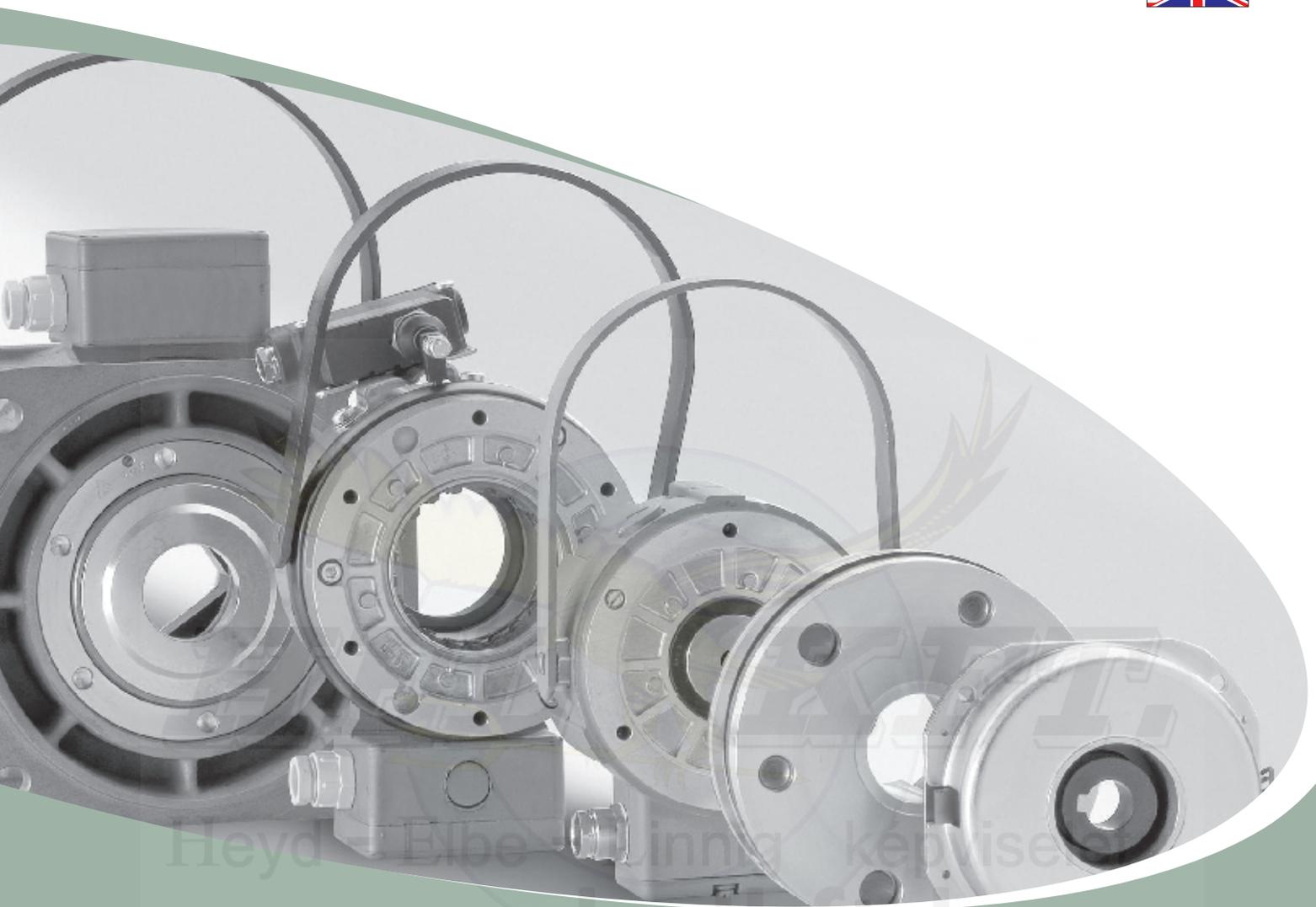




WE MAGNETISE THE WORLD

INDUSTRIAL DRIVE SYSTEMS



[www.heiktt.hu](http://www.heiktt.hu)

Product range

BINDER



Kendrion (Villingen) GmbH, Villingen (D)



Kendrion (Aerzen) GmbH, Aerzen (D)



Kendrion Magnetic (Suzhou) Co. Ltd. Suzhou (CN)



Kendrion (UK) Ltd. Bradford (UK)

## Business Unit Industrial Drive Systems

Kendrion N.V. is a worldwide leading manufacturer of electromagnetic components. Consisting of the four business units Industrial Drive Systems, Industrial Magnetic Systems, Commercial Vehicle Systems and Passenger Car Systems – Kendrion guarantees solution-oriented customer service. The company is characterized by an innovative ability and highest productivity.

Since 1997 the traditional brand BINDER is a strong element of the group, which is successfully operating in the fields of industry and automotive. The brand BINDER stands for a traditional family business, which set worldwide standards in terms of quality. Kendrion builds on this tradition and has consequent advanced the established BINDER-philosophy.

The business unit Industrial Drive Systems develops and produces electromechanical brakes and clutches for the industrial drive technology.

Applications include accelerating, decelerating, positioning, holding and securing movable drive components and loads.

Our brakes and clutches are mainly used in robotics and automation technology, machine tool building, machine and production building, medical technology, transportation, entertainment, safety and comfort, renewable energy and consumer appliances.

We have implemented the fantastic potential of magnetism in excellent products – the high satisfaction of user of BINDER-products sources this sustainable.

Our brakes and clutches have a good standing since decades concerning robustness and reliability. A network of locations and sales partners guarantees worldwide availability and service.

# Applications & Industries

	<p><b>Medical technology</b></p> <ul style="list-style-type: none"> <li>■ PM Line</li> <li>■ High Torque</li> </ul>		<p><b>Entertainment</b></p> <ul style="list-style-type: none"> <li>■ AC Line</li> <li>■ Airflex</li> </ul>
	<p><b>Servo motors</b></p> <ul style="list-style-type: none"> <li>■ PM Line</li> <li>■ High Torque</li> </ul>		<p><b>Automation &amp; robotic</b></p> <ul style="list-style-type: none"> <li>■ PM Line</li> <li>■ High Torque</li> </ul>
	<p><b>Crane building &amp; materials handling</b></p> <ul style="list-style-type: none"> <li>■ Vario Line</li> <li>■ Classic Line</li> <li>■ Module Line</li> </ul>		<p><b>Machine building</b></p> <ul style="list-style-type: none"> <li>■ Vario Line</li> <li>■ Classic Line</li> <li>■ PM Line</li> <li>■ Slim Line</li> <li>■ Compact Line</li> <li>■ Active Clutch Line</li> <li>■ Active Brake Line</li> </ul>
	<p><b>Renewable energies</b></p> <ul style="list-style-type: none"> <li>■ High Torque</li> </ul>		<p><b>Safety &amp; comfort</b></p> <ul style="list-style-type: none"> <li>■ Compact Line</li> <li>■ Slim Line</li> <li>■ PM-Line</li> <li>■ High Torque</li> <li>■ Vario Line</li> <li>■ Module Line</li> </ul>
	<p><b>Explosion-hazardous areas</b></p> <ul style="list-style-type: none"> <li>■ Exx Line</li> </ul>		<p><b>Customized solutions</b></p> <ul style="list-style-type: none"> <li>■ on request</li> </ul>



Series line	PM LINE	HIGH TORQUE
Design	Permanent magnet single surface brakes <ul style="list-style-type: none"> <li>▪ electrically released</li> <li>▪ holding brake</li> </ul>	Permanent magnet single surface brakes <ul style="list-style-type: none"> <li>▪ electrically released</li> <li>▪ holding brake</li> </ul>
Typical applications	<ul style="list-style-type: none"> <li>▪ servo motors</li> <li>▪ backlash-free drives</li> <li>▪ robotics</li> <li>▪ optics and medical engineering</li> </ul>	Analogous to conventional permanent magnet brake (PM Line)
Number of sizes	8	11
Rated torque range $M_2$ (Nm)	0,4 Nm up to 240 Nm	0,1 Nm up to 300 Nm
Electrical supply (voltage)	24 VDC	24 VDC
Degree of protection	IP 00	IP 00
Special features	<ul style="list-style-type: none"> <li>▪ torque transfer free of torsional backlash</li> <li>▪ zero residual torque at any mounting position</li> <li>▪ ambient temperature -5 to +120°C</li> <li>▪ wear-free axial movement of the armature</li> </ul>	<ul style="list-style-type: none"> <li>▪ higher torque with equal size compared to PM Line</li> <li>▪ high consistency of torque during full service life; extended temperature range</li> <li>▪ -15 to +120°C, optional -40°C</li> </ul>
Options and accessories	<ul style="list-style-type: none"> <li>▪ types of armatures</li> <li>▪ bridge and transformer rectifiers</li> <li>▪ tailor-made designs</li> </ul>	<ul style="list-style-type: none"> <li>▪ types of armatures</li> <li>▪ bridge rectifiers</li> <li>▪ tailor-made designs</li> </ul>
Approvals / certificates	–	–
Remarks	–	–



SLIM LINE
Spring applied single disc brakes and single surface brakes <ul style="list-style-type: none"> <li>▪ electrically released</li> </ul>
<ul style="list-style-type: none"> <li>▪ mini motors</li> <li>▪ servo motors</li> <li>▪ actuators</li> <li>▪ saws</li> <li>▪ wood-working machines</li> <li>▪ door drives</li> </ul>
2
0,25 Nm up to 3 Nm
24, 102 VDC 1~230 VAC; 50 or 60 Hz
IP 54*
<ul style="list-style-type: none"> <li>▪ with and without built-in rectifier with protection circuits</li> <li>▪ mounting in any position</li> <li>▪ brake disc serves as motor fan</li> </ul>
<ul style="list-style-type: none"> <li>▪ rectifiers</li> </ul>
–
* if installed under fan cover

COMPACT LINE
Spring applied single disc brakes <ul style="list-style-type: none"> <li>▪ electrically released</li> </ul>
<ul style="list-style-type: none"> <li>▪ mini motors</li> <li>▪ wood-working machines</li> <li>▪ door drives</li> <li>▪ conveyor systems</li> </ul>
2
1 Nm up to 10 Nm
24, 102, 178 VDC 1~230 VAC; 50 Hz
IP 54*
<ul style="list-style-type: none"> <li>▪ very good value for money</li> <li>▪ with and without built-in rectifier</li> <li>▪ easy assembly</li> <li>▪ air gap adjustment not required</li> </ul>
<ul style="list-style-type: none"> <li>▪ rectifiers</li> <li>▪ flange</li> </ul>
–
* if installed under fan cover

VARIO LINE
Spring applied single disc brakes <ul style="list-style-type: none"> <li>▪ electrically released</li> </ul>
<ul style="list-style-type: none"> <li>▪ industrial motors</li> <li>▪ servo motors</li> <li>▪ door drives</li> <li>▪ geared motors</li> <li>▪ conveying technology</li> </ul>
9
1 Nm up to 600 Nm
24, 102, 178, 205 VDC
IP 55*, IP 65**
<ul style="list-style-type: none"> <li>▪ stepless and centrally adjustable torque</li> <li>▪ air gap adjustment not required</li> <li>▪ modular design</li> </ul>
<ul style="list-style-type: none"> <li>▪ rectifiers</li> <li>▪ current and voltage detection for high-speed switching-off</li> <li>▪ hand release</li> <li>▪ static friction disc, collar</li> <li>▪ increased corrosion protection</li> <li>▪ without adjustment ring,</li> </ul>
–
* if installed under fan cover ** If installed under fan cover using accessories



Series line	AC LINE (1~)	AC LINE (3~)
Design	Spring applied single disc brakes <ul style="list-style-type: none"> <li>▪ electrically released</li> </ul>	Spring applied single disc brakes in open and closed design <ul style="list-style-type: none"> <li>▪ electrically released</li> </ul>
Typical applications	<ul style="list-style-type: none"> <li>▪ AC motors for industrial applications</li> </ul>	<ul style="list-style-type: none"> <li>▪ cranes</li> <li>▪ conveyor systems</li> </ul>
Number of sizes	3	4
Rated torque range $M_2$ (Nm)	0,2 Nm up to 5 Nm	4,5 Nm up to 92,5 Nm
Electrical supply (voltage)	24, 48, 90, 190 VDC 1~230 VAC; 50 or 60 Hz	3~400 VAC; 50 or 60 Hz
Degree of protection	IP 54**	IP 40*, IP 44**, IP 65***
Special features	<ul style="list-style-type: none"> <li>▪ direct connection to AC supply</li> <li>▪ short switching time compared to DC spring applied brakes</li> </ul>	<ul style="list-style-type: none"> <li>▪ direct connection to three-phase AC supply</li> <li>▪ high switching frequency</li> <li>▪ extremely short response time</li> <li>▪ enhanced disk</li> </ul>
Options and accessories	<ul style="list-style-type: none"> <li>▪ hand release*</li> <li>▪ static friction disc</li> </ul>	<ul style="list-style-type: none"> <li>▪ hand release*</li> <li>▪ static friction disc (open design)</li> <li>▪ flange (open design)</li> </ul>
Approvals /certificates	–	Atex Zone 2/22, size 13
Remarks	* not for all sizes ** if installed under fan cover	* open design ** if installed under fan cover ***closed design with terminal box available



CLASSIC LINE
<p>Spring applied single disc and multi disc brakes</p> <ul style="list-style-type: none"> <li>▪ electrically released</li> </ul>
<ul style="list-style-type: none"> <li>▪ controlled industrial drives</li> <li>▪ servo motors</li> </ul>
9
4 Nm up to 1000 Nm
24, 102, 178 VDC 1~230, 400, 525 VAC; 40 up to 60 Hz
IP 54, IP 55*, IP 66**
<ul style="list-style-type: none"> <li>▪ closed system</li> <li>▪ ready for fitting</li> <li>▪ steplessly and centrally adjustable torque</li> <li>▪ spigot for speedometer installation</li> </ul>
<ul style="list-style-type: none"> <li>▪ hand release, micro-switch</li> <li>▪ enhanced corrosion protection</li> <li>▪ rectifiers, overexcitation rectifiers</li> <li>▪ current and voltage detection for high-speed switching-off</li> <li>▪ with special friction lining</li> <li>▪ stand-by heater</li> </ul>
–
<p>* if installed under fan cover ** tailor-made designs</p>

EEX LINE
<p>Spring applied single disc brakes; explosion-proof design acc. to ATEX 100a (94/9/EG), EN 60079-0</p> <ul style="list-style-type: none"> <li>▪ electrically released</li> </ul>
<ul style="list-style-type: none"> <li>▪ industrial motors in safety areas</li> </ul>
6
10 Nm up to 270 Nm
24, 205, 342, 356 VDC 1~230, 400 VAC; 40 up to 60 Hz
IP 56, IP 67*
<ul style="list-style-type: none"> <li>▪ explosion or firedamp protection, dust protection</li> <li>▪ varistor protection circuits against voltage peaks</li> <li>▪ -20 to +40°C ambient temperature</li> </ul>
<ul style="list-style-type: none"> <li>▪ hub bore ready for fitting</li> <li>▪ hand release</li> <li>▪ micro-switch</li> <li>▪ with special friction lining</li> <li>▪ additional sealings for offshore-applications</li> <li>▪ rectifiers</li> </ul>
II 2G Ex de IIC T5**
<p>* tailor-made designs ** tailor-made designs available with approval II 2D Ex tD A21 T100°C</p>

MODULE LINE
<p>Special spring applied brakes in modular design</p> <ul style="list-style-type: none"> <li>▪ electrically released</li> </ul>
<ul style="list-style-type: none"> <li>▪ main spindle motors</li> <li>▪ big servo motors</li> <li>▪ industrial motors</li> <li>▪ special applications</li> <li>▪ conveying engineering</li> </ul>
4
60 Nm up to 500 Nm
24, 102, 178 VDC 1~230 VAC; 50 or 60 Hz
IP 55
<ul style="list-style-type: none"> <li>▪ for fitting to A-side motor flange</li> <li>▪ adjustable torque</li> </ul>
<ul style="list-style-type: none"> <li>▪ rectifiers</li> <li>▪ hand release</li> <li>▪ micro-switch</li> <li>▪ terminal box</li> </ul>
–
plug-in shaft on request



Series line	ACTIVE CLUTCH LINE	ACTIVE BRAKE LINE
Design	Electromagnetic single surface clutches <ul style="list-style-type: none"> <li>▪ electrically closed</li> </ul>	Electromagnetic single surface brakes <ul style="list-style-type: none"> <li>▪ electrically closed</li> </ul>
Typical applications	<ul style="list-style-type: none"> <li>▪ industrial applications</li> <li>▪ precision mechanics</li> <li>▪ office machines</li> <li>▪ textile machinery</li> </ul>	<ul style="list-style-type: none"> <li>▪ industrial applications</li> <li>▪ precision mechanics</li> <li>▪ office machines</li> <li>▪ textile machinery</li> </ul>
Number of sizes	10	9
Rated torque range $M_2$ (Nm)	0,2 Nm up to 150 Nm/350 Nm*	0,2 Nm up to 150 Nm/350 Nm*
Electrical supply (voltage)	24, 48 VDC	24, 48 VDC
Degree of protection	IP 00	IP 00
Special features	<ul style="list-style-type: none"> <li>▪ different types of armatures</li> <li>▪ tailor-made designs</li> </ul>	<ul style="list-style-type: none"> <li>▪ different types of armatures</li> <li>▪ tailor-made designs</li> </ul>
Options and accessories	<ul style="list-style-type: none"> <li>▪ rectifiers</li> </ul>	<ul style="list-style-type: none"> <li>▪ rectifiers</li> </ul>
Approvals /certificates	–	–
Remarks	* on request	* on request



## CUSTOMIZED SOLUTIONS

### Customized solutions

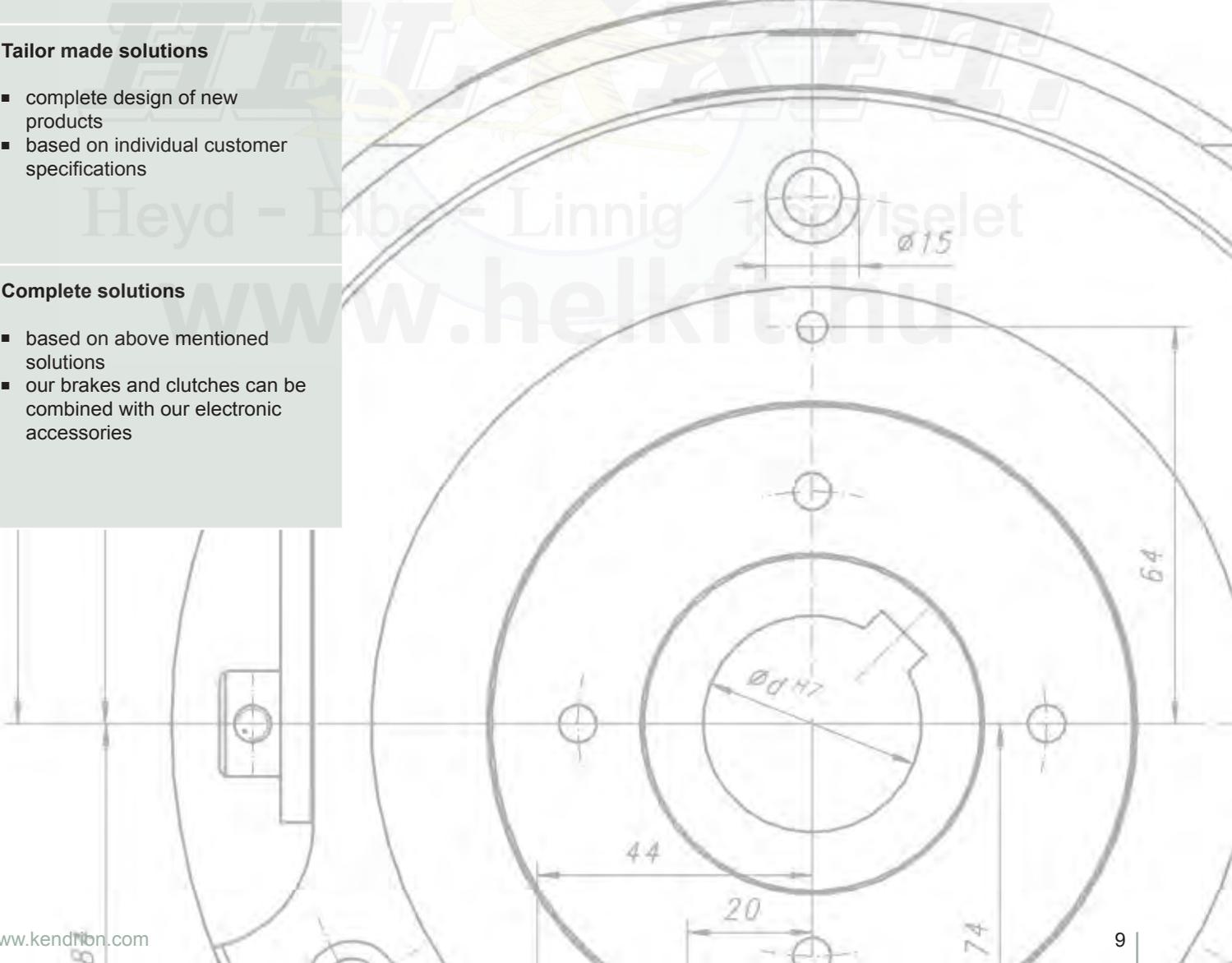
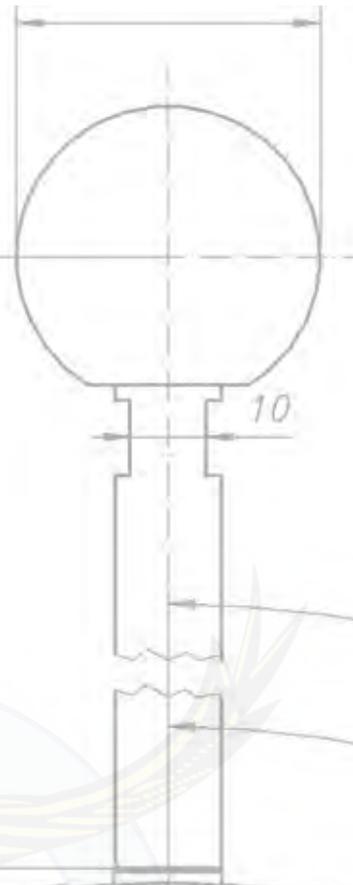
- based on existing standard product platform
- from minor to major adjustments
- according to specific customer requirements (geometry, techniques, interface...)

### Tailor made solutions

- complete design of new products
- based on individual customer specifications

### Complete solutions

- based on above mentioned solutions
- our brakes and clutches can be combined with our electronic accessories





Series line	LEAN COLLECTION	UNIVERSAL COLLECTION
Features	<ul style="list-style-type: none"> <li>▪ extremely small size</li> <li>▪ cost-effective</li> <li>▪ manifold mounting and connecting options</li> </ul>	<ul style="list-style-type: none"> <li>▪ all types of rectifiers and switches can be combined in one housing</li> <li>▪ manifold mounting and connecting options</li> </ul>
Applications	<ul style="list-style-type: none"> <li>▪ for use with Slim Line, Compact Line and Vario Line brakes up to size 16</li> <li>▪ for applications with low requirements to dynamics</li> <li>▪ mounting into small motor terminal boxes</li> </ul>	<ul style="list-style-type: none"> <li>▪ universal application with all brakes up to size 16 depending on power input</li> <li>▪ drives with high clock rates</li> <li>▪ operation of brakes with longer maintenance cycles and less heating</li> <li>▪ installation into Classic Line brakes</li> <li>▪ separate use with brakes and magnets</li> </ul>
Types	32 0710.B..   32 0730.B.. 32 0731.B..	32 07.2.B..   32 17.2.B.. 32 4730.B..   32 57303B.. 32 67.04B..   32 77303B..
Nominal input voltage VAC	max. 500 V	max. 500 (575) V
Max. output current ADC	half wave: 1,0 full wave: 2,0	half wave: 0,7 to 2,0 full wave: 0,7 to 2,0 overexcitation: 1,4/0,7 to 3,0/1,5
Overexcitation	no	depending on model 2:1
High-speed switching-off	depending on type external	external or internal with voltage or current detection
Standards	CE   EN60529   HD625.1 S1 NSRL   IP 00	CE   EN60529   HD625.1 S1 NSRL, EMVRL   IP 00
Options and accessories	<ul style="list-style-type: none"> <li>▪ mounting rail clip</li> <li>▪ adhesive pad</li> <li>▪ leads for motor connection M4</li> </ul>	<ul style="list-style-type: none"> <li>▪ mounting rail clip</li> <li>▪ adhesive pad, mounting clip</li> <li>▪ leads for motor connection M4</li> </ul>



STANDARD LINE
<ul style="list-style-type: none"> <li>intelligent rectifier with high-speed switching-off</li> <li>overexciting function</li> </ul>
<ul style="list-style-type: none"> <li>for brakes with higher power beginning from size 14</li> <li>easy mounting by integration in the motor terminal box</li> </ul>
32 47124A00   32 57123A00 32 67124A00   32 77123A00
max. AC 500 V
half wave: to 1,2 A full wave: to 1,2 A overexcitation: 2,4/1,2 A
depending on model 2:1
external or internal with voltage or current detection
CE   EN60529   HD625.1 S1 NSRL, EMVRL   IP 00   IP 65
<ul style="list-style-type: none"> <li>mounting rail optional</li> <li>screw terminal housing</li> <li>leads for motor connection M4</li> </ul>

POWER COLLECTION
<ul style="list-style-type: none"> <li>overexcitation rectifier with adjustable holding voltage for high performance</li> <li>plug-in screw terminals allow easy assembling</li> </ul>
<ul style="list-style-type: none"> <li>for use with large brakes and magnets</li> <li>holding power can be optimized</li> <li>high-speed switching-off</li> <li>fixing with mounting rail</li> <li>open circuit board</li> </ul>
33 433 1.A..
max. 415 V
overexcitation: 4 to 12 holding excitation : 2 to 9
yes
external
CE   EN60529   HD625.1 S1 NSRL, EMVRL   IP 00
<ul style="list-style-type: none"> <li>mounting rail</li> <li>open circuit board</li> <li>plug-in screw terminals</li> </ul>

MPR
<ul style="list-style-type: none"> <li>efficient brake control with PWM</li> <li>constant voltage / Power over a large voltage range</li> <li>overexcitation function</li> </ul>
<ul style="list-style-type: none"> <li>small and cost efficient</li> <li>customer-specific holding voltage and current</li> <li>retrofit possible</li> </ul>
34 17x25A 0X 34 10125A 0X
DC 18 to 40 V
DC 2 A
Yes
Optional
CE EMV 2004/108 EWG EN 50081/2
<ul style="list-style-type: none"> <li>mounting rail</li> <li>open circuit board</li> <li>heat-shrink protected module</li> <li>screw terminal housing</li> </ul>

## About Airflex®

The Airflex® product line is comprised of a complete range of clutches and brakes designed for industrial applications. First manufactured in 1938 by Thomas Fawick, Airflex® products are recognized around the world as the Original Fawick® Clutch.

Today, Eaton's Airflex® product line provides solutions for a wide variety of applications ranging from oil rigs to mining shovels to grinding mills to tugboats. Whether your applications requires a standard product or a custom solution, the Eaton team is available to assist with all of your product needs. T

o learn more about how Airflex® products can meet your application requirements, get in contact with Kendrion Industrial Drive Systems.



### Airflex® advantage World Class. Worldwide.

#### Engineered to last

Together with our partner Eaton we can look back on 70 years of experience in the production of industrial clutches and brakes with ground-breaking, innovative and approved product design. The results are high-performance solutions for applications which come up to their standards. All Airflex® products are backed by service to ensure complete satisfaction.

#### Customized solutions

Kendrion Industrial Drive Systems Application Engineering team is available to work with your engineers to optimize an application solution. From a single component to a complete system solution, the Industrial Drive Systems application engineering and sales team are ready to help you get the job done right the first time and every time. To learn more about how Airflex® products can meet your application requirements, visit Kendrion Industrial Drive Systems at [www.kendrion.com](http://www.kendrion.com).

### Airflex® replacement parts Providing the highest reliability

When you purchase an Eaton product, you expect a quality solution that will keep your application running at peak performance under the harshest operating conditions. Eaton continuously strives to produce the highest quality product available because that is what customers require. There are various choices in the market for friction material and other replacement parts, but why risk performance. Genuine Airflex® replacement parts are an exact fit and will ensure your clutch or brake will continue to perform to original specifications for its entire operating life. Airflex®, the original designer and only source of the Fawick® clutch and replacement parts.

**Providing the highest reliability in harsh duty conditions for the lowest total life cycle cost...**

## APPLICATIONS

**Marine**  
Clutches for main and auxiliary drives

**Can making**  
Bodymaker or cupper

**Dynamometer**  
Absorber, holding brake

**Engines**  
Generator set, power take-off

**Logging**  
Skidders, yarders

**Paper**  
Calender, converters, conveyor, couch, dryer, presses, pulpers, reel, rewind stand, slitters, unwind stand, yankee dryer

**Mining & cement**  
Conveyors, crushers, dragline, grinding mills, shovels

**Metalworking**  
Alligator shear, car shredders, coining press, draw benches, expanders, flywheel brakes, forging presses, headers / upsetters, machine tools, multi-slide, powder metal presses, press brakes, rebar shear, rewind stands, roll forming, roller leveler, shears, slitters, spring coiling, stamping, punching & forming presses, unwind stands, wire cage

**Gas, oil, water well drilling**  
Cat head, compound, drawworks, offshore pipe laying, mooring systems, power take-off, pumps, rotary table, sand reel, top drive

# Airflex® Product Categories



Constricting clutches & brakes



Caliper disc brakes



Constricting clutches & brakes



Expanding clutches & brakes



Constricting clutches & brakes



Spring applied drum brakes



Water cooled brakes



Rotorseals

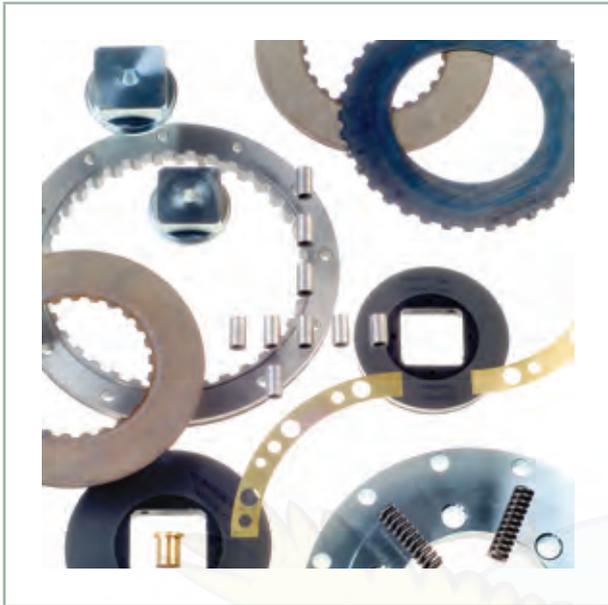


Air cooled disc clutches & brakes



Quick Release Valves

## Original Spare Parts from BINDER. Much more than just replacement...



If it comes to spare parts for BINDER products you should avoid experiments. Only original BINDER spare parts and spare devices guarantee reliability, and you can only obtain these proven spare parts from us. The BINDER service network guarantees availability worldwide.

Our regular customers have long known how reliable BINDER spare parts are, because only they are perfectly compatible and allow the full operation of your machines.

If you believe in long-term reliability and smooth operation you should make sure to use exclusively Original BINDER spare parts. In the long run this investment is always worth it.

## Kendrion BINDER Spare Parts Easy to find, fast to get...



High-quality spare parts are one thing – finding and getting the right parts easily and fast another. In order to make our service as convenient and safe as possible we support you from the start in your search for the desired spare part or spare device.

You can always count on our spare parts supply. Our flexible production and powerful logistics as well as the competence of our service-oriented employees allow for quick and competent help in any situation.

No enterprise can afford unnecessary delays because of machines going out of service. Due to our Service Competence Center short reaction times are possible worldwide. In urgent cases we deliver goods in stock within 24 hours.

## Notes





INDUSTRIAL DRIVE SYSTEMS

WE MAGNETISE THE WORLD

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