

> RasuunDrive®

BallScrew 10mm - Type 23

Attributes

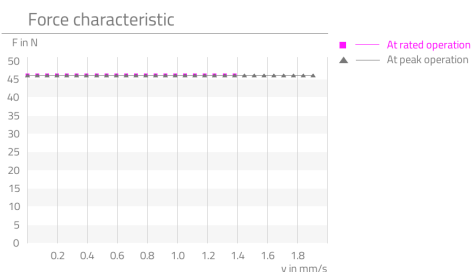
Highlights	Description
<ul style="list-style-type: none">▪ Zero backlash at high adjustment speed▪ Flexible integration▪ Ball screw▪ Easy controllability▪ Preloaded ball bearing	<p>The extremely compact RasuunDrive® BallScrew 10mm - type 23 provides a travel range of up to 5 mm. This is possible thanks to the combination of a DC Motor, an encoder with 1024 Impulses per revolution and with a sturdy, zero backlash MaalonDrive® gear and a ball screw. The MaalonDrive® gear comes with a reduction ratio of 120:1, directly integrated in the preloaded bearing in X-arrangement of the gear output shaft is the ball screw with a pitch of 1 mm. The preload of the output bearing is 20 N. The load capacity of the ball bearing in axial direction is 134 N and in radial direction 77 N. The associated technical drawing is C-279-100-001.</p>

Technical parameter

The stated values are based on calculations and measurements by Micromotion GmbH, carried out according to the current state of the art. You can find our definitions at www.micromotion-drives.com.

For further information please contact sales@micromotion.de.

P-019



Nr.	Parameter	Symbol	Value	Hint
P-001	Vacuum suitable			
P-003	Ratio	i	120 : 1	
P-004	Self-locking		yes	
P-005	Travel range	s	5 mm	
P-008	Repeatability unidirectional		±1.25 µm	
P-009	Repeatability bidirectional		±1.5 µm	
P-012	Resolution		0.00814 µm	
P-014	Lost motion		2.1 µm	
P-015	Backlash		0 µm	
P-016	Rated force	F	46 N	
P-017	Peak force	F	46 N	
P-018	Momentary peak force	F	46 N	
P-023	Rated speed	v	1.38889 mm/s	
P-024	Maximum speed	v	1.98611 mm/s	
P-034	Lifetime for rated operation		500 h	
P-035	Radial backlash output shaft		0 µm	
P-036	Axial backlash output shaft		0 µm	
P-044	Max. axial load on output shaft (non-operating, impulsive load)	F	46 N	

Technical Supply Specifications: RasunDrive® BallScrew 10mm - Type 23



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Nr.	Parameter	Symbol	Value	Hint
P-055	Moment of inertia	I	1325.01 * 10 ⁻⁴ gcm ²	
P-057	Min. permissible ambient temperature (non-operating)	T	-30 °C	
P-058	Min. permissible ambient temperature (operating)	T	-10 °C	
P-059	Max. permissible ambient temperature (non-operating)	T	85 °C	
P-060	Max. permissible ambient temperature (operating)	T	85 °C	1)

Motor data: DC motor DCX10L EB KL 12V

(Data are provided by the manufacturer or are based on the data sheets of the manufacturer)

Nr.	Parameter	Symbol	Value	Hint
P-100	Motortype		DC	
P-101	Rated speed of motor	n	5980 rpm	
P-102	Maximum speed of motor	n	14300 rpm	
P-104	Speed constant of motor	K _n	960 rpm/V	
P-106	Stall torque of motor	T	4.36 mNm	
P-107	Torque constant of motor	K _m	9.95 mNm/A	
P-108	No-load current of motor	I	8.71 mA	
P-110	Max. continuous current of motor	I	211 mA	
P-111	Rated voltage of motor	U	12 V	
P-112	Phase resistance of motor	R	27.3 ohm	
P-113	Inductance of motor	L	0.362 mH	
P-114	Amplitude BEMF of motor	U	1.04167 mV/rpm	
P-118	Max. coil temperature of motor	T	100 °C	
P-119	Thermal resistance of motor between coil and housing	R _{th1}	10.6 K/W	
P-120	Thermal resistance of motor between housing and air	R _{th2}	36.5 K/W	
P-121	Thermal time constant of the coil of the motor	τ _{w1}	3940 ms	
P-122	Thermal time constant of the housing of the motor	τ _{w2}	151000 ms	

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Encoder data

(Data are provided by the manufacturer or are based on the data sheets of the manufacturer)

Nr.	Parameter	Symbol	Value	Hint
P-200	Type of encoder		Magnetisch	
P-201	Impulses per revolution of encoder		1024	
P-202	Channels of encoder		A, A _I , B, B _I , I, I _I	
P-203	Frequency range of encoder	f	500 kHz	
P-204	Operating voltage of encoder	U	5 ±0.5 V	
P-205	Rated current consumption of encoder	I	22 mA	
P-206	Output current of encoder	I	±20 mA	
P-207	Signal/phase shifting of encoder		90±45 °	
P-208	Signal build-up/decay time of encoder	t	0.02 / 0.02	

Data limit switch

(Data are provided by the manufacturer or are based on the data sheets of the manufacturer)

Nr.	Parameter	Symbol	Value	Hint
P-302	Configuration Limit switches		n.c.	

Spindle data: Ball screw – diameter 3mm, pitch 1mm, travel range 5mm, backlash free

(Data are provided by the manufacturer or are based on the data sheets of the manufacturer)

Nr.	Parameter	Symbol	Value	Hint
P-402	Pitch	R	1 mm	

Material information

Nr.	Parameter	Symbol	Value	Hint
P-900	RoHS compliant		yes	
P-901	Lubrication of output bearing gearbox		Braycote601EF	
P-903	Lubrication of gear component set		Braycote601EF	
P-905	Lubrication of spindel-nut-system		NSK LGU	
P-908	Material of gear component set		NiFe	
P-909	Material of output bearing gearbox		1.4108 DIN EN	

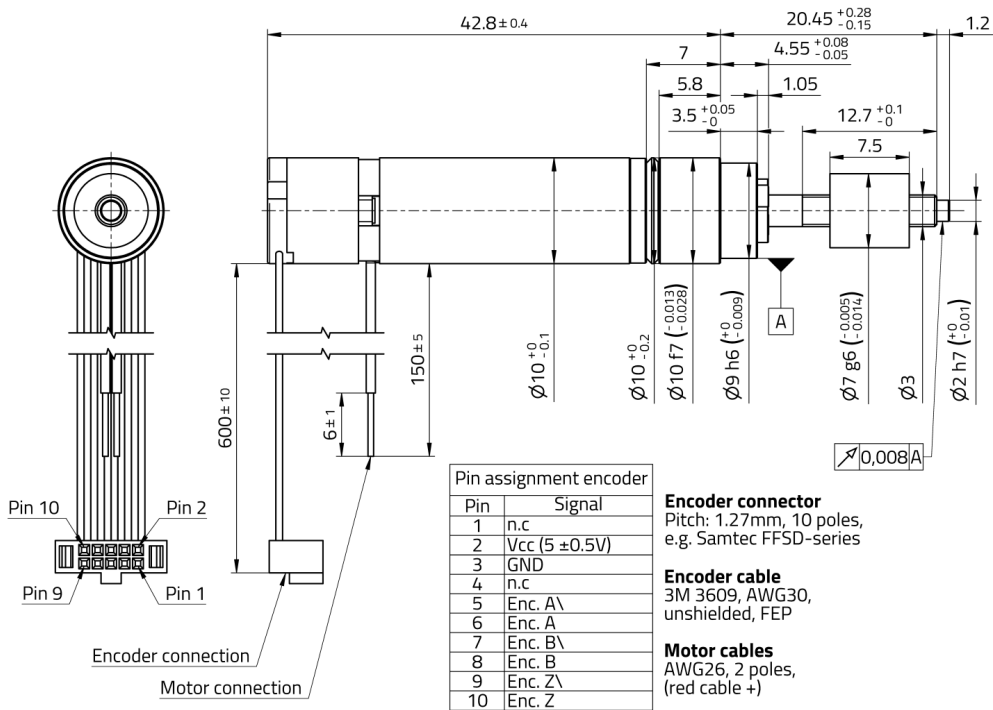
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Nr.	Parameter	Symbol	Value	Hint
P-911	Material of bearing motor		stainless steel	
P-912	Material of gearbox output side		1.4305 DIN EN	
P-914	Material of motor housing		Steel, nickel plated	
P-917	Material of spindle		1.4034	

Technical drawing



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