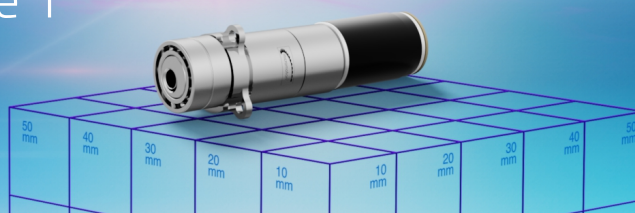


> KeevoDrive®

MedTec 10mm - Type 1



Attributes

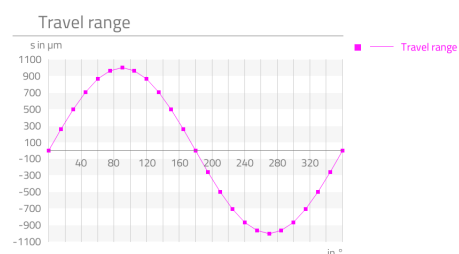
Highlights	Description
▪ Zero backlash at ultra high resolution ▪ Sterilizable ▪ Step with in the range of nm ▪ Robust control without feedback system ▪ High load capacity of output bearing	The KeevoDrive® MedTec 10mm - type 1 micro positioning system was specially designed for use in medical technology and is defined, in particular, by its sterilising capability. An eccentric with eccentricity of 1000 µm enables a travel range of up to 2000 µm. Because the system is driven by a stepper motor with 20 steps per rotation, it can easily be operated in an open loop control. A zero-backlash MaalonDrive® gear with a reduction ratio of 1000:1 forms the heart of this high-reduction and reliable micro system.

Technical parameter

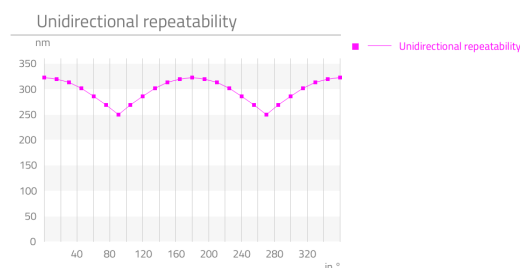
The stated values are based on calculations and measurements by Micromotion GmbH, carried out according to the current state of the art. You can find our definitions at www.micromotion-drives.com.

For further information please contact sales@micromotion.de.

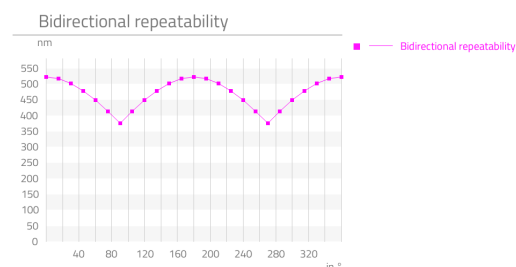
P-005



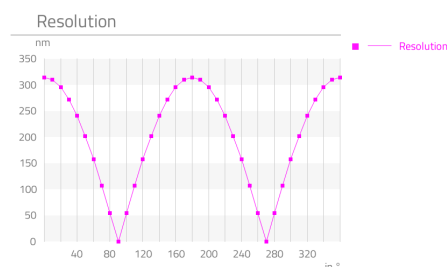
P-008



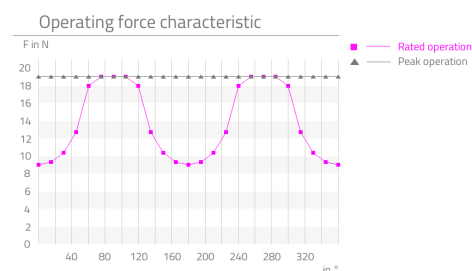
P-009



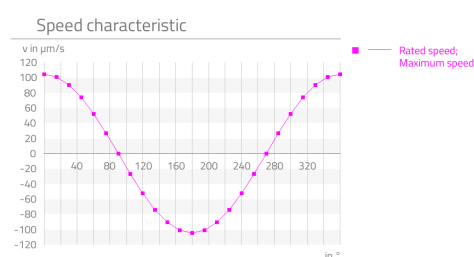
P-012



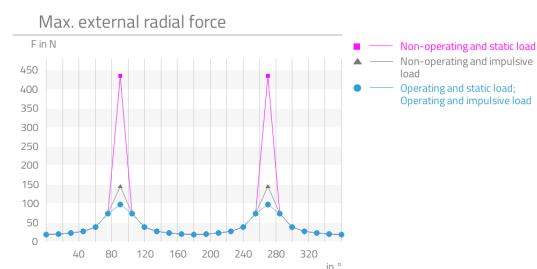
P-016



P-502



P-512



Technical Supply Specifications: KeevoDrive® MedTec 10mm - Type 1



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Nr.	Parameter	Symbol	Value	Hint
P-002	Sterilizable		yes	
P-003	Ratio	i	1000 : 1	
P-004	Self-locking		yes	
P-005	Max. travel range	s	2000 µm	
P-014	Lost motion		8.751 µm	
P-015	Backlash		0 µm	
P-016	Rated force	F	9 N	
P-016	Rated torque	T	9 mNm	
P-017	Peak force	F	19 N	
P-017	Peak torque	T	19 mNm	
P-018	Momentary peak torque	T	47 mNm	
P-018	Momentary peak force	F	47 N	
P-021	Rated input speed	n	10000 rpm	
P-022	Maximum input speed	n	21000 rpm	
P-027	No-load running torque	T	200 µNm	
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-037	Radial stiffness	c	69.13 N/µm	
P-038	Axial stiffness	c	40 N/µm	
P-039	Max. radial load on output shaft (non-operating, constant load)	F	435 N	
P-040	Max. radial load on output shaft (non-operating, impulsive load)	F	145 N	
P-041	Max. radial load on output shaft (operating, constant load)	F	98 N	
P-042	Max. radial load on output shaft (operating, impulsive load)	F	98 N	
P-043	Max. axial load on output shaft (non-operating, constant load)	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	955 * 10 ⁻⁴ gcm ²	
P-056	Weight	m	19 g	

Technical Supply Specifications: KeevoDrive® MedTec 10mm - Type 1



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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	

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

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

Nr.	Parameter	Symbol	Value	Hint
P-100	Motor type		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 °/W	
P-120	Thermal resistance of motor between housing and air	R _{th2}	53.8 °/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	

Excenter data

Technical Supply Specifications: KeevoDrive® MedTec 10mm - Type 1



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Nr.	Parameter	Symbol	Value	Hint
P-501	Eccentricity		1000 µm	
P-504	Max. radial load on eccentric bearing (non-operating, constant load)	F	19 N	
P-505	Max. radial load on eccentric bearing (non-operating, impulsive load)	F	19 N	
P-506	Max. radial load on eccentric bearing (operating, constant load)	F	19 N	
P-507	Max. radial load on eccentric bearing (operating, impulsive load)	F	19 N	
P-508	Max. axial load on eccentric bearing (non-operating, constant load)	F	150 N	
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	

Material information

Nr.	Parameter	Symbol	Value	Hint
P-900	RoHS compliant		yes	
P-901	Lubrication of output bearing gearbox		BarriertaL55/2	
P-902	Lubrication of input bearing gearbox		BarriertaL55/2	
P-903	Lubrication of gear component set		BarriertaL55/2	
P-904	Lubrication of bearing motor		BarriertaL55/2	
P-907	Lubrication of eccentric bearing		BarriertaL55/2	
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	

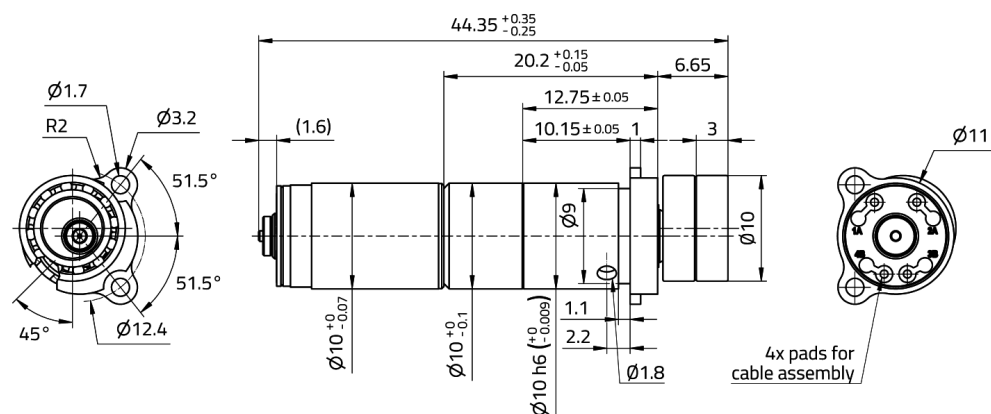
Technical Supply Specifications: KeevoDrive® MedTec 10mm - Type 1



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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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