



# SPUR GEAR DC MOTORS | Ø 27 - 43 mm 0.25 - 12.8W

Transmotec sell a broad range of geared DC motors in standard and customized configurations. Our motors are often available with gear heads, encoders and wire harnesses. Transmotec is the ideal supplier source especially to instrument and apparatus builders. We keep a high number of motors in stock for immediate delivery.

## Customizations include:

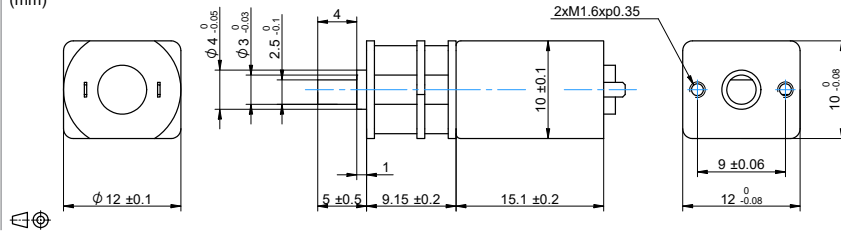
- ✓ Customized harness
- ✓ Shaft configuration
- ✓ Winding configuration
- ✓ And more...

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# SDS1215 / Ø 12mm / 0.29W / 0.46W

## DRAWING (mm)



## PHOTO



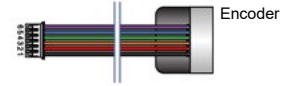
## MODEL NO. DESIGNATION

SDS1215 - VOLTAGE - REDUCTION - F - E

Example: SDS1215-12-10

F = EMC Filter  
E = Encoder

## ADDITIONAL



## GEAR MOTOR DATA

| Reduction                  | 10:1  | 19:1  | 29:1  | 60:1  | 76:1  | 102:1 | 134:1 | 197:1 | 235:1 | 298:1 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Nominal torque 3 V (mNm) * | 1.5   | 2.5   | 3.9   | 7.4   | 9.8   | 11.8  | 15.2  | 22.6  | 27    | 34.3  |
| Nominal speed 3 V (rpm) *  | 1400  | 720   | 480   | 230   | 180   | 135   | 100   | 70    | 59    | 46    |
| Nominal torque 6 V (mNm) * | 2.4   | 3.9   | 5.9   | 11.3  | 14.7  | 19.6  | 23.1  | 33.8  | 40.2  | 51.0  |
| Nominal speed 6 V (rpm) *  | 1450  | 770   | 510   | 245   | 195   | 145   | 110   | 75    | 63    | 50    |
| Length (mm)                | 24.25 | 24.25 | 24.25 | 24.25 | 24.25 | 24.25 | 24.25 | 24.25 | 24.25 | 24.25 |
| Weight (g)                 | 11    | 11    | 11    | 11    | 11    | 11    | 11    | 11    | 11    | 11    |

\* Nominal speed and nominal torque have a tolerance of ± 15%

## GEAR HEAD DATA

| Reduction                               | 10:1 | 19:1 | 29:1 | 60:1  | 76:1  | 102:1  | 134:1  | 197:1 | 235:1 | 298:1 |
|---|------|------|------|-------|-------|--------|--------|-------|-------|-------|
| Max. continuous torque (mNm)            | 19.6 | 29.4 | 29.4 | 49.1  | 49.1  | 78.5   | 78.5   | 98.1  | 98.1  | 98.1  |
| Intermittently permissible torque (mNm) | 58.9 | 88.3 | 88.3 | 147.2 | 147.2 | 235.44 | 235.44 | 294.3 | 294.3 | 294.3 |
| Efficiency (%)                          | 81   | 73   | 73   | 66    | 66    | 66     | 59     | 59    | 59    | 59    |
| Length (mm)                             | 14.2 | 14.2 | 14.2 | 14.2  | 14.2  | 14.2   | 14.2   | 14.2  | 14.2  | 14.2  |
| Height (mm)                             | 2.5  | 2.1  | 2.1  | 2.5   | 2.5   | 2.5    | 2.1    | 2.1   | 2.1   | 2.1   |
| Weight (g)                              | 4    | 4    | 4    | 4     | 4     | 4      | 4      | 4     | 4     | 4     |

## GEAR MOTOR FEATURES AND STANDARD DATA

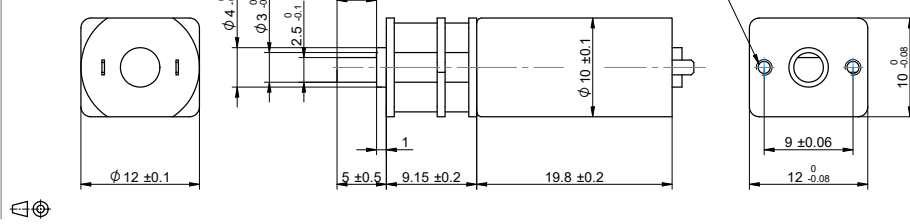
|                                   | STANDARD                              | CUSTOMIZATION OPTIONS                   |
|-----------------------------------|---------------------------------------|---|
| Type                              | Spur geared brush DC motor            |   |
| Motor type                        | Iron core, commutation                | Winding parameters                      |
| Motor terminals                   | Soldering ears                        | Wiring harnesses, cables and connectors |
| EMC filter                        | No                                    |   |
| Gears                             | Metal                                 |   |
| Motor pinion gear                 | Metal                                 |   |
| Bearing                           | Sleeve                                |   |
| Shaft                             | Hardened stainless steel              | Dimensions                              |
| Encoder option                    | Magnetic encoder (to order as option) | Through shaft dimensions                |
| Operating temperature             | -10-...+60 °C                         | -40-...+60 °C                           |
| Backlash no load                  | ≤ 1.5°                                |   |
| Radial load 5 mm from gear flange | ≤ 3.9 N                               |   |
| Shaft axial load                  | ≤ 1.96 N                              |   |
| Shaft press fit force max.        | ≤ 19.6 N                              |   |
| Radial play                       | ≤ 0.06 mm                             |   |
| Thrust play                       | ≤ 0.2 mm                              |   |
| Manufacturing quality standards   | ISO 9001                              |   |
| RoHS compliance                   | Yes                                   |   |
| CE label                          | No                                    | Yes                                     |
| UL approval                       | No                                    | Yes                                     |

## MOTOR DATA

|                      |       |       |
|----------------------|-------|-------|
| Nominal voltage (V)  | 3     | 6     |
| No load speed (rpm)  | 16000 | 18000 |
| No load current (mA) | ≤ 80  | ≤ 50  |
| Nominal speed (rpm)  | 14000 | 14900 |
| Nominal torque (mNm) | 0.29  | 0.39  |
| Nominal current (mA) | ≤ 250 | ≤ 170 |
| Stall torque (mNm)   | 1.2   | 1.4   |
| Starting current (A) | 1.5   | 0.8   |
| Output (W)           | 0.29  | 0.46  |
| Length (mm)          | 15.1  | 15.1  |
| Weight (g)           | 5.5   | 5.5   |

# SDS1220 / Ø 12mm / 0.41W / 0.61W

## DRAWING (mm)



## PHOTO



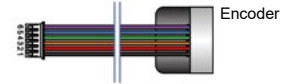
## MODEL NO. DESIGNATION

SDS1220 - VOLTAGE - REDUCTION - F - E

Example: SDS1220-3-10

F = EMC Filter  
E = Encoder

## ADDITIONAL



| GEAR MOTOR DATA            |       |       |       |       |       |       |       |       |       |       |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Reduction                  | 10:1  | 19:1  | 29:1  | 60:1  | 76:1  | 102:1 | 134:1 | 197:1 | 235:1 | 298:1 |
| Nominal torque 3 V (mNm) * | 2.4   | 3.9   | 5.9   | 11.3  | 14.7  | 19.6  | 23.1  | 33.8  | 40.7  | 51.5  |
| Nominal speed 3 V (rpm) *  | 1300  | 700   | 460   | 225   | 175   | 132   | 100   | 68    | 47    | 45    |
| Nominal torque 6 V (mNm) * | 2.9   | 5.4   | 7.8   | 15.2  | 19.6  | 26.5  | 29.4  | 45.1  | 52    | 68.7  |
| Nominal speed 6 V (rpm) *  | 1500  | 780   | 510   | 250   | 195   | 145   | 112   | 76    | 64    | 50    |
| Length (mm)                | 29.25 | 29.25 | 29.25 | 29.25 | 29.25 | 29.25 | 29.25 | 29.25 | 29.25 | 29.25 |
| Weight (g)                 | 11.5  | 11.5  | 11.5  | 11.5  | 11.5  | 11.5  | 11.5  | 11.5  | 11.5  | 11.5  |

\* Nominal speed and nominal torque have a tolerance of  $\pm 15\%$

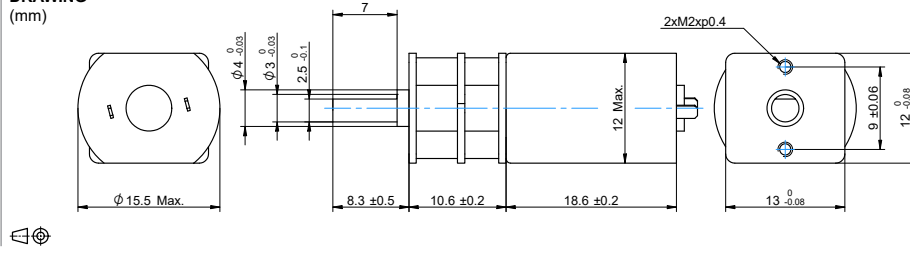
| GEAR HEAD DATA                          |      |      |      |       |       |       |       |       |       |       |
|---|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| Reduction                               | 10:1 | 19:1 | 29:1 | 60:1  | 76:1  | 102:1 | 134:1 | 197:1 | 235:1 | 298:1 |
| Max. continuous torque (mNm)            | 19.6 | 29.4 | 29.4 | 49.1  | 49.1  | 78.5  | 78.5  | 98.1  | 98.1  | 98.1  |
| Intermittently permissible torque (mNm) | 58.9 | 88.3 | 88.3 | 147.2 | 147.2 | 235.4 | 235.4 | 294.3 | 294.3 | 294.3 |
| Efficiency (%)                          | 81   | 73   | 73   | 66    | 66    | 66    | 59    | 59    | 59    | 59    |
| Length (mm)                             | 18.9 | 18.9 | 18.9 | 18.9  | 18.9  | 18.9  | 18.9  | 18.9  | 18.9  | 18.9  |
| Height (mm)                             | 2.5  | 2.1  | 2.1  | 2.5   | 2.5   | 2.5   | 2.1   | 2.1   | 2.1   | 2.1   |
| Weight (g)                              | 4    | 4    | 4    | 4     | 4     | 4     | 4     | 4     | 4     | 4     |

| GEAR MOTOR FEATURES AND STANDARD DATA |                                       |   |
|---------------------------------------|---------------------------------------|---|
|                                       | STANDARD                              | CUSTOMIZATION OPTIONS                   |
| Type                                  | Spur geared brush DC motor            |   |
| Motor type                            | Iron core, commutation                | Winding parameters                      |
| Motor terminals                       | Soldering ears                        | Wiring harnesses, cables and connectors |
| EMC filter                            | No                                    |   |
| Gears                                 | Metal                                 |   |
| Motor pinion gear                     | Metal                                 |   |
| Bearing                               | Sleeve                                |   |
| Shaft                                 | Hardened stainless steel              | Dimensions                              |
| Encoder option                        | Magnetic encoder (to order as option) | Through shaft dimensions                |
| Operating temperature                 | -10-...+60 °C                         | -40-...+60 °C                           |
| Backlash no load                      | $\leq 1.5^\circ$                      |   |
| Radial load 5 mm from gear flange     | $\leq 3.9$ N                          |   |
| Shaft axial load                      | $\leq 1.96$ N                         |   |
| Shaft press fit force max.            | $\leq 19.6$ N                         |   |
| Radial play                           | $\leq 0.06$ mm                        |   |
| Thrust play                           | $\leq 0.2$ mm                         |   |
| Manufacturing quality standards       | ISO 9001                              |   |
| RoHS compliance                       | Yes                                   |   |
| CE label                              | No                                    | Yes                                     |
| UL approval                           | No                                    | Yes                                     |

| MOTOR DATA           |            |            |
|----------------------|------------|------------|
| Nominal voltage (V)  | 3          | 6          |
| No load speed (rpm)  | 16000      | 18000      |
| No load current (mA) | $\leq 90$  | $\leq 65$  |
| Nominal speed (rpm)  | 13500      | 15000      |
| Nominal torque (mNm) | 0.29       | 0.39       |
| Nominal current (mA) | $\leq 310$ | $\leq 250$ |
| Stall torque (mNm)   | 1.6        | 2.4        |
| Starting current (A) | 1.2        | 1          |
| Output (W)           | 0.41       | 0.61       |
| Length (mm)          | 19.8       | 19.8       |
| Weight (g)           | 7.5        | 7.5        |

# SDS1319 / Ø 13mm / 0.39W / 0.4W

## DRAWING (mm)



## PHOTO



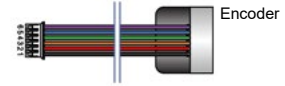
## MODEL NO. DESIGNATION

SDS1319 - VOLTAGE - REDUCTION - F - E

Example: SDS1319-6-10

F = EMC Filter  
E = Encoder

## ADDITIONAL



| GEAR MOTOR DATA             |      |      |      |      |      |       |       |       |       |       |       |
|-----------------------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| Reduction                   | 10:1 | 21:1 | 34:1 | 59:1 | 75:1 | 105:1 | 146:1 | 203:1 | 257:1 | 294:1 | 360:1 |
| Nominal torque 6 V (mNm) *  | 2.9  | 5.9  | 9.8  | 15.2 | 19.6 | 26.5  | 33.4  | 46.1  | 58.9  | 67.7  | 82.4  |
| Nominal speed 6 V (rpm) *   | 950  | 445  | 270  | 160  | 125  | 91    | 65    | 47    | 37    | 32    | 26    |
| Nominal torque 12 V (mNm) * | 3.4  | 6.9  | 10.8 | 17.2 | 21.6 | 30.4  | 37.3  | 52    | 66.7  | 76.5  | 93.2  |
| Nominal speed 12 V (rpm) *  | 870  | 400  | 255  | 145  | 116  | 83    | 59    | 43    | 34    | 29    | 24    |
| Length (mm)                 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5  | 37.5  | 37.5  | 37.5  | 37.5  | 37.5  |
| Weight (g)                  | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3  | 15.3  | 15.3  | 15.3  | 15.3  | 15.3  |

\* Nominal speed and nominal torque have a tolerance of ± 15%

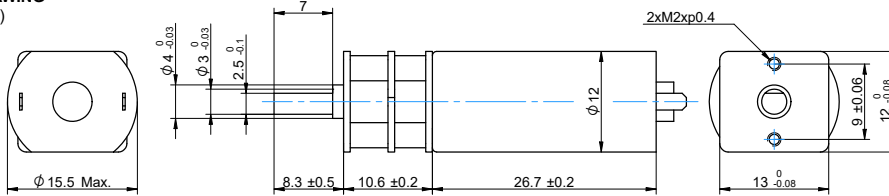
| GEAR HEAD DATA                          |       |       |       |        |        |        |        |       |       |       |       |
|---|-------|-------|-------|--------|--------|--------|--------|-------|-------|-------|-------|
| Reduction                               | 10:1  | 21:1  | 34:1  | 59:1   | 75:1   | 105:1  | 146:1  | 203:1 | 257:1 | 294:1 | 360:1 |
| Max. continuous torque (mNm)            | 19.62 | 29.43 | 29.43 | 49.05  | 49.05  | 78.48  | 78.48  | 98.1  | 98.1  | 98.1  | 98.1  |
| Intermittently permissible torque (mNm) | 58.86 | 88.29 | 88.29 | 147.15 | 147.15 | 235.44 | 235.44 | 294.3 | 294.3 | 294.3 | 294.3 |
| Efficiency (%)                          | 81    | 73    | 73    | 66     | 66     | 66     | 59     | 59    | 59    | 59    | 59    |
| Length (mm)                             | 10.6  | 10.6  | 10.6  | 10.6   | 10.6   | 10.6   | 10.6   | 10.6  | 10.6  | 10.6  | 10.6  |
| Height (mm)                             | 3.4   | 2.4   | 2.4   | 3.4    | 3.4    | 3.4    | 2.4    | 2.4   | 2.4   | 2.4   | 2.4   |
| Weight (g)                              | 5.3   | 5.3   | 5.3   | 5.3    | 5.3    | 5.3    | 5.3    | 5.3   | 5.3   | 5.3   | 5.3   |

| GEAR MOTOR FEATURES AND STANDARD DATA |                                       |   |
|---------------------------------------|---------------------------------------|---|
|                                       | STANDARD                              | CUSTOMIZATION OPTIONS                   |
| Type                                  | Spur geared brush DC motor            |   |
| Motor type                            | Iron core, commutation                | Winding parameters                      |
| Motor terminals                       | Soldering ears                        | Wiring harnesses, cables and connectors |
| EMC filter                            | No                                    |   |
| Gears                                 | Metal                                 |   |
| Motor pinion gear                     | Copper                                |   |
| Bearing                               | Sleeve                                |   |
| Shaft                                 | Hardened stainless steel              | Dimensions                              |
| Encoder option                        | Magnetic encoder (to order as option) | Through shaft dimensions                |
| Operating temperature                 | -10-...+60 °C                         | -40-...+60 °C                           |
| Backlash no load                      | ≤ 1.5°                                |   |
| Radial load 5 mm from gear flange     | ≤ 3.9 N                               |   |
| Shaft axial load                      | ≤ 1.96 N                              |   |
| Shaft press fit force max.            | ≤ 19.6 N                              |   |
| Radial play                           | ≤ 0.06 mm                             |   |
| Thrust play                           | ≤ 0.2 mm                              |   |
| Manufacturing quality standards       | ISO 9001                              |   |
| RoHS compliance                       | Yes                                   |   |
| CE label                              | No                                    | Yes                                     |
| UL approval                           | No                                    | Yes                                     |

| MOTOR DATA           |       |       |
|----------------------|-------|-------|
| Nominal voltage (V)  | 6     | 12    |
| No load speed (rpm)  | 11500 | 11700 |
| No load current (mA) | ≤ 50  | ≤ 30  |
| Nominal speed (rpm)  | 9600  | 8750  |
| Nominal torque (mNm) | 0.39  | 4.4   |
| Nominal current (mA) | ≤ 140 | ≤ 100 |
| Stall torque (mNm)   | 2.3   | 1.7   |
| Starting current (A) | 0.5   | 0.3   |
| Output (W)           | 0.39  | 0.4   |
| Length (mm)          | 18.6  | 18.6  |
| Weight (g)           | 10    | 10    |

# SDS1327 / Ø 13mm / 0.5W / 0.39W

## DRAWING (mm)



## PHOTO



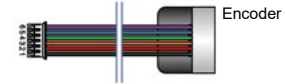
## MODEL NO. DESIGNATION

SDS1327 - VOLTAGE - REDUCTION - F - E

Example: SDS1327-6-10

F = EMC Filter  
E = Encoder

## ADDITIONAL



## GEAR MOTOR DATA

| Reduction                   | 10:1 | 21:1 | 34:1 | 59:1 | 75:1 | 105:1 | 146:1 | 203:1 | 257:1 | 294:1 | 360:1 |
|-----------------------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| Nominal torque 6 V (mNm) *  | 5.4  | 10.8 | 17.7 | 28   | 35.8 | 50    | 62.3  | 86.3  | 98.1  | 98.1  | 98.1  |
| Nominal speed 6 V (rpm) *   | 350  | 300  | 190  | 110  | 86   | 62    | 44    | 32    | 25    | 23    | 19    |
| Nominal torque 12 V (mNm) * | 4.4  | 8.8  | 14.7 | 23.1 | 29.4 | 41.2  | 51    | 71.6  | 90.3  | 98.1  | 98.1  |
| Nominal speed 12 V (rpm) *  | 620  | 290  | 180  | 100  | 82   | 59    | 42    | 30    | 24    | 21    | 18    |
| Length (mm)                 | 45.6 | 45.6 | 45.6 | 45.6 | 45.6 | 45.6  | 45.6  | 45.6  | 45.6  | 45.6  | 45.6  |
| Weight (g)                  | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 | 23.3  | 23.3  | 23.3  | 23.3  | 23.3  | 23.3  |

\* Nominal speed and nominal torque have a tolerance of ± 15%

## GEAR HEAD DATA

| Reduction                               | 10:1  | 21:1  | 34:1  | 59:1   | 75:1   | 105:1  | 146:1  | 203:1 | 257:1 | 294:1 | 360:1 |
|---|-------|-------|-------|--------|--------|--------|--------|-------|-------|-------|-------|
| Max. continuous torque (mNm)            | 19.62 | 29.43 | 29.43 | 49.05  | 49.05  | 78.48  | 78.48  | 98.1  | 98.1  | 98.1  | 98.1  |
| Intermittently permissible torque (mNm) | 58.86 | 88.29 | 88.29 | 147.15 | 147.15 | 235.44 | 235.44 | 294.3 | 294.3 | 294.3 | 294.3 |
| Efficiency (%)                          | 81    | 73    | 73    | 66     | 66     | 66     | 59     | 59    | 59    | 59    | 59    |
| Length (mm)                             | 14.15 | 14.15 | 14.15 | 14.15  | 14.15  | 14.15  | 14.15  | 14.15 | 14.15 | 14.15 | 14.15 |
| Height (mm)                             | 3.4   | 2.4   | 2.4   | 3.4    | 3.4    | 3.4    | 2.4    | 2.4   | 2.4   | 2.4   | 2.4   |
| Weight (g)                              | 5.3   | 5.3   | 5.3   | 5.3    | 5.3    | 5.3    | 5.3    | 5.3   | 5.3   | 5.3   | 5.3   |

## GEAR MOTOR FEATURES AND STANDARD DATA

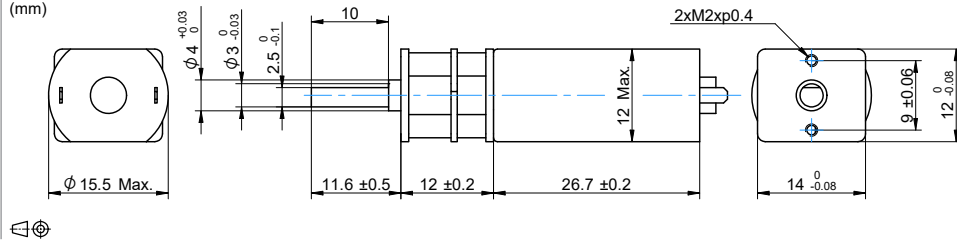
|                                   | STANDARD                              | CUSTOMIZATION OPTIONS                   |
|-----------------------------------|---------------------------------------|---|
| Type                              | Spur geared brush DC motor            |   |
| Motor type                        | Iron core, commutation                | Winding parameters                      |
| Motor terminals                   | Soldering ears                        | Wiring harnesses, cables and connectors |
| EMC filter                        | No                                    |   |
| Gears                             | Metal                                 |   |
| Motor pinion gear                 | Copper                                |   |
| Bearing                           | Sleeve                                |   |
| Shaft                             | Hardened stainless steel              | Dimensions                              |
| Encoder option                    | Magnetic encoder (to order as option) | Through shaft dimensions                |
| Operating temperature             | -10...+60 °C                          | -40...+60 °C                            |
| Backlash no load                  | ≤ 1.5°                                |   |
| Radial load 5 mm from gear flange | ≤ 3.9 N                               |   |
| Shaft axial load                  | ≤ 1.96 N                              |   |
| Shaft press fit force max.        | ≤ 19.6 N                              |   |
| Radial play                       | ≤ 0.06 mm                             |   |
| Thrust play                       | ≤ 0.2 mm                              |   |
| Manufacturing quality standards   | ISO 9001                              |   |
| RoHS compliance                   | Yes                                   |   |
| CE label                          | No                                    | Yes                                     |
| UL approval                       | No                                    | Yes                                     |

## MOTOR DATA

|                      |       |      |
|----------------------|-------|------|
| Nominal voltage (V)  | 6     | 12   |
| No load speed (rpm)  | 8000  | 8000 |
| No load current (mA) | ≤ 65  | ≤ 50 |
| Nominal speed (rpm)  | 6550  | 6200 |
| Nominal torque (mNm) | 0.7   | 0.6  |
| Nominal current (mA) | ≤ 160 | ≤ 85 |
| Stall torque (mNm)   | 2.8   | 2.0  |
| Starting current (A) | 0.7   | 0.3  |
| Output (W)           | 0.5   | 0.39 |
| Length (mm)          | 26.7  | 26.7 |
| Weight (g)           | 18    | 18   |

# SDS1427 / Ø 14mm / 0.39W / 1W

## DRAWING (mm)



## PHOTO



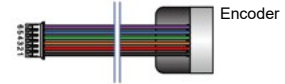
## MODEL NO. DESIGNATION

SDS1427 - VOLTAGE - REDUCTION - F - E

Example: SDS1427-12-10

F = EMC Filter  
E = Encoder

## ADDITIONAL



| GEAR MOTOR DATA             |      |      |      |       |       |
|-----------------------------|------|------|------|-------|-------|
| Reduction                   | 6:1  | 36:1 | 62:1 | 123:1 | 209:1 |
| Nominal torque 12 V (mNm) * | 2.9  | 13.7 | 23.5 | 43.2  | 73.6  |
| Nominal speed 12 V (rpm) *  | 100  | 170  | 100  | 50    | 29    |
| Nominal torque 24 V (mNm) * | 3.9  | 16.1 | 19.4 | 22.7  | 26    |
| Nominal speed 24 V (rpm) *  | 1800 | 300  | 175  | 89    | 53    |
| Length (mm)                 | 50.3 | 50.3 | 50.3 | 50.3  | 50.3  |
| Weight (g)                  | 24.2 | 24.2 | 24.2 | 24.2  | 24.2  |

\* Nominal speed and nominal torque have a tolerance of ± 15%

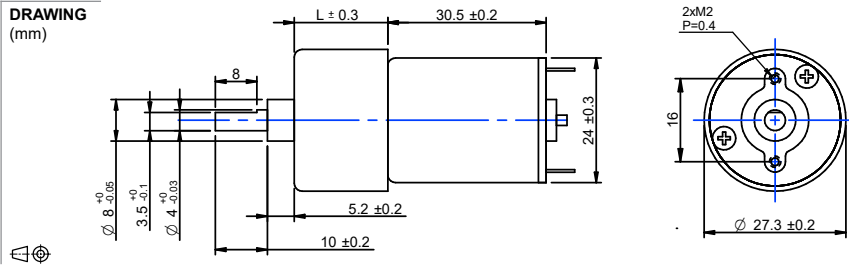
| GEAR HEAD DATA                          |       |       |        |        |       |
|---|-------|-------|--------|--------|-------|
| Reduction                               | 6:1   | 36:1  | 62:1   | 123:1  | 209:1 |
| Max. continuous torque (mNm)            | 19.62 | 29.43 | 49.05  | 78.48  | 98.1  |
| Intermittently permissible torque (mNm) | 58.86 | 88.29 | 147.15 | 235.44 | 294.3 |
| Efficiency (%)                          | 81    | 66    | 66     | 59     | 59    |
| Length (mm)                             | 23.6  | 23.6  | 23.6   | 23.6   | 23.6  |
| Height (mm)                             | 4.1   | 4.1   | 4.1    | 2.9    | 2.9   |
| Weight (g)                              | 6.2   | 6.2   | 6.2    | 6.2    | 6.2   |

| GEAR MOTOR FEATURES AND STANDARD DATA |                                       |   |
|---------------------------------------|---------------------------------------|---|
|                                       | STANDARD                              | CUSTOMIZATION OPTIONS                   |
| Type                                  | Spur geared brush DC motor            |   |
| Motor type                            | Iron core, commutation                | Winding parameters                      |
| Motor terminals                       | Soldering ears                        | Wiring harnesses, cables and connectors |
| EMC filter                            | No                                    |   |
| Gears                                 | Metal                                 |   |
| Motor pinion gear                     | Copper                                |   |
| Bearing                               | Sleeve                                |   |
| Shaft                                 | Hardened stainless steel              | Dimensions                              |
| Encoder option                        | Magnetic encoder (to order as option) | Through shaft dimensions                |
| Operating temperature                 | -10...+60 °C                          | -40...+60 °C                            |
| Backlash no load                      | ≤ 1.5°                                |   |
| Radial load 5 mm from gear flange     | ≤ 3.9 N                               |   |
| Shaft axial load                      | ≤ 1.96 N                              |   |
| Shaft press fit force max.            | ≤ 19.6 N                              |   |
| Radial play                           | ≤ 0.06 mm                             |   |
| Thrust play                           | ≤ 0.2 mm                              |   |
| Manufacturing quality standards       | ISO 9001                              |   |
| RoHS compliance                       | Yes                                   |   |
| CE label                              | No                                    | Yes                                     |
| UL approval                           | No                                    | Yes                                     |

| MOTOR DATA           |       |       |
|----------------------|-------|-------|
| Nominal voltage (V)  | 12    | 24    |
| No load speed (rpm)  | 8000  | 13500 |
| No load current (mA) | ≤ 50  | ≤ 50  |
| Nominal speed (rpm)  | 6200  | 11000 |
| Nominal torque (mNm) | 0.60  | 0.88  |
| Nominal current (mA) | ≤ 85  | ≤ 90  |
| Stall torque (mNm)   | 2.0   | 3.5   |
| Starting current (A) | 0.3   | 0.4   |
| Output (W)           | 0.394 | 1.026 |
| Length (mm)          | 26.7  | 26.7  |
| Weight (g)           | 18    | 18    |

# SDC2730 / Ø 27mm / 0.75W / 0.68W

## DRAWING (mm)



## PHOTO



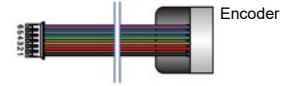
## MODEL NO. DESIGNATION

SDC2730 - VOLTAGE - REDUCTION - F - E

Example: SDC2730-12-10

F = EMC Filter  
E = Encoder

## ADDITIONAL



## GEAR MOTOR DATA

| Reduction                   | 10:1 | 15:1 | 21:1 | 30:1 | 44:1 | 60:1 | 77:1 | 100:1 | 112:1 | 150:1 | 170:1 | 200:1 | 250:1 | 320:1 | 360:1 | 500:1 | 700:1 | 800:1 | 900:1 | 1150:1 |
|-----------------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Nominal torque 12 V (mNm) * | 16   | 22   | 31   | 39   | 57   | 78   | 78   | 98    | 98    | 118   | 118   | 118   | 118   | 118   | 118   | 147   | 147   | 147   | 147   | 147    |
| Nominal speed 12 V (rpm) *  | 340  | 230  | 160  | 110  | 80   | 59   | 46   | 36    | 33    | 21.5  | 20    | 18    | 14.5  | 12    | 10.5  | 7.5   | 5.7   | 5.1   | 4.5   | 3.7    |
| Nominal torque 24 V (mNm) * | 15   | 21   | 29   | 37   | 54   | 74   | 78   | 98    | 98    | 118   | 118   | 118   | 118   | 118   | 118   | 147   | 147   | 147   | 147   | 147    |
| Nominal speed 24 V (rpm) *  | 325  | 220  | 153  | 105  | 77   | 56   | 44   | 34    | 33    | 22    | 20    | 18.0  | 14.5  | 11.5  | 10.5  | 7.5   | 5.6   | 5.0   | 4.5   | 3.6    |
| Length (mm)                 | 48   | 48   | 48   | 48   | 48   | 48   | 48   | 48    | 48    | 48    | 48    | 48    | 48    | 48    | 48    | 50    | 50    | 50    | 50    | 50     |
| Weight (g)                  | 75   | 76   | 76   | 77   | 77   | 77   | 77   | 78    | 78    | 78    | 78    | 78    | 78    | 78    | 78    | 79    | 79    | 79    | 79    | 79     |

\* Nominal speed and nominal torque have a tolerance of  $\pm 15\%$

## GEAR HEAD DATA

| Reduction                               | 10:1 | 15:1 | 21:1 | 30:1 | 44:1 | 60:1 | 77:1 | 100:1 | 112:1 | 150:1 | 170:1 | 200:1 | 250:1 | 320:1 | 360:1 | 500:1 | 700:1 | 800:1 | 900:1 | 1150:1 |
|---|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Max. continuous torque (mNm)            | 29   | 39   | 39   | 59   | 59   | 78   | 78   | 98    | 98    | 118   | 118   | 118   | 118   | 118   | 118   | 147   | 147   | 147   | 147   | 147    |
| Intermittently permissible torque (mNm) | 88   | 118  | 118  | 177  | 177  | 235  | 235  | 294   | 294   | 353   | 353   | 353   | 353   | 353   | 353   | 441   | 441   | 441   | 441   | 441    |
| Efficiency (%)                          | 81   | 73   | 73   | 65   | 65   | 65   | 65   | 65    | 65    | 50    | 50    | 50    | 50    | 50    | 50    | 40    | 40    | 40    | 40    | 40     |
| Length (mm)                             | 17.3 | 17.3 | 17.3 | 17.3 | 17.3 | 17.3 | 17.3 | 17.3  | 17.3  | 17.3  | 17.3  | 17.3  | 17.3  | 17.3  | 17.3  | 19.3  | 19.3  | 19.3  | 19.3  | 19.3   |
| Weight (g)                              | 33   | 34   | 34   | 35   | 35   | 35   | 35   | 36    | 36    | 36    | 36    | 36    | 36    | 36    | 36    | 37    | 37    | 37    | 37    | 37     |

## GEAR MOTOR FEATURES AND STANDARD DATA

|                                    | STANDARD                               | CUSTOMIZATION OPTIONS                   |
|------------------------------------|--|---|
| Type                               | Spur gear brush DC motor               |   |
| Motor type                         | Iron core, commutation                 | Winding parameters                      |
| Motor terminals                    | Soldering ears                         | Wiring harnesses, cables and connectors |
| EMC filter                         | Yes                                    | Yes                                     |
| Gears                              | Straight teeth metal gears produced by | Plastic                                 |
| Motor pinion gear                  | Bakelite                               | Metal                                   |
| Bearing                            | Sleeve bearing                         |   |
| Shaft                              | Hardened stainless steel               | Dimensions                              |
| Encoder option                     | Magnetic encoder (to order as option)  | Through shaft dimensions                |
| Operating temperature              | -10...+60 °C                           | -40...+60 °C                            |
| Backlash no load                   | $\leq 2^\circ$                         |   |
| Radial load 10 mm from gear flange | $\leq 2.9$ N                           |   |
| Shaft axial load                   | $\leq 2$ N                             |   |
| Shaft press fit force max.         | $\leq 19.6$ N                          |   |
| Radial play                        | $\leq 0.05$ mm                         |   |
| Thrust play                        | $\leq 0.3$ mm                          |   |
| Manufacturing quality standards    | ISO 9001                               |   |
| RoHS compliance                    | Yes                                    |   |
| CE label                           | No                                     | Yes                                     |
| UL approval                        | No                                     | Yes                                     |

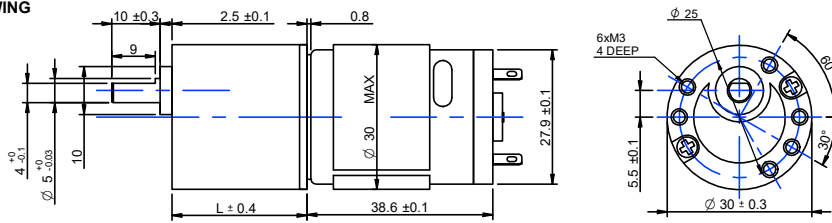
## MOTOR DATA

|                      |            |           |
|----------------------|------------|-----------|
| Nominal voltage (V)  | 12         | 24        |
| No load speed (rpm)  | 4500       | 4500      |
| No load current (mA) | $\leq 50$  | $\leq 30$ |
| Nominal speed (rpm)  | 3560       | 3400      |
| Nominal torque (mNm) | 2          | 1.9       |
| Nominal current (mA) | $\leq 150$ | $\leq 65$ |
| Stall torque (mNm)   | 8.6        | 9.4       |
| Starting current (A) | 0.42       | 0.24      |
| Output (W)           | 0.75       | 0.68      |
| Length (mm)          | 30.5       | 30.5      |
| Weight (g)           | 42         | 42        |



# SD3039 / Ø 30mm / 4.22W / 4W

## DRAWING (mm)



## PHOTO



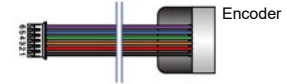
## MODEL NO. DESIGNATION

SD3039 - VOLTAGE - REDUCTION - F - E - C

Example: SD3039-12-10

F = EMC Filter  
E = Encoder  
C = Plastic encoder cover

## ADDITIONAL



## GEAR MOTOR DATA

| Reduction                   | 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 |
|-----------------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Nominal torque 12 V (mNm) * | 98   | 147  | 147  | 196  | 196  | 294  | 294  | 294   | 392   | 392   | 441   | 441   | 441   | 441   | 441   | 441   | 441   | 441   | 441   | 441    |
| Nominal speed 12 V (rpm) *  | 255  | 168  | 150  | 107  | 91   | 73   | 62   | 56    | 46.3  | 37.5  | 32    | 28.8  | 24    | 19.5  | 15.2  | 12.1  | 10.4  | 7.7   | 6.9   | 6.3    |
| Nominal torque 24 V (mNm) * | 96   | 144  | 147  | 196  | 196  | 294  | 294  | 294   | 392   | 392   | 441   | 441   | 441   | 441   | 441   | 441   | 441   | 441   | 441   | 441    |
| Nominal speed 24 V (rpm) *  | 258  | 168  | 150  | 107  | 91   | 73   | 62   | 56    | 46.3  | 37.4  | 31.8  | 28.7  | 24    | 19.5  | 15.1  | 12.1  | 10.3  | 7.7   | 6.9   | 6.3    |
| Length (mm)                 | 62   | 62   | 62   | 62   | 62   | 62   | 62   | 62    | 67    | 67    | 67    | 67    | 67    | 67    | 67    | 67    | 67    | 67    | 67    | 67     |
| Weight (g)                  | 162  | 162  | 162  | 162  | 162  | 162  | 162  | 162   | 171   | 171   | 171   | 171   | 171   | 171   | 171   | 171   | 171   | 171   | 171   | 171    |

\* Nominal speed and nominal torque have a tolerance of  $\pm 15\%$

## GEAR HEAD DATA

| Reduction                               | 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 |
|---|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Max. continuous torque (mNm)            | 98   | 147  | 147  | 196  | 196  | 294  | 294  | 294   | 392   | 392   | 441   | 441   | 441   | 441   | 441   | 441   | 441   | 441   | 441   | 441    |
| Intermittently permissible torque (mNm) | 294  | 441  | 441  | 588  | 588  | 883  | 883  | 883   | 1177  | 1177  | 1324  | 1324  | 1324  | 1324  | 1324  | 1324  | 1324  | 1324  | 1324  | 1324   |
| Efficiency (%)                          | 66   | 66   | 66   | 66   | 66   | 66   | 66   | 66    | 53    | 53    | 53    | 53    | 53    | 53    | 53    | 53    | 53    | 53    | 53    | 53     |
| Length (mm)                             | 23   | 23   | 23   | 23   | 23   | 23   | 23   | 23    | 28    | 28    | 28    | 28    | 28    | 28    | 28    | 28    | 28    | 28    | 28    | 28     |
| Weight (g)                              | 89   | 89   | 89   | 89   | 89   | 89   | 89   | 89    | 98    | 98    | 98    | 98    | 98    | 98    | 98    | 98    | 98    | 98    | 98    | 98     |

## GEAR MOTOR FEATURES AND STANDARD DATA

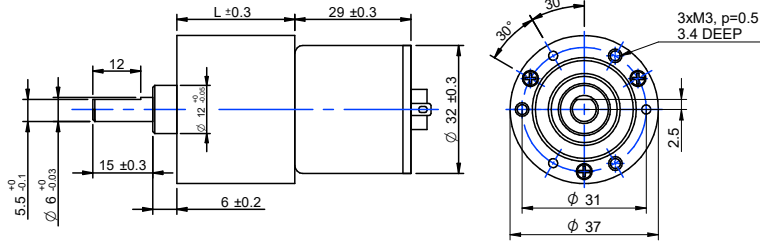
|                                    | STANDARD                               | CUSTOMIZATION OPTIONS                   |
|------------------------------------|--|---|
| Type                               | Spur gear brush DC motor               |   |
| Motor type                         | Iron core, commutation                 | Winding parameters                      |
| Motor terminals                    | Soldering ears                         | Wiring harnesses, cables and connectors |
| EMC filter                         | Yes                                    | Yes                                     |
| Gears                              | Straight teeth metal gears produced by | Plastic                                 |
| Motor pinion gear                  | Bakelite                               | Metal                                   |
| Bearing                            | Sleeve bearing                         |   |
| Shaft                              | Hardened stainless steel               | Dimensions                              |
| Encoder option                     | Magetic encoder (to order as option)   | Through shaft dimensions                |
| Operating temperature              | -10...+60 °C                           | -40...+60 °C                            |
| Backlash no load                   | $\leq 2^\circ$                         |   |
| Radial load 10 mm from gear flange | 7.9 N                                  |   |
| Shaft axial load                   | 5.9 N                                  |   |
| Shaft press fit force max.         | $\leq 98$ N                            |   |
| Radial play                        | $\leq 0.05$ mm                         |   |
| Thrust play                        | $\leq 0.35$ mm                         |   |
| Manufacturing quality standards    | ISO 9001                               |   |
| RoHS compliance                    | Yes                                    |   |
| CE label                           | No                                     | Yes                                     |
| UL approval                        | No                                     | Yes                                     |

## MOTOR DATA

|                      |            |            |
|----------------------|------------|------------|
| Nominal voltage (V)  | 12         | 24         |
| No load speed (rpm)  | 6500       | 6500       |
| No load current (mA) | $\leq 150$ | $\leq 85$  |
| Nominal speed (rpm)  | 5290       | 5250       |
| Nominal torque (mNm) | 7.65       | 7.26       |
| Nominal current (mA) | $\leq 530$ | $\leq 250$ |
| Stall torque (mNm)   | 35.8       | 37         |
| Starting current (A) | 2.1        | 1          |
| Output (W)           | 4.22       | 4          |
| Length (mm)          | 38.6       | 38.6       |
| Weight (g)           | 73         | 73         |

# SDC3729 / Ø 37mm / 3.14W / 3.17W

## DRAWING (mm)



## PHOTO



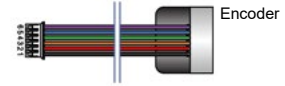
## MODEL NO. DESIGNATION

SDC3729 - VOLTAGE - REDUCTION - F - E - C

Example: SDC3729-12-10

F = EMC Filter  
E = Encoder  
C = Plastic encoder cover

## ADDITIONAL



## GEAR MOTOR DATA

| Reduction                   | 6:1 | 16:1 | 21:1 | 31:1 | 56:1 | 75:1 | 104:1 | 125:1 | 156:1 | 188:1 | 219:1 | 250:1 | 312:1 | 469:1 | 625:1 | 750:1 | 938:1 | 1875:1 | 3750:1 | 5625:1 |
|-----------------------------|-----|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Nominal torque 12 V (mNm) * | 29  | 69   | 90   | 121  | 218  | 261  | 362   | 435   | 543   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588    | 588    | 588    |
| Nominal speed 12 V (rpm) *  | 800 | 310  | 245  | 155  | 90   | 67   | 49    | 41    | 33    | 28    | 24    | 21.5  | 17.6  | 12.3  | 9.1   | 7.8   | 6.3   | 3.2    | 1.6    | 1      |
| Nominal torque 24 V (mNm) * | 30  | 71   | 94   | 125  | 225  | 270  | 374   | 450   | 561   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588    | 588    | 588    |
| Nominal speed 24 V (rpm) *  | 780 | 308  | 240  | 150  | 87   | 65   | 48    | 40    | 32    | 27    | 23.5  | 21.5  | 17.5  | 12    | 9     | 7.8   | 6.2   | 3.2    | 1.6    | 1      |
| Length (mm)                 | 51  | 54   | 54   | 56   | 56   | 59   | 59    | 59    | 59    | 59    | 61    | 61    | 61    | 61    | 61    | 64    | 64    | 64     | 66     | 66     |
| Weight (g)                  | 172 | 178  | 178  | 184  | 184  | 192  | 192   | 192   | 192   | 192   | 196   | 196   | 196   | 196   | 196   | 203   | 203   | 203    | 206    | 206    |

\* Nominal speed and nominal torque have a tolerance of  $\pm 15\%$

## GEAR HEAD DATA

| Reduction                               | 6:1  | 16:1 | 21:1 | 31:1 | 56:1 | 75:1 | 104:1 | 125:1 | 156:1 | 188:1 | 219:1 | 250:1 | 312:1 | 469:1 | 625:1 | 750:1 | 938:1 | 1875:1 | 3750:1 | 5625:1 |
|---|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Max. continous torque (mNm)             | 98   | 196  | 196  | 294  | 392  | 490  | 490   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588    | 588    | 588    |
| Intermittently permissible torque (mNm) | 294  | 588  | 588  | 883  | 1177 | 1471 | 1471  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765   | 1765   | 1765   |
| Efficiency (%)                          | 81   | 73   | 73   | 66   | 66   | 59   | 59    | 59    | 59    | 59    | 53    | 53    | 53    | 53    | 53    | 48    | 48    | 48     | 43     | 43     |
| Length (mm)                             | 21.8 | 24.6 | 24.6 | 27.1 | 27.1 | 29.5 | 29.5  | 29.5  | 29.5  | 29.5  | 32    | 32    | 32    | 32    | 32    | 34.5  | 34.5  | 34.5   | 37     | 37     |
| Weight (g)                              | 97   | 103  | 103  | 109  | 109  | 117  | 117   | 117   | 117   | 117   | 121   | 121   | 121   | 121   | 121   | 128   | 128   | 128    | 131    | 131    |

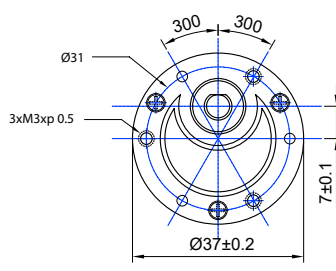
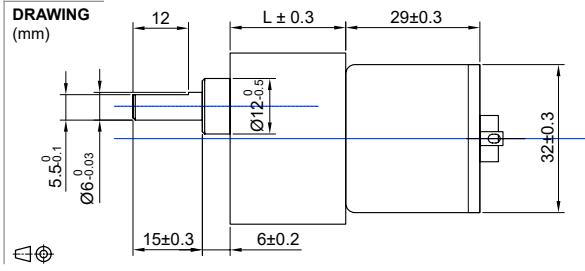
## GEAR MOTOR FEATURES AND STANDARD DATA

|                                    | STANDARD                               | CUSTOMIZATION OPTIONS                   |
|------------------------------------|--|---|
| Type                               | Spur gear brush DC motor               |   |
| Motor type                         | Iron core, commutation                 | Winding parameters                      |
| Motor terminals                    | Soldering ears                         | Wiring harnesses, cables and connectors |
| EMC filter                         | Yes                                    | Yes                                     |
| Gears                              | Straight teeth metal gears produced by | Plastic                                 |
| Motor pinion gear                  | Bakelite                               | Metal                                   |
| Bearing                            | Sleeve bearing                         |   |
| Shaft                              | Hardened stainless steel               | Dimensions                              |
| Encoder option                     | Magetic encoder (to order as option)   | Through shaft dimensions                |
| Operating temperature              | -10...+60 °C                           | -40...+60 °C                            |
| Backlash no load                   | $\leq 2^\circ$                         |   |
| Radial load 10 mm from gear flange | $\leq 9.81$ N                          |   |
| Shaft axial load                   | $\leq 6.9$ N                           |   |
| Shaft press fit force max.         | $\leq 49$ N                            |   |
| Radial play                        | $\leq 0.05$ mm                         |   |
| Thrust play                        | $\leq 0.35$ mm                         |   |
| Manufacturing quality standards    | ISO 9001                               |   |
| RoHS compliance                    | Yes                                    |   |
| CE label                           | No                                     | Yes                                     |
| UL approval                        | No                                     | Yes                                     |

## MOTOR DATA

|                      |            |            |
|----------------------|------------|------------|
| Nominal voltage (V)  | 12         | 24         |
| No load speed (rpm)  | 6200       | 6200       |
| No load current (mA) | $\leq 120$ | $\leq 60$  |
| Nominal speed (rpm)  | 5100       | 5000       |
| Nominal torque (mNm) | 5.9        | 6.1        |
| Nominal current (mA) | $\leq 470$ | $\leq 210$ |
| Stall torque (mNm)   | 33         | 31         |
| Starting current (A) | 2          | 0.9        |
| Output (W)           | 3.14       | 3.17       |
| Length (mm)          | 29         | 29         |
| Weight (g)           | 75         | 75         |

# SD3729 / Ø 37mm / 3.14W / 3.17W

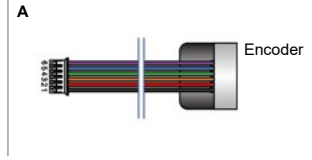


## MODEL NO. DESIGNATION

SD3729 - VOLTAGE - REDUCTION - F - E - C

Example: SD3729-12-10

F = EMC Filter  
E = Encoder  
C = Plastic encoder cover



| GEAR MOTOR DATA             |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |        |        |        |
|-----------------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Reduction                   | 10:1 | 18:1 | 30:1 | 50:1 | 60:1 | 75:1 | 90:1 | 100:1 | 120:1 | 150:1 | 180:1 | 200:1 | 250:1 | 300:1 | 500:1 | 600:1 | 750:1 | 1000:1 | 1500:1 | 3000:1 |
| Nominal torque 12 V (mNm) * | 48   | 78   | 129  | 195  | 234  | 292  | 350  | 389   | 418   | 522   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588    | 588    | 588    |
| Nominal speed 12 V (rpm) *  | 490  | 270  | 168  | 100  | 84   | 67   | 57   | 51    | 42.5  | 34    | 29    | 26.0  | 22    | 19    | 11.2  | 9.5   | 8     | 6      | 4.1    | 2      |
| Nominal torque 24 V (mNm) * | 49   | 80   | 134  | 201  | 242  | 302  | 362  | 403   | 432   | 540   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588    | 588    | 588    |
| Nominal speed 24 V (rpm) *  | 480  | 250  | 160  | 98   | 83   | 65   | 56   | 50    | 41.5  | 33    | 28.5  | 26    | 22    | 19    | 11    | 9.3   | 7.9   | 5.9    | 4      | 2      |
| Length (mm)                 | 49   | 51   | 51   | 54   | 54   | 54   | 54   | 54    | 56    | 56    | 56    | 56    | 56    | 56    | 59    | 59    | 59    | 59     | 61     | 61     |
| Weight (g)                  | 161  | 168  | 168  | 175  | 175  | 175  | 175  | 175   | 181   | 181   | 181   | 181   | 181   | 181   | 187   | 187   | 187   | 187    | 195    | 195    |

\* Nominal speed and nominal torque have a tolerance of ± 15%

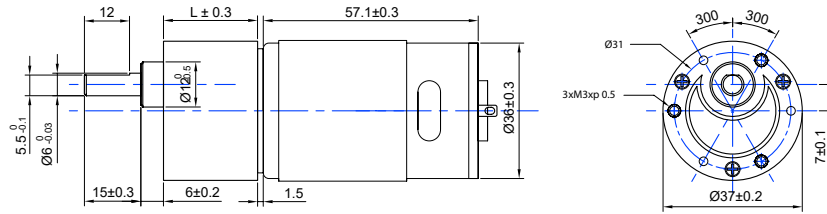
| GEAR HEAD DATA                          |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |        |        |        |
|---|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Reduction                               | 10:1 | 18:1 | 30:1 | 50:1 | 60:1 | 75:1 | 90:1 | 100:1 | 120:1 | 150:1 | 180:1 | 200:1 | 250:1 | 300:1 | 500:1 | 600:1 | 750:1 | 1000:1 | 1500:1 | 3000:1 |
| Max. continous torque (mNm)             | 98   | 98   | 196  | 294  | 294  | 392  | 392  | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588    | 588    | 588    |
| Intermittently permissible torque (mNm) | 294  | 294  | 588  | 883  | 883  | 1177 | 1177 | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765   | 1765   | 1765   |
| Efficiency (%)                          | 81   | 73   | 73   | 66   | 66   | 66   | 66   | 66    | 59    | 59    | 59    | 59    | 59    | 59    | 53    | 53    | 53    | 53     | 48     | 48     |
| Length (mm)                             | 19.5 | 22   | 22   | 24.5 | 24.5 | 24.5 | 24.5 | 24.5  | 27    | 27    | 27    | 27    | 27    | 27    | 29.5  | 29.5  | 29.5  | 29.5   | 32     | 32     |
| Weight (g)                              | 86   | 93   | 93   | 100  | 100  | 100  | 100  | 100   | 106   | 106   | 106   | 106   | 106   | 106   | 112   | 112   | 112   | 112    | 120    | 120    |

| GEAR MOTOR FEATURES AND STANDARD DATA |  |   |
|---------------------------------------|--|---|
|                                       | STANDARD                               | CUSTOMIZATION OPTIONS                   |
| Type                                  | Spur gear brush DC motor               |   |
| Motor type                            | Iron core, commutation                 | Winding parameters                      |
| Motor terminals                       | Soldering ears                         | Wiring harnesses, cables and connectors |
| EMC filter                            | Yes                                    | Yes                                     |
| Gears                                 | Straight teeth metal gears produced by | Plastic                                 |
| Motor pinion gear                     | Bakelite                               | Metal                                   |
| Bearing                               | Sleeve bearing                         |   |
| Shaft                                 | Hardened stainless steel               | Dimensions                              |
| Encoder option                        | Magetic encoder (to order as option)   | Optical encoder                         |
| Operating temperature                 | -10-...+60 °C                          | -40-...+60 °C                           |
| Backlash no load                      | ≤2°                                    |   |
| Radial load 10 mm from gear flange    | ≤9.81 N                                |   |
| Shaft axial load                      | 6.9 N                                  |   |
| Shaft press fit force max.            | ≤196 N                                 |   |
| Radial play                           | ≤0.05 mm                               |   |
| Thrust play                           | ≤0.35 mm                               |   |
| Manufacturing quality standards       | ISO 9001                               |   |
| RoHS compliance                       | Yes                                    |   |
| CE label                              | No                                     | Yes                                     |
| UL approval                           | No                                     | Yes                                     |

| MOTOR DATA           |       |       |
|----------------------|-------|-------|
| Nominal voltage (V)  | 12    | 24    |
| No load speed (rpm)  | 6200  | 6200  |
| No load current (mA) | ≤ 120 | ≤ 60  |
| Nominal speed (rpm)  | 5100  | 5000  |
| Nominal torque (mNm) | 5.9   | 6.1   |
| Nominal current (mA) | ≤ 470 | ≤ 210 |
| Stall torque (mNm)   | 34    | 31    |
| Starting current (A) | 2     | 0,9   |
| Output (W)           | 3.14  | 3.17  |
| Length (mm)          | 29    | 29    |
| Weight (g)           | 75    | 75    |

# SD3757 / Ø 37mm / 12.8W / 12.7W

## DRAWING (mm)



## PHOTO



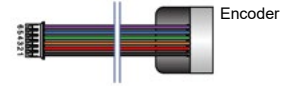
## MODEL NO. DESIGNATION

SD3757 - VOLTAGE - REDUCTION - F - E - C

Example: SD3757-12-10

F = EMC Filter  
E = Encoder  
C = Plastic encoder cover

## ADDITIONAL



## GEAR MOTOR DATA

| Reduction                   | 10:1 | 18:1 | 30:1 | 50:1 | 60:1 | 75:1 | 90:1 | 100:1 | 120:1 | 150:1 | 180:1 | 200:1 | 250:1 | 300:1 | 500:1 | 600:1 | 750:1 | 1000:1 | 1500:1 | 3000:1 |
|-----------------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Nominal torque 12 V (mNm) * | 98   | 98   | 196  | 294  | 294  | 392  | 392  | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588    | 588    | 588    |
| Nominal speed 12 V (rpm) *  | 528  | 313  | 185  | 109  | 95   | 76   | 63   | 55    | 47    | 36    | 31.5  | 29    | 22.5  | 19.5  | 11.5  | 9.8   | 8     | 5.9    | 3.9    | 2      |
| Nominal torque 24 V (mNm) * | 98   | 98   | 196  | 294  | 294  | 392  | 392  | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588    | 588    | 588    |
| Nominal speed 24 V (rpm) *  | 532  | 315  | 186  | 111  | 69   | 77   | 64   | 55.5  | 48    | 36    | 32    | 29.5  | 23    | 20    | 11.8  | 9.9   | 8     | 6      | 4      | 2      |
| Length (mm)                 | 77   | 79   | 79   | 82   | 82   | 82   | 82   | 82    | 84    | 84    | 84    | 84    | 84    | 84    | 87    | 87    | 87    | 87     | 89     | 89     |
| Weight (g)                  | 306  | 313  | 313  | 320  | 320  | 320  | 320  | 320   | 326   | 326   | 326   | 326   | 326   | 326   | 332   | 332   | 332   | 332    | 340    | 340    |

\* Nominal speed and nominal torque have a tolerance of ± 15%

## GEAR HEAD DATA

| Reduction                               | 10:1 | 18:1 | 30:1 | 50:1 | 60:1 | 75:1 | 90:1 | 100:1 | 120:1 | 150:1 | 180:1 | 200:1 | 250:1 | 300:1 | 500:1 | 600:1 | 750:1 | 1000:1 | 1500:1 | 3000:1 |
|---|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Max. continous torque (mNm)             | 98   | 98   | 196  | 294  | 294  | 392  | 392  | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588   | 588    | 588    | 588    |
| Intermittently permissible torque (mNm) | 294  | 294  | 588  | 883  | 883  | 1177 | 1177 | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765  | 1765   | 1765   | 1765   |
| Efficiency (%)                          | 81   | 73   | 73   | 66   | 66   | 66   | 66   | 66    | 59    | 59    | 59    | 59    | 59    | 59    | 53    | 53    | 53    | 53     | 48     | 48     |
| Length (mm)                             | 19.5 | 22   | 22   | 24.5 | 24.5 | 24.5 | 24.5 | 24.5  | 27    | 27    | 27    | 27    | 27    | 27    | 29.5  | 29.5  | 29.5  | 29.5   | 32     | 32     |
| Weight (g)                              | 86   | 93   | 93   | 100  | 100  | 100  | 100  | 100   | 106   | 106   | 106   | 106   | 106   | 106   | 112   | 112   | 112   | 112    | 120    | 120    |

## GEAR MOTOR FEATURES AND STANDARD DATA

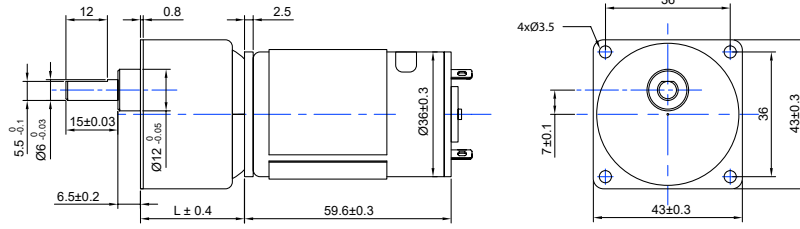
|                                    | STANDARD                               | CUSTOMIZATION OPTIONS                   |
|------------------------------------|--|---|
| Type                               | Spur gear brush DC motor               |   |
| Motor type                         | Iron core, commutation                 | Winding parameters                      |
| Motor terminals                    | Soldering ears                         | Wiring harnesses, cables and connectors |
| EMC filter                         | Yes                                    | Yes                                     |
| Gears                              | Straight teeth metal gears produced by | Plastic                                 |
| Motor pinion gear                  | Bakelite                               | Metal                                   |
| Bearing                            | Sleeve bearing                         |   |
| Shaft                              | Hardened stainless steel               | Dimensions                              |
| Encoder option                     | Magetic encoder (to order as option)   | Optical encoder                         |
| Operating temperature              | -10-...+60 °C                          | -40-...+60 °C                           |
| Backlash no load                   | ≤ 2°                                   |   |
| Radial load 10 mm from gear flange | ≤ 9.81 N                               |   |
| Shaft axial load                   | ≤ 6.86 N                               |   |
| Shaft press fit force max.         | ≤ 196 N                                |   |
| Radial play                        | ≤ 0.05 mm                              |   |
| Thrust play                        | ≤ 0.35 mm                              |   |
| Manufacturing quality standards    | ISO 9001                               |   |
| RoHS compliance                    | Yes                                    |   |
| CE label                           | No                                     | Yes                                     |
| UL approval                        | No                                     | Yes                                     |

## MOTOR DATA

|                      |        |       |
|----------------------|--------|-------|
| Nominal voltage (V)  | 12     | 24    |
| No load speed (rpm)  | 6000   | 6000  |
| No load current (mA) | ≤ 250  | ≤ 130 |
| Nominal speed (rpm)  | 4930   | 5150  |
| Nominal torque (mNm) | 24.5   | 23.5  |
| Nominal current (mA) | ≤ 1600 | ≤ 750 |
| Stall torque (mNm)   | 180    | 189   |
| Starting current (A) | 9,7    | 5     |
| Output (W)           | 12.8   | 12.7  |
| Length (mm)          | 57.1   | 57.1  |
| Weight (g)           | 220    | 220   |

# SDS4360 / Ø 43mm / 12.8W / 12.7W

## DRAWING (mm)



## PHOTO



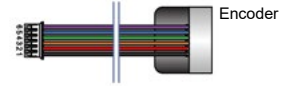
## MODEL NO. DESIGNATION

SDS4360 - VOLTAGE - REDUCTION - F - E - C

Example: SDS4360-12-10

F = EMC Filter  
E = Encoder  
C = Plastic encoder cover

## ADDITIONAL



## GEAR MOTOR DATA

| Reduction                   | 10:1 | 15:1 | 18:1 | 25:1 | 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 | 360:1 | 400:1 | 500:1 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Nominal torque 12 V (mNm) * | 98   | 268  | 294  | 392  | 392  | 392  | 490  | 490  | 490  | 686  | 686   | 686   | 686   | 686   | 686   | 686   | 686   | 686   | 686   | 686   |
| Nominal speed 12 V (rpm) *  | 519  | 321  | 275  | 198  | 172  | 145  | 103  | 91   | 72.5 | 61   | 54    | 46    | 37    | 31    | 28.2  | 22.5  | 19.2  | 16    | 14.5  | 11.8  |
| Nominal torque 24 V (mNm) * | 98   | 257  | 294  | 392  | 392  | 392  | 490  | 490  | 490  | 686  | 686   | 686   | 686   | 686   | 686   | 686   | 686   | 686   | 686   | 686   |
| Nominal speed 24 V (rpm) *  | 530  | 340  | 283  | 207  | 176  | 149  | 107  | 92   | 73   | 61   | 54    | 46    | 37    | 31    | 28.5  | 23    | 19.1  | 16.2  | 14.5  | 11.8  |
| Length (mm)                 | 84   | 86   | 86   | 86   | 86   | 86   | 89   | 89   | 89   | 89   | 89    | 89    | 89    | 91    | 91    | 91    | 91    | 91    | 91    | 91    |
| Weight (g)                  | 330  | 336  | 336  | 336  | 336  | 336  | 345  | 345  | 345  | 345  | 345   | 345   | 345   | 350   | 350   | 350   | 350   | 350   | 350   | 350   |

\* Nominal speed and nominal torque have a tolerance of ± 15%

## GEAR HEAD DATA

| Reduction                               | 10:1 | 15:1 | 18:1 | 25:1 | 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 | 360:1 | 400:1 | 500:1 |
|---|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Max. continous torque (mNm)             | 98   | 294  | 294  | 392  | 392  | 392  | 490  | 490  | 490  | 686  | 686   | 686   | 686   | 686   | 686   | 686   | 686   | 686   | 686   | 686   |
| Intermittently permissible torque (mNm) | 294  | 883  | 883  | 1177 | 1177 | 1177 | 1471 | 1471 | 1471 | 2059 | 2059  | 2059  | 2059  | 2059  | 2059  | 2059  | 2059  | 2059  | 2059  | 2059  |
| Efficiency (%)                          | 81   | 73   | 73   | 73   | 73   | 73   | 66   | 66   | 66   | 66   | 66    | 66    | 66    | 59    | 59    | 59    | 59    | 59    | 59    | 59    |
| Length (mm)                             | 23.9 | 26.4 | 26.4 | 26.4 | 26.4 | 26.4 | 28.9 | 28.9 | 28.9 | 28.9 | 28.9  | 28.9  | 28.9  | 31.4  | 31.4  | 31.4  | 31.4  | 31.4  | 31.4  | 31.4  |
| Weight (g)                              | 110  | 116  | 116  | 116  | 116  | 116  | 125  | 125  | 125  | 125  | 125   | 125   | 125   | 130   | 130   | 130   | 130   | 130   | 130   | 130   |

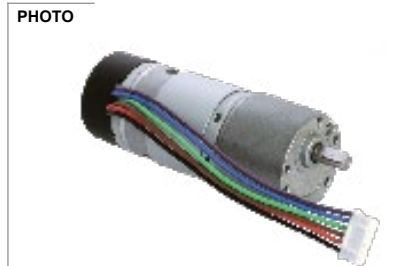
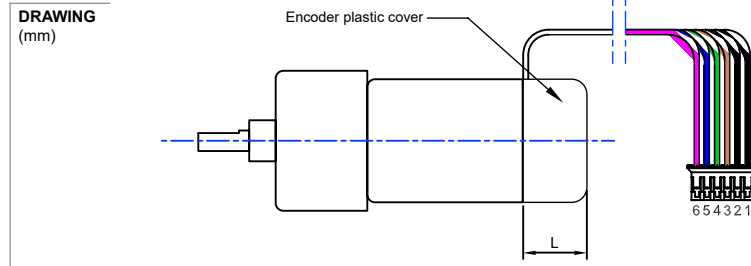
## GEAR MOTOR FEATURES AND STANDARD DATA

|                                    | STANDARD                               | CUSTOMIZATION OPTIONS                   |
|------------------------------------|--|---|
| Type                               | Spur gear brush DC motor               |   |
| Motor type                         | Iron core, commutation                 | Winding parameters                      |
| Motor terminals                    | Soldering ears                         | Wiring harnesses, cables and connectors |
| EMC filter                         | Yes                                    | Yes                                     |
| Gears                              | Straight teeth metal gears produced by | Plastic                                 |
| Motor pinion gear                  | Bakelite                               | Metal                                   |
| Bearing                            | Sleeve bearing                         |   |
| Shaft                              | Hardened stainless steel               | Dimensions                              |
| Encoder option                     | Magetic encoder (to order as option)   | Optical encoder                         |
| Operating temperature              | -10...+60 °C                           | -40...+60 °C                            |
| Backlash no load                   | ≤ 2°                                   |   |
| Radial load 10 mm from gear flange | ≤ 9.81 N                               |   |
| Shaft axial load                   | ≤ 6.86 N                               |   |
| Shaft press fit force max.         | ≤ 196 N                                |   |
| Radial play                        | ≤ 0.05 mm                              |   |
| Thrust play                        | ≤ 0.35 mm                              |   |
| Manufacturing quality standards    | ISO 9001                               |   |
| RoHS compliance                    | Yes                                    |   |
| CE label                           | No                                     | Yes                                     |
| UL approval                        | No                                     | Yes                                     |

## MOTOR DATA

|                      |        |       |
|----------------------|--------|-------|
| Nominal voltage (V)  | 12     | 24    |
| No load speed (rpm)  | 6000   | 6000  |
| No load current (mA) | ≤ 250  | ≤ 130 |
| Nominal speed (rpm)  | 4930   | 5150  |
| Nominal torque (mNm) | 24.5   | 23.5  |
| Nominal current (mA) | ≤ 1600 | ≤ 750 |
| Stall torque (mNm)   | 176    | 186   |
| Starting current (A) | 10     | 5     |
| Output (W)           | 12.8   | 12.7  |
| Length (mm)          | 59.6   | 59.6  |
| Weight (g)           | 220    | 220   |

# Encoder / 6/14 counts per revolution / 2 channels



## ENCODER FEATURES

|                                | STANDARD      | CUSTOMIZATION OPTIONS |
|--------------------------------|---------------|-----------------------|
| Type                           | Magnetic      | Yes                   |
| Counts per revolution          |               | Yes                   |
| Number of channels             | 2             | 1                     |
| Harness                        |               | Yes                   |
| Connector                      |               | Yes                   |
| Encoder rear cover             | Black plastic | Yes                   |
| Operating temperature range    | -10 to +60°C  |                       |
| Manufacturing quality standard | ISO9001       |                       |
| RoHS compliance                | Yes           |                       |
| CE label                       | No            | Yes                   |
| UL approval                    | No            | Yes                   |

Open collector output (V out A, V out B)

## MOTOR AND ENCODER CONNECTION

|                      |           |
|----------------------|-----------|
| Motor (-)            | 1. Black  |
| Motor (+)            | 2. Red    |
| Vcc, Hall sensor     | 3. Brown  |
| GND, Hall sensor     | 4. Green  |
| V out A, Hall sensor | 5. Blue   |
| V out B, Hall sensor | 6. Purple |

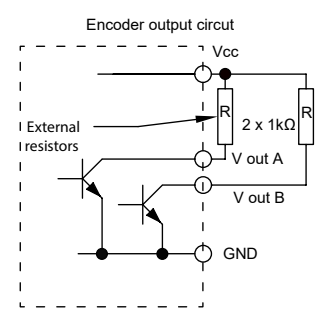
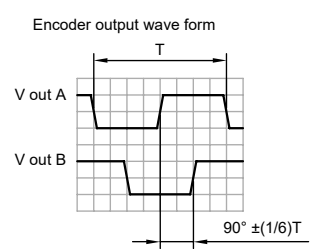
### CONNECTOR

JST PHR-6  
P=2.0-6P



## MOTOR AND ENCODER CONNECTION

| Gear motor model                        | SDS12              | SDS13, SDS14       | SDC2718, SDC2730,  | SDC3729, SD3729    | SD3757, SDS4360    |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|
| Hall sensor                             | UTC SK1816         | UTC SK1816         | UTC SK1816         | UTC SK1816         | UTC SK1816         |
| Number of channels                      | 2                  | 2                  | 2                  | 2                  | 2                  |
| Counts per revolution per channel (CPR) | 6                  | 6                  | 6                  | 14                 | 14                 |
| Pulses per revolution per channel (PPR) | 3                  | 3                  | 3                  | 7                  | 7                  |
| Encoder cable length (mm)               | 100                | 100                | 100                | 100                | 100                |
| Wire gauge (AWG)                        | AWG24/UL1007       | AWG24/UL1007       | AWG24/UL1007       | AWG24/UL1007       | AWG24/UL1007       |
| Cable connector                         | JST PHR-6 P=2.0-6P | JST PHR-6 P=2.0-6P | JST PHR-6 P=2.0-6P | JST PHR-6 P=2.0-6P | JST PHR-6 P=2.0-6P |
| Encoder rear cover cover length (mm)    | -                  | -                  | 12.6               | 14.3               | 13.5               |



## MOTOR AND ENCODER CONNECTION

| CHARACTERISTIC            | SYMBOLS   | TEST CONDITIONS                     | MIN         | REF   | MAX | UNITS |
|---------------------------|-----------|-------------------------------------|-------------|-------|-----|-------|
| Supply voltage            | Vcc       | ---                                 | 3.5         | -     | 20  | V     |
| Output saturation voltage | Vce (sat) | Vcc = 14 V ; Ic = 20 m              | -           | 300   | 700 | mV    |
| Output leakage current    | Icex      | Vce = 14 V ; Vcc = 14               | -           | < 0.1 | 10  | µA    |
| Supply Current            | Ice       | Vcc = 20 V Output open              | -           | 5     | 10  | mA    |
| Output rise time          | tr        | Vcc = 14 V ; R = 820 Ω ; CL = 20 pF | -           | 0.3   | 1.5 | µS    |
| Output fall time          | tf        | Vcc = 14 V ; R = 820 Ω ; CL = 20 pF | -           | 0.3   | 1.5 | µS    |
| Phase shift               | Φ         | ---                                 | 90° ±(1/6)T |       |     | °     |