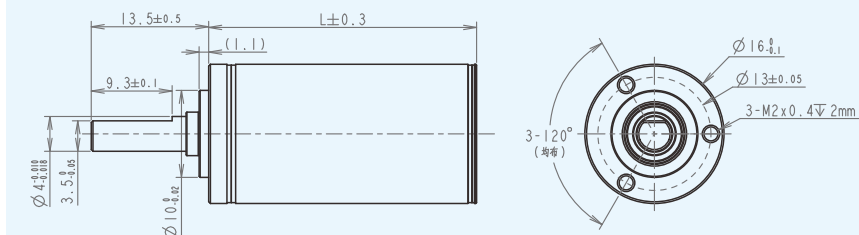


# ZWSMD016016

**Φ16mm** Planetary Gearbox



## Gearbox Technical Data

|                                           | 2                      | 3                                         | 4                                                                       |
|-------------------------------------------|------------------------|-------------------------------------------|-------------------------------------------------------------------------|
| Number of stages                          | 2                      | 3                                         | 4                                                                       |
| Max. continuous torque (Nm)               | 0.55                   | 0.8                                       | 0.9                                                                     |
| Max. intermittent torque (Nm)             | 0.7                    | 1                                         | 1.1                                                                     |
| Reduction Ratio                           | 16, 21, 26, 28, 35, 44 | 62, 83, 103, 111, 138, 150, 172, 186, 231 | 243, 326, 406, 439, 546, 590, 679, 734, 794, 913, 987, 1135, 1227, 1526 |
| Outer Diameter (mm)                       | 16                     | 16                                        | 16                                                                      |
| Gearbox Length L1(mm)                     | 25.8                   | 30.8                                      | 35.7                                                                    |
| Max. efficiency (%)                       | 80                     | 70                                        | 60                                                                      |
| Recommended temperature range (°C)        | -30~+100               | -30~+100                                  | -30~+100                                                                |
| Max. Weight (G)                           | 32.8                   | 36.8                                      | 40.8                                                                    |
| Max. continuous transmittable power (W)   | 8                      | 4                                         | 1.5                                                                     |
| Max. intermittent transmittable power (W) | 10                     | 4.4                                       | 1.5                                                                     |
| Average backlash no load (°)              | 0.5                    | 0.5                                       | 0.5                                                                     |
| Max. axial load (dynamic) (N)             | 30                     | 30                                        | 30                                                                      |
| Max. radial load (4mm from flange) (N)    | 80                     | 90                                        | 90                                                                      |
| Bearing at output                         | ball bearing           | ball bearing                              | ball bearing                                                            |
| Axial play (mm)                           | 0~0.1                  | 0~0.1                                     | 0~0.1                                                                   |

\* Note: Data above does not include the motor. Specifications can be customized per customer requirements.

## Modular assembly

| Integrated Product | Part No.            | Number of stages |      |      |
|--------------------|---------------------|------------------|------|------|
|                    |                     | 2                | 3    | 4    |
|                    |                     | Length(mm)       |      |      |
| DC Motor           | 1625 Graphite brush | 50.8             | 55.8 | 60.7 |
| Brushless Motor    | MC1636 Brushless    | 53.8             | 58.8 | 63.7 |
| Encoder            | CB-ST-16            | Magnetic Encoder |      |      |

## Product Specifications

| PART NO.         | Rated Voltage (V) | No-Load Data        |                          | Load Data        |                      |              | Overall Length (mm) | Gearbox Rated Allowable Torque (NM) | Gearbox Intermittent Allowable Torque (NM) | Reduction Ratio | Gearbox Length L1(mm) |
|------------------|-------------------|---------------------|--------------------------|------------------|----------------------|--------------|---------------------|-------------------------------------|--------------------------------------------|-----------------|-----------------------|
|                  |                   | No-Load Speed (rpm) | No-Load Current (mA max) | Load Speed (rpm) | Load Current (A Max) | Torque (N.m) |                     |                                     |                                            |                 |                       |
| ZWSMD016016-16   | 24                | 3000                | 150                      | 2500             | 1.15                 | 0.055        | 53.8                | 0.55                                | 0.7                                        | 16              | 25.8                  |
| ZWSMD016016-21   | 24                | 2286                | 150                      | 1905             | 1.15                 | 0.072        |                     |                                     |                                            | 21              |                       |
| ZWSMD016016-26   | 24                | 1846                | 150                      | 1538             | 1.15                 | 0.089        |                     |                                     |                                            | 26              |                       |
| ZWSMD016016-28   | 24                | 1714                | 150                      | 1429             | 1.15                 | 0.096        |                     |                                     |                                            | 28              |                       |
| ZWSMD016016-35   | 24                | 1371                | 150                      | 1143             | 1.15                 | 0.120        |                     |                                     |                                            | 35              |                       |
| ZWSMD016016-44   | 24                | 1091                | 150                      | 909              | 1.15                 | 0.151        |                     |                                     |                                            | 44              |                       |
| ZWSMD016016-62   | 24                | 774                 | 170                      | 645              | 1.2                  | 0.213        | 58.8                | 0.8                                 | 1                                          | 62              | 30.8                  |
| ZWSMD016016-83   | 24                | 578                 | 170                      | 482              | 1.2                  | 0.286        |                     |                                     |                                            | 83              |                       |
| ZWSMD016016-103  | 24                | 466                 | 170                      | 388              | 1.2                  | 0.354        |                     |                                     |                                            | 103             |                       |
| ZWSMD016016-111  | 24                | 432                 | 170                      | 360              | 1.2                  | 0.382        |                     |                                     |                                            | 111             |                       |
| ZWSMD016016-138  | 24                | 348                 | 170                      | 290              | 1.2                  | 0.475        |                     |                                     |                                            | 138             |                       |
| ZWSMD016016-150  | 24                | 320                 | 170                      | 267              | 1.2                  | 0.516        |                     |                                     |                                            | 150             |                       |
| ZWSMD016016-172  | 24                | 279                 | 170                      | 233              | 1.2                  | 0.592        |                     |                                     |                                            | 172             |                       |
| ZWSMD016016-186  | 24                | 258                 | 170                      | 215              | 1.2                  | 0.640        |                     |                                     |                                            | 186             |                       |
| ZWSMD016016-231  | 24                | 208                 | 170                      | 173              | 1.2                  | 0.795        | 63.7                | 0.9                                 | 1.1                                        | 231             | 35.7                  |
| ZWSMD016016-243  | 24                | 198                 | 190                      | 165              | 1.25                 | 1.100        |                     |                                     |                                            | 243             |                       |
| ZWSMD016016-326  | 24                | 147                 | 190                      | 123              | 1.25                 | 1.100        |                     |                                     |                                            | 326             |                       |
| ZWSMD016016-406  | 24                | 118                 | 190                      | 99               | 1.25                 | 1.100        |                     |                                     |                                            | 406             |                       |
| ZWSMD016016-439  | 24                | 109                 | 190                      | 91               | 1.25                 | 1.100        |                     |                                     |                                            | 439             |                       |
| ZWSMD016016-546  | 24                | 88                  | 190                      | 73               | 1.25                 | 1.100        |                     |                                     |                                            | 546             |                       |
| ZWSMD016016-590  | 24                | 81                  | 190                      | 68               | 1.25                 | 1.100        |                     |                                     |                                            | 590             |                       |
| ZWSMD016016-679  | 24                | 71                  | 190                      | 59               | 1.25                 | 1.100        |                     |                                     |                                            | 679             |                       |
| ZWSMD016016-734  | 24                | 65                  | 190                      | 54               | 1.25                 | 1.100        |                     |                                     |                                            | 734             |                       |
| ZWSMD016016-794  | 24                | 60                  | 190                      | 50               | 1.25                 | 1.100        |                     |                                     |                                            | 794             |                       |
| ZWSMD016016-913  | 24                | 53                  | 190                      | 44               | 1.25                 | 1.100        |                     |                                     |                                            | 913             |                       |
| ZWSMD016016-987  | 24                | 49                  | 190                      | 41               | 1.25                 | 1.100        |                     |                                     |                                            | 987             |                       |
| ZWSMD016016-1135 | 24                | 42                  | 190                      | 35               | 1.25                 | 1.100        |                     |                                     |                                            | 1135            |                       |
| ZWSMD016016-1227 | 24                | 39                  | 190                      | 33               | 1.25                 | 1.100        |                     |                                     |                                            | 1227            |                       |
| ZWSMD016016-1526 | 24                | 31                  | 190                      | 26               | 1.25                 | 1.100        |                     |                                     |                                            | 1526            |                       |