

## 3 Technical data 8LSA4 version 3

Product ID	8LSA43. ee030ffgg-3	8LSA43. ee045ffgg-3	8LSA43. ee060ffgg-3	8LSA44. ee022ffgg-3	8LSA44. ee030ffgg-3	8LSA44. ee045ffgg-3
<b>Motor</b>						
Nominal speed $n_N$ [min <sup>-1</sup> ]	3000	4500	6000	2200	3000	4500
Number of pole pairs	5					
Nominal torque $M_N$ [Nm]	3.1	2.7	2	5.2	4.62	3.6
Nominal power $P_N$ [W]	974	1272	1257	1198	1451	1696
Nominal current $I_N$ [A]	1.9	2.49	2.5	2.3	2.8	3.3
Stall torque $M_0$ [Nm]	4		6			
Stall current $I_0$ [A]	2.5	3.7	4.9	2.7	3.7	5.5
Maximum torque $M_{max}$ [Nm]	22.8					
Maximum current $I_{max}$ [A]	14.59	21.9	29.2	16.1	21.9	32.91
Maximum speed $n_{max}$ [rpm]	12000					
Torque constant $K_T$ [Nm/A]	1.63	1.08	0.81	2.22	1.63	1.08
Voltage constant $K_E$ [V/1000 rpm]	98.4	65.45	49.2	134	98.4	65.45
Stator resistance $R_{zph}$ [Ω]	5.94	2.64	1.42	6.24	3.6	1.6
Stator inductance $L_{zph}$ [mH]	36.5	16.5	9.2	44.8	24	10.8
Electrical time constant $t_{el}$ [ms]	6.1	6.3	6.5	7.2	6.7	6.8
Thermal time constant $t_{therm}$ [min]	25			30		
Moment of inertia $J$ [kgcm <sup>2</sup> ]	1.87			2.73		
Weight without brake $m$ [kg]	4.5			5.4		
<b>Holding brake</b>						
Holding torque of the brake $M_{Br}$ [Nm]	8					
Weight of brake [kg]	1					
Moment of inertia for the brake $J_{Br}$ [kgcm <sup>2</sup> ]	0.54					
<b>Recommendations</b>						
ACOPOS servo drive 8Vxxxx.xx...	1045		1090		1045 1090	
ACOPOSmulti inverter module 8BVlxxxx...	0028	0055		0028	0055	
Cross section for B&R motor cables [mm <sup>2</sup> ]	1.5					
Connector type	SpeedTec					
Connector size	1.0					

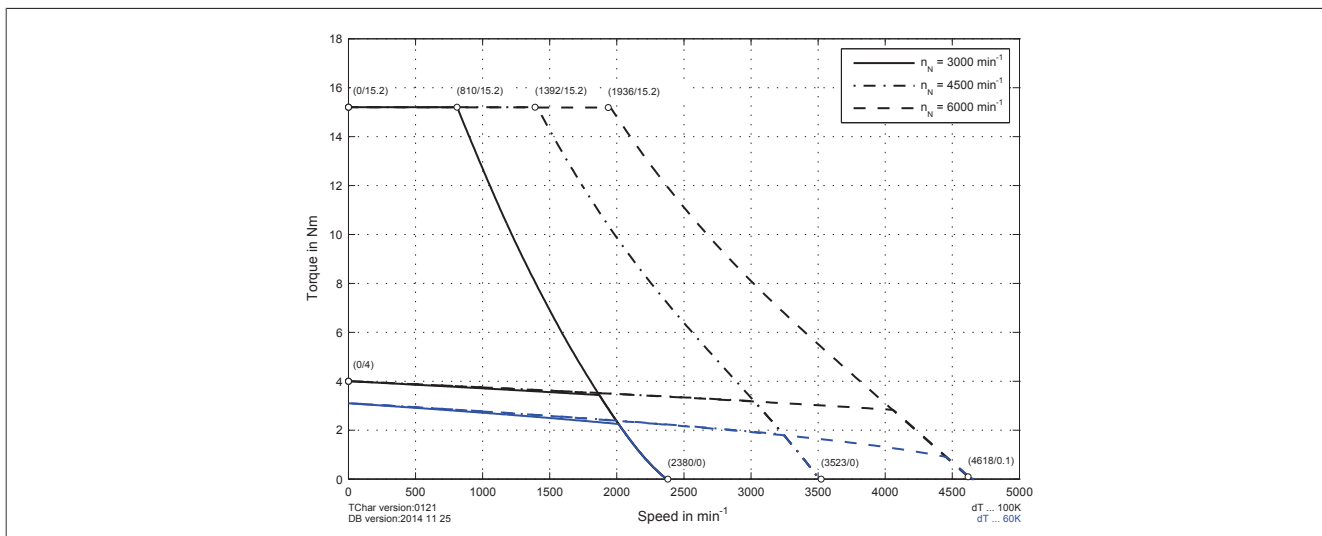
Technical data 8LSA4 version 3

Product ID	8LSA44. ee060ffgg-3	8LSA45. ee022ffgg-3	8LSA45. ee030ffgg-3	8LSA45. ee045ffgg-3	8LSA45. ee060ffgg-3	8LSA46. ee022ffgg-3
<b>Motor</b>						
Nominal speed $n_N$ [min <sup>-1</sup> ]	6000	2200	3000	4500	6000	2200
Number of pole pairs	5					
Nominal torque $M_N$ [Nm]	3	7	6.16	4.8	4	8.7
Nominal power $P_N$ [W]	1885	1613	1935	2262	2513	2004
Nominal current $I_N$ [A]	3.7	3.2	3.8	4.4	4.91	3.9
Stall torque $M_0$ [Nm]	6	8				10
Stall current $I_0$ [A]	7.4	3.6	4.9	7.4	9.8	4.5
Maximum torque $M_{max}$ [Nm]	22.8	30.4				38
Maximum current $I_{max}$ [A]	43.8	21.4	29.2	43.9	58.3	26.8
Maximum speed $n_{max}$ [rpm]	12000					
Torque constant $K_T$ [Nm/A]	0.81	2.22	1.63	1.08	0.81	2.22
Voltage constant $K_E$ [V/1000 rpm]	49.2	134	98.4	65.45	49.2	134
Stator resistance $R_{zph}$ [ $\Omega$ ]	0.863	4.32	2.489	1.106	0.6	3.61
Stator inductance $L_{zph}$ [mH]	6.2	41	21.8	9.69	5.4	32
Electrical time constant $t_{el}$ [ms]	7.2	9.5	8.8		9	8.9
Thermal time constant $t_{therm}$ [min]	30	35				40
Moment of inertia $J$ [kgcm <sup>2</sup> ]	2.73	3.58				4.39
Weight without brake $m$ [kg]	5.4	6.5				7.3
<b>Holding brake</b>						
Holding torque of the brake $M_{Br}$ [Nm]	8					
Weight of brake [kg]	1	0.9				1
Moment of inertia for the brake $J_{Br}$ [kgcm <sup>2</sup> ]	0.54					
<b>Recommendations</b>						
ACOPOS servo drive 8Vxxxx.xx...	1090	1045	1090		1180	1045
ACOPOS multi inverter module 8BVxxxx...	0110	0055		0110		0055
Cross section for B&R motor cables [mm <sup>2</sup> ]	1.5				4	1.5
Connector type	SpeedTec					
Connector size	1.0					

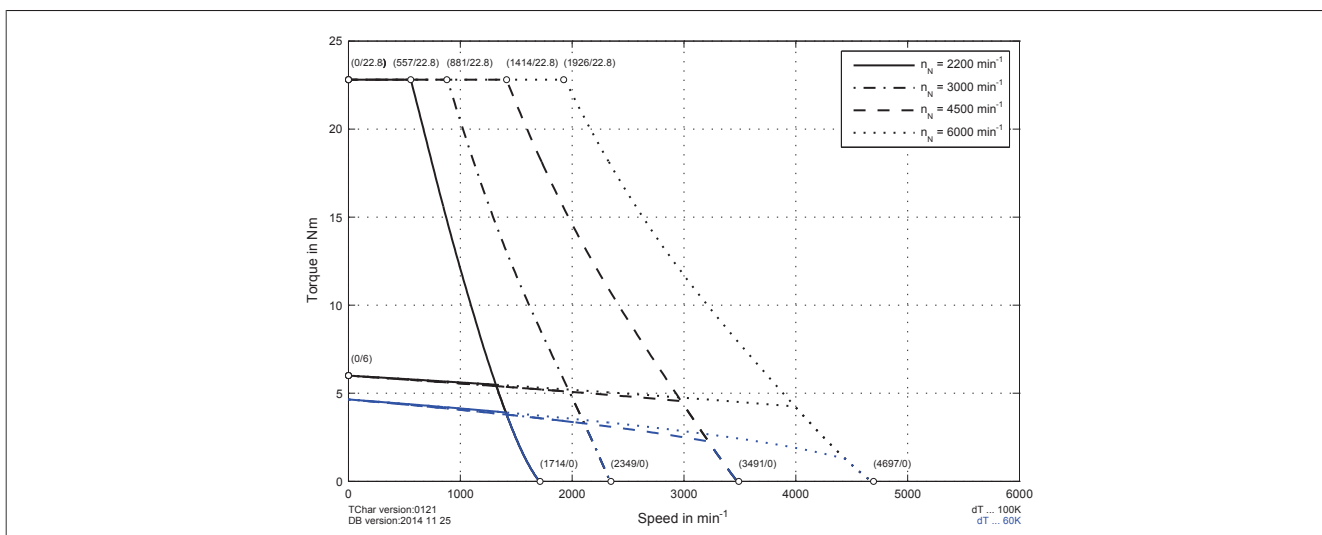
Product ID	8LSA46.ee030ffgg-3	8LSA46.ee045ffgg-3	8LSA46.ee060ffgg-3
<b>Motor</b>			
Nominal speed $n_N$ [min <sup>-1</sup> ]	3000	4500	6000
Number of pole pairs		5	
Nominal torque $M_N$ [Nm]	7.7	6	5
Nominal power $P_N$ [W]	2419	2827	3142
Nominal current $I_N$ [A]	4.7	5.5	6.1
Stall torque $M_0$ [Nm]		10	
Stall current $I_0$ [A]	6.1	9.2	12.3
Maximum torque $M_{max}$ [Nm]		38	
Maximum current $I_{max}$ [A]	36.5	54.8	72.9
Maximum speed $n_{max}$ [rpm]		12000	
Torque constant $K_T$ [Nm/A]	1.63	1.08	0.81
Voltage constant $K_E$ [V/1000 rpm]	98.4	65.45	49.2
Stator resistance $R_{zph}$ [ $\Omega$ ]	1.92	0.8	0.48
Stator inductance $L_{zph}$ [mH]	17.44	7.75	4.36
Electrical time constant $t_{el}$ [ms]	9.1	9.7	9.1
Thermal time constant $t_{therm}$ [min]		40	
Moment of inertia $J$ [kgcm <sup>2</sup> ]		4.39	
Weight without brake $m$ [kg]		7.3	
<b>Holding brake</b>			
Holding torque of the brake $M_{Br}$ [Nm]		8	
Weight of brake [kg]		1	
Moment of inertia for the brake $J_{Br}$ [kgcm <sup>2</sup> ]		0.54	
<b>Recommendations</b>			
ACOPOS servo drive 8Vxxx.xx...		1090	1180
ACOPOSmulti inverter module 8BVIxxx...		0110	0220
Cross section for B&R motor cables [mm <sup>2</sup> ]	1.5		4
Connector type		SpeedTec	
Connector size		1.0	

### 3.1 Speed-torque characteristics at 325 VDC bus voltage

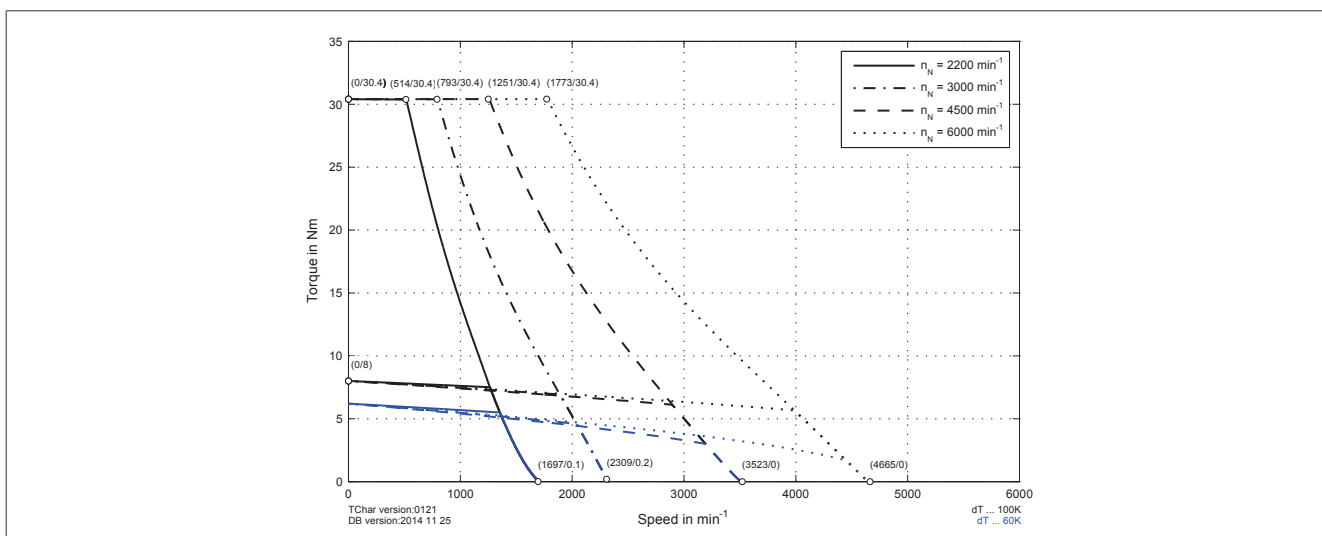
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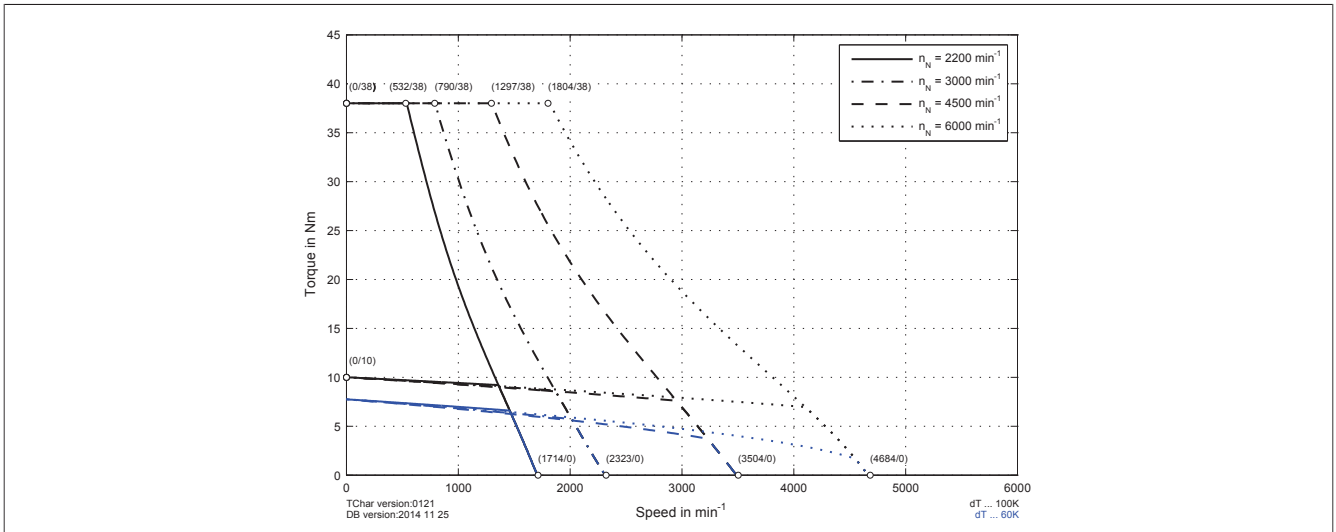
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#### 8LSA45.eennffgg-3

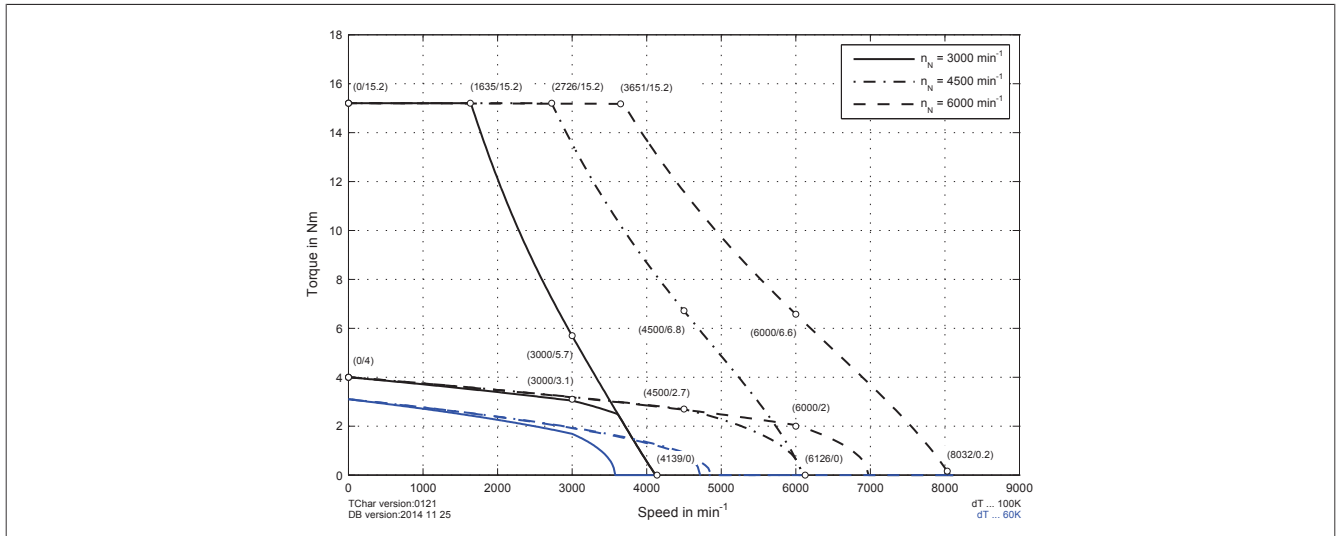


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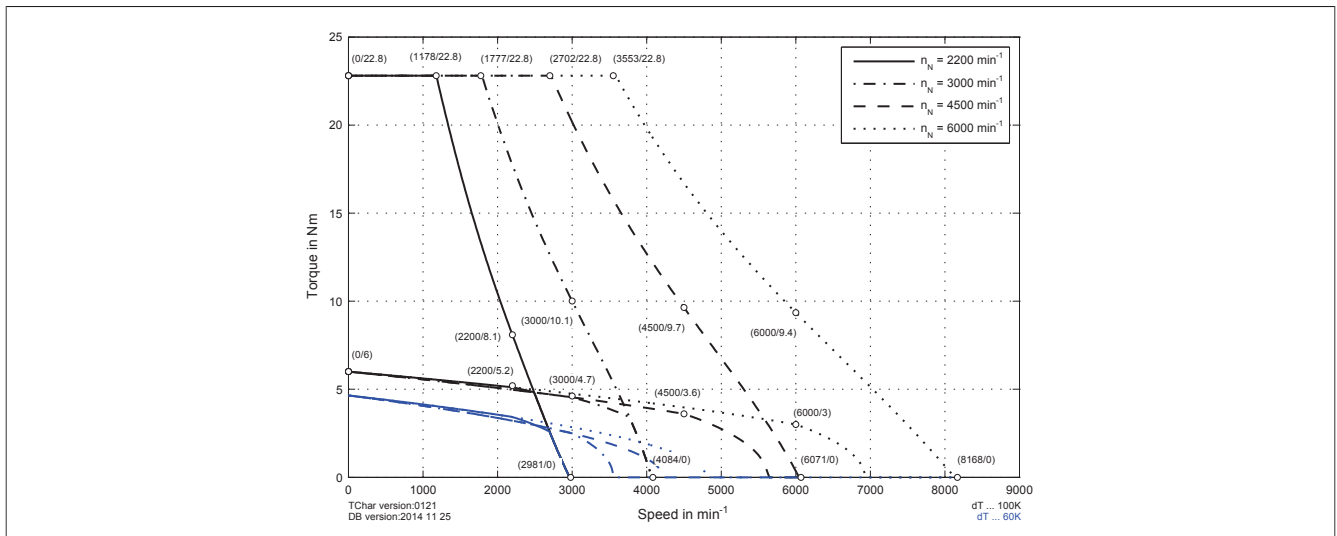


### 3.2 Speed-torque characteristics at 560 VDC bus voltage

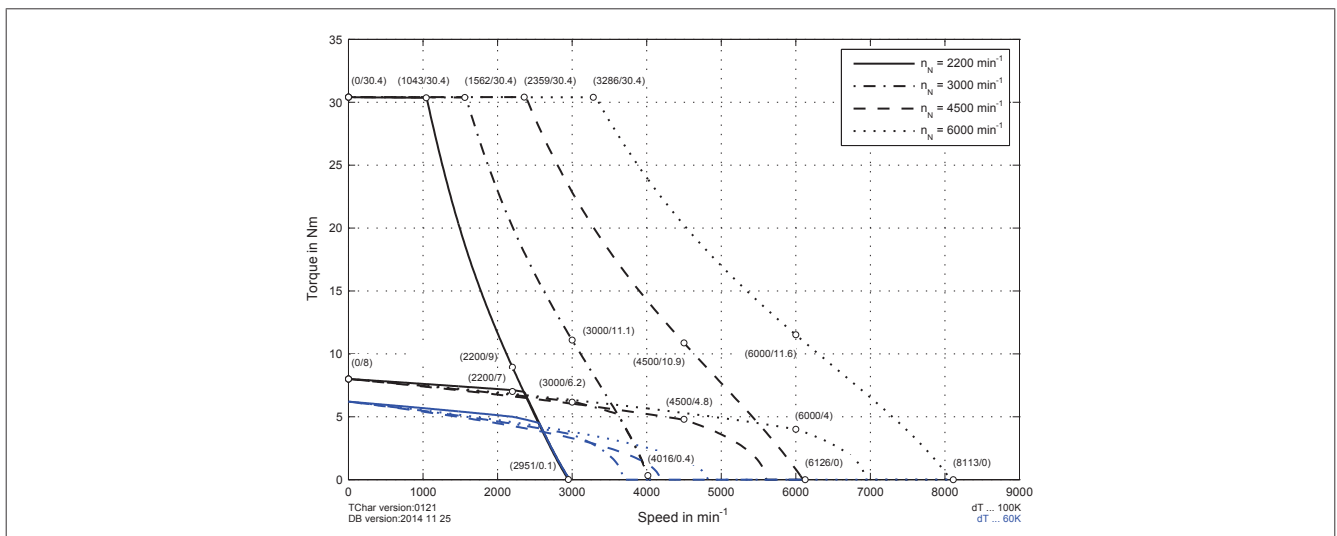
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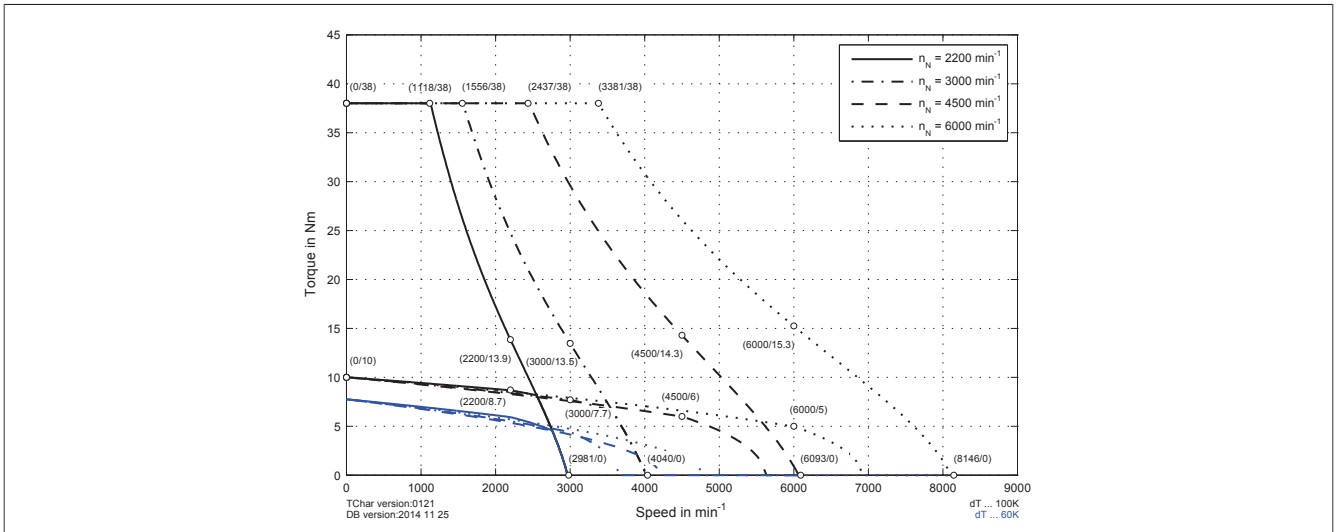
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#### 8LSA45.eennffgg-3

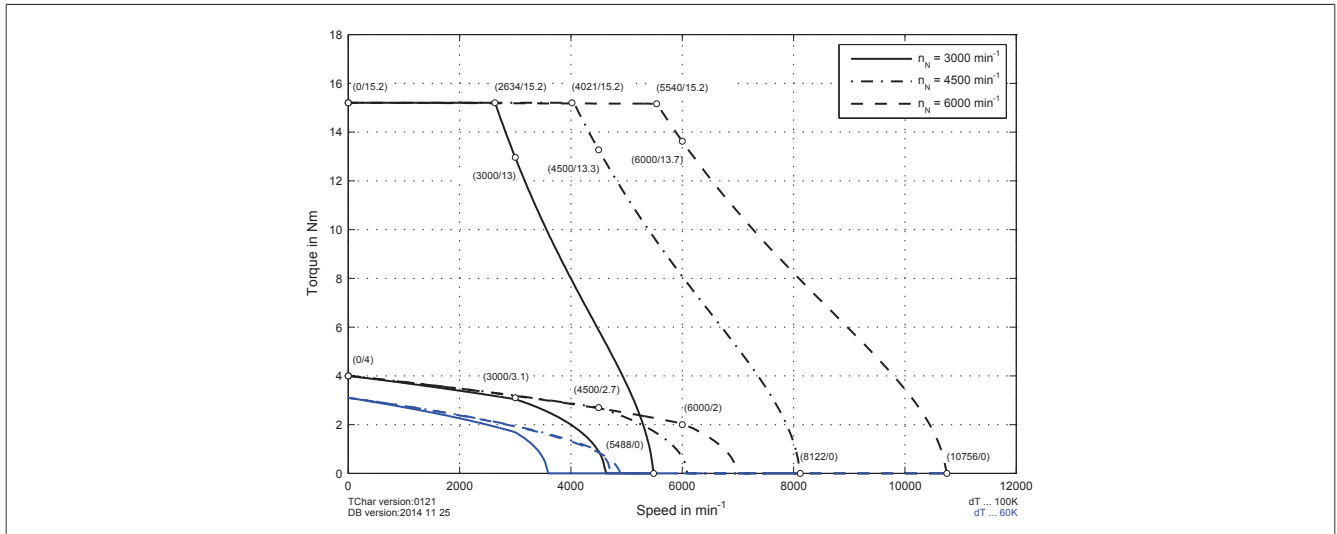


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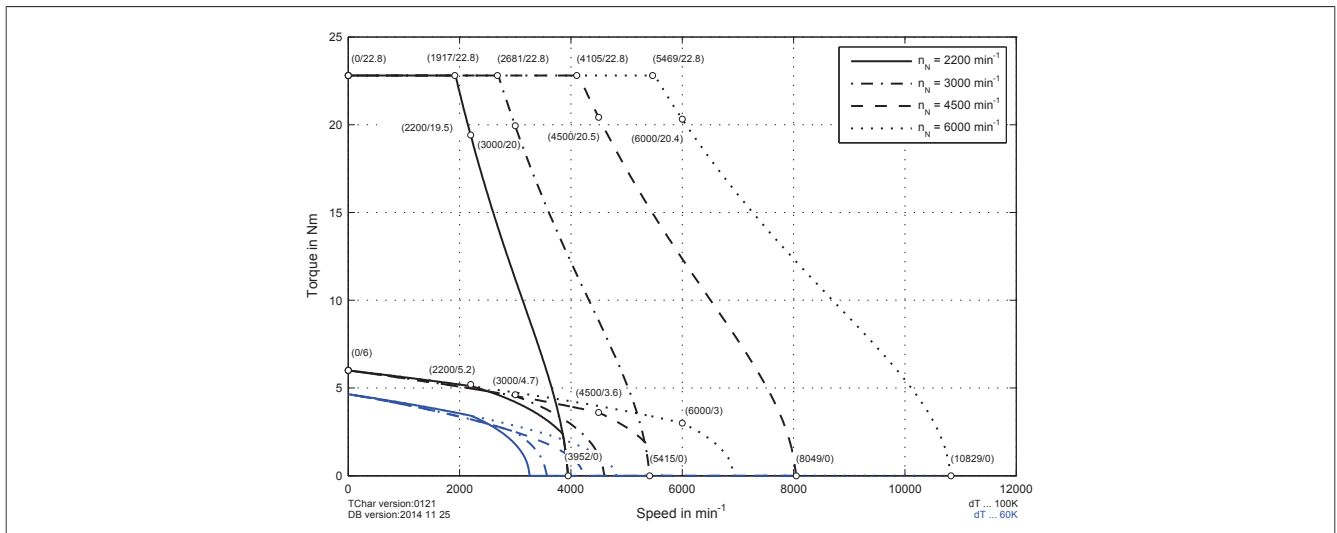


### 3.3 Speed-torque characteristics at 750 VDC bus voltage

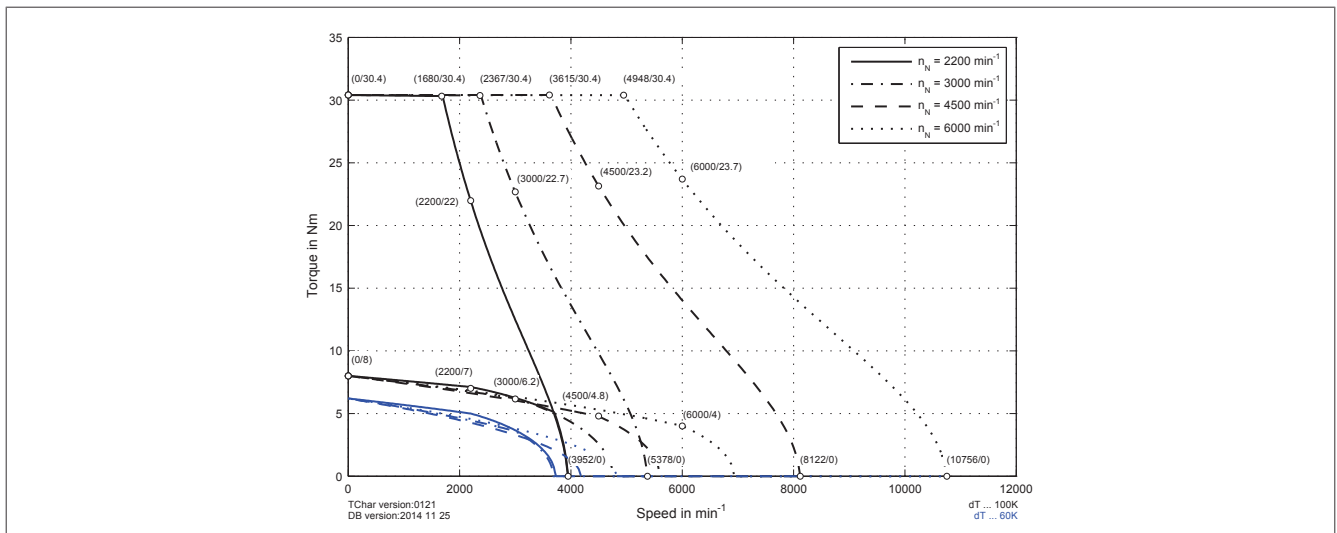
#### 8LSA43.eennffgg-3



#### 8LSA44.eennffgg-3

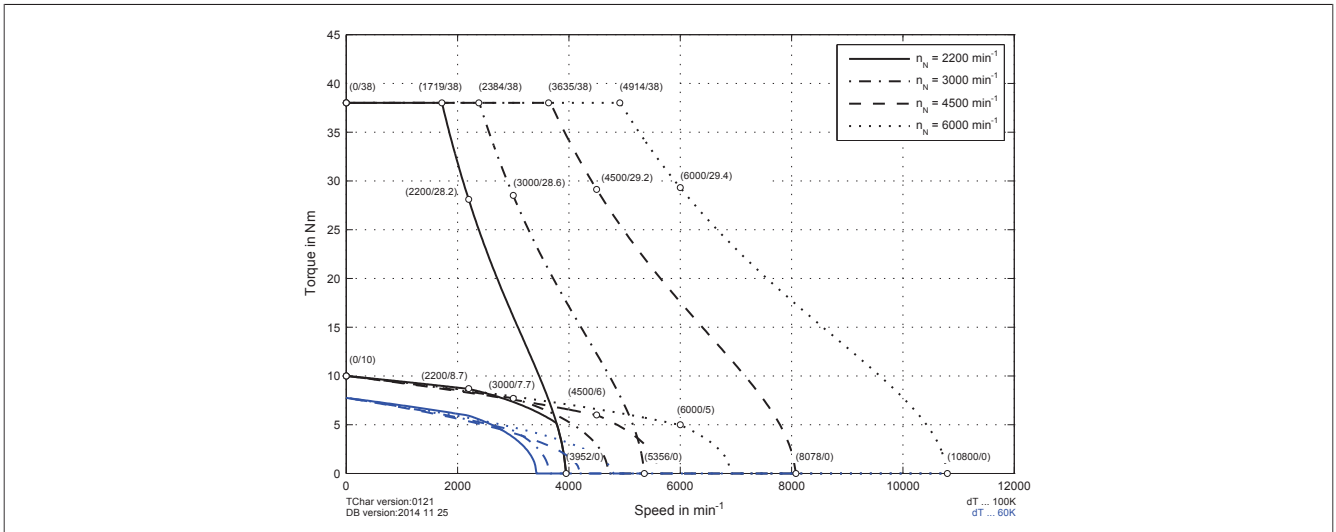


#### 8LSA45.eennffgg-3

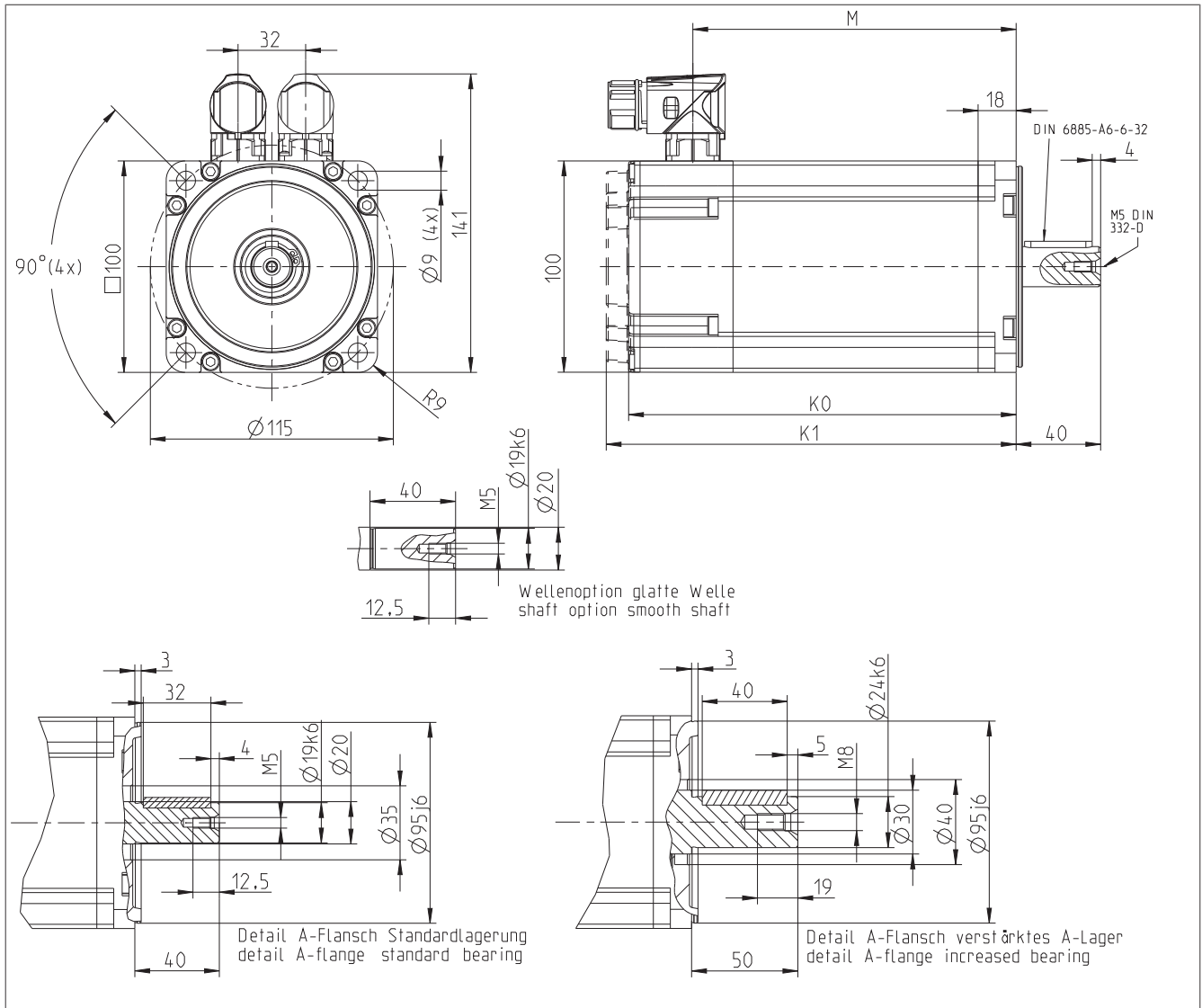




8LSA46.eennffgg-3



### 3.4 Dimensions 8LSA4 version 3



EnDat / Resolver feedback			Extension of K <sub>0</sub> and K <sub>1</sub> depending on motor option [mm]					
Encoder type	DA, DB, EA, EB, SA, SB, R2	D0, D1, E0, E1, S0, S1						
Model number	K <sub>0</sub>	K <sub>1</sub>	M	Holding brake	Reinforced brake	holding	Reinforced bearing	A-side bearing
8LSA43.eennffgg-3	163	174	133	32	37		15	
8LSA44.eennffgg-3	183	194	153	32	37		15	
8LSA45.eennffgg-3	207	218	173	32	37		15	
8LSA46.eennffgg-3	227	238	193	32	37		15	

Using an oil seal ring has no influence on the motor length