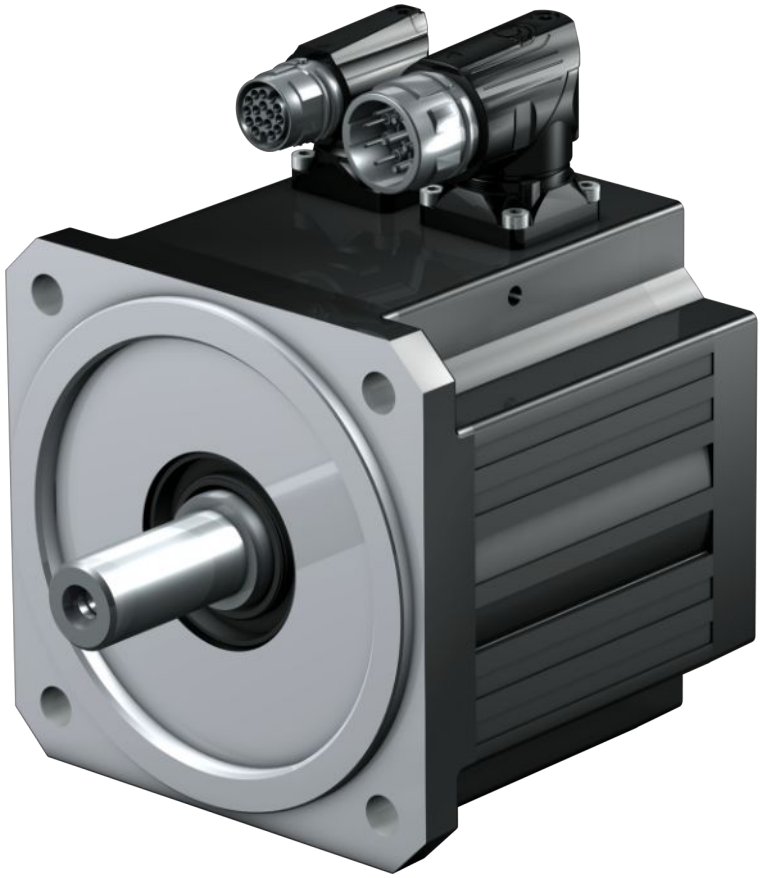

EZ motors in combination with Allen-Bradley Kinetix 5500/5700/6500
Information on compatibility

en-US
04/2026
ID 443244_en.02

STÖBER

Table of contents

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1 Foreword

The STOBER synchronous servo motors of the EZ series can be operated with drive controllers from a wide range of manufacturers – for example with the Kinetix 5500/5700/6500 servo drives from Allen-Bradley (referred to below as drive controllers).

The encoders, plug connectors and terminal assignments of the STOBER motors are compatible with the aforementioned drive controllers. We recommend using only original cables from Allen-Bradley.

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2 Information on this documentation

This documentation contains information on the compatibility of STOBER synchronous servo motors of the EZ series with the Kinetix 5500/5700/6500 drive controllers from Allen-Bradley. The relevant operating manual applies to installation, connection and commissioning.

2.1 Timeliness

Check whether you have the latest version of this documentation. The latest document versions for our products are available for download on our website:
http://www.stoeber.de/en/downloads/.

2.2 Original language

The original language of this documentation is German; all other language versions are derived from the original language.

2.3 Limitation of liability

This documentation was created taking into account the applicable standards and regulations as well as the current state of technology.

No warranty or liability claims for damage shall result from failure to comply with the documentation or from use that deviates from the intended use of the product. This is especially true for damage caused by individual technical modifications to the product or the project configuration and operation of the product by unqualified personnel.

2.4 Formatting conventions

Orientation guides in the form of signal words, symbols and special text markups are used to emphasize specific information so that you are able identify it in this documentation quickly.

2.4.1 Distinction of text elements

Certain elements of the continuous text are distinguished as follows.

Important information	Words or expressions with a special meaning
Interpolated position mode	Optional: File or product name or other name
Detailed information	Internal cross-reference
http://www.samplelink.com	External cross-reference

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2.5 Trademarks

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3 Connection

The terminal assignment of the plug connectors of STOBER synchronous servo motors of the EZ series – in the version for Allen-Bradley drive controllers – is identical to that of the motors from Allen-Bradley. The customer can therefore obtain and connect the corresponding Allen-Bradley original cables. STOBER does not offer any connection cables for Allen-Bradley drive controllers, but can recommend an appropriate cable family on request.

3.1 Possible combinations with drive controllers

The following table shows the possible combinations of STOBER motors and geared motors with drive controllers from Allen-Bradley depending on the encoder model.

Information

The safety functionality of the encoders cannot be used in combination with Allen-Bradley drive controllers because, for applications with safety functionality, Allen-Bradley only permits its own motors.

Drive controller		**KINETIX 5500 OCS** HIPERFACE DSL	**KINETIX 5700 OCS** HIPERFACE DSL	**KINETIX 5700** EnDat 2.2	**KINETIX 6500** EnDat 2.2
Drive controller code		HB	GD	HA	GC
Connection plan ID		443169	442449	443096	442448
Encoder	**Encoder code**				
EnDat 2.2 EQN 1135 Safety	S3	–	–	EZ	EZ
EDM35	H6	EZ	EZ	–	–

The encoder and drive controller codes are a part of the type designation of the motor.

3.2 Encoders

Information

The safety functionality of the encoders cannot be used in combination with Allen-Bradley drive controllers because, for applications with safety functionality, Allen-Bradley only permits its own motors.

Encoders with EnDat 2.2 interface

Encoder model	Code	Measuring method	Recordable revolutions	Resolution	Position values per revolution	MTTF [years]	PFH [h]
EnDat 2.2 EQN 1135 Safety	S3	Optical	4096	23 bit	8388608	> 100	$\leq 15 \times 10^{-9}$

Encoders with HIPERFACE DSL interface

Encoder model	Code	Measuring method	Recordable revolutions	Resolution	Position values per revolution	MTTF [years]	PFH [h]
EDM35	H6	Optical	4096	20 bit	1048576	> 100	$\leq 31 \times 10^{-9}$

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Notes

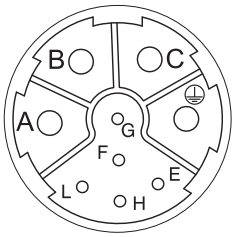
- The encoder code is a part of the type designation of the motor.
- Safety = Safety-related position measuring system for use in safety-oriented applications.
- Multiple revolutions of the motor shaft can be recorded only using multi-turn encoders.

3.3 Two-cable solution

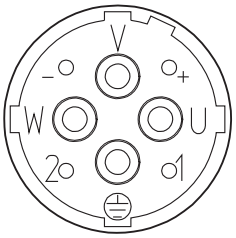
3.3.1 Terminal assignment of the power plug connector

The size and connection diagram of the power plug connector depend on the size of the motor.

Plug connector size con.23

Connection diagram	Pin	Connection
	A	1U1 (U phase)
	B	1V1 (V phase)
	C	1W1 (W phase)
	F	MBRK + (1BD1)
	G	MBRK – (1BD2)
	E	
	H	
	L	
	⏚	PE (grounding conductor)

Plug connector size con.40

Connection diagram	Pin	Connection
	U	1U1 (U phase)
	V	1V1 (V phase)
	W	1W1 (W phase)
	+	MBRK + (1BD1)
	–	MBRK – (1BD2)
	1	
	2	
	⏚	PE (grounding conductor)

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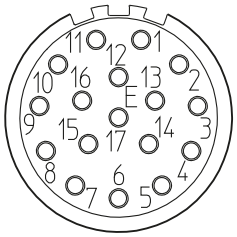
3.3.2 Terminal assignment of the encoder plug connector

The size and terminal assignment of the encoder plug connectors depend on the model of encoder installed and the size of the motor.

EnDat 2.2 digital encoder, plug connector size con.23

Connection diagram	Pin	Connection
	1	
	2	
	3	
	4	
	5	DATA +
	6	DATA –
	7	CLK + (Clock +)
	8	CLK – (Clock –)
	9	EPWR_5V (Up +)
	10	ECOM (0 V)
	11	
	12	
	13	TS + (1TP1)
	14	TS – (1TP2)
	15	
	16	
	17	

3.3.3 Plug connectors

In the standard version, STOBER synchronous servo motors are equipped with rotatable plug connectors[1] for power and encoder connections. You can find detailed technical information about the plug connectors at http://www.intercontec.biz.

For motors with forced ventilation, avoid collisions between the motor connection cables and the plug connector of the forced ventilation unit. In the event of a collision, rotate the plug connectors of the motor by the required angle.

In Allen-Bradley motors, NTC temperature sensors are installed as standard. STOBER uses PTC or Pt1000 temperature sensors for winding protection. Therefore, overheat protection must be implemented in the Allen-Bradley drive controller using the i2t model.

In a two-cable solution, the temperature sensor (PTC or Pt1000) connections are routed via the encoder plug connector. These cannot be used on the Allen-Bradley drive controller.

[1] The connectors can be pivoted up to 10 times at a specific angle. They cannot be rotated repeatedly.

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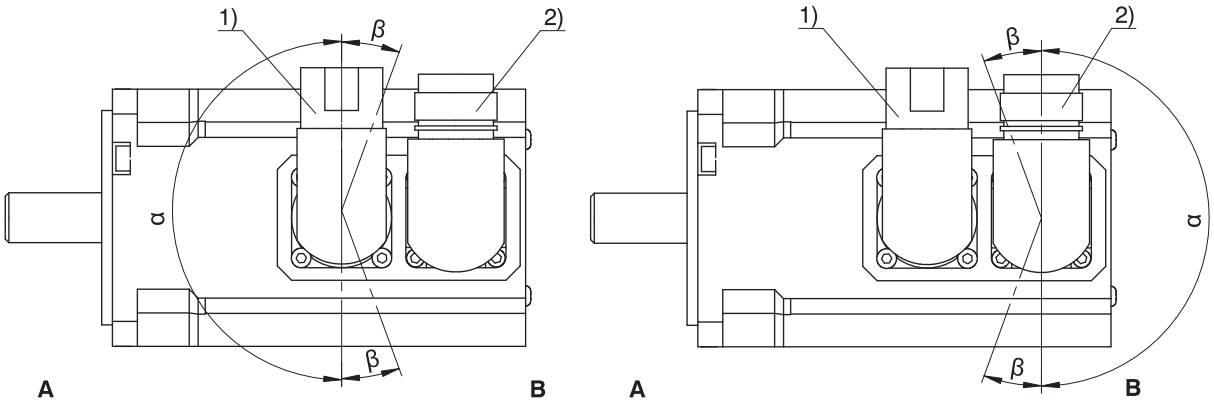
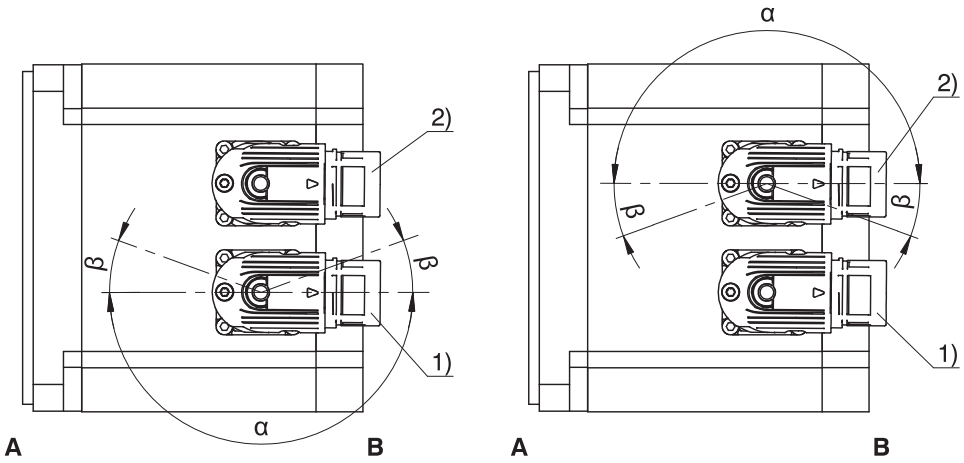
The figures represent the position of the plug connectors upon delivery.

Turning ranges of plug connectors (EZ2 – EZ3 motors)



Turning ranges of plug connectors (EZ4 – EZ8 motors)



1	Power plug connector	2	Encoder plug connector
A	Attachment or output side of the motor	B	Not output side

Power plug connector features

Motor type	Size	Connection	Turning range	
			α	β
EZ2, EZ3	con.23	Quick-lock	180°	120°
EZ4, EZ5, EZ701, EZ702, EZ703	con.23	Quick-lock	180°	40°
EZ705, EZ8	con.40	Quick-lock	180°	40°

Encoder plug connector features

Motor type	Size	Connection	Turning range	
			α	β
EZ2, EZ3	con.23	Quick-lock	180°	120°
EZ4, EZ5, EZ7, EZ8	con.23	Quick-lock	190°	35°

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Notes

- The number after "con." indicates the approximate external thread diameter of the plug connector in mm (for example, con.23 designates a plug connector with an external thread diameter of about 23 mm).
- In turning range β, the power or encoder plug connectors can be turned only if doing so does not cause them to collide.

3.4 One Cable Solution

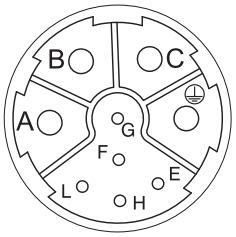
3.4.1 Terminal assignment for plug connectors (One Cable Solution)

In the One Cable Solution design, the power and encoder lines are connected using a shared plug connector.

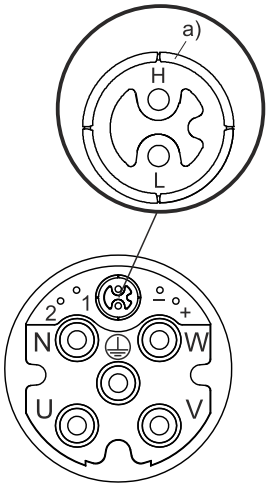
The size of the plug connector depends on the size of the motor.

The temperature sensor of the motor is connected to the encoder internally. The measured values from the temperature sensor are transmitted via the log of the encoder.

Plug connector size con.23

Connection diagram	Pin	Connection
	A	1U1 (U phase)
	B	1V1 (V phase)
	C	1W1 (W phase)
	E	DATA + (DSL +)
	F	MBRK + (1BD1)
	G	MBRK – (1BD2)
	H	DATA – (DSL –)
	L	
	⏚	PE (grounding conductor)

Plug connector size con.40

Connection diagram	Pin	Connection
	U	1U1 (U phase)
	V	1V1 (V phase)
	W	1W1 (W phase)
	N	
	+	
	–	
	1	MBRK + (1BD1)
	2	MBRK – (1BD2)
	H	DATA – (DSL –)
	L	DATA + (DSL +)
	⏚	PE (grounding conductor)
a) Coaxial shield to which the DSL shield is connected		

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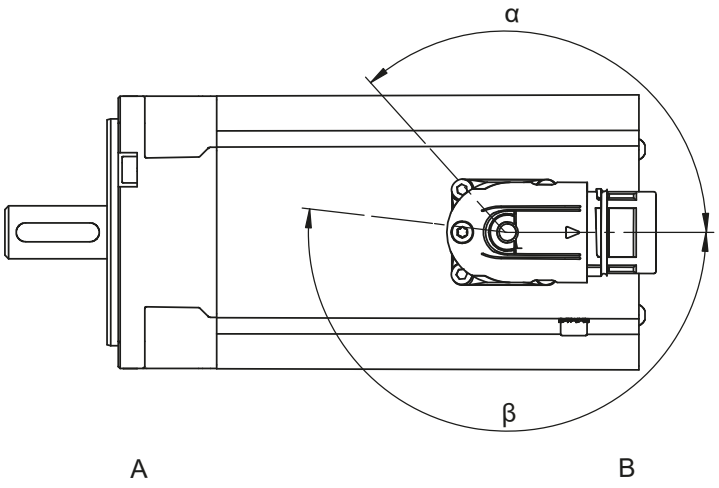
3.4.2 Plug connectors (One Cable Solution)

For motors with forced ventilation, avoid collisions between the motor connection cables and the plug connector of the forced ventilation unit. In the event of a collision, rotate the plug connectors of the motor by the required angle.

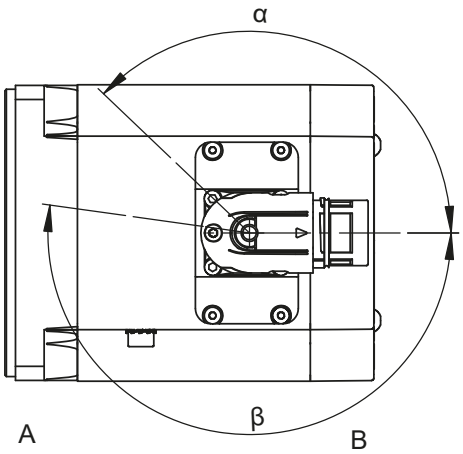
The figures represent the position of the plug connectors upon delivery.

Turning ranges of plug connectors (EZ2 – EZ3 motors)



A	Attachment or output side of the motor	B	Not output side

Turning ranges of plug connectors (EZ4 – EZ7 motors)



A	Attachment or output side of the motor	B	Not output side

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Plug connector features

Motor type	Size	Connection	Turning range	
			α	β
EZ3 – EZ5, EZ701 – EZ703, EZ705U (n_N=3000 rpm)	con.23	Quick-lock	130°	190°
EZ705U (n_N=4500 rpm), EZ705B, EZ813U	con.40	Quick-lock	130°	190°

Notes

- The number after "con." indicates the approximate external thread diameter of the plug connector in mm (for example, con.23 designates a plug connector with an external thread diameter of about 23 mm).

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4 Commissioning

Only put the motor into operation if you have reviewed its installation and connection in accordance with the associated operating manual, as well as all other necessary requirements specific to your system. In addition, follow the instructions for commissioning your drive controller in the third-party manufacturer's documentation.

4.1 Parameterizing the motor

After the motor has been installed and connected to the corresponding drive controller, parameterization takes place in Allen-Bradley's Studio 5000 commissioning software.

As a specific parameterization list is required for this, please contact STOBER System Support at systemsupport@stoeber.de and send either your order number or the series, size and type designation of the motor as well as the type of drive controller used. You will receive the requested list immediately by e-mail.

To parameterize the STOBER motor on the Allen-Bradley drive controller, you also need a corresponding CMF file. You can find this in our download center at http://www.stoeber.de/en/downloads/ by entering the ID 442849 in the search box. Then import the CMF file into the Studio 5000 installation folder.

The electronic nameplate of STOBER motors is stored in the encoder memory and can be read by Allen-Bradley drive controllers. The electronic nameplate contains all the necessary motor parameters that the drive controller needs to operate the motor reliably.

Information

The commutation offset of the motor comes from the factor set in such a way that calibration by the customer is not necessary.

5 Appendix

5.1 Further information

The documentation listed below provides you with further relevant information on the motors. The current status of the documentation can be found in our download center at:
http://www.stoeber.de/en/downloads/.
Enter the ID of the documentation in the search.

Title	Documentation	Contents	ID
Synchronous Servo Motors EZ	Operating manual	Technical data, transport and storage, installation, connection, commissioning, service	443032_en

The documentation for the drive controllers and a current version of the Studio 5000 commissioning software are available in the download area of Allen-Bradley at:
https://www.rockwellautomation.com/en-us/support/product/product-downloads.html.

5.2 Abbreviations

Abbreviation	Meaning
GND	Ground
OCS	One Cable Solution
PE	Protective Earth (grounding conductor)
PTC	Positive Temperature Coefficient

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6 Contact

6.1 Consultation, service and address

We would be happy to help you!

We offer a wealth of information and services to go with our products on our website:
http://www.stoeber.de/en/service

For additional or personalized information, contact our consultation and support service:
http://www.stoeber.de/en/support

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replace@stoeber.de

Call our 24-hour service hotline:
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Our address is:
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75177 Pforzheim, Germany

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Thank you for your interest.
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+43 7613 7600-0
sales@stoeber.at

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www.stober.fr
+33 478 98 91 80
sales@stober.fr

STOBER ITALY
www.stober.it
+39 02 93909570
sales@stober.it

STOBER KOREA
www.stober.kr
+82 10 5681 6298
sales@stober.kr

STOBER SWITZERLAND
www.stoeber.ch
+41 56 496 96 50
sales@stoeber.ch

STOBER TURKEY
www.stober.com
+90 216 510 2290
sales-turkey@stober.com

STOBER USA
www.stober.com
+1 606 759 5090
sales@stober.com

STOBER CHINA
www.stoeber.cn
+86 512 5320 8850
sales@stoeber.cn

STOBER Germany
www.stoeber.de
+49 7231 582-0
sales@stoeber.de

STOBER JAPAN
www.stober.co.jp
+81-3-5875-7583
sales@stober.co.jp

STOBER SWEDEN
www.stober.com
+46 702 394 675
neil.arstad@stoeber.de

STOBER TAIWAN
www.stober.tw
+886 4 2358 6089
sales@stober.tw

STOBER UK
www.stober.co.uk
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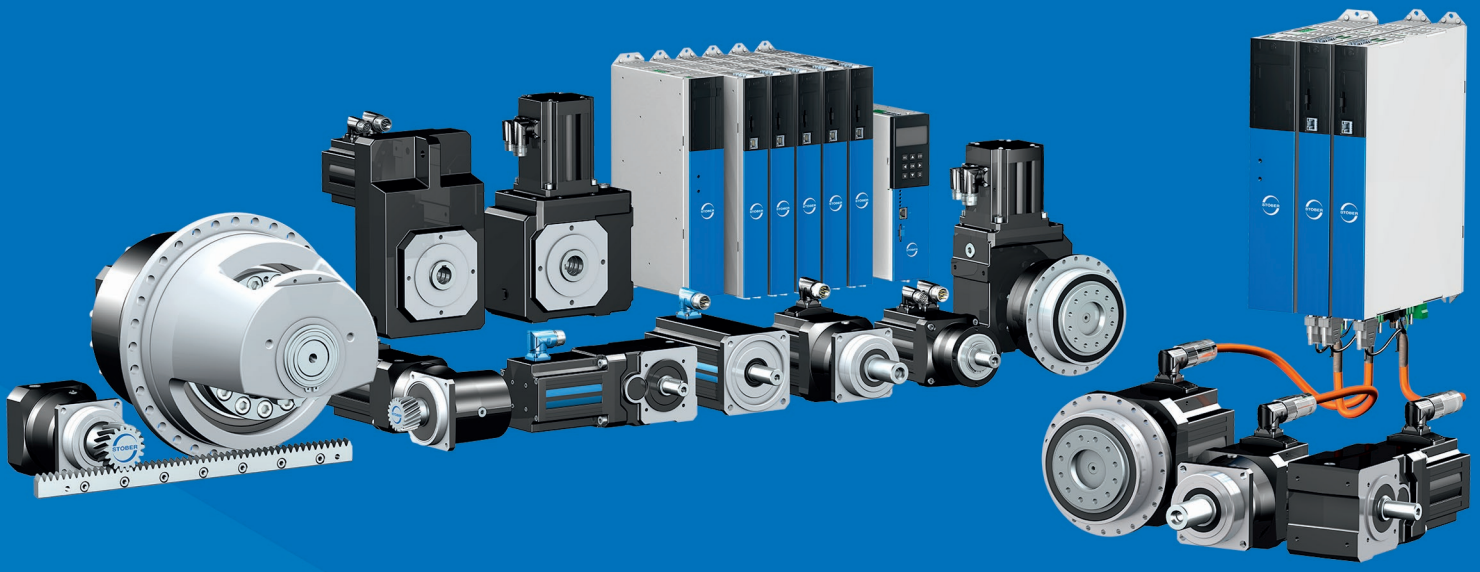

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STÖBER Antriebstechnik GmbH + Co. KG
Kieselbronner Str. 12
75177 Pforzheim
Germany
Tel. +49 7231 582-0
mail@stoeber.de
www.stober.com

24 h Service Hotline
+49 7231 582-3000