



AC Line

Spring-applied single-disc brake

73 341..A00

73 431..H00

73 241..E00 / 73 245..E00



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.

'Servo Line', our newly designed spring-applied brake for servo motors, 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 AC Line

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.

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 connection cable

73 245..E00

torque range 4.5 - 75 Nm
three-phase AC
adjustable torque
closed version with connection box

Applications

AC motors

Equipment manufacturing industry

Geared motors

Handling technology

Lifting and materials

Crane construction

Paper-making and printing machines

Heavy machinery construction

Gate drives

Packaging machinery

Data sheets – 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.



Spring-applied single-disc brake

Single-phase AC

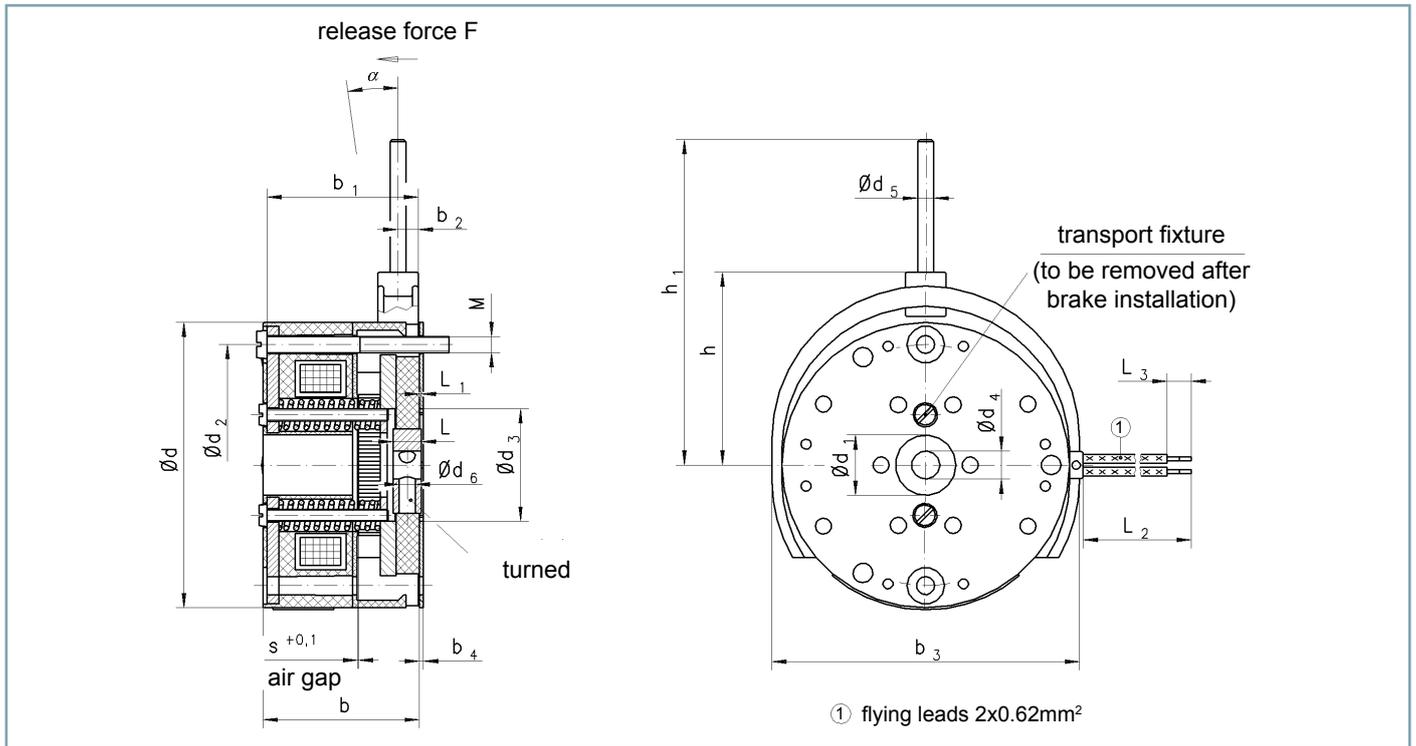
Version	73 341..A00
Standard rated voltage	230V AC, 50 Hz
Protection	IP 54 (when installed under motor fan hood)
Thermal class	F
Rated torque	1 - 5 Nm
Accessories (options)	friction plate, hand release feature, mounting screws
Note	Specification subject to change without notice. The "General technical information" and the "Operating instructions" 73 341..A00 must be strictly observed.



Technical specifications

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_s [VA]	Response times		Moment of inertia armature and flange hub J [kgcm ²]	Weight m [kg]
						Coupling time (acc. to VDE 0580) t_1 [ms]	Disconnection time t_2 [ms]		
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

Dimensions [mm]



Size	d	d ₁	d ₂	d ₃	d ₄ (H7)	d ₅	d ₆	b	b ₁	b ₂	b ₃
05	56	12	46	22	8 ¹⁾ /11 ²⁾	–	2.8 ⁴⁾	32	30.5	–	–
07	71	15	60	28	10 ¹⁾ /14 ²⁾	4	3.8 ⁴⁾	39	37.5	5	76
09	90	16	75	32	13 ¹⁾ /15 ²⁾	4	5.8 ⁴⁾	47.5	46	6	96

Size	h	h ₁	L	L ₁	L ₂	L ₃	s	s _{max} ³⁾	M	F [N]	α
05	–	–	5	0.5	400	6	0.2	0.6	2 x M3	–	–
07	48	81	7	0.5	400	6	0.2	0.6	2 x M4	ca. 26	ca. 6°
09	59	92	8	0.5	400	6	0.2	0.6	2 x M5	ca. 42	ca. 6°

¹⁾ Min. bore

²⁾ Max. bore

²⁾ 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	–	ISO 1207 - M3 x 35 - 4.8	1 Nm	302 074	2
07	73 34107A02902	73 34107A00902	73 34107A00940	ISO 1207 - M4 x 45 - 4.8	2.5 Nm	302 165	2
09	73 34109A02902	73 34109A00902	73 34109A00940	ISO 1207 - M5 x 55 - 4.8	5 Nm	302 252	2

Spring-applied single-disc brake

Three-phase AC

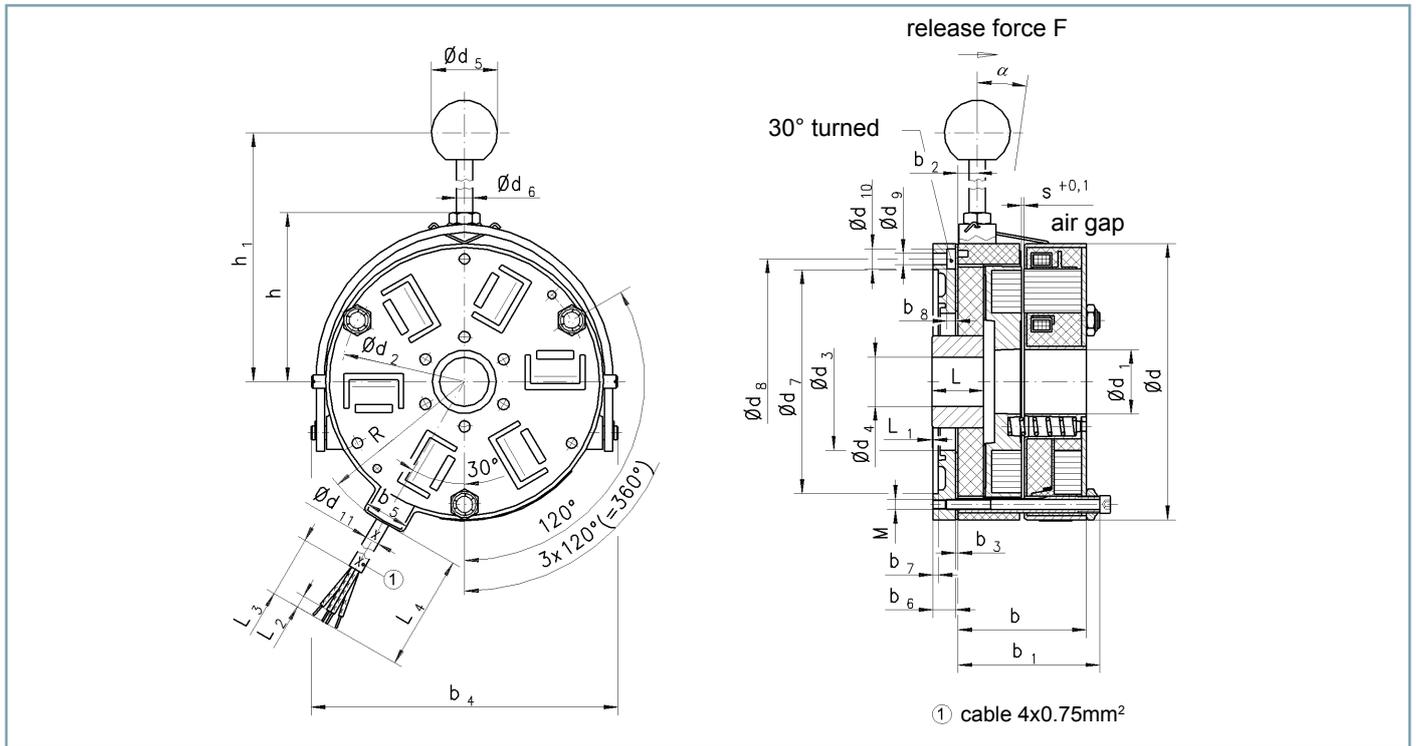
Version	73 431..H00
Standard rated voltage	400 V AC 3~, 50 Hz
Protection	IP 44 (when installed under motor fan hood)
Thermal class	F
Rated torque	7.5 - 75 Nm
Accessories (options)	friction plate, hand release feature, flange, mounting screws
Note	Specification subject to change without notice. The "General technical information" and the "Operating instructions" 73 431..H00 must be strictly observed.



Technical specifications

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_s [VA]	Response times		Moment of inertia armature and flange hub J [kgcm ²]	Weight m [kg]
						Coupling time (acc. to VDE 0580) t_1 [ms]	Disconnection time t_2 [ms]		
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

Dimensions [mm]



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

Size	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.

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Three-phase AC

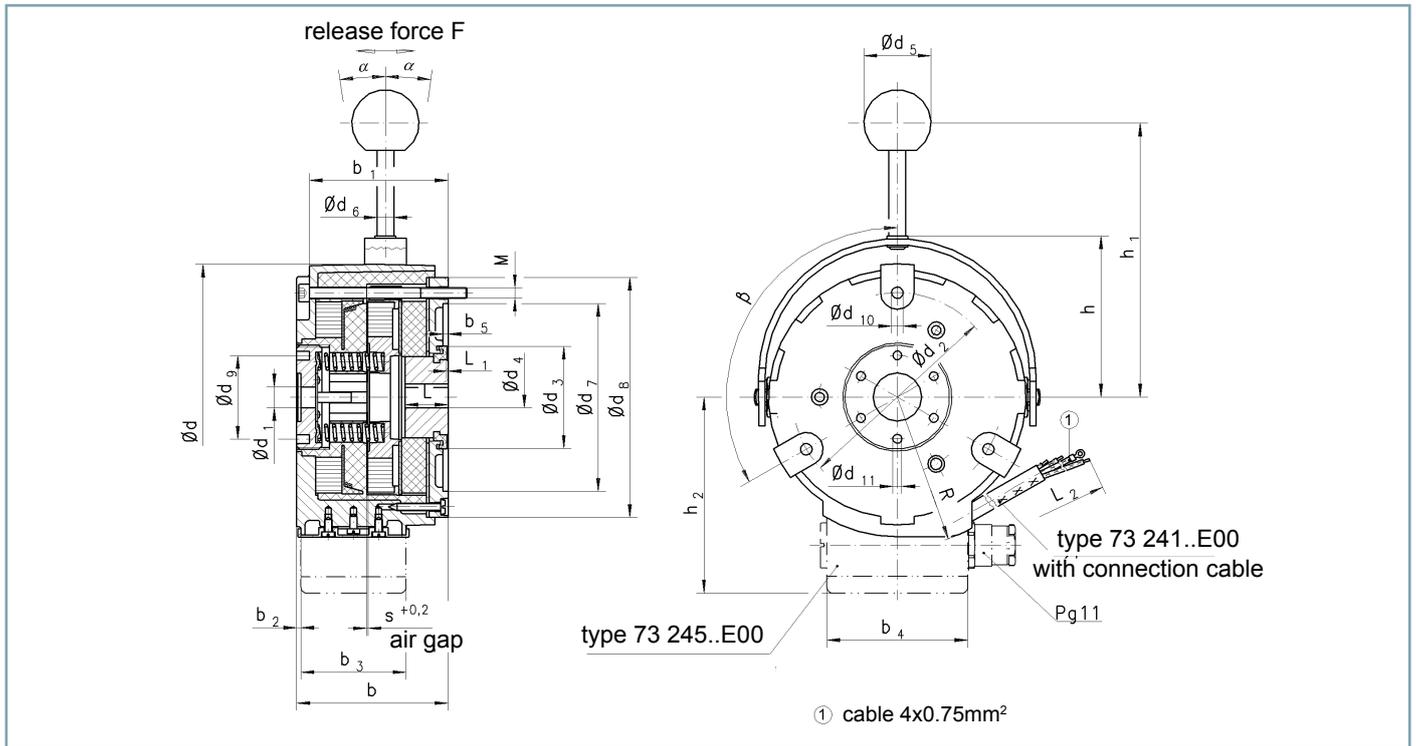
Version	73 241..E00 – closed version with connection cable 73 245..E00 – closed version with connection box
Standard rated voltage	400 V AC 3~, 50 Hz
Protection	IP 65 (when installed under motor fan hood)
Thermal class	F
Rated torque	4.5 - 75 Nm
Accessories (options)	hand release feature, mounting screws
Note	Specification subject to change without notice. The “General technical information” and the “Operating instructions” 73 241..E00 or 73 245..E00 must be strictly observed.



Technical specifications

Size	Transmissible torque M_4 [Nm]	Max. reachable rated torque with fully screwed in adjustment ring $M_{2\max}$ [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_s [VA]	Response times		Moment of inertia armature and flange hub J [kgcm ²]	Weight m [kg]
							Coupling time (acc. to VDE 0580) t_1 [ms]	Disconnection time 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

Dimensions [mm]



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	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	67
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	67
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	67
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	67

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

²⁾ Max. bore with keyway JS9 as per DIN 6885, sheet 1; supporting keyway entire length. Shaft ISO fitting k6 (¹⁾,²⁾)

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

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

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



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