

# > RasuunDrive®

## BallScrew 10mm - Type 12

### Attributes

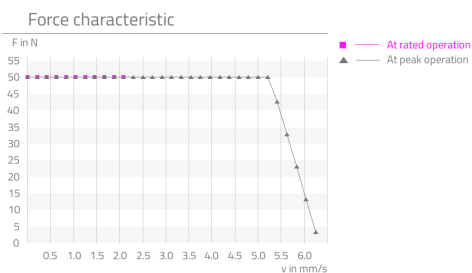
Highlights	Description
<ul style="list-style-type: none"><li>▪ <b>Flexible integration</b></li><li>▪ <b>Preloaded ball bearing</b></li><li>▪ <b>Easy controllability</b></li><li>▪ <b>Ball screw</b></li><li>▪ <b>Transmission ratio optimized to torque</b></li></ul>	<p>The RasuunDrive® BallScrew 10mm - type 12 provides an impressive travelrange of up to 15 mm. This is possible thanks to the combination of a EC Motor, an encoder with 1024 Impulses per revolution and with a sturdy, low backlash CoograDrive® gear and a ball screw. The CoograDrive® gear comes with a reduction ratio of 80:1, directly integrated in the bearing of the gear output shaft is the ball screw with a pitch of 1 mm.</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](http://www.micromotion-drives.com).

For further information please contact [sales@micromotion.de](mailto:sales@micromotion.de).

P-019



# Technical Supply Specifications: RasunDrive® BallScrew 10mm - Type 12



Micromotion GmbH, Phone: +49 (0) 6431 – 569 18 – 25, E-mail: sales@micromotion.de

Nr.	Parameter	Symbol	Value	Hint
P-003	Ratio	i	80 : 1	
P-004	Self-locking		yes	
P-005	Travel range	s	15 mm	
P-008	Repeatability unidirectional		0.5 µm	
P-009	Repeatability bidirectional		2 µm	
P-010	Accuracy		20 µm	
P-012	Resolution		0.01221 µm	
P-014	Lost motion		10 µm	
P-015	Backlash		5 µm	
P-016	Rated force	F	50 N	
P-017	Peak force	F	50 N	
P-018	Momentary peak force	F	50 N	
P-021	Rated input speed	n	10000 rpm	
P-022	Maximum input speed	n	30000 rpm	
P-023	Rated speed	v	2.08333 mm/s	
P-024	Maximum speed	v	6.25 mm/s	
P-034	Lifetime for rated operation		1000 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	50 N	
P-055	Moment of inertia	I	660.04 * 10 <sup>-4</sup> gcm <sup>2</sup>	
P-056	Weight	m	25 g	
P-057	Min. permissible ambient temperature (non-operating)	T	-40 °C	
P-058	Min. permissible ambient temperature (operating)	T	-20 °C	
P-059	Max. permissible ambient temperature (non-operating)	T	125 °C	
P-060	Max. permissible ambient temperature (operating)	T	100 °C	

Motor data: EC-Motor 1028S006B

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

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Nr.	Parameter	Symbol	Value	Hint
P-100	Motortype		EC	
P-102	Maximum speed of motor	n	79000 rpm	1)
P-104	Speed constant of motor	$K_n$	5426 $\frac{\text{rpm}}{\text{V}}$	
P-106	Stall torque of motor	T	9.72 mNm	
P-107	Torque constant of motor	$K_m$	1.76 $\frac{\text{mNm}}{\text{A}}$	
P-108	No-load current of motor	I	121 mA	
P-110	Max. continuous current of motor	I	1160 mA	2)
P-111	Rated voltage of motor	U	6 V	
P-112	Phase resistance of motor	R	1.08 ohm	
P-113	Inductance of motor	L	0.024 mH	
P-114	Amplitude BEMF of motor	U	0.184 mV/rpm	
P-118	Max. coil temperature of motor	T	125 °C	
P-119	Thermal resistance of motor between coil and housing	$R_{th1}$	6.6 $\frac{\text{K}}{\text{W}}$	1)
P-120	Thermal resistance of motor between housing and air	$R_{th2}$	42.4 $\frac{\text{K}}{\text{W}}$	
P-121	Thermal time constant of the coil of the motor	$\tau_{w1}$	4200 ms	1)
P-122	Thermal time constant of the housing of the motor	$\tau_{w2}$	152000 ms	

## Encoder data

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

Nr.	Parameter	Symbol	Value	Hint
P-201	Impulses per revolution of encoder		1024	
P-202	Channels of encoder		A, B, 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	max. 23	3)
P-206	Output current of encoder	I	4 mA	4)
P-207	Signal/phase shifting of encoder		90±75 °	5)
P-208	Signal build-up/decay time of encoder	t	0.1/0.1	

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Spindle data: Ball screw – 15 mm travel range pitch 1 mm 1112. /1.3.30.39R P5\*  
(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		Longtime PD2	
P-903	Lubrication of gear component set		Molykote BR 2 plus	
P-905	Lubrication of spindel-nut-system		Braycote 601EF	
P-908	Material of gear component set		NiFe	
P-909	Material of output bearing gearbox		1.4108 DIN EN	
P-912	Material of gearbox output side		1.4305 DIN EN	
P-914	Material of motor housing		Aluminium	
P-917	Material of spindle		1.4034	

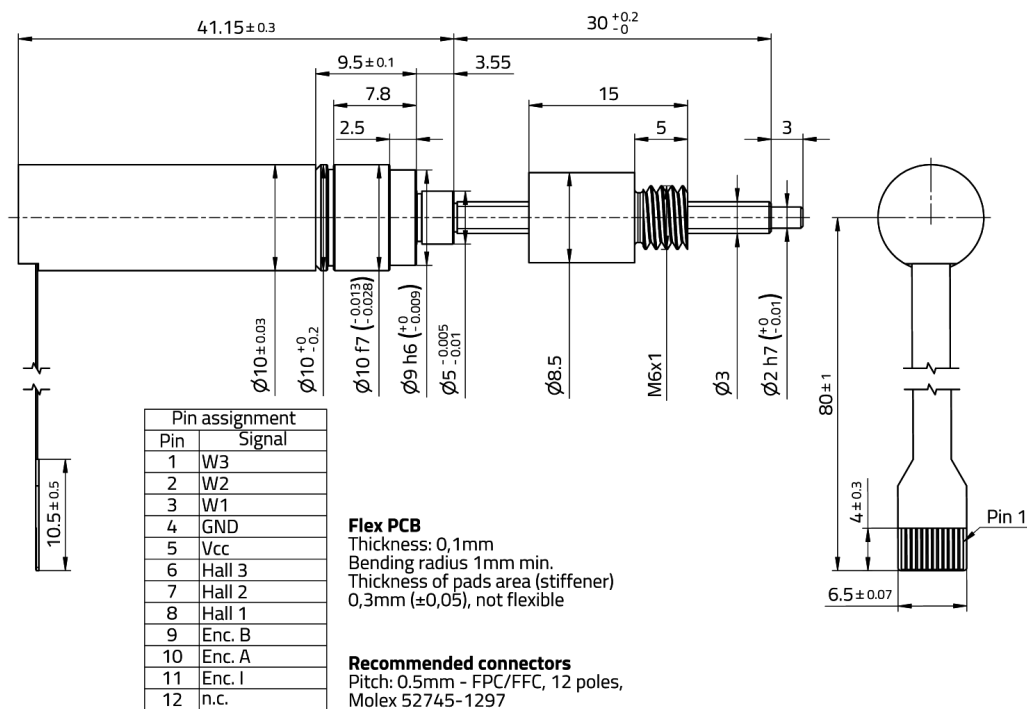
- 2) Curve measured with nominal voltage and load inertia  $6 \cdot 10^{-9} \text{ kg/m}^2$  in  $\frac{1}{2}$  micro steps.
- 3) Supply = 5V; unloaded outputs
- 4) Supply = 5V; low logic level <0.4V, high logic level >4.5V; CMOS and TTL compatible
- 5) At 5000 rpm

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## Technical drawing



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