

# Actuators

## DC motor, brush-type

### Absolute multiturn position detection, CANopen®

#### MSBA 42



MSBA 42 with axial output

#### Features

- Actuator / CANopen®
- Brush-type DC motor
- Absolute position detection
- Nominal power output 25 W
- 2 inputs programmable
- Separate communication and power supply
- i2t monitoring
- Automated referencing methods
- Voltage supply monitoring

#### Technical data - electrical ratings

Voltage supply	24 VDC $\pm$ 10 %
Current consumption	$\leq$ 4 A
Nominal current	1.75 A
Operating current typ.	$\leq$ 55 mA
Initializing time	$\leq$ 1000 ms after power on
Positioning resolution motor	45 °
Positioning accuracy motor	$\pm$ 36 °
Number of revolutions	536 mio / 29 bit
Undervoltage shutdown	$\leq$ 18 V
Terminating resistor	Manually set by DIP switch
Controller	Integrated position and speed regulator (4Q)
Sensing method	Magnetic
Reverse polarity protection	Bus electronics
Overheat protection	110 °C (final power output circuit)
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4

#### Technical data - mechanical design

Dimensions	$\varnothing$ 42 mm
Shaft type	$\varnothing$ 8 mm solid shaft
Nominal speed	2700 rpm
Nominal power output	25 W
Nominal torque	0.09 Nm
Service life	3000 h
Protection DIN EN 60529	IP 42
Ambient temperature	-15...+40 °C
Isolation class	E (+120 °C, DIN EN 60034-1)
Connection	Connector
Resistance	DIN EN 60068-2-6 Vibration DIN EN 60068-2-27 shock
Shaft surface	Key
Material	Housing: steel and aluminium
S1 continuous operation	DIN EN 60034-1
Instruction	Nominal data at +40 °C ambient temperature for gearless motor. Service life at operating factor = 1.

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## Part number

MSBA 42C2N  C0-K44BP4

### Gear reducer

004 4.28 : 1  
007 6.75 : 1  
014 13.73 : 1  
025 25.01 : 1  
046 45.56 : 1  
100 99.5 : 1  
169 168.84 : 1

### Connecting direction

A Axial  
R Radial

## Accessories

### Connectors and cables

10159374 Female connector Binder 423, 12-pin, straight

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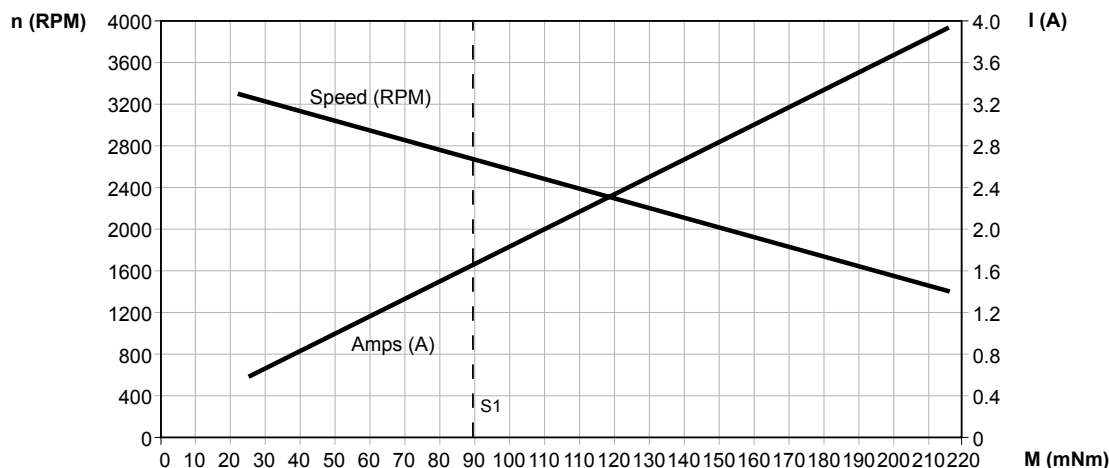
### Motor-gearing-combination

Gear ratio	Torque nominal (Nm)	Rotational speed (rpm)	Admitted shaft load (N)		Weight (kg)	Length L (mm)	Positioning resolution (°)	Recordable revolutions	Max. transmission play (°)	Mmax gear (Nm)	Gear efficiency approx.
	S1	S1	axial	radial							
4.28	0.31	630	50	160	1.1	189	10.5	125 Mio	0.90	3	0.80
6.75	0.49	400	50	160	1.1	189	6.7	79.5 Mio	0.90	3	0.80
13.73	0.93	197	80	230	1.2	201	3.3	39.1 Mio	0.95	7.5	0.75
25.01	1.69	108	80	230	1.2	201	1.8	21.4 Mio	0.95	7.5	0.75
45.56	3.08	59.3	80	230	1.2	201	0.99	11.7 Mio	0.95	7.5	0.75
99.5	6.27	27.1	110	300	1.3	214	0.45	5.4 Mio	1.00	15	0.70
168.84	10.6	16.0	110	300	1.3	214	0.27	3.1 Mio	1.00	15	0.70

\* Note: Mmax gear

Further motor - gear combinations upon request.

### Characteristic load curve motor without gears



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#### Terminal assignment

##### Connector – Binder 423, 12-pin

Connector	Signals	Description
Pin A	0 VME	0 VDC voltage s. motor/electronic
Pin B	0 VME	0 VDC voltage s. motor/electronic
Pin C	+VsM	+24 VDC voltage supply motor
Pin D	+VsM	+24 VDC voltage supply motor
Pin E	+VsE	+24 VDC voltage supply electronic
Pin F	CAN_H in	Bus (dominant HIGH) input
Pin G	CAN_L in	Bus (dominant LOW) input
Pin H	CAN_GND	CAN Ground
Pin J	CAN_H out	Bus (dominant HIGH) output
Pin K	CAN_L out	Bus (dominant LOW) output
Pin L	Input 1	Input programmable
Pin M	Input 2	input programmable



#### Technical data - communication

Interface	CANopen®
Output stages	CAN bus standard ISO / DIS 11898
Profile conformity	CANopen® CiA DS 301 V4.02, DSP 305 V1.0, DSP 402 V2.0
Cyclic data transfer	PDO
Node Guarding	Node Guarding, Life Guarding, Heartbeat
Transmission rate	20...1000 kbit/s
Inputs	2 digitally programmable
Switching frequency	<500 Hz
Setting switch	Manual setting of bus address, baud rate and terminating resistor
Status indicator	DUO-LED integrated in housing
Operating modes	Position-controlled operation, Referencing
Diagnostic functions	Voltage monitoring Temperature control Self-diagnosis Position error Multiturn sensing Bus communication
Programming software	Yes

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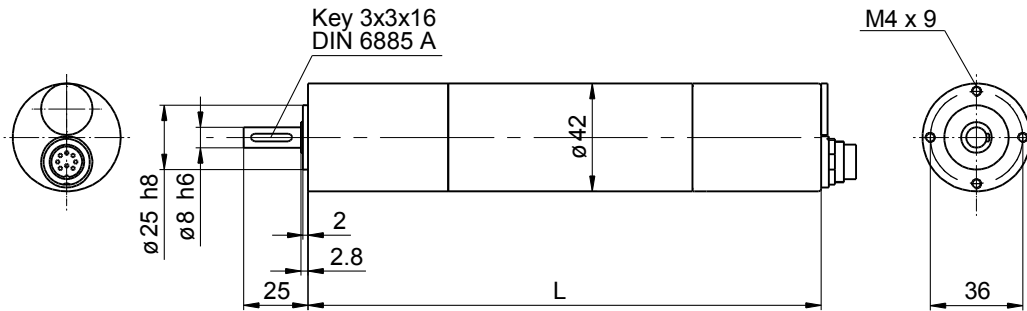
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### Dimensions

#### MSBA 42 connection axial



#### MSBA 42 connection radial

