

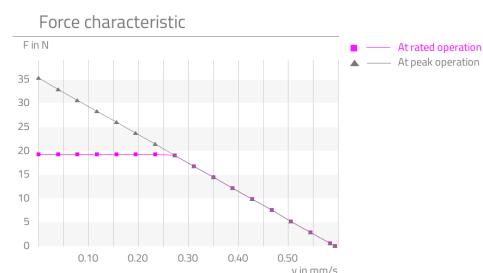


Attributes

Highlights	Description
<ul style="list-style-type: none"> ▪ Flexible integration ▪ High adjustment force ▪ Integrated limit switches ▪ High reliability ▪ Easy controllability 	<p>With its cylindrical housing, the RasuunDrive® HighRange 10mm - type 3 micro positioning system is a space-optimised linear actuator with a travel range of 12 mm. It 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

P-019



Technical Supply Specifications: RasuunDrive® HighRange 10mm - Type 3



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	12 mm	
P-008	Repeatability unidirectional		1 µm	
P-009	Repeatability bidirectional		5 µm	
P-010	Accuracy		12 µm	
P-012	Resolution		0.01953 µm	
P-014	Lost motion		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-021	Rated input speed	n	10000 rpm	
P-022	Maximum input speed	n	14000 rpm	
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	
P-055	Moment of inertia	I	742.01 * 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	-20 °C	
P-059	Max. permissible ambient temperature (non-operating)	T	85 °C	
P-060	Max. permissible ambient temperature (operating)	T	65 °C	

Technical Supply Specifications: RasuunDrive® HighRange 10mm - Type 3



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

Additional technical data:

- 2 digital limit sensors integrated

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

Nr.	Parameter	Symbol	Value	Hint
P-100	Motortype		DC	
P-102	Maximum speed of motor	n	14000 rpm	
P-104	Speed constant of motor	K_n	1000 $\frac{\text{rpm}}{\text{V}}$	
P-106	Stall torque of motor	T	1.01 mNm	
P-107	Torque constant of motor	K_m	9.55 $\frac{\text{mNm}}{\text{A}}$	
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 $\frac{\text{K}}{\text{W}}$	
P-120	Thermal resistance of motor between housing and air	R_{th2}	45.5 $\frac{\text{K}}{\text{W}}$	
P-121	Thermal time constant of the coil of the motor	τ_{w1}	3160 ms	
P-122	Thermal time constant of the housing of the motor	τ_{w2}	108000 ms	

Encoder data

Nr.	Parameter	Symbol	Value	Hint
P-201	Impulses per revolution of encoder		256	
P-202	Channels of encoder		A, A $\bar{1}$, B, B $\bar{1}$	
P-203	Frequency range of encoder	f	320 kHz	
P-204	Operating voltage of encoder	U	5 \pm 0.2 V	
P-206	Output current of encoder	I	5 mA	
P-207	Signal/phase shifting of encoder		90 \pm 45 °	

Technical Supply Specifications: RasuunDrive® HighRange 10mm - Type 3



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

Data limit switch

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

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

Nr.	Parameter	Symbol	Value	Hint
P-402	Pitch	R	0.4 mm	

Material information

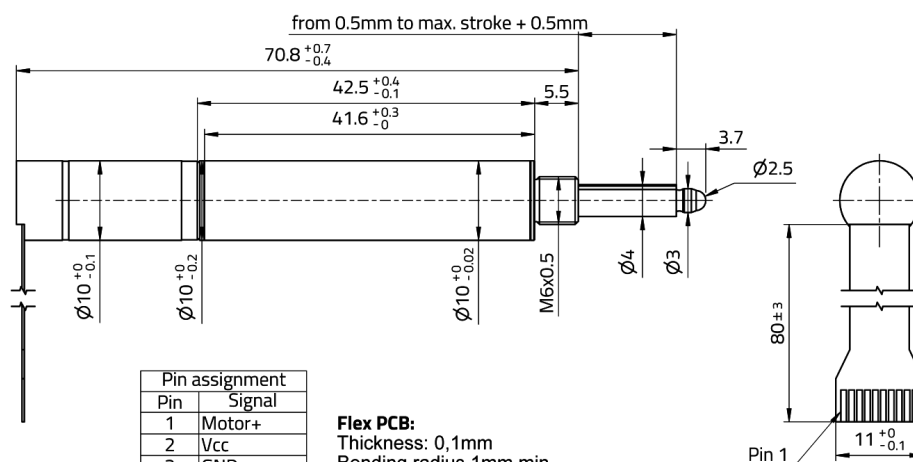
Nr.	Parameter	Symbol	Value	Hint
P-900	RoHS compliant		yes	
P-901	Lubrication of output bearing gearbox		Longtime PD2	
P-903	Lubrication of gear component set		Molykote BR 2 plus	
P-905	Lubrication of spindel-nut-system		Fomblin GRM60	
P-908	Material of gear component set		NiFe	
P-909	Material of output bearing gearbox		1.4108 DIN EN	
P-911	Material of bearing motor		Stainless steel	
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 Supply Specifications: RasunDrive® HighRange 10mm - Type 3



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

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



Micromotion GmbH | Hoenbergstraße 14 | 65555 Limburg
+49(0)6431-59618-25 | sales@micromotion.de | www.micromotion-drives.com