



## Product Catalogue

Flame proof motors  
Explosion proof motors  
Increased Safety



Certified to  
ATEX 94/9/EC  
Directive



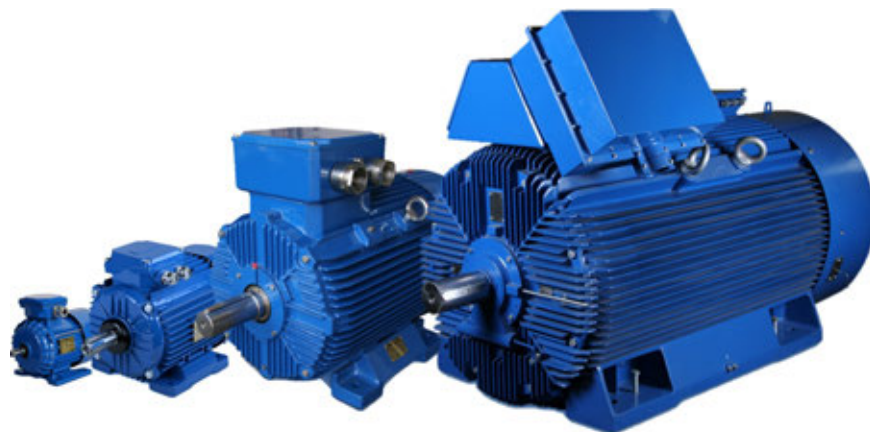




since 1948



Product range beginning from 0,04kW up to 5000kW



„FFD part of Cantoni Goup” in numbers

- ~ 1900 employees
- Annual production ~ 1.000.000 motors
- Covered area ~ 120.000 m<sup>2</sup>

**OUR SOLUTION FOR YOUR POWER!**

**General information of flame proof squirrel cage motors** *pages 05-06*

Identification , Bearings, Description of version

**Technical data of flame proof squirrel cage motors**

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**Dimensional drawings of flame proof squirrel cage motors**

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**General information of explosion-proof motors increased safety** *pages 14-16*

Identification , Bearings, Description of version

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**Dimensional drawings of explosion-proof motors increased safety**

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# Flame Proof Squirrel Cage Motors

**according to  
ATEX 94/9/EC Directive**



## Flame proof squirrel cage motors

The catalogue covers flame-proof motors intended for use in chemical industry.

The motors are adapted for operating in areas endangered by explosion, zone 1 and zone 2, category 2G, for use in potentially explosive atmospheres other than mines susceptible to fire-damp, for group IIA or IIB or IIB + H<sub>2</sub> (including hydrogen) or IIC.

The body of the motor is mechanically tough and does not allow to transfer the explosion outside the motor.

Temperature class for the motors is T5. It means that the maximum temperature of any part of the surface of the motor can not exceed +100°C.

**Our motors are designed for long life and reliable operation.**

## IDENTIFICATION

Frame Size	ATEX Certificate	Flame-Proof Body Increased Safety Terminal Box	Type of Motor	Flame-Proof Body and Terminal Box	Type of Motor
80	KDB 04ATEX052X	II 2G Exde IIC T5	ECS(K,L,1)g 80	II 2G Exd IIB +H <sub>2</sub> T5	CS(K,L,1)gb 80
90	KDB 04ATEX052X	II 2G Exde IIB +H <sub>2</sub> T5	ECS(K,L,1)gb 90	II 2G Exd IIB +H <sub>2</sub> T5	CS(K,L,1)gb 90
100	KDB 04ATEX052X	II 2G Exde IIB T5	ECS(K,L,1)g 100	II 2G Exd IIB T5	CS(K,L,1)gb 100
112	KDB 04ATEX052X	II 2G Exde IIC T5	ECS(K,L,1)g 112	II 2G Exd IIC T5	CS(K,L,1)g 112
132	KDB 04ATEX052X	II 2G Exde IIC T5	ECS(K,L,1)g 132	II 2G Exd IIC T5	CS(K,L,1)g 132
160	KDB 04ATEX053X	II 2G Exde IIB T5	EcS(K,L)gb 160	II 2G Exd IIB T5	cS(K,L)gb 160
180	KDB 04ATEX053X	II 2G Exde IIC T5	EcS(K,L)g 180	II 2G Exd IIB T5	cS(K,L)gb 180
200	KDB 05ATEX183X	II 2G Exde IIC T5	EcS(K,L)g 200	II 2G Exd IIB T5	cS(K,L)gb 200
225	KDB 05ATEX183X	II 2G Exde IIB + H <sub>2</sub> T5	EcS(K,L)gb 225	II 2G Exd IIB T5	cS(K,L)gb 225
250	KDB 05ATEX183X	II 2G Exde IIB + H <sub>2</sub> T5	EcS(K,L)gb 250	II 2G Exd IIB T5	cS(K,L)gb 250
280	KDB 05ATEX183X	II 2G Exde IIB + H <sub>2</sub> T5	EcS(K,L)gb 280	II 2G Exd IIB T5	cS(K,L)gb 280
315	KDB 04ATEX054X	II 2G Exde IIB T5	EcS(K,L)gb 315	II 2G Exd IIB T5	cS(K,L)gb 315

## BEARINGS



Frame Size	3000 rpm		1500 rpm		1000 rpm		750 rpm	
	Drive End	Non Drive End	Drive End	Non Drive End	Drive End	Non Drive End	Drive End	Non Drive End
80	6204 2Z	6204 2Z	6204 2Z	6204 2Z	-	-	-	-
90	6205 2Z	6205 2Z	6205 2Z	6205 2Z	-	-	-	-
100	6206 2Z	6206 2Z	6206 2Z	6206 2Z	-	-	-	-
112	6306 2Z	6306 2Z	6306 2Z	6306 2Z	-	-	-	-
132	6308 2Z	6308 2Z	6308 2Z	6308 2Z	-	-	-	-
160	6309 2ZC3	6309 2ZC3	6309 2ZC3	6309 2ZC3	6309 2ZC3	6309 2ZC3	6309 2ZC3	6309 2ZC3
180	6311 2ZC3	6311 2ZC3	6311 2ZC3	6311 2ZC3	6311 2ZC3	6311 2ZC3	6311 2ZC3	6311 2ZC3
200	NU 312	6312 C3	NU 312	6312 C3	NU 312	6312 C3	NU 312	6312 C3
225	NU 313	6313 C3	NU 313	6313 C3	NU 313	6313 C3	NU 313	6313 C3
250	NU 315	6315 C3	NU 315	6315 C3	NU 315	6315 C3	NU 315	6315 C3
280	NU 315	6315 C3	NU 317	6317 C3	NU 317	6317 C3	NU 317	6317 C3
315	NU 315	6315 C3	NU 318	6318 C3	NU 318	6318 C3	NU 318	6318 C3

## DESCRIPTION OF VERSION

- Continuous duty S1
- Voltage 400 V / 50 Hz, on request other voltage up to 750 V, frequency 60 Hz
- Ambient temperature -20°C +50°C (T5) Frame Size 80 - 132; on request -35°C -20°C +40°C (T5) Frame Size 160 - 315; on request -30°C, -40°C
- According to standard 60079-0, 60079-1
- Insulation class F, on request class H
- Degree of protection IP 55, on request IP 56, IP 65



ISO 9001



As part of our development programme, we reserve the right to alter or amend any of the specifications included in this catalogue without giving prior notice.

Totally Enclosed Motors IP 55  
Insulation Class F

Item	Frame Size	Rated Output		Rated Speed	Rated Torque	Efficiency	Power Factor	Full load Current	Starting Torque	Starting Current	Breakdown Torque	Moment of Inertia	Weight (IMB3)										
		P <sub>N</sub>												η <sub>N</sub>	T <sub>N</sub>	η <sub>N</sub>	cos φ <sub>N</sub>	I <sub>N</sub>	T <sub>S</sub> /T <sub>N</sub>	I <sub>S</sub> /I <sub>N</sub>	T <sub>b</sub> /T <sub>N</sub>	J	m
		[kW]	[HP]											[rpm]	[Nm]	[%]	[-]	[A]	[-]	[-]	[-]	[kgm <sup>2</sup> ]	[kg]
<b>2p=2      n<sub>s</sub>=3000 rpm</b>																							
1.	802A	0,75	1	2770	2,6	75	0,86	1,7	2,4	4,9	3	0,0008	25,0										
2.	802B	1,1	1,5	2785	3,8	79	0,86	2,3	3,2	6,2	3,2	0,001	26,5										
3.	90S2	1,5	2	2845	5	79,1	0,82	3,3	2,9	5,5	3,1	0,0013	34,5										
4.	90L2	2,2	3	2865	7,3	83,3	0,82	4,6	3,4	6,5	3,5	0,002	36,5										
5.	100L2	3	4	2905	9,9	83,4	0,86	6	2,7	7,5	2,8	0,0048	48										
6.	112M2	4	5,5	2875	13,3	85,4	0,9	7,5	2,1	6,2	2,3	0,0079	70										
7.	132S2A	5,5	7,5	2920	18	87	0,88	10,4	2,4	7	3,2	0,015	96										
8.	132S2B	7,5	10	2925	24,5	87,5	0,88	14,1	2,5	7,5	3,2	0,018	102										
9.	160M2A	11	15	2925	36	88,5	0,89	20,2	2,1	5,7	2,5	0,04	150										
10.	160M2B	15	20	2920	49	89,5	0,91	26,6	2,1	6	2,2	0,05	158										
11.	160L2	18,5	25	2925	60	91,3	0,91	32,5	2,4	6,5	2,8	0,06	176										
12.	180M2	22	30	2945	71	91,5	0,89	39	2,7	6,8	2,6	0,07	210										
13.	200L2A	30	40	2960	97	92,9	0,89	52	1,9	6	2,3	0,15	285										
14.	200L2B	37	50	2960	119	93,7	0,89	64	2,2	6,7	2,5	0,18	315										
15.	225M2	45	60	2968	145	94,5	0,89	77	2,4	7	2,5	0,26	375										
16.	250M2	55	75	2970	177	93,5	0,9	94	2	6,9	2	0,36	434										
17.	280S2	75	100	2977	241	94	0,9	128	2,1	7,5	3,3	0,76	580										
18.	280M2	90	125	2970	289	94,7	0,91	151	2	7	3,2	0,87	620										
19.	315S2	110	150	2975	353	95,4	0,92	181	1,8	8	2,6	0,91	755										
20.	315M2A	132	180	2975	424	95	0,91	220	2,1	8,5	2,8	0,98	795										
21.	315M2B	160	220	2975	514	95,9	0,91	265	1,9	7,9	2,7	1,2	855										
<b>2p=4      n<sub>s</sub>=1500 rpm</b>																							
22.	804A	0,55	0,75	1400	3,8	72,0	0,62	1,8	3,0	4,6	3	0,0016	25,0										
23.	804B	0,75	1	1405	5,1	74	0,64	2,3	3,2	5	3,3	0,0019	26,5										
24.	90S4	1,1	1,5	1405	7,5	75	0,8	2,6	2,1	4,5	2,6	0,0023	34,5										
25.	90L4	1,5	2	1410	10,2	78	0,79	3,5	2,5	5,4	2,9	0,0028	36,5										
26.	100L4A	2,2	3	1425	14,7	81	0,81	4,8	2,5	5,9	2,8	0,0058	47										
27.	100L4B	3	4	1415	20,2	81	0,81	6,6	2,6	5,8	2,7	0,0065	50										
28.	112M4	4	5,5	1435	26,6	85,1	0,84	8,1	2,6	6,3	3	0,0118	71										
29.	132S4	5,5	7,5	1450	36,2	85,8	0,84	11	2,2	6,9	3,1	0,029	97										
30.	132M4	7,5	10	1450	49,4	87	0,85	14,6	2,2	6,7	3,1	0,035	105										
31.	160M4	11	15	1463	72	89,5	0,84	21,1	2,5	7,5	2,9	0,06	150										
32.	160L4	15	20	1460	98	89,8	0,86	28	2,5	7,9	3,2	0,08	172										
33.	180M4	18,5	25	1465	121	90,8	0,9	32,5	2,3	6,9	2,9	0,11	205										
34.	180L4	22	30	1465	143	91,5	0,9	38,6	2,5	7,2	2,9	0,13	225										
35.	200L4	30	40	1472	195	92,5	0,88	53	2,9	7,1	2,5	0,31	310										
36.	225S4	37	50	1475	240	92,6	0,88	66	2,1	6,3	2,2	0,44	350										
37.	225M4	45	60	1480	290	94	0,88	79	2,4	7	2,3	0,53	390										
38.	250M4	55	75	1483	354	93,5	0,91	93	2,4	7,3	2,6	0,79	465										
39.	280S4	75	100	1485	482	94,2	0,9	128	2,5	7,3	2,5	1,37	630										
40.	280M4	90	125	1485	579	94,8	0,91	151	2,6	7,3	2,6	1,63	670										
41.	315S4	110	150	1480	710	94,2	0,92	183	2,3	6,9	2,2	1,67	785										
42.	315M4A	132	180	1487	848	94,9	0,9	223	2,3	7,6	2,5	1,84	825										
43.	315M4B	160	220	1483	1030	95,6	0,91	265	2	6,7	2,4	2,27	865										

**Totally Enclosed Motors IP 55  
Insulation class F**

Item	Frame Size	Rated Output		Rated Speed	Rated Torque	Efficiency	Power Factor	Full load Current	Starting Torque	Starting Current	Breakdown Torque	Moment of Inertia	Weight (MB3)										
		P <sub>N</sub>												n <sub>N</sub>	T <sub>N</sub>	η <sub>N</sub>	cos φ <sub>N</sub>	I <sub>N</sub>	T <sub>S</sub> /T <sub>N</sub>	I <sub>S</sub> /I <sub>N</sub>	T <sub>b</sub> /T <sub>N</sub>	J	m
		[kW]	[HP]											[rpm]	[Nm]	[%]	[-]	[A]	[-]	[-]	[-]	[kgm <sup>2</sup> ]	[kg]
<b>2p=6 n<sub>s</sub>=1000 rpm</b>																							
44.	100L6	1,5	2,0	962	14,9	81,4	0,74	3,6	1,9	4,6	2,3	0,009	47										
45.	160M6	7,5	10	962	74	87,5	0,81	15,3	2,2	6,4	3	0,07	146										
46.	160L6	11	15	960	109	88,2	0,82	22	2,2	6,7	2,8	0,1	173										
47.	180L6	15	20	973	147	89	0,85	28,6	2,4	5,6	2,4	0,19	210										
48.	200L6A	18,5	25	980	180	90,5	0,86	34,5	2,5	6,8	2,4	0,41	290										
49.	200L6B	22	30	981	214	90,5	0,88	40	2,4	6,9	2,2	0,47	305										
50.	225M6	30	40	982	292	91,9	0,88	54	2,1	6,3	2,2	0,76	365										
51.	250M6	37	50	985	359	92,5	0,89	65	2,6	6,8	2,3	1,23	458										
52.	280S6	45	60	985	436	93	0,87	80	2	6,5	2,3	1,35	555										
53.	280M6	55	75	985	533	93,5	0,89	95	2,2	6,2	2,2	1,61	600										
54.	315S6	75	100	985	727	93,5	0,89	130	2,3	6,6	2,2	2,16	785										
55.	315M6A	90	125	984	873	93,7	0,88	158	2,5	6,8	2	2,29	815										
56.	315M6B	110	150	985	1066	94,2	0,89	189	2,3	7,2	2,1	2,86	900										
<b>2p=8 n<sub>s</sub>=750 rpm</b>																							
57.	160M8A	4	5,5	710	54	81	0,75	9,5	2,1	5,1	2,7	0,06	132										
58.	160M8B	5,5	7,5	705	75	82,5	0,75	12,8	2,5	5,5	3,1	0,08	142										
59.	160L8	7,5	10	708	101	83,5	0,78	16,6	2,7	5,7	3	0,1	162										
60.	180L8	11	15	730	144	88,5	0,76	23,6	1,9	5,5	2,5	0,19	208										
61.	200L8	15	20	733	195	89,5	0,83	29,1	2,2	5,5	2,1	0,45	290										
62.	225S8	18,5	25	735	240	89,5	0,81	37	2	5,6	2	0,58	320										
63.	225M8	22	30	735	286	90,4	0,8	44	2	5,2	1,8	0,68	350										
64.	250M8	30	40	738	388	91,5	0,84	56	2,5	6,3	2,1	1,27	455										
65.	280S8	37	50	737	479	92,8	0,83	69	2	5,3	1,8	1,47	575										
66.	280M8	45	60	737	583	92,5	0,84	84	2,1	5,4	2	1,8	635										
67.	315S8	55	75	735	715	92,7	0,81	106	2	5,3	1,9	2,16	785										
68.	315M8A	75	100	737	972	93,2	0,82	142	2,5	6,2	1,9	2,29	810										
69.	315M8B	90	125	737	1166	93,2	0,82	170	2,4	6,5	1,9	2,86	890										

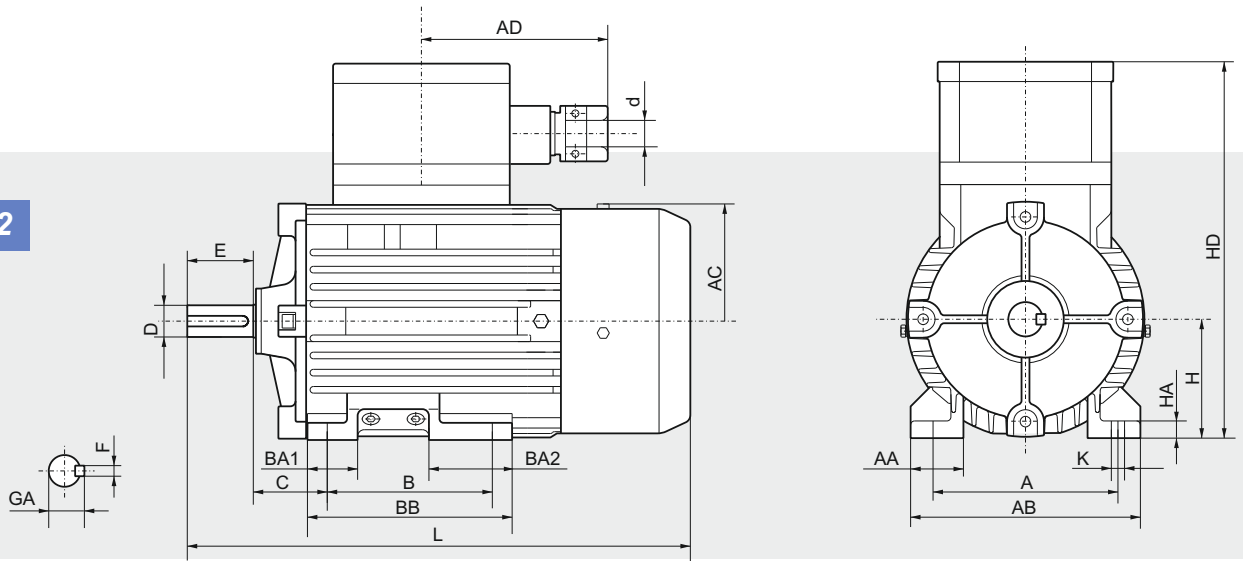


FOOT MOUNTED MOTORS - IM B3

.CSg.

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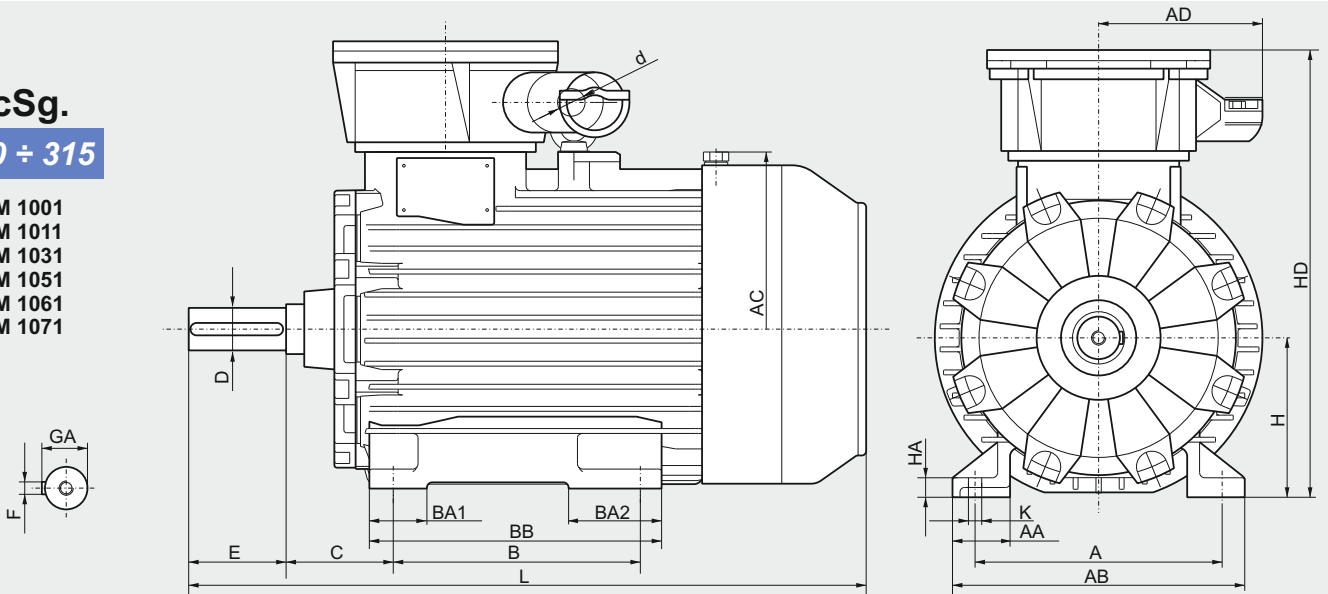
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- IM 1011
- IM 1031
- IM 1051
- IM 1061
- IM 1071



.cSg.

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- IM 1001
- IM 1011
- IM 1031
- IM 1051
- IM 1061
- IM 1071



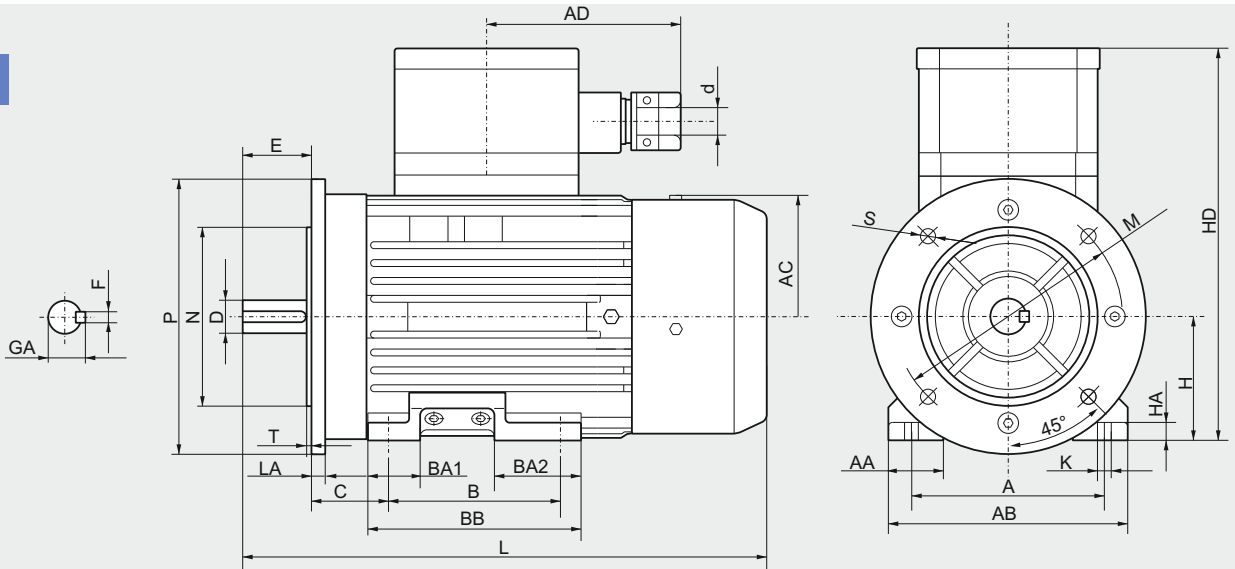
Frame	A	B	C	D	E	F h9	GA	H	HA	K	AA	AB	AC	AD	BA1	BA2	BB	HD	L	d
.CSg. 80.	125	100	50	19j6	40	6	21,5	80	12	10	40	165	190	145	38	38	130	274	310	13-18
.CSg. 90S.	140	100	56	24j6	50	8	27	90	13	10	40	174	190	145	38	63	155	291	380	13-18
.Csg. 90L.	140	125	56	24j6	50	8	27	90	13	10	40	174	190	145	38	63	155	291	380	13-18
.CSg.100L.	160	140	63	28j6	60	8	31	100	14	12	45	200	211	145	48	48	170	311	430	13-18
.Csg 112M.	190	140	70	28j6	60	8	31	112	14	12	54	230	240	150	50	50	174	376	475	13-18
.CSg 132S.	216	140	89	38k6	80	10	41	132	16	12	56	270	286	150	50	88	218	409	570	13-18
.Csg 132M.	216	178	89	38k6	80	10	41	132	16	12	56	270	286	150	50	88	218	409	570	13-18
.cSg. 160 M.	254	210	108	42k6	110	12	45	160	22	15	60	300	360	185	60	60	256	465	670	20-25
.cSg. 160 L.	254	254	108	42k6	110	12	45	160	22	15	60	300	360	185	60	60	300	465	710	20-25
.cSg. 180 M.	279	241	121	48k6	110	14	51,5	180	22	15	65	330	400	185	65	105	330	505	765	26-31
.cSg. 180 L.	279	279	121	48k6	110	14	51,5	180	22	15	65	330	400	185	65	105	330	505	765	26-31
.cSg. 200L.	318	305	133	55m6	110	16	59	200	32	19	80	400	465	190	105	105	388	590	810	32-37
.cSg. 225S.	356	286	149	60m6	140	18	64	225	34	19	85	445	510	190	115	120	385	635	860	32-37
.cSg. 225M2	356	311	149	55m6	110	16	59	225	34	19	85	445	510	190	115	120	385	635	830	32-37
.cSg. 225M4-8	356	311	149	60m6	140	18	64	225	34	19	85	445	510	190	115	120	385	635	860	32-37
.cSg. 250M2	406	349	168	60m6	140	18	64	250	37	24	95	495	550	190	120	120	445	680	915	38-43
.cSg. 250M4-8	406	349	168	65m6	140	18	69	250	37	24	95	495	550	190	120	120	445	680	915	38-43
.cSg. 280S2	457	368	190	65m6	140	18	69	280	40	24	100	560	620	190	140	170	500	755	1060	44-49
.cSg. 280S4-8	457	368	190	75m6	140	20	79,5	280	40	24	100	560	620	190	140	170	500	755	1060	44-49
.cSg. 280M2	457	419	190	65m6	140	18	69	280	40	24	100	560	620	190	140	170	500	755	1060	44-49
.cSg. 280M4	457	419	190	75m6	140	20	79,5	280	40	24	100	560	620	190	140	170	500	755	1060	44-49
.cSg. 315S2	508	406	216	65m6	140	18	69	315	46	28	105	610	625	190	140	185	550	805	1210	50-55
.cSg. 315S4-8	508	406	216	80m6	170	22	85	315	46	28	105	610	625	190	140	185	550	805	1240	50-55
.cSg. 315M2	508	457	216	65m6	140	18	69	315	46	28	105	610	625	190	140	185	550	805	1210	50-55
.cSg. 315M4-8	508	457	216	80m6	170	22	85	315	46	28	105	610	625	190	140	185	550	805	1240	50-55

**FOOT/FLANGE MOUNTED MOTORS - IM B35**  
**FOOT/FLANGE MOUNTED MOTORS - IM B34**

**.CSLg.**

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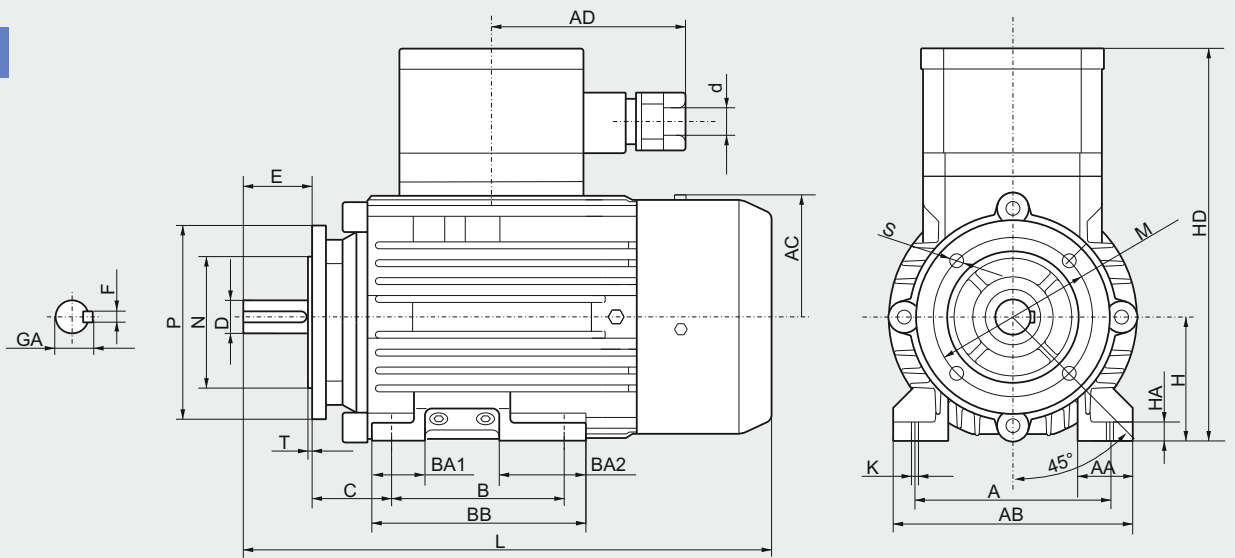
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- IM 2011
- IM 2031
- IM 2051
- IM 2061
- IM 2071



**.CSL1g.**

80 ÷ 132

- IM 2101
- IM 2111
- IM 2131
- IM 2151
- IM 2161
- IM 2171



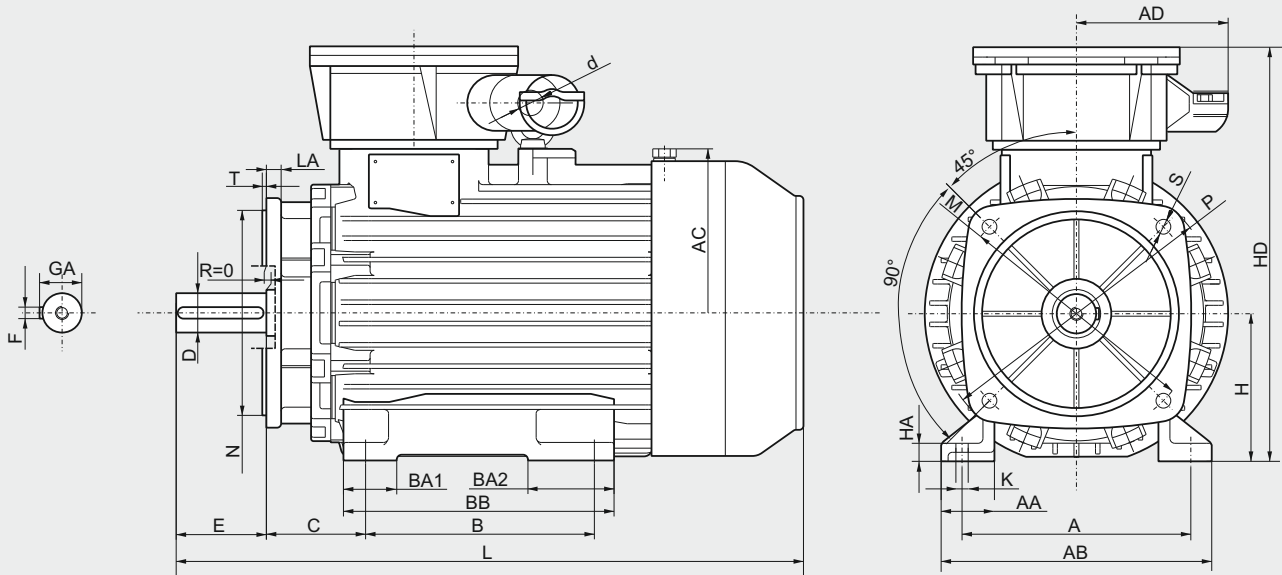
Frame	Fl.	A	B	C	D	E	Fh9	GA	H-0,5	HA	LA	M	Nj6	P	φ	no.	T	K	AA	AB	AC	AD	BA1	BA2	BB	HD	L	d
.CSLg. 80.	B5	125	100	50	19j6	40	6	21,5	80	12	15	165	130	200	12	4	3,5	10	40	165	190	145	38	38	130	268	310	13-18
.CSL1g. 80.	B14	125	100	50	19j6	40	6	21,5	80	12	15	100	80	120	M6	4	3	10	40	165	190	145	38	38	130	268	310	13-18
.CSLg. 90S.	B5	140	100	56	24j6	50	8	27	90	13	10	165	130	200	12	4	3,5	10	40	174	190	150	38	63	155	285	381	13-18
.CSL1g. 90S.	B14	140	100	56	24j6	50	8	27	90	13	10	115	95	140	M8	4	3	10	40	174	190	150	38	63	155	285	381	13-18
.CSLg. 90L.	B5	140	125	56	24j6	50	8	27	90	13	10	165	130	200	12	4	3,5	10	40	174	190	150	38	63	155	285	381	13-18
.CSL1g. 90L.	B14	140	125	56	24j6	50	8	27	90	13	10	115	95	140	M8	4	3	10	40	174	190	150	38	63	155	285	381	13-18
.CSLg. 100L.	B5	160	140	63	28j6	60	8	31	100	14	11	215	180	250	15	4	4	12	45	200	211	143	48	48	170	305	430	13-18
.CSL1g. 100L.	B14	160	140	63	28j6	60	8	31	100	14	11	130	110	160	M8	4	3,5	12	45	200	211	143	48	48	170	305	430	13-18
.CSLg 112M.	B5	190	140	70	28j6	60	8	31	112	14	12	215	180	250	15	4	4	12	54	230	240	150	50	50	174	360	470	13-18
.CSL1g 112M.	B14	190	140	70	28j6	60	8	31	112	14	12	130	110	160	M8	4	3,5	12	54	230	240	150	50	50	174	360	470	13-18
.CSLg 132S.	B5	216	140	89	38k6	80	10	41	132	16	15	265	230	300	14,5	4	4	12	56	270	286	150	50	88	218	392	570	13-18
.CSL1g 132S.	B14	216	140	89	38k6	80	10	41	132	16	15	165	130	200	M10	4	3,5	12	56	270	286	150	50	88	218	392	570	13-18
.CSLg 132M.	B5	216	178	89	38k6	80	10	41	132	16	15	265	230	300	14,5	4	4	12	56	270	286	150	50	88	218	392	570	13-18
.CSL1g 132M.	B14	216	178	89	38k6	80	10	41	132	16	15	165	130	200	M10	4	3,5	12	56	270	286	150	50	88	218	392	570	13-18

FOOT/FLANGE MOUNTED MOTORS - IM B35

.cSLg.

160 ÷ 315

- IM 2001
- IM 2011
- IM 2031
- IM 2051
- IM 2061
- IM 2071



Frame	A	B	C	D	E	Fh9	GA	H <sub>-0.5</sub>	HA	K	LA	M	N	P	Φ	S no.	T	AA	AB	AC	AD	BA1	BA2	BB	HD	L	d
.cSLg. 160M.	254	210	108	42k6	110	12	45	160	22	15	17	300	250j6	350	18	4	5	60	300	360	185	60	60	256	465	670	20-25
.cSLg. 160L.	254	254	108	42k6	110	12	45	160	22	15	17	300	250j6	350	18	4	5	60	300	360	185	60	60	300	465	710	20-25
.cSLg. 180M.	279	241	121	48k6	110	14	51,5	180	22	15	18	300	250j6	350	18	4	5	65	330	400	185	65	105	330	505	765	26-31
.cSLg. 180L.	279	279	121	48k6	110	14	51,5	180	22	15	18	300	250j6	350	18	4	5	65	330	400	185	65	105	330	505	765	26-31
.cSLg. 200L.	318	305	133	55m6	110	16	59	200	32	19	21	350	300j6	400	18	4	5	80	400	465	190	105	105	388	590	810	32-37
.cSLg. 225S.	356	286	149	60m6	140	18	64	225	34	19	22	400	350j6	450	18	8	5	85	445	510	190	115	120	385	635	860	32-37
.cSLg. 225M2	356	311	149	55m6	110	16	59	225	34	19	22	400	350j6	450	18	8	5	85	445	510	190	115	120	385	635	830	32-37
.cSLg. 225M.	356	311	149	60m6	140	18	64	225	34	19	22	400	350j6	450	18	8	5	85	445	510	190	115	120	385	635	860	32-37
.cSLg. 250M2	406	349	168	60m6	140	18	64	250	37	24	24	500	450j6	550	18	8	5	95	495	550	190	120	120	445	680	915	38-43
.cSLg. 250M.	406	349	168	65m6	140	18	69	250	37	24	24	500	450j6	550	18	8	5	95	495	550	190	120	120	445	680	915	38-43
.cSLg. 280S2	457	368	190	65m6	140	18	69	280	40	24	25	500	450j6	550	18	8	5	100	560	620	190	140	170	500	755	1060	44-49
.cSLg. 280S.	457	368	190	75m6	140	20	79,5	280	40	24	25	500	450j6	550	18	8	5	100	560	620	190	140	170	500	755	1060	44-49
.cSLg. 280M2	457	419	190	65m6	140	18	69	280	40	24	25	500	450j6	550	18	8	5	100	560	620	190	140	170	500	755	1060	44-49
.cSLg. 280M4	457	419	190	75m6	140	20	79,5	280	40	24	25	500	450j6	550	18	8	5	100	560	620	190	140	170	500	755	1060	44-49
.cSLg. 315S2	508	406	216	65m6	140	18	69	315	46	28	26	600	550js6	660	22	8	6	105	610	625	190	140	185	550	805	1210	50-55
.cSLg. 315S.	508	406	216	80m6	170	22	85	315	46	28	26	600	550js6	660	22	8	6	105	610	625	190	140	185	550	805	1240	50-55
.cSLg. 315M2	508	457	216	65m6	140	18	69	315	46	28	26	600	550js6	660	22	8	6	105	610	625	190	140	185	550	805	1210	50-55
.cSLg. 315M.	508	457	216	80m6	170	22	85	315	46	28	26	600	550js6	660	22	8	6	105	610	625	190	140	185	550	805	1240	50-55

FLANGE MOUNTED MOTORS - IM B5

.cSKg.

160 ÷ 180

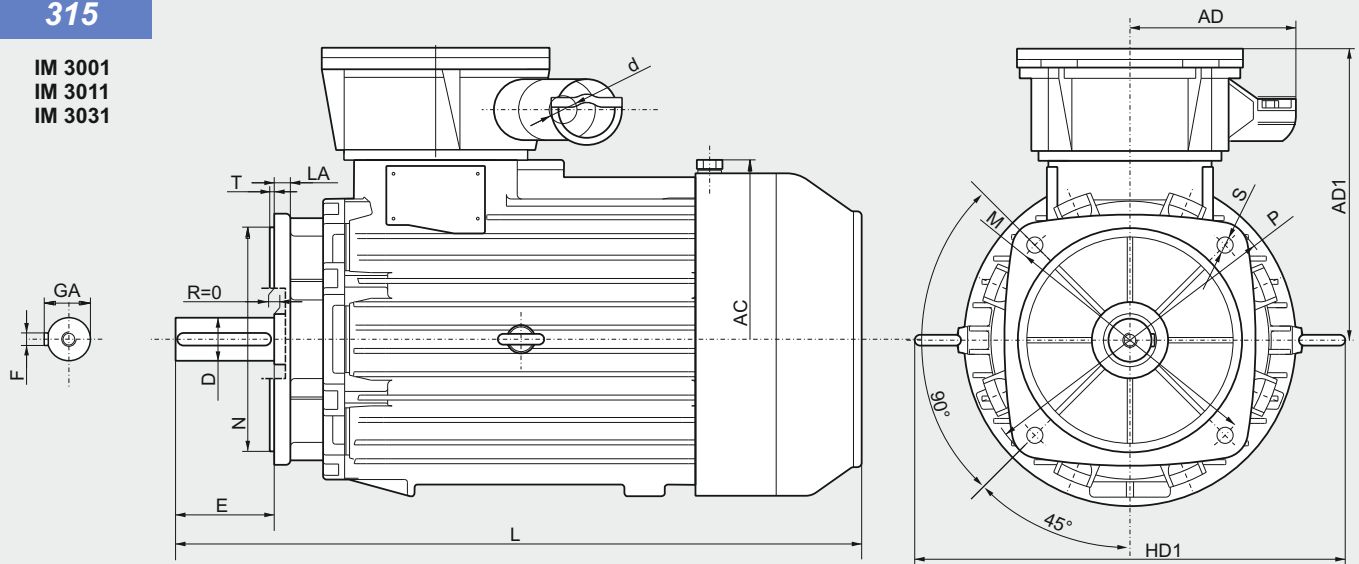
- IM 3001
- IM 3011
- IM 3031

200 ÷ 280

- IM 4001
- IM 4011
- IM 4031

315

- IM 3001
- IM 3011
- IM 3031



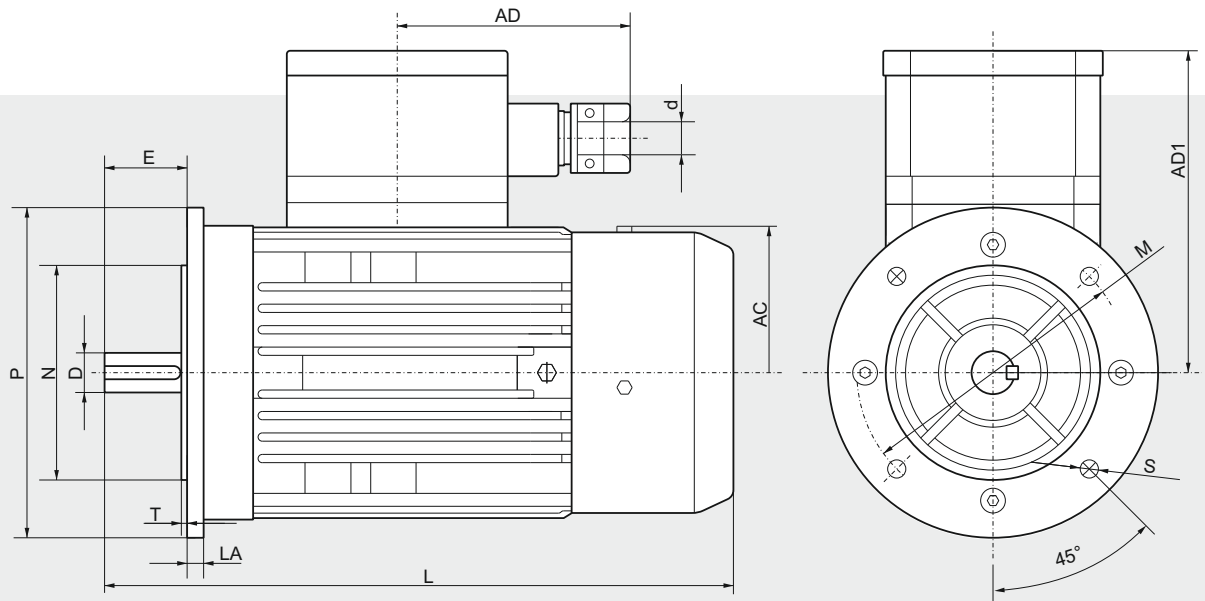
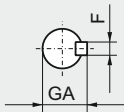
Frame	D	E	Fh9	GA	LA	M	N	P	S		T	AC	AD	AD1	HD	HD1	L	d
									Φ	no.								
.cSKg. 160M.	42k6	110	12	45	17	300	250j6	350	18	4	5	360	185	305	465	440	670	20-25
.cSKg. 160L.	42k6	110	12	45	17	300	250j6	350	18	4	5	360	185	305	465	440	710	20-25
.cSKg. 180M.	48k6	110	14	51,5	18	300	250j6	350	18	4	5	400	185	325	505	480	765	26-31
.cSKg. 180L.	48k6	110	14	51,5	18	300	250j6	350	18	4	5	400	185	325	505	480	765	26-31
.cSKg. 200L.	55m6	110	16	59	21	350	300j6	400	18	4	5	465	190	390	590	560	810	32-37
.cSKg. 225S.	60m6	140	18	64	22	400	350j6	450	18	8	5	510	190	410	635	610	860	32-37
.cSKg. 225M2	55m6	110	16	59	22	400	350j6	450	18	8	5	510	190	410	635	610	830	32-37
.cSKg. 225M.	60m6	140	18	64	22	400	350j6	450	18	8	5	510	190	410	635	610	860	32-37
.cSKg. 250M2	60m6	140	18	64	24	500	450j6	550	18	8	5	550	190	430	680	670	915	38-43
.cSKg. 250M.	65m6	140	18	69	24	500	450j6	550	18	8	5	550	190	430	680	670	915	38-43
.cSKg. 280S2	65m6	140	18	69	25	500	450j6	550	18	8	5	620	190	475	755	770	1060	44-49
.cSKg. 280S.	75m6	140	20	79,5	25	500	450j6	550	18	8	5	620	190	475	755	770	1060	44-49
.cSKg. 280M2	65m6	140	18	69	25	500	450j6	550	18	8	5	620	190	475	755	770	1060	44-49
.cSKg. 280M4	75m6	140	20	79,5	25	500	450j6	550	18	8	5	620	190	475	755	770	1060	44-49
.cSKg. 315S2	65m6	140	18	69	26	600	550js6	660	22	8	6	625	190	490	805	770	1210	50-55
.cSKg. 315S.	80m6	170	22	85	26	600	550js6	660	22	8	6	625	190	490	805	770	1240	50-55
.cSKg. 315M2	65m6	140	18	69	26	600	550js6	660	22	8	6	625	190	490	805	770	1210	50-55
.cSKg. 315M.	80m6	170	22	85	26	600	550js6	660	22	8	6	625	190	490	805	770	1240	50-55

**FLANGE MOUNTED MOTORS - IM B5**  
**FLANGE MOUNTED MOTORS - IM B14**

**.CSKg.**

80 ÷ 132

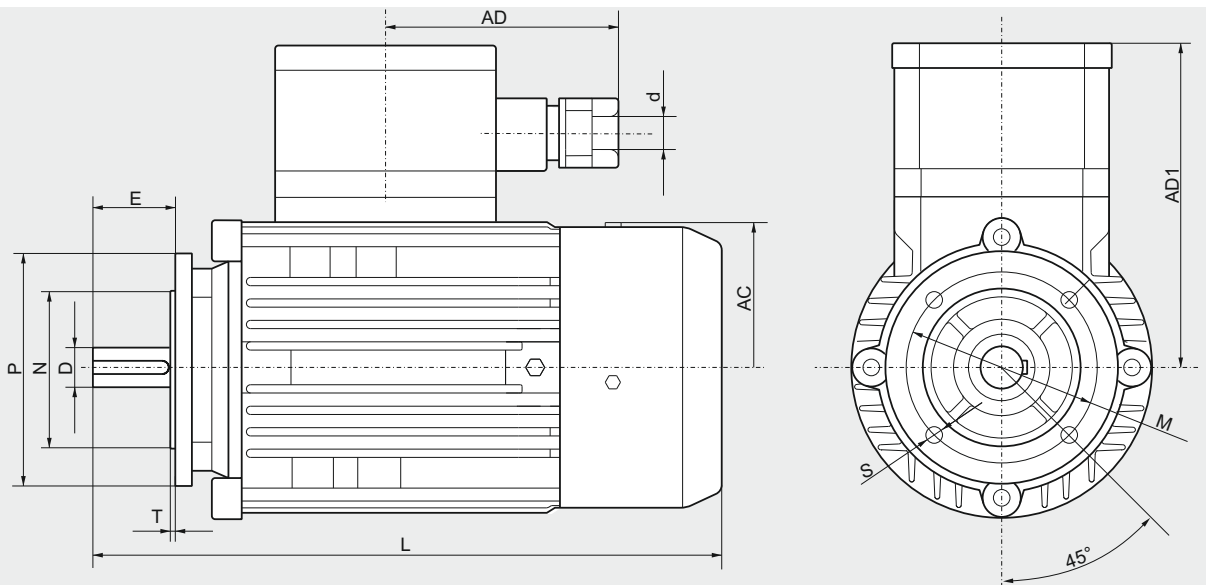
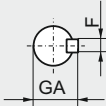
IM 3001  
 IM 3011  
 IM 3031



**.CSK1g.**

80 ÷ 132

IM 3601  
 IM 3611  
 IM 3631



Frame	Fl.	D	E	Fh9	GA	LA	M	Nj6	P	Φ	S no.	T	AC	AD	AD1	L	d
.CSKg. 80.	B5	19j6	40	6	21,5	15	165	130	200	12	4	3,5	190	145	188	310	13-18
.CSK1g 80.	B14	19j6	40	6	21,5	15	100	80	120	M6	4	3	190	145	188	310	13-18
.CSKg. 90S.	B5	24j6	50	8	27	10	165	130	200	12	4	3,5	190	150	195	381	13-18
.CSK1g. 90S.	B14	24j6	50	8	27	10	115	95	140	M8	4	3	190	150	195	381	13-18
.CSKg. 90L.	B5	24j6	50	8	27	10	165	130	200	12	4	3,5	190	150	195	381	13-18
.CSK1g. 90L.	B14	24j6	50	8	27	10	115	95	140	M8	4	3	190	150	195	381	13-18
.CSKg. 100L.	B5	28j6	60	8	31	11	215	180	250	15	4	4	211	143	205	430	13-18
.CSK1g. 100L.	B14	28j6	60	8	31	11	130	110	160	M8	4	3,5	211	143	205	430	13-18
.CSKg 112M.	B5	28j6	60	8	31	12	215	180	250	15	4	4	240	150	248	470	13-18
.CSK1g 112M.	B14	28j6	60	8	31	12	130	110	160	M8	4	3,5	240	150	248	470	13-18
.CSKg 132S.	B5	38k6	80	10	41	15	265	230	300	14,5	4	4	286	150	260	570	13-18
.CSK1g 132S.	B14	38k6	80	10	41	15	165	130	200	M10	4	3,5	286	150	260	570	13-18
.CSKg 132M.	B5	38k6	80	10	41	15	265	230	300	14,5	4	4	286	150	260	570	13-18
.CSK1g 132M.	B14	38k6	80	10	41	15	165	130	200	M10	4	3,5	286	150	260	570	13-18

## Explosion-Proof Increased Safety Motors

according to  
ATEX 94/9/EC Directive

**II 2G Ex e II T3 - T4**

**II 2G Ex e II T3 - T4 / II 2D Ex tD A21 Txxx°C**

**II 2D Ex tD A21 Txxx°C**



KEMA  






## DESCRIPTION OF THE CATALOGUE VERSION

Duty type:	S1
Rated voltage:	230V/400V
Frequency:	50 Hz
Ambient temperature:	from -20°C to + 40°C
Mounting height:	up to 1000 m above sea level
Insulation class:	F

Explosion-proof increased safety motors are adapted for operating in areas endangered by explosion other than methane mines, (apparatus group II, explosion group II) in zone 1 (zone 21).

The Exe motors belong to the apparatus category 2G (zone 1, gas hazardous area) or 2D (zone 21, dust hazardous area) or 2G and 2D (zone 1, zone 2, zone 21, zone 22, gas and/or dust hazardous area) which means that it is either necessary to ensure that the occurrence of ignition source is excluded, or the ignition source must be encapsulated by a recognized type of protection in such a way that the ignition of an explosive atmosphere surrounding the motor is prevented.

Classification of temperature classes according to the ignition temperature of explosive atmosphere:		
Ignition temperature of explosive atmosphere [°C]	Temperature class	Max. temperature of motor [°C]
Above 450	T1	450
300 - 450	T2	300
200 - 300	T3	200
135 - 200	T4	135

	<i>specific marking of explosion protection</i>
<b>II</b>	<i>for use in hazardous areas other than mines</i>
<b>2</b>	<i>apparatus category 2 for use in zone 1 (zone 21)</i>
<b>G</b>	<i>for use in gas hazardous areas</i>
<b>D</b>	<i>for use in dust hazardous areas</i>
<b>Ex</b>	<i>indicates that the product corresponds to one or more of the types of protection which are subject of the specific standards listed in general requirements standards</i>
<b>e</b>	<i>increased safety</i>
<b>tD</b>	<i>Indicates the type of protection used for flammable gas / combustible dust</i>
<b>A21</b>	<i>areas category</i>
<b>II</b>	<i>explosion group</i>
<b>T3</b>	<i>temperature class</i>
<b>T125°C</b>	<i>maximal housing temperature</i>

The motors are designed for the temperature class T3 which means that the maximum temperature of any part of the motor can not exceed + 200°C or for the temperature class T4 where maximum temperature can not exceed + 135°C.

## IDENTIFICATION, BEARINGS, DEGREE OF PROTECTION

Motor Type	Bearings	Increased Safety Gas Hazardous Area	Degree of Protection	Increased Safety Dust Hazardous Area	Degree of Protection	Increased Safety Gas and Dust Hazardous Area	Degree of Protection
Sg 56	6201 2Z	II 2G Exe II T3-T4	IP 55	-	-	-	-
Sg 63	6202 2Z	II 2G Exe II T3-T4	IP 56	II 2D Txxx°C	IP 65	II 2G Exe II T3-T4/ II 2D Txxx°C	IP 65
Sh 71	6203 2Z	II 2G Exe II T3-T4	IP 56	II 2D Txxx°C	IP 65	II 2G Exe II T3-T4/ II 2D Txxx°C	IP 65
Sh 80	6204 2Z	II 2G Exe II T3-T4	IP 56	II 2D Txxx°C	IP 65	II 2G Exe II T3-T4/ II 2D Txxx°C	IP 65
Sh 90	6205 2Z	II 2G Exe II T3-T4	IP 55	II 2D T125°C	IP 65	II 2G Exe II T3-T4/ II 2D T125°C	IP 65
Sg 100	6206 2Z	II 2G Exe II T3-T4	IP 55	II 2D T125°C	IP 65	II 2G Exe II T3-T4/ II 2D T125°C	IP 65
Sg 112	6306 2Z	II 2G Exe II T3-T4	IP 55	II 2D T125°C	IP 65	II 2G Exe II T3-T4/ II 2D T125°C	IP 65
Sg 132	6308 2Z	II 2G Exe II T3-T4	IP 55	II 2D T125°C	IP 65	II 2G Exe II T3-T4/ II 2D T125°C	IP 65
Sg 160	6309 2Z	II 2G Exe II T3-T4	IP 55	II 2D T125°C	IP 65	II 2G Exe II T3-T4/ II 2D T125°C	IP 65
Sg 180	6311 2Z	II 2G Exe II T3-T4	IP 55	II 2D T125°C	IP 65	II 2G Exe II T3-T4/ II 2D T125°C	IP 65

As part of our development program, we reserve the right to alter or amend any of the specifications without giving prior notice.

## TECHNICAL DATA

In the Exe motors there are applied additional means to increase safety in case of appearance of excessive temperature or occurrence of arcs and sparks inside the motor and on its external parts. There are special terminal board, terminal box ensuring suitable insulating distances, certified cable gland, two neutral terminals, reinforced insulation etc. The parts of motor housing are made of material with magnesium contents less than 6% apart from the fan cover which is made of steel.

The overload protection of the motor must cause the motor to disconnect from the supply voltage in a time shorter than the specified time  $t_E$  when the current is equal to the starting current. Time  $t_E$  is the time when, during the flow of the starting current, the motor winding heats up to the limit temperature from the temperature of rated conditions at maximum ambient temperature. For  $t_E$  please refer to the table with parameters.

The motors can be provided with a cable gland with a holder (protecting the supply wire against pulling out). The motors that are provided with special fan cover can work in perpendicular position with the shaft down, However detailed conditions specified in service manual being enclosed to each motor, must be fulfilled.

The motors II 2D Ex tD A21 Txxx°C are equipped with posistor-based PTC temperature sensors. During normal operation within the nominal range, temperatures of motor component external surfaces do not exceed xxx°C. The user must install the equipment compliant with PTC sensors. The equipment should cut power off if motor temperature is exceeded. Motor overheating may be caused by its overload, shaft locking, motor failure, etc.

## STANDARDS

<b>The electric motors are manufactured according to international standards:</b>	
Electrical requirements	EN 60034-1 EN 60034-6 EN 60034-9
Mechanical requirements	EN 60034-5, EN 60529 EN 60034-6 EN 60034-7 EN 60034-14 IEC 72-1, EN 50347
<p>The motors meet requirements of EN 60079-0, EN 60079-7 and EN 13980 (production quality requirements).</p> <p>The products comply with the specifications regarding the electromagnetic compatibility specified in: EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4.</p> <p>"II 2D Ex tD A21 Txxx°C" range motors meet also requirements of EN 61241-0 and EN 61241-1.</p>	

<b>Each motor is manufactured according to requirements of ATEX Directive 94/9/EC and has a certificate of conformity with the documentation approved by N.V. KEMA, Netherlands.</b>	
Type Sg56.-	KDB 07 ATEX057 for temperature class T3/T4
Type Sg63.-	KEMA 03 ATEX2176 for temperature class T3 KEMA 03 ATEX2177 for temperature class T4
Type Sh71.-	KEMA 03 ATEX2178 for temperature class T3 KEMA 03 ATEX2179 for temperature class T4
Type Sh80.-	KEMA 03 ATEX2180 for temperature class T3 KEMA 03 ATEX2181 for temperature class T4
Type Sh90.-	KEMA 02 ATEX2136 for temperature class T3 KEMA 02 ATEX2137 for temperature class T4
Type Sg100.-	KEMA 02 ATEX2138 for temperature class T3 KEMA 02 ATEX2139 for temperature class T4
Type Sg112.-	KEMA 02 ATEX2140 for temperature class T3 KEMA 02 ATEX2141 for temperature class T4
Type Sg132.-	KEMA 02 ATEX2142 for temperature class T3 KEMA 02 ATEX2143 for temperature class T4
Type Sg160.-	KEMA 02 ATEX2144 for temperature class T3 KEMA 02 ATEX2145 for temperature class T4
Type Sg 180.-	KEMA 02 ATEX2146 for temperature class T3 KEMA 02 ATEX2147 for temperature class T4
"II 2D Ex tD A21 T125°C" range	KEMA 06 ATEX0113

All the motors are manufactured in Quality Assurance System consistent with ISO 9001.



The motors covered by the present catalogue comply with the regulations and standards consistent with IEC standards.



All the motors described in present catalogue are provided with CE mark. It means that our products are consistent with the European Union directives regarding the safety features.





Totally Enclosed Motors  
Insulation Class F

II 2G Exe II T3 - T4 (frame size: 56 - 180)  
II 2D Ex tD A21 Txxx°C (frame size: 63 - 180)

II 2G Exe II T3 - T4 / II 2D Ex tD A21 Txxx°C (frame size: 63 - 180)



Item	Type of Motor	Rated Output		Rated Speed n <sub>N</sub> [rpm]	Rated Torque T <sub>N</sub> [Nm]	Rated Efficiency η <sub>N</sub> [%]	Power Factor cos φ <sub>N</sub> [-]	Full-Load Amps at Rated Voltage		Locked Rotor Torque T <sub>L</sub> /T <sub>N</sub> [-]	Locked Rotor Current I <sub>L</sub> /I <sub>N</sub> [-]	Breakdown Torque T <sub>b</sub> /T <sub>N</sub> [-]	Heating Time t <sub>e</sub>		Weight (IMB3) m kg
		P <sub>N</sub>						I <sub>N</sub>	T3				T4		
		[kW]	[HP]											[A] <sub>230V</sub>	
2p=2 n <sub>s</sub> =3000 rpm															
1.	ExSg56-2A-T3	0,09	0,12	2800	0,31	58	0,68	0,58	0,33	2,3	3,7	2,4	50	-	2,9
2.	ExSg56-2A-T4	0,09	0,12	2800	0,31	58	0,68	0,58	0,33	2,3	3,7	2,4	-	20	2,9
3.	ExSg56-2B-T3	0,12	0,16	2810	0,41	60	0,62	0,81	0,47	2,7	3,9	2,7	40	-	3,2
4.	ExSg56-2B-T4	0,12	0,16	2810	0,41	60	0,62	0,81	0,47	2,7	3,9	2,7	-	15	3,2
5.	ExSg63-2A-T3	0,18	0,25	2710	0,63	61	0,82	0,9	0,5	1,9	4	1,9	39,5	-	3,6
6.	ExSg63-2A-T4	0,18	0,25	2710	0,63	61	0,82	0,9	0,5	1,9	4	1,9	-	14,0	3,6
7.	ExSg63-2B-T3	0,25	0,33	2770	0,86	64	0,82	1,2	0,7	2	4,4	2	25,8	-	4,2
8.	ExSg63-2B-T4	0,18	0,25	2840	0,61	62	0,72	1,1	0,6	2,8	5,2	2,8	-	11,5	4,2
9.	ExSh71-2A-T3	0,37	0,5	2680	1,32	59	0,9	1,75	1	2,2	4	2,2	18,2	-	5
10.	ExSh71-2A-T4	0,25	0,33	2830	0,84	65	0,8	1,2	0,7	2,8	5,4	3	-	11,8	5
11.	ExSh71-2B-T3	0,55	0,75	2720	1,93	67	0,86	2,4	1,4	2	4,4	2,1	12	-	6
12.	ExSh71-2B-T4	0,37	0,5	2850	1,24	70	0,75	1,75	1	2,9	5,8	3	-	8,8	6
13.	ExSh80-2A-T3	0,75	1	2760	2,6	73	0,83	3,1	1,8	2,7	4,7	2,6	10,5	-	8
14.	ExSh80-2A-T4	0,55	0,75	2850	1,85	71	0,78	2,45	1,4	2,8	6	2,9	-	6,2	8
15.	ExSh80-2B-T3	1,1	1,5	2780	3,7	75	0,88	4,15	2,4	2,6	5,5	2,6	7,2	-	9,1
16.	Sh90S-2-T3	1,5	2	2850	5	77,8	0,81	6,1	3,5	2,9	6	3	10	-	12,5
17.	Sh90S-2-T4	1	1,36	2895	3,3	79,6	0,78	4	2,3	3,8	7,5	4,1	-	6	12,7
18.	Sh90L-2-T3	2,2	3	2860	7,35	81,7	0,82	8,2	4,7	3	7,1	3,2	5	-	15,9
19.	Sh90L-2-T4	1,2	1,6	2855	4	79,5	0,9	4,2	2,4	3,2	7,4	3,2	-	6	16,5
20.	Sg100L-2-T3	2,4	3,3	2905	7,9	81,7	0,88	8,3	4,8	2,7	8,3	3	6	-	22,8
21.	Sg100L-2-T4	1,5	2	2900	4,9	79,2	0,91	5,2	3	2,8	7,8	3,1	-	5,5	22,5
22.	Sg112M-2-T3	4	5,5	2875	13,3	85,5	0,91	13	7,5	2	6,5	2,4	8	-	33
23.	Sg112M-2-T4	2	2,7	2915	6,5	85,8	0,91	6,4	3,7	3	7,9	3,5	-	15	33
24.	Sg132S-2A-T3	5,5	7,5	2915	18	85,3	0,9	18,1	10,4	2,4	7,1	2,7	9	-	57
25.	Sg132S-2A-T4	2,5	3,4	2930	8,1	85,2	0,91	8	4,6	2,4	7,5	3,2	-	16	58
26.	Sg132S-2B-T3	7	9,4	2920	22,9	87,3	0,91	22,1	12,7	2,5	7,7	3,1	7	-	76
27.	Sg132S-2B-T4	3,5	4,8	2935	11,4	86,1	0,92	11,1	6,4	2,8	8	3,4	-	11	72
28.	Sg160M-2A-T3	11	15	2920	36	88,1	0,89	35	20,1	2,3	6,5	2,7	5,6	-	101
29.	Sg160M-2A-T4	5	6,8	2945	16,2	87,7	0,9	16	9,2	3	7,7	3,6	-	8	101
30.	Sg160M-2B-T4	6	8,1	2950	19,4	88,7	0,91	18,6	10,7	2,9	7,7	3,3	-	7	112
31.	Sg160L-2-T3	16	21,4	2940	52	90,8	0,9	49,2	28,3	2,8	7,7	3,5	7	-	132
32.	Sg160L-2-T4	7,5	10	2950	24,3	90	0,92	22,8	13,1	3,2	7,8	3,5	-	8	129
33.	Sg180M-2-T3	18,5	25	2945	60	91,6	0,92	55,3	31,8	2,3	8,25	3,4	13	-	188
34.	Sg180M-2-T4	10	13,6	2950	32,4	90,4	0,92	30,3	17,4	2,4	8,5	3,6	-	14	191
2p=4 n <sub>s</sub> =1500 rpm															
35.	ExSg56-4A-T3	0,06	0,82	1400	0,41	53	0,60	0,47	0,27	1,8	3,3	2	80	-	2,9
36.	ExSg56-4A-T4	0,06	0,82	1400	0,41	53	0,60	0,47	0,27	1,8	3,3	2	-	35	2,9
37.	ExSg56-4B-T3	0,09	0,12	1390	0,62	55	0,62	0,66	0,38	1,9	3,1	2	55	-	3,2
38.	ExSg56-4B-T4	0,09	0,12	1390	0,62	55	0,62	0,66	0,38	1,9	3,1	2	-	21	3,2
39.	ExSg63-4A-T3	0,12	0,17	1380	0,83	50	0,67	0,9	0,5	2	3,4	2	50,3	-	3,6
40.	ExSg63-4A-T4	0,12	0,17	1380	0,83	58	0,67	0,9	0,5	2	3,4	2	-	18,6	3,6
41.	ExSg63-4B-T3	0,18	0,25	1370	1,25	62	0,69	1,1	0,6	2	3,7	2	41,1	-	4,2
42.	ExSg63-4B-T4	0,18	0,25	1370	1,25	62	0,69	1,1	0,6	2	3,7	2	-	14,2	4,2
43.	ExSh71-4A-T3	0,25	0,33	1350	1,77	65	0,69	1,4	0,8	2	3,7	2	41,7	-	4,8
44.	ExSh71-4A-T4	0,18	0,25	1400	1,23	66	0,57	1,2	0,7	2,7	4,2	2,7	-	19,2	4,8
45.	ExSh71-4B-T3	0,37	0,5	1350	2,62	68	0,59	2,25	1,3	2	3,6	2	20,4	-	5,9
46.	ExSh80-4A-T3	0,55	0,75	1370	3,8	71	0,72	2,75	1,6	1,7	3,4	1,8	16,5	-	7,8
47.	ExSh80-4A-T4	0,37	0,5	1420	2,5	72	0,58	2,25	1,3	2,5	4,1	2,7	-	11	7,8
48.	ExSh80-4B-T3	0,75	1	1370	5,2	71	0,74	3,7	2,1	1,8	4,6	1,8	20	-	9
49.	ExSh80-4B-T4	0,55	0,75	1420	3,7	74	0,64	2,95	1,7	2,5	5,5	2,5	-	11,5	9
50.	Sh90S-4-T3	1,1	1,5	1405	6,8	72,9	0,8	4,7	2,7	2	4,65	2,4	14	-	12,7
51.	Sh90S-4-T4	0,8	1,07	1435	5,3	75,8	0,75	3,5	2	2,6	5,7	3,1	-	10	12,7
52.	Sh90L-4-T3	1,5	2	1415	10,1	75,5	0,77	6,4	3,7	2,5	5,3	2,7	13	-	15,5
53.	Sh90L-4-T4	1,1	1,5	1430	7,3	76	0,78	4,7	2,7	2,8	6,2	3	-	10	16

Totally Enclosed Motors

Insulation Class F

II 2G Exe II T3 - T4 (frame size: 56 - 180)

II 2D Ex tD A21 Txxx°C (frame size: 63 - 180)

II 2G Exe II T3 - T4 / II 2D Ex tD A21 Txxx°C (frame size: 63 - 180)



Item	Type of Motor	Rated Output		Rated Speed n <sub>N</sub>	Rated Torque T <sub>N</sub>	Rated Efficiency η <sub>N</sub>	Power Factor cos φ <sub>N</sub>	Full-Load Amps at Rated Voltage		Locked Rotor Torque T <sub>L</sub> /T <sub>N</sub>	Locked Rotor Current I <sub>L</sub> /I <sub>N</sub>	Breakdown Torque T <sub>b</sub> /T <sub>N</sub>	Heating Time t <sub>e</sub>		Weight (IMB3) m
		P <sub>N</sub>						I <sub>N</sub>	T <sub>3</sub>				T <sub>4</sub>		
		[kW]	[HP]											[A] <sub>230V</sub>	
2p=4 n <sub>s</sub> =1500 rpm															
123.	Sg100L-4A-T3	2,2	3	1425	14,7	77,1	0,8	9	5,2	2,4	5,9	2,8	9	-	21,9
124.	Sg100L-4A-T4	1,5	2	1430	10	78,1	0,83	5,7	3,3	2,6	6,2	3,1	-	10	22,1
125.	Sg100L-4B-T3	3	4	1415	20,2	78	0,81	12	6,9	2,6	5,75	2,9	9	-	24
126.	Sg100L-4B-T4	2	2,7	1425	13,4	79,8	0,85	7,5	4,3	2,4	6,2	2,7	-	7	23,9
127.	Sg112M-4-T3	4	5,5	1430	26,7	82,6	0,85	14,4	8,3	2,5	6,9	3	7	-	33
128.	Sg112M-4-T4	2,4	3,3	1450	15,8	83,8	0,84	8,5	4,9	3	7,9	3,7	-	8	33
129.	Sg132S-4-T3	5,5	7,5	1455	36,1	84,5	0,84	19,3	11,1	2,2	6,8	2,8	7	-	60
130.	Sg132S-4-T4	3	4	1465	19,5	85,5	0,85	10,4	6	2,3	7,7	3	-	8	60
131.	Sg132M-4-T3	7,5	10	1450	49,4	85,9	0,86	25,4	14,6	2,3	7	2,8	5	-	71
132.	Sg132M-4-T4	4	5,5	1460	26,2	86,2	0,87	13,4	7,7	2,2	7,4	3	-	7	71
133.	Sg160M-4-T3	11	15	1460	72	88,5	0,85	36,7	21,2	2,2	7,2	3,1	7	-	104
134.	Sg160M-4-T4	6	8,1	1465	39,1	88,6	0,87	19,7	11,3	2	7,3	2,8	-	14	105
135.	Sg160L-4-T3	15	20	1460	98,1	89,7	0,86	48,7	28	2,3	7,4	3	6	-	126
136.	Sg160L-4-T4	7,5	10	1465	48,9	89,4	0,88	24	13,8	2,2	7,6	2,9	-	12	127
137.	Sg180M-4-T3	18,5	25	1470	120	91,4	0,89	57,4	33	2,8	7,9	2,7	5	-	173
138.	Sg180L-4-T3	22	30	1465	143	91,7	0,9	66,6	38,3	2,8	7,7	2,6	5	-	200
139.	Sg180L-4-T4	11	15	1465	71,7	89,8	0,92	33,6	19,3	2	5,8	2,3	-	7	199
2p=6 n <sub>s</sub> =1000 rpm															
140.	ExSg63-6B-T3	0,06	0,08	920	0,62	33	0,50	0,95	0,55	2,3	1,9	2,3	70,5	-	4,2
141.	ExSh71-6A-T3	0,18	0,25	890	1,93	49	0,66	1,4	0,8	1,9	2,8	1,9	26	-	4,9
142.	ExSh71-6B-T3	0,25	0,33	870	2,74	51	0,7	1,75	1	1,6	2,8	1,6	22,1	-	5,8
143.	ExSh80-6A-T3	0,37	0,5	910	3,9	62	0,66	2,25	1,3	2	3	2,1	30	-	7,3
144.	ExSh80-6B-T3	0,55	0,75	880	5,9	65	0,72	2,95	1,7	1,9	3,1	2	22	-	8,6
145.	ExSh80-6B-T4	0,37	0,5	940	3,75	68	0,6	2,25	1,3	2,7	4	3	-	18	8,9
146.	Sh90S-6-T3	0,75	1	915	7,82	69,8	0,73	3,7	2,1	1,9	3,7	2,1	32	-	12,1
147.	Sh90S-6-T4	0,65	0,88	935	6,6	71,1	0,68	3,5	2	2,3	4,1	2,6	-	18	12,4
148.	Sh90L-6-T3	1,1	1,5	920	11,4	73,3	0,71	5,2	3	2,2	4,05	2,5	33	-	15,5
149.	Sh90L-6-T4	0,8	1,07	950	8	73,9	0,61	4,5	2,6	3,1	4,8	3,3	-	18	15,5
150.	Sg100L-6-T3	1,5	2	945	15,2	72,5	0,73	7,1	4,1	2,1	4,5	2,4	17	-	21
151.	Sg100L-6-T4	1,2	1,6	950	12,1	73,7	0,74	5,6	3,2	2,3	4,8	2,7	-	12	22,1
152.	Sg112M-6-T3	2,2	3	960	21,9	81,2	0,77	8,9	5,1	2,3	5,9	2,7	19	-	32
153.	Sg112M-6-T4	1,6	2,1	970	15,7	81,1	0,73	6,8	3,9	2,8	6,7	3,4	-	12	32
154.	Sg132S-6-T3	3	4	945	30,3	79,7	0,8	11,8	6,8	2,1	5,3	2,8	18	-	52
155.	Sg132S-6-T4	2,2	3	960	21,9	80,7	0,78	8,9	5,1	2,3	5,9	3	-	11	52
156.	Sg132M-6A-T3	4	5,5	950	40,2	82,9	0,82	14,8	8,5	2,3	6,1	2,9	14	-	64
157.	Sg132M-6A-T4	2,8	3,8	960	27,8	84,3	0,8	10,4	6	2,4	6,5	2,9	-	12	63
158.	Sg132M-6B-T3	5,5	7,5	950	55,3	83,3	0,82	20,2	11,6	2,7	6,4	3,4	8	-	71
159.	Sg132M-6B-T4	4	5,5	960	39,8	84,8	0,83	14,3	8,2	2,5	7	3,5	-	5,5	71
160.	Sg160M-6-T3	7,5	10	960	74,6	86,3	0,8	27,3	15,7	2,2	6,5	2,8	10	-	99
161.	Sg160M-6-T4	5,5	7,5	965	54,4	87,2	0,81	19,5	11,2	2,2	6,7	2,9	-	7	101
162.	Sg160L-6-T3	11	15	960	109,4	87,5	0,82	38,3	22	2,3	6,8	3,3	8	-	126
163.	Sg160L-6-T4	7	9,4	970	68,9	88,6	0,84	23,7	13,6	2,4	7,5	3,1	-	8	125
164.	Sg180L-6-T3	13,5	18	980	131	89,3	0,82	46,3	26,6	3,2	6,7	2,4	8	-	169

Totally Enclosed Motors  
Insulation Class F  
II 2D Ex tD A21 T125°C



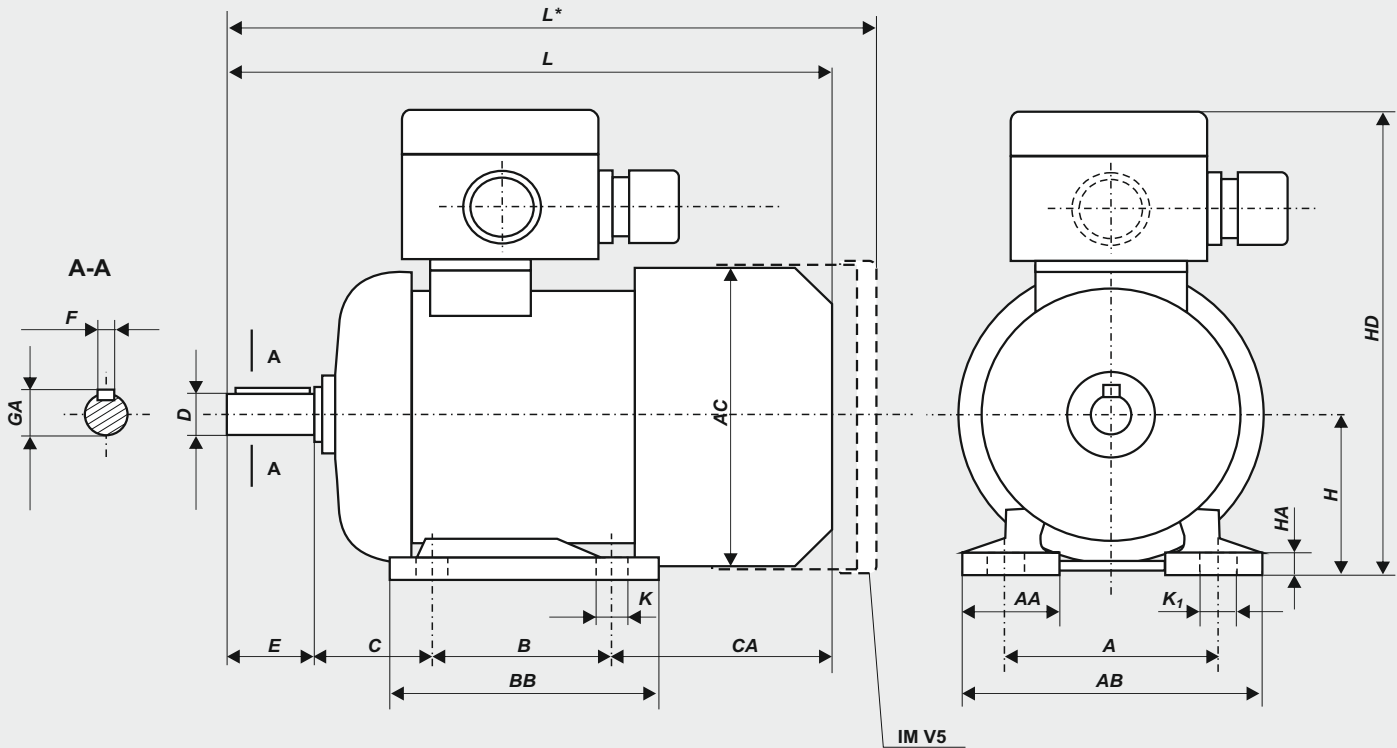
Item	Type of Motor	Rated Output		Rated Speed	Rated Torque	Rated Efficiency	Power Factor	Full-Load Amps at Rated Voltage		Locked Rotor Torque	Locked Rotor Current	Breakdown Torque	Weight (MB3)
		P <sub>N</sub>						n <sub>N</sub>	T <sub>N</sub>				
		[kW]	[HP]	[rpm]	[Nm]	[%]	[-]	[A] <sub>230V</sub>	[A] <sub>400V</sub>	[-]	[-]	[-]	[kg]
2p=2 n <sub>s</sub> =3000 rpm													
165.	Sh 90S-2	1,5	2	2835	5,1	81,1	0,83	5,6	3,2	3	6,15	3,05	14
166.	Sh 90L-2	2,2	3	2855	7,4	83,2	0,82	8,1	4,7	3,4	7,1	3,5	16,8
167.	Sg 100L-2	3	4	2905	9,9	83,4	0,86	10,5	6	2,7	7,5	2,8	25
168.	Sg 112M-2	4	5,5	2865	13,3	85,4	0,9	13,1	7,5	2,1	6,4	2,3	34
169.	Sg 132S-2A	5,5	7,5	2910	18,0	87	0,88	18,0	10,4	2,4	7	3,2	60
170.	Sg 132S-2B	7,5	10	2920	24,5	88,5	0,88	24,2	13,9	2,5	7,5	3,2	71
171.	Sg 160M-2A	11	15	2930	35,9	89,5	0,89	34,7	19,9	2,4	6,1	2,9	100
172.	Sg 160M-2B	15	20	2920	49,1	90,5	0,91	45,7	26,3	2,4	6,2	2,7	115
173.	Sg 160L-2	18,5	25	2930	60,3	91	0,91	56,1	32,2	2,8	6,5	3	130
174.	Sg 180M-2	22	30	2920	71,9	90,6	0,88	69,3	39,8	2,5	6	2,5	165
2p=4 n <sub>s</sub> =1500 rpm													
175.	Sh 90S-4	1,1	1,5	1405	7,5	76,7	0,8	4,5	2,6	220	4,9	2,8	14
176.	Sh 90L-4	1,5	2	1410	10,2	79	0,78	6,1	3,5	250	5,3	2,8	16,5
177.	Sg 100L-4A	2,2	3	1425	14,7	82	0,8	8,4	4,8	250	6,1	2,8	25
178.	Sg 100L-4B	3	4	1415	20,2	82,7	0,81	11,2	6,5	260	6,1	2,7	26
179.	Sg 112M-4	4	5,5	1435	26,6	85,1	0,82	14,4	8,3	260	6,3	3	34
180.	Sg 132S-4	5,5	7,5	1450	36,2	85,9	0,84	19,1	11	220	6,9	3,1	62
181.	Sg 132M-4	7,5	10	1450	49,4	87	0,85	25,5	14,6	240	6,7	3,1	73
182.	Sg 160M-4	11	15	1460	71,9	89	0,85	36,5	21	230	7	3,1	105
183.	Sg 160L-4	15	20	1460	98,1	89,5	0,87	48,4	27,8	240	7,3	3,2	125
184.	Sg 180M-4	18,5	25	1470	120,2	90,5	0,9	57,0	32,8	240	6,8	2,9	165
185.	Sg 180L-4	22	30	1465	143,4	91	0,9	67,4	38,8	270	7,3	2,8	175
2p=6 n <sub>s</sub> =1000 rpm													
186.	Sh 90S-6	0,75	1	915	7,8	72,4	0,72	3,6	2,1	190	3,7	2,2	13,5
187.	Sh 90L-6	1,1	1,5	920	11,4	75,4	0,71	5,2	3	220	4	2,25	16,5
188.	Sg 100L-6	1,5	2	945	15,2	76,7	0,73	6,7	3,9	190	4,6	2,3	24
189.	Sg 112M-6	2,2	3	960	21,9	83,8	0,78	8,4	4,9	220	5,9	2,8	33
190.	Sg 132S-6	3	4	950	30,2	81	0,78	11,9	6,9	210	5,4	2,8	54
191.	Sg 132M-6A	4	5,5	950	40,2	84	0,79	15,1	8,7	240	6	3,1	66
192.	Sg 132M-6B	5,5	7,5	950	55,3	85	0,79	20,6	11,8	270	6,3	3,1	72
193.	Sg 160M-6	7,5	10	960	74,6	87,5	0,81	26,6	15,3	230	6,5	3,1	100
194.	Sg 160L-6	11	15	960	109,4	88,5	0,82	38,0	21,9	240	7	3,1	125
195.	Sg 180L-6	15	20	975	146,9	89	0,84	50,4	29	280	6	2,4	170

**FOOT MOUNTED MOTORS - IM B3 / V5**

**II 2G Exe II T3 - T4 (frame size: 56 - 180)**

**II 2D Ex tD A21 Txxx°C (frame size: 63 - 180)**

**II 2G Exe II T3 - T4 / II 2D Ex tD A21 Txxx°C (frame size: 63 - 180)**



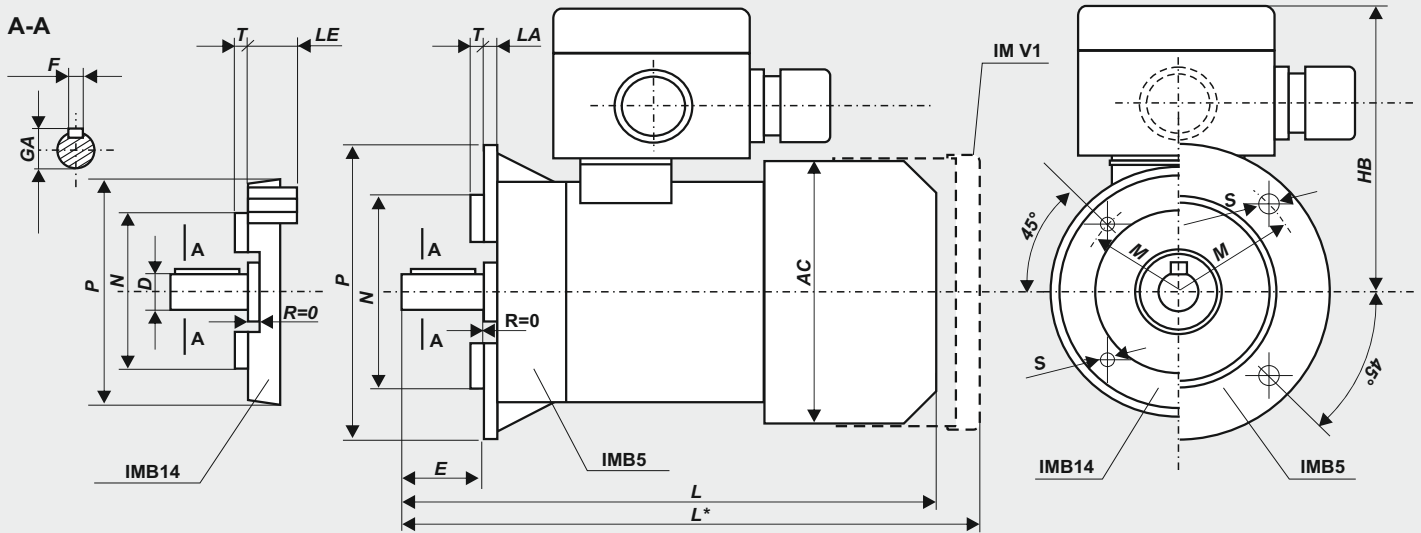
**IM B3 / V5**

Type of Motor	A	B	C	CA	D	E	F	GA	H	K	K1	Gland	AA	AB	AC	BB	HA	HD	L/L*	Bearings
ExSg56-.A	90	71	36	66,5	9j6	20	3h9	10,2	56	5,8	8	M20	30	110	117	92	7	176	188/214	6201 2Z
ExSg56-.B	90	71	36	74,5	9j6	20	3h9	10,2	56	5,8	8	M20	30	110	117	92	7	176	196/222	6201 2Z
ExSg63-.A	100	80	40	67	11j6	23	4h9	12,5	63	7	10	M20	36	124	126	106	8,5	185	202/228	6202 2Z
ExSg63-.B	100	80	40	79	11j6	23	4h9	12,5	63	7	10	M20	36	124	126	106	8,5	185	214/240	6202 2Z
ExSh71-.A	112	90	45	65	14j6	30	5h9	16	71	7	10	M20	45	142	141	116	8	202	223/249	6203 2Z
ExSh71-.B	112	90	45	83	14j6	30	5h9	16	71	7	10	M20	45	142	141	116	8	202	245/271	6203 2Z
ExSh80-.A	125	100	50	87	19j6	40	6h9	21,5	80	10	13	M20	55	160	157	130	9	222	266/283	6204 2Z
ExSh80-.B	125	100	50	99	19j6	40	6h9	21,5	80	10	13	M20	55	160	157	130	9	222	278/303	6204 2Z
Sh90S-	140	100	56	104	24j6	50	8h9	27	90	10	-	M20	50	170	185	153	10	220	305/329	6205 2Z
Sh90L-	140	125	56	104	24j6	50	8h9	27	90	10	-	M20	50	170	185	153	10	220	330/354	6205 2Z
Sg100L-	160	140	63	116	28j6	60	8h9	31	100	12	-	M20	45	200	206	172	14	240	376/421	6206 2Z
Sg112M-	190	140	70	119	28j6	60	8h9	31	112	12	-	M25	54	230	245	174	14	276	384/429	6306 2Z
Sg132S-	216	140	89	160	38k6	80	10h9	41	132	12	-	M25	56	278	274	182	16	330	463/516	6308 2Z
Sg132S-2B	216	140	89	198	38k6	80	10h9	41	132	12	-	M25	56	278	274	220	16	330	501/554	6308 2Z
Sg132M-	216	178	89	160	38k6	80	10h9	41	132	12	-	M25	56	278	274	220	16	330	501/554	6308 2Z
Sg160M-	254	210	108	200	42k6	110	12h9	45	160	15	-	M40	60	305	323	256	20	370	612/665	6309 2Z
Sg160L-	254	254	108	200	42k6	110	12h9	45	160	15	-	M40	60	305	323	300	20	370	656/709	6309 2Z
Sg180M-2	279	241	121	256	48k6	110	14h9	51,5	180	15	-	M40	70	350	360	320	26	408	756/809	6311 2Z
Sg180M-4	279	241	121	243	48k6	110	14h9	51,5	180	15	-	M40	70	350	360	320	26	408	705/758	6311 2Z
Sg180L-4	279	279	121	256	48k6	110	14h9	51,5	180	15	-	M40	70	350	360	320	26	408	756/809	6311 2Z
Sg180L-6	279	279	121	243	48k6	110	14h9	51,5	180	15	-	M40	70	350	360	320	26	408	705/758	6311 2Z

\* - protection raincup on request

**FLANGE MOUNTED MOTORS - IM B5 / V1**

**II 2G Exe II T3 - T4 (frame size: 56 - 180)**  
**II 2D Ex tD A21 Txxx°C (frame size: 63 - 180)**  
**II 2G Exe II T3 - T4 / II 2D Ex tD A21 Txxx°C (frame size: 63 - 180)**



**IM B5 / V1**

Type of Motor	Flange	P	M	N	S	D	E	F	GA	LA	T	Gland	AC	HB	L/L*	Bearings
ExSKg56-A	B5	120	100	80j6	7	9j6	20	3h9	10,2	8	3	M20	117	120	188/214	6201 2Z
ExSKg56-B	B5	120	100	80j6	7	9j6	20	3h9	10,2	8	3	M20	117	120	214/222	6201 2Z
ExSKg63-A	B5	140	115	95j6	10	11j6	23	4h9	12,5	9	3	M20	126	114	201/227	6202 2Z
ExSKg63-B	B5	140	115	95j6	10	11j6	23	4h9	12,5	9	3	M20	126	114	213/239	6202 2Z
ExSKh71-A	B5	160	130	110j6	10	14j6	30	5h9	16	9	3,5	M20	141	119	223/249	6203 2Z
ExSKh71-B	B5	160	130	110j6	10	14j6	30	5h9	16	9	3,5	M20	141	119	245/271	6203 2Z
ExSKh80-A	B5	200	165	130j6	12	19j6	40	6h9	21,5	10	3,5	M20	157	127	266/283	6204 2Z
ExSKh80-B	B5	200	165	130j6	12	19j6	40	6h9	21,5	10	3,5	M20	157	127	278/303	6204 2Z
SKh90S-	B5	200	165	130j6	12	24j6	50	8h9	27	8	3,5	M20	185	130	305/329	6205 2Z
SKh90L-	B5	200	165	130j6	12	24j6	50	8h9	27	8	3,5	M20	185	130	330/354	6205 2Z
SKg100L-	B5	250	215	180j6	15	28j6	60	8h9	31	11	4	M20	206	140	376/421	6206 2Z
SKg112M-	B5	250	215	180j6	15	28j6	60	8h9	31	12	4	M25	245	164	384/429	6306 2Z
SKg132S-	B5	300	265	230j6	15	38k6	80	10h9	41	12	4	M25	274	198	463/516	6308 2Z
SKg132S-2B	B5	300	265	230j6	15	38k6	80	10h9	41	12	4	M25	274	198	501/554	6308 2Z
SKg132M-	B5	300	265	230j6	15	38k6	80	10h9	41	12	4	M25	274	198	501/554	6308 2Z
SKg160M-	B5	350	300	250j6	19	42k6	110	12h9	45	13	5	M40	323	210	612/665	6309 2Z
SKg160L-	B5	350	300	250j6	19	42k6	110	12h9	45	13	5	M40	323	210	656/709	6309 2Z
SKg180M-2	B5	350	300	250j6	19	48k6	110	14h9	51,5	13	5	M40	360	228	756/809	6311 2Z
SKg180M-4	B5	350	300	250j6	19	48k6	110	14h9	51,5	13	5	M40	360	228	705/758	6311 2Z
SKg180L-4	B5	350	300	250j6	19	48k6	110	14h9	51,5	13	5	M40	360	228	756/809	6311 2Z
SKg180L-6	B5	350	300	250j6	19	48k6	110	14h9	51,5	13	5	M40	360	228	705/758	6311 2Z

\* - protection raincup on request

**FLANGE MOUNTED MOTORS - IM B14 / V18**

**II 2G Exe II T3 - T4 (frame size: 56 - 160)**

**II 2D Ex tD A21 Txxx°C (frame size: 63 - 160)**

**II 2G Exe II T3 - T4 / II 2D Ex tD A21 Txxx°C (frame size: 63 - 160)**

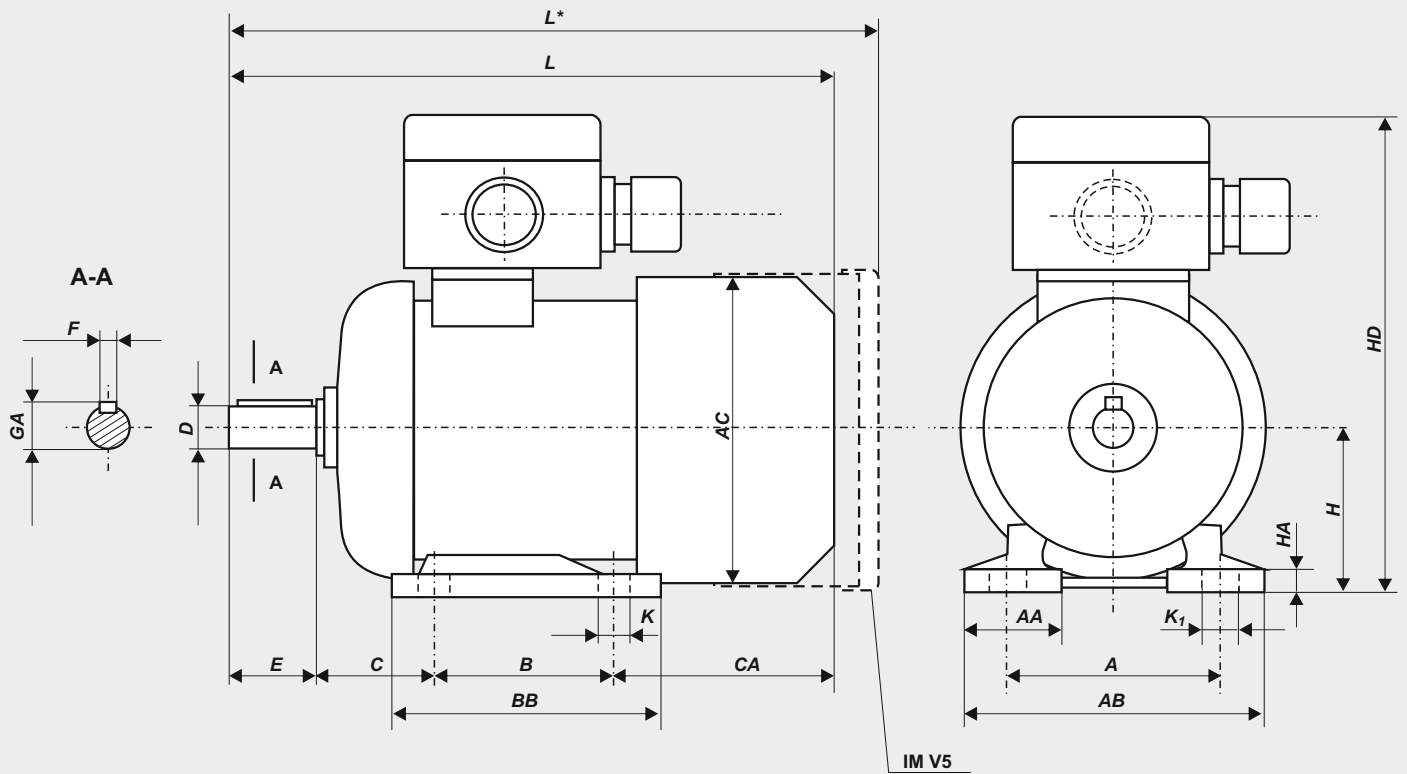
**IM B14 / V18**

Type of Motor	Flange	P	M	N	S	D	E	F	GA	LE	T	Gland	AC	HB	L/L*	
<b>Bearings</b>																
ExSKg56-.A1	B14C1	105	85	70j6	M6	9j6	20	3h9	10,2	15	2,5	M20	117	120	188/214	6201 2Z
ExSKg56-.A2	B14C2	80	65	50j6	M5	9j6	20	3h9	10,2	12,5	2,5	M20	117	120	188/214	6201 2Z
ExSKg56-.B1	B14C1	105	85	70j6	M6	9j6	20	3h9	10,2	15	2,5	M20	117	120	196/222	6201 2Z
ExSKg56-.B2	B14C2	80	65	50j6	M5	9j6	20	3h9	10,2	12,5	2,5	M20	117	120	196/222	6201 2Z
ExSKg63-.A1	B14C1	120	100	80j6	M6	11j6	23	4h9	12,5	14	3	M20	126	114	201/227	6202 2Z
ExSKg63-.A2	B14C2	90	75	60j6	M5	11j6	23	4h9	12,5	9,5	2,5	M20	126	114	201/227	6202 2Z
ExSKg63-.B1	B14C1	120	100	80j6	M6	11j6	23	4h9	12,5	14	3	M20	126	114	213/239	6202 2Z
ExSKg63-.B2	B14C2	90	75	60j6	M5	11j6	23	4h9	12,5	9,5	2,5	M20	126	114	213/239	6202 2Z
ExSKh71-.A1	B14C1	140	115	95j6	M8	14j6	30	5h9	16	14	3	M20	141	119	223/249	6203 2Z
ExSKh71-.A2	B14C2	105	85	70j6	M6	14j6	30	5h9	16	12	2,5	M20	141	119	223/249	6203 2Z
ExSKh71-.B1	B14C1	140	115	95j6	M8	14j6	30	5h9	16	14	3	M20	141	119	245/271	6203 2Z
ExSKh71-.B2	B14C2	105	85	70j6	M6	14j6	30	5h9	16	12	2,5	M20	141	119	245/271	6203 2Z
ExSKh80-.A1	B14C1	160	130	110j6	M8	19j6	40	6h9	21,5	14	3,5	M20	157	127	266/283	6204 2Z
ExSKh80-.A2	B14C2	120	100	80j6	M6	19j6	40	6h9	21,5	12	3	M20	157	127	266/283	6204 2Z
ExSKh80-.B1	B14C1	160	130	110j6	M8	19j6	40	6h9	21,5	14	3,5	M20	157	127	278/303	6204 2Z
ExSKh80-.B2	B14C2	120	100	80j6	M6	19j6	40	6h9	21,5	12	3	M20	157	127	278/303	6204 2Z
SKh90S-	B14C1	160	130	110j6	M8	24j6	50	8h9	27	10	3,5	M20	185	130	305/329	6205 2Z
SKh90S-	B14C2	140	115	95j6	M8	24j6	50	8h9	27	10	3	M20	185	130	305/329	6205 2Z
SKh90L-	B14C1	160	130	110j6	M8	24j6	50	8h9	27	10	3,5	M20	185	130	330/354	6205 2Z
SKh90L-	B14C2	140	115	95j6	M8	24j6	50	8h9	27	10	3	M20	185	130	330/354	6205 2Z
SKg100L-	B14C1	200	165	130j6	M10	28j6	50	8h9	31	10	3,5	M20	206	140	376/421	6206 2Z
SKg100L-	B14C2	160	130	110j6	M8	28j6	50	8h9	31	10	3,5	M20	206	140	376/421	6206 2Z
SKg112M-	B14C1	200	165	130j6	M10	28j6	60	8h9	31	12	3,5	M25	245	164	384/429	6306 2Z
SKg112M-	B14C2	160	130	110j6	M8	28j6	60	8h9	31	12	3,5	M25	245	164	384/428	6306 2Z
SKg132S-	B14C1	250	215	180j6	M12	38k6	80	10h9	41	12	4	M25	274	178	463/516	6308 2Z
SKg132S-	B14C2	200	165	130j6	M10	38k6	80	10h9	41	12	3,5	M25	274	178	463/516	6308 2Z
SKg132S-2B-	B14C1	250	215	180j6	M12	38k6	80	10h9	41	12	4	M25	274	178	501/554	6308 2Z
SKg132S-2B-	B14C2	200	165	130j6	M10	38k6	80	10h9	41	12	3,5	M25	274	178	501/554	6308 2Z
SKg132M-	B14C1	250	215	180j6	M12	38k6	80	10h9	41	12	4	M25	274	178	501/554	6308 2Z
SKg132M-	B14C2	200	165	130j6	M10	38k6	80	10h9	41	12	3,5	M25	274	178	501/554	6308 2Z
SKg160M-	B14C1	300	265	230j6	M12	42k6	110	12h9	45	13	4	M40	323	210	612/665	6309 2Z
SKg160M-	B14C2	250	215	180j6	M12	42k6	110	12h9	45	20	4	M40	323	210	612/665	6309 2Z
SKg160L-	B14C1	300	265	230j6	M12	42k6	110	12h9	45	13	4	M40	323	210	656/709	6309 2Z
SKg160L-	B14C2	250	215	180j6	M12	42k6	110	12h9	45	20	4	M40	323	210	656/709	6309 2Z

\* - protection raincup on request

FOOT MOUNTED MOTORS - IMB 3 / V5

II 2D Ex tD A21 T125°C (frame size: 90 - 180)



IM B3 / V5

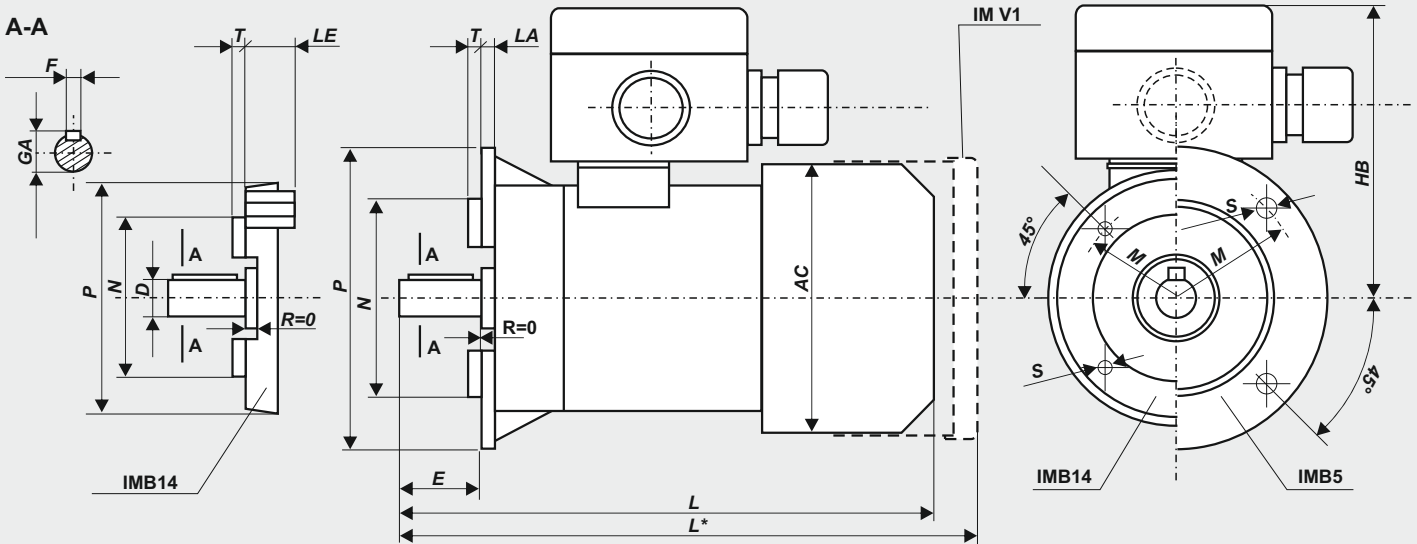
Type of Motor	A	B	C	CA	D	E	F	GA	H	K	K1	Gland	AA	AB	AC	BB	HA	HD	L/L*	Bearings
Sh 90S ...	140	125	56	104	24j6	50	8h9	27	90	10	-	M20	50	170	185	153	10	220	305/329	6205 2Z
Sh 90L ...	140	125	56	104	24j6	50	8h9	27	90	10	-	M20	50	170	185	153	10	220	330/354	6205 2Z
Sg 100L ...	160	140	63	116	28j6	60	8h9	31	100	12	-	M20	45	200	206	172	14	240	376/421	6206 2Z
Sg 112M ...	190	140	70	119	28j6	60	8h9	31	112	12	-	M25	54	230	245	174	14	276	384/429	6306 2Z
Sg 132S ...	216	140	89	160	38k6	80	10h9	41	132	12	-	M25	56	278	274	182	16	310	463/516	6308 2Z
Sg 132S-2B	216	140	89	198	38k6	80	10h9	41	132	12	-	M25	56	278	274	220	16	310	501/554	6308 2Z
Sg 132M ...	216	178	89	160	38k6	80	10h9	41	132	12	-	M25	56	278	274	220	16	310	501/554	6308 2Z
Sg 160M ...	254	210	108	200	42k6	110	12h9	45	160	15	-	M40	60	305	323	256	20	370	612/665	6309 2Z
Sg 160L ...	254	254	108	200	42k6	110	12h9	45	160	15	-	M40	60	305	323	300	20	370	656/709	6309 2Z
Sg 180M ...	279	241	121	243	48k6	110	14h9	51,5	180	15	-	M40	70	350	360	320	26	408	705/758	6311 2Z
Sg 180L ...	279	279	121	205	48k6	110	14h9	51,5	180	15	-	M40	70	350	360	320	26	408	705/758	6311 2Z

\* - protection raincup on request

**FLANGE MOUNTED MOTORS - IM B5 / V1, IM B14 / V18**

**II 2D Ex tD A21 T125°C (frame size: 90 - 180)**

Type of Motor	Flange	P	M	N	S	D	E	F	GA	LA	T	Gland	AC	HB	L/L*	Bearings
SKh 90S ...	B5	200	165	130j6	12	24j6	50	8h9	27	8	3,5	M20	185	130	305/329	6205 2Z
SKh 90L ...	B5	200	165	130j6	12	24j6	50	8h9	27	8	3,5	M20	185	130	330/354	6205 2Z
SKg 100L ...	B5	250	215	180j6	15	28j6	60	8h9	31	11	4	M20	206	140	376/421	6206 2Z
SKg 112M ...	B5	250	215	180j6	15	28j6	60	8h9	31	12	4	M25	245	164	384/429	6306 2Z
SKg 132S ...	B5	300	265	230j6	15	38k6	80	10h9	41	12	4	M25	274	178	463/516	6308 2Z
SKg 132S-2B	B5	300	265	230j6	15	38k6	80	10h9	41	12	4	M25	274	178	501/554	6308 2Z
SKg 132M ...	B5	300	265	230j6	15	38k6	80	10h9	41	12	4	M25	274	178	501/554	6308 2Z
SKg 160M ...	B5	350	300	250j6	19	42k6	110	12h9	45	13	5	M40	323	210	612/665	6309 2Z
SKg 160L ...	B5	350	300	250j6	19	42k6	110	12h9	45	13	5	M40	323	210	656/709	6309 2Z
SKg 180M ...	B5	350	300	250j6	19	48k6	110	14h9	51,5	13	5	M40	360	228	705/758	6311 2Z
SKg 180L ...	B5	350	300	250j6	19	48k6	110	14h9	51,5	13	5	M40	360	228	705/758	6311 2Z



**IM B14 / V18**

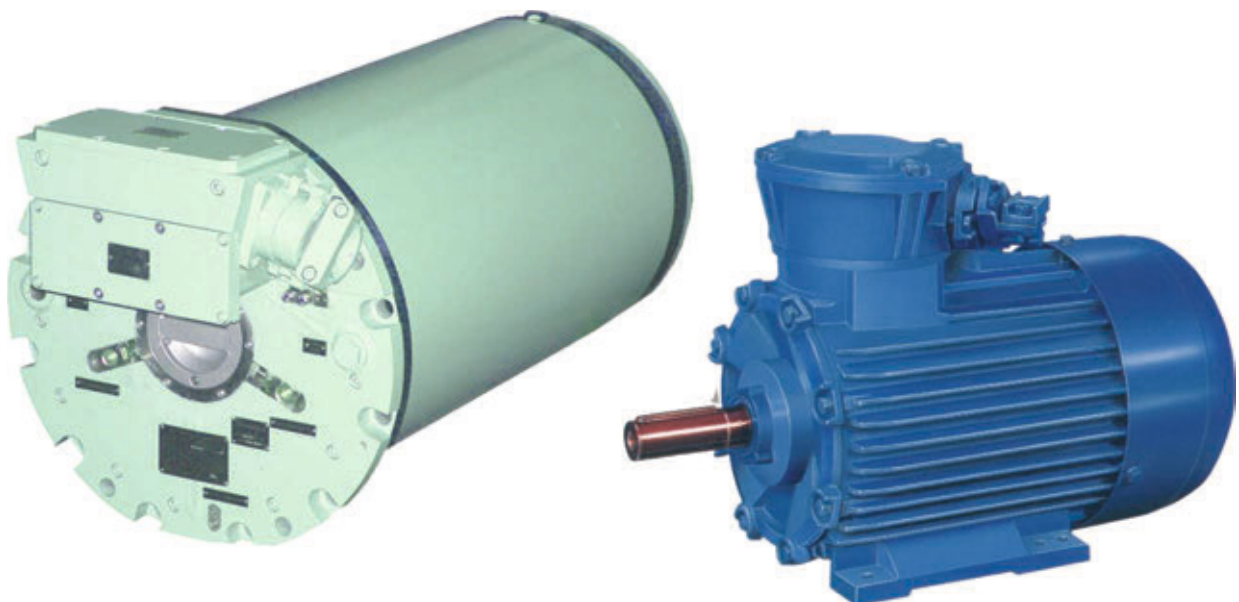
Type of Motor	Flange	P	M	N	S	D	E	F	GA	LE	T	Gland	AC	HB	L/L*	Bearings
SKh 90S-	B14C1	160	130	110j6	M8	24j6	50	8h9	27	10	3,5	M20	185	130	305/329	6205 2Z
SKh 90S-	B14C2	140	115	95j6	M8	24j6	50	8h9	27	10	3	M20	185	130	305/329	6205 2Z
SKh 90L-	B14C1	160	130	110j6	M8	24j6	50	8h9	27	10	3,5	M20	185	130	330/354	6205 2Z
SKh 90L-	B14C2	140	115	95j6	M8	24j6	50	8h9	27	10	3	M20	185	130	330/354	6205 2Z
SKg 100L-	B14C1	200	165	130j6	M10	28j6	60	8h9	31	12	3,5	M20	206	140	376/421	6206 2Z
SKg 100L-	B14C2	160	130	110j6	M8	28j6	60	8h9	31	12	3,5	M20	206	140	376/421	6206 2Z
SKg 112M-	B14C1	200	165	130j6	M10	28j6	60	8h9	31	12	3,5	M25	245	164	384/429	6306 2Z
SKg 112M-	B14C2	160	130	110j6	M8	28j6	60	8h9	31	12	3,5	M25	245	164	384/429	6306 2Z
SKg 132S-	B14C1	250	215	180j6	M12	38k6	80	10h9	41	12	4	M25	274	178	463/516	6308 2Z
SKg 132S-	B14C2	200	165	130j6	M10	38k6	80	10h9	41	12	3,5	M25	274	178	463/516	6308 2Z
SKg 132S-2B	B14C1	250	215	180j6	M12	38k6	80	10h9	41	12	4	M25	274	178	501/554	6308 2Z
SKg 132S-2B	B14C2	200	165	130j6	M10	38k6	80	10h9	41	12	3,5	M25	274	178	501/554	6308 2Z
SKg 132M-	B14C1	250	215	180j6	M12	38k6	80	10h9	41	12	4	M25	274	178	501/554	6308 2Z
SKg 132M-	B14C2	200	165	130j6	M10	38k6	80	10h9	41	12	3,5	M25	274	178	501/554	6308 2Z
SKg 160M-	B14C1	300	265	230j6	M12	42k6	110	12h9	45	13	4	M40	323	210	612/665	6309 2Z
SKg 160M-	B14C2	250	215	180j6	M12	42k6	110	12h9	45	20	4	M40	323	210	612/665	6309 2Z
SKg 160L-	B14C1	300	265	230j6	M12	42k6	110	12h9	45	13	4	M40	323	210	656/709	6309 2Z
SKg 160L-	B14C2	250	215	180j6	M12	42k6	110	12h9	45	20	4	M40	323	210	656/709	6309 2Z

\* - protection raincup on request



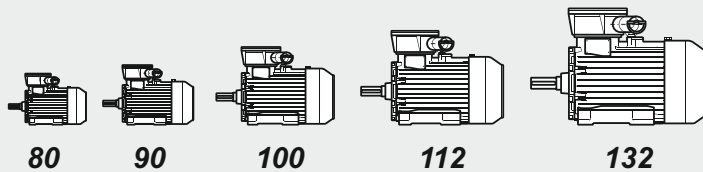
# Flame-Proof Squirrel Cage Motors for Mining

*according to  
ATEX 94/9/EC Directive*

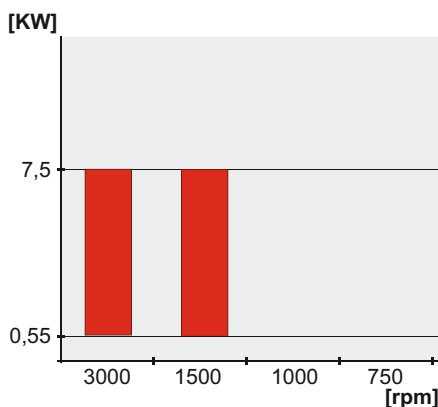


Range of Motors:  
**dSg**

**AVAILABLE FRAME SIZE**



**OUTPUT RANGE: 0,55 - 7,5 kW**



The motors are designed for working in the mines endangered by the explosion of methane and coal dust,

In the spaces (zone 1 or 2) where explosive mixtures of combustible gases and steams of liquid with air can occur, reckoned as subgroups IIA and IIB, Temperature class T1-T5.



**I M2 Exd I**  
**II 2G Exd IIB T5**  
KDB 05ATEX096X

**DESCRIPTION**

- Operating duty S1
- Rated voltage 500 V, frequency 50 Hz
- Insulation class F, degree of protection IP 54
- Ambient temperature -20°C ÷ +40°C
- Terminal box with one cable inlet
- Three current terminals, terminal unit CK1 for testing of PE wire continuity (diode)
- Unattended ball bearing
- According to PN-EN 60034-1, EN 60079-0, EN 60079-1
- The cable inlet and terminals are adapted for connection of copper cable conductors
- The device of the category M2, G2 acc. to Directive 94/9/EC (ATEX)

**CUSTOMISED VERSION**

- Different supply voltage to 1000V
- Frequency 60 Hz
- Degree of protection IP66
- Different ambient temperature
- With thermal protection of winding
- With thermal protection of drive end bearing
- Terminal box with two cable inlets
- Terminal unit CK2 for testing of PE wire continuity (diode and resistor)
- With rubber ring seals for other cable diameter



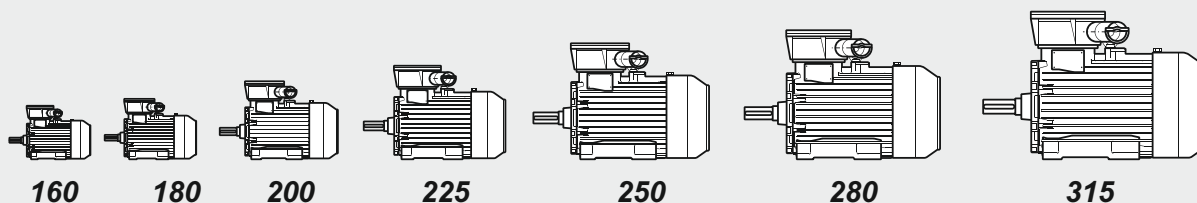
ISO 9001

IEC

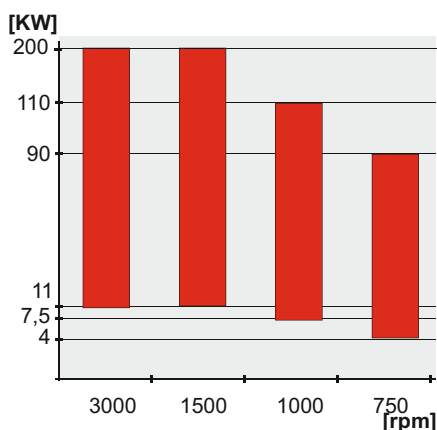
*Detailed technical data on request.*

Range of Motors:  
**dSg-EP**

**AVAILABLE FRAME SIZE**



**OUTPUT RANGE: 4 - 200 kW**



The motors are designed for working in the mines endangered by the explosion of methane and coal dust, in the spaces (zones 1 or 2) where explosive mixtures of combustible gases and steams of liquid with air can occur, reckoned as subgroup IIA, temperature class T1-T5.



**I M2 Exd I**  
**II 2G Exd IIA T5**  
KDB 04ATEX277X

**DESCRIPTION**

- Operating duty S1
- Rated voltage 500 V or 1000V, frequency 50 Hz
- Insulation class F, degree of protection IP 55
- Ambient temperature -20°C ÷ +40°C
- Thermal protection of winding (bimetallic)
- Thermal protection of bearings (bimetallic) frame 160 and 180 - drive end bearing, frame 200-315 both bearings
- Terminal box with one cable inlet equipped with 3 current terminals, 2-4 auxiliary terminals, terminal for PE wire, CK1 unit
- According to PN-EN 60034-1, EN 60079-0, EN 60079-1 and PN-G- 38010:1997 (for 1000V)
- The device of the category M2, G2 acc. to Directive 94/9/EC (ATEX)

**CUSTOMISED VERSION**

- Different supply voltage to 1140V
- Frequency 60 Hz
- Dual voltage (500/1000V)
- Degree of protection IP56
- With thermal protection of winding (PTC or Pt100)
- With thermal protection of drive end bearing (PTC or Pt100)
- With heaters in winding
- Terminal box with max 4 cable inlets, 6 current terminals, terminal unit CK2 for testing of PE wire continuity (diode and resistor), with rubber ring seals for other cable diameter
- Adapted for a frequency inverter supply (Motors marked with additional letter "f" e.g. dSg315..-EP-f)



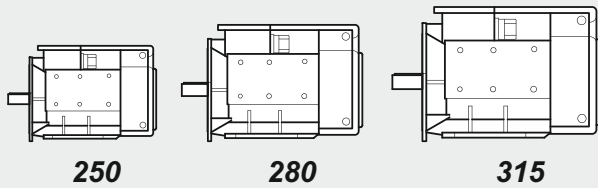
ISO 9001



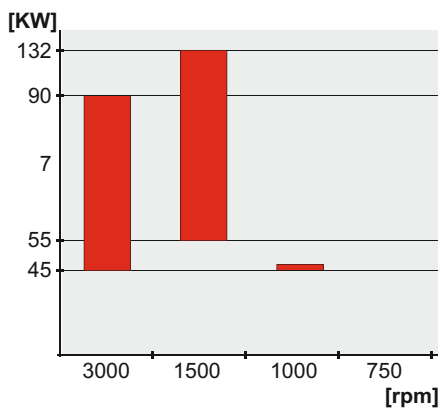
Detailed technical data on request.

Range of Motors:  
**3SGf**

**AVAILABLE FRAME SIZE**



**OUTPUT RANGE: 45 - 132 kW**



The motors are designed for working in the mines endangered by the explosion of methane and coal dust For driving of mining devices (e.g. impactors, conveyors).



**I M2 Exd I**  
KDB 04ATEX050X

**DESCRIPTION**

- Operating duty S1 and S4 60% 40c/h  $J_{ext}/J_M = 1$
- Rated voltage 500 V or 1000V
- Frequency 50 Hz
- Insulation class F
- Degree of protection IP 56
- Ambient temperature  $-20^{\circ}\text{C} + +40^{\circ}\text{C}$
- Thermal protection of winding and bearings (bimetallic or PTC)
- Terminal box with two cable inlets equipped with 3 current terminals, 4 auxiliary terminals for PE wire, CK1 unit
- The cable inlet and terminals adapted for connection of mining copper cable conductors
- According to PN-EN 60034-1, EN 60079-0, EN 60079-1 and PN-G- 38010:1997 (for 1000V)
- Motors as device from group I category M2 acc. to Directive 94/9/EC

**CUSTOMISED VERSION**

- Different supply voltage to 1140V
- Frequency 60 Hz
- With thermal protection with Pt100
- With heaters in windings
- Terminal unit CK2 for testing of PE wire continuity (diode and resistor)
- With rubber ring seals for other cable diameter
- Different versions according to customer's specifications



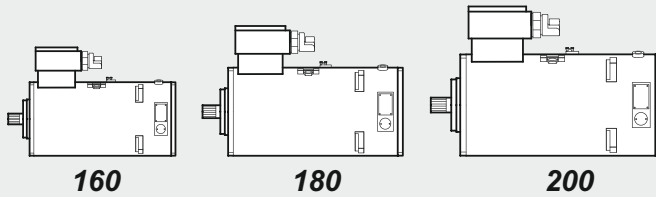
ISO 9001



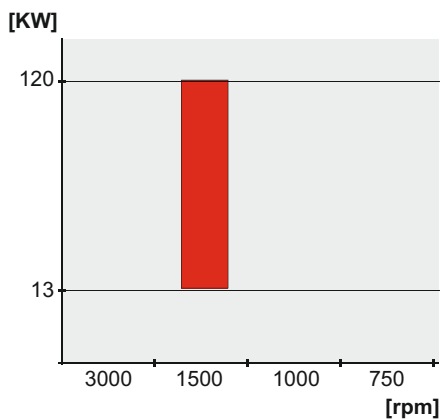
Detailed technical data on request.

Range of Motors:  
**dSKKs, dSKK (Water Cooled)**

**AVAILABLE FRAME SIZE**



**OUTPUT RANGE: 13 - 120 kW**



The motors are designed for working in the mines endangered by the explosion of methane and coal dust. For driving of mining devices which work in undergrounds of coal mines.

	<b>I M2 Exd I</b>	acc. to EN 50014
	<b>I M2 Exd I</b>	acc. to EN 60079-0

**DESCRIPTION**

- Operating duty S1 and S4 60% (40 c/h for dSKK200), (80 c/h for dSKK180L4)
- Rated voltage: dSKK - 500 V or 1000V, dSKKs 440V - designed to the power supply with the frequency inverter
- Frequency 50 Hz
- Insulation class F dSKK, H - dSKKs
- Degree of protection IP 66
- Terminal box with one cable inlet equipped with 3 current terminals, 8 auxiliary terminals, 2 terminals for PE wire, CK1 unit and plug of auxiliary cable inlet
- Thermal protection of winding and bearings (bimetallic or PTC)
- Pt100 in winding and drive end bearing (dSKKs)
- The cable inlet and terminals adapted for connection of mining copper cable conductors
- According to PN-EN 60034-1, PN-G- 38010:1997 (for 1000V)
- Motors as device from group I category M2 acc. to Directive 94/9/CE

**CUSTOMISED VERSION**

- Different supply voltage to 1140V
- Frequency 60 Hz
- With thermal protection with Pt100 (dSKK)
- With heaters in winding
- Terminal unit CK2 for testing of PE wire continuity (diode and resistor)
- With rubber ring seals for other cable diameter
- Different versions according to customer's specifications

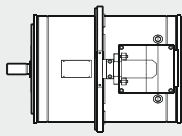
**CE      ISO 9001      IEC**

*Detailed technical data on request.*

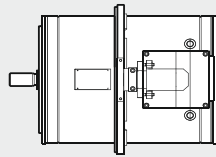
Range of Motors:

**dSKKs 355** (Water Cooled)

**AVAILABLE FRAME SIZE**



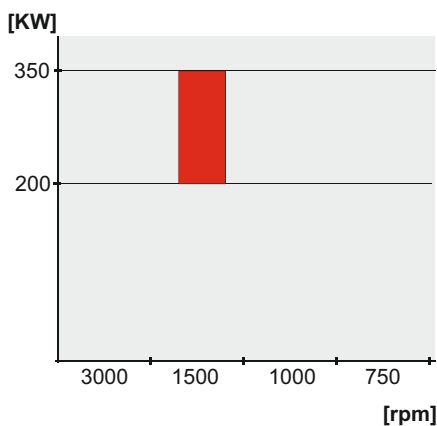
315



355



**OUTPUT RANGE: 250 - 350 kW**



The motors are designed for working in the mines endangered by the explosion of methane and coal dust. The motor designed in cooperation with the firm FAMUR S.A. Katowice for driving the organ which moulds a coal- the combine harvesters in undergrounds of coal mines.



**I M2 Exd I**  
**I M2 Exd I**

acc. to EN 50014

acc. to EN 60079-0

**DESCRIPTION**

- Operating duty S1
- Rated voltage : 1000V
- Frequency 50 Hz
- Insulation class H
- Degree of protection IP 66
- Terminal box with one cable inlet (for cable's diameter : 46-49 mm) equipped in 3 current terminals, 12 auxiliary terminals, 2 terminals for PE wire, CK1 unit and plug of auxiliary cable inlet
- Thermal protection of winding and bearings (bimetallic or PTC)
- Pt100 in winding and both bearing
- The cable inlet and terminals adapted for connection of mining copper cable conductors
- According to PN-EN 60034-1, PN-G- 38010:1997 (for 1000V) and EN 50014, EN 50018 for I group dSKK 355-4z, dSKKs 355-L4z, EN 60079-0 i EN 60079-1 for I group dSKKs 355-4
- Motors as device from group I category M2 acc. to Directive 94/9/EC

**CUSTOMISED VERSION**

- Different supply voltage to 1140V
- Frequency 60 Hz
- Terminal unit CK2 for testing of PE wire continuity (diode and resistor)
- Terminal box without CK unit
- With rubber ring seals for other cable diameter
- Different versions per customer's specifications



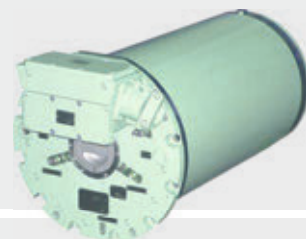
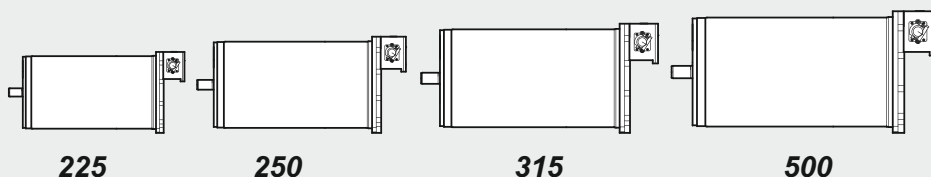
ISO 9001

IEC

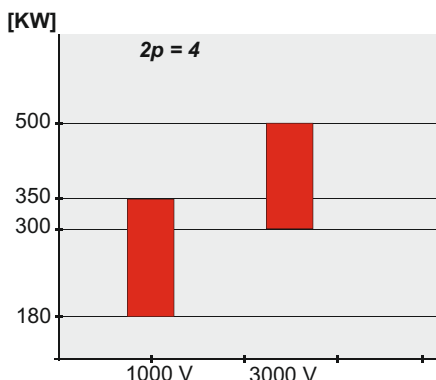
*Detailed technical data on request.*

Range of Motors:  
**dSKgw (Water Cooled)**

**AVAILABLE FRAME SIZE**



**OUTPUT RANGE: 180 - 500 kW**



**dSKgw** motors are used for driving the mining organ of combined-cutter-loaders and conveyors under extremely tough conditions in underground headings with class "a", "b", "c" of a methane explosion danger and class "A" and "B" of a coal dust explosion danger. The motors of this range are three-phase squirrel cage induction motors in the explosion-proof execution, Exd I confirmed by ATEX certificate issued by KD "BARBARA".

Depending on clients' requirements **dSKgw** motors can be adjusted to 1000V, 1140V and 3300V which gives the opportunity to use them both in Polish and in foreign mines.

The motors are cooled with water flowing through ducts in the frame and end shields. Water inlets are placed on the frame next to the terminal box. The water supply is realized by the special connection which consists of armoured hose screwed into the threaded socket and then mounted with a special bush.



**I M2 Exd I**

acc. to EN 60079-1

The motor is equipped with the mechanical overload protection - a safety shaft placed in shaft's hole and which has a contraction and additional notch. Functioning of protection consists in twisting the shaft in notch area that stops the driven machine without damaging the motor.

**DESCRIPTION**

- Exd I according to EN 60079-0, EN 60079-1 and ATEX 100A Directive
- Degree of protection IP55 according to PN-EN 60034-5, insulation class H
- Water cooling, cooling system ICW37 according to PN-EN 60034-6
- Long-lasting anti-corrosive protection - corrosive aggression class C acc. to PN-71/H-04651
- Durable bearings
- Continuous duty S1 and intermittent duty S4-60% (40c/h;  $J_{ext}/J_m=1$ )
- Declutching device with safety shaft
- Durable welded frame with double coat
- Low noise and vibrations

**DUTY CONDITIONS**

- Atmospheric pressure 800 -1070 hPa, ambient temperature 0-40°C
- Relative humidity at 35°C 97-100%
- Altitude <1000m, dustiness <1000mg/m<sup>3</sup>
- Operation in areas with class "a", "b" and "c" of methane explosion danger and class "A" and "B"
- Corrosive aggression class C according to PN-71/H-04651
- Operating voltage (0,95-1,05)  $U_N$
- Allowable inclination of shaft from horizontal position 30°
- Parameters of cooling water (on inlet): max. temp. 30°C, max. stat. pressure 3MPa, flow 15dm<sup>3</sup>/min



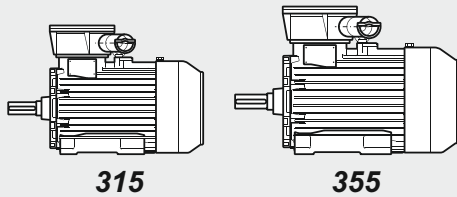
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**IEC**

*Detailed technical data on request.*

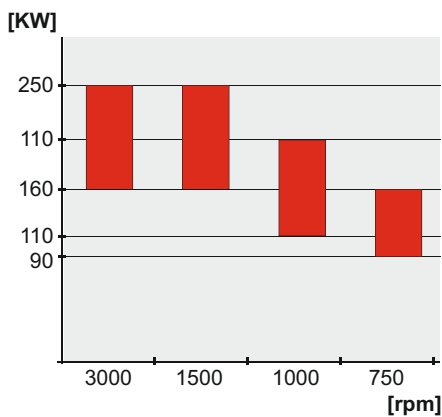
Range of Motors:  
**ExSg, ExSgm**

**AVAILABLE FRAME SIZE**



Motor ExSgm 315 M2C 260kW, 1000V, 3000 rpm tested in KD "BARBARA"

**OUTPUT RANGE: 90 - 250 kW**



Flameproof motors are used in mines mainly for driving auxiliary machines such as pumps, fans and conveyors. These motors belong to the group I category M2 and group II category 2G according to ATEX directive.

Within this group we offer squirrel cage induction motors for both high and low voltage, the following series: ExSg/ExSgm, ExSh, ExSf (only group II). All the motors are supplied with ATEX certificate issued by KD "Barbara".

ExSg series motors comply with the requirements of ATEX Directive for machines in an explosion-proof execution and belong to the group I M2 and II 2G, the temperature class T4 or lower according to PN-EN 50014:2004, with the flameproof cover "d" according to PN-EN 50018:2002 and are suitable for work in methane mines and other zones and areas where explosive mixtures of flammable gases, steams or vapors with air (group IIB) can occur.



**I M2 Exd I  
II 2G Exd IIB T4**

**DESCRIPTION**

- Flameproof enclosure - „d” according to PN-EN 50018:2002
- Foot mounted , with cylindrical shaft end - IM1001 according to PN-EN 60034-7:1998
- Degree of protection - IP 54 according PN-EN 60034-5:2004
- Degree of protection of terminal box - IP55
- Cooling system - IC 411 according to PN-EN 60034-6:1999
- Motors meet requirements of PN-EN 60034-1

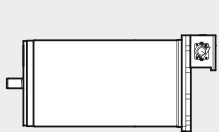


Detailed technical data on request.

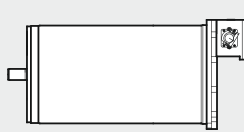


Range of Motors:  
**dSKgwp (Water Cooled)**

**AVAILABLE FRAME SIZE**



315



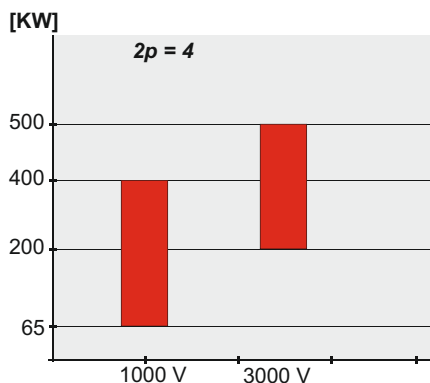
355



500



**OUTPUT RANGE: 65 - 500 kW**



**dSKgwp** series motors are used for driving mining machines and devices especially belt and push-plate conveyors in extremely tough conditions in underground headings with class “a”, “b”, “c” of methane explosion danger and class “A” and “B” of coal dust explosion danger.

dSKgwp series motors are three phase squirrel cage induction motors in flanged execution for horizontal operation mechanical execution Im3001 (B5) and IM4001 (B10). Motors are available in single speed and two speed execution.

Motors are executed as explosion proof with flameproof cover “d” class **I M2 Exd I** acc. to PN-EN 60079-1.

Depending on clients’ requirements dSKgw motors can be adjusted to 1000V, 1140V and 3300V which gives the opportunity to use them both in Polish and in foreign mines.

The motors are cooled with water flowing through ducts in the frame and end shields.

Winding is made of copper wire with class H insulation materials.

Rotor has single or double cage construction with brass and copper bars.



**I M2 Exd I**

Acc. to PN-EN 60079-1

**DESCRIPTION**

- Exd I according to EN 60079-0, EN 60079-1 and ATEX 100A Directive
- Degree of protection IP55 according to PN-EN 60034-5, insulation class H
- Water cooling, cooling system ICW37 according to PN-EN 60034-6
- Long-lasting anti-corrosive protection - corrosive aggression class C acc. to PN-71/H-04651
- Durable bearings
- Single speed motors continuous duty S1 and intermittent duty S4-60% (40c/h;  $J_{ext}/J_m=1$ )
- Two speed motors continuous duty S1 and intermittent duty S4-60% (75c/h;  $J_{ext}/J_m=0,6$ )
- Declutching device with safety shaft
- Durable welded frame with double coat
- Low noise and vibrations

**DUTY CONDITIONS**

- Atmospheric pressure 800 -1070 hPa, ambient temperature 0-40°C
- Relative humidity at 35°C 97-100%
- Altitude <1000m, dustiness <1000mg/m<sup>3</sup>
- Operation in areas with class “a”, “b” and “c” of methane explosion danger and class “A” and “B”
- Corrosive aggression class C according to PN-71/H-04651
- Operating voltage (0,95-1,05)  $U_N$
- Allowable inclination of shaft from horizontal position 30°
- Parameters of cooling water (on inlet): max. temp. 30°C, max. stat. pressure 3MPa, flow 15dm<sup>3</sup>/min



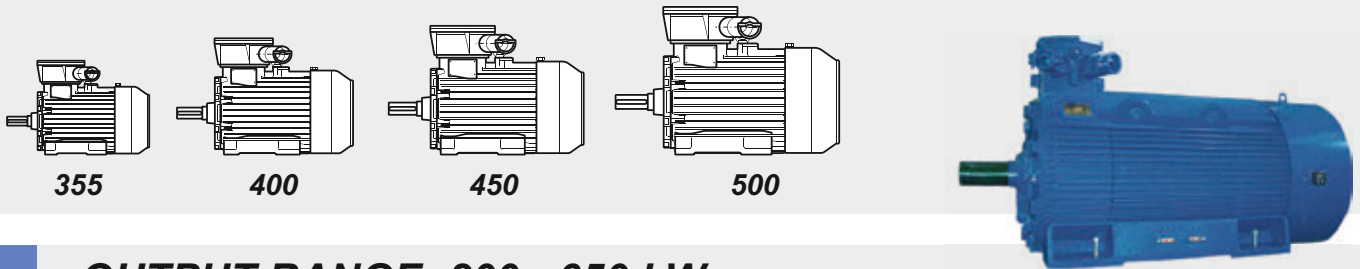
**ISO 9001**

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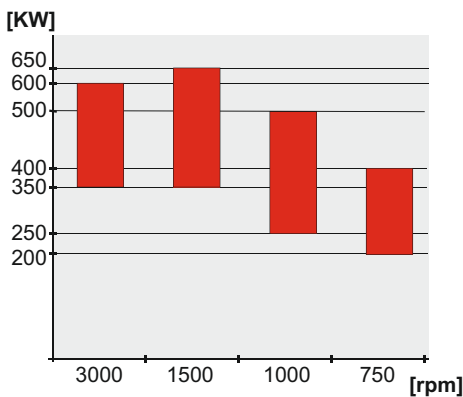
*Detailed technical data on request.*

Range of Motors:  
**ExSh...s**

**AVAILABLE FRAME SIZE**



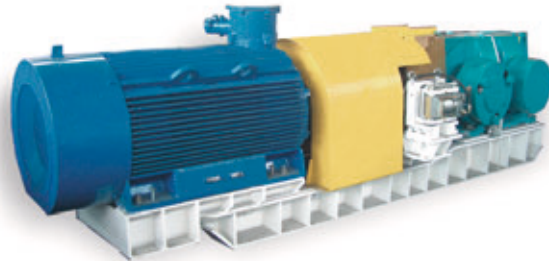
**OUTPUT RANGE: 200 - 650 kW**



ExSh series motors as explosion-proof devices from the group I category M2 and the group II category 2G according to PN-EN 50014:2004 with the flameproof cover „d” in the temperature class T4 or lower according to PN-EN 50018:2002 are suitable for the operation in methane mines and other areas where explosive mixtures of flammable gases, steams or vapors with air (group IIB) can occur.



**I M2 Exd I**  
**II 2G EExd IIB T4**



Driving unit for the conveyor BOGDA-1200A made by Pioma Piotrków Trybunalski. This unit consists of the transmission QHRG-3, hydrodynamic couple, shield brake and electric motor ExSh 355 made by EMIT S.A.

**DESCRIPTION**

- Flameproof protection „d” according to PN-EN 50018:2002
- Foot mounted horizontally with a cylindrical shaft end - IM1001 according to PN-EN 60034-7:1998
- Degree of protection - IP54 according to PN-EN 60034-5:2004
- Degree of protection of terminal box - IP55
- Cooling system - IC 411 according to PN-EN 60034-6:1999
- Motors meet requirements of PN-EN 60034-1

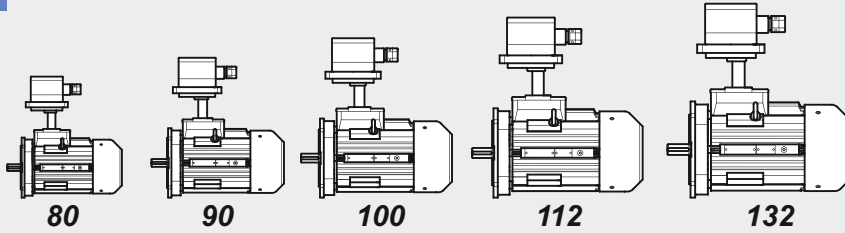
**DUTY CONDITIONS**

- Ambient temperature: from -20°C to +40°C, altitude above sea level: up to 1000m
- Relative humidity at 35C: to 95%
- Dustiness of cooling air not bigger then 10mg/m<sup>3</sup>
- Pollutants of cooling air cannot be chemically aggressive (e.g. fumes of acids or lye)
- Continuous duty S1
- Power supply  $U_N \pm 5\%, f_N \pm 2\%$
- Direct start-up

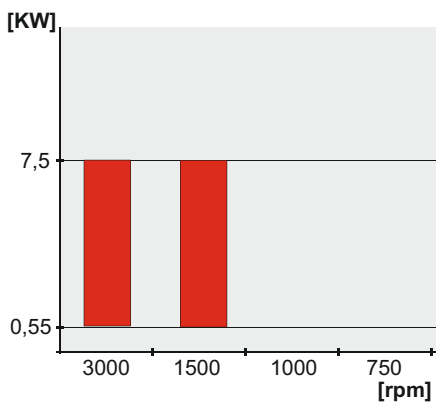


Detailed technical data on request.

**AVAILABLE FRAME SIZE**



**OUTPUT RANGE: 0,55 - 7,5 kW**



The motors are designed for working in the mines endangered by the explosion of methane and coal dust, for driving the devices (pipes vents) which work in undergrounds of coal mines.



**DESCRIPTION**

- Operating duty S1
- Rated voltage: 500V, frequency 50 Hz
- Insulation class F, degree of protection IP 54
- Terminal box with one cable inlet ( connected with the housing with distance tube and special flange) equipped in 3 current terminals, terminal for PE wire, CK1 unit
- Ambient temperature -20°C ÷ +40°C
- The cable inlet and terminals adapted for connection of mining copper cable conductors
- According to PN-EN 60034-1, PN-G- 38010:1997 (for 1000V) and EN 50014, EN 50018 for I group
- Motors as device from group I category M2 acc. to Directive 94/9/EC

**CUSTOMISED VERSION**

- Different supply voltage to 1000V
- Frequency 60 Hz
- Degree of protection IP66
- With thermal protection of winding
- With thermal protection of drive end bearing
- Terminal box with two cable inlets
- Terminal unit CK2 for testing of PE wire continuity (diode and resistor)
- With rubber ring seals for other cable diameter
- Different versions according to customer's specifications



ISO 9001

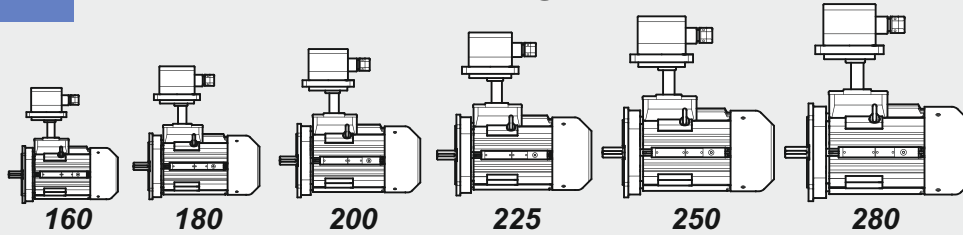
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*Detailed technical data on request.*

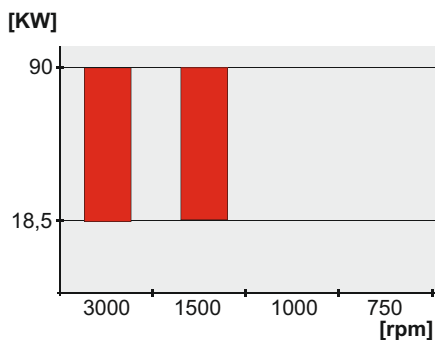
Range of Motors:

**dSOKg-E** (for Axial Fans)

**AVAILABLE FRAME SIZE**



**OUTPUT RANGE: 18,5 - 90kW**



The motors are designed for working in the mines endangered by the explosion of methane and coal dust. For driving the devices (pipes vents) working in undergrounds of coal mines.



**I M2 Exd I**  
**I M2 Exd I**

acc. to EN 50014

acc. to EN 60079-0

**DESCRIPTION**

- Operating duty S1
- Rated voltage : 500V or 1000V
- Frequency 50 Hz
- Insulation class F
- Degree of protection IP 56
- Thermal protection of winding (bimetallic)
- Thermal protection of bearings (bimetallic) : frame 160 and 180 - drive end bearing, frame 200-225 both bearings
- Terminal box with one cable inlet ( connected with the housing with distance tube and special flange) equipped with 3 current terminals, 3 or 4 auxiliary terminals , terminal for PE wire, CK1 unit
- Ambient temperature -20°C ÷ +40°C
- The cable inlet and terminals adapted for connection of mining copper cable conductors
- According to PN-EN 60034-1, PN-G- 38010:1997 (for 1000V) and EN 50014, EN 50018 for I group Motors as device from group I category M2 acc. to Directive 94/9/EC

**CUSTOMISED VERSION**

- Different supply voltage to 1140V
- Frequency 60 Hz
- With thermal protection of winding and bearings (PTC)
- With thermal protection of drive end bearing (frame 160 and 180)
- With Pt100 in winding or bearings
- With heaters in winding (frame 200 and 225)
- Terminal box with max 4 cable inlets, 6 current terminals and plug
- Terminal unit CK2 for testing of PE wire continuity (diode and resistor)
- With rubber ring seals for other cable diameter
- Different versions according to customer's specifications



**ISO 9001**

**IEC**









*Detailed technical data on request.*

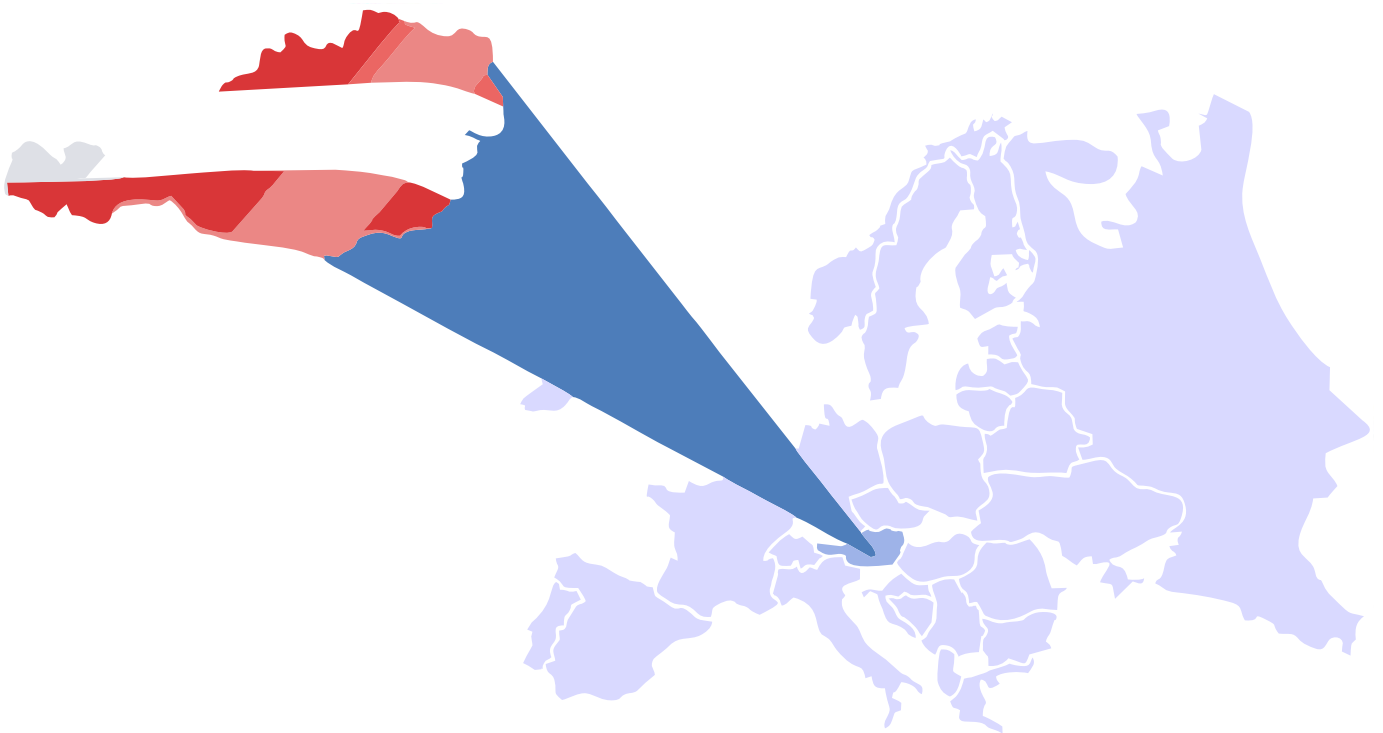
# NOTICE

## PRODUCT RANGE

GENERAL PURPOSE 3-PHASE INDUCTION MOTORS	Three-phase motors with squirrel-cage rotor series (2)Sg(m), Sh. High efficiency motors series 2SIE, 3SIE and 4SIE (Efficiency classes IE1, IE2, IE3, IE4)	from 0,04kW up to 1400kW	general purpose, pumps, fans, compressors, specific requirements relating to the highest efficiency	
GENERAL PURPOSE 1-PHASE INDUCTION MOTORS	Single-phase motors with squirrel-cage rotor series SEh(R), SEMh(R). - motors with standard starting torque - motors with increased starting torque - motors with high starting torque.	from 0,04kW up to 4kW	general purpose, pumps, fans, compressors, wood machines, machines and devices for food processing, mixers for building	
HIGH VOLTAGE INDUCTION MOTORS	Three-phase squirrel-cage high voltage and high efficiency motors series Sh with cast-iron housing. High voltage motors with module construction (steel/welded housing) series Sf-E and Sfw.	from 160kW up to 3150kW	general industrial use, drives used for own needs of power plants (pumps, fans, coal mills, conveyors)	
BRAKE MOTORS	Three-phase and single-phase brake motors with AC and DC brakes.	from 0,04kW up to 160kW	applied in case of necessity to stop the motor suddenly	
MOTORS WITH FOREIGN COOLING	Three-phase 3-phase induction motors with foreign cooling.	from 0,06kW up to 250kW	drives adapted for speed regulation by frequency converter	
EXPLOSION-PROOF MOTORS	Increased safety motors.  Flame-proof motors.	from 0,06kW up to 22kW  from 0,75kW up to 315kW	adapted for operation in areas endangered by explosion (without methane)  application in an atmosphere where a mixture of explosive gas and vapours may occur	
NEMA MOTORS	Low voltage NEMA motors SIE series (in compliance with the NEMA PREMIUM requirements).	from 1HP up to 250HP	general industrial application, pumps, fans	
TRACTION MOTORS	Traction motors and traction generators.	from 50kW up to 1500kW	various traction vehicles: trams (including low-deck trams), trolleybuses, subway and locomotives	

# PRODUCT RANGE

SUBMERSIBLE MOTORS	Submersible motors with protection Ip68 Type TMP	from 5,5kW up to 22kW 4 poles standard with 10m connection cable and 6m protection tube  with special shaft (long or short)	PUMP DIRVE Agriculture, liquid manure, biogas, wastewater , sewage plant	
SUBMERSIBLE MOTORS	Special motors desinged and produced from FFD in close coordination with and especially for our customers. From the first idea to the final production.	for example: Submersible motor type: dSKLS (11 and 15kW)  flame proof desing IIG Ex dIIA T4	MIXER Agriculture, liquid manure, biogas, wastewater , sewage plant	
HOLLOW SHAFT MOTORS	Three-phase induction motors with hollow shaft	Frame size: 100 up to 250 Poles: 2, 4, 6, 8, 12  and multiple speed	Suitable for agitators driving with special flange and hollow shaft (without propeller and shaft)	
MARINE MOTORS	Three-phase induction motors	PRS - polish register of shipping GL - German Lloyd ´s LRS - Lloyd ´s Register of shipping DNV - Det Norske Veritas ABS - American Bureau of shipping BV - Bureau Veritas RMRS - Russian Maritime Register of Shipping	Motors designed for use on ships. On deck or under deck. The motors are made to withstand aggressive environments such a salt mist.	
MOTORS FOR INDUSTRIAL FURNANCE AND BLOWERS	Three-phase induction motors	Motors used for air circulation up to 1200°C air temperature	Motors works in drying plants	
COOLING MEDIUM PUMPS	Three phase pumps or Single phase pumps	DKP with 115W EKP with 100W  Dip length: 86mm, 120mm, 170mm, 220mm, 270mm  220-250/380-440V 50/60Hz	Work like centrifugal pumps. These pumps are quite resistant to the pollution of coolants. Manufactured in with 5 different dip length.	
BRAKES	Electromagnetic brakes	H2SP, HPS, 2H2SP, H2SPX H2SP...AT - quiet operation HPS...AT - quiet operation STE, STK - quiet operation 2H2SP...BT - quiet operation, NE - high level of protection NEX - explosion-proof version HZg - alternating current brakes	High standard and high repeatability even with large number of actuations.	
REPAIRS AND SERVICE	Electrical and mechanical repairs of all motor types  Service and testing of all motor types  Also motors from other manufacturers	for example: - new winding - new bearings - new shafts - new PTC, Pt100 or bi-metal switch - new painting (all RAL colors) - new name plate - Motor routine test	We are using only high quality materials for motor repair.	



**FFD locadet in the heart  
of Europe, AUSTRIA!**

## **FRANK & DVORAK**

Elektromaschinenbau- und Vertriebsgesellschaft m.b.H. u. Co.KG

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