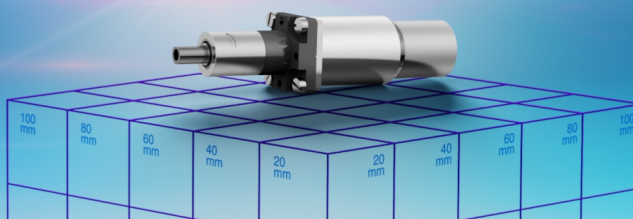


> MaalonDrive® UHV 19mm - Type 2



Attributes

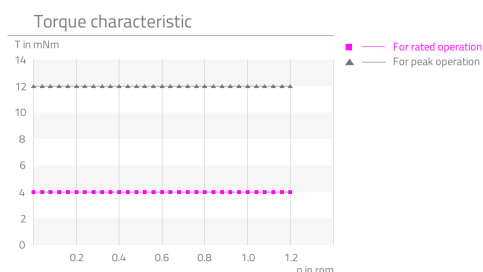
Highlights	Description
▪ High repeatability ▪ Dry lubrication due to coatings ▪ Zero backlash at high resolution ▪ Suitable in wide temperature range ▪ Easy controllability	The MaalonDrive® UHV 19mm - type 1 is, thanks to the dry lubrication and the materials that are used, especially well suited for applications in extreme environmental conditions, particularly in ultra-high-vacuum environments. It is driven by a stepper motor with 200 steps per rotation and an encoder with 3600 pulses per rotation. Directly connected to the motor is a zero-backlash and high-reduction MaalonDrive® gear with a reduction ratio of 500:1 that is equipped with a preloaded ball bearing on the output side to which the application can be directly connected.

Technical parameter

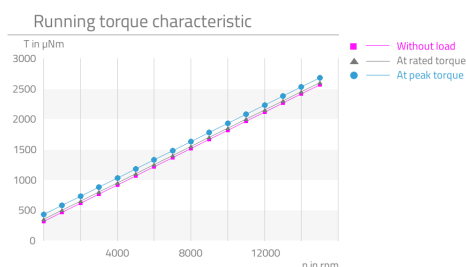
The stated values are based on calculations and measurements by Micromotion GmbH, carried out according to the current state of the art. You can find our definitions at www.micromotion-drives.com.

For further information please contact sales@micromotion.de.

P-019



P-029



Nr.	Parameter	Symbol	Value	Hint
P-001	Vacuum suitable		UHV	
P-003	Ratio	i	500 : 1	
P-004	Self-locking		yes	
P-008	Repeatability unidirectional		21.296 arcsec	
P-009	Repeatability bidirectional		40.0432 arcmin	
P-010	Accuracy		15.0432 arcmin	
P-011	Transmission accuracy		30.0864 arcmin	
P-012	Resolution		0.0036 °	
P-013	Torsional stiffness		6.13 $\frac{\text{Nm}}{\text{rad}}$	
P-014	Lost motion		40 arcmin	
P-015	Backlash		0 arcmin	
P-016	Rated torque	T	4 mNm	
P-017	Peak torque	T	12 mNm	
P-018	Momentary peak torque	T	16 mNm	
P-021	Rated input speed	n	1000 rpm	
P-022	Maximum input speed	n	1000 rpm	
P-023	Rated output speed	n	2 rpm	
P-024	Maximum output speed	n	2 rpm	

Technical Supply Specifications: MaalonDrive® UHV 19mm - Type 2



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Nr.	Parameter	Symbol	Value	Hint
P-026	No-load starting torque	T	202.5 µNm	
P-027	No-load running torque	T	315 µNm	
P-028	Rated running torque	T	1815 µNm	
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-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 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	11559 * 10 ⁻⁴ gcm ²	
P-056	Weight	m	79 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	

Motor data: Stepper VSS 19.200.1,2-UHVG-4LP

(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	

Technical Supply Specifications: MaalonDrive® UHV 19mm - Type 2



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Nr.	Parameter	Symbol	Value	Hint
P-109	Rated current of motor	I	1200 mA	
P-111	Rated voltage of motor	U	42 V	
P-112	Phase resistance of motor	R	0.63 ohm	
P-113	Inductance of motor	L	0.21 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	0.333 ms	
P-118	Max. coil temperature of motor	T	300 °C	1)

Encoder data

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

Nr.	Parameter	Symbol	Value	Hint
P-201	Impulses per revolution of encoder		3600	
P-202	Channels of encoder		A, A-, B, B-, I, I-	
P-203	Frequency range of encoder	f	200 kHz	
P-204	Operating voltage of encoder	U	4.5 - 30	
P-205	Rated current consumption of encoder	I	35 mA	2)
P-206	Output current of encoder	I	20 mA	3)
P-207	Signal/phase shifting of encoder		90±18 °	

Material information

Nr.	Parameter	Symbol	Value	Hint
P-900	RoHS compliant		yes	
P-901	Lubrication of output bearing gearbox		MoS ₂ (dry lubrication)	
P-902	Lubrication of input bearing gearbox		MoS ₂ (dry lubrication)	
P-903	Lubrication of gear component set		DICRONITE®/MoS ₂ (drylubrication)	
P-904	Lubrication of bearing motor		Lubcon Ultratherm 2000	
P-908	Material of gear component set		NiFe	
P-909	Material of output bearing gearbox		1.4108 DIN EN	

Technical Supply Specifications: MaalonDrive® UHV 19mm - Type 2



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Nr.	Parameter	Symbol	Value	Hint
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-913	Material of gearbox input side		1.4043 DIN EN	
P-914	Material of motor housing		Stainless steel	

- 2) Maximal, at no load on outputs
3) Maximal load per output channel

Technical drawing

