

Positioning drives

DC motor, brushless

Absolute multiturn position detection, CANopen®

MSIA 68 - planetary gear transmission CANopen



MSIA 68 without gear transmission connection axial

Features

- Positioning drive with/without planetary gears
- CANopen®
- Brushless DC motor
- Absolute multiturn position detection
- Nominal power output 80 W
- 4 inputs programmable
- Journey datasets programmable
- Separate communication and power supply

Optional

- Holding brake

Technical data - electrical ratings

Voltage supply	24 VDC ±10 %
Current consumption	≤14 A
Nominal current	5.5 A
Starting current	Charging current capacitor 1500 µF
Operating current typ.	≤100 mA
Initializing time	≤1000 ms after power on
Positioning resolution motor	0.02 °
Positioning accuracy motor	±1 °
Repeatability motor	0.3 °
Number of turns	262144 / 18 bit
Commutation	Sine
Undervoltage shutdown	≤11.5 V
Terminating resistor	External (see accessories)
Controller	Integrated position and speed regulator (4Q)
Sensing method	Magnetic
Number of pole pairs	2 = 4 poles
Reverse polarity protection	Bus electronics
Overheat protection	112 °C (final power output circuit)
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4

Technical data - mechanical design

Dimensions	ø68 mm
Shaft type	ø10 mm solid shaft ø14 mm solid shaft
Operating speed	≤4200 rpm
Nominal speed	3900 rpm
Nominal power output	92 W
Nominal torque	0.225 Nm
Starting torque	≤0.68 Nm
Service life	20000 h (without gear)
Protection DIN EN 60529	IP 54
Ambient temperature	-15...+40 °C
Isolation class	B (+130 °C, DIN EN 60034-1)
Rotor moment of inertia	588 gcm ²
Connection	Connector
Number of stages	1...3
Resistance	DIN EN 60068-2-6 Vibration DIN EN 60068-2-27 shock
Self-locking in de-energized state	<0.02 Nm
Shaft surface	Smooth and round (without gear transmission); key (with gear transmission)
Material	Housing: steel and aluminium
S1 continuous operation	DIN EN 60034-1
S3 intermittent operation	Power-on time 25 %, run time 1 min
Instruction	Nominal data at +40 °C ambient temperature for gearless motor. Service life at operating factor = 1.

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Part number

MSIA 68C2P 12-N64 C

Gear reducer
 000 Without gear transmission
 007 6.75 : 1
 025 25.01 : 1
 046 45.56 : 1
 169 168.84 : 1
 Gearing variant
 K0 Without gear transmission
 P6 Planetary gear transmission
 Protection
 C IP 54
 Connecting direction
 A Axial
 R Radial

Accessories

Connectors and cables

10164870	Female connector D-SUB, 9-pin, straight, voltage supply / I/Os, cable 5 m
10153493	Female connector D-SUB, 9-pin, straight, voltage supply and I/Os without cable
10163483	Female connector D-SUB Kit, IP 65, 9-pin, straight
11002151	Cable, 10-wire, voltage supply and I/Os
10158249	Cable with male/female M12, 5-pin, angled, A-coded, 2 m
10156842	Cable with male/female M12, 5-pin, angled, A-coded, 5 m
11144301	Cable with male/female M12, 5-pin, straight, A-coded, 0.3 m (stub line)
11144304	Cable with male/female M12, 5-pin, straight, A-coded, 2 m
11144306	Cable with male/female M12, 5-pin, straight, A-coded, 5 m
10158246	Female connector M12, CAN, angled, A-coded, 2 m cable
10153968	Female connector M12, 5-pin, straight, less cable
10145021	Female connector M12, 5-pin, CAN, angled
10153969	Cable connector M12, 5-pin, CAN, straight
10153972	T-junction M12 CAN (1 male/2 female)
10153974	Terminating resistor CAN
10154968	Female connector D-SUB, 9-pin, CAN, angled, with terminating resistor

Programming accessories

10147362	CD-ROM with GSD-/EDS-/XML files and user manuals
11128719	USB-to-CAN V2 adaptor, D-SUB, 9-pin

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	S3	S1	S3	axial	radial		axial	radial					
-	0.23	0.53	3900	3500	40	400	1.9	144	136	0.022	262144	-	-	-
6.75	1.2	2.8	578	519	70	240	2.7	190	186	3.3×10^{-3}	38836	0.65	8	0.80
25.01	4.2	9.8	156	140	100	360	3.1	207	199	8.8×10^{-4}	10482	0.70	25	0.75
45.56	7.7	17.9	86	77	100	360	3.1	207	199	4.8×10^{-4}	5754	0.70	25	0.75
168.84	26.6	50	23	21	150	520	3.5	224	216	1.3×10^{-4}	1553	0.75	50	0.70

Further motor - gear combinations upon request.

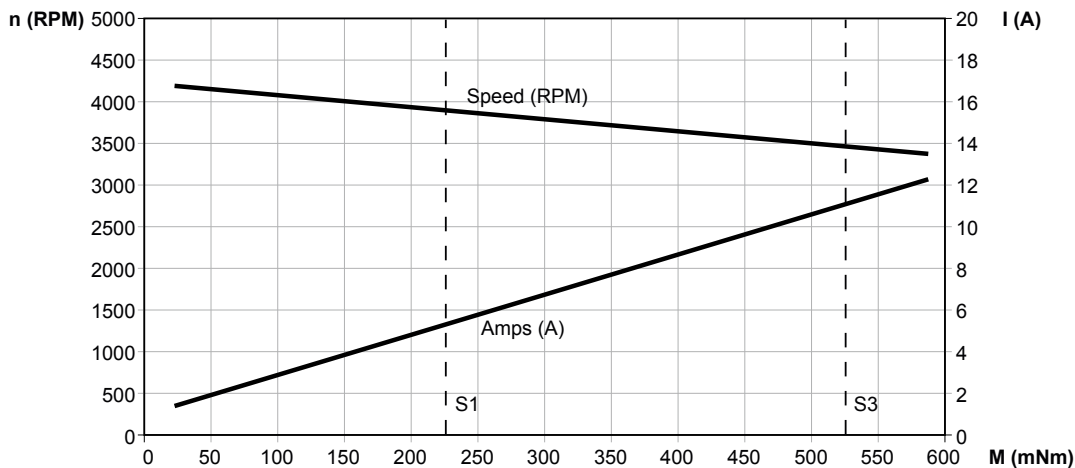
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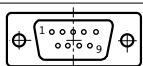
Characteristic load curve motor without gears



Terminal assignment

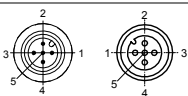
Connector – D-Sub, 9-pin

Connector	Signal	Description
Pin 1	+VsE	+24 VDC voltage supply electronic
Pin 2	Input 1	Input programmable
Pin 3	Input 2	Input programmable
Pin 4	Input 3	Input programmable
Pin 5	Input 4	Input programmable
Pin 6	0 VME	0 VDC voltage s. motor / electronic
Pin 7	0 VME	0 VDC voltage s. motor / electronic
Pin 8	+VsM	+24 VDC voltage supply motor
Pin 9	+VsM	+24 VDC voltage supply motor
Shield		Housing



Connector male / female – M12, 5-pin, A-coded

Connector	Signal	Description
Pin 1	n.c.	–
Pin 2	n.c.	–
Pin 3	CAN_GND	CAN Ground
Pin 4	CAN_H	Bus (dominant HIGH)
Pin 5	CAN_L	Bus (dominant LOW)
Shield		Housing



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	10...1000 kbit/s
Galvanic isolation bus	Yes
Inputs	4 digitally programmable
Switching frequency	<500 Hz
Inputs	
Setting switch	Manual setting of bus address and baud rate
Potential equalization	Separate screw connection
Status indicator	DUO-LED integrated in housing
Operating modes	Position-controlled operation, Speed-controlled operation, Referencing, Journey datasets
Diagnostic functions	Temperature control Position error Self-diagnosis
Programming software	Yes
Factory setting	50 kbit/s, Node ID 1

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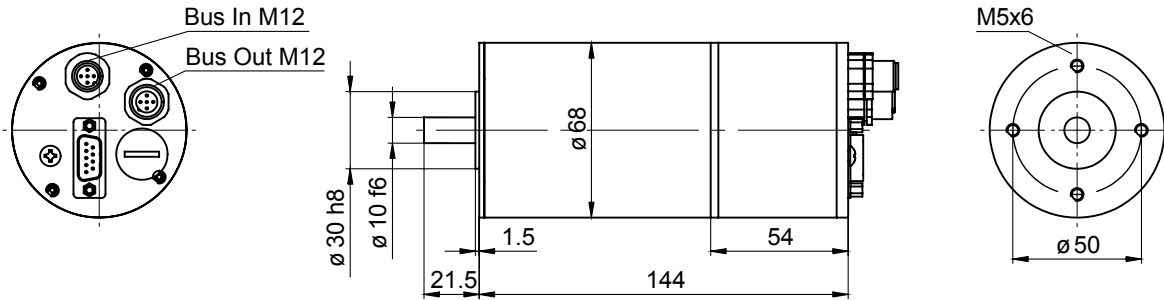
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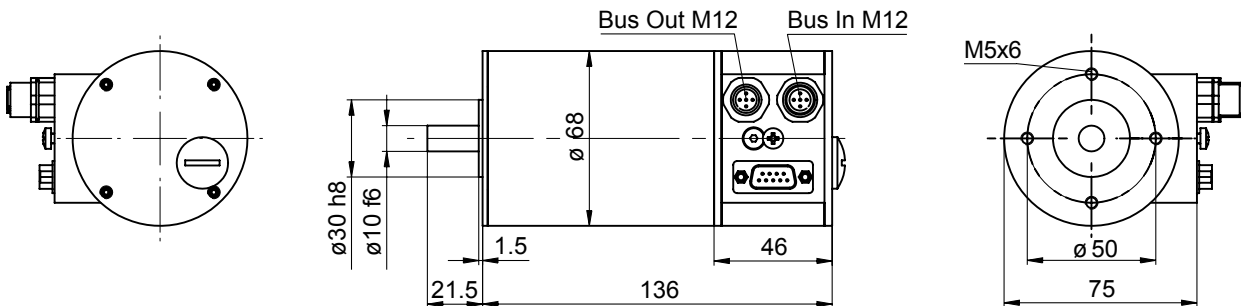
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Dimensions

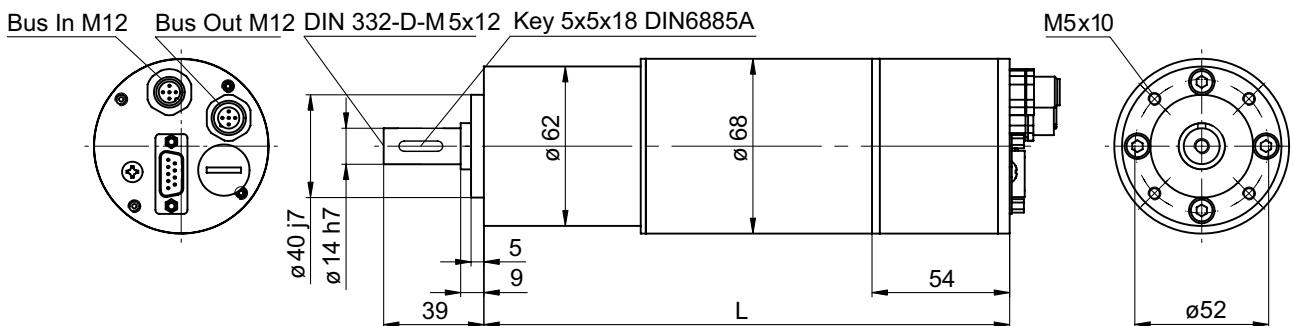
MSIA 68 without gear transmission connection axial



MSIA 68 without gear transmission connection radial



MSIA 68 planetary gear transmission connection axial



MSIA 68 planetary gear transmission connection radial

