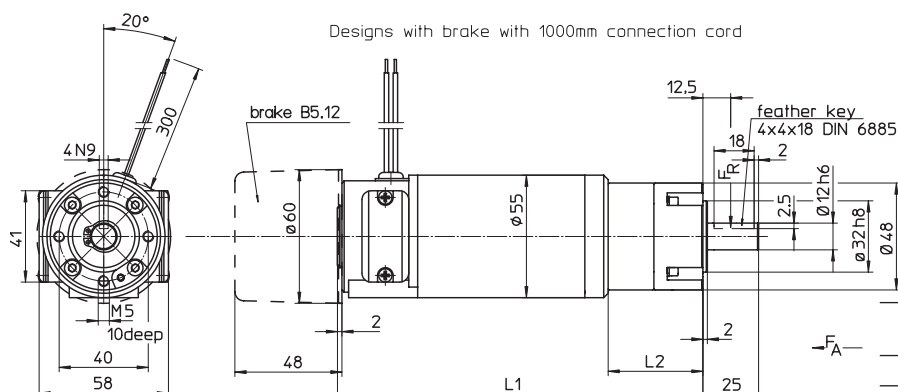




GNM 31 - GP 48.2

DC
Geared Motors
with permanent magnet field

Motor series GNM 31
with + without parking brake
Planetary gear series GP 48.2
up to 20 Nm



| Type | Gear Ratio | Dimension | |
|----------|---------------|-----------|------|
| | | L1 | L2 |
| GNM 3125 | 94:1 - 450 :1 | 173 | 76,5 |
| GNM 3150 | 5:1 - 7,66:1 | 164,5 | 43 |
| GNM 3150 | 21:1 - 59 :1 | 181 | 59,5 |

| | | | | |
|---------------------------------------|------------------|-----|--|--|
| type | GNM 31 - GP 48.2 | | | |
| series | - | | | |
| operation acc. to standards VDE 0530 | S1 | | | |
| isolation acc. to standards VDE 0530 | F | | | |
| protection acc. to standards VDE 0530 | IP 41 | | | |
| kind of connection | free leads | | | |
| rotating direction | reversible | | | |
| bearing (motor and gear box) | ball bearing | | | |
| gear box | not self-locking | | | |
| parking brake B 5.12 | | | | |
| nominal voltage | V | 24 | | |
| nominal current | A | 0,3 | | |
| static brake torque (motor shaft) | Nm | 0,5 | | |
| max. number of operations/h | 2000 | | | |

- Motors also available with DC-tachometer and/ or incremental encoder
- Motors also available in protection IP 54 and/ or with device plug DIN 43650
- Design with brake in protection IP 54 and with cable connection

Motor design:

Brush holder opening will be accessible by removing the cover plate.
Flange mounting with 4 threads, see drawing.

Rotating direction:

The rotating direction can be changed by inverting the connections.

1. Order example

Motor - gear box
GNM 3150 - GP 48.2
24 V, 3000 rpm - 5:1

2. Order example

Motor - gear box - DC-tachometer
GNM 3150 - GP 48.2 - T 9.05
42 V, 3000 rpm - 25:1 - 5 V / 1000 rpm

Special designs on request.

GNM 31 - GP 48.2

| 1 nominal voltage | 2 nominal speed | 3 nominal torque | 4 starting torque | 5 nominal torque at undulatory current | 6 nominal power | 7 nominal current | 8 nominal current at undulatory current | 9 peak current | 10 power gear box input | 11 nominal speed gear box input | 12 ratio gear box | 13 efficiency gear box | load limitations gear box | | | 17 max. backlash | 18 moment of inertia gear box ¹⁾ | 19 total weight motor + gear box | 20 total weight motor + gear box + parking brake | 21 F _k (allow. radial shaft load) ²⁾ | 22 F _A (allow. axial shaft load) | 23 Motor type | |
|-------------------|-----------------|--------------------|--------------------|--|-----------------|--------------------|---|--------------------|-------------------------|---------------------------------|-------------------|------------------------|---------------------------|----------------------|-------------------------|------------------|---|----------------------------------|--|--|---|---------------|--|
| | | | | | | | | | | | | | 14 max. power | 15 max. cont. torque | 16 max. starting torque | | | | | | | | |
| V | rpm | Nm | Nm | Nm | W | A | A | A | W | rpm | i | % | W | Nm | Nm | < min | kgm ² | kg | kg | N | N | | |
| 24 | 600 | 0,79 | 2,6 | 0,51 | 50 | 3,1 | 2,2 | 17,1 | 55 | 3000 | 5 :1 | 90 | 63 | 1,0 | 3,0 | 80 | 0,00017x10 ⁻³ | 1,5 | 1,7 | 112 | 100 | GNM 3150 | |
| 42 | | | | | | 1,8 | 1,3 | 10,8 | | | | | | | | | | | | | | | |
| 24 | 500 | 0,95 | 3,2 | 0,61 | 50 | 3,1 | 2,2 | 17,1 | 55 | 3000 | 6 :1 | 90 | 68 | 1,3 | 3,5 | 80 | 0,00012x10 ⁻³ | 1,5 | 1,7 | 112 | 100 | | |
| 42 | | | | | | 1,8 | 1,3 | 10,8 | | | | | | | | | | | | | | | |
| 24 | 392 | 1,0 ³⁾ | 3,0 ³⁾ | 0,79 | 41 | 2,7 ³⁾ | 2,2 | 12,8 ³⁾ | 46 | 3000 | 7,66:1 | 90 | 41 | 1,0 | 3,0 | 80 | 0,00007x10 ⁻³ | 1,5 | 1,7 | 112 | 100 | | |
| 42 | | | | | | 1,5 ³⁾ | 1,3 | 7,4 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 143 | 3,1 | 11 | 2,0 | 47 | 3,1 | 2,2 | 17,1 | 55 | 3000 | 21 :1 | 85 | 48 | 3,2 | 12 | 50 | 0,00015x10 ⁻³ | 1,6 | 1,8 | 150 | 110 | | |
| 42 | | | | | | 1,8 | 1,3 | 10,7 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 120 | 3,7 | 13 | 2,4 | 47 | 3,1 | 2,2 | 17,1 | 55 | 3000 | 25 :1 | 85 | 50 | 4,0 | 14,5 | 50 | 0,00014x10 ⁻³ | 1,6 | 1,8 | 150 | 110 | | |
| 42 | | | | | | 1,8 | 1,3 | 10,8 | | | | | | | | | | | | | | | |
| 24 | 100 | 4,5 | 14,5 ³⁾ | 2,9 | 47 | 3,1 | 2,2 | 15,7 ³⁾ | 55 | 3000 | 30 :1 | 85 | 50 | 4,8 | 14,5 | 50 | 0,00010x10 ⁻³ | 1,6 | 1,8 | 150 | 110 | | |
| 42 | | | | | | 1,8 | 1,3 | 9,1 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 83 | 5,4 | 16 ³⁾ | 3,5 | 47 | 3,1 | 2,2 | 14,5 ³⁾ | 55 | 3000 | 36 :1 | 85 | 48 | 5,5 | 16 | 50 | 0,00010x10 ⁻³ | 1,6 | 1,8 | 150 | 110 | | |
| 42 | | | | | | 1,8 | 1,3 | 8,4 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 65 | 5,6 ³⁾ | 16 ³⁾ | 4,5 | 38 | 2,6 ³⁾ | 2,2 | 11,4 ³⁾ | 45 | 3000 | 46 :1 | 85 | 38 | 5,6 | 16 | 50 | 0,00006x10 ⁻³ | 1,6 | 1,8 | 150 | 110 | | |
| 42 | | | | | | 1,5 ³⁾ | 1,3 | 6,6 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 51 | 6,0 ³⁾ | 16 ³⁾ | 5,7 | 32 | 2,3 ³⁾ | 2,2 | 9,0 ³⁾ | 38 | 3000 | 59 :1 | 85 | 32 | 6,0 | 16 | 50 | 0,00006x10 ⁻³ | 1,6 | 1,8 | 150 | 110 | | |
| 42 | | | | | | 1,3 ³⁾ | 1,3 | 5,2 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 32 | 7,2 ³⁾ | 18 ³⁾ | 4,8 | 24 | 2,0 ³⁾ | 1,4 | 6,8 ³⁾ | 30 | 3000 | 94 :1 | 80 | 25 | 7,5 | 18 | 55 | 0,00015x10 ⁻³ | 1,5 | 1,7 | 180 | 150 | GNM 3125 | |
| 42 | | | | | | 1,2 ³⁾ | 0,81 | 4,1 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 24 | 8,5 ³⁾ | 20 ³⁾ | 6,4 | 21 | 1,8 ³⁾ | 1,4 | 5,8 ³⁾ | 27 | 3000 | 125 :1 | 80 | 21 | 8,5 | 20 | 55 | 0,00014x10 ⁻³ | 1,5 | 1,7 | 180 | 150 | | |
| 42 | | | | | | 1,0 ³⁾ | 0,81 | 3,4 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 20 | 9,0 ³⁾ | 20 ³⁾ | 7,7 | 19 | 1,6 ³⁾ | 1,4 | 4,9 ³⁾ | 24 | 3000 | 150 :1 | 80 | 19 | 9,0 | 20 | 55 | 0,00010x10 ⁻³ | 1,5 | 1,7 | 180 | 150 | | |
| 42 | | | | | | 0,94 ³⁾ | 0,81 | 2,9 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 17 | 10,5 ³⁾ | 20 ³⁾ | 9,2 | 18 | 1,5 ³⁾ | 1,4 | 4,1 ³⁾ | 23 | 3000 | 180 :1 | 80 | 18 | 10,5 | 20 | 55 | 0,00010x10 ⁻³ | 1,5 | 1,7 | 180 | 150 | | |
| 42 | | | | | | 0,92 ³⁾ | 0,81 | 2,4 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 14 | 10,5 ³⁾ | 20 ³⁾ | 10,5 | 15 | 1,3 ³⁾ | 1,3 | 3,5 ³⁾ | 19 | 3000 | 216 :1 | 80 | 15 | 10,5 | 20 | 55 | 0,00010x10 ⁻³ | 1,5 | 1,7 | 180 | 150 | | |
| 42 | | | | | | 0,80 ³⁾ | 0,80 | 2,1 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 10 | 10,5 ³⁾ | 20 ³⁾ | 10,5 | 11 | 1,1 ³⁾ | 1,1 | 2,7 ³⁾ | 14 | 3000 | 293 :1 | 80 | 11 | 10,5 | 20 | 55 | 0,00006x10 ⁻³ | 1,5 | 1,7 | 180 | 150 | | |
| 42 | | | | | | 0,64 ³⁾ | 0,64 | 1,6 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 8,5 | 10,5 ³⁾ | 20 ³⁾ | 10,5 | 9,4 | 0,95 ³⁾ | 0,95 | 2,3 ³⁾ | 12 | 3000 | 352 :1 | 80 | 9,4 | 10,5 | 20 | 55 | 0,00006x10 ⁻³ | 1,5 | 1,7 | 180 | 150 | | |
| 42 | | | | | | 0,57 ³⁾ | 0,57 | 1,4 ³⁾ | | | | | | | | | | | | | | | |
| 24 | 6,7 | 9,0 ³⁾ | 18 ³⁾ | 9,0 | 6,3 | 0,75 ³⁾ | 0,75 | 1,7 ³⁾ | 7,9 | 3000 | 450 :1 | 80 | 6,3 | 9,0 | 18 | 55 | 0,00006x10 ⁻³ | 1,5 | 1,7 | 180 | 150 | | |
| 42 | | | | | | 0,45 ³⁾ | 0,45 | 1,0 ³⁾ | | | | | | | | | | | | | | | |

Tolerances ± 10 %

Columns 3 and 13

Values are valid at operating temperature after run-in period.

Columns 5 and 8

Current values should not exceeded during operation with undulatory current (single way rectification) with harmonic portion above 5%.

Columns 4 and 9

Figures correspond with the gearbox load limitations. For high gear ratios the allowed currents may be lower than the motors rated current. If so, please the current has to be limited, e.g. through adjusting the servo controller.

Columns 14, 15 and 16

To avoid gear box overload do not exceed the mentioned values. For oscillating operation the mentioned limitations must be multiplied by 0,75.

¹⁾ values are reduced to motor shaft

²⁾ middle of the shaft-extension

³⁾ motor current must be limited to avoid excess of the mentioned value