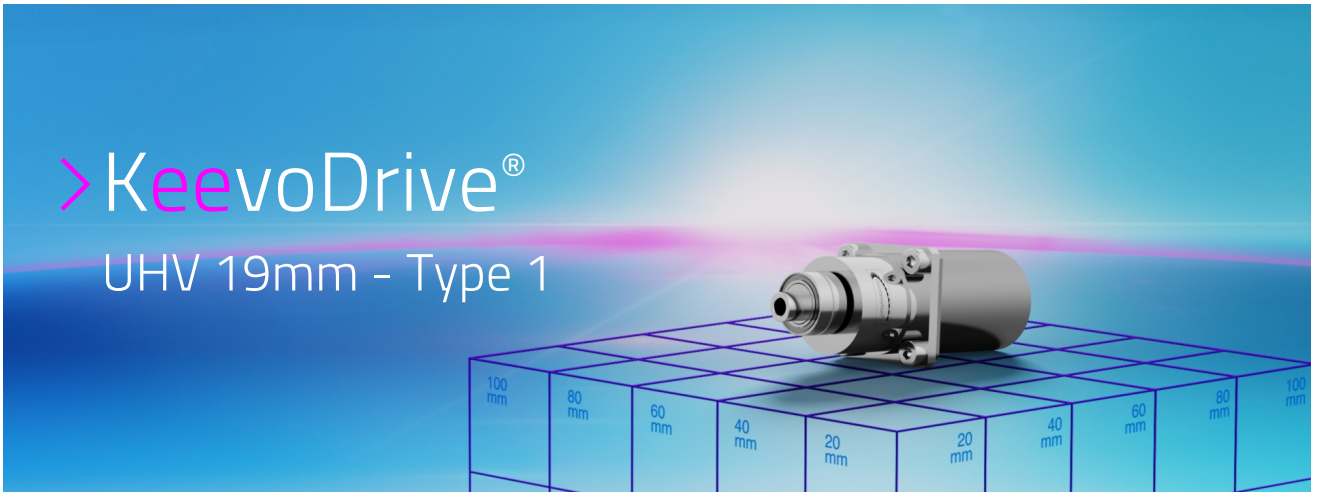
Technical Supply Specifications:
KeevoDrive® UHV 19mm - Type 1

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



Attributes

Highlights	Description
▪ **Zero backlash at high adjustment speed** ▪ **Vacuum suitable lubrication** ▪ **Step with in the range of nm** ▪ **Robust control without feedback system** ▪ **High load capacity of output bearing**	The KeevoDrive® UHV 19mm - type 1 micro positioning system is characterised by its very high movement resolution and was specially designed for use in ultra-high-vacuum environments. Both the ball bearings as well as the gear component set are lubricated with Braycote for this reason. The gear itself is a zero-backlash MaalonDrive® gear with a reduction ratio of 120:1. The micro positioning system is based on an eccentric with eccentricity of 500 µm, thereby making possible a travel range of up to 1000 µm. Because it is driven by a stepper motor with 200 steps per rotation, it can easily be operated in an open loop control.

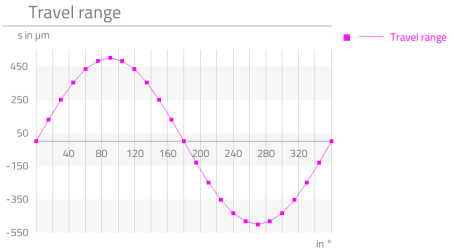
Version: 2-2018-05-02

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

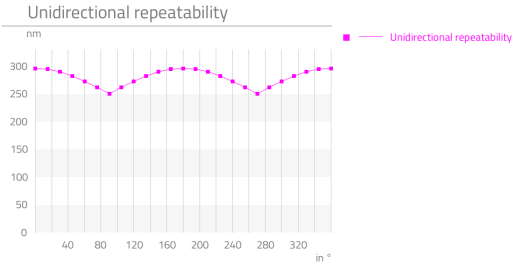
Technical parameter

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.

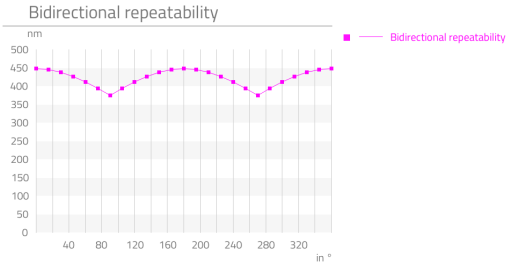
P-005



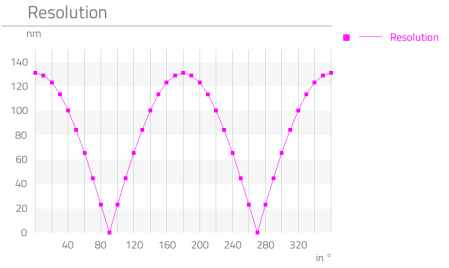
P-008



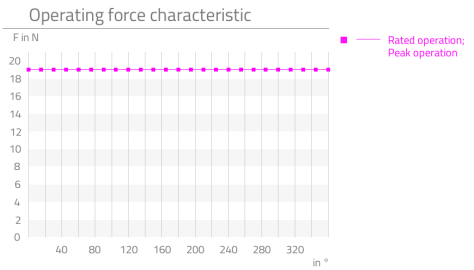
P-009



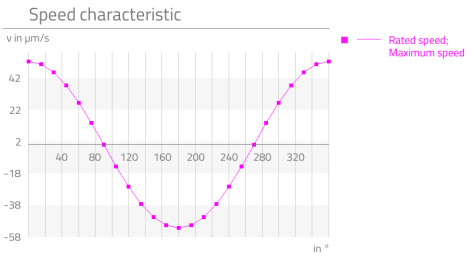
P-012



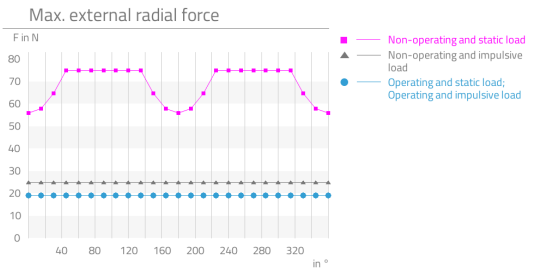
P-016



P-502



P-512



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

Nr.	Parameter	Symbol	Value	Hint
P-001	Vacuum suitable		HV	
P-003	Ratio	i	120 : 1	
P-004	Self-locking		yes	
P-005	Max. travel range	s	1000 µm	
P-014	Lost motion		4.3755 µm	
P-015	Backlash		0 µm	
P-016	Rated force	F	30 N	
P-017	Peak force	F	56 N	
P-018	Momentary peak force	F	140 N	
P-034	Lifetime for rated operation		300 h	
P-035	Radial backlash output shaft		0 µm	
P-036	Axial backlash output shaft		0 µm	
P-037	Radial stiffness	c	4.16 N/µm	
P-038	Axial stiffness	c	40 N/µm	
P-039	Max. radial load on output shaft (non-operating, constant load)	F	75 N	
P-040	Max. radial load on output shaft (non-operating, impulsive load)	F	25 N	
P-041	Max. radial load on output shaft (operating, constant load)	F	19 N	
P-042	Max. radial load on output shaft (operating, impulsive load)	F	19 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	900025 * 10^{-4} gcm^2	
P-056	Weight	m	85 g	
P-057	Min. permissible ambient temperature (non-operating)	T	-20 °C	
P-058	Min. permissible ambient temperature (operating)	T	-20 °C	
P-059	Max. permissible ambient temperature (non-operating)	T	150 °C	
P-060	Max. permissible ambient temperature (operating)	T	120 °C	

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

Motor data: Stepper VSS 19.200.0,6-UHVG-2g5-BC-R

(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	1000 rpm	
P-105	Holding torque of motor (unpowered)	T	0.9 mNm	
P-109	Rated current of motor	I	600 mA	
P-111	Rated voltage of motor	U	42 V	
P-112	Phase resistance of motor	R	2.1 ohm	
P-113	Inductance of motor	L	0.85 mH	
P-115	Full step angle of motor		1.8 °	
P-116	Angular accuracy of step of motor		±0.09 °	
P-117	Electrical time constant of motor	t	0.367 ms	
P-118	Max. coil temperature of motor	T	300 °C	1)

Excenter data

Nr.	Parameter	Symbol	Value	Hint
P-501	Eccentricity		500 µm	
P-504	Max. radial load on eccentric bearing (non-operating, constant load)	F	56 N	
P-505	Max. radial load on eccentric bearing (non-operating, impulsive load)	F	25 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	

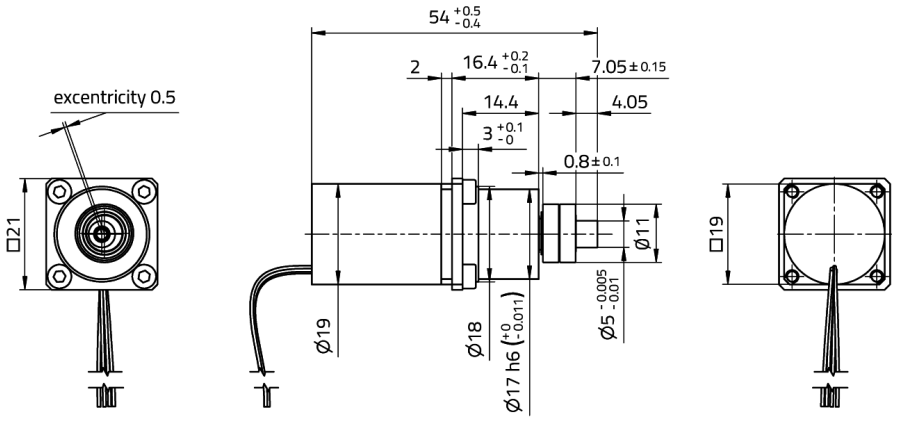
Micromotion GmbH, Phone: +49 (0) 6431 – 569 18 – 25, E-mail: sales@micromotion.de

Material information

Nr.	Parameter	Symbol	Value	Hint
P-900	RoHS compliant		yes	
P-901	Lubrication of output bearing gearbox		Braycote601EF	
P-903	Lubrication of gear component set		Braycote601EF	
P-904	Lubrication of bearing motor		Braycote601EF	
P-907	Lubrication of eccentric bearing		Braycote601EF	
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		1.4301 DIN EN	
P-914	Material of motor housing		Stainless steel	
P-915	Material of eccentric bearing		1.4108 DIN EN	

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

Technical drawing



Pin assignment	
Color	Signal
YEL	A+
RED	A-
BLU	B+
GRE	B-

Cable:
Individual lead wires,
Kapton-insulating, AWG 28,
length=300mm

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