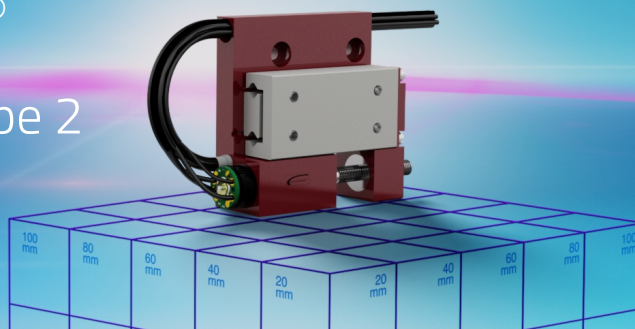


> RasuunDrive® HighTemp 8mm - Type 2



Attributes

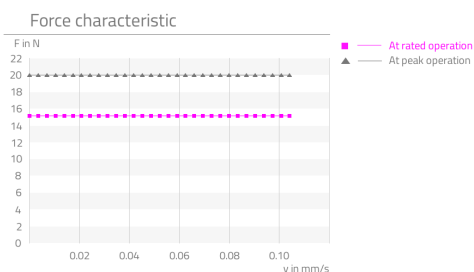
Highlights	Description
▪ Dry lubrication due to coatings ▪ Ball screw ▪ Integrated limit switches ▪ Compact build up ▪ Robust control without feedback system	The RasuunDrive® HighTemp 8mm - type 2 is an extremely short, dry-lubricated micro linear actuator system. Thanks to the parallel arrangement of linear roller table and gear-spindle motor, an impressive 10 mm travel range can be realised with minimal axial length. The system is driven by a stepper motor with 20 steps per rotation in an open loop control. At the core of the actuator is a zero-backlash MaalonDrive® gear with a reduction ratio of 160:1 that is directly connected to the motor and drives a ball screw with a pitch of 1 mm. The end positions are monitored by two inductive limit sensors.

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



Nr.	Parameter	Symbol	Value	Hint
P-001	Vacuum suitable		UHV	
P-003	Ratio	i	160 : 1	
P-004	Self-locking		yes	
P-005	Travel range	s	10 mm	
P-008	Repeatability unidirectional		1 μm	
P-009	Repeatability bidirectional		4 μm	
P-010	Accuracy		23 μm	
P-012	Resolution		0.3125 μm	
P-014	Lost motion		10 μm	
P-015	Backlash		0 μm	
P-016	Rated force	F	15.1516 N	
P-017	Peak force	F	20 N	
P-018	Momentary peak force	F	20 N	
P-023	Rated speed	v	0.10417 $\frac{\text{mm}}{\text{s}}$	
P-024	Maximum speed	v	0.10417 $\frac{\text{mm}}{\text{s}}$	
P-034	Lifetime for rated operation		200 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	20 N	

Technical Supply Specifications: RasuunDrive® HighTemp 8mm - Type 2



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Nr.	Parameter	Symbol	Value	Hint
P-055	Moment of inertia	I	$282 \cdot 10^{-4} \text{ gcm}^2$	
P-056	Weight	m	22 g	
P-057	Min. permissible ambient temperature (non-operating)	T	-30 °C	
P-058	Min. permissible ambient temperature (operating)	T	-30 °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:

- Output shaft is sealed by teflon washers and epoxy and cable:PVC ribbon with color code

Motor data: Stepper AM 0820-2R-A0.225

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

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	170 Hz	
P-105	Holding torque of motor (unpowered)	T	0.17 mNm	
P-109	Rated current of motor	I	225 mA	
P-111	Rated voltage of motor	U	2 V	
P-112	Phase resistance of motor	R	7.3 ohm	
P-113	Inductance of motor	L	1.4 mH	
P-114	Amplitude BEMF of motor	U	0.267 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	0.21 ms	
P-118	Max. coil temperature of motor	T	130 °C	
P-119	Thermal resistance of motor between coil and housing	R _{th1}	4.1 °/W	
P-120	Thermal resistance of motor between housing and air	R _{th2}	65.3 °/W	
P-121	Thermal time constant of the coil of the motor	τ _{w1}	3500 ms	
P-122	Thermal time constant of the housing of the motor	τ _{w2}	160000 ms	
P-123	Insulation voltage of motor	U	200 V	

Technical Supply Specifications: RasuunDrive® HighTemp 8mm - Type 2



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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: Ball screw MLP-8-SPM0052 – 10 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	1 mm	

Material information

Nr.	Parameter	Symbol	Value	Hint
P-900	RoHS compliant		yes	
P-901	Lubrication of output bearing gearbox		MoS ₂ (drylubrication)	
P-903	Lubrication of gear component set		DICRONITE®/MoS ₂ (drylubrication)	
P-904	Lubrication of bearing motor		MoS ₂ (drylubrication)	
P-905	Lubrication of spindle-nut-system		MoS ₂ (drylubrication)	
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		100Cr6	

Technical drawing



Version: 2-2021-03-30