



BINDER CLUTCHES & BRAKES

SPRING-APPLIED SINGLE-DISC/DOUBLE-DISC BRAKE

76 461..A00 / 76 451..A00



ELEVATION LINE

POWER OF PARTNERSHIP AND MAGNETISM

Kendrion Power Transmission

BINDER CLUTCHES & BRAKES

Our company's strength is measured by the delivery of products, performances, as well as a high degree of esteem towards our customers. KENDRION POWER TRANSMISSION is striving to develop a long-term relations-

hip with its customers and to cultivate this relationship under the motto "Power of Partnership". Ambitious aims can only be realised through a close and productive co-operation with our

customers. The development of high-quality standard products as well as optimised tailor made solutions is the foundation of all our actions.

Power of Partnership stands for a co-operation with the Kendrion employees without bureau-crazy, ensuring a long and successful partnership with our customers.

Top Market Knowledge...

the realisation of market orientated products are the results of our competence in electromagnetism which has been achieved with decades of experience and knowledge. The development of most innovative concepts and the

use of the most modern technologies in our research department together with the use of the latest production and logistic processes are our strengths.

Our customers profit from the individual solutions for high volume as well as the availability of individual products on the basis of a standard platform.

Our know-how is growing steadily hand in hand with the constant optimisation of every business process.

Optimal tailor made solutions...

are not empty promises. The profound understanding of the Power of Magnetism at KENDRION POWER TRANSMISSION is the source of the research/development of market orientated products. Continuous expansion of the technological possibilities

enables us to be in the position to offer optimal solutions of brakes and clutches for numerous applications. We lay great emphasis on being able to offer solutions for different applications such as:

... SECURING
... STOPPING
... POSITIONING
... ACCELERATING.

Important synergies as a basis for success...

KENDRION POWER TRANSMISSION is a European company with a local presence in all economic regions of the world. Integrated in and yielding performance to the Kendrion Holding N.V., which is noted on the Amsterdam stock exchange, as a successful company with an annual turnover of 1,8 billion EUR; and approx. 5500

employees all over the world. This is an excellent basis to realise, secure and enable our long-term goals and company objectives. A network of connected companies within Kendrion is another valuable factor for the success of KENDRION POWER TRANSMISSION. We live the

"Power of Partnership" in a firm exchange of expertise and business relationship within these companies.



Kendrion Power Transmission protects people and the environment

General technical information

76 461..A00/76 451..A00

Clutch or brake design and rating, calculation example

look at www.KendrionAT.com



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 (safety requirements to be observed in the construction and installation of elevators). Built-in microswitches are provided for remote interrogation of the brake condition (armature position, degree of wear, armature bearing). 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. 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 50 - 220 Nm DC adjustable torque single-disc brake (holding brake)
76 451.. A00	torque range 280 - 440 Nm DC adjustable torque double-disc brake (holding brake)

Approval: EN 81-1

Applications

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

Information on technical data included in the data sheets

The information provided in the operating instructions must be strictly adhered to when designing a machine (e.g. motor) and when using the brakes. The brakes are manufactured and tested in compliance with DIN VDE 0580 requirements. The insulation materials used conform with thermal class F norms. The specified times apply to the following conditions: separate switching of the brake, operating temperature, rated voltage, and rated air gap. All values are mean values that are subject to variation. In the case of AC brake switching, the coupling time t_1 is substantially longer.

W_{max} (maximum switching energy) is the switching energy that must not be exceeded during braking operations at max. 1500 rpm. Braking operations at >1500 rpm lead to a substantial reduction in the maximum admissible switching energy per switching operation. Such operation is only permitted after prior consultation with the manufacturer. The maximum switching power P_{max} is the switching energy W that can be converted by the brake per hour. The permitted number of switching operations Z (emergency stops) per hour and the max. permitted switching energy W_{max} resulting

therefrom are specified in the table included in the operating instructions. If the brake is used for other applications, e.g. as service brake, the diagram (W_{max} as a function of the number of switching operations per hour Z) shown in the operating instructions applies. The P_{max} and W_{max} values are approximate values; they apply to applications where the brake is attached to the motor without additional cooling as well as to emergency stops. The specified transmissible torques M_4 characterises the torque level of the brakes. Depending on the application of the brake, the switching torque M_1 and

the effective transmissible torque M_4 may differ from the specified M_4 values. The switching torque M_1 depends on the speed (rpm). If the friction surfaces are contaminated with oil, grease or dirt the transferable torque M_4 and the switching torque M_1 may drop.

All technical data is subject to the running-in process of the brake being completed. Vertical operation of the brake is only permitted after prior consultation with the manufacturer.

**SPRING-APPLIED SINGLE-DISC
DOUBLE-DISC BRAKE**

DC

Versions	76 451..A00 - double-disc brake (holding brake)
	76 461..A00 - single-disc brake (holding brake)
Standard rated voltages	205 V DC
Protection	IP 44
Thermal class	F
Transmissible torques	50 - 440 Nm
Accessories (options)	mounting screws (only size 13)

Specification subject to change without notice.
The "General technical information" and the "Operating instructions" 76 461..A00 / 76 451..A00 must be strictly observed.



Photo: 76 46119A00

Technical data

Size	Transmissible torque range (standard)	Max. speed	Max. switching power	Max. switching energy (Z = 1)	Rated power	Response times		Moment of inertia hub and friction disc	Weight
						on	off		
	M ₄	n _{max}	P _{max}	W _{max}	P _N	t ₁	t ₂	J	m
	[Nm]	[rpm]	[kJ/h]	[kJ]	[W]	[ms]	[ms]	[kgcm ²]	[kg]
13	50	3500	-	50	80 ¹⁾	30	80	6	3.9
16	75 - 145	2500	400	65	135 ²⁾	185	280	20	16
19	120 - 220	2500	500	95	230 ²⁾	160	220	45	22
19³⁾	280 - 440	2500	500	155	230 ²⁾	95	260	75	25

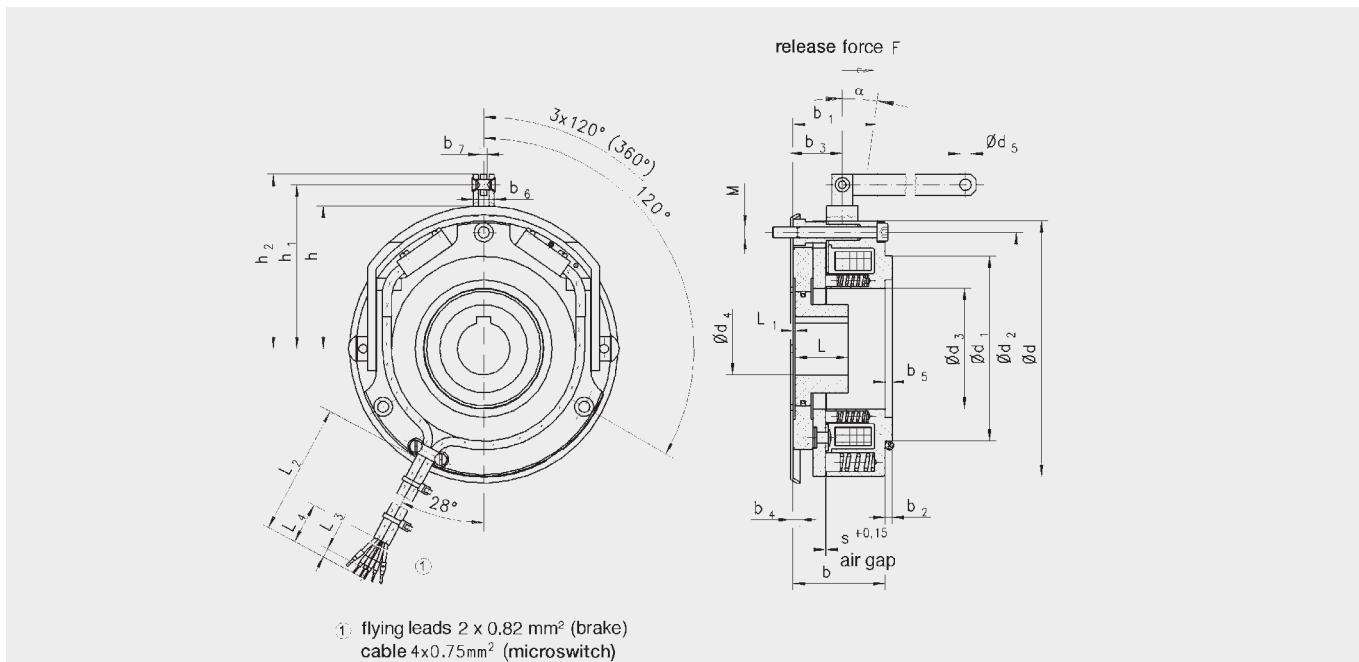
¹⁾ Duty cycle = 60%, cycle time t_γ = 1 min.

²⁾ Double-disc brake 76 45119A00.

³⁾ Duty cycle = 55%, cycle time t_γ = 5 min.

Ordering data (to be fully specified)

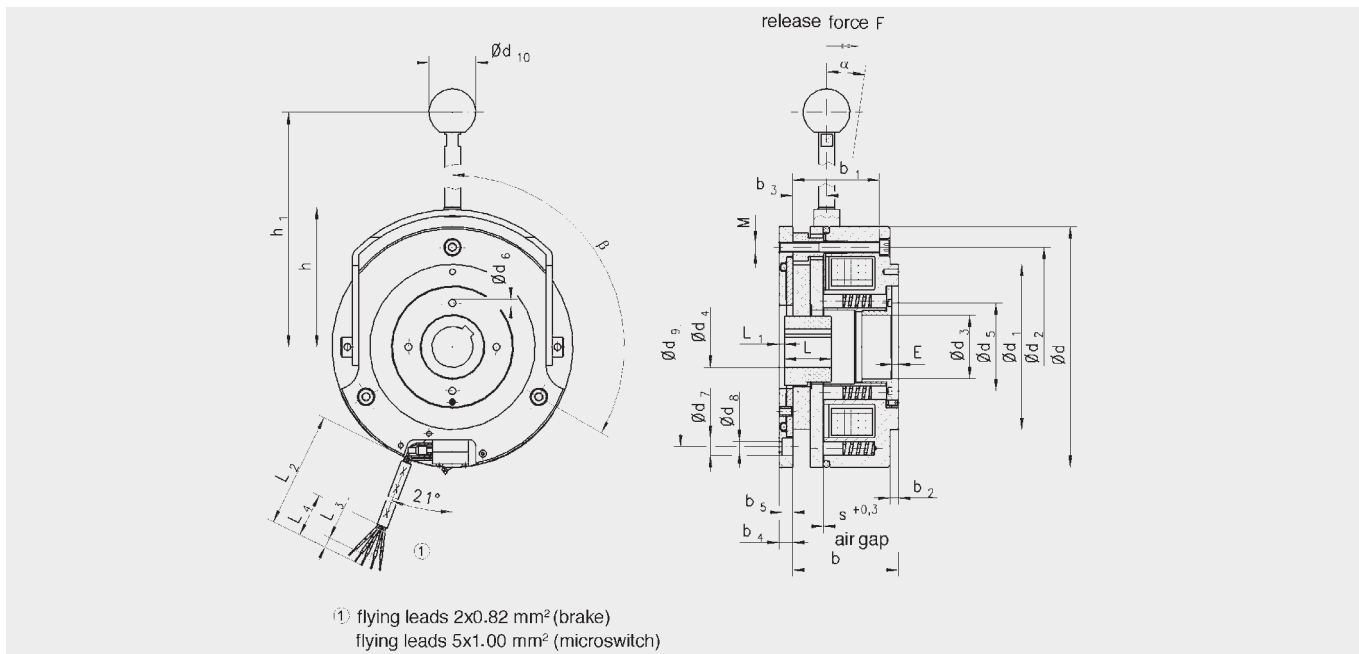
SPRING-APPLIED SINGLE-DISC / DOUBLE-DISC BRAKE		HUB	
Please specify requested version.			
1	Size (13, 16, 19)	1	Size (13, 16, 19)
	Size: _____		Size: _____
	2	Coil voltage (standard 205 V)	2
	Voltage: _____ V DC	Gr. 13: Ø 22, Ø 25, Ø 30 mm	
3	Transmissible torque M ₄ (standard)		Gr. 16: Ø 30, Ø 35, Ø 40 mm
	Size 13: 50 Nm		Gr. 19: Ø 30, Ø 40, Ø 45 mm
	Size 16: 145 Nm		
	Size 19: 220 Nm		Bore diameter: _____ mm
	Size 19: 440 Nm (double-disc brake 76 45119A00)		<input type="checkbox"/> or pilot bore
	Transmissible torque M ₄ : _____ Nm		



Size	d	d ₁	d ₂	d ₃	d ₄ (H7)	d ₅	b	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	b ₇	h	h ₁	h ₂	L	L ₁	L ₂	L ₃	L ₄	s	s _{max}	M	F [N]	α
13	145	105	132	68.5	20 ¹⁾ /38 ²⁾	6.5	52	48	4	29.5	5.5	4	12	4	81	93	99	30	1.25	500	5	80	0.25	0.6	3xM6	approx. 160	approx. 8°

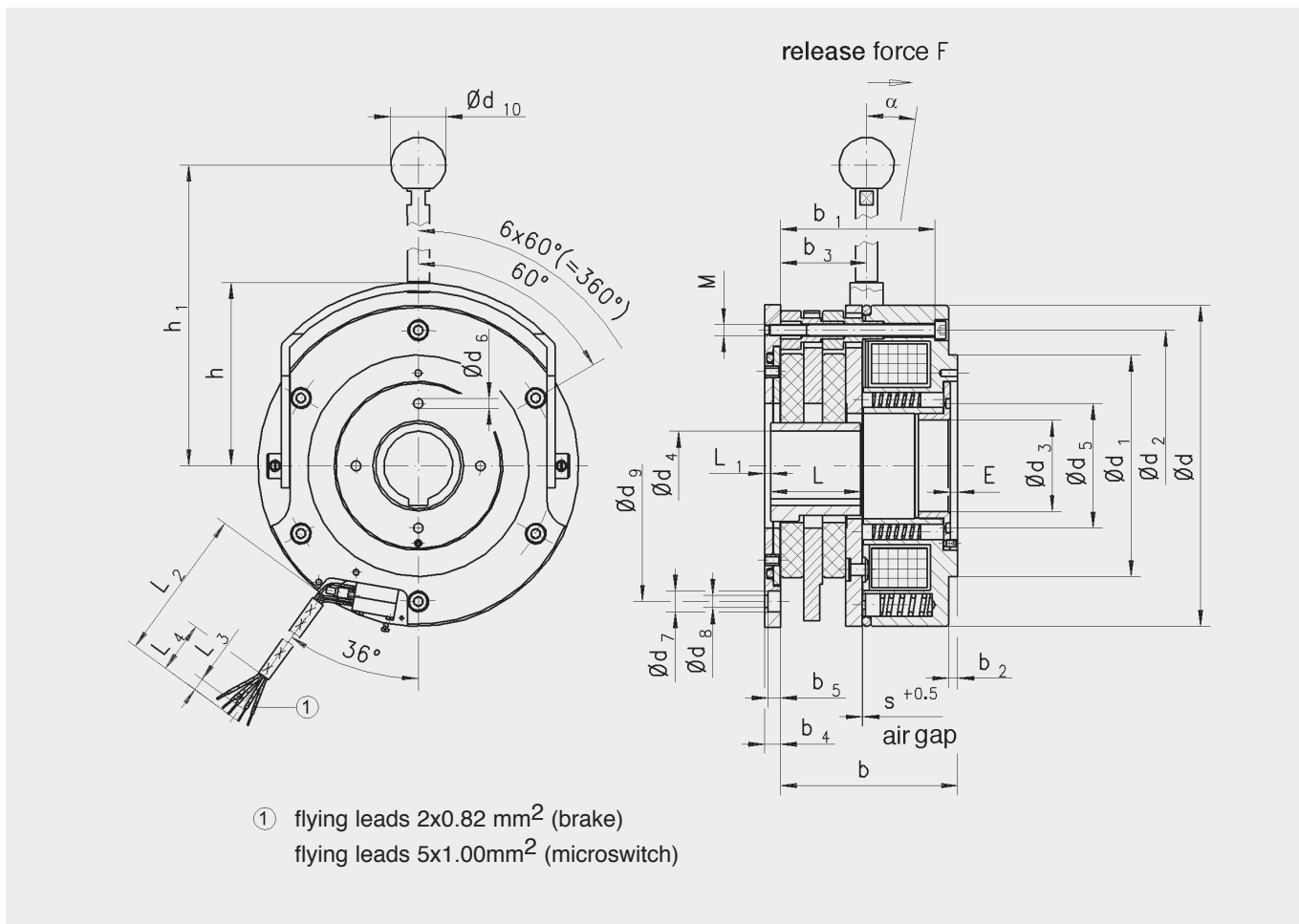
¹⁾ Min. bore with keyway as per DIN 6885, sheet 1, groove JS9.
²⁾ Max. bore with keyway as per DIN 6885, sheet 1, groove JS9.
 Supporting keyway over entire length. Shaft ISO fitting k6. (¹⁾,²⁾)

Dimensions (mm) Type 76 461..A00



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	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	205	141	170	54	25 ¹⁾ /45 ²⁾	75	6.1	15	9	170	40	90	74	7	33	11.5	9	119	260	40	4.5	850	9	40	0.3	1.1	0-6	3xM8	400	ca. 8°	3x120°
19	232	160	196	66	35 ¹⁾ /50 ²⁾	90	7	15	9	196	40	97.5	81	6.5	30	11.5	9	133	350	65	4.5	850	9	40	0.2	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).



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	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	233	160	196	66	45 ¹⁾ /50 ²⁾	90	7	15	9/6 x 60°	196	40	128	111.5	6.5	62	11.5	9	133	350	65	4.5	850	9	40	0.4	1.4	0-6	6xM8	400	approx 10°

¹⁾ Min. bore with keyway JS9 as per DIN 6885, sheet 1.

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

²⁾ Max. bore with keyway JS9 as per DIN 6885, sheet 1.

Supporting keyway over entire length. Shaft ISO fitting k6 (^{1),²⁾}

Accessories (Type 76 46113A00)

Size	Mounting screws			
	Screw	Nominal torque	Material number	Screws per brake
13	ISO 4762 - M6 x 60 - 8.8	10 Nm	304052	3



Kendrion Binder Magnete GmbH
Power Transmission
Mönchweilerstrasse 1
78048 Villingen-Schwenningen
Germany

Phone: +49 7721 877 -1417
Fax: +49 7721 877 -1462

www.kendrion-electromagnetic.com
sales-kpt@kendrion.com

Contact details of our subsidiaries and
distributors can be found on our website.

ELEVATION LINE

ELEVATION LINE

POWER OF PARTNERSHIP AND MAGNETISM