

Product data sheet

TP⁺

Low backlash planetary gearbox



Gearbox data	
Designation: TP050X-MF2-31-0G1-2S	
Gearbox type	TP ⁺
Gearbox size	050
Design keyword	Food-grade lubrication
Gearbox variation	Motor attachment gearbox
Gearbox stages	2
Gearbox ratio i	31
Output design	Flange
Clamping hub diameter	24 mm
Gearbox backlash	Standard
Gearbox material number	20059137

Technical specifications		
Max. output torque (Depending on the specific boundary conditions of the application)	T _{2α}	546 Nm
Max. acceleration torque (max. 1000 cycles per hour)	T _{2B}	546 Nm
Nominal output torque (with n _{in})	T _{2N}	431 Nm
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T _{2Not}	1250 Nm
Nominal input speed (with T _{2N} and 20°C ambient temperature ^{a)})	n _{1N}	2900 min ⁻¹
Max. input speed	n _{1Max}	6250 min ⁻¹
Mean no load running torque (with n _i =3000 min ⁻¹ and 20°C gearbox temp. ^{b)})	T ₀₁₂	2.3 Nm
Max. torsional backlash	j _t	≤ 3 arcmin
Torsional rigidity ^{b)}	C _{t21}	130 Nm/arcmin
Tilting rigidity	C _{2K}	560 Nm/arcmin
Max. axial force ^{c)}	F _{2AMax}	6130 N
Max. tilting moment	M _{2KMax}	1335 Nm
Efficiency at full load	η	94 %
Service life (for calculation, see the Chapter "Information" in our product catalogue)	L _h	> 20000 h
Weight incl. standard adapter plate	m	14.1 kg
Operating noise (with n _i =3000 min ⁻¹ no load)	L _{PA}	≤ 61 dB(A)
Max. permitted housing temperature		90 °C
Ambient temperature		-15 °C to 40 °C
Lubrication		food grade lubrication
Paint		Mankiewicz-Lack Seevenax 112
Protection class		IP 65
Inertia (relates to the drive)	J ₁	2.81 kgcm ²

a) For higher ambient temperatures, please reduce input speed

b) Depends on clamping hub diameter

c) Refers to center of the output shaft or flange