

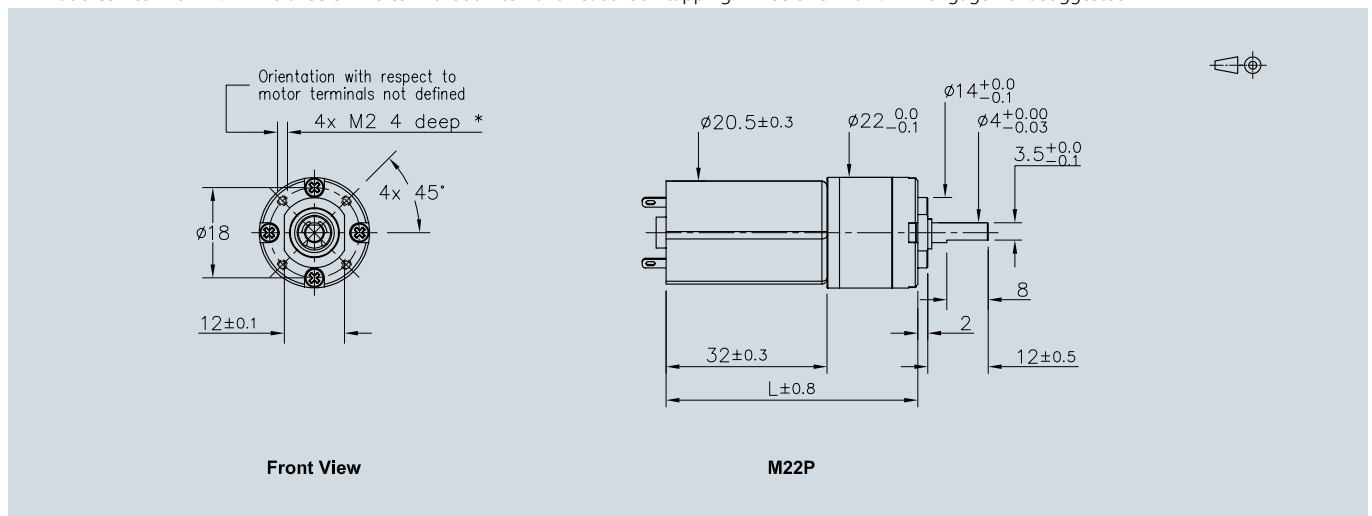
Series M22P

	M22P...		YSGT1	YSGT2	YBGT1	YBGT2	
Nominal voltage	U_N		12	24	12	24	Volt
Winding resistance	R	±10%	12.33	43.70	12.33	43.70	Ω
Output power	$P_{2 \max}$		2.7	3.04	2.7	3.04	W
No-load speed (motor)	n_o	±10%	8,124	8,910	8,124	8,910	rpm
Speed constant	k_n		704	387	704	387	rpm/V
Back-EMF constant	k_E		1.42	2.59	1.42	2.59	mV/rpm
Torque constant	k_M		13.57	24.69	13.57	24.69	mNm/A
Current constant	k_I		0.074	0.040	0.074	0.040	A/mNm
Slope of n-M curve	$\Delta n/\Delta M$		615	657	615	657	rpm/mNm
Rotor inductance	L		5.29	19.1	5.29	19.1	mH
Rotor inertia	J		3.3	3.3	3.3	3.3	gcm ²

Bearings on output shaft	sintered bronze bearings	preloaded ball bearings
Housing material	metal	metal
Geartrain material	hardened powdered metal	hardened powdered metal
Backlash, at no-load	≤ 4°	≤ 4°
Shaft load max.:		
– radial at (10 mm from bearing)	≤ 8 N	≤ 10 N
– axial	≤ 6 N	≤ 6 N
Shaft press fit force, max.	≤ 30 N	≤ 30 N
Shaft play:		
– radial (on bearing output)	≤ 0.05 mm	≤ 0.04 mm
– axial	≤ 0.25 mm	≤ 0.25 mm
Operating temperature range	-10 ... +60°C	-10 ... +60°C

reduction ratio (nominal)	12 volt output speed up to	24 volt output speed up to	weight g	length L mm	output torque		direction of rotation (reversible)	efficiency %
	n_{\max} rpm	n_{\max} rpm			continuous operation M max. mNm	intermittent operation M max. mNm		
4 : 1	1,502	1,680	58	46.70	8	16	=	80
16 : 1	407	450	62	50.35	25	50	=	70
19 : 1	348	384	62	50.35	30	60	=	70
62 : 1	109	120	66	54.00	80	160	=	60
84 : 1	79	88	66	54.00	110	220	=	60
104 : 1	64	71	66	54.00	140	280	=	60
231 : 1	29	32	92	57.65	250	500	=	50
316 : 1	22	24	92	57.65	250	500	=	50
370 : 1	19	21	92	57.65	250	500	=	50
455 : 1	15.5	17	92	57.65	250	500	=	50
1,014 : 1	7.0	7.7	100	61.30	300	600	=	40
1,621 : 1	4.6	5.0	100	61.30	300	600	=	40
1,996 : 1	3.8	4.2	100	61.30	300	600	=	40

* 4:1 Ratio comes with 1.6 mm dia. screw holes without internal threads. Self tapping M2 screws with 3mm engagement suggested.



How to order a M22P

Part number	Ratio	Voltage	Gearhead bearing	Stocked item
M22P0004YSGT1	4:1	12	sleeve	X
M22P0016YSGT1	16:1	12	sleeve	X
M22P0019YSGT1	19:1	12	sleeve	X
M22P0062YSGT1	62:1	12	sleeve	X
M22P0084YSGT1	84:1	12	sleeve	X
M22P0104YSGT1	104:1	12	sleeve	X
M22P0231YSGT1	231:1	12	sleeve	X
M22P0316YSGT1	316:1	12	sleeve	X
M22P0370YSGT1	370:1	12	sleeve	X
M22P0455YSGT1	455:1	12	sleeve	X
M22P1014YSGT1	1014:1	12	sleeve	X
M22P1621YSGT1	1621:1	12	sleeve	X
M22P1996YSGT1	1996:1	12	sleeve	X
M22P0004YBGT1	4:1	12	ball	
M22P0016YBGT1	16:1	12	ball	
M22P0019YBGT1	19:1	12	ball	
M22P0062YBGT1	62:1	12	ball	
M22P0084YBGT1	84:1	12	ball	
M22P0104YBGT1	104:1	12	ball	
M22P0231YBGT1	231:1	12	ball	
M22P0316YBGT1	316:1	12	ball	
M22P0370YBGT1	370:1	12	ball	
M22P0455YBGT1	455:1	12	ball	
M22P1014YBGT1	1014:1	12	ball	
M22P1621YBGT1	1621:1	12	ball	
M22P1996YBGT1	1996:1	12	ball	
M22P0004YSGT2	4:1	24	sleeve	X
M22P0016YSGT2	16:1	24	sleeve	X
M22P0019YSGT2	19:1	24	sleeve	X
M22P0062YSGT2	62:1	24	sleeve	X
M22P0084YSGT2	84:1	24	sleeve	X
M22P0104YSGT2	104:1	24	sleeve	X
M22P0231YSGT2	231:1	24	sleeve	X
M22P0316YSGT2	316:1	24	sleeve	X
M22P0370YSGT2	370:1	24	sleeve	X
M22P0455YSGT2	455:1	24	sleeve	X
M22P1014YSGT2	1014:1	24	sleeve	X
M22P1621YSGT2	1621:1	24	sleeve	X
M22P1996YSGT2	1996:1	24	sleeve	X
M22P0004YBGT2	4:1	24	ball	
M22P0016YBGT2	16:1	24	ball	
M22P0019YBGT2	19:1	24	ball	
M22P0062YBGT2	62:1	24	ball	
M22P0084YBGT2	84:1	24	ball	
M22P0104YBGT2	104:1	24	ball	
M22P0231YBGT2	231:1	24	ball	
M22P0316YBGT2	316:1	24	ball	
M22P0370YBGT2	370:1	24	ball	
M22P0455YBGT2	455:1	24	ball	
M22P1014YBGT2	1014:1	24	ball	
M22P1621YBGT2	1621:1	24	ball	
M22P1996YBGT2	1996:1	24	ball	