

# 8GA50-120 standard

## Technical data



8GA50-120hh003klmm  
 8GA50-120hh004klmm  
 8GA50-120hh005klmm  
 8GA50-120hh008klmm  
 8GA50-120hh010klmm  
 8GA50-120hh009klmm  
 8GA50-120hh012klmm  
 8GA50-120hh015klmm  
 8GA50-120hh016klmm  
 8GA50-120hh020klmm  
 8GA50-120hh025klmm  
 8GA50-120hh032klmm  
 8GA50-120hh040klmm  
 8GA50-120hh064klmm  
 8GA50-120hh100klmm

### 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]	80	105	130	120	95	157	195	172	195	195	172	195	172	120	95
Max. output torque $T_{2max}$ [Nm]	128	168	208	192	152	251	312	275	312	312	275	312	275	192	152
E-stop torque $T_{2stop}$ [Nm]	360	474	500	380	430	500	520	500	520	520	500	520	500	380	430
Idle torque [Nm] at 20°C and 3000 rpm	2.25	1.85	1.5	1.15	1.05	1.3	1.25	1.2	1.2	1.1	1.05	0.95	0.95	0.9	0.9
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% $T_{2N}$ and S1	2350	2450	2600	3450	3500	2950	3050	3450	3450	3500	3500	3500	3500	3500	3500
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% $T_{2N}$ and S1	1700	1750	1750	2550	3200	2100	2150	2650	2550	2900	3400	3500	3500	3500	3500
Max. drive speed $n_{1max}$ [rpm]	6500														
Max. backlash $J_1$ [arcmin]	11	11	11	11	11	13	13	13	13	13	13	13	13	13	13
Reduced backlash $J_1$ [arcmin] less than	0														
Torsional rigidity $C_{t21}$ [Nm/arcmin]	10	10	10	10	10	13	13	13	13	13	13	13	13	13	13
Tilting rigidity $C_{2K}$ [Nm/arcmin]	0														
Max. breakdown torque $M_{2Kmax}$ [Nm]	0														
Max. radial force $Fr_{max}$ [N] for 30,000 h	2150														
Max. radial force $Fr_{max}$ [N] for 20,000 h	2500														
Max. axial force $Fa_{max}$ [N] for 30,000 h	3000														
Max. axial force $Fa_{max}$ [N] for 20,000 h	4000														
Operating noise $L_{pA}$ [dB(A)]	75														
Efficiency at full load $\eta$ [%]	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]	13.5	13.5	13.5	13.5	13.5	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
Moment of inertia $J_1$ [kgcm <sup>2</sup> ]	2.87	1.92	1.6	1.35	1.3	2.65	2.57	2.54	1.76	1.5	1.5	1.3	1.3	1.3	1.3

**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

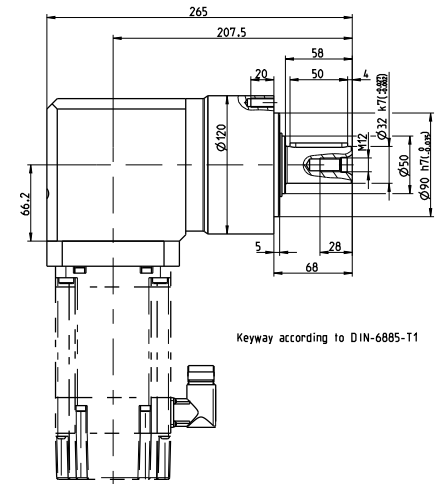
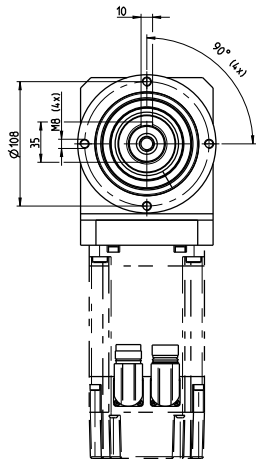
**NOTE – Axial / radial force:** With reference to the middle of the output shaft; the entries refer to an output shaft speed of  $n_2 = 100$  rpm and application factor  $K_A = 1$  as well as S1 operating mode for electrical machines and  $T = 30^\circ\text{C}$

**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

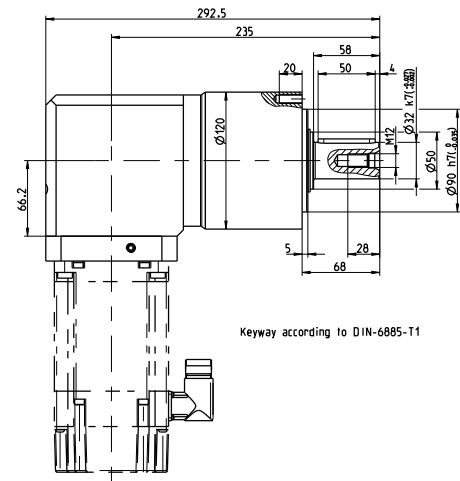
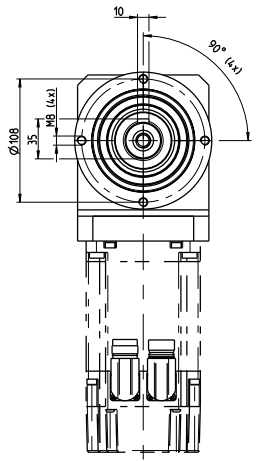
**NOTE – Weight:** Planetary gearbox including universal flange (specific weight upon request)

## 1-stage gear



Keyway according to DIN-6885-T1

## 2-stage gear



Keyway according to DIN-6885-T1

## Adapter flange - Overview of dimensions

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

8GA50-120	8LSA3	8LSA/C4	8LSA/C5	8JSA4	8JSA5	8LSN4	8LSN5	80MPH
Flange length L [mm]	21.8	21.8	31.8	21.8	31.8	21.8	31.8	21.8
Flange diameter Q [mm]	115	115	140	115	115	115	140	115