

8GA45-121 standard

Technical data



8GA45-121hh003klmm
 8GA45-121hh004klmm
 8GA45-121hh005klmm
 8GA45-121hh008klmm
 8GA45-121hh010klmm
 8GA45-121hh009klmm
 8GA45-121hh012klmm
 8GA45-121hh015klmm
 8GA45-121hh016klmm
 8GA45-121hh020klmm
 8GA45-121hh025klmm
 8GA45-121hh032klmm
 8GA45-121hh040klmm
 8GA45-121hh064klmm
 8GA45-121hh100klmm

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	210	260	230	260	260	230	260	230	120	95
Max. output torque T_{2max} [Nm]	128	168	208	192	152	336	416	368	416	416	368	416	368	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	1.5	1.45	1.2	1	0.95	1.25	1.25	1.2	1.25	1.1	1.05	0.9	0.9	0.9	0.9
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	2850	2950	3050	3500	3500	2950	3050	3500	3450	3500	3500	3500	3500	3500	3500
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	2050	2050	2050	2950	3500	2000	2050	2550	2450	2850	3350	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 F_{rmax} [N] for 30,000 h	2400														
Max. radial force F_{rmax} [N] for 20,000 h	2950														
Max. axial force F_{amax} [N] for 30,000 h	2100														
Max. axial force F_{amax} [N] for 20,000 h	2500														
Operating noise L_{pA} [dB(A)]	75														
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]	12.6	12.6	12.6	12.6	12.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
Moment of inertia J_1 [kgcm ²]	5.75	3.91	3.35	2.89	2.85	5.73	5.6	5.53	3.83	3.28	3.26	2.84	2.84	2.84	2.84

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

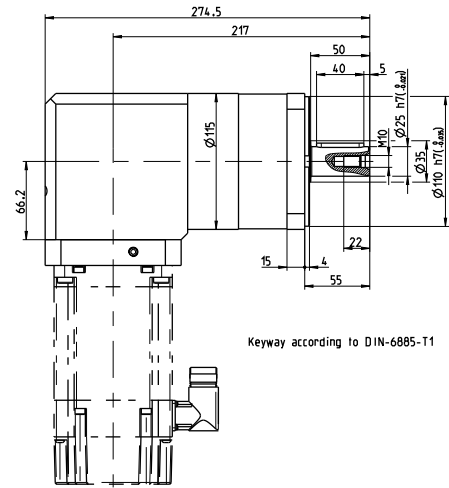
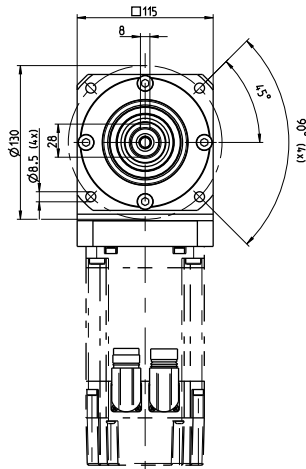
NOTE – Axial / radial force: With reference to the middle of the output shaft; the entries refer to an output shaft speed of $n_2 = 100$ rpm and application factor $K_A = 1$ as well as S1 operating mode for electrical machines and $T = 30^\circ\text{C}$

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

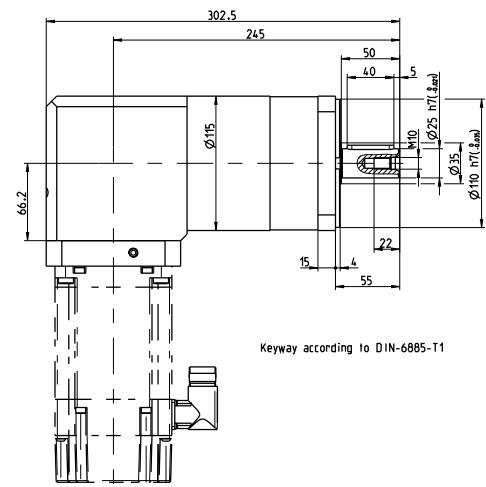
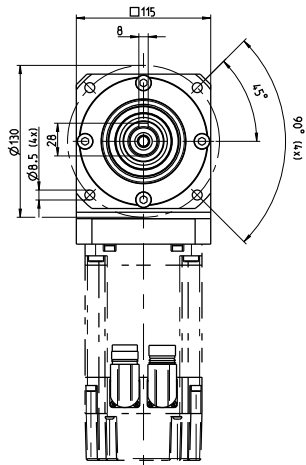
NOTE – Operating temperature: With reference to the middle of the housing surface

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.

8GA45-121	8LSA3	8LSA/C4	8LSA/C5	8JSA4	8JSA5	8LSN 4	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

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8GA45-121hh060klmm

8GA45-121hh080klmm

8GA45-121hh120klmm

8GA45-121hh160klmm

8GA45-121hh200klmm

8GA45-121hh256klmm

8GA45-121hh320klmm

8GA45-121hh512klmm

Gearbox

Number of gear stages	3								
Gear ratio i	60	80	120	160	200	256	320	512	
Nominal output torque T_{2N} [Nm]	260	260	230	260	230	260	230	120	
Max. output torque T_{2max} [Nm]	416	416	368	416	368	416	368	192	
E-stop torque T_{2stop} [Nm]	520	520	500	520	500	520	500	380	
Idle torque [Nm] at 20°C and 3000 rpm	1.2	1.05	1.15	0.9	0.9	0.9	0.9	0.9	
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	3500								
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	3500								
Max. drive speed n_{1max} [rpm]	6500								
Max. backlash J_1 [arcmin]	15								
Reduced backlash J_1 [arcmin] less than	0								
Torsional rigidity C_{t21} [Nm/arcmin]	12								
Tilting rigidity C_{2K} [Nm/arcmin]	0								
Max. breakdown torque M_{2Kmax} [Nm]	0								
Max. radial force F_{rmax} [N] for 30,000 h	2400								
Max. radial force F_{rmax} [N] for 20,000 h	2950								
Max. axial force F_{amax} [N] for 30,000 h	2100								
Max. axial force F_{amax} [N] for 20,000 h	2500								
Operating noise L_{pA} [dB(A)]	75								
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]	16.6								
Moment of inertia J_1 [kgcm ²]	5.62	3.28	5.47	2.84	2.84	2.84	2.84	2.84	

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

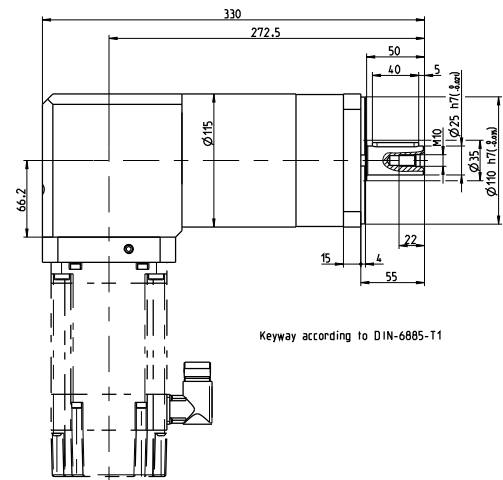
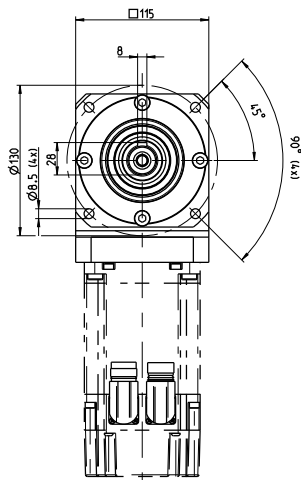
NOTE – Axial / radial force: With reference to the middle of the output shaft; the entries refer to an output shaft speed of $n_2 = 100$ rpm and application factor $K_A = 1$ as well as S1 operating mode for electrical machines and $T = 30^\circ\text{C}$

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

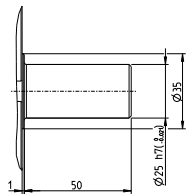
NOTE – Weight: Planetary gearbox including universal flange (specific weight upon request)

3-stage gear



Alternative drive shaft options

Smooth shaft



Adapter flange - Overview of dimensions

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

8GA45-121	8LSA3	8LSA/C4	8LSA/C5	8JSA4	8JSA5	8LSN 4	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