

Positioning drives

DC motor, brushless

Absolute multiturn position detection, Profibus-DP

MSIA 42 - Profibus



MSIA 42 without gearing

Features

- Positioning drive with/without planetary gears
- Profibus-DP
- Brushless DC motor
- Absolute multiturn position detection
- Nominal power output 36 W
- 4 inputs programmable
- Journey datasets programmable
- Separate communication and power supply

Technical data - electrical ratings

Voltage supply	24 VDC $\pm 10\%$
Current consumption	≤ 10 A
Nominal current	2.3 A
Starting current	Charging current capacitor 1500 μ F
Operating current typ.	≤ 100 mA
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	Manually set by DIP switch
Controller	Integrated position and speed regulator (4Q)
Sensing method	Magnetic
Number of pole pairs	4 = 8 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	42 x 95 mm
Shaft type	$\varnothing 6$ mm solid shaft $\varnothing 8$ mm solid shaft
Operating speed	≤ 4800 rpm
Nominal speed	4400 rpm
Nominal power output	36 W
Nominal torque	0.08 Nm
Starting torque	≤ 0.39 Nm
Service life	10000 h (without gear)
Protection DIN EN 60529	IP 54
Ambient temperature	-15...+40 °C
Isolation class	B (+130 °C, DIN EN 60034-1)
Connection	Connector
Number of stages	1...3
Resistance	DIN EN 60068-2-6 Vibration DIN EN 60068-2-27 shock
Shaft surface	Smooth and round (without gear transmission); key (with gear transmission)
Material	Housing: zinc diecast, 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.

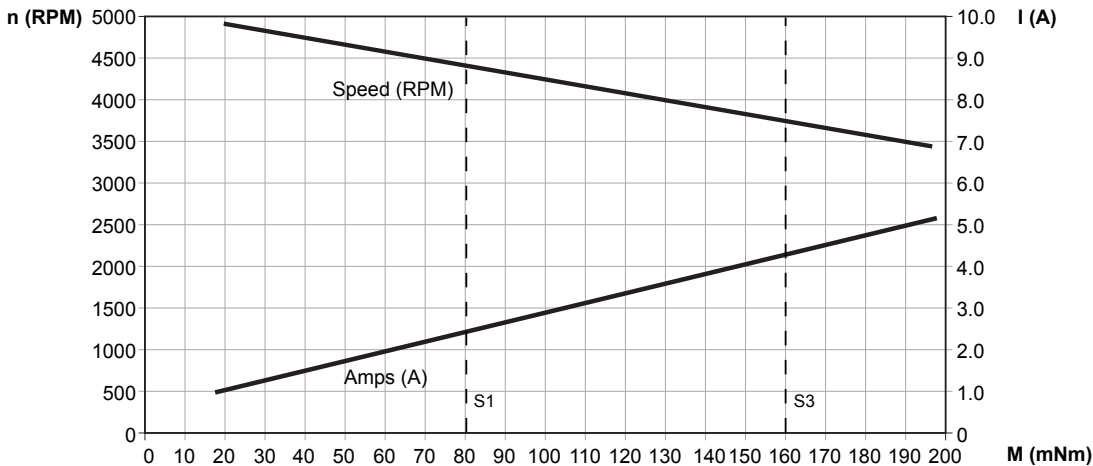
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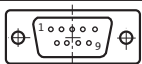
Characteristic load curve motor without gears



Terminal assignment

Connector – D-Sub, 9-pin

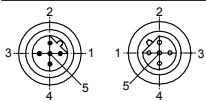
Connector	Signal	Description
Pin 1	+VsE	+24 VDC voltage supply electronic
Pin 2	Input 1	Input programmable
Pin 3	Input 2	Input programmable
Pin 4	Input 3	Input programmable
Pin 5	Input 4	Input programmable
Pin 6	0 VME	0 VDC voltage s. motor / electronic
Pin 7	0 VME	0 VDC voltage s. motor / electronic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



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

Connector	Signal	Description
Pin 1	+VsDP	VP Profibus +5 VDC (female) ¹⁾
Pin 2	A line green	Cable green / Profibus-DP
Pin 3	0 VDP	DGND Profibus (female) ¹⁾
Pin 4	B line red	Cable red / Profibus-DP
Pin 5	n.c.	–
	Shield	Housing

¹⁾ option: external terminating resistor



Technical data - communication

Interface	Profibus-DPV0
Output stages	Profibus Insulated RS485 Interface
Profile conformity	Profidrive no. 3 Version 2.0
PPO	Type 2
Cyclic data transfer	Communication according to DPV0
Transmission rate	9.6...12000 kbit/s
Galvanic isolation bus	Yes
Inputs	4 digitally programmable
Switching frequency	<500 Hz
Inputs	
Setting switch	Manual setting of bus address and terminating resistor
Potential equalization	Separate screw connection
Status indicator	DUO-LED integrated in housing
Operating modes	Position-controlled operation, Referencing, External targets, Journey datasets
Diagnostic functions	Temperature control Parameter error Multiturn sensing Self-diagnosis
Programming software	Yes
Factory setting	Node ID 3, terminating resistor OFF

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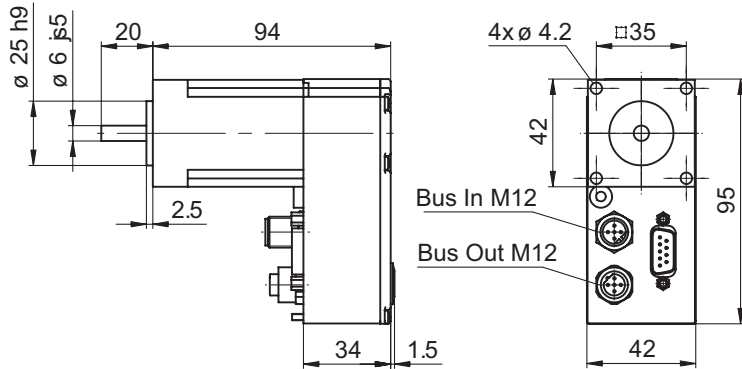
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Dimensions

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