



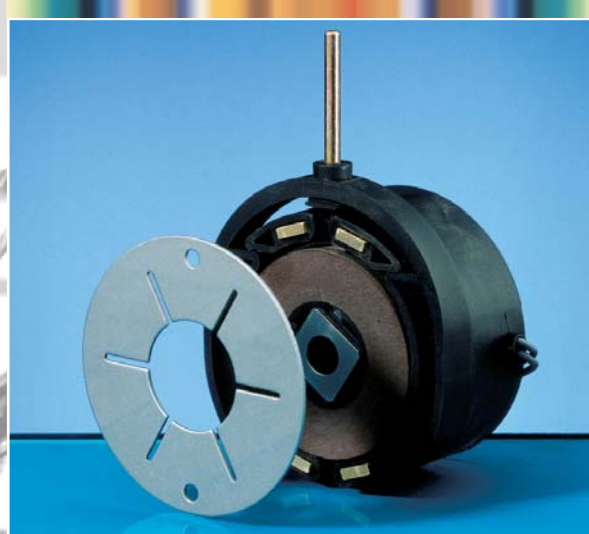
BINDER CLUTCHES & BRAKES

SPRING-APPLIED SINGLE-DISC BRAKE

73 341..A00

73 431..H00

73 241..E00 / 73 245..E00



POWER OF PARTNERSHIP AND MAGNETISM

AC LINE

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 relationship 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 bureaucracy, 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

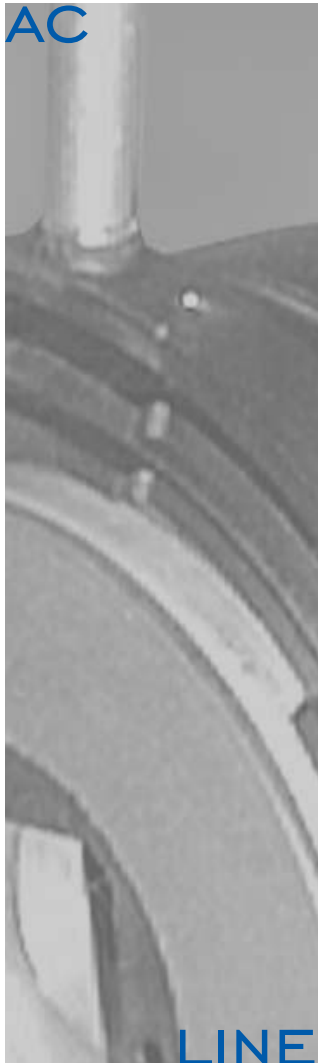
73 341..A00

73 431..H00

73 241..E00/73 245..E00

Product line information

BINDER CLUTCHES & BRAKES



The AC LINE is comprised of spring-applied single-disc brakes which can be connected directly to an AC power source (e.g. motor terminal box) without having to use a rectifier.

The switching times of the AC LINE brakes are characteristically shorter than DC operated brakes. Electromagnetically operated spring-applied braking generates the braking torque when voltage is removed.

Applications

- AC motors
- Equipment manufacturing industry
- Geared motors
- Handling technology
- Lifting and materials handling technology
- Crane construction
- Paper-making and printing machines
- Heavy machinery construction
- Gate drives
- Packaging machinery
- ...

Versions

73 341..A00	torque range 1 - 5 Nm single-phase AC
73 431..H00	torque range 7.5 - 75 Nm three-phase AC
73 241..E00	torque range 4.5 - 75 Nm three-phase AC adjustable torque closed version with connecting cables
73 245..E00	torque range 4.5 - 75 Nm three-phase AC adjustable torque closed version with connection box

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. Operation of the brake as a pure holding brake without friction work is only permitted after prior consultation with the manufacturer. 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. If the brake is connected in parallel with the three-phase motor, 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. In the case of applications where the number of switching operations per hour is greater than 1 ($Z > 1$), 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 installed between the B-face end shield of the motor and the motor fan. The specified rated torques M_2 characterise the torque level of the brakes. Depending on the application of the brake, the switching

torque M_1 and the transmissible torque M_4 may differ from the specified M_2 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 BRAKE

Single-phase AC

Version	73 341..A00
Standard rated voltages	230V AC, 50 Hz
Protection	IP 54 (when installed under motor fan hood)
Thermal class	F
Rated torques	1 - 5 Nm
Accessories (options)	friction plate, hand release feature, mounting screws

Specification subject to change without notice.
The "General technical information" and the "Operating instructions" 73 341..A00 must be strictly observed.



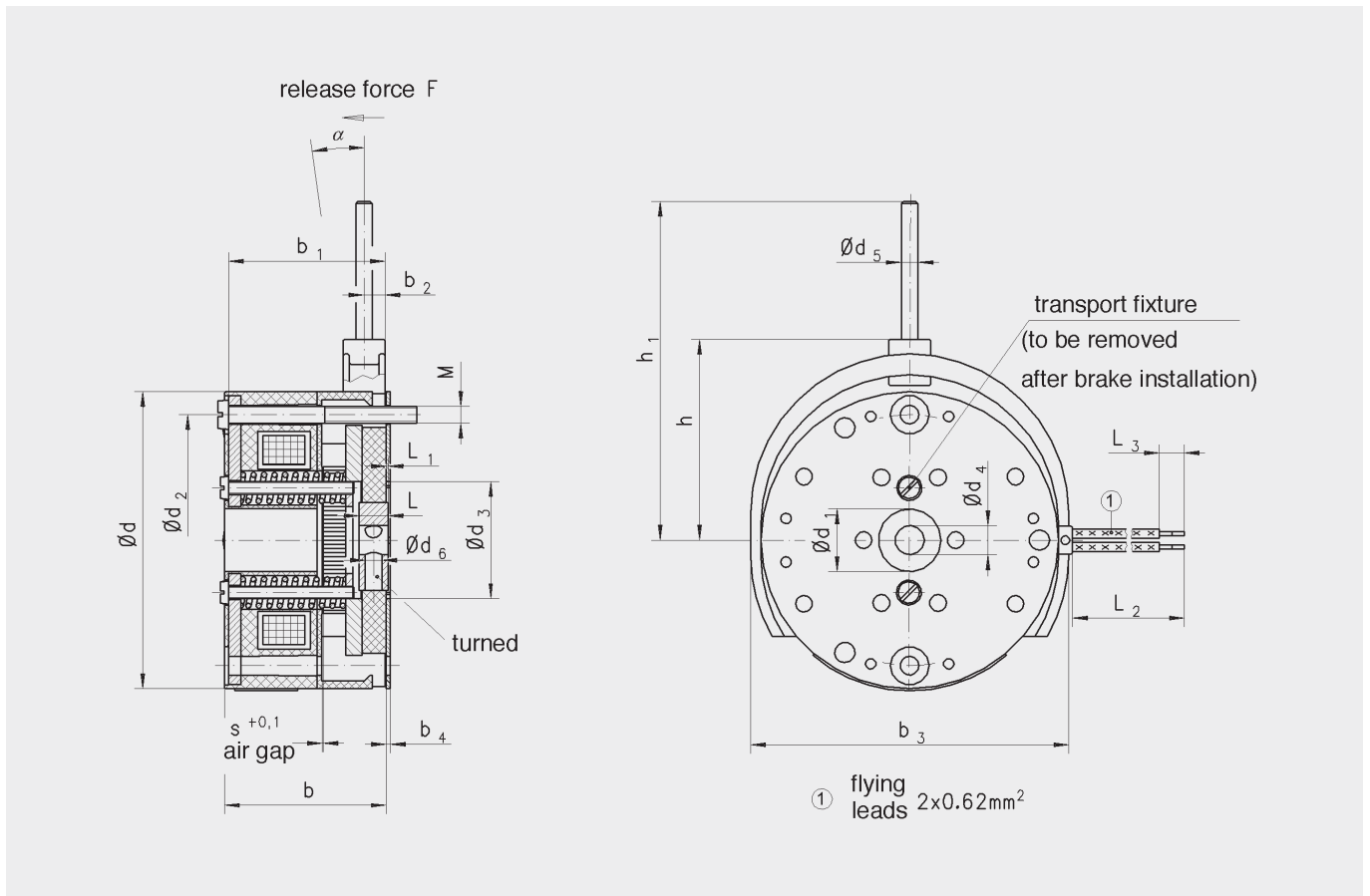
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Technical data

Size	Rated torque	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 ₂	n _{max}	P _{max}	W _{max}	P _S	t ₁	t ₂	J	m
	[Nm]	[rpm]	[kJ/h]	[kJ]	[VA]	[ms]	[ms]	[kgcm ²]	[kg]
05	1	13000	70	18	25	15	10	0.021	0.28
07	2	10000	100	22	70	15	10	0.096	0.56
09	5	8000	140	45	75	20	10	0.277	1.15

Ordering data (to be fully specified)

SPRING-APPLIED SINGLE-DISC BRAKE		HUB	
Please specify requested version			
1	Size (05, 07, 09) Size: _____	1	Size (05, 07, 09) Size: _____
2	Coil voltage (standard 230 V) Voltage: _____ V AC	2	Bore diameter (standard), with drive pin diameters Size 05: Ø 8, Ø 10, Ø 11 mm Size 07: Ø 10, Ø 12, Ø 14 mm Size 09: Ø 13, Ø 14, Ø 15 mm
3	Nominal voltage (standard 50 Hz) Frequency: _____ Hz		Bore diameter: _____ mm <input type="checkbox"/> or pilot bore



Size	d	d ₁	d ₂	d ₃	d ₄ (H7)	d ₅	d ₆	b	b ₁	b ₂	b ₃	h	h ₁	L	L ₁	L ₂	L ₃	s	s _{max} ³⁾	M	F [N]	α
05	56	12	46	22	8 ^{1)/11²⁾}	-	2.8 ⁴⁾	32	30.5	-	-	-	-	5	0.5	400	6	0.2	0.6	2 x M3	-	-
07	71	15	60	28	10 ^{1)/14²⁾}	4	3.8 ⁴⁾	39	37.5	5	76	48	81	7	0.5	400	6	0.2	0.6	2 x M4	ca. 26	ca. 6°
09	90	16	75	32	13 ^{1)/15²⁾}	4	5.8 ⁴⁾	47.5	46	6	96	59	92	8	0.5	400	6	0.2	0.6	2 x M5	ca. 42	ca. 6°

¹⁾ Min. bore.

²⁾ Max. bore.

Shaft ISO fitting k6. (^{1),2)}

³⁾ Max. air gap up to friction disc replacement.

⁴⁾ Pre-bored in case of hubs with finished bore d₄.

Accessories

Size	Friction plate		Hand release feature	Mounting screws			
	with corrosion protection	without corrosion protection		Screw	Rated torque	Material number	Screws per brake
05	73 34105A02902	73 34105A00902	-	DIN 84 - M3 x 35 - 4.8	1 Nm	302 074	2
07	73 34107A02902	73 34107A00902	73 34107A00940	DIN 84 - M4 x 45 - 4.8	2.5 Nm	302 165	2
09	73 34109A02902	73 34109A00902	73 34109A00940	DIN 84 - M5 x 55 - 4.8	5 Nm	302 252	2

SPRING-APPLIED SINGLE-DISC BRAKE

Three-phase AC

Version	73 431..H00
Standard rated voltages	400 V AC 3~, 50 Hz
Protection	IP 44 (when installed under motor fan hood)
Thermal class	F
Rated torques	7.5 - 75 Nm
Accessories (options)	friction plate, hand release feature, flange, mounting screws

Specification subject to change without notice.
The "General technical information" and the "Operating instructions" 73 431..H00 must be strictly observed.

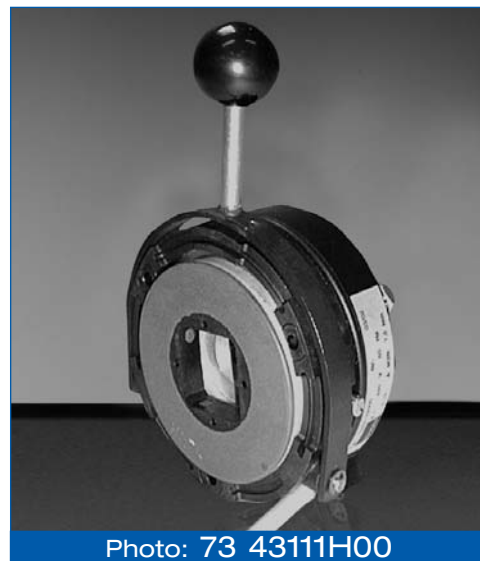


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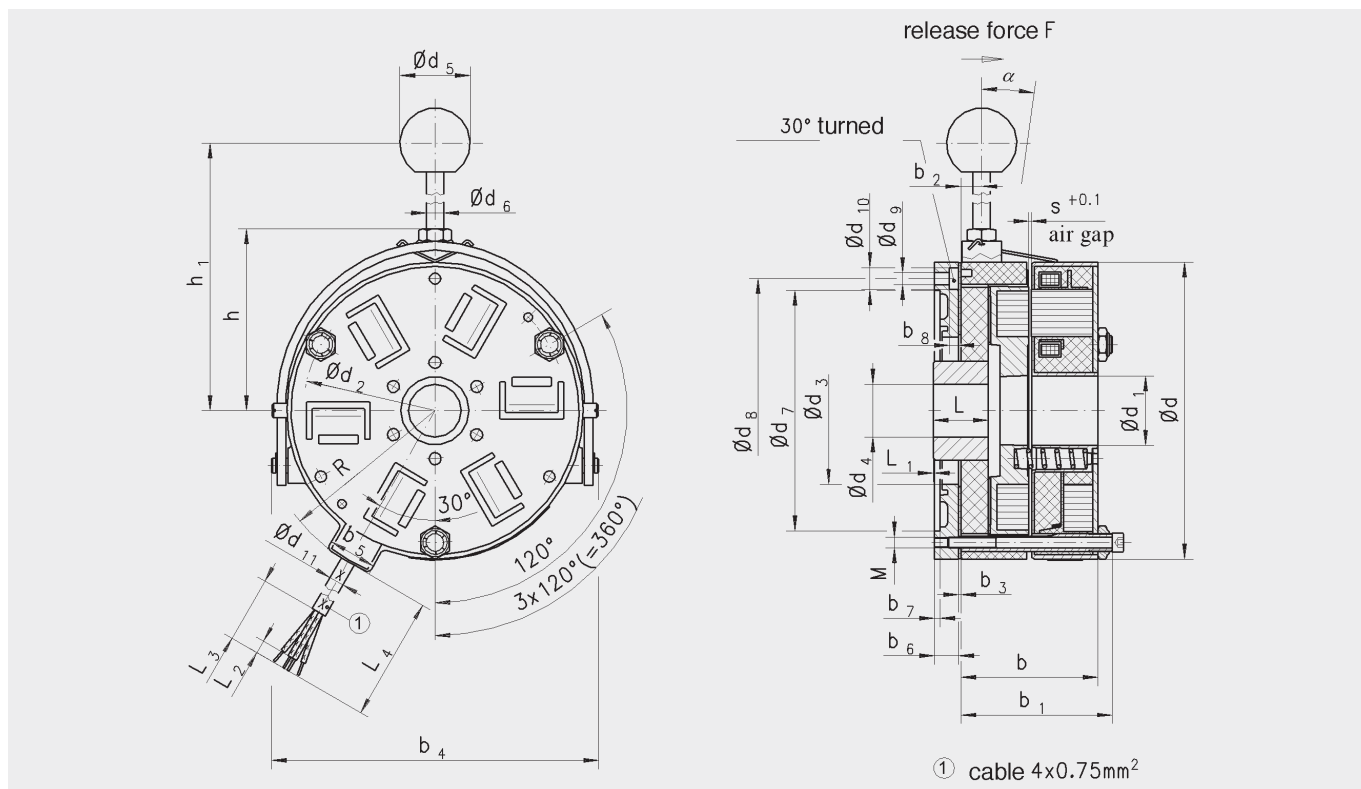
Technical data

Size	Rated torque	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 ₂	n _{max}	P _{max}	W _{max}	P _S	t ₁	t ₂	J	m
	[Nm]	[rpm]	[kJ/h]	[kJ]	[VA]	[ms]	[ms]	[kgcm ²]	[kg]
10	7.5	5400	300	30	80	7	5	1.22	1.3
11	15	5400	360	41	100	8	5	1.75	1.9
13	35	4000	540	50	230	11	6	5	3.0
16	75	3500	850	58	480	12	7	14	5.6

The service life values (W_{tot}) specified in the table apply if the brake is adjusted five times.

Ordering data (to be fully specified)

SPRING-APPLIED SINGLE-DISC BRAKE		HUB	
Please specify requested version			
1	Size (10, 11, 13, 16)	1	Size (10, 11, 13, 16)
	Size: _____		Size: _____
2	Coil voltage (standard 400 V)	2	Hub type
	Voltage: _____ V AC 3~		<input type="checkbox"/> Brake without optional flange <input type="checkbox"/> Brake with optional flange
3	Nominal voltage (standard 50 Hz)	3	Bore diameter (standard), keyway JS9 as per DIN 6885, sheet 1
	Frequency: _____ Hz		Size 10: Ø 15, Ø 18, Ø 20 mm Size 11: Ø 15, Ø 20, Ø 22 mm Size 13: Ø 22, Ø 25, Ø 30 mm Size 16: Ø 30, Ø 35, Ø 40 mm Bore diameter: _____ mm <input type="checkbox"/> or pilot bore



① cable 4x0.75mm²

Size	d	d ₁	d ₂	d ₃	d ₄ (H7)	d ₅	d ₆	d ₇ (H9)	d ₈	d ₉	d ₁₀	d ₁₁	b	b ₁	b ₂	b ₃	b ₄
10	100	23	88	42	10 ¹⁾ / 10 ²⁾ / 22 ³⁾	32	8	75	88	5.5 3x120°	10	6.8	49	56.5	8.5	1	105
11	115	22.5	100	42	13 ¹⁾ / 13 ²⁾ / 22 ³⁾	32	8	90	100	5.5 3x120°	10	6.8	54.5	62	9	1	118
13	135	31	120	67	18 ¹⁾ / 22 ²⁾ / 38 ³⁾	32	8	110	120	5.5 6x60°	10	6.8	61.5	69	9.5	1	141.5
16	165	46	150	78	23 ¹⁾ / 30 ²⁾ / 44 ³⁾	32	8	140	150	6.5 6x60°	11	6.8	74.5	83	11.5	1	170.5

Gr.	b ₅	b ₆	b ₇	b ₈	h	h ₁	R	L	L ₁	L ₂	L ₃	L ₄	s	s _{max} ⁴⁾	M	F [N]	α
10	22	8	2.5	4.2	63	115	62	13/20.5 ⁵⁾	0..1	6	30	500	0.25	0.6	3xM5	ca.60	ca. 8°
11	22	9	2.5	4.2	70	122	68.5	13/22 ⁵⁾	0..1	6	30	500	0.25	0.6	3xM5	ca.100	ca. 8°
13	22	11	2.5	4.2	84	135	79.5	14/24.5 ⁵⁾	0..1	6	30	500	0.25	0.6	3xM5	ca.170	ca. 8°
16	22	10.5	2.5	4.5	99	150	94	17/26.7 ⁵⁾	0..1	6	30	500	0.3	0.6	3xM6	ca.220	ca. 8°

¹⁾ Min. bore of brake with optional flange; keyway JS9 as per DIN 6885, sheet 1.
²⁾ Min. bore of brake without optional flange; keyway JS9 as per DIN 6885, sheet 1.
³⁾ Max. bore with keyway JS9 as per DIN 6885, sheet 1.

⁴⁾ Max. air gap up to brake adjustment or friction disc replacement.
⁵⁾ Hub length of brake with optional flange.
 Supporting keyway over entire length. Shaft ISO fitting k6 . (¹⁾, ²⁾, ³⁾)

Accessories

Size	Friction plate	Flange (only with friction plate)	Hand release feature	Mounting screws			
				Screw	Rated torque	Material number	Screws per brake
10	73 43110A01001	73 44110A00002	73 43110A01940	ISO 4762 - M5 x 65 - 8.8	6 Nm	304 029	3
11	73 43111A01001	73 44111A00002	73 43111A01940	ISO 4762 - M5 x 70 - 8.8	6 Nm	304 030	3
13	73 43113A01001	73 44113A00002	73 43113A01940	ISO 4762 - M5 x 75 - 8.8 ⁶⁾	6 Nm	304 031	3
16	73 43116A01001	73 44116A00002	73 43116A01940	ISO 4762 - M6 x 90 - 8.8	10 Nm	304 058	3

⁶⁾ If the brake is fitted to the aluminium end shield or if an optional flange is used, screws as per ISO 4762-M5x80-8.8 will be required.

SPRING-APPLIED SINGLE-DISC BRAKE

Three-phase AC

Version	73 241..E00 - closed version with connecting cable
	73 245..E00 - closed version with connection box
Standard rated voltages	400 V AC 3~, 50 Hz
Protection	IP65 (when installed under motor fan hood)
Thermal class	F
Rated torques	4.5 - 75 Nm
Accessories (options)	hand release feature, mounting screws

Specification subject to change without notice.
The "General technical information" and the "Operating instructions" 73 241..E00 / 73 245..E00 must be strictly observed.

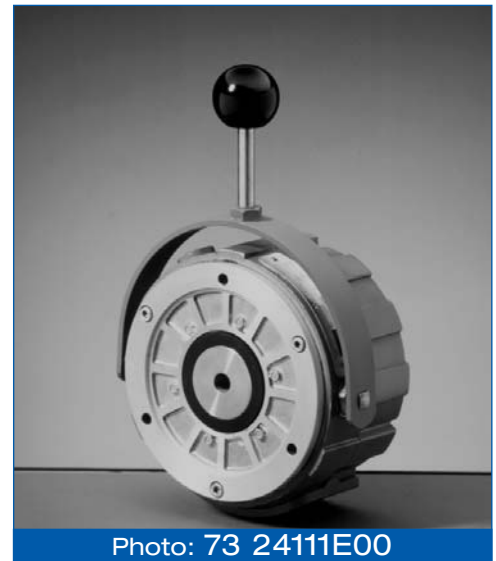


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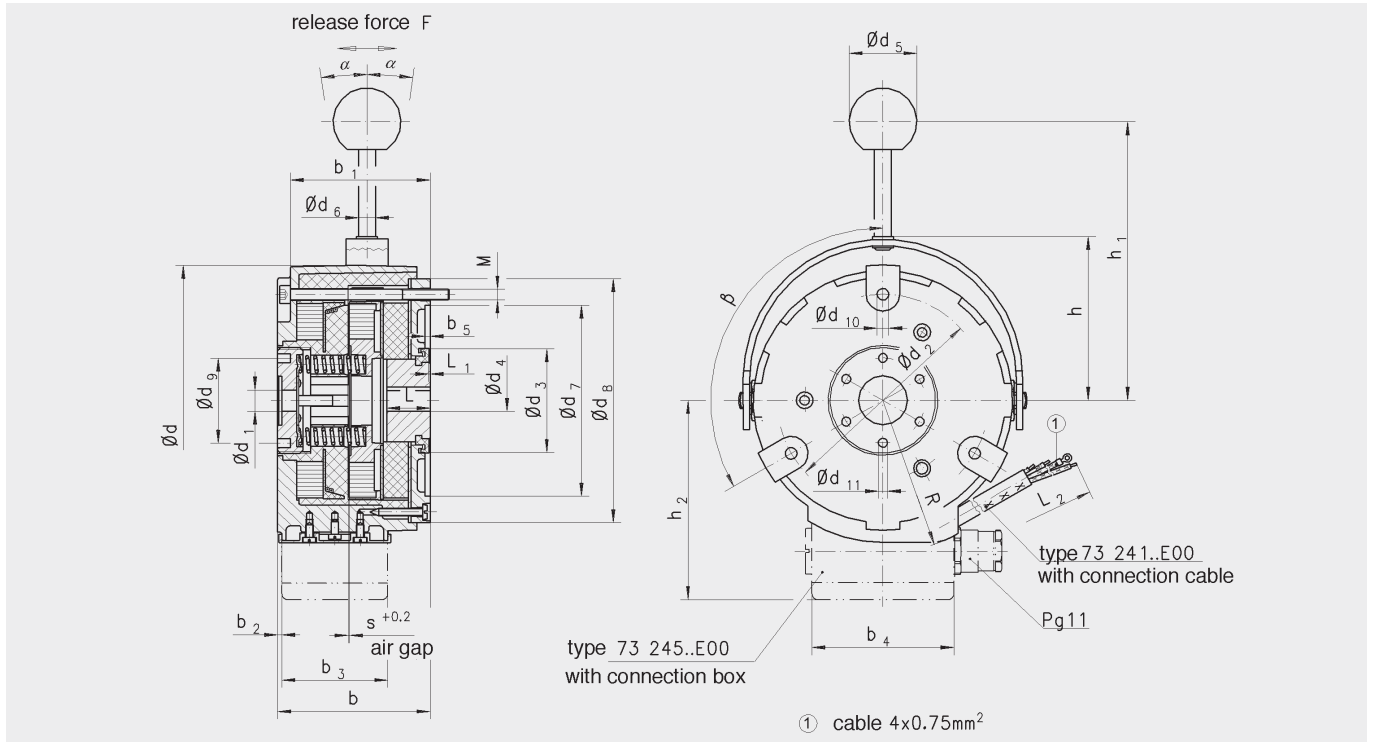
Technical data

Size	Rated torque range (standard) M_2 [Nm]	Max. reachable rated torque with fully screwed in adjustment ring $M_{2 \max}$ [Nm]	Max. speed n_{\max} [rpm]	Max. switching power P_{\max} [kJ/h]	Max. switching energy (Z=1) W_{\max} [kJ]	Rated power P_S [VA]	Response Times		Moment of inertia hub and friction disc J [kgcm ²]	Weight m [kg]
							on t_1 [ms]	off t_2 [ms]		
10	4.5-7.5	8	5400	450	60	80	7	5	1.22	1.7
11	9-15	16.5	5000	500	65	100	8	5	1.75	2.5
13	21-35	38.5	4000	680	72	230	11	6	5	3.8
16	45-75	82.5	3500	850	82	480	12	7	14	7.5

The service life values (W_{tot}) specified in the table refer to the maximum rated torque (standard).

Ordering data (to be fully specified)

SPRING-APPLIED SINGLE-DISC BRAKE Please specify requested version		HUB	
1	Size (10, 11, 13, 16) Size: _____	1	Size (10, 11, 13, 16) Size: _____
2	Rated torque M_2 (standard) Size 10: 7.5 Nm Size 11: 15 Nm Size 13: 35 Nm Size 16: 75 Nm Rated torque M_2 : _____ Nm	2	Bore diameter (standard), keyway DIN 6885 Bl.1 JS9 Size 10: \varnothing 15, \varnothing 18, \varnothing 20 mm Size 11: \varnothing 15, \varnothing 20, \varnothing 22 mm Size 13: \varnothing 22, \varnothing 25, \varnothing 30 mm Size 16: \varnothing 30, \varnothing 35, \varnothing 40 mm Bore diameter: _____ mm <input type="checkbox"/> or pilot bore
3	Coil voltage (standard 400 V) Voltage V AC 3~		
4	Nominal voltage (standard 50 Hz) Frequenz: _____ Hz		



Size	d	d ₁	d ₂	d ₃	d ₄ (H7)	d ₅	d ₆	d ₇ (H9)	d ₈	d ₉	d ₁₀	d ₁₁	b	b ₁	b ₂	b ₃
10	110	0...23	88	48.9	10 ¹⁾ / 22 ²⁾	32	8	75	100	40	5.5	4.1	62.5	59.5	2	50
11	128	0...22.5	100	48.9	12 ¹⁾ / 22 ²⁾	32	8	90	115	40	5.5	4.1	72	66	2	50
13	148	0...31	120	76	17 ¹⁾ / 38 ²⁾	32	8	110	135	50	5.5	5.1	80.5	74.5	2	50
16	176	0...46	150	88	23 ¹⁾ / 45 ²⁾	32	8	140	165	60	6.5	7.1	93.1	86.1	2	50

Size	b ₄	b ₅	h	h ₁	h ₂	R	L	L ₁	L ₂	s	s _{max} ³⁾	M	F ⁴⁾ [N]	α	β
10	67	2.5	66	122	86	64	20.5	0.5	500	0.2	0.6	3xM5	20	ca. 26°	3x120°
11	67	2.5	78	135	94	71	20.5	0.5	500	0.2	0.6	3xM5	40	ca. 26°	3x120°
13	67	2.5	91	148	105	83	24	0.5	500	0.2	0.6	6xM5	80	ca. 26°	6x60°
16	67	2.5	109.5	168	121	100	26.5	0.5	500	0.2	0.6	6xM6	100	ca. 26°	6x60°

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

³⁾ Max. air gap referred to max. rated torque (standard).

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

⁴⁾ Release force F (approx.) referred to max. rated torque (standard).

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

Accessories

Size	Hand release feature	Mounting screws			
		Screw	Rated torque	Material number	Screws per brake
10	73 24110A00940	ISO 4762 - M5 x 70 - 8.8	6 Nm	304 03	3
11	73 24111A00940	ISO 4762 - M5 x 75 - 8.8	6 Nm	304 031	3
13	73 24113A00940	ISO 4762 - M5 x 85 - 8.8	6 Nm	304 035	6
16	73 24116A00940	ISO 4762 - M6 x 100 - 8.8	10 Nm	304 060	6



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.



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