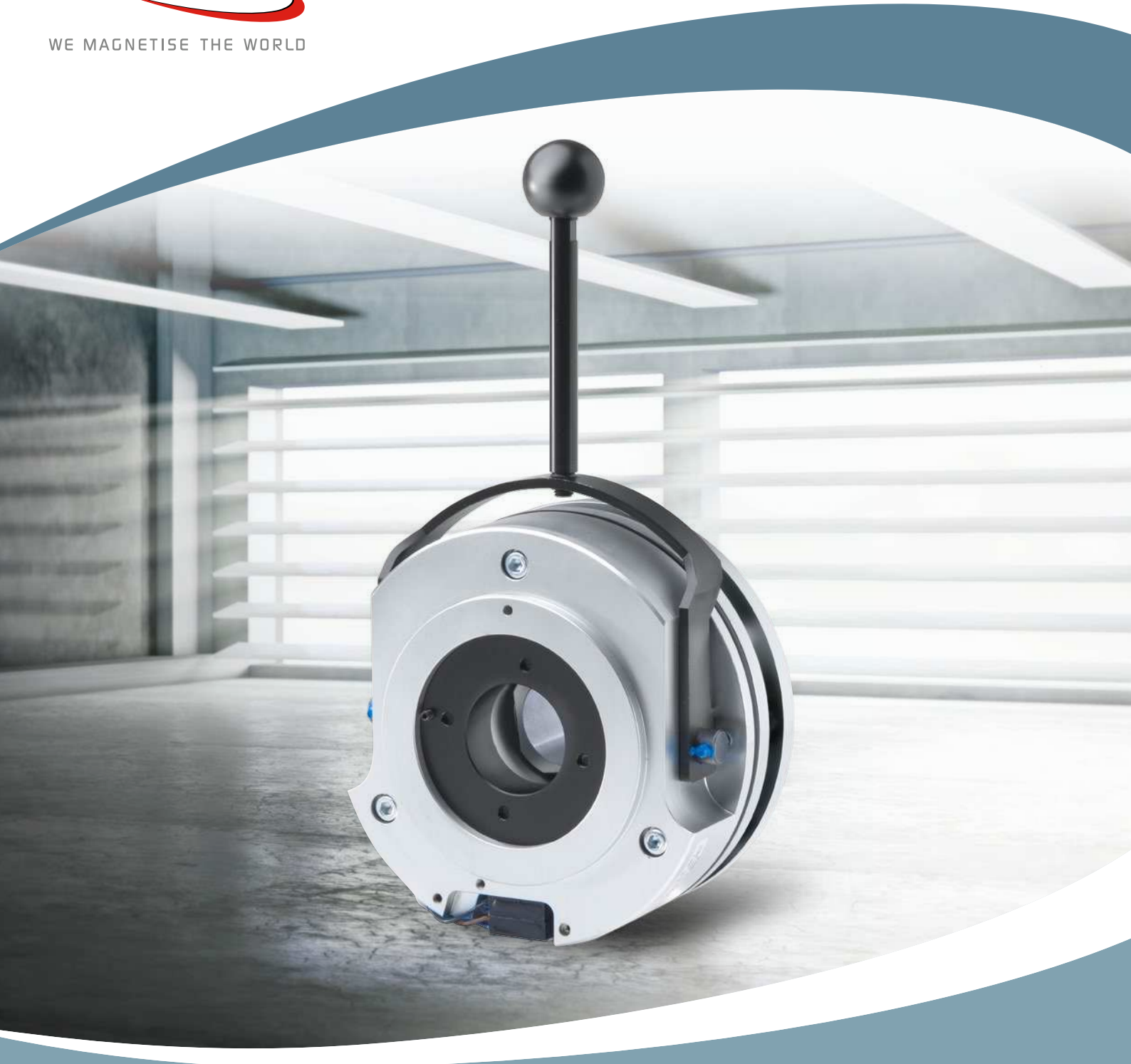




WE MAGNETISE THE WORLD



Elevation Line

Spring-applied single-disc brake and spring-applied double-disc brake for the elevator technology



INDUSTRIAL DRIVE SYSTEMS



Kendrion – The brake experts

As a solution provider, Kendrion develops, produces and markets innovative and high-quality electromagnetic and mechatronic systems and components for industrial and automotive applications. Kendrion is very serious about its commitment to addressing the technical challenges of the future. Which is why the responsible use of resources along the entire value chain, and trustworthy business practices, are deeply ingrained in our corporate culture.

The right brakes for every situation

The Industrial Drive Systems business unit develops and produces electromagnetic brakes and clutches for industrial drive engineering. They are used for the accelerating, braking, positioning, holding and securing of movable drive components and loads. The areas of application for our brakes and clutches are primarily in robotics and automation technology, machine tool and production machinery, as well as in medical technology and material handling.

The Elevation Line, our spring-applied brake for the elevator technology, completes our product portfolio, enabling us to provide the ideal solution for any application.

Worldwide availability

The headquarters of Industrial Drive Systems is located in Villingen within Germany's Black Forest. However, the business unit can also rely on additional production sites and subsidiaries in Aerzen (Germany), China, the UK and Italy, as well as numerous sales partners all over the world.

Tradition and progress

It was the long-established BINDER brand that laid the foundations for the successful development of Industrial Drive Systems. Wilhelm Binder founded his company in 1911, and during the early 1920s he began developing and manufacturing electromagnetic components. In 1997, the business was taken over by Dutch group Schuttersveld N.V., today Kendrion N.V.

The former magneta GmbH & Co. KG has been part of the Kendrion Group since 2010. Now known as Kendrion (Aerzen) GmbH, this innovative company continues to develop and produce permanent magnet brakes for small motors, electromagnetic clutches and brakes at its site in Aerzen, along with magnetic particle clutches and brakes.

Kendrion – We magnetise the world!

www.kendrion-ids.com



About the Elevation Line

The Elevation Line is comprised of DC operated spring-applied single-disc and double-disc brakes which comply with the requirements of the European standard EN 81-1 (safety requirements to be observed in the construction and installation of elevators).

Owing to the patented safety concept, the usual checks concerning the double-circuit system of spring-applied brakes can be omitted during the technical approval of the elevators. Built-in microswitches are provided for remote interrogation of the brake condition (armature position, degree of wear).

The brake is ideally suited for use in space restricted environments where compact systems comprising of a motor, gearbox and brake are required.

The Elevation Line is preferably used in the field of elevator construction, but it is also ideal for other applications characterised by stringent requirements in terms of brake safety.

Electromagnetically operated spring-applied brakes generate the brake torque when voltage is removed.

Versions

76 461..A00

Torque range 75 to 220 Nm

Direct current (DC)

Adjustable torque

Single-disc brake (holding brake)

76 451..A00

Torque range 280 to 440 Nm

Direct current (DC)

Adjustable torque

Double-disc brake (holding brake)

Approval

EN 81-1

General information

The Operating instructions must be strictly observed during the set-up of the machine (e.g. motor) and during the start-up, operation and maintenance of the brakes. The state-of-the-art brakes have been designed, built and tested in

accordance with the requirements of DIN VDE 0580 concerning electromagnetic devices and components. Additional information on technical specifications given in the data sheets is included in the operating instructions.

Application for the Elevation Line

- Elevator technology
- Lifting and materials handling technology
- Crane construction



We are pleased to advise you!



Technical specifications

Versions	76 451..A00 – double-disc brake (holding brake) 76 461..A00 – single-disc brake (holding brake)
Standard rated voltages	205 VDC
Protection	IP44
Thermal class	F
Transmissible torques	75 to 440 Nm
Note	The general information on specification sheets and the applicable operating instructions must be observed. Specifications are subject to change without notice.

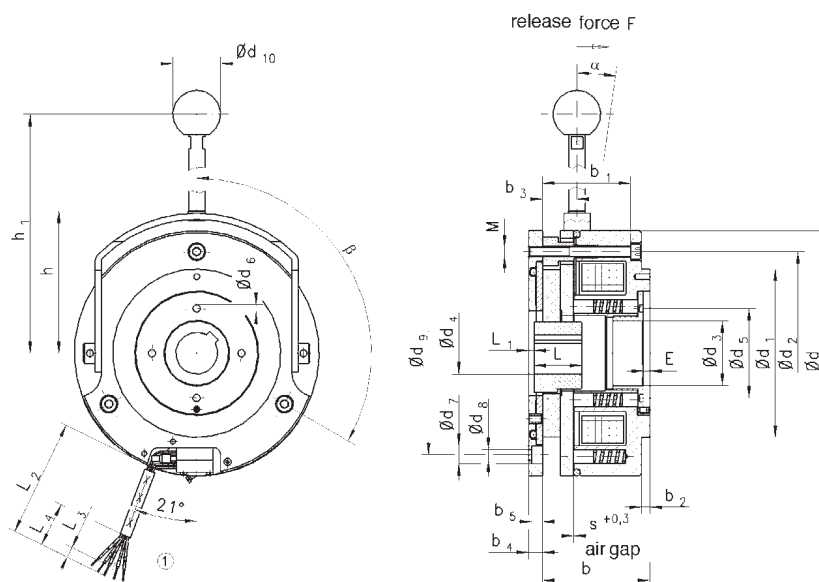


Size	Transmissible torque M_4 [Nm]	Max. speed n_{max} [min ⁻¹]	Max. switching power P_{max} [kJ/h]	Max. switching energy (Z = 1) W_{max} [kJ]	Rated power P_N [W]	Response times		Moment of inertia armature and flange hub J [kgcm ²]	Weight m [kg]
						Coupling time t_1 [ms]	Disconnection time t_2 [ms]		
16	75 – 145	2500	400	65	135 ^[1]	185	280	20	16
19	120 – 220	2500	500	95	230 ^[1]	160	220	45	22
19^[2]	280 – 440	2500	500	155	230 ^[1]	95	260	75	25

^[1] Duty cycle = 55%, cycle time $t_7 = 5$ min.

^[2] Double-disc brake 76 45119A00

Dimensions type 76 461..A00



① flying leads 2x0.82mm² (brake)
 flying leads 3x0.53mm² (microswitch)

Size	d	d ₁	d ₂	d ₃	d ₄ (H7)	d ₅	d ₆	d ₇	d ₈	d ₉	d ₁₀	b	b ₁	b ₂	b ₃
16	205	141	170	54	25 ¹⁾ /45 ²⁾	75	6.1	15	9/3 x 120°	170	40	90	74	7	33
19	232	160	196	66	35 ¹⁾ /50 ²⁾	90	7	15	9/6 x 60°	196	40	97.5	81	6.5	30

Size	b ₄	b ₅	h	h ₁	L	L ₁	L ₂	L ₃	L ₄	s	s _{max}	E	M	F ³⁾ [N]	α	β
16	11.5	9	119	260	40	4.5	850	9	40	0.3	1.1	0-6	3xM8	400	ca. 8°	3x120°
19	11.5	9	133	350	65	4.5	850	9	40	0.3	1.3	0-6	6xM8	400	ca. 12°	6x60°

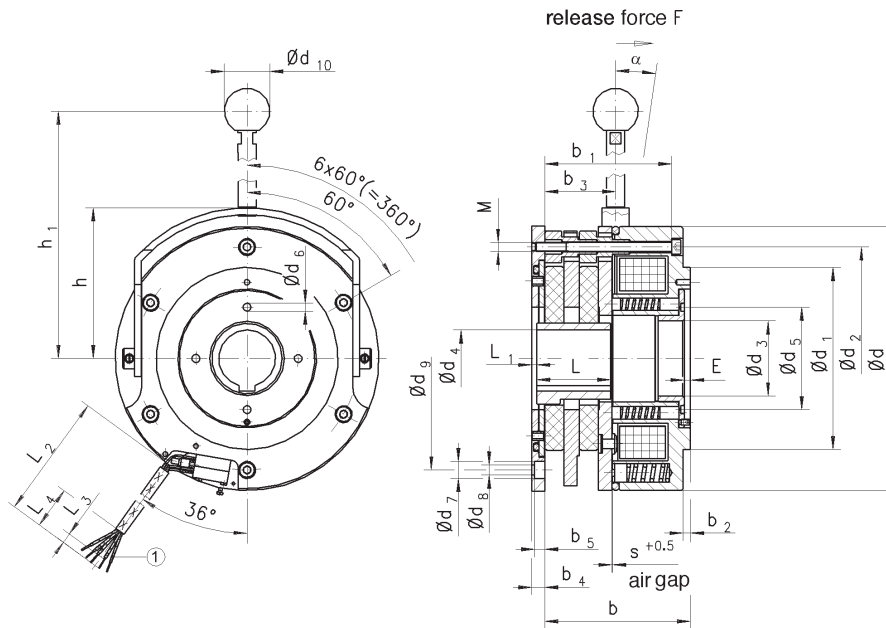
^[1] Min. bore with keyway JS9 as per DIN 6885, sheet 1

^[2] Max. bore with keyway JS9 as per DIN 6885, sheet 1
 Supporting keyway over entire length. Shaft ISO fitting k6 (^[1],^[2])

^[3] Release force F (approx.) referred to max. transmissible torque (standard).

Dimensions in mm

Dimensions type 76 451..A00



① flying leads 2x0.82mm² (brake)
flying leads 3x0.53mm² (microswitch)

Size	d	d ₁	d ₂	d ₃	d ₄ (H7)	d ₅	d ₆	d ₇	d ₈	d ₉	d ₁₀	b	b ₁	b ₂	b ₃
19	233	160	196	66	45 ¹⁾ /50 ²⁾	90	7	15	9/6 x 60°	196	40	128	111.5	6.5	62

Size	b ₄	b ₅	h	h ₁	L	L ₁	L ₂	L ₃	L ₄	s	s _{max}	E	M	F ³⁾ [N]	α
19	11.5	9	133	350	65	4.5	850	9	40	0.4	1.4	0-6	6xM8	400	ca. 10°

^[1] Min. bore with keyway JS9 as per DIN 6885, sheet 1
^[2] Max. bore with keyway JS9 as per DIN 6885, sheet 1
 Supporting keyway over entire length. Shaft ISO fitting k6 (^[1],^[2])
^[3] Release force F (approx.) referred to max. transmissible torque (standard).

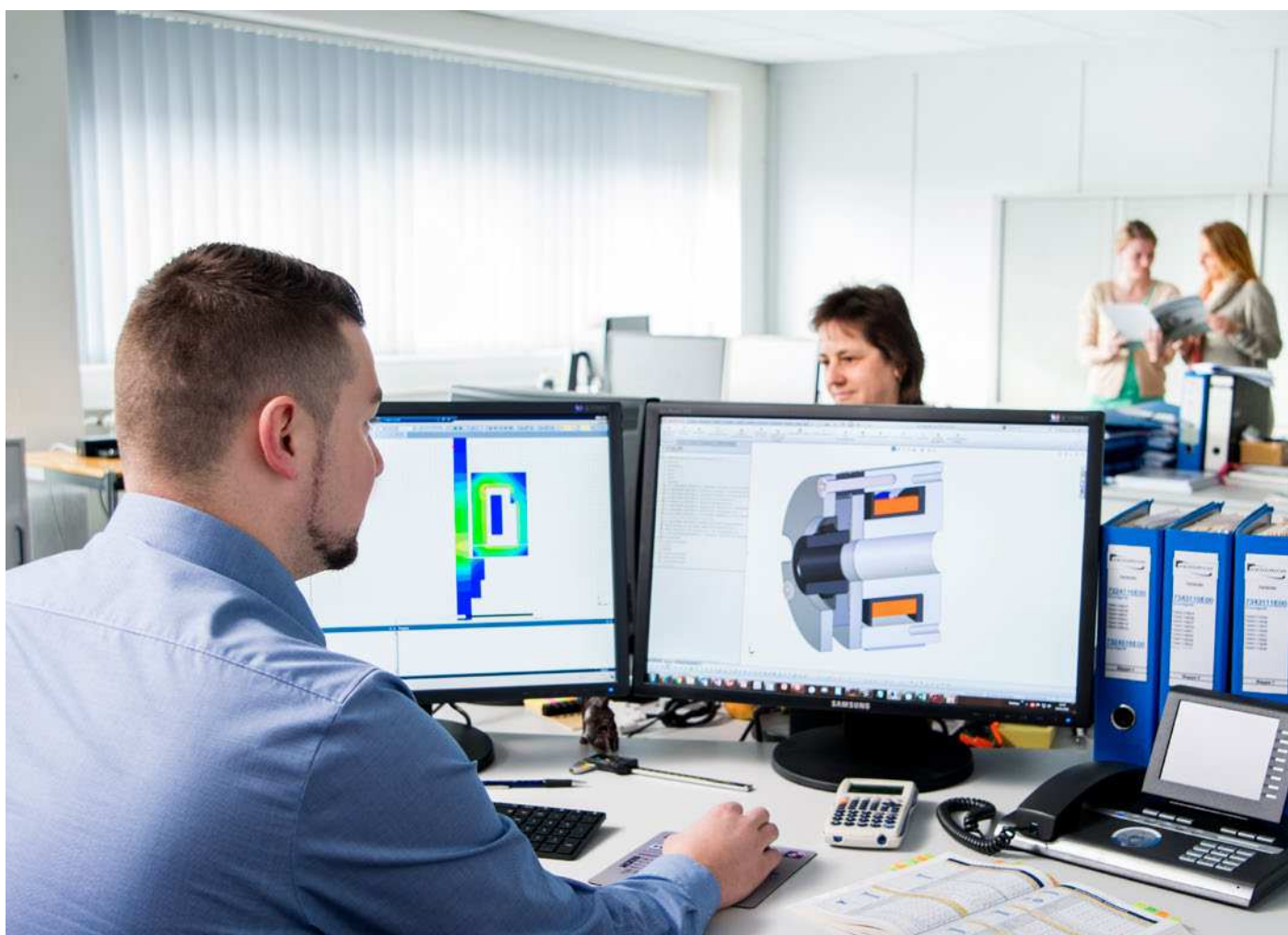
Dimensions in mm

Your dependable partner for individual brake solutions

Automation solutions have become indispensable in both industry and our everyday lives. Mechatronics helps achieve further expansion of these solutions, and increases the range of applications. In many cases, electromagnetic brakes meet the necessary safety requirements, allowing loads to be securely held and ensuring safe braking in an emergency.

Catering to different market demands while also ensuring product standardization is a challenge that Kendrion relishes. Customized solutions can be developed and manufactured on the basis of an existing portfolio of products, the prerequisite being the analysis and understanding of industry-specific customer requirements. With the right product range and a high level of expertise in automation technology, robotics, machine building and elevator engineering, Kendrion Industrial Drive Systems is your dependable partner, providing the ideal individual brake solution for any application.

We'll be happy to help you identify the right solution, whether it's from our wide product portfolio or individually designed just for you.





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Kendrion (Villingen) GmbH
Wilhelm-Binder-Strasse 4-6
78048 Villingen-Schwenningen
Germany
Tel: +49 7721 877-0
Fax: +49 7721 877-1462
sales-ids@kendrion.com
www.kendrion.com