

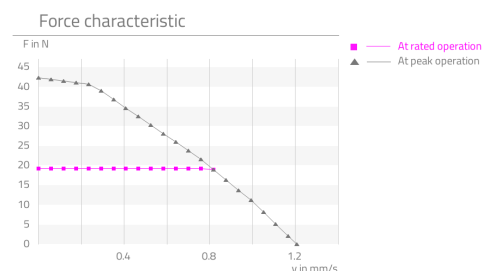


Attributes

Highlights	Description
<ul style="list-style-type: none">▪ Corrosional consistent materials▪ Custom designed housing▪ High adjustment force▪ Robust control without feedback system▪ Compact build up	<p>The RasuunDrive® Sealed 10mm - type 1 is a micro positioning system with a travel range of 4 mm that is fully encapsulated on the application side. Thanks to the stainless steel bellows, the system is completely protected against the penetration of gases or liquids and is easy to clean. The system is driven by a stepper motor with 20 steps per rotation and adapted encoder with 10 pulses per rotation. Directly connected to the motor is the heart of the actuator: 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 end positions are monitored by two magnetoresistive limit sensors. The micro linear actuator system is attached via a flange; the load is connected via a 3 f6 cylinder surface.</p>

Technical parameter

P-019 Curve measured with 5x nominal voltage and load inertia $6 \cdot 10E-9$ kg/m² in $\frac{1}{4}$ micro steps.



Nr.	Parameter	Symbol	Value	Hint
P-003	Ratio	i	80 : 1	
P-004	Self-locking		yes	
P-005	Travel range	s	3.7 mm	
P-008	Repeatability unidirectional		1 μ m	
P-009	Repeatability bidirectional		5 μ m	
P-010	Accuracy		8 μ m	
P-012	Resolution		0.25 μ m	
P-014	Lost motion		5 μ m	
P-015	Backlash		0 μ m	
P-016	Rated force	F	15.3727 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	21000 rpm	
P-023	Rated speed	v	0.83333 $\frac{\text{mm}}{\text{s}}$	
P-024	Maximum speed	v	1.75 $\frac{\text{mm}}{\text{s}}$	
P-034	Lifetime for rated operation		1000 h	
P-035	Radial backlash output shaft		0 μ m	
P-036	Axial backlash output shaft		0 μ m	
P-044	Max. axial load on output shaft (non-operating, impulsive load)	F	50 N	
P-055	Moment of inertia	I	$1838.01 \cdot 10^{-4}$ gcm ²	
P-056	Weight	m	28 g	

Technical Supply Specifications: RasuunDrive® Sealed 10mm - Type 1



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

Nr.	Parameter	Symbol	Value	Hint
P-057	Min. permissible ambient temperature (non-operating)	T	-35 °C	
P-058	Min. permissible ambient temperature (operating)	T	-20 °C	
P-059	Max. permissible ambient temperature (non-operating)	T	130 °C	
P-060	Max. permissible ambient temperature (operating)	T	70 °C	

Additional technical data:

- complete encapsulation

Motor data: Stepper AM 1020-2R-A-0.25-8-10/1977

Nr.	Parameter	Symbol	Value	Hint
P-100	Motortype		Stepper	
P-102	Maximum speed of motor	n	21000 rpm	
P-103	Resonance frequency of motor	f	140 Hz	
P-105	Holding torque of motor (unpowered)	T	0.2 mNm	
P-109	Rated current of motor	I	250 mA	
P-111	Rated voltage of motor	U	2 V	
P-112	Phase resistance of motor	R	8 ohm	
P-113	Inductance of motor	L	2.4 mH	
P-114	Amplitude BEMF of motor	U	0.6 mV/rpm	
P-115	Full step angle of motor		18 °	
P-116	Angular accuracy of step of motor		±1.8 °	
P-117	Electrical time constant of motor	t	0.32 ms	
P-118	Max. coil temperature of motor	T	130 °C	
P-119	Thermal resistance of motor between coil and housing	R _{th1}	3.9 ^{°C} /W	
P-120	Thermal resistance of motor between housing and air	R _{th2}	53.8 ^{°C} /W	
P-121	Thermal time constant of the coil of the motor	τ _{w1}	3200 ms	
P-122	Thermal time constant of the housing of the motor	τ _{w2}	200000 ms	
P-123	Insulation voltage of motor	U	200 V	

Encoder data

Technical Supply Specifications: RasuunDrive® Sealed 10mm - Type 1



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

Nr.	Parameter	Symbol	Value	Hint
P-201	Impulses per revolution of encoder		10	
P-202	Channels of encoder		A, B	
P-203	Frequency range of encoder	f	7.2 kHz	
P-204	Operating voltage of encoder	U	5 ±0.5 V	
P-205	Rated current consumption of encoder	I	5 mA	
P-207	Signal/phase shifting of encoder		90±45 °	
P-208	Signal build-up/decay time of encoder	t	5 / 0.2	

Data limit switch

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

Spindle data: Precision spindle m 2x0.4 – 3.7 mm travel range

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

Material information

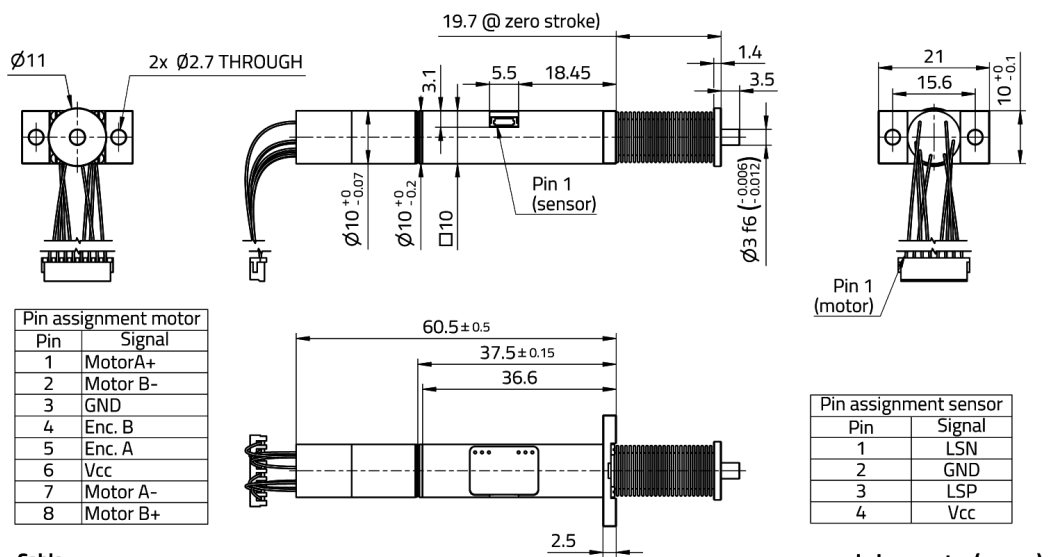
Nr.	Parameter	Symbol	Value	Hint
P-900	RoHS compliant		yes	
P-901	Lubrication of output bearing gearbox		Longtime PD2	
P-903	Lubrication of gear component set		Molykote BR 2 plus	
P-904	Lubrication of bearing motor		Synthetic light ester oil	
P-905	Lubrication of spindel-nut-system		Fomblin GRM60	
P-908	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		Anodized aluminum	
P-917	Material of spindle		1.4104	

Technical Supply Specifications: RasuuDrive® Sealed 10mm - Type 1



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

Technical drawing



Cable:
Individual leads wires,
AWG30, length=125mm

Recommended connectors (motor):
Pitch: 1.5mm, 8 poles
JST B8B-ZR or JST S8B-ZR

recommended connector (sensor):
socket , 4-pole, JST 04SUR-32S



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