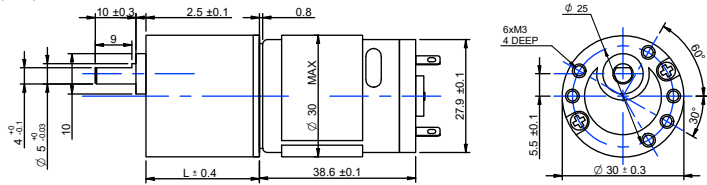


SD3039 | Ø 30 mm | 24 V | BRUSHED DC SPUR GEAR MOTOR



DRAWING (mm)



MODEL NO. DESIGNATION

|        |   |         |   |            |   |   |    |
|--------|---|---------|---|------------|---|---|----|
| SD3039 | - | VOLTAGE | - | GEAR RATIO | - | F | EC |
|--------|---|---------|---|------------|---|---|----|

Example: SD3039-24-20-FEC

F = EMC Filter  
EC = Encoder with cover

PHOTO



ACCESSORIES



● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

GEAR MOTOR DATA

| Gear ratio                       | 20:1 | 30:1 | 36:1 | 50:1 | 60:1 | 75:1 | 90:1 | 100:1 | 120:1 | 150:1 | 180:1 | 200:1 | 250:1 | 300:1 | 400:1 | 500:1 | 600:1 | 810:1 | 900:1 | 1000:1 | C    |
|----------------------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|------|
| Nominal torque   ^ gearbox limit | mNm  | 96   | 140  | 150^ | 200^ | 200^ | 290^ | 290^  | 390^  | 390^  | 440^  | 440^  | 440^  | 440^  | 440^  | 440^  | 440^  | 440^  | 440^  | 440^   |      |
| Nominal speed                    | rpm  | 260  | 170  | 150  | 110  | 91   | 73   | 62    | 56    | 46    | 37    | 29    | 24    | 20    | 15    | 12    | 10    | 8     | 7     | 6      |      |
| Peak torque                      | mNm  | 290  | 440  | 440  | 590  | 590  | 880  | 880   | 1180  | 1180  | 1300  | 1300  | 1300  | 1300  | 1300  | 1300  | 1300  | 1300  | 1300  | 1300   |      |
| Nominal power                    | W    | 2.6  | 2.5  | 2.3  | 2.2  | 1.9  | 2.2  | 1.9   | 1.7   | 1.9   | 1.5   | 1.5   | 1.3   | 1.1   | 0.9   | 0.7   | 0.56  | 0.48  | 0.36  | 0.32   | 0.29 |
| Gearbox efficiency               | %    | 66   | 66   | 66   | 66   | 66   | 66   | 66    | 66    | 53    | 53    | 53    | 53    | 53    | 53    | 53    | 53    | 53    | 53    | 53     |      |
| Gearbox length   L               | mm   | 23   | 23   | 23   | 23   | 23   | 23   | 23    | 28    | 28    | 28    | 28    | 28    | 28    | 28    | 28    | 28    | 28    | 28    | 28     |      |
| Weight                           | g    | 160  | 160  | 160  | 160  | 160  | 160  | 160   | 160   | 170   | 170   | 170   | 170   | 170   | 170   | 170   | 170   | 170   | 170   | 170    |      |

OTHER GEAR MOTOR DATA

|                        |    |                                 |   |
|------------------------|----|---------------------------------|---|
| Service life           | h  | 500                             | C |
| Performance tolerances | %  | ±15                             |   |
| Operating temperature  | °C | -10 to 60                       | ● |
| IP rating              |    | IP20                            |   |
| Manufacturing standard |    | ISO 9001   ISO 14001   TS 16949 |   |
| CE label   UL label    |    | No   No                         | ● |

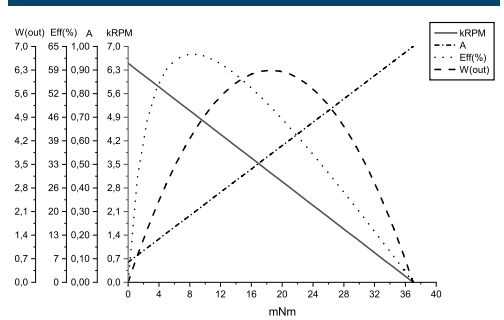
GEARBOX DATA

|                            |    |                                  |   |
|----------------------------|----|----------------------------------|---|
| Backlash no load           | °  | ≤ 2                              | C |
| Radial load¹               | N  | 7.9                              |   |
| Shaft axial load           | N  | 5.9                              |   |
| Shaft press fit force max. | N  | ≤ 98                             |   |
| Radial play                | mm | ≤ 0.05                           |   |
| Thrust play                | mm | ≤ 0.35                           |   |
| Bearing type               |    | Sleeve bearing                   |   |
| Shaft material             |    | Carbon steel AISI 1144           |   |
| Motor pinion material      |    | Bronze                           | ● |
| Motor pinion shape         |    | Straight                         |   |
| Material gear stage²       |    | Bakelite, steel                  | ● |
| Direction of rotation      |    | CW or CCW by reversed V polarity |   |
| Assembly front bell        | mm | 4                                |   |

BRUSHED DC MOTOR DATA

|                   |     |          |   |
|-------------------|-----|----------|---|
| Nominal voltage   | V   | 24       | C |
| No load speed     | rpm | 6500     |   |
| No load current   | mA  | ≤ 85     |   |
| Nominal speed     | rpm | 5300     |   |
| Nominal torque    | mNm | 7.3      |   |
| Nominal current   | mA  | ≤ 250    |   |
| Nominal power     | W   | 4        |   |
| Stall torque      | mNm | 37       |   |
| Starting current  | A   | 1        |   |
| Motor commutation |     | Carb.b.³ |   |
| Motor rotor       |     | Iron     |   |
| Motor stator      |     | Ferr.m.⁴ |   |
| Varistor EMC      | V   | 26 - 38  |   |
| Capacitor EMC     | V   | 50       |   |
| Resistance        | Ω   | 24       |   |
| Inductance        | mH  | 13       |   |
| Insulation class  |     | B        |   |

BRUSHED DC MOTOR DATA GRAPH



NOTES

- 10 mm from gear flange.
- Contact us for information regarding gear stage material of a specific gear ratio.
- Carbon brush.
- Ferrite magnet.

MAGNETIC ENCODER DATA

|                             |    |                                                                       |   |
|-----------------------------|----|-----------------------------------------------------------------------|---|
| Pulses per revolution       |    | 3 x 2                                                                 | ● |
| Channels                    |    | 2                                                                     |   |
| Phase shift                 | °  | 90 ± (1/6)T                                                           |   |
| Encoder rear cover material |    | ABS plastic                                                           |   |
| Sensor technical data       |    | Refer externally to brand and part UTC-SK1816.                        |   |
| Size                        | mm | Diameter 30   Length 12.1                                             |   |
| Harness connector           |    | JST PHR-6 P=2.0-6P                                                    | ● |
| Harness cable               |    | AWG24   UL1007                                                        | ● |
| Harness length              | mm | 100                                                                   | ● |
| Connection                  |    | 1. BLK M-   2. RED M+   3. BRN Vcc   4. GRN GND   5. BLU A   6. VIO B | ● |
| Supply voltage              | V  | Min. 5   Max. 20                                                      |   |
| Supply current              | mA | Ref. 5   Max. 10                                                      |   |
| Open collector output       |    | Requires external output resistors.                                   |   |
| Output current per channel  | mA | -                                                                     |   |

OPTICAL SENSOR DATA

|  |  |                                                          |   |
|--|--|----------------------------------------------------------|---|
|  |  | (100   200   256   360   400   500) x 2                  | C |
|  |  | 2                                                        |   |
|  |  | 90 ± (1/6)T                                              |   |
|  |  | Zink alloy                                               |   |
|  |  | -                                                        |   |
|  |  | Width 30   Height 40   Length 23.5                       |   |
|  |  | JST SMR-05V                                              | ● |
|  |  | AWG24   UL2464                                           | ● |
|  |  | 195                                                      | ● |
|  |  | 1. BLK A   2. RED Vcc   3. WHT B   4. EMPTY   5. GRN GND | ● |
|  |  | 5 ± 10%                                                  |   |
|  |  | -                                                        |   |
|  |  | -                                                        |   |
|  |  | ± 20                                                     |   |