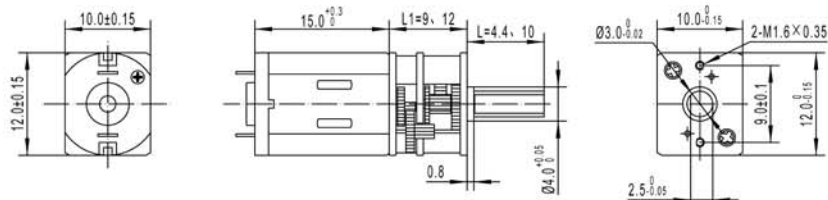## GM12-N20VA   12X10mm gearbox plus N20 & N30 permanent magnet DC motor

- 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 |
| TFF-N20VA-13110 | 2.4 | 14800 | 60 | 12000 | 2.5 | 200 | 0.31 | 13 | 1.20 |
| TFF-N20VA-09220 | 5.0 | 14800 | 30 | 12000 | 2.5 | 120 | 0.31 | 13 | 0.52 |
| TFF-N20VA-05430 | 12.0 | 16000 | 15 | 12500 | 3.0 | 60 | 0.35 | 13 | 0.25 |

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

| Reduction ratio | 10 | 30 | 50 | 100 | 150 | 210 | 250 | 298 | 380 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Length  mm | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 12 |
| No-load speed    rpm | 1450 | 470 | 285 | 145 | 96 | 69 | 58 | 50 | 38 | 14.5 |
| Rated speed    rpm | 1200 | 400 | 240 | 120 | 80 | 57 | 48 | 40 | 31 | 12 |
| Rated torque    kg.cm | 0.015 | 0.05 | 0.07 | 0.15 | 0.22 | 0.31 | 0.37 | 0.45 | 0.5 | 1.0 |
| Max.momentary tolerance torque  kg.cm | 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

| Reduction ratio | 10 | 30 | 50 | 100 | 150 | 210 | 250 | 298 | 380 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Length  mm | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 12 |
| No-load speed    rpm | 1450 | 470 | 285 | 145 | 96 | 69 | 58 | 50 | 38 | 14.5 |
| Rated speed    rpm | 1200 | 400 | 240 | 120 | 80 | 57 | 48 | 40 | 31 | 12 |
| Rated torque    kg.cm | 0.015 | 0.05 | 0.07 | 0.15 | 0.22 | 0.31 | 0.37 | 0.45 | 0.5 | 1.0 |
| Max.momentary tolerance torque  kg.cm | 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

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