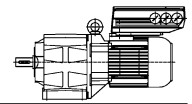


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**Drive solutions for decentral and central Drive
technology**

533-546



FCD 300

All Bauer gear motors from 0.37 to 3.0 kW are available with an externally mounted FCD frequency inverter. The frequency inverters in the range FCD300 are mounted directly to the motor in place of the terminal box. The inverters can alternatively be installed in the vicinity of the motor.



Features of FCD geared motors

Flexible assembly

- The FCD300 can be either mounted on the Bauer gear motor or in the vicinity

Simple cabling

- Through spring connectors and a large installation area in the installation box Cable entries 3 X M25, 2 X M20, 2 X M16
- Maximum cable cross section: Control contacts: 2,5 mm², Power contacts 4 mm², PE: 10 mm²
- The installation box can be used as T-connector for the power and bus system connections
- Plug connections are available on request (e.g. Harting Connector)

Integrated Brake Control

- The gear motor brake is controlled directly from the FCD
- Brakes can be supplied from the FCD

Robust Housing

- Enclosure IP66
- Easy to clean
- Protected against aggressive environments

Advanced Bus Communication

- With Profibus DP (3 or 12 MB), AS(i) or DeviceNet
- The unit can be parameterized parallel to the standard cycle bus communication by means of the 2nd bus connection RS 485

Clearly visible status information by means of LED

- Bus
- Status
- Alarm
- Warning
- On

Integrated mains filter

- The unit contains filters for Class 1A (Industry) and mains return as standard

Technical Data for FCD 300

Power range:

0.37-3 kW (3-phase)

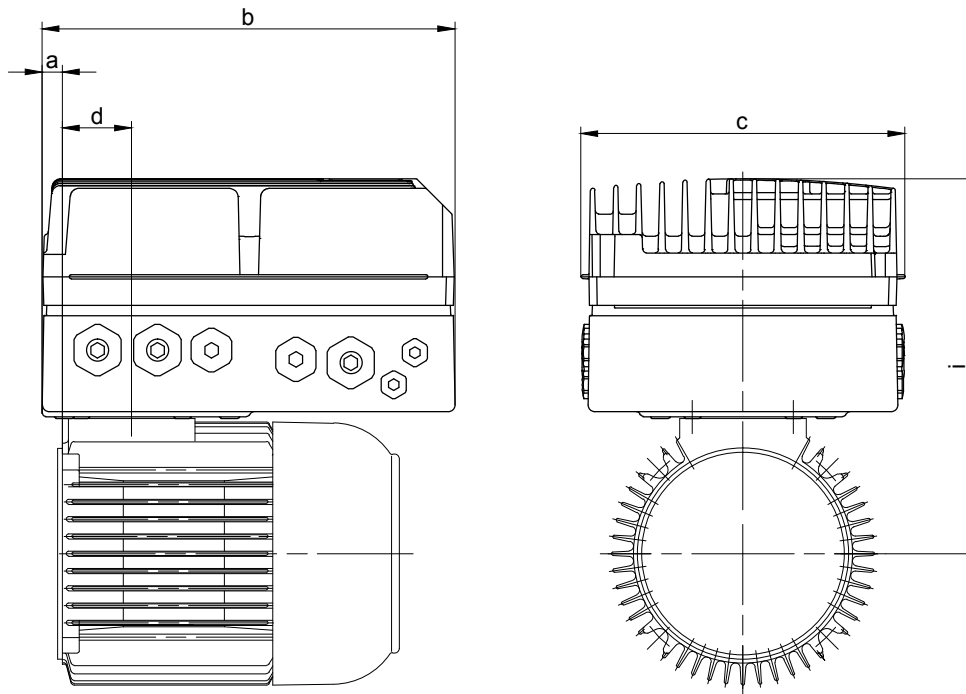
Voltage range:

380-480 V

Advantages

- Adaptation to gear motors, standard motors or assembly in the vicinity of the motor
- Enclosure IP66
- High resistance against aggressive environments
- Profibus option
- integrated EMV filter (EN 55011, 1A)
- Convection cooling, no ventilation needed
- Automatic motor adjustment
- Simple operation through separate clear text display

Allocation of FCD300 to motor



Motor	Type FCD		Dimensions (mm)					Cable entry	
			a	b	c	d	i	right	at both ends
D..08	D303	D305	13	244.5	192	40.5	222	2 x M16x1.5	4 x M16x1.5
	D307	D311						2 x M20x1.5	4 x M20x1.5
	D315							3 x M25x1.5	6 x M25x1.5
D..09	D303	D305	0	244.5	192	62	240.5	2 x M16x1.5	4 x M16x1.5
	D307	D311						2 x M20x1.5	4 x M20x1.5
	D315							3 x M25x1.5	6 x M25x1.5
D..11	D322	D330	0.5	302	258	62	266	2 x M16x1.5	4 x M16x1.5
								2 x M20x1.5	5 x M20x1.5
								3 x M25x1.5	6 x M25x1.5

Eta geared motors

All Bauer geared motors from 0.12 to 7.5 kW are available with an externally mounted Eta-K frequency inverter. These are mounted directly onto the motor in place of a terminal box. The installation volume required for the geared motor is not much greater than that required for standard geared motors.



Features of Eta geared motors

The combination of geared motor and converter opens up a whole range of attractive possibilities:

Reduce costs - Save space

- Planning and installation costs are down
- Less space needed for switchgear
- Fewer drive versions, so stock holding is streamlined
- Thermal situation inside the switchgear cabinet is better
- Fewer shielded motor cables

Think system - Avoid interfaces

- Converter and motor are integrated in a single, compact unit
- Converter is optimized ex-works for motor and application
- Retrofits available for existing drive configurations
- Cabling is simplified

Replace standards - Boost functionality

- Substitute the convenience of remote operation for mechanical actuation
- Replacement for pole-changing motors with defined ramp functions

Design features

- Compact, slimline geometry
- Plug-fit to motor
- Maintenance-friendly, accessible and easily replaced
- Complete unit, requires no external control voltage

User benefits

- Preconfigured, plug and play on application-specific basis
- Slip compensation for load-independent constant speed
- PID controller for structuring process control
- Switching frequency adjusts automatically to temperature

Technical Data for Eta-K

- Motor power range 0.12 to 7.5 kW
- Supply voltage 3 x 380 .. 480 V +/- 10%
- Frequency 50/60 Hz
- Speed range 1 : 50
- 160 % of rated motor torque over the entire frequency-converter range
- Flux braking
- Integrated Profibus interface instead of standard controller card available on request
- CE mark
- Compliant with EMC Directive for Industry and Households as per EN 61800-3 (EN 50081, EN 50082)
- Design compliant with UL requirements
- Degree of protection IP 65: motor and converter
- Integrated protection against overload, overcurrent, phase failure, overvoltage and undervoltage
- Drive is thermally monitored

Classification. Eta-K to motor

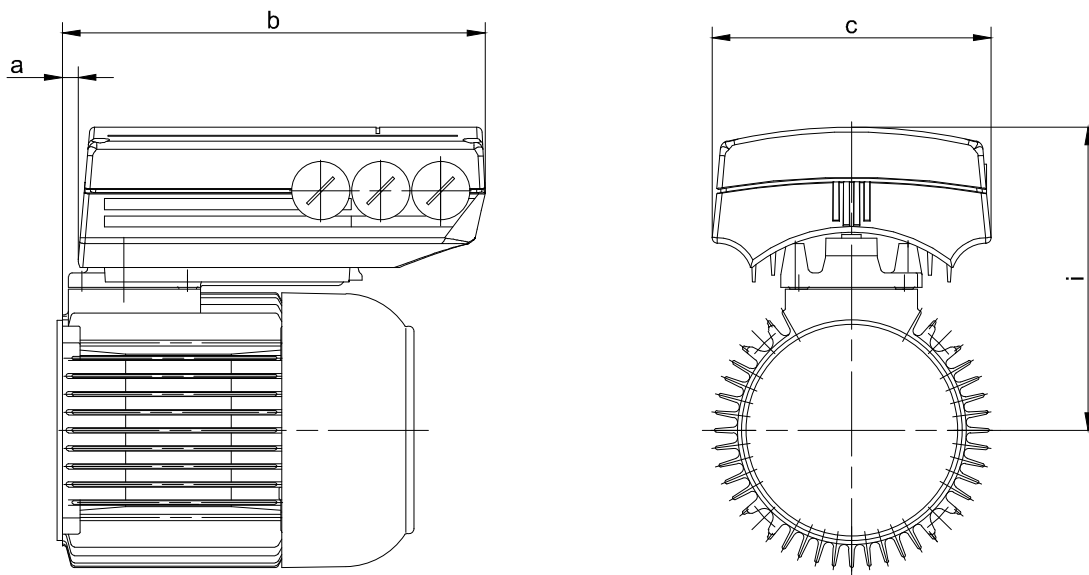
Motor power	Type of motor	Type of inverter 400 V / 50 Hz	Type of inverter 400 V / 87 Hz
0.12	D06LA4	K305	K305
0.18	D06LA4	K305	K305
0.25	D06LA4	K305	K305
0.37	D08MA4	K305	K307
0.55	D08MA4	K305	K311
0.75	D08LA4	K307	K315
1.1	D09SA4	K311	K322
1.5	D09LA4	K315	K330
1.8	D09XA4	K322	K340
2.2 *	D09XA4-FV	K322	K340
2.2	D11SA4	K322	K340
3.0	D11MA4	K330	K355
4.0	D11LA4	K340	K375
5.5	D13LA4	K355	-
7.5	D16MA4	K375	-

* = Motor design only with Forced Cooling (FV) permissible

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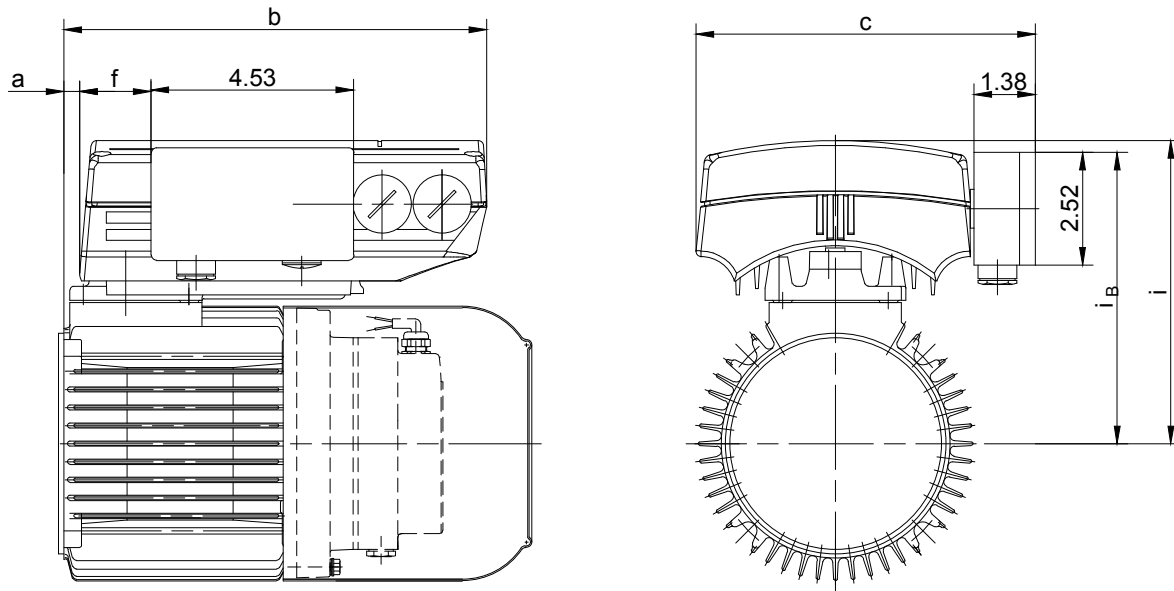
Dimensional drawing, motors with externally mounted Eta-K inverter Imperial



Motor	Type Eta-K...		Dimensions (inch)				Cable entry
			a	b	c	i	
D06	K305		0.47	8.58	5.55	5.83	3xM20x1.5
D..08	K305	K307	0.32	8.43	5.55	6.54	3xM20x1.5
	K311	K315	0.35	9.45	6.22	6.85	3xM20x1.5
D..09	K311	K315	0.20	9.29	6.22	7.95	3xM20x1.5
	K322	K330	0.08	10.20	6.93	8.35	3xM20x1.5
	K340		0.04	11.38	7.76	8.98	2xM20x1.5;1xM25x1.5
D..11	K322	K330	0.12	10.24	6.93	8.78	3xM20x1.5
	K340		0.08	11.42	7.76	9.65	2xM20x1.5;1xM25x1.5
	K355	K375	0.16	14.29	9.65	10.12	2xM20x1.5;1xM25x1.5
D..13	K355		0.28	14.41	9.65	10.94	2xM20x1.5;1xM25x1.5
D..16	K375		0.32	14.45	9.65	11.97	2xM20x1.5;1xM25x1.5

The actual gearbox design can vary from the geometry shown.

Dimensional drawing, Eta-K converter with brake control Imperial



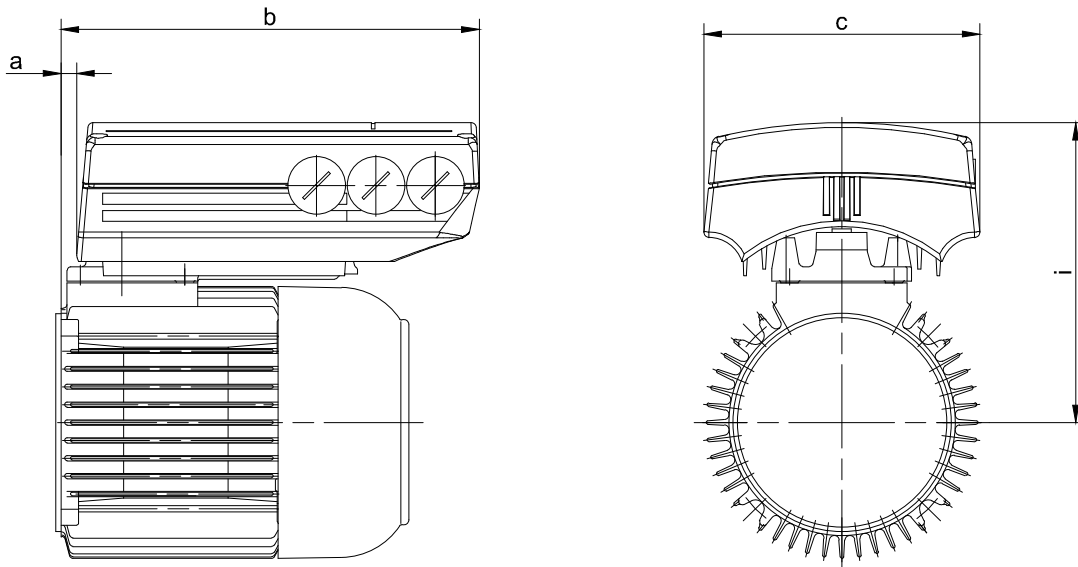
Motor	Type Eta-K...		Dimensions (inch)						Cable entry
			a	b	c	f	i	i _B	
D06	K305		0.47	8.58	7.11	0.67	5.83	6.18	2xM20x1.5
D..08	K305	K307	0.32	8.43	7.11	0.67	6.54	6.77	2xM20x1.5
	K311	K315	0.35	9.45	7.80	1.57	6.89	6.69	2xM20x1.5
D..09	K311	K315	0.20	9.29	7.80	1.57	7.95	7.76	2xM20x1.5
	K322	K330	0.08	10.20	8.46	2.56	8.35	8.27	2xM20x1.5
	K340		0.04	11.38	9.29	3.23	8.98	8.58	1xM20x1.5; 1xM25x1.5
D..11	K322	K330	0.12	10.24	8.46	2.56	8.78	8.78	1xM20x1.5
	K340		0.08	11.42	9.29	3.23	9.65	9.25	1xM20x1.5; 1xM25x1.5

The actual gearbox design can vary from the geometry shown.

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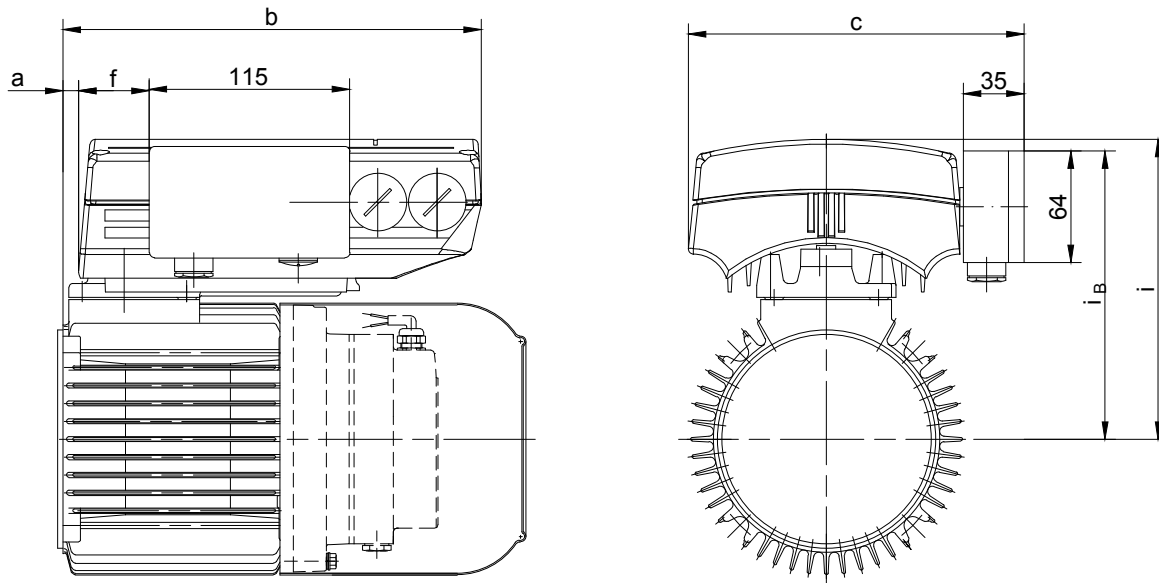
Drive solutions for decentral and central Drive technology

Dimensional drawing, motors with externally mounted Eta-K inverter



Motor	Type Eta-K...		Dimensions (mm)				Cable entry
			a	b	c	i	
D06	K305		12	218	141	148	3xM20x1.5
D..08	K305	K307	8	214	141	166	3xM20x1.5
	K311	K315	9	240	158	174	3xM20x1.5
D..09	K311	K315	5	236	158	202	3xM20x1.5
	K322	K330	2	259	176	212	3xM20x1.5
	K340		1	289	197	228	2xM20x1.5;1xM25x1.5
D..11	K322	K330	3	260	176	223	3xM20x1.5
	K340		2	290	197	245	2xM20x1.5;1xM25x1.5
	K355	K375	4	363	245	257	2xM20x1.5;1xM25x1.5
D..13	K355		7	366	245	278	2xM20x1.5;1xM25x1.5
D..16	K375		8	367	245	304	2xM20x1.5;1xM25x1.5

The actual gearbox design can vary from the geometry shown.



Motor	Type Eta-K...		Dimensions (mm)						Cable entry
			a	b	c	f	i	i _B	
D06	K305		12	218	180.5	17	148	157	2xM20x1.5
D..08	K305	K307	8	214	180.5	17	166	172	2xM20x1.5
	K311	K315	9	240	198	40	175	170	2xM20x1.5
D..09	K311	K315	5	236	198	40	202	197	2xM20x1.5
	K322	K330	2	259	215	65	212	210	2xM20x1.5
	K340		1	289	236	82	228	218	1xM20x1.5; 1xM25x1.5
D..11	K322	K330	3	260	215	65	223	223	1xM20x1.5
	K340		2	290	236	82	245	235	1xM20x1.5; 1xM25x1.5

The actual gearbox design can vary from the geometry shown.

Accessories

Operating panel with keyboard (LCP2) for setting parameters

This IP 65 control panel has a 4-line plain-text display for easy operation and parameterization. All parameters can be stored in the control panel for straightforward transfer to other converters. The control panel connects to the RS 485 serial interface. 2 connecting-cable sets are available:

- Connecting cable from LCP to the terminal strip of the converter
- Connecting cable for LCP with plug connector and adapter to terminal strip with plug socket for installation in PG16 hole. A kit complete with connecting cable for installing the control panel in a master panel is also available.



Local operator panel (LOP)

A LOP with connecting cable can be used for setting speed locally and for starting and stopping the drive. The LOP can be used to control the following functions via the converter's programmable inputs/outputs: Start clockwise, start counter-clockwise, stop, acknowledge, increase speed, decrease speed.

Setpoint potentiometer

A setpoint potentiometer for installation in a cable entry gland of the converter housing is available for adjusting speed directly at the drive. Resistance 1 kohm, angle of rotation 270°, protection IP52. This potentiometer is particularly suitable as an alternative to mechanical actuating drives.



Parameterisation software

Using this software it is possible to set parameters, operate and control all frequency inverters by means of a PC. This contributes significantly to simplifying parameterization, initial operation, diagnosis and documentation of the systems. It is possible to network up to 126 inverters. Downtimes for device replacement are cut dramatically using a configuration of this nature.

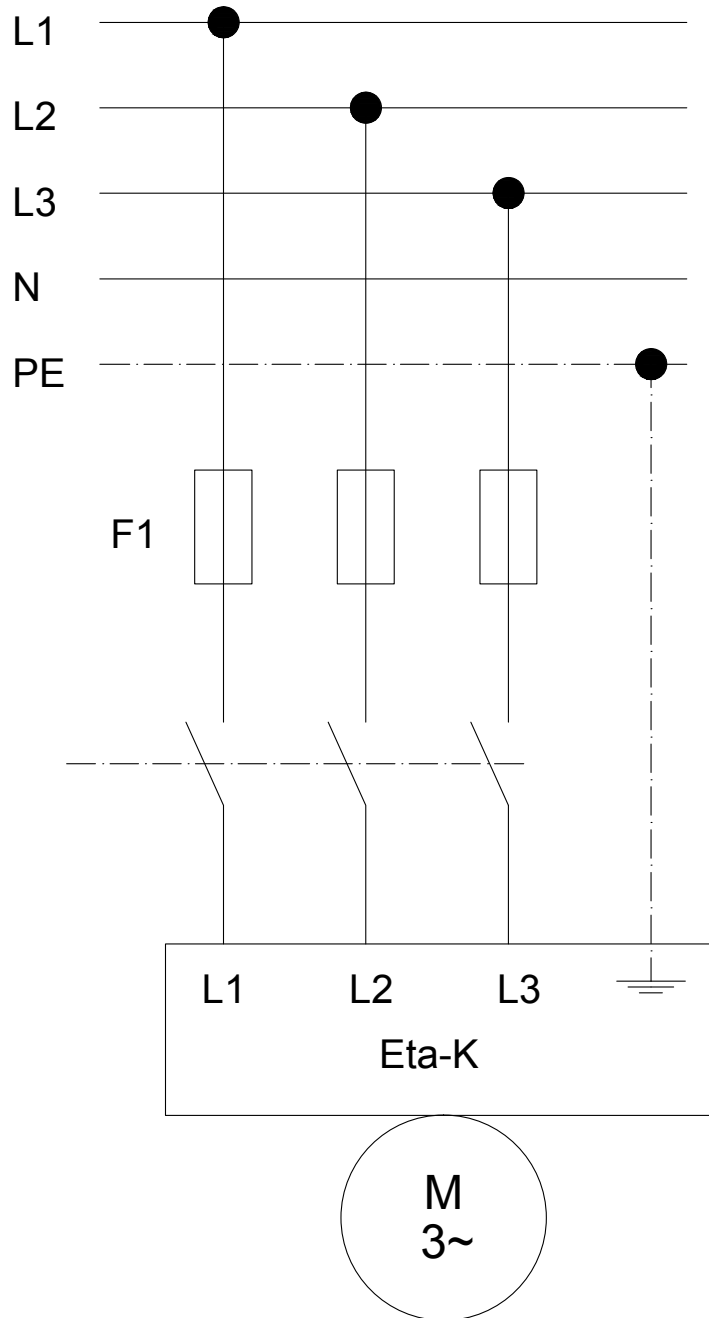
- Basic module for convenient parameterization and testing.
- Log module with monitor functionality for commissioning complex systems; modem-based communication is possible.
- Compilation module for compiling input and output forms with password protection.

Supply for mechanical brake

A mechanical brake for the motor can be actuated directly by the frequency converter. Connection is by means of an additional terminal box on the frequency converter. Two output relays are also available for the signals "Eta-K ready" and "Brake fault".

Connection diagrams

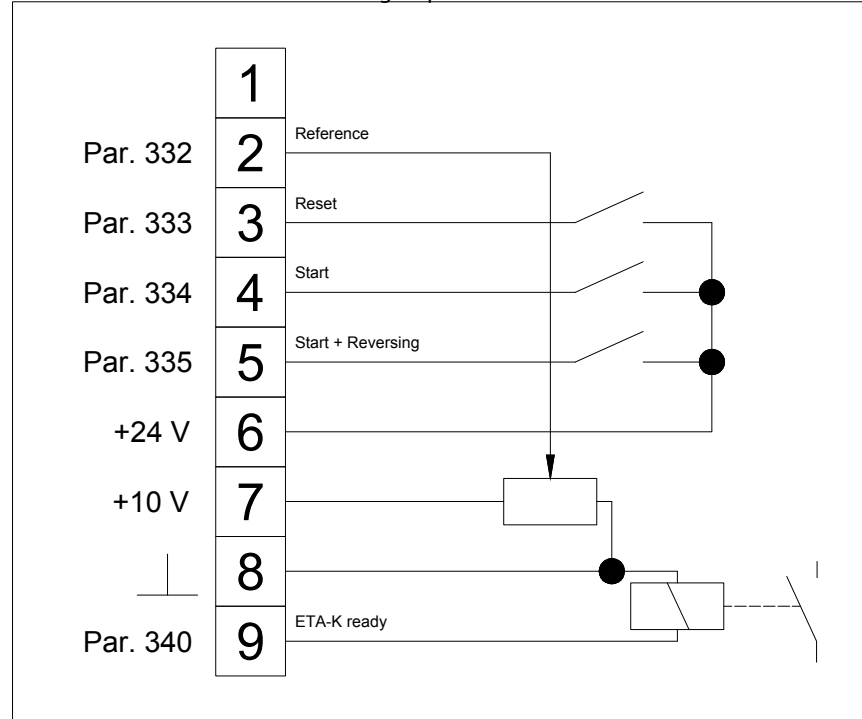
Power section



Control section

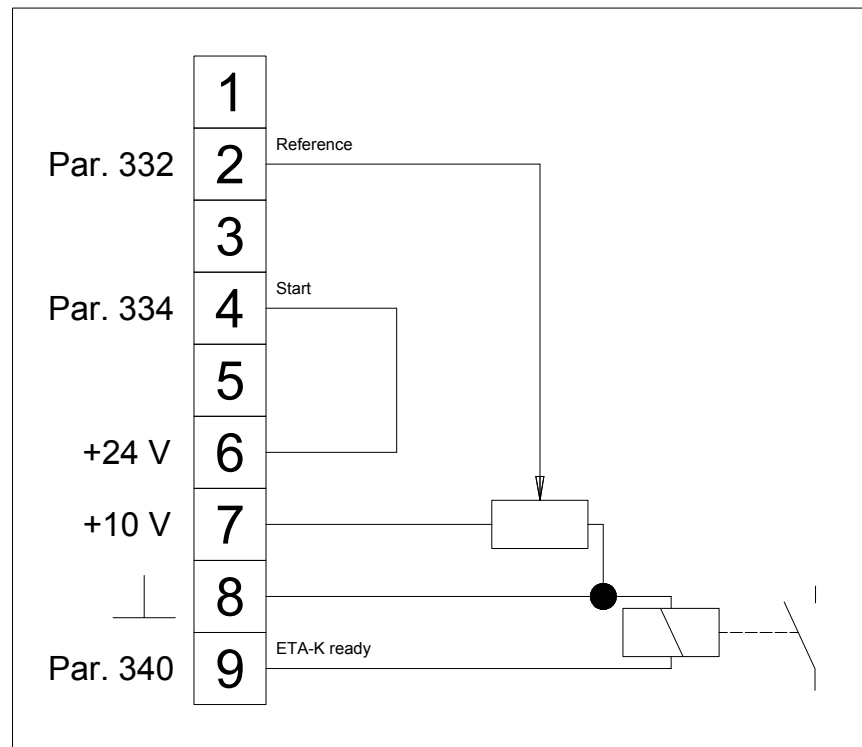
Standard

Two directions of rotation with analog setpoint



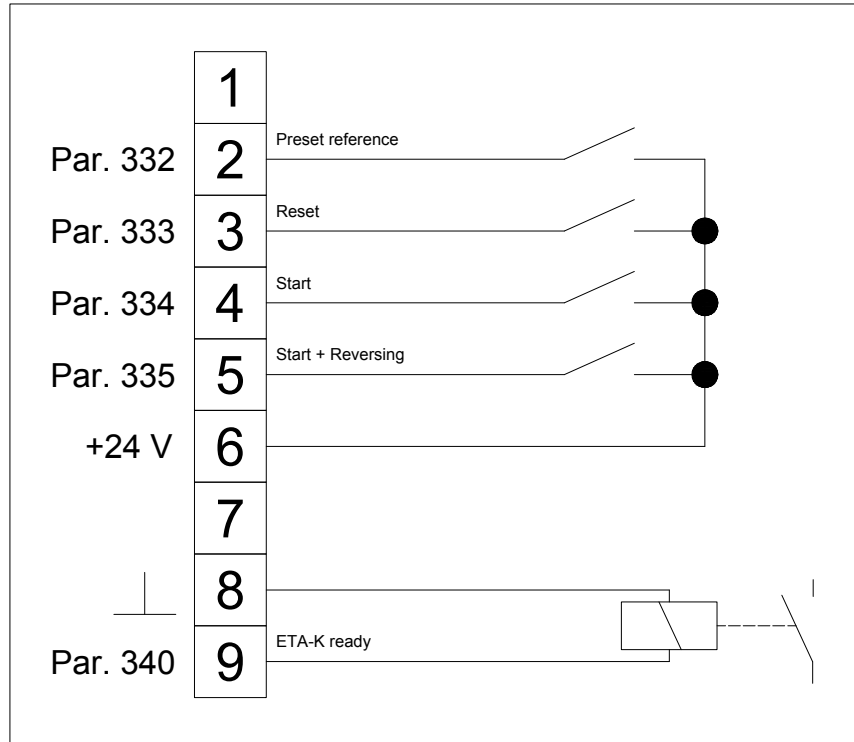
One direction of rotation with analog setpoint

e. g. as a substitute for actuator geared motors.



2 speeds + 2 directions of rotation

e. g. as a substitute for pole-changing drives



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Drive solutions for decentral and central Drive technology

Possible assemblies for FCD and Eta-K

BG-series

Terminal box position	B3 H4	B6 H1	B7 H2	B8 H3	V5 H5	V6 H6	B5	V1	V3
I	+	o	+	+	+	+	+	+	+
II	+	+	+	o	+	+	+	+	+
III	+	+	o	+	+	+	+	+	+
IV	o	+	+	+	+	+	o	+	+

+ possible, o not possible

BF-series

Terminal box position	H1	H2	H3	H4	V1	V2			
I	o	+	+	+	+	+			
II	+	+	o	+	+	+			
III	+	o	+	+	+	+			
IV	+	+	+	o	+	+			

+ possible, o not possible

BK-series

Terminal box position	H1	H2	H3	H4	V1	V2			
I	+	+	+	+	o	+			
II	+	o	+	+	+	+			
III	+	+	+	+	+	o			
IV	o	+	+	+	+	+			

+ possible, o not possible

BS-series

Terminal box position	H1	H2	H3	H4	V1	V2			
I	+	+	+	+	o	+			
II	+	o	+	+	+	+			
III	+	+	+	+	+	o			
IV	o	+	+	+	+	+			

+ possible, o not possible