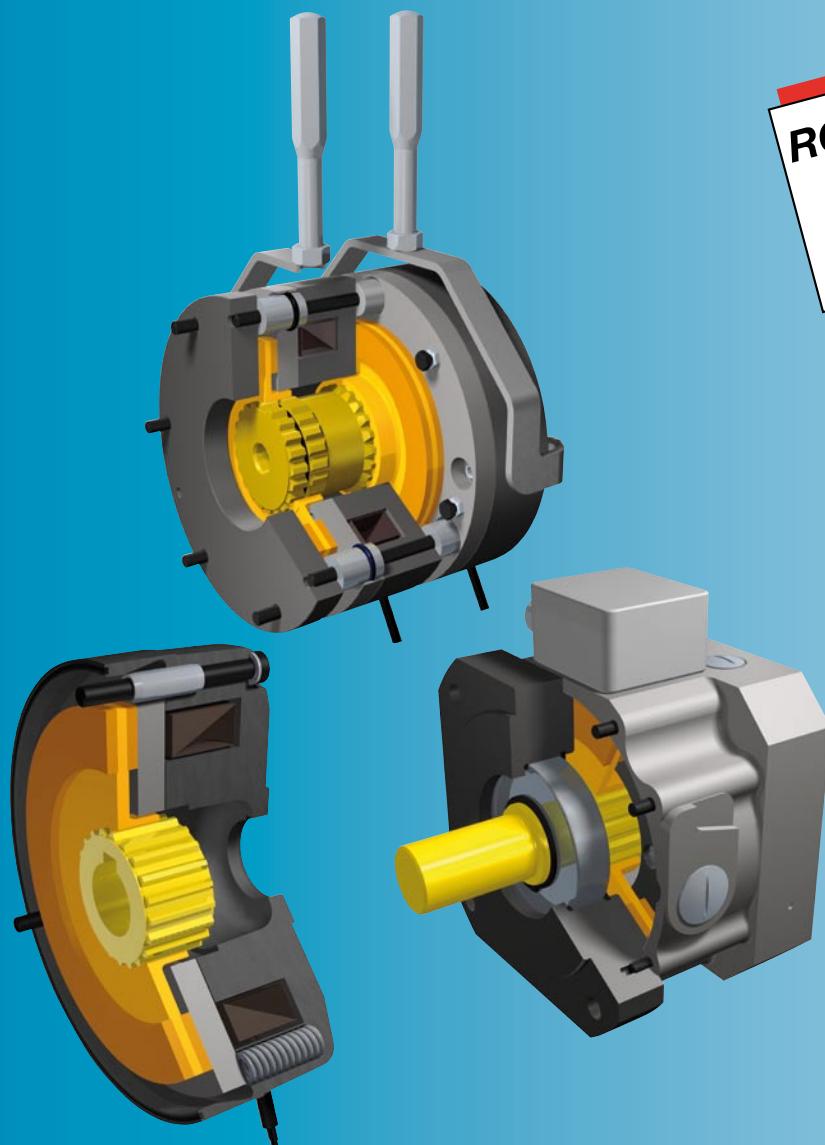


Safety brakes

ROBA-stop®

ROBA-stop®
Always the
safest choice
for brakes



www.mayr.com

IMG.803.V06.GB

mayr®
your reliable partner

What is your definition of reliability?

We define reliability as the highest product quality and competent service from the initial contact right up to the after-sale service

- ☐ Largest variety in selection of standard products
- ☐ Market leader's competence arising from decades of experience in the development, production and application of power transmission products
- ☐ Optimum product choice due to our experts' designs and calculations
- ☐ Reliable component dimensioning
- ☐ Intelligent platform (modular construction)
- ☐ High flexibility for individual requests and customer-tailored solutions
- ☐ Quality-inspected suppliers
- ☐ Modern, highly robust materials
- ☐ 100% quality control
- ☐ Certified according to DIN EN ISO 9001:2000
- ☐ Personal supervision from the first contact right up to the after-sale service
- ☐ Worldwide local service network
- ☐ CAD-files available online to save time and costs during construction
- ☐ 24-hour delivery service for preferred products
- ☐ Short delivery times and on-time delivery
- ☐ Unlimited replacement part availability worldwide



A Worldwide Presence

Our Sales and Service network is constantly expanding. We guarantee you and your customers local representation almost all over the world. With eight branch firms in France, Switzerland, Italy, England, Poland, the USA, Singapore and China as well as around 30 representatives and eight subsidiaries in Germany, we provide local service for our customers in all important industrial areas.



Total Quality Management

Product Quality

Every delivery which leaves our firm has been subjected to a careful quality inspection, meaning that you are able to rely 100 % on *mayr®* products. If required, we pre-adjust our clutches and brakes accurately to the requested values and confirm the product characteristics with an Inspection Report.

Quality Management

mayr® uses the term quality to describe its products and services. Certification of our quality management confirms the quality-consciousness of our colleagues at every level of the company.

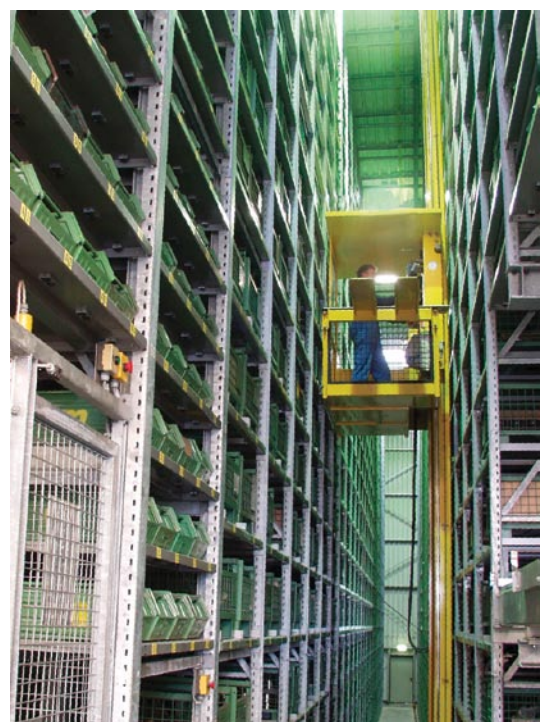
Our integrated management system is certified according to **DIN EN ISO 9001:2000 (Quality)** and **DIN EN ISO 14001 (Environment)** and complies with the **OHSAS 18001/OHRIS (Occupational Health and Safety)** demands.



Individual and Flexible Logistics

Flexible and optimally qualified colleagues ensure that your order is delivered according to schedule and with the most appropriate delivery method. We take into account your individual packaging and dispatch regulations as a matter of course. Our modern high rack warehouse has a permanently available stock of our wide standard product selection.

And if you are really in a hurry, simply use our uniquely-quick basic product delivery service!



Construction and Development

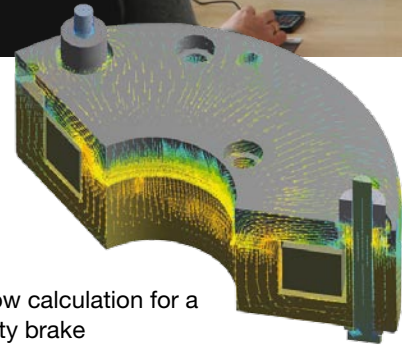
Innovations for your success

With our innovative and economical solutions, we are able to set new records in the field of power transmission. Our many worldwide patents prove our constant ambition to develop better and technologically superior products.

Highly qualified engineers, high-performance 3D-CAD-systems and the most up-to-date FEM calculation aids used in our Development and Construction departments mean that our business is perfectly equipped to offer our customers effective solutions.

Experts for all Power Transmission Questions

Exploit our know-how, gained by decades of experience in the development, production and application of power transmission products. Our experts in Construction and Development are happy to advise you personally and competently when selecting and dimensioning the drive solution you require.



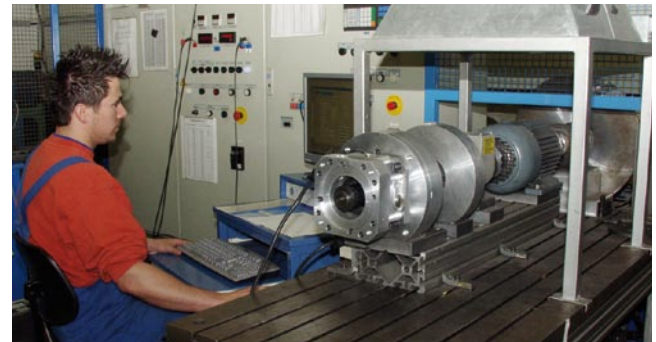
FEM-magnetic flow calculation for a ROBA-stop® safety brake

From Prototype to Finished Product

No mayr® product is released onto the market until it has proved its functional capabilities and reliability in extreme, long-term tests.

The spectrum of testing stands is as varied as our range of products:

- ☐ Friction work test stands
- ☐ Wear test stands
- ☐ Noise measurement room with highly accurate noise measurement inspection devices
- ☐ Torque inspection stands up to 200.000 Nm
- ☐ Impact alternating load test stands
- ☐ Force test stands
- ☐ Linear movement test stands
- ☐ Continuous performance test stands
- ☐ Magnetic flow measurement test stands
- ☐ High-speed test stands up to 20.000 rpm
- ☐ Misalignment and angular misalignment test stands
- ☐ Load and measurement test stands for DC motors



Product Data: Our 24-hour Service

Our website offers you detailed information 24 hours per day, 365 days per year with no delays. Here you can find not only the latest catalogues and technical documentation but also CAD-files for cost-saving construction of our products.

Unsurpassed - Our Standard Program

For safety clutches, safety brakes, backlash-free shaft couplings and high-quality DC drives, we offer you a complete product range with market and branch optimised constructions and designs.

Function

ROBA-stop® safety brakes are spring applied, electromagnetic safety brakes. These brakes ensure reliable and safe braking of machines and systems in any position in the event of a power switch-off, a power failure or an EMERGENCY STOP.

Overview

Brake description page

- Construction Types, our recommendation
- Suitable Types

Exemplary Application Areas

	6	6	6	6	7	7	8	9	10	11	12	12	12	13	14	15	16	17	18
	ROBA-stop®-positioning brake	ROBA-stop®-holding brake	ROBA-stop®-tacho brake	ROBA-stop®-peak load brake	ROBA-stop®-M-positioning brake	ROBA-stop®-M-holding brake	ROBA®-topstop®	ROBA®-alphastop®	ROBA®-pinionstop	ROBA®-linearstop	ROBA-stop®-silenzio® dual circuit brake	ROBA-stop®-silenzio® single circuit brake	ROBA-stop®-silenzio® with double rotor	ROBA®-diskstop®	ROBA-stop®-Z	ROBA®-duplostop®	ROBA®-twinstop®	ROBA®-sheavestop®	ROBA-stop®-S
General mechanical engineering	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Electromotors	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Servo drives	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Crane construction	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Harbour/ship/seawater	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Elevator construction	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Escalators	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Stage construction	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Hoists	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Mobile devices with low voltage	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Medical technology	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Robots/Handling	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Gravity loaded axes	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Linear motors	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Machine tools	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Special characteristics

	6	6	6	6	7	7	8	9	10	11	12	12	12	13	14	15	16	17	18
	CSA-certification	ATEX design	Sealed design	Two independent braking circuits	Minimal noise														
CSA-certification	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
ATEX design	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Sealed design	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Two independent braking circuits	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Minimal noise	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Brake description page ...



On request ROBA-stop®-Safety brakes can also be delivered with UL approval.



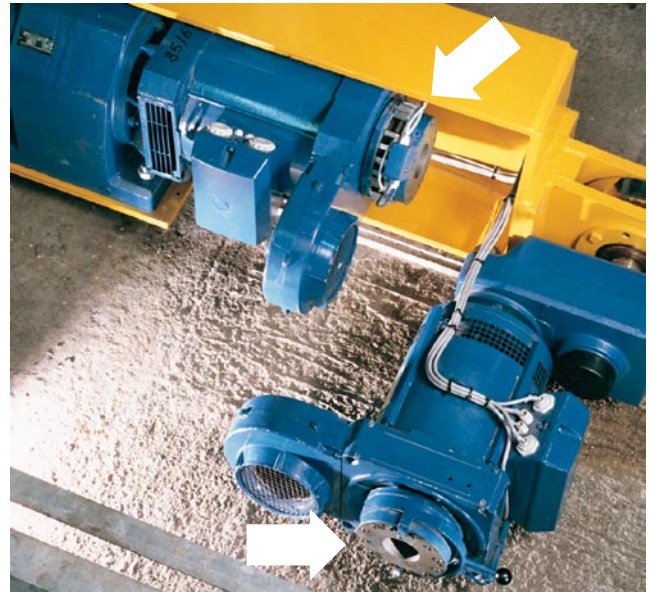
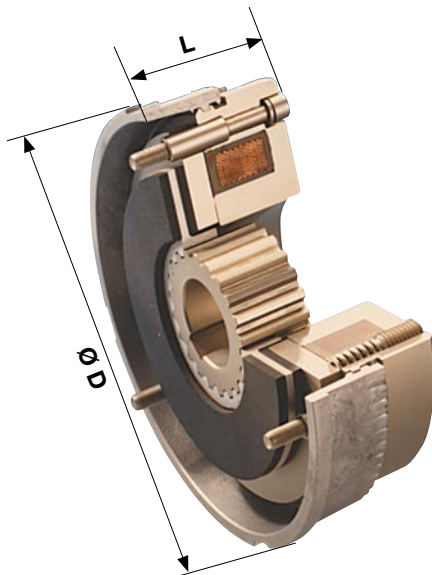
According to German notation, decimal points in this catalogue are represented with a comma (e.g. 0,5 instead of 0.5).

ROBA-stop®-Universal

The multi-functional all-round safety brake

Performance characteristics

- Finely adjustable braking torque adjustment
- Simple wear re-adjustment
- Designs as positioning brake, holding brake, tacho brake and peak load brake
- Enclosed construction
- Simple installation
- Insulation material class F
- Can be used for 100 % duty cycle
- Short switching times



ROBA-stop® application in a high rack warehouse

Designs

- ❑ **ROBA-stop®-positioning brakes**
Brake like a working brake during movement and offer high positioning and repeat accuracy.
- ❑ **ROBA-stop®-holding brakes**
Achieve very high braking torques and hold drives safely in position when they are not running.
- ❑ **ROBA-stop®-tacho brakes**
Have a centring on the rear side and a tapped hole for mounting a tacho generator.
- ❑ **ROBA-stop®-tacho peak load brakes**
Allow a tacho generator to be mounted and have a special armature disk for high friction work.
- ❑ **ROBA-stop®-peak load brakes**
Have a special, extremely strong armature disk which allows high friction work.

Technical Data, Dimensions				Size									
				2	3	4	5	6	7	8	9	10	11
Braking torque ¹⁾		M	[Nm]	1,1	3	6	12	26	50	100	200	400	800
	Holding brake	M	[Nm]	-	5	10	22	48	90	180	360	620	1250
Shafts-Ø			[mm]	6 to 11	8 to 12	10 to 15	10 to 20	15 to 25	20 to 32	25 to 45	25 to 50	25 to 60	30 to 80
	Holding brake		[mm]	-	8 to 12	10 to 15	10 to 20	15 to 25	20 to 32	25 to 45	30 to 50	30 to 60	30 to 80
Brake	Outer-Ø	D	[mm]	59	79	98	114	142	165	199	220	275	360
	Length	L	[mm]	28	30,2	32,2	39,3	43,2	58,2	66,7	74,3	96,3	116,3
	Length peak load brake	L	[mm]	-	-	-	-	-	68,2	77,7	87,3	116,3	138,3

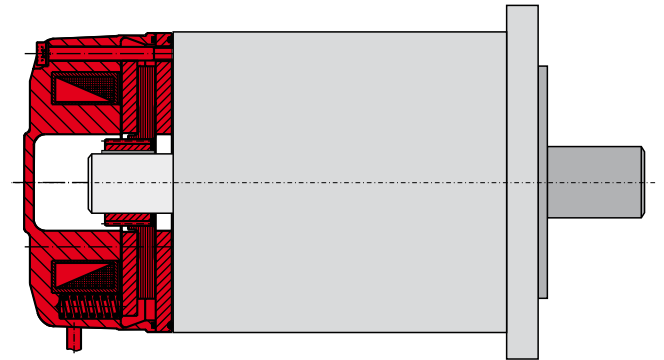
1) Tolerance +40 % / -20 %

ROBA-stop®-M

The robust, cost-effective motor brake

Performance characteristics

- **Maintenance-free (no re-adjustment)**
- Simple installation
- Completely enclosed brake housing acc. Protection IP54 or IP65
- Insulation material class F
- Can be used for 100 % duty cycle
- Short switching times



ROBA-stop®-M safety brake on the B-bearing side of an electromotor. The design with flange plate is used if there is no suitable counterfriction surface for the brake linings available motor-side.

**Designs**

- ❑ **ROBA-stop®-standard brake**
As a working brake it brakes off movement, and positions at the required point.
- ❑ **ROBA-stop®-M holding brake**
Holds drives safety in position when they are not running and brakes off movement on EMERGENCY STOP.

Technical Data, Dimensions				Size										
				2	4	8	16	32	60	100	150	250	500	1000
Braking torque	Standard brake ¹⁾	M	[Nm]	2	4	8	16	32	60	100	150	250	500	1000
	Holding brake ²⁾	M	[Nm]	4	8	16	32	64	100	180	250	450	800	1600
Shafts-Ø	Standard brake		[mm]	8 to 15	10 to 15	11 to 20	14 to 25	19 to 30	22 to 35	24 to 45	30 to 50	40 to 60	50 to 80	75 to 90
	Holding brake		[mm]	8 to 15	10 to 15	11 to 20	14 to 25	19 to 30	22 to 35	24 to 45	30 to 50	40 to 55	50 to 75	75 to 90
Brake	Outer-Ø	D	[mm]	76	87	103	128	148	168	200	221	258	310	382
	Length	L	[mm]	39	41,5	45,2	55,7	61,7	72,5	84	97	116	114	135

1) Tolerance +30 % / -10 %

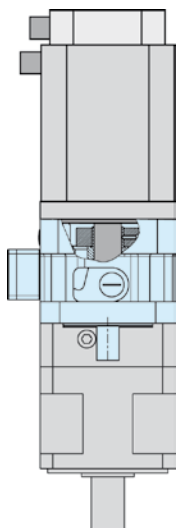
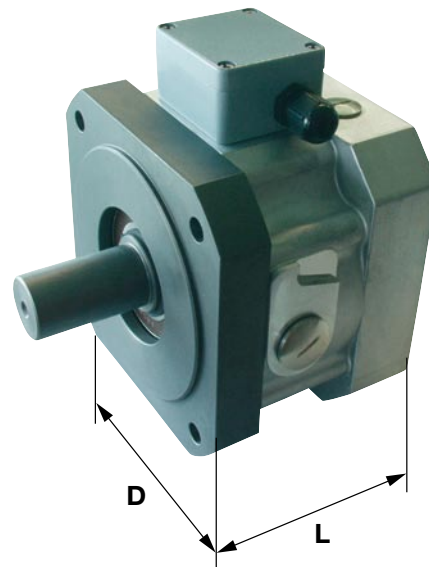
2) Tolerance +40 % / -20 %

ROBA®-topstop®

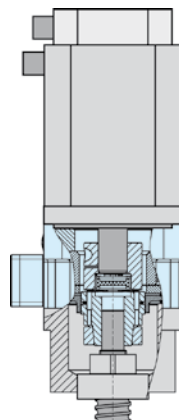
Modular safety system for mounting onto A-bearing-side servo motors

Performance characteristics

- Axes are held safely in any position even when the servo motor is disassembled, e.g. during machine maintenance
- Optimum braking system for vertical axes and when handling large weights
- Long lifetime even after frequent EMERGENCY STOP brakings
- Integrated switch signals the operating condition (not braked/braked)
- Short, compact construction
- Low device weight (light metal housing)
- Low protection of heat even at 100 % duty cycle



ROBA®-topstop® with output shaft for direct mounting onto a gearbox with a hollow shaft.



Braking system with integrated, insertable shaft coupling. Separate coupling and coupling housing no longer necessary.

Brake Designs:

- ❑ Single circuit brake with bearing-supported output shaft, meaning that it can also be used for toothed belt drives.
- ❑ Single circuit brake with integrated, insertable shaft coupling.
- ❑ Single circuit brake with shaft coupling and integrated EAS®-smartic® torque limiting clutch.
- ❑ Redundant dual circuit brake with bearing-supported output shaft.
- ❑ Basic brake module for special brake configurations.

Due to their adapted flange dimensions, ROBA®-topstop® safety brakes can be easily integrated in existing constructions between the servo motor and the counterflange. If necessary, a design for any installation situation can be implemented by replacing the standard flange.

Five standard construction sizes for braking torques from 12 to 400 Nm are available at short notice.

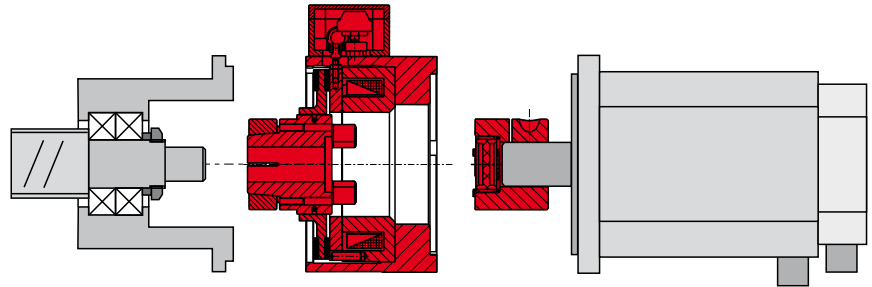
Technical Data, Dimensions				Size				
				120	150	175	200	260
Braking torque ¹⁾	Single circuit brake	M	[Nm]	12	45	70	100	200
	Single circuit brake (with overexcitation)	M	[Nm]	30	90	120	160	400
Single circuit brake	4-cornered flange	D	[mm]	126	155	176	194	264
	Length	L	[mm]	104	119	138,5	138,5	185

1) Tolerance +40 % / -20 %

ROBA®-topstop® brake module with insertable shaft coupling

These brake modules were conceived for special customer-specific applications. Depending on the respective mounting situation, these brake can be mounted directly onto a pre-installed friction flange, or they can be delivered with a mounting flange which has been specially adapted for the particular application.

In this way, the brake module can be equipped with the standard clamping hub shafts and ROBA®-ES shaft couplings, or optimally adapted to the existing mounting possibilities with special coupling constructions.



ROBA®-alphastop® Safety brake for mounting A-bearing-side onto Fanuc motors

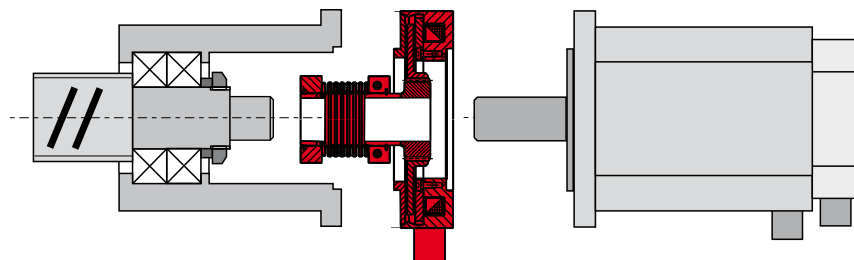
Performance characteristics

- Complete unit with backlash-free shaft coupling
- Simple installation between the servo motor and the mounting flange
- Completely enclosed brake housing
- Design with output shaft for direct installation onto a hollow shaft gearbox
- Can be used for 100 % duty cycle



The ROBA®-alphastop® is a safety brake, installed between the servo motor and a bell housing. The brake toothed hub is combined with the smartflex® backlash-free steel bellows coupling. Frictionally-locking clamping rings ensure backlash-free torque transmission between the motor and the ball screw spindle.

The ROBA®-alphastop® is designed with an output shaft for direct installation onto a gearbox with a hollow shaft, meaning that the shaft coupling is unnecessary.



ROBA®-pinionstop

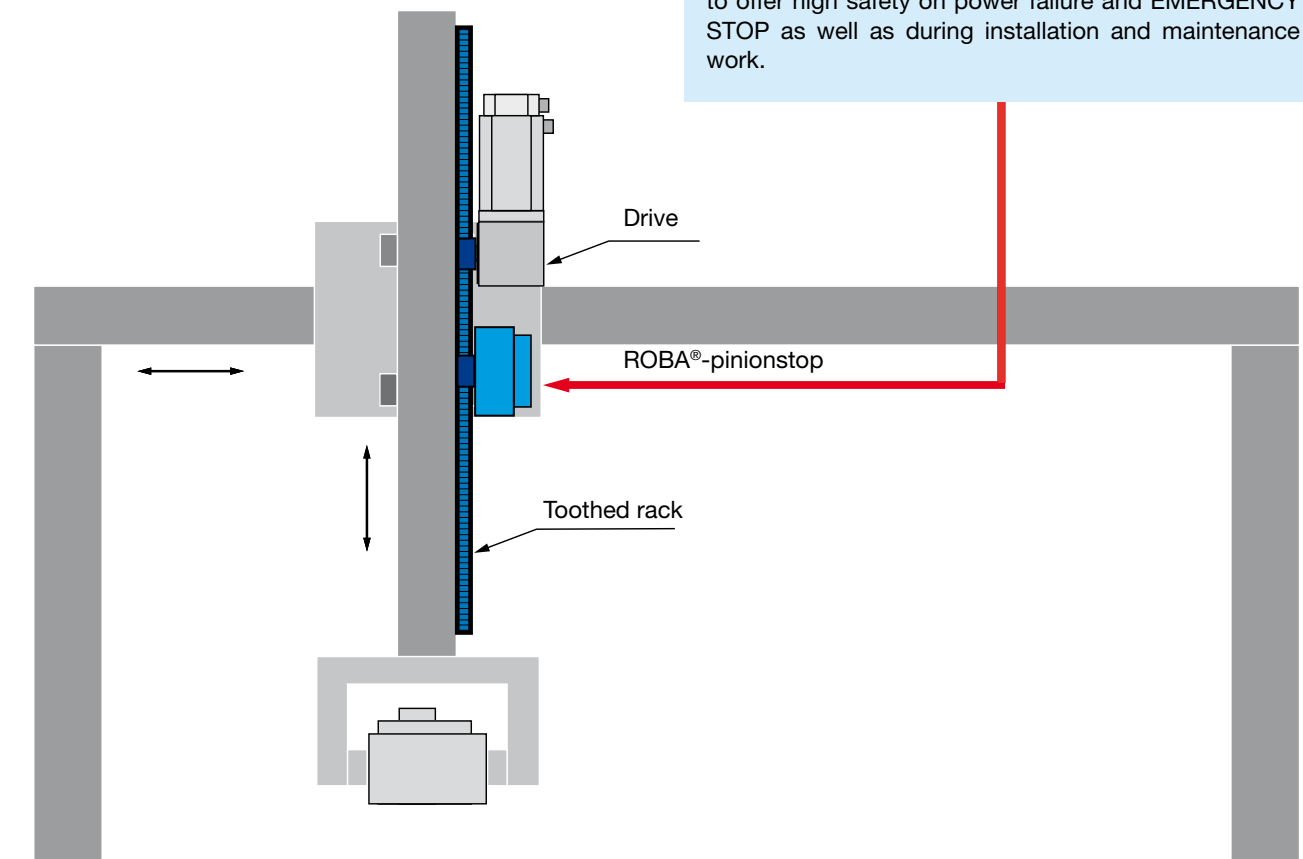
The safe rack and pinion brake

Performance characteristics

- The axes are held safely via a manufacturer-assembled brake module with a pinion shaft
- Independent, electromagnetically released spring applied braking system
- Integrated release monitoring
- Sealed brake housing
- Individual dimensioning and constructional possibilities for brake configuration
- Easy to mount
- Easy-to-implement redundant brake system (according to Category 3) by mounting a second ROBA®-pinionstop brake or by using an additional brake on the servo motor.



The ROBA®-pinionstop engages directly and in any position onto the toothed rack and is closed in a de-energised condition. This safety brake is therefore able to offer high safety on power failure and EMERGENCY STOP as well as during installation and maintenance work.



ROBA®-linearstop

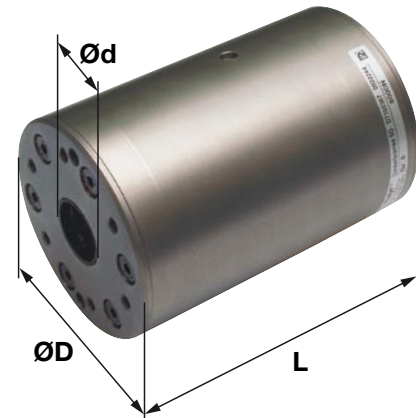
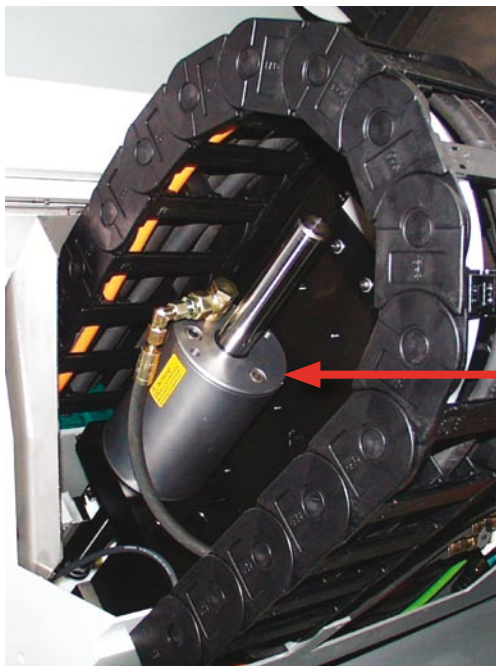
The hydraulic and pneumatic brake system for linear axes

Performance characteristics

- **Backlash-free force transmission**
- **Safety brake system based on the fail-safe principle**
- **No self-amplification during clamping**
- **Clamping release unnecessary**
- **Highest performance density**
- **Suitable for EMERGENCY STOP braking**
- **Shortest reaction time**
- **Integrated switching condition monitoring**
- **Long lifetime**
- **Easy to integrate onto existing constructions**

Additionally on pneumatic design Type 381.1__0

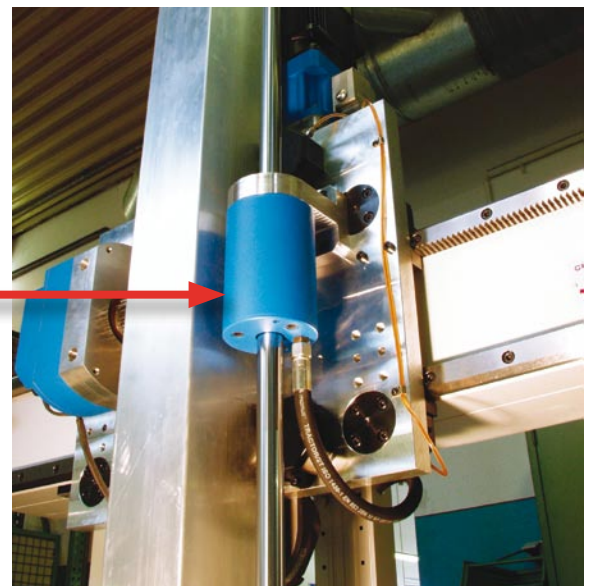
- **reliable dynamic braking**
- **TÜV (German Technical Inspectorate) -tested acc. Trade Association inspection policies**



As a new braking system, the ROBA®-linearstop® offers unique possibilities for increasing machine safety. As a compact brake unit, it can be integrated even into existing machines and system constructions simply, quickly and without complex adjustment work. By mounting a second ROBA®-linearstop® brake or by using an additional brake on the servo motor, a redundant brake system can be implemented easily.

The unit, which has a direct effect on a rod, brakes independently of the existing drive system.

This means that it does not just brake on unpermitted height loss of the vertical carriage due to power failure or other malfunctions, but is also capable of braking dynamic horizontal movements safely in EMERGENCY STOP situations.



Technical Data, Dimensions			Size							
			Pneumatic brake system					Hydraulic brake system		
			30	40	60	70	80	10	20	30
Nominal holding force	F _{Nom}	[kN]	0,8 - 2,2	1,5 - 4,4	4,6 - 13,8	7,5 - 22,5	12,5 - 40	10	20	35
Outer-Ø	D	[mm]	56	70	110	140	178	91	112	140
Brake rod-Ø	d	[mm]	20	20	25	32	40	30	30	40
max. Length	L	[mm]	152.9	157.9	184.5	213	246.6	131	163	172

For detailed technical data and dimensions, please see catalogue:

ROBA®-linearstop®

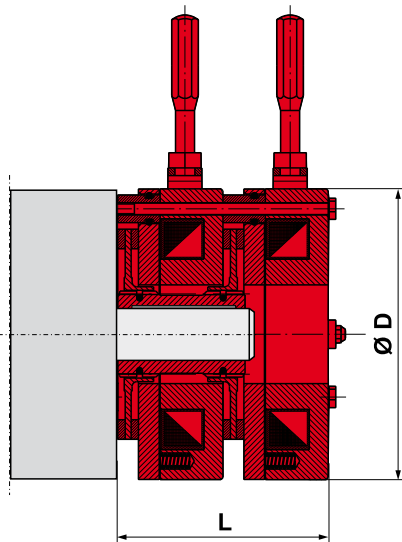
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ROBA-stop®-silenzio®

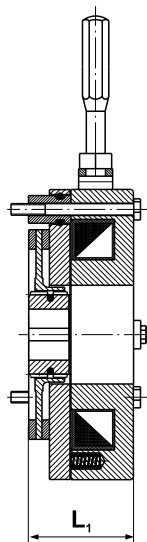
The quietest safety brake for elevator and stage drives

Performance characteristics

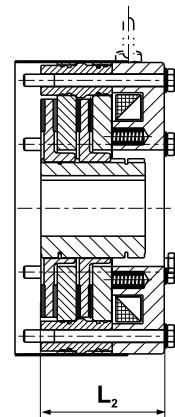
- Noise level of the basic version under 60 dB(A) even after several million switchings
- Dual circuit brake as redundant brake system according to BGV C 1 and EN 81
- Very short construction length
- Extremely simple installation
- No air gap adjustment required
- Function monitoring via microswitch
- Brakes can be switched and inspected individually
- Prototype-inspected



- ☐ **Dual circuit brake**
Redundant brake system with two brake bodies working independently of each other



- ☐ **Single circuit brake**
Compact brake with an extremely short construction length



- ☐ **Double rotor design**
Single circuit brake with two rotors (4 friction surfaces) with double braking torque

Technical Data, Dimensions				Size											
				4	8	16	32	64	100	200	300	500	800	1300	1800
Max. braking torque ¹⁾	Dual circuit brake	M	[Nm]	2 x 5	2 x 10	2 x 19	2 x 40	2 x 77	2 x 120	2 x 240	2 x 360	2 x 600	2 x 1000	2 x 1560	2 x 2150
	Dual circuit brake amplified	M	[Nm]	-	-	-	-	-	-	2 x 300	2 x 500	2 x 800	2 x 1200	2 x 1800	2 x 2300
	Single circuit brake	M	[Nm]	5	10	19	40	77	120	240	360	600	1000	1560	2150
	Single circuit brake amplified	M	[Nm]	-	-	-	-	-	-	300	500	800	1200	1800	2300
	Double rotor design	M	[Nm]	-	-	-	-	-	-	-	720	1200	2000	3120	4300
Shafts-Ø	min - max		[mm]	8 - 15	9 - 20	14 - 24	20 - 30	18 - 35	24 - 46	35 - 48	40 - 60	50 - 65	65 - 75	75 - 90	85 - 95
Outer-Ø		D	[mm]	88	108	130	153	168	195	223	261	285	329	370	415
Length	Dual circuit brake	L	[mm]	87	91	99	109	127	134	152	159	172	189	199	205
	Single circuit brake	L ₁	[mm]	43,5	45,5	49	54,5	63,5	67	76	79,5	86	94,5	99,5	102,5
	Double rotor design	L ₂	[mm]	-	-	-	-	-	-	-	109,4	120,6	133,7	143,7	148,7

1) Tolerance +60 %

For detailed technical data and dimensions, please see catalogue:

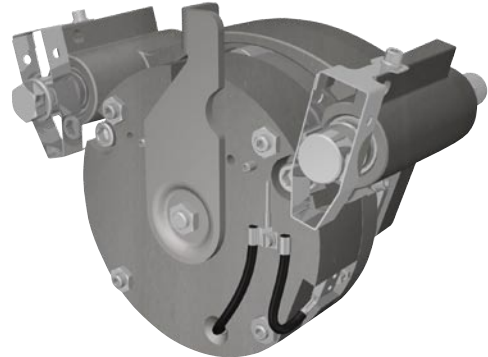
ROBA-stop®-silenzio® K.896.V0_GB

ROBA®-diskstop®

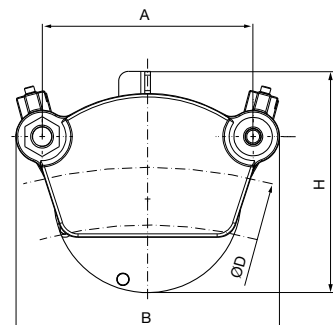
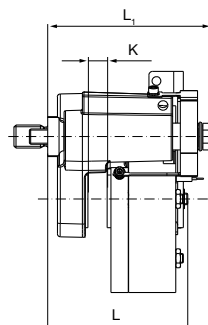
The electromagnetic safety brake system for brake disks

Performance characteristics

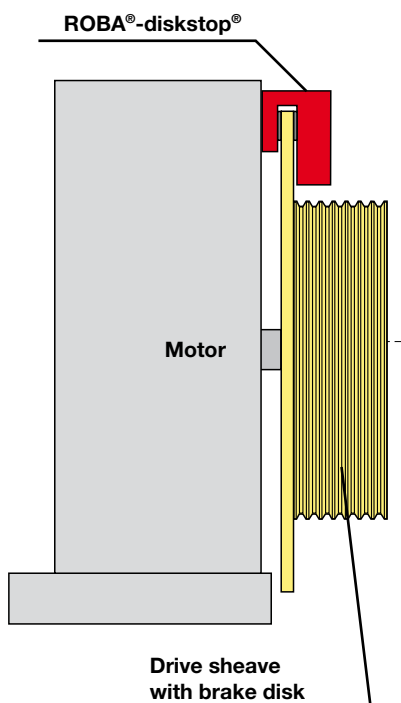
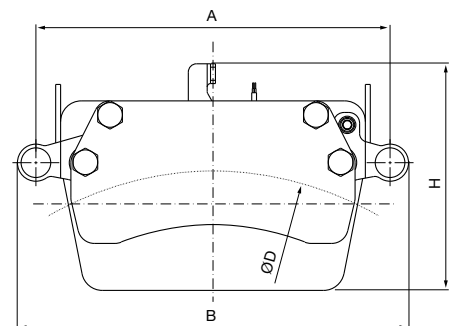
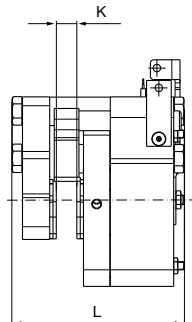
- Grind-free operation due to unique patented alignment mechanism
- Attractive solution for large braking torques
- Minimum-noise operation
- Redundancy according to EN 81 when assembling two brakes
- Brakes can be switched and inspected individually
- Prototype-inspected
- High performance density



Size 6 – 8



Size 10



Technical Data, Dimensions			Size			
			6	7	8	10
Braking torque ¹⁾ "performance optimised"						
Example for brake disk diameter D = 1000 mm						
	M	[Nm]	1550	1777	2328	4876
Braking torque ¹⁾ "noise-optimised"						
Example for brake disk diameter D = 1000 mm						
	M	[Nm]	1244	1534	1862	4020
Brake disk	Outer-Ø	D [mm]	270 – ∞	390 – 1500	390 – ∞	650 – 1500
	Width ²⁾	K [mm]	15	15	20	25
Brake	Bolt distance	A [mm]	140	180	220	430
	Length	L [mm]	125	138	146	198
	Length (with alignment mechanism for Sizes 6 – 8)	L ₁ [mm]	161	161	173	-
	Height	H [mm]	198	225,5	229	275
	Width	B [mm]	184	227	275	475

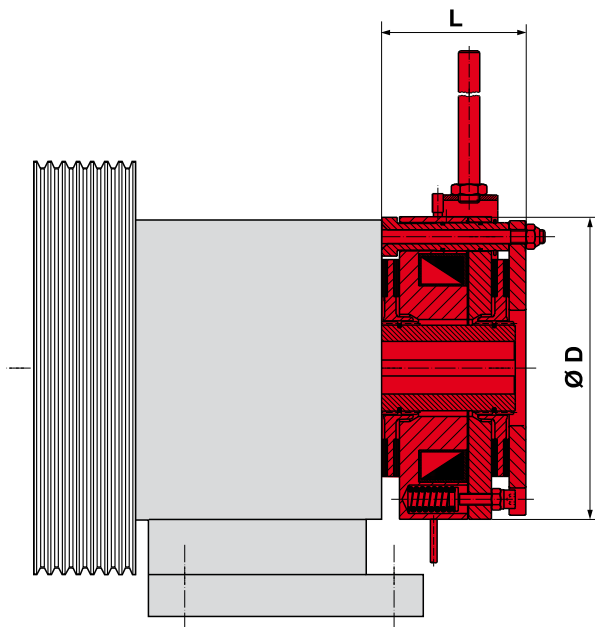
1) Tolerance -0 % / +60 %

2) Other brake disk widths are possible

ROBA-stop®-Z The double-safety elevator brake

Performance characteristics

- Highest safety due to two independent brake circuits in one brake
- Compact structural shape
- Tried and tested in passenger elevators and stage drives
- Ideal brake for all hoists and conveyor systems
- Low-noise operation via switching noise-damping
- Prototype-insected



ROBA-stop®-Z dual circuit brakes fulfil the demands according to EN 81 or to TRA 200 and, due to their highly effective noise damping system they run extremely quietly. The compact design offers innovative possibilities for economical solutions.

ROBA-stop®-Z brakes are equipped with release monitoring and, if required, also with temperature monitoring and are permitted for use in theatre drives according to BGV C1 (former VBG 70), DIN 56950.

ROBA-stop®-Z on the shaft (= the drive sheave shaft) of a gearless elevator machine.

Technical Data, Dimensions			Size					
			60	125	250	500	1000	2000
Braking torque ¹⁾	M	[Nm]	70 (2 x 35)	140 (2 x 70)	280 (2 x 140)	540 (2 x 270)	1100 (2 x 550)	2380 (2 x 1190)
Shafts-Ø		[mm]	20 to 32	25 to 45	25 to 42	42 to 55	51 to 75	70 to 95
Brake	Outer-Ø	D [mm]	152	182	216	265	322	400
	Length	L [mm]	76,9	83,4	99	133,5	171,7	216,8

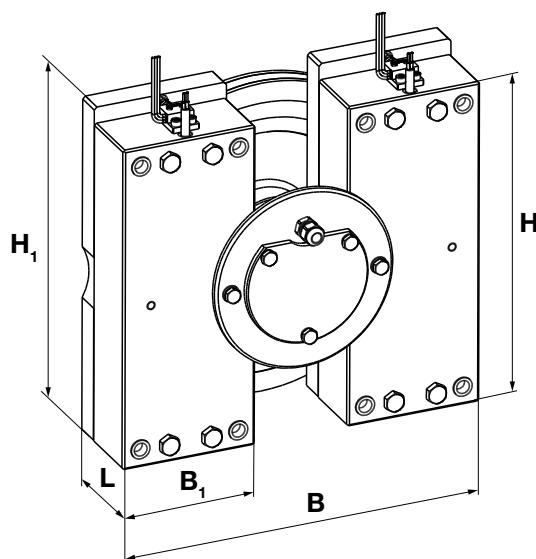
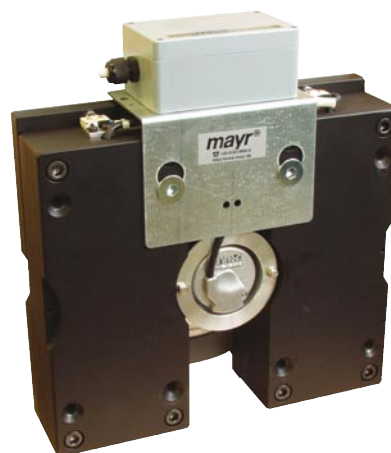
1) Tolerance +40 % / -20 %

ROBA®-duplostop®

The double safety brake system for elevator drives

Performance characteristics

- Highest safety due to two independent brakes according to EN 81
- Permitted for use with release monitoring as protection against excessive speeds in an upwards direction
- Particularly short construction form
- Cost-effective redundant elevator brake
- Brakes can be switched and inspected individually
- Prototype-inspected acc. ABV 766/2
- Encoder can be mounted without increasing construction length
- Simple installation
- No air gap adjustment required
- Extremely quiet operation due to mayr®-patented sound damping
- Brake can be opened via hand release



Technical Data, Dimensions				Size						
				200	400		600		800	1000
					short	long	short	long		
Braking torque ¹⁾		M	[Nm]	2 x 200	2 x 420	2 x 450	2 x 600	-	2 x 850	2 x 1050
	(with overexcitation)	M	[Nm]	2 x 250	-	2 x 550	2 x 700	2 x 800	2 x 950	2 x 1200
Shafts-Ø	directly splined motor shaft DIN 5480 ²⁾		[mm]	60 x 2,5 x 22	67 x 3 x 21	72 x 3 x 22	72 x 3 x 22	82 x 3 x 26	82 x 3 x 26 90 x 3 x 28 *	90 x 3 x 28 * 98 x 4 x 23
Brake	Length (with rotor)	L	[mm]	86,1 / 91,1 *	96,1	101,1	101,1	- / 108,1 *	108,1	108,1
	Height	H	[mm]	244	268	290	298	334	336	380
		H ₁	[mm]	256	280	303	311	347	349	393
	Width	B	[mm]	270	315	290	355	380	375	395
		Single brake	B ₁	[mm]	100	120	120	140	140	150

1) Tolerance +60 %

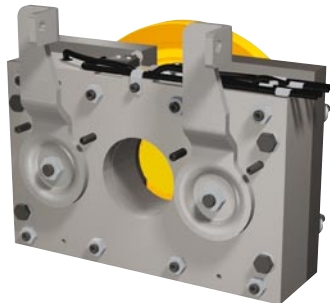
2) Design with toothed hub available on request

*) Dimension valid for braking torque with overexcitation

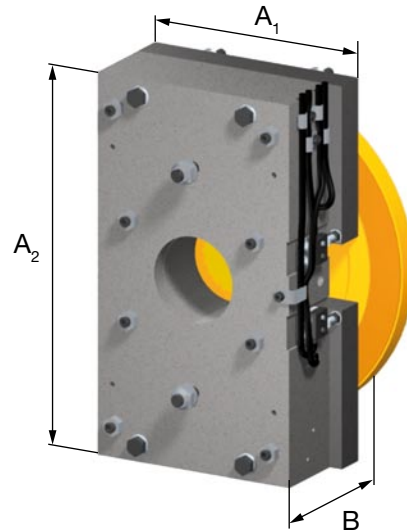
ROBA®-twinstop® The doubled safety brake for elevator drives and stage technology

Performance characteristics

- **Maximum safety due to two independent brakes acc. EN 81**
- Also suitable as protection against excessive upwards speeds when fitted with release monitoring (prototype inspection applied for ABV 845)
- Exceptionally short design
- Cost-effective, redundant elevator brake
- Brakes can be individually subjected to an electrical inspection
- Mounting the encoder does not lengthen the construction or add further parts
- Installation of microswitches for function monitoring possible
- No air gap adjustment necessary
- Virtually silent due to patented *mayr*® noise damping
- Brake release via rotating hand release for Bowden cable (hand release lever on request)



ROBA®-twinstop®
Design with rotating hand release
for Bowden cable



Design

The ROBA®-twinstop® consists of a compact brake block with two independent brake circuits which is fixed to the motor using four screws. In comparison to brake systems with brakes, which are positioned behind each other, it has an extremely short construction length. Even the addition of a compact encoder does not alter this length, as it is located in the central bore.

Function

The redundant electromagnetic safety brake ROBA®-twinstop® is spring applied. If the power is switched off, or on power failure / EMERGENCY STOP, the brake ensures reliable and secure stops in any position.

Technical Data				Size			
				150	200	250	350
Nominal braking torque		M _{Nom}	[Nm]	2 x 150	2 x 200	2 x 250	2 x 350
Shaft-Ø	Directly toothed motor shaft DIN 5480 ¹⁾		[mm]	60 x 2,5 x 22	60 x 2,5 x 22	65 x 3 x 20	65 x 3 x 20
Brake	Length (with rotor)	B	[mm]	90,6	90,6	100,6	100,6
	Height	A ₂	[mm]	250	290	290	300
	Width	A ₁	[mm]	170	170	170	210
	Rotor	R	[mm]	223	235/253 ²⁾	253	273

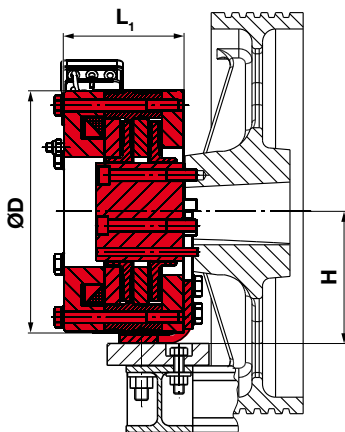
1) Design with toothed hub available on request
2) For version with hub

ROBA®-sheavestop®

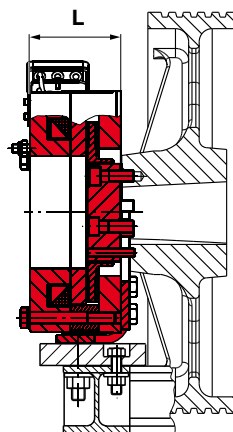
The reliable elevator brake for prevention against excessive speed rises according to EN 81

Performance characteristics

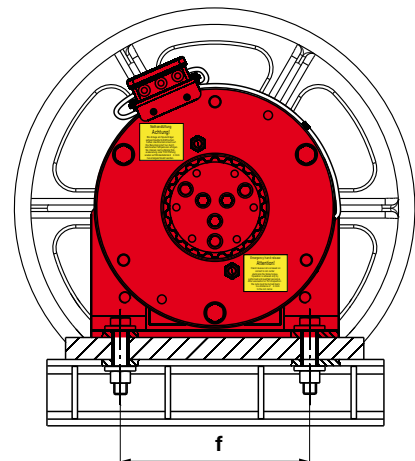
- **Retrofitting saves replacement of entire drive**
- Reliable holding at the holding point offers safety against uncontrolled trundling downwards and upwards
- Ropes need not be removed
- Economical implementation of the operational safety regulation
- Permitted for use with release monitoring as protection against excessive speeds in an upwards direction
- Time-saving installation
- Extremely quiet operation due to *mayr*® noise damping
- Prototype-inspected acc ABV 781 or ABV 782



Double rotor design



Single rotor design



Technical Data, Dimensions				Size			
				500	800	1300	1800
Max. braking torque ¹⁾	Single rotor design	M	[Nm]	800	1200	1800	2300
	Double rotor design	M	[Nm]	1400	2200	3120	4300
Axis height		H	[mm]	160	180	200	225
Fixing screws distance		f	[mm]	220	260	300	345
Brake	Outer-Ø	D	[mm]	288	332	373	418
	Length	Single rotor design	L	[mm]	114	124,5	129,5
		Double rotor design	L ₁	[mm]	149	164	174
						174	185

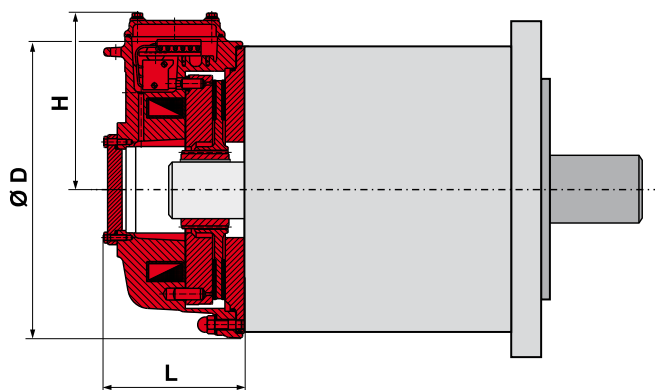
1) Tolerance +60 %

ROBA-stop®-S

The waterproof, robust monoblock brake

Performance characteristics

- Completely enclosed and sealed design in Protection IP67
- Robust, single-part monoblock housing
- All components are corrosion-protected
- High friction work is permitted
- Can be used in extreme ambient conditions
- Long-distance diagnosis via integration of release monitoring and wear monitoring
- Anti-condensation heating system to avoid condensation formation inside the brake



Application fields

- ☐ Harbour/ship/seawater
- ☐ Outdoor applications
- ☐ Steel works
- ☐ Crane systems
- ☐ Heavy industries
- ☐ Recycling plants
- ☐ Environmental technology

Technical Data, Dimensions			Size			
			8	9	10	11
Braking torque ¹⁾	M	[Nm]	100	200	400	800
Shafts-Ø		[mm]	25 to 45	25 to 50	25 to 60	55 to 75
Brake	Outer-Ø	D [mm]	240	270	310	450
	Length	L [mm]	122	132,5	152	194,1
	Height of terminal box	H [mm]	155	167	185	217

1) Tolerance +40 % / -20 %

Application

Rectifiers are used to connect DC units to alternating voltage supplies, for example electromagnetic brakes and clutches (ROBA-stop®, ROBA-quick®, ROBATIC®), electromagnets, electrovalves, contactors, switch-on safe DC motors, etc.

Function

The AC input voltage (VAC) is rectified (VDC) in order to operate DC voltage units. Also, voltage peaks, which occur when switching off inductive loads and which may cause damage to insulation and contacts, are limited and the contact load reduced.

Electrical Connection (Terminals)

- 1 + 2 Input voltage
- 3 + 4 Connection for an external switch for DC-side switching
- 5 + 6 Coil
- 7 - 10 Free nc terminals (only for size 2)

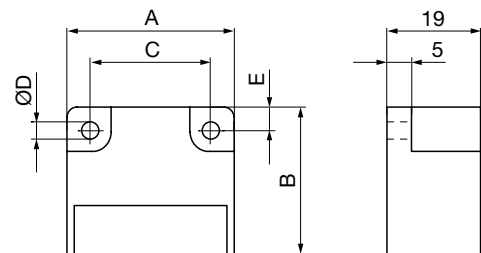
Order Number

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▲				▲						
Size				4						
1				5						
up to										
4										

Technical Data

	Bridge rectifier		Half-wave rectifier			
Calculation output voltage	VDC = VAC x 0,9		VDC = VAC x 0,45			
Type	1/025	2/025	1/024	2/024	3/024	4/024
Max. input voltage ± 10 %	230 VAC	230 VAC	400 VAC	400 VAC	500 VAC	600 VAC
Max. output voltage	207 VDC	207 VDC	180 VDC	180 VDC	225 VDC	270 VDC
Output current at ≤ 50 °C	2,5 A	2,5 A	3,0 A	4,0 A	4,0 A	4,0 A
Output current at max. 85 °C	1,7 A	1,7 A	1,8 A	2,4 A	2,4 A	2,4 A
Max. coil capacity at 115 VAC ≤ 50 °C	260 W	260 W	-	-	-	-
Max. coil capacity at 115 VAC up to 85 °C	177 W	177 W	-	-	-	-
Max. coil capacity at 230 VAC ≤ 50 °C	517 W	517 W	312 W	416 W	416 W	416 W
Max. coil capacity at 230 VAC up to 85 °C	352 W	352 W	187 W	250 W	250 W	250 W
Max. coil capacity at 400 VAC ≤ 50 °C	-	-	540 W	720 W	720 W	720 W
Max. coil capacity at 400 VAC up to 85 °C	-	-	324 W	432 W	432 W	432 W
Max. coil capacity at 500 VAC ≤ 50 °C	-	-	-	-	900 W	900 W
Max. coil capacity at 500 VAC up to 85 °C	-	-	-	-	540 W	540 W
Max. coil capacity at 600 VAC ≤ 50 °C	-	-	-	-	-	1080 W
Max. coil capacity at 600 VAC up to 85 °C	-	-	-	-	-	648 W
Peak reverse voltage	1600 V	1600 V	2000 V	1600 V	2000 V	2000 V
Rated insulation voltage	320 V _{RMS}	320 V _{RMS}	500 V _{RMS}	500 V _{RMS}	630 V _{RMS}	630 V _{RMS}
Pollution degree (insulation coordination)	1	1	1	1	1	1
Protection fuse	To be included in the input voltage line.					
Recommended microfuse switching capacity H The microfuse corresponds to the max. possible connection capacity. If fuses are used corresponding to the actual capacities, the permitted limit integral I²t must be observed on selection.	FF 3,15A	FF 3,15A	FF 4A	FF 5A	FF 5A	FF 5A
Permitted limit integral I²t	40 A²s	40 A²s	50 A²s	100 A²s	50 A²s	50 A²s
Protection	IP65 components, encapsulated / IP20 terminals					
Terminals	Cross-section 0,14 - 1,5 mm² (AWG 26-14)					
Ambient temperature	- 25 °C up to + 85 °C					
Storage temperature	- 25 °C up to + 105 °C					
Conformity markings	UL, CE	UL, CE	UL, CE	UL, CE	UL, CE	CE
Installation conditions	The installation position can be user-defined. Please ensure sufficient heat dissipation and air convection! Do not install near to sources of intense heat!					

Dimensions (mm)



Size	A	B	C	ØD	E
1	34	30	25	3,5	4,5
2	54	30	44	4,5	5,0
3/4	64	30	54	4,5	5,0

Accessories: Mounting bracket set for 35 mm rail acc. EN 60715: Article-No. 1803201

Application

ROBA®-switch fast acting rectifiers are used to connect DC consumers to alternating voltage supplies, for example electromagnetic brakes and couplings (ROBA-stop®, ROBA®-quick, ROBATIC®) as well as electromagnets and electrovalves etc.

Fast acting rectifier ROBA®-switch 017._00.2

- Consumer operation with overexcitation or power reduction
- Input voltage: 100 - 500 VAC
- Maximum output current I_{RMS} : 3 A at 250 VAC
- UL-approved

Function

The ROBA®-switch units are used for operation at an input voltage of between 100 and 500 VAC, dependent on size. They can switch internally from bridge rectification output voltage to half-wave rectification output voltage. The bridge rectification time can be modified from 0,05 to 2 seconds by exchanging the external resistor (R_{ext}).









Electrical Connection (Terminals)

- 1 + 2 Input voltage (fitted protective varistor)
- 3 + 4 Connection for external contact for DC-side switch-off
- 5 + 6 Output voltage (fitted protective varistor)
- 7 + 8 R_{ext} for bridge rectifier timing adjustment

Technical Data

Input voltage	see Table 1
Output voltage	see Table 1
Protection	IP65 components, IP20 terminals, IP10 R_{ext}
Terminal nom. cross-section	1,5 mm ² , (AWG 22-14)
Ambient temperature	-25 °C up to +70 °C
Storage temperature	-40 °C up to +105 °C

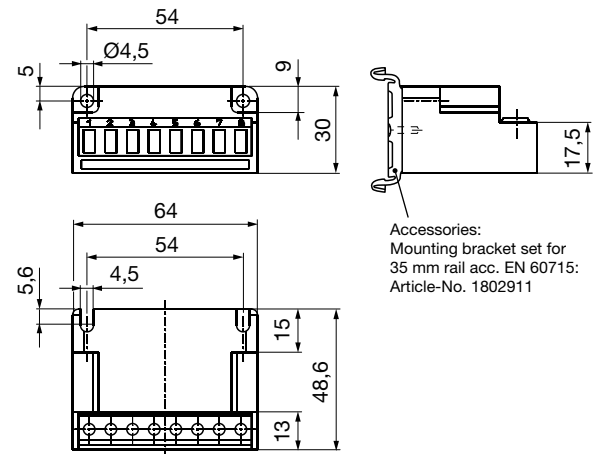
ROBA®-switch Sizes, Table 1

	Size			
	Type 017.000.2		Type 017.100.2	
	10	20	10	20
Input voltage VAC ± 10 %	100 - 250	200 - 500	100 - 250	200 - 500
Output voltage VDC, U_{bridge}	90 - 225	180 - 450	90 - 225	180 - 450
Output voltage VDC, $U_{half-wave}$	45 - 113	90 - 225	45 - 113	90 - 225
Output current I_{RMS} at ≤ 45 °C, (A)	2,0	1,8	3,0	2,0
Output current I_{RMS} at max. 70 °C, (A)	1,0	0,9	1,5	1,0
Conformity markings	 	  up to 300 V	 	 

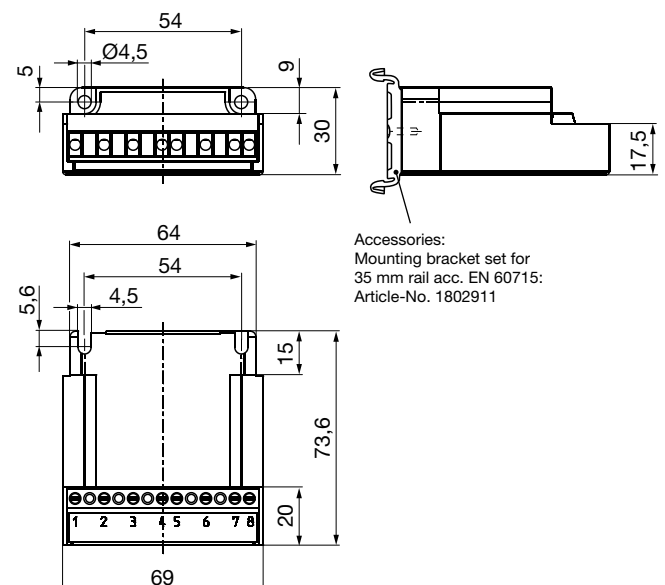


Dimensions (mm)

Type 017.000.2



Type 017.100.2



Order Number

___ / 0 1 7 . ___ 0 0 . 2



Size
10
20



UL-approved
0 to 300 V
1 to 500 V

Application

ROBA®-switch fast acting rectifier units are used to connect DC units to alternating voltage supplies, for example electromagnetic brakes and clutches (ROBA-stop®, ROBA®-quick, ROBATIC®), ectromagnets, electrovalves, etc.

Fast acting rectifier ROBA®-switch 017.110.2

- Consumer operation with overexcitation or power reduction
- Integrated automatic DC-side disconnection (shorter connection time t_i)
- Input voltage: 100 - 500 VAC
- Max. output current I_{RMS} : 1,5 A
- UL-approved



The ROBA®-switch units with integrated automatic DC-side disconnection are not suitable for use as safety disconnections!

Function

The ROBA®-switch units are used for operation at an input voltage of between 100 and 500 VAC, depending on the size. They can switch automatically internally from bridge rectification output voltage to half-wave rectification output voltage. The bridge rectification time can be modified from 0,05 to 2 seconds by exchanging the external resistor (R_{ext}).

The ROBA®-switch units also have an integrated automatic DC-side disconnection. In contrast to the conventional DC-side disconnection, no further protective measures or external components are necessary. The DC-side disconnection is standard-activated (terminals 3 and 4 are not wired), resulting in short electromagnetic consumer switching times.

The integrated automatic DC-side disconnection is deactivated by fitting a bridge between the terminals 3 and 4. The coil is deenergised via the free wheeling diode. This has the advantages of softer braking and a lower switching noise. However, the switching times increase (taking approx. 6 - 10 times longer).

Electrical Connection (Terminals)

- 1 + 2 Input voltage (fitted protective varistor)
- 3 + 4 Switching between DC- and AC-side disconnection
- 5 + 6 Output voltage (fitted protective varistor)
- 7 + 8 R_{ext} for bridge rectifier timing adjustment

Technical Data

Input voltage	see Table 1
Output voltage	see Table 1
Protection	IP65 components, IP20 terminals
Terminal nom. cross-section	1,5 mm ² , (AWG 22-14)
Ambient temperature	-25 °C up to +70 °C
Storage temperature	-40 °C up to +105 °C

Order Number

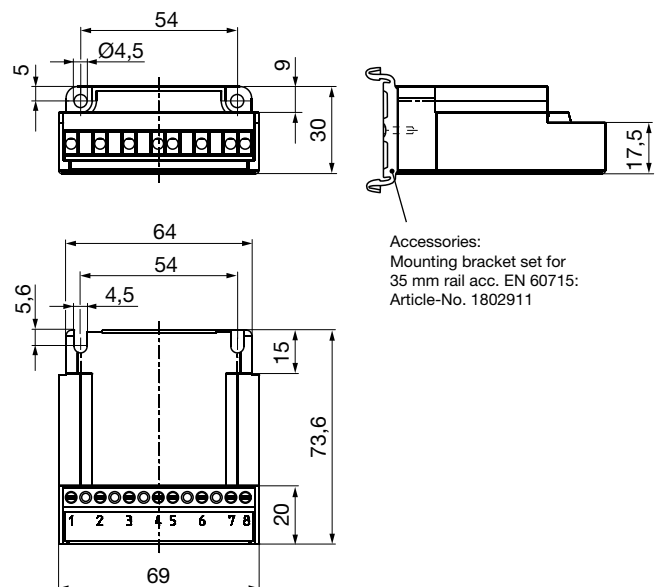
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Size
10
20



Dimensions (mm)



ROBA®-switch Sizes, Table 1

	Size	
	10	20
Input voltage VAC ± 10 %	100 - 250	200 - 500
Output voltage VDC, U_{bridge}	90 - 225	180 - 450
Output voltage VDC, $U_{half-wave}$	45 - 113	90 - 225
Output current I_{RMS} at ≤ 45 °C, (A)	1,5	1,5
Output current I_{RMS} at max. 70 °C, (A)	0,75	0,75
Conformity markings	UL US CE	UL US CE

Application

ROBA®-multiswitch fast acting rectifiers are used to connect DC units to alternating voltage supplies, for example electromagnetic brakes and clutches (ROBA-stop®, ROBA®-quick, ROBATIC®), electromagnets, electrovalves etc.

Fast acting rectifier ROBA®-multiswitch 019.100.2

- Consistently controlled output voltage in the entire input voltage range.
- Consumer operation with overexcitation or power reduction
- Input voltage: 100 - 500 VAC
- Max. output current I_{RMS} : 2 A



ROBA®-multiswitch units are not suitable for all applications, e.g. use of the ROBA®-multiswitch when operating noise-damped brakes is not possible without taking additional measures. The product's suitability should be checked before use.

Function

The ROBA®-multiswitch units are (dependent on size) used for an input voltage of between 100 and 500. After switch-on, they emit the rectified bridge voltage for 50 ms and then control the 90 or 180 VDC overexcitation voltages. After the overexcitation period, they control the 52 or 104 VDC holding voltages. The overexcitation period can be adjusted via a DIP-switch to 150 ms, 450 ms, 1 s, 1,5 s and 2 s.

Electrical Connection (Terminals)

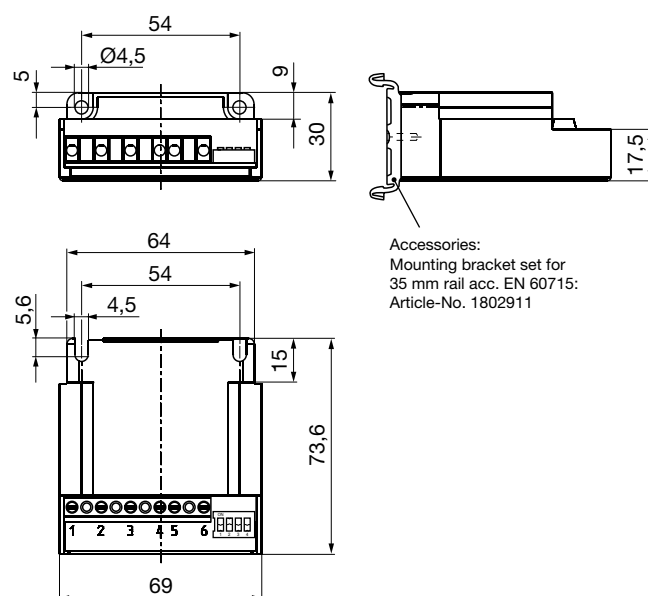
- 1 + 2 Input voltage (fitted protective varistor)
- 3 + 4 Connection for external contact for DC-side switch-off
- 5 + 6 Output voltage (fitted protective varistor)

Technical Data

Input voltage	see Table 1
Output voltage	see Table 1
Protection	IP65 components, IP20 terminals
Terminal nom. cross-section	1,5 mm ² , (AWG 22-14)
Ambient temperature	-25 °C up to +70 °C
Storage temperature	-40 °C up to +105 °C



Dimensions (mm)



ROBA®-multiswitch Sizes, Table 1

	Size	
	10	20
Input voltage VAC ± 10 % acc. to EN 50160	100 - 275	200 - 500
Frequency input voltage Hz	50 - 60	50 - 60
Output voltage U_{over} VDC ± 10 %	90	180
Output voltage U_{hold} VDC ± 10 %	52	104
Output current I_{RMS} at ≤ 45 °C ADC	2,0	2,0
Output current I_{RMS} at max. 70 °C ADC	1,0	1,0
Conformity markings	CE *	CE *

* cULus in preparation

Order Number

— / 0 1 9 . 1 0 0 . 2



Size
10
20

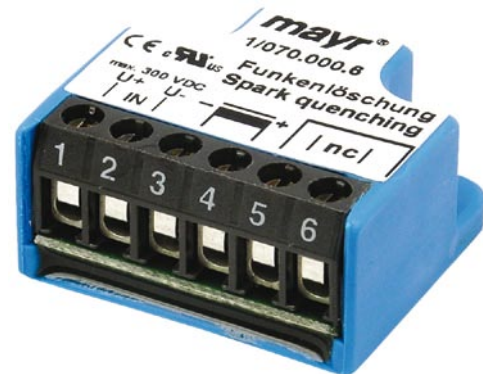
Application

Reduces spark production on the switching contacts occurring during VDC inductive load switching.

- Voltage limitation according to VDE0580 2000-07, Item 4.6.
- Reduction of EMC-disturbance by voltage rise limitation, suppression of switching sparks.
- Reduction of brake engagement times by a factor of 2-4 compared to free-wheeling diodes.

Function

The spark quenching unit will absorb voltage peaks resulting from inductive load switching, which can cause damage to insulation and contacts. It limits these to 70 V and reduces the contact load. Switching products with a contact opening distance of > 3 mm are suitable for this purpose.



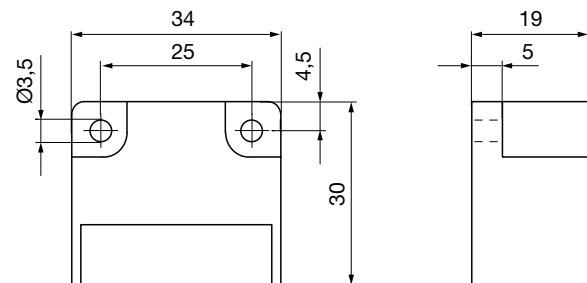
Electrical Connection (Terminals)

- 1 (+) Input voltage
- 2 (-) Input voltage
- 3 (-) Coil
- 4 (+) Coil
- 5 Free nc terminal
- 6 Free nc terminal

Technical Data

Input voltage	max. 300 VDC, max. 615 V _{peak} (rectified voltage 400 VAC, 50/60 Hz)
Switch-off energy	max. 9 J/2 ms
Power dissipation	max. 0,1 Watt
Max. voltage nc terminals	250 V
Protection	IP65 / IP20 terminals
Ambient temperature	-25 °C up to +85 °C
Storage temperature	-25 °C up to +105 °C
Max. conductor connection diameter	2,5 mm ² / AWG 26-12
Max. terminal tightening torque	0,5 Nm

Dimensions (mm)



Accessories

Mounting bracket set for 35 mm rail acc. EN 60715:
Article-No. 1803201

Order Number

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Size
1



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 59174 Kamen
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