

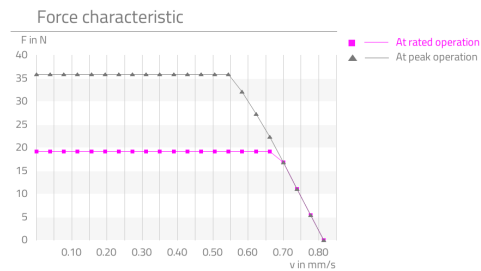


## Attributes

Highlights	Description
<ul style="list-style-type: none"> <li>▪ <b>Compact build up</b></li> <li>▪ <b>Zero backlash at high adjustment speed</b></li> <li>▪ <b>Integrated limit switches</b></li> <li>▪ <b>High reliability</b></li> <li>▪ <b>Robust control without feedback system</b></li> </ul>	<p>The RasuunDrive® HighRange 10mm - type 1 micro linear actuator is characterised by its short length with a travel range of 6 mm. It is driven by a stepper motor with 20 steps per rotation in an open loop control and is equipped with a zero-backlash MaalonDrive® gear with a reduction ratio of 120:1 that is directly connected to the motor as well as a spring-loaded, zero-backlash spindle nut system with a pitch of 0.4 mm. Two inductive limit sensors monitor the end positions. The mechanical interface for attaching the micro linear actuator system is an M6x0.5 thread; the load is connected via an M3x3.5 thread.</p>

## Technical parameter

P-019 Curve measured with 5x nominal voltage and load inertia  $6 \cdot 10^{-9} \text{ kg/m}^2$  in  $\frac{1}{4}$  micro steps.



# Technical Supply Specifications: RasuunDrive® HighRange 10mm - Type 1



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Nr.	Parameter	Symbol	Value	Hint
P-003	Ratio	i	120 : 1	
P-004	Self-locking		yes	
P-005	Travel range	s	6 mm	
P-008	Repeatability unidirectional		1 µm	
P-009	Repeatability bidirectional		5 µm	
P-010	Accuracy		12 µm	
P-012	Resolution		0.16667 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	35.8696 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	0.55556 mm/s	
P-024	Maximum speed	v	1.16667 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	925.01 * 10 <sup>-4</sup> gcm <sup>2</sup>	
P-056	Weight	m	22 g	
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	

## Motor data: Stepper AM 1020-2R-A0.25

Nr.	Parameter	Symbol	Value	Hint
P-100	Motortype		Stepper	
P-102	Maximum speed of motor	n	21000 rpm	

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Nr.	Parameter	Symbol	Value	Hint
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 <sub>th1</sub>	3.9 <sup>°C</sup> /W	
P-120	Thermal resistance of motor between housing and air	R <sub>th2</sub>	53.8 <sup>°C</sup> /W	
P-121	Thermal time constant of the coil of the motor	T <sub>w1</sub>	3200 ms	
P-122	Thermal time constant of the housing of the motor	T <sub>w2</sub>	200000 ms	
P-123	Insulation voltage of motor	U	200 V	

## Data limit switch

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

## Spindle data: Precision spindle m 2x0.4 – 6 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	

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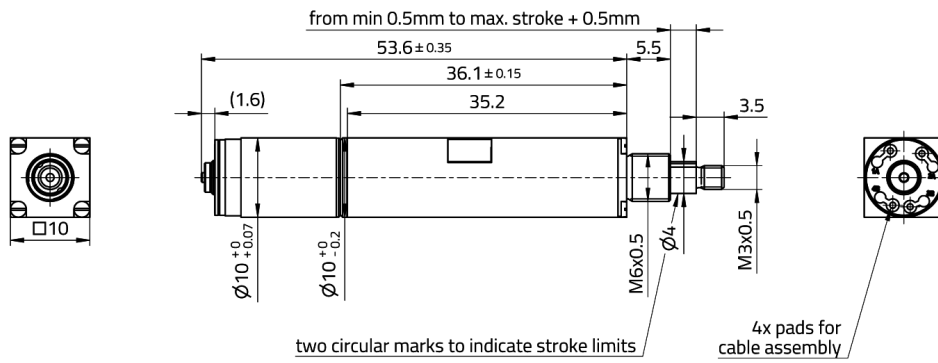
Nr.	Parameter	Symbol	Value	Hint
P-905	Lubrication of spindel-nut-system		Fomblin GRM60	
P-908	Material of gear component set		NiFe	
P-909	Material of output bearing gearbox		1.4108 DIN EN	
P-911	Material of bearing motor		Stainless steel	
P-912	Material of gearbox output side		1.4305 DIN EN	
P-914	Material of motor housing		Anodized aluminum	
P-917	Material of spindle		1.4305 DIN EN	

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## Technical drawing



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