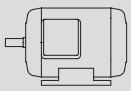
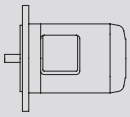
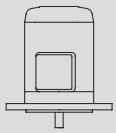
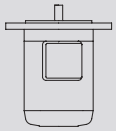
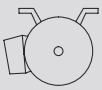
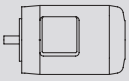
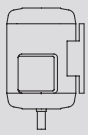
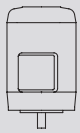
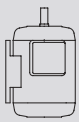
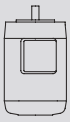
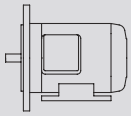
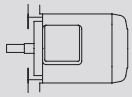
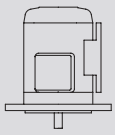
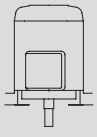
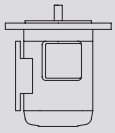
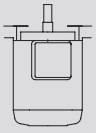
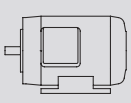
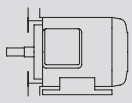
Mechanical design

Type of protection

As standard all motors are delivered in IP 54. They are however also available with a higher protection.

Mounting positions

Design	Symbol	Explanation	Design	Symbol	Explanation
B 3 IM B 3 IM 1001		2 end shields, housing with feet, free shaft end, mounted on a base	B 5 IM B 5 IM 3001		2 end shields, housing without feet, free shaft end, mounting flange type A according to DIN 42 948 close to bearing at the input side, flange mounting
B 6 IM B 6 IM 1051		2 end shields, housing with feet, free shaft end, if necessary end shields turned by 90 °, wall mounted, feet on the left seen from input side	V 1 IM V 1 IM 3011		2 end shields, housing without feet, bottom shaft end free, mounting flange type A according to DIN 42 948 close to bearing at the input side, flange mounting at bottom
B 7 IM B 7 IM 1061		2 end shields, housing with feet, free shaft end, if necessary end shields turned by 90 °, wall mounted, feet on the right seen from input side	V 3 IM V 3 IM 3031		2 end shields, housing without feet, top shaft end free, mounting flange type A according to DIN 42 948 close to bearing at the input side, flange mounting at top
B 8 IM B 8 IM 1071		2 end shields, housing with feet, free shaft end, if necessary end shields turned by 180 °, ceiling mounted	B 14 IM B 14 IM 3601		2 end shields, housing without feet, free shaft end, mounting flange type C according to DIN 42 948 close to bearing at the input side, flange mounting
V 5 IM V 5 IM 1011		2 end shields, housing with feet, bottom shaft end free, wall mounted	V 18 IM V 18 IM 3611		2 end shields, housing without feet, bottom shaft end free, mounting flange type C according to DIN 42 948 close to bearing at the input side, flange mounting
V 6 IM V 6 IM 1031		2 end shields, housing with feet, top shaft end free, wall mounted	V 19 IM V 19 IM 3631		2 end shields, housing without feet, top shaft end free, mounting flange type C according to DIN 42 948 close to bearing at the input side, flange mounting
B 3 / B 5 IM B 35 IM 2001		2 end shields, housing with feet, free shaft end, mounting flange type A according to DIN 42 948 close to bearing at the input side, wall mounted	B 9 IM B 9 IM 9101		1 end shield, housing without feet, free shaft end, without end shield (and without roller bearing) at input side, mounting to the front of the input side
V 1 / V 5 IM V 15 IM 2011		2 end shields, housing with feet, bottom shaft end free, mounting flange type A according to DIN 42 948 close to bearing at the input side, wall mounted	V 8 IM V 8 IM 9111		1 end shield, housing without feet, bottom shaft end free, without end shield (and without roller bearing) at input side, mounting to the front of the input side
V 3 / V 6 IM V 36 IM 2031		2 end shields, housing with feet, top shaft end free, mounting flange type A according to DIN 42 948 close to bearing at the input side, wall mounted	V 9 IM V 9 IM 9131		1 end shield, housing without feet, top shaft end free, without end shield (and without roller bearing) at input side, mounting to the front of the input side
B 3 / B 14 IM B 34 IM 3601		2 end shields, housing with feet, free shaft end, mounting flange type C according to DIN 42 948 close to bearing at the input side, mounted on a base for flange use	B 15 IM B 15 IM 1201		1 end shield, housing without feet, free shaft end, without end shield (and without roller bearing) at input side, mounting to the front of the input side

Mechanical design

Fits

The shaft ends and the diameters of the centering shoulder listed in the table below comply with the following fits. Bores in couplings and pulleys must have at least one fit according to ISO-H7.

Fits	
Size	ISO fits according to DIN 748, DIN 7160, DIN 7161, DIN 42948 and DIN 42946
d up to 50 mm Ø	k 6
b1 up to 230 mm Ø	j 6

Tolerances

The following tolerances apply to the sizes a, b, e1 and h indicated in the table.
Keyways and keys (t and u) correspond to DIN 6885.

Tolerances		
Size	Dimensions	Tolerance
a and b	≤ 250 mm	± 0.75 mm
e_1	≤ 200 mm 200 mm - 500 mm	± 0.25 mm ± 0.5 mm
h	≤ 250 mm	- 0.5 mm

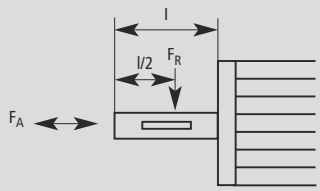
Shaft ends

Center holes 60° according to DIN 332. Threads for press on and pull off device.

Shaft ends	
Shaft diameter (mm)	Thread (mm)
≤ 16	M 5
≤ 21	M 6
≤ 24	M 8
≤ 30	M 10
≤ 38	M 12

Maximum axial load

If the maximum radial load Fr is applied, an axial load of Fa=0.3 x Fr is permissible.



Mechanical design

Permissible radial load

Frame size	Type	Number of poles	Permissible radial load F_r [N]	Distance l/2 [mm]
56	5z2 5y4	2 4	260 320	10 10
63	6KB2 6A4	2 4	380 480	11,5 11,5
71	7D2 7KC4	2 4	380 480	15 15
80	8G2 8F4	2 4	620 780	20 20
90	9LI2 9LH4	2 4	660 850	25 25
100 RL	10RLK2 10RLK4	2 4	890 1140	30 30
112	11MN2S 11ML4	2 4	950 1140	30 30
132	– 13MN4	2 4	1420 1760	40 40

Balancing

The rotors are dynamically balanced with half key at the shaft end. The standard motor design comply with the vibration severity level N to ISO 2373.

Optionally HANNING industrial motors are also available in vibration severity level R.

Technical data
3-phase industrial motors

Three-phase AC motors at 400 V, 50 Hz

Rated power	Frame size	Type	Weight	Rated speed	Rated current	cos φ	Efficiency η load		Efficiency class	Rated torque	Rel. starting torque	Rel. stalling torque	Rel. starting current	Moment of inertia
[kW]			[kg]	[1/min]	[A]		100%	75%	EFF	[Nm]	M_A/M_N	M_K/M_N	I_A/I_N	J [kgm²]
3000 rpm in no-load operation														
0.09	56	5y2	3.4	2750	0.3	0.82	56.1	55.5	–	0.32	2.30	–	3.10	0.00013
0.12	56	5z2	3.6	2790	0.4	0.84	57.7	57.1	–	0.42	3.19	–	3.90	0.00019
0.18	63/63K*	6A2/6KA2	4.1/3.9	2860	0.63	0.77	65.7	62.4	–	0.60	2.67	3.23	4.10	0.00035
0.25	63/63K*	6B2/6KB2	4.2/4.0	2840	0.90	0.77	68.2	65.5	–	0.84	2.75	2.61	4.00	0.00035
0.37	71K**	7KC2	6.2	2840	1.0	0.84	71.0	69.0	–	1.25	2.86	2.98	5.70	0.00040
0.55	71	7D2	6.5	2840	1.5	0.82	74.1	70.0	–	1.86	2.72	2.68	6.00	0.00050
0.75	80	8F2	9.2	2850	1.9	0.89	75.2	73.3	–	2.50	3.45	3.09	6.25	0.00060
1.1	80	8G2	9.6	2810	2.8	0.82	78.8	77.6	2	3.70	3.77	3.47	6.60	0.00079
1.5	90S	9SH2	14.0	2840	3.2	0.85	82.2	83.4	2	5.06	2.33	2.67	5.94	0.00157
2.2	90L	9LI2	17.2	2840	4.8	0.86	81.0	82.6	2	7.36	2.83	3.00	6.90	0.00217
3.0	100RL	10RLK2	20.1	2850	6.2	0.88	84.4	83.3	2	10.00	3.05	3.28	7.50	0.00291
4.0	112M	11ML2	31.0	2910	8.7	0.90	85.1	86.0	2	13.30	2.60	3.67	8.20	0.00765
5.5	112[1)]	11MM2S	31.8	2890	12.2	0.83	86.0	86.3	2	18.12	2.35	2.96	7.70	0.00765
7.5	112[1)]	11MN2S	40.8	2880	15.5	0.88	87.3	87.7	2	24.70	2.14	2.64	6.60	0.01072
1500 rpm in no-load operation														
0.06	56	5v4	3.4	1300	0.30	0.66	44.0	39.8	–	0.44	2.50	–	2.20	0.00019
0.09	56	5y4	3.6	1360	0.45	0.60	53.2	51.5	–	0.63	2.70	2.40	2.40	0.00019
0.12	63/63K*	6z4/6Kz4	4.5/4.3	1380	0.52	0.65	54.3	52.0	–	0.82	2.60	2.60	2.93	0.00035
0.18	63	6A4	5.0	1380	0.75	0.61	56.5	54.7	–	1.30	3.20	3.00	3.53	0.00049
0.25	71 K**	7B4/7KB4	5.8	1400	0.82	0.70	64.8	62.1	–	1.72	2.66	2.54	3.90	0.00074
0.37	71	7C4/7KC4	6.4	1390	1.20	0.70	72.0	69.5	–	2.54	3.20	3.00	3.90	0.00092
0.55	80	8D4	7.3	1400	1.60	0.72	73.1	71.2	–	3.75	2.54	2.73	4.31	0.00110
0.75	80	8F4	8.3	1380	2.00	0.76	76.6	75.4	–	5.14	2.59	2.75	4.74	0.00147
1.1	90S	9SG4	13.2	1410	2.60	0.80	79.8	81.3	2	7.45	2.24	2.48	5.10	0.00260
1.5	90L	9LH4	15.7	1420	3.50	0.80	82.5	82.8	2	10.05	2.90	3.08	6.00	0.00360
2.2	100RL	10RLI4	20.3	1400	5.60	0.78	83.0	84.9	2	15.00	3.10	3.60	6.20	0.00479
3.0	100RL	10RLK4	23.9	1400	7.30	0.81	83.0	84.3	2	20.20	3.10	3.20	6.20	0.00599
4.0	112M	11ML4	34.5	1430	8.50	0.85	86.4	86.9	2	26.50	2.70	3.20	7.40	0.01905
5.5	132S	13SM4	52.0	1460	11.50	0.83	86.7	87.1	2	35.90	3.00	3.50	8.80	0.04060
7.5	132M	13MN4	63.0	1450	15.30	0.84	87.0	87.5	2	50.00	2.70	3.40	7.70	0.05413
1000 rpm in no-load operation														
0.12	71K**	7Kz6	5.0	900	0.50	0.70	52.1		–	1.30	2.00	2.14	2.50	0.00055
0.18	71K**	7KA6	6.2	870	0.75	0.71	63.9		–	1.89	2.16	2.40	3.10	0.00074
0.25	71	7B6	6.4	920	1.00	0.63	66.3			2.60	2.18	2.45	3.22	0.00092
0.37	80	8C6	9.3	900	1.40	0.67	66.2		–	4.00	2.00	2.20	3.10	0.00110
0.55	80	8D6	10.2	900	1.90	0.68	65.9		–	5.90	2.30	2.40	3.20	0.00147
0.75	90S	9SF6	14.0	930	2.50	0.71	69.1		–	7.70	2.30	2.65	4.70	0.00468
1.10	90L	9LG6	17.0	915	3.20	0.79	72.3		–	11.50	2.10	2.60	4.90	0.00623
1.50	100RL	10RLH6	21.6	920	4.10	0.77	76.1		–	15.60	2.50	2.50	4.50	0.00810
2.20	112M	11MI6	36.0	950	5.20	0.78	79.6		–	22.20	2.40	3.10	6.00	0.01904
3.00	132S	13SK6	41.0	930	7.50	0.78	80.2		–	31.00	2.20	2.60	4.70	0.02975
4.00	132M	13ML6	53.0	955	9.30	0.81	80.8		–	40.00	1.80	2.60	5.60	0.04060
5.50	132M	13MM6	65.0	955	13.50	0.74	85.0		–	55.00	2.20	2.40	6.20	0.05413

1) Frame size not according to IEC standard

* Frame size 63 K = mounting dimensions as frame size 63, total length shorter (k) with flange motors only

** Frame size 71 K = mounting dimensions as frame size 71, total length shorter (k)

Technical data
3-phase industrial motors, pole changing

Three-phase AC motors at 400 V, 50 Hz

Rated power [kW]	Frame size	Type	Weight [kg]	Rated speed [1/min]	Rated current [A]	Rel. starting torque M_A/M_N	Rel. starting current I_A/I_N	Moment of inertia J [kgm²]
1000/1500 rpm in no-load operation, two separate windings								
0.12/0.18	71 K**	7Kz6-4	6.50	945/1430	0.55/0.70	2.00/2.00	2.80/3.10	0.00079
0.20/0.30	71	7A6-4	7.80	930/1430	1.00/1.25	2.30/2.60	2.20/4.20	0.00129
0.30/0.45	80	8B6-4	9.50	935/1445	1.15/1.60	2.20/1.80	3.00/3.40	0.00175
0.40/0.60	90S	9SC6-4	13.20	965/1440	2.00/2.50	2.20/1.30	3.30/3.50	0.00470
0.60/0.90	90L	9LD6-4	17.00	945/1430	1.90/2.20	2.10/1.60	3.90/4.30	0.00399
1.10/1.60	100L	10RLG6-4	21.50	930/1425	3.30/3.80	2.00/1.80	3.30/4.30	0.00599
1.50/2.20	112M	11MH6-4	35.00	970/1460	4.60/5.90	2.50/2.00	4.80/3.80	0.02823
1.80/2.50	112M	11MI6-4	36.00	950/1440	5.80/7.20	2.20/2.10	5.00/5.70	0.02823
2.20/3.30	132S	13SI6-4	51.00	980/1475	6.20/8.80	1.50/1.80	4.00/7.50	0.04060
3.00/4.50	132M	13MK6-4	62.00	975/1470	7.40/9.70	2.50/2.20	6.10/8.20	0.05413
1500/3000 rpm in no-load operation, Dahlander curcuit								
0.18/0.25	71 K**	7KA42	6.20	1415/2830	0.81/1.10	3.10/2.70	4.10/4.80	0.00092
0.25/0.37	71	7B42	7.00	1420/2785	1.00/1.40	3.40/3.10	4.00/4.30	0.00110
0.37/0.55	80	8C42	8.40	1410/2800	1.20/1.80	2.90/2.80	4.40/4.20	0.00129
0.55/0.75	80	8D42	8.40	1360/2830	1.70/1.90	2.40/2.50	3.80/5.20	0.00175
0.90/1.10	90S	9SF42	13.00	1400/2800	2.20/2.40	1.90/2.20	4.50/5.40	0.00260
1.20/1.50	90L	9LG42	16.50	1430/2860	2.90/3.50	2.60/2.70	5.60/5.20	0.00399
1.80/2.20	100L	10RLHI42	21.00	1440/2910	5.30/6.80	2.40/2.90	5.30/5.20	0.00599
2.60/3.00	112M	11MI42	35.00	1450/2920	5.90/6.90	2.40/3.10	6.00/7.80	0.01905
3.30/4.00	112M	11MK42	35.00	1460/2840	7.20/10.00	2.60/2.90	5.50/8.00	0.02381
4.00/5.50	132S	13SL42	52.00	1450/2890	8.50/11.60	2.50/2.30	7.60/8.10	0.04060
6.00/7.50	132M	13MM42	62.00	1455/2910	12.20/15.10	2.20/2.50	8.10/9.30	0.05413
750/1500 rpm in no-load operation, Dahlander curcuit								
0.15/0.25	71	7zA84	7.80	695/1410	0.97/0.72	2.29/2.00	2.17/3.90	0.00129
0.25/0.37	80	8B84	9.40	665/1390	1.23/1.01	1.50/1.60	2.25/3.75	0.00175
0.37/0.55	90S	9SC84	13.20	715/1435	1.65/1.35	1.96/1.81	3.54/5.74	0.00468
0.60/1.10	90L	9LD84	16.60	710/1400	2.30/2.40	2.07/1.56	3.57/4.71	0.00623
0.75/1.10	100R	10RLF84	21.00	700/1400	2.50/2.40	1.64/1.56	3.28/4.71	0.00623
1.10/1.50	112M	11MG84	30.00	705/1430	3.70/3.30	1.70/1.90	3.90/5.60	0.02150
1.50/2.20	112M	11MH84	35.00	715/1430	4.30/4.90	1.30/1.60	3.50/4.50	0.02733
2.20/3.00	132S	13SI84	55.00	730/1470	6.60/6.50	1.40/1.80	4.80/4.60	0.03950
3.00/4.00	132M	13MK84	67.00	720/1430	9.40/8.20	1.90/2.70	4.80/8.70	0.07750

** Frame size 71 K = mounting dimensions as frame size 71, total length shorter (K). Different number of pole pairs on request.

Technical data
Single-phase industrial motors

AC motors with running capacitors at 230 V, 50 Hz

Rated power [kW]	Frame size	Type	Weight [kg]	Rated speed [1/min]	Rated current [A]	Starting current [A]	Rel. starting torque M_A/M_N	Rated torque [Nm]	Running capacitor [µF]	Moment of inertia J [kgm²]
3000 rpm in no-load operation										
0.06	56	E5v2B	3.6	2700	0.80	2.0	1.00	0.21	4	0.00019
0.09	56	E5y2B	3.8	2730	1.00	2.4	1.10	0.33	5	0.00019
0.12	63/63K*	E6z2B/E6Kz2B	4.1/3.9	2790	1.30	3.3	0.65	0.42	4	0.000245
0.18	63/63K*	E6A2B/E6KA2B	4.3/4.1	2760	1.70	4.6	0.90	0.69	8	0.000350
0.25	63	E6B2B	4.5	2770	2.00	6.0	0.65	0.87	8	0.000490
0.37	71K**	E7KC2B	7.0	2850	3.40	14.1	0.45	1.23	12	0.000496
0.55	71	E7D2B	8.0	2810	4.20	13.5	0.45	1.86	16	0.000595
0.75	80	E8F2B	10.0	2870	5.10	22.4	0.30	2.50	16	0.000794
1.10	80	E8G2B2	11.0	2730	7.30	27.0	0.50	3.86	30	0.000992
1.50	90L	E9LH2B	19.0	2850	9.80	44.0	0.30	5.05	40	0.001389
1500 rpm in no-load operation										
0.06	56	E5v4B	3.8	1380	0.85	1.6	0.95	0.42	5	0.000157
0.09	63/63K*	E6y4B/E6Ky4B	4.0	1380	1.00	2.2	0.62	0.64	6	0.000350
0.12	63	E6z4B	4.1	1410	1.20	3.4	0.80	0.81	6	0.000490
0.18	71 K**	E7KA4B	5.5	1370	1.80	4.6	0.84	1.24	8	0.000735
0.25	71 K**	E7KB4B	5.7	1400	1.90	5.8	0.63	1.70	12	0.000919
0.37	71	E7C4B1	6.0	1400	3.00	9.0	0.70	2.50	16	0.001103
0.55	80	E8D4B	8.5	1360	4.60	15.2	0.45	3.79	16	0.001746
0.75	90S	E9SF4B	12.4	1360	6.20	17.0	0.58	5.10	30	0.002996
1.10	90L	E9LG4B	18.0	1370	7.00	25.0	0.60	7.65	40	0.003995

Technical data
Single-phase industrial motors

AC motors with starting, running capacitors, DriveSAS electronic centrifugal switch at 230 V, 50 Hz

Rated power [kW]	Frame size	Type	Weight [kg]	Rated speed [1/min]	Rated current [A]	Starting current [A]	Rel. starting torque M_A/M_N	Rated torque [Nm]	Running capacitor [µF]	Starting capacitor [µF]	Moment of inertia J [kgm²]
3000 rpm in no-load operation											
0,37	71K**	E7KC2AB	8.0	2850	3.0	12.8	1.50	1.24	16	16	0.000496
0.55	71	E7D2AB	9.0	2810	3.9	13.5	1.70	1.87	12	40	0.000595
0.75	80	E8F2AB	11.0	2870	5.1	23.0	1.40	2.50	16	40	0.000794
1.1	80	E8G2AB6	12.0	2840	7.0	32.8	1.65	3.70	30	100	0.000942
1.5	90S	E9SH2AB	15.0	2870	10.0	44.4	1.70	5.00	40	100	0.00182
1500 rpm in no-load operation											
0.18	71K**	E7KA4AB	6.5	1370	1.8	4.00	1.50	1.26	6	16	0.000735
0.25	71K**	E7KB4AB	6.7	1400	1.9	7.00	1.81	1.73	10	20	0.000919
0.37	71	E7C4AB1	7.0	1370	3.0	10.80	2.07	2.62	12	30	0.001103
0.55	80	E8D4AB	9.5	1360	4.6	13.40	1.90	3.86	16	30	0.001746
0.75	80	E8F4AB	12.0	1370	5.5	18.00	1.60	5.20	20	40	0.001746
1.1	90S	E9SG4AB1	14.0	1430	6.5	27.80	2.14	7.30	40	100	0.00300
1.5	90L	E9LH4AB	19.0	1415	10.8	36.00	1.38	10.10	40	80	0.00400

* Frame size 63 K = mounting dimensions as frame size 63, total length shorter (K) with flange motors
** Frame size 71 K = mounting dimensions as frame size 71, total length shorter (K)

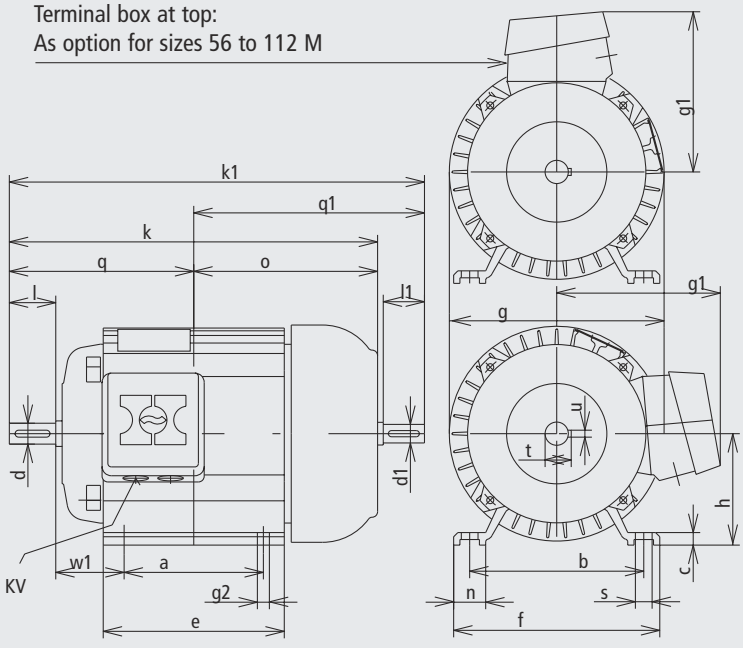
Dimension sheets

IM B 3

Dimensions for foot mounting IM B 3, IM B 6, IM B 7, IM B 8, IM V 5, IM V 6

Frame s.	a	b	c	d	e	f	g	g1(x)	g2	h	k	l	n	o	q	s	t	u	w1	k1	q1	l1	d1	KV
56	71	90	6	9	110	106	107	90	M5	56	195.5	20	16	104	91.5	9	10.2	3	36	219	127.5	20	9	M16 x1.5
63K	80	100	8	11	95	125	123	103	M6	63	188.5	23	25	102.5	88	12	12.5	4	25	217	129	23	11	
63	80	100	8	11	129	125	123	103	M6	63	222.5	23	25	121.5	103	12	12.5	4	40	251	148	23	11	
71K	60	112	8	14	88	130	141	128 (111)	M6	71	209	30	18	104	105	9	16	5	45	242	137	30	14	M20 x1.5
71	90	112	8	14	118	130	141	128 (111)	M6	71	239	30	18	119	120	9	16	5	45	272	152	30	14	
80	100	125	9	19	130	148	156	128 (111)	M8	80	272	40	23	132	140	12	21.5	6	50	306	166	30	14	
90S	100	140	10	24	127	164	178	141 (126)	M8	90	301.5	50	24	145.5	156	12	27	8	56	354	198	50	24	
90L	125	140	10	24	152	164	178	141 (126)	M8	90	326.5	50	24	158	168.5	12	27	8	56	379	210.5	50	24	
100RL	140	160	12	28	190	187	194	159 (143)	M10	100	375	60	27	182	193	15	31	8	63	430	237	50	24	
100L	140	160	13	28	184	195	198	154	M10	100	371	60	35	178	193	15	31	8	63	435	242	60	28	
112M	140	190	14	28	177.5	225	222	167	M10	112	393.5	60	35	193.5	200	15	31	8	70	458	258	60	28	
132S	140	216	14	38	213.5	251	262	196	M10	132	458	80	35	219	239	15	41	10	89	542	303	80	38	M25 x1.5
132M	178	216	14	38	251.5	251	262	196	M10	132	496	80	35	238	258	15	41	10	89	580	322	80	38	

(x) g1 Dimensions for metal terminal box
( ) Dimensions for plastic terminal box



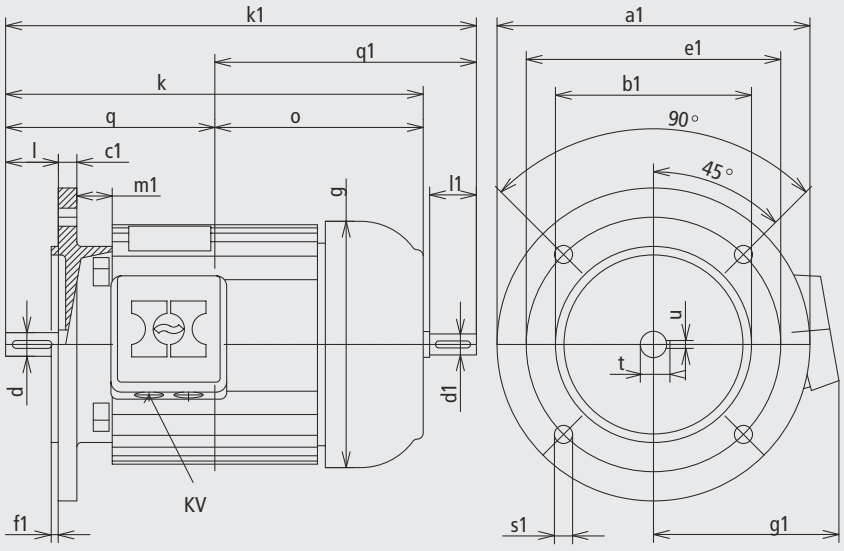
Dimension sheets

IM B 5

Dimensions for flange mounting IM B 5, IM V 1, IM V 3

Frame s.	a1	b1	c1	d	e1	f1	g	g1(x)	k	l	m1	o	q	s1	t	u	k1	q1	l1	d1	KV
63K	140	95	9	11	115	3	123	103	210.5	23	16	102.5	110	9	12.5	4	239	129	23	11	
	160	110	9	11	130	3.5	123	103	210.5	23	18	102.5	110	9	12.5	4	239	129	23	11	M16
63	140	95	9	11	115	3	123	103	244.5	23	16	121.5	125	9	12.5	4	273	148	23	11	x1.5
	160	110	9	11	130	3.5	123	103	244.5	23	18	121.5	125	9	12.5	4	273	148	23	11	
71K	160	110	9	14	130	3.5	141	128(111)	224	30	18	104	120	9	16	5	257	137	30	14	
	200	130	10	14	165	3.5	141	128(111)	213	30	31	104	109	11	16	5	246	137	30	14	
71	160	110	9	14	130	3.5	141	128(111)	254	30	18	119	135	9	16	5	287	152	30	14	
	200	130	10	14	165	3.5	141	128(111)	243	30	31	119	124	11	16	5	276	152	30	14	
80	160	110	9	19	130	3.5	156	128(111)	283	40	18	132	151	9	21.5	6	317	166	30	14	
	200	130	10	19	165	3.5	156	128(111)	272	40	31	132	140	11	21.5	6	306	166	30	14	
90S	200	130	10	24	165	3.5	178	141(126)	315	50	25	145.5	169.5	11	27	8	368	198	50	24	M20
90L	200	130	10	24	165	3.5	178	141(126)	340	50	25	158	182	11	27	8	393	210.5	50	24	x1.5
The dimensions of types 19LI2 and 9LH4 are the same as for size 90S																					
100RL	250	180	11	28	215	4	194	159 (143)	375	60	27	182	193	13	31	8	430	237	50	24	
Types 10RLK2 and 10RLKI4 are also available as short version =									345	60	27	167	178	13	31	8	400	222	50	24	
100L	250	180	11	28	215	4	198	154	371	60	30	167	178	13	31	8	435	242	60	28	
112M	250	180	11	28	215	4	222	167	393.5	60	27	193.5	200	13	31	8	458	258	60	28	
	300	230	12	28	265	4	222	167	393.5	60	39	193.5	200	13	31	8	458	258	60	28	
132S	250	180	11	38	215	4	262	196	479	80	25	219	260	13	41	10	563	303	80	38	
	300	230	12	38	265	4	262	196	458	80	25	219	239	13	41	10	542	303	80	38	M25
132M	250	180	11	38	215	4	262	196	517	80	25	238	279	13	41	10	601	322	80	38	x1.5
	300	230	12	38	265	4	262	196	496	80	25	238	258	13	41	10	580	322	80	38	

(x) g1 Dimensions for metal terminal box
( ) Dimensions for plastic terminal box



Dimension sheets

IM B 14

Dimensions for flange mounting IM B 14, IM V 18, IM V 19

Frame s.	a	b	c1	d1	e	f1	g	g1(x)	k	l	o	q	s	t	u	k1	q1	l1	d1	KV
56	80	50	7	9	65	2.5	107	90	195.5	20	104	91.5	M5	10.2	3	219	127.5	20	9	M16
	105	70	8	9	85	2.5	107	90	195.5	20	104	91.5	M6	10.2	3	219	127.5	20	9	x1.5
63K	90	60	8	11	75	2.5	123	103	188.5	23	102.5	88	M5	12.5	4	217	129	23	11	
	105	70	8	11	85	2.5	123	103	188.5	23	102.5	88	M6	12.5	4	217	129	23	11	
	120	80	9	11	100	3	123	103	210.5	23	102.5	110	M6	12.5	4	239	129	23	11	
63	90	60	8	11	75	2.5	123	103	222.5	23	121.5	103	M5	12.5	4	251	148	23	11	
	105	70	8	11	85	2.5	123	103	222.5	23	121.5	103	M6	12.5	4	251	148	23	11	
	120	80	9	11	100	3	123	103	244.5	23	121.5	125	M6	12.5	4	273	148	23	11	
71K	90	60	8	14	75	2.5	141	128(111)	209	30	104	105	M5	16	5	242	137	30	14	
	105	70	8	14	85	2.5	141	128(111)	209	30	104	105	M6	16	5	242	137	30	14	
	120	80	9	14	100	3	141	128(111)	209	30	104	105	M6	16	5	242	137	30	14	
	140	95	10	14	115	3	141	128(111)	213	30	104	109	M8	16	5	246	137	30	14	
	160	110	12	14	130	3.5	141	128(111)	213	30	104	109	M8	16	5	146	137	30	14	
71	90	60	8	14	75	2.5	141	128(111)	239	30	119	120	M5	16	5	272	152	30	14	
	105	70	8	14	85	2.5	141	128(111)	239	30	119	120	M5	16	5	272	152	30	14	
	120	80	9	14	100	3	141	128(111)	239	30	119	120	M6	16	5	272	152	30	14	
	140	95	10	14	115	3	141	128(111)	243	30	119	124	M8	16	5	276	152	30	14	
	160	110	12	14	130	3.5	141	128(111)	243	30	119	124	M8	16	5	276	152	30	14	
80	105	70	8	19	85	2.5	156	128(111)	272	40	132	140	M6	21.5	6	306	166	30	14	M20
	120	80	9	19	100	3	156	128(111)	272	40	132	140	M6	21.5	6	306	166	30	14	x1.5
	140	95	10	19	115	3	156	128(111)	272	40	132	140	M8	21.5	6	306	166	30	14	
	160	110	12	19	130	3.5	156	128(111)	272	40	132	140	M6	21.5	6	306	166	30	14	
90S	105	70	8	24	85	2.5	178	141(126)	301.5	50	145.5	156	M6	27	8	354	198	50	24	
	120	80	9	24	100	3	178	141(126)	301.5	50	145.5	156	M6	27	8	354	198	50	24	
	140	95	10	24	115	3	178	141(126)	301.5	50	145.5	156	M8	27	8	354	198	50	24	
	160	110	12	24	130	3.5	178	141(126)	301.5	50	145.5	156	M8	27	8	354	198	50	24	
90L	105	70	8	24	85	2.5	178	141(126)	326.5	50	158	168.5	M6	27	8	379	210.5	50	24	
	120	80	9	24	100	3	178	141(126)	326.5	50	158	168.5	M6	27	8	379	210.5	50	24	
	140	95	10	24	115	3	178	141(126)	326.5	50	158	168.5	M8	27	8	379	210.5	50	24	
	160	110	12	24	130	3.5	178	141(126)	326.5	50	158	168.5	M6	27	8	379	210.5	50	24	
The dimensions of types 19LI2 and 9LH4 are the same as for size 90S																				
100RL	140	95	10	28	150	3	194	159(143)	375	60	182	193	M8	31	8	430	237	50	24	
	160	110	12	28	130	3.5	194	159(143)	375	60	182	193	M8	31	8	430	237	50	24	
Types 10RLK2 and 10RLKI4 are also available as short version =									345	60	167	178	M8	31	8	400	222	50	24	
100L	160	110	12	28	130	3.5	198	154	371	60	178	193	M8	31	8	435	242	60	28	
112M	140	95	10	28	115	3	222	167	393.5	60	193.5	200	M8	31	8	458	258	60	28	
	160	110	12	28	130	3.5	222	167	393.5	60	193.5	200	M8	31	8	458	258	60	28	

(x) g1 Dimensions for metal terminal box
( ) Dimensions for plastic terminal box

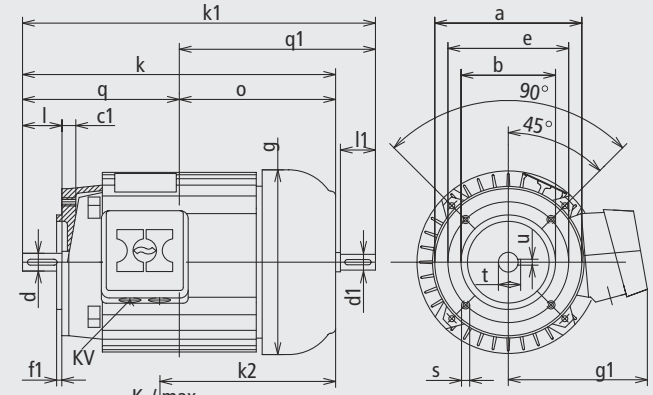
Dimension sheets

IM B 9

Dimensions for flange mounting IM B 9, IM V 8, IM V 9

Frame size	B	E	F	C	G	H	A	K	K2
56	83	2.8	2.5	96	M5	11.5	74	8	156.5
63K	98	2.8	2.5	109	M5	15	86	5	147.5
63	98	2.8	2.5	109	M5	16	86	5	181.5
71K	124	3	3	135	M5	14	110	22	145
71	124	3	3	135	M5	13	110	22	175
80	124	3	3	135	M5	14	110	22	194
90S	150	3.5	3	164	M5	19.5	138	25	206
90L	150	3.5	3	164	M5	16.5	138	25	231
The dimensions of types 9LI2 and 9LH4 are the same as for size 90S									
100RL	150	3.5	3	164	M6	16	138	28	274
						Types 10RLK2 and 10RLKI4 are also available as short versions =			244
100L	172	4	3	182	M6	17.5	156	24	267
112M	195	4.5	3.75	210	M6	17.5	180	33	278.5
132S	236	5	3.75	251	M6	17	220	33	343
132M	236	5	3.75	251	M6	21	220	33	381

IM B 14



IM B 9