



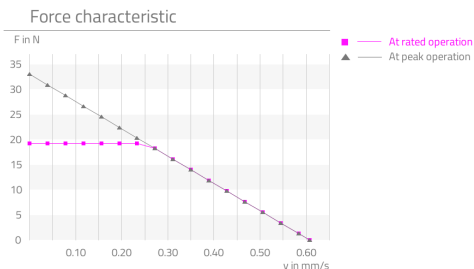
Attributes

Highlights	Description
<ul style="list-style-type: none">▪ Vacuum suitable lubrication▪ Flexible integration▪ High adjustment force▪ Integrated limit switches▪ Easy controllability	<p>Designed for use in high-vacuum environments and lubricated with Braycote: The RasuunDrive® HighVac 10mm - type 2 micro positioning system, with its cylindrical housing, is a space-optimised linear actuator with a travel range of 12 mm. The system is driven by a DC motor with rated voltage of 12V and integrated encoder with a resolution of 256 pulses per rotation. The immediately following drive train consists of a low-backlash CoograDrive® gear with a reduction ratio of 80:1 and a spring-loaded, zero-backlash spindle nut system with a pitch of 0.4 mm. The micro linear actuator system is attached by means of an M6x0.5 thread; the load is coupled via a spherical surface.</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		HV	
P-003	Ratio	i	80 : 1	
P-004	Self-locking		yes	
P-005	Travel range	s	12 mm	
P-008	Repeatability unidirectional		1.5 µm	
P-009	Repeatability bidirectional		7.5 µm	
P-010	Accuracy		12 µm	
P-012	Resolution		0.01953 µm	
P-014	Lost motion		7.5 µm	
P-015	Backlash		0 µm	
P-016	Rated force	F	19.2159 N	
P-017	Peak force	F	50 N	
P-018	Momentary peak force	F	50 N	
P-023	Rated speed	v	0.83333 mm/s	
P-024	Maximum speed	v	1.16667 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	50 N	

Technical Supply Specifications: RasuunDrive® HighVac 10mm - Type 2



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Nr.	Parameter	Symbol	Value	Hint
P-055	Moment of inertia	I	$742.01 \cdot 10^{-4}$ gcm ²	
P-056	Weight	m	23 g	
P-057	Min. permissible ambient temperature (non-operating)	T	-20 °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	65 °C	

Additional technical data:

- 2 digital limit sensors integrated

Motor data: DC-Motor RE 10 12V 0.75W

(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-102	Maximum speed of motor	n	14000 rpm	
P-104	Speed constant of motor	Kn	1000 ^{rpm} /V	
P-106	Stall torque of motor	T	1.01 mNm	
P-107	Torque constant of motor	Km	9.55 ^{mNm} /A	
P-108	No-load current of motor	I	5.37 mA	
P-110	Max. continuous current of motor	I	81 mA	
P-111	Rated voltage of motor	U	12 V	
P-112	Phase resistance of motor	R	114 ohm	
P-113	Inductance of motor	L	0.92 mH	
P-114	Amplitude BEMF of motor	U	1 mV/rpm	
P-118	Max. coil temperature of motor	T	85 °C	
P-119	Thermal resistance of motor between coil and housing	R _{th1}	19.5 ^K /W	
P-120	Thermal resistance of motor between housing and air	R _{th2}	45.5 ^K /W	
P-121	Thermal time constant of the coil of the motor	T _{w1}	3160 ms	
P-122	Thermal time constant of the housing of the motor	T _{w2}	108000 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-201	Impulses per revolution of encoder		256	
P-202	Channels of encoder		A, A\, B, B\	
P-203	Frequency range of encoder	f	320 kHz	
P-204	Operating voltage of encoder	U	5 ±0.2 V	
P-206	Output current of encoder	I	5 mA	
P-207	Signal/phase shifting of encoder		90±45 °	

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: Precision spindle m 2x0.4 – 12 mm travel range

(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	0.4 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 spindle-nut-system		Braycote601EF	
P-908	Material of gear component set		NiFe	
P-909	Material of output bearing gearbox		1.4108 DIN EN	
P-911	Material of bearing motor		Stainless steel	

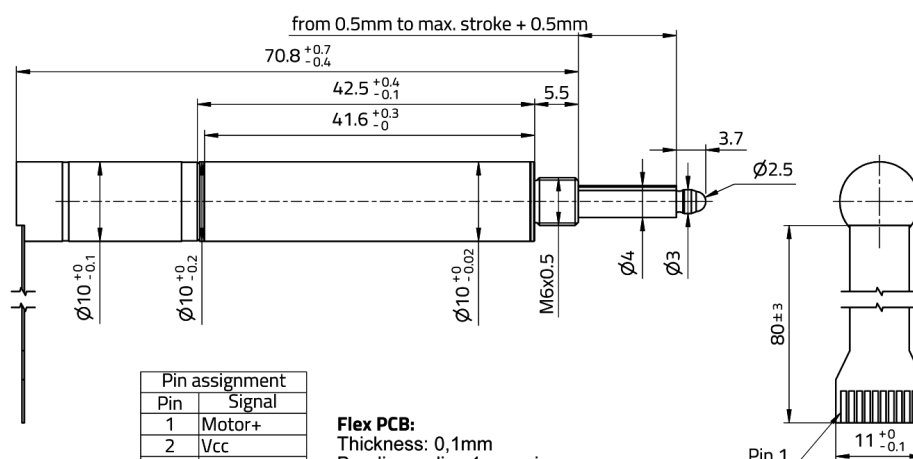
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Nr.	Parameter	Symbol	Value	Hint
P-912	Material of gearbox output side		1.4305 DIN EN	
P-914	Material of motor housing		Steel, black coated	
P-917	Material of spindle		1.4305 DIN EN	

Technical drawing



Pin assignment	
Pin	Signal
1	Motor+
2	Vcc
3	GND
4	Motor-
5	Enc. A/
6	Enc. A
7	Enc. B/
8	Enc. B
9	n.c.
10	n.c.

Flex PCB:
Thickness: 0,1mm
Bending radius 1mm min.
Thickness of pads area (stiffener)
0,3mm (±0,05), not flexible

Recommended connectors:
Pitch: 1mm - FPC/FFC, 10 poles,
top contact style
Molex 52207-1033 or Tyco 1-84953-0



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