



Working together to make complex building automation simpler.

KNX/SMI tubular drives for roller shutters and sun protection:
with **BECKER**.



BECKER
Together it's easier.



Your personal living space is something very special.
This is where you can relax, feel at home and do your own thing.

Today's house automation systems already offer undreamt-of possibilities. One of many advantages:

All the drives communicate with the central house control unit, so that the current position of all the roller shutters can be displayed in real time on the terminals in the house, and controlled directly through the touch screen.



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Note: You can download the installation guidelines for SMI from www.becker-antriebe.com/downloads or you can request them from a Becker representative.



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Building automation

Open to everything

A system that can get round to the problems of "island solutions" is needed if the control information is to be transmitted to all the building automation components: it must ensure that all the components communicate with one another using a common language. Putting it briefly, a system that operates independently of the manufacturer and of the application, such as the KNX bus, is needed.



Good for your customers

1 Protection against sun, heat and UV

You're not at home and the sun is beating down "mercilessly". Your roller shutter or your external blinds are closed by the automatic sun protection control. The heat stays outside, while the interior is protected from the bleaching effect of UV radiation.

2 Protection from wind and rain

If the awning is operated automatically, the use of a wind or rain sensor means that nothing will go wrong even when a storm blows up.

3 Convenient roller shutter operation

Everything is easier with a central control unit for roller shutters: just press one button, and all the roller shutters that are fitted with electrical drives will move. Or you can let it happen automatically – whenever you want.

4 Energy saving

Thanks to an intelligent roller shutter controller you can save energy – for the air conditioning in summer, for heating in winter.

5 Presence simulation

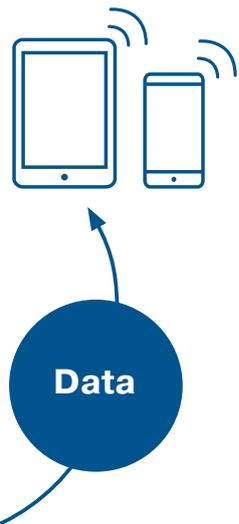
Depending on the system, occupancy can be simulated, moving the roller shutters according to a random rule, and switching the light on and off in line with a selected profile. If you now leave the house for several days, it will operate the lights and the shading control – just as if you were at home.

6 Flexible options for operation

Flexible operation of all the household equipment at various locations has many advantages, and not only for the elderly or sick. For example, all the lighting can be switched off, and all the roller shutters in the house can be controlled from certain points such as the front door or the bed.

7 Intrusion detection system

It detects an attempted break-in, switches the light on in the building, and raises or lowers the roller shutter. The potential intruder is deterred – even if you are not at home. Networked exterior cameras are triggered by a motion sensor to record persons, sending the image to a home server. The householder can therefore see what is happening on the television or over the Internet when out and about. At night the lighting is switched on at the same time as a deterrent.

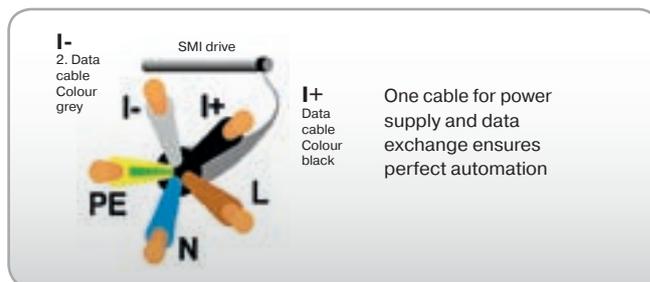
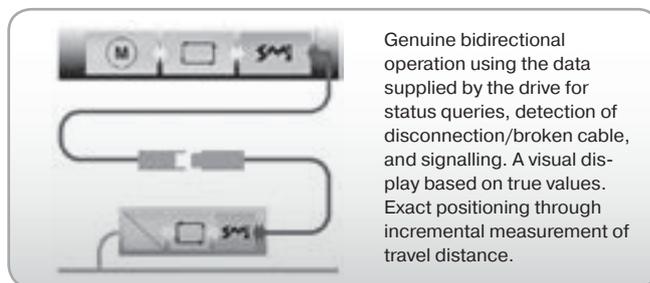
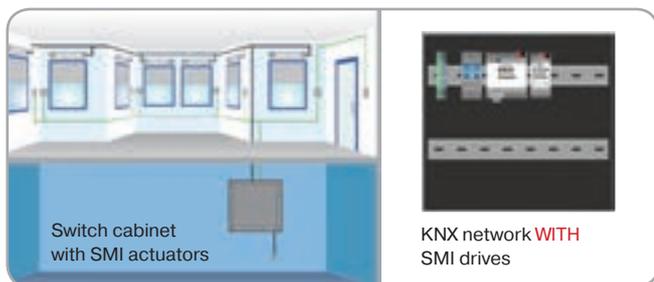
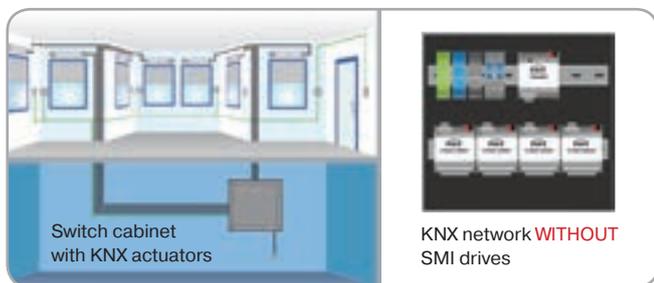


SMI – the engineering solution for roller shutters and sun protection

Electrical drives for roller shutters and sun protection installations can also be integrated into the KNX bus system with the standardised SMI (Standard Motor Interface).

Becker supplies tubular drives with integrated SMI interfaces as well as the corresponding SMI actuator. Planners, roller shutter and sun protection drive engineers, and electricians can offer their end-customers a particularly economical automation solution with this system concept.

This is because, thanks to the ability to connect the drives in parallel, only one 5-core cable is required for the power supply and for bidirectional data transmission between the SMI actuators and the drives – the amount of wiring is reduced significantly. Every Becker SMI actuator controls up to eight drives; it supports all the standard SMI functions as well as additional functions parameterised by Becker.



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SMI roller shutter drive with electronic limit switching

for barrels with diameters of 38 mm and above

P5-S01 ... P9-S01



Can be used with:

- Roller shutters
- Roller shutters with anti-lifting device

E Electronic limit switching

Sensitive obstacle detection: If the drive hits an obstacle, it immediately stops and automatically moves up again – even if using flexible shaft connectors (springs)

Anti-freeze mechanism at the top with automatic shading solution length adjustment that can also be activated

Blockage detection in the UP direction (anti-freeze mechanism)

Fly screen protection function

Automatic increase of the pressing force with **anti-lifting devices**

Soft upper stop

Dynamic drive torque adjustment to changes in the roller shutter element

Suitable for left and right installation

Automatic limit position setting – when fixed stops are used, the drive automatically detects the limit positions, regardless of whether rigid shaft connectors are used

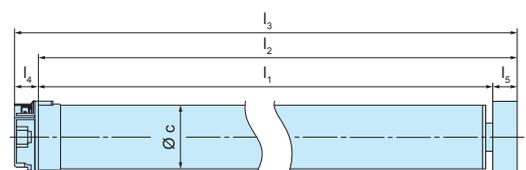
Intelligent installation management with limit positions status indicator (LSI)

Thermal protection incl. electronic detection of activation

Technical data	Item number	Item number with bracket	Torque (Nm)	Speed (min ⁻¹)	Limit switch range (revolutions)	Nominal current (A)	Power consumption (W)	Connecting cable (m)
P5-16-S01	2009 120 505 0	2009 120 503 0	5	16	64	0.35	80	*
P9-16-S01	2009 120 506 0	2009 120 504 0	9	16	64	0.45	110	*

Rated voltage: 230 V/AC/50Hz **Operating mode:** S2 4 min **Degree of protection:** IP44

Dimensions (in mm)	l_1	l_2^{**}	l_3^{**}	l_4	l_5^{**}	dia. c
P5-16-S01	423	463	476	13	40	35
P9-16-S01	453	493	506	13	40	13



* C+plug connecting cables are available in various versions and lengths, and are to be ordered separately

** Drive adapter width of S60 (4930 300 041 0) page 18, selection of a different drive adapter will change dimensions l_2 , l_3 and l_5

SMI roller shutter drives with electronic limit switching

for barrels with diameters of 50 mm and above

R8-S01 ... R40-S01



Can be used with:

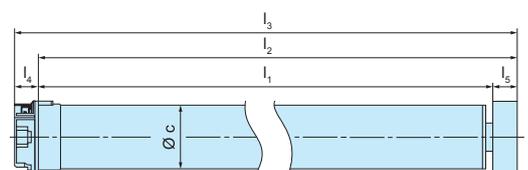
- Roller shutters
- Roller shutters with anti-lifting device

<p>E Electronic limit switching</p> <p>Sensitive obstacle detection: If the drive hits an obstacle, it immediately stops and automatically moves up again – even if using flexible shaft connectors (springs)</p> <p>Anti-freeze mechanism at the top with automatic shading solution length adjustment that can also be activated</p> <p>Blockage detection in the UP direction (anti-freeze mechanism)</p>	<p>Fly screen protection function</p> <p>Automatic increase of the pressing force with anti-lifting devices</p> <p>Soft upper stop</p> <p>Dynamic drive torque adjustment to changes in the roller shutter element</p> <p>Suitable for left and right installation</p>	<p>Automatic limit position setting – when fixed stops are used, the drive automatically detects the limit positions, regardless of whether rigid shaft connectors are used</p> <p>Intelligent installation management with limit positions status indicator (LSI)</p> <p>Thermal protection incl. electronic detection of activation</p>
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Technical data	Item number	Torque (Nm)	Speed (min ⁻¹)	Limit switch range (revolutions)	Nominal current (A)	Power consumption (W)	Connecting cable (m)
R8-17-S01	2010 120 503 0	8	17	64	0.45	100	*
R12-17-S01	2010 120 504 0	12	17	64	0.50	110	*
R20-17-S01	2020 120 502 0	20	17	64	0.75	160	*
R30-17-S01	2030 120 502 0	30	17	64	0.90	205	*
R40-17-S01	2040 120 502 0	40	17	64	1.15	260	*

Rated voltage: 230 V/AC/50Hz **Operating mode:** S2 4 min **Degree of protection:** IP44

Dimensions (in mm)	l ₁	l ₂ **	l ₃ **	l ₄	l ₅ **	dia. c
R8-17-S01	471	511	528	17	40	45
R12-17-S01	471	511	528	17	40	45
R20-17-S01	500	540	557	17	40	45
R30-17-S01	524	564	581	17	40	45
R40-17-S01	539	579	596	17	40	45



* C-plug connecting cables are available in various versions and lengths, and are to be ordered separately

** Drive adapter width of O-S60 (4930 200 222 0) page 28, selection of a different drive adapter will change dimensions l₂, l₃ and l₅



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SMI sun protection drive with electronic limit switching

for barrels with diameters of 38 mm and above

P3-S12 ... P9-S12



Can be used with:

- Open and half-open articulated-arm awnings
- Cassette awnings
- Drop-arm awnings

- Markisolettes
- Conservatory awnings
- Guided and non-guided screens
- Vertical screens

- Volants
- Insect protection
- Interior screens
- Projection screen

E Electronic limit switching

Blockage detection in both directions with automatic reversal and multiple testing

Fabric tension function can be switched on in the lower limit position

Fabric untensioning can be switched on/off in the upper limit position

Programmable upper **stop behaviour**

Automatic shading solution length adjustment

Lower limit position adjustment: Point (automatic detection or freely programmable)

Upper limit position adjustment: Point or stop

Intelligent installation management with limit positions status indicator (LSI)

Thermal protection incl. electronic detection of activation

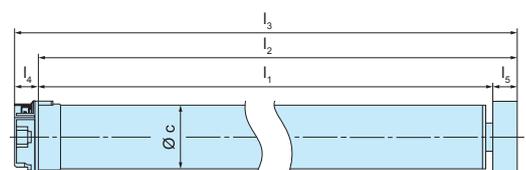
Auto-install function

Suitable for left and right installation

Technical data	Item number	Torque (Nm)	Speed (min ⁻¹)	Limit switch range (revolutions)	Nominal current (A)	Power consumption (W)	Connecting cable (m)
P3-30-S12	2009 130 505 0	3	30	64	0.35	80	*
P5-20-S12	2009 130 506 0	5	20	64	0.45	110	*
P5-30-S12	2009 130 507 0	5	30	64	0.45	110	*
P9-16-S12	2009 130 508 0	9	16	64	0.45	110	*

Rated voltage: 230 V/AC/50Hz **Operating mode:** S2 4 min **Degree of protection:** IP44

Dimensions (in mm)	l ₁	l ₂ **	l ₃ **	l ₄	l ₅ **	dia. c
P3-30-S12	423	440	453	13	17	35
P5-20-S12	453	470	483	13	17	35
P5-30-S12	453	470	483	13	17	35
P9-16-S12	453	470	483	13	17	35



* C+plug connecting cables are available in various versions and lengths, and are to be ordered separately

** Drive adapter width of DW78N (4931 300 365 0) page 23, selection of a different drive adapter will change dimensions l₂, l₃ and l₅

SMI sun protection drive with electronic limit switching

for barrels with diameters of 50 mm and above

R8-S12 ... R50-S12



Can be used with:

- Open and half-open articulated-arm awnings
- Cassette awnings
- Drop-arm awnings

- Markisolettes
- Conservatory awnings
- Guided and non-guided screens
- Vertical screens

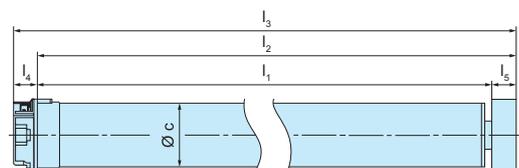
- Volants
- Insect protection
- Interior screens
- Projection screen

E Electronic limit switching	✓ Programmable upper stop behaviour	Intelligent installation management with limit positions status indicator (LSI)
Blockage detection in both directions with automatic reversal and multiple testing	Automatic shading solution length adjustment	Thermal protection incl. electronic detection of activation
✓ Fabric tension function can be switched on in the lower limit position	Lower limit position adjustment: Point (automatic detection or freely programmable)	Auto-install function
Fabric untensioning can be switched on/off in the upper limit position	Upper limit position adjustment: Point or stop	Suitable for left and right installation

Technical data	Item number	Torque (Nm)	Speed (min ⁻¹)	Limit switch range (revolutions)	Nominal current (A)	Power consumption (W)	Connecting cable (m)
R8-17-S12	2010 130 505 0	8	17	64	0.45	100	*
R12-17-S12	2010 130 506 0	12	17	64	0.50	110	*
R20-17-S12	2020 130 503 0	20	17	64	0.75	160	*
R30-17-S12	2030 130 503 0	30	17	64	0.90	205	*
R40-17-S12	2040 130 503 0	40	17	64	1.15	230	*
R50-11-S12	2050 130 505 0	50	11	64	1.10	240	*

Rated voltage: 230 V/AC/50Hz **Operating mode:** S2 4 min **Degree of protection:** IP44

Dimensions (in mm)	l ₁	l ₂ **	l ₃ **	l ₄	l ₅ **	dia. c
R8-17-S12	471	511	528	17	40	45
R12-17-S12	471	511	528	17	40	45
R20-17-S12	514	531	548	17	17	45
R30-17-S12	542	559	576	17	17	45
R40-17-S12	553	570	587	17	17	45
R50-11-S12	553	570	587	17	17	45



* C+plug connecting cables are available in various versions and lengths, and are to be ordered separately
 ** Drive adapter width of DW78R+F (4930 300 091 0) page 23, selection of a different drive adapter will change dimensions l₂, l₃ and l₅

SMI sun protection drive with electronic limit switching

for barrels with diameters of 63 mm and above

L50-S12 ... L120-S12



Can be used with:

- Open and half-open articulated-arm awnings
- Cassette awnings
- Drop-arm awnings

- Markisolettes
- Conservatory awnings
- Guided and non-guided screens
- Vertical screens

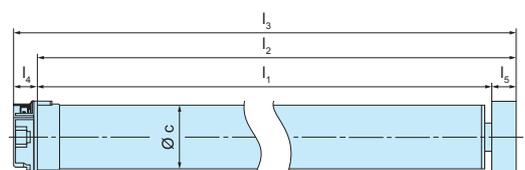
- Volants
- Insect protection
- Interior screens
- Projection screen

<p>E Electronic limit switching</p> <p> Blockage detection in both directions with automatic reversal and multiple testing</p> <p> Fabric tension function can be switched on in the lower limit position</p> <p> Fabric untensioning can be switched on/off in the upper limit position</p>	<p> Programmable upper stop behaviour</p> <p> Automatic shading solution length adjustment</p> <p> Lower limit position adjustment: Point (automatic detection or freely programmable)</p> <p> Upper limit position adjustment: Point or stop</p>	<p> Intelligent installation management with limit positions status indicator (LSI)</p> <p> Thermal protection incl. electronic detection of activation</p> <p> Auto-install function</p> <p> Suitable for left and right installation</p>
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Technical data	Item number	Torque (Nm)	Speed (min ⁻¹)	Limit switch range (revolutions)	Nominal current (A)	Power consumption (W)	Connecting cable (m)
L50-17-S12	2050 130 506 0	50	17	64	1.40	315	*
L60-11-S12	2060 130 504 0	60	11	64	1.20	265	*
L60-17-S12	2060 130 503 0	60	17	64	1.75	380	*
L70-17-S12	2070 130 503 0	70	17	64	1.90	430	*
L80-11-S12	2080 130 506 0	80	11	64	1.40	310	*
L120-11-S12	2120 130 503 0	120	11	64	1.90	435	*

Rated voltage: 230 V/AC/50Hz **Operating mode:** S2 4 min **Degree of protection:** IP44

Dimensions (in mm)	l ₁	l ₂ **	l ₃ **	l ₄	l ₅ **	dia. c
L50-14-S12	535	565	585	20	30	58
L60-11-S12	515	545	565	20	30	58
L60-17-S12	565	595	615	20	30	58
L70-17-S12	565	595	615	20	30	58
L80-11-S12	535	565	585	20	30	58
L120-11-S12	565	595	615	20	30	58



* C+plug connecting cables are available in various versions and lengths, and are to be ordered separately

** Drive adapter width of DW78N (4931 300 365 0) page 23, selection of a different drive adapter will change dimensions l₂, l₃ and l₅

SMI "ZIP" sun protection drive with electronic limit switching

for barrels with diameters of 38 mm and above



P5-S18 ... P9-S18



Can be used with:

- Zip screens

E Electronic limit switching



Sensitive obstacle detection with automatic reversal and multiple testing



Blockage detection in UP direction (anti-freeze mechanism) with automatic reversal and multiple testing



Fabric untensioning can be switched on/off in the upper limit position



Lower limit position adjustment: Point or automatic detection of the lower limit position



Upper limit position adjustment: Point or stop

Soft upper stop



Auto-install function for zip applications with a heavy end strip



Intelligent installation management with limit positions status indicator (LSI)



Thermal protection incl. electronic detection of activation



Automatic shading solution length adjustment

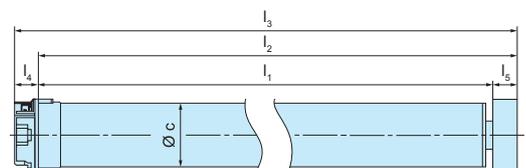


Suitable for left and right installation

Technical data	Item number	Torque (Nm)	Speed (min ⁻¹)	Limit switch range (revolutions)	Nominal current (A)	Power consumption (W)	Connecting cable (m)
P5-16-S18	2009 130 512 0	5	16	64	0.35	80	*
P5-20-S18	2009 130 509 0	5	20	64	0.45	110	*
P5-30-S18	2009 130 510 0	5	30	64	0.45	110	*
P9-16-S18	2009 130 511 0	9	16	64	0.45	110	*

Rated voltage: 230 V/AC/50Hz **Operating mode:** S2 4 min **Degree of protection:** IP44

Dimensions (in mm)	I ₁	I ₂ **	I ₃ **	I ₄	I ₅ **	dia. c
P5-16-S18	423	440	453	13	17	35
P5-20-S18	453	470	483	13	17	35
P5-30-S18	453	470	483	13	17	35
P9-16-S18	453	470	483	13	17	35



* C-plug connecting cables are available in various versions and lengths, and are to be ordered separately

** Drive adapter width of O-63N (4930 200 276 0) page 29, selection of a different drive adapter will change dimensions I₂, I₃ and I₅



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SMI "ZIP" sun protection drive with electronic limit switching

for barrels with diameters of 50 mm and above

R8-S18 ... R40-S18



Can be used with:

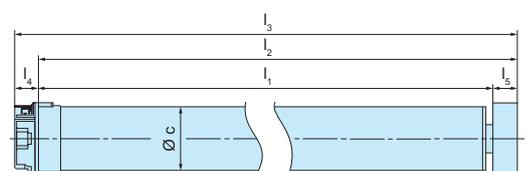
- Zip screens

<p>E Electronic limit switching</p>	<p>Lower limit position adjustment: Point or automatic detection of the lower limit position</p>	<p>Intelligent installation management with limit positions status indicator (LSI)</p>
<p>Sensitive obstacle detection with automatic reversal and multiple testing</p>	<p>Upper limit position adjustment: Point or stop</p>	<p>Thermal protection incl. electronic detection of activation</p>
<p>Blockage detection in UP direction (anti-freeze mechanism) with automatic reversal and multiple testing</p>	<p>Soft upper stop</p>	<p>Automatic shading solution length adjustment</p>
<p>✓ Fabric untensioning can be switched on/off in the upper limit position</p>	<p>Auto-install function for zip applications with a heavy end strip</p>	<p>Suitable for left and right installation</p>

Technical data	Item number	Torque (Nm)	Speed (min ⁻¹)	Limit switch range (revolutions)	Nominal current (A)	Power consumption (W)	Connecting cable (m)
R8-17-S18	2010 130 507 0	8	17	64	0.45	100	*
R12-17-S18	2010 130 508 0	12	17	64	0.50	110	*
R20-17-S18	2020 130 504 0	20	17	64	0.75	160	*
R30-17-S18	2030 130 504 0	30	17	64	0.90	205	*
R40-17-S18	2040 130 504 0	40	17	64	1.15	260	*

Rated voltage: 230 V/AC/50Hz **Operating mode:** S2 4 min **Degree of protection:** IP44

Dimensions (in mm)	l ₁	l ₂ **	l ₃ **	l ₄	l ₅ **	dia. c
R8-17-S18	471	511	528	17	40	45
R12-17-S18	471	511	528	17	40	45
R20-17-S18	500	540	557	17	40	45
R30-17-S18	524	564	581	17	40	45
R40-17-S18	539	579	596	17	40	45



* C+plug connecting cables are available in various versions and lengths, and are to be ordered separately

** Drive adapter width of O-63N (4930 200 276 0) page 29, selection of a different drive adapter will change dimensions l₂, l₃ and l₅

C+plug

Plug-in Becker connecting cable 5-core for SMI drives

High flexibility through different versions of C+plug connecting cables.

Our service:

to make things easier for you, the 5-core SMI C+plug plug-in connecting cables are delivered pre-mounted on the drives (plugged in). 6 adhesive labels are attached to the connecting cables with the SMI Key ID of the respective drive, as plain text for documentation purposes and as a bar code for detection by scanners.

They can easily be dismantled on site if a different connecting cable is needed according to the circumstances when installing.

No screw connection is necessary, thereby simplifying mounting and disassembly

Drive head can be overwrapped

Degree of protection IP44

Only a conventional mains tester with a narrow blade is needed for mounting/dismantling the drive cable

UV-resistant rubber cable

Black cable allows unobtrusive integration amongst dark or black elements.

Dismantling the cable when fitted into the roller shutter box is usually possible (depending on the installation position)



Available versions

Plug-in connecting cable	Connecting cable (m)	Item no.
with wire end ferrules	1	2010 270 612 0
	2 (Standard)	2010 270 605 0
	3	2010 270 649 0
	5	2010 270 614 0
	10	2010 270 615 0
with Hirschmann plug type STAS 4N incl. securing clip, SMI	0.5	2010 270 616 0
	2	2010 270 617 0
	5	2010 270 618 0



These drives – with a 5-core cable for power supply and data transmission – are also available with the SMI interface specially for KNX bus installations. Suitable accessory: the SMI actuator.



Every drive is subject to comprehensive series testing according to VDE guidelines on the series test beds specially developed for the purpose. This guarantees the highest possible quality of our products.



BECKER

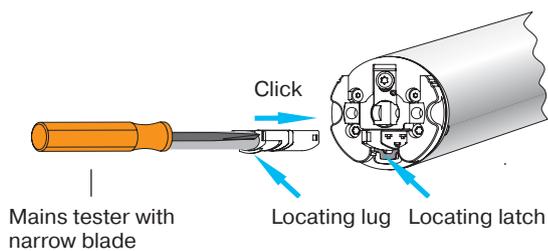
Tool

- One side for mounting
- One side for dismantling
- Secure engagement and release of the C-plug connector
- Easy and reliable application of the C-plug tool through guidance along the connecting cable
- For drives with tube diameters 45 and 58 mm

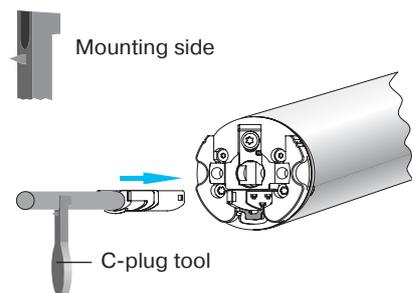
Item no. 2010 300 365 0



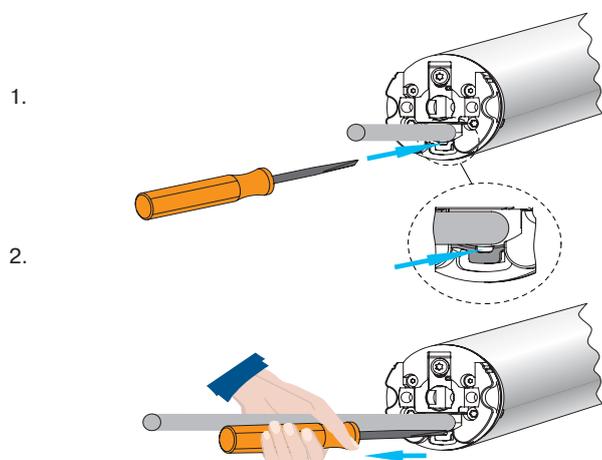
Mounting with mains tester



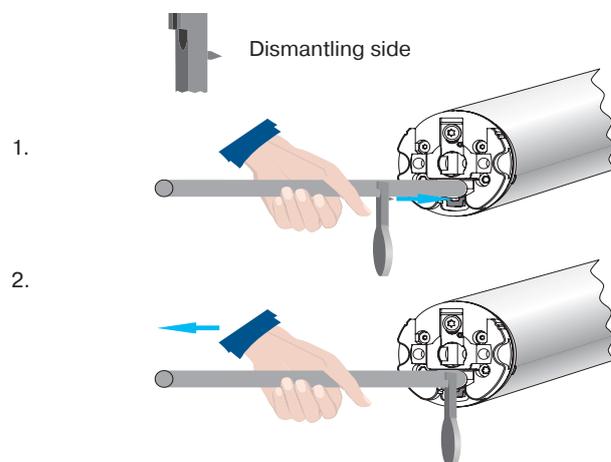
Mounting with C-plug tool



Dismantling with mains tester



Dismantling with C-plug tool



SMI – actuators and accessories

KNX/SMI actuator

(Roller shutter, sun protection and blind actuator) 8-way, REG 2TE/rail mounting assembly



- KNX/SMI actuator to control up to 8 SMI drives, can be connected using just one ring cable, e.g. 5 x 1.5 mm². With genuine, active position determination through bidirectional drive feedback.
- Compatible with KNX, bus connection via KNX bus connection terminal
- Mains and SMI drive cables connected via screw terminals

Item no. 4002 000 003 0

Rated voltage	230 V AC / 50 Hz
EIB operating voltage	via BUS 21–32 V=
Degree of protection	IP 20
Permissible ambient temperature	-5 to +45°C
Type of mounting	REG 2TE/rail mounting
Colour	grey
Dimensions (W x H x D)	36.5 x 90 x 58.5 mm
Installed height above the mounting rail	53.5 mm

Cord switch adjustment set

for commissioning SMI drives



- 2 m mains cable
- 2.8 m drive connecting cable with 5-way push-in terminal or 0.3 m cable with Hirschmann coupling

Item no. 4935 200 034 0

Mains connection	230 V / 50 Hz
Degree of protection	IP 20
Loading capacity	5 A
Cable colour	black



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SMI – actuators and accessories

USB SMI tool



- Computer with Windows 98, 2000 or XP or higher operating system
- USB interface
- Downloadable "SMI EasyMonitor" software

Item no. 4002 000 004 0

SMI connecting terminal



Item no. 4816 000 005 0

SMI – software and tools

SMI Hirschmann set



consisting of:

Hirschmann plug STAS 4 N, black

Item no. 4809 002 002 0

Hirschmann coupling STAK 4 N, black

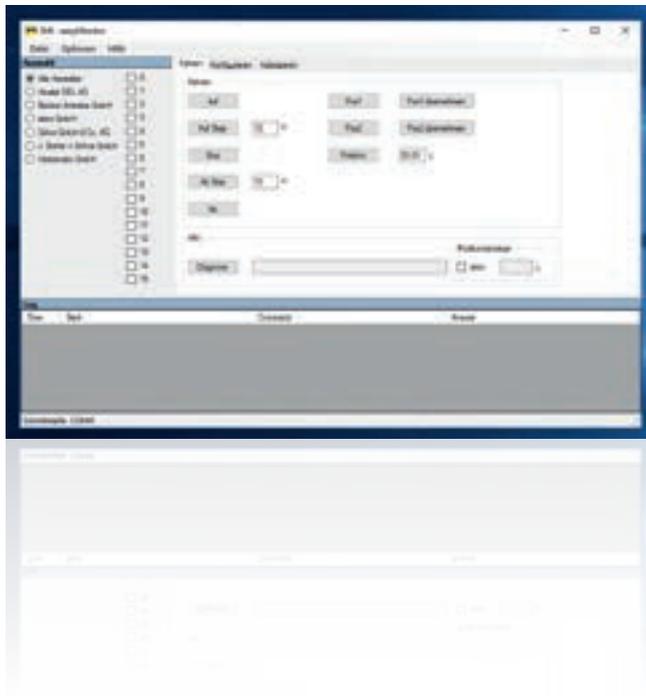
Item no. 4809 002 003 0

Securing clip STASI 4

Item no. 4809 004 000 1

Components can be ordered individually

SMI EasyMonitor



“SMI EasyMonitor” allows the bus function of the installation to be checked easily (knowledge of the higher-level building system is not necessary). It is necessary to disconnect the bus connector from the KNX side of the actuator for this purpose.

Requirements

- Computer with Windows 7 or higher operating system and Windows 10
- USB interface
- BECKER USB SMI tool 4002 000 004 0
- Can be downloaded free from the homepage

Functions

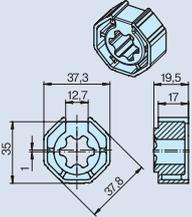
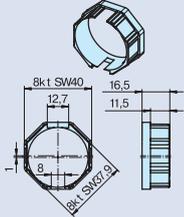
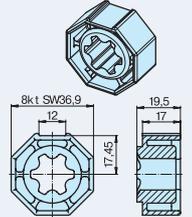
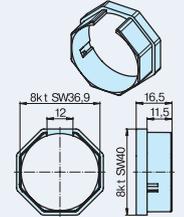
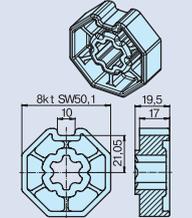
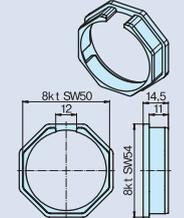
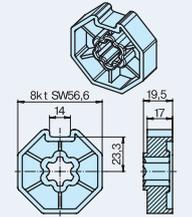
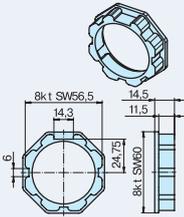
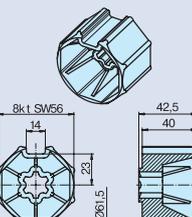
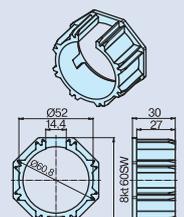
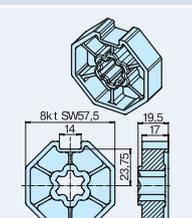
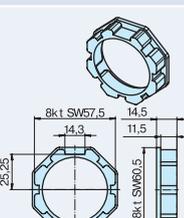
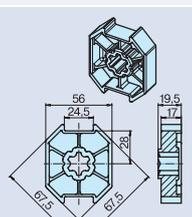
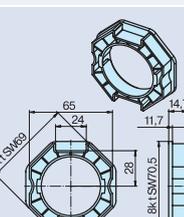
- Identification of the manufacturer codes
- Identification of the KEY-ID
- Assignment of a slave address
- Commands: UP/DOWN/STOP/STEP-UP/STEP-DOWN



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Drive adapters and rings

Octagonal shaft

Drive adapter	Ring	Application	Manufacturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
			Selve	Drive adapter S40 Ring S40	4930 300 083 0 4930 300 085 0		
			V. Müller	Drive adapter S40VM Ring S40VM	4930 300 142 0 4930 300 143 0		
				Drive adapter SW50 Ring SW50 Intermediate ring 50 x 1.5	4930 300 121 0 4930 300 122 0 4930 300 102 0	4930 300 121 0 4930 300 122 0	
			Selve, Weisbender, Staffer, V. Müller	Drive adapter S60 Ring S60 Intermediate ring 50 x 1.5	4930 300 041 0 4930 020 707 2 4930 300 102 0		
			Selve, Weisbender, Staffer, V. Müller	Drive adapter S60L extended Ring S60L extended		4930 300 466 0 4930 300 465 0	
				Drive adapter Rolm 60 Ring Rolm 60 Intermediate ring 50 x 1.5	4930 300 044 0 4930 300 037 0 4930 300 102 0	4930 300 044 0 4930 300 037 0	
			Selve, SHG, Weisbender, Eckermann	Drive adapter SM70 Ring SM70		4930 300 045 0 4930 000 607 0	

*Application

Drive adapter	Ring	Application	Manufacturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
			Alulux	Drive adapter SM70 Ring SM70			4931 300 080 0 4931 030 707 4
			Heroal	Drive adapter 70 Ring 70			4931 000 603 4 4931 030 707 4
				Drive adapter SW102 with accessories Ring SW102			4931 200 063 0 4931 300 137 0
			Heroal	Drive adapter SW125 with accessories Ring SW125			4931 200 062 0 4931 300 098 0

Profile shaft

Drive adapter	Ring	Application	Manufacturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
			Zurflüh Feller	Drive adapter ZF 45x0.5 Ring ZF 45x0.5	4930 300 135 0 4930 300 136 0		
			Helio-screen	Drive adapter 47x2 Ring 47x2	4930 300 305 0 4930 300 306 0		



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Drive adapters and rings

Profile shaft

Drive adapter	Ring	Appli- cation	Manu- facturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
			HOCO	Drive adapter HOCO 52 Ring HOCO 52		4930 300 272 0 4930 300 273 0	
			Benthin	Drive adapter Benthin 52+62 Ring Benthin 52+62 Wall bracket	4930 300 442 0 4930 300 443 0 4930 300 432 0		
			Zurflüh Feller	Drive adapter ZF54 Ring ZF54 Intermediate ring 50 x 1.5	4930 300 193 0 4930 300 390 0 4930 300 102 0	4930 300 193 0 4930 300 390 0	
			Zurflüh Feller	Drive adapter ZF64x0.8 Ring ZF64x0.8 Intermediate ring 50 x 1.5	4930 300 140 0 4930 300 141 0 4930 300 102 0	4930 300 140 0 4930 300 141 0	
			Hoos, Metal- preß, Weis- bender	Drive adapter HM65 Ring HM65 Intermediate ring 50 x 1.5	4930 300 048 0 4930 080 707 0 4930 300 102 0	4930 300 048 0 4930 080 707 0	
			Ecker- mann, Imbac	Drive adapter E65 Ring E65 Intermediate ring 50 x 1.5	4930 300 047 0 4930 040 707 2 4930 300 102 0	4930 300 047 0 4930 040 707 2	
			Zurflüh Feller	Drive adapter ZF80x1.2 Ring ZF80x1.2 Intermediate ring 63x1.5		4930 300 327 0 4931 300 149 0 4930 300 628 0	4931 300 148 0 4931 300 149 0

*Application

Drive adapter	Ring	Appli- cation	Manu- facturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
			Alukon	Drive adapter A128			4931 300 302 0
				Ring A128			4931 200 104 0
				Ring 70			4931 030 707 4

Hexagonal shaft

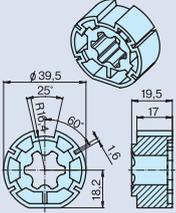
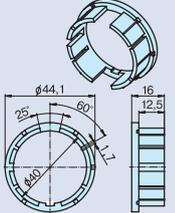
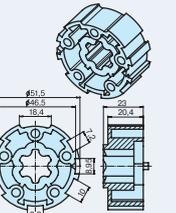
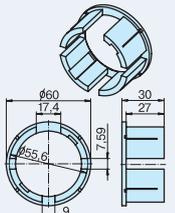
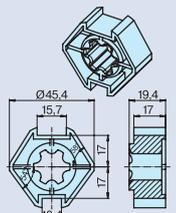
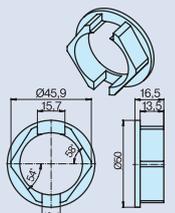
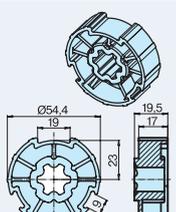
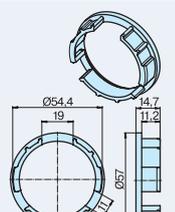
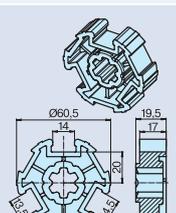
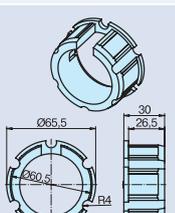
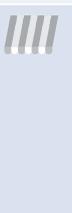
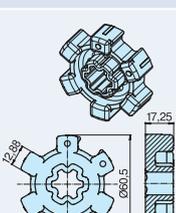
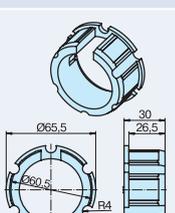
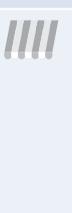
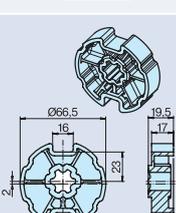
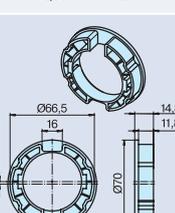
Drive adapter	Ring	Appli- cation	Manu- facturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
			Butzbach Rieko	Drive adapter B60	4930 300 046 0	4930 300 046 0	
				Ring B60	4930 030 707 1	4930 030 707 1	
				Intermediate ring 50 x 1.5	4930 300 102 0		
			Butzbach Rieko	Drive adapter B75		4930 300 189 0	
				Ring B75		4931 010 707 4	
				Intermediate ring 63 x 1.5		4930 300 628 0	
			Butzbach	Drive adapter B75			4931 300 081 0
				Ring B75			4931 010 707 4
			Butzbach	Drive adapter B85			4931 300 082 0
				Ring B85			4931 020 707 4



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Drive adapters and rings

Grooved shaft

Drive adapter	Ring	Appli- cation	Manu- facturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
				Drive adapter M40 Drive wheel Universal Ring M40 Crown wheel 43 mm	4930 300 408 0 4930 300 409 0		
				Drive adapter M50 Drive wheel Universal Ring M50 Crown wheel 60 mm		4930 300 406 0 4930 300 407 0	
				Drive adapter 50x2 Rolmatic Ring 50x2 Rolmatic	4930 300 103 0 4930 300 104 0		
				Drive adapter 57.5 Ring 57.5 Intermediate ring 50x1.5	4930 300 173 0 4930 300 174 0 4930 300 102 0	4930 300 173 0 4930 300 174 0	
				Drive adapter 63N K up to 25 Nm Ring 63N		4930 300 084 0 4930 300 415 0	
				Drive adapter 63N D from 30 Nm Ring 63N		4930 300 052 0 4930 300 415 0	
				Drive adapter Forjas 70 Ring Forjas 70		4930 300 217 0 4930 300 218 0	

*Application

Drive adapter	Ring	Appli- cation	Manu- facturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
				Drive adapter DW70N Ring DW70N		4930 300 055 0 4930 070 707 0	
				Drive adapter DW74N Ring DW74N		4930 300 056 0 4930 010 707 2	
				Drive adapter DW78R+F Ring DW78R+F		4930 300 091 0 4930 300 033 0	
				Drive adapter DW78N 1.5 mm centre offset Ring DW78N			4931 300 365 0 4931 300 357 0
				Drive adapter DW78N 4 mm centre offset Ring DW78N			4931 300 086 0 4931 230 707 0
				Drive adapter DW78 x 1 Ring DW78 x 1			4931 300 079 0 4931 210 707 1
				Drive adapter Optinut 81.8 Ring for R series		4930 300 529 0 4930 300 528 0	



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Drive adapters and rings

Grooved shaft

Drive adapter	Ring	Application	Manufacturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
				Drive adapter Optinut 81.8 Ring for L series			4931 300 371 0 4931 300 370 0
				Drive adapter Optinut 69 x 1.25 Ring for R series		4930 300 557 0 4930 300 556 0	
				Drive adapter DW85N Drive adapters > 40 Nm DW85N Ring DW85N		4930 300 065 0 4930 300 410 0 4930 300 066 0	
				Drive adapter DW85N Ring DW85N			4931 300 078 0 4931 300 227 0

Round tube

Drive adapter	Ring	Application	Manufacturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
				Drive adapter 38 x 1 / 40 x 2	4930 300 088 0 Without ring**		
				Drive adapter 40 x 1 / 42 x 2 Ring 40 x 1 / 42 x 2	4930 300 086 0 4930 300 087 0		

*Application

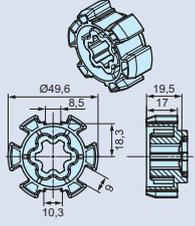
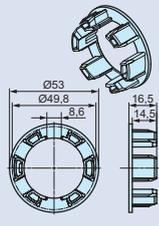
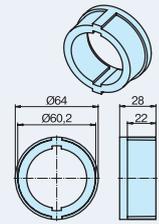
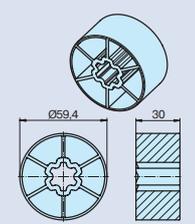
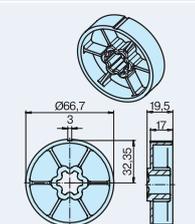
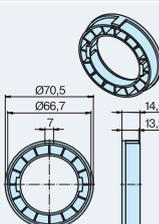
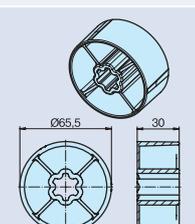
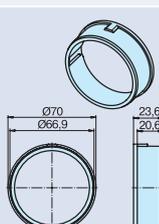
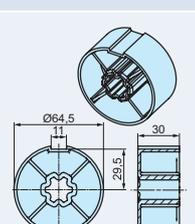
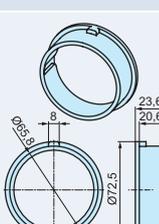
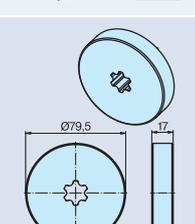
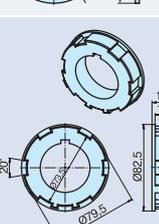
**Barrel fits on the thrust ring of the drive

Drive adapter	Ring	Appli- cation	Manu- facturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
				Drive adapter 40x 1.3/ 40x 1.5 Ring 40x 1.3/ 40x 1.5	4930 300 195 0 4930 300 196 0		
				Drive adapter 50x 1.5 Intermediate ring 50x 1.5	4930 300 049 0 4930 300 102 0	4930 300 049 0 Without ring**	
				Drive adapter Siral 50 Intermediate ring 50x 1.5	4930 300 050 0 4930 300 102 0	4930 300 050 0 Without ring**	
			Warema	Drive adapter 50x 1.5 Thread M4 Intermediate ring 50x 1.5	4930 300 420 0 4930 300 102 0	4930 300 420 0 Without ring**	
			Mottura	Drive adapter D60 Ring D60	4930 300 367 0 4930 300 368 0		
				Drive adapter 60x 1.5 Ring 60x 1.5 Intermediate ring 50x 1.5	4930 300 075 0 4930 300 076 0 4930 300 102 0	4930 300 075 0 4930 300 076 0	
				Drive adapter 63x 1.5 Ring 63x 1.5 Intermediate ring 50x 1.5	4930 300 059 0 4930 300 628 0 4930 300 102 0	4930 300 059 0 4930 300 628 0	



Drive adapters and rings

Round tube

Drive adapter	Ring	Appli- cation	Manu- facturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
				Drive adapter HD50 Ring HD50		4930 300 593 0 4930 300 594 0	
				Intermediate ring 63x1.5		4930 300 060 0	
				Drive adapter 63x1.5			4931 300 083 0 Without ring**
				Drive adapter 70x1.5 Ring 70x1.5		4930 300 061 0 4930 300 062 0	
				Drive adapter 70x1.5 Ring 70x1.5			4931 300 084 0 4931 050 707 4
				Drive adapter 70x2 Ring 70x2			4931 300 085 0 4931 060 707 4
				Drive adapter 83x1.5/ 85x2.5 Ring 83x1.5/ 85x2.5		4930 300 098 0 4930 300 100 0	

*Application

**Barrel fits on the thrust ring of the drive

Drive adapter	Ring	Appli- cation	Manu- facturer	Designation (Dimensions)	P5 – P13	R7 – R50	L44 – L120
				Drive adapter 83x1.5/ 85x2.5 Ring 83x1.5/ 85x2.5			4931 300 119 0 4931 300 125 0
				Drive adapter 98x2 Ring 98x2			4931 300 115 0 4931 300 126 0
				R7 – R25 Drive adapter 100x2 Ring 100x2 Ring 63x1.5		4930 300 185 0 4931 300 160 0 4930 300 628 0	4931 300 167 0 4931 300 160 0
				Drive adapter 102x2 Ring 102x2			4931 300 104 0 4931 300 049 0
				Drive adapter 108x3.6 Ring 108x3.6			4931 300 155 0 4931 300 043 0
				Drive adapter 133x2 Ring 133x2			4931 300 120 0 4931 300 127 0
				Ring 98x2			4931 300 126 0



Drive adapters and rings

Drive adapters and rings for sensitive obstacle detection

Drive adapter	Ring	Appli- cation	Manu- facturer	Designation (Dimensions)	P5 – P13	R7 – R40	L44 – L120
				Drive adapter O-S40 Ring S40	4930 200 250 0 4930 300 085 0		
				Drive adapter O-40x1.3 / 40x1.5 round shaft for obsta- cle detection for P series Ring 40x1.3 / 40x1.5	4930 200 246 0 4930 300 196 0		
				Drive adapter O-S50 Ring S50 Intermediate ring 50x1.5	4930 200 229 0 4930 300 122 0 4930 300 102 0	4930 200 229 0 4930 300 122 0	
				Drive adapter O-HOCO52 Ring HOCO52 Intermediate ring 50x1.5	4930 200 237 0 4930 300 273 0 4930 300 102 0	4930 200 237 0 4930 300 273 0	
				Drive adapter O-ZF54 Ring ZF54 Intermediate ring 50x1.5	4930 200 230 0 4930 300 390 0 4930 300 102 0	4930 200 230 0 4930 300 390 0	
				Drive adapter O-Rolm 60 Ring Rolm 60 Intermediate ring 50x1.5	4930 200 223 0 4930 300 037 0 4930 300 102 0	4930 200 223 0 4930 300 037 0	
				Drive adapter O-S60 Ring S60 L Intermediate ring 50x1.5	4930 200 222 0 4930 300 465 0 4930 300 102 0	4930 200 222 0 4930 300 465 0	

*Application

Drive adapter	Ring	Appli- cation	Manu- facturer	Designation (Dimensions)	P5 – P13	R7 – R40	L44 – L120
				Drive adapter O-63N 14.5 mm	4930 200 275 0	4930 200 275 0	
				Ring 63N	4930 300 415 0	4930 300 415 0	
				Intermediate ring 50 x 1.5	4930 300 102 0		
				Drive adapter O-63N 14.0 mm	4930 200 276 0	4930 200 276 0	
				Ring 63N	4930 300 415 0	4930 300 415 0	
				Intermediate ring 50 x 1.5	4930 300 102 0		
				Drive adapter O-63N 13.5 mm	4930 200 277 0	4930 200 277 0	
				Ring 63N	4930 300 415 0	4930 300 415 0	
				Intermediate ring 50 x 1.5	4930 300 102 0		
				Drive adapter O-ZF64	4930 200 231 0	4930 200 231 0	
				Ring ZF64x0.8	4930 300 141 0	4930 300 141 0	
				Intermediate ring 50x 1.5	4930 300 102 0		
				Drive adapter O-HM65	4930 200 245 0	4930 200 245 0	
				Ring HM65	4930 080 707 0	4930 080 707 0	
				Intermediate ring 50x 1.5	4930 300 102 0		
				Drive adapter O-E65	4930 200 249 0	4930 200 249 0	
				Ring E65	4930 040 707 2	4930 040 707 2	
				Intermediate ring 50 x 1.5	4930 300 102 0		
				Drive adapter O-SM70	4930 200 236 0	4930 200 236 0	
				Ring SM70	4930 000 607 0	4930 000 607 0	
				Intermediate ring 50 x 1.5	4930 300 102 0		



Drive adapters and rings

Drive adapters and rings for sensitive obstacle detection

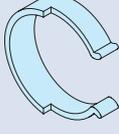
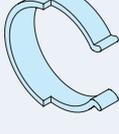
Drive adapter	Ring	Appli- cation	Manu- facturer	Designation (Dimensions)	P5 – P13	R7 – R40	L44 – L120
				Drive adapter O-DW78 R+F Ring DW78 R+F		4930 200 274 0 4930 300 033 0	
				Drive adapter O-D85N Ring DW85N		4930 200 271 0 4931 300 227 0	
				Drive adapter O-D100 Ring DW100		4930 200 278 0 4931 300 336 0	
				Drive adapter Forjas 70 Ring Forjas 70		4930 200 279 0 4930 300 218 0	

Fasteners for drive adapters

Name	Application	R7–R20	R30 – R120	L44 – L120
Drive adapter safety catch		4930 300 161 0		
Tooth lock washer			9900 101 679 7	
Screw M6			9901 250 091 2	
M6 screw for drive adapter 102 / 125 octagonal				9901 252 091 2
Washer for drive adapter 102 / 125 octagonal				4931 300 161 0

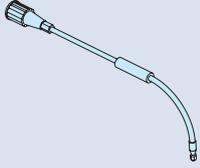
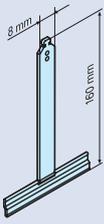
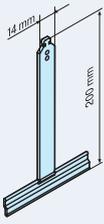
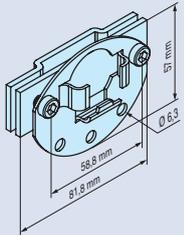
*Application

Cover clips

Cover clip	Application	Designation	Item number
		Cover clip white for Pico without strip	4930 300 490 0
		Cover clip black for Pico without strip	4930 300 491 0
		Cover clip white for Pico with strip	4930 300 492 0
		Cover clip black for Pico with strip	4930 300 493 0

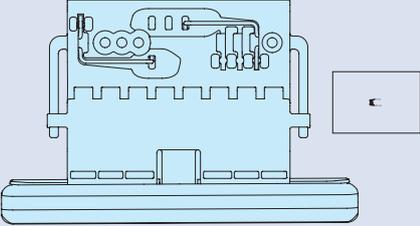
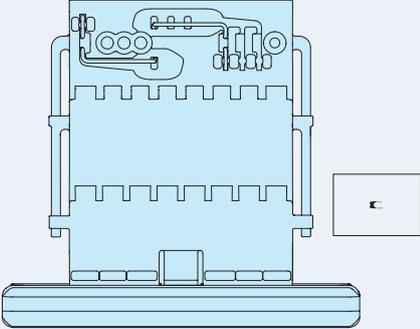
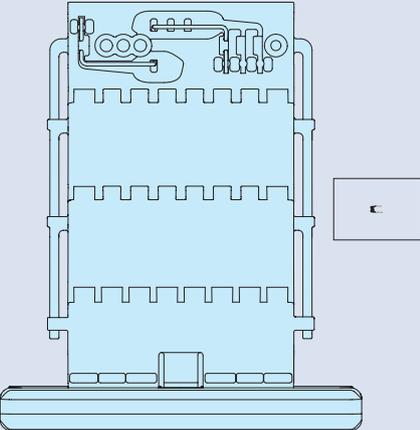


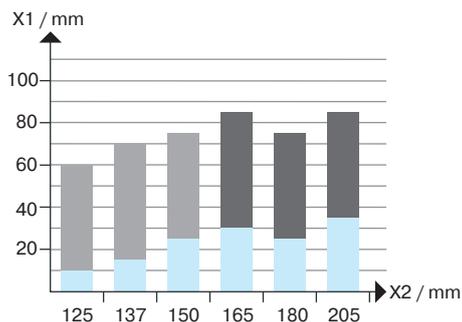
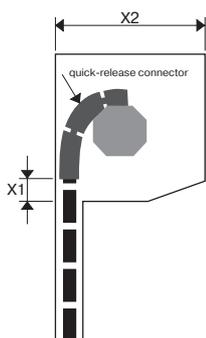
Setting tools/suspension springs

	Name	Application	Packaging unit	Item number
	Flexible setting tool			4933 200 002 0
	Setting tool			4933 300 029 0
	Mini suspension spring	 <ul style="list-style-type: none"> For roller shutter curtain with Mini profile, width 8 mm, length 160 mm 	100 units	4930 300 338 0
	Maxi suspension spring	 <ul style="list-style-type: none"> For roller shutter curtain with Maxi profile, width 14 mm, length 200 mm 	100 units	4930 300 337 0
	Tube clamp S40	 <ul style="list-style-type: none"> For S40 suspension springs For clipping onto the shaft Suspension springs are hooked into tube clamp Protects the drive against friction damage 		4930 300 307 0
	Tube clamp S50	 <ul style="list-style-type: none"> For S50 suspension springs For clipping onto the shaft Suspension springs are hooked into tube clamp Protects the drive against friction damage 		4930 300 618 0
	Ball bearing conversion set			4930 200 255 0

Rigid shaft connectors

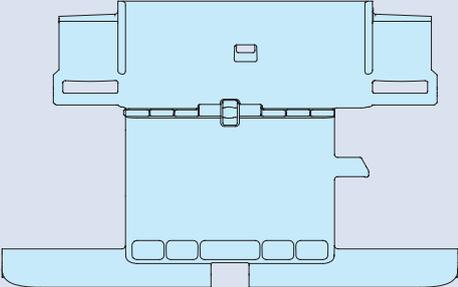
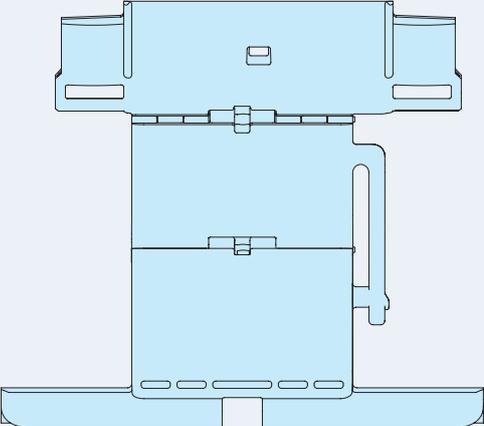
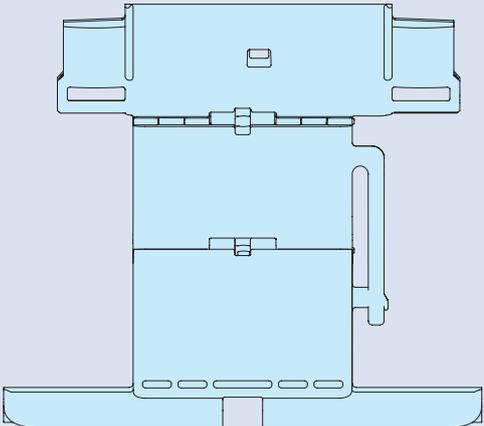
Rigid safety springs

	Name	Application	Item number
	Rigid safety spring 1-link	 <ul style="list-style-type: none"> For 50 mm and 60 mm shaft diameters With mounting profile for 8 mm and 14 mm roller shutter laths Roller shutter tubular drives with automatic detection of anti-lifting devices (+-types, e.g. RP+, PR+, C01, etc.) 	4902 000 306 0
	Rigid safety spring 2-link	 <ul style="list-style-type: none"> For 50 mm and 60 mm shaft diameters With mounting profile for 8 mm and 14 mm roller shutter laths Roller shutter tubular drives with automatic detection of anti-lifting devices (+-types, e.g. RP+, PR+, C01, etc.) 	4902 000 307 0
	Rigid safety spring 3-link	 <ul style="list-style-type: none"> For 50 mm and 60 mm shaft diameters With mounting profile for 8 mm and 14 mm roller shutter laths Roller shutter tubular drives with automatic detection of anti-lifting devices (+-types, e.g. RP+, PR+, C01, etc.) 	4902 000 308 0

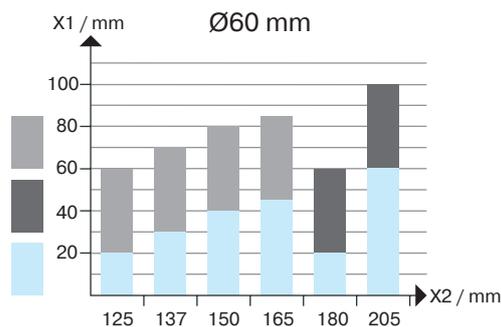
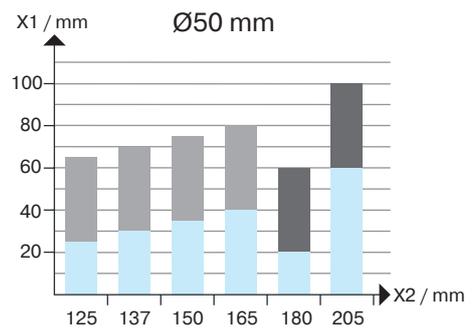
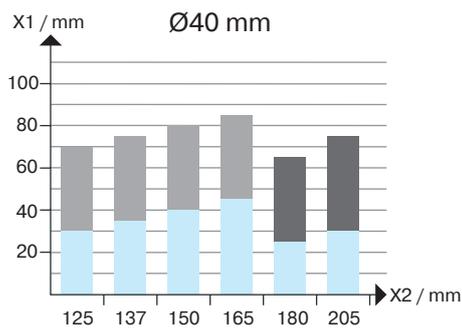
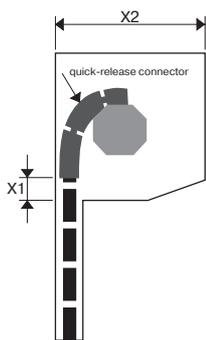


Rigid shaft connectors

Rigid quick-release connectors for size 40 shafts

	Name	Application	Item number
	Rigid quick-release connector 1-link	 <ul style="list-style-type: none"> ■ For sizes 40, 50 and 60 octagonal shafts ■ With mounting profile for 8 mm to 11 mm roller shutter laths ■ Roller shutter tubular drives with automatic detection of anti-lifting devices 	4902 000 309 0
	Rigid quick-release connector 2-link	 <ul style="list-style-type: none"> ■ For size 40 octagonal shafts ■ With mounting profile for 8 mm to 11 mm roller shutter laths ■ Roller shutter tubular drives with automatic detection of anti-lifting devices 	4902 000 310 0
	Rigid quick-release connector 2-link	 <ul style="list-style-type: none"> ■ For sizes 50 and 60 octagonal shafts ■ With mounting profile for 8 mm to 11 mm roller shutter laths ■ Roller shutter tubular drives with automatic detection of anti-lifting devices 	4902 000 312 0

	Name	Application	Item number
	Ring for rigid quick-release connector	 <ul style="list-style-type: none"> For size 40 octagonal shafts 	4902 000 311 0
	Ring for rigid quick-release connector	 <ul style="list-style-type: none"> For size 50 octagonal shafts 	4902 000 313 0
	Ring for rigid quick-release connector	 <ul style="list-style-type: none"> For size 60 octagonal shafts 	4902 000 314 0



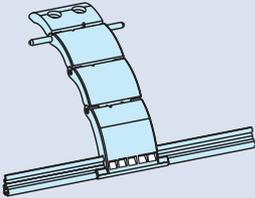
-  Add roller shutter laths
-  Area of application for 2-link quick-release connectors
-  Add roller shutter laths



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Rigid shaft connectors

Anti-lifting device

	Name	Application	Item number
	1-link, profile 8 mm		4902 000 250 0
	2-link, profile 8 mm		4902 000 251 0
	3-link, profile 8 mm		4902 000 252 0
	2-link, profile 14 mm		4902 000 254 0
	3-link, profile 14 mm		4902 000 255 0
	4-link, profile 14 mm		4902 000 256 0

2 fastening rings are needed for each anti-lifting device; the gap between 2 anti-lifting devices should not be greater than 70 cm.

Connecting pieces

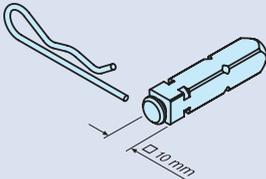
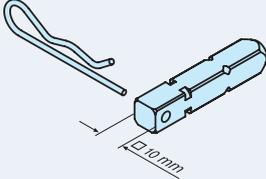
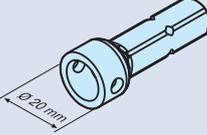
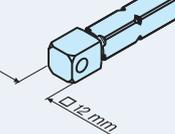
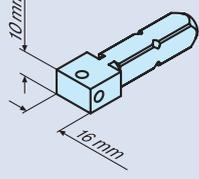
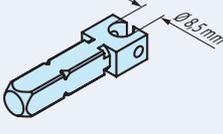
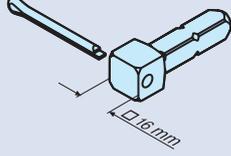
Tubular drives P5 – P13

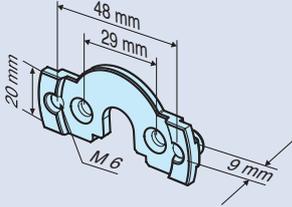
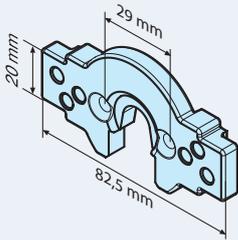
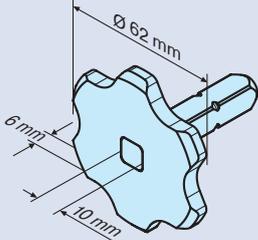
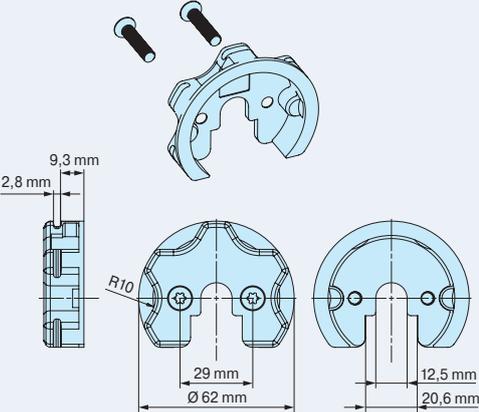
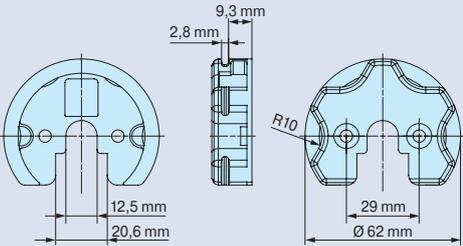
	Name	Application	Item number
	Connecting piece P 4K-10 incl. screws, with square, 10 mm	Drives for roller shutters P5 – P13 Drives for sun protection P5 – P13	4930 200 140 0
	Connecting piece P 20 round incl. screws, with round pin 20 mm diameter	Drives for roller shutters P5 – P13 Drives for sun protection P5 – P13	4930 200 139 0
	Mini strip P C-plug M6/48 incl. screws	Drives for roller shutters P5 – P13 Drives for sun protection P5 – P13	4930 200 232 0
	B-strip P C-plug	Drives for roller shutters P5 – P13 Drives for sun protection P5 – P13	4930 200 234 0



Connecting pieces

Tubular drives R7 – R50

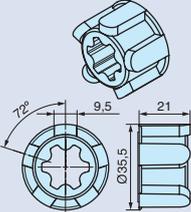
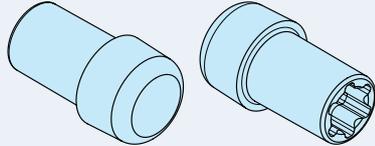
	Name	Application	Item number
	Mounting pin R 1/10 Square, 10 mm	 Drives for roller shutters R7 – R50  Drives for sun protection R7 – R50	4930 200 026 0
	Mounting pin R 2/10 Square, 10 mm	 Drives for roller shutters R7 – R50  Drives for sun protection R7 – R50	4930 200 030 0
	Mounting pin R 3/20 Round, d = 20 mm	 Drives for roller shutters R7 – R50  Drives for sun protection R7 – R40	4930 300 159 0
	Mounting pin R 4/12 Square, 12 mm	 Drives for roller shutters R7 – R50  Drives for sun protection R7 – R50	4930 300 412 0
	Mounting pin R 4/16-10 Square, 16 x 10 mm	 Drives for roller shutters R7 – R50  Drives for sun protection R7 – R50	4930 300 449 0
	Mounting pin R 4/16-10 Square, 16 x 10 mm hole with 8.5 mm diameter	 Drives for roller shutters R7 – R50  Drives for sun protection R7 – R50	4930 300 627 0
	Mounting pin R 4/16 Square, 16 mm	 Drives for roller shutters R7 – R50  Drives for sun protection R7 – R50 Note: For wall brackets with 16 mm square receptacle (4931...)	4930 200 052 0

	Name	Application	Item number
	<p>Mini strip R C-plug Mini strip M6/48 incl. screws</p>	 <p>Drives for roller shutters R7 – R20</p>	4930 200 244 0
	<p>B-strip R C-plug including screws</p>	 <p>Drives for roller shutters (one-sided load) R7 – R40</p>	4930 200 235 0
	<p>Star connecting piece</p>	 <p>Drives for roller shutters R7 – R50</p>  <p>Drives for sun protection R7 – R50</p>	4930 200 260 0
	<p>Star adapter set Star adapter incl. fastening screws</p>	 <p>Drives for roller shutters R7 – R30</p>	4930 200 265 0
	<p>Star adapter without fastening material</p>	 <p>Drives for roller shutters R7 – R30</p>	4930 300 582 0

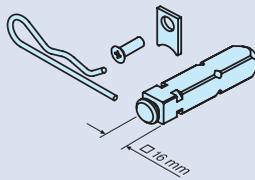
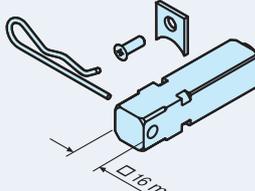
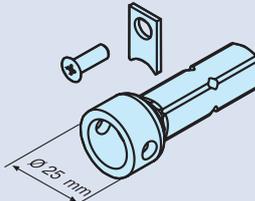
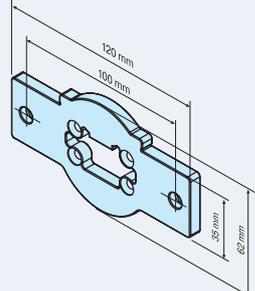


Connecting pieces

Tubular drives R7 – R50

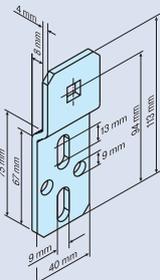
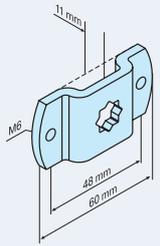
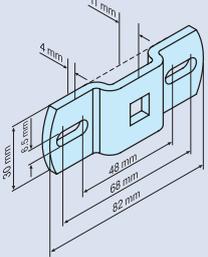
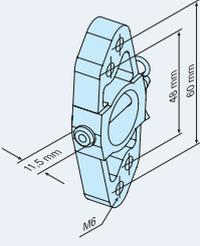
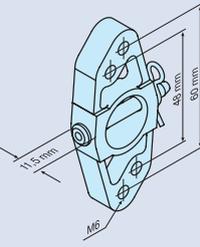
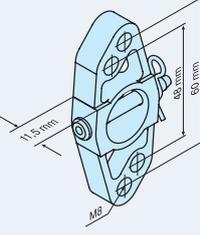
	Name	Application	Item number
		<p>Adapter kit BS for R series</p> <p>consisting of: Drive shaft adapter BS to 40 Nm and drive adapter safety catch BS to 40 Nm</p>	<p>4930 200 282 0</p> <p>4930 300 291 0</p> <p>4930 300 292 0</p>
	Disassembly tool for drive adapter		4930 300 606 0

Tubular drives L44 – L120

	Name	Application	Item number
	Mounting pin L 1/16 Square, 16 mm	<p>Drives for roller shutters L44 – L120</p> <p>Drives for sun protection L44 – L120</p>	4931 200 040 0
	Mounting pin L 2/16 Square, 16 mm	<p>Drives for roller shutters L44 – L120</p> <p>Drives for sun protection L44 – L120</p> <p>Note: For wall brackets with 16 mm square receptacle (4931...)</p>	4931 200 034 0
	Mounting pin L 3/25 Round, d = 25 mm	<p>Drives for roller shutters L44 – L120</p> <p>Drives for sun protection L44 – L120</p>	4931 200 035 0
	B-strip L	Drives for roller shutters (one-sided load) L44/14 – L80/11	4931 300 169 0

Wall brackets, box brackets, system brackets and awning brackets

Tubular drives P5 – P13 and R7 – R50

	Name	Application	RRP €/Pc.*	Item number
	Box bracket P/R 4K-10 with square 10 mm for mounting pins 1/10 and 2/10 and connecting piece 10 mm	 Drives for roller shutters (one-sided load) R7 – R50	6.00	4930 300 051 0
	Awning bracket P/R star-10 with star for mounting pins 1/10 and 2/10 and connecting piece with 10 mm diameter	 Drives for sun protection R7 – R50	6.00	4930 300 053 0
	Awning bracket P/R 4K-10 with square 10 mm for mounting pins 1/10 and 2/10 and connecting piece with 10 mm diameter	 Drives for sun protection R7 – R50	6.00	4930 300 040 0
	Awning bracket M6 with spigot for mounting pin 3/20	 Drives for roller shutters R7 – R40  Drives for sun protection R7 – R40	9.00	4930 200 043 0
	Awning bracket M6 without spigot for mounting pin 3/20	 Drives for roller shutters R7 – R40  Drives for sun protection R7 – R40	9.00	4930 000 728 0
	Awning bracket M8 with spigot for mounting pin 3/20	 Drives for roller shutters R7 – R40  Drives for sun protection R7 – R40	9.00	4930 200 044 0

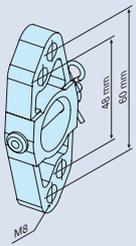
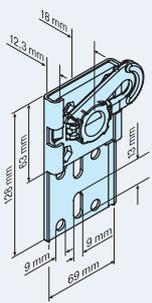
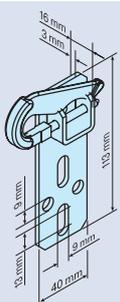
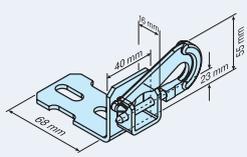
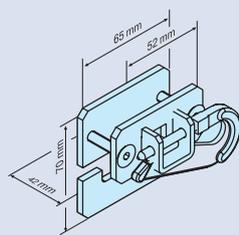
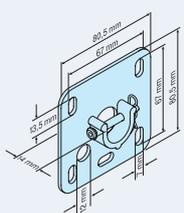
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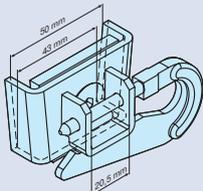
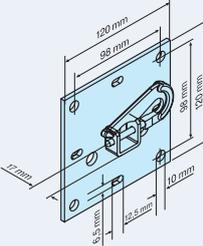
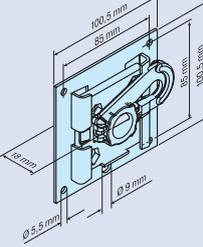
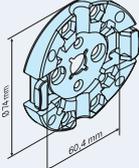
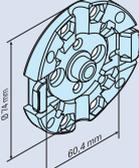
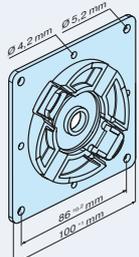
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Wall brackets, box brackets, system brackets and awning brackets

Tubular drives P5 – P13 and R7 – R50

	Name	Application	RRP €/Pc.*	Item number
	Awning bracket M8 without spigot for mounting pin 3/20	 Drives for roller shutters R7 – R40  Drives for sun protection R7 – R40	9.00	4930 000 726 1
	Universal wall bracket P/R 3/20 for mounting pin 3/20 and connecting piece with 20 mm diameter	 Drives for roller shutters R7 – R50	6.00	4930 200 005 0
	Box bracket P/R 3/20 for mounting pin 3/20 and connecting piece with 20 mm diameter	 Drives for roller shutters R7 – R50	6.00	4930 010 607 0
	Behind-plaster bracket P/R 3/20 for mounting pin 3/20	 Drives for roller shutters R7 – R50	6.00	4930 040 607 0
	Conversion bracket P/R 3/20 for the behind-plaster bracket for mounting pin 3/20	 Drives for roller shutters R7 – R30	12.00	4930 200 077 0
	Plate bracket P/R B80 3/20 Width 80 mm for mounting pin 3/20	 Drives for roller shutters R7 – R30	7.00	4930 000 607 2

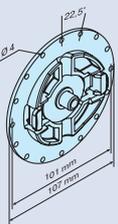
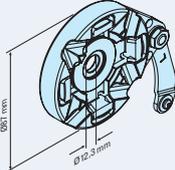
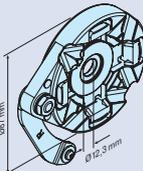
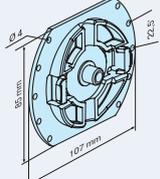
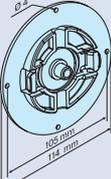
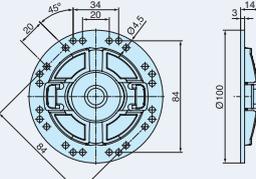
* incl. VAT

	Name	Application	RRP € / Pc. *	Item number
	Complete conversion set P/R 3/20 Complete behind-plaster bracket for mounting pin 3/20	 Drives for roller shutters R7 – R30	12.00	4930 200 207 0
	Plate bracket P/R B120 3/20 Width 120 mm for mounting pin 3/20	 Drives for roller shutters R7 – R50	13.00	4930 200 001 0
	Motor bracket P/R 3/20 for covering cap for mounting pin 3/20	 Drives for roller shutters R7 – R50	6.00	4930 200 036 0
	Wall bracket P/R with catch for Mini strip	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 382 0
	Wall bracket P/R with catch 2 for Mini strip	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 332 0
	Wall bracket P/R Exte with catch for Mini strip and EXTE head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 524 0

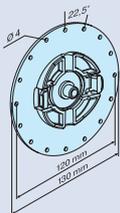
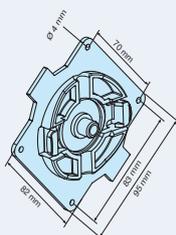
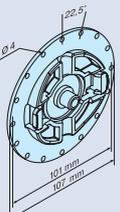
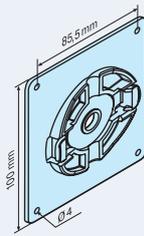
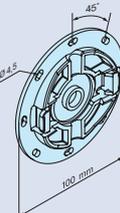
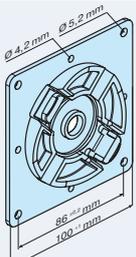


Wall brackets, box brackets, system brackets and awning brackets

Tubular drives P5 – P13 and R7 – R50

	Name	Application	RRP €/Pc.*	Item number
	Wall bracket P/R Gealan with catch for Mini strip and Gealan head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 525 0
	Wall bracket Heroal left	 Drives for roller shutters P5 – P13 R7 – R20	8.00	4930 200 262 0
	Wall bracket Heroal right	 Drives for roller shutters P5 – P13 R7 – R20	8.00	4930 200 263 0
	Wall bracket P/R Inoutic with catch for Mini strip and Inoutic head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 359 0
	Wall bracket P/R Kömmerling with catch for Mini strip and Kömmerling head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 357 0
	Wall bracket Lakal with catch for Mini strip and Lakal head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 389 0

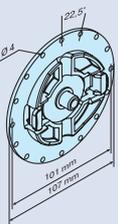
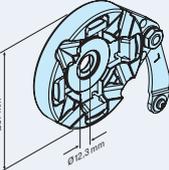
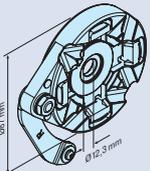
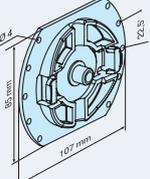
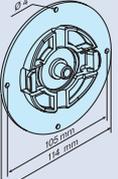
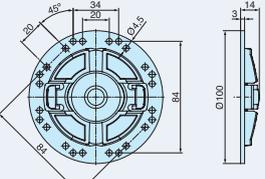
* incl. VAT

	Name	Application	RRP €/Pc.*	Item number
	Wall bracket P/R Profine with catch for Mini strip and VariNova head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 496 0
	Wall bracket P/R SKS with catch for Mini strip and SKS head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 591 0
	Wall bracket P/R Veka with catch for Mini strip and VEKA head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 355 0
	Wall bracket P/R Vekavariant with catch for Mini strip and VEKAVARIANT head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 419 0
	Wall bracket with catch for Mini strip and ZF head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 413 0
	Wall bracket P/R Exte with catch for mini strip and EXTE head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 524 0

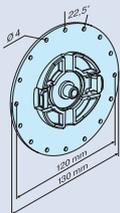
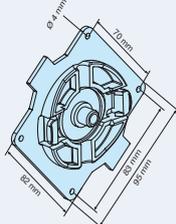
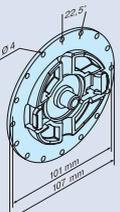
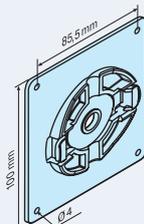
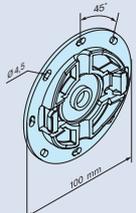


Wall brackets, box brackets, system brackets and awning brackets

Tubular drives P5 – P13 and R7 – R50

	Name	Application	RRP €/Pc.*	Item number
	Wall bracket P/R Gealan with catch for Mini strip and Gealan head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 525 0
	Wall bracket Heroal left	 Drives for roller shutters P5 – P13 R7 – R20	8.00	4930 200 262 0
	Wall bracket Heroal right	 Drives for roller shutters P5 – P13 R7 – R20	8.00	4930 200 263 0
	Wall bracket P/R Inoutic with catch for Mini strip and Inoutic head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 359 0
	Wall bracket P/R Kömmerling with catch for Mini strip and Kömmerling head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 357 0
	Wall bracket Lakal with catch for Mini strip and Lakal head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 389 0

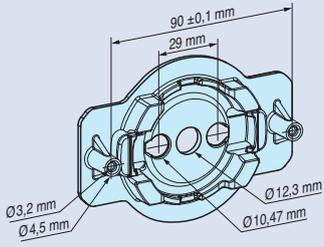
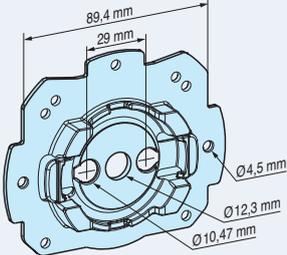
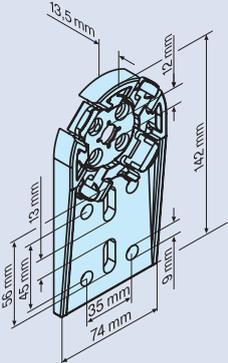
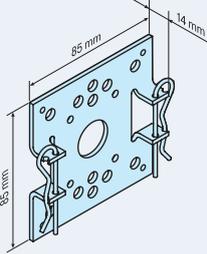
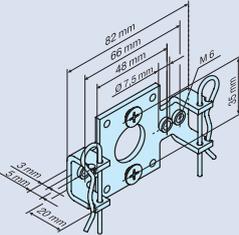
* incl. VAT

	Name	Application	RRP €/Pc.*	Item number
	Wall bracket P/R Profine with catch for Mini strip and VariNova head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 496 0
	Wall bracket P/R SKS with catch for Mini strip and SKS head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 591 0
	Wall bracket P/R Veka with catch for Mini strip and VEKA head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 355 0
	Wall bracket P/R Vekavariant with catch for Mini strip and VEKAVARIANT head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 419 0
	Wall bracket with catch for Mini strip and ZF head piece	 Drives for roller shutters P5 – P13 R7 – R20	6.00	4930 300 413 0

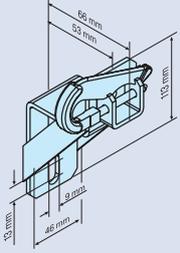
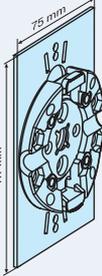
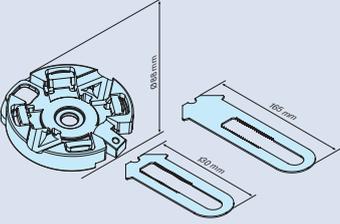


Wall brackets, box brackets, system brackets and awning brackets

Tubular drives P5 – P13 and R7 – R50

	Name	Application	RRP €/Pc.*	Item number
	Wall bracket with ZF catch	 Drives for roller shutters up to 20 Nm	6.00	4930 300 585 0
	Wall bracket with 2 ZF catch	 Drives for roller shutters up to 20 Nm	6.00	4930 300 586 0
	New build bracket P/R with catch for Mini strip	 Drives for roller shutters R7 – R20	6.00	4930 300 418 0
	Plate bracket R 85 x 85 for B-strip	 Drives for roller shutters R7 – R40	6.00	4930 200 082 0
	Plate bracket R for B-strip	 Drives for roller shutters R7 – R40	6.00	4930 200 007 0

* incl. VAT

	Name	Application	RRP € / Pc. *	Item number
	<p>Box bracket P/R 3/20 offset for mounting pin 3/20</p>	 <p>Drives for roller shutters R7 – R50</p>	16.00	4930 200 098 0
	<p>Wall bracket P/R with catch including plate</p>	 <p>Drives for roller shutters R7 – R20</p>	9.00	4930 200 186 0
	<p>Universal front-mounting clamp bracket for covering cap sizes 125 – 165</p> <p>Universal front-mounting clamp bracket for covering cap sizes 180 – 230</p>	 <p>Drives for roller shutters R7 – R20</p>	10.00 10.00	4930 200 261 0 4930 200 264 0

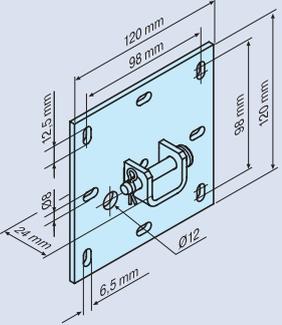
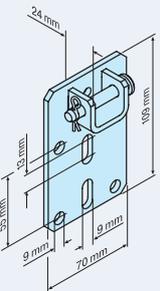
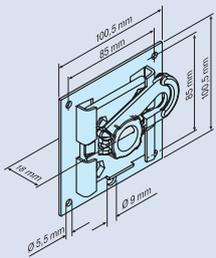
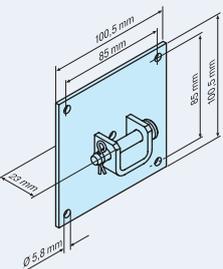
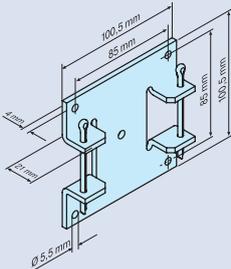


Wall brackets, box brackets, system brackets and awning brackets

Tubular drives L44 – L120

	Name	Application	RRP €/Pc.*	Item number
	Box bracket L star-16 with star for mounting pins 1/16, 2/16 and 4/16	Drives for roller shutters R12 – L120	9.00	4931 300 091 0
	Drive bracket L star-16 with star for mounting pins 1/16, 2/16 and 4/16	Drives for roller shutters R12 – L120	9.00	4931 300 096 0
	Awning bracket L star-16 M6 with star and M6 for mounting pins 1/16, 2/16 and 4/16	Drives for sun protection L44 – L120	9.00	4931 300 094 0
	Awning bracket L star-16 M8 with star and M8 for mounting pins 1/16, 2/16 and 4/16	Drives for sun protection L44 – L120	9.00	4931 300 209 0
	Universal wall bracket L 3/25 for mounting pin 3/25	Drives for roller shutters L44/14 – L60/11	9.00	4931 200 006 0

* incl. VAT

	Name	Application	RRP €/Pc.*	Item number
	Plate bracket L B120 3/25 for mounting pin 3/25	 Drives for roller shutters L44 – L120	13.00	4931 000 607 2
	Combination bracket L 3/25 for mounting pin 3/25	 Drives for roller shutters L44 – L120	9.00	4931 030 607 0
	Motor bracket P/R 3/20 for covering cap for mounting pin 3/20	 Drives for roller shutters L50 – L60	9.00	4931 200 041 0
	Drive bracket L cover 3/25 for covering caps for mounting pin 3/25	 Drives for roller shutters L44 – L200	9.00	4931 200 042 0
	Plate bracket L for B-strip	 Drives for roller shutters L44 – L80	10.00	4931 200 060 0





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Load table for roller shutters and sun protection drives

for SMI drive types: S01, S12

Shaft diameter (mm)	40		50		50		60		60		70		78		85		108		125	
	1.4	2.2	1.4	2.2	1.4	2.2	1.4	2.2	1.4	2.2	1.4	2.2	1.4	2.2	1.4	2.2	2.2	3.0	2.2	3.0
Roller shutter height (m)	8	8	8	8	14	14	8	8	14	14	14	14	14	14	14	14	14	19	19	19
Profile thickness (mm)	kg																			
Type	Nm/rpm ⁻¹																			
P3/30	9	8	8	7	7	6	7	7	7	6	5									
P5/16	15	13	13	12	11	9	12	11	10	9										
P5/20	15	13	13	12			12	11	10	9										
P5/30	15	13	13	12			12	11	10	9										
P9/16	27	23	25	22			22	20	20	17										
P13/9	38	33	35	31			31	29												
R8/17			22	19	18	15	20	18	17	15	15	15	14	14	15	13				
R12/17			33	29	27	23	30	27	26	23	24	22	23	21	22	20				
R20/17			55	49	44	38	50	45	43	38	41	37	39	35	37	34				
R30/17			83	73			75	68	64	57	61	55	58	53	56	50				
R40/17			102	91			93	85	79	70	75	68	72	65	69	62				
R50/11			139	123			125	114	107	94	102	92	97	88	94	84				
L44/14											90	81	85	77	82	74	66	63	61	57
L60/11											122	111	116	106	112	101	83	79	78	72
L80/11											163	148	156	141	150	135	11	106	104	98
L120/11											245	222	233	211	225	202	167	159	156	145

The tensile load figures are guidelines for single-piece roller shutter curtains. The friction typical for roller shutters has been taken into account!
 Example: Shaft diameter 60 mm, profile thickness 14 mm, 23 kg curtain weight, roller shutter height 2.20 m = R12/17

Load table for awning drives

Assumption: 78 mm shaft Ø, 20° drop angle

for SMI drive types: S12

Number of arms	Width (m)	Drive torque (Nm) depending on drop lengths (m)																	
		2 m		2.5 m		3 m		3.5 m		4 m		4.5 m		5 m					
		Type R	Type L	Type R	Type L	Type R	Type L	Type R	Type L	Type R	Type L	Type R	Type L	Type R	Type L				
2	3.0	30	44	30	44	30	X	40	40	50	44	50	44	50	44	50	44	44	
2	4.5	30	44	30	44	40	X	40	40	50	44	50	44	50	44	50	44	44	
2	6.0	30	44	40	44	40	X	40	40	50	44	50	44	50	44	50	44	44	
3	4.5	40	44	40	44	50	44	50	60	50	80	80	80	80	80	80	80	80	
3	6.0	40	44	40	44	50	44	50	60	50	80	80	80	80	80	80	80	80	
3	7.5	40	44	40	44	50	44	50	60	50	80	80	80	80	80	80	80	80	
4	6.0	50	60	50	60	60	60	60	80	60	120	120	120	120	120	120	120	120	
4	7.5	50	60	50	60	60	60	60	80	60	120	120	120	120	120	120	120	120	
4	9.0	50	60	50	60	60	60	60	80	60	120	120	120	120	120	120	120	120	

Becker does not accept any responsibility for the accuracy of information. Due to the large number of different brands/models and the corresponding variety in drive power requirements, the Nm data provided are non-binding and intended as a guideline only.



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General conditions of sale

General conditions of sale of BECKER-Antriebe GmbH, Sinn, Germany

§1 Validity of the terms and conditions

All contractual relations between BECKER-Antriebe GmbH (hereinafter referred to as the Manufacturer), as the seller, and its customers (hereinafter referred to as the Purchaser), as the buyers, shall from 1 July 2016 be subject exclusively to the following General Conditions of Sale (AVB). Under the above premise, these shall also apply to all future business relations, even if they are not expressly agreed again. When the Purchaser orders goods based on the Manufacturer's quotation, these terms and conditions shall be considered to be accepted. Any counterprovisions of the Purchaser with reference to their General or Purchasing Terms and Conditions are hereby negated. Such provisions shall only apply if the Manufacturer has expressly agreed to them in advance. All agreements which are reached between the Manufacturer and the Purchaser and which the Manufacturer is obliged to adhere to for the purpose of implementing the Contract must be put in writing in order to take effect.

§2 Offer and placing of orders

Offers from the Manufacturer that are not expressly defined in writing as binding are not legally binding. Orders placed by the Purchaser are legally binding contractual offers. Documents that form part of the offer, such as catalogues, figures, drawings, specifications of weights and dimensions, are only approximate unless expressly designated as binding or the contractual usability and functionality of the purchased items is compromised by subsequent deviations. The Manufacturer retains proprietary rights and copyrights to all cost proposals, drawings, samples and other documents. These must not be made accessible to third parties. The Manufacturer is obliged to only give third parties access to plans designated by the Purchaser as confidential with the Purchaser's consent.

§3 Prices

As long as nothing in the order confirmation is stated to the contrary, prices are ex works including loading, but excluding packaging, freight, carriage and insurance. Statutory VAT is not included in the prices. This is stated separately on the invoice at the statutory rate on the date of delivery or service. Additional deliveries or services are invoiced separately. The Manufacturer will only arrange insurance against transport damage at the express request of the Purchaser, and on their account.

§4 Time of delivery and service

Agreements on dates or deadlines for a delivery of service are not binding unless put in writing. If all or part of the delivery or service is delayed due to circumstances beyond the control of the Manufacturer, including force majeure, traffic disruption, strikes, fire, water damage, power cuts, operational disruptions, administrative measures, lock-outs, lack of materials or other unavoidable events, the Manufacturer is entitled to extend the delivery period by the length of the disruption plus an appropriate lead time, or to withdraw from the contract completely or partially in consequence of the part of the contract not yet fulfilled. If the disruption continues for more than three months, the Purchaser is entitled, after setting a reasonable grace period, to withdraw from the contract with regard to the part of the contract that has not yet been fulfilled. If the delivery period is extended or the Manufacturer is freed from their obligation, the Purchaser has no claims to compensation arising from this. Fulfilment of supply and service obligations on the part of the Manufacturer is subject to the Purchaser's obligations being fulfilled on time and correctly. If the Purchaser delays acceptance, the Manufacturer is entitled to demand compensation for the loss they have incurred as a result; on commencement of the delay in acceptance, the risk of accidental deterioration and accidental loss passes to the Purchaser.

§5 Order cancellation, framework agreements

Order cancellations by the Purchaser for customer-specific products or for products commissioned exclusively by the Purchaser will not be accepted. Cancellations for other products require the Manufacturer's express approval.

Unless a term has been agreed, framework agreements have a maximum term of 12 months. If the Supplier fails to plan call-ups, the Manufacturer is entitled to organise them itself. Should the average agreed purchase volume not meet the expected demand, the Manufacturer is entitled to supply partial quantities at any time at its own discretion. Unless otherwise agreed, the Manufacturer is entitled at the end of the contractual term to deliver all the residual quantities or to bill the Purchaser for materials, any additional costs incurred and any lost profit.

§6 Part deliveries

The Manufacturer is at all times entitled to make part deliveries or deliver partial services.

§7 Returns

Goods that have been ordered and supplied correctly and in perfect condition by the Manufacturer cannot be returned. In exceptional circumstances and with prior written approval from the Manufacturer, goods may be returned. With one-off returns, the Manufacturer shall apply a fixed processing fee of at least €20 plus statutory VAT. Costs for larger returns will be calculated based on the expenditure. This does not apply to items returned on account of justified complaints.

Acceptance of the items can be denied if they are returned without a return note from the Manufacturer. Costs incurred as a result shall be borne by the Purchaser. The Manufacturer will not accept the return of custom-made or cut-to-size items.

§8 Third-party industrial property rights

If the Manufacturer is obliged to deliver a product to the Purchaser's specifications (drawings, models, patterns, sketches, etc.), the Purchaser must ensure that no third-party industrial property rights are infringed as a result. In the event that third-party industrial property rights are infringed, the Purchaser, irrespective of whether or not they are at fault, is obliged to exempt the Manufacturer from any third-party claims and pay compensation to the Manufacturer.

§9 Place of fulfilment/Passing of risk

The place of fulfilment for the Manufacturer's services is the Manufacturer's registered office. Unless the order confirmation states to the contrary, upon delivery of the item the risk of accidental loss or accidental deterioration passes to the Purchaser, who is responsible for any expenses associated with the item after delivery. In the event that the delivery item is shipped somewhere other than the place of fulfilment, the risk of loss of or damage to the delivery item passes to the Purchaser when the item is delivered to the shipping company, the carrier or any other person or agency tasked with shipping.

§10 Warranty/Guarantee

For warranty claims in the event of material defects in roller shutter, sun protection and door drives as well as their control unit components, the following applies:

1. General
 - 1.1 These warranty and guarantee provisions apply to products used in roller shutter, sun protection and door systems.
 - 1.2 The Manufacturer guarantees to remedy any defects in new products for a period of 2 years in accordance with the provisions of law unless agreed otherwise in these General Conditions of Sale. For used products, the warranty period is 1 year.
 - 1.3 The warranty commences upon delivery of the products to the Purchaser. If the Purchaser is unable to prove the precise delivery date, the date of manufacture of the delivery item plus a three-month period of grace is applicable.
 - 1.4 The requirement for warranty is the prior performance of an inspection of the rejected product at the Manufacturer's premises, during which a defect has been determined that the Manufacturer is responsible for. The Purchaser is obliged to make the disputed product available to the Manufacturer, as well as all the information and verifiable documents that are required in order to establish that there is a defect.
 - 1.5 There are no grounds for a warranty claim if it becomes evident in the course of inspection in accordance with Item 1.4 that the complaint is based on improper handling of the delivery item or that, for other reasons, the problem is not the responsibility of the Manufacturer. In this event, the Purchaser is obliged to reimburse the Manufacturer for the expenses and costs incurred by inspecting the item in accordance with Item 1.4.
 - 1.6 In the event of a warranty claim, the Manufacturer is entitled to initially attempt to rectify the issue. The Manufacturer hereby reserves the right to decide whether to carry out a repair, or supply a replacement or new unit.
 - 1.7 If rectification of the issue is ultimately unsuccessful, a deadline is set following which the Purchaser retains their rights from § 437 Clauses 2. and 3. of the BGB (German Civil Code). The deadline must be set in writing; it must be of an appropriate length and no less than 14 working days. If the Purchaser has the legal right to withdraw from the contract, the obligation to compensate in accordance with § 346 Para. 3 Clause 3 of the BGB (German Civil Code) only fails to apply if the Purchaser has observed the due diligence of a prudent businessman.
 - 1.8 The manufacturer shall reimburse the contractor for the installation and expansion costs in case of a defective delivery according to § 439 Para. 3 of the BGB (German Civil Code), as soon as culpable conduct on the part of the manufacturer can be proven. No-fault reimbursement is excluded.

1.9 The law of the Federal Republic of Germany alone shall be applicable to warranty claims to the exclusion of UN purchase law.

1.10 By purchasing products from the Manufacturer, the Purchaser acknowledges the valid form of the Manufacturer's warranty and guarantee provisions as set out in these General Conditions of Sale.

2. Guarantee for roller shutter and sun protection drives

2.1 Irrespective of the warranty rights described in Item 1, the Manufacturer provides a five-year guarantee on roller shutter and sun protection drives, with the effect that drives purchased as new items from the Becker catalogue will be replaced free of charge for a period of up to 5 years from the date of manufacture. The provisions in §9 Clauses 1.3-1.5, 1.9 and 1.10 apply here accordingly.

It is the Manufacturer's responsibility to decide whether to effect a repair, or supply an equivalent replacement unit or new unit, and the decision is based on economic considerations. The Manufacturer shall not be liable for any additional costs.

2.2 Should the Purchaser invoke the rights in a guarantee, it is their responsibility to prove that the circumstances warrant their claim.

2.3 This provision does not apply to devices that are not used in roller shutter or sun protection applications in the conventional sense, including fire protection systems, swimming pool systems, sports or similar facilities and used equipment.

3. Obligation to inspect and give notice of defects

The Purchaser is subject to a legal obligation to inspect and give notice of defects in accordance with § 377 of the German Commercial Code (HGB) in respect of all deliveries and services from the Manufacturer. When a works contract is signed, § 377 of the German Commercial Code (HGB) applies by analogy. After the service has been delivered or the risk transferred, the Purchaser must immediately check that the consignment is complete and determine any obvious defects within 10 days at the latest, clearly notified in writing to the Manufacturer. Once this 10-day period has elapsed, it is assumed that the consignment was complete and the goods free of defects at the time of transfer of risk.

§ 11 Limitation of liability

Irrespective of their legal basis, claims for compensation against the Manufacturer, their employees or vicarious agents are excluded provided there is no case of wilful misconduct or gross negligence.

In the event of wilful misconduct or gross negligence, the Manufacturer's liability is limited to foreseeable damages typical for the type of contract. In the event of an ordinary breach of key contractual obligations due to actions or negligence by non-executive employees, the Manufacturer's liability is limited to the reasonable foreseeable damage typical for the type of contract.

In all cases, the Manufacturer's liability for damage to life, body and health, their liability under the German Product Liability Act and other claims arising from manufacturer's liability remain unaffected.

The provisions in § 9 are also applicable to Purchaser claims for compensation associated with control unit components, door, roller shutter and sun protection drives as well as all equipment that is not used in roller shutter or sun protection systems in the conventional sense, including fire protection systems, swimming pool systems, sports or similar facilities.

§ 12 Liability for defects when processing sent in parts

With any kind of processing of sent in or supplied material, the Manufacturer shall not be liable for any defects that arise due to the properties or deficiencies of the material per se. If parts which have been sent in become unusable during processing or assembly due to material faults or other deficiencies, the Manufacturer must be compensated for the processing costs incurred or for any other resulting damages.

§ 13 Reservation of proprietary rights

Until full settlement of all claims (including all current account balance claims) against the Purchaser which the Manufacturer is entitled to now or in the future regardless of their legal basis, the Manufacturer is granted the following securities that they can release on demand and at will where their value exceeds the claims consistently by more than 10%.

The goods remain the property of the Manufacturer. Processing or reforming are always carried out on behalf of the Manufacturer as manufacturer, but without any obligation on their part. If the (co)ownership of the Manufacturer expires as a result of merger, it is now hereby agreed that the Purchaser's (co)ownership of the uniform item will be transferred to the Manufacturer in proportion to its value (invoice amount). The Purchaser shall keep the Manufacturer's (co-owned) property safe free of charge. Goods to which the Manufacturer has claim to (co)ownership shall be referred to as reserved goods hereinafter.

The Purchaser is entitled to process and sell the reserved goods in normal business operations as long as they are not in arrears. Pledging or collateral assignments are inadmissible. The Purchaser now, for the sake of safety, relinquishes any claims (including all current account balance claims) relating to the reserved goods arising from the resale or any other legal reason (insurance, unauthorised action) in their entirety to the Manufacturer. The Manufacturer revocably authorises the Purchaser to collect on claims relinquished to them on their own behalf. This authorisation to collect can only be revoked if the Purchaser fails to honour their payment obligations properly.

Where third parties access reserved goods, especially attachments, the Purchaser shall refer to the ownership of the Manufacturer and immediately inform the Manufacturer to enable them to assert their proprietary rights. Where the third party is unable to reimburse the Manufacturer for judicial or extra-judicial costs that arise in this context, the Purchaser shall be liable for said costs.

In the event of breach of contract by the Purchaser – in particular late payment – the Manufacturer shall be entitled to demand the surrender of the reserved goods or, where applicable, demand that the Purchaser's surrender claims against third parties are relinquished. Recovery or pledging of reserved goods by the Manufacturer does not represent a withdrawal from the contract.

§ 14 Payment

Invoices from the Manufacturer are payable in full within 30 days of the invoice date unless any agreement to the contrary is in place. Where payment is made within 10 days of the invoice date, the Manufacturer will grant the Purchaser a discount of 2%.

In the event of overseas delivery, the Manufacturer is entitled to require the Purchaser to transfer an open-ended directly-enforceable security from a German bank to the order value of the goods for the purpose of providing collateral against payment claims.

In the event of part deliveries or partial provision of services, the Manufacturer is entitled to invoice for services that have already been provided. If the Purchaser fails to meet their payment obligations for part deliveries or partial services provided on time, the Manufacturer is entitled to withhold further partial deliveries or services, or to deliver them exclusively on a cash-on-delivery basis at the Purchaser's expense.

Where the Manufacturer has reasonable doubts concerning the Purchaser's financial reliability, or where the latter has fallen into payment arrears for an earlier delivery or partial delivery, the Manufacturer is entitled to carry out future deliveries or partial deliveries exclusively on a cash-on-delivery basis at the Purchaser's expense. Any retention of payments or offsetting against payment claims from the Manufacturer is inadmissible unless there are legally binding, uncontested or acknowledged counterclaims involved.

Should the Purchaser fall into payment arrears, the Manufacturer shall be entitled to demand 10% above the basic interest rate of the European Central Bank as compensation from the time the payment was due. The interest rate applied shall be lower if the Purchaser proves a smaller loss. The Manufacturer is permitted to prove more serious damages.

§ 15 Applicable law, place of jurisdiction, partial invalidity

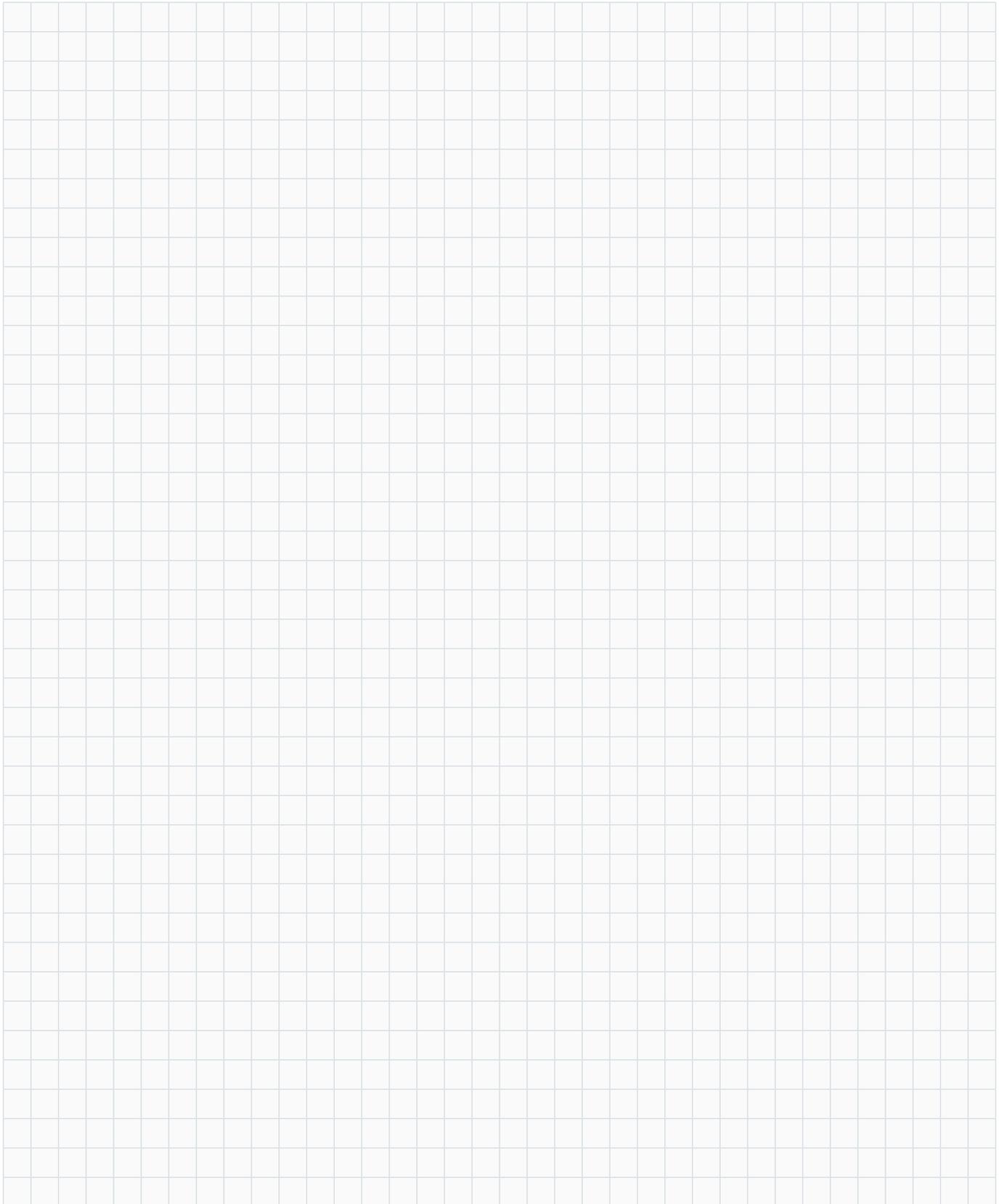
These General Conditions of Sale and all legal relations between the Manufacturer and the Purchaser shall be governed by the law of the Federal Republic of Germany. The provisions of the UN sales law are not applicable. If the Purchaser is a merchant as defined by the German Commercial Code (HGB), a legal entity under public law or special funds under public law, the registered office of the Manufacturer shall be the exclusive place of jurisdiction for all disputes arising directly or indirectly from the contractual relationship. The same applies where the Purchaser has no place of general jurisdiction in Germany or if their domicile or habitual residence are not known at the time of filing legal action. Should one of the provisions in these General Conditions of Sale or one of the provisions within the scope of other agreements be or become invalid, the validity of any other provisions or agreements shall not be affected thereby. The fully or partially ineffective provision should in this case be replaced with an effective provision whose economic purpose comes as close as possible to that of the ineffective provision.

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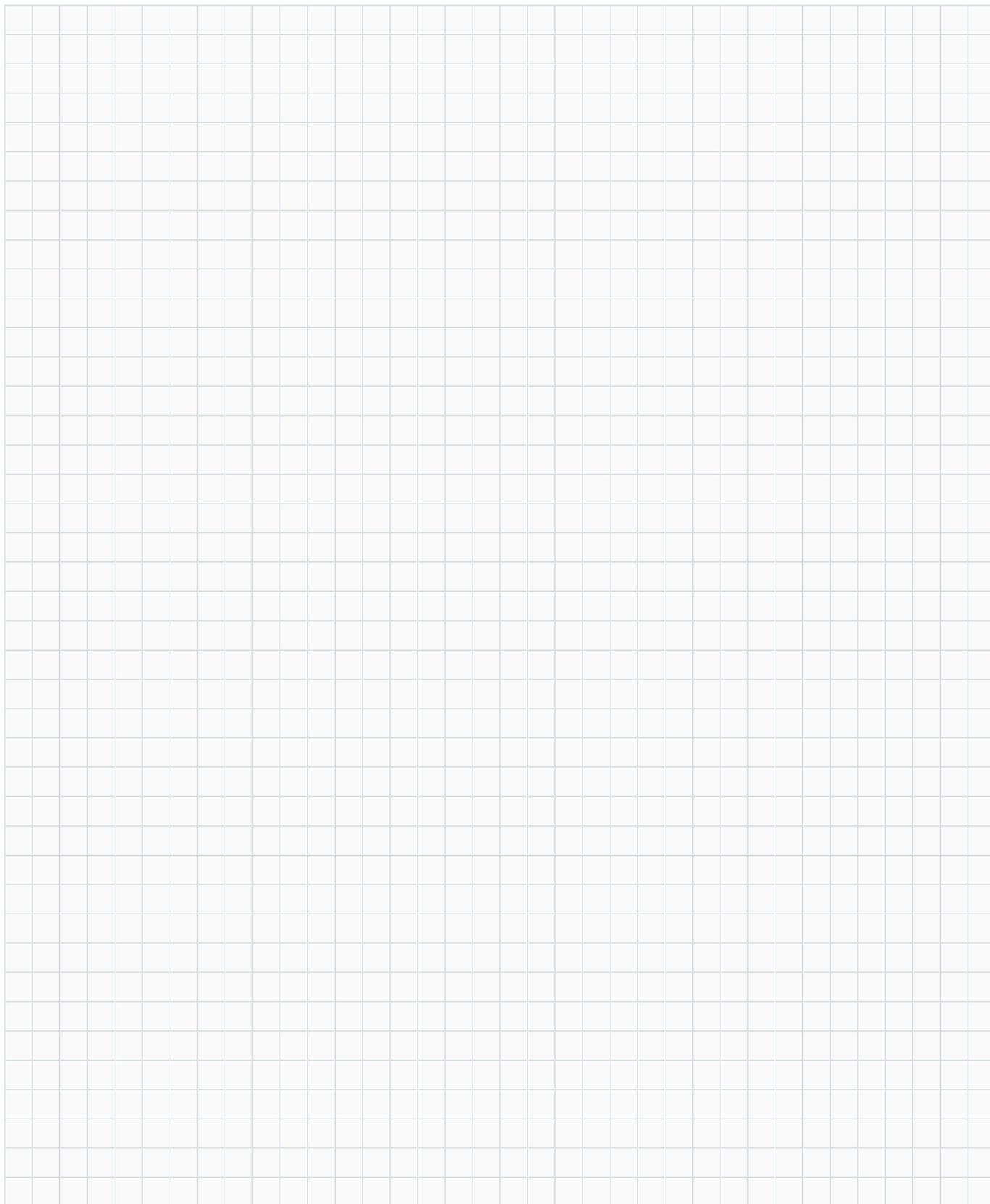


BECKER

Notes



Together it's easier.



Together it's easier.



BECKER



A good feeling ...

... something on which, with BECKER, not only your customers but also you can rely. Because we share one goal: to inspire people through innovative products and expert service. And that's just easier done together.

With Becker.

BECKER-Antriebe GmbH

Drives and control units for roller shutters, sun protection and doors

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