

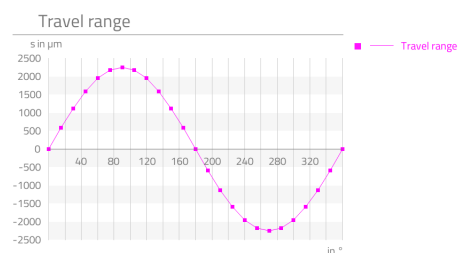
Attributes

Highlights	Description
<ul style="list-style-type: none"> ▪ Integrated lens holder ▪ Zero backlash at optimised fit between speed and resolution ▪ Vacuum suitable lubrication ▪ Step with in the range of nm ▪ Robust control without feedback system 	<p>The KeevoDrive® Space 19mm - type 3 micro focusing system is based on an eccentric with eccentricity of 1250 µm and travel range of up to 2500 µm. The positioning unit is suitable for use in high-vacuum environments and is equipped with a stepper motor with 20 steps per rotation, thereby making it possible to operate the system in a simple, open loop control. At the heart of the micro system is a zero-backlash MaalonDrive® gear with a reduction ratio of 160:1.</p>

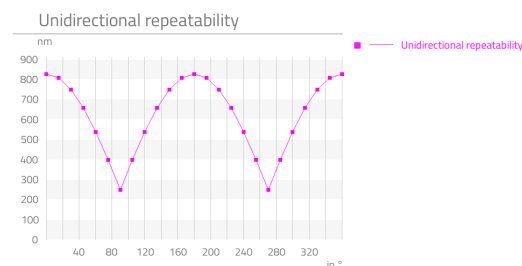
Technical parameter

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-005



P-008

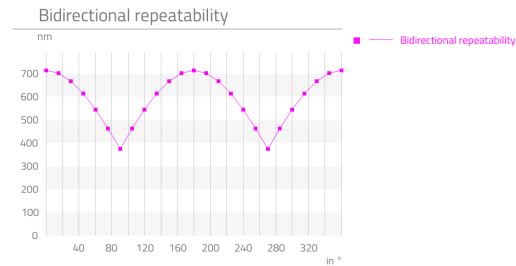


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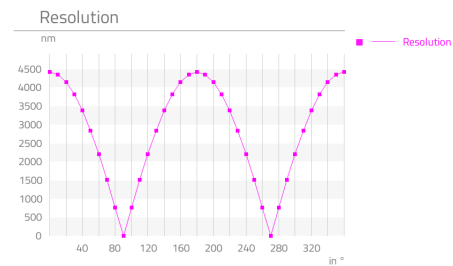


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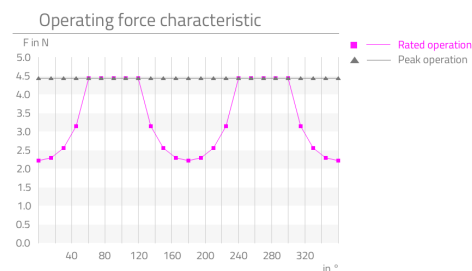
P-009



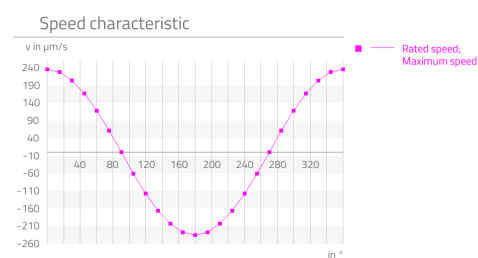
P-012



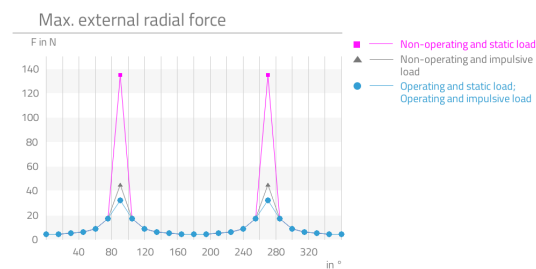
P-016



P-502



P-512



Nr.	Parameter	Symbol	Value	Hint
P-001	Vacuum suitable		HV	
P-003	Ratio	i	160 : 1	
P-004	Self-locking		yes	
P-005	Max. travel range	s	4500 µm	
P-012	Resolution		30 nm	
P-014	Lost motion		11.8139 µm	
P-015	Backlash		0 µm	
P-016	Rated force	F	2.22222 N	
P-017	Peak force	F	4.44444 N	
P-018	Momentary peak force	F	10.2222 N	

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Nr.	Parameter	Symbol	Value	Hint
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-037	Radial stiffness	c	11.32 N/µm	
P-038	Axial stiffness	c	40 N/µm	
P-039	Max. radial load on output shaft (non-operating, constant load)	F	135 N	
P-040	Max. radial load on output shaft (non-operating, impulsive load)	F	45 N	
P-041	Max. radial load on output shaft (operating, constant load)	F	32 N	
P-042	Max. radial load on output shaft (operating, impulsive load)	F	32 N	
P-043	Max. axial load on output shaft (non-operating, constant)	F	150 N	
P-044	Max. axial load on output shaft (non-operating, impulsive load)	F	50 N	
P-045	Max. axial load on output shaft (operating, constant load)	F	380 N	
P-046	Max. axial load on output shaft (operating, impulsive load)	F	127 N	
P-055	Moment of inertia	I	960 * 10 ⁻⁴ gcm ²	
P-056	Weight	m	124 g	
P-057	Min. permissible ambient temperature (non-operating)	T	-20 °C	
P-058	Min. permissible ambient temperature (operating)	T	0 °C	
P-059	Max. permissible ambient temperature (non-operating)	T	80 °C	
P-060	Max. permissible ambient temperature (operating)	T	60 °C	

Additional technical data:

- - Vacuum supply
- magnetic Pick Tool Holder
- axial spring-loaded

Motor data: Stepper AM 1020-RV-V-3-16-01-1977 dry lubrication
(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	3000 rpm	
P-103	Resonance frequency of motor	f	140 Hz	

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Nr.	Parameter	Symbol	Value	Hint
P-105	Holding torque of motor (unpowered)	T	0.2 mNm	
P-109	Rated current of motor	I	180 mA	
P-111	Rated voltage of motor	U	3 V	
P-112	Phase resistance of motor	R	16 ohm	
P-113	Inductance of motor	L	5.2 mH	
P-114	Amplitude BEMF of motor	U	0.867 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	

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.o.	

Excenter data

Nr.	Parameter	Symbol	Value	Hint
P-501	Eccentricity		2250 μm	
P-504	Max. radial load on eccentric bearing (non-operating, constant load)	F	4.44444 N	
P-505	Max. radial load on eccentric bearing (non-operating, impulsive load)	F	4.44444 N	
P-506	Max. radial load on eccentric bearing (operating, constant load)	F	4.44444 N	
P-507	Max. radial load on eccentric bearing (operating, impulsive load)	F	4.44444 N	
P-508	Max. axial load on eccentric bearing (non-operating, constant load)	F	150 N	

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Nr.	Parameter	Symbol	Value	Hint
P-509	Max. axial load on eccentric bearing (non-operating, impulsive load)	F	50 N	
P-510	Max. axial load on eccentric bearing (operating, constant load)	F	380 N	
P-511	Max. axial load on eccentric bearing (operating, impulsive load)	F	127 N	
P-513	Eccentricity error		20 µm	

Data linear bearing

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

Nr.	Parameter	Symbol	Value	Hint
P-600	Type of guiding system		Micro frictionless table type NDN	
P-601	Max. lateral force in y-direction (non-operating, constant load)	F	50 N	
P-602	Max. lateral force in y-direction (non-operating, impulsive load)	F	50 N	
P-603	Max. lateral force in y-direction (operating, constant load)	F	50 N	
P-604	Max. lateral force in y-direction (operating, impulsive load)	F	50 N	
P-605	Max. lateral force in z-direction (non-operating, constant load)	F	50 N	
P-606	Max. lateral force in z-direction (non-operating, impulsive load)	F	50 N	
P-607	Max. lateral force in z-direction (operating, constant load)	F	50 N	
P-608	Max. lateral force in z-direction (operating, impulsive load)	F	50 N	
P-609	Max. overturning around y-axis (non-operating, constant load)	T	90 mNm	
P-610	Max. overturning around y-axis (non-operating, impulsive load)	T	90 mNm	
P-611	Max. overturning around y-axis (operating, constant load)	T	90 mNm	
P-612	Max. overturning around y-axis (operating, impulsive load)	T	90 mNm	
P-613	Max. overturning around z-axis (non-operating, constant load)	T	140 mNm	
P-614	Max. overturning around z-axis (non-operating, impulsive load)	T	140 mNm	
P-615	Max. overturning around z-axis (operating, constant load)	T	140 mNm	

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Nr.	Parameter	Symbol	Value	Hint
P-616	Max. overturning around z-axis (operating, impulsive load)	T	140 mNm	
P-618	Stiffness in y-direction	c	10 N/μm	
P-619	Stiffness in z-direction	c	10 N/μm	
P-620	Backlash of linear guiding in y-direction		Zero backlash/ preloaded	
P-621	Backlash of linear guiding in z-direction		Zero backlash/ preloaded	

Data flexure hinges

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

Nr.	Parameter	Symbol	Value	Hint
P-703	Angular position of eccentric at min. position	α	0 °	
P-704	Angular position of eccentric at max. position	α	360 °	

Material information

Nr.	Parameter	Symbol	Value	Hint
P-900	RoHS compliant		yes	
P-901	Lubrication of output bearing gearbox		FomblinGRM60	
P-902	Lubrication of input bearing gearbox		FomblinGRM60	
P-903	Lubrication of gear component set		FomblinGRM60	
P-904	Lubrication of bearing motor		FomblinGRM60	
P-906	Lubrication of linear bearing		KP2K/ DIN 51502	
P-907	Lubrication of eccentric bearing		FomblinGRM60	
P-908	Material of gear component set		NiFe	
P-909	Material of output bearing gearbox		1.4108 DIN EN	
P-910	Material of input 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	

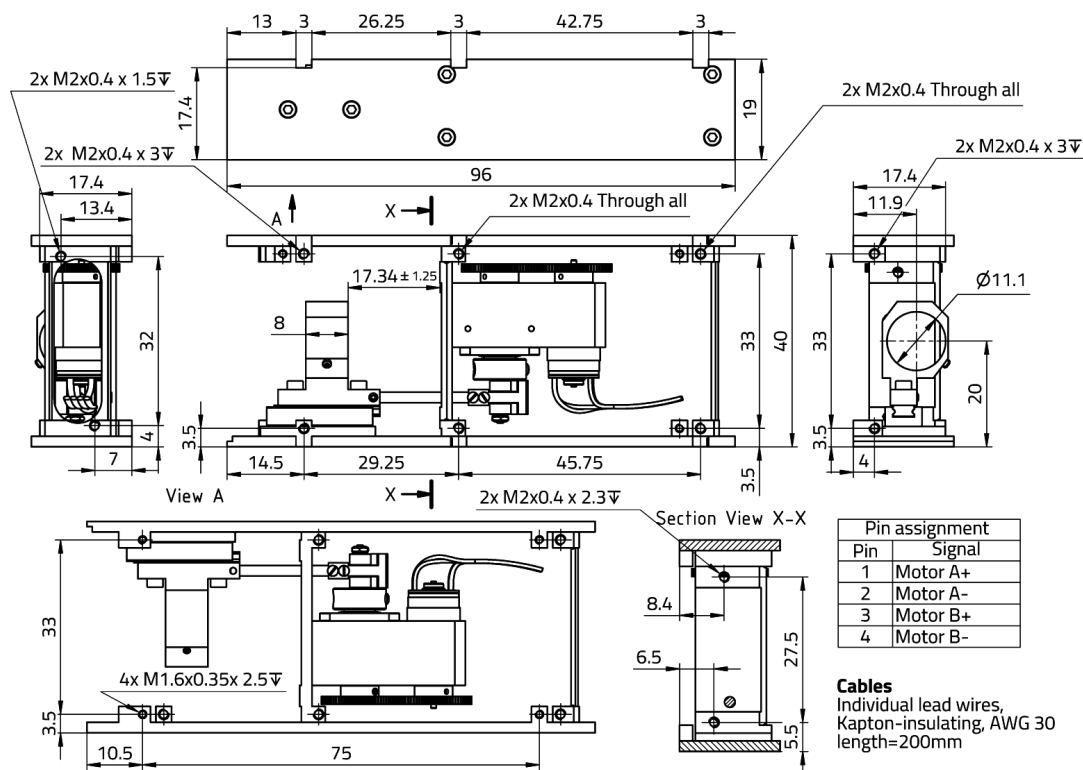
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Nr.	Parameter	Symbol	Value	Hint
P-915	Material of eccentric bearing		1.4108 DIN EN	

Technical drawing



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