



## Active Brake Line

Electromagnetic single-surface brake

86 111..E00  
86 121..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 customers all over the world.**

In the Industrial Drive Systems business unit, electromagnetic brakes and clutches are developed and produced for industrial drive engineering. They are used for the accelerating, braking, positioning, holding and securing of movable drive components and loads. Areas of application for our brakes and clutches are primarily in the areas of robotic and automatic control engineering, machine tool and production machinery as well as medical technology and material handling.

Our main site is located in Villingen in the Black Forest, Germany. Industrial Drive Systems can also rely on additional production sites and subsidiaries in Aerzen (Germany), China, Great Britain and Italy, as well as numerous sales partners all over the world.

### Tradition and progress

The long-established BINDER brand laid the foundations for the successful development of Industrial Drive Systems. In the year 1911, Wilhelm Binder founded his company and began at the start of the 1920s with the development and production of electromagnetic components. In 1997, the company was taken over by the Dutch group Schuttersveld N.V., today Kendrion N.V..

The former magneta GmbH & Co. KG belongs to the Kendrion Group since 2010. As the present Kendrion (Aerzen) GmbH, the innovative company continues to develop and produce electromagnetic clutches and brakes along with magnetic particle clutches and brakes at its site in Aerzen.

### Kobra greensigned safety brakes

As the first company, we at Kendrion developed safety brakes that contribute to the well-being of the environment in two separate ways. The reduced energy consumption was just as important to us as the ecology in the entire value-creation process. The KOBRA (Kendrion Optimised Brake) spring-applied safety brake is the impressive result, and the pioneer product of the Kendrion greensigned strategy.

### Kendrion – We magnetise the world!

[www.kendrion.com](http://www.kendrion.com)



# About the Active Brake Line

The Active Brake Line is comprised of DC operated single-disc brakes where the dynamic effect of an electromagnetic field is used to generate the braking effect (electromagnetically engaged brakes). Active Brake Line products ensure a reliable

brake release with zero residual torque in any mounting position and zero backlash during torque transmission. These brakes require little maintenance throughout their entire service span.

## Versions

### 86 111..E00

torque range 1 - 150 Nm  
DC  
front mounting

### 86 121..E00

torque range 1 - 150 Nm  
DC  
flange mounting

Upon request, the brake can be supplied with variable armature systems (shaft coupling).

## Applications

Automotive technology

Equipment manufacturing industry

Handling technology

Building installations

Medical technology

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.



# Electromagnetic single-surface brake

## DC

Version	86 111..E00 – front mounting
Standard rated voltages	24 V DC
Protection	IP 00
Thermal class	F
Rated torques	1 - 150 Nm
Note	Specification subject to change without notice. The „General technical information“ and the „Operating instructions“ 86 111..E00 must be strictly observed.

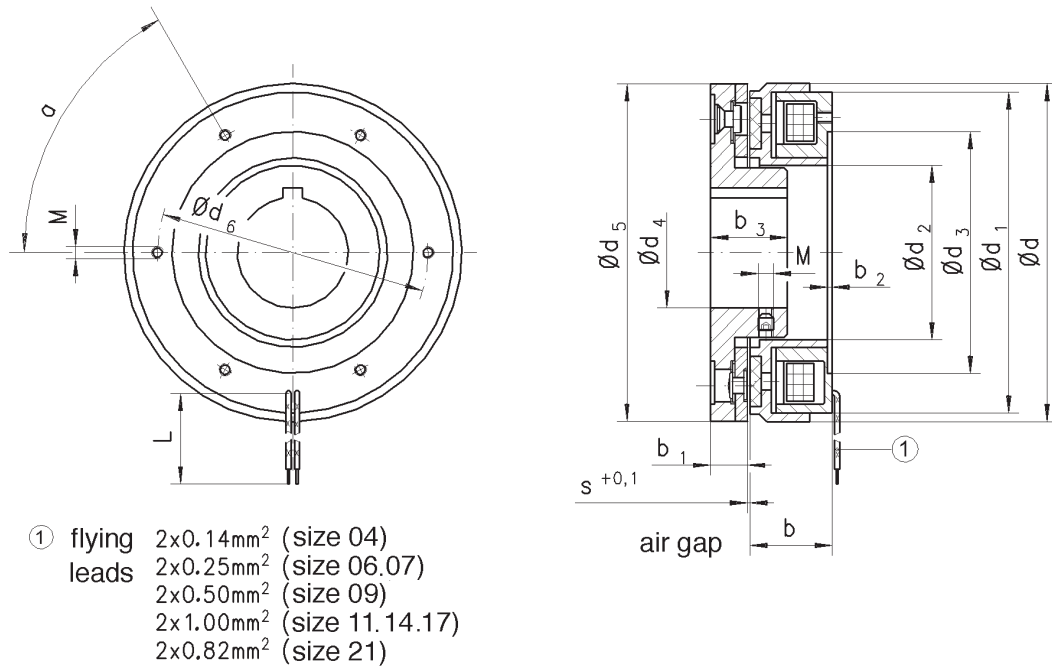


### Technical data

Size	Rated torque $M_2$ [Nm]	Max. speed $n_{max}$ [rpm]	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 (without flange hub) J [kgcm <sup>2</sup> ]	Weight (without flange hub) m [kg]
						Coupling time $t_1$ [ms]	Disconnection time $t_2$ [ms]		
04	1	12000	100	1.6	8	15	16	0.05	0.15
06	2.2	10000	160	4.5	10	15	18	0.22	0.35
07	5	8000	250	6	12	25	25	0.65	0.65
09	11	6000	350	11	17	45	38	2.1	1.15
11	21	4800	500	30	22	70	40	5.7	2
14	60	3600	700	53	35	110	65	20	4

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

## Dimensions [mm]



Size	d	d <sub>1</sub> (h7)	d <sub>2</sub>	d <sub>3</sub> (H7)	d <sub>4</sub> (H7)	d <sub>5</sub>	d <sub>6</sub>	b	b <sub>1</sub>
04	39.5	37	15	28	5 <sup>1)</sup> / 8 <sup>2)</sup>	39.5	32.5	17.5	6
06	56	53	25	42	6 <sup>1)</sup> / 15 <sup>2)</sup>	56	48	19	8
07	70	66.5	32	55	10 <sup>1)</sup> / 20 <sup>2)</sup>	70	61	23	9.5
09	90	85.5	42	68	10 <sup>1)</sup> / 30 <sup>2)</sup>	90	75	24.5	12
11	110	104	52	80	15 <sup>1)</sup> / 35 <sup>2)</sup>	110	90	28	14
14	140	134	72	110	20 <sup>1)</sup> / 48 <sup>2)</sup>	140	120	33.5	16

Size	b <sub>2</sub>	b <sub>3</sub>	L	s	s <sub>max</sub>	M	M <sub>1</sub>	α
04	2	15	400	0.2	0.5	6xM2 / 3 deep	2xM3	6x60°
06	2	17	400	0.2	0.5	6xM3 / 4 deep	2xM4	6x60°
07	2	20	400	0.2	0.5	6xM3 / 5 deep	2xM4	6x60°
09	2	25	400	0.3	0.75	6xM3 / 5 deep	2xM5	6x60°
11	2	30	400	0.3	0.75	6xM4 / 6 deep	2xM6	6x60°
14	2.5	40	400	0.3	0.75	6xM5 / 8 deep	2xM8	6x60°

<sup>1)</sup> Min. bore.

<sup>2)</sup> Max. bore.

# Electromagnetic single-surface brake DC

Version	86 121..E00 – flange mounting
Standard rated voltages	24 V DC
Protection	IP 00
Thermal class	F
Rated torques	1 - 60 Nm
Note	Specification subject to change without notice. The „General technical information“ and the „Operating instructions“ 86 121..E00 must be strictly observed.

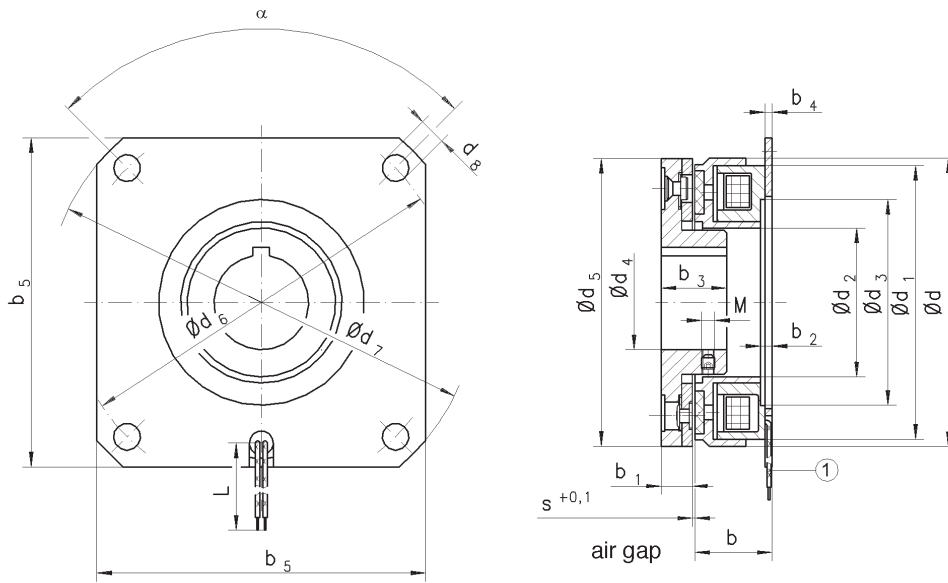


## Technical data

Size	Rated torque $M_2$ [Nm]	Max. speed $n_{max}$ [rpm]	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 (without flange hub) J [kgcm <sup>2</sup> ]	Weight (without flange hub) m [kg]
						Coupling time $t_1$ [ms]	Disconnection time $t_2$ [ms]		
04	1	12000	100	1.6	8	15	16	0.05	0.15
06	2.2	10000	160	4.5	10	15	18	0.22	0.35
07	5	8000	250	6	12	25	25	0.65	0.65
09	11	6000	350	11	17	45	38	2.1	1.15
11	21	4800	500	30	22	70	40	5.7	2
14	60	3600	700	53	35	110	65	20	4

The service life values (Wtot) specified in the table apply if the brake is adjusted twice.

## Dimensions [mm]



- ① flying leads  
 2x0.14mm<sup>2</sup> (size 04)  
 2x0.25mm<sup>2</sup> (size 06.07)  
 2x0.50mm<sup>2</sup> (size 09.11)  
 2x1.00mm<sup>2</sup> (size 14)

Size	d	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub> (H7)	d <sub>4</sub> (H7)	d <sub>5</sub>	d <sub>6</sub>	d <sub>7</sub>	d <sub>8</sub>	b
04	39.5	37	15	28	5 <sup>1)</sup> / 8 <sup>2)</sup>	39.5	54	62.5	3.5	19.5
06	56	53	25	42	6 <sup>1)</sup> / 15 <sup>2)</sup>	56	65	75.5	4.5	21
07	70	66.5	32	55	10 <sup>1)</sup> / 20 <sup>2)</sup>	70	79.5	89.5	5.5	25.5
09	90	85.5	42	68	10 <sup>1)</sup> / 30 <sup>2)</sup>	90	102	115.5	6.5	27
11	110	104	52	80	15 <sup>1)</sup> / 35 <sup>2)</sup>	110	127	143.5	9	31
14	140	134	72	110	20 <sup>1)</sup> / 48 <sup>2)</sup>	140	155	170.5	9	37.5

Size	b <sub>1</sub>	b <sub>2</sub>	b <sub>3</sub>	b <sub>4</sub>	b <sub>5</sub>	L	s	s <sub>max</sub>	M	α
04	6	4	15	2	45	400	0.2	0.5	2xM3	4x90°
06	8	4	17	2	56	400	0.2	0.5	2xM4	4x90°
07	9.5	4.5	20	2.5	70	400	0.2	0.5	2xM4	4x90°
09	12	4.5	25	2.5	90	400	0.3	0.75	2xM5	4x90°
11	14	5	30	3	110	400	0.3	0.75	2xM6	4x90°
14	16	6.5	40	4	140	400	0.3	0.75	2xM8	4x90°

<sup>1)</sup> Min. bore.

<sup>2)</sup> Max. bore.



INDUSTRIAL

WE MAGNETISE THE WORLD

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