

be in motion be in motion

**Three-phase
synchronous motors**

DS 100-160

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Three-phase synchronous motors DC



Three-phase synchronous motors of the **DS** series are permanently excited motors.

Boasting a very high power density, very high efficiency and high response the motors are perfectly suitable for most sophisticated applications in mechanical engineering.

This is additionally supported by a high overload capability.

These durable, compact motors are also largely maintenance-free, which is an extra benefit to ensure most efficient operation.

General technical data

Version	IM B3, IM B34, IM B35	
Type of protection	IP23	Internally cooled, with fan
	IP54	surface-cooled with fan or uncooled
Forced ventilation / standard	N-end, top, left or right hand side Air conduction non-drive end to drive end, lateral air outlet at drive end	
Forced ventilation / option	Drive end, top, left or right hand side Air conduction drive end to non-drive end, lateral air outlet at N-end	
Connection	Main connection	U V W
	Control connection	Terminal box
	Brake	12-pin connector
	Thermal sensor	Terminal box of brake in the main connection
Cooling	IP 23	IC 06
	IP 54	IC 0641
	IP 54	IC 0041
Thermal sensor		Linear thermal sensor for evaluation in the controller
Temperature rise	$\Delta\theta \leq 105K$	Insulation class F acc. to EN 60034-1
Temperature range	0...+ 40°C,	
Storage	-30°C...+85°C	
Paint	black matt	RAL 9005
Bearing	D-end: standard = ball bearing; option = roller bearing, locating bearing on the N-end	
Terminal box	D- and N-end; top , left or right hand side	
Balance quality	N	According to DIN ISO 2373
	R, S	On request
Vibrationproof / standard	radial 3 g / axial 1g , 10 .. 55 Hz acc. to EN 60068-2-6	
	Higher vibration resistance on request	
Flange	acc. to IEC standard Dimension b1: up to flange size a1 300 mm tolerance j6 as from flange size a1 300 mm tolerance h6	
shaft end	cylindrical	Acc. to DIN 748 with shaft key DIN 6885; also available without
	keyway) centering with internal thread	acc. to DIN 332 form D
		Dimension d: $\leq \varnothing 50$ mm tolerance k6; d: $> \varnothing 50$ mm tolerance m6
Brake	Disk brakes from Baumüller, N-end mounting as a module other brands on request	

Actual speed encoder 2-pin resolver
 Option: Sincos Encoder
 Other encoders on request
 UL Option in preparation

Ratings definition

The ratings (torques) listed in the table apply to continuous operation (S1) with nominal speed at a maximum ambient temperature of 40°C with the machine being installed below 1000m a.m.s.l.

If motors are to be operated in an ambient temperature of more than 40 °C or altitudes above 1000 m a.m.s.l., the required list nominal power P_L (list torque M_n) results from the product of the factors k_1 , k_2 specified in the table and the required power P (torque M).

Ambient temperature	40 °C	45°C	50 °C	55°C	60°C
Correction factor k_1	1	1.06	1.13	1.22	1.34
Altitude a.m.s.l. up to	1.000 m	2.000 m	3.000 m	4.000 m	5.000 m
Correction factor k_2	1	1.07	1.16	1.27	1.55

For ambient temperatures above 40 °C and enclosed installation of motors, it is absolutely necessary to contact the manufacturer, because design changes may be necessary.

If, with increasing site altitude above 1000 m, the ambient temperature decreases by approx. 10 °C per 1000 m increase in altitude, no power correction is necessary.

Winding isolation and temperature rise

All machines of this series are designed in insulation class F according to EN 60034 for a permissible winding temperature of 105 K at a room temperature of up to 40 °C. The insulation is resistant against gases and vapours of combustible materials and it meets the requirements placed on a moisture-proof and tropical insulation.

A special insulation that can be obtained for an extra charge is necessary if concentrated acid vapours and metallic powders occur, with a permanent relative air humidity of more than 80% and as protection against termite and mould fungus attacks.

In the case of converters with a DC link voltage > 500 V, the cables between the converter and the motor must not be longer than 20 meters. For longer cables, additional measures (e.g. motor filters) must be provided. The maximum permissible terminal voltage is 1000 V.

Explanation of the motor data

- P_N Nominal power (kW) with nominal speed n_N in continuous operation (S1)
- M_N Nominal torque (kW) with nominal speed n_N in continuous operation (S1) Nominal r.m.s. current (A)
- I_{dN} Magnetizing current for field weakening (A)
- U_N Nominal voltage (V)
- $K_{E / COLD}$ referred to 1000 min⁻¹ motor e.m.f. (voltage constant) (V)
- cos φ power factor
- η_N Efficiency
- f_N Nominal frequency (Hz)
- J Rotor inertia incl. resolver without holding brake (kg m²)
- m Weight (kg)
- $M_{o,max}$ Maximum standstill torque (Nm)

Ratings of synchronous motors DS

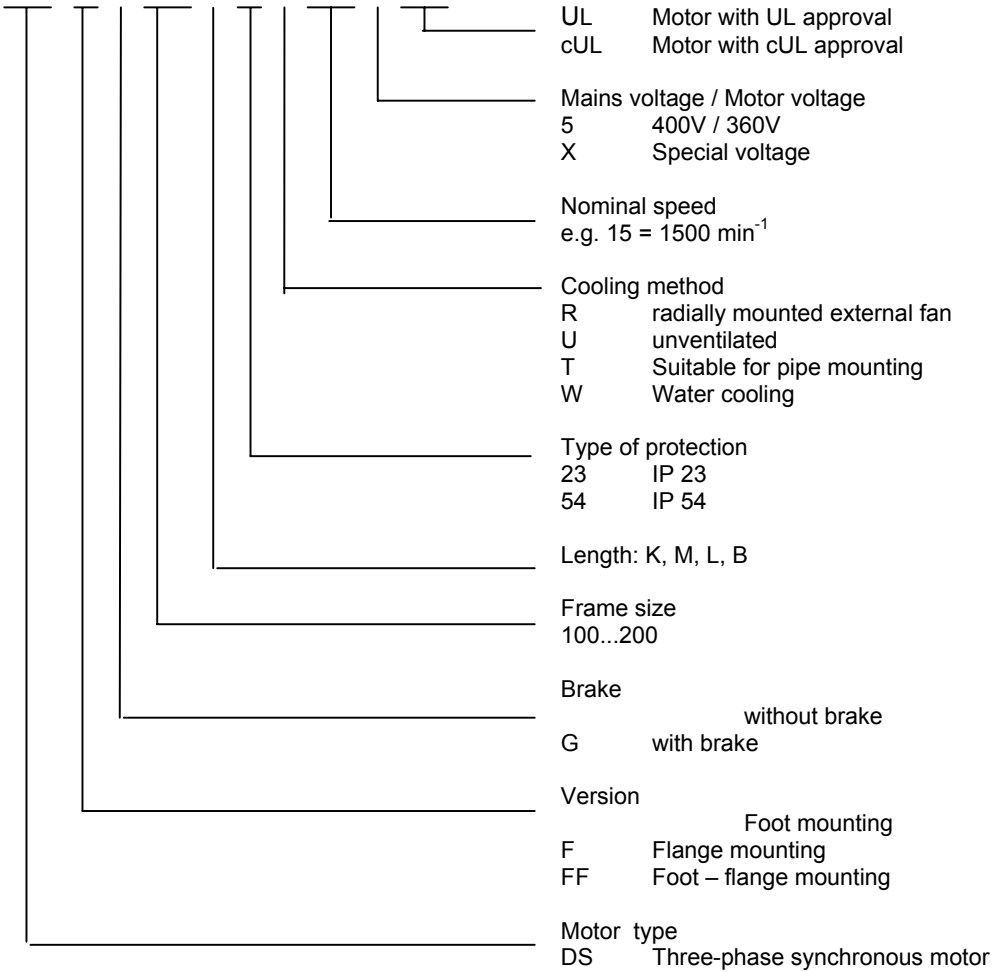
The specified ratings are achieved in converter operation (field-oriented control) with a clock frequency of 4 kHz in the power stage.

Overload capacity

According to technical data sheet

Type key

DS FF G 100 M 54 R 15 – 5 UL



Technical data

DS 100..23 R.. (IP 23 internally ventilated)

Mains voltage 3 AC 400 V for converter with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Voltage constant	Power factor	Magnetizing current (field weakening)	Efficiency	Nom. frequency	Inertia		Weight	
		P _N	P _N	M _N	M _N								J	J	m	m
n _N	Typ	P _N	P _N	M _N	M _N	I _N	U _N	K _E / COLD	cos φ	I _{dN}	η _N	f _N	J	J	m	m
min ⁻¹		KW	hp	Nm	lbf ft	A	V	V/1000 min ⁻¹	-	A	-	Hz	kgm ²	lb ft ²	kg	lb
1000	DS100K23R10-5	6.9	9.3	66	49	15	350	276	0.9	1.5	0.825	50	0.01	0.24	45	99
	DS100M23R10-5	9.7	13.0	93	69	21.5	345	272	0.88	0	0.856	50	0.014	0.33	55	121
	DS100L23R10-5	12.3	16.5	117	86	27	340	277	0.89	0	0.875	50	0.018	0.43	65	143
	DS100B23R10-5	14.7	19.7	140	103	30	355	293	0.89	0	0.886	50	0.022	0.52	75	165
1500	DS100K23R15-5	10	13.4	64	47	21	350	198	0.91	3	0.872	75	0.01	0.24	45	99
	DS100M23R15-5	14.3	19.2	91	67	29	350	198	0.9	2	0.897	75	0.014	0.33	55	121
	DS100L23R15-5	18	24.1	115	85	35	350	208	0.92	5	0.909	75	0.018	0.43	65	143
	DS100B23R15-5	21.5	28.8	137	101	42	350	207	0.92	4	0.917	75	0.022	0.52	75	165
2000	DS100K23R20-5	13	17.4	62	46	25	355	162	0.94	6.5	0.896	100	0.01	0.24	45	99
	DS100M23R20-5	18	24.1	86	63	33.5	350	167	0.95	10	0.915	100	0.014	0.33	55	121
	DS100L23R20-5	23	30.8	110	81	43	350	166	0.95	10	0.926	100	0.018	0.43	65	143
	DS100B23R20-5	27.5	36.9	131	97	51	350	166	0.95	11.5	0.932	100	0.022	0.52	75	165
2500	DS100K23R25-5	15.5	20.8	59	44	30	345	134	0.96	10	0.91	125	0.01	0.24	45	99
	DS100M23R25-5	22	29.5	84	62	40.5	355	135	0.95	10.5	0.929	125	0.014	0.33	55	121
	DS100L23R25-5	27.5	36.9	105	77	50	350	138	0.97	15	0.936	125	0.018	0.43	65	143
	DS100B23R25-5	33.5	44.9	128	94	60	355	138	0.96	14	0.942	125	0.022	0.52	75	165
3000	DS100K23R30-5	18	24.1	57	42	34	345	113	0.96	11	0.921	150	0.01	0.24	45	99
	DS100M23R30-5	25.5	34.2	81	60	46	350	115	0.96	13	0.936	150	0.014	0.33	55	121
	DS100L23R30-5	32	42.9	102	75	58	350	115	0.96	15	0.944	150	0.018	0.43	65	143
	DS100B23R30-5	38	51.0	121	89	66	360	120	0.97	18	0.948	150	0.022	0.52	75	165

Maximum standstill torque

Motor type	M _{0 max} [Nm]	M _{0 max} [lbf ft]
DS100K23R	130	96
DS100M23R	195	144
DS100L23R	260	192
DS100B23R	320	236

Legend

American units

Three-phase synchronous motors DS 100 - 160

DS 132..23 R.. (IP 23 internally ventilated)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Voltage constant	Power factor	Magnetizing current (field weakening)	Efficiency	Nom. frequency	Inertia		Weight	
		P _N	P _N	M _N	M _N								J	J	M	m
n _N		KW	hp	Nm	lbf ft	A	V	K _E / COLD	cos φ	I _{dN}	η _N	f _N	kgm ²	lb ft ²	Kg	lb
min ⁻¹								V/1000 min ⁻¹		A		Hz				
1000	DS132K23R10-5	20.5	27	196	145	43	350	297	0.89	7.5	0.883	50	0.045	1.07	110	243
	DS132M23R10-5	27	36	258	190	56	355	295	0.87	4	0.898	50	0.058	1.38	125	276
	DS132L23R10-5	31.5	42	301	222	62	350	319	0.92	13.5	0.906	50	0.071	1.68	140	309
	DS132B23R10-5	37.5	50	358	264	78	355	294	0.85	0	0.916	50	0.084	1.99	155	342
1500	DS132K23R15-5	30.5	41	194	143	61	355	208	0.89	11	0.916	75	0.045	1.07	110	243
	DS132M23R15-5	39	52	248	183	75	355	216	0.91	16	0.925	75	0.058	1.38	125	276
	DS132L23R15-5	46	62	293	216	88	355	221	0.92	20	0.933	75	0.071	1.68	140	309
	DS132B23R15-5	55	74	350	258	109	355	205	0.87	5	0.939	75	0.084	1.99	155	342
2000	DS132K23R20-5	39	52	186	137	76	350	163	0.91	20	0.931	100	0.045	1.07	110	243
	DS132M23R20-5	50	67	239	176	94	350	170	0.93	28.5	0.939	100	0.058	1.38	125	276
	DS132L23R20-5	60	80	286	211	110	360	172	0.92	26.5	0.946	100	0.071	1.68	140	309
	DS132B23R20-5	70	94	334	246	130	355	166	0.91	22.5	0.951	100	0.084	1.99	155	342
2500	DS132K23R25-5	48	64	184	136	90	355	133	0.91	22.5	0.942	125	0.045	1.07	110	243
	DS132M23R25-5	61	82	233	172	114	355	137	0.92	34.5	0.948	125	0.058	1.38	125	276
	DS132L23R25-5	71	95	271	200	130	350	139	0.94	35.5	0.954	125	0.071	1.68	140	309
	DS132B23R25-5	83	111	317	234	152	355	137	0.93	34	0.957	125	0.084	1.99	155	342
3000	DS132K23R30-5	54	72	172	127	99	350	119	0.95	36	0.948	150	0.045	1.07	110	243
	DS132M23R30-5	70	94	223	164	129	350	118	0.94	44	0.954	150	0.058	1.38	125	276
	DS132L23R30-5	81	109	258	190	147	355	115	0.93	32	0.96	150	0.071	1.68	140	309
	DS132B23R30-5	92	123	293	216	166	350	117	0.95	45	0.961	150	0.084	1.99	155	342

Maximum standstill torque

Motor type	M _{0 max} [Nm]	M _{0 max} [lbf ft]
DS132K23R	350	258
DS132M23R	460	339
DS132L23R	575	424
DS132B23R	680	502

Legend

American units

DS 160..23R.. (IP 23 internally ventilated)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Voltage constant	Power factor	Magnetizing current (field weakening)	Efficiency	Nom. frequency	Inertia		Weight	
		P _N	P _N	M _N	M _N								J	J	m	m
n _N		P _N	P _N	M _N	M _N	I _N	U _N	K _E / COLD	cos φ	I _{dN}	η _N	f _N	J	J	m	m
min ⁻¹		kW	hp	Nm	lbf ft	A	V	V/1000 min ⁻¹		A		Hz	kgm ²	lb ft ²	kg	lb
1000	DS160K23R10-5	42.5	57	406	299	81	355	334	0.93	20	0.916	50	0.15	3.56	195	430
	DS160M23R10-5	51	68	487	359	99	345	328	0.94	24	0.925	50	0.184	4.37	220	485
	DS160L23R10-5	60	80	573	423	113	360	330	0.91	15	0.933	50	0.217	5.15	245	540
	DS160B23R10-5	69	93	659	486	131	360	324	0.9	9	0.937	50	0.25	5.93	270	595
1500	DS160K23R15-5	63	84	401	296	119	350	221	0.93	26	0.94	75	0.15	3.56	195	430
	DS160M23R15-5	76	102	484	357	143	350	221	0.93	28	0.946	75	0.184	4.37	220	485
	DS160L23R15-5	88	118	560	413	168	350	214	0.9	16	0.951	75	0.217	5.15	245	540
	DS160B23R15-5	98	131	624	460	176	360	235	0.94	36	0.953	75	0.25	5.93	270	595
2000	DS160K23R20-5	82	110	392	289	152	350	170	0.93	35	0.951	100	0.15	3.56	195	430
	DS160M23R20-5	99	133	473	349	183	355	168	0.93	33	0.956	100	0.184	4.37	220	485
	DS160L23R20-5	109	146	520	384	196	350	176	0.95	49	0.959	100	0.217	5.15	245	540
	DS160B23R20-5	125	168	597	440	224	355	175	0.94	43	0.962	100	0.25	5.93	270	595
2500	DS160K23R25-5	100	134	382	282	183	355	135	0.93	34	0.958	125	0.15	3.56	195	430
	DS160M23R25-5	118	158	450	332	215	350	136	0.93	40	0.961	125	0.184	4.37	220	485
	DS160L23R25-5	130	174	497	367	236	345	137	0.95	50	0.964	125	0.217	5.15	245	540
	DS160B23R25-5	145	194	554	409	252	360	145	0.96	56	0.966	125	0.25	5.93	270	595
3000	DS160K23R30-5	110	148	350	258	198	345	118	0.96	60	0.961	150	0.15	3.56	195	430
	DS160M23R30-5	130	174	414	305	236	345	115	0.96	54	0.964	150	0.184	4.37	220	485
	DS160L23R30-5	140	188	446	329	240	355	125	0.98	78	0.966	150	0.217	5.15	245	540
	DS160B23R30-5	150	201	477	352	254	355	130	0.99	96	0.966	150	0.25	5.93	270	595

Maximum standstill torque

Motor type	M _{0 max} [Nm]	M _{0 max} [lbf ft]
DS160K23R	740	546
DS160M23R	910	671
DS160L23R	1080	797
DS160B23R	1180	870

Legend

American units

Three-phase synchronous motors DS 100 - 160

DS 100..54R.. IP 54 surface-ventilated

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Voltage constant	Power factor	Magnetizing current (field weakening)	Efficiency	Nom. frequency	Inertia		Weight	
		P_N	P_N	M_N	M_N								J	J	m	m
n_N		P_N	P_N	M_N	M_N	I_N	U_N	K_E / COLD	$\cos \varphi$	I_{dN}	η_N	f_N	J	J	m	m
min^{-1}		KW	hp	Nm	lbf ft	A	V	V/1000 min^{-1}		A		Hz	kgm^2	lb ft ²	Kg	lb
1100	DS100K54R11-5	5	6.7	43	32	10.2	350	276	0.92	0	0.873	55	0.01	0.24	45	99
	DS100M54R11-5	7.5	10.1	65	48	15.5	335	271	0.91	0	0.89	55	0.014	0.33	55	121
	DS100L54R11-5	10	13.4	87	64	20.5	340	277	0.91	0	0.9	55	0.018	0.43	65	143
	DS100B54R11-5	12	16.1	104	77	23.5	355	293	0.91	0	0.907	55	0.022	0.52	75	165
1600	DS100K54R16-5	7.1	9.5	42	31	14	350	198	0.92	0	0.903	80	0.01	0.24	45	99
	DS100M54R16-5	10.7	14.3	64	47	21	350	198	0.91	0	0.916	80	0.014	0.33	55	121
	DS100L54R16-5	14.2	19.0	85	63	27	355	208	0.93	2	0.924	80	0.018	0.43	65	143
	DS100B54R16-5	17.2	23.1	103	76	33	355	207	0.91	0	0.929	80	0.022	0.52	75	165
2000	DS100K54R20-5	8.7	11.7	41.5	31	17	355	162	0.92	0	0.916	100	0.01	0.24	45	99
	DS100M54R20-5	13.1	17.6	62.5	46	25	360	167	0.91	0	0.928	100	0.014	0.33	55	121
	DS100L54R20-5	17.4	23.3	83	61	33	360	166	0.91	0	0.935	100	0.018	0.43	65	143
	DS100B54R20-5	21	28.2	100	74	38.5	350	172	0.95	4	0.938	100	0.022	0.52	75	165
2500	DS100K54R25-5	10.6	14.2	40.5	30	20	360	134	0.92	0	0.926	125	0.01	0.24	45	99
	DS100M54R25-5	15.8	21.2	60.5	45	29.5	350	135	0.94	3	0.936	125	0.014	0.33	55	121
	DS100L54R25-5	21	28.2	80	59	38	355	138	0.94	3.5	0.942	125	0.018	0.43	65	143
	DS100B54R25-5	25	33.5	95	70	46	340	138	0.96	7	0.945	125	0.022	0.52	75	165
3000	DS100K54R30-5	12.3	16.5	39	29	23	360	113	0.92	0	0.932	150	0.01	0.24	45	99
	DS100M54R30-5	18	24.1	57	42	33	350	115	0.95	3	0.941	150	0.014	0.33	55	121
	DS100L54R30-5	24	32.2	76.5	56	44	355	115	0.94	3	0.947	150	0.018	0.43	65	143
	DS100B54R30-5	28	37.5	89	66	50	350	120	0.98	10	0.949	150	0.022	0.52	75	165

Maximum standstill torque

Motor type	$M_{0 \max}$ [Nm]	$M_{0 \max}$ [lbf ft]
DS100K54R	120	89
DS100M54R	175	129
DS100L54R	235	173
DS100B54R	290	214

Legend

	American units
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DS 132..54R.. IP 54 surface-ventilated

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Voltage constant	Power factor	Magnetizing current (field weakening)	Efficiency	Nom. frequency	Inertia		Weight	
		P _N	P _N	M _N	M _N								J	J	M	m
n _N		KW	hp	Nm	lbf ft	I _N	U _N	K _E / COLD	cos φ	I _{dN}	η _N	f _N	kgm ²	lb ft ²	Kg	lb
min ⁻¹						A	V	V/1000 min ⁻¹		A		Hz				
1100	DS132K54R11-5	13.5	18.1	117	86	26	360	297	0.9	0	0.922	55	0.045	1.07	110	243
	DS132M54R11-5	18	24.1	156	115	35	350	295	0.9	0	0.93	55	0.058	1.38	125	276
	DS132L54R11-5	22	29.5	191	141	40	360	319	0.94	5	0.935	55	0.071	1.68	140	309
	DS132B54R11-5	26	34.9	225	166	51	345	293	0.91	0	0.939	55	0.084	1.99	155	342
1600	DS132K54R16-5	19.2	25.7	115	85	36.5	360	208	0.91	0	0.94	80	0.045	1.07	110	243
	DS132M54R16-5	25	33.5	149	110	46	355	216	0.94	5	0.946	80	0.058	1.38	125	276
	DS132L54R16-5	30	40.2	179	132	54	350	221	0.95	8	0.95	80	0.071	1.68	140	309
	DS132B54R16-5	35.5	47.6	212	156	69	345	205	0.91	0	0.952	80	0.084	1.99	155	342
2000	DS132K54R20-5	23	30.8	110	81	44.5	350	163	0.91	0	0.947	100	0.045	1.07	110	243
	DS132M54R20-5	30	40.2	143	105	56	360	170	0.91	0	0.952	100	0.058	1.38	125	276
	DS132L54R20-5	36	48.3	172	127	67	355	172	0.91	0	0.956	100	0.071	1.68	140	309
	DS132B54R20-5	42.5	57.0	203	150	82	345	166	0.92	0	0.957	100	0.084	1.99	155	342
2500	DS132K54R25-5	27.5	36.9	105	77	52	350	133	0.91	0	0.952	130	0.045	1.07	110	243
	DS132M54R25-5	35.5	47.6	136	100	66	360	137	0.91	0	0.956	130	0.058	1.38	125	276
	DS132L54R25-5	42	56.3	160	118	77	355	139	0.92	0	0.959	130	0.071	1.68	140	309
	DS132B54R25-5	50	67.1	190	140	93	350	137	0.92	0	0.96	130	0.084	1.99	155	342
3000	DS132K54R30-5	31	41.6	99	73	55	360	119	0.95	5	0.954	150	0.045	1.07	110	243
	DS132M54R30-5	40	53.6	127	94	72	345	118	0.96	10	0.958	150	0.058	1.38	125	276
	DS132L54R30-5	47	63.0	150	111	88	350	114	0.93	0	0.959	150	0.071	1.68	140	309
	DS132B54R30-5	55	73.8	175	129	99	355	117	0.93	0	0.96	150	0.084	1.99	155	342

Maximum standstill torque

Motor type	M _{0 max} [Nm]	M _{0 max} [lbf ft]
DS132K54R	305	225
DS132M54R	400	295
DS132L54R	500	369
DS132B54R	600	443

Legend

American units

Three-phase synchronous motors DS 100 - 160

DS 100..54U.. (IP 54 unventilated)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Voltage constant	Power factor	Magnetizing current (field weakening)	Efficiency	Nom. frequency	Inertia		Weight	
		P _N	P _N	M _N	M _N								J	J	m	m
n _N		KW	hp	Nm	lbf ft	I _N	U _N	K _E / COLD	cos φ	I _{dN}	η _N	f _N	kgm ²	lb ft ²	kg	lb
min ⁻¹						A	V	V/1000 min ⁻¹		A		Hz				
1200	DS100K54U12-5	3.5	4.7	27.5	20	6.7	345	276	0.96	0	0.902	60	0.01	0.24	40	88
	DS100M54U12-5	5	6.7	40	30	9.9	335	271	0.96	0	0.918	60	0.014	0.33	50	110
	DS100L54U12-5	6.5	8.7	52	38	12.5	340	277	0.96	0	0.926	60	0.018	0.43	60	132
	DS100B54U12-5	7.6	10.2	60	44	14	350	293	0.96	0	0.931	60	0.022	0.52	70	154
1700	DS100K54U17-5	4.7	6.3	26.5	20	9	345	198	0.96	0	0.919	85	0.01	0.24	40	88
	DS100M54U17-5	6.8	9.1	38	28	12.8	340	198	0.96	0	0.931	85	0.014	0.33	50	110
	DS100L54U17-5	8.6	11.5	48	35	15.5	350	208	0.96	0	0.938	85	0.018	0.43	60	132
	DS100B54U17-5	10	13.4	56	41	18	345	207	0.97	0	0.941	85	0.022	0.52	70	154
2100	DS100K54U21-5	5.5	7.4	25	18	10.4	345	162	0.96	0	0.926	105	0.01	0.24	40	88
	DS100M54U21-5	7.9	10.6	36	27	14.4	350	167	0.96	0	0.936	105	0.014	0.33	50	110
	DS100L54U21-5	9.8	13.1	44.5	33	18	345	166	0.97	0	0.94	105	0.018	0.43	60	132
	DS100B54U21-5	11.2	15.0	51	38	20.5	340	166	0.97	0	0.942	105	0.022	0.52	70	154
2600	DS100K54U26-5	6.3	8.4	23	17	11.6	350	134	0.97	0	0.927	130	0.01	0.24	40	88
	DS100M54U26-5	8.7	11.7	32	24	16	350	135	0.97	0	0.936	130	0.014	0.33	50	110
	DS100L54U26-5	10.6	14.2	39	29	19	350	138	0.97	0	0.939	130	0.018	0.43	60	132
	DS100B54U26-5	11.6	15.6	42.5	31	21	345	138	0.98	0	0.938	130	0.022	0.52	70	154
3000	DS100K54U30-5	6.6	8.9	21	15	12.7	355	113	0.97	0	0.935	150	0.01	0.24	40	88
	DS100M54U30-5	8.9	11.9	28	21	16.8	335	115	0.97	0	0.932	150	0.014	0.33	50	110
	DS100L54U30-5	10.4	13.9	33	24	19.5	335	115	0.98	0	0.932	150	0.018	0.43	60	132

Maximum standstill torque

Motor type	M _{0 max} [Nm]	M _{0 max} [lbf ft]
DS100K54U	110	81
DS100M54U	160	118
DS100L54U	215	159
DS100B54U	265	195

Legend

American units

DS 132..54U.. (IP 54 unventilated)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Voltage constant	Power factor	Magnetizing current (field weakening)	Efficiency	Nom. frequency	Inertia		Weight	
		P _N	P _N	M _N	M _N								J	J	m	m
n _N		KW	hp	Nm	lbf ft	I _N	U _N	K _E / COLD	cos φ	I _{dN}	η _N	f _N	kgm ²	lb ft ²	kg	lb
min ⁻¹						A	V	V/1000 min ⁻¹		A		Hz				
1200	DS132K54U12-5	9.7	13.0	78	58	17.5	360	297	0.96	0	0.938	60	0.045	1.1	100	220
	DS132M54U12-5	12.4	16.6	98	72	22.5	355	295	0.95	0	0.944	60	0.058	1.4	115	254
	DS132L54U12-5	15	20.1	119	88	25.5	360	319	0.99	5	0.948	60	0.071	1.7	130	287
	DS132B54U12-5	17	22.8	135	100	31	345	293	0.96	0	0.951	60	0.084	2.0	145	320
1700	DS132K54U17-5	12.7	17.0	71	52	23	355	208	0.95	0	0.947	85	0.045	1.1	100	220
	DS132M54U17-5	15.5	20.8	87	64	27	355	216	0.98	2	0.951	85	0.058	1.4	115	254
	DS132L54U17-5	18.7	25.1	105	77	32	355	221	0.99	4	0.954	85	0.071	1.7	130	287
	DS132B54U17-5	20	26.8	112	83	37	340	205	0.97	0	0.954	85	0.084	2.0	145	320
2100	DS132K54U21-5	14.2	19.0	64	47	26.5	340	163	0.96	0	0.948	105	0.045	1.1	100	220
	DS132M54U21-5	16.7	22.4	76	56	30	345	170	0.97	0	0.951	105	0.058	1.4	115	254
	DS132L54U21-5	19.6	26.3	89	66	35	345	172	0.97	0	0.952	105	0.071	1.7	130	287
2600	DS132K54U26-5	14.5	19.4	53	39	27	340	133	0.97	0	0.944	130	0.045	1.1	100	220
	DS132M54U26-5	16.2	21.7	59	44	29.5	340	137	0.98	0	0.943	130	0.058	1.4	115	254
	DS132L54U26-5	17	22.8	63	46	31	340	139	0.98	0	0.938	130	0.071	1.7	130	287
3000	DS132K54U30-5	13.2	17.7	42	31	24	340	119	0.98	0	0.933	150	0.045	1.1	100	220
	DS132M54U30-5	13.7	18.4	43.5	32	25.5	335	118	0.99	0	0.925	150	0.058	1.4	115	254

Maximum standstill torque

Motor type	M _{0 max} [Nm]	M _{0 max} [lbf ft]
DS132K54U	275	203
DS132M54U	360	266
DS132L54U	450	332
DS132B54U	535	395

Legend

American units

Bearings and shaft load

All machines are equipped with rolling-contact bearings. Normally, the non-locating bearing (ball bearing) is intended for the drive end and the locating bearing (ball bearing) for the non-drive end. For increased radial force, machines with roller bearings on the drive end are available. Please specify radial forces in your order.

Ball bearing assignment for D-end

Frame size	D-end	N-end
100	6209	6209
132	6212	6212
160	6214	6214

Ball bearing assignment for D-end

Frame size	D-end	N-end
100	NU 209 E	6209
132	NU 212 E	6212
160	NU 214 E	6214

Determination of radial forces F_R

When using pulleys, the radial load is calculated according to the following formula:

P = Nominal power in kW

$$F_R = k \frac{2 \cdot 10^7 \cdot P}{n \cdot D} \text{ [N]} \quad n = \text{Nominal speed in min}^{-1}$$

D = Disk diameter in mm

The belt tightening factor k is approximately:

k = 1.8...2.5 for V-belt

k = 2.2...3.5 for flat belt

(Observe specifications of the belt manufacturer)

For a safe transmission of the torque it is necessary to utilise the entire bearing length of the key. Otherwise, an excessive compressive load per unit area may occur at the key which may result in a motor defect.

The pulley must be mounted up to the shaft shoulder and is tightened with the following tightening torques as a maximum.

Gland	M5	M6	M8	M10	M12	M16	M20
Tightening torque	2.2 Nm	4.0 Nm	10.0 Nm	19.0 Nm	33.0 Nm	80 Nm	160 Nm

Permissible radial forces F_R at the shaft end

The ball bearings are dimensioned for a calculated service life of approx. 20,000 operating hours¹⁾. The load values specified in the following must not be exceeded.

The specified permissible radial forces F_R are valid only for horizontal mounting of the motor without additional axial forces. If additional forces occur, please consult the manufacturer.

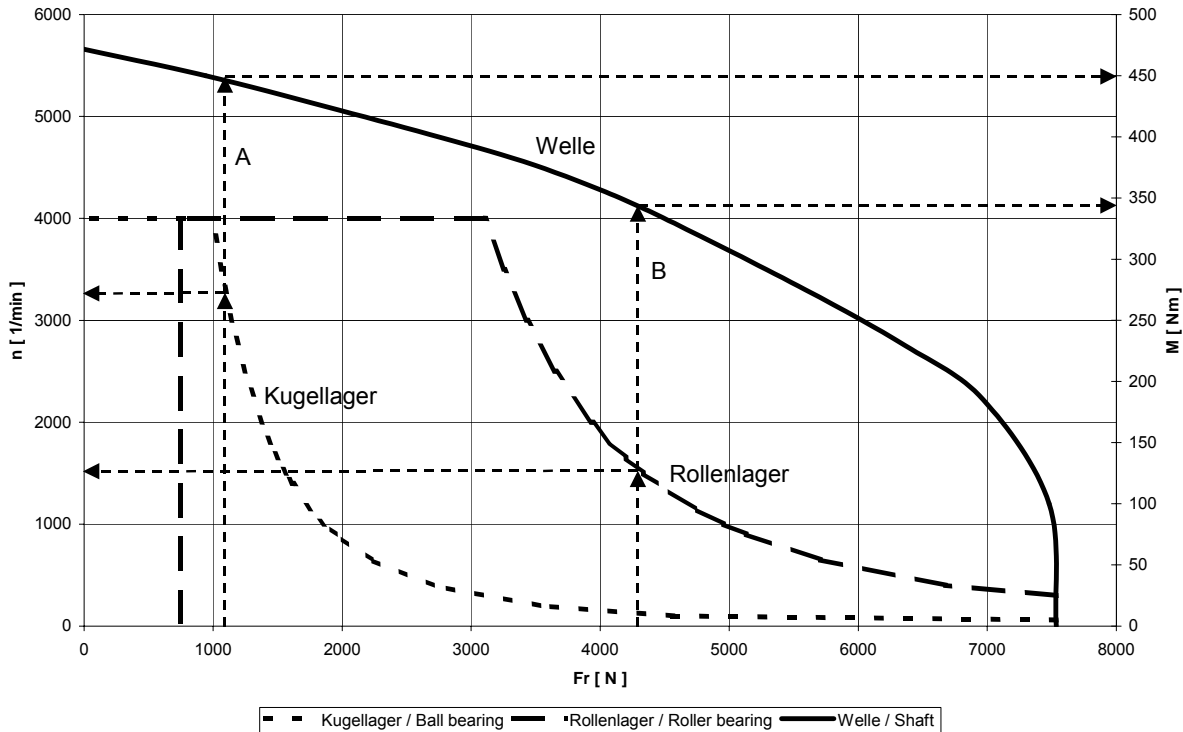
Axial load of the motor shaft

When mounting clutches, pulleys, etc. onto the motor shaft, axial forces must not occur! Therefore use the internal thread of the shaft end as assembly aid.

1) medium operating temperature < 75 °C, medium operating speed < 2000 U/min

Radial force diagrams

Example



Explanation of the example

Force acting on the end of the shaft end (for force acting on the middle of the shaft end $Fr \times 1.1$)
 Shaft end with keyway

Case A – Ball bearing:

The radial force Fr of the application is used to determine the possible maximum speed of the bearing in the “Ball bearing” characteristic.

Radial force 1100 N => maximum speed 3250 min^{-1}

The maximum transmittable torque results from the “Shaft” characteristic.

Radial force 1100 N => maximum transmittable torque 450 Nm

Case B – Roller bearing:

The radial force Fr of the application is used to determine the possible maximum speed of the bearing in the “Roller bearing” characteristic.

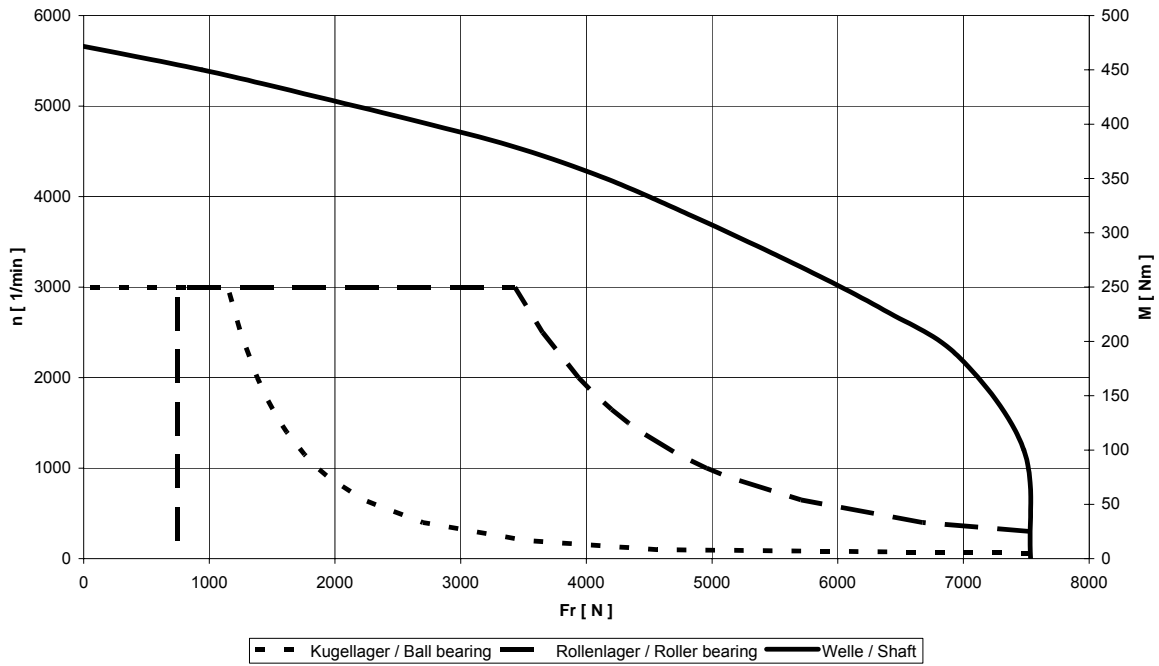
Radial force 4,300 N => maximum speed 1,500 min^{-1}

The maximum transmittable torque results from the “Shaft” characteristic.

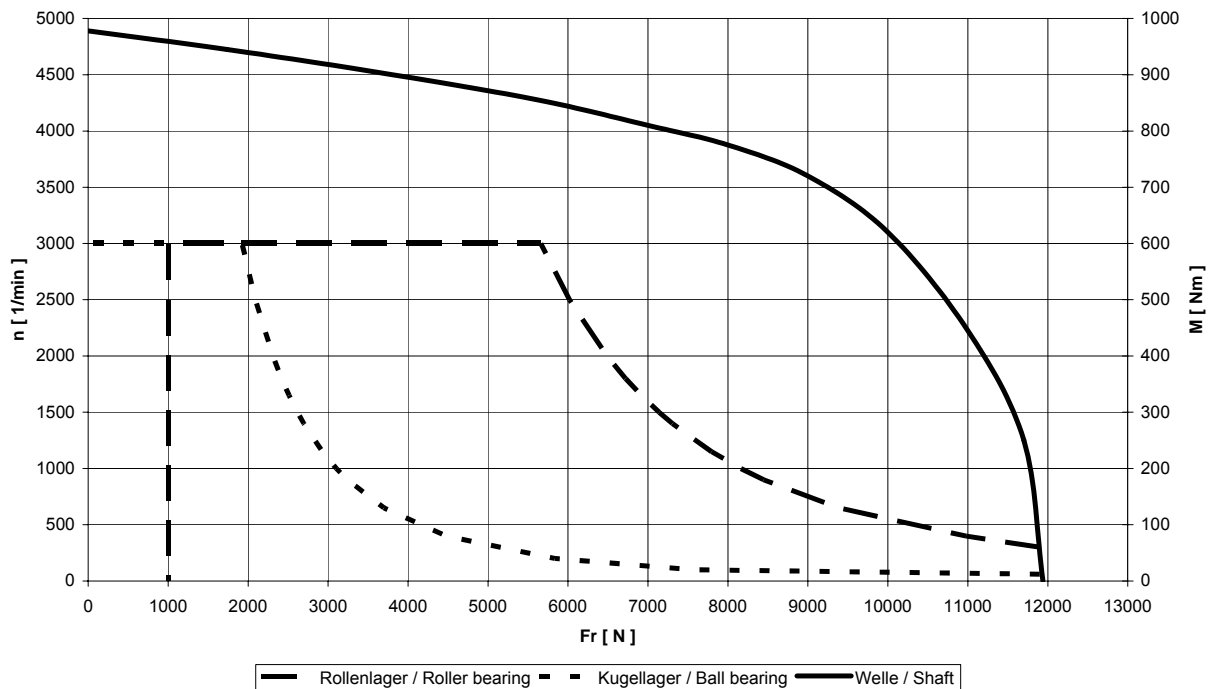
Radial force 4,300 N => maximum transmittable torque 345 Nm

The roller bearing requires a minimum radial force of 800 N to avoid bearing damage.

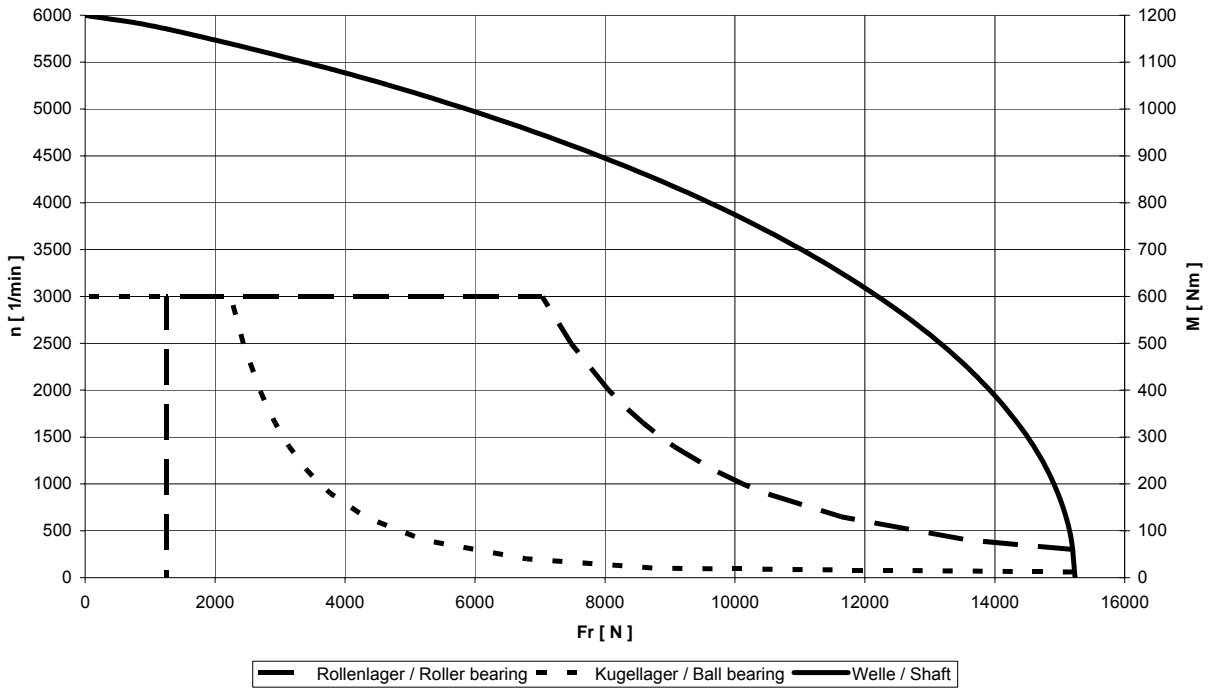
DS 100



DS 132

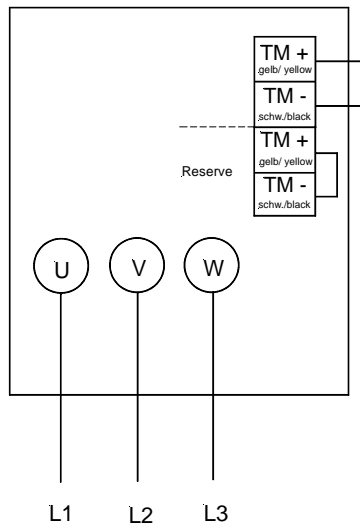


DS 160



Main connection – Terminal marking

Connection diagram



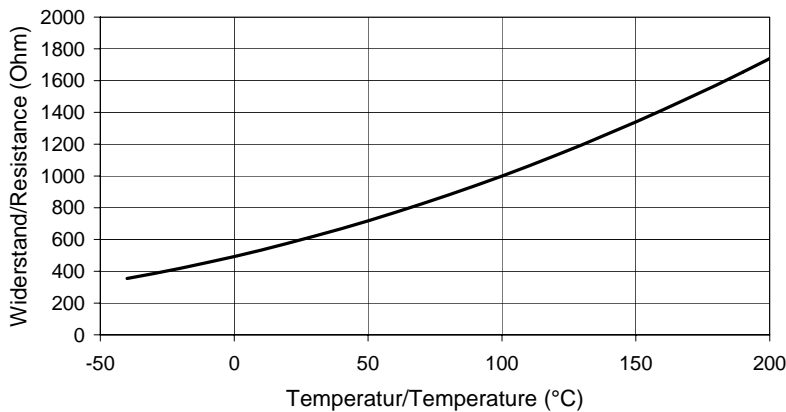
U V W ----- Power connection
 TM----- Thermal sensor

Frame size	100	132	160
Stud	8 M	10 M	12 M
Metric gland	1xM16 1xM40	3xM40 2xM25 2xM20	2xM63 2xM25

Thermal sensor

As a standard, the motors are equipped with a thermal sensor in the stator winding; the data of which are evaluated in the motor controller. Additional PTCs or thermal sensors can be fitted on request.

KTY84 - 130



The motor temperature is continuously monitored using the thermal sensor type KTY 84-130. The above shown resistance results when the sensor is supplied with a measuring current of 2 mA.

Noise intensity

The ventilated motors do not exceed the noise intensity specified in EN 60034. The values of unventilated motors are clearly lower.

Vibration severity

Vibration severity	Speed [min ⁻¹]	Frame size	
		100-132 V _{eff} [mm/s]	160
N (normal)	600 - 1800 > 1800	1.8	2.8
R* (reduced)	600 - 1800 > 1800	0.71	1.12
S* (special)	600 - 1800 > 1800	0.45	0.71

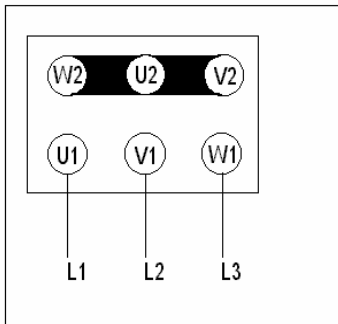
The motors can be supplied in three vibration classes according to DIN ISO 5473.

* R and S are available with ball bearings only

Fan data

Fan connection via terminal box

Connection diagram



U V W----- Power connection

Radial fan

Frame size	Fan type	Nom. current [A] with Y
100	BFB 398	0.33
132	BFB 519	0.8
160	BFB 635	1.4

The fan motors are dimensioned for Δ/Y 200-265/345-460V 50/60Hz as a standard. Nominal currents are maximum values.

Brake assignment

for motor type	Brake type	Brake torque			Input power [W]	max. perm. switching energy Wperm. per switching operation [J]			Switching power Pperm. [kJ/h] for operating brake	Disengaging time [s] Switching operation	Engaging time [ms] Indiv. braking	Inertia [kgm²] Indiv. braking	max. perm. speed [min⁻¹]	Weight [kg]
		Operating brake [M2]	Holding brake [M4]	Peak load brake [M4]		Operating brake	Holding brake	Peak load brake						
DS..100	SB 50	30	50	-	80	4500	10000	-	470	120	160	0.0005	4000	5
DS..100	SB 100	60	100	60	106	5000	18000	70000	560	180	250	0.0015	3500	9.5
DS..132	SB 200	135	200	140	170	8000	20000	90000	630	225	300	0.0040	3000	13
DS..160	On request													

For use as a holding brake the following must be observed:

Brake has a considerably increased brake torque

3 emergency stops (individual braking operations) per hour possible if evenly distributed

Switching times values are valid for switching on the AC side, in a cold state, with basic air gap and holding brake

Disengaging time – Time until the brake has completely disengaged (brake without torque)

Engaging time – Time until the brake torque is reached

M2 ... dynamic torque, M4 ... static torque

All information are valid for the installation on a horizontal shaft

The supplier must be contacted before vertical installation.

Requirements other than those indicated on request.

Braking time / switching energy / switching capacity

It is useful to check that the brake is suited for its application. To do this, the brake energy and braking power must be determined.

Determination of the braking time [t_B]

$$t_B = \frac{\sum J \cdot \Delta n}{9,55 \cdot (M_B \pm M_L)} + t_0 \quad \text{in s}$$

$\sum J$ Total moment of inertia in kgm² = J_{mot} + J_{add} (referred to motor shaft)

J_{mot} Motor moment of inertia in kgm²

J_{add} Additional moment of inertia in kgm² (referred to motor shaft)

Δn Motor speed in min⁻¹

M_B Brake torque in Nm

M_L Load torque in Nm (positively calculated if it decelerates, negatively calculated if it accelerates)

t₀ Time in s from the switching instant to the full extent of the braking torque (response time)

i Number of cycles per hour

Determining the switching energy [W_R]

$$W_R = \frac{\sum J \cdot \Delta n^2}{182.4} \cdot \frac{M_B}{(M_B \pm M_L)} \quad \text{in Joule}$$

Determining the switching capacity [P_R]

$$P_R = \frac{W_R \cdot i}{1000} \quad \text{in } \frac{\text{kJ}}{\text{h}}$$

W_{Rperm} ≤ value from table

P_{Rperm} ≤ Value from table

In most cases, t₀ is negligible. If this is not the case and the time t₀ must be reduced, you can achieve this by interrupting the magnet circuit on the DC side. However, this measure must be known before dimensioning the brake motor.

Brake supply

Normal voltage: 24; 96 - 120; 176V- (other voltages on request), 24 V: Supply with transformer and rectifier, 96 – 120 and 176 V:

Supply using brake supply unit

The brakes can alternatively be equipped with microswitch or mechanical ventilation.

Switching capacity of microswitches

Ohmic load up to 30 V DC - 5 A or 250 V AC - 5 A; inductive load up to 30 V DC -3 A or 250 V AC -2 A

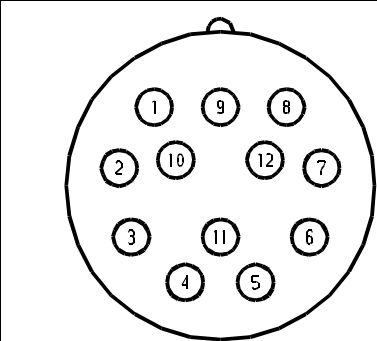
The contact ratings apply to silver contacts.

Encoder

Resolver

Pole pair number	1
Ratio	0,5
Frequency	5 kHz
Nominal input voltage	4V
Active input power for no-load operation	112 mW
Current consumption for no-load operation	40mA
Max. output voltage for no-load operation	2 V eff
Voltage constant	
Rotor resistance	$44 \Omega \pm 10\%$
Stator resistance	$28 \Omega \pm 10\%$
Rotor impedance for no-load operation	$70 + j 74 \Omega \pm 15\%$
Rotor impedance at short-circuit	$62 + j 66 \Omega \pm 15\%$
Stator impedance for no-load operation with min. coupling	$108 + j 206 \Omega \pm 15\%$
Stator impedance at short-circuit and maximum coupling	$97 + j 183 \Omega \pm 15\%$
Phase shift	8°
Zero voltage	15 mV
Phase error referred to zero position	$10'$

Resolver connection

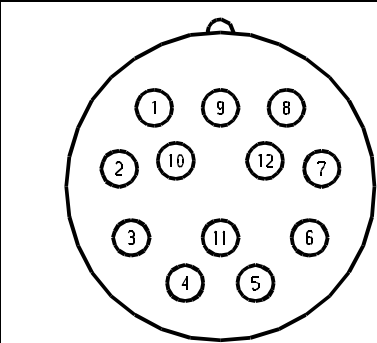
	Pin	Signal
	1	cos -
	2	
	3	
	4	
	5	sin -
	6	sin +
	7	
	8	cos +
	9	
	10	Ref +
	11	
	12	Ref -

View to contact side of female connector

SINCOS SRS/SRM 50 (Stegmann)

	SRS 50 / SRM 50
Number of sine, cosine periods per revolution	1024
Number of increments per revolution	32768
Number of absolute resolved revolutions	1 4096
Code type for the absolute value	Binary
Output frequency of sine, cosine signals (kHz)	0 ... 200
Error limits when evaluating 1024 signals, integral non-linearity (arc seconds)	+/- 45
Non-linearity within a sine, cosine period; differential non-linearity (arc seconds)	+/- 7
Working speed up to which the absolute position can be formed (1/min)	6000
Maximum operating speed (1/min)	12000
Output signals; 2 x 90° shifted sinusoidal signals (V _{pp})	1
Output signal	serial RS 485, asynchronous, halfduplex
Operating voltage range (V)	7 ... 12
Operating current without load (mA)	80

SRS/SRM 50 connection

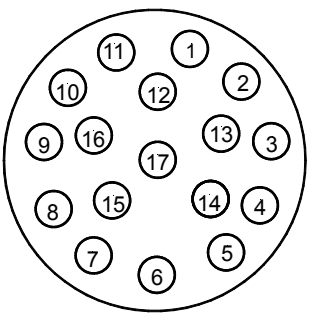
	Pin	Signal
	1	ref cos
	2	+ 485
	3	
	4	
	5	sin
	6	ref sin
	7	- 485
	8	cos
	9	Screening
	10	Gnd
	11	
	12	+ U

View to contact side of female connector

ECN 1313 EQN 1325 (Heidenhain)

		ECN 1313 / EQN 1325	
Number of sine, cosine periods per revolution	2048		
System accuracy in arc seconds	± 20		
Number of absolute resolved revolutions	1	4096 (12 bit)	
Code type for the absolute value	EnDat		
Sampling limit frequency or limit frequency (kHz)	0 ... 200		
Position values / revolution	8192 (13 bit)		
Working speed up to which the absolute position can be formed (1/min)	12.000		
Maximum operating speed (1/min)	12000		
Voltage supply (V)	5 V 5%		
Current consumption without load (mA)	≤ 150	≤ 250	

ECN 1313 EQN 1325 connection

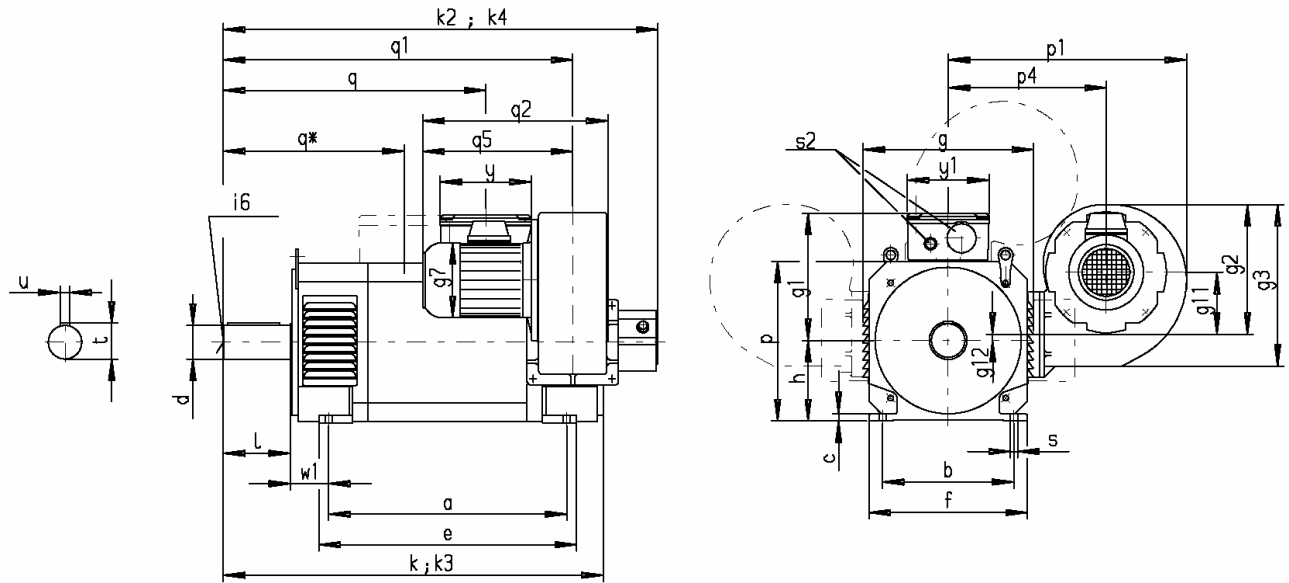
	Pin	Signal
	1	U _p
	2	
	3	
	4	0V
	5	
	6	
	7	U _p
	8	Clock
	9	Clock inv.
	10	0V
	11	
	12	B+
	13	B-
	14	Data
	15	A+
	16	A-
	17	Data inv.

We recommend not to use optical encoders for motors with a vibration resistance of more than 3 g.

Three-phase synchronous motors DS 100 - 160

Dimension drawings

DS 100 / 132 / 160 IP 23 internally ventilated



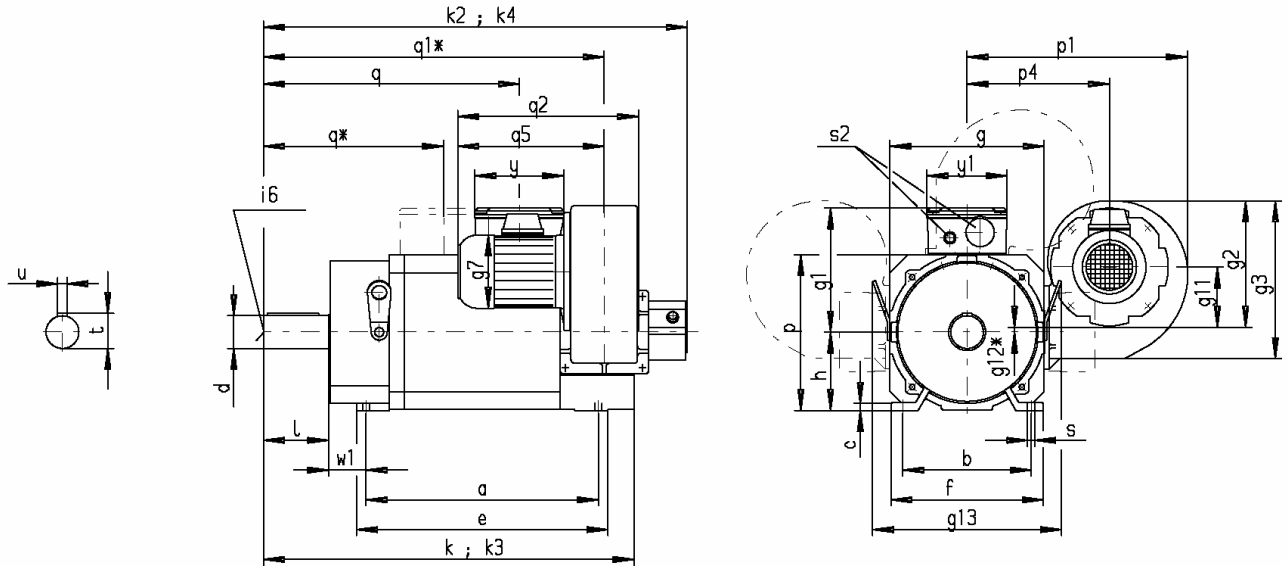
- k = without brake
- k2 = with encoder
- k3 = with brake
- k4 = with encoder and brake
- i6 = Centring with internal thread acc. to DIN 332 form D

Type	Shaft					Motor		
	d	l	t	u	i ₆	y	y ₁	S ₂
100	42	110	45	12	M16	150	135	1M40
								1M16
132	55	110	59	16	M20	235	235	3M40
								2M25
								2M20
160	60	140	64	18	M20	252	252	2M63
								2M25

Type	Foot							Motor																			
	a	b	c	e	f	s	w ₁	g	g ₁	g ₂	g ₃	g ₇	g ₁₁	g ₁₂	h	k	k ₂	k ₃	k ₄	p	p ₁	p ₄	q*	q	q ₁	q ₂	q ₅
100 K	273	160	10	330	200	12	50	220	190	172	220	108	78	10	100	480	600	578	698	210	320	215	283	310	451	230	181
100 M	323			380												530	650	628	748					360	501		
100 L	373			430												580	700	678	798					410	551		
100 B	423			480												630	750	728	848					460	601		
132 K	365	216	12	423	264	12	63	285	285	213	265	125	102	15	132	595	715	703	823	270	395	264	338	373	550	311	250
132 M	415			473												645	765	753	873					423	600		
132 L	465			523												695	815	803	923					473	650		
132 B	515			573												745	865	853	973					523	700		
160 K	464	254	12	508	312	14	70	340	276	237	295	145	114	19	160	738	858	888	1008	324	450	297	380	504	667	339	280
160 M	514			558												788	908	938	1058					554	717		
160 L	564			608												838	958	988	1108					604	767		
160 B	614			658												888	1008	1038	1158					654	817		

Version IM B3	Type of protection IP 23	Cooling method IC 06	
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DS 100 / 132 IP 54 surface-cooled



- k = without brake
- k2 = with encoder
- k3 = with brake
- k4 = with encoder and brake
- i6 = Centring with internal thread acc. to DIN 332 form D

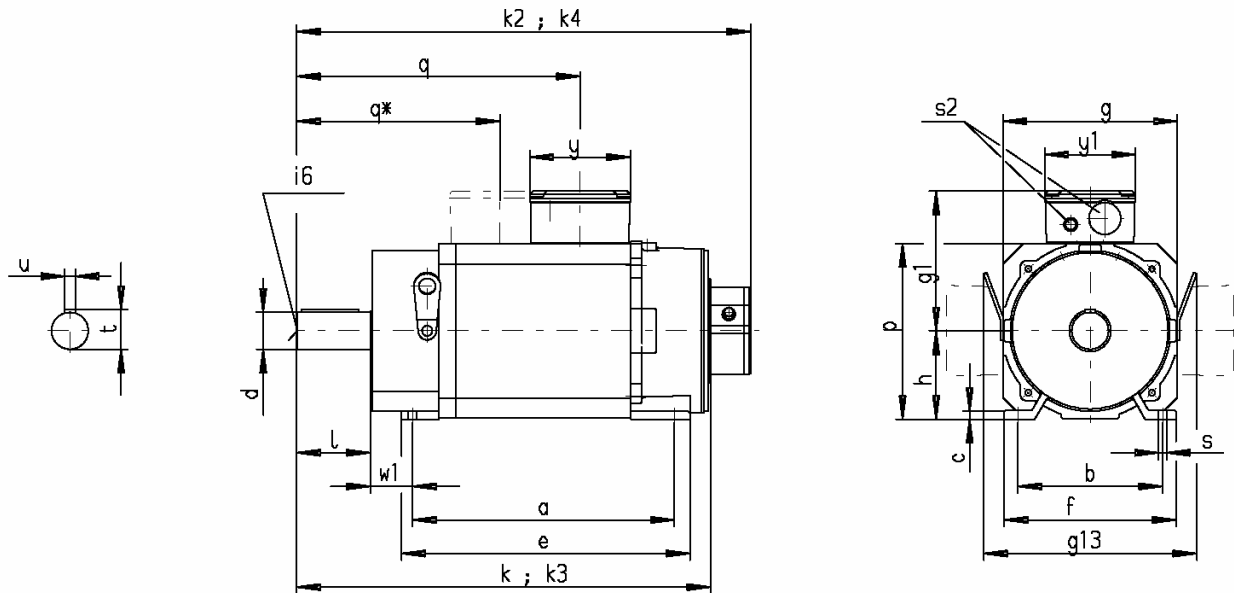
Type	Shaft					Motor		
	d	l	t	u	i ₆	y	y ₁	S ₂
100	42	110	45	12	M16	150	135	1M40 1M16
132	55	110	59	16	M20	235	235	3M40 2M25 2M20

Type	Foot							Motor																				
	a	b	c	e	f	s	w ₁	g	g ₁	g ₂	g ₃	g ₇	g ₁₁	g ₁₂ *	g ₁₃	h	k	k ₂	k ₃	k ₄	p	p ₁	p ₄	q*	q	q ₁ *	q ₂	q ₅
100 K	273	160	10	330	200	12	50	220	190	172	220	108	78	8	260	100	480	600	578	698	210	320	215	283	310	451	230	181
100 M	323			380													530	650	628	748					360	501		
100 L	373			430													580	700	678	798					410	551		
100 B	423			480													630	750	728	848					460	601		
132 K	365	216	12	423	264	12	63	285	276	213	265	125	102	10	324	132	595	715	703	823	270	395	264	338	373	557	311	250
132 M	415			473													645	765	753	873					423	607		
132 L	465			523													695	815	803	923					473	657		
132 B	515			573													745	865	853	973					523	707		

Version IM B3	Type of protection IP 54	Cooling method IC 06	
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Three-phase synchronous motors DS 100 - 160

DS 100 / 132 IP 54 self-cooled



- k = without brake
- k2 = with encoder
- k3 = with brake
- k4 = with encoder and brake
- i6 = Centring with internal thread acc. to DIN 332 form D

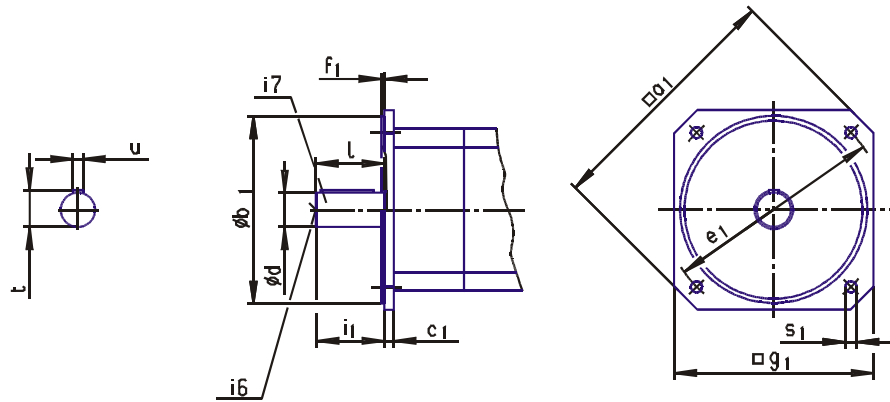
Type	Shaft					Motor				
	d	l	t	u	i ₆	y	y ₁	S ₂		
100	42	110	45	12	M16	150	135	1M40		
								1M16		
132	55	110	59	16	M20	235	235	3M40		
								2M25		
								2M20		

Type	Foot							Motor														
	a	b	c	e	f	s	w ₁	g	g ₁	g ₁₃	h	k	k ₂	k ₃	k ₄	p	q*	q	y	y ₁	S ₂	
100K	273	160	10	330	200	12	50	220	190	260	100	480	600	578	698	210	283	310	150	135	1M40	
100M	323			380								530	650	628	748			360			1M16	
100L	373			430								580	700	678	798			410				
100B	423			480								630	750	728	848			460				
132 K	365	216	12	423	264	12	63	285	285	324	132	595	715	703	823	270	338	373	235	235	3M40	
132 M	415			473								645	765	753	873			423			2M25	
132 L	465			523								695	815	803	923			473			2M20	
132 B	515			573								745	865	853	973			523				

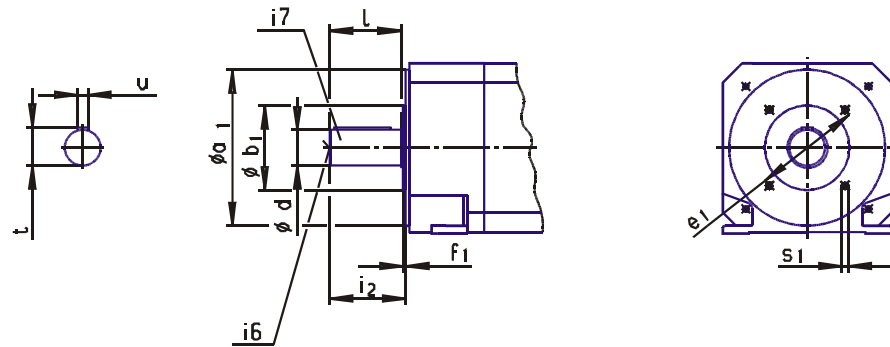
Version IM B3	Type of protection IP 54	Cooling method IC 00		
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Flange dimensions of frame size 100 / 132 / 160

Version IM B 5



Version IM B 14



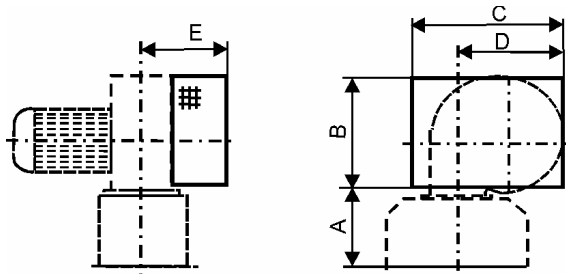
$i6$ = Centring with internal thread acc. to DIN 332 form D
 $i7$ = Tolerances of shaft ends acc. to DIN 748 T3

Type	Shaft				Flange B5							Flange B 14							
	d	l	t	u	a ₁	b ₁	c ₁	e ₁	f ₁	g ₁	i ₁	s ₁	a ₁	b ₁	e ₁	f ₁	i ₂		s ₁
100 K 100 M 100 L 100 B	42	110	45	12	300	230	12	265	4	240	110	14	177	110	130	2	115	M8	IM B35 only IP54 in B5 only
132 K 132 M 132 L 132 B	55	110	59	16	400	300	16	350	5	312	110	18	239	130	165	2	115	M10	IM B35 only IM B5; IM B35
160 K 160 M 160 L 160 B	60	140	64	18	400	300	20	350	5	316	140	18							IM B35 only

Version IM B5, B35, B14	30893015b
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Filters frame size 100 / 1332 / 160

Rectangular filter



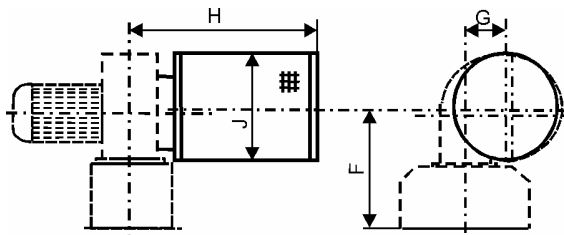
Filter towards N-end

View to D-end

Dimension when fan at the top in [mm]

Motor frame size	Fan type	A	B	C	D	E
100	BFB 398	124	176	246	162	145
132	BFB 519	175	206	306	213	163
160	BFB 635	215	546	336	545	189

Round filter



Filter towards N-end
end

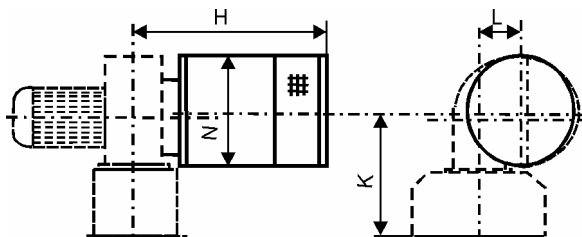
View to D-

With frame size 100 filter towards non-drive end
With frame size 132 - 160 filter towards drive end

Dimension when fan at the top in [mm]

Motor frame size	Fan type	F	G	H	J
100	BFB 398	218	78	311	174
132	BFB 519	265	92	298	205
160	BFB 635	310	100	458	213

Silencer



Filter towards N-end

View to D-end

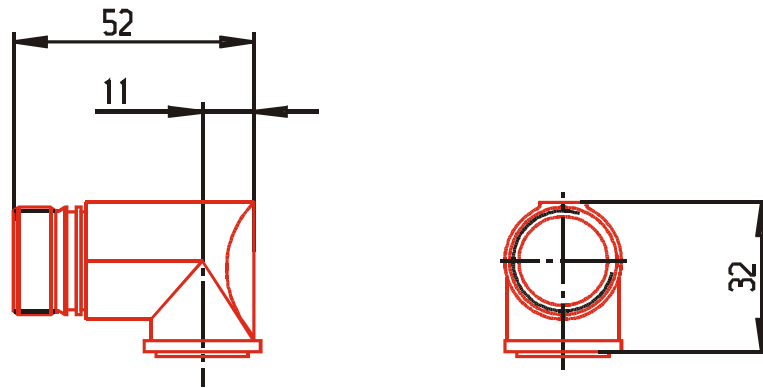
Dimension when fan at the top in [mm]

Motor frame size	Fan type	K	L	M	N
160	BFB 635	310	92	450	256

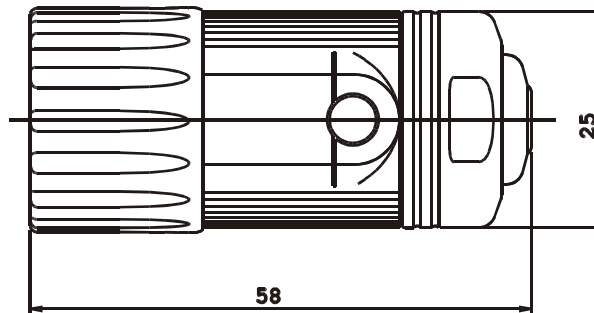
When silencer on the non-drive end, it must be supported by the customer.

Encoder male and female connectors

Female connector



Male connector



Motor cables

General

The motor cables are highly flexible trailing cables with overall shielding. They comply with the regulations VDE, UL and CSA. The brake is controlled via the brake connection (terminal box, brake), the thermal sensor is connected via the main connection. The cables are particularly suitable for the optimum use of cable racks thanks to their low cross-section, low weight and non-impeding surface. They can thus be efficiently used in trailing chains. The overall shielding with an optical coverage of more than 85% makes it an EMC uncritical cable.

Technical description

- Sheath resistance against media such as coolants, machine and gearbox oils
- Abrasion resistance because of a special surface in cable racks and trailing chains
- High-flexible, trailing cable
- Sheath surface not blocking, satin-finish
- Shield made of tinned copper braid with optical coverage of $\geq 85\%$
- Core insulation made of TPE or polyester, sheath material PUR halogene-free
- Cable FCF-free and silicone-free
- Behavior in case of fire: fire-inhibiting, halogene-free
- Cable color in RAL 1028, melon yellow
- Labelling with Baumüller sign, VDE, UL and CSA sign
- Minimum bending radius for flexible use $12 \times D$

Nominal voltage

U_o/U 600 / 1000 V (power cores)
 U 24 V DC (control cores)

Core lettering

Power cores U, VV, WWW
 Colored control cable pairs as star-quads in red, white, black, yellow
 Assignment of pairs red – black (brake),
 white – yellow (temperature)

Cable data

Cable cross-section	Nominal current [A] ¹⁾	Cable diameter [mm]
4×1.5 mm ² 4×0.75 mm ²	15	11.7 – 12.3
4×2.5 mm ² 4×0.75 mm ²	21	12.7 – 14.6
4×4 mm ² 4×0.75 mm ²	28	14.2 – 15.4
4×6 mm ² 4×0.75 mm ²	36	16.6 – 17.9
4×10 mm ² 4×0.75 mm ²	50	20.5 – 21.5
4×16 mm ² 4×0.75 mm ²	66	24.0 – 25.8
4×25 mm ² 2×(2×1.5 mm ²)	84	26.3 – 29.7
4×35 mm ² 2×(2×1.5 mm ²)	104	30.8 – 32.5

1) Current carrying capacity acc. to table 5 laying type C or E
 (VDE 0113 / EN 60 204 Part 1 issue 1997)
 Ambient temperature 40°C

Cables of 1.5 / 2.5 mm² can be laid up to 100 m without additional filters, when larger cross-sections used, cable lengths up to 40 m are permissible. The terminal voltage at the motor must be < 1kV, however. If the terminal voltages exceed 1 kV, filters must be installed between converter and motor.

Application notes

Operating temperature

The cables can be operated within a temperature range from -20°C to $+80^{\circ}\text{C}$.

Cable laying at the motor

The cables must not touch the motor surface.

Smallest permissible bending radii

12 times outer cable diameter.

Smaller bending radii are possible with reduced service life.

Encoder cables

General

A fully preassembled encoder cable is used for all encoder systems. Motor connection is via a 12-pin round signal connector and converter connection via a 15-pin sub-D plug. The encoder cables are available as 'trailing' and 'non-trailing' cables.

The trailing cable is suitable for use in trailing chains, for example. As opposed to the 'non-trailing' cable, the cable sheath consists of tougher PUR for use in environments with acids and bases (coolants) instead of PVC.

Up to a length of 10 m, the cables are available in 1 m sections (1 m, 2 m, 10 m). From a cable length of 10 m, the sections come in 5 m intervals (10 m, 15 m, ...).

In the case of servo motors, the resolver encoder system links the temperature sensor with the converter via the encoder cable.

Technical data

1. Technical description – non-trailing

- LiYCY, 5x (2x0.14mm²) + 2 x 0.5mm² copper lead, twisted pair
- PVC sheath, grey
- 1st end: 12-pin signal circular connector with 12 female contacts
- 2nd end: 15-pin D-Sub connector with male contacts and locking screws 4-4OUNC
- Baumüller labelling, black
- Outer diameter 9.0 mm (+/-3mm)
- Bending radius: $r \geq 60$ mm (fixed installation), $r \geq 135$ mm (flexible use)
- Nominal voltage: 250V_{AC}

2. Technical description – trailing

- Li12YC11Y, 5x (2x0.14mm²) + 2 x 0.5mm² copper lead, twisted pair
- PU sheath, black
- 1st end: 12-pin signal circular connector with 12 female contacts
- 2nd end: 15-pin D-Sub connector with male contacts and locking screws 4-4OUNC
- Baumüller labelling, white
- Outer diameter 9.0 mm (+/-3mm)
- Bending radius: $r \geq 70$ mm (fixed installation), $r \geq 100$ mm (flexible use)
- Nominal voltage: 300V_{AC}

Application notes

- Operating temperature

	trailing	non-trailing
Limit temperature	at the surface	at the surface
no / few movements	-40 °C to +80 °C	- 30 °C to +80 °C
continuous movements	- 30 °C to +80 °C	-5 °C to + 70 °C

- Cable laying at the motor

The cables must not touch the motor surface.

Ordering data

Encoder cables / preassembled cables with connector

Encoder cable

non-trailing, preassembled

Cable 5 x (2x014mm²) + 2 x 0.5 mm²

with connector

Length in m	Article number
1	243601
2	211338
3	219333
4	541166
5	209879
6	220197
7	216455
8	220429
10	210052
15	215716
20	218568
25	218569
30	217094
35	216444
40	217095
45	217567
50	217568
55	217569
60	217570
70	542088

Encoder cable

trailing, preassembled

Cable 5 x (2x014mm²) + 2 x 0.5 mm²

with connector

Length in m	Article number
3	246658
4	243379
5	549540
6	242954
8	549541
10	549542
15	549543
20	549544
25	549545
30	549546
35	549547
40	240520
45	240521
50	240522
55	244033
60	245484

Encoder connector

Encoder connector	Article number
Encoder connector	201833

Commissioning and maintenance instructions

Please contact us for our commissioning and maintenance instructions for motor commissioning.

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