



Your system partner
for intralogistics

For you – from us

What makes b-drives special?

Our motivation and expertise are the strong points of b-drives.

With our specialist knowledge and sophisticated innovations, we offer you drive solutions to match your needs. We work in close coordination with you to implement your requests, starting by gathering your exact technical, logistical and commercial requirements. Our experience and skills in the areas of design, control technology, software and our extensive application knowledge provide tangible added value on the road towards implementation. From motors preassembled with cable and plug to completely customised drive solutions consisting of gearbox, motor, brake, control system and software, we can implement your project right up to the application stage.

We work together with you to develop the drive package suitable for you and look forward to getting to know you and your requirements.

b-drives: key facts

b-drives® is a trademark of Breuell & Hilgenfeldt GmbH and part of the Breuell and Hilgenfeldt Group

- A team of 120 motivated and qualified colleagues
- In-house development
- Each year, we deliver more than 40,000 drive solutions by b-drives® to customers in medical technology, robotics, intralogistics, mechanical engineering and the pharmaceutical industry.



Modular system plus customisation

Your solution for intralogistics

We have been a reliable and successful partner in the intralogistics sector for many years thanks to our flexible modular system along with numerous additional possibilities for customisation and adaptation. Here are a few examples of the successful application of our products in the field of intralogistics.

We offer you the optimal combination of availability, economic efficiency and precision fitting with minimal effort on your side.

We achieve this by using standard or near-standard

components for the motor in combination with a customer-specific gearbox solution.

Because our motors and gearboxes can be flexibly combined, we are able to cover a broad range of performance.

Don't hesitate to contact us; together we will find the optimal solution for your application!

b-drives process:

Working together with you – from idea to series production



Consultation

In dialogue with you. All steps are discussed and agreed with you and then tailored to suit your needs



Construction & development

Client-specific solutions with the development of b-drives



Optimisation

Optimisation in terms of efficiency, assembly space or performance data



Assembly space

You have limited assembly space; we have the suitable drive solution



Plug & Play

Ready-to-install, customer-specific drive solutions



Last mile

We design and build the product to fit right into your application and supply you with plug-and-play solutions for series assembly straight out of the box



Commissioning

On-site support for sample and series commissioning



Logistics

High availability and adjusted to your requirements

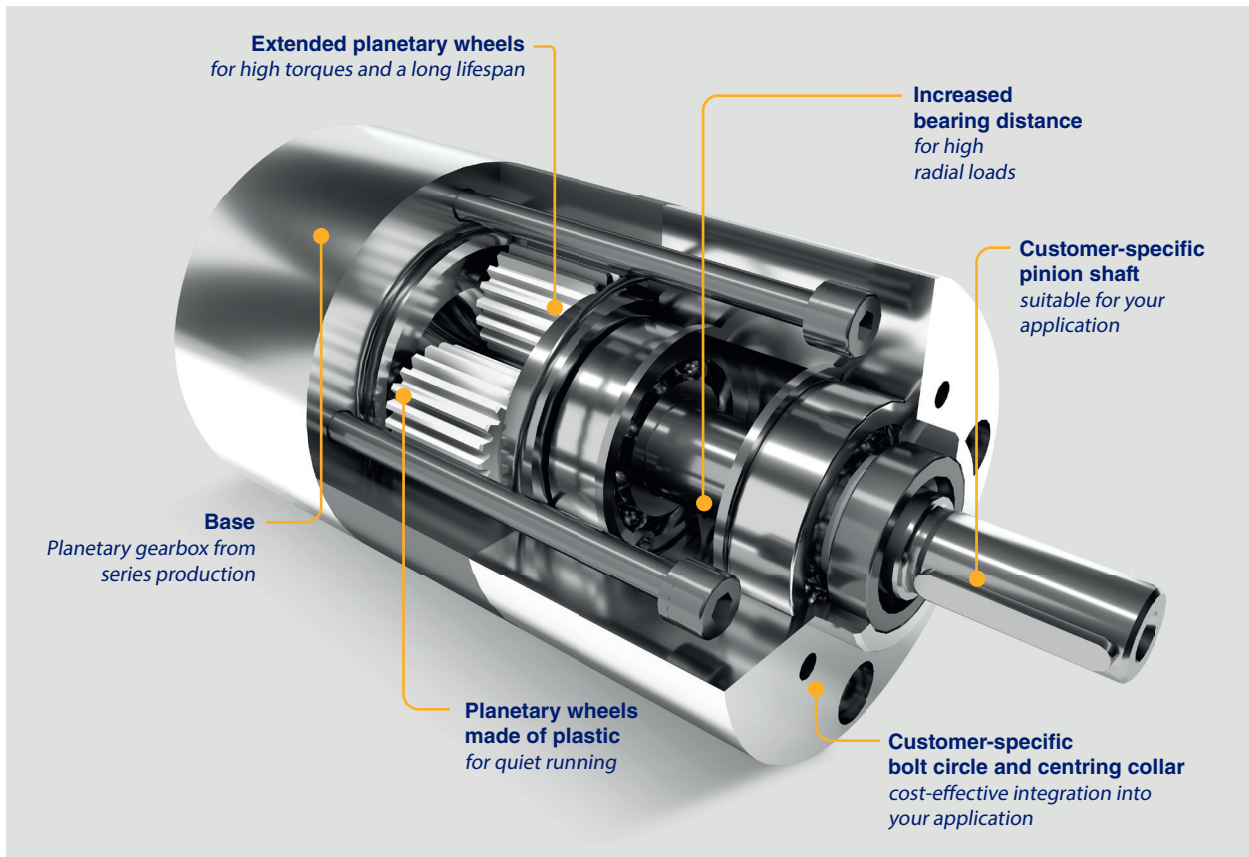


Personal support

We provide personal, client-specific, quick and competent support in all commercial, logistical and technical matters – even for series production

Example: planetary gearbox

Robust and smooth



The optimal combination of robustness and smooth running

The gearbox is modified according to customer wishes, but its basic design is the same as that of a gearbox from large-scale production.



Application examples:

- Drive belt converter
- Caster switch
- Roller conveyor
- Cross-belt sorter

Example: worm gearbox

Noise-optimised and ready for assembly



Compact, quiet, long-lasting and cost-effective

Ready to assemble straight out of the box thanks to the customised shaft and the preassembled clamp ring.

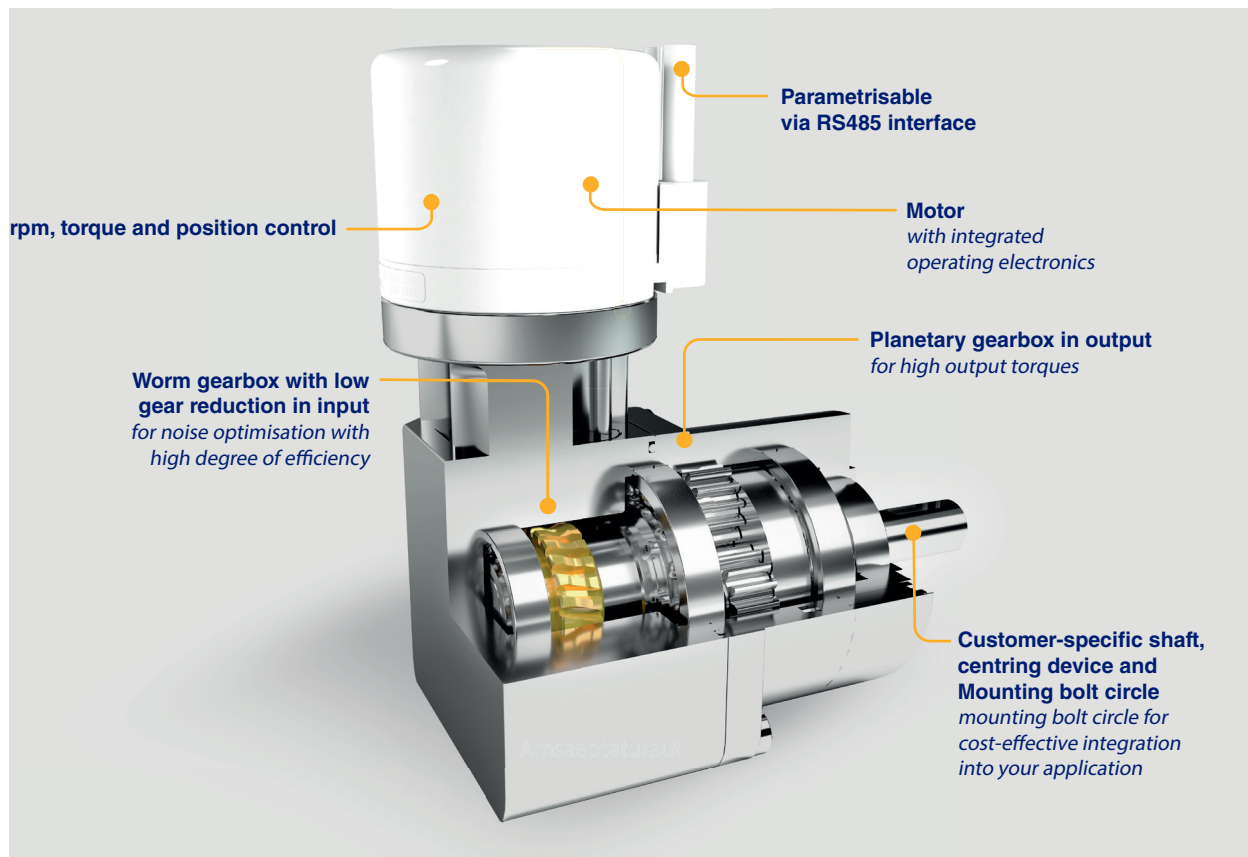


Application examples:

- Conveyor drive
- Pusher
- Damper actuator
- Swing-arm sorter

Example: worm planetary gearbox

Compact angular gearbox without self-locking effect



The best of both worlds:

The worm planetary gearbox unites the advantages of the worm gearbox with those of the planetary gearbox and offers you an angular gearbox with high efficiency, high permissible output torque and no self-locking effect.

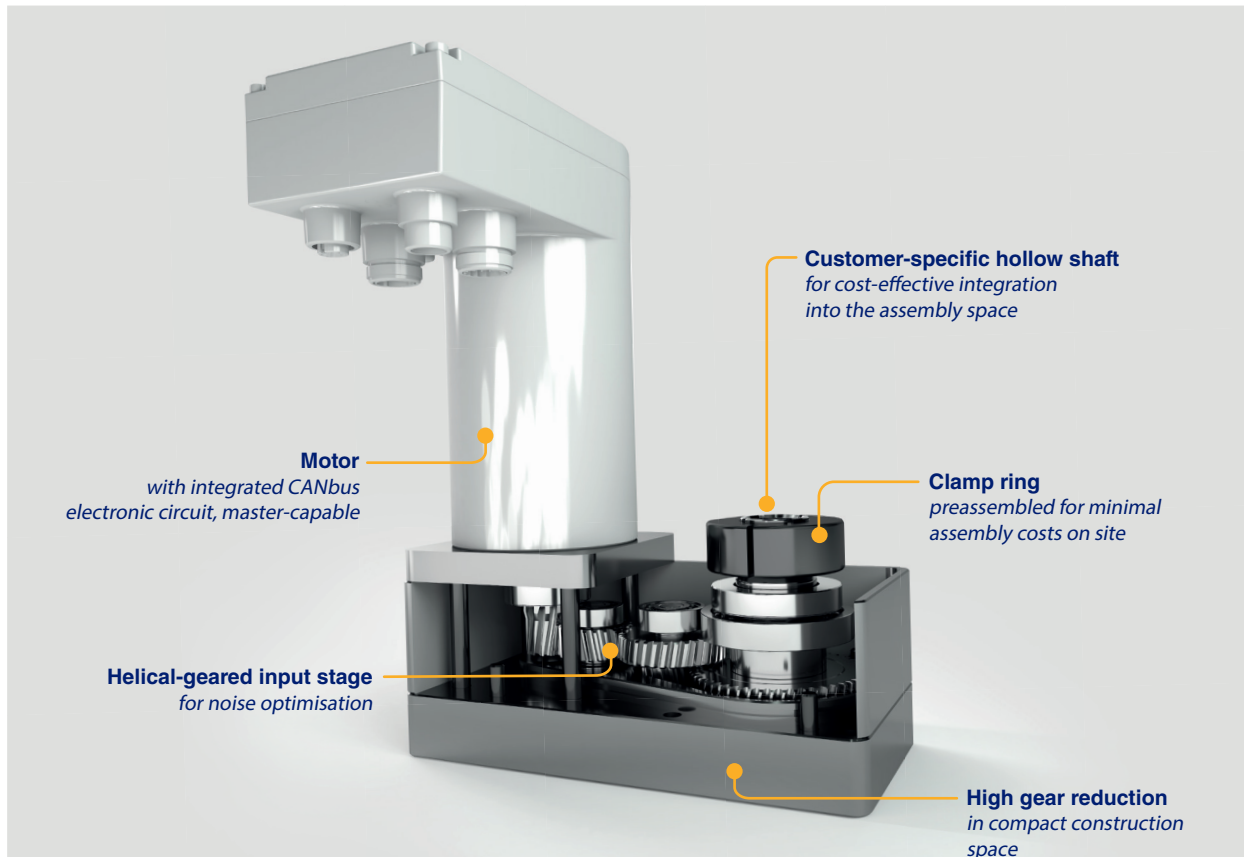


Application examples:

- Caster switch
- Belt conveyor
- Roller conveyor
- Cross-belt sorter

Example: helical gearbox

Compact gearbox solution with high gear reduction



Compact drive unit designed for your application

The helical gearbox motor unit with integrated, master-capable, programmable CANbus electronic circuit is an extremely compact, flexible and intelligent solution for numerous applications in intralogistics.

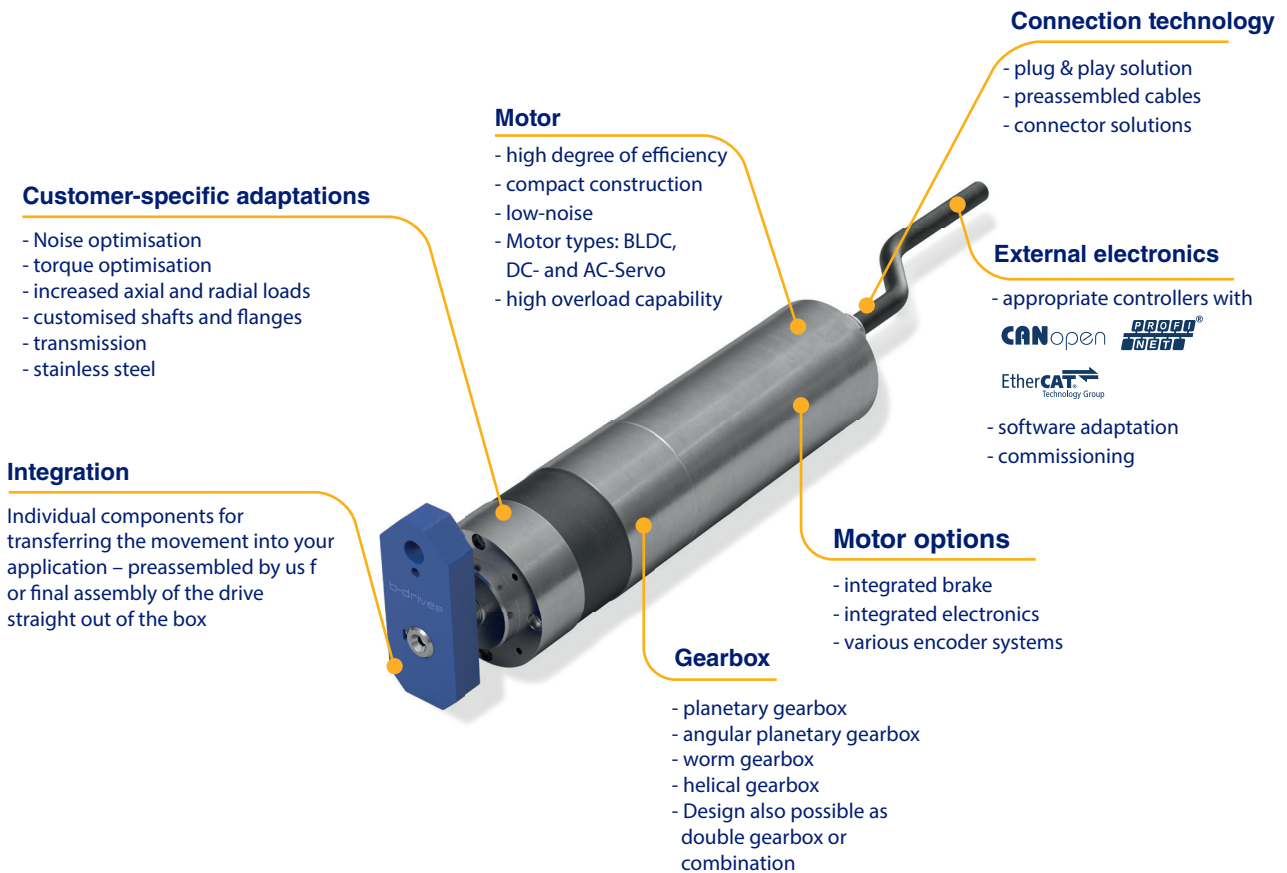


Application examples:

- Drive belt converter
- Shuttle propulsion
- Lifting eccentric
- Pusher

Drive solutions

The complete solution for your application



Feature	DC Servos / BLDC		AC Servos	
	24/48 DC	60 DC	230 AC	400 AC
Voltage	24/48 DC	60 DC	230 AC	400 AC
Maximum power	0,75 kW	0,75 kW	3,1 kW	108 kW
Motor nominal torque	1,8 Nm	2,45 Nm	9,96 Nm	345 Nm
int. electronic I/O	✓	-	-	-
int .electronic CAN	✓	-	-	-
iQ encoder for SIEMENS Microdrive	✓	-		-
Ext. elektronikCAN / ProfiNet / EtherCAT			✓	
STO			✓	
Integrated / external brakes			✓	
Hall sensors			✓	
Incremental encoder			✓	
Resolver	-	✓	✓	✓
Absolute encoder (multiturn)			✓	
sine/cose inkremental encoder	-	✓	✓	✓
Protection class	IP 40/54		IP 65	
Planetary gearbox up to nominal torque			950 Nm	
Worm gearbox up to nominal torque			20 Nm	
Double worm gearbox up to nominal torque			120Nm	

Our modular assembly principle

Gearboxes adapted to customer needs come together with motors and controllers from the standard modular system

With us, you get the best of both worlds:

economic efficiency and availability through standard motors, and optimal accuracy of fit and function for your application through the possible adaptations to gearboxes, controllers with CANbus, ProfiNet, EtherCAT, brakes and encoders.

Our modular assembly principle allows the solutions to be scaled across the entire performance area and we can offer you customised, compact drive solutions for the entire range.

easy integration
ProfiNet
customising
CANbus optimised EtherCAT
system costs SIEMENS MicroDrive
COMPACT
standard modular system
PERSONAL SUPPORT

We also look forward to enquiries which challenge us. Contact us so that together we can find the best solution for your application.



eWheel: Your wheel drive for automated guided vehicles (AGV)

As part of Breuell & Hilgenfeldt GmbH and as a system partner of the company ebm-papst, the b-drives team has over 10 years' experience in the design, control and application of electric drives. We have been supplying optimally customised drive systems to numerous customers in the mechanical engineering industry and intralogistics. The eWheel was specially developed by b-drives as a wheel drive system for automated guided vehicles.

With the eWheel from b-drives, your transport systems can bring even large payloads safely to their destination, even in very tight spaces. The eWheel is the most compact system on the market for this purpose and easily adapts itself to your design ideas thanks to its flexible modular system. But that's not all: despite its small size, the e-

Wheel proves impressive with a very high power density and high efficiency. This results in high vehicle availability. The b-drives assembly concept ensures convenient changing of the wheels. The wheel can be changed in a few seconds by loosening just three screws. Behind the gearbox-wheel unit, a modern BLDC motor with a redundant feedback system ensures drive safety. The overload capacity comes into its own during vehicle acceleration and when negotiating inclines. And the best part is that our innovative wheel drive is the cost benchmark for AGV drive systems.

Complete.

Control electronics

Double axis controller
Power supply voltage up to 60 V
Peak current up to 60 A

Bus interfaces

CANopen  EtherCAT 

Functional safety

Up to SIL3 / PL e

Wheel

Planetary gearbox
with = 11 / i = 20 / i = 30
Three different wheel diameters
Application-specific wheel materials possible

BLDC motor

Sizes S / M / L / XL
Parking brake with emergency stop function

Redundant feedback system

High-resolution incremental encoder
Hall sensors

Compact.

Lowest construction length

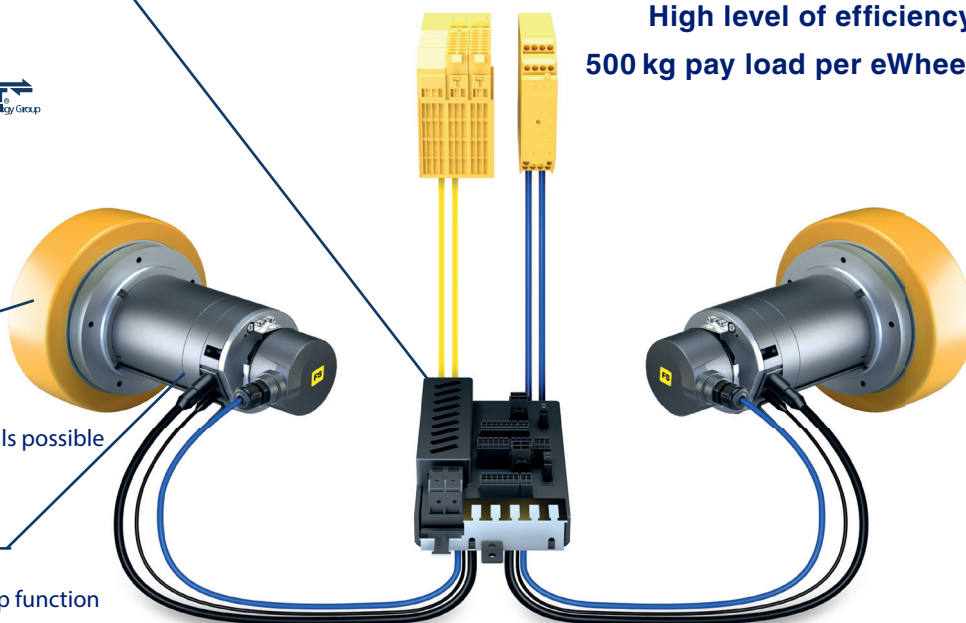
High overload

High power density

Low tare weight

High level of efficiency

500 kg payload per eWheel



Are your requirements not listed? Don't hesitate to contact us!

We will check your requests for feasibility!

→ [Contact](#)

Flexible modular system

eWheel	Unit	S	M	L	XL
Overall length	mm	109	199	219	238
Maximum speed	m / s	0.7 – 3.0	1.0–3.7		
Maximum torque	Nm	29 – 100	24 – 66	35 – 97	53 – 100
Nominal voltage	V	24 / 48			48
Motor protection class	–	IP00	IP54		
Wheel protection class	–	IP69			
Wheel diameter	mm	140 / 160 / 200			
Parking brake with emergency stop function	Nm	1–3			
Redundant feedback system with Hall sensors and incremental encoder	–	✓			
Permissible load capacity per wheel	kg	500			
Wheel materials	–	Vulkollan® 92° Shore A			
Options		✓			
Functional safety STO PL e	–	✓			
Safety encoder attachment	–	x	✓		
Application-specific wheel material		✓			
Attachment to the vehicle		from the exterior/interior of the vehicle or above the drive using a mounting bracket			

Functional safety for automated guided vehicles

In normal operation, the eWheel's BLCD motor brakes dynamically, thus feeding energy back into the battery or into other consumers. For safety-related emergency braking, the eWheel is equipped with a mechanical parking brake with emergency stop function. The brake torque is correspond-

ingly increased by the gearbox, so that the vehicle comes to a safe halt even in unfavourable operating situations. We can adapt the nominal brake torque to your application.

For functional safety in terms of the electronics, the eWheel offers the following possibilities:

Solution with STO

The double axis controller is equipped with STO according to PL e. This means that the torque of two drives can be switched off via a safe channel (e.g. from a safety PLC). Of course, it is possible to activate the parking brakes together with the STO.

Redundant feedback system for SLS and SDI

The motors always have two independent feedback systems each as standard: 1. Hall sensors for commutation 2. High-resolution incremental encoder for control The rpm can be recorded in a functionally safe way by comparing both signals with a corresponding electronics system.

Solution with SLS and SDI using a safety encoder

As a further option, we can mount a safety encoder on the eWheel. The possible design types are sine/cosine encoders, TTL or HTL incremental encoders. These signals can be evaluated in corresponding modules of the safety controls.

Solution with SLS and SDI with Siemens MicroDrive-PDC

The eWheel can be optionally equipped with motors that are compatible with the MicroDrive-PDC by Siemens. By using the PDC-F series by Siemens, numerous safety functions are thus automatically available via PROFIsafe.



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For questions, please contact:

Ms Anna-Lena Bösche

Sales

Tel.: +49 40 / 53 80 92 - 97

E-mail: boesche@bh-gmbh.com

Mr Robert Nohr

Sales

Tel.: +49 40 / 53 80 92 - 57

E-mail: nohr@bh-gmbh.com

Imprint

Breuell & Hilgenfeldt GmbH

Oststraße 96

22844 Norderstedt, Germany

Mail: info@b-drives.de

Phone: +49 40 / 53 80 92 - 430

Managing directors: Dipl.-Ing.

Reinhard Breuell, Ing. Dirk Kahl

Kiel district court HRB 16520

VAT ID DE 163 022 111

Tax no. 50/709/00221