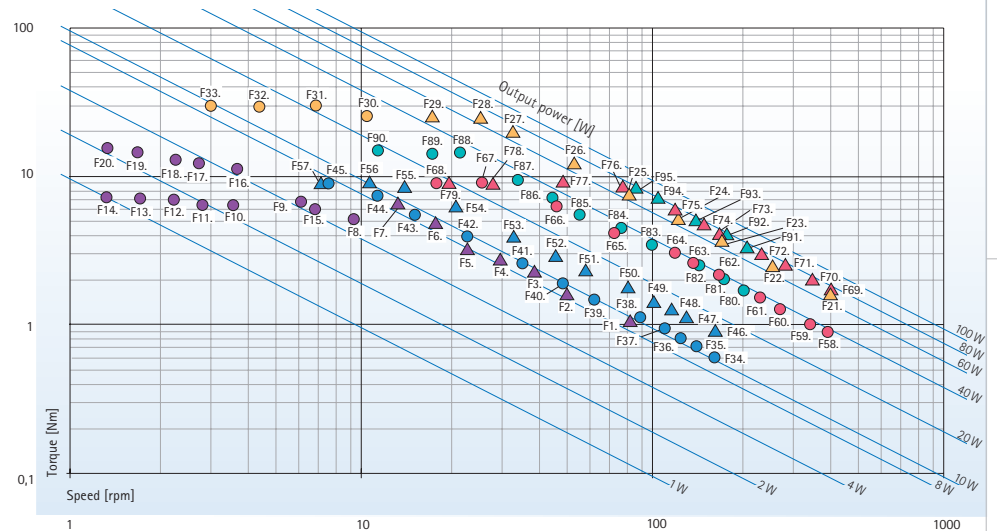


Permanent magnet DC motor with spur gearheads Compactline and Flatline

▲ Flatline 78 with BCI4225
 ▲ Flatline 85 with BCI6355
 ● Compactline 90 with BCI4225
 ● Compactline 91 with BCI6325
 ● Compactline 92 with BCI6325
● Flatline 78 with M4210
 ● Flatline 85 with BCI6325
 ▲ Compactline 90 with BCI4240
 ▲ Compactline 91 with BCI6355
 ▲ Compactline 92 with BCI6355

Performance overview



Compact design and flexible speed.



Permanent magnet DC motor with spur gearhead Compactline / Flatline

For the Compactline series we engineered the largest possible wheel width providing good overlap between the motor shaft and the combing gear wheel in the first stage. The first stage gear wheel is made of plastic. This design makes the gearhead extremely quiet. If it needs to be more flat, you should choose a gearhead of the Flatline series.

Mechanically commutated permanent magnet motors are designed for operation with 24 V direct voltage and provide nominal torque and speed with this voltage. The exact motor speed is dependent on the required torque, according to the motor characteristic. Speed control is possible in conjunction with external open-loop or closed-loop control. The lifetime of a mechanically commutated permanent magnet motor is designed for 3000 hours (operating factor $c_B=1$).

- flat and compact gearhead design
- noise-optimised helical teeth in the input stage
- plastic wheels with optimum sliding properties in the first stage for additional noise reduction
- selectable in sintered material or in steel execution for Flatline 78
- ground and hardened output shaft (diameter tolerance h7)
- motors can be fitted with suitable brake to the motor size and various encoders (see accessories)
- operating electronics (CANopen) and switched-mode power supplies are available optional (see accessories)
- gearhead lifetime of 5,000 hours (operating factor $c_B=1$)
- protection class IP 40
- maintenance free – grease lubricated for life
- ambient temperature 0 °C to +40 °C



F

G

H

I

J

F

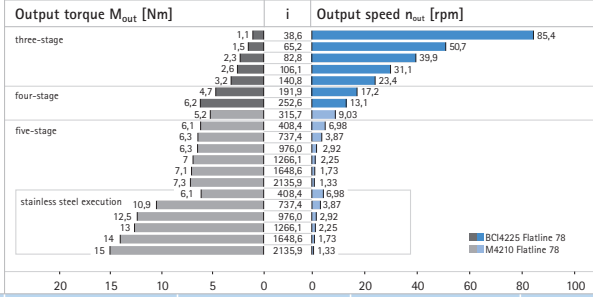
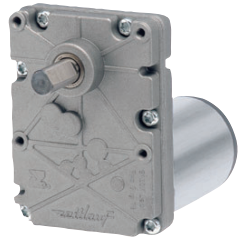
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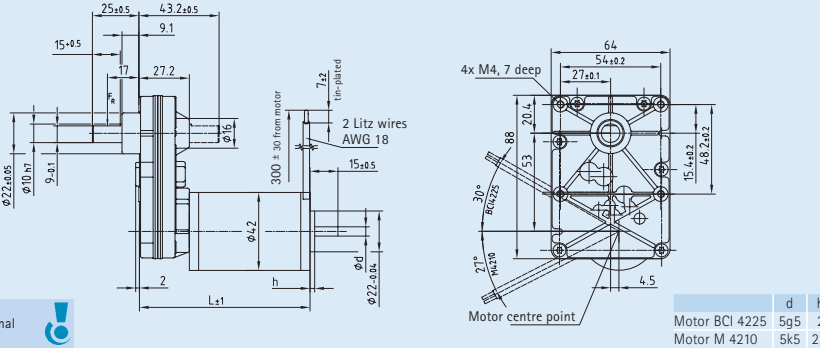
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Permanent magnet DC motor with spur gearhead Flatline 78



Max. radial load (F _R)	Max. axial load	Lifetime at M _{out} [Nm]	Output shaft bearing assy.	Gearhead play	Protection
300 N	50 N	5000 h	needle bearing on both sides	approx. 0,8° to 1,8° depending on reduction	IP 40
Operating factor c ₀ =1					

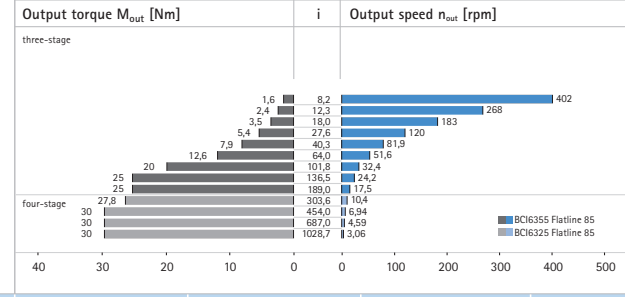


Spur gearhead		Permanent magnet DC motor						
Flatline 78		BCI4225						
No.	Reduction i / no. of stages	Output torque M _{out} [Nm]*	Output speed n _{out} [rpm]	Output power P _{out} [W]	Order No.	Rated current I [A]	Weight m [kg]	Length L [mm]
F.1.	38,6 / 3	1,1	85,4	9,5	78.3.4225.F20	0,83	0,7	97
F.2.	65,2 / 3	1,5	50,7	8	78.3.4225.F21			
F.3.	82,8 / 3	2,3	39,9	9,5	78.3.4225.F22			
F.4.	106,1 / 3	2,6	31,1	8,5	78.3.4225.F23			
F.5.	140,8 / 3	3,2	23,4	7,9	78.3.4225.F24			
F.6.	191,9 / 4	4,7	17,2	8,5	78.4.4225.F25			
F.7.	252,6 / 4	6,2	13,1	8,5	78.4.4225.F26			

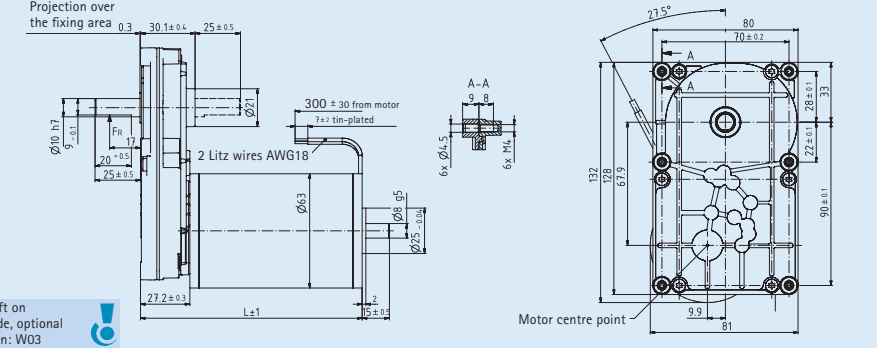
Spur gearhead		Permanent magnet DC motor						
Flatline 78		M4210						
No.	Reduction i / no. of stages	Output torque M _{out} [Nm]*	Output speed n _{out} [rpm]	Output power P _{out} [W]	Order No.	Rated current I [A]	Weight m [kg]	Length L [mm]
F.8.	315,7 / 4	5,2	9,03	4,9	78.4.4210.F27	0,7	0,7	92
F.9.	408,4 / 5	6,1	6,98	4,4	78.5.4210.F28			
F.10.	737,4 / 5	6,3	3,87	2,5	78.5.4210.F29			
F.11.	976 / 5	6,3	2,92	1,9	78.5.4210.F30			
F.12.	1266,1 / 5	7	2,25	1,6	78.5.4210.F31			
F.13.	1648,6 / 5	7,1	1,73	1,3	78.5.4210.F32			
F.14.	2135,9 / 5	7,3	1,33	1	78.5.4210.F33			
F.15.	408,4 / 5	6,1**	6,98	4,4	78.5.4210.F40			
F.16.	737,4 / 5	10,9**	3,87	4,4	78.5.4210.F41			
F.17.	976 / 5	12,5**	2,92	3,8	78.5.4210.F42			
F.18.	1266,1 / 5	13**	2,25	3,1	78.5.4210.F43			
F.19.	1648,6 / 5	14**	1,73	2,5	78.5.4210.F44			
F.20.	2135,9 / 5	15**	1,33	2,1	78.5.4210.F45			

Add-on components		BCI4225			M4210		
Brake	Encoder	Electronics	Brake	Encoder	Electronics		
B01	G01-G05	CAN01, E01-E08, S01-S02	B01	G01-G05	CAN01, E01-E08, S01-S02		

Permanent magnet DC motor with spur gearhead Flatline 85



Max. radial load (F _R)	Max. axial load	Lifetime at M _{out} [Nm]	Output shaft bearing assy.	Gearhead play	Protection
150 N	50 N	5000 h	needle bearing on both sides	approx. 0,8° to 1,6° depending on reduction	IP 40
Operating factor c ₀ =1					

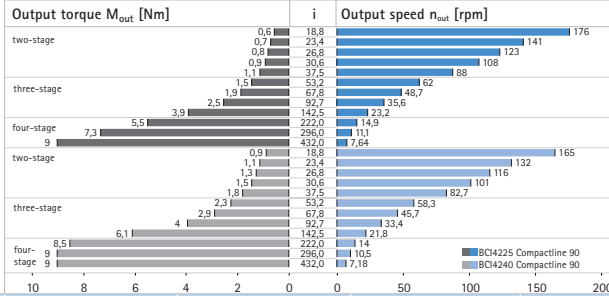
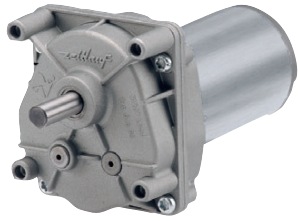


Spur gearhead		Permanent magnet DC motor						
Flatline 85		BCI6355						
No.	Reduction i / no. of stages	Output torque M _{out} [Nm]*	Output speed n _{out} [rpm]	Output power P _{out} [W]	Order No.	Rated current I [A]	Weight m [kg]	Length L [mm]
F.21.	8,2 / 3	1,6	402	68	85.3.6355.F01	4,9	2,2	152
F.22.	12,3 / 3	2,4	268	68	85.3.6355.F02			
F.23.	18 / 3	3,5	183	68	85.3.6355.F03			
F.24.	27,6 / 3	5,4	120	68	85.3.6355.F04			
F.25.	40,3 / 3	7,9	81,9	68	85.3.6355.F05			
F.26.	64 / 3	12,6	51,6	68	85.3.6355.F06			
F.27.	101,8 / 3	20	32,4	68	85.3.6355.F07			
F.28.	136,5 / 3	25	24,2	63	85.3.6355.F08			
F.29.	189 / 3	25	17,5	46	85.3.6355.F09			

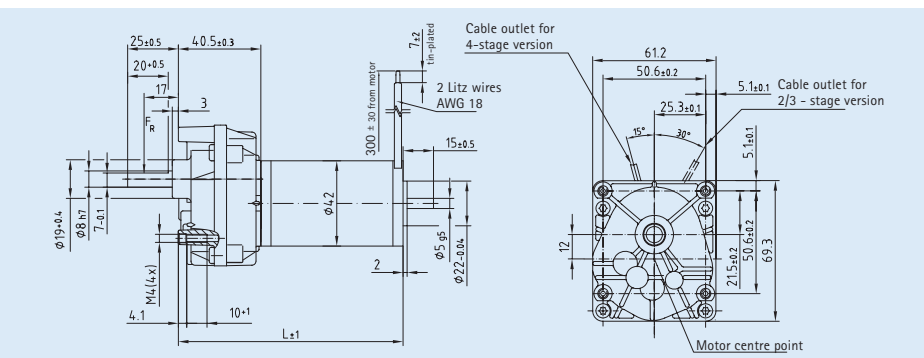
Spur gearhead		Permanent magnet DC motor						
Flatline 85		BCI6325						
No.	Reduction i / no. of stages	Output torque M _{out} [Nm]*	Output speed n _{out} [rpm]	Output power P _{out} [W]	Order No.	Rated current I [A]	Weight m [kg]	Length L [mm]
F.30.	303,6 / 4	27,8	10,4	30	85.4.6325.F10	2,7	1,8	122
F.31.	454 / 4	30	6,94	22	85.4.6325.F11			
F.32.	687 / 4	30	4,59	14	85.4.6325.F12			
F.33.	1028,7 / 4	30	3,06	9,6	85.4.6325.F13			

Add-on components		BCI6355			BCI6325		
Brake	Encoder	Electronics	Brake	Encoder	Electronics		
B03	G01-G05	CAN01, E01-E08, S02	B03	G01-G05	CAN01, E01-E08, S01-S02		

Permanent magnet DC motor with spur gearhead Compactline 90



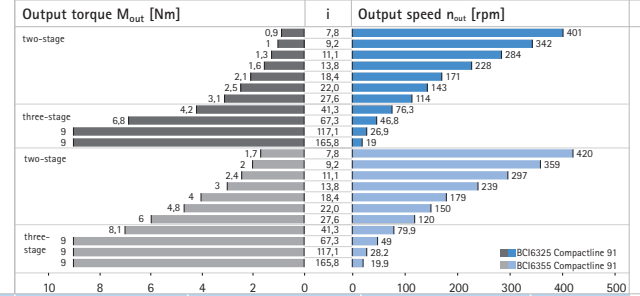
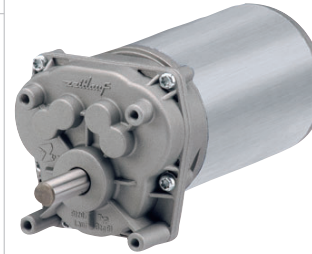
Max. radial load (F _R) 120 N	Max. axial load 40 N	Lifetime at M _{out} [Nm] 5000 h Operating factor c ₀ =1	Output shaft bearing assy. Combined sliding needle bearing	Gearhead play approx. 0,7° to 1,6° depending on reduction	Protection IP 40
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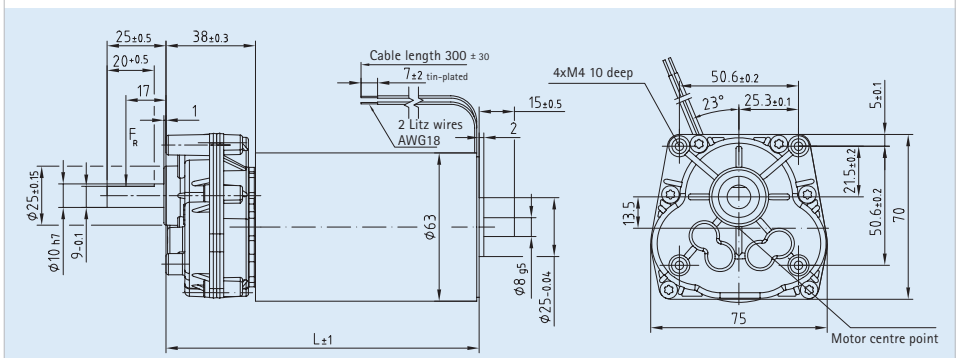
Spur gearhead		Permanent magnet DC motor				Add-on components		
Compactline 90		BCI4225				Brake	Encoder	Electronics
No.	Reduction i / no. of stages	Output torque M _{out} [Nm]*	Output speed n _{out} [rpm]	Output power P _{out} [W]	Order No.	B01	G01-G05	CAN01, E01-E08, S01-S02
F 34.	18,8 / 2	0,6	176	11	90.2.4225.C01	0,83	0,7	111
F 35.	23,4 / 2	0,7	141	11	90.2.4225.C02			
F 36.	26,8 / 2	0,8	123	11	90.2.4225.C03			
F 37.	30,6 / 2	0,9	108	11	90.2.4225.C04			
F 38.	37,5 / 2	1,1	88	11	90.2.4225.C05	0,83	0,7	111
F 39.	53,2 / 3	1,5	62	9,5	90.3.4225.C06			
F 40.	67,8 / 3	1,9	48,7	9,5	90.3.4225.C07			
F 41.	92,7 / 3	2,5	35,6	9,5	90.3.4225.C08			
F 42.	142,5 / 3	3,9	23,2	9,5	90.3.4225.C09	0,83	0,8	111
F 43.	222 / 4	5,5	14,9	8,5	90.4.4225.C10			
F 44.	296 / 4	7,3	11,1	8,5	90.4.4225.C11			
F 45.	432 / 4	9	7,64	7,2	90.4.4225.C12			

Spur gearhead		Permanent magnet DC motor				Add-on components		
Compactline 90		BCI4240				Brake	Encoder	Electronics
No.	Reduction i / no. of stages	Output torque M _{out} [Nm]*	Output speed n _{out} [rpm]	Output power P _{out} [W]	Order No.	B01	G01-G05	CAN01, E01-E08, S01-S02
F 46.	18,8 / 2	0,9	165	15	90.2.4240.C13	1,2	0,8	126
F 47.	23,4 / 2	1,1	132	15	90.2.4240.C14			
F 48.	26,8 / 2	1,3	116	15	90.2.4240.C15			
F 49.	30,6 / 2	1,5	101	15	90.2.4240.C16			
F 50.	37,5 / 2	1,8	82,7	15	90.2.4240.C17	1,2	0,8	126
F 51.	53,2 / 3	2,3	58,3	14	90.3.4240.C18			
F 52.	67,8 / 3	2,9	45,7	14	90.3.4240.C19			
F 53.	92,7 / 3	4	33,4	14	90.3.4240.C20			
F 54.	142,5 / 3	6,1	21,8	14	90.3.4240.C21	1,2	0,9	126
F 55.	222 / 4	8,5	14	12	90.4.4240.C22			
F 56.	296 / 4	9	10,5	9,9	90.4.4240.C23			
F 57.	432 / 4	9	7,18	6,8	90.4.4240.C24			

Permanent magnet DC motor with spur gearhead Compactline 91



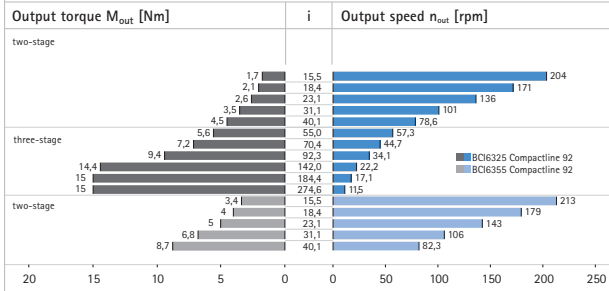
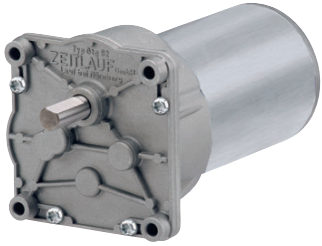
Max. radial load (F _R) 150 N	Max. axial load 50 N	Lifetime at M _{out} [Nm] 5000 h Operating factor c ₀ =1	Output shaft bearing assy. Combined sliding needle bearing	Gearhead play approx. 0,7° to 1,2° depending on reduction	Protection IP 40
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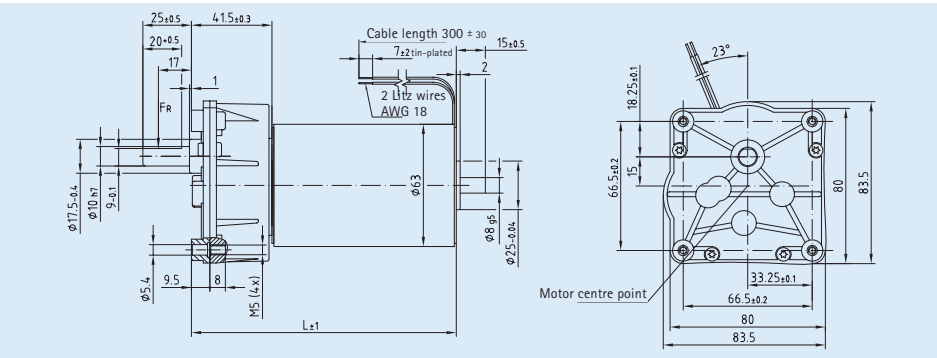
Spur gearhead		Permanent magnet DC motor				Add-on components		
Compactline 91		BCI6325				Brake	Encoder	Electronics
No.	Reduction i / no. of stages	Output torque M _{out} [Nm]	Output speed n _{out} [rpm]	Output power P _{out} [W]	Order No.	B03	G01-G05	CAN01, E01-E08, S01-S02
F 58.	7,8 / 2	0,9	401	37	91.2.6325.C01	2,7	1,6	133
F 59.	9,2 / 2	1	342	37	91.2.6325.C02			
F 60.	11,1 / 2	1,3	284	37	91.2.6325.C03			
F 61.	13,8 / 2	1,6	228	37	91.2.6325.C04			
F 62.	18,4 / 2	2,1	171	37	91.2.6325.C05	2,7	1,6	133
F 63.	22 / 2	2,5	143	37	91.2.6325.C06			
F 64.	27,6 / 2	3,1	114	37	91.2.6325.C07			
F 65.	41,3 / 3	4,2	76,3	34	91.3.6325.C08			
F 66.	67,3 / 3	6,8	46,8	34	91.3.6325.C09	2,7	1,6	133
F 67.	117,1 / 3	9	26,9	25	91.3.6325.C10			
F 68.	165,8 / 3	9	19	18	91.3.6325.C11			

Spur gearhead		Permanent magnet DC motor				Add-on components		
Compactline 91		BCI6355				Brake	Encoder	Electronics
No.	Reduction i / no. of stages	Output torque M _{out} [Nm]	Output speed n _{out} [rpm]	Output power P _{out} [W]	Order No.	B03	G01-G05	CAN01, E01-E08, S02
F 69.	7,8 / 2	1,7	420	75	91.2.6355.C01	4,9	2,1	163
F 70.	9,2 / 2	2	359	75	91.2.6355.C02			
F 71.	11,1 / 2	2,4	297	75	91.2.6355.C03			
F 72.	13,8 / 2	3	239	75	91.2.6355.C04			
F 73.	18,4 / 2	4	179	75	91.2.6355.C05	4,9	2,1	163
F 74.	22 / 2	4,8	150	75	91.2.6355.C06			
F 75.	27,6 / 2	6	120	75	91.2.6355.C07			
F 76.	41,3 / 3	8,1	79,9	68	91.3.6355.C08			
F 77.	67,3 / 3	9	49	46	91.3.6355.C09	4,9	2,1	163
F 78.	117,1 / 3	9	28,2	27	91.3.6355.C10			
F 79.	165,8 / 3	9	19,9	19	91.3.6355.C11			

Permanent magnet DC motor with spur gearhead Compactline 92



Max. radial load (F_R) 150 N	Max. axial load 50 N	Lifetime at M_{out} [Nm] 5000 h Operating factor $c_3=1$	Output shaft bearing assy. Combined sliding needle bearing	Gearhead play approx. 0,7° to 1,2° depending on reduction	Protection IP 40
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Spur gearhead		Permanent magnet DC motor						
Compactline 92		BCI6325						
		3150 rpm/46W 24V						
No.	Reduction i / no. of stages	Output torque M_{out} [Nm]*	Output speed n_{out} [rpm]	Output power P_{out} [W]	Order No.	Rated current I [A]	Weight m [kg]	Length L [mm]
F 80.	15,5 / 2	1,7	204	37	92.2.6325.C01	2,7	1,6	137
F 81.	18,4 / 2	2,1	171	37	92.2.6325.C02			
F 82.	23,1 / 2	2,6	136	37	92.2.6325.C03			
F 83.	31,1 / 2	3,5	101	37	92.2.6325.C04			
F 84.	40,1 / 2	4,5	78,6	37	92.2.6325.C05			
F 85.	55 / 3	5,6	57,3	34	92.3.6325.C06			
F 86.	70,4 / 3	7,2	44,7	34	92.3.6325.C07			
F 87.	92,3 / 3	9,4	34,1	34	92.3.6325.C08			
F 88.	142 / 3	14,4	22,2	34	92.3.6325.C09			
F 89.	184,4 / 3	15	17,1	27	92.3.6325.C10			
F 90.	274,6 / 3	15	11,5	18	92.3.6325.C11			

Spur gearhead		Permanent magnet DC motor						
Compactline 92		BCI6355						
		3300 rpm/93W 24V						
No.	Reduction i / no. of stages	Output torque M_{out} [Nm]*	Output speed n_{out} [rpm]	Output power P_{out} [W]	Order No.	Rated current I [A]	Weight m [kg]	Length L [mm]
F 91.	15,5 / 2	3,4	213	75	92.2.6355.C12	4,9	2,1	167
F 92.	18,4 / 2	4	179	75	92.2.6355.C13			
F 93.	23,1 / 2	5	143	75	92.2.6355.C14			
F 94.	31,1 / 2	6,8	106	75	92.2.6355.C15			
F 95.	40,1 / 2	8,7	82,3	75	92.2.6355.C16			

Add-on components		BCI6325			BCI6355		
Brake	Encoder	Electronics	Brake	Encoder	Electronics		
B03	G01-G05	CAN01, E01-E08, S01-S02	B03	G01-G05	CAN01, E01-E08, S02		



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