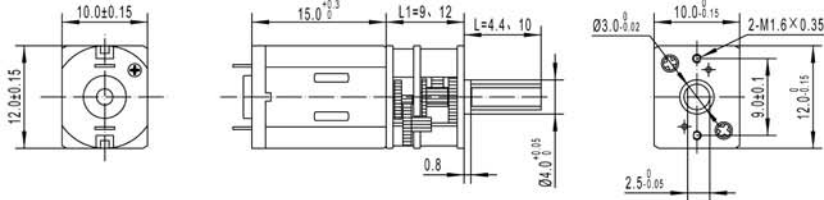


KLS23-GM12-N20VA 12X10mm gearbox plus N20 & N30 permanent magnet DC motor

- Small size dc gear motor with low speed and big torque
- 12mm gear motor provide 0.1Nm torque and more reliable
- Suitable to small diameter, low noise and big torque application
- Dc Gear motors can match encoder,3ppr
- Reduction Ratio: 3、5、10、20、30、50、63、100、150、210、250、298、380、1000



Gear Motor Dimensions (mm)



### Motor Technical Data

Motor model No.	Rated voltage	No-load speed	No-load current	Rated speed	Rated torque	Rated current	Output power	Stall torque	Stall current
	VDC	r/min	mA	r/min	g.cm	mA	W	g.cm	A
<b>TFF-N20VA-13110</b>	2.4	14800	60	12000	2.5	200	0.31	13	1.20
<b>TFF-N20VA-09220</b>	5.0	14800	30	12000	2.5	120	0.31	13	0.52
<b>TFF-N20VA-05430</b>	12.0	16000	15	12500	3.0	60	0.35	13	0.25

### Gear motor Technical Data Gearbox with motor: GM12 - N20VA - 13110 - XXX

	10	30	50	100	150	210	250	298	380	1000
<b>Reduction ratio</b>	10	30	50	100	150	210	250	298	380	1000
<b>Length mm</b>	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	12
<b>No-load speed rpm</b>	1450	470	285	145	96	69	58	50	38	14.5
<b>Rated speed rpm</b>	1200	400	240	120	80	57	48	40	31	12
<b>Rated torque kg.cm</b>	0.015	0.05	0.07	0.15	0.22	0.31	0.37	0.45	0.5	1.0
<b>Max.momentary tolerance torque kg.cm</b>	0.08	0.23	0.4	0.8	1.1	1.5	1.6	1.9	2.5	3.0

### Gearbox with motor GM12 - N20VA - 09220 - XXX

	10	30	50	100	150	210	250	298	380	1000
<b>Reduction ratio</b>	10	30	50	100	150	210	250	298	380	1000
<b>Length mm</b>	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	12
<b>No-load speed rpm</b>	1450	470	285	145	96	69	58	50	38	14.5
<b>Rated speed rpm</b>	1200	400	240	120	80	57	48	40	31	12
<b>Rated torque kg.cm</b>	0.015	0.05	0.07	0.15	0.22	0.31	0.37	0.45	0.5	1.0
<b>Max.momentary tolerance torque kg.cm</b>	0.08	0.23	0.4	0.8	1.1	1.5	1.6	1.9	2.5	3.0

### Gearbox with motor GM12 - N20VA - 05430 - XXX

	10	30	50	100	150	210	250	298	380	1000
<b>Reduction ratio</b>	10	30	50	100	150	210	250	298	380	1000
<b>Length mm</b>	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	12
<b>No-load speed rpm</b>	1550	530	310	160	110	78	60	55	43	16
<b>Rated speed rpm</b>	1100	400	250	125	83	60	50	42	33	13
<b>Rated torque kg.cm</b>	0.02	0.05	0.08	0.18	0.27	0.37	0.45	0.5	0.5	1.0
<b>Max.momentary tolerance torque kg.cm</b>	0.1	0.2	0.4	0.8	1.1	1.5	1.6	1.9	2.5	3.0