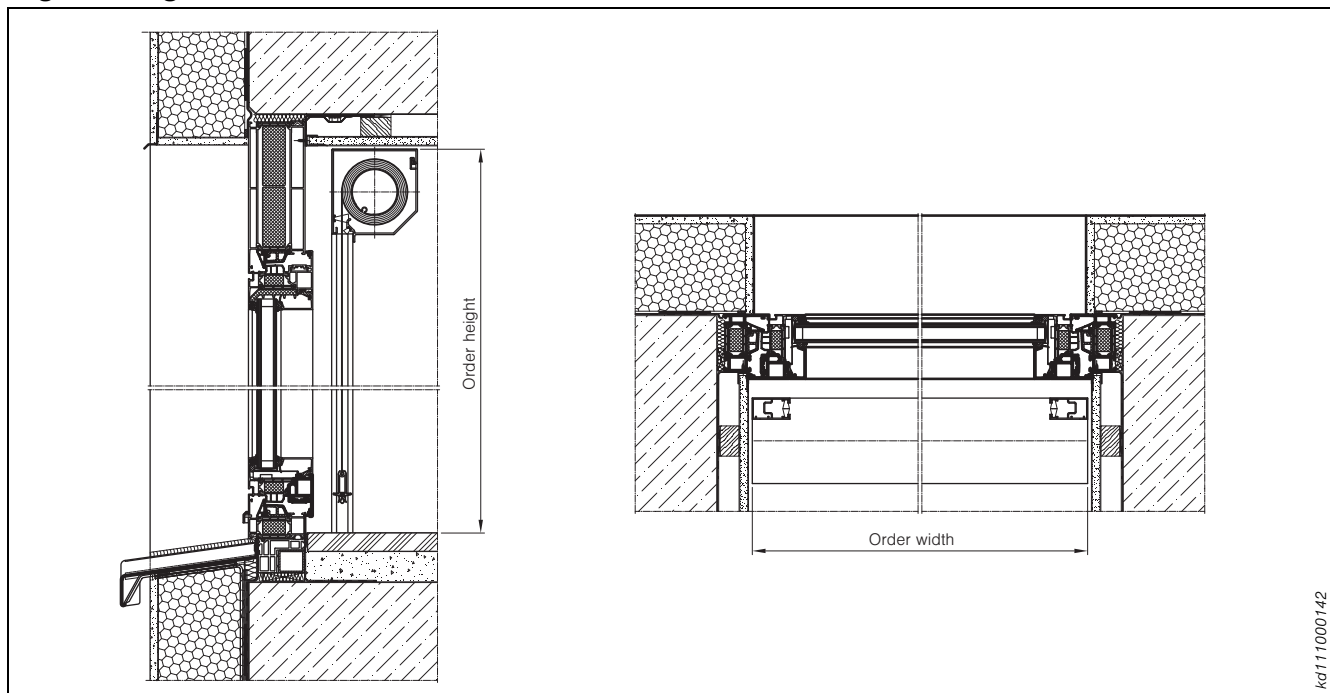


fig. 3: Right rolling blind

#### Left rolling blind in the reveal

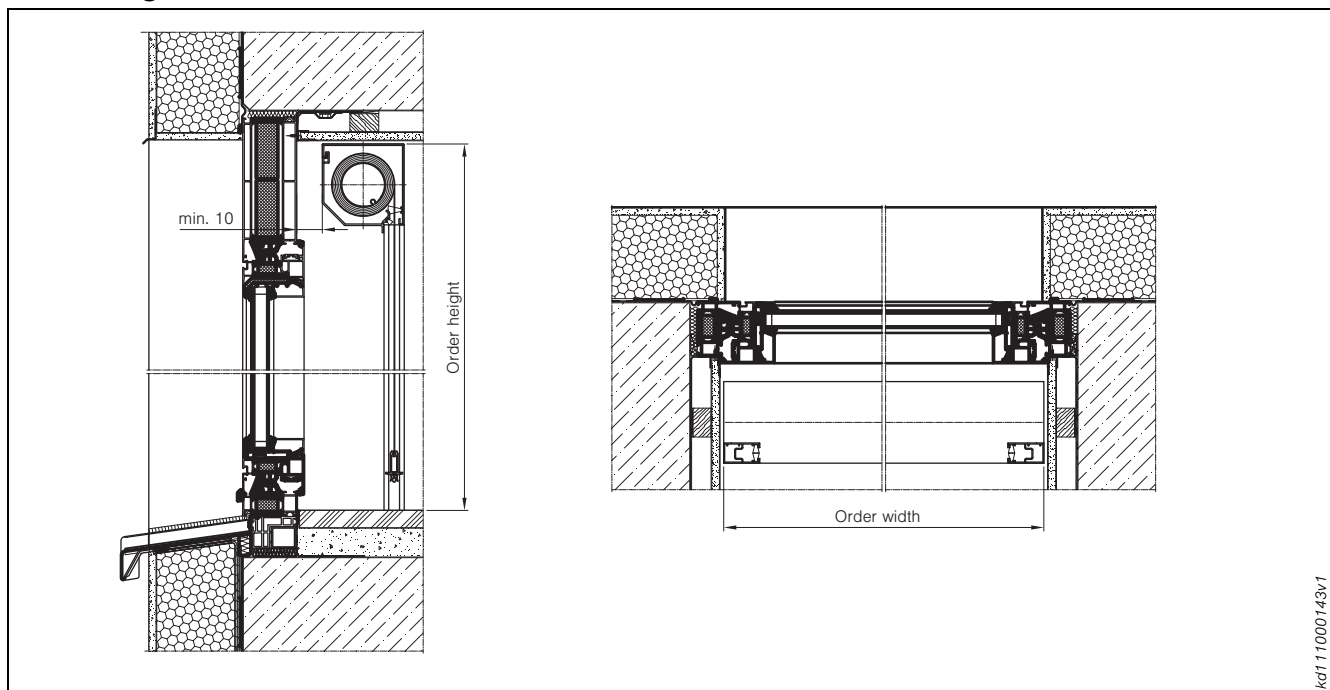


fig. 4: Left rolling blind

#### Note on general order data

- Order width = back edge of the guide rails
- Order height = bottom edge of guide rail to top edge of box
- Operation side, seen from inside
- See Page 37 f. when using rear ventilation profiles!
- See Page 40 when using black-out I-rail!
- Specify box size if not standard (see construction limit values)

## Order data for combinations

### Black-out blind VDA 13

#### Order data for centre rail 100-28, 140-28, 180-28

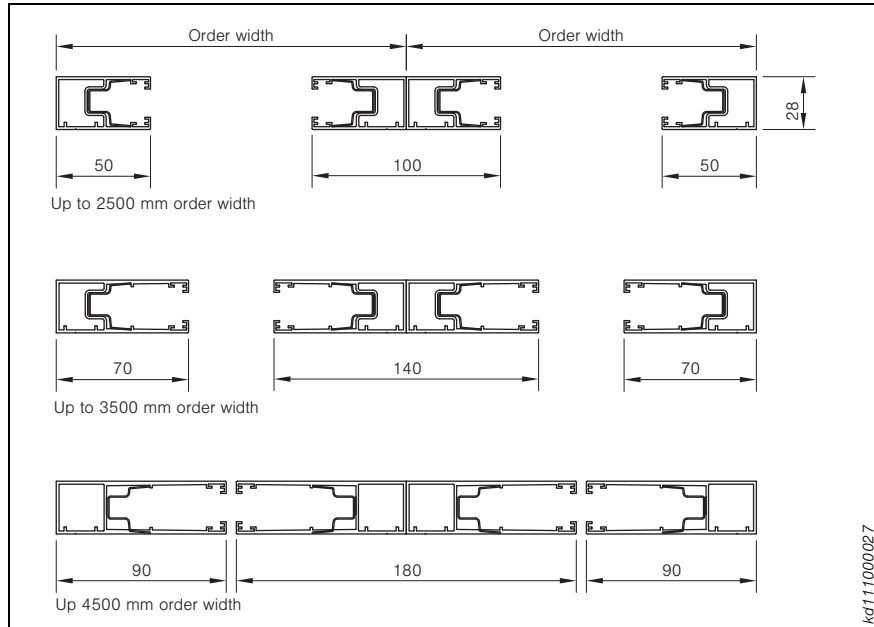


fig. 5: Order data for centre rail

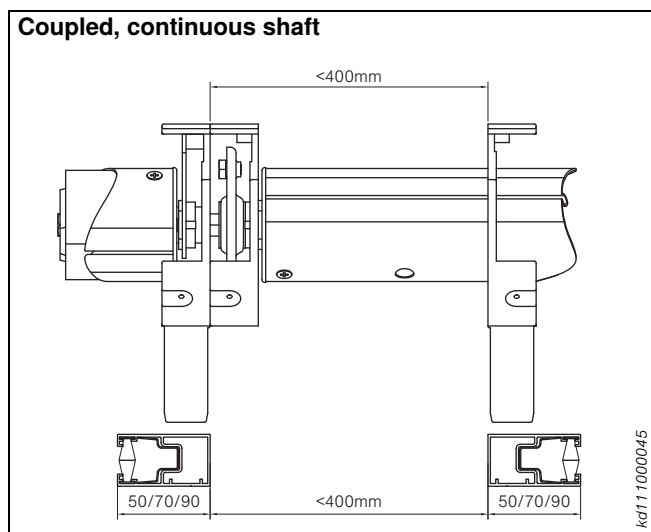


fig. 6: Continuous box with type 7 box extension, continuous shaft

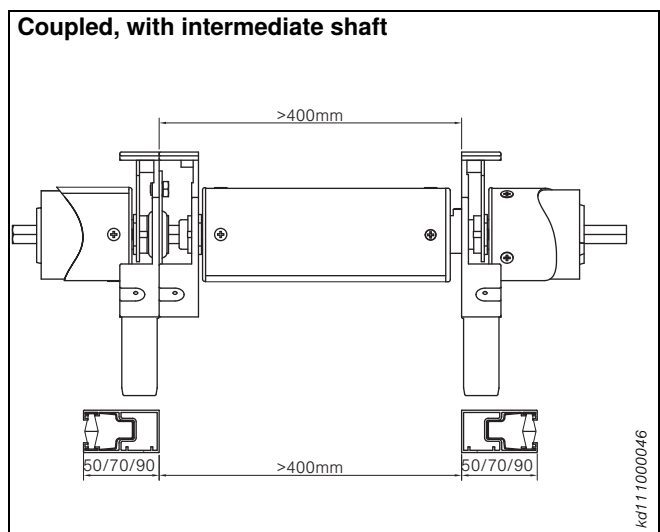


fig. 7: Continuous box with type 7 box extension, separate intermediate shaft

#### Note for combinations:

- Order data always as seen from the inside from left to right
- Enter on order form:
  - 2-piece units:
    - A** Beginning – **E** End
  - 3-piece units:
    - A** Beginning – **M** Intermediate pos. – **E** End position
- Always with continuous box, extruded, closed on 4 sides up to 6000 mm
- Optionally box to box up to 6000 mm (coupled on-site)

## Operating details

### Black-out blind VDA 13

#### Crank, internal, for size 11 to 15 box

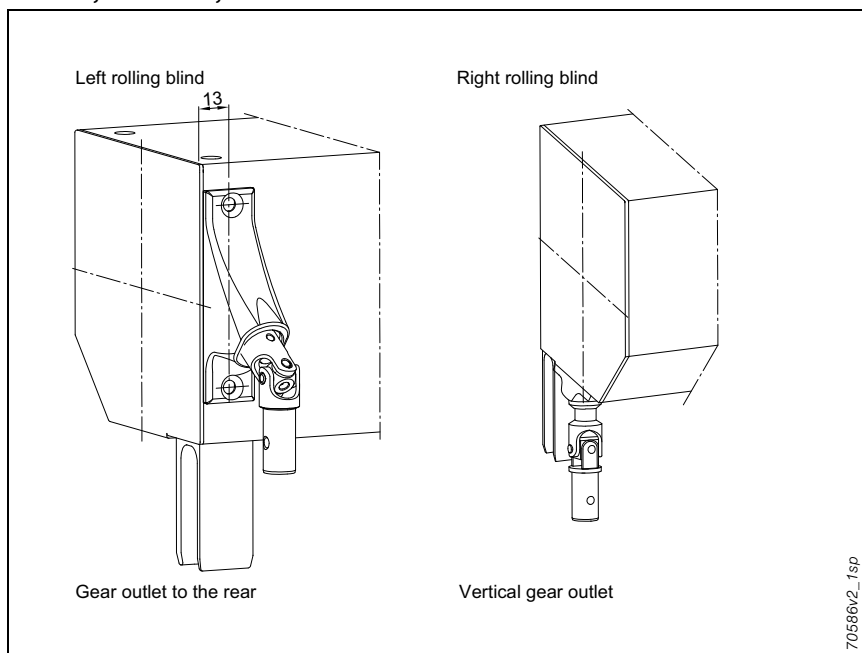


fig. 8: Crank, internal

#### Crank, internal, for size 9 box

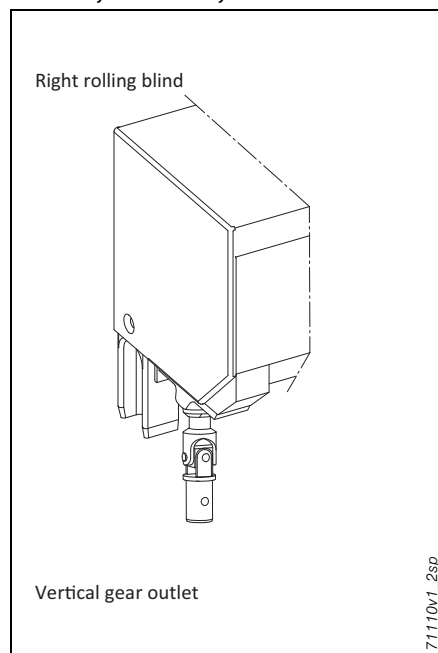


fig. 9: Crank, internal

#### Note on cranks:

- Standard crank length 1200 mm, please state deviating lengths
- Gear outlet possible horizontal from size 11 box, vertical from size 9 box

#### Crank length

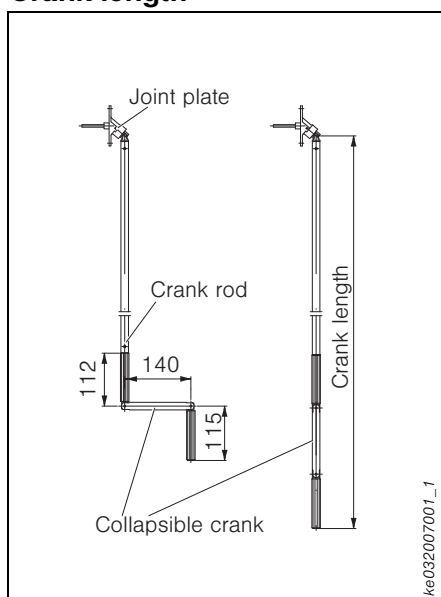


fig. 10: Order data for crank

## Operating details

### Black-out blind VDA 13

#### Motor, outlet for motor line

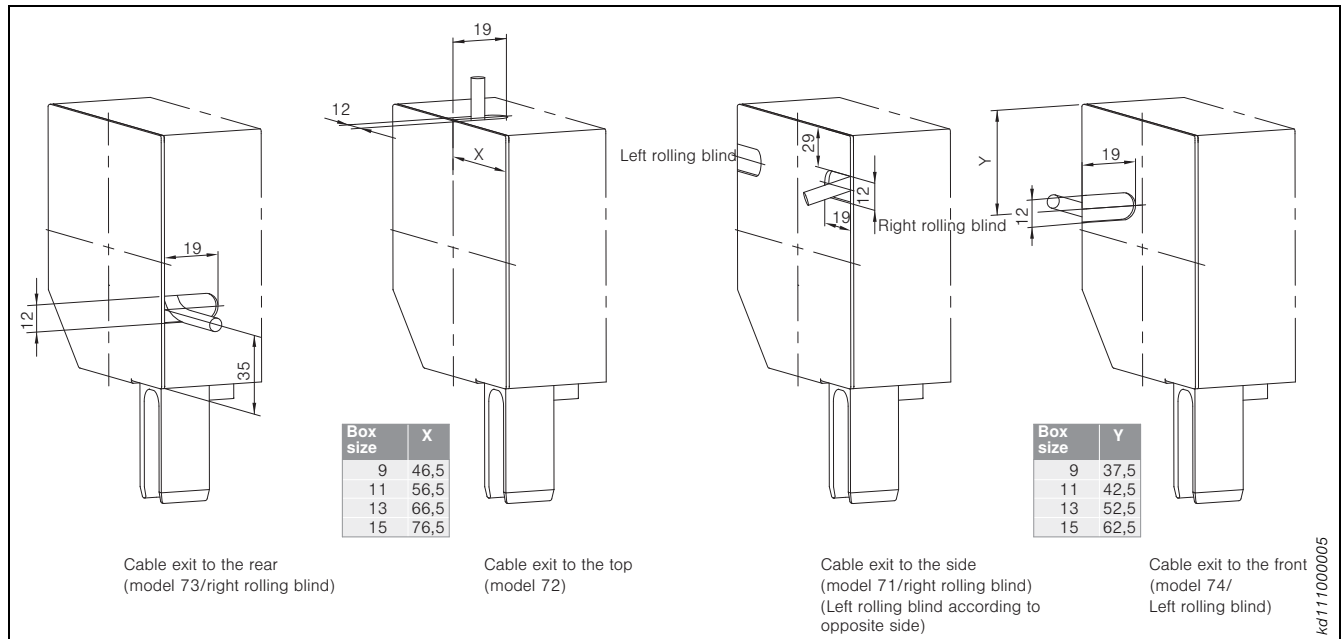


fig. 11: Outlet for motor line when operating motor

#### Note on general motor drive:

- Standard line length 400 mm incl. wired plug-in connector STAS 3/STAK 3
- Additionally cable whips in custom lengths are possible as an option: please state 1000 mm, 2500 mm or 5000 mm, with plug-in connector STAS 3/STAK 3 (loose), separately when ordering



Box sizes

Black-out blind VDA 13

Box sizes

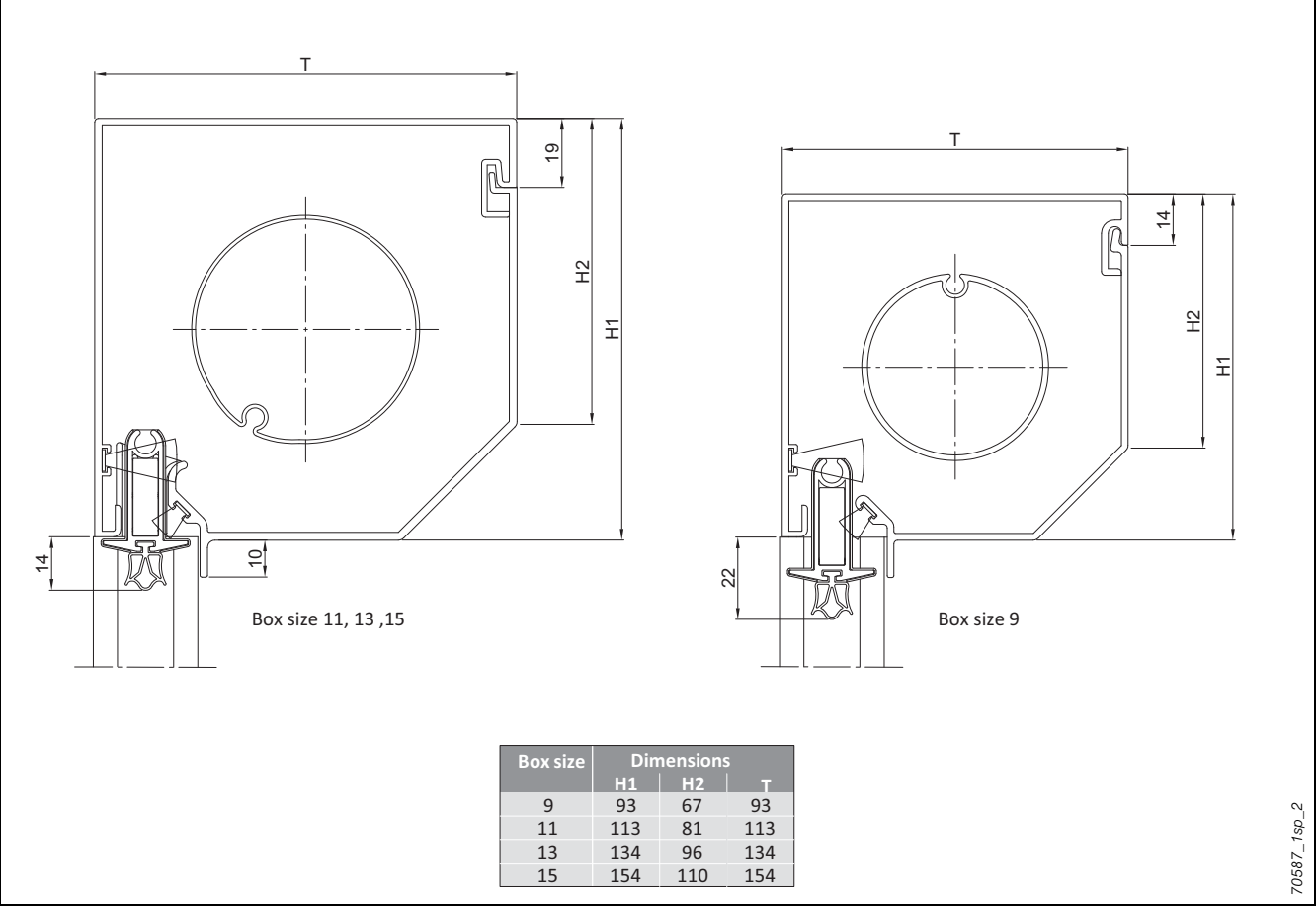


fig. 12: Box sizes

## Box extension

### Black-out blind VDA 13

#### Box extension type 5

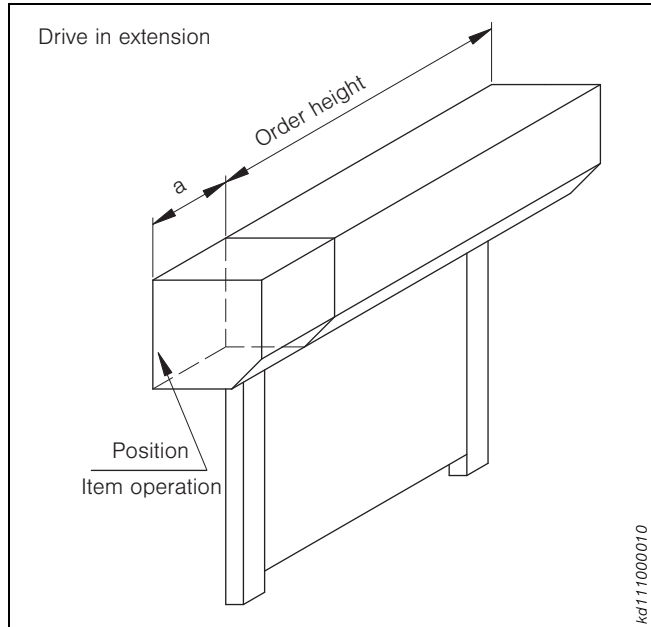


fig. 13: Box extension type 5

#### Box extension type 6

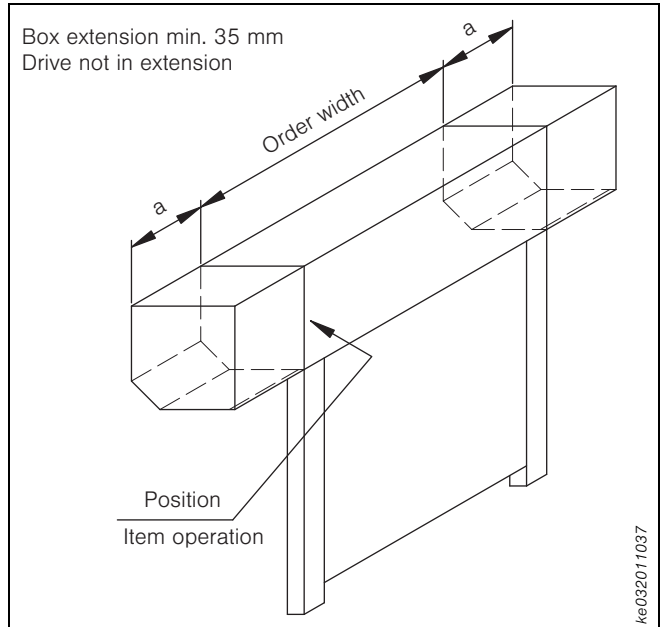


fig. 14: Box extension type 6

#### Note:

Please state type of extension (one or both sides) as well as dimension "a" when ordering. Outlet gap generally open.

#### Box extension type 7

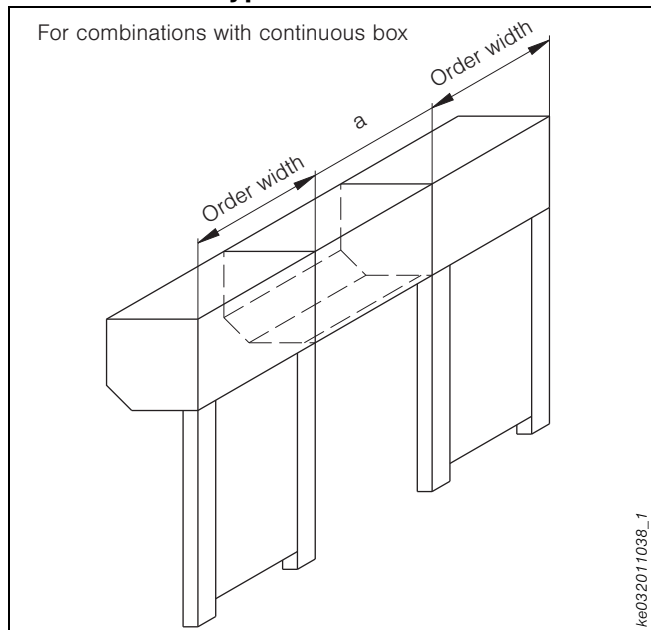


fig. 15: Box extension type 7

# Guide rails/end closures

## Black-out blind VDA 13

### Guide rails

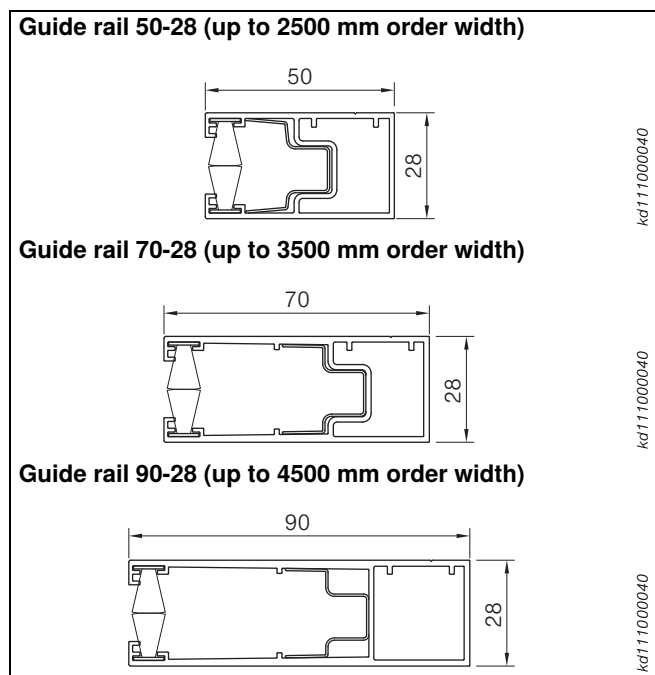


fig. 16: Guide rails

### End closure for guide rails

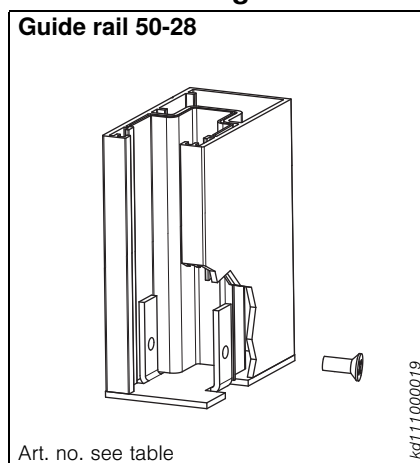


fig. 17: End closure

End closure (plain)	Guide rail
Art. no.	
502223	50-28
502221	70-28
502222	90-28

### Guide rail borehole

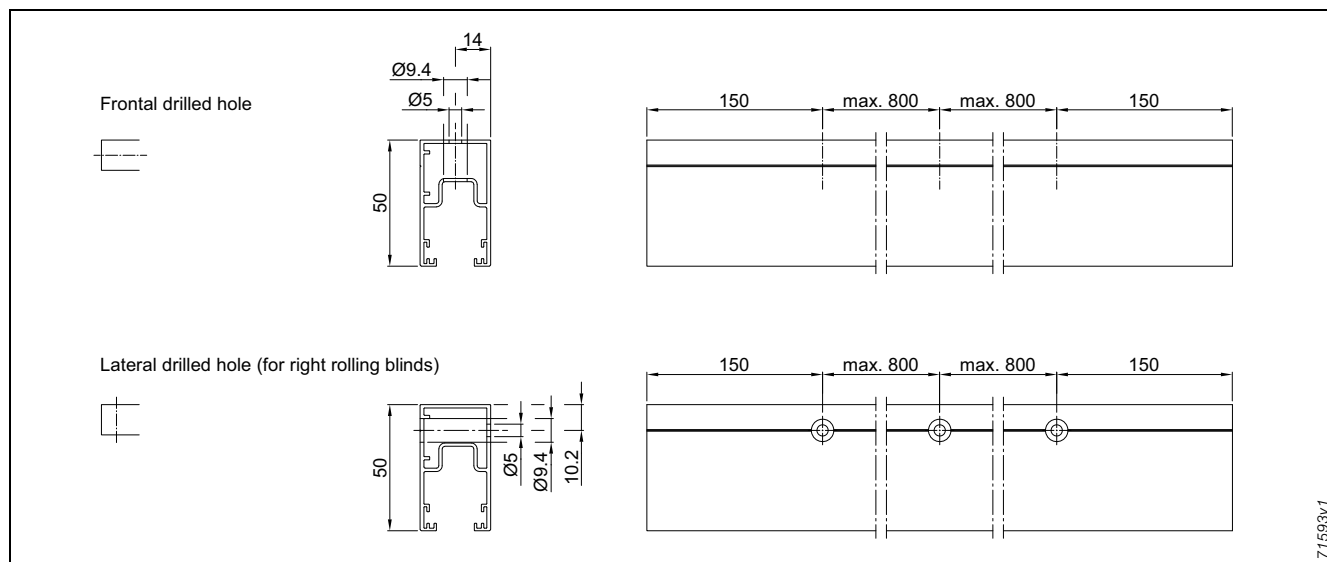


fig. 18: Guide rail borehole

Guide rail length (mm)	Number of fixing holes
– 1100 mm	2
1101 – 1900 mm	3
1901 – 2700 mm	4
2701 – 3500 mm	5
3501 – 4300 mm	6
4301 – 5100 mm	7
5101 – 5900 mm	8

## End rails

### Black-out blind VDA 13

#### End rails

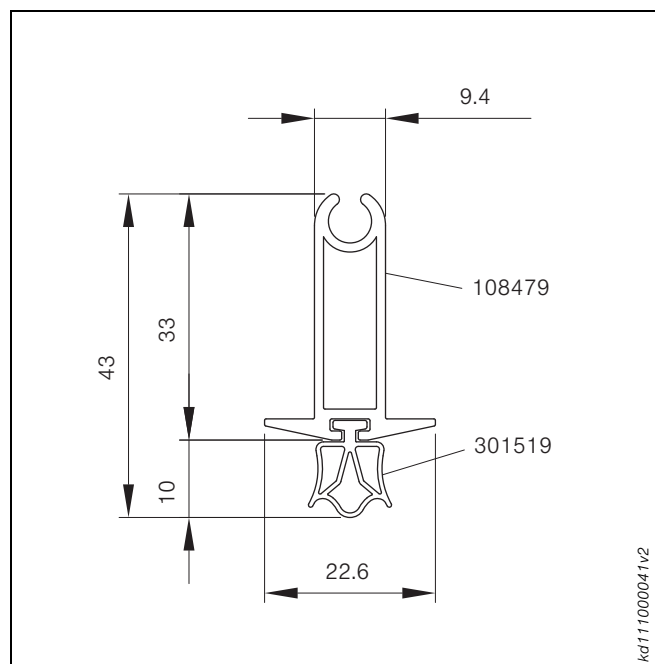


fig. 19: Standard end rail

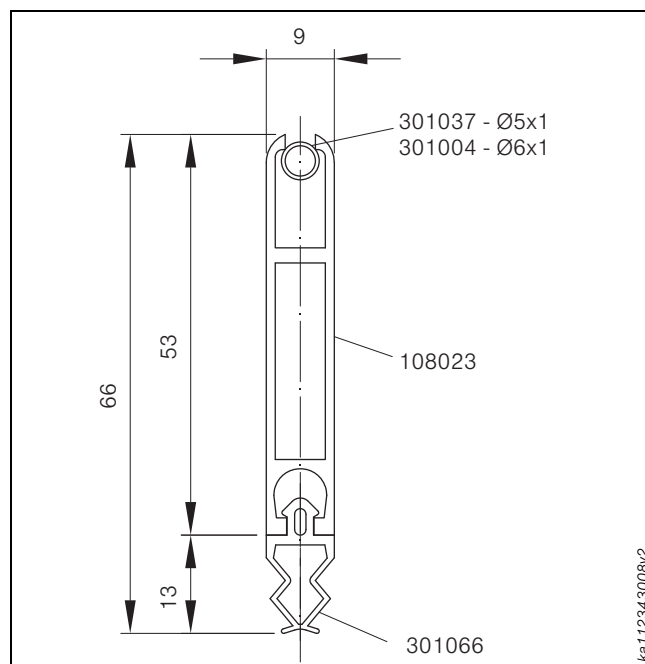


fig. 20: End rail for repairing older installations

#### Black-out I-rail

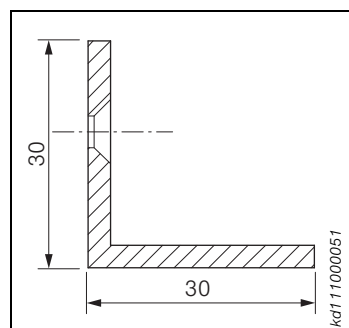


fig. 21: Black-out I-rail

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# Horizontal ceiling connection

## Black-out blind VDA 13

### Horizontal ceiling connection (for installation inside suspended ceilings)

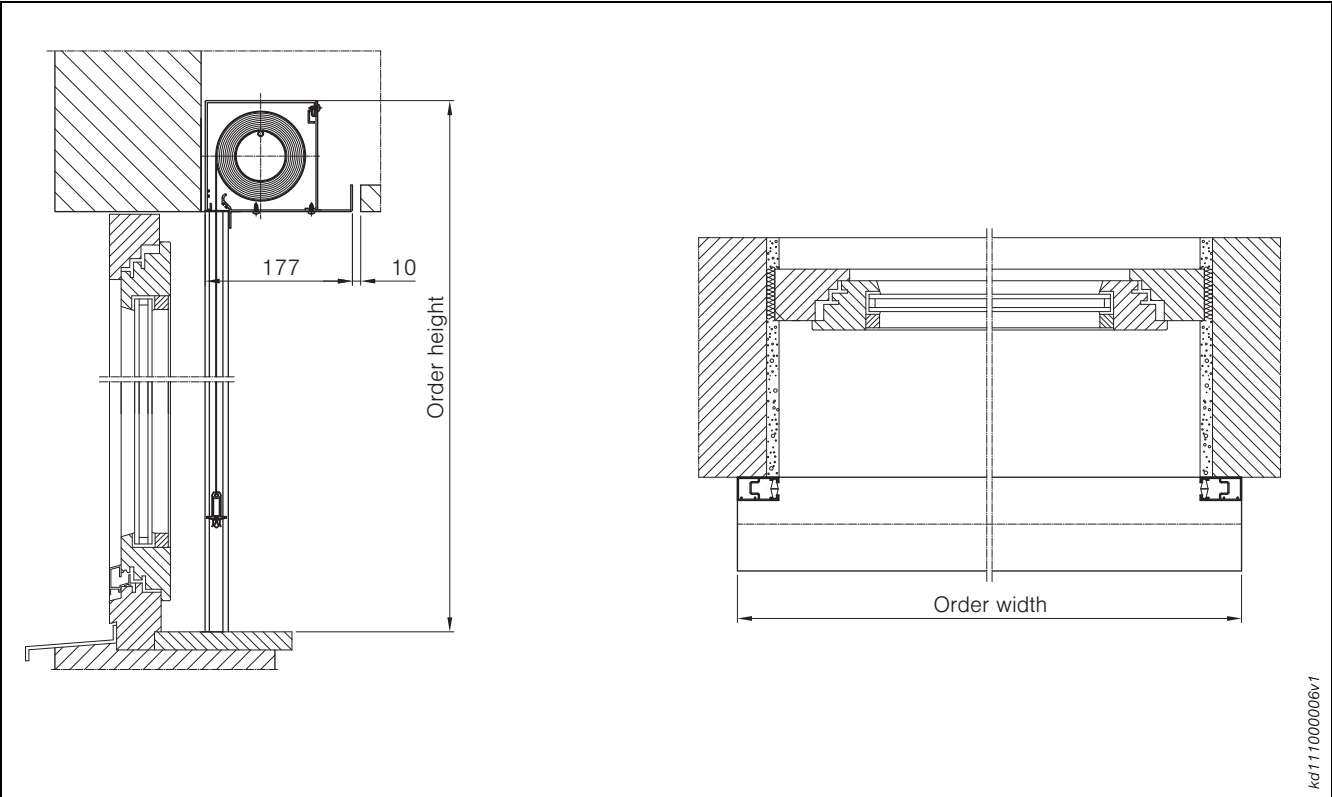


fig. 22: Installation situation

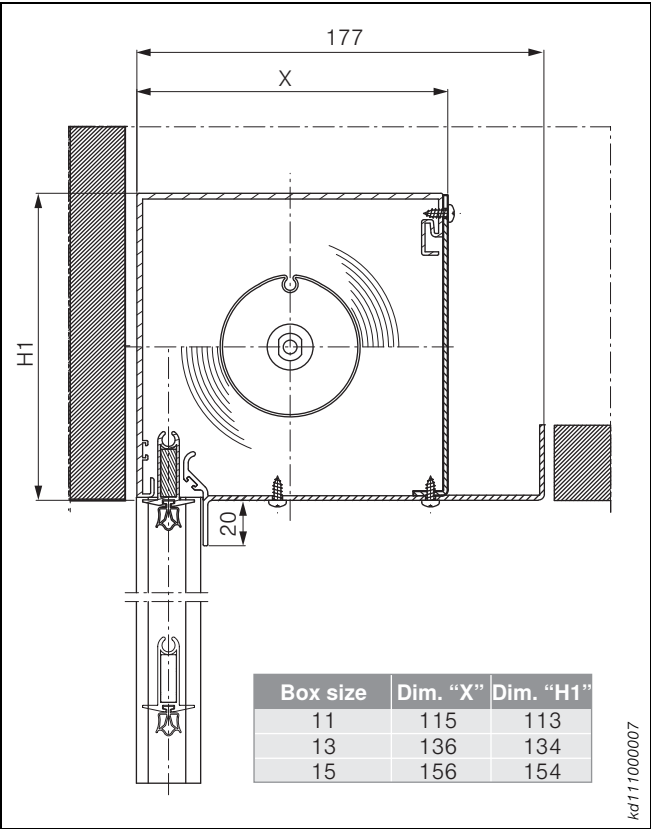


fig. 23: Dimensions



## Rear ventilation profile Black-out blind VDA 13

### For preventing heat accumulation between window and black-out blind

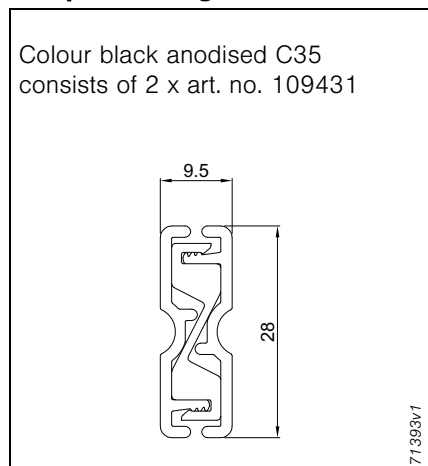


fig. 24: Rear ventilation profile

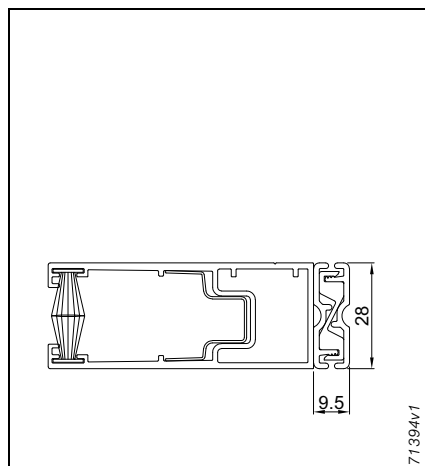


fig. 25: Mounting rear ventilation profile frontally

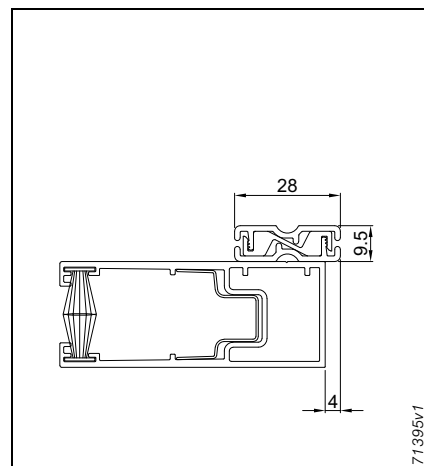


fig. 26: Mounting rear ventilation profile between fixing level and guide rail

### Rear ventilation profile on guide rails – mounted in reveal

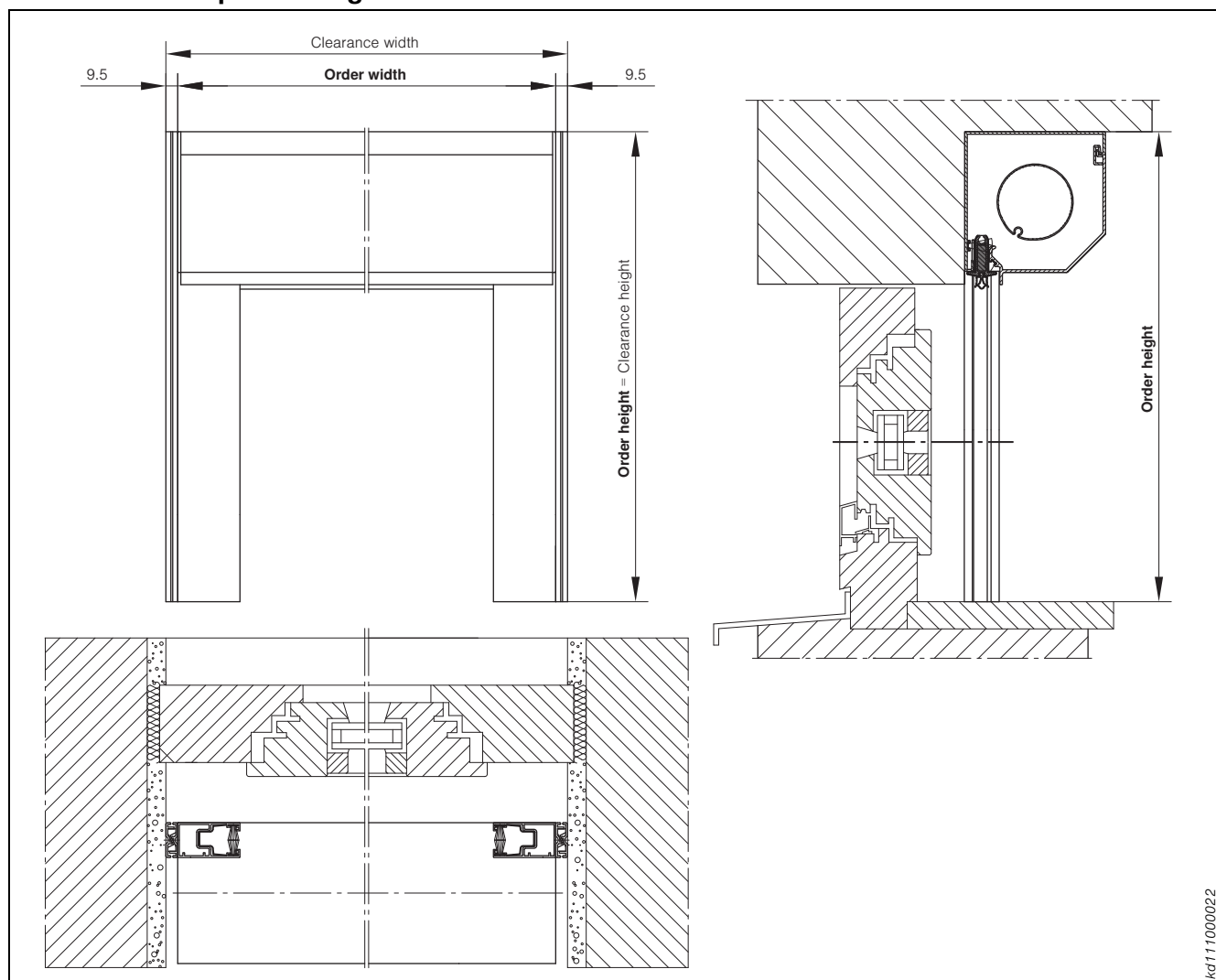


fig. 27: Rear ventilation profile on guide rails – mounted in reveal

## Rear ventilation profile Black-out blind VDA 13

### Rear ventilation profile on guide rails and box – mounted in reveal

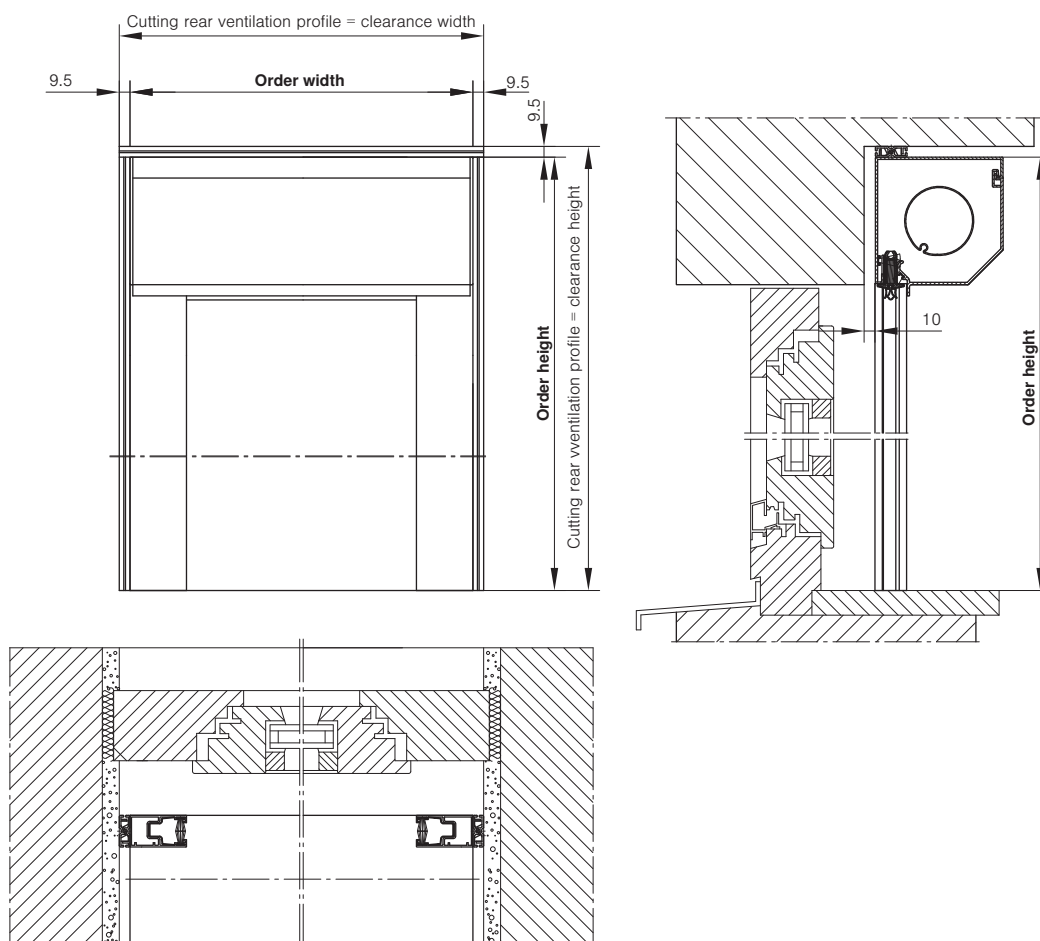


fig. 28: Rear ventilation profiles on guide rails and box – mounted in reveal

kd111000024

## Rear ventilation profile Black-out blind VDA 13

### Rear ventilation profile on guide rails and box – mounted in front of reveal

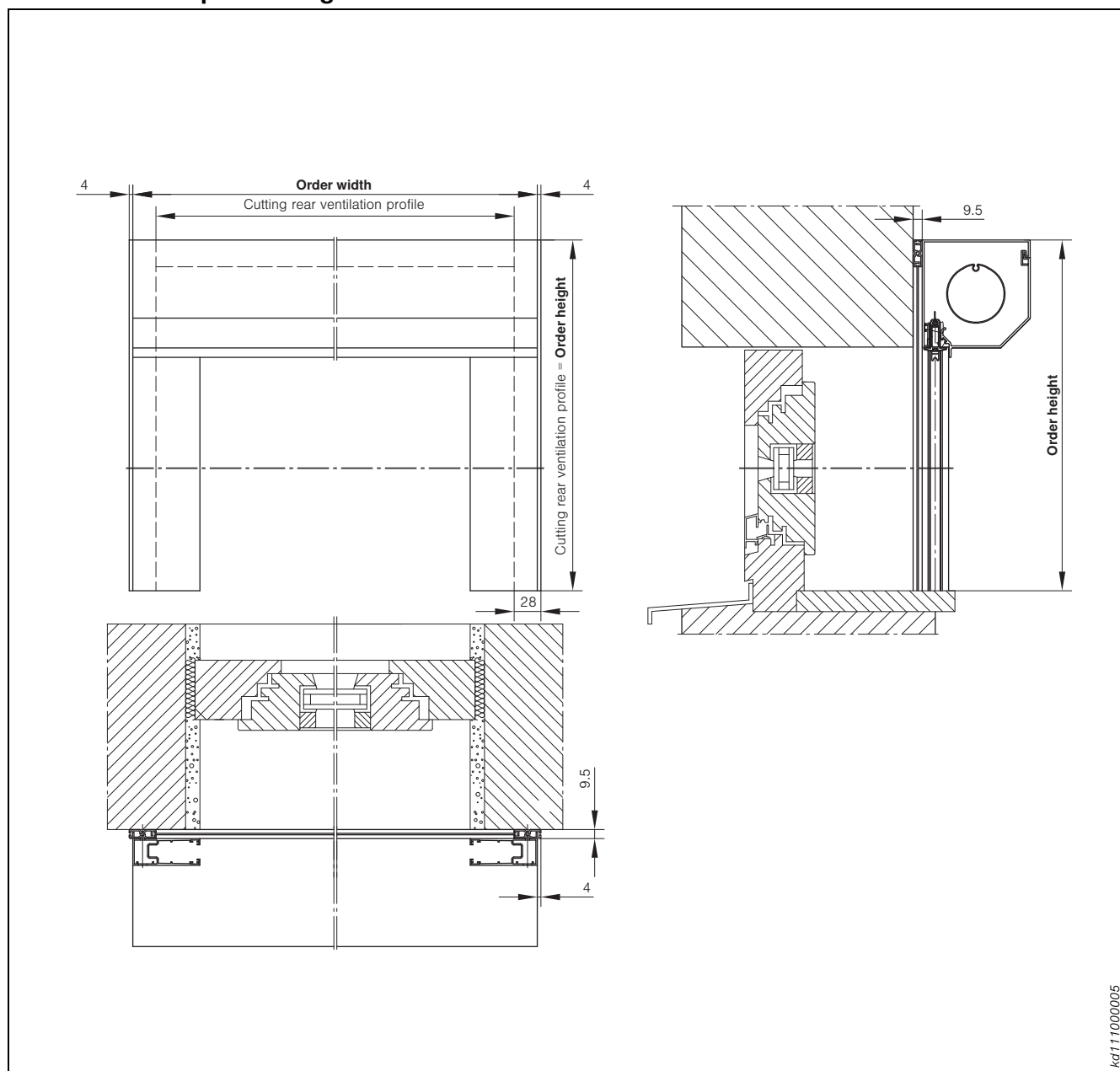


fig. 29: Rear ventilation profiles on guide rails and box – in front of reveal

## Black-out I-rail

### Black-out blind VDA 13

#### Mounting options for black-out I-rail (e.g. for uneven window sill or no window sill)

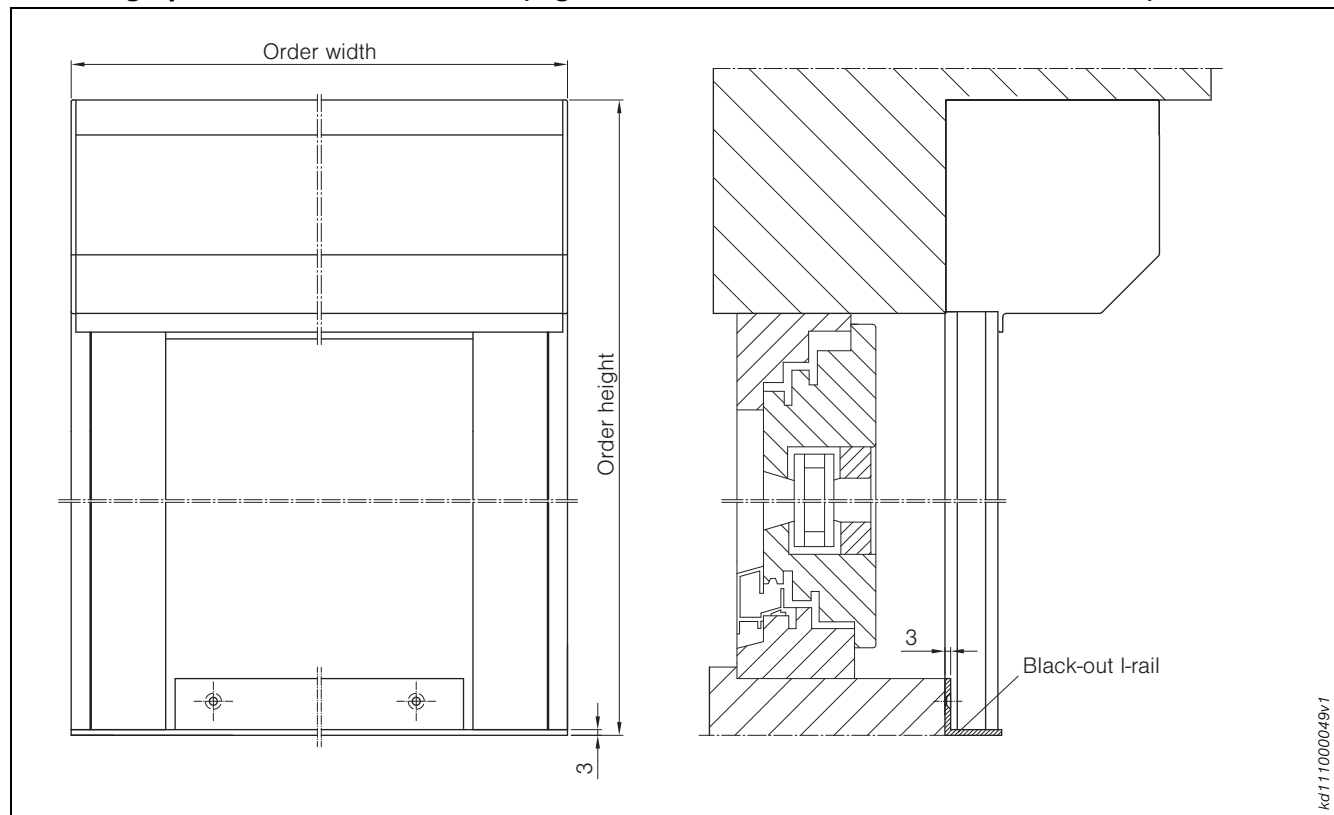


fig. 30: Black-out I-rail

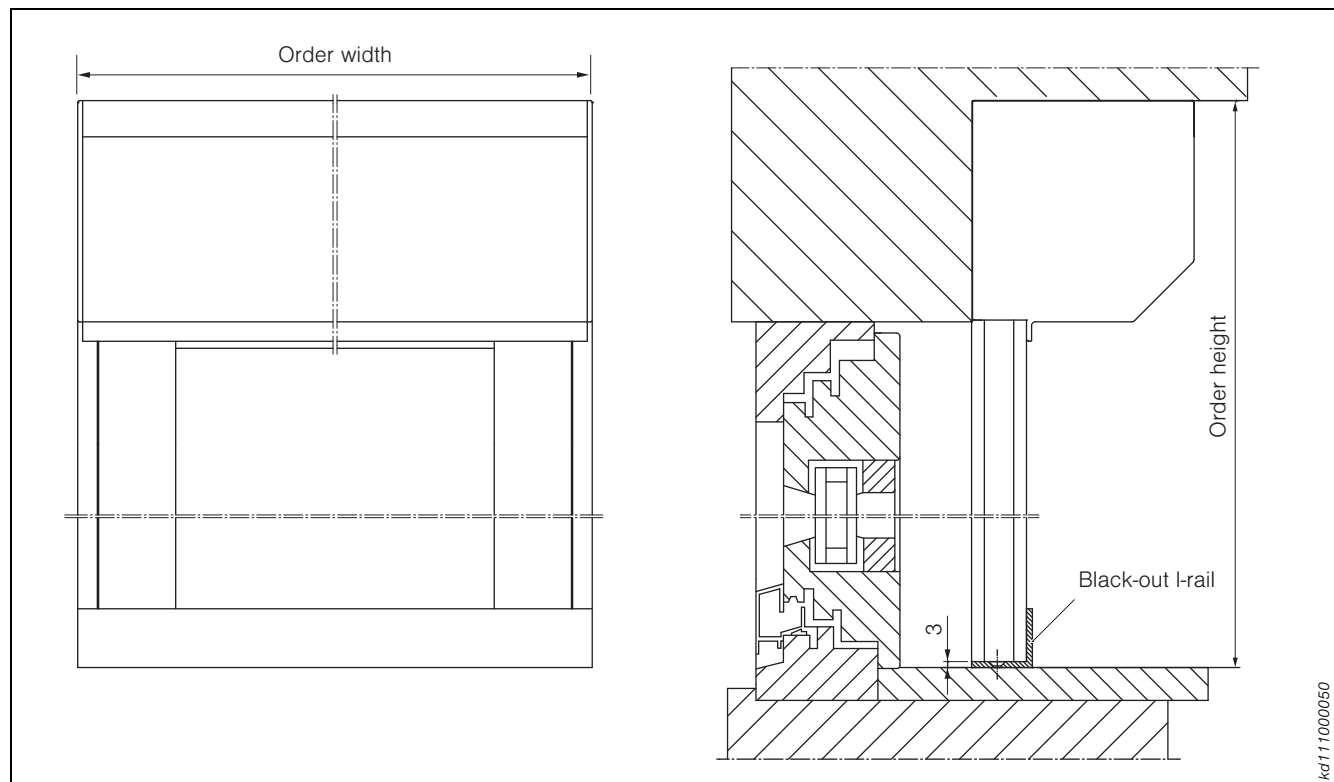


fig. 31: Black-out I-rail

Guide rail brackets  
Black-out blind VDA 13

Guide rail brackets (for mounting guide rails with distance)

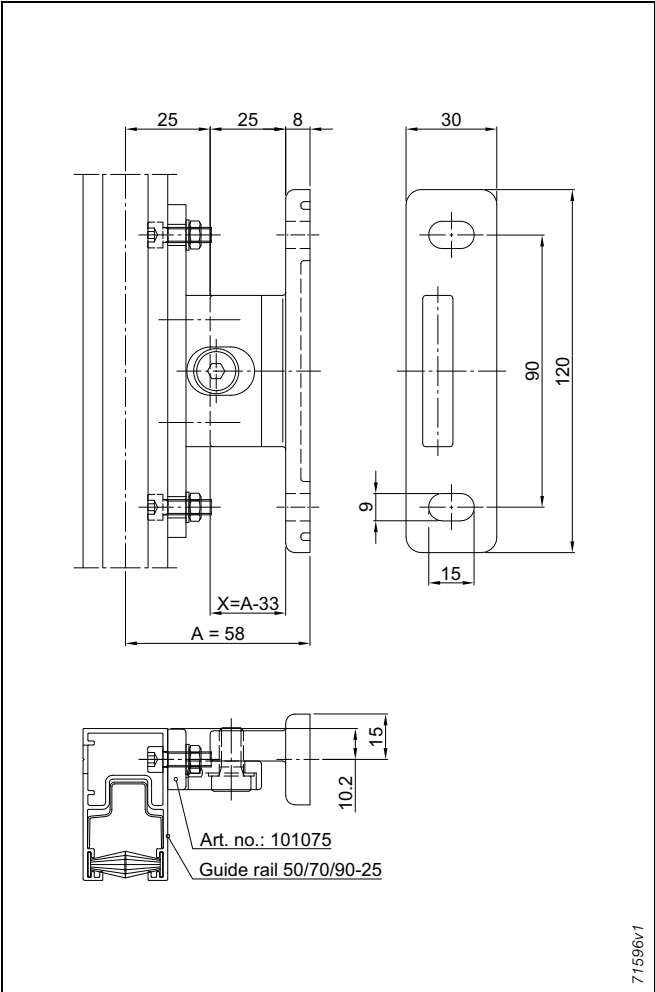


fig. 32: Guide rail bracket no. 7

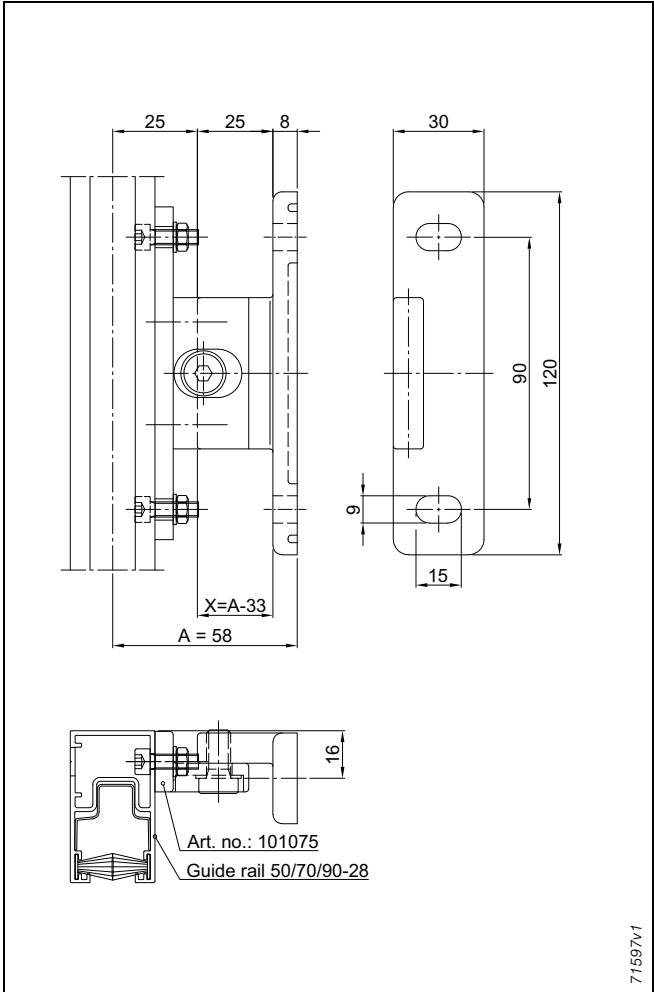


fig. 33: Guide rail bracket No. 8

## Guide rail brackets

### Black-out blind VDA 13

Bracket 9 is available for serial mounting. Two guide rails can be mounted over one bracket.

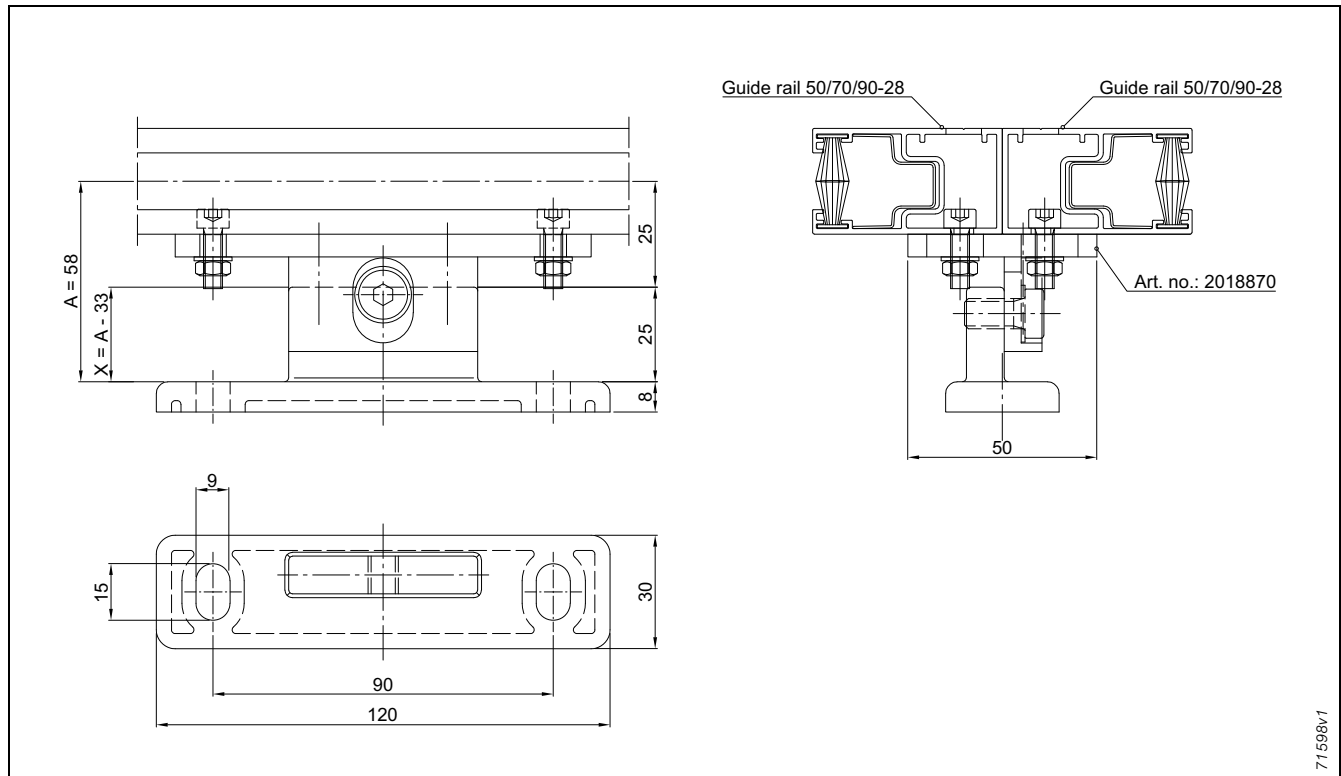


fig. 34: Guide rail bracket no. 9 – mounting two guide rails on one bracket

Guide rail	Distance "A" in mm	Length of bracing "X" (X=A-33)	Shifting range
50/70/90x28	58	25	+0.5 –6.5
50/70/90x28	68	35	+0.5 –6.5
50/70/90x28	78	45	+0.5 –6.5
50/70/90x28	88	55	+0.5 –6.5
50/70/90x28	98	65	+0.5 –6.5
50/70/90x28	108	75	+0.5 –6.5
50/70/90x28	118	85	+0.5 –6.5
50/70/90x28	Max. 133	100	+0.5 –6.5

### Guide rail brackets

Length in mm	Guide rail brackets per rail
– 1900	2
1901 – 3500	3
3501 – 5100	4
5101 – 5900	5

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Black-out blind with ZIP guidance

Black-out blind with ZIP guidance

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## Description

### Black-out blind with ZIP guidance

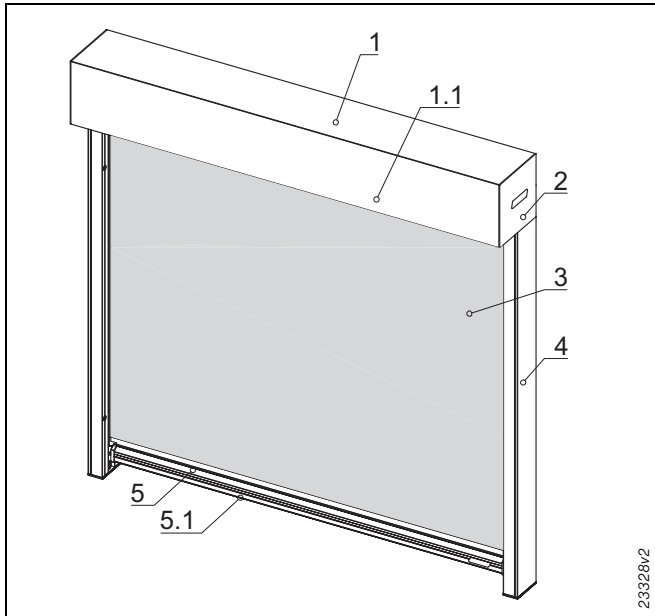


fig. 35: Structure of VDA ZIP

- 1 Box
- 1.1 Inspection cover
- 2 Shaft
- 3 Black-out blind
- 4 Lateral guidance
- 5 End rail
- 5.1 Sealing strip

## Application

Compact construction with Minimax guide rails for dim-out of rooms.

## Operation

### Basic motor, 230 V, 50 Hz

ZM REA with electronic limit switch-off  
(optionally with EWFS/WMS plug receiver; EWFS hand-held transmitter 1-channel/hand-held transmitter basic comprised)

### EWFS radio motor, 230 V, 50 Hz (optional)

W-ZM with electronic limit switch-off; EWFS hand-held transmitter 1 channel comprised

### WMS radio motor, 230 V, 50 Hz (optional)

WMS-ZM with electronic limit switch-off; WMS hand-held transmitter basic comprised

More information about drives from page 79.

## Box (1)

3 box sizes, box closed on 4 sides

Material: aluminium, extruded; electropolished  
stainless steel side covers.

Dimensions (H x D): see cross-sections

Surface: powder-coated

Fixing: pushed onto guide rails

Maximum box width 4000 mm.

Available as right or left rolling blind.

Concealed cut edges on the covers.

## Inspection cover (1.1)

Material: aluminium, extruded

Surface: powder-coated

## Box size

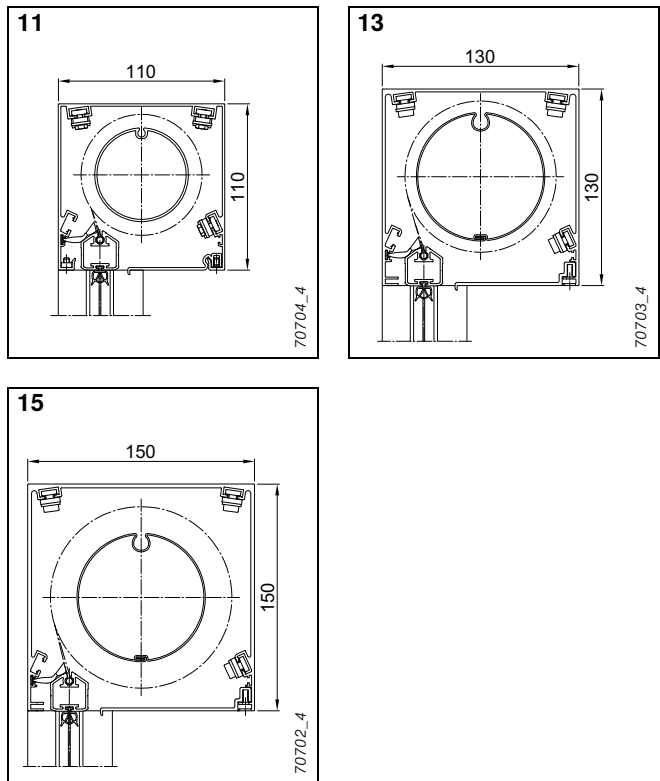


fig. 36: Box size

## Description

### Black-out blind with ZIP guidance

#### Shaft (2)

Material:	up to 2000 mm width for aluminium (Ø62); from 2001 mm for steel (Ø61) with box size 11, for steel Ø85 with box size 13, Ø108 with box size 15
Material thickness:	1.5 mm at Ø62/61, 1.0 mm at Ø85 and 2.1 mm at Ø108
Profile:	groove tube
Dimensions (Ø):	62, 61, 85 or 108 mm
Surface:	aluminium, plain or steel, galvanised

#### Black-out blind (3)

Soltis B92, without stiffener rods. The fabric is permanently welded to a zipper.

Flame-resistant according to DIN 4102-1 B1

Material: polyester fabric with PVC coating inside and outside

Surface inside: coloured, according to current colour chart for WAREMA black-out blinds. See also colour overview page 12.

Surface outside: silver

Fabric properties: dirt-repellent, highly tear-resistant, high diagonal stability, resistant to UV rays

The Soltis B92 fabric is welded crosswise for order widths from 1700 mm.

#### Lateral guidance (4)

##### Guide rail with ZIP guidance

Lateral guidance using ZIP (zipper) directly in the two-piece rail. Internal flexible PVC inlay for guiding the curtain and for attenuation.

Material:	aluminium, extruded
Dimensions (W x D):	25 x 56 mm
Surface:	powder-coated
Fixing:	directly on the facade or in the reveal
End closure:	aluminium, powder-coated
Inlay:	extruded PVC profile

Guide rail 25-56

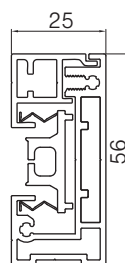


fig. 37: Lateral guidance for direct installation on the wall or in the reveal

Guide rail 25-56

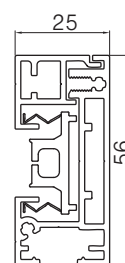


fig. 38: Lateral guidance for installation over guide rail brackets

## Description

### Black-out blind with ZIP guidance

#### End rail (5)

Material: aluminium, extruded  
Material thickness: 1.5 mm  
Dimensions (WxH): 25x26 or 35x40 mm  
Profile: rectangular, internal beading channel  
Surface: powder-coated  
End plug: plastic, black  
In the model with end rail 25x26 mm (see Fig. 39) the end rail moves fully into the box.  
A black-out I-rail is recommended for highly reflective surfaces to avoid light reflections.

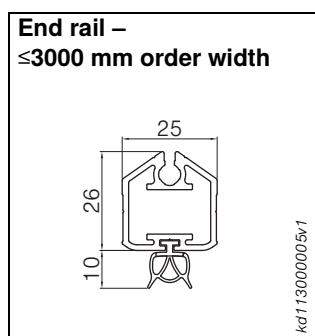


fig. 39: End rail 25 x 26 mm

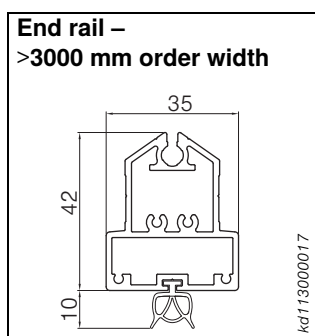


fig. 40: End rail 35 x 40 mm

#### Sealing strip (5.1)

for end rail

Material: TPE  
Colour: black

#### Colours

Powder coating of the aluminium parts with chrome-free pre-treatment according to valid RAL CLASSIC colour chart (except camouflage and luminous colours) or in six DB colours as well as eight textured colours (W4914–W4921), four anodised-look colours (WC31–WC34) and further colours according to WAREMA Colour World (in WAREMA colour specification).

Other colour specifications and special colours are available on request and are subject to surcharge.

Curtain colours according to valid WAREMA colour chart for black-out blinds. See also overview page 12.

All visible plastic parts are black.

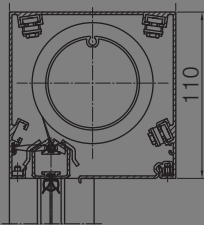
#### General information

All materials are resistant to UV rays and corrosion proof.

## Construction limit values

### Black-out blind with ZIP guidance

Use our free planning program at [www.sunshadingplanner.com](http://www.sunshadingplanner.com) to plan your sun shading systems – here you can configure the product and create a technical drawing to be integrated into your plans.

VDA ZIP	Limit values			Operating types and max. areas in m <sup>2</sup>	
	max. width in mm	max. height in mm	max. area individual unit in m <sup>2</sup>	Motor	EWFS/WMS radio motor
Soltis B92	4000 <sup>1)</sup>	5500 <sup>1)</sup>	18.0	18.0	18.0
min. order width in mm				750	750

<sup>1)</sup> The maximum construction limit values also depend on the width-to-height ratio. Please refer to the following table "Construction limit values for each box size".

#### Note:

Only individual units with motor drive possible!

#### Construction limit values for each box size

taking into account the width-to-height ratio

Box size	max. width in mm	max. height in mm
11	3000	3000
13	4000	4500
15	4000	5500

Area diagram

Black-out blind with ZIP guidance

Maximum dimensions for individual areas in mm for Soltis B92

Height	Width	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
1500																		
1600																		
1700																		
1800																		
1900																		
2000																		
2100																		
2200																		
2300																		
2400																		
2500																		
2600																		
2700																		
2800																		
2900																		
3000		Box size 11																
3100																		
3200																		
3300																		
3400																		
3500																		
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3700																		
3800																		
3900																		
4000																		
4100																		
4200																		
4300																		
4400																		
4500		Box size 13																
4600																		
4700																		
4800																		
4900																		
5000																		
5100																		
5200																		
5300																		
5400																		
5500		Box size 15																

# Dimension determination/order data

## Black-out blind with ZIP guidance

### Maximum dimensions for individual areas in mm for Soltis B92

Height	Width	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000
1500																	
1600																	
1700																	
1800																	
1900																	
2000																	
2100																	
2200																	
2300																	
2400																	
2500																	
2600																	
2700																	
2800																	
2900																	
3000	Box size 11																
3100																	
3200																	
3300																	
3400																	
3500																	
3600																	
3700																	
3800																	
3900																	
4000																	
4100																	
4200																	
4300																	
4400																	
4500	Box size 13																
4600																	
4700																	
4800																	
4900																	
5000																	
5100																	
5200																	
5300																	
5400																	
5500	Box size 15																

End rail  
25x26 mm

End rail  
35x40 mm

### Black-out blind with ZIP guidance

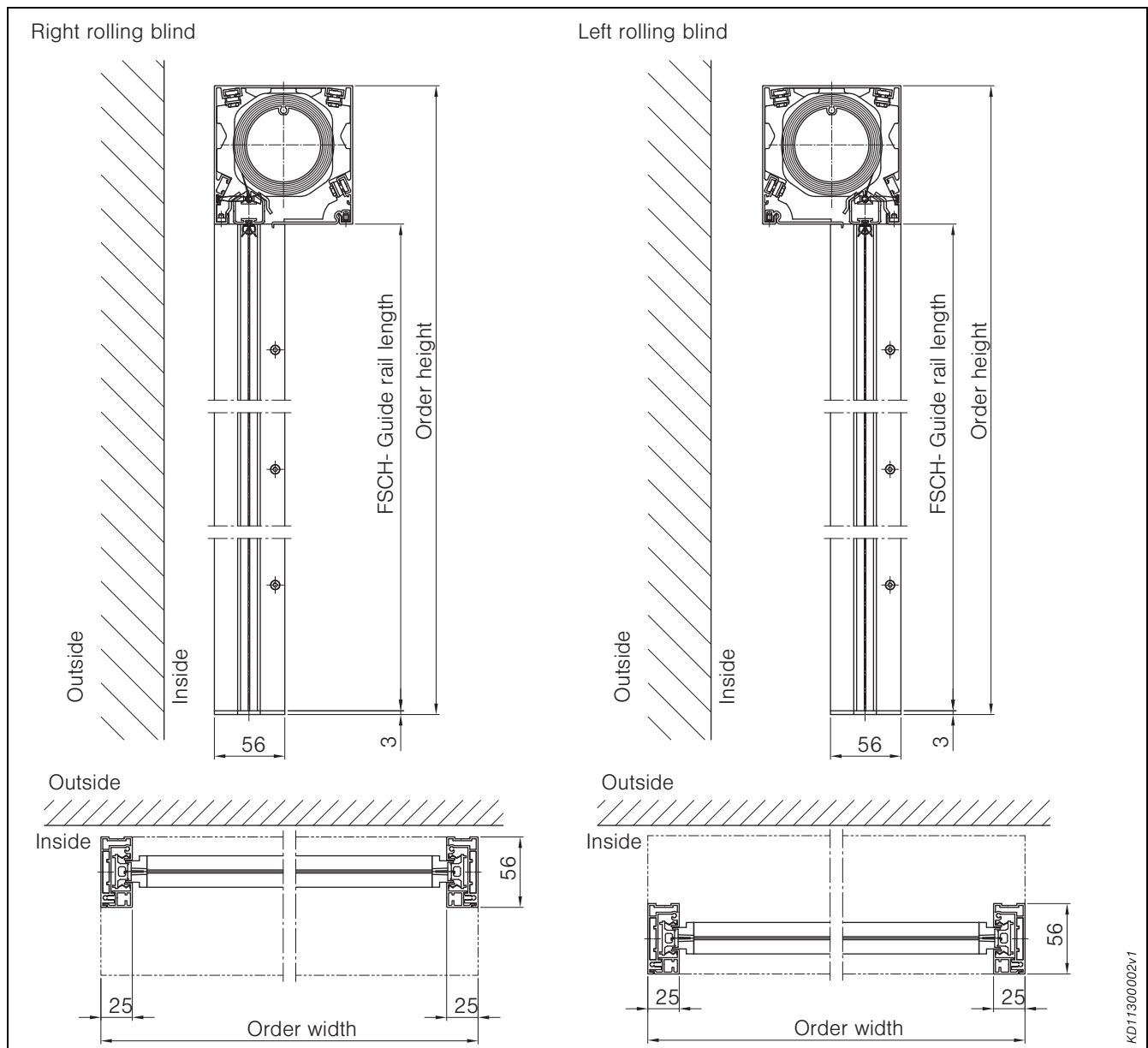


fig. 41: Black-out blind with ZIP guidance, dimension determination

Note on general order data:

- Order width = back edge of the guide rails
- Order height = bottom edge of guide rails to top edge of box
- Operation side, seen from inside

## Motor connection/dimension determination

### Black-out blind with ZIP guidance

#### Motor, outlet for motor line

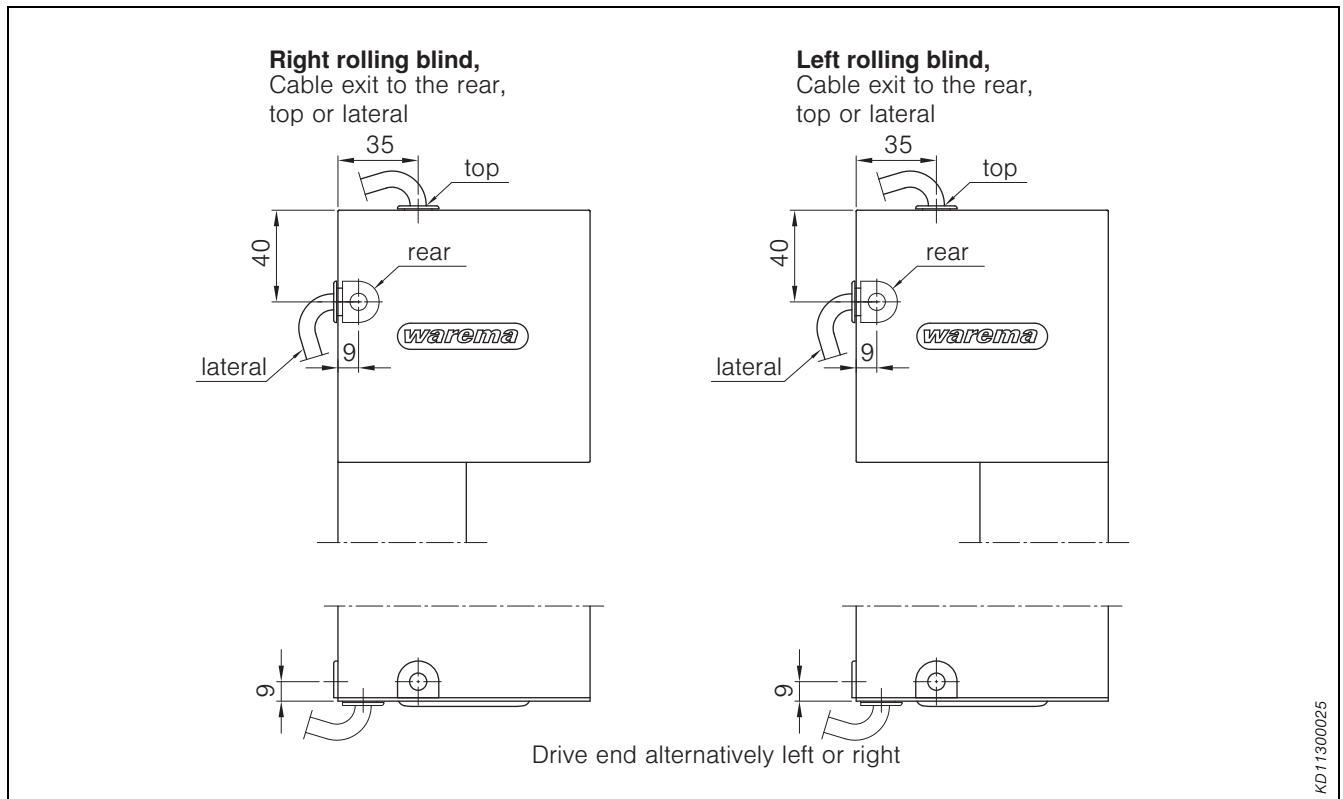


fig. 42: Motor, outlet for motor line

Note on motor drive:

- Standard cable length 400 mm incl. wired plug-in connector STAS 3/STAK 3
- Optionally with additional 1000 mm, 2500 mm or 5000 mm with plug-in connector STAS 3/STAK 3 (loose)



## Guide rails/Guide rail fixing

### Black-out blind with ZIP guidance

#### Transom and mullion system/right rolling blind on mullions (installation in the reveal)

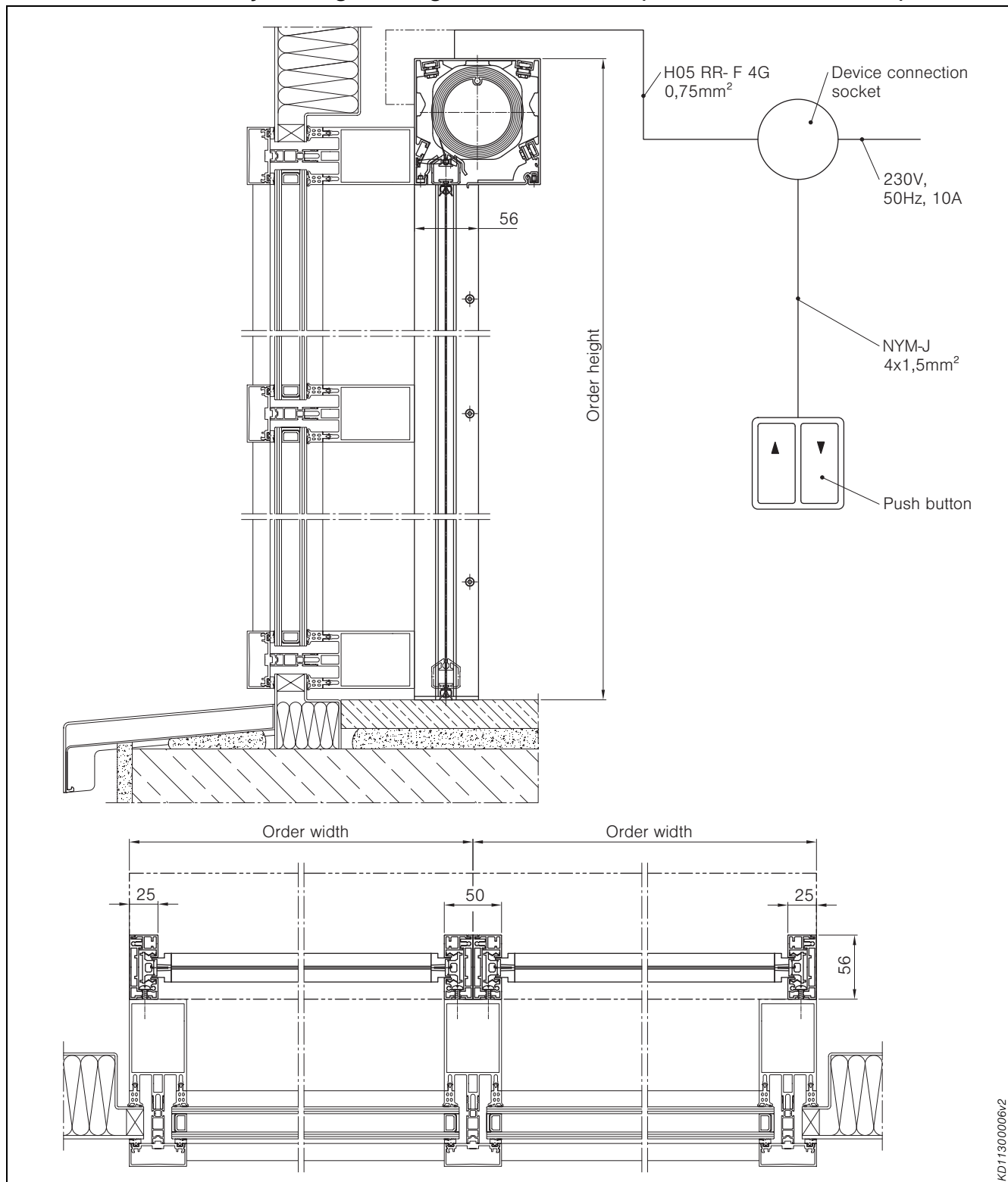


fig. 43: Transom and mullion system/right rolling blind on mullions

# Fixing guide rails Black-out blind with ZIP guidance

Guide rails, installation in the reveal

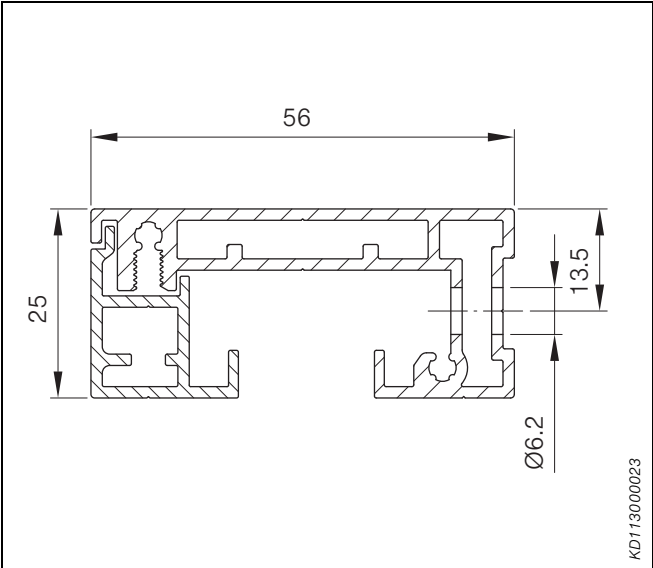


fig. 44: Guide rails, wall installation

Guide rails, installation in the reveal

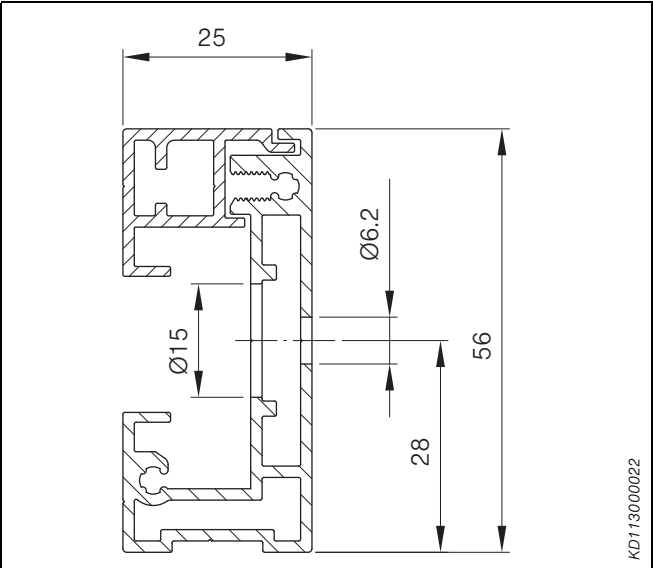


fig. 45: Guide rails, reveal installation

Installation over guide rail brackets

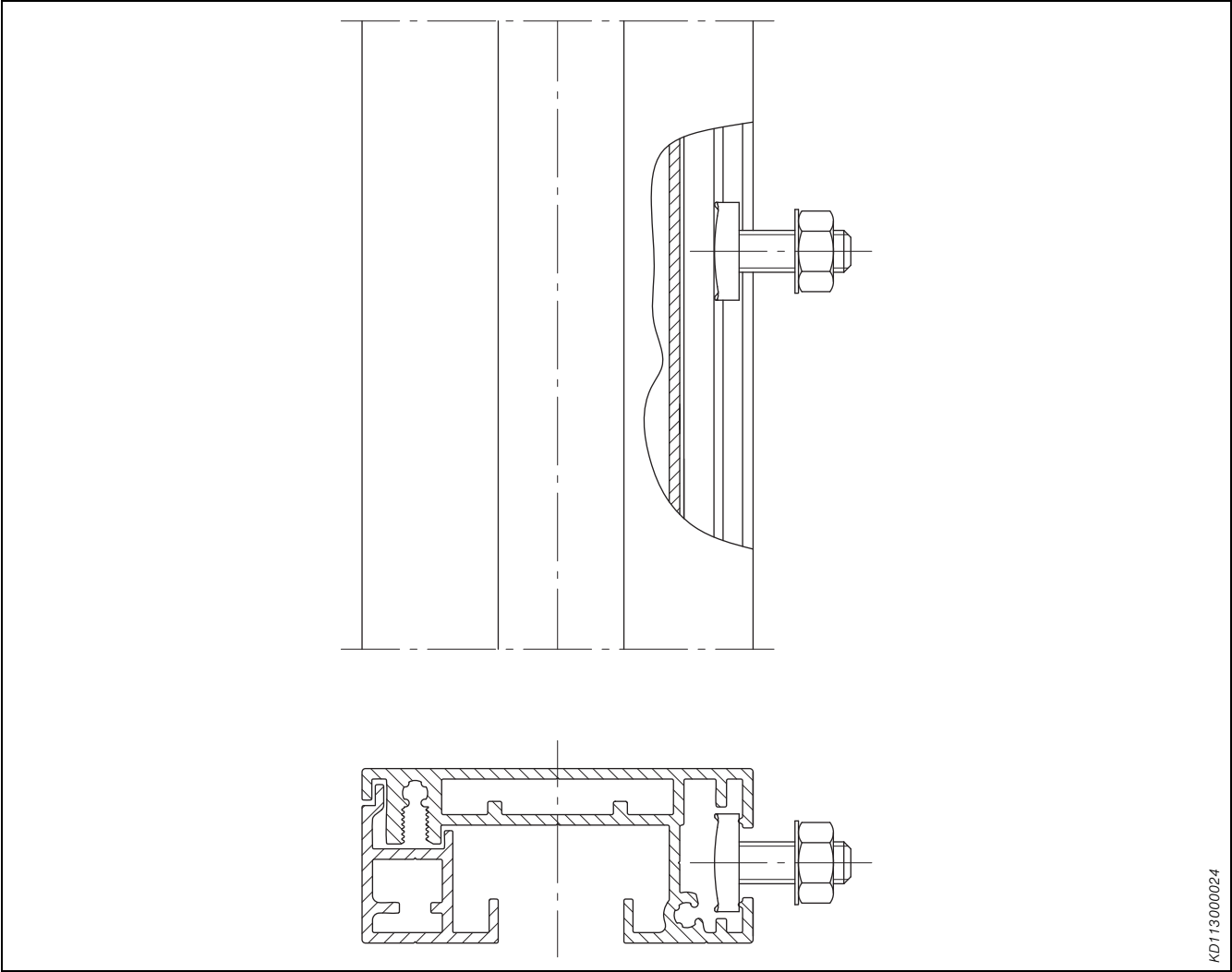


fig. 46: Guide rails, installation over brackets

## Guide rail brackets

### Black-out blind with ZIP guidance

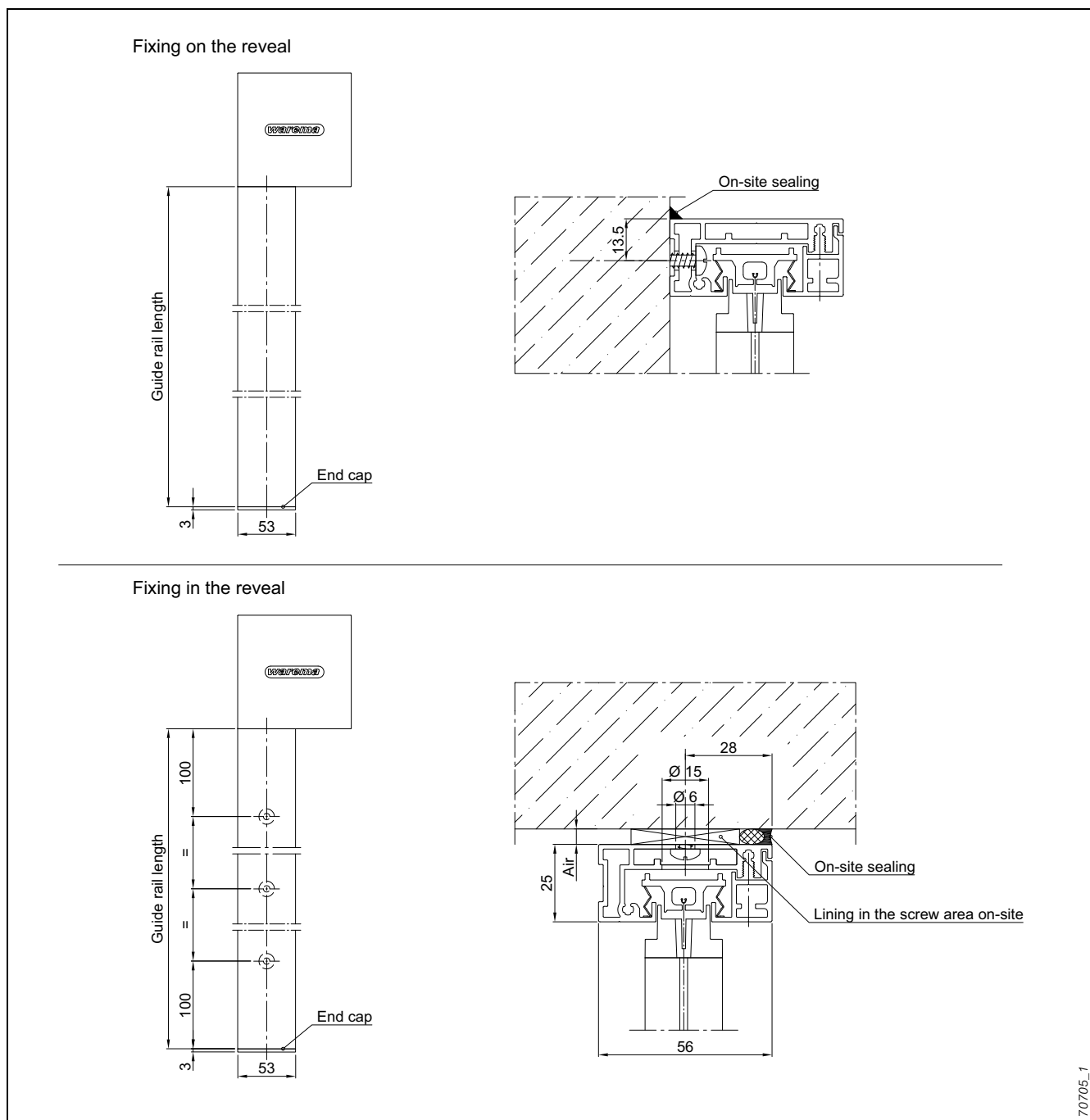


fig. 47: Guide rails, wall installation

Guide rail length (mm)	Number of fixing holes
– 900	2
901 – 1600	3
1601 – 2300	4
2301 – 3000	5
3001 – 3700	6
3701 – 4400	7
4401 – 5100	8
5101 – 5500	9

# Guide rail brackets Black-out blind with ZIP guidance

Guide rail bracket no. 8

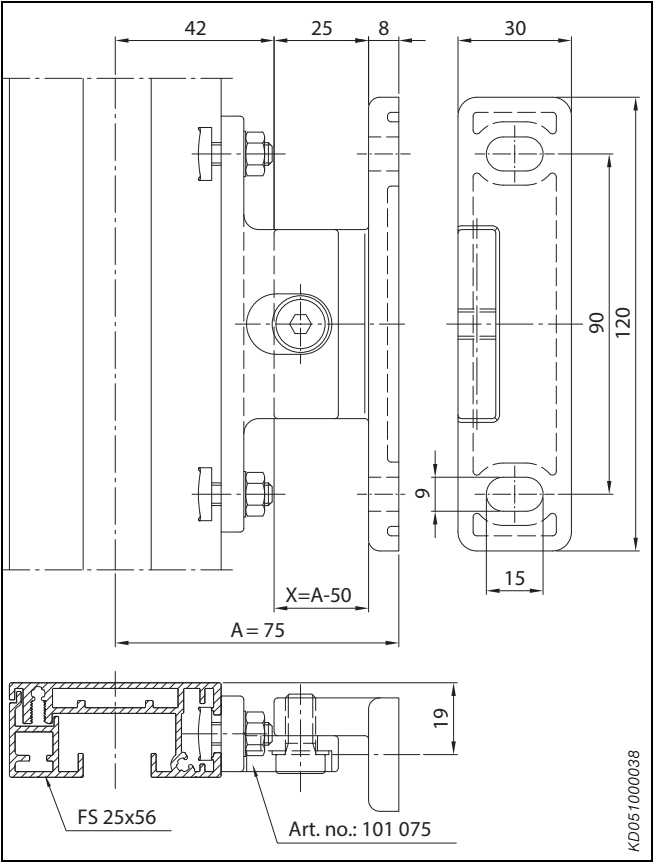


fig. 48: Guide rail bracket No. 8

Guide rail	Distance "A" in mm	Bracing length "X" (X=A-50)	Shifting range
25x56	75	25	+0.5 -6.5
25x56	max. 150	100	+0.5 -6.5

## Guide rail brackets

### Black-out blind with ZIP guidance

Bracket 9 is available for serial mounting. Two guide rails can be mounted over one bracket.

#### Guide rail bracket no. 9

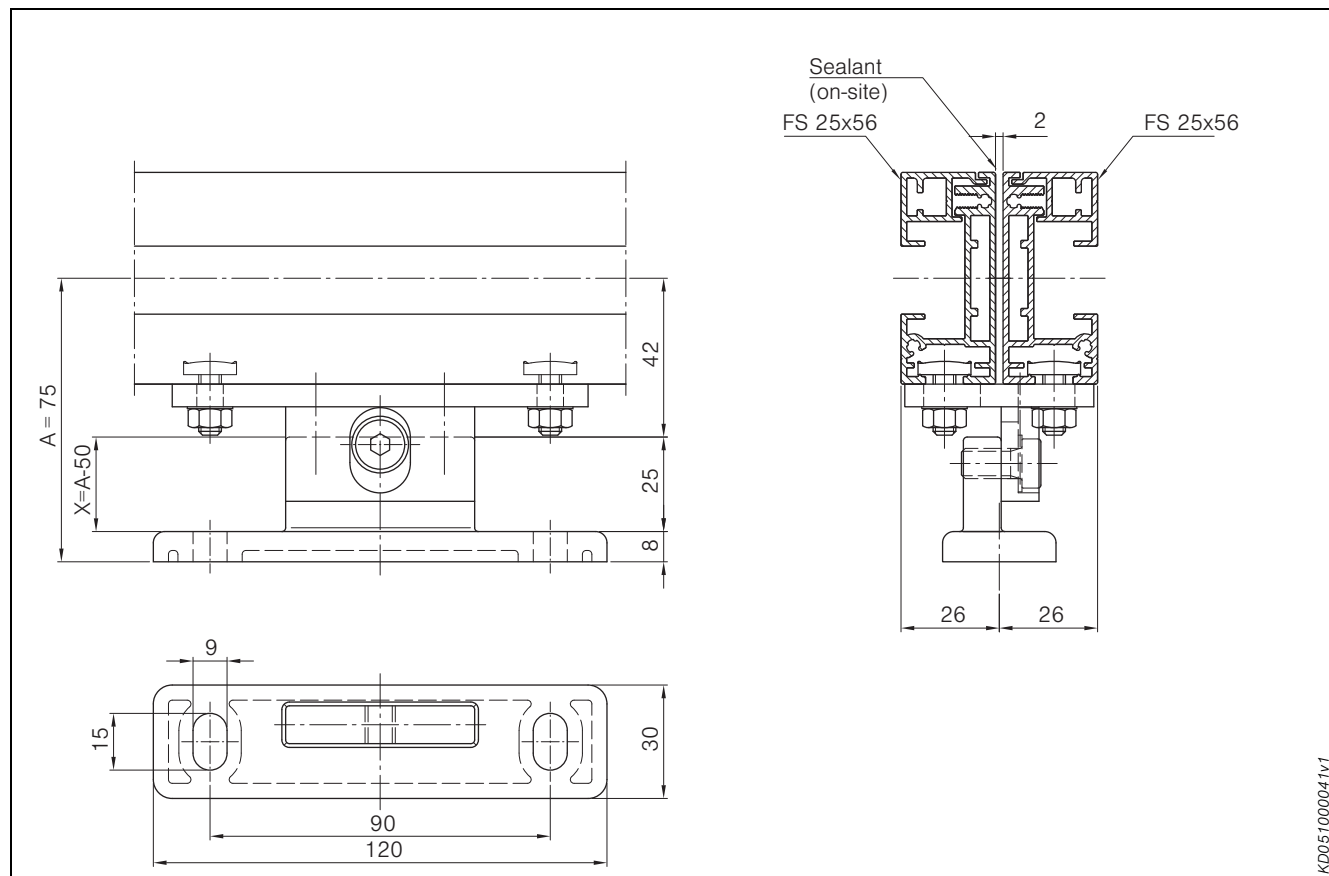


fig. 49: Guide rail bracket no. 9 – mounting two guide rails on one bracket

Guide rail	Distance "A" in mm	Bracing length "X" (X=A-50)	Shifting range
25x56	75	25	+0.5 -6.5
25x56	max. 150	100	+0.5 -6.5

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Black-out blind with ZIP guidance

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## Application examples

### Black-out blind with ZIP guidance

#### Right rolling blind in the reveal

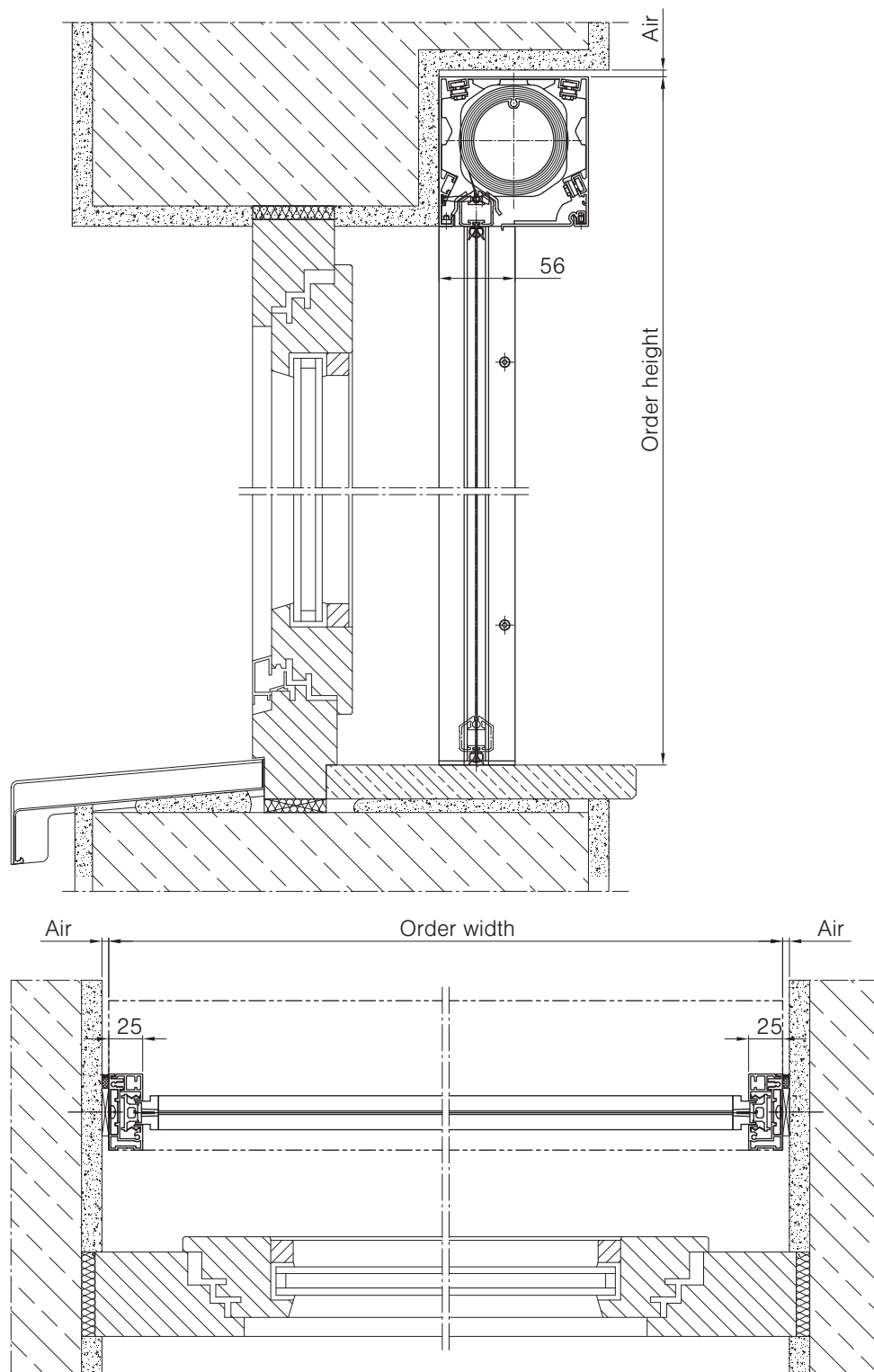


fig. 50: Right rolling blind in the reveal

Application examples

**Black-out blind with ZIP guidance**

**Right rolling blind on the reveal**

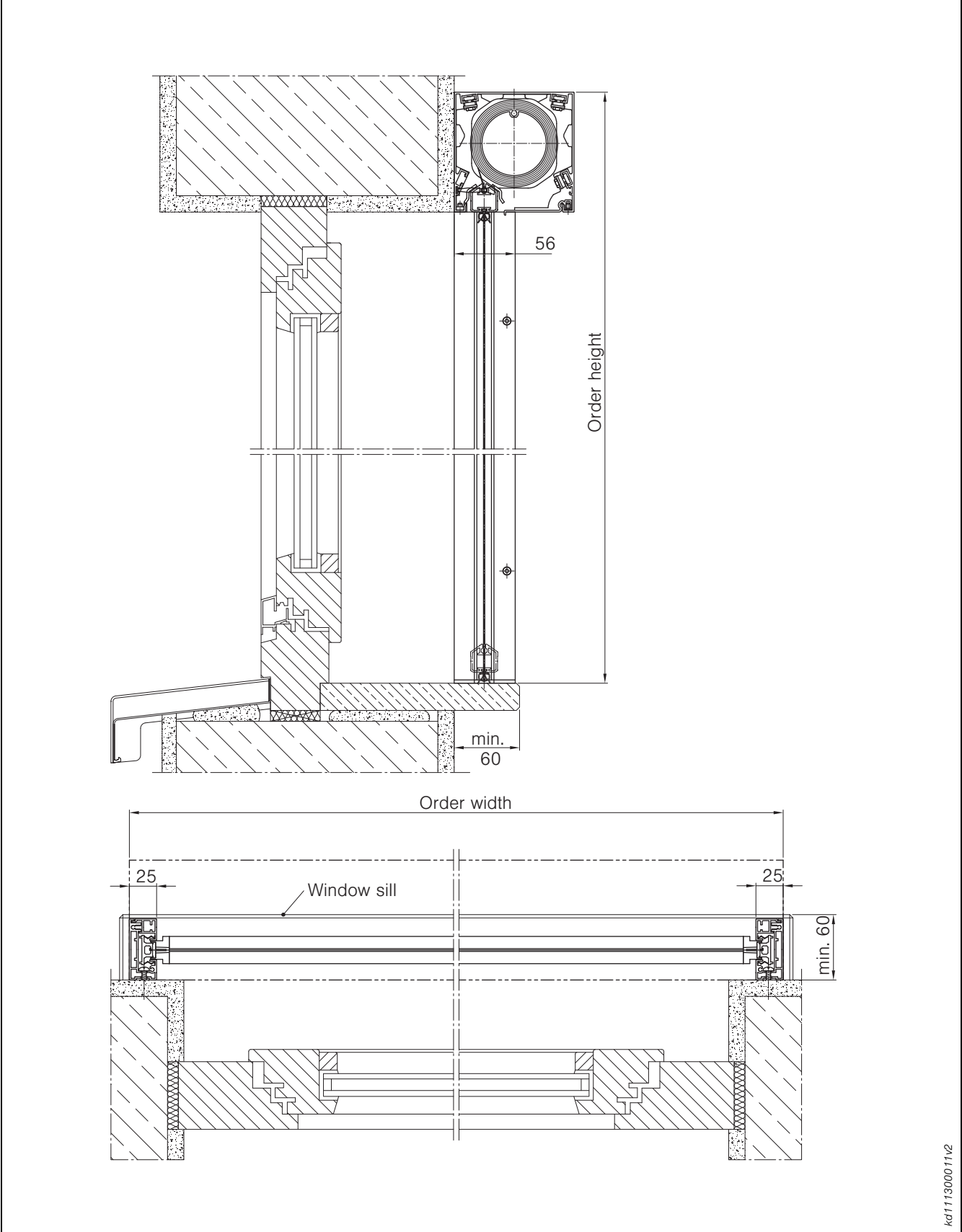


fig. 51: Right rolling blind on the reveal



## Black-out blind with ZIP guidance

### Right rolling blind in the reveal, black-out l-rail on window sill

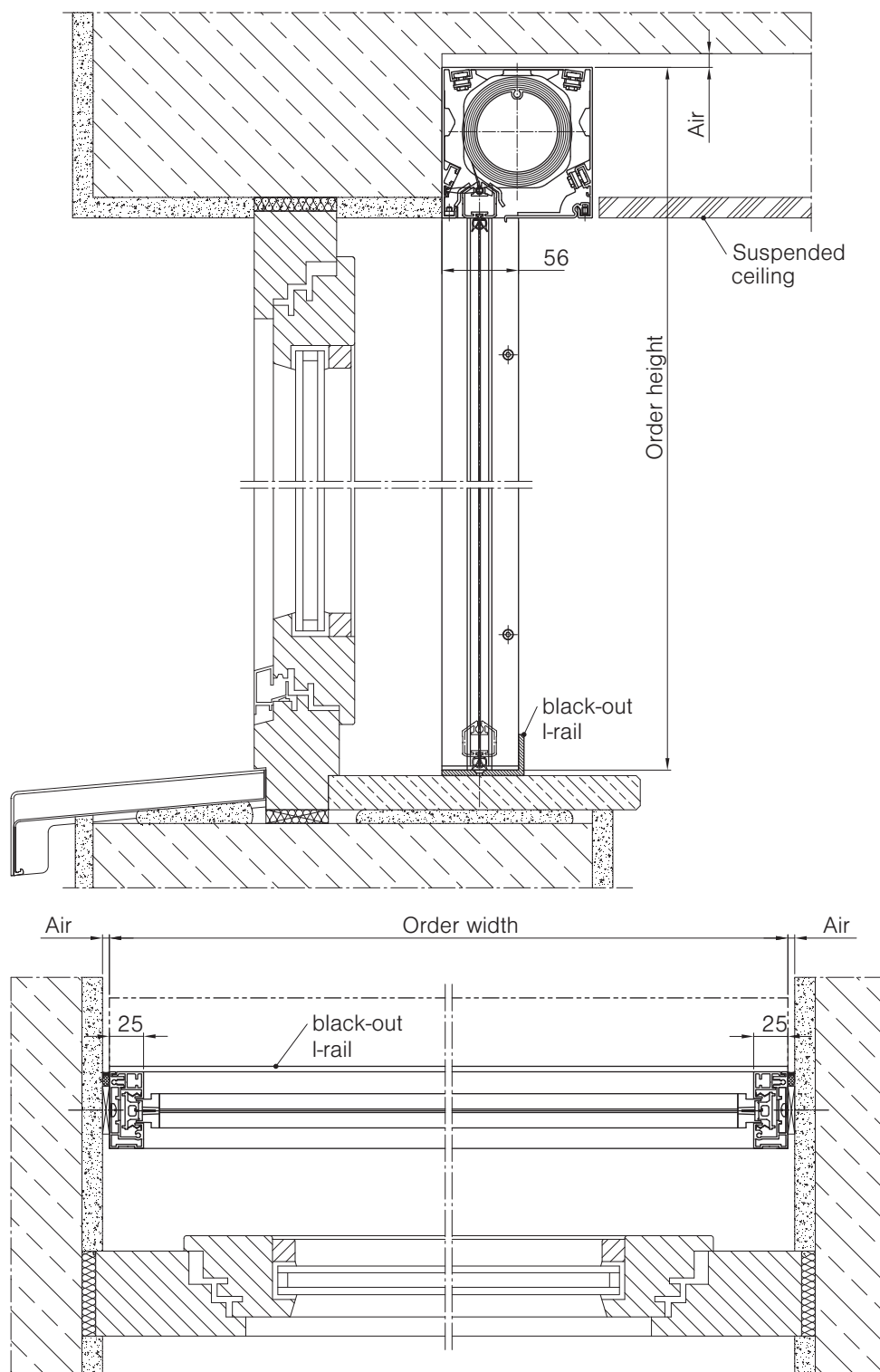


fig. 52: Right rolling blind in the reveal

Application examples

**Black-out blind with ZIP guidance**

Right rolling blind on the reveal with black-out l-rail in front of the window sill

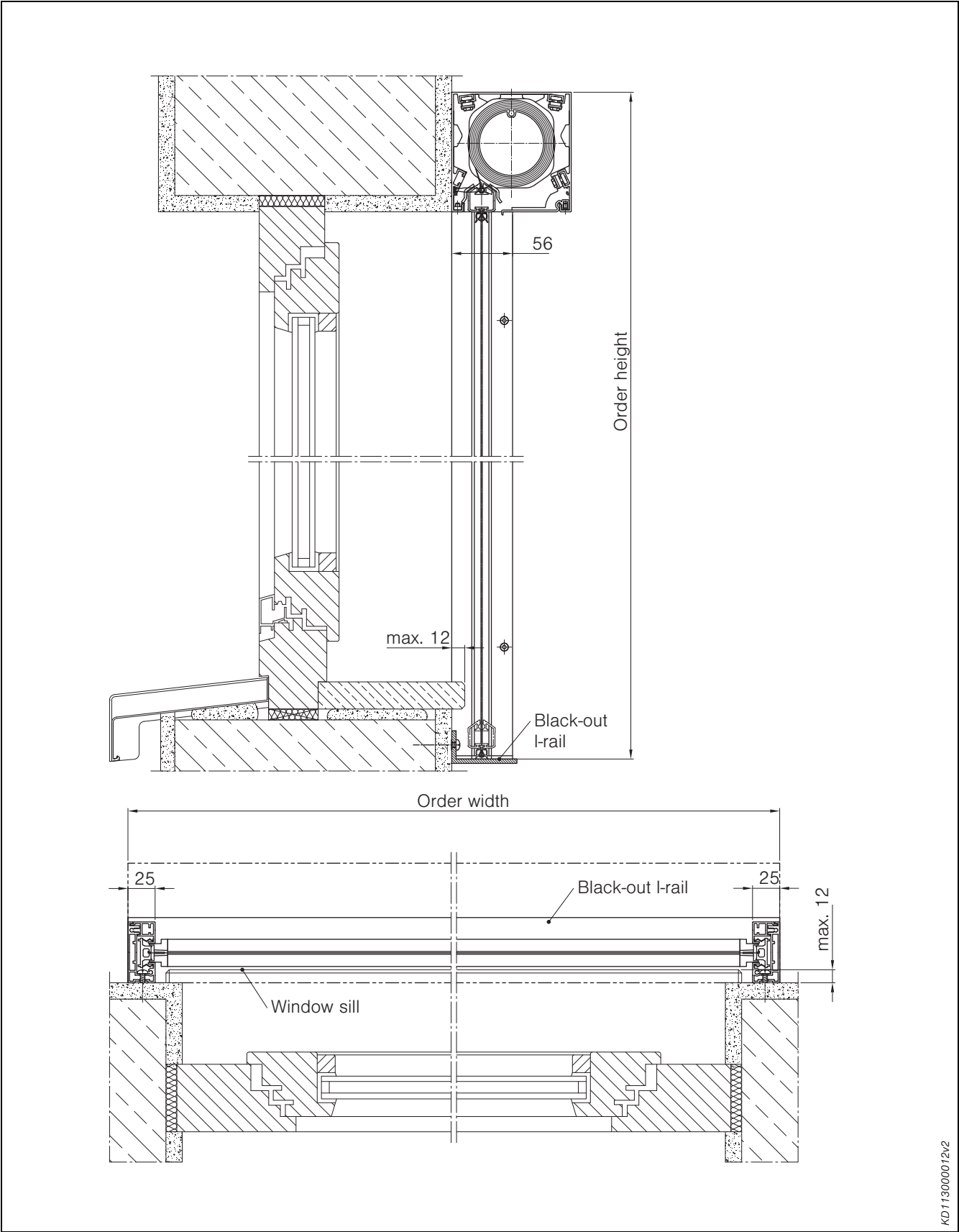


fig. 53: Right rolling blind on the reveal

## Application examples

### Black-out blind with ZIP guidance

#### Left rolling blind in the reveal

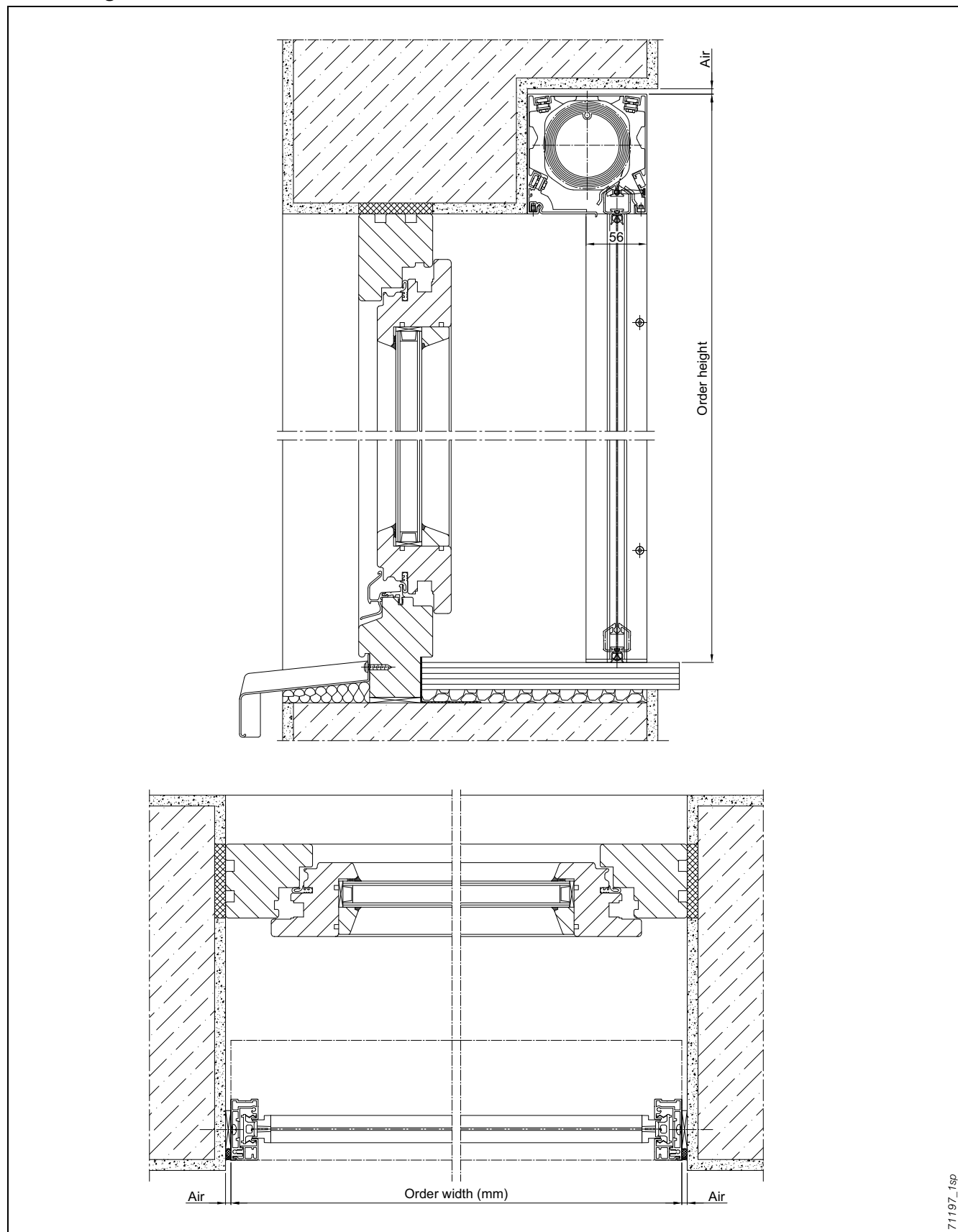
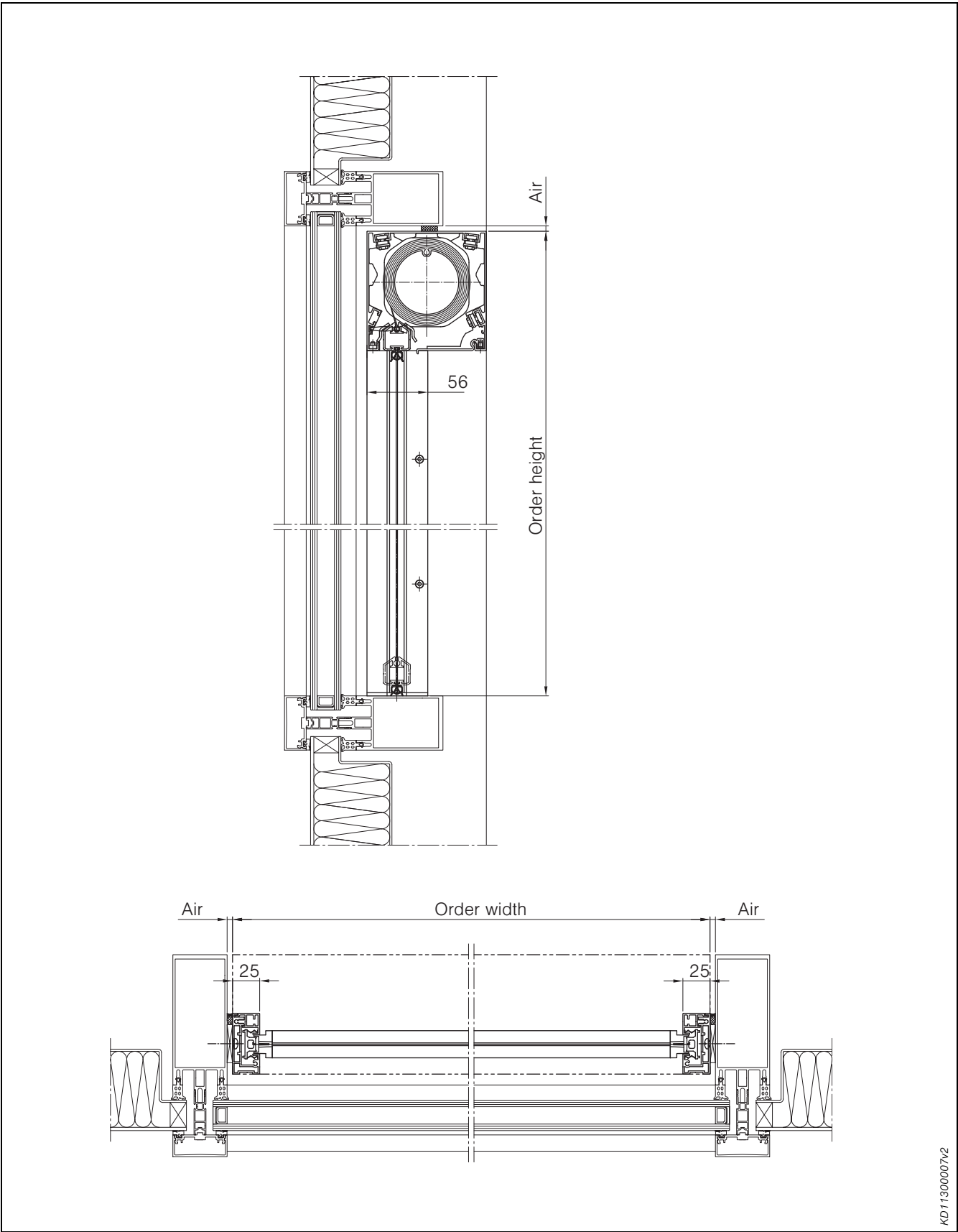


fig. 54: Left rolling blind in the reveal

Application examples

**Black-out blind with ZIP guidance**

**Transom and mullion system/right rolling blind between mullions (in the reveal)**



KD11300007v2

fig. 55: Transom and mullion system/right rolling blind between the mullions



Contents

Horizontal black-out blind H-VDA

Horizontal black-out blind H-VDA

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## Description

### Horizontal black-out blind H-VDA

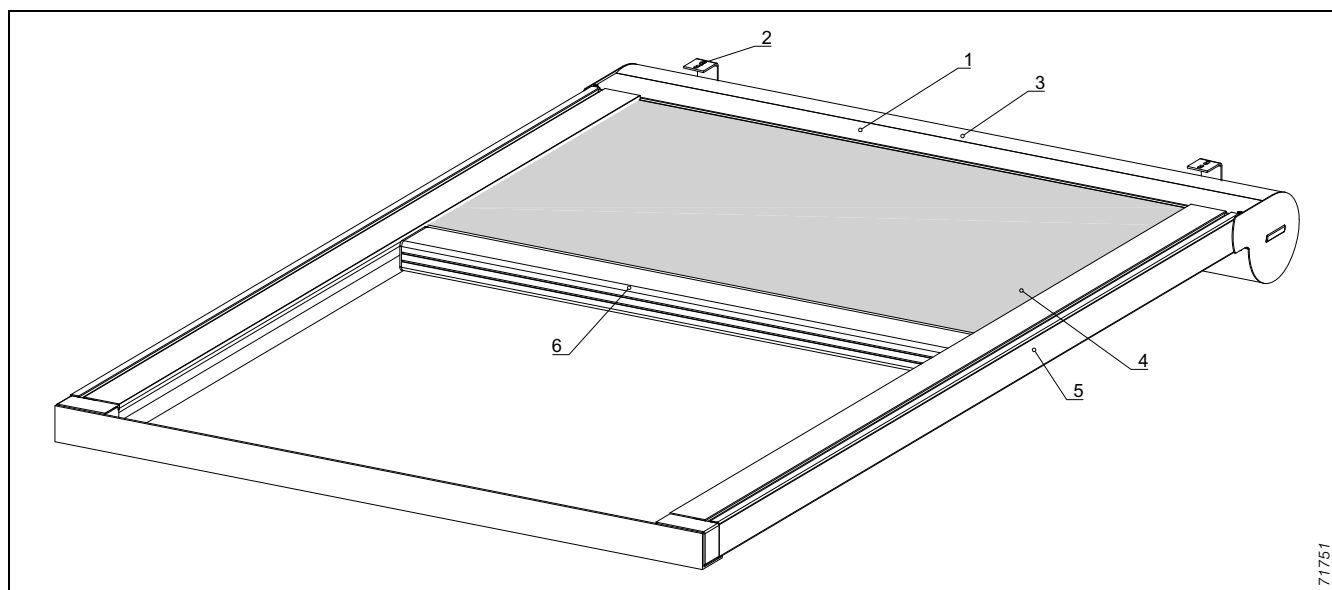


fig. 56: Horizontal black-out blind

- 1 Cover panel
- 2 Ceiling bracket
- 3 Shaft
- 4 Black-out blind
- 5 Lateral guidance with toothed belt
- 6 Front rail

### Application

For 100 % darkening of rooms. Mounted inside the room on horizontal or sloped windows as well as within skylight domes.

Function principle: back-pull system via toothed belt with steel reinforcement.

Optimal fabric tension through pre-tensioning of the spring mechanism.

### Operation

#### Basic motor, 230 V, 50 Hz

WM REA with electronic limit switch-off  
(optionally with EWFS/WMS Plug receiver)

#### EWFS radio motor, 230 V, 50 Hz (optional)

W-WM with electronic limit switch-off

#### WMS radio motor, 230 V, 50 Hz (optional)

WMS-WM with electronic limit switch-off

More information about drives from page 79.

### Cover panel (1)

two-piece, closed at the front, incl. brush seal

Material: aluminium, extruded

Dimensions (W x D): 199 x 159 mm

Surface: powder-coated

Fixing: using a ceiling bracket

### Ceiling bracket (2)

Material: stainless steel

Dimensions (W x D): 40 x 75.5 or 129 mm

Surface: plain

### Shaft (3)

#### Fabric shaft

Material: galvanised steel

Material thickness: 1 mm

Dimensions (Ø): 85 mm

Profile: groove tube

Surface: plain

#### Motor shaft

Material: aluminium

Material thickness: 1.5 mm

Dimensions (Ø): 56 mm

Profile: round profile

Surface: plain

## Description/Safety instructions

### Horizontal black-out blind H-VDA

#### Black-out blind (4)

100 % opaque, light-fast, infrared-safe

##### Textile fabric

flame-resistant according to DIN 4102-1 B1

Material: base material made of Trevira CS, with welded pockets for aluminium stiffener (Ø10 x 1 mm) every 690 mm.

Surface inside: textile (coloured), according to colour chart for WAREMA black-out blinds.

Surface outside: PVC (silver or white)

##### Glass fibre curtain

non-flammable according to DIN 4102-1 A2

Material: laminated with PTFE (polytetrafluorethylene), with bonded pockets for stainless steel stiffener (Ø8 x 1 mm) every 690 mm

Surface inside: grey, according to colour chart for WAREMA black-out blinds.

Surface outside: silver

#### Lateral guidance (5)

##### with back-pull system via toothed belt

with mounting groove

Material: aluminium, extruded

Dimensions (W x D): 98 x 65 mm

Surface: powder-coated

Fixing: brackets, page 69

Pulling element: Toothed belt with steel insert

End cap: powder-coated with deflection bearing

#### Front rail (6)

Material: aluminium, extruded

Dimensions (H x D): 94 x 54 mm

Surface: powder-coated

#### Fixing and connecting parts

inside the horizontal black-out blind

Material: A2 steel or aluminium

#### Colours

Powder coating of aluminium parts with chrome-free pre-treatment according to valid RAL CLASSIC colour chart (except camouflage and luminous colours) or in six DB colours as well as eight textured colours, four anodised-look colours (WC31–WC34) and further colours according to WAREMA Colour World (in WAREMA colour specification). Other colour specifications and special colours are available on request and are subject to surcharge.

#### Checklist

- Provide drawings of the installation site or make a sketch and also attach a photo (if possible)
- Fabric colour and quality
- Frame colour
- Type of guide rail brackets
- Determine position of drive (operation side of cover panel in direction of movement)
- Arrange for supply line on-site
- Arrange for housing of plug-in connector

#### Safety instructions

- In gyms, multi-purpose halls or similar, the horizontal black-out blind must be protected against shocks (ball games), impacts etc. by appropriate features like fences, nets etc.
- Do not use in indoor pools where chlorine is in the atmosphere.
- It is imperative that the installation instructions and the relevant appendices are adhered to.
- Accident prevention regulations from trade associations must be observed.
- The specifications of the manufacturers of screw anchors and fixing materials must be observed.
- The fixing points have to be checked once a year!

#### Information on operation and electrical connection:

The following connection conditions must be taken into consideration when controlling electronic motors:

1. It must be ensured that the drives are to be operated via locked switching elements. However, the drives switch to programming mode, if synchronous voltage is applied to the up and down running directions. In this case the built-in electronics lose their saved limit positions and await new programming.
2. Switching devices with the so-called 3-wire conductor technology (e.g. Rademacher timer clip) cannot be used because these devices draw their operating voltage from the drive and the electronics in the motors do not build up enough voltage.

If both conditions have been met, the electronic motors can be operated with any roller shutter controller or bus system (via actuators).



Weights/guide rail/cover panel

Horizontal black-out blind H-VDA

Diagram for determining weight of a horizontal black-out blind

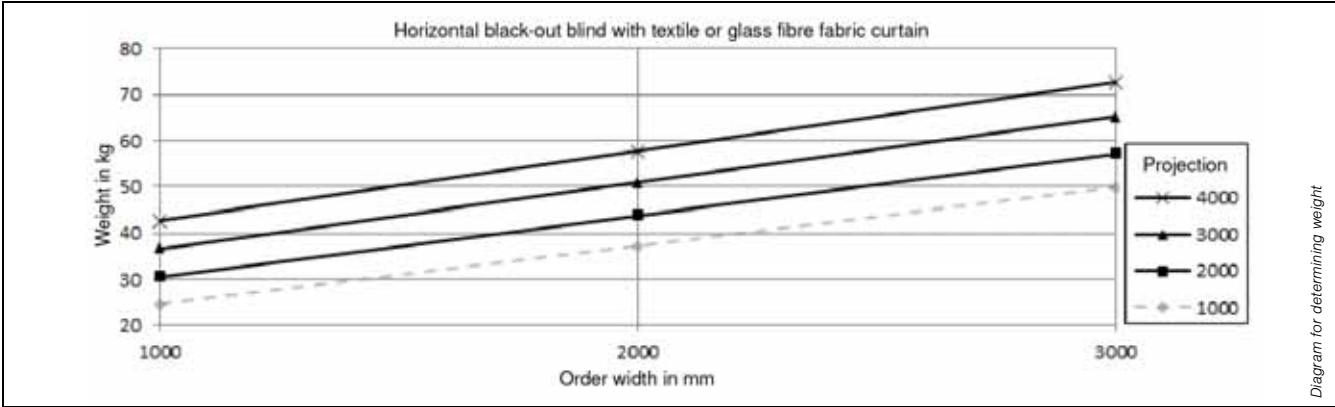


fig. 57: Weight table H-VDA

Guide rail

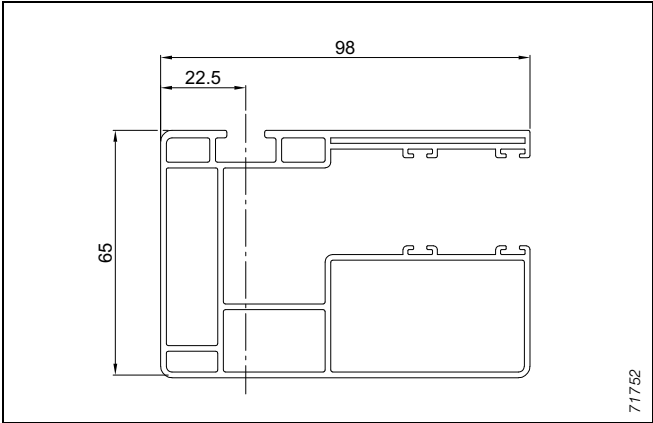


fig. 58: Guide rail

Cover panel

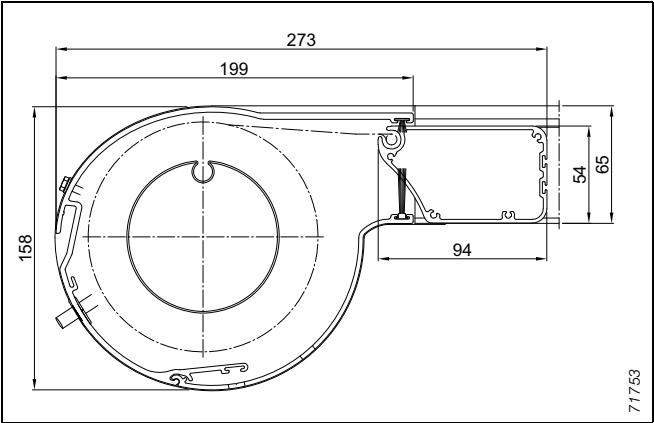


fig. 59: Cover panel with front rail

## Construction limit values/definitions

### Horizontal black-out blind H-VDA

#### Construction limit values in mm H-VDA

Internal sun shading systems	Black-out blind	Individual units
Max. width	Textile fabric	3000
	Glass fibre curtain	3000
Min. width	Textile fabric	820
	Glass fibre curtain	820
Max. length	Textile fabric	4000
	Glass fibre curtain	4000
Min. length	Textile fabric	650
	Glass fibre curtain	650
Max. area (m <sup>2</sup> )	Textile fabric	9
	Glass fibre curtain	9

#### Note:

Horizontal black-out blinds are only available as individual units, i.e. no coupled curtains and no motor/end bearing situations are possible! Each horizontal black-out blind requires 2 single guide rails.

#### Definitions

The drive end or operation side is always seen from the cover panel in extension direction.

Order width = from one guide rail fixing axis to the next fixing axis = axial dimension

#### Guide rail brackets

Length (mm)	Guide rail brackets per rail
up to 2000	2
2001 to 4000	3

#### Ceiling bracket

Width (mm)	Ceiling bracket
up to 3000	2

# Measuring instructions

## Horizontal black-out blind H-VDA

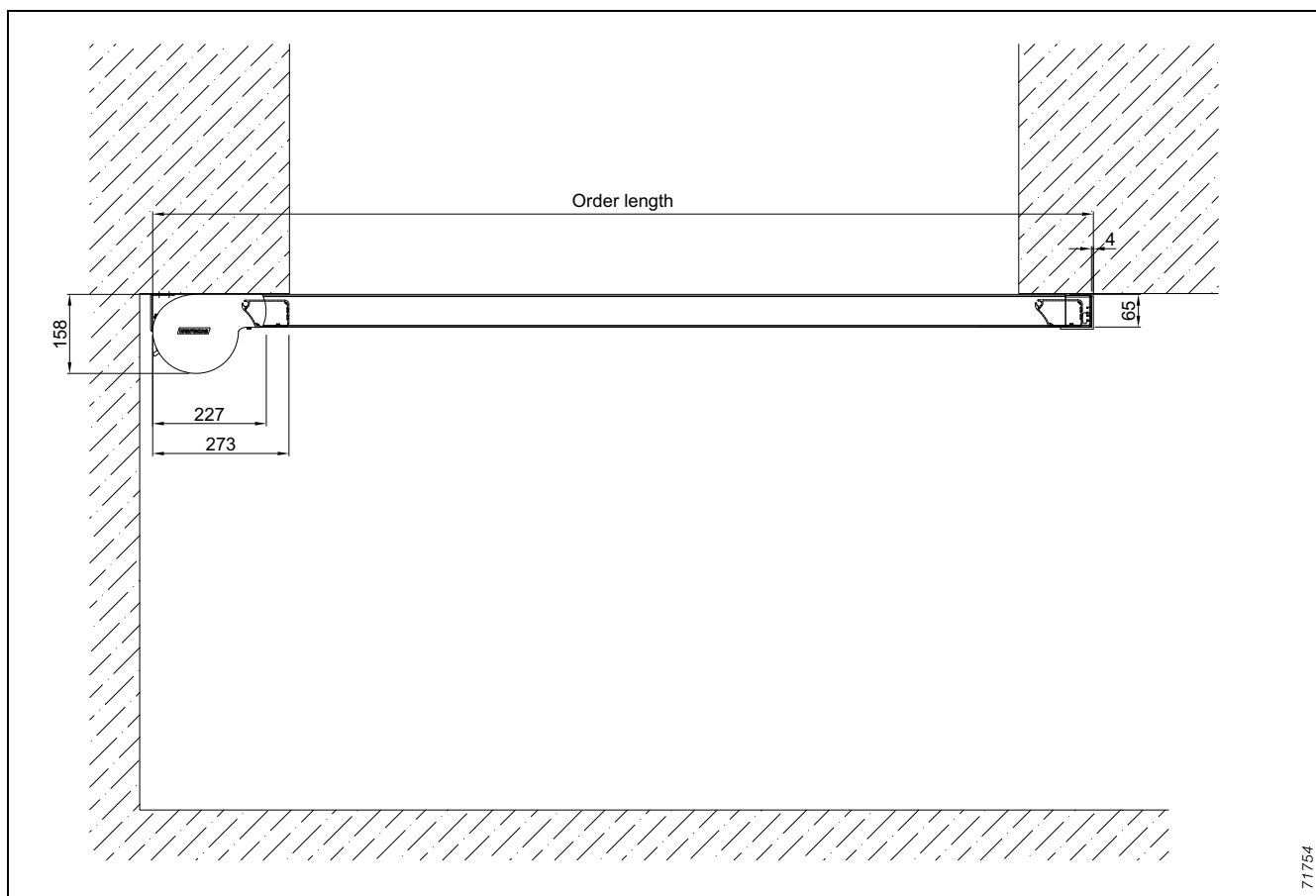


fig. 60: Horizontal black-out blind H-VDA

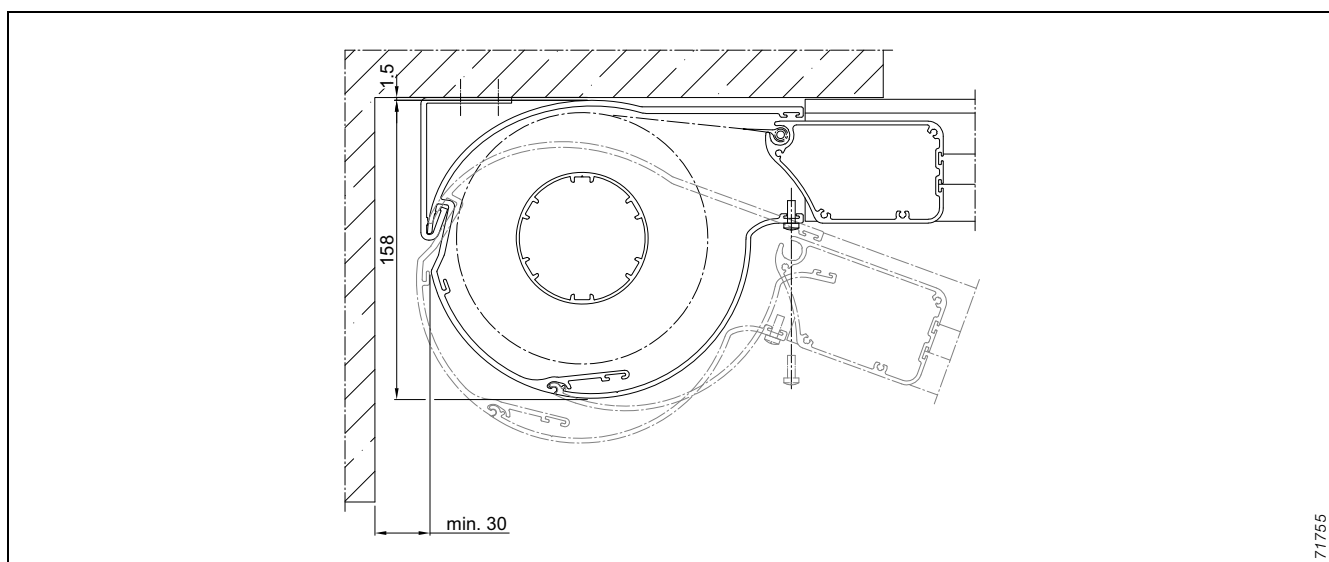


fig. 61: Installation space cover panel

## Measuring instructions

### Horizontal black-out blind H-VDA

**Attention: Order width = middle of guide rail – middle of guide rail. The complete horizontal black-out blind (incl. side covers) is 53 mm wider. Please note when ordering!**

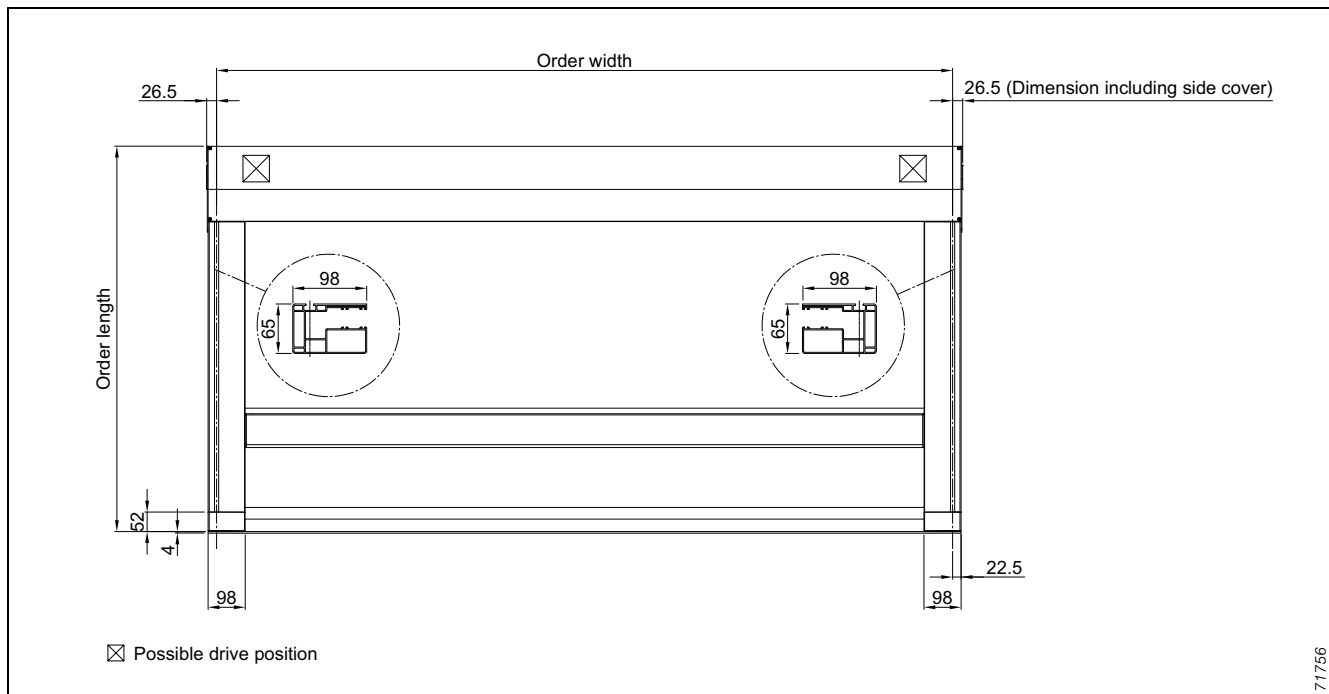


fig. 62: Measuring instructions for individual unit

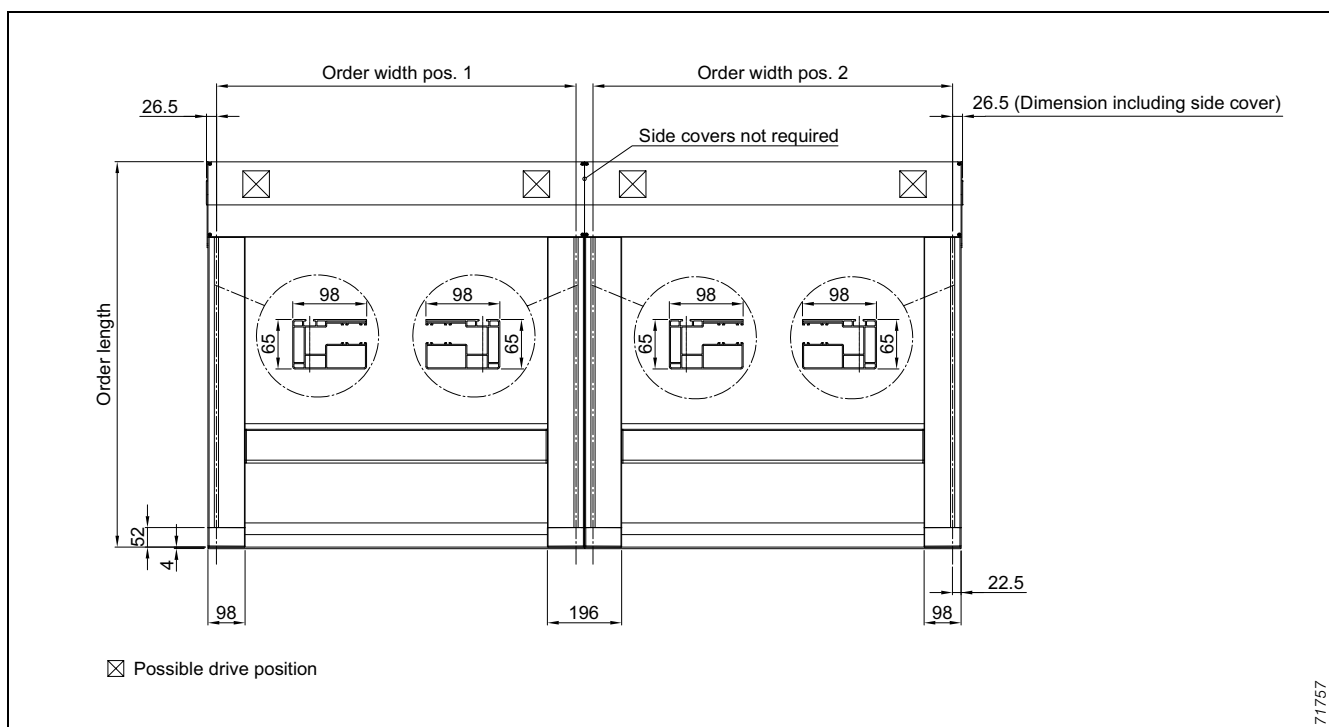


fig. 63: Measuring instructions for series-mounted unit

For series-mounted units it is possible to attach 2 guide rails with one bracket; after 12000 mm an expansion joint of 20 mm is necessary.

## Cable exit

### Horizontal black-out blind H-VDA

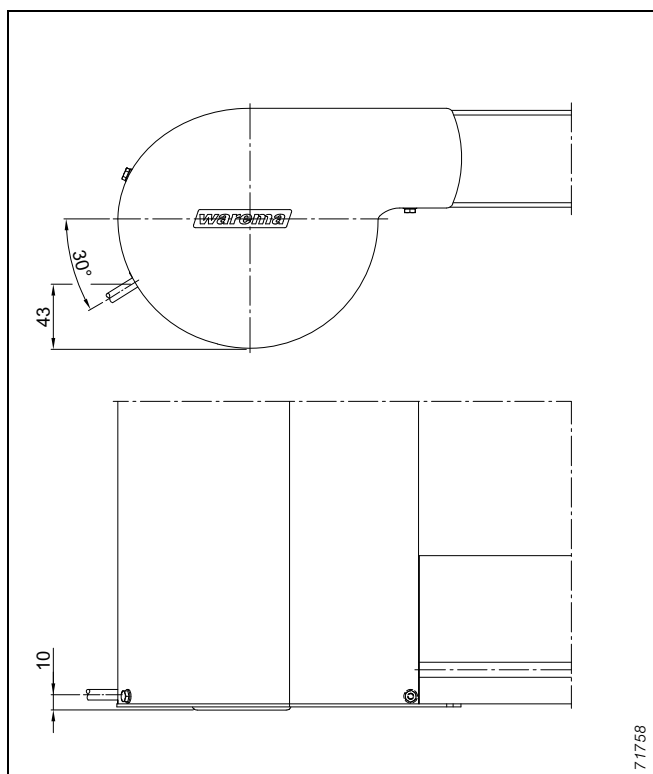


fig. 64: Cable exit

Mounting examples

Horizontal black-out blind H-VDA

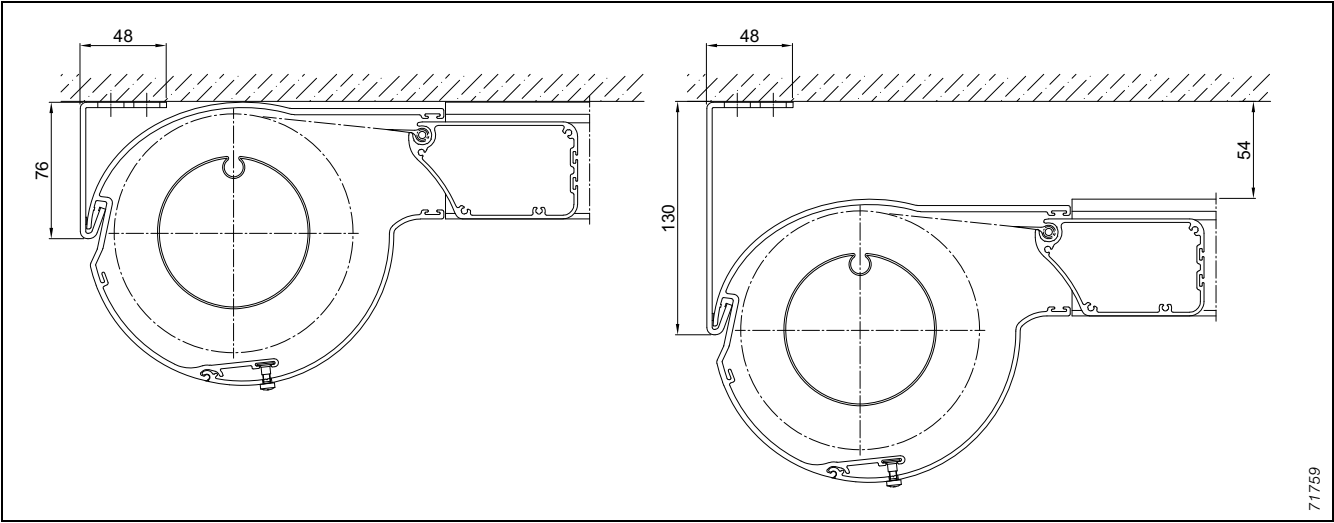


fig. 65: Overview of cover panel fixing

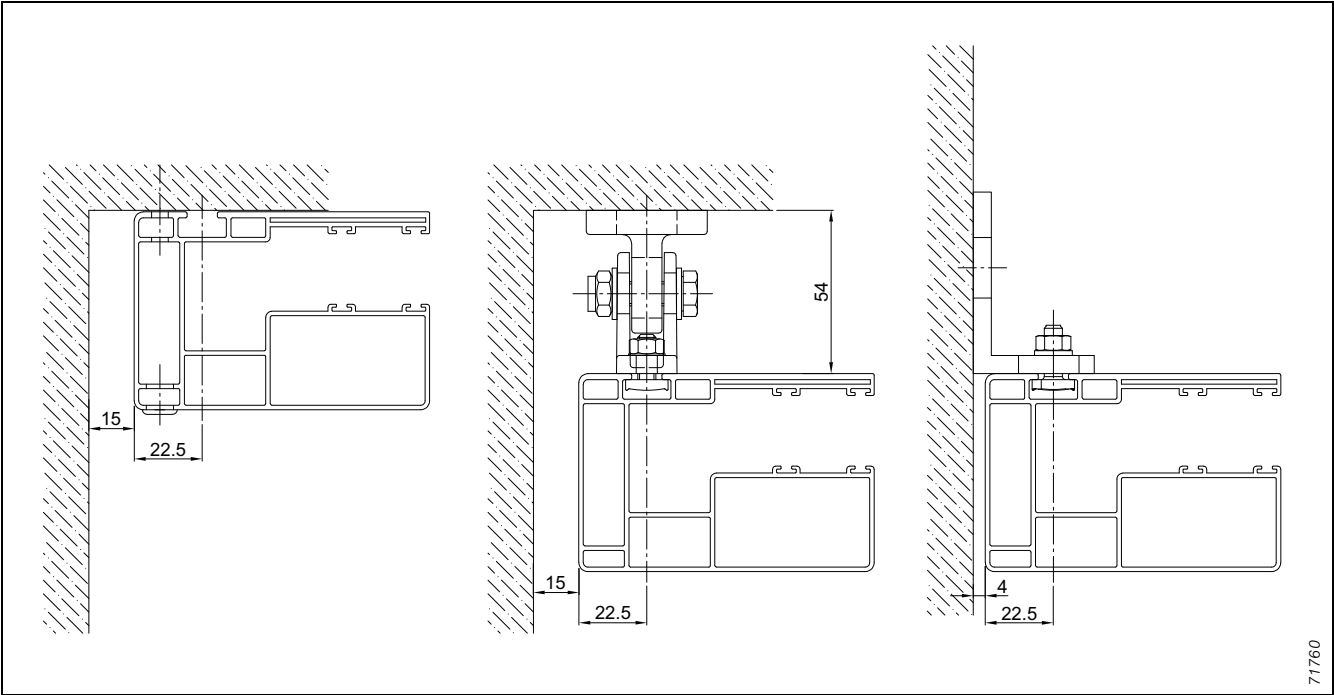


fig. 66: Overview of guide rail fixation



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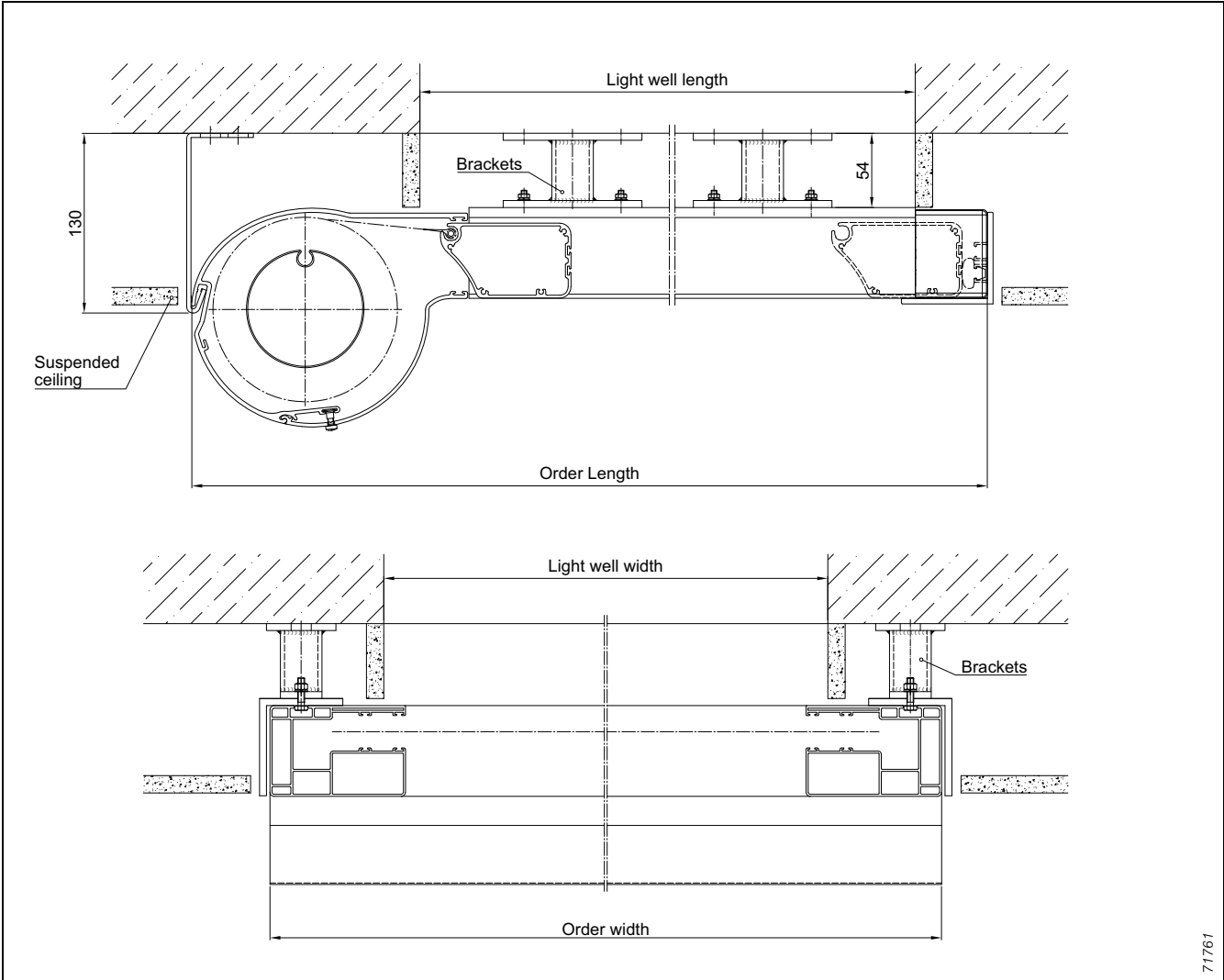
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Application examples

Horizontal black-out blind H-VDA

For suspended ceiling



71761

fig. 67: Mounting example

## Application examples

### Horizontal black-out blind H-VDA

#### Contradirectional units

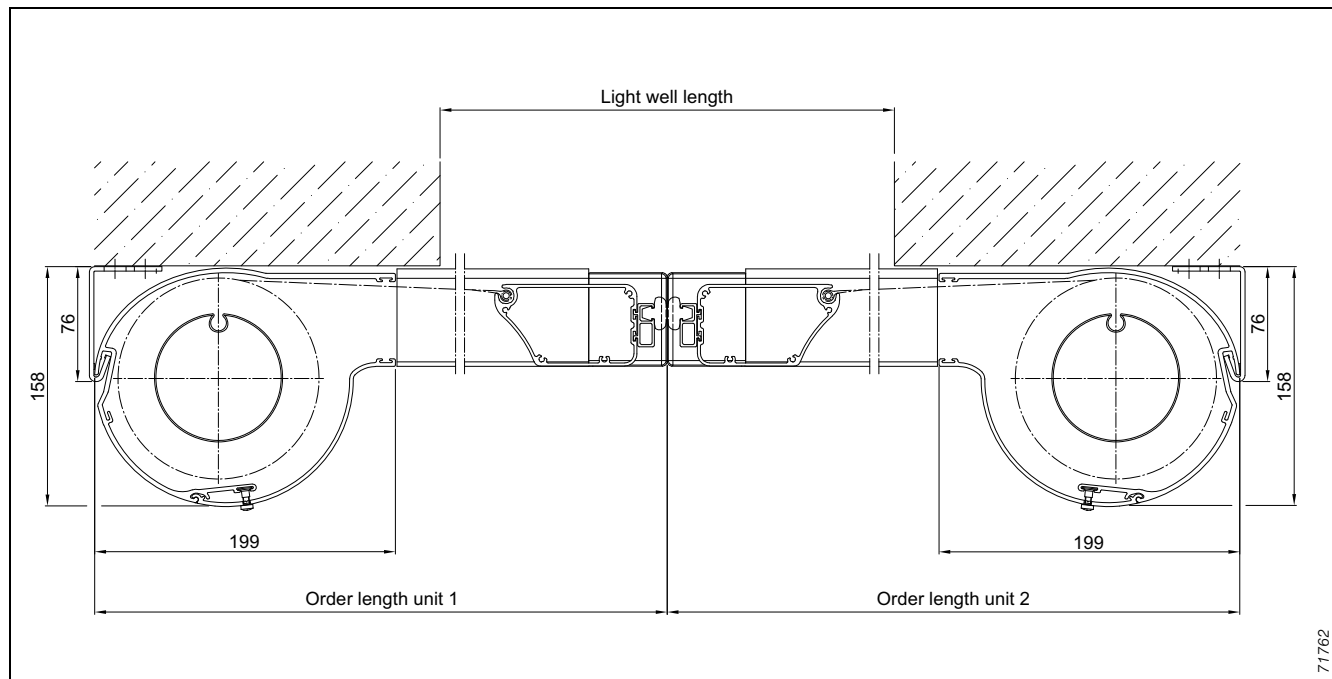


fig. 68: Application example for contradictirectional units

#### Note:

- For darkening long light wells without central cross connection



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## Drives Overview

WAREMA only uses innovative drives of reliable European quality suppliers, e.g. Somfy and Becker drives. These comply with the highest quality standards and have been tested extensively.

All drive solutions optimally match the corresponding WAREMA sun shading products as well as WAREMA control systems and are continuously further developed.

From the first conception phase through to the market launch WAREMA accompanies the development of new drives with expertise in sun shading systems. Before a drive is installed in WAREMA products, it is again subjected to a very extensive series of tests which individually match the drive.

All setting instructions are tailored exactly to the WAREMA sun shading products and enable a very comfortable installation and commissioning of the drives.

### Technologies at a glance

#### Drives with mechanical limit switch-off

- Proven track record
- Reliable and precise
- Intuitive setting
- Our basic motorisation with black-out blind VDA 13

#### Drives with electronic limit switch-off

- Software/function specifically matches the sun shading product
- Comfortable adjustment of the motor limit positions with programming cable
- Our basic motorisation with horizontal black-out blind H-VDA

#### Electronic special drive ZM REA for black-out blind with ZIP guidance

- With responsive obstacle detection
- The drive reacts sensitively to blockages in both directions of movement in any situation and thus ensures maximum curtain protection and operating safety. Used as standard for products with ZIP guidance

#### EWFS radio motor

- Based on our unidirectional EWFS radio system with a transmission frequency of 433.92 MHz
- Comprehensive range of functions, e.g. comfort position teachable
- Combinable with comprehensive control components such as hand-held transmitter, wall-mounted transmitter

#### WMS radio motor

- Based on our bidirectional WMS radio system with a transmission frequency of 2.4 GHz
- Maximum safety by means of encoded radio network
- Accurate moving to intermediate positions
- Exact position feedback
- Responsive obstacle detection for products with special guidance (e.g. black-out blind with ZIP guidance)
- Can also be operated via smartphone by means of WAREMA climatronic® WebControl
- Our highlight: on request, we can program your order with WMS radio motors for the delivered hand-held transmitter ex works, our service – your installation advantage!







### Functions in detail

Function	Explanation
<b>Position switch-off</b> (motor limit position)	Drive stops precisely at an exactly adjustable position.
<b>Torque overload protection</b> (motor limit position)	Drive drives against a system stop. Switch-off torque optimally matches the black-out blind product.
<b>Optional box closure</b>	The box is always closed correctly.
<b>Fabric tension relief mechanism</b>	Short, optically invisible extension movement after the torque overload protection activates in order to preserve the black-out blind.
<b>Fabric stretching adjustment</b>	For drives with torque overload protection in the upper limit position, an elongation of the black-out blind is compensated.
<b>Block detection</b> (Retract, raise)	Drive stops in the case of blockages and thus protects your black-out blind from damage.
<b>Obstacle detection</b> (Extend, lower)	Drive stops in the case of obstacles and thus protects your black-out blind from damage.
<b>Responsive obstacle detection</b>	Drive reacts while being sensitive to obstacles/blockages and thus ensures maximum curtain protection.
<b>Comfort position</b> (intermediate position)	Individually adjustable for EWFS and WMS radio motor.
<b>Drive with connection for additional crank operation</b>	The product can also be operated in the case of power failure via a collapsible crank.

## Utilisation options

### Black-out systems

#### Applications

Motor type	LT50	LT50 Motor with connection for additional crank operation	P9/16CM (VDA)	ZM REA	WT	W-MP (EWFS)
Limit switch-off	mechanical	mechanical <sup>2)</sup>	mechanical	electronic	electronic	Radio
						
VDA13..... 9	–	–	●	–	–	–
VDA13..... 11, 13, 15	●	○	○	–	–	○
VDA ZIP ..11, 13, 15	–	–	–	●	–	–
H-VDA	–	–	–	–	●	–

Motor type	W-ZM (EWFS)	EWFS-ZWS	WMS-MP (WMS)	WMS-ZM (WMS)	WMS-ZWS
Limit switch-off	Radio	Radio <sup>1)</sup>	Radio	Radio	Radio <sup>1)</sup>
					
VDA13..... 9	–	○	–	–	○
VDA13..... 11, 13, 15	–	○	○	–	○
VDA ZIP ..11, 13, 15	○	○	–	○	○
H-VDA	–	○	–	–	○

<sup>1)</sup> Basic motor with additional EWFS plug receiver

<sup>2)</sup> only for box size 15

- standard
- optional
- not possible

## Function overview

### Black-out systems

#### Function overview

Motor type	LT50	LT50 Motor with connection for additional crank operation	P9/16CM (VDA)	ZM REA	WT	W-MP (EWFS)
Limit switch-off	mechanical	mechanical	mechanical	electronic	electronic	Radio
Position switch-off bottom	●	●	●	●	–	●
Position switch-off top	●	●	●	○	–	●
Torque overload protection bottom	–	–	–	–	●	–
Torque overload protection top	–	–	–	●	●	–
Optional box closure	–	–	–	●	●	–
Block detection (Raise)	–	–	–	●	●	●
Obstacle detection (Lower)	–	–	–	●	●	–
Reactive obstacle detection	–	–	–	●	–	–
Comfort position (intermediate position)	–	–	–	–	–	●
Fabric stretching adjustment	–	–	–	○ <sup>1)</sup>	●	–
Fabric tension relief mechanism	–	–	–	–	●	–
Drive with connection for additional crank operation	–	●	–	–	–	–

Motor type	W-ZM (EWFS)	WMS-MP (WMS)	WMS-ZM (WMS)
Limit switch-off	Radio	Radio	Radio
Position switch-off bottom	●	●	●
Position switch-off top	–	●	–
Torque overload protection bottom	–	–	–
Torque overload protection top	●	–	●
Optional box closure	●	–	●
Block detection (Raise)	●	●	●
Obstacle detection (Lower)	–	–	●
Reactive obstacle detection	–	–	●
Comfort position (intermediate position)	●	●	●
Fabric stretching adjustment	●	–	●
Fabric tension relief mechanism	–	–	–
Drive with connection for additional crank operation	–	–	–

- standard
- optional
- <sup>1)</sup> only for torque overload protection
- not possible

## Technical data

### Black-out systems

#### Technical data

Motor type	LT50	LT50 Motor with connection for additional crank operation	P9/16CM (VDA)	ZM REA	WT	W-MP (EWFS)
Limit switch-off	mechanical	mechanical	mechanical	electronic	electronic	Radio
Rated voltage	230 V, 50 Hz	230 V, 50 Hz	230 V, 50 Hz	230 V, 50 Hz	230 V, 50 Hz	230 V, 50 Hz
Torque	6 to 120 Nm	40 Nm	9 Nm	8/12/20/30 Nm	20/40 Nm	8/12/20/30/40 Nm
Speed	17 rpm	17 rpm	16 rpm	17 rpm	17 rpm	17 rpm
Rated power consumption	90 to 400 W	270 W	110 W	100 to 205 W	160/260 W	100 to 260 W
Nominal current	0.45 to 1.8 A	1.2 A	0.47 A	0.45 to 0.9 A	0.75/1.15 A	0.45 to 1.15 A
Idle losses (Standby)	No	No	No	n/a	No	<1 W
Transmission frequency	–	–	–	–	–	433.92 MHz
Minimum run time (at 23 °C)	4 min	4 min	4 min	4 min	4 min	4 min
Degree of protection	IP44	IP44	IP44	IP44	IP44	IP44
Motor line	0.4 m	0.4 m	0.5 m	0.5 m	0.5 m	0.5 m
Plug-in connector	STAS 3	STAS 3	STAS 3	STAS 3	STAS 3	STAS 3
Overheat protection	yes	yes	yes	yes	yes	yes
Operating temperature (temporary)	–10° to +40 °C (–25 to +70 °C)	–10° to +40 °C (–25 to +70 °C)	–10° to +40 °C (–20 to +80 °C)	–10° to +40 °C (–20 to +80 °C)	–10° to +40 °C (–20 to +80 °C)	–10° to +40 °C (–20 to +80 °C)
Test/Programming cable	Standard test cable up/down	Standard test cable up/down	Standard test cable up/down	Becker programming cable	Becker programming cable	Test cable latch standard

Motor type	W-ZM (EWFS)	WMS-MP (WMS)	WMS-ZM (WMS)
Limit switch-off	Radio	Radio	Radio
Rated voltage	230 V, 50 Hz	230 V, 50 Hz	230 V, 50 Hz
Torque	8/12/20/30 Nm	8/12/20/30/40 Nm	8/12/20/30 Nm
Speed	17 rpm	17 rpm	17 rpm
Rated power consumption	100 to 205 W	100 to 260 W	100 to 205 W
Nominal current	0.45 to 0.9 A	0.45 to 1.15 A	0.45 to 0.9 A
Idle losses (Standby)	<1 W	n/a	n/a
Transmission frequency	433.92 MHz	2.4 GHz	2.4 GHz
Minimum run time (at 23 °C)	4 min	4 min	4 min
Degree of protection	IP44	IP44	IP44
Motor line	0.5 m	0.5 m	0.5 m
Plug-in connector	STAS 3	STAS 3	STAS 3
Overheat protection	yes	yes	yes
Operating temperature (temporary)	–10° to +40 °C (–20 to +80 °C)	–10° to +40 °C (–20 to +80 °C)	–10° to +40 °C (–20 to +80 °C)
Test/Programming cable	Test cable with locking function	Test cable with locking function	Test cable with locking function



Details

Plug-in connector

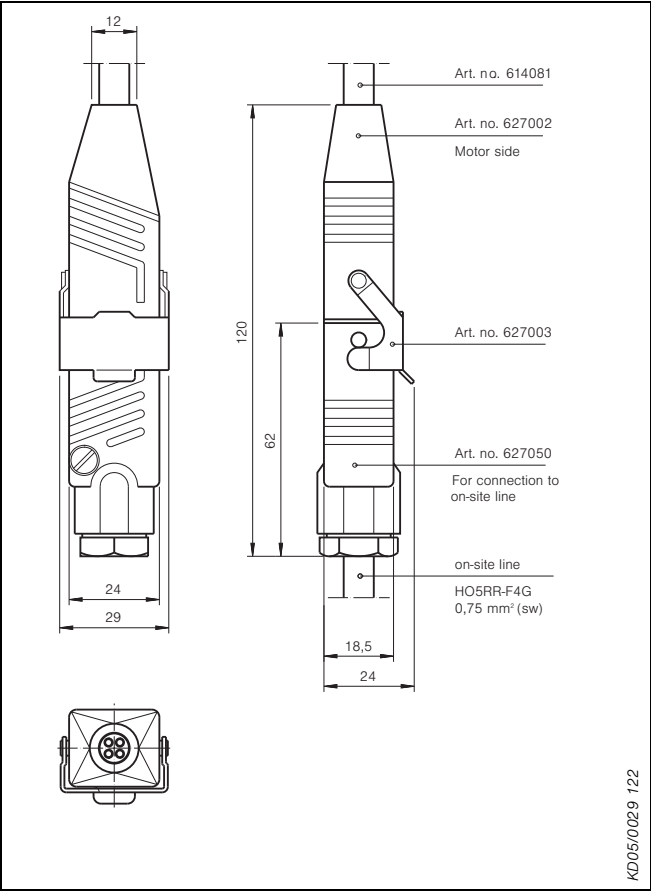


fig. 69: Plug-in connector

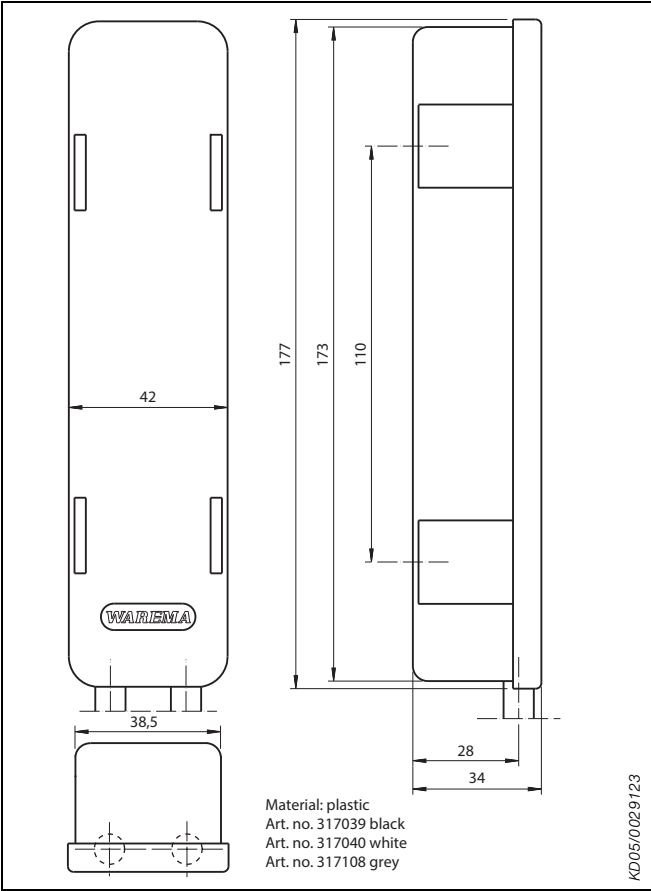


fig. 70: Housing for plug-in connector

Details

WMS and/or EWFS Plug receiver

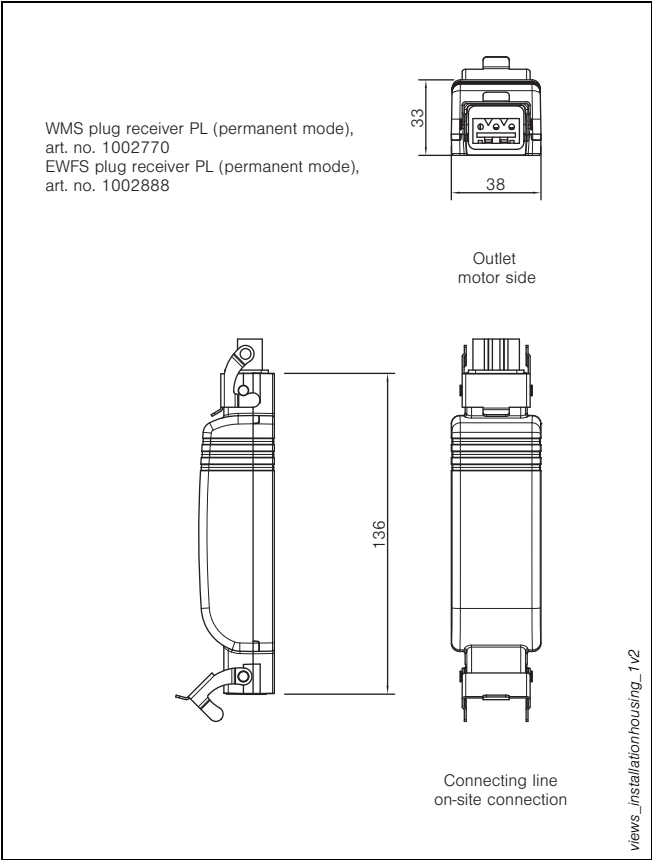


fig. 71: WMS and/or EWFS plug receiver

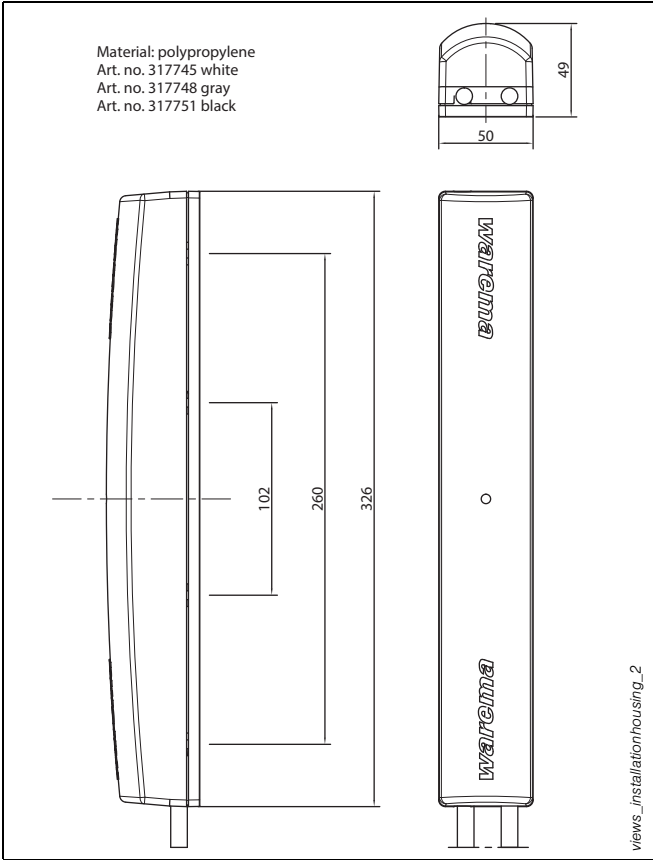



fig. 72: Housing for WMS and/or EWFS plug receiver

## Everything at a glance

### Function overview

		Radio systems		Central control systems	
		WMS	EWFS	WAREMA Timer	Time switch
					
Control channels		200	1/8	1	1
Transmission frequency		2.4 GHz	433.92 MHz	–	–
EWFS compatible		–	●	–	–
Automatic factory settings for various sun shading products		●	–	–	–
Safety functions	Wind monitoring (max. connectible sensors)	●	●	–	–
	Direction-sensitive wind monitoring	–	–	–	–
	Precipitation monitoring	●	●	–	–
	Ice monitoring	●	–	–	–
Energy efficiency/comfort functions	Sun control	●	●	–	● <sup>2)</sup>
	Dawn/dusk control	●	–	● <sup>3)</sup>	● <sup>2)</sup>
	Time switch	●	●	●	●
	Control timer	●	–	–	–
	Temperature control according to sensor Inside temperature	●	–	–	–
	Temperature control according to sensor Outside temperature	–	–	–	–
	Differential temperature control	–	–	–	–
	Humidity control	–	–	–	–
	Adjustable blind runtime	●	–	●	●
	Window control	●	–	–	–
	Intermittent ventilation	–	–	–	–
	Slat tilting	●	–	–	–
	Slat tracking	–	–	–	–
	Radio clock (DCF77)	–	–	–	–
	Dimming of light (230 V AC)	–	●	–	–
	Dimming of light (LED directly above dimmer)	●	–	–	–
	Switching of light (230 V AC)	●	●	–	–
	Fan control	–	–	–	–
	Astro function	●	–	●	–
	Scenes	●	–	–	–
	Presence simulation	–	–	●	–
	History for measuring values and trigger events	–	–	–	–
Operation	Hand-held and wall-mounted transmitters	●	●	–	–
	Central control unit	●	●	●	●
	By smartphone, mobile terminal devices	●	–	–	–
	External channel pushbutton connectible	–	–	–	–
	PC	●	–	–	–
	Control via BCS	–	–	–	–
Commissioning	Online via PC	–	–	–	–
	Offline via PC	●	–	–	–

● possible

– not possible

<sup>1)</sup> Weather station multisense is included in the max. number of sensors

<sup>2)</sup> Optional photo sensor with suction cup for window pane

<sup>3)</sup> Integrated Astro function

## General information

**Black-out blind**  
VDA 13

Application examples  
VDA 13

**Black-out blind**  
**VDA ZIP**

## Application examples

Horizontal black-out blind  
H-VDA

## Application examples

## Description

### WMS – WAREMA Mobile System

- Simple and cost-effective retrofitting
- The WMS devices confirm that a command is being received and executed. In this way, feedback is received by the transmitter about the executed move command (bidirectional radio system)
- The operating range is increased through the intelligent routing function since the WMS participants pass the information on to other WMS devices.
- Encryption of the transfer protocol
- Comfortable commissioning via the WMS studio pro software
- Control possible via Android app, iOS app or via web browser with WMS WebControl pro
- Controls the connected products in terms of:
  - Brightness
  - Wind speeds
  - Precipitation
  - Time
  - Dawn/dusk
  - Inside temperature
  - Ice monitoring (combination of outside temperature and precipitation)
  - Astro function



- 1 WMS WebControl pro
- 2 WMS Hand-held transmitter basic
- 3 WMS Wall-mounted transmitter basic
- 4 WMS Hand-held transmitter plus
- 5 WMS Wall-mounted transmitter plus
- 6 WMS Hand-held transmitter
- 7 WMS Central transmitter
- 8 WMS Temperature sensor
- 9 WMS Weather station eco
- 10 WMS Weather station plus
- 11 WMS Actuator UP / Actuator 24 V UP
- 12 WMS Plug receiver
- 13 WMS Wind sensor
- 14 WMS Stick
- 15 WMS Radio motor

## Functional principle

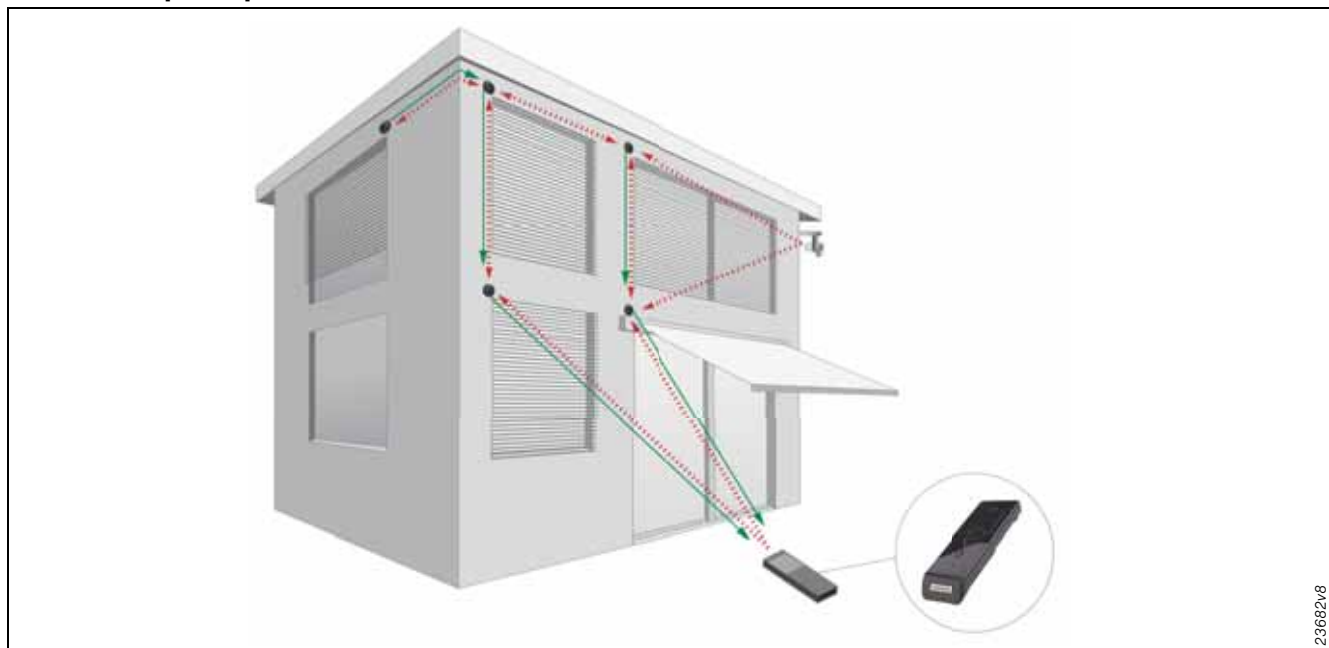


fig. 73: WMS: Intelligent routing function transmits move commands to remote devices

## Description

### EWFS – Standardised WAREMA Radio System

- Simple and cost-effective retrofitting
- One transmitter can control any number of receivers within the radio operating range
- One receiver can be controlled by one main transmitter and up to 15 auxiliary transmitters.
- Several receivers can be grouped per channel
- Simple teaching of transmitter and receiver
- Controls the connected products in terms of:
  - Brightness
  - Wind speeds
  - Precipitation
  - Time
  - Dawn/Dusk via Astro function



- 1 EWFS Timer
- 2 EWFS Wall-mounted transmitter
- 3 EWFS Wall-mounted transmitter slim
- 4 EWFS Hand-held transmitter
- 5 EWFS Weather station eco
- 6 EWFS Weather station plus
- 7 EWFS Plug receiver
- 8 EWFS Flush-mounted receiver

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VDA ZIPApplication examples  
VDA ZIPHorizontal black-out blind  
H-VDAApplication examples  
H-VDADrives/  
control systems

## Functional principle

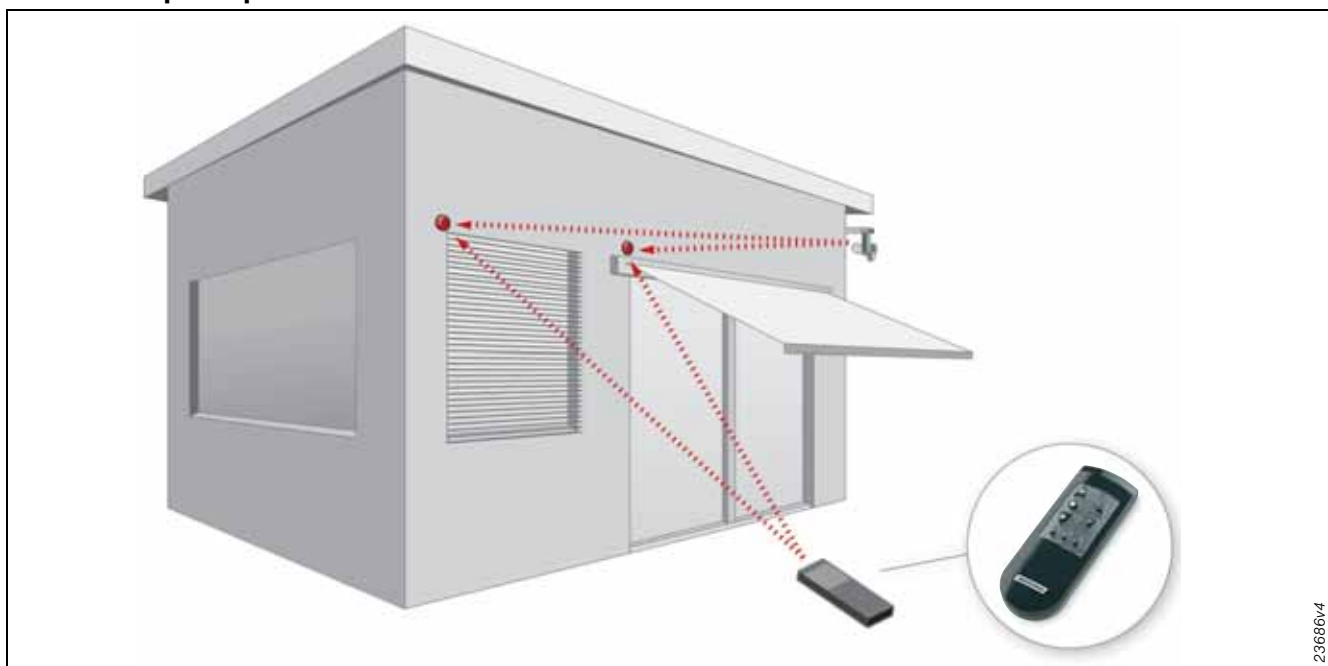


fig. 74: EWFS transmitter wirelessly transmits move commands to the receiver

## Description

### WAREMA Wisotronic

- 1–4 outputs/channels (floating)
- Controls the connected products in terms of:
  - Brightness
  - Dawn/dusk
  - Wind speeds
  - Precipitation
  - Ice
  - Time
  - Inside/outside temperature
- Inside temperature sensor is integrated in the control panel
- Up to 4 individual scene statuses can be retrieved at the press of a button
- Operated via touch-sensitive sensor push buttons and sensor function wheel
- Quickstart menu enables fast commissioning with only a few selection steps
- Different housing models are available for the control panel's different mounting situations
- High-class design thanks to virtually flush installation in hollow wall box
- Radio operation possible via EWFS Hand-held or Wall-mounted transmitter (optionally available)



- 1 Wisotronic control panel
- 2 Wisotronic power unit AP
- 3 Wisotronic power unit REG
- 4 Weather station multisense
- 5 EWFS Hand-held transmitter
- 6 Motor control unit (MSE)

## Functional principle

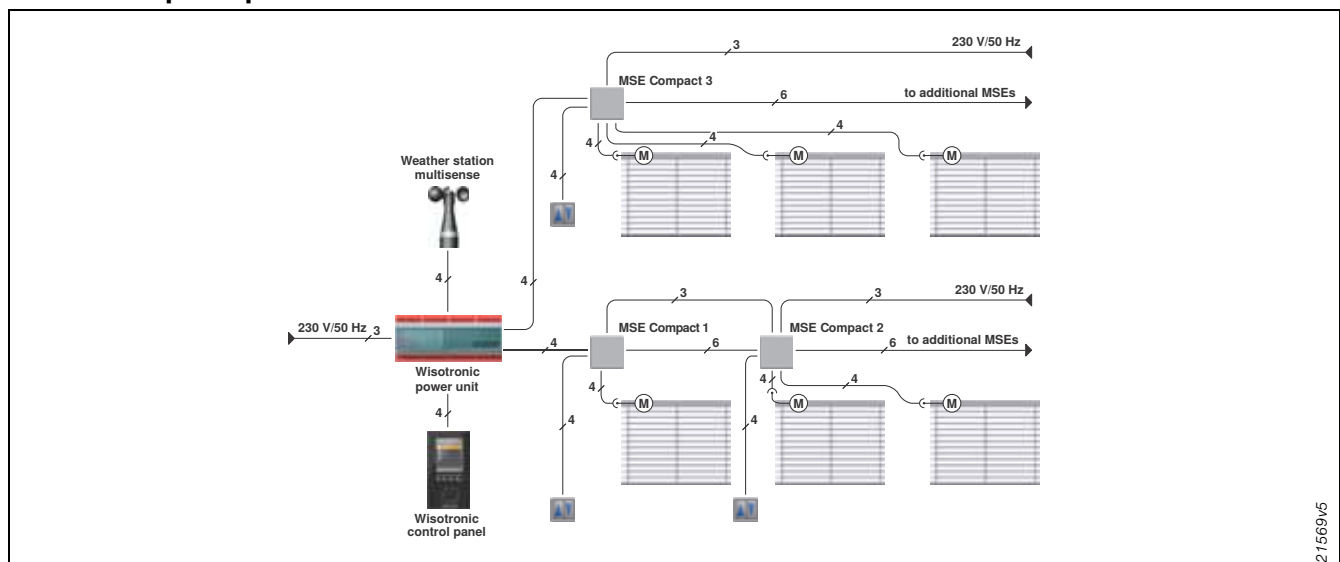


fig. 75: Wisotronic 2-channel with weather station multisense and MSE Compact

## Description

### WAREMA climatronic® 3.0

- Administration of up to 64 channels per WAREMA climatronic® system
- For controlling up to 1200 actuators (max. 7200 power consumers)
- Operation of the connected power consumers is possible individually or in groups
- Up to 16 scenes can be set
- Temperature and humidity sensor integrated in the control panel
- History of important events that resulted, for example, in a move command to the sun shading system and weather data
- Switching and dimming of light
- Integrated slat tracking based on the position of the sun ensures the optimum positioning of the external venetian blind slats
- Commissioning and settings on the control panel or via WAREMA climatronic® studio software
- Settings can be saved on an SD card or settings changed via PC can be re-transferred
- Available in the languages German, English, French, Italian, Norwegian, Spanish, Swedish, Japanese and Chinese
- Control possible via Android app, iOS app or via web browser with WAREMA climatronic® WebControl
- Radio operation possible via EWFS hand-held or wall-mounted transmitter (optionally available)
- KNX Gateway turns the control panel into a WAREMA climatronic® KNX central weather unit



- 1 WAREMA climatronic® control panel
- 2 WAREMA climatronic® WebControl
- 3 WAREMA climatronic® weather station
- 4 WAREMA climatronic® switch actuator REG
- 5 EWFS Hand-held transmitter

Black-out blind  
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VDA 13Black-out blind  
VDA ZIPApplication examples  
VDA ZIPHorizontal black-out blind  
H-VDAApplication examples  
H-VDADrives/  
control systems

## Functional principle

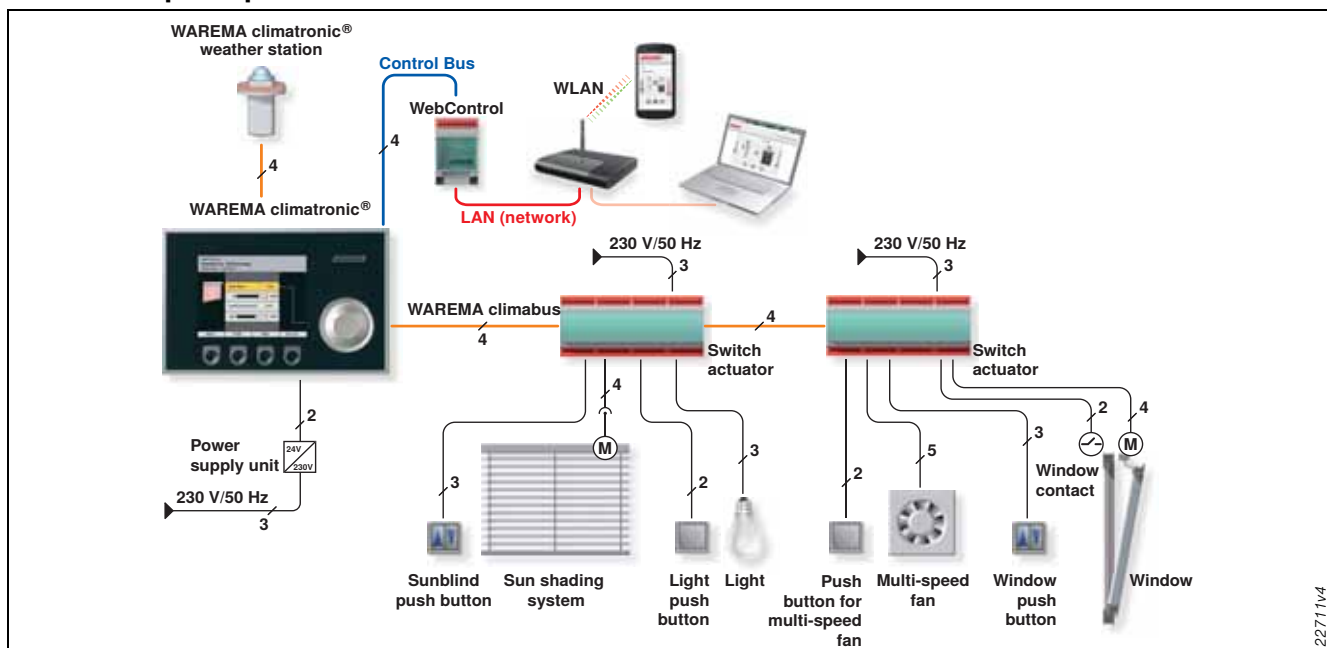


fig. 76: WAREMA climatronic®





## Notes

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raffstoren.international@warema.de

### Roller shutters

Tel. +49 9391 20-3240 • Fax -3249  
rollladen.international@warema.de

### Black-out blinds

Tel. +49 9391 20-3240 • Fax -3249  
verdunkelungen.international@warema.de

### Awnings

Tel. +49 9391 20-3440, -3340  
Fax +49 9391 20-3349  
markisen.international@warema.de

### Internal sun shading systems

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Tel. +49 9391 20-3540 • Fax -3549  
rollladen.international@warema.de

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