Differences and Compatibility of the new Generation 8LS…-3 to older versions

Additional Information to S/N

I Versions

Version	Date	Comment	Edited by
1.0	Nov 03, 2014	First Edition	St. Schiele
1.1	Nov 20, 2014	Corrections	St. Schiele
1.2	Dec 17, 2014	Additional Information, 8LSA7…-3 added	St. Schiele

Table 1: Versions

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1. Compact Information regarding new 8LS motor design

Following topics are important for changing to the new motors 8LS…-3

Changing from size 8LSA2…-0 --> 8LSA2…-3:

Compacter dimensions due to state of the art pole winding technology; --> please check geometries (page 2)
Small changes of technical data; --> please check (appendix 1):

- Equal: torque, current, motor constants (torque/speed) and inertia
- different: resistance, inductance, pole pairs and weight

--> changing of motor parameters necessary

Changing from size 8LSA3…-0 --> 8LSA3…-3:

Compacter dimensions due to state of the art pole winding technology; --> please check geometries (page 3/4)
Small changes of technical data; --> please check (appendix 2):

- Equal: torque, current, motor constants (torque/speed) and inertia
- different: resistance, inductance, pole pairs and weight

--> changing of motor parameters necessary

Size 8LSA4…-0 --> 8LSA4…-3:

Small changes in dimensions; --> please check geometries (appendix 3)
No changes of technical data

Size 8LSA5…-1 --> 8LSA5…-3:

Small changes in geometries — 8LSA5 with Resolver and optical encoders are equal
8LSA5 with inductive EnDat 2.1 encoders (EA/EB) are 11mm longer

No changes in technical data

Size 8LSA6…-1 --> 8LSA6…-3:

Small changes in geometries — 8LSA5 with Resolver and optical encoders are equal
8LSA5 with inductive EnDat 2.1 encoders (EA/EB) are 11mm longer

No changes in technical data

Size 8LSA7…-0 --> 8LSA7…-3:

Compacter dimensions due to state of the art pole winding technology, all types are shorter
--> please check geometries (appendix 3)

Technical data were optimized, significant changes, for example resistance, inductance, pole pairs, inertia and weight

--> please check application data with servosoft
--> please check control parameters
--> changing of motor parameters necessary

2. 8LSA2 Technical data

- 8LSA2
- Technical data

			8LSA23.ee060ffgg-0	8LSA23.ee060ffgg-3	8LSA24.ee060ffgg-0	8LSA24.ee060ffgg-3	8LSA25.ee045ffgg-0	8LSA25.ee045ffgg-3	8LSA25.ee060ffgg-0	8LSA25.ee060ffgg-3	8LSA26.ee045ffgg-0	8LSA26.ee045ffgg-3	8LSA26.ee060ffgg-0	8LSA26.ee060ffgg-3
Motor														
Rated speed	n_N	[min^{-1}]		6.000		6.000		4.500		6.000		4.500		6.000
Number of pole pairs			2	4	2	4	2	4	2	4	2	4	2	4
Rated torque	M_N	[Nm]		0,17		0,35		0,54		0,52		0,72		0,69
Rated power	P_N	[W]		107		220		254		327		339		434
Rated current	I_N	[A_{eff}]		0,23		0,48		0,56		0,71	0,74	0,80		0,95
Stall torque	M_0	[Nm]		0,20		0,40		0,60		0,60		0,80		0,80
Stall current	I_0	[A_{eff}]		0,27		0,55		0,62		0,82	0,82	0,89		1,10
Maximum torque	M_{max}	[Nm]		0,80		1,60		2,40		2,40		3,20		3,20
Maximum current	I_{max}	[A_{eff}]		1,25		2,50		2,77		3,70	3,75	4,05		5,00
Maximum speed	n_{max}	[min^{-1}]	12.000	9.000	12.000	9.000	12.000	9.000	12.000	9.000	12.000	9.000	12.000	9.000
Torque constant	K_T	[Nm/A]		0,73		0,73		0,97		0,73	0,97	0,90		0,73
Voltage constant	K_E	[V/1000 min^{-1}]		44,0		44,0		58,6		44,0	59	54,5		44,0
Stator resistance	R_{2ph}	[Ω]	207,00	178,60	62,00	52,30	54,70	63,40	31,00	34,63	33,50	33,75	20,80	24,70
Stator inductance	L_{2ph}	[mH]	201,0	165,0	75,0	67,5	91,8	87,8	49,7	49,6	66,9	52,9	37,5	36,6
Electrical time constant	t_{el}	[ms]	1,0	0,9	1,2	1,3	1,7	1,4	1,6	1,4	1,8	1,6	1,8	1,5
thermal time constant	t_{therm}	[min]	15,0	13,0	20,0	16,0	25,0	20,0	25,0	20,0	30,0	23,0	30,0	23,0
Moment of inertia w/o brake	J	[kgm^2]		0,07		0,12		0,16		0,16		0,20		0,20
Weight without brake	m	[kg]	1,24	0,90	1,37	1,10	1,41	1,30	1,41	1,30	1,92	1,50	1,92	1,50

3. 8LSA3 Technical data

8LSA3
Technical data

			8LSA33.ee030ffgg-0	8LSA33.ee030ffgg-3	8LSA33.ee045ffgg-0	8LSA33.ee045ffgg-3	8LSA33.ee060ffgg-0	8LSA33.ee060ffgg-3	8LSA34.ee022ffgg-0	8LSA34.ee022ffgg-3	8LSA34.ee030ffgg-0	8LSA34.ee030ffgg-3	8LSA34.ee045ffgg-0	8LSA34.ee045ffgg-3	8LSA34.ee060ffgg-0	8LSA34.ee060ffgg-3
Motor																
Rated speed	n_N	[min^{-1}]		3.000		4.500		6.000		2.200		3.000		4.500		6.000
Number of pole pairs			2	4	2	4	2	4	2	4	2	4	2	4	2	4
Rated torque	M_N	[Nm]		0,70		0,67		0,60		1,44		1,40		1,30		1,00
Rated power	P_N	[W]		220		316		377		332		440		613		628
Rated current	I_N	[A_{eff}]		0,48		0,69		0,82		0,72		0,96		1,34		1,37
Stall torque	M_0	[Nm]		0,75		0,75		0,75		1,50		1,50		1,50		1,50
Stall current	I_0	[A_{eff}]		0,52		0,77		1,03		0,75		1,03		1,55		2,06
Maximum torque	M_{max}	[Nm]		3,00		3,00		3,00		6,00		6,00		6,00		6,00
Maximum current	I_{max}	[A_{eff}]		2,20		3,30		4,40		3,20		4,40		6,60		8,90
Maximum speed	n_{max}	[min^{-1}]	12.000	9.000	12.000	9.000	12.000	9.000	12.000	9.000	12.000	9.000	12.000	9.000	12.000	9.000
Torque constant	K_T	[Nm/A]		1,45		0,97		0,73		1,99		1,45		0,97		0,73
Voltage constant	K_E	[V/1000 min^{-1}]		88,0		58,6		44,0		120,4		88,0		58,6		44,0
Stator resistance	R_{2ph}	[Ω]	100,00	56,50	40,46	27,56	27,00	15,98	62,00	40,62	34,30	22,83	16,50	9,35	8,52	5,08
Stator inductance	L_{2ph}	[mH]	147,5	214,0	63,1	98,4	36,9	58,2	140,0	184,2	76,6	102,3	32,8	43,7	18,3	23,9
Electrical time constant	t_{el}	[ms]	1,5	3,8	1,6	3,6	1,4	3,6	2,2	4,5	2,2	4,5	2,2	4,7	2,1	4,7
thermal time constant	t_{therm}	[min]	32,0	30,0	32,0	30,0	32,0	30,0	35,0	32,0	35,0	32,0	35,0	32,0	35,0	32,0
Moment of inertia w/o brake	J	[kgm²]	0,35	0,40	0,35	0,40	0,35	0,40	0,60	0,65	0,60	0,65	0,60	0,65	0,60	0,65
Weight without brake	m	[kg]	2,60	3,20	2,60	3,20	2,60	3,20	2,89	3,80	2,89	3,80	2,89	3,80	2,89	3,80

8LSA3
Technical data

Motor

			8LSA35.ee022ffgg-0		8LSA35.ee022ffgg-3		8LSA35.ee030ffgg-0		8LSA35.ee030ffgg-3		8LSA35.ee045ffgg-0		8LSA35.ee045ffgg-3		8LSA35.ee060ffgg-0		8LSA35.ee060ffgg-3		8LSA36.ee022ffgg-0		8LSA36.ee022ffgg-3		8LSA36.ee030ffgg-0		8LSA36.ee030ffgg-3	
Rated speed	n_N	[min^{-1}]		2.200		3.000		4.500		6.000		2.200		3.000												
Number of pole pairs			2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4
Rated torque	M_N	[Nm]		2,10		2,10		1,80		1,60		2,70		2,70												
Rated power	P_N	[W]		484		660		848		1005		622		848												
Rated current	I_N	[A_{eff}]		1,10		1,40		1,90		2,20		1,40		1,90												
Stall torque	M_0	[Nm]		2,30		2,30		2,30		2,30		3,00		3,00												
Stall current	I_0	[A_{eff}]		1,20		1,60		2,40		3,20		1,50		2,10												
Maximum torque	M_{max}	[Nm]		9,20		9,20		9,20		9,20		12,00		12,00												
Maximum current	I_{max}	[A_{eff}]		5,00		6,80		10,20		13,60		6,50		8,90												
Maximum speed	n_{max}	[min^{-1}]	12.000	9.000	12.000	9.000	12.000	9.000	12.000	9.000	12.000	9.000	12.000	9.000												
Torque constant	K_T	[Nm/A]		1,99		1,45		0,97		0,73		1,99		1,45												
Voltage constant	K_E	[V/1000 min^{-1}]		120,4		88,0		58,6		44,0		120,4		88,0												
Stator resistance	R_{2ph}	[Ω]	32,70	24,26	19,50	12,22	8,20	6,16	4,60	3,02	24,06	15,18	12,40	8,18												
Stator inductance	L_{2ph}	[mH]	91,1	119,9	51,5	63,0	21,7	29,7	12,3	15,6	73,8	83,4	37,8	44,9												
Electrical time constant	t_{el}	[ms]	2,8	4,9	2,6	5,2	2,6	4,8	2,7	5,1	3,0	5,5	3,0	5,5												
thermal time constant	t_{therm}	[min]	38,0	34,0	38,0	34,0	38,0	34,0	38,0	34,0	40,0	36,0	40,0	36,0												
Moment of inertia w/o brake	J	[kgm²]		0,90		0,90		0,90		0,90	1,20	1,15	1,20	1,15												
Weight without brake	m	[kg]	3,66	4,40	3,66	4,40	3,66	4,40	3,66	4,40	4,43	5,00	4,43	5,00												

8LSA3
Technical data

			8LSA36.ee045ffgg-0	8LSA36.ee045ffgg-3	8LSA36.ee060ffgg-0	8LSA36.ee060ffgg-3	8LSA37.ee022ffgg-3	8LSA37.ee030ffgg-3	8LSA37.ee045ffgg-3	8LSA37.ee060ffgg-3
Motor										
Rated speed	n_N	[min^{-1}]		4.500		6.000	2.200	3.000	4.500	6.000
Number of pole pairs			2	4	2	4	4	4	4	4
Rated torque	M_N	[Nm]		2,20		1,80	3,40	3,40	2,70	2,00
Rated power	P_N	[W]		1037		1131	783	1068	1272	1257
Rated current	I_N	[A_{eff}]		2,30		2,50	1,70	2,30	2,80	2,70
Stall torque	M_0	[Nm]		3,00		3,00	3,60	3,60	3,60	3,60
Stall current	I_0	[A_{eff}]		3,10		4,10	1,80	2,50	3,70	4,90
Maximum torque	M_{max}	[Nm]		12,00		12,00	14,40	14,40	14,40	14,40
Maximum current	I_{max}	[A_{eff}]		13,30		17,70	7,80	10,60	16,00	21,20
Maximum speed	n_{max}	[min^{-1}]	12.000	9.000	12.000	9.000	9.000	9.000	9.000	9.000
Torque constant	K_T	[Nm/A]		0,97		0,73	1,99	1,45	0,97	0,73
Voltage constant	K_E	[V/1000 min^{-1}]		58,6		44,0	120,4	88,0	58,6	44,0
Stator resistance	R_{2ph}	[Ω]	5,16	3,73	3,10	1,95	12,59	6,98	2,93	1,76
Stator inductance	L_{2ph}	[mH]	16,6	20,3	9,5	10,6	68,9	37,5	16,2	9,6
Electrical time constant	t_{el}	[ms]	3,2	5,4	3,3	5,5	5,5	5,4	5,5	5,5
thermal time constant	t_{therm}	[min]	40,0	36,0	40,0	36,0	38,0	38,0	38,0	38,0
Moment of inertia w/o brake	J	[kgm^2]	1,20	1,15	1,20	1,15	1,38	1,38	1,38	1,38
Weight without brake	m	[kg]	4,43	5,00	4,43	5,00	5,60	5,60	5,60	5,60

4. 8LSA7 Technical data

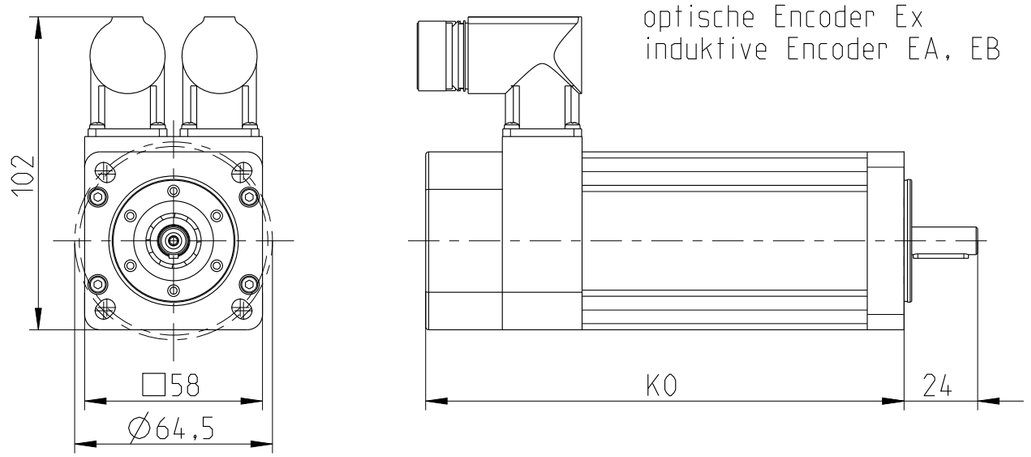
8LSA7
Technical Dat

			8LSA73.ee022ffgg-0	8LSA73.ee022ffgg-3	8LSA73.ee030ffgg-0	8LSA73.ee030ffgg-3	8LSA73.ee045ffgg-0	8LSA73.ee045ffgg-3	8LSA74.ee022ffgg-0	8LSA74.ee022ffgg-3
Motor										
Rated speed	n_N	[min^{-1}]		2.200		3.000		4.500		2.200
Number of pole pairs			3	5	3	5	3	5	3	5
Rated torque	M_N	[Nm]	21,00	21,90	20,00	20,50	14,50	16,00	26,00	27,50
Rated power	P_N	[W]	4838	5045	6283	6440	6833	7540	5990	6336
Rated current	I_N	[A_{eff}]	9,50	9,86	12,30	12,58	13,20	14,68	11,70	12,39
Stall torque	M_0	[Nm]		26,00		26,00		26,00	32,00	33,00
Stall current	I_0	[A_{eff}]	11,70	11,71	16,00	15,95	23,60	23,85	14,40	14,86
Maximum torque	M_{max}	[Nm]		107,00		107,00		107,00	134,00	150,00
Maximum current	I_{max}	[A_{eff}]	65,60	71,00	89,30	96,54	133,20	144,00	82,20	99,00
Maximum speed	n_{max}	[min^{-1}]		6.000		6.000		6.000		6.000
Torque constant	K_T	[Nm/A]		2,22		1,63	1,10	1,09		2,22
Voltage constant	K_E	[V/1000 min^{-1}]		134,0		98,4		66,0		134,0
Stator resistance	R_{2ph}	[Ω]	0,86	0,81	0,46	0,42	0,23	0,19	0,60	0,54
Stator inductance	L_{2ph}	[mH]	10,5	12,3	5,6	6,5	2,7	2,9	7,6	9,0
Electrical time constant	t_{el}	[ms]	12,2	15,2	12,1	15,5	11,7	15,3	12,5	16,7
thermal time constant	t_{therm}	[min]	55,0	37,0	55,0	37,0	55,0	37,0	60,0	41,0
Moment of inertia w/o brake	J	[kgm^2]	93,2	46,0	93,2	46,0	93,2	46,0	113,7	60,0
Weight without brake	m	[kg]	26,0	20,0	26,0	20,0	26,0	20,0	30,0	24,0

8LSA7
Technical Data

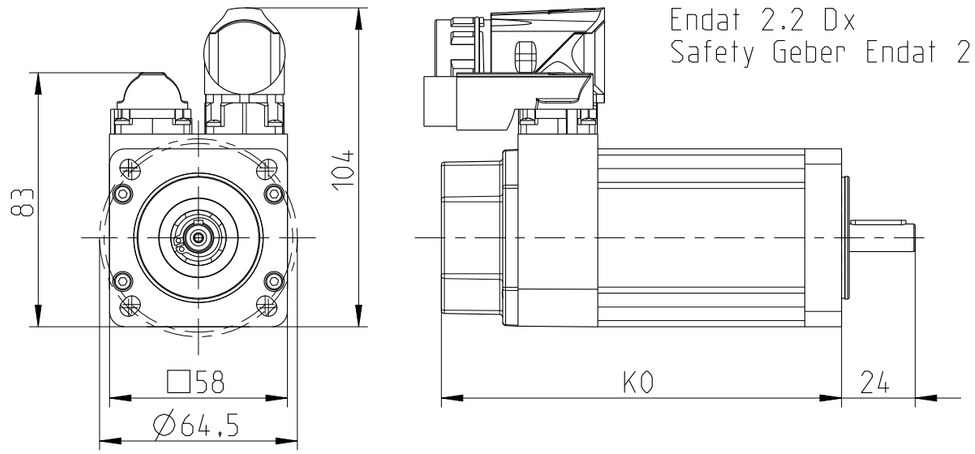
			8LSA74.ee030ffgg-0	8LSA74.ee030ffgg-3	8LSA74.ee045ffgg-0	8LSA74.ee045ffgg-3	8LSA75.ee022ffgg-0	8LSA75.ee022ffgg-3	8LSA75.ee030ffgg-0	8LSA75.ee030ffgg-3
Motor										
Rated speed	n_N	[min^{-1}]		3.000		4.500		2.200		3.000
Number of pole pairs			3	5	3	5	3	5	3	5
Rated torque	M_N	[Nm]	24,00	25,00	15,00	18,00	32,00	34,00		30,00
Rated power	P_N	[W]	7540	7854	7069	8482	7372	7833		9425
Rated current	I_N	[A_{eff}]	14,70	15,34	13,60	16,51	14,40	15,32	18,40	18,40
Stall torque	M_0	[Nm]	32,00	33,00	32,00	33,00	40,00	43,00	40,00	43,00
Stall current	I_0	[A_{eff}]	19,60	20,25	29,10	30,00	18,00	19,37	24,50	26,38
Maximum torque	M_{max}	[Nm]	134,00	150,00	134,00	150,00		187,00		187,00
Maximum current	I_{max}	[A_{eff}]	112,00	135,33	167,00	202,00	115,00	124,00	156,00	168,71
Maximum speed	n_{max}	[min^{-1}]		6.000		6.000		4.500		4.500
Torque constant	K_T	[Nm/A]		1,63	1,10	1,09		2,22		1,63
Voltage constant	K_E	[V/1000 min^{-1}]		98,4		66,0		134,0		98,4
Stator resistance	R_{2ph}	[Ω]	0,34	0,28	0,18	0,13	0,38	0,39		0,21
Stator inductance	L_{2ph}	[mH]	4,4	4,9	1,8	2,2	5,5	7,1	3,1	3,9
Electrical time constant	t_{el}	[ms]	13,0	17,5	10,3	16,9	14,5	17,5	14,6	18,6
thermal time constant	t_{therm}	[min]	60,0	41,0	60,0	41,0	65,0	46,0	65,0	46,0
Moment of inertia w/o brake	J	[kgm^2]	113,7	60,0	113,7	60,0	154,7	74,0	154,7	74,0
Weight without brake	m	[kg]	30,0	24,0	30,0	24,0	36,5	28,0	36,5	28,0

Version 0



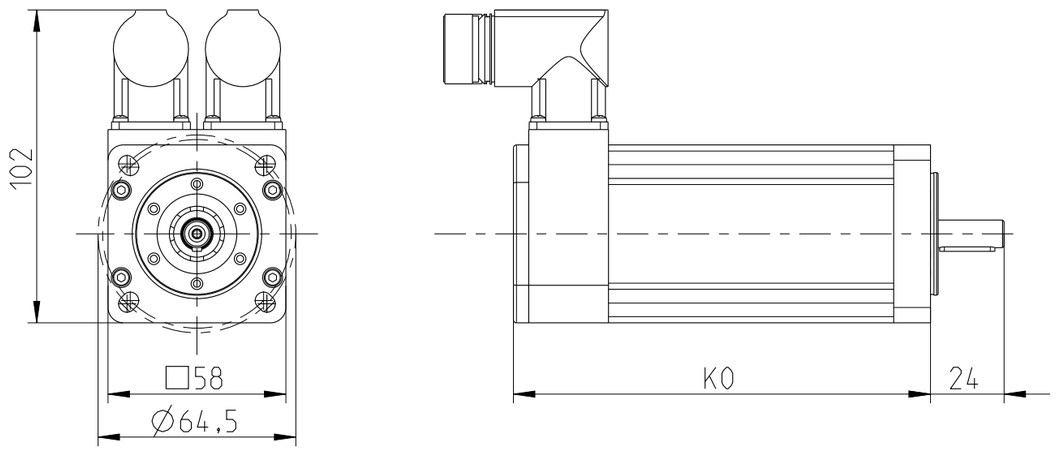
8LSA25.E0nnnD100-0
optische Encoder Ex
induktive Encoder EA, EB

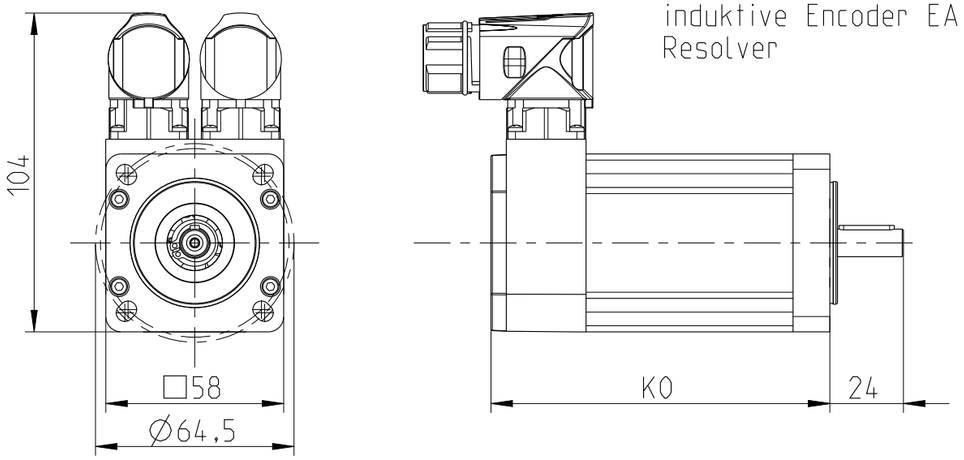
Version 3



8LSA25.DxnnnD100-3
Endat 2.2 Dx
Safety Geber Endat 2.2 Sx

8LSA25.R0nnnD100-0
Resolver R0





8LSA25.R0nnnD100-3
optische Encoder Ex
induktive Encoder EA, EB
Resolver

	Version 0		Version 3	
	K0		K0	
	Ex, E8, E9	R0	Dx, Sx	R0 Ex E8 E9
8LSA23	126	106	111	91
8LSA24	141	121	121	101
8LSA25	156	136	131	111
8LSA26	171	151	141	121

Rev.	Aenderung/changes	Datum/date	Name
.	.	.	.

°

Oberflaechenstandard surface standard: DIN ISO 1302

Allgemeintoleranzen general tolerances: ISO 2768 - mK

	Datum/date	Name
designer	04.09.14	PCH
approved	.	.

Ursprung/ original .

Bernecker & Rainer
A-5142 Eggelsberg

Maßstab/scale 7:20

Oberfl. Behandlung / surface treatment
-

Werkstoff, Halbzeug / material, half-finished items
-

Benennung / designation
Vergleich 8LS2-0 mit 8LS2-3
°

Materialnummer - Revision / model number - revision
8LSA25_R0NNND100-3

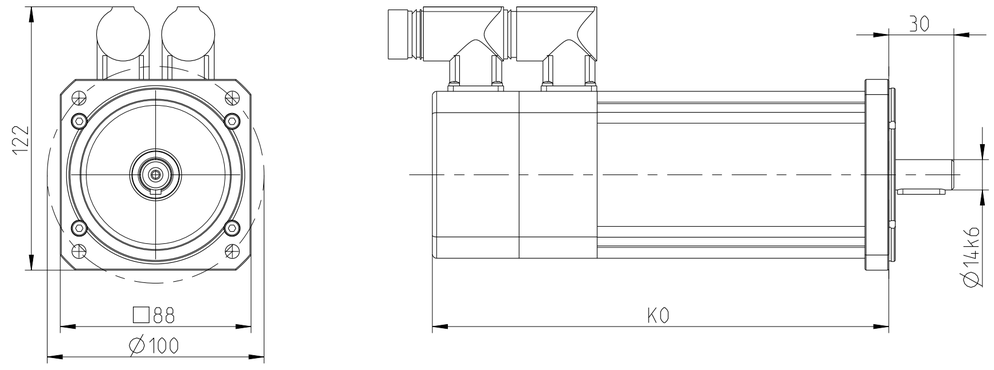
Blatt/sheet 1
1 Bl./sh.

Werkstueckkanten / edge of workpieces DIN ISO 13715

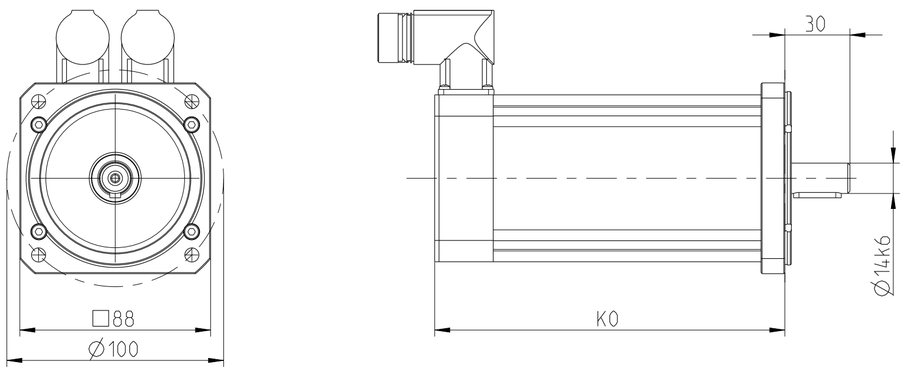
Format: A3 Masse 1.54 kg

Version 0

8LSA35.E0nnnD100-0
induktive und optische Encoder Endat 2.1
Ex

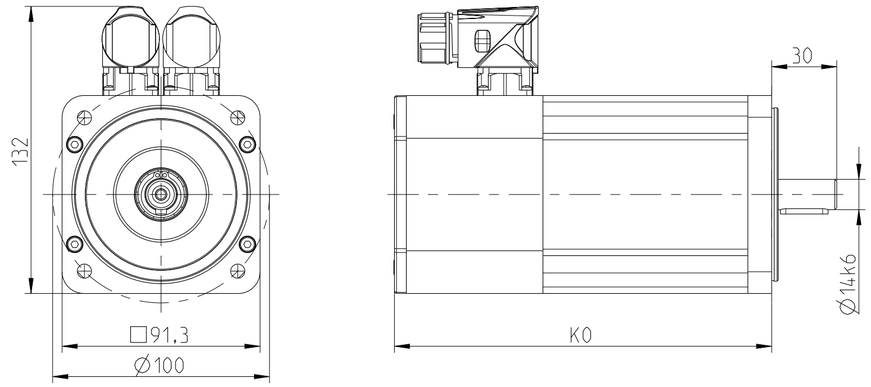


8LSA35.R0nnnD100-0
Resolver R0

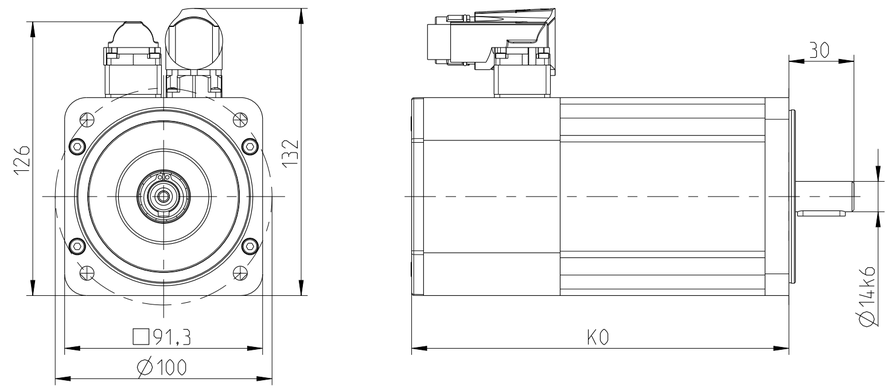


Version 3

8LSA35.E0nnnD100-3
induktive und optische Encoder Endat 2.1
Ex
Resolver R0



8LSA35.D0nnnD100-3
induktive und optische Encoder Endat 2.2
Dx, Sx



	Version 0		Version 3
	K0		K0
	Ex	R0	Dx Sx Ex R0
8LSA33	161	112	144
8LSA34	186	137	159
8LSA35	211	162	174
8LSA36	236	187	189
8LSA37	-	-	204

Rev.	Aenderung/changes	Datum/date	Name
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Oberflaechenstandard surface standard: DIN ISO 1302
Allgemeintoleranzen general tolerances: ISO 2768 - mK

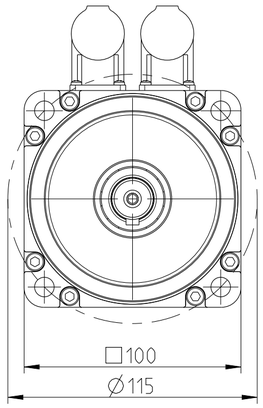
	Datum/date	Name
designer	20.11.14	PCH
approved	.	.

Bernecker & Rainer
A-5142 Eggelsberg

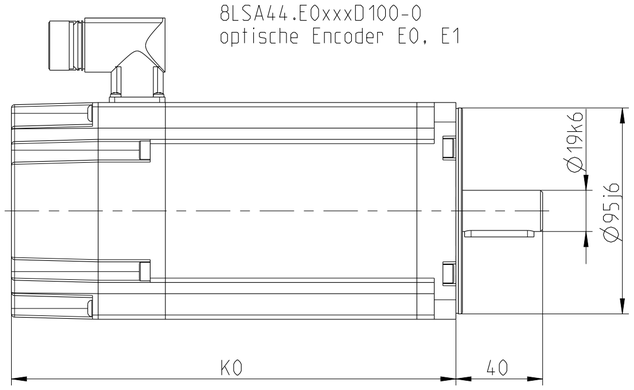
Ursprung/original: .

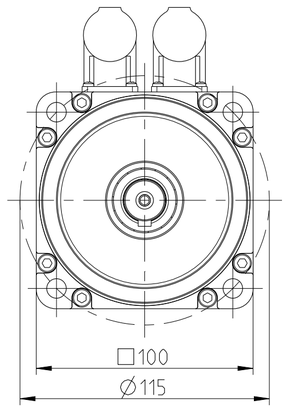
Maßstab/scale 1:2
Oberfl. Behandlung / surface treatment: -
Werkstoff, Halbzeug / material, half-finished items: -
Benennung / designation: Vergleich 8LSA3-0 mit 8LSA3-3
Materialnummer - Revision / model number - revision: 8LSA35_RONNND100-0
Blatt/sheet: 1
1 Bl./sh.
Werkstueckkanten / edge of workpieces DIN ISO 13715
Format: A2 Masse 3.76 kg

Version 0

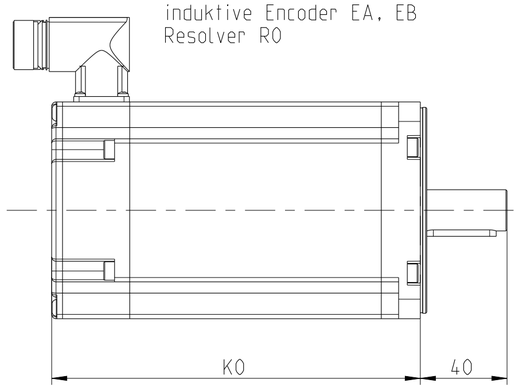


8LSA44.E0xxxD100-0
optische Encoder E0, E1



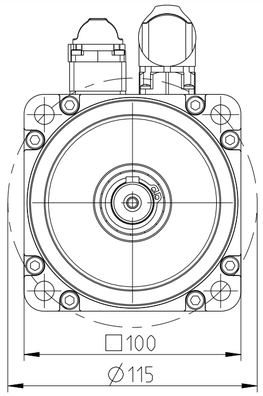


8LSA44.R0xxxD100-0
induktive Encoder EA, EB
Resolver R0



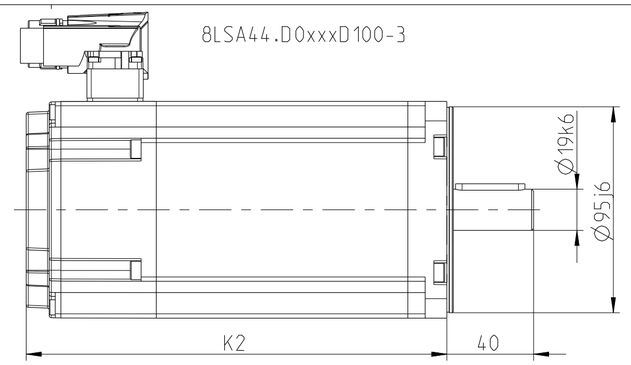
	Version 0		Version 3	
	K0		K1	K2
	EA EB R0	E0 E1	DA DB EA EB SA SB R0	D0 D1 E0 E1 S0 S1
8LSA43	150	185	163	174
8LSA44	170	205	183	194
8LSA45	194	229	207	218
8LSA46	214	249	227	238

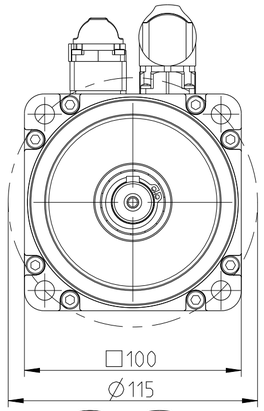
Version 3



8LSA44.D0xxxD100-3

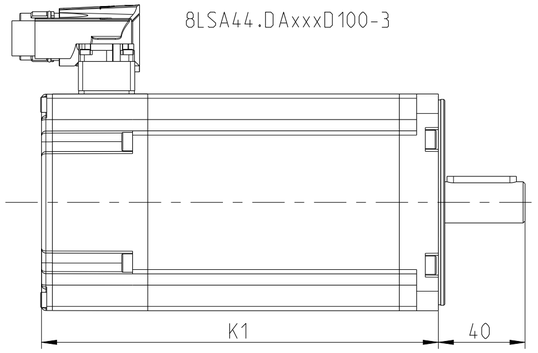
optische Encoder
Endat 2.2
D0, D1
S0, S1

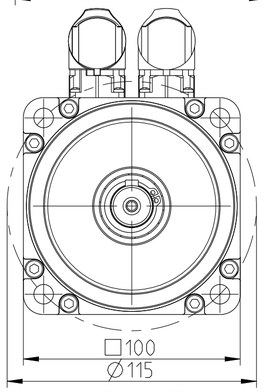




8LSA44.DAxxxD100-3

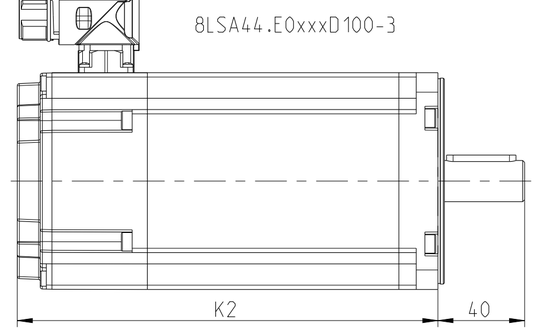
induktiver Encoder
Endat 2.2
DA, DB
SA, SB

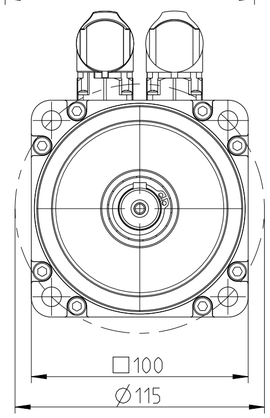




8LSA44.E0xxxD100-3

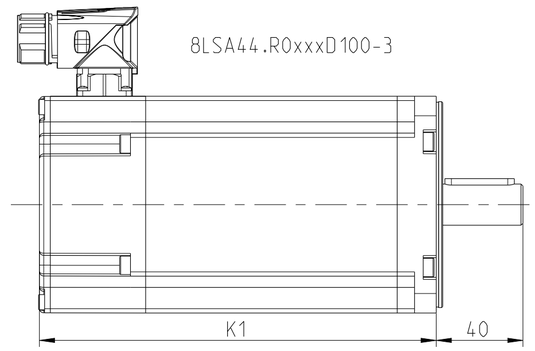
optische Encoder
Endat 2.1
E0, E1





8LSA44.R0xxxD100-3

induktiver Encoder
Endat 2.1
EA, EB
Resolver R0



Rev.	Aenderung/changes	Datum/date	Name
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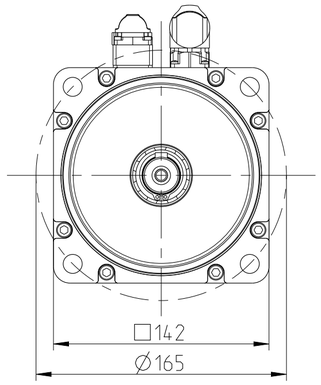
Oberflaechenstandard surface standard: DIN ISO 1302
Allgemeintoleranzen general tolerances: ISO 2768 - mK

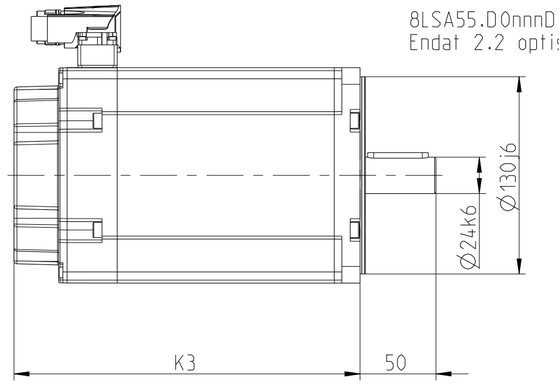
	Datum/date	Name
designer	03.09.14	PCH
approved	.	.

Bernecker & Rainer
A-5142 Eggelsberg

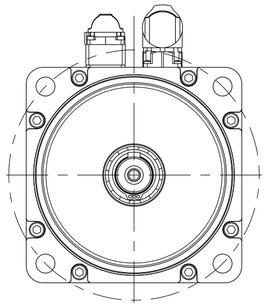
Ursprung/ original: .

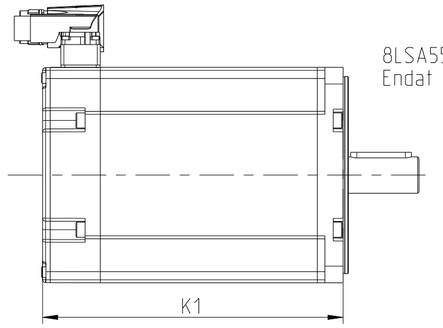
Maßstab/scale 1:2
Oberfl. Behandlung / surface treatment: -
Werkstoff. Halbzeug / material. half-finished items: -
Benennung / designation: Vergleich 8LSA4-0 mit 8LSA4-3
Materialnummer - Revision / model number - revision: 8LSA44_RONNND100-3
Blatt/sheet: 1
1 Bl./sh.
Werkstueckkanten / edge of workpieces DIN ISO 13715
Format: A2 Masse 4.12 kg



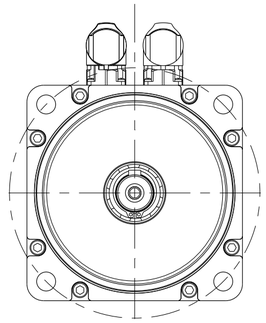


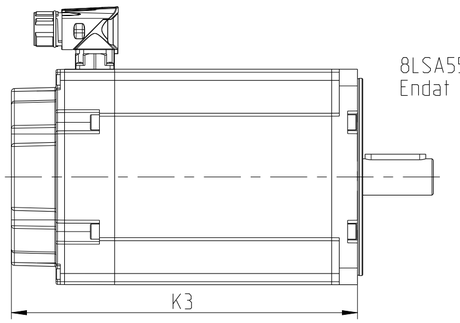
8LSA55.D0nnnD100-3
Endat 2.2 optisch



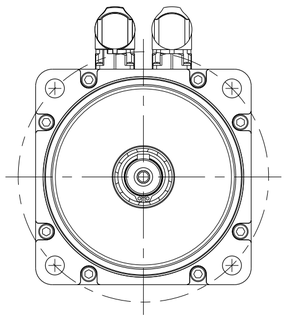


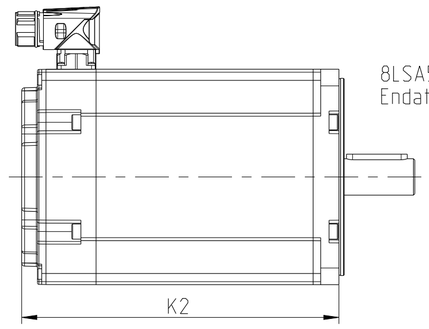
8LSA55.DAnnnD100-3
Endat 2.2 induktiv



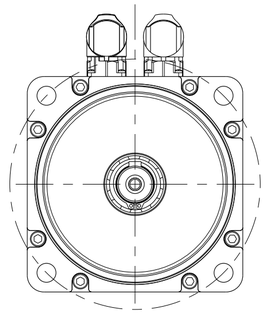


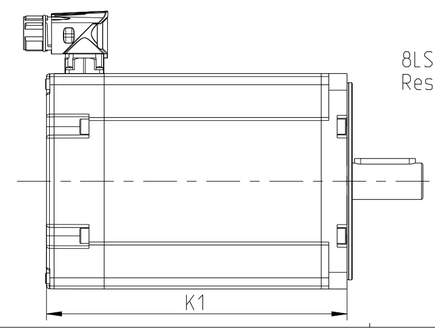
8LSA55.E0nnnD100-3
Endat 2.1 opisch





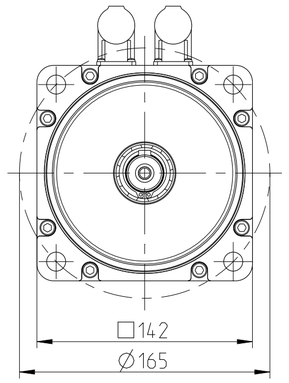
8LSA55.EAnnnD100-3
Endat 2.1 induktiv

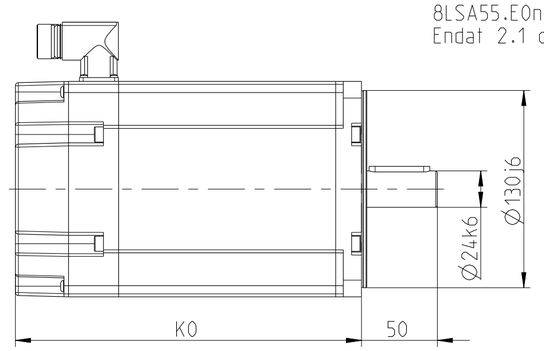




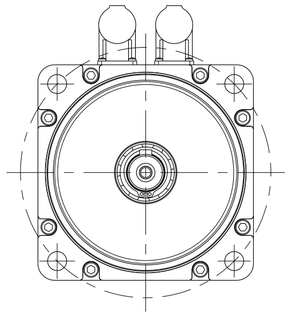
8LSA55.R0nnnD100-3
Resolver

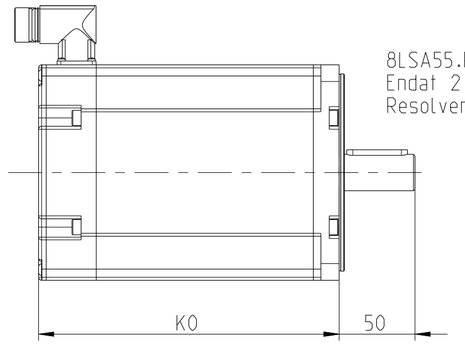
Version 1





8LSA55.E0nnnD100-1
Endat 2.1 optisch





8LSA55.R0nnnD100-1
Endat 2.1 induktiv
Resolver

	Version 1		Version 3		
	K0		K1	K2	K3
Geberoption	R0 EA EB	E0 E1	R0 DA DB SA SB	EA EB	D0 D1 E0 E1 S0 S1
8LSA53	148	178	148	159	178
8LSA54	173	203	173	184	203
8LSA55	198	228	198	209	228
8LSA56	223	253	223	234	253
8LSA57	248	278	248	259	278

Oberflaechenstandard surface standard: DIN ISO 1302
Allgemeintoleranzen general tolerances: ISO 2768 - mK
Maßstab/scale 7:20
Oberfl. Behandlung / surface treatment: -
Werkstoff, Halbzeug / material, half-finished items: -

	Datum/date	Name
designer	06.10.14	PCH
approved	.	.

Benennung / designation: Vergleich 8LSA5-1 mit 8LSA5-3

Bernecker & Rainer, A-5142 Eggelsberg

Materialnummer - Revision / model number - revision: 8LSA55_D0NNND100-3

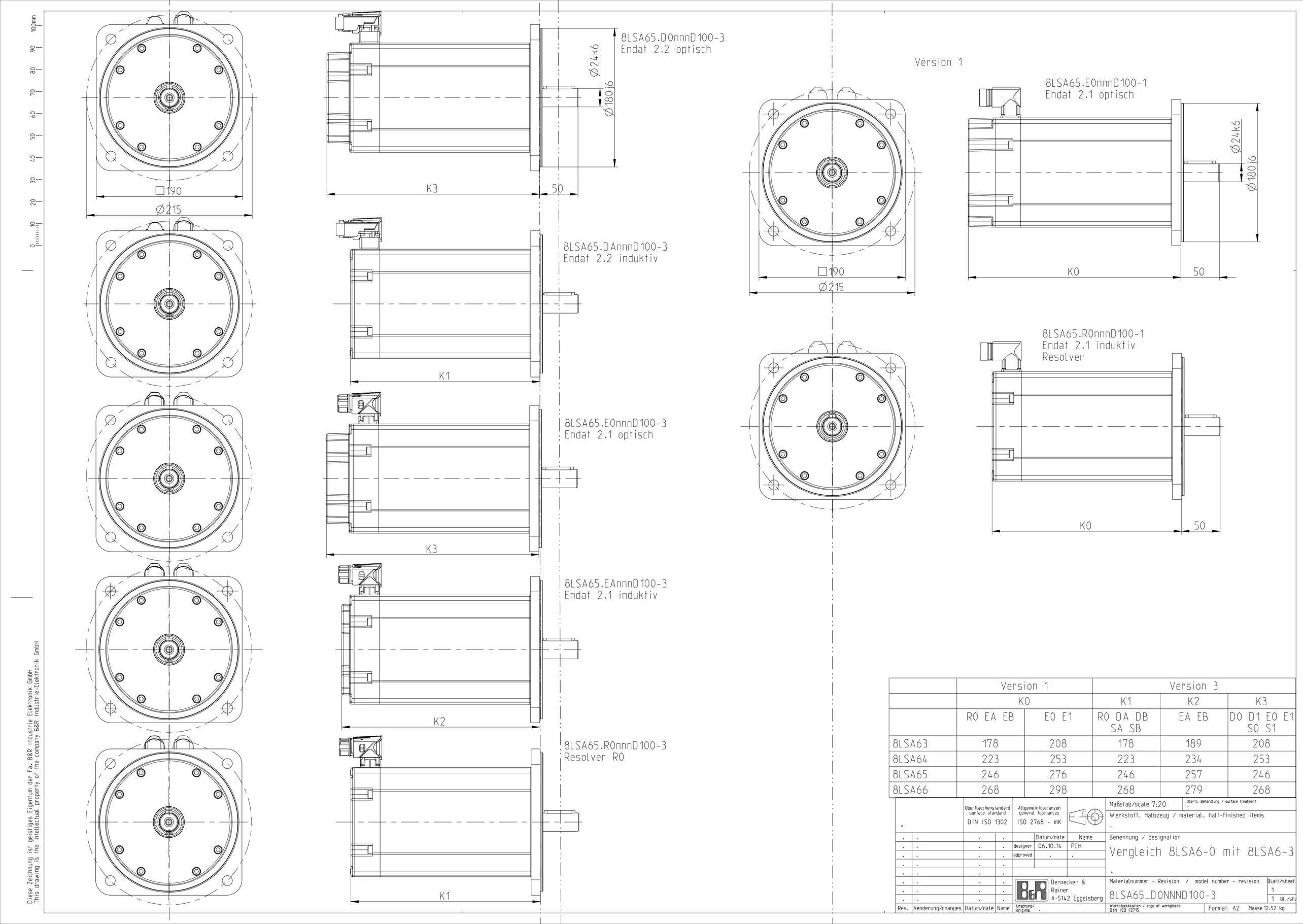
Blatt/sheet: 1 / 1 Bl./sh.

Rev.	Aenderung/changes	Datum/date	Name

Ursprung/original: .

Werkstueckkanten / edge of workpieces DIN ISO 13715

Format: A2 Masse 10.57 kg



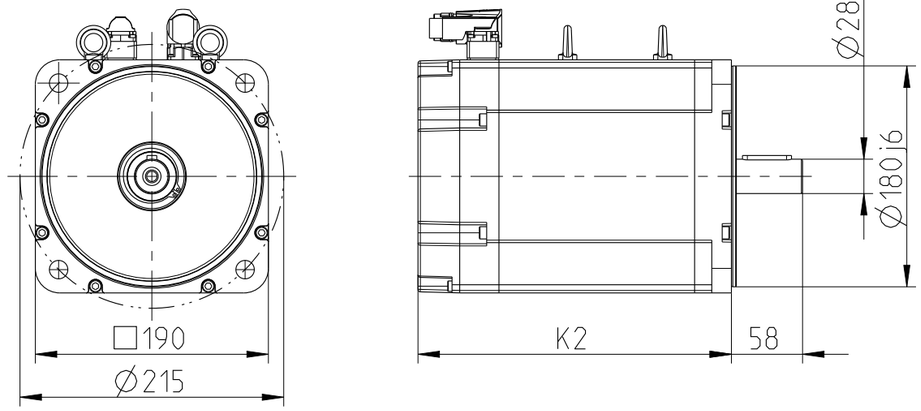
	Version 1		Version 3		
	K0		K1	K2	K3
	R0 EA EB	E0 E1	R0 DA DB SA SB	EA EB	D0 D1 E0 E1 S0 S1
8LSA63	178	208	178	189	208
8LSA64	223	253	223	234	253
8LSA65	246	276	246	257	246
8LSA66	268	298	268	279	268

Oberflaechenstandard surface standard: DIN ISO 1302				Allgemeintoleranzen general tolerances: ISO 2768 - mK			Maßstab/scale 7:20	Oberfl. Behandlung / surface treatment: -
							Werkstoff. Halbzeug / material. half-finished items: -	
					Datum/date	Name	Benennung / designation	
				designer	06.10.14	PCH	Vergleich 8LSA6-0 mit 8LSA6-3	
				approved	.	.		
Rev.	Aenderung/changes	Datum/date	Name	Ursprung/ original: .			Materialnummer - Revision / model number - revision: 8LSA65_D0NNND100-3	Blatt/sheet: 1 / 1 Bl./sh.
							Werkstueckkanten / edge of workpieces DIN ISO 13715	Format: A2 Masse 12.52 kg

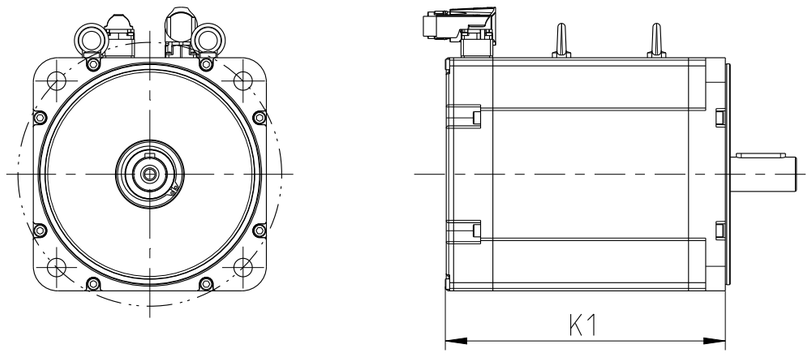
Bernecker & Rainer A-5142 Eggelsberg

Version 3

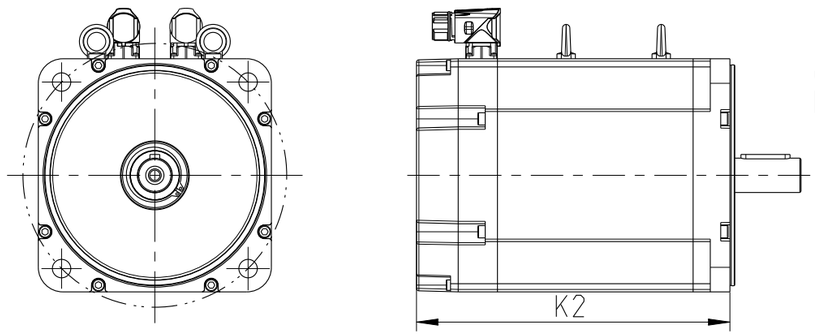
8LSA74.D0nnnD100-3
Endat 2.2 optisch



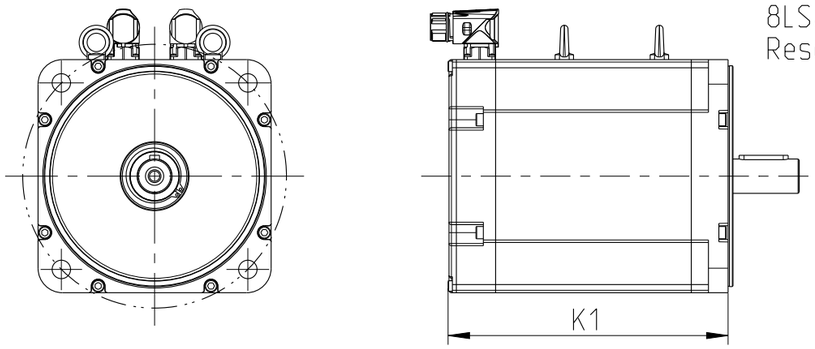
8LSA74.DAnnnD100-3
Endat 2.2 induktiv



8LSA74.E0nnnD100-3
Endat 2.1 optisch

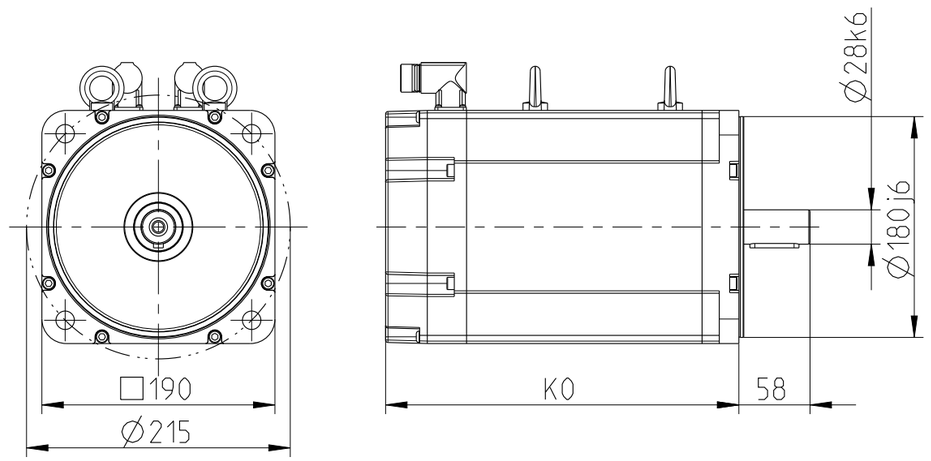


8LSA74.R0nnnD100-3
Resolver R0

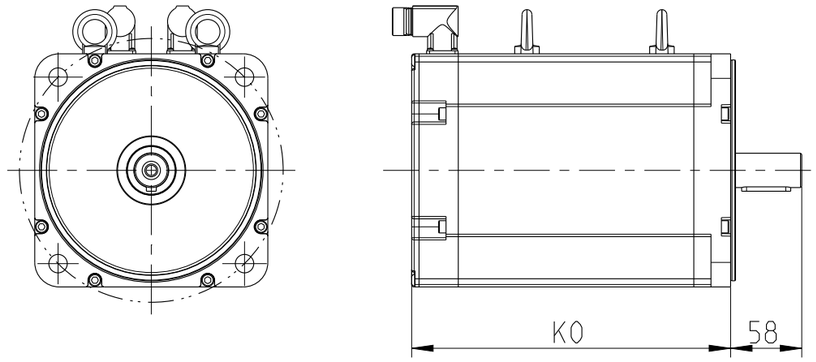


Version 0

8LSA74.E0nnnD100-1
Endat 2.1 optisch



8LSA74.R0nnnD100-1
Endat 2.1 induktiv
Resolver



	Version 0		Version 3	
	K0		K1	K2
	R0 EA EB	E0 E1	EA EB R0 DA DB SA SB	D0 D1 E0 E1 S0 S1
8LSA73	240	268	206	233
8LSA74	260	288	228	256
8LSA75	300	328	251	278

°		Oberflaechenstandard surface standard DIN ISO 1302		Allgemeintoleranzen general tolerances ISO 2768 - mK			Maßstab/scale 1:5	Oberfl. Behandlung / surface treatment -
							Werkstoff, Halbzeug / material, half-finished items -	
.	.	.	.		Datum/date	Name	Benennung / designation	
.	.	.	.	designer	16.12.14	PCH	Vergleich 8LSA7x-0 mit -3	
.	.	.	.	approved	.	.	°	
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.	.	.	.					
.	.	.	.	Bernecker & Rainer A-5142 Eggelsberg			Materialnummer - Revision / model number - revision	Blatt/sheet
.	.	.	.				8LSA74_E0NNND100-3	1
.	.	.	.					1 Bl./sh.
Rev.	Aenderung/changes	Datum/date	Name	Ursprung/ original .			Werkstueckkanten / edge of workpieces DIN ISO 13715	Format: A3 Masse 18.69 kg