

8GA40-060 standard

Technical data



8GA40-060hh003klmm
 8GA40-060hh004klmm
 8GA40-060hh005klmm
 8GA40-060hh008klmm
 8GA40-060hh010klmm
 8GA40-060hh009klmm
 8GA40-060hh012klmm
 8GA40-060hh015klmm
 8GA40-060hh016klmm
 8GA40-060hh020klmm
 8GA40-060hh025klmm
 8GA40-060hh032klmm
 8GA40-060hh040klmm
 8GA40-060hh064klmm
 8GA40-060hh100klmm

Gearbox

| | | | | | | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Number of gear stages | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Gear ratio i | 3 | 4 | 5 | 8 | 10 | 9 | 12 | 15 | 16 | 20 | 25 | 32 | 40 | 64 | 100 |
| Nominal output torque T_{2N} [Nm] | 14 | 19 | 24 | 18 | 15 | 44 | 44 | 44 | 44 | 44 | 40 | 44 | 40 | 18 | 15 |
| Max. output torque T_{2max} [Nm] | 22 | 30 | 38 | 29 | 24 | 70 | 70 | 70 | 70 | 70 | 64 | 70 | 64 | 29 | 24 |
| E-stop torque T_{2stop} [Nm] | 66 | 86 | 80 | 80 | 70 | 88 | 88 | 88 | 88 | 88 | 80 | 88 | 80 | 80 | 80 |
| Idle torque [Nm] at 20°C and 3000 rpm | 0.25 | 0.25 | 0.2 | 0.2 | 0.2 | 0.25 | 0.25 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1 | 4500 | | | | | | | | | | | | | | |
| Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1 | 3900 | 3950 | 4000 | 4500 | 4500 | 3550 | 4150 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 |
| Max. drive speed n_{1max} [rpm] | 13000 | | | | | | | | | | | | | | |
| Max. backlash J_1 [arcmin] | 16 | 16 | 16 | 16 | 16 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Reduced backlash J_1 [arcmin] less than | 0 | | | | | | | | | | | | | | |
| Torsional rigidity C_{t21} [Nm/arcmin] | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Tilting rigidity C_{2K} [Nm/arcmin] | 0 | | | | | | | | | | | | | | |
| Max. breakdown torque M_{2Kmax} [Nm] | 0 | | | | | | | | | | | | | | |
| Max. radial force F_{rmax} [N] for 30,000 h | 340 | | | | | | | | | | | | | | |
| Max. radial force F_{rmax} [N] for 20,000 h | 400 | | | | | | | | | | | | | | |
| Max. axial force F_{amax} [N] for 30,000 h | 450 | | | | | | | | | | | | | | |
| Max. axial force F_{amax} [N] for 20,000 h | 500 | | | | | | | | | | | | | | |
| Operating noise L_{pA} [dB(A)] | 70 | | | | | | | | | | | | | | |
| Efficiency at full load η [%] | 94 | 94 | 94 | 94 | 94 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Min. operating temperature $B_{Tempmin}$ [°C] | -25 | | | | | | | | | | | | | | |
| Max. operating temperature $B_{Tempmax}$ [°C] | 90 | | | | | | | | | | | | | | |
| Mounting orientation | Any | | | | | | | | | | | | | | |
| Protection | IP54 | | | | | | | | | | | | | | |
| Weight m [kg] | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| Moment of inertia J_1 [kgcm ²] | 0.246 | 0.204 | 0.189 | 0.176 | 0.175 | 0.242 | 0.238 | 0.188 | 0.199 | 0.186 | 0.186 | 0.175 | 0.175 | 0.175 | 0.175 |

NOTE – Output torque / Max. output torque: This refers to an output shaft speed of $n_2 = 100$ rpm and application factor $K_A = 1$ as well as S1 operating mode for electrical machines and $T = 30^\circ\text{C}$, depending on the diameter of the motor shaft. The maximum output torque is only permissible for 30,000 revolutions!

NOTE – E-stop torque: Approved for 1000x

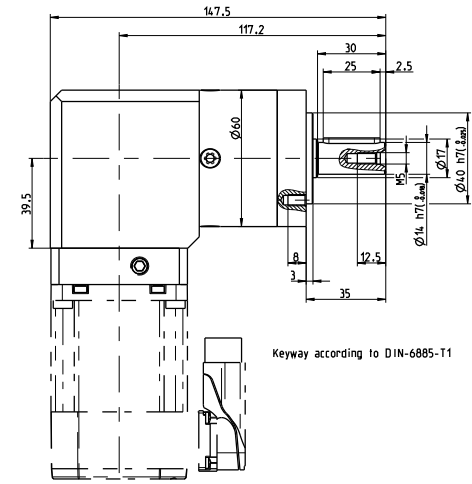
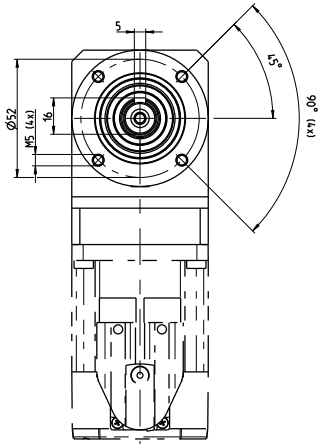
NOTE – Axial / radial force: With reference to the middle of the output shaft; the entries refer to an output shaft speed of $n_2 = 100$ rpm and application factor $K_A = 1$ as well as S1 operating mode for electrical machines and $T = 30^\circ\text{C}$

NOTE – Running noise: Noise level at a distance of 1 m; at an output speed of $n_1 = 3000$ rpm without a load; $i = 5$

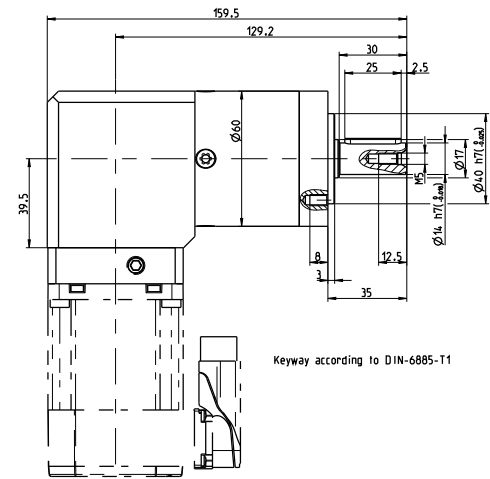
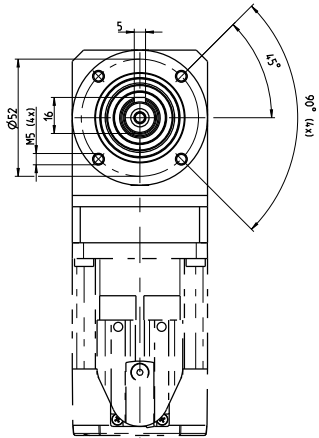
NOTE – Operating temperature: With reference to the middle of the housing surface

NOTE – Weight: Planetary gearbox including universal flange (specific weight upon request)

1-stage gear



2-stage gear



Adapter flange - Overview of dimensions

The flange length L completes the diagram for determining the gearbox length.

| 8GA40-060 | 8LSA2 | 8LSA3 | 8LVA2 | 8JSA2 | 8JSA3 | 80MPD | 80MPF | 80MPH |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Flange length L [mm] | 17.1 | 23.1 | 23.1 | 16.1 | 23.1 | 16.1 | 16.1 | 25.1 |
| Flange diameter Q [mm] | 60 | 90 | 60 | 60 | 70 | 60 | 60 | 80 |

8GA40-060 standard

Technical data



8GA40-060hh060klmm

8GA40-060hh080klmm

8GA40-060hh120klmm

8GA40-060hh160klmm

8GA40-060hh200klmm

8GA40-060hh256klmm

8GA40-060hh320klmm

8GA40-060hh512klmm

Gearbox

| | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Number of gear stages | 3 | | | | | | | | |
| Gear ratio i | 60 | 80 | 120 | 160 | 200 | 256 | 320 | 512 | |
| Nominal output torque T_{2N} [Nm] | 44 | 44 | 44 | 44 | 40 | 44 | 40 | 18 | |
| Max. output torque T_{2max} [Nm] | 70 | 70 | 70 | 70 | 64 | 70 | 64 | 29 | |
| E-stop torque T_{2stop} [Nm] | 88 | 88 | 88 | 88 | 80 | 88 | 80 | 80 | |
| Idle torque [Nm] at 20°C and 3000 rpm | 0.2 | | | | | | | | |
| Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1 | 4500 | | | | | | | | |
| Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1 | 4500 | | | | | | | | |
| Max. drive speed n_{1max} [rpm] | 13000 | | | | | | | | |
| Max. backlash J_1 [arcmin] | 21 | | | | | | | | |
| Reduced backlash J_1 [arcmin] less than | 0 | | | | | | | | |
| Torsional rigidity C_{t21} [Nm/arcmin] | 2.5 | | | | | | | | |
| Tilting rigidity C_{2K} [Nm/arcmin] | 0 | | | | | | | | |
| Max. breakdown torque M_{2Kmax} [Nm] | 0 | | | | | | | | |
| Max. radial force F_{rmax} [N] for 30,000 h | 340 | | | | | | | | |
| Max. radial force F_{rmax} [N] for 20,000 h | 400 | | | | | | | | |
| Max. axial force F_{amax} [N] for 30,000 h | 450 | | | | | | | | |
| Max. axial force F_{amax} [N] for 20,000 h | 500 | | | | | | | | |
| Operating noise L_{PA} [dB(A)] | 70 | | | | | | | | |
| Efficiency at full load η [%] | 88 | | | | | | | | |
| Min. operating temperature $B_{Tempmin}$ [°C] | -25 | | | | | | | | |
| Max. operating temperature $B_{Tempmax}$ [°C] | 90 | | | | | | | | |
| Mounting orientation | Any | | | | | | | | |
| Protection | IP54 | | | | | | | | |
| Weight m [kg] | 2.1 | | | | | | | | |
| Moment of inertia J_1 [kgcm ²] | 0.187 | 0.186 | 0.175 | 0.175 | 0.175 | 0.175 | 0.175 | 0.175 | |

NOTE – Output torque / Max. output torque: This refers to an output shaft speed of $n_2 = 100$ rpm and application factor $K_A = 1$ as well as S1 operating mode for electrical machines and $T = 30^\circ\text{C}$, depending on the diameter of the motor shaft. The maximum output torque is only permissible for 30,000 revolutions!

NOTE – E-stop torque: Approved for 1000x

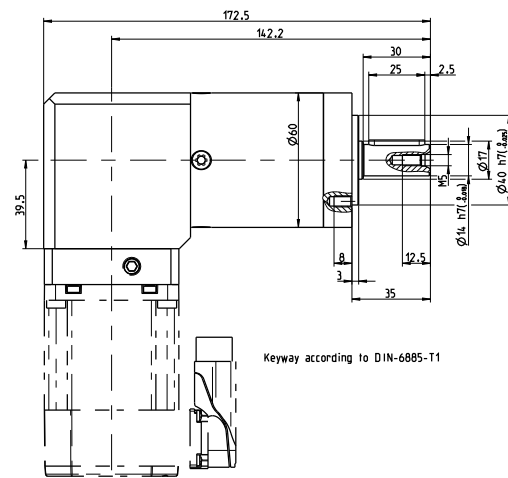
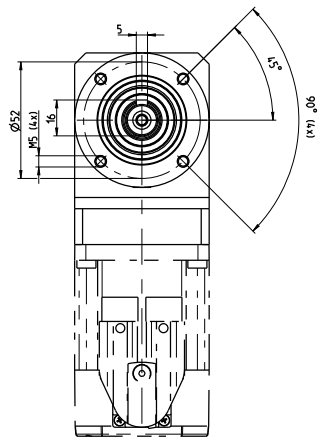
NOTE – Axial / radial force: With reference to the middle of the output shaft; the entries refer to an output shaft speed of $n_2 = 100$ rpm and application factor $K_A = 1$ as well as S1 operating mode for electrical machines and $T = 30^\circ\text{C}$

NOTE – Running noise: Noise level at a distance of 1 m; at an output speed of $n_1 = 3000$ rpm without a load; $i = 5$

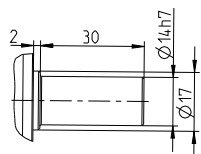
NOTE – Operating temperature: With reference to the middle of the housing surface

NOTE – Weight: Planetary gearbox including universal flange (specific weight upon request)

3-stage gear



Alternative drive shaft options



Adapter flange - Overview of dimensions

The flange length L completes the diagram for determining the gearbox length.

| 8GA40-060 | 8LSA2 | 8LSA3 | 8LVA2 | 8JSA2 | 8JSA3 | 80MPD | 80MPF | 80MPH |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Flange length L [mm] | 17.1 | 23.1 | 23.1 | 16.1 | 23.1 | 16.1 | 16.1 | 25.1 |
| Flange diameter Q [mm] | 60 | 90 | 60 | 60 | 70 | 60 | 60 | 80 |