

Positioning drives

DC motor, brushless

Absolute multiturn position detection, CANopen®

MSIA 68 - spur gear transmission CANopen



MSIA 68 with spur gear transmission connection axial

Features

- Positioning drive with spur gear transmission
- 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	ø69 mm
Shaft type	ø10 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	2...4
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: Aluminium and zinc diecast
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 trans-
mission
010 10 : 1
015 15 : 1
020 20 : 1
049 49 : 1
117 117 : 1

Gearing variant
K0 Without gear
transmission
T6 Spur gear
transmission with
shaft ø10 mm and
key

Protection
C IP 54

Connecting direction

- A Axial
- R Connection on 6:00 o'clock position, radial*
- S Connection on 3:00 o'clock position, radial*
- T Connection on 9:00 o'clock position, radial*
- U Connection on 12:00 o'clock position, radial*

* when looking at shaft (shaft position 12:00 o'clock)

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
10145023	Female connector D-SUB, 9-pin, angled
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
10156584	Cable connector M12, 5-pin, CAN, angled
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)		Wei ght (kg)	Positioning resolution (°)	Recordable revolutions	Max. trans- mission play (°)	Mmax gear (Nm)	Gear efficiency approx.
	S1	S3	S1	S3	axial	radial						
-	0.23	0.53	3900	3500	40	400	1.9	0.022	262144	-	-	-
10.4	2.1	4.8	375	338	22	220	2.2	2.1 x 10 ⁻³	25206	0.6	5.5	0.90
15.4	3.1	7.2	253	227	22	220	2.2	1.4 x 10 ⁻³	17022	0.6	5.5	0.90
20.5	4.1	9.6	190	171	22	220	2.2	1.1 x 10 ⁻³	12788	0.6	5.5	0.90
48.9	9.3	21.8	80	72	22	220	2.3	4.5 x 10 ⁻⁴	5361	0.9	6.5	0.85
117	21.3	49.7	33	30	22	220	2.3	1.9 x 10 ⁻⁴	2241	1.2	7.0	0.81

Further motor - gear combinations upon request.

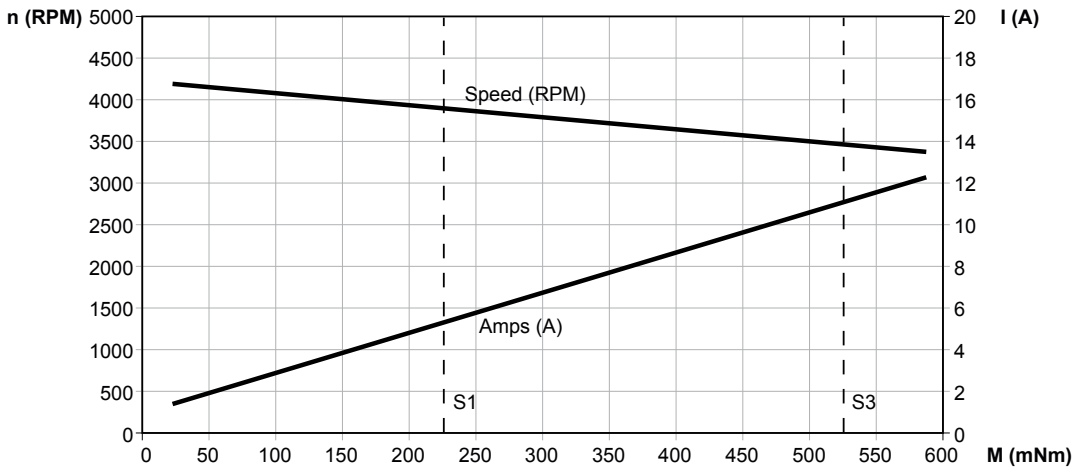
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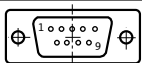
Characteristic load curve motor without gears



Terminal assignment

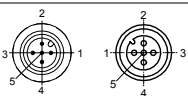
Connector – D-Sub, 9-pin

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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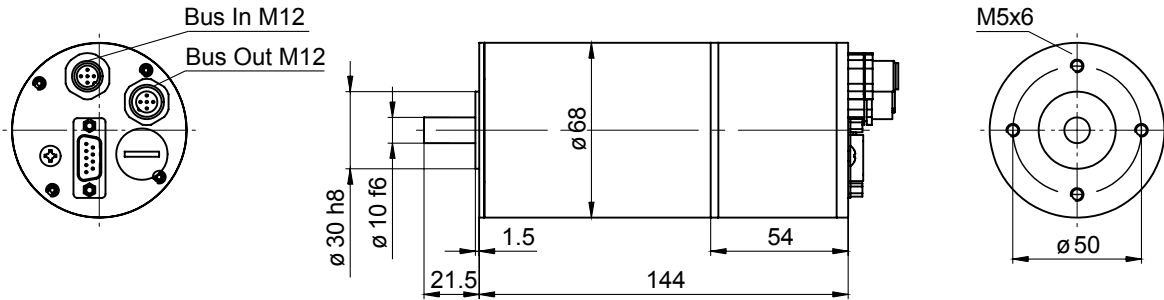
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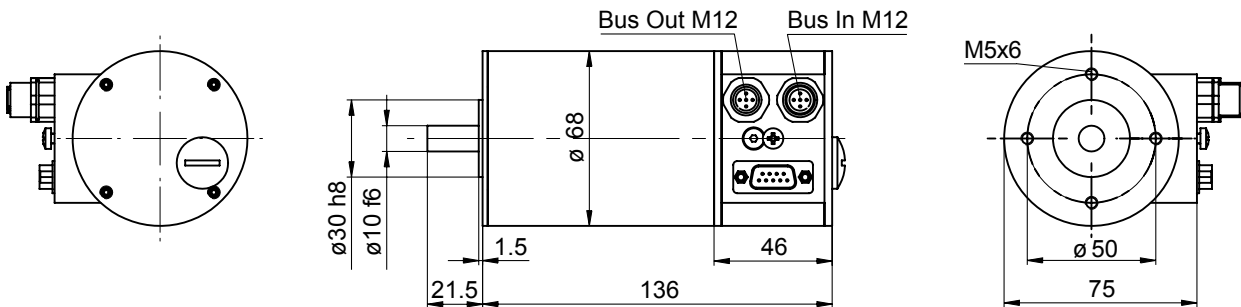
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Dimensions

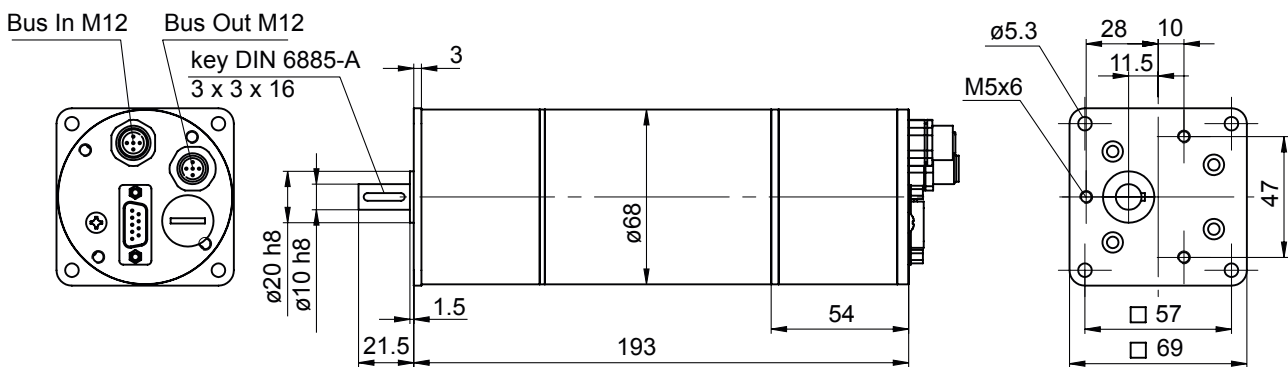
MSIA 68 without gear transmission connection axial



MSIA 68 without gear transmission connection radial



MSIA 68 spur gear transmission connection axial



MSIA 68 spur gear transmission connection radial

