

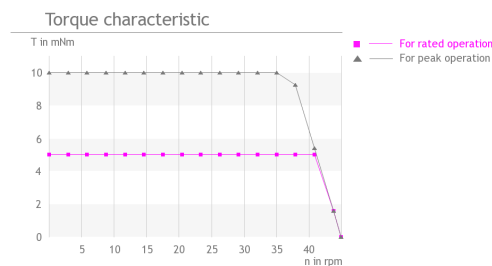


Attributes

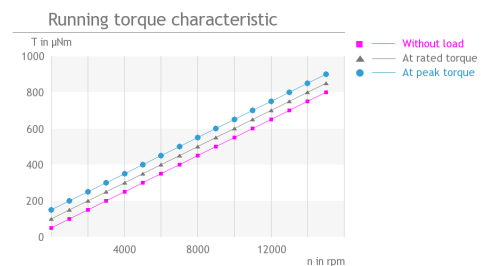
Highlights	Description
<ul style="list-style-type: none"> ▪ High repeatability ▪ Zero backlash with optimised fit between speed and resolution ▪ Easy controllability ▪ Simple integration to the application ▪ Preloaded ball bearing 	<p>Zero backlash, robust output bearing and excellent controllability characterise the MaalonDrive® HighAcc 10mm - type 1 micro positioning system. The combination of a zero-backlash MaalonDrive® gear with a reduction ratio of 160:1 with a DC motor with rated voltage of 12V and an integrated encoder with a resolution of 256 pulses per rotation results in a high-performance micro positioning system. Preloaded ball bearings mounted on the output side allow the application to be directly connected.</p>

Technical parameter

P-019



P-029



Technical Supply Specifications: MaalonDrive® HighAcc 10mm - Type 1



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Nr.	Parameter	Symbol	Value	Hint
P-003	Ratio	i	160 : 1	
P-004	Self-locking		yes	
P-008	Repeatability unidirectional		15 arcsec	
P-009	Repeatability bidirectional		20 arcmin	
P-010	Accuracy		12 arcmin	
P-011	Transmission accuracy		24 arcmin	
P-012	Resolution		0.00879 °	
P-013	Torsional stiffness		8.25 $\frac{\text{Nm}}{\text{rad}}$	
P-014	Lost motion		12 arcmin	
P-015	Backlash		0 arcmin	
P-016	Rated torque	T	5 mNm	
P-017	Peak torque	T	10 mNm	
P-018	Momentary peak torque	T	23 mNm	
P-021	Rated input speed	n	10000 rpm	
P-022	Maximum input speed	n	14000 rpm	
P-023	Rated output speed	n	62.5 rpm	
P-024	Maximum output speed	n	87.5 rpm	
P-026	No-load starting torque	T	75 μNm	
P-027	No-load running torque	T	50 μNm	
P-028	Rated running torque	T	600 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	2.3 N/ μm	
P-038	Axial stiffness	c	40 N/ μm	
P-039	Max. radial load on output shaft (non-operating, constant load)	F	55 N	
P-040	Max. radial load on output shaft (non-operating, impulsive load)	F	20 N	
P-041	Max. radial load on output shaft (operating, constant load)	F	7 N	
P-042	Max. radial load on output shaft (operating, impulsive load)	F	7 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	

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Nr.	Parameter	Symbol	Value	Hint
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	$727 * 10^{-4}$ gcm ²	
P-056	Weight	m	12 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	85 °C	
P-060	Max. permissible ambient temperature (operating)	T	65 °C	

Motor data: DC-Motor RE 10 12V 0.75W

Nr.	Parameter	Symbol	Value	Hint
P-100	Motortype		DC	
P-102	Maximum speed of motor	n	14000 rpm	
P-104	Speed constant of motor	Kn	1000 rpm/V	
P-106	Stall torque of motor	T	1.01 mNm	
P-107	Torque constant of motor	Km	9.55 mNm/A	
P-108	No-load current of motor	I	5.37 mA	
P-110	Max. continuous current of motor	I	81 mA	
P-111	Rated voltage of motor	U	12 V	
P-112	Phase resistance of motor	R	114 ohm	
P-113	Inductance of motor	L	0.92 mH	
P-114	Amplitude BEMF of motor	U	1 mV/rpm	
P-118	Max. coil temperature of motor	T	85 °C	
P-119	Thermal resistance of motor between coil and housing	R _{th1}	19.5 K/W	
P-120	Thermal resistance of motor between housing and air	R _{th2}	45.5 K/W	
P-121	Thermal time constant of the coil of the motor	T _{w1}	3160 ms	
P-122	Thermal time constant of the housing of the motor	T _{w2}	108000 ms	

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Encoder data

Nr.	Parameter	Symbol	Value	Hint
P-201	Impulses per revolution of encoder		256	
P-202	Channels of encoder		A, A\, B, B\	
P-203	Frequency range of encoder	f	320 kHz	
P-204	Operating voltage of encoder	U	5 ±0.2 V	
P-206	Output current of encoder	I	5 mA	
P-207	Signal/phase shifting of encoder		90±45 °	

Material information

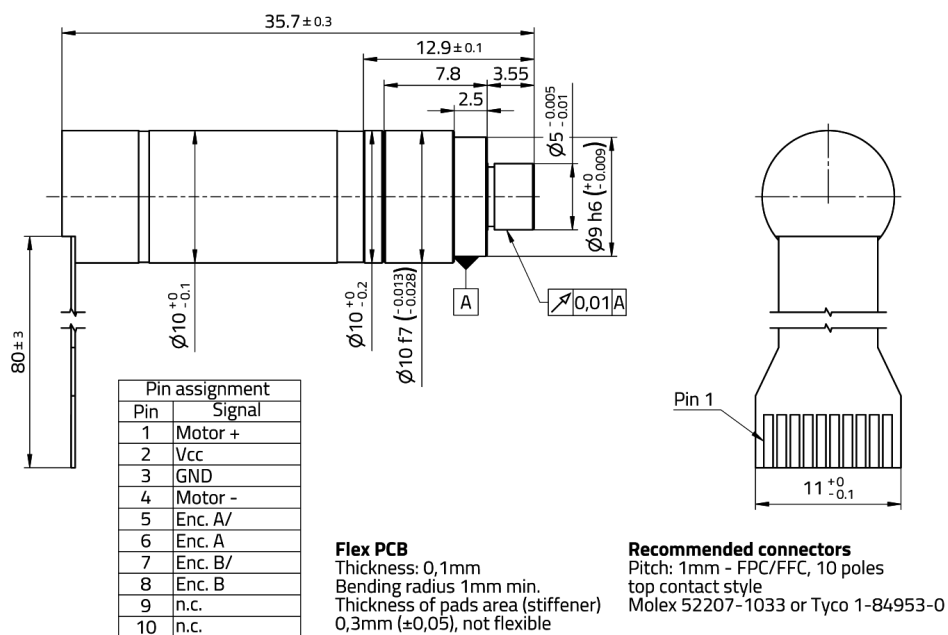
Nr.	Parameter	Symbol	Value	Hint
P-900	RoHS compliant		yes	
P-901	Lubrication of output bearing gearbox		Longtime PD2	
P-903	Lubrication of gear component set		Molykote BR 2 plus	
P-908	Material of gear component set		NiFe	
P-909	Material of output bearing gearbox		1.4108 DIN EN	
P-911	Material of bearing motor		Stainless steel	
P-912	Material of gearbox output side		1.4305 DIN EN	
P-914	Material of motor housing		Steel, black coated	

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Technical drawing



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