

8LSN5

Technical data

	8LSN54.ee020fpgg-0	8LSN54.ee030fpgg-0	8LSN54.ee045fpgg-0	8LSN55.ee020fpgg-0	8LSN55.ee030fpgg-0	8LSN55.ee045fpgg-0	8LSN56.ee020fpgg-0	8LSN56.ee030fpgg-0	8LSN56.ee045fpgg-0	8LSN57.ee020fpgg-0	8LSN57.ee022fpgg-0	8LSN57.ee030fpgg-0	8LSN57.ee045fpgg-0	8LSN58.ee022fpgg-0	8LSN58.ee030fpgg-0	8LSN58.ee045fpgg-0
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Motor

	2000	3000	4500	2000	3000	4500	2000	3000	4500	2000	2200	3000	4500	2200	3000	4500
Nominal speed n_N [rpm]	2000	3000	4500	2000	3000	4500	2000	3000	4500	2000	2200	3000	4500	2200	3000	4500
Number of pole pairs	3															
Nominal torque M_N [Nm]	7.4	7	5.8	11.1	10.5	8.7	14.8	14	11.6	16.7	16.5	14.5	9.7	19.1	16.5	10
Nominal power P_N [W]	1550	2199	2733	2325	3299	4100	3100	4398	5466	3498	3801	4555	4571	4400	5184	4712
Nominal current I_N [A]	3.03	4.3	5.32	4.54	6.45	7.97	6.06	8.6	10.63	6.8	7.4	8.9	8.9	8.6	10.1	9.2
Stall torque M_0 [Nm]	7.8	7.8	7.8	11.7	11.7	11.7	15.6	15.6	15.6	19.5	19.5	19.5	19.5	23.4	23.4	23.4
Stall current I_0 [A]	3.2	4.8	7.1	4.8	7.2	10.7	6.4	9.6	14.3	8	8.8	12	17.9	10.6	14.4	21.4
Maximum torque M_{max} [Nm]	30	30	30	48	48	48	60	60	60	80	80	80	80	92	92	92
Maximum current I_{max} [A]	16.38	24.57	36.66	26.21	39.31	58.65	32.76	49.14	73.31	43.68	48.11	65.51	97.75	55.33	75.34	112.42
Maximum speed n_{max} [rpm]	7200															
Torque constant K_T [Nm/A]	2.44	1.63	1.09	2.44	1.63	1.09	2.44	1.63	1.09	2.44	2.22	1.63	1.09	2.22	1.63	1.09
Voltage constant K_E [V/1000 rpm]	147.6	98.4	66	147.6	98.4	66	147.6	98.4	66	147.7	134	98.4	66	134	98.4	66
Stator resistance R_{2ph} [Ω]	5.99	2.71	1.19	3.23	1.43	0.63	2.07	0.91	0.41	1.43	1.17	0.64	0.31	0.94	0.53	0.23
Stator inductance L_{2ph} [mH]	29.28	13.01	5.78	19.52	8.68	3.86	14.64	6.51	2.89	11.07	9.06	4.92	2.51	7.71	4.34	1.93
Electrical time constant t_{el} [ms]	4.9	4.8	4.9	6	6	6.1	7.1	7.1	7	7.7	7.8	7.7	8.1	8.2	8.2	8.3
Thermal time constant t_{them} [min]	40	40	40	43	43	43	45	45	45	48	48	48	48	50	50	50
Moment of inertia J [kgcm ²]	15.75	15.75	15.75	23.6	23.6	23.6	31.5	31.5	31.5	38.4	38.4	38.4	38.4	45.4	45.4	45.4
Weight without brake m [kg]	9.5	9.5	9.5	11	11	11	13.5	13.5	13.5	15.6	15.6	15.6	15.6	18	18	18

Holding brakes

Holding torque of the brake M_{br} [Nm]	15
Weight of brake [kg]	0.9
Moment of inertia for the brake J_{br} [kgcm ²]	1.66

Recommendations

ACOPOS servo drive 8Vxxx.00-x1	1045	1090	1090	1090	1090	1180	1090	1180	1180	1090	1180	1180	1320	1180	1180	1320
ACOPOSmulti inverter module 8BVI...	0028	0055	0110	0055	0110	0110	0055	0110	0220	0110	0110	0110	0220	0110	0220	0330
Cross section for B&R motor cables [mm ²]	1.5	1.5	1.5	1.5	1.5	4	1.5	4	4	1.5	4	4	4	4	4	4

Connector type

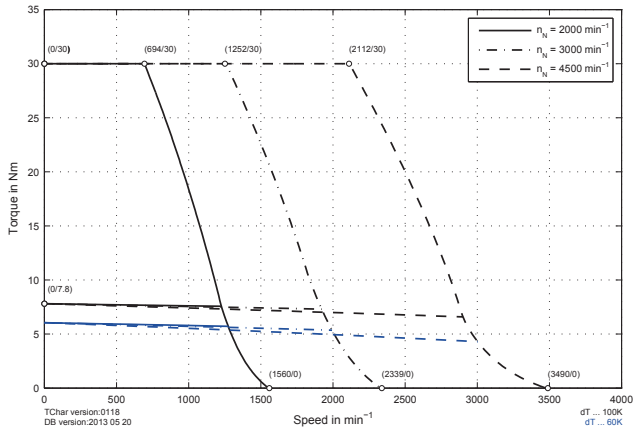
SpeedTec

NOTE – Servo drive: The recommended servo drive / inverter module is designed for 1.1x the stall current. If more than double the amount is needed during the acceleration phase, the next larger servo drive should be selected. This recommendation is only a guideline, detailed inspection of the corresponding speed - torque characteristic curve can result in deviations of the servo drive size (one size larger or smaller).

NOTE – Cable cross section: The B&R motor cables with this cable cross section are produced optimally (cables stripped to the correct length) for the ACOPOS servo drive or the recommended ACOPOS inverter module. B&R motor cables with other cable cross sections can also be used (within the specified terminal cross section range) and can be obtained from B&R in the desired design on request.

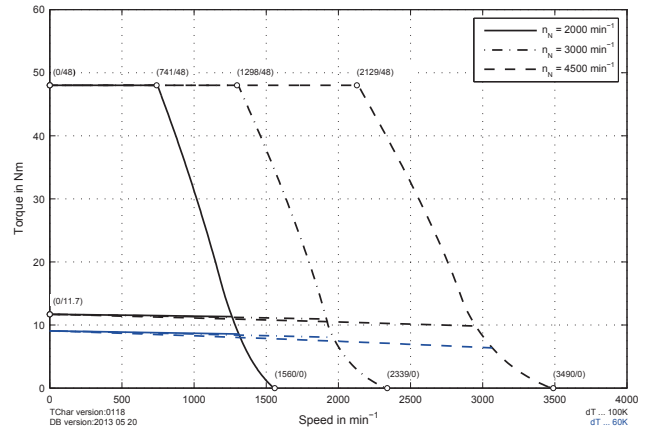
Speed - torque characteristics for DC bus voltage of 325 VDC

ACOPOS



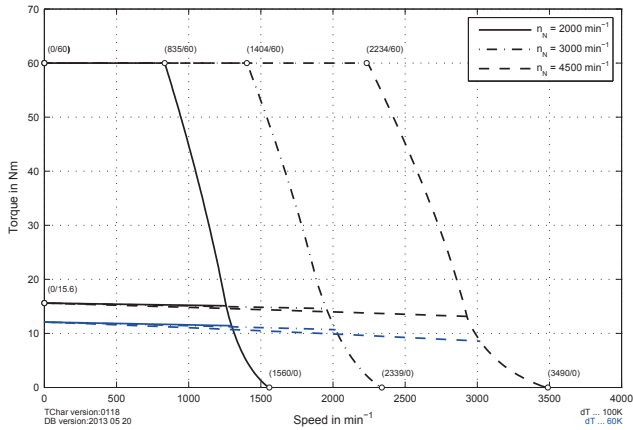
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ACOPOS



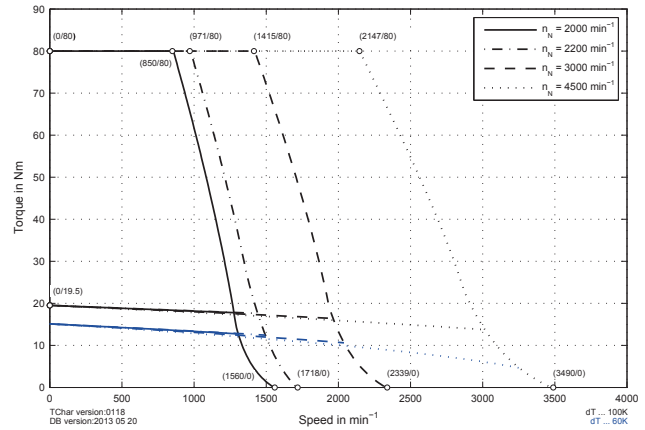
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ACOPOS



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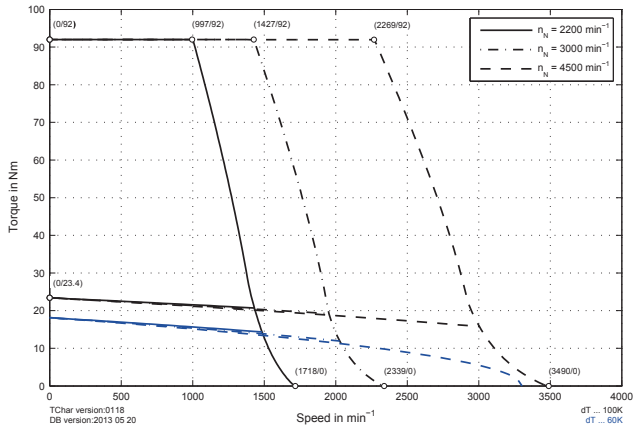
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8LSN5

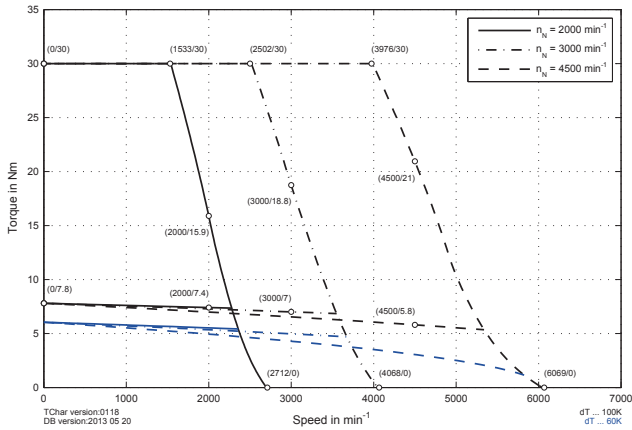
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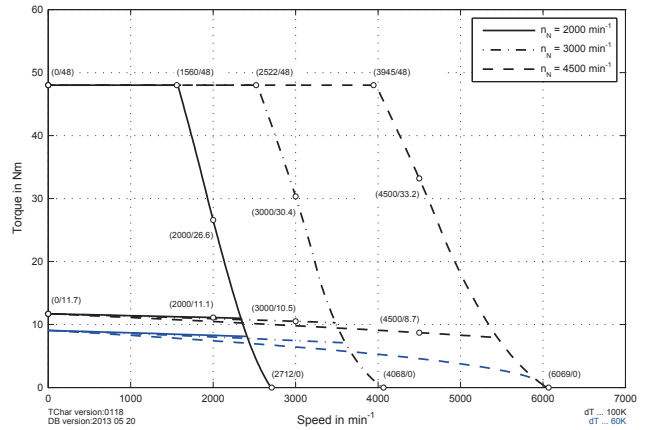
Speed-torque characteristics for DC bus voltage of 560 VDC

ACOPOS



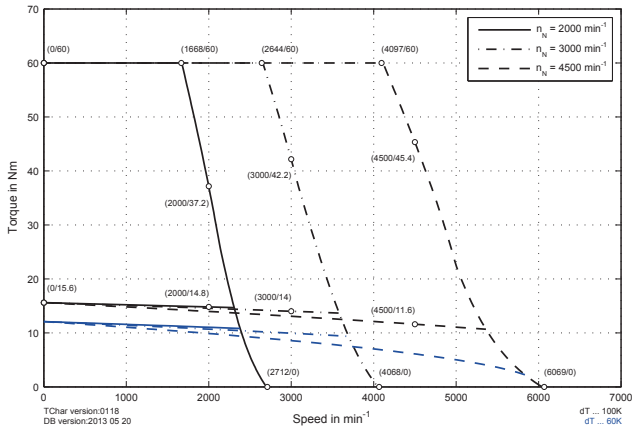
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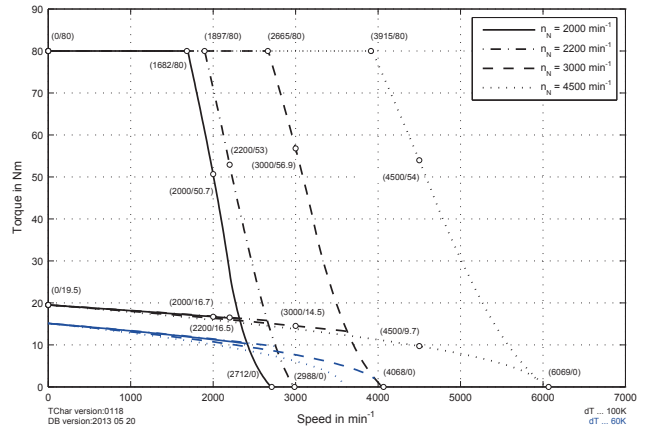
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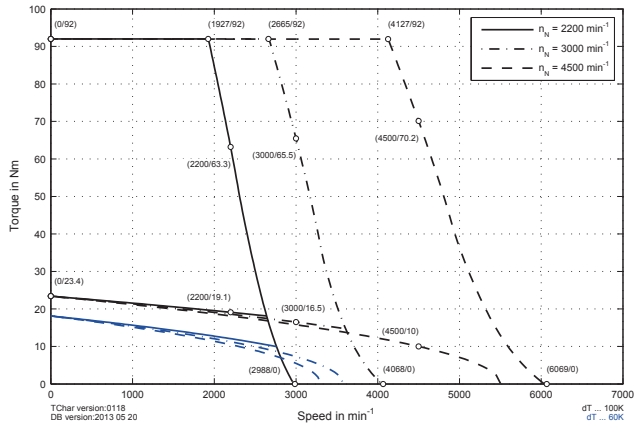
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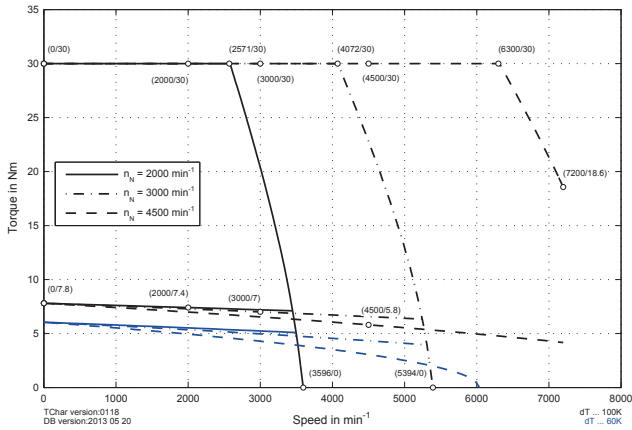
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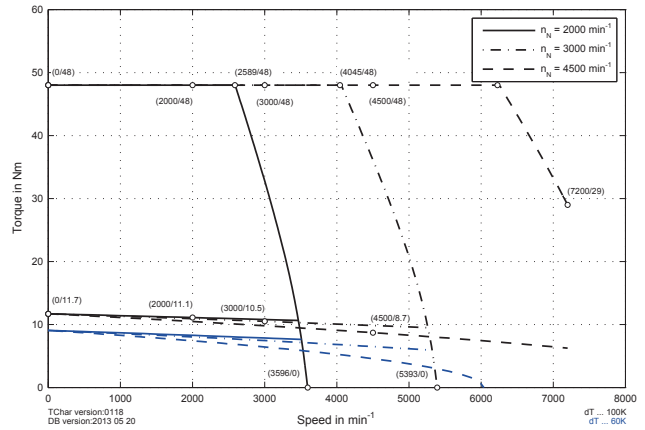
Speed-torque characteristics for DC bus voltage of 750 VDC

ACOPOSmulti



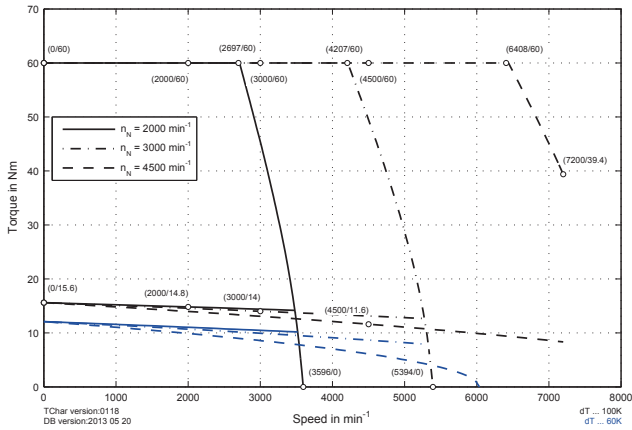
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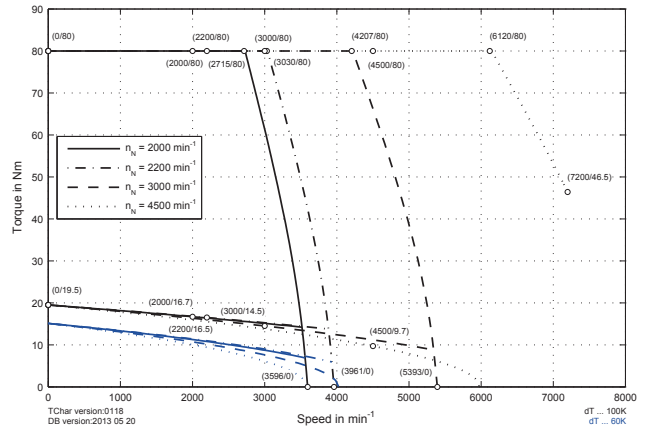
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ACOPOSmulti



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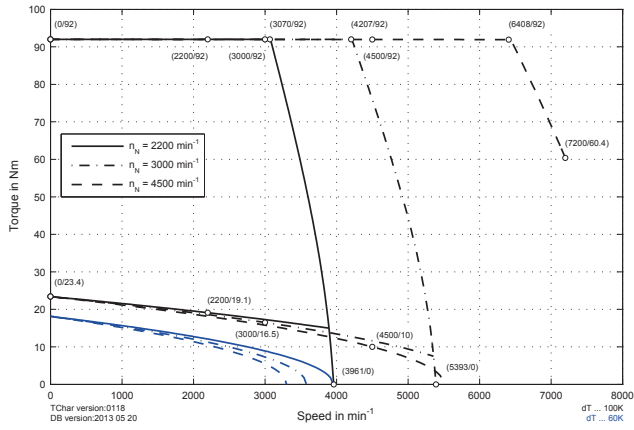
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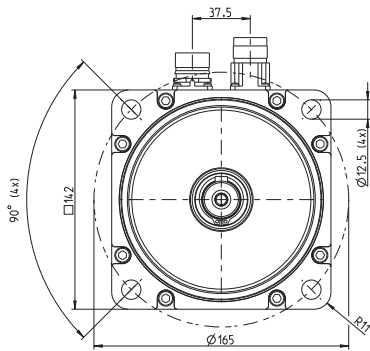
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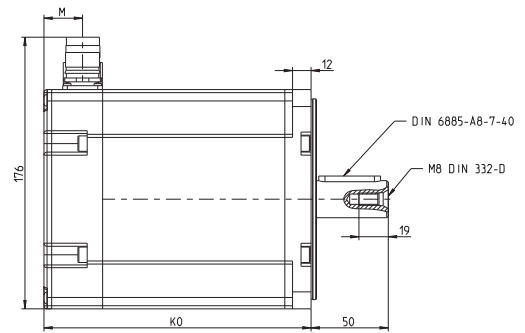
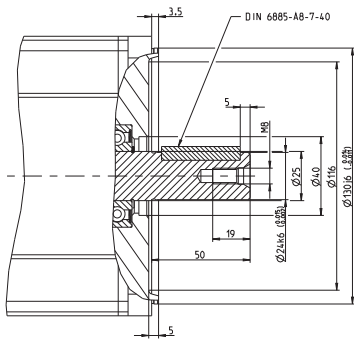
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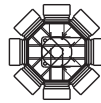
**A side flange detail
Standard bearing**



**Possible
Connection directions**



Straight (top connector)



Angled (swivel connector)

Optical EnDat feedback

Extension of K_0 depending on the motor option [mm]

Model number	K_0	M	Holding brake	Oil seal	Reinforced A side bearing
8LSN54.eennffgg-0	228	55	40	---	---
8LSN55.eennffgg-0	253	55	40	---	---
8LSN56.eennffgg-0	278	55	40	---	---
8LSN57.eennffgg-0	303	55	40	---	---

Inductive EnDat / resolver feedback

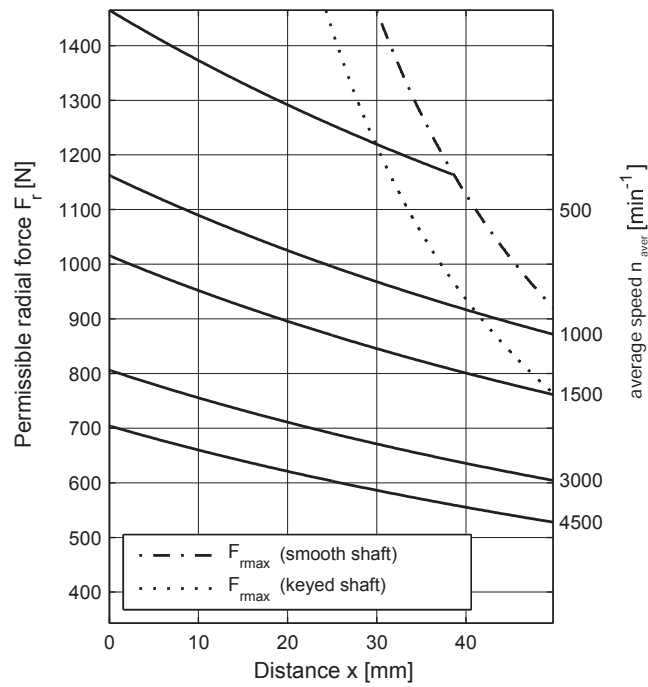
Extension of K_0 depending on the motor option [mm]

Model number	K_0	M	Holding brake	Oil seal	Reinforced A side bearing
8LSN54.eennffgg-0	198	25	40	---	---
8LSN55.eennffgg-0	223	25	40	---	---
8LSN56.eennffgg-0	248	25	40	---	---
8LSN57.eennffgg-0	273	25	40	---	---

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Maximum shaft load

The values in the diagram below are based on a mechanical lifespan of the bearings of 20,000 operating hours.



Maximum axial force: $F_{amax} = 131 \text{ N}$