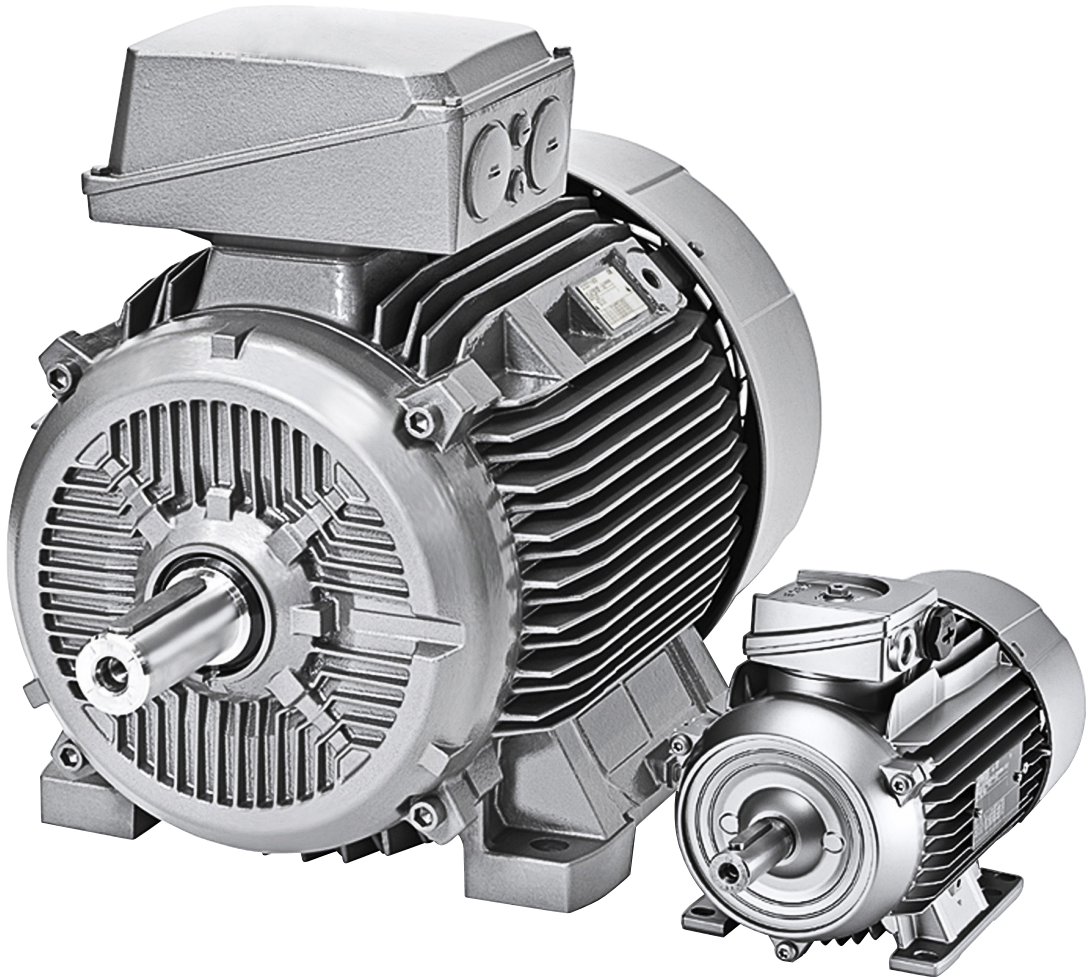


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Motor catalog

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Electrical Motors

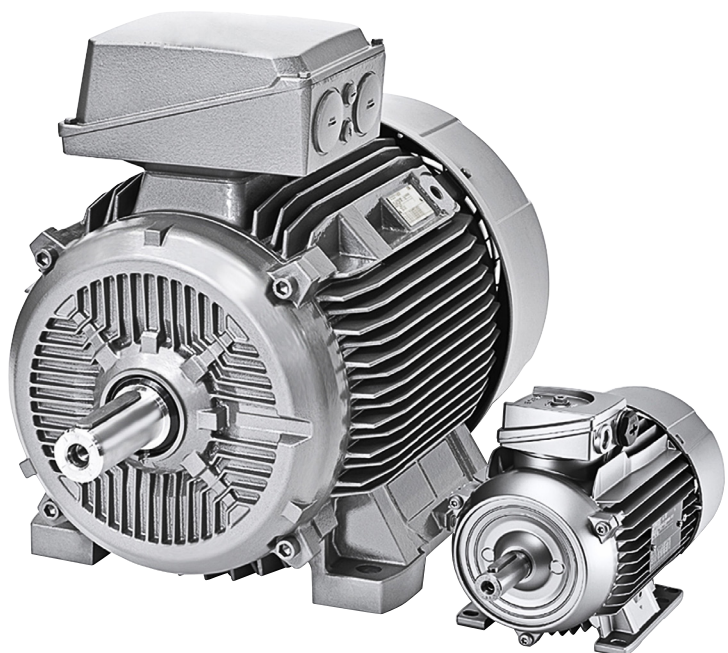
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Motor Series 1TZ9 IE1

2-pole: 3000 rpm at 50 Hz

Type	Output		RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	60Hz	50Hz	50Hz	%	%	%		50Hz				50Hz	Kg	kgm2
1TZ9 A 63M	0,18	0,21	2805	0,6	52,8	50,1	44,2	0,79	0,62	3,4	1,7	2,2	64	4	0,00018
1TZ9 A 63M	0,25	0,28	2835	0,8	58,2	55,5	48,6	0,75	0,83	3,6	1,9	2,6	64	4	0,00022
1TZ9 A 63L*	0,37	0,43	2795	1,3	63,9	60,3	51,9	0,71	1,18	3,5	2,4	2,6	64	5	0,00022
1TZ9 A 71M	0,37	0,43	2755	1,3	63,9	64,5	61,1	0,79	1,06	3,4	2,2	2,2	56	5	0,00022
1TZ9 A 71M	0,55	0,63	2750	1,9	69	69,9	66,5	0,79	1,46	3,7	2,2	2,2	62	6	0,00029
1TZ9 A 71L*	0,75	0,86	2780	2,6	72,1	72,5	70,2	0,83	1,81	4,5	2,2	2,2	62	6	0,00051
1TZ9 A 80M	0,75	0,86	2835	2,5	72,1	72,6	69,9	0,86	1,75	5,2	2,1	2,3	62	9	0,00169
1TZ9 A 80M	1,1	1,27	2840	3,7	75	75,7	73,4	0,86	2,45	5,7	2,5	2,5	58	12	0,00223
1TZ9 A 90S	1,5	1,75	2835	5,1	77,2	78,2	76,8	0,85	3,3	5,5	2,6	2,9	62	13	0,00364
1TZ9 A 90L	2,2	2,54	2855	7,4	79,7	80,9	81,3	0,85	4,7	6,5	2,8	3,2	64	14	0,00461
1TZ9 A/C 100L	3	3,45	2835	10	81,5	83,2	82,7	0,87	6,1	6,4	3,2	3,5	67	20/31	0,0034
1TZ9 A/C 100L*	4	4,55	2850	13	83,1	83,9	83	0,85	8,2	7	4,5	4,1	67	25/33	0,0044
1TZ9 A/C 112M	4	4,55	2935	13	83,1	82,9	80,5	0,85	8,2	8,3	3,3	4,2	69	25/36	0,0067
1TZ9 A/C 112M*	5,5	6,3	2935	18	84,7	84,7	82,7	0,86	10,9	7,5	2,9	3,8	69	31/40	0,0085
1TZ9 A/C 132S	5,5	6,3	2910	18	84,7	85,8	85,3	0,88	10,7	5,7	1,8	2,6	68	35/53	0,013
1TZ9 A/C 132S	7,5	8,6	2925	24	86	86,6	86,1	0,88	14,3	6,8	2,2	3,1	68	40/58	0,016
1TZ9 A/C 132M*	11	12,6	2920	36	87,6	88,3	87,8	0,9	20	7,5	2,8	3,7	68	53/76	0,022
1TZ9 A/C 160M	11	12,6	2925	36	87,6	88,2	87	0,86	21	5,7	2	2,7	70	60/87	0,03
1TZ9 A/C 160M	15	17,3	2935	49	88,7	88,9	87,2	0,85	28,5	6,8	2,4	3,2	70	68/95	0,036
1TZ9 A/C 160L	18,5	21,3	2935	60	89,3	89,7	88,5	0,87	34,5	7,6	2,7	3,4	70	78/105	0,044
1TZ9 A/C 160L*	22	25,3	2935	72	89,9	90,2	89,5	0,9	39	7,5	2,6	3,4	70	85/125	0,049
1TZ9 C 180M	22	24,5	2945	71	89,9	90,6	90,4	0,87	40,5	7,7	2,5	3,5	72	150	0,069
1TZ9 C 180L*	30	33,5	2940	97	90,7	91,5	91,5	0,89	54	8,1	2,4	3,5	72	180	0,094
1TZ9 C 200L	30	33,5	2960	97	90,7	90,9	90,2	0,79	60	7,3	2,5	3,6	72	195	0,124
1TZ9 C 200L	37	41,5	2955	120	91,2	91,6	91,2	0,88	67	8,2	2,7	3,5	72	230	0,15
1TZ9 C 200L*	45	51	2955	145	91,7	92,3	92,4	0,85	83	8,1	2,5	3,6	71	245	0,176
1TZ9 C 225M	45	51	2960	145	91,7	92	91,6	0,88	80	6,7	2,3	3	73	280	0,22
1TZ9 C 225M*	55	62	2960	177	92,1	92,4	92	0,88	98	7,3	2,5	3,2	76	330	0,27
1TZ9 C 250M	55	62	2970	177	92,1	92,3	91,4	0,88	98	6,7	2	2,9	76	360	0,4
1TZ9 C 250M*	75	84	2970	241	92,7	92,8	92,1	0,87	134	7,3	2,4	3,1	76	420	0,48
1TZ9 C 280S	75	84	2975	241	92,7	92,5	91,3	0,86	136	6,8	2,2	3	72	470	0,72
1TZ9 C 280M	90	101	2975	289	93	93,1	92,4	0,88	159	7,1	2,5	3,1	76	530	0,83
1TZ9 C 280M*	110	123	2975	353	93,3	93,5	93,1	0,9	189	7,3	2,4	3,1	77	620	1
1TZ9 C 315S	110	123	2982	352	93,3	92,9	91,5	0,86	198	7,5	2,3	3,3	80	680	1,2
1TZ9 C 315M	132	148	2982	423	93,5	93,2	92,5	0,89	230	7,6	2,3	3	80	740	1,4
1TZ9 C 315L	160	180	2982	512	93,8	93,6	93,1	0,91	270	7,4	2,3	2,9	80	880	1,6
1TZ9 C 315L	200	224	2982	640	94	93,9	93,5	0,92	335	7,1	2,2	2,8	80	1000	2,1

* Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I_n(\text{new}) = I_n(\text{with } 400V) \cdot (400 / U(\text{new voltage}))$

Motor Series 1TZ9 IE1

4-pole: 1500 rpm at 50 Hz

Type	Output		RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	60Hz	50Hz	50Hz	%	%	%		50Hz				50Hz	Kg	kgm2
1TZ9 A 63M	0,12	0,14	1360	0,8	50	47,3	39,1	0,71	0,49	2,5	1,6	1,8	59	4	0,00029
1TZ9 A 63M	0,18	0,21	1360	1,3	57	55,1	47,8	0,71	0,64	2,8	1,9	2,1	59	4	0,00037
1TZ9 A 63L*	0,25	0,28	1365	1,7	61,5	59,6	53,5	0,68	0,86	2,9	2,3	2,3	59	5	0,00045
1TZ9 A 71M	0,25	0,28	1365	1,7	61,5	61,4	56,1	0,73	0,8	3	1,8	2	49	5	0,00052
1TZ9 A 71M	0,37	0,43	1350	2,6	66	67,7	65	0,75	1,08	3,2	2	2	54	6	0,00077
1TZ9 A 71L*	0,55	0,63	1365	3,8	70	70,5	67,4	7	1,62	3,6	2,5	2,5	54	7	0,00095
1TZ9 A 80M	0,55	0,63	1385	3,8	70	70,7	67,7	0,79	1,44	3,7	2,1	2,2	53	9	0,00284
1TZ9 A 80M	0,75	0,86	1385	5,2	72,1	72	67	0,76	1,85	3,6	2,1	2,3	53	11	0,00377
1TZ9 A 90S	1,1	1,27	1405	7,5	75	75,9	73,6	0,81	2,5	4,5	2,1	2,3	56	12	0,005
1TZ9 A 90L	1,5	1,75	1410	10	77,2	77,8	75,1	0,8	3,35	4,7	2,4	2,6	58	15	0,00596
1TZ9 A/C 100L	2,2	2,54	1425	15	79,7	80,3	78,1	0,81	4,9	5,1	2,3	2,7	60	18/29	0,0059
1TZ9 A/C 100L	3	3,45	1425	20	81,5	82,6	81,5	0,85	6,3	5,4	2,4	2,6	60	22/33	0,0078
1TZ9 A/C 100L*	4	4,55	1435	27	83,1	83,8	82,3	0,81	8,6	5,8	2,9	3,1	60	27/36	0,01
1TZ9 A/C 112M	4	4,55	1435	27	83,1	84,3	84	0,83	8,4	6,1	2,5	2,9	58	27/38	0,01
1TZ9 A/C 112M*	5,5	6,3	1420	37	84,7	85,9	85,3	0,81	11,6	5,8	3	3,1	58	33/43	0,012
1TZ9 A/C 132S	5,5	6,3	1450	36	84,7	85,3	84,2	0,82	11,4	5,7	2,3	2,7	64	38/56	0,019
1TZ9 A/C 132M	7,5	8,6	1450	49	86	86,5	85,4	0,82	15,4	6,6	2,6	3,1	64	44/59	0,024
1TZ9 A/C 132M*	11	12,6	1450	72	87,6	88,2	87,6	0,84	21,5	7,2	2,5	3	64	58/76	0,033
1TZ9 A/C 160M	11	12,6	1460	72	87,6	87,9	86,7	0,81	22,5	6,9	2,7	3,3	65	62/89	0,044
1TZ9 A/C 160L	15	17,3	1460	98	88,7	89	87,8	0,82	30	7,5	3	3,6	65	73/105	0,056
1TZ9 A/C 160L*	18,5	21,3	1460	121	89,3	89,8	89,2	0,85	35	7,2	2,7	3,2	65	85/125	0,068
1TZ9 C 180M	18,5	21,3	1468	120	89,3	90,2	90,2	0,85	35	7,3	2,2	3,1	63	170	0,13
1TZ9 C 180L	22	25,3	1465	143	89,9	90,8	90,7	0,83	42,5	8	2,7	3,6	63	170	0,13
1TZ9 C 180L*	30	34,5	1465	196	90,7	91,7	91,9	0,79	60	7,2	2,6	3,4	64	185	0,159
1TZ9 C 200L	30	34,5	1472	195	90,7	91,5	91,4	0,83	58	6,9	2,3	3,1	64	220	0,2
1TZ9 C 200L	37	42,5	1470	240	91,2	92	92,1	0,82	71	6,8	2,4	2,9	64	240	0,246
1TZ9 C 225S	37	42,5	1475	240	91,2	91,6	91,1	0,85	69	7	2,3	3,2	68	260	0,37
1TZ9 C 225M	45	52	1475	291	91,7	92,1	91,7	0,86	82	7,2	2,6	3,2	71	290	0,45
1TZ9 C 225M*	55	63	1475	356	92,1	92,8	92,6	0,86	100	6,7	2,5	2,6	70	320	0,49
1TZ9 C 250M	55	63	1475	356	92,1	92,5	92,1	0,85	101	6,1	2,4	2,6	70	360	0,69
1TZ9 C 250M*	75	86	1482	483	92,7	93,1	92,6	0,84	139	7,4	2,5	3	73	440	0,86
1TZ9 C 280S	75	86	1485	482	92,7	92,9	92,2	0,85	137	7	2,3	2,8	72	540	1,2
1TZ9 C 280M	90	104	1482	580	93	93,4	93,1	0,87	161	6,5	2,2	2,8	72	560	1,4
1TZ9 C 280M*	110	127	1486	707	93,3	93,5	93	0,85	200	8	2,6	3,3	73	680	1,7
1TZ9 C 280M*	132	152	1482	850	94,7	95,2	95,2	0,88	230	7,1	2,5	2,8	74	750	1,8
1TZ9 C 315S	110	127	1488	706	93,3	93,4	92,8	0,84	205	6,5	2,3	2,7	75	730	1,9
1TZ9 C 315M	132	152	1488	847	93,5	93,7	93,3	0,85	240	6,8	2,5	2,7	76	760	2,2
1TZ9 C 315L	160	184	1486	1028	93,8	93,9	93,5	0,86	285	7,2	2,7	2,7	76	940	2,9
1TZ9 C 315L	200	230	1486		94	94,2	94	0,87	355	6,9	2,5	2,7	76	1140	3,5

* Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I_n(\text{new}) = I_n(\text{with } 400V) \cdot (400 / U(\text{new voltage}))$

Motor Series 1TZ9 IE1

6-pole: 1000 rpm at 50 Hz

Type	Output		RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	60Hz	50Hz	50Hz	%	%	%		50Hz				50Hz	Kg	kgm2
1TZ9 A 63M	0,09	0,11	895	1	42,7	38,5	30,4	0,63	0,48	2	1,8	1,9	56	4	0,00037
1TZ9 A 71M	0,18	0,21	800	2,1	45,5	44,4	38,3	0,67	0,84	2	1,9	2	47	5	0,00055
1TZ9 A 71M	0,25	0,28	860	2,8	52,1	52,8	48,4	0,71	0,98	2,2	2	2	51	6	0,0008
1TZ9 A 80M	0,37	0,43	915	3,9	59,7	58,6	52,7	0,7	1,23	2,7	1,6	1,8	54	9	0,00198
1TZ9 A 80M	0,55	0,63	900	5,8	65,8	66,6	62,6	0,72	1,68	2,7	1,7	1,9	54	12	0,00238
1TZ9 A 90S	0,75	0,86	940	7,6	70	70	66	0,67	2,3	3,8	2	2,2	59	13	0,00333
1TZ9 A 90L	1,1	1,27	925	11	72,9	73,8	71,2	0,69	3,15	3,8	2,2	2,4	58	15	0,00402
1TZ9 A/C 100L	1,5	1,75	940	15	75,2	75,6	72,3	0,74	3,9	4	2	2,2	59	19/30	0,0065
1TZ9 A/C 100L*	2,2	2,54	930	23	77,7	79,5	78,1	0,78	5,2	4	2	2,2	59	24/35	0,0084
1TZ9 A/C 112M	2,2	2,54	940	22	77,7	78,4	76,6	0,72	5,7	4,6	2,6	2,7	57	25/37	0,0092
1TZ9 A/C 112M*	3	3,45	945	30	79,7	79,5	76,3	0,72	7,5	4,6	2,9	3	57	32/45	0,013
1TZ9 A/C 132S	3	3,45	955	30	79,7	79,9	77,1	0,74	7,3	4,6	2	2,6	63	34/52	0,017
1TZ9 A/C 132M	4	4,55	955	40	81,4	82,5	81,9	0,76	9,3	5,2	2,3	2,6	63	39/57	0,021
1TZ9 A/C 132M	5,5	6,3	955	55	83,1	84	82,8	0,75	12,7	5,7	2,7	3	63	48/66	0,027
1TZ9 A/C 132M*	7,5	8,6	950	75	84,7	85,3	84,1	0,74	17,3	5,3	2,4	3	63	54/78	0,032
1TZ9 A/C 160M	7,5	8,6	970	74	84,7	84,8	83,2	0,73	17,5	5,5	2,1	2,9	67	72/100	0,056
1TZ9 A/C 160L	11	12,6	965	109	86,4	86,8	85,9	0,77	24	5,9	1,9	2,7	67	92/120	0,078
1TZ9 A/C 160L*	15	17,3	965	148	87,7	87,9	86,5	0,75	33	6	2,9	3,4	67	109/140	0,094
1TZ9 C 180L	15	18	975	147	87,7	88,5	87,9	0,77	32	6,1	2,3	3	56	155	0,17
1TZ9 C 180L*	18,5	22	970	182	88,6	89,4	89,1	0,77	39	5,9	2,2	2,9	56	165	0,206
1TZ9 C 200L	18,5	22	978	181	88,6	89,8	89,8	0,79	38	6,3	2,5	2,6	59	200	0,25
1TZ9 C 200L	22	26,5	980	214	89,2	90	89,6	0,79	45	6,8	2,8	2,9	59	220	0,3
1TZ9 C 200L	30	34,5	975	294	90,2	91,4	91,7	0,78	62	6	2,6	2,7	61	245	0,381
1TZ9 C 225M	30	36	978	293	90,2	91	90,7	0,82	59	6	2,7	2,5	60	270	0,49
1TZ9 C 225M*	37	44,5	978	361	90,8	91,5	91,5	0,82	72	6,1	2,5	2,8	76	310	0,62
1TZ9 C 250M	37	44,5	980	361	90,8	91,5	91,3	0,82	72	6	2,7	2,4	63	330	0,76
1TZ9 C 250M*	45	54	982	438	91,4	92,2	92,1	0,83	86	6,6	2,7	2,3	76	390	0,93
1TZ9 C 280S	45	54	986	436	91,4	92	91,6	0,84	85	7	2,6	2,6	63	440	1,1
1TZ9 C 280M	55	66	986	533	91,9	92,5	92,6	0,85	102	6,7	2,6	2,6	63	500	1,3
1TZ9 C 280M*	75	90	985	727	92,6	93,3	93,2	0,84	139	7	2,9	2,7	61	560	1,7
1TZ9 C 315S	75	90	988	725	92,6	92,8	92,1	0,83	141	7,1	2,5	2,7	62	660	2,1
1TZ9 C 315M	90	108	988	870	92,9	93,2	92,8	0,83	168	7,3	2,6	2,6	61	740	2,5
1TZ9 C 315L	110	132	988	1063	93,3	93,6	93,4	0,86	198	6,8	2,6	2,8	61	880	3,2
1TZ9 C 315L	132	158	988	1276	93,5	93,7	93,4	0,86	235	7,5	3	2,9	61	1030	4
1TZ9 C 315L	160	192	988	1546	93,8	93,9	93,6	0,86	285	7,7	3,1	3	64	1160	4,7

*Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I'n \text{ (new)} = I_n \text{ (with 400V)} \cdot (400 / U \text{ (new voltage)})$

Motor Series 1TZ9 IE1 8-pole: 750 rpm at 50 Hz

Type	Output		RPM	T rated Nm	η rated 50Hz			Cos φ	I rated 400V	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure db(A)	Weight A/C IM B3	Inertia J
	kW	kW			100	75	50								
	50Hz	60Hz	400V 50Hz	50Hz	%	%	%	50Hz	50Hz	Ist/In	Mst/Mn	Mk/Mn	50Hz	Kg	kgm2
1TZ9 A/C 100L	0,75	0,86	705	10	61,2	58,1	50,5	0,62	2,85	3	1,9	2,2	60	17/28	0,006
1TZ9 A/C 100L	1,1	1,27	690	15	66,5	65,9	61,5	0,61	3,9	3,2	2	2,3	60	22/33	0,008
1TZ9 A/C 112M	1,5	1,75	700	20	70,2	71,2	69,4	0,66	4,65	3,5	1,9	2,1	63	29/42	0,009
1TZ9 A/C 132S	2,2	2,54	715	29	74,2	74,1	71,4	0,66	6,5	3,9	1,7	2,4	63	37/60	0,019
1TZ9 A/C 132M	3	3,45	715	40	77	77,4	75,2	0,68	8,3	3,9	1,8	2,2	63	44/60	0,024
1TZ9 A/C 160M	4	4,55	720	53	79,2	79,2	76,3	0,67	10,9	4,1	1,6	2,3	63	60/89	0,044
1TZ9 A/C 160L	5,5	6,3	720	73	81,4	81,9	80,3	0,68	14,3	4	1,6	2,2	63	72/96	0,056
1TZ9 A/C 160L	7,5	8,6	715	100	83,1	83,7	82,4	0,69	18,9	3,8	1,7	2,2	63	91/120	0,077
1TZ9 C 180L	11	13,2	720	146	85	86,2	86	0,7	26,5	5	1,9	2,5	65	160	0,2
1TZ9 C 200L	15	18	718	199	86,2	87,9	88,4	0,75	33,5	5,5	2,5	2,9	55	220	0,3
1TZ9 C 200L*	18,5	22	720	245	86,9	88,2	88,4	0,76	40	6,1	2,7	3,2	59	250	0,416
1TZ9 C 225S	18,5	22	730	242	86,9	87,8	87,4	0,78	39,5	5,5	2,2	2,7	59	250	0,43
1TZ9 C 225M	22	26,5	730	288	87,4	88,3	88,1	0,79	46	5,5	2,3	2,7	58	270	0,5
1TZ9 C 225M*	30	36	730	392	88,3	89,1	89,1	0,79	62	5,6	2,6	2,8	57	320	0,73
1TZ9 C 250M	30	36	732	391	88,3	89,2	89,2	0,81	61	5,5	2,3	2,6	54	370	0,84
1TZ9 C 250M*	37	44,5	730	484	88,8	89,8	89,9	0,83	72	5,7	2,3	2,6	63	405	1
1TZ9 C 280S	37	44,5	735	481	88,8	89,7	89,7	0,81	74	5	2,1	2,1	54	460	1,22
1TZ9 C 280M	45	54	735	585	89,2	90,3	90,4	0,81	90	5,3	2,1	2,1	58	500	1,42
1TZ9 C 280M*	55	66	736	714	89,7	90,4	90,5	0,8	111	5,7	2,5	2,5	70	550	1,6
1TZ9 C 315S	55	66	740	710	89,7	90,1	89,7	0,8	111	5,7	2,1	2,6	69	640	2
1TZ9 C 315M	75	90	738	970	90,3	90,7	90,5	0,81	148	5,9	2,3	2,7	69	720	2,5
1TZ9 C 315L	90	108	738	1165	90,7	91,2	91,2	0,84	171	5,9	2,2	2,6	68	840	3,1
1TZ9 C 315L	110	132	740	1419	91,1	91,6	91,5	0,82	215	6,7	2,7	2,9	73	1000	3,9
1TZ9 C 315L	132	158	740	1703	91,5	91,9	91,6	0,81	255	7,2	2,9	3,3	75	1080	4,5

*Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I'n \text{ (new)} = I_n \text{ (with 400V)} \cdot (400 / U \text{ (new voltage)})$

Motor Series 1TZ9 IE2

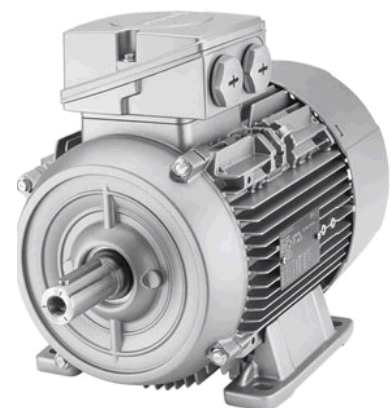
2-pole: 3000 rpm at 50 Hz

Type	Output		RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	60Hz	50Hz	50Hz	%	%	%		50Hz				50Hz	Kg	kgm2
1TZ9 A 63M	0,18	0,21	2850	0,6	60,4	59,4	53,7	0,78	0,55	4,5	2,2	2,7	64	4	0,00022
1TZ9 A 63M	0,25	0,28	2835	0,8	64,8	63,5	57,3	0,81	0,69	4,1	1,9	2,5	64	5	0,00026
1TZ9 A 71M	0,37	0,43	2770	1,3	69,5	70,5	67,9	0,81	0,95	4,1	2,5	2,5	52	6	0,00035
1TZ9 A 71M	0,55	0,63	2780	1,9	74,1	75,2	72,9	0,8	1,34	4,6	2,6	2,6	52	7	0,00045
1TZ9 A 80M	0,75	0,86	2805	2,6	77,4	80	80,1	0,84	1,67	4,9	1,9	2,3	60	9	0,0008
1TZ9 A 80M	1,1	1,27	2835	3,7	79,6	81,3	80,9	0,83	2,4	6	2,7	3,1	60	11	0,0011
1TZ9 A 80M*	1,5	1,75	2830	5,1	81,3	83,4	83,6	0,85	3,15	6,1	2,6	2,8	60	11	0,0013
1TZ9 A 90S	1,5	1,75	2900	4,9	81,3	81,7	79,8	0,84	3,15	6,9	2,7	3,6	65	13	0,0017
1TZ9 A 90L	2,2	2,54	2890	7,3	83,2	83,7	82	0,85	4,5	7,1	2,5	3,7	65	15	0,0021
1TZ9 A 90L*	3	3,45	2895	9,9	84,6	85,5	84,5	0,86	6	7,9	3,4	3,6	65	15	0,0031
1TZ9 A/C 100L	3	3,45	2905	9,9	84,6	85,5	84,6	0,84	6,1	7	2,3	3,3	67	21/32	0,0044
1TZ9 A/C 100L*	4	4,55	2905	13	85,8	86,9	86,5	0,86	7,8	7,6	2,5	3,5	67	26/45	0,0054
1TZ9 A/C 112M	4	4,55	2945	13	85,8	86,2	85,1	0,85	7,9	8	2,2	3,6	69	27/39	0,0092
1TZ9 A/C 112M*	5,5	6,3	2945	18	87	87,8	87,4	0,88	10,4	8,5	2,3	3,8	69	34/53	0,012
1TZ9 A/C 132S	5,5	6,3	2950	18	87	88	87,6	0,87	10,5	6,6	1,8	2,9	68	39/57	0,02
1TZ9 A/C 132S	7,5	8,6	2950	24	88,1	88,5	87,6	0,87	14,1	7,5	2,2	3,1	68	43/61	0,024
1TZ9 A/C 132M*	11	12,6	2950	36	89,4	90,1	89,9	0,89	20	7,9	2,3	3,2	68	57/80	0,031
1TZ9 A/C 160M	11	12,6	2955	36	89,4	89,3	88	0,87	20,5	7,4	2,1	3,2	70	67/96	0,045
1TZ9 A/C 160M	15	17,3	2955	48	90,3	90,7	90	0,88	27	7,6	2,4	3,4	70	75/104	0,056
1TZ9 A/C 160L	18,5	21,3	2955	60	90,9	91,3	90,6	0,88	33,5	7,9	2,9	3,6	70	84/113	0,061
1TZ9 A/C 160L*	22	25,3	2955	71	91,3	91,8	91,4	0,89	39	8,4	3,1	3,7	70	94/126	0,068
1TZ9 A/C 180M	22	24,5	2940	71	91,3	91,8	91,3	0,87	40	7,4	2,7	3,6	77	145	0,069
1TZ9 A/C 180L*	30	33,5	2940	97	92	92,6	92,3	0,89	53	7,8	2,3	3,4	76	180	0,094
1TZ9 A/C 200L	30	33,5	2960	97	92	92,3	91,8	0,87	54	6,9	2,5	3,3	78	200	0,13
1TZ9 A/C 200L	37	41,5	2960	119	92,5	93	92,7	0,88	66	7,4	2,7	3,5	78	225	0,15
1TZ9 A/C 200L*	45	51	2950	146	92,9	93,2	92,9	0,87	81	7,1	2,5	3,2	77	245	0,176
1TZ9 C 225M	45	51	2965	145	92,9	93,1	92,5	0,88	79	7,8	2,7	3,7	76	295	0,23
1TZ9 C 225M*	55	62	2960	177	93,2	93,6	93,2	0,88	97	7	2,5	3,3	76	320	0,26
1TZ9 C 250M	55	62	2970	177	93,2	93,3	92,4	0,88	97	6,8	2,3	3,1	76	360	0,4
1TZ9 C 250M*	75	84	2970	241	93,8	93,6	92,6	0,84	137	7	2,2	3,3	75	390	0,463
1TZ9 C 280S	75	84	2978	240	93,8	93,6	92,4	0,86	134	7,2	2,5	3,2	76	490	0,71
1TZ9 C 280M	90	101	2975	289	94,1	94,2	93,5	0,88	157	7,1	2,5	3,1	76	530	0,83
1TZ9 C 280M*	110	123	2978	353	94,3	94,5	94,1	0,9	187	8,5	2,9	3,6	80	650	1,2
1TZ9 C 315S	110	123	2982	352	94,3	94,2	93,3	0,9	187	7,3	2,4	3	77	720	1,3
1TZ9 C 315M	132	148	2982	423	94,6	94,7	94,1	0,91	220	7,2	2,4	3,1	77	880	1,6
1TZ9 C 315L	160	180	2982	512	94,8	94,9	94,3	0,92	265	7	2,3	3,1	80	930	1,8
1TZ9 C 315L	200	224	2982	640	95	95,2	94,8	0,92	330	7,3	2,5	3	80	1130	2,2

*Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I'n \text{ (new)} = I_n \text{ (with 400V)} \cdot (400 / U \text{ (new voltage)})$



Motor Series 1TZ9 IE2

4-pole: 1500 rpm at 50 Hz

Type	Output		RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	60Hz	50Hz	50Hz	%	%	%		50Hz				50Hz	Kg	kgm2
1TZ9 A 63M	0,12	0,14	1390	0,8	59,1	56,4	49	0,66	0,44	3,1	2,4	2,5	59	5	0,00037
1TZ9 A 63M	0,18	0,21	1385	1,2	64,7	62,4	55,7	0,65	0,62	3,3	2,6	2,6	59	5	0,00045
1TZ9 A 71M	0,25	0,28	1395	1,7	68,5	68,4	64,2	0,69	0,76	3,7	2,4	2,5	44	6	0,00076
1TZ9 A 71M	0,37	0,43	1380	2,6	72,7	73,2	69,9	0,72	1,02	3,8	2,3	2,4	44	7	0,00095
1TZ9 A 80M	0,55	0,63	1440	3,6	77,1	76,8	73,7	0,74	1,39	5,3	2,2	3,1	53	10	0,0017
1TZ9 A 80M	0,75	0,86	1440	5	79,6	79,9	77,5	0,76	1,79	5,6	2,2	3,1	53	11	0,0021
1TZ9 A 80M*	1,1	1,27	1440	7,3	81,4	82,1	80,7	0,78	2,5	6,1	2,4	3	53	11	0,0029
1TZ9 A 90S	1,1	1,27	1425	7,4	81,4	81,8	80	0,78	2,5	5,6	2,3	2,9	56	13	0,0028
1TZ9 A 90L	1,5	1,75	1435	10	82,8	83,5	82,2	0,79	3,3	6,4	2,6	3,4	56	16	0,0036
1TZ9 A 90L*	2,2	2,54	1425	15	84,3	85,6	85	0,81	4,65	6,1	2,8	3,1	56	16	0,0049
1TZ9 A/C 100L	2,2	2,54	1455	14	84,3	85,1	84,2	0,81	4,65	6,9	2,1	3,3	60	21/32	0,0086
1TZ9 A/C 100L	3	3,45	1455	20	85,5	86,4	85,6	0,82	6,2	6,9	2	3,1	60	25/37	0,014
1TZ9 A/C 100L*	4	4,55	1460	26	86,6	88	87,5	0,8	8,3	7,5	2,2	3,5	60	30/46	0,014
1TZ9 A/C 112M	4	4,55	1460	26	86,6	87,3	86,4	0,81	8,2	7,1	2,5	3,2	58	29/46	0,014
1TZ9 A/C 112M*	5,5	6,3	1460	36	87,7	88,2	87,2	0,81	11,2	7,1	2,5	3,2	58	34/58	0,017
1TZ9 A/C 132S	5,5	6,3	1465	36	87,7	88,4	87,6	0,8	11,3	6,9	2,3	2,9	64	42/61	0,022
1TZ9 A/C 132M	7,5	8,6	1465	49	88,7	89,8	89,8	0,83	14,7	6,9	2,3	2,9	64	49/75	0,028
1TZ9 A/C 132M*	11	12,6	1465	72	89,8	90,9	90,9	0,84	21	7,7	2,6	3,1	64	64/80	0,046
1TZ9 A/C 160M	11	12,6	1470	71	89,8	91	90,9	0,85	21	6,7	2,1	2,8	65	71/96	0,055
1TZ9 A/C 160L	15	17,3	1475	97	90,6	91,2	90,8	0,85	28	7,3	2,3	3	65	83/104	0,071
1TZ9 A/C 160L*	18,5	21,3	1475	120	91,2	91,8	91,3	0,85	34,5	7,7	2,5	3,3	65	100/116	0,085
1TZ9 A/C 180M	18,5	21,3	1465	121	91,2	92	91,9	0,84	35	7,2	2,5	3,4	61	160	0,12
1TZ9 A/C 180L	22	25,3	1465	143	91,6	92,2	91,9	0,84	41,5	7,3	2,6	3,5	69	170	0,13
1TZ9 A/C 180L*	30	34,5	1465	196	92,3	93	92,9	0,81	58	7,3	2,5	3,3	70	185	0,159
1TZ9 A/ C 200L	30	34,5	1470	195	92,3	92,9	92,6	0,84	56	6,7	2,5	3,3	70	230	0,2
1TZ9 A/C 200L	37	42,5	1470	240	92,7	93,5	93,6	0,84	69	7	2,4	3	68	240	0,246
1TZ9 C 225S	37	42,5	1470	240	92,7	93,5	93,5	0,88	65	6,6	2,3	2,9	66	280	0,42
1TZ9 C 225M	45	52	1475	291	93,1	93,8	93,7	0,87	80	6,9	2,5	3,1	66	305	0,46
1TZ9 C 225M*	55	63	1475	356	93,5	94,2	94,1	0,84	101	5,8	2,5	2,7	69	320	0,47
1TZ9 C 250M	55	63	1480	355	93,5	93,9	93,5	0,85	100	6,8	2,7	3	66	385	0,75
1TZ9 C 250M*	75	86	1480	484	94	94,5	94,3	0,86	134	6,2	2,3	2,8	74	440	0,85
1TZ9 C 280S	75	86	1485	482	94	94,2	93,8	0,87	132	6,8	2,5	3	71	550	1,3
1TZ9 C 280M	90	104	1486	578	94,2	94,3	93,6	0,87	159	7,3	2,6	3,1	71	570	1,4
1TZ9 C 280M*	110	127	1485	707	94,5	94,9	94,8	0,87	193	6,9	2,5	3	73	680	1,7
1TZ9 C 280M*	132	152	1488	845	93,5	93	93	0,82	250	8,4	2,7	3,7	74	720	1,84
1TZ9 C 315S	110	127	1490	705	94,5	94,6	94	0,86	195	7,4	2,7	3	72	740	2
1TZ9 C 315M	132	152	1490	846	94,7	94,9	94,6	0,87	230	7,1	2,7	2,9	75	870	2,3
1TZ9 C 315L	160	184	1490	1025	94,9	95	94,5	0,87	280	7,2	2,8	3,1	76	940	2,8
1TZ9 C 315L	200	230	1490		95,1	95,3	94,7	0,87	350	7,5	3,1	3,2	77	1140	3,5

*Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I_n(\text{new}) = I_n(\text{with 400V}) \cdot (400 / U(\text{new voltage}))$

Motor Series 1TZ9 IE2

6-pole: 1000 rpm at 50 Hz

Type	Output		RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	60Hz	50Hz	50Hz	%	%	%		50Hz				50Hz	Kg	kgm2
1TZ9 A 80M	0,37	0,43	925	3,8	67,6	67,9	64,4	0,69	1,14	4	2,1	2,4	42	9	0,002
1TZ9 A 80M	0,55	0,63	935	5,6	73,1	73,8	70,8	0,66	1,65	4,4	2,5	2,9	42	12	0,003
1TZ9 A 90S	0,75	0,86	935	7,7	75,9	76,8	74,5	0,7	2,05	4,1	2	2,5	43	13	0,003
1TZ9 A 90L	1,1	1,27	935	11	78,1	79,3	77,7	0,7	2,9	4,4	2,2	2,6	43	16	0,004
1TZ9 A/C 100L	1,5	1,75	970	15	79,8	80,5	79	0,73	3,7	5,4	2	2,8	59	25/36	0,011
1TZ9 A/C 100L*	2,2	2,54	965	22	81,8	83,3	82,7	0,76	5,1	4,9	1,7	2,5	59	30/49	0,014
1TZ9 A/C 112M	2,2	2,54	965	22	81,8	82,7	81,7	0,75	5,2	5	2	2,8	62	29/41	0,014
1TZ9 A/C 112M*	3	3,45	965	30	83,3	84	82,7	0,74	7	5,4	2,1	2,7	62	34/53	0,017
1TZ9 A/C 132S	3	3,45	970	30	83,3	83,4	81	0,72	7,2	5	1,6	2,5	63	38/56	0,024
1TZ9 A/C 132M	4	4,55	970	39	84,6	85,5	84,3	0,75	9,1	5	1,6	2,3	63	43/61	0,029
1TZ9 A/C 132M	5,5	6,3	970	54	86	87,1	86,4	0,76	12,1	5,6	1,9	2,6	63	52/70	0,037
1TZ9 A/C 132M*	7,5	8,6	970	74	87,2	88,1	87,1	0,75	16,6	5,6	2	2,6	63	64/83	0,046
1TZ9 A/C 160M	7,5	8,6	975	73	87,2	87,9	87,2	0,74	16,8	4,7	1,9	2,2	67	71/106	0,075
1TZ9 A/C 160L	11	12,6	975	108	88,7	89,7	89,3	0,76	23,5	4,8	1,9	2,2	67	93/122	0,098
1TZ9 A/C 160L*	15	17,3	975	147	89,7	90,4	89,7	0,75	32	5,2	2	2,4	67	115/147	0,12
1TZ9 A/C 180L*	15	18	975	147	89,7	90,1	89,5	0,78	31	6	2,5	3,1	57	155	0,17
1TZ9 A/C 180L*	18,5	22	975	181	90,4	90,9	90,5	0,77	38,5	6	2,3	2,9	67	165	0,206
1TZ9 A/C 200L	18,5	22	978	181	90,4	91,4	91,3	0,82	36	5,8	2,4	2,6	63	200	0,25
1TZ9 A/C 200L	22	26,5	978	215	90,9	91,7	91,4	0,82	42,5	6,2	2,5	2,6	63	220	0,3
1TZ9 A/C 200L*	30	34,5	975	294	91,7	92,5	92,4	0,77	61	6,3	2,6	2,7	63	240	0,381
1TZ9 C 225M	30	36	980	292	91,7	92,5	92,3	0,83	57	5,6	2,5	2,7	65	300	0,58
1TZ9 C 225M*	37	44,5	978	361	92,2	93	92,9	0,83	70	6,3	2,5	2,9	64	325	0,67
1TZ9 C 250M	37	44,5	982	360	92,2	93,1	93,1	0,83	70	6	2,8	2,5	62	370	0,86
1TZ9 C 250M*	45	54	985	436	92,7	93,4	93,4	0,84	83	6,6	2,4	2,7	67	410	1
1TZ9 C 280S	45	54	985	436	92,7	93,4	93,2	0,84	83	6,3	2,7	2,6	65	460	1,1
1TZ9 C 280M	55	66	985	533	93,1	93,9	94	0,86	99	6,4	2,5	2,6	65	510	1,37
1TZ9 C 280M*	75	90	986	726	93,7	94,3	94,4	0,85	136	7	3,2	2,9	66	570	1,8
1TZ9 C 315S	75	90	988	725	93,7	94	93,6	0,84	138	6,7	2,5	2,8	65	660	2,1
1TZ9 C 315M	90	108	988	870	94	94,3	93,6	0,84	165	6,9	2,6	2,8	65	730	2,5
1TZ9 C 315L	110	132	988	1063	94,3	94,6	94,5	0,86	196	7	2,7	2,8	68	940	3,6
1TZ9 C 315L	132	158	988	1276	94,6	94,9	94,7	0,86	235	7,5	3	2,9	69	990	4,02
1TZ9 C 315L	160	192	988	1546	94,8	94,7	94,4	0,86	285	7,7	3,1	3,3	69	1160	4,7

* Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I_n(\text{new}) = I_n(\text{with 400V}) \cdot (400 / U(\text{new voltage}))$

Motor Series 1TZ9 IE2

8-pole: 750 rpm at 50 Hz

Type	Output		RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	60Hz	50Hz	50Hz	%	%	%		50Hz				50Hz	Kg	kgm2
1TZ9 A 80M	0,18	0,21	690	2,5	45,9	43,6	37,8	0,6	0,93	2,2	1,7	2,1	51	16	0,002
1TZ9 A 80M	0,25	0,28	705	3,4	50,6	48,1	41,9	0,55	1,3	2,5	2	2,5	51	18	0,002
1TZ9 A 90S	0,37	0,43	675	5,2	56,1	55,6	49,6	0,71	1,34	2,6	1,4	1,7	53	20	0,002
1TZ9 A 90L	0,55	0,63	665	7,9	61,7	63,4	59,8	0,74	1,74	2,7	1,5	1,7	53	22	0,003
1TZ9 A/C 100L	0,75	0,86	705	10	66,2	65,7	61,6	0,61	2,7	3,2	1,5	2,1	60	21/32	0,009
1TZ9 A/C 100L	1,1	1,27	695	15	70,8	72,3	69,6	0,65	3,45	3,2	1,4	1,9	60	25/36	0,011
1TZ9 A/C 112M	1,5	1,75	725	20	74,1	73,9	71,2	0,63	4,65	4	1,6	2,4	63	34/53	0,017
1TZ9 A/C 132S	2,2	2,54	725	29	77,6	78,2	76,6	0,62	6,6	3,5	1,4	2	63	46/64	0,034
1TZ9 A/C 132M	3	3,45	720	40	80	80,7	79,2	0,62	8,7	3,7	1,4	2	63	52/67	0,037
1TZ9 A/C 160M	4	4,55	730	52	81,9	82,6	81,4	0,67	10,5	3,7	1,6	1,9	63	69/98	0,065
1TZ9 A/C 160L	5,5	6,3	730	72	83,8	84,2	83	0,67	14,1	3,9	1,7	2	63	82/111	0,083
1TZ9 A/C 160L	7,5	8,6	725	99	85,3	86,4	86	0,7	18,1	3,8	1,6	1,9	63	94/123	0,098
1TZ9 A/C 180L	11	13,2	720	146	86,9	88	87,6	0,7	26	4,9	2,3	2,6	72	155	0,195
1TZ9 A/ C 180L*	15	18	720	199	88	89,2	89	0,73	33,5	4,9	2,2	2,5	67	190	0,263
1TZ9 A/C 200L	15	18	718	199	88	89,5	89,9	0,76	32,5	5,4	2,4	2,8	58	220	0,344
1TZ9 A/C 200L*	18,5	22	720	245	88,6	89,9	90,2	0,78	38,5	5,8	2,6	3	65	250	0,416
1TZ9 C 225S	18,5	22	730	242	89	89,9	89,5	0,78	38,5	5,4	2,2	2,7	59	250	0,43
1TZ9 C 225M	22	26,5	730	288	90,3	91,3	91,1	0,8	44	5,5	2,3	2,7	58	270	0,5
1TZ9 C 225M*	30	36	732	391	90,8	92	92,1	0,76	63	6,1	2,8	3,2	62	325	0,67
1TZ9 C 250M	30	36	732	391	91,3	92,2	92	0,8	59	5,6	2,4	2,7	60	370	0,86
1TZ9 C 250M*	37	44,5	730	484	91,6	92,6	92,7	0,83	70	5,5	2,3	2,6	63	405	1
1TZ9 C 280S	37	44,5	736	480	91,9	92,5	92,1	0,78	75	5,4	2,3	2,4	63	460	1,1
1TZ9 C 280M	45	54	738	582	92,4	92,8	92,4	0,79	89	5,7	2,5	2,5	66	510	1,4
1TZ9 C 280M*	55	66	736	714	92,9	93,4	93	0,8	107	5,9	2,5	2,5	70	550	1,6
1TZ9 C 315S	55	66	740	710	92,9	93,9	92,9	0,8	107	5,8	2,2	2,6	69	640	2
1TZ9 C 315M	75	90	738	970	93,5	94,4	94,5	0,81	143	5,9	2,3	2,7	69	720	2,5
1TZ9 C 315L	90	108	740	1161	93,5	94,3	94,4	0,83	167	5,8	2,2	2,5	69	860	3,1
1TZ9 C 315L	110	132	740	1419	94,2	95	95,1	0,82	205	6,7	2,7	2,9	74	980	3,9
1TZ9 C 315L	132	158	740	1703	94,4	94,8	94,4	0,81	250	7,2	2,9	3,3	76	1070	4,5

* Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I_n(\text{new}) = I_n(\text{with } 400V) \cdot (400 / U(\text{new voltage}))$

Motor Series 1TZ9 / 1TZ5 IE3

2-pole: 3000 rpm at 50 Hz

Type	Output		RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	60Hz	50Hz	50Hz	%	%	%		50Hz				50Hz	Kg	kgm2
1TZ9 A 80M	0,75	0,86	2850	2,5	80,7	82,2	81,9	0,86	1,56	6,2	2,6	3	60	11/18	0,001
1TZ9 A 80M	1,1	1,27	2885	3,6	82,7	83,9	83,1	0,85	2,25	7,1	3	3,3	60	12/21	0,001
1TZ9 A 90S	1,5	1,75	2910	4,9	84,2	84,6	83,2	0,86	3	8,1	2,7	4,2	65	15/26	0,002
1TZ9 A 90L	2,2	2,55	2910	7,2	85,9	86,8	86,1	0,88	4,2	8,3	2,6	4	65	19/32	0,003
1TZ9 A/C 100L	3	3,45	2910	9,8	87,1	87,9	87,5	0,87	5,7	9,4	4,4	4,5	67	25/36	0,004
1TZ9 A/C 112M	4	4,55	2945	13	88,1	88,7	88,2	0,89	7,4	9,1	2,6	3,6	69	32/45	0,008
1TZ9 A/C 132S	5,5	6,3	2945	17,8	89,2	90,1	89,7	0,88	10,1	8,9	2,5	3,8	69	48/58	0,018
1TZ9 A/C 132S	7,5	8,6	2950	24,5	90,1	91	91	0,92	13,1	8,3	1,9	3,9	68	57/73	0,031
1TZ9 A/C 132M*	11	12,6	2955	36	91,2	91,7	91,8	0,86	20	9,4	2,5	4,1	68	57/80	0,031
1TZ9 A/C 160M	11	12,6	2955	35,5	91,2	91	89,5	0,89	19,6	7,9	2,4	3,8	70	75/100	0,053
1TZ9 A/C 160M	15	17,3	2960	48	91,9	91,9	91	0,87	27	8,8	2,8	4,3	70	84/110	0,061
1TZ9 A/C 160L	18,5	21,3	2955	60	92,4	92,8	92,4	0,9	32	9	2,8	4,2	70	94/127	0,068
1TZ9 A/C 160L*	22	25,3	2945	71	92,7	93,4	93,3	0,91	37,5	9,9	3,5	4,4	76	108/137	0,067
1TZ9 A/C 180M	22	24,5	2950	71	92,7	93,2	92,9	0,89	38,5	7,5	2,3	3,5	67	122/160	0,08
1TZ9 A/C 180L*	30	34,5	2950	97	93,3	93,9	93,9	0,88	53	8,6	2,6	3,9	69	140/173	0,094
1TZ9 A/C 200L	30	33,5	2955	97	93,3	93,5	92,9	0,87	53	7	2,5	3,3	67	173/225	0,134
1TZ9 A/C 200L	37	41,5	2955	120	93,7	94,2	94	0,88	65	7,1	2,5	3,2	67	194/250	0,158
1TZ9 A/C 200L*	45	51	2950	146	94	94,3	94	0,87	79	7,1	2,5	3,2	72	194/245	0,16
1TZ9 C 225M	45	51	2960	145	94	94,5	94,4	0,89	78	6,9	2,4	3,3	73	315	0,26
1TZ9 C 225M*	55	62	2965	177	94,3	94,6	94,4	0,88	96	8	2,8	3,7	73	370	0,31
1TZ9 C 250M	55	62	2975	177	94,3	94,5	93,9	0,89	95	6,7	2,3	3,1	73	385	0,46
1TZ9 C 250M*	75	84	2970	241	94,7	94,9	94,5	0,9	127	6,8	2,2	2,9	74	455	0,56
1TZ9 C 280S	75	84	2975	241	94,7	94,8	94,1	0,89	128	6,8	2,4	3	74	510	0,77
1TZ9 C 280M	90	101	2975	289	95	95,1	94,6	0,9	152	7,2	2,4	3,1	74	590	0,94
1TZ9 C 280M*	110	123	2975	353	95,2	95,4	95,1	0,91	183	7,7	2,5	3,2	75	660	1,1
1TZ9 C 315S	110	123	2982	352	95,2	95,4	94,9	0,91	183	7,1	2,4	3,1	75	750	1,4
1TZ9 C 315M	132	148	2982	423	95,4	95,5	95,2	0,91	220	7,2	2,5	3,1	75	880	1,6
1TZ9 C 315L	160	180	2982	512	95,6	95,7	95,2	0,92	265	7,8	2,8	3,3	77	980	1,9
1TZ9 C 315L	200	224	2982	640	95,8	95,9	95,5	0,92	330	7,2	2,5	3	77	1150	2,3
1TZ5 C 315L*	250	280	2986	800	95,8	95,7	95	0,88	430	9,3	3	4,2	80	1340	2,82
1TZ5 C 315L*	315	355	2986	1007	95,8	95,6	94,8	0,87	550	9,9	3,5	4,2	81	1520	3,27
1TZ5 C 355M	355	400	2988	1135	95,8	95,6	94,8	0,88	600	8,9	2,6	4	84	2100	4,74
1TZ5 C 355L	400	450	2986	1279	95,8	95,7	95,2	0,92	660	8,5	2,6	3,4	83	2240	5,36
1TZ5 C 355L	500	560	2988	1598	95,8	95,7	95,1	0,89	850	8,9	3	3,8	84	2340	5,76

* Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I'n \text{ (new)} = I_n \text{ (with 400V)} \cdot (400 / U \text{ (new voltage)})$

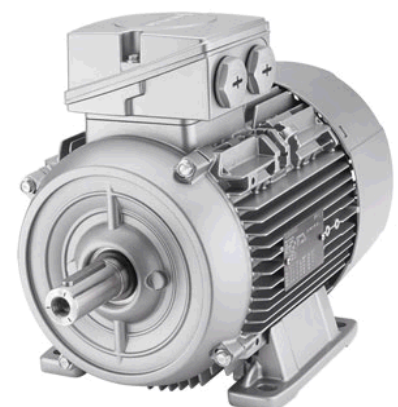
Motor Series 1TZ9 / 1TZ5 IE3 4-pole: 1500 rpm at 50 Hz

Type	Output		RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	60Hz	50Hz	50Hz	%	%	%		50Hz				Kg	kgm2	
1TZ9 A 80M	0,55	0,63	1440	3,6	80,8	81,1	79,3	0,78	1,26	5,9	2,1	3,1	53	11/18,5	0,002
1TZ9 A 80M	0,75	0,86	1450	4,9	82,5	82,3	79,9	0,75	1,75	7,1	2,7	3,9	53	14/22,5	0,003
1TZ9 A 90S	1,1	1,27	1440	7,3	84,1	84,7	83,4	0,78	2,4	6,9	2,9	3,6	56	16/25	0,004
1TZ9 A 90L	1,5	1,75	1445	9,9	85,3	86	85,2	0,8	3,15	7,3	2,9	3,5	56	19/31	0,005
1TZ9 A/C 100L	2,2	2,55	1455	14,4	86,7	87,3	86,4	0,82	4,45	8,3	3	3,8	67	25/40	0,01
1TZ9 A/C 100L	3	3,45	1450	19,8	87,7	88,4	88,2	0,8	6,2	8	3,1	3,8	67	26/40	0,01
1TZ9 A/C 112M	4	4,55	1460	26	88,6	89,2	88,6	0,82	7,9	7,1	2,4	3,7	58	34/46	0,017
1TZ9 A/C 132S	5,5	6,3	1470	36	89,6	90,1	89,5	0,84	10,5	7,2	2,1	3,4	64	64/74	0,046
1TZ9 A/C 132M	7,5	8,6	1465	49	90,4	91,1	90,8	0,8	15	8,5	3	3,8	72	59/80	0,035
1TZ9 A/C 132M*	11	12,6	1470	71	91,4	91,9	91,5	0,79	22	8,3	2,8	3,8	71	81/97	0,043
1TZ9 A/C 160M	11	12,6	1470	71	91,4	91,9	91,4	0,82	21	8	2,5	3,5	67	78/109	0,061
1TZ9 A/C 160M	15	17,3	1475	97	92,1	92,3	91,5	0,82	28,5	8,5	2,5	3,8	65	100/127	0,099
1TZ9 A/C 160L*	18,5	21,3	1470	120	93,6	94,2	94,1	0,79	59	7,8	2,8	3,7	65	110/126	0,101
1TZ9 A/C 180M	18,5	21,3	1470	120	92,6	93,1	92,9	0,82	35	7,2	2,5	3,3	66	134/165	0,13
1TZ9 A/C 180L	22	25,3	1470	143	93	93,6	93,6	0,83	41	6,8	2,3	3,3	68	142/170	0,14
1TZ9 A/C 180L*	30	34,5	1470	195	93,6	94	93,8	0,79	59	8,2	3	3,8	68	154/193	0,173
1TZ9 A/C 200L	30	34,5	1470	195	93,6	94	93,7	0,84	55	7,3	2,6	3,1	65	189/240	0,22
1TZ9 A/C 200L*	37	42,5	1475	240	93,9	94,3	94,2	0,81	70	8,1	3,1	3,5	65	205/260	0,275
1TZ9 C 225M	37	42,5	1478	239	93,9	94,5	94,4	0,86	66	6,4	2,5	2,7	65	285	0,42
1TZ9 C 225M	45	52	1478	291	94,2	94,9	95	0,86	80	6,6	2,6	2,6	65	340	0,5
1TZ9 C 225M*	55	63	1478	355	94,6	95,3	95,5	0,86	98	6,5	2,8	2,7	66	405	0,65
1TZ9 C 250M	55	63	1482	354	94,6	95,1	95	0,87	96	6,8	2,5	2,9	66	420	0,85
1TZ9 C 250M*	75	86	1486	482	95	95,2	94,8	0,85	134	7,9	3	3,4	69	510	1,1
1TZ9 C 280S	75	86	1485	482	95	95,3	95	0,86	133	6,9	2,5	3	69	570	1,4
1TZ9 C 280M	90	104	1485	579	95,2	95,5	95,3	0,87	157	7,2	2,6	3	70	670	1,7
1TZ9 C 280M*	110	127	1486	707	95,4	95,5	95	0,85	196	8,3	3	3,4	70	710	1,8
1TZ9 C 315S	110	127	1488	706	95,4	95,8	95,5	0,87	191	6,8	2,6	2,9	70	760	2,2
1TZ9 C 315M	132	152	1490	846	95,6	95,9	95,9	0,87	230	7,3	2,8	3	73	960	2,9
1TZ9 C 315L	160	184	1490	1025	95,8	96,1	96,1	0,87	275	7,3	2,9	3,1	73	990	3,1
1TZ9 C 315L	200	230	1488	1284	96	96,3	96,1	0,88	340	7,4	3,2	3	73	1190	3,7
1TZ5 C 315L*	250	290	1490	1602	96	96,1	95,7	0,85	440	7,9	2,8	3,2	75	1290	4,27
1TZ5 C 315L*	315	360	1490	2019	96	96	95,6	0,83	570	8,5	3,2	3,5	75	1560	5,39
1TZ5 C 355M	355	410	1492	2272	96	96	95,4	0,86	620	7,9	2,9	2,8	81	2020	6,76
1TZ5 C 355L	400	460	1492	2560	96	96	95,5	0,84	720	8,4	3,4	3	81	2110	7,16
1TZ5 C 355L	500	580	1491	3202	96	96,1	95,9	0,86	870	8,1	3	3,3	80	2290	8,36

* Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I_n(\text{new}) = I_n(\text{with 400V}) \cdot (400 / U(\text{new voltage}))$



Motor Series 1TZ9 IE3

6-pole: 1000 rpm at 50 Hz

Type	Output	RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	50Hz	50Hz	%	%	%		50Hz				Kg	kgm2	
1TZ9 A 80M	0,37	940	3,8	73,5	73,1	69,4	0,66	1,1	4,2	2,3	2,7	42	12/18,5	0,003
1TZ9 A 80M	0,55	935	5,6	77,2	77	73,9	0,67	1,53	4,5	2,5	2,8	42	14/22,5	0,003
1TZ9 A 90S	0,75	945	7,6	78,9	80	78,8	0,7	1,96	4,6	2,2	2,6	43	16/26,5	0,004
1TZ9 A 90L	1,1	950	11	81	81,4	79,3	0,66	2,95	5	2,8	3	43	19/32	0,005
1TZ9 A/C 100L	1,5	970	14,8	82,5	83,1	81,5	0,73	3,6	5,2	1,9	2,8	59	25/36	0,011
1TZ9 A/C 112M	2,2	970	22	84,3	85	83,9	0,75	5	5,6	2,2	2,8	65	34/53	0,017
1TZ9 A/C 132S	3	975	29	85,6	86,1	84,9	0,73	6,9	6,6	2,3	3,2	63	42/61	0,034
1TZ9 A/C 132M	4	975	39	86,8	87,1	86,2	0,73	9,1	6,2	2,2	3	63	46/70	0,037
1TZ9 A/C 132M	5,5	975	54	88	88,3	87,2	0,72	12,5	6,8	2,7	3,4	63	58/83	0,05
1TZ9 A/C 160M	7,5	985	73	89,1	89,5	88,6	0,81	15	7,9	2,3	3,2	67	95/122	0,132
1TZ9 A/C 160L	11	980	107	90,3	90,8	90,2	0,8	22	6,8	2,9	2,8	67	106/147	0,164
1TZ9 A/C 180M	15	975	147	91,2	92	91,9	0,8	29,5	5,9	2,3	2,8	61	130/180	0,19
1TZ9 A/C 180L*	18,5	975	181	91,7	92,3	91,9	0,77	38	6,9	2,6	3,3	67	150/185	0,247
1TZ9 A/C 200L	18,5	978	181	91,7	92,5	92,4	0,79	37	5,6	2,5	2,6	64	166/215	0,28
1TZ9 A/C 200L	22	978	215	92,2	93,1	93,2	0,79	43,5	5,6	2,5	2,6	61	179/230	0,32
1TZ9 A/C 200L*	30	978	293	92,9	93,7	93,7	0,79	59	6,5	2,8	2,8	61	220/264	0,434
1TZ9 C 225M	30	982	292	92,9	93,6	93,5	0,83	56	6,6	2,6	3	64	325	0,67
1TZ9 C 225M*	37	982	360	93,3	93,9	93,7	0,81	71	7,1	3	3,2	60	395	0,84
1TZ9 C 250M	37	985	359	93,3	94	94	0,85	67	7	2,7	2,9	62	405	1
1TZ9 C 250M*	45	986	436	93,7	94,3	94,2	0,84	83	7	2,8	2,9	63	480	1,3
1TZ9 C 280S	45	988	435	93,7	94,3	94,2	0,85	82	6,8	3	2,8	60	510	1,4
1TZ9 C 280M	55	988	532	94,1	94,5	94,4	0,85	99	7,2	3,3	3	60	560	1,7
1TZ9 C 280M*	75	988	725	94,6	95	94,8	0,83	138	8,6	3,7	3,3	63	630	1,9
1TZ9 C 315S	75	990	723	94,6	94,9	94,4	0,84	136	7,5	2,6	3,1	63	750	2,6
1TZ9 C 315M	90	991	867	94,9	95,2	94,9	0,85	161	6,7	2,5	2,8	63	890	3,1
1TZ9 C 315L	110	991	1060	95,1	95,5	95,3	0,84	199	7,2	2,8	3	63	990	3,9
1TZ9 C 315L	132	992	1271	95,4	95,7	95,4	0,82	245	8	3,3	3,3	67	1130	4,4
1TZ9 C 315L	160	992	1540	95,6	95,8	95,5	0,82	295	8,5	3,5	3,6	67	1260	5,4
1TZ5 C 315L*	200	992	1925	95,8	95,9	95,6	0,82	365	7,5	3	3,2	68	1410	6,28
1TZ5 C 315L*	250	992	2407	95,8	95,9	95,6	0,81	465	8,2	3,3	3,3	69	1700	8
1TZ5 C 355M	315	993	3029	95,8	95,8	95,3	0,82	580	7,8	2,9	3,2	75	2040	11,6
1TZ5 C 355L	355	993	3414	95,8	95,9	95,5	0,83	640	8,4	2,9	3,3	74	2250	13,7
1TZ5 C 355L	400	994	3843	95,8	96	95,8	0,84	720	8,1	2,8	3	75	2240	13,4

* Increased output

Cooling: self-ventilated (IC 411)Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I'n (new) = I_n (with 400V) \cdot (400 / U (new voltage))$

Motor Series 1TZ9 IE3 8-pole: 750 rpm at 50 Hz

Type	Output	RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	50Hz	50Hz	%	%	%		50Hz				50Hz	Kg	kgm2
1TZ9 A/C 132S	2,2	725	29	81,9	82,9	81,8	0,71	5,3	5	1,9	2,5	65	42/66	0,046
1TZ9 A/C 132M	3	725	39,5	83,5	84,2	82,7	0,72	7,1	5,2	2	2,5	70	58/78	0,061
1TZ9 A/C 160M	4	730	52	84,5	85,6	84,5	0,74	9,1	4,7	1,6	2,1	68	67/98	0,076
1TZ9 A/C 160M	5,5	730	72	86,2	86,9	85,7	0,73	12,4	5,5	2	2,4	68	78/110	0,1
1TZ9 A/C 160L	7,5	730	98	87,3	88,2	87,7	0,73	16,9	5,8	2,3	2,7	70	76/135	0,13
1TZ9 A/C 180L	11	725	145	88,6	89,7	89,6	0,74	24	5,1	2,1	2,4	61	161/190	0,267
1TZ9 A/C 180L*	15	730	196	89,6	89,4	89,4	0,73	33,5	6,8	3	3,7	57	255	0,42
1TZ9 A/C 200L	15	730	196	89,6	90,1	89,4	0,73	33,5	6,8	3	3,7	57	212/255	0,42
1TZ9 C 225S	18,5	732	241	90,1	90,6	90	0,75	39,5	5,9	2,5	3	56	270	0,5
1TZ9 C 225M	22	732	287	90,6	91,4	91,2	0,77	45,5	5,9	2,6	2,9	56	280	0,55
1TZ9 C 250M	30	735	390	91,3	91,8	91,5	0,79	60	6,1	2,6	3	60	370	0,86
1TZ9 C 280S	37	736	480	91,8	92,5	92,4	0,78	75	5,4	2,3	2,4	63	460	1,1
1TZ9 C 280M	45	738	582	92,2	92,8	92,6	0,8	88	5,9	2,5	2,5	65	550	1,6
1TZ9 C 315S	55	740	710	92,5	92,9	92,6	0,81	106	6	2,3	2,7	66	650	2
1TZ9 C 315M	75	738	970	93,1	93,5	93,3	0,81	144	5,9	2,3	2,7	69	720	2,5
1TZ9 C 315L	90	740	1161	93,4	94,2	94,3	0,83	168	5,8	2,2	2,5	71	860	3,1
1TZ9 C 315L	110	740	1419	93,7	94,2	94,1	0,82	205	6,7	2,7	2,9	74	980	3,9
1TZ9 C 315L	132	740	1703	94	94,4	94,1	0,81	250	7,2	2,9	3,3	76	1160	4,6
1TZ5 C 315L*	160	741	2062	94,3	94,7	94,7	0,79	310	6,3	2,5	2,5	67	1420	6,78
1TZ5 C 315L*	200	742	2574	94,6	94,8	94,5	0,78	390	6,7	2,7	2,9	72	1660	8,6
1TZ5 C 355L	250	744	3209	94,6	95	95	0,8	475	7,1	2,4	2,7	73	2280	13,3
1TZ5 C 355L	315	744	4043	94,6	94,9	94,6	0,8	600	7,3	2,5	3	73	2310	14

* Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I'n \text{ (new)} = I_n \text{ (with 400V)} \cdot (400 / U \text{ (new voltage)})$

Motor Series 1TZ9 IE4

2-pole: 3000 rpm at 50 Hz

Type	Output		RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	60Hz	50Hz	50Hz	%	%	%		50Hz				50Hz	Kg	kgm2
1TZ9 A/C 100L	3	3,45	2920	9,8	89,1	89,8	89,4	0,86	5,7	9	3,7	4,9	62	27/38	0,005
1TZ9 A/C 112M	4	4,55	2950	13	90	90,4	89,7	0,89	7,2	8,8	2,6	4,1	69	34/45	0,012
1TZ9 A/C 132S	5,5	6,3	2960	18	90,9	90,9	89,8	0,84	10,4	8,6	2,1	4,6	68	44/62	0,024
1TZ9 A/C 132S	7,5	8,6	2955	24	91,7	92,4	92,3	0,91	13	8,6	2,2	4,3	68	56/74	0,031
1TZ9 A/C 160M	11	12,6	2955	36	92,6	92,8	92	0,9	19,1	8,6	2,8	4,2	74	84/113	0,061
1TZ9 A/C 160M	15	17,3	2955	48	93,3	93,5	92,9	0,9	26	9	3,1	4,5	74	98/130	0,068
1TZ9 A/C 160L	18,5	21,3	2955	60	93,7	94,1	93,8	0,91	31,5	8,9	3,1	4,3	74	112/147	0,074
1TZ9 A/C 180M	22	24,5	2950	71	94	94,4	94,1	0,89	38	8,9	2,8	4,3	71	139/175	0,091
1TZ9 A/C 200L	30	33,5	2955	97	94,5	94,8	94,4	0,85	54	7,9	2,8	4	71	173/222	0,13
1TZ9 A/C 200L	37	41,5	2955	120	94,8	95,1	94,9	0,88	64	7,8	2,9	4	71	214/263	0,2
1TZ9 C 225M	45	51	2970	145	95	95	94,4	0,85	80	8,8	3,1	4,1	75	330	0,26
1TZ9 C 250M	55	62	2978	176	95,3	95,2	94,5	0,88	95	7,5	2,5	3,2	72	430	0,48
1TZ9 C 280S	75	84	2980	240	95,6	95,6	95	0,89	127	8,4	2,7	3,5	72	610	0,94
1TZ9 C 280M	90	101	2978	289	95,8	95,9	95,4	0,89	152	8,4	2,7	3,5	73	610	1
1TZ9 C 315S	110	123	2985	352	96	96	95,3	0,89	186	8,8	2,6	3,4	77	750	1,4
1TZ9 C 315M	132	148	2988	422	96,2	96,2	95,6	0,9	220	10,5	3,1	4	77	980	1,9
1TZ9 C 315L	160	180	2988	511	96,3	96,3	95,8	0,92	260	10,3	3,2	3,9	78	1060	2,1
1TZ9 C 315L	200	224	2986	640	96,5	96,5	96,1	0,92	325	10	3,5	3,9	78	1180	2,4
1TZ5 C 315L*	250	280	2986	800	96,5	96,4	95,7	0,88	425	9,3	3	4,2	80	1340	2,82
1TZ5 C 315L*	315	355	2986	1007	96,5	96,3	95,5	0,87	540	9,9	3,5	4,2	81	1520	3,27
1TZ5 C 355M	355	400	2988	1135	96,5	96,3	95,5	0,89	600	8,9	2,6	4	84	2100	4,74
1TZ5 C 355L	400	450	2986	1279	96,5	96,4	95,9	0,92	650	8,5	2,6	3,4	83	2240	5,36
1TZ5 C 355L	500	560	2988	1598	96,5	96,4	95,8	0,89	840	8,9	3	3,8	84	2340	5,76

* Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I'n \text{ (new)} = I_n \text{ (with 400V)} \cdot (400 / U \text{ (new voltage)})$

Motor Series 1TZ9 IE4

4-pole: 1500 rpm at 50 Hz

Type	Output		RPM	T rated	η rated 50Hz			Cos φ	I rated	I Start / I rated	T Start / T rated	T B.Down / T rated	Sound pressure	Weight	Inertia
	kW	kW	400V	Nm	100	75	50	50Hz	400V	Ist/In	Mst/Mn	Mk/Mn	db(A)	A/C IM B3	J
	50Hz	60Hz	50Hz	50Hz	%	%	%		50Hz				50Hz	Kg	kgm2
1TZ9 A/C 100L	2,2	2,55	1465	14	89,5	89,6	88,3	0,79	4,5	8,5	3,3	4,7	63	30/41	0,014
1TZ9 A/C 100L	3	3,45	1460	20	90,4	91	90,5	0,81	5,9	8,8	3,5	4,2	63	38/50	0,016
1TZ9 A/C 112M	4	4,55	1465	26	91,1	91,6	91	0,81	7,8	8,3	3,1	4,3	65	46/58	0,02
1TZ9 A/C 132S	5,5	6,3	1470	36	91,9	92,6	92,3	0,83	10,4	8,3	2,6	3,5	56	59/77	0,039
1TZ9 A/C 132M	7,5	8,6	1470	49	92,6	93,1	92,7	0,81	14,4	7,7	3	4	56	62/80	0,046
1TZ9 A/C 160M	11	12,6	1475	71	93,3	93,5	92,9	0,82	21	8,1	2,9	4,1	63	98/127	0,099
1TZ9 A/C 160M	15	17,3	1480	97	93,9	94	93,3	0,8	29	7,8	3,7	4,3	63	109/138	0,11
1TZ9 A/C 180M	18,5	21,3	1470	120	94,2	94,7	94,5	0,81	35	7,9	2,7	3,6	62	153/187	0,17
1TZ9 A/C 180L	22	25,3	1475	142	94,5	95	94,8	0,81	41,5	7,7	2,9	3,8	62	158/192	0,18
1TZ9 A/C 200L	30	34,5	1475	194	94,9	95,2	94,9	0,81	56	7,3	3,2	3,6	59	205/258	0,27
1TZ9 C 225S	37	42,5	1485	238	95,2	95,5	95,2	0,84	67	8,4	3,2	3,2	69	345	0,52
1TZ9 C 225M	45	52	1485	289	95,4	95,7	95,4	0,84	81	8	3,4	3,3	64	415	0,66
1TZ9 C 250M	55	63	1486	353	95,7	95,8	95,4	0,86	96	8,2	3	3,3	67	490	1,1
1TZ9 C 280S	75	86	1490	481	96	96,1	95,6	0,85	133	9,2	3,4	3,8	69	670	1,7
1TZ9 C 280M	90	104	1488	578	96,1	96,3	96,1	0,86	157	9	3,2	3,4	69	730	2
1TZ9 C 315S	110	127	1491	705	96,3	96,4	95,9	0,86	192	8,6	3,2	3,3	70	910	2,7
1TZ9 C 315M	132	152	1491	845	96,4	96,6	96,2	0,87	225	8,7	3,3	3,3	70	990	3,1
1TZ9 C 315L	160	184	1490	1025	96,6	96,7	96,5	0,86	280	9	3,6	3,2	73	1180	3,7
1TZ9 C 315L	200	230	1490	1282	96,7	96,9	96,6	0,86	345	9,2	3,8	3,4	73	1300	4,4
1TZ5 C 315L*	250	290	1490	1602	96,7	96,8	96,5	0,86	435	7,9	2,8	3,2	75	1500	4,98
1TZ5 C 315L*	315	360	1490	2019	96,7	96,7	96,3	0,83	570	8,5	3,2	3,5	75	1560	5,39
1TZ5 C 355M	355	410	1492	2272	96,7	96,7	96,2	0,83	640	7,9	2,8	2,8	81	2050	6,76
1TZ5 C 355L	400	460	1492	2560	96,7	96,7	96,2	0,82	730	7,9	3,2	2,9	81	2080	7,16
1TZ5 C 355L	500	580	1491	3202	96,7	96,8	96,6	0,86	870	8,1	3,1	3,3	80	2290	8,36

* Increased output

Cooling: self-ventilated (IC 411) Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (ClassB) For higher output motors, please contact Rubix.

Formula for current with new voltage: $I'n \text{ (new)} = I_n \text{ (with 400V)} \cdot (400 / U \text{ (new voltage)})$

Motor Series 2/4-pole (2-speed)

Technical data for standard execution, S1-duty, IP55, 380-420V 50Hz.
(Single winding-Dahlander)

Fan / Pump duty						
Type	Output kW		RPM		AMP (400)	
	Low	High	Low	High	Low	High
1TZ9011 2/4 A 80M VT	0,15	0,7	1445	2825	0,36	1,54
1TZ9011 2/4 A 80M VT	0,25	0,95	1435	2855	0,64	2,4
1TZ9011 2/4 A 90S VT	0,33	1,4	1435	2845	0,75	3,55
1TZ9011 2/4 A 90L VT	0,5	2	1420	2840	1,1	4,5
1TZ9011 2/4 A 100L VT	0,65	2,4	1415	2800	1,45	5,6
1TZ9011 2/4 A 100L VT	0,8	3,1	1435	2840	1,72	6,5
1TZ9011 2/4 A 112M VT	1,1	4,4	1455	2895	2,25	8,5
1TZ9011 2/4 A 132S VT	1,45	5,9	1460	2875	2,95	12
1TZ9011 2/4 A 132M VT	2	8	1455	2880	4	15,3
1TZ9011 2/4 A 160M VT	2,9	11,5	1465	2870	5,6	22
1TZ9011 2/4 A 160L* VT	4,3	16	1455	2920	8,1	28,5
1TZ9511 2/4 C 180L VT	5,8	21,5	1480	2955	11,3	37,5
1TZ9511 2/4 C 200L VT	8,4	31	1480	2955	15,7	55
1TZ9511 2/4 C 225S VT	10,5	38	1478	2952	20	68
1TZ9511 2/4 C 225M VT	13	45	1478	2958	23,5	78
1TZ9511 2/4 C 250M VT	15	55	1480	2955	28	98
1TZ9511 2/4 C 280S VT	18	67	**	**	**	**
1TZ9511 2/4 C 280M VT	22	80	**	**	**	**
1TZ9511 2/4 C 315M VT	32	110	**	**	**	**
1TZ9511 2/4 C 315L VT	40	161	**	**	**	**

Constant Torque						
Type	Output kW		RPM		AMP (400)	
	Low	High	Low	High	Low	High
1TZ9011 2/4 A 80M CT	0,48	0,6	1390	2830	1,27	1,5
1TZ9011 2/4 A 80M CT	0,7	0,85	1375	2835	1,73	2,05
1TZ9011 2/4 A 90S CT	1,1	1,4	1400	2830	2,6	3,4
1TZ9011 2/4 A 90L CT	1,5	1,9	1400	2860	3,45	4,4
1TZ9011 2/4 A 100L CT	1,9	2,4	1390	2800	4,4	5,6
1TZ9011 2/4 A 100L CT	2,5	3,1	1400	2840	5,5	6,5
1TZ9011 2/4 A 112M CT	3,7	4,4	1420	2885	7,8	8,5
1TZ9011 2/4 A 132S CT	4,7	5,9	1440	2875	9,9	12
1TZ9011 2/4 A 132M CT	6,5	8	1435	2880	13,3	15,3
1TZ9011 2/4 A 160M CT	9,3	11,5	1440	2870	18,3	22
1TZ9011 2/4 A 160L* CT	13	16	1450	2920	25,5	35,5
1TZ9511 2/4 C 180L CT	18	21,5	1470	2955	34	37
1TZ9511 2/4 C 200L CT	26	31	1480	2960	49,5	55
1TZ9511 2/4 C 225S CT	32	38	1475	2955	57	70
1TZ9511 2/4 C 225M CT	38	45	1475	2955	68	80
1TZ9511 2/4 C 250M CT	46	55	1475	2955	84	99
1TZ9511 2/4 C 280S CT	63	75	**	**	**	**
1TZ9511 2/4 C 280M CT	73	87	**	**	**	**
1TZ9511 2/4 C 315S CT	85	100	**	**	**	**
1TZ9511 2/4 C 315L CT	145	172	1488	2975	255	290

Motor Series 4/6-pole (2-speed)

Technical data for standard execution, S1-duty, IP55, 380-420V 50Hz.
(Seperate winding-Dahlander)

Fan / Pump duty						
Type	Output kW		RPM		AMP (400)	
	Low	High	Low	High	Low	High
1TZ9011 4/6 A 80M VT	0,18	0,55	915	1405	0,68	1,58
1TZ9011 4/6 A 90S VT	0,29	0,8	955	1420	1,07	2,15
1TZ9011 4/6 A 90L VT	0,38	1,1	945	1415	1,32	2,65
1TZ9011 4/6 A 100L VT	0,6	1,7	970	1435	2,6	3,9
1TZ9011 4/6 A 100L VT	0,75	2,1	955	1435	2,2	4,6
1TZ9011 4/6 A 112M VT	0,9	3	975	1455	3,05	6,8
1TZ9011 4/6 A 132S VT	1,2	3,9	980	1455	3,45	8,2
1TZ9011 4/6 A 132M VT	1,7	5,4	980	1465	4,65	11,1
1TZ9011 4/6 A 160M VT	2,5	7,2	985	1470	6,5	14,1
1TZ9011 4/6 A 160L VT	3,7	12	985	1475	9,4	24,5
1TZ9511 4/6 C 180M VT	5,5	16	985	1475	14,7	32
1TZ9511 4/6 C 180L VT	6,5	19	985	1475	16,5	38
1TZ9511 4/6 C 200L VT	9,5	26	985	1475	23	52
1TZ9511 4/6 C 225S VT	12	34	980	1465	24,5	63
1TZ9511 4/6 C 225M VT	14,5	40	978	1465	29	72
1TZ9511 4/6 C 250M VT	18	52	980	1475	34,5	93
1TZ9511 4/6 C 280S VT	25	70	982	1478	48	127
1TZ9511 4/6 C 280M VT	30	82	982	1480	56	148
1TZ9511 4/6 C 315S VT	33	92	**	**	**	**
1TZ9511 4/6 C 315M VT	45	120	986	1485	85	210
1TZ9511 4/6 C 315L VT	55	170	988	1488	104	315

Constant Torque						
Type	Output kW		RPM		AMP (400)	
	Low	High	Low	High	Low	High
1TZ9511 4/6 C 180M CT	9,5	14	980	1480	24	32
1TZ9511 4/6 C 180L CT	11	16,5	980	1480	27	36
1TZ9511 4/6 C 225S CT	21	31	975	1465	41,5	59
1TZ9511 4/6 C 225M CT	25	37	970	1470	49	68
1TZ9511 4/6 C 250M CT	32	47	975	1480	60	85
1TZ9511 4/6 C 280S CT	45	66	982	1480	84	118
1TZ9511 4/6 C 315S CT	62	92	**	**	**	**
1TZ9511 4/6 C 315L CT	90	132	986	1488	168	235

* Increased output
** On request

Formula for current with new voltage:
 $I'n \text{ (new)} = I_n \text{ (with 400V)} \cdot (400 / U \text{ (new voltage)})$

Motor Series 4/8-pole (2-speed)

Technical data for standard execution, S1-duty, IP55, 380-420V 50Hz.
(Single winding-Dahlander)

Type	Fan / Pump duty					
	Output kW		RPM		AMP (400)	
	Low	High	Low	High	Low	High
1TZ9011 4/8 A 80M VT	0,1	0,5	690	1390	0,56	1,31
1TZ9011 4/8 A 80M VT	0,15	0,7	680	1380	0,74	1,76
1TZ9011 4/8 A 90S VT	0,22	1	695	1370	1,26	2,35
1TZ9011 4/8 A 90L VT	0,33	1,5	690	1345	1,63	3,45
1TZ9011 4/8 A 100L VT	0,5	2	720	1440	2,8	4,45
1TZ9011 4/8 A 100L VT	0,65	2,5	715	1425	2,9	5,3
1TZ9011 4/8 A 112M VT	0,9	3,6	715	1430	4,3	7,5
1TZ9011 4/8 A 132S VT	1,1	4,7	730	1430	4,75	9,6
1TZ9011 4/8 A 132M VT	1,4	6,4	730	1440	5,8	12,6
1TZ9011 4/8 A 160M VT	2,2	9,5	730	1465	6,3	19
1TZ9011 4/8 A 160L VT	3,3	14	735	1475	10,4	32,5
1TZ9511 4/8 C 180M VT	4,5	16	730	1470	13,1	30,5
1TZ9511 4/8 C 180L VT	5	18,5	730	1475	15,2	35,5
1TZ9511 4/8 C 200L VT	7,5	28	730	1475	20,5	53
1TZ9511 4/8 C 225S VT	9,5	35	738	1475	26,5	64
1TZ9511 4/8 C 225M VT	11,5	42	738	1475	30	75
1TZ9511 4/8 C 250M VT	14,5	52	740	1482	39	93
1TZ9511 4/8 C 280S VT	19	70	742	1482	49	125
1TZ9511 4/8 C 280M VT	23	83	742	1485	58	147
1TZ9511 4/8 C 315S VT	26	95	**	**	**	**
1TZ9511 4/8 C 315M VT	30	115	**	**	**	**
1TZ9511 4/8 C 315L VT	35	140	**	**	**	**

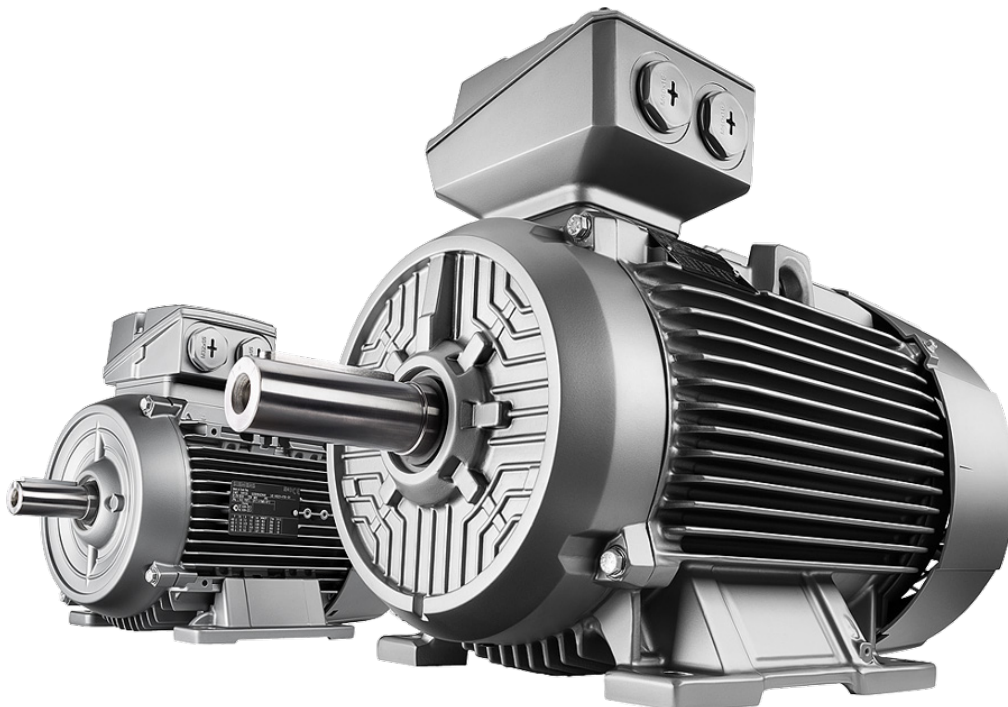
Type	Constant Torque					
	Output kW		RPM		AMP (400)	
	Low	High	Low	High	Low	High
1TZ9011 4/8 A 90S CT	0,35	0,5	680	1375	1,24	1,43
1TZ9011 4/8 A 90L CT	0,5	0,7	685	1400	1,77	2,1
1TZ9011 4/8 A 100L CT	0,55	1,1	715	1425	2,6	2,35
1TZ9011 4/8 A 100L CT	0,9	1,5	700	1415	3,3	3,2
1TZ9011 4/8 A 112M CT	1,1	1,9	715	1440	4	3,9
1TZ9011 4/8 A 132S CT	1,6	3,2	730	1435	6,3	6,6
1TZ9011 4/8 A 132M CT	2,2	4,4	730	1435	8,7	9
1TZ9011 4/8 A 160M CT	3,5	7	730	1450	11,4	13,4
1TZ9011 4/8 A 160L CT	5,6	11	725	1445	16,8	21
1TZ9511 4/8 C 180L CT	11	18	720	1445	26,5	32,5
1TZ9511 4/8 C 200L CT	17	27	730	1460	38	46,5
1TZ9511 4/8 C 225S CT	22	32	730	1465	46	55
1TZ9511 4/8 C 225M CT	25	37	732	1470	53	63
1TZ9511 4/8 C 250M CT	32	47	736	1475	65	80
1TZ9511 4/8 C 280S CT	38	56	*	*	*	*
1TZ9511 4/8 C 280M CT	46	67	740	1480	96	113
1TZ9511 4/8 C 315S CT	56	82	740	1481	114	140
1TZ9511 4/8 C 315M CT	78	115	*	*	*	*
1TZ9511 4/8 C 315L CT	92	135	*	*	*	*

* Increased output

** On request

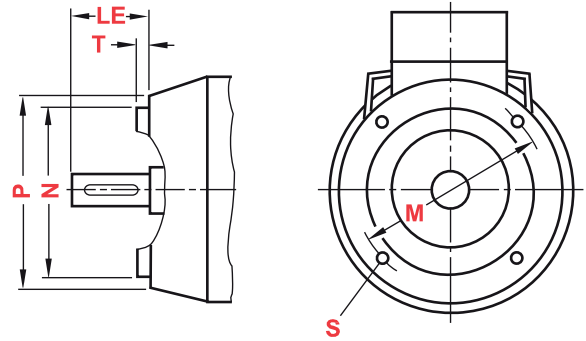
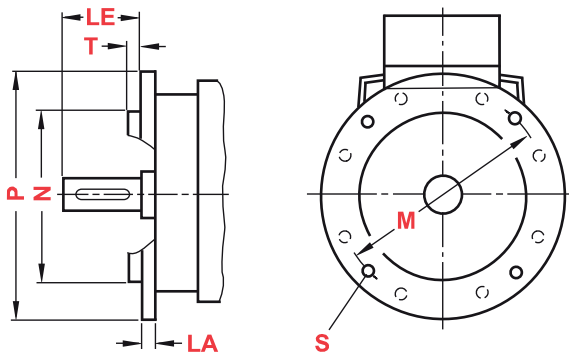
Formula for current with new voltage:

$$I_n(\text{new}) = I_n(\text{with } 400V) \cdot (400 / U(\text{new voltage}))$$



Flange Dimensions

Motor Series 1TZ9, 1TZ5

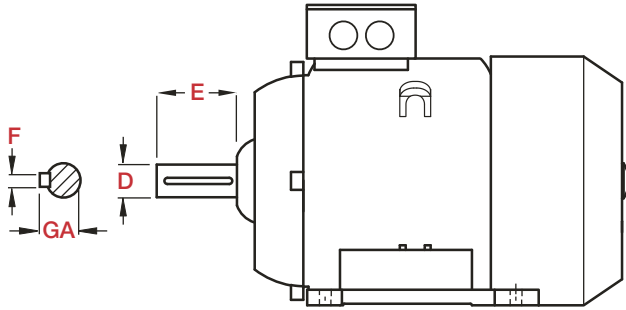


IEC	Type	B5 Flange					
		M	N	P	LA	S	T
63	M	115	95	140	5	4xØ10	3
71	M	130	110	160	5	4xØ10	3,5
80	M	165	130	200	10	4xØ12	3,5
90	S/L	165	130	200	10	4xØ12	3,5
100	L	215	180	250	11	4xØ14,5	4
112	M	215	180	250	11	4xØ14,5	4
132	S/M	265	230	300	12	4xØ14,5	4
160	M/L	300	250	350	13	4xØ18,5	5
180	M/L	300	250	350	13	4xØ18,5	5
200	L	350	300	400	15	4xØ18,5	5
225	S/M	400	350	450	16	8xØ18,5	5
250	M	500	450	550	18	8xØ18,5	5
280	S/M	500	450	550	18	8xØ22	5
315	S/M/L	600	550	660	22	8xØ22	6
315	L for 1TZ5	740	680	800	25	8xØ24	6
355	M/L for 1TZ5	840	780	900	25	8xØ24	6

IEC	Type	B14A Flange				
		M	N	P	S	T
63	M	75	60	90	M6	2,5
71	M	85	70	105	M6	2,5
80	M	100	80	120	M6	3
90	S/L	115	95	140	M8	3
100	L	130	110	160	M8	3,5
112	M	130	110	160	M8	3,5
132	S/M	165	130	200	M10	3,5
160	M/L	215	180	250	M12	4
B14B Flange						
63	M	100	80	120	M6	3
71	M	115	95	140	M8	3
80	M	130	110	160	M8	3,5
90	S/L	130	110	160	M8	3,5
100	L	165	130	200	M10	3,5
112	M	165	130	200	M10	3,5

Shaft Dimensions

Motor Series 1TZ9, 1TZ5

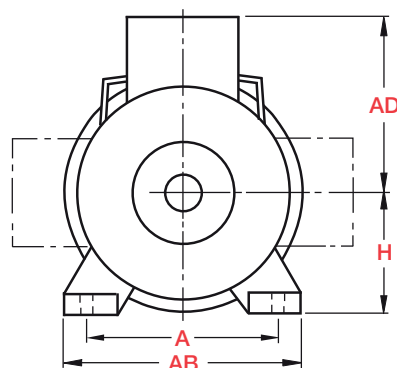
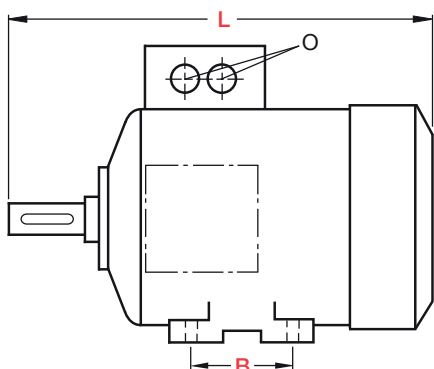


Note: Complete Drawings on request

IEC	Type	Shaft			
	1TZ9 & 1TZ5 (IEC 355)	D	E	F	GA
63	ALL	11	23	4	12,5
71	ALL	14	30	5	16
80	ALL	19	40	6	21,5
90	ALL	24	50	8	27
100	ALL	28	60	8	31
112	ALL	28	60	8	31
132	ALL	38	80	10	41
160	ALL	42	110	12	45
180	ALL	48	110	14	52
200	ALL	55	110	16	59
225	225M-2,	55	110	16	59
	225S-4, 225S-8, 225M-4, 225M-6, , 225M-8,	60	140	18	64
250	250M-2,	60	140	18	64
	250S-4, 250M-4, 250M-6, 250M-4, 250M-8,	65	140	18	69
280	280S-2, 280M-2	65	140	18	69
	280S-4, 280S-6, 280M-4, 280M-6,	75	140	20	79,5
315	315S-2, 315M-2, 315L-2,	65	140	18	69
	315S-4, 315S-6, 315S-8, 315M-4, 315M-6, 315M-8, 315L-4, 315L-6, 315L-8,	80	170	22	85
355	355M-2, 355L-2,	75	140	20	79,5
	355M-4, 355M-6, 355M-8, 355L-4, 355L-6, 355L-8,	95	170	25	100

Motor Dimensions

Motor Series 1TZ9 IE1, IE2



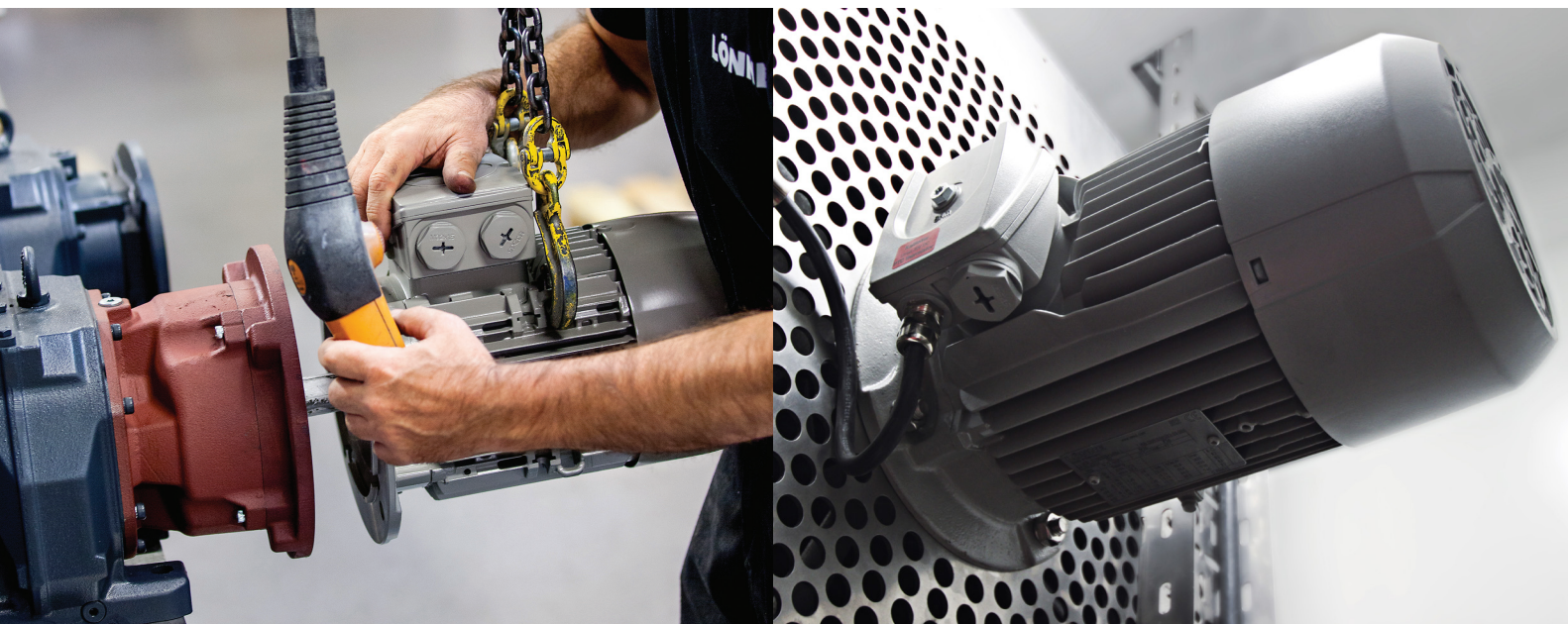
IEC	Type							
		L	AD	H	AB	B	A	O
63M	Aluminium	202,5, 228,5*	101	63	120	80	100	1xM25x1,5
71M	Aluminium	240	111	71	132	90	112	1xM25x1,5
71M	Cast Iron	240	149	71	132	90	112	1xM25x1,5
80M	Aluminium	292	121,5	80	150	100	125	1xM25x1,5
80M Inc output	Aluminium	327	121,5	80	150	100	125	1xM25x1,5
80M	Cast Iron	292	159	80	150	100	125	1xM25x1,5
90S / 90L	Aluminium	347	126	90	165	100	140	1xM25x1,5
90L Inc output	Aluminium	387	126	90	165	125	140	1xM25x1,5
90S	Cast Iron	347	164	90	165	100	140	1xM25x1,5
90L	Cast Iron	347	164	90	165	125	140	1xM25x1,5
100L	Aluminium	395,5	166	100	196	140	160	2xM32x1,5
100L Inc output	Aluminium	430,5	166	100	196	140	160	2xM32x1,5
100L	Cast Iron	397,5	193	100	196	140	160	2xM32x1,5
112M	Aluminium	389, 414*	177	112	226	140	190	2xM32x1,5
112M Inc output	Aluminium	414	177	112	226	140	190	2xM32x1,5
112M-2, 112M-4, 112M-6	Cast Iron	390,5	195	112	226	140	190	2xM32x1,5
112M-8	Cast Iron	415,5	195	112	226	140	190	2xM32x1,5
132S	Aluminium	465	202	132	256	140	216	2xM32x1,5
132S	Cast Iron	466,5	214,5	132	256	140	216	2xM32x1,5
132M	Aluminium	465	202	132	256	178	216	2xM32x1,5
132M Inc output	Aluminium	515	202	132	256	178	216	2xM32x1,5
132M	Cast Iron	466,5	214,5	132	256	178	216	2xM32x1,5
160M	Aluminium	604	236,5	160	300	210	254	2xM40x1,5
160M	Cast Iron	606	265	160	300	210	254	2xM40x1,5
160L	Aluminium	604	236,5	160	300	254	254	2xM40x1,5
160L	Cast Iron	606	265	160	300	254	254	2xM40x1,5
160L Inc output	Cast Iron	664	236,5	160	300	254	254	2xM40x1,5
180M	Aluminium	698	259	180	339	241	279	2xM40x1,5
180M-2, 180M-4	Cast Iron	668	286	180	339	241	279	2xM40x1,5
180L	Aluminium	698	259	180	339	279	279	2xM40x1,5
180L Inc output	Aluminium	698	259	180	339	279	279	2xM40x1,5
180L-4	Cast Iron	698	286	180	339	279	279	2xM40x1,5
180L-6	Cast Iron	668	286	180	339	241	279	2xM40x1,5
180L Inc output	Cast Iron	698	286	180	339	279	279	2xM40x1,5
200L	Aluminium	746	296	200	378	305	318	2xM50x1,5
200L Inc output	Aluminium	746	296	200	378	305	318	2xM50x1,5
200L	Cast Iron	721	315	200	378	305	318	2xM50x1,5

Motor Dimensions

Motor Series 1TZ9 IE1, IE2

IEC	Type							
		L	AD	H	AB	B	A	O
200L Inc output	Cast Iron	746	315	200	378	305	318	2xM50x1,5
225S-4, 225S-8	Cast Iron	788	338	225	436	311	356	2xM50x1,5
225M-2	Cast Iron	818	338	225	436	311	356	2xM50x1,5
225M-4, 225M-6, 225M-8	Cast Iron	848	338	225	436	311	356	2xM50x1,5
225M-2 Inc output	Cast Iron	818	338	225	436	311	356	2xM50x1,5
225M-4 Inc out, 225M-6 Inc out, 225M-8 Inc out	Cast Iron	848	338	225	436	311	356	2xM50x1,5
250M	Cast Iron	887	410	250	490	349	406	2xM63x1,5
250M-2 Inc out, 250M-6 Inc out, 250M-8 Inc out	Cast Iron	887	410	250	490	349	406	2xM63x1,5
250M-4 Inc output	Cast Iron	957	410	250	490	349	406	2xM63x1,5
280S	Cast Iron	960	433	280	540	368	457	2xM63x1,5
280M	Cast Iron	960	515	280	540	419	508	2xM63x1,5
280M-6 Inc output, 280M-8 Inc output	Cast Iron	960	515	280	540	419	508	2xM63x1,5
280M-2 Inc output, 280M-4 Inc output	Cast Iron	1070	515	280	540	419	508	2xM63x1,5
315S-2	Cast Iron	1082	515	315	610	406	508	2xM63x1,5
315S-4, 315S-6, 315S-8	Cast Iron	1052	515	315	610	406	508	2xM63x1,5
315M-2	Cast Iron	1217	515	315	610	457	508	2xM63x1,5
315M-4	Cast Iron	1247	515	315	610	457	508	2xM63x1,5
315M-6, 315M-8	Cast Iron	1082	515	315	610	457	508	2xM63x1,5
315L-2	Cast Iron	1217	515	315	610	508	508	2xM63x1,5
315L-4, 315L-6, 315L-8	Cast Iron	1247, 1402*	515	315	610	508	508	2xM63x1,5
315L-2 Inc output	Cast Iron	1372	515	315	610	508	508	2xM63x1,5
315L-6 Inc output	Cast Iron	1402	515	315	610	508	508	2xM63x1,5
315L-8 Inc output	Cast Iron	1247	515	315	610	508	508	2xM63x1,5

* Several variants exists, for detailed dimensional drawings please contact local Rubix office



Motor Dimensions

Motor Series 1TZ9 IE3

IEC	Type	L	AD	H	AB	B	A	O
	80M	Aluminium	292, 327*	121,5	80	150	100	125
80M	Cast Iron	292, 327*	159	80	150	100	125	1xM25x1,5
90S	Aluminium	347	126	90	165	100	140	1xM25x1,5
90L	Aluminium	387	126	90	165	125	140	1xM25x1,5
90S	Cast Iron	347	164	90	165	100	140	1xM25x1,5
90L	Cast Iron	387	164	90	165	125	140	1xM25x1,5
100L	Aluminium	470,5	166	100	196	140	160	2xM32x1,5
100L-2, 100L-4	Cast Iron	432,5	193	100	196	140	160	2xM32x1,5
100L-6	Cast Iron	397	193	100	196	140	160	2xM32x1,5
112M	Aluminium	459	177	112	226	140	190	2xM32x1,5
112M	Cast Iron	415,5	195	112	226	140	190	2xM32x1,5
132S	Aluminium	515	202	132	256	140	216	2xM32x1,5
132S	Cast Iron	466,5, 516,5*	214,5	132	256	140	216	2xM32x1,5
132M	Aluminium	515	202	132	256	178	216	2xM32x1,5
132M Inc output	Aluminium	515	202	132	256	178	216	2xM32x1,5
132M-6	Cast Iron	466,5	214,5	132	256	178	216	2xM32x1,5
132M-4, 132M-6, 132M-8	Cast Iron	516,5	214,5	132	256	178	216	2xM32x1,5
132M-4 Inc out	Cast Iron	567,5	214,5	132	256	178	216	2xM32x1,5
160M	Aluminium	604	236,5	160	300	210	254	2xM40x1,5
160M	Cast Iron	606	261	160	300	210	254	2xM40x1,5
160L	Aluminium	664	236,5	160	300	254	254	2xM40x1,5
160L Inc output	Aluminium	664	236,5	160	300	254	254	2xM40x1,5
160L	Cast Iron	666	261	160	300	254	254	2xM40x1,5
180M	Aluminium	698	259	180	339	241	279	2xM40x1,5
180L	Aluminium	698	259	180	339	279	279	2xM40x1,5
180L Inc output	Aluminium	698	259	180	339	279	279	2xM40x1,6
180M-2	Cast Iron	698	286	180	339	241	279	2xM40x1,5
180M-4	Cast Iron	668	286	180	339	241	279	2xM40x1,5
180L-4, 180L-8	Cast Iron	698	286	180	339	241	279	2xM40x1,5
180L-6	Cast Iron	668	286	180	339	241	279	2xM40x1,5
200L	Aluminium	746	296	200	378	305	318	2xM50x1,5
200L Inc output	Aluminium	746	296	200	378	305	318	2xM50x1,5
200L	Cast Iron	721, 746*	315	200	378	305	318	2xM50x1,5
225S-4, 225S-8	Cast Iron	788	338	225	436	286	356	2xM50x1,5
225M-2	Cast Iron	818	338	225	436	311	356	2xM50x1,5
225M-4, 225M-6, 225M-8	Cast Iron	848	338	225	436	311	356	2xM50x1,5
250M	Cast Iron	887	410	250	490	349	406	2xM63x1,5
280S	Cast Iron	960	433	280	540	368	457	2xM63x1,5
280M-2, 280M-4	Cast Iron	1070	433	280	540	419	457	2xM63x1,5
280M-6, 280M-8	Cast Iron	960	433	280	540	419	457	2xM63x1,5
315S-2	Cast Iron	1052	515	315	610	406	508	2xM63x1,5
315S-4, 315S-6, 315S-8	Cast Iron	1082	515	315	610	406	508	2xM63x1,5
315M-2	Cast Iron	1217	515	315	610	457	508	2xM63x1,5
315M-4, 315M-6, 315M-8	Cast Iron	1247	515	315	610	457	508	2xM63x1,5
315L-2	Cast Iron	1217, 1372*	515	315	610	508	508	2xM63x1,5
315L-4, 315L-6, 315L-8	Cast Iron	1247, 1402*	515	315	610	508	508	2xM63x1,5
315L-6 Inc out, 315L-8 Inc out	Cast Iron	1402	515	315	610	508	508	2xM63x1,5

* Several variants exists, for detailed dimensional drawings please contact local Rubix office

Motor Dimensions

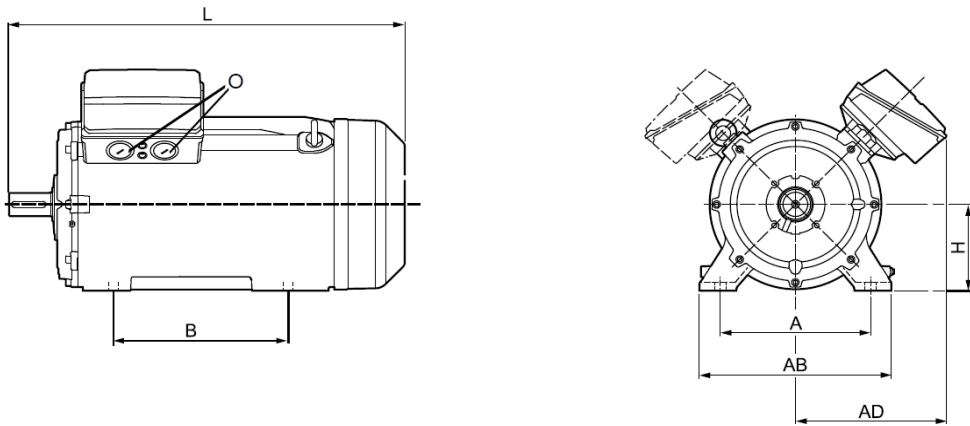
Motor Series 1TZ9 IE4

IEC	Type	L	AD	H	AB	B	A	O
	100L-2	Aluminium	430,5	166	100	196	140	160
100L-4	Aluminium	480,5	166	100	196	140	160	2xM32x1,5
100L-2	Cast Iron	432,5	193	100	196	140	160	2xM32x1,5
100L-4	Cast Iron	482,5	193	100	196	140	160	2xM32x1,5
112M-2	Aluminium	414	177	112	226	140	190	2xM32x1,5
112M-4	Aluminium	464	177	112	226	140	190	2xM32x1,5
112M-2	Cast Iron	415,5	195	112	226	140	190	2xM32x1,5
112M-4	Cast Iron	465,5	195	112	226	140	190	2xM32x1,5
132S-2	Aluminium	465, 515*	202	132	256	140	216	2xM32x1,5
132S-4	Aluminium	515	202	132	256	140	216	2xM32x1,5
132S-2	Cast Iron	466,5, 516,5*	214,5	132	256	140	216	2xM32x1,5
132S-4	Cast Iron	516,5	214,5	132	256	140	216	2xM32x1,5
132M	Aluminium	515	202	132	256	178	216	2xM32x1,5
132M	Cast Iron	516,5	214,5	132	256	178	216	2xM32x1,5
160M-2	Aluminium	604, 664*	236,5	160	300	210	254	2xM40x1,5
160M-4	Aluminium	664	236,5	160	300	210	254	2xM40x1,5
160M-2	Cast Iron	606, 666*	261	160	300	210	254	2xM40x1,5
160M-4	Cast Iron	666	261	160	300	210	254	2xM40x1,5
160L	Aluminium	664	236,5	160	300	254	254	2xM40x1,5
160L	Cast Iron	666	261	160	300	254	254	2xM40x1,5
180M	Aluminium	698	259	180	339	241	279	2xM40x1,5
180M-2	Cast Iron	698	286	180	339	279	279	2xM40x1,5
180M-4	Cast Iron	668, 698*	286	180	339	279	279	2xM40x1,5
180L	Aluminium	698	259	180	339	279	279	2xM40x1,5
180L	Cast Iron	698	286	180	339	279	279	2xM40x1,5
200L	Aluminium	746	296	200	378	305	318	2xM50x1,5
200L	Cast Iron	746	315	200	378	305	318	2xM50x1,5
225S	Cast Iron	848	338	225	436	286	356	2xM50x1,5
225M-2	Cast Iron	818	338	225	436	311	356	2xM50x1,5
225M-4	Cast Iron	928	338	225	436	311	356	2xM50x1,5
250M-2	Cast Iron	887	410	250	490	349	406	2xM63x1,5
250M-4	Cast Iron	957	410	250	490	349	406	2xM63x1,5
280S	Cast Iron	1070	433	280	540	368	457	2xM63x1,5
280M	Cast Iron	1070	433	280	540	419	457	2xM63x1,5
315S	Cast Iron	1052	515	315	610	406	508	2xM63x1,5
315M-2	Cast Iron	1217	515	315	610	457	508	2xM63x1,5
315M-4	Cast Iron	1247	515	315	610	457	508	2xM63x1,5
315L-2	Cast Iron	1217, 1372*	515	315	610	508	508	2xM63x1,5
315L-4	Cast Iron	1402	515	315	610	508	508	2xM63x1,5

* Several variants exists, for detailed dimensional drawings please contact local Rubix office

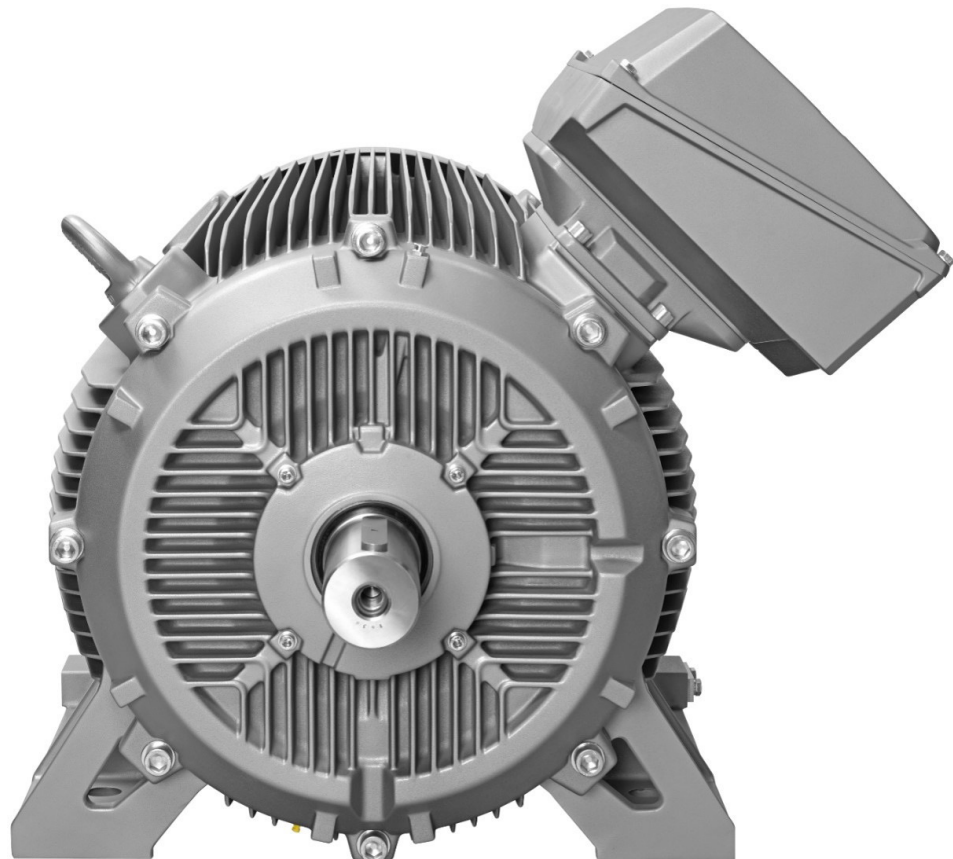
Motor Dimensions

Motor Series 1TZ5 IE3, IE4



IEC	Type	L	AD	H	AB	B	A	O
315L-2 Inc output	Cast Iron	1282, 1362*	590	315	610	630	508	2xM63x1,5
315L-4 Inc output	Cast Iron	1312, 1422*	59	315	610	630	508	2xM63x1,5
315L-6 Inc output	Cast Iron	1512	542, 590*	315	610	630	508	2xM63x1,5
315L-8 Inc output	Cast Iron	1422, 1512*	543	315	610	630	508	2xM63x1,5
355L-2	Cast Iron	1577	620	355	780	800	610	2xM63x1,5
355L-4, 355L-6, 355L-8	Cast Iron	1607	620	355	780	800	610	2xM63x1,5

* Several variants exists, for detailed dimensional drawings please contact local Rubix office

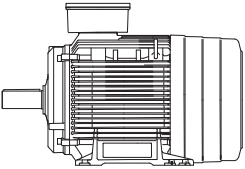
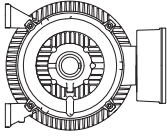
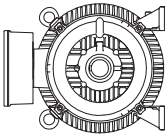
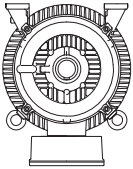
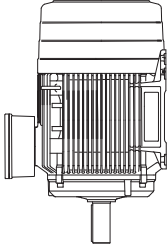
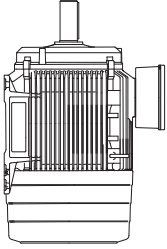
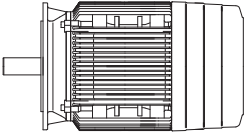
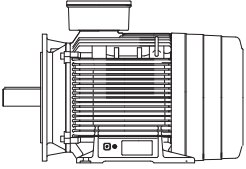
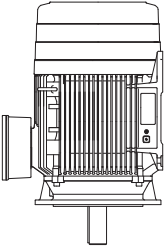
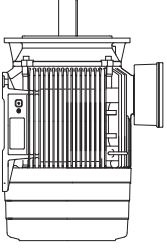
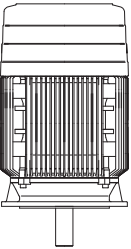
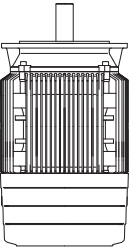
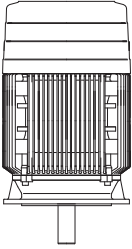
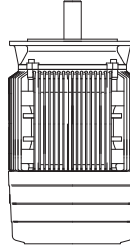
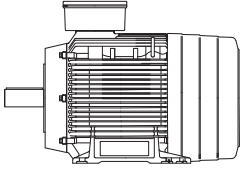
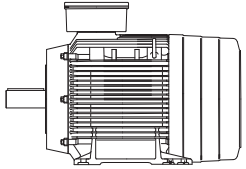
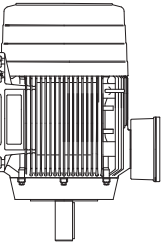
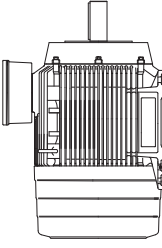


Technical information and options

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Mounting forms

IM B3 - IM 1001	IM B6 - IM 1051	Standards																	
		<p>All LÖNNE motors are manufactured according to norms as following standards:</p> <table border="0"> <tr> <td>EN 50347</td> <td>EN 60034-6</td> <td>EN 60034-11</td> <td>IEC 60038</td> </tr> <tr> <td>EN 60034-1</td> <td>EN 60034-7</td> <td>EN 60034-12</td> <td>IEC 60085</td> </tr> <tr> <td>EN 60034-2</td> <td>EN 60034-8</td> <td>EN 60034-14</td> <td>DIN 42925</td> </tr> <tr> <td>EN 60034-5</td> <td>EN 60034-9</td> <td>IEC 60072</td> <td>DIN ISO 10816</td> </tr> </table>		EN 50347	EN 60034-6	EN 60034-11	IEC 60038	EN 60034-1	EN 60034-7	EN 60034-12	IEC 60085	EN 60034-2	EN 60034-8	EN 60034-14	DIN 42925	EN 60034-5	EN 60034-9	IEC 60072	DIN ISO 10816
EN 50347	EN 60034-6	EN 60034-11	IEC 60038																
EN 60034-1	EN 60034-7	EN 60034-12	IEC 60085																
EN 60034-2	EN 60034-8	EN 60034-14	DIN 42925																
EN 60034-5	EN 60034-9	IEC 60072	DIN ISO 10816																
IM B7 - IM 1061	IM B8 - IM 1071	IM V5 - IM 1031	IM V6 - IM 1011																
																			
IM B5 - IM 3001	IM B35 - IM 2001	IM V15 - IM 2011	IM V36 - IM 2031																
																			
IM V1 - IM 3011	IM V3 - IM 3031	IM V18 - IM 3611	IM V19 - IM 3631																
																			
IM B14 - IM 3601	IM B34 - IM 2101	IM 2111	IM 2131																
																			

Motor Options

Motor Frame Sizes 63 - 160

Options	Order code	Frame size							
		63	71	80	90	100	112	132	160
Motor standard alternatives									
Special voltage	Specified at order	x	x	x	x	x	x	x	x
Flange execution B5, B14, V1	Specified at order	x	x	x	x	x	x	x	x
Foot-flange execution B35, B34, V1	Specified at order	x	x	x	x	x	x	x	x
Terminal box on the right (view onto drive end)	Specified at order			x	x	x	x	x	x
Terminal box on the left (view onto drive end)	Specified at order			x	x	x	x	x	x
Motor options									
1 or 3 PTC thermistors – for tripping (2 terminals)	Q11	x	x	x	x	x	x	x	x
1 or 3 Bimetal - thermostats in the winding	Q3A	x	x	x	x	x	x	x	x
1 temperature sensor KTY84-130 (2 terminals)	Q23	x	x	x	x	x	x	x	x
2 temperature sensors KTY84-130 (4 terminals)	Q25	x	x	x	x	x	x	x	x
3 Pt100 resistance thermometers – 2-wire circuit (6 terminals)	Q60					x	x	x	x
1 Pt100 resistance thermometer – 2-wire circuit (2 terminals)	Q62			x	x	x	x	x	x
Test report according to EN 10204 2.3	B02	x	x	x	x	x	x	x	x
Ambient temperature -50 to +40 C	D02					x	x	x	x
Ambient temperature -40 to +40 C	D03	x	x	x	x	x	x	x	x
Coolant temperature –30 to +40 °C	D04	x	x	x	x	x	x	x	x
Design according to UL with "Recognition Mark"	D31	x	x	x	x	x	x	x	x
Canadian regulation - CSA	D40			x	x	x	x	x	x
Kendrion INTORQ 2LM8 spring-operated disc brake	F01	x	x	x	x	x	x	x	x
PRECIMA FDW brake	F04					x	x	x	x
Brake supply voltage 24 V DC	F10	x	x	x	x	x	x	x	x
Brake supply voltage 230 V AC, 50/60 Hz	F11	x	x	x	x	x	x	x	x
Brake supply voltage 400 V AC, 50/60 Hz	F12	x	x	x	x	x	x	x	x
Manual hand release of the 2LM8 brake unit	F50	x	x	x	x	x	x	x	x
Mounting of separately driven fan IC416	F70	x	x	x	x	x	x	x	x
Sheet metal fan cover	F74	x	x	x	x	x	x	x	x
Metal impeller fan	F76			x	x	x	x	x	x
Without external fan and without fan cover IC418	F90		x	x	x	x	x	x	x
Rotary pulse encoder HOG 9 D 1024	G05							x	x
Rotary pulse encoder Kübler Sendix 5020 HTL, 1024 l	G11			x	x	x	x	x	x
Rotary pulse encoder Kübler Sendix 5020 TTL, 1024 l	G12			x	x	x	x	x	x
Protective cover, Canopy	H00	x	x	x	x	x	x	x	x
Screwed-on (instead of cast) feet	H01			x	x	x	x	x	x
Condensing hole - prepared and closed Cast Iron	H03								
Condensing hole - prepared and closed Aluminium	H03	x	x	x	x				
External grounding	H04								
Rust-resistant screws (externally)	H07	x	x	x	x	x	x	x	x
Terminal box on NDE	H08			x	x	x	x	x	x
IP65 degree of protection	H20	x	x	x	x	x	x	x	x
IP56 for non heavy sea	H22	x	x	x	x	x	x	x	x
Non drive end standard shaft extension acc. with EN 5034	L05	x	x	x	x	x	x	x	x
Standard shaft made of stainless steel (e.g. 1.4021)	L06			x	x	x	x	x	x

Motor Options

Motor Frame Sizes 180 - 355

Options	Order code	Frame size								
		1T29						1T25		
		180	200	225	250	280	315 S, M	315 L	315	355
Motor standard alternatives										
Special voltage	Specified at order	x	x	x	x	x	x	x	x	x
IM B35	Specified at order	x	x	x	x	x	x	x	x	x
IM B5	Specified at order	x	x	x	x	x	x	x	x	x
IMV1	Specified at order	x	x	x	x	x	x	x	x	x
IMV3	Specified at order	x	x	x	x	x	x	x	x	x
Detachable feet, term.box right	Specified at order	x	x	x	x	x	x	x		
Detachable feet, term.box left	Specified at order	x	x	x	x	x	x	x		
Motor options										
3 x PTC thermistors in the winding	Q11	x	x	x	x	x	x	x	x	x
6 x PTC thermistors in the winding	Q12	x	x	x	x	x	x	x	x	x
1 Pc of thermosensors KTY84 in the winding	Q23	x	x	x	x	x	x	x	x	x
2 Pc of thermosensors KTY84 in the winding	Q25	x	x	x	x	x	x	x	x	x
3 Pcs thermosensors PT100 in the winding	Q60	x	x	x	x	x	x	x	x	x
6 Pcs thermosensors PT100 in the winding	Q61	x	x	x	x	x	x	x	x	x
Acceptance test certificate 3.1 according to EN 10204 50Hz	B02	x	x	x	x	x	x	x	x	x
Acceptance test certificate 3.1 according to EN 10204 60Hz	AT3	x	x	x	x	x	x	x	x	x
Coolant temperature -30 to +40 °C	D04	x	x	x	x	x	x	x		
Motors for export outside the EEA, without CE marking	D22	x	x	x	x	x	x	x	x	x
Design according to UL with "Recognition Mark"	D31	x	x	x	x	x	x	x	x	x
Canadian regulation - CSA	D40	x	x	x	x	x	x	x		
Kendrion INTORQ 2LM8 spring-operated disc brake	F01	x	x	x						
Dellner Bubenzer KFB Brake	F01	x	x	x	x	x	x	x		
Dellner Bubenzer SFB Brake	F01							x		
PRECIMA FDW Brake (180-200)/FDX (225 - 315)	F04	x	x	x	x	x	x	x		
Brake supply voltage 230 V AC, 50/60 Hz	F11	x	x	x	x	x	x	x	x	x
Brake supply voltage 400 V AC, 50/60 Hz	F12	x	x	x	x	x	x	x	x	x
Mechanical manual brake release with lever (no locking)	F50	x	x	x	x					
Mounting of separat. driven fan	F70	x	x	x	x	x	x	x	x	x
Sheet metal fan cover	F74	x	x	x	x	x	x	x	x	x
Metal impeller fan	F76	x	x	x	x	x	x	x	x	x
Rotary pulse encoder LL 861 900 220	G04	x	x	x	x	x	x	x		
Rotary pulse encoder HOG 9 D 1024 I	G05	x	x	x	x	x	x	x	x	x
Rotary pulse encoder HOG 10 D 1024 I	G06	x	x	x	x	x	x	x	x	x
Inkremental encoder Sendix 5020 HTL	G11	x	x	x	x	x	x	x	x	x
Inkremental encoder Sendix 5020 TTL	G12	x	x	x	x	x	x	x	x	
Mechanical protection for encoders	G43								x	x
Detachable feet, term.box above	H01	x	x	x	x	x	x	x		
Rust-resistant screws (externally)	H07	x	x	x	x	x	x	x		
IP65 degree of protection	H20	x	x	x	x	x	x	x	x	x
IP56 for non heavy sea	H22	x	x	x	x	x	x	x	x	x
Vibration quantity level B	L00	x	x	x	x	x	x	x	x	x
Full-key balancing	L02	x	x	x	x	x	x	x	x	x
Non drive end standard shaft extension	L05	x	x	x	x	x	x	x		
Located/Fixed bearing DE	L20	x	x	x	x	x	x	x		
Bearing design for increased cantilever forces, frame size 180-200	L28	x	x	x	x	x	x	x	x	x

* Condensing holes and external earthing is standard on all motors with frame size 180 - 355.

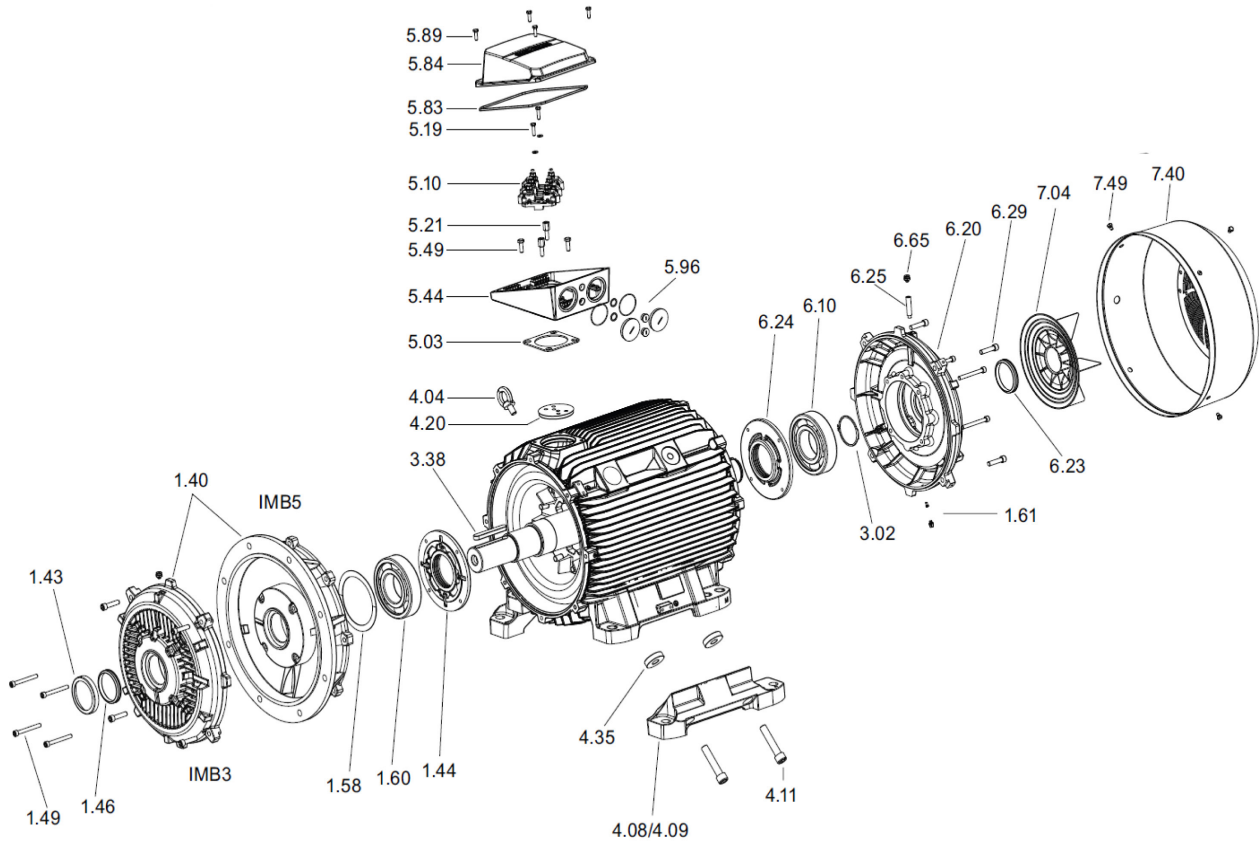
Motor Options

Motor Frame Sizes 180 - 355

Options	Order code	Frame size								
		1TZ9						1TZ5		
		180	200	225	250	280	315 S, M	315 L	315	355
Bearing design for increased cantilever forces, frame size 225-355	L22	x	x	x	x	x	x	x	x	x
Regreasing device	L23						Included	Included		
Special bearing for DE and NDE, bearing size 63	L25						Included	Included		
Insulated shaft DE side	L50			x	x	x	x	x	x	x
Insulated shaft NDE side	L51			x	x	x	x	x	x	x
Second rating plate, loose	M10	x	x	x	x	x	x	x		
Rating plate, stainless steel	M11						Included	Included		
Temperature class 155 (F), utilized acc. to 155 (F), with increased power	N02	x	x	x	x	x	x	x		
Temp. class 155 (F), used acc. to 155 (F), with increased coolant temperature	N03	x	x	x	x	x	x	x		
Temp. class 155 (F), used acc. to 130 (B), coolant temp. 45 °C, derating approx. 4 %	N05	x	x	x	x	x	x	x		
Measuring nipple for SPM shock pulse measurement for bearing inspection	Q01	x	x	x	x	x	x	x	x	x
Anticondensation heating 230V	Q02	x	x	x	x	x	x	x	x	x
Anticondensation heating 115V	Q03	x	x	x	x	x	x	x	x	x
Bimetal - thermosensors in the winding	Q31	x	x	x	x	x	x	x	x	x
1 Pcs thermosensor PT100 in the winding	Q62	x	x	x	x	x	x	x	x	x
2 Pcs thermosensors PT100 in bearings	Q72	x	x	x	x	x	x	x	x	x
4 Pcs thermosensors PT100 in bearings	Q79						x	x		
Rotation of the terminal box through 90°, entry from DE	R10	x	x	x	x	x	x	x		
Rotation of the terminal box through 90°, entry from NDE	R11	x	x	x	x	x	x	x		
Rotation of the terminal box through 180°	R12	x	x	x	x	x	x	x		
One metal cable gland	R15	x	x	x	x	x				
Cable gland, max. configuration	R18	x	x	x	x	x	x	x		
Larger terminal box	R50	x	x	x	x	x	x	x		
Terminal box without cable entry opening	R51	x	x	x	x	x	x	x		
Drilled removable entry plate	R52	x	x	x	x	x	x	x		
Undrilled removable entry plate	R53	x	x	x	x	x	x	x	x	
Cast iron auxiliary connection box	R62			x	x	x	x	x		
Special paint finish C3	S02	x	x	x	x	x	x	x		
Special coating - 150µ corrosion resistance C4	S03	x	x	x	x	x	x	x	x	x
Internal coating	S05	x	x	x	x	x	x	x		
Top coat polyurethane	S06	x	x	x	x	x	x	x	x	x
Temperature class F, used acc. to F, other ambient temperature	Y52	x	x	x	x	x	x	x	x	x
Paint finish in other standard RAL colors	Y53	x	x	x	x	x	x	x	x	x
Paint finish in special RAL colors	Y56	x	x	x	x	x	x	x	x	x
Non-standard shaft extension, DE	Y58	x	x	x	x	x	x	x	x	x
Non-standard shaft extension, NDE	Y59	x	x	x	x	x	x	x		
Stainless steel shaft	Y60	x	x	x	x	x	x	x		
Insulation class H 40°C	N10	x	x	x	x	x	x	x	x	x
Insulation class H 60°C	N11	x	x	x	x	x	x	x	x	x
Insulation class H Other	Y75	x	x	x	x	x	x	x	x	x
Extra rating plate or rating plate with deviating data	Y80	x	x	x	x	x	x	x		
Customer specific data on nameplate	Y84	x	x	x	x	x	x	x	x	x

* Condensing holes and external earthing is standard on all motors with frame size 180 - 355.

Spare part illustration



Spare part list

1,40	Bearing Shield B3 / B5/B14A/B14B	5,19	Screws /Bolts
1,43	Shaft Sealing Ring DE (Drive End)	5,21	Screws /Bolts
1,44	Inner Bearing Cap DE (Drive End)	5,44	Terminal Box Housing
1,46	Sealing Ring	5,49	Screws /Bolts
1,49	Screws /Bolts	5,83	Gasket for Terminal Box Cover
1,58	Preloading Ring	5,84	Terminal Box Cover
1,60	Bearing DE (Drive End)	5,89	Terminal Box Cover Screw
1,61	Drain Nipple	5,96	Sealing Plug
3,02	Circlip	6,10	Bearing NDE (Non Drive End)
3,38	Shaft Key	6,20	Bearing Shield NDE (Non Drive End)
4,04	Lifting Lug	6,23	Shaft Sealing Ring NDE (Non Drive End)
4,08	Motor Feet	6,24	Inner Bearing Cap NDE (Non Drive End)
4,09	Motor Feet	6,25	Regreasing Parts
4,11	Screws /Bolts	6,29	Screws /Bolts
4,20	Bushing	6,65	Greas nipple
4,35	distance disk	7,04	Cooling Fan
5,03	Gasket for Terminal Box Housing	7,40	Fan Cover
5,10	Terminal Board With Connection Parts	7,49	Screws /Bolts

Bearing and lubrication

The nominal bearing lifetime is defined acc. To standardized calculation procedures (DIN ISO 281). Under average operating conditions. a lifetime (Lh10) of 100,000 hours can be achieved.

Closed bearings, lubricated for life

Frame size Type	Poles	D- end bearing	N- end bearing
1TZ9 A 63	2 to 8	6201-2Z C3	6201-2Z C3
1TZ9 C 63	2 to 8	6301-2Z C3	6301-2Z C3
1TZ9 A 71	2 to 8	6202-2Z C3	6202-2Z C3
1TZ9 C 71	2 to 8	6302-2Z C3	6302-2Z C3
1TZ9 A 80	2 to 8	6004-2Z C3	6004-2Z C3
1TZ9 C 80	2 to 8	6004-2Z C3	6004-2Z C3
1TZ9 A 90	2 to 8	6205-2Z C3	6205-2Z C3
1TZ9 C 90	2 to 8	6305-2Z C3	6305-2Z C3
1TZ9 A 100	2 to 8	6206-2Z C3	6206-2Z C3
1TZ9 C 100	2 to 8	6306-2Z C3	6306-2Z C3
1TZ9 A 112	2 to 8	6206-2Z C3	6206-2Z C3
1TZ9 C 112	2 to 8	6306-2Z C3	6306-2Z C3
1TZ9 A 132	2 to 8	6208-2Z C3	6208-2Z C3
1TZ9 C 132	2 to 8	6308-2Z C3	6308-2Z C3
1TZ9 A 160	2 to 8	6209-2Z C3	6209-2Z C3

Open bearings, for re-lubrication

Frame size Type	Poles	D- end bearing	N- end bearing	Lubrication intervall (hours)	Quantity of Grease (gram)
1TZ9 C 160	2	6309 C3	6309 C3	8000 h	10g
1TZ9 C 160	4 to 8	6309 C3	6309 C3	8000 h	10g
1TZ9 C 180	2	6310 C3	6310 C3	4000 h	10g
1TZ9 C 180	4 to 8	6310 C3	6310 C3	8000 h	10g
1TZ9 C 200	2	6312 C3	6312 C3	4000 h	20g
1TZ9 C 200	4 to 8	6312 C3	6312 C3	8000 h	20g
1TZ9 C 225	2	6313 C3	6313 C3	4000 h	20g
1TZ9 C 225	4 to 8	6313 C3	6313 C3	8000 h	20g
1TZ9 C 250	2	6315 C3	6315 C3	4000 h	25g
1TZ9 C 250	4 to 8	6315 C3	6315 C3	8000 h	25g
1TZ9 C 280	2	6315 C3	6315 C3	4000 h	25g
1TZ9 C 280	4 to 8	6317 C3	6317 C3	8000 h	30g
1TZ9 C 315	2	6316 C3	6316 C3	3000 h	30g
1TZ9 C 315	4	6319 C3	6319 C3	6000 h	40g
1TZ9 C 315	6, 8	6319 C3	6319 C3	6000 h	40g
1TZ5 C 315	2	6316 C4	6316 C4	3000 h	30g
1TZ5 C 315	4, 6	6319 C4	6319 C4	6000 h	40g
1TZ5 C 355	2	6317 C4	6317 C4	3000 h	60g
1TZ5 C 355	4, 6	6320 C4	6320 C4	6000 h	60g

Frequency intervals of lubrication life time, all motors

Horizontally mounted motors and for normal coolant temperature at 40°C, the grease lifetime should be:
 Approx. 40,000 operation hours for speeds of 1500 rpm
 Approx. 20,000 operation hours for speeds of 3000 rpm
 For higher coolant temperature, please contact your Brammer team.

Irrespective of the number of operation hours, the grease should be renewed every 3 years because of ageing. In the case of motors operating under special conditions, such as vertical motor position, frequent operation at maximum speed n_{max} heavy vibration, sudden load changes and frequent reversing operation, the bearing should be

changed at considerably more frequent intervals than at the operating hour stated above.

Type of grease for standard machines: (Fa.ESSO / UNIREX N3), grease lifetime and lubrication intervals are valid for this type of grease only. Compensatory greases must conform to DIN 51825- KL3N at least. In this case the lubrication intervals at KT > 25 °C are to be reduced. Special greases are introduced on the lubricating data plate. If the coolant temperature is increased by 10K, the grease life and regreasing interval are halved. Only relubricate bearings when the motor has a speed of at least n > 300 rpm.

Design, Painting Colours, Balance and Vibration Severity

Motor Series 1TZ9, 1TZ5

Type	Design
1TZ9 A 80 - 90	Aluminium housing and terminal box (turnable 4x90°)
1TZ9 C 100 - 160	Cast iron housing, end shields and flanges. Cast iron terminal box (turnable 4x90°). Foot mounted motors of frame size 100-160 are of bolt design.
1TZ9 A 100 - 160	Aluminium housing and terminal box (turnable 4x90°), aluminium end shields and B5 flange. Flange B14 cast iron. Flange B5 size 100-112 aluminium, B5 size 132-160 cast iron. Snap in fancover in reinforced plastic. Frame for B5 motors are delivered with option for bolt design.
1TZ9 C 180 - 315	Cast iron housing, end shields and flanges. Cast iron terminal box (turnable 4x90°). Frame size 180-315 plastic fan cover, metal as option. Motors in mounting form B5, can be modified with bolt on feet.
1TZ5 C 315 - 355	Rugged design in cast-iron housing, end shields and flanges. Compact dimensions/high power density in confined space conditions. Variable terminal box position increase flexible adaptation to application requirements.

Colours and paint finish



RAL 7030

All motors frame size 63–355 are painted with RAL 7030. Corrosion category C2.

Balance and vibration severity

All of the rotors are dynamically balanced with half key. The vibrational characteristics and behaviour of electrical machinery is specified in EN 60034-14. "Half key balancing" is specified here based on ISO 8821. The balancing is stamped on the face of the shaft on the drive- end.

Vibration grade	Shaft height mm	56 ≤ H ≤ 132			56 ≤ H ≤ 280			H > 280		
		Mounting	Displac.	Vel. mm/s	Acc m/s ²	Displac.	Vel. mm/s	Acc m/s ²	Displac.	Vel. mm/s
A	Free suspension	25	1,6	2,5	35	2,2	3,5	45	2,8	4,4
	Rigid Mounting	21	1,3	2	29	11,8	2,8	37	2,3	3,6
B	Free suspension	11	0,7	1,1	18	1,1	1,7	29	1,8	2,8
	Rigid Mounting				14	0,9	1,4	24	1,5	2,4

Grade "A" applies to machines with no special vibration requirements.
 Grade "B" applies to machines with special vibration requirements.
 Rigid mounting is not considered acceptable with shaft heights less than 132 mm
 The interface frequencies for displacement/velocity and velocity/acceleration are 10Hz and 250Hz respectively.

Notes:

The manufacturer and the purchaser should take into account that the instrumentation can have a measurement tolerance of + 10 %. The shaft height of a machine without feet, or a machine with raised feet, or any vertical machine is to be taken as the shaft height of a machine in the same basic frame, but of the horizontal shaft foot-mounting type.

Painting systems and surface treatment

Surface Treatment

In order to prevent corrosion, surface treatments with standard and special paint system are offered based on the type of environmental impacts. Typical procedure for surface treatment follows following steps.

1. Surface pre-treatment
 - a. Cast iron parts are blasted.
 - b. Steel parts are cleaned by hand and degreased if necessary
 - c. Thin wallet parts are degreased exclusively
 - d. Aluminium parts are degreased and passivated on request.
2. Primer
 - a. Priming of cast iron housings
 - b. Priming of steel housings
3. Cleaning of surfaces after assembly
4. Standard or Special paint system

The surface treatment for motors according to ISO 12944 is classified based on the level of corrosive environments to which motors are exposed. The table below gives the classification based on the typical environmental exposure.

Summarizing the scenario for IEC motors

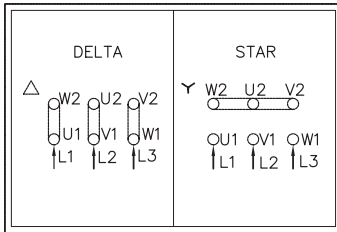
ISO 12944 Classification (Corrosion category)	Typical Environments
C1 Very low	Heated buildings / neutral atmosphere
C2 Standard paintsystem	Indoor unheated spaces with varying temperature and relative humidity, low frequency of condensation and low pollution. Outdoor in dry and cold zones with a short time of wetness, low pollution.
C3 Special paintsystem	Moderate frequency of condensation and medium pollution (SO ₂ or chlorides), urban areas, subtropical and tropical zone with low pollution. Standard paint system for VIK design (C02).
C4 Special paint "Sea air resistant"	High frequency of condensation and high pollution, industrial processing plants, polluted urban areas, coastal areas without spray of salt water or exposure to strong effect of deicing salts.
C5 Special paint system "Offshore"	Spaces with very high pollution from production process, outdoor installations exposed to direct weather conditions, significant effect of SO ₂ or chlorides, offshore maritime climate.
C5mid Special paint system with durability "Medium"	Industrial areas with high frequency of condensation, humidity, pollution, and aggressive atmosphere. Coastal areas with high salinity, sheltered positions on coastlines, unventilated buildings in subtropical and tropical zone.
CX Special paint system for offshore with durability "High"	Offshore areas with high salinity, spaces with almost permanent condensation or extensive periods of exposure to extreme humidity effects. Industrial areas with extreme aggressive atmosphere with high pollution. Unventilated buildings in humid tropical zones exposed to outdoor factors to an extent that is particularly corrosion-stimulating.
Polyurethane-based top coat	Can only be ordered with C04 and C5 (with C5mid and CX included as standard with Polysiloxan). Exposure to direct sunlight (UV light) may cause a change in color. When color stability is a requirement, a polyurethane-based paint system is recommended for the top coat (RAL 7030). Colors other than RAL 7030 are available on request.

Notes:

In addition, NORSOK standard surface treatment is available as an option for offshore environments. This standard covers paints, metallic coatings and application of spray-on fire protective coatings.

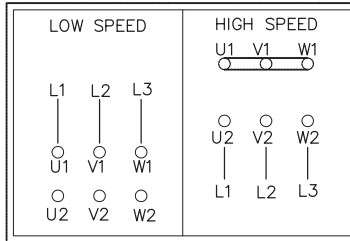
Terminal marking / connections

Three-phase motors



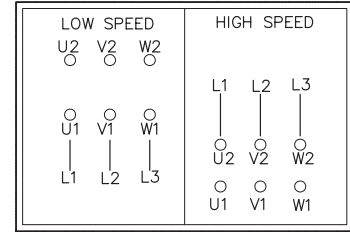
Two-speed motors

Dahlander-connection
750-1500 and 1500 - 3000rpm



Separate windings

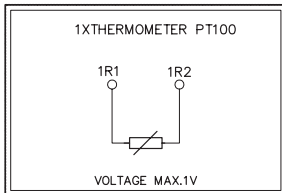
1000 - 1500, 750 - 3000 and 750 - 1000



Options

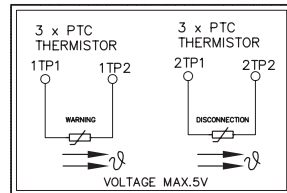
A62

1x resistance thermometer PT100



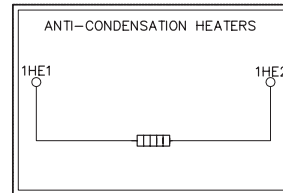
A12

6PTC thermistors for warning and tripping



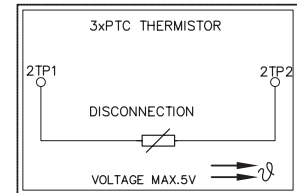
K45 / K46 / 1VT

Anticondensation heaters



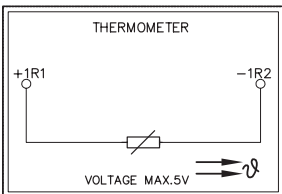
A11

3PTC thermistors for tripping



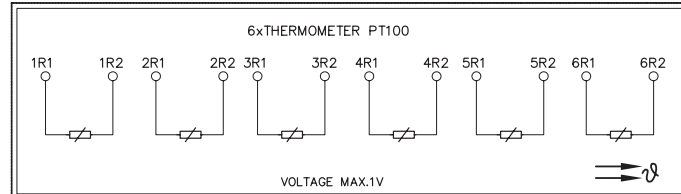
A23

1x temperature sensor KTY84-130



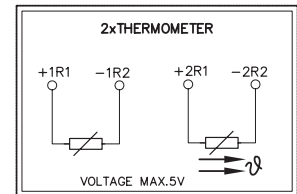
A61

6x resistance thermometers PT100



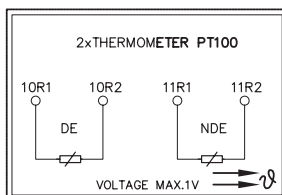
A25

6 2x temperature sensor KTY84-130



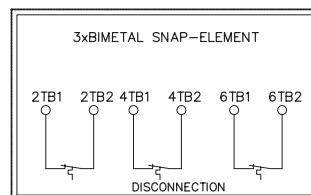
A72

2 screw-in resistance thermometers (basic circuit) for rolling-contact bearing



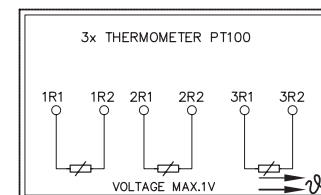
A31

1x temperature detector for tripping



A60

1x temperature detector for tripping



Direction of rotation and information about star and delta connection

By connecting L1 to U1; L2 to V1 and L3 to W1, will result in clockwise direction of rotation when looking at drive end of the shaft. Anticlockwise rotation can be achieved by changing any two of the phases.

Star connection is obtained by connecting the terminals W2, U2, V2 together (star point) and connecting the terminals U1, V1, W1 to the mains.

Phase current (I_{ph}) and phase voltage (U_{ph}) hold following relations with the line current (I_n) and line voltage (U_n).

$$I_{ph} = I_n \text{ \& } U_{ph} = U_n / \sqrt{3}$$

Delta connection is obtained by connecting the end of each winding to the starting of next winding. In this case,

$$I_{ph} = I_n / \sqrt{3} \text{ \& } U_{ph} = U_n$$

Motor Protection

The following applies to all motors:
The motors can withstand 1.5 times the rated current at rated voltage and frequency for two minutes (DIN EN 60034).

Current-dependent protection devices

Fuses are only used to protect mains cables in the event of a short-circuit. They are not suitable for overload protection of the motor. The motors are usually protected by thermally delayed overload protection devices (circuit breakers for motor protection or overload relays). This protection is current-dependent and is particularly effective in the case of a locked rotor.

For standard duty with short start-up times and starting currents not too excessive and for low numbers of switching operations, motor protection switches provide adequate protection. Motor protection switches are not suitable for heavy starting duty or large numbers of switching operations. Differences in the thermal time constants for the protection equipment and the motor result in unnecessary early tripping when the protection switch is set to rated current.

Motor-temperature-dependent protective devices and motor temperature detection with converter-fed operation. Depending on the specific requirements, various different components can be built into the motor winding for switching off the motor before it overheats and for monitoring the winding temperature and motor temperature.

Temperature detectors – Bimetal switches

Bimetal switches operate on the principle of mechanical deformation as a result of long-term heating. Bimetal strips bent as a result of such heating have a spring action that results in sudden reversal of the curvature (concave to convex or vice-versa).

When a limit temperature is reached, these temperature detectors (NC contacts) can deactivate an auxiliary circuit. The circuit can only be reclosed following a considerable fall in temperature. Bimetal switches are suitable protection devices in the case of slowly rising motor temperatures. When the motor current rises quickly (e.g. with a locked rotor), these switches are not suitable due to their large thermal time constants.

The temperature detectors have the following current-carrying capacity and switching capacity:
230 V, AC 2.5 A
24 V, DC: 1.6 A

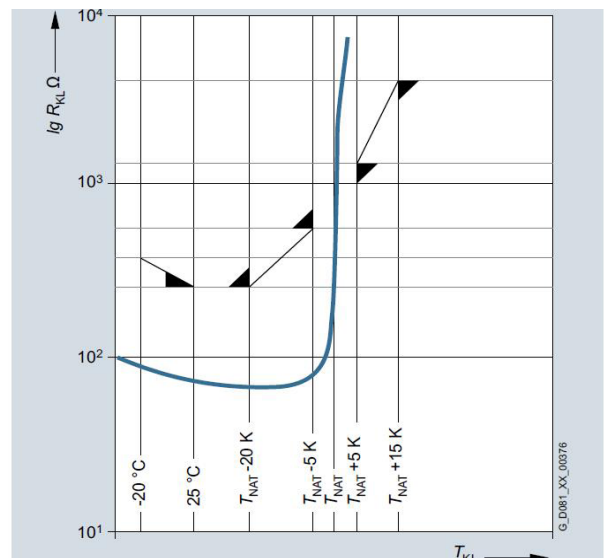
PTC thermistors – Thermistor motor protection

PTC thermistors provide the most comprehensive protection against thermal overloading of the motor. A rise in the winding temperature over the permissible value can be accurately detected thanks to the low heat capacity of these PTC (Positive Temperature Coefficient) thermistors and their excellent heat contact with the winding. When the limit temperature is reached (rated tripping temperature), the PTC thermistors undergo a sudden change in resistance. This is evaluated by a tripping unit and can be used to open auxiliary circuits. PTC thermistors cannot themselves be subjected to high currents and voltages. This would result in destruction of the semiconductor. The switching hysteresis of the PTC thermistor and tripping unit is low, which supports fast restarting of the drive. Motor protection of this type is recommended for heavy duty starting, switching duty, extreme changes in load, high ambient temperatures or fluctuating supply systems. Motor protection with PTC thermistor for tripping.

Two temperature sensor circuits are used if a warning is required before the motor is shut down (tripped). The warning is normally set to 10 K below the tripping temperature. In order to achieve full thermal protection it is necessary to combine a thermally delayed overcurrent release and a PTC thermistor. For full motor protection implemented only with PTC thermistors, please inquire.

PTC sensor characteristic

The PTC thermistor is a temperature-dependent component. At the smallest changes in temperature in the region of the rated shutdown temperature, the resistance of the PTC increases steeply.



Motor Protection

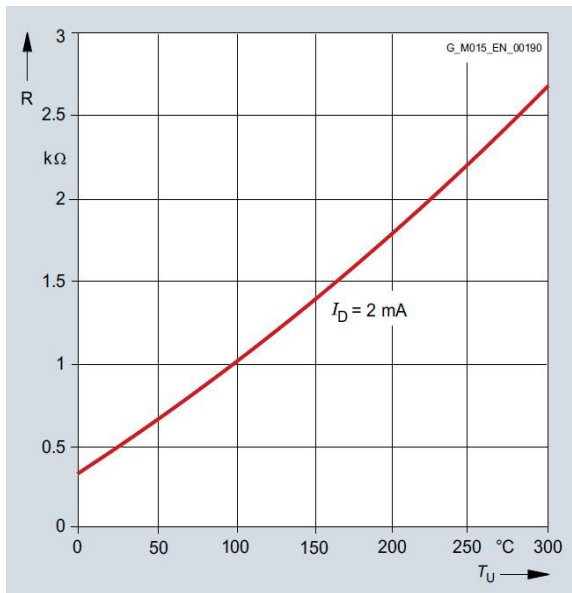
KTY 84-130 temperature sensor

This temperature sensor is a semiconductor which, in a similar manner to a PTC thermistor, changes its resistance as a function of its temperature at a defined rate. Within the measuring range, however, the KTY 84-130 characteristic rises almost linearly. The temperature sensor is embedded in the winding overhang of the motor in the same way as the components mentioned above. It is characterized by its outstanding precision, high reliability and temperature stability, as well as a fast response time. Thanks to these properties, which permit the almost analog monitoring of winding temperature, the KTY 84-130 is preferred for converter-fed operation.

Motor temperature detection with embedded temperature sensor KTY 84-130. Two auxiliary terminals are required in the terminal box.

Temperatures for warning and shutdown can be set as required when using converters from Siemens that determine the motor temperature in accordance with the measuring principle described above. With these devices, the measured signal is evaluated directly in the converter. For mains-fed operation, the temperature monitoring device 3RS10, which forms part of the protection equipment, can be ordered separately.

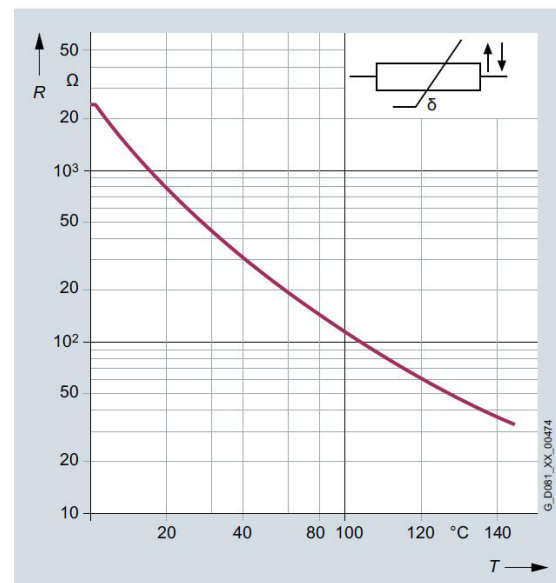
KTY 84-130 temperature sensor characteristic



NTC thermistor

NTC thermistors have a negative temperature coefficient and conduct current at higher temperatures better than at lower temperatures. NTC thermistors are typically used for temperature compensation of electronic circuits, or to limit inrush currents, to achieve the soft starting of electrical machines, for example. Motor temperature monitoring and shutdown using NTC thermistors is unusual, but it is technically possible. The tripping temperature can be set when using suitable tripping devices of this type.

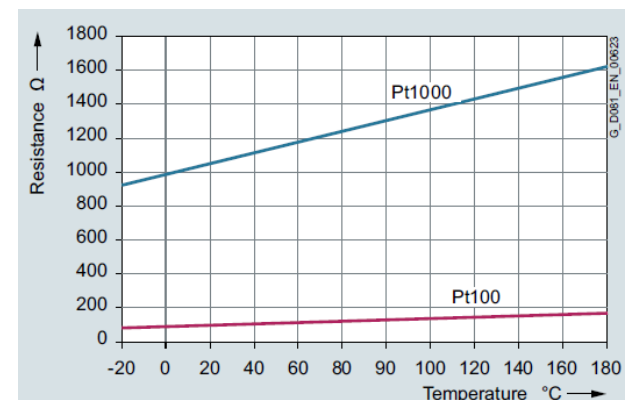
NTC thermistor characteristic



PT100/PT1000 temperature sensor

The resistance thermometer has a chip for a temperature sensor, the resistance of which changes in relation to temperature according to a series of reproducible values. The changes in resistance are converted as changes in current. At 0 °C, the measurement resistances are adjusted to 100 Ω for the Pt100 and 1000 Ω for the Pt1000, and correspond to the accuracy class B (i.e. the relationship

PT100/PT1000 sensor characteristic



Degree of protection

All motors are designed to IP55 degree of protection. They can be installed in dusty or humid environments. The motors are suitable for operating in tropical climates. Guide value

<60%, relative humidity at KT40°C. Other requirements are available on request. Most motors can be supplied in IP56 and IP65 degree of protection on request.

IP First number	
- Protection against solid objects	
0	No special protection
1	No special protection
2	Protected against solid objects up to mm, e.g. fingers
4	Protected against solid objects over 1mm (tools, wire, and small wires)
5	Protected against dust limited ingress (no harmful deposit)
6	Totally protected against dust
IP Second number	
- Protection against liquids	
0	No protection
1	Protection against vertically falling drops of water e.g. condensation
2	Protected against direct sprays of water up to 15° from vertical
3	Protected against direct sprays of water up to 60 from vertical
4	Protection against water sprayed from all directions ° limited ingress permitted
5	Protected against low pressure jets of water from all directions limited ingress permitted
6	Protected against low pressure jets of water, e.g. for use on ship decks - limited ingress permitted
7	Protected against the effect of immersion between 15 cm and 1 m
8	Protects against long periods of immersion under pressure

Frame size	Anti condensation heaters	
	230V	115V
71-80	12,5W	12,5W
90-112	25W	25W
132-200	50W	50W
225-250	92W	92W
280-315	109W	109W
315-355	218W	218W

Brakes

BFK458 spring-operated disk brake

This brake is a standard brake for 1T29 motors in frame sizes 63 to 225.

Design and mode of operation

The brake takes the form of a single-disk brake with two friction surfaces. The braking torque is generated by friction when pressure is applied by one or more pressure springs in the deenergized state. The brake is released electromagnetically. When the motor brakes, the rotor which can be axially shifted on the hub or the shaft, is pressed via the armature disk against the friction surface by means of the springs. In the braked

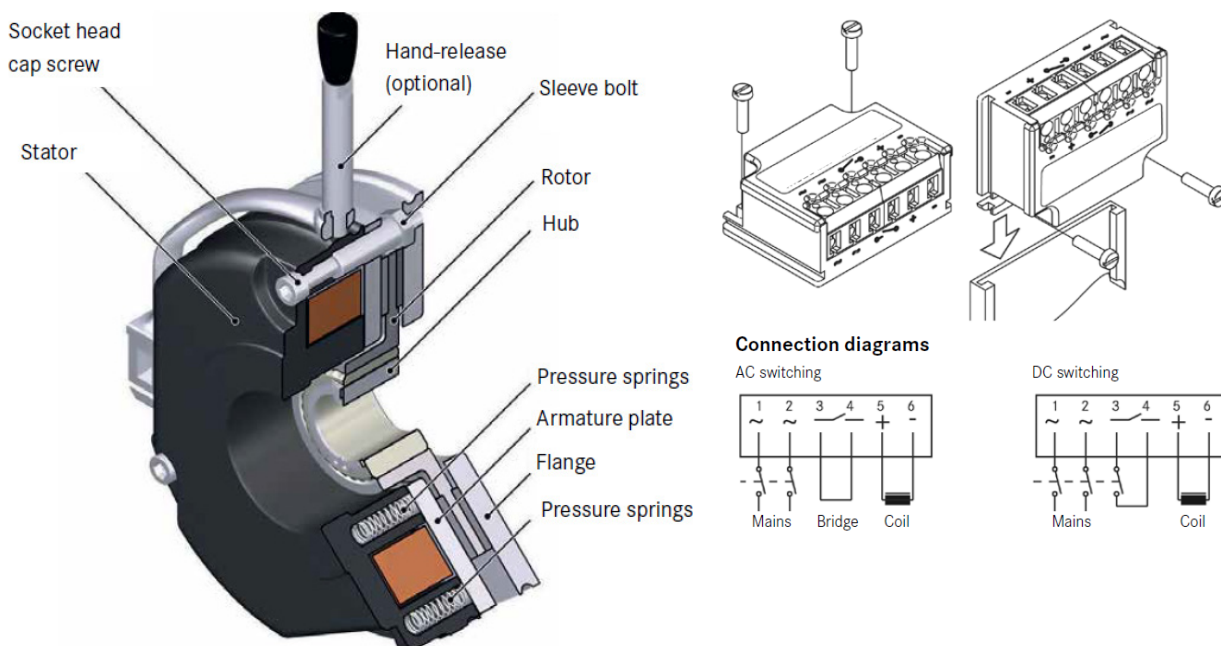
Characteristics of BFK458 brake

The BFK458 brake has IP55 degree of protection. Please inquire if motors with brakes are to be operated below the freezing point or in conjunction with very humid environments (e.g. close to the sea) with long standstill times.

state there is a gap S_{gap} between the armature disc and the solenoid component. To release the brake, the solenoid is energized with DC voltage. The resulting magnetic force pulls the armature disk against the spring force on to the solenoid component. The spring force is then no longer applied to the rotor which can rotate freely.

Operation values for BFK458 spring-operated disk brake									
Frame size	Brake type	Rated braking torque at 100rpm	Supply voltage	Current/Power		Brake application time ms	Brake release time ms	Noise level Lp with rated air gap db (a)	Brake moment of inertia
				A	W				
63	BFK458-06	5	AC 230, AC400, DC24	0.1, 0.11, 0.83	20	25	56	77	0,000013
71	BFK458-06	5	AC 230, AC400, DC24	0.1, 0.11, 0.83	20	25	56	77	0,000013
80	BFK458-08	10	AC 230, AC400, DC24	0.12, 0.14, 1,04	25	26	70	75	0,000045
90	BFK458-10	20	AC 230, AC400, DC24	0.15, 0.17, 1.25	32	37	90	75	0,00016
100	BFK458-12	40	AC 230, AC400, DC24	0.2, 0.22, 1.67	40	43	140	80	0,00036
112	BFK458-14	60	AC 230, AC400, DC24	0.25, 0.28, 2.1	53	60	210	77	0,00063
132	BFK458-16	100	AC 230, AC400, DC24	0.27, 0.31, 2.3	55	50	270	77	0,0015
160	BFK458-20	260	AC 230, AC400, DC24	0.5, 0.47, 4.2	100	165	340	79	0,0073
180	BFK458-20	315	AC 230, AC400, DC24	0.5, 0.56, 4.2	100	152	410	79	0,0073
200	BFK458-25	400	AC 230, AC400, DC24	0.55, 0.61, 4.6	110	230	390	93	0,0200
225	BFK458-25	400	AC 230, AC400, DC24	0.55, 0.61, 4.6	110	230	390	93	0,0200

Design of the BFK458 Spring-operated disk



Brakes

SFB Electromagnetic Double-Disc Spring-Applied Brake

This brake is a standard brake option for 1TZ5 and 1TZ9 motors. Additionally, special brake selections are available SFB-H (brake with emergency operation) and SFB-SH (increased torque)

Design and mode of operation

When the brake current is switched on, an electromagnetic field develops which overcomes the spring force of the brake. The corresponding modules, including the motor shaft, can rotate freely. The brake is released. If the brake current is switched off or if there is a power failure, the electromagnetic field of the brake disappears. The mechanical braking energy is transferred to the motor shaft. The motor is braked.

Characteristics of SFB brake

- Spring applied safety brake
- Electromagnetic released
- Protection-class IP67
- Double wear reserve
- High work capacity
- High wear resistance because of high abrasion resistance
- Functional without cover
- Emergency release screws

Operation values for SFB solenoid double-disk spring-operated brake										
Recomended frame size	Brake type	Brake torque dynamic acc. to DIN VDE 0580	Nominal Voltage DC	Nominal Current/Power (Coil at 20°C)		Mass (weight) kg	Max idle speed rpm	Mass moment of inertia kgm ²	Airgap Off	
				A	W				Normal air gap mm	Maximum air gap
132	SFB 6,3	63	110	0,90	99	19	6000	0,0017	0,3	0,9
160	SFB 10	100	110	1,16	128	28	6000	0,0037	0,3	1,2
180	SFB 16	160	110	1,44	158	42	6000	0,0048	0,3	1,2
200	SFB 25	250	110	1,78	196	55	5500	0,0068	0,4	1,3
225	SFB 40	400	110	2,00	220	74	4700	0,0175	0,4	1,4
250	SFB 63	630	110	2,79	307	106	4000	0,036	0,4	1,8
280	SFB 100	1000	110	3,13	344	168	3600	0,050	0,6	1,8
315	SFB 160	1600	110	3,95	435	242	3200	0,128	0,4	2,3
315	SFB 250	2500	110	4,50	495	306	2800	0,140	0,4	2,5
355	SFB 400	4000	110	5,03	553	357	2500	0,325	0,4	2,5

Design of SFB Electromagnetic Double-Disc Spring-Applied Brake



Brakes

FDW/FDX spring-operated brake

FDW/FDX brake can be provided for 1TZ9 motors (FDW frame size 100 - 200 and FDX for frame size 225 - 315).

Design and mode of operation

The solenoid spring-operated brakes, FDW with IP66 and FDX with IP67 degree of protection, are quiescent current brakes, meaning that the braking torque is produced by spring force and increased by magnetic force in normal operation. During the braking operation, the built-in compression springs apply pressure to the rotor that interlocks radially with the machine shaft using the axially moving armature disk. In turn, this applies pressure to the opposing side against the friction surface. The braking torque is produced from the linings of the rotor and the

Characteristics of SFB brake

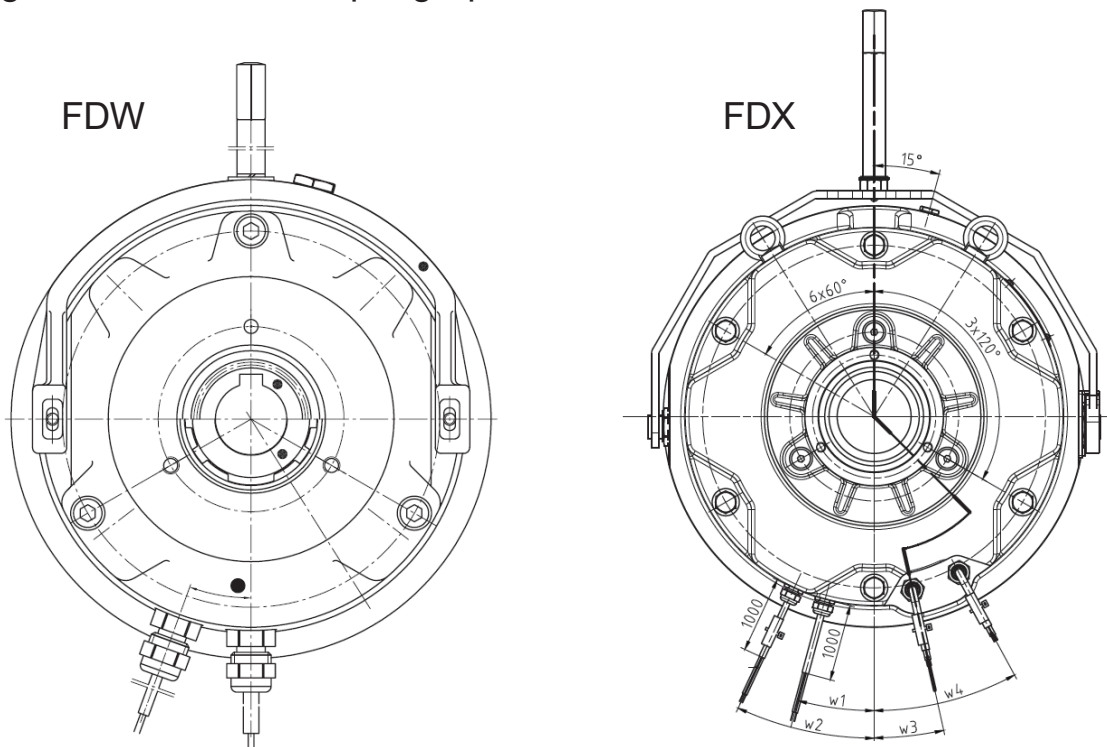
FDW is a fully capsulated brake sealed from outside influence. Used in outdoor applications or in aggressive environment. **FDX** is a capsulated, solid IP 67 brake which is designed for use in very rough environment like offshore or sea climate.

armature disk/friction surface being in contact. During the brake release process, a magnetic force is produced by applying a direct current via the excitation winding in the solenoid. The armature disk is thereby pulled from the solenoid and the rotor is released. During the manual brake release process (only available for the brake version with manual brake release), the armature disk is pressed mechanically against the solenoid by operating the manual release lever. The brake can therefore still be released in the event of a power failure, for example.

Operation values for FDW spring-operated brake								
Frame size	Brake type	Dynamic rated braking torque acc. to DIN VDE 0580	Admissible speed (rpm)	Current at 205V DC (A)	Brake application time ms	Brake release time ms	Weight (kg)	Brake moment of inertia
100	FDW 15	20	6000	0,28	70	100	6,7	0,00045
112	FDW 17	40	6000	0,44	82	120	9,2	0,00086
132	FDW 20	60	6000	0,59	115	150	13,6	0,00122
160	FDW 26	250	3000	0,68	178	300	30,3	0,00665
180	FDW 26	250	3000	0,68	178	300	30,3	0,00665
200	FDW 30	400	3000	0,89	195	400	44,9	0,0195

Operation values for FDX spring-operated brake								
Frame size	Brake type	Dynamic rated braking torque acc. to DIN VDE 0580	Admissible speed (rpm) Operating / Holding	Current at 180V DC (A)	Brake application time ms	Brake release time ms	Weight (kg)	Brake moment of inertia
225	FDX 30	500	3000 / 6000	1,22	60	140	45	0,0195
250	FDX 30	630	3000 / 6000	1,22	60	140	45	0,0195
280	FDX 40	1000	3000 / 6000	1,5	160	320	80	0,0445
315	FDX 40	1600	3000 / 6000	1,5	160	320	80	0,0445

Design of the FDW/FDX spring-operated brake



External Cooling Fan Unit

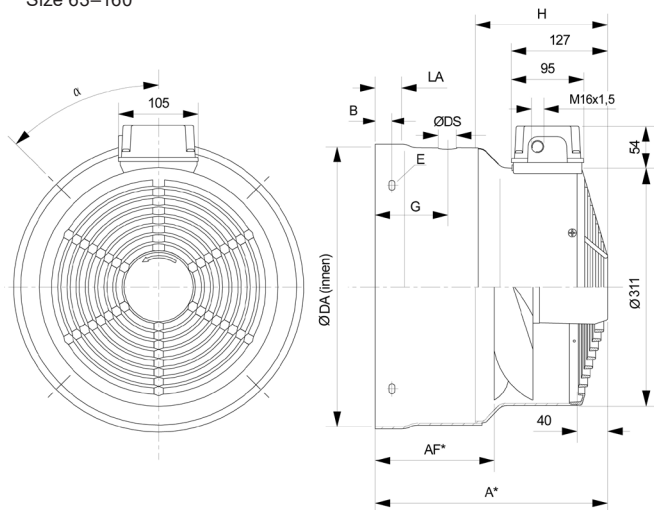
Motor Series 1TZ9

Item name	Type number	IP	50/60Hz 3~ D 230V-265V	50 / 60Hz 3~ Y 400 - 460V
Size 80	17.00.0063	66	0,10A	0,05 / 0,16A
Size 90	17.00.0064	66	0,28 / 0,26A	0,16 / 0,15A
Size 100	17.01.0065	66	0,32A	0,18A
Size 112	17.00.0654	66	0,39A	0,16A
Size 132	17.00.0197	66	0,31A	0,24A
Size 160	17.00.0181	66	0,31A	0,56A
Size 180	17.00.2404	66	0,76A	0,43A
Size 200	17.00.2405	66	0,76A	0,43A
Size 225	17.00.2406	66	0,495 / 0,648A	0,283 / 0,369A
Size 250	17.00.2407	66	0,495 / 0,648A	0,283 / 0,369A
Size 280	17.00.2408	66	0,933 / 1,302 A	0,536 / 0,730A
Size 315	17.00.2409	66	0,933 / 1,302 A	0,536 / 0,730A

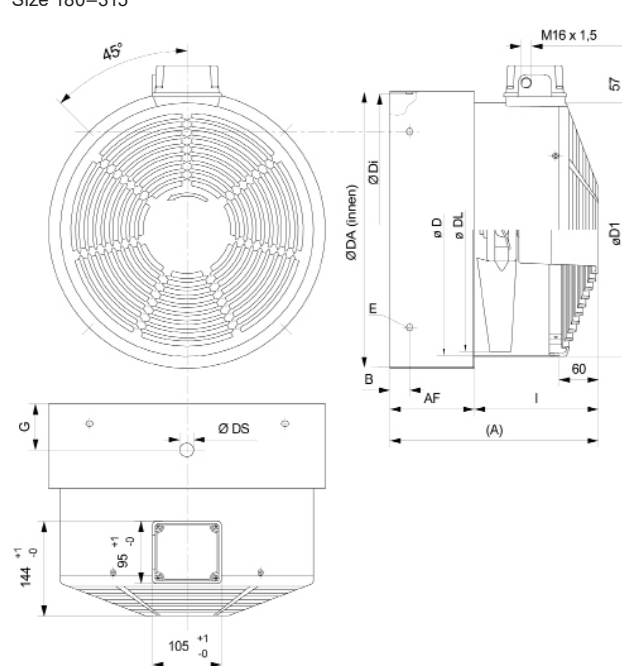
External cooling units dimension table

Type	A	AF	B	DA	D1
Size 80	166	71	5,5	155	157
Size 90	195	90	5,5	172	177
Size 100	200	95	6	194	195
Size 112	255	150	6	219	219
Size 132	252	125	6	258	258
Size 160	295	143	6	312	311
Size 180	370	195	29,5	350	311
Size 200	385	200	29	390	311
Size 225	400	205	40	441	385
Size 250	420	225	41	489	385
Size 280	440	240	45	543	480
Size 315	470	270	51	608	480

Size 63–160



Size 180–315



87 Hz motor technique with an AC drive

Induction motors can be connected to the line supply and operated at constant voltage and frequency, they can also be supplied via a frequency converter and operated with a variable frequency and voltage. Connected to a Frequency converter it can also utilize the 87 Hz technique and operate at speeds above the rated nominal speed. Usually, to achieve higher speed the frequency is increased. But this has the disadvantage that motor torque is reduced. With the 87 Hz technique it is possible to keep the motor torque even in the field weakening range up to 87 Hz. There are additionally several advantages, and this application guide gives some basic details on the theory and how to setup the configuration.

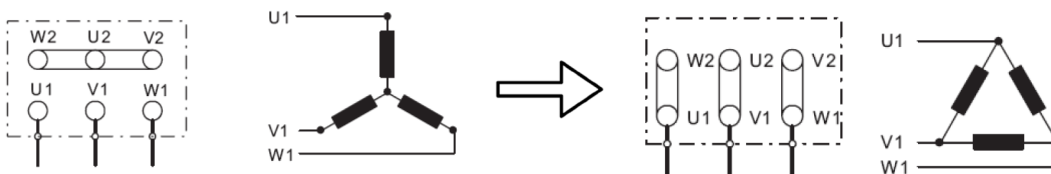
Advantage example:

- Constant torque up to 87 Hz with a 400 V Supply.
- 1,7 times more power from the same IEC-motor size-
- 73% more acceleration power
- In some application there is the possibility of avoiding external fan

87 Hz motor control connection

A motor which can be supplied with 230/400V has windings that are 230V per phase at 50Hz. If the motor is connected to a 400V supply then the windings in the motor needs to be connected as Y- or Star connection. And when the motor is fed by a frequency converter it will have nominal torque up to 50 Hz and above this it will go into field weakening range.

When setting up the motor for 87 Hz technique the motor needs to be connected as D- or Delta connection.



Frequency converter settings:

- Base frequency = 87 Hz
- Base Voltage = 400V

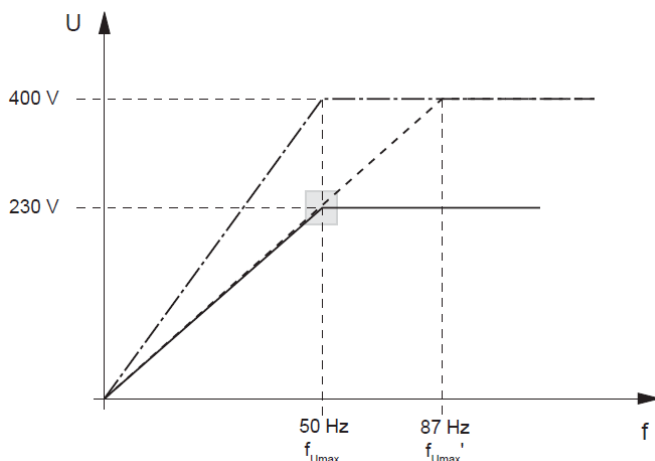
With this setup the motor will be able to run up to 87 Hz without reaching field weakening point. This means it can handle nominal torque at 87 Hz. Rotor losses will be the same as with nominal value at 50 Hz, but the resistive stator losses will be three times because of the increasing current in the stator by a factor of $\sqrt{3}$

Choosing correct converter power

Motor 7,5 kW /50 Hz, D- or Delta connection

Power Frequency converter \geq Power motor * $\sqrt{3}$ = 7,5 kW * 1,73 = 12,98 kW

Recommended rated power of Frequency converter = 15kW



Insulation system

For details of order codes for use in temperature class F, see "DURIGNIT IR 2000 insulation system" under "windings and insulation".

The following applies to all motors: The motors can withstand 1.5 times the rated current at rated voltage and frequency for two minutes (DIN EN 60034).

Ambient temperature: All motors can be used in standard version at ambient temperatures between -20 and +40 °C. Motors can be used in temperature class F

- at 40° C with service factor 1.5, i.e. the motor can be continuously overloaded with 5% of the rated output (for motors of 14BG and 1TZ9 IE1 series, with service factor 1.1, i.e. 10 % of the rated output).
- above 40° C at rated output

When motors are used in temperature class B for higher ambient temperatures and site altitudes derating occurs in accordance with the table "Reduction factor k HT for different site altitudes and/ or ambient temperatures" .

For other temperatures special measures are necessary. When brakes are to be mounted on motors intended for operation at temperatures below freezing, please contact your local LÖNNE office.

Winding and insulation

DURIGNIT IR 2000 insulation system

The DURIGNIT IR 2000 insulation system comprises high- grade enameled wires and insulating sheet materials combined with solvent- free impregnating resin.

The system ensures a high level of mechanical and electrical strength as well as good serviceability and a long motor life. The insulation system protects the winding against aggressive gases, vapours, dust, oil and increased air humidity. It can withstand the usual vibration stressing. The insulation is suitable up to an absolute air humidity of 30 g water per m³ of air. Moisture condensation should be prevented from forming on the winding. Please contact your local LÖNNE office if higher values are present. Please enquire about extreme applications.

Winding and insulation design with regard to temperature class and air humidity

All motors are designed for temperature class F. At rated output with line- fed operation, the motors can be used in temperature class B.

Temperature class F, used in accordance with F, with service factor (SF)

For all 1TZ9 IE2/IE3 and 16BG motors for line- fed operation in frame sizes 63 to 315 for rated output given in the selection table and rated output given in the selection table and rated voltage, a service factor of 1.15 can be specified. Exeptions of IE1 motors which have a service factor of 1.1.

Temperature class F, used in accordance with F, for increased output

For motors supplied from stock for use in accordance with temperature class F, the rated output according to the selection and ordering data can be increased by 15 %.

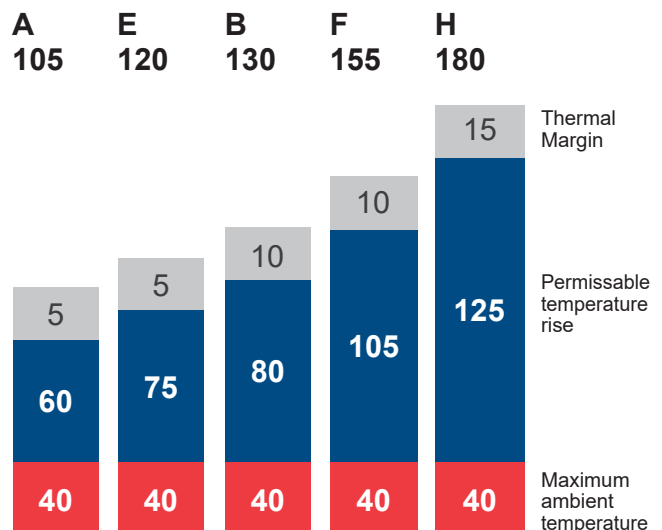
Temperature class H for rated output and maximum ambient temperature (AT) 60 °C

For motors of series 1TZ9, 14/16BG and 7BA use in accordance with temperature class H is permitted at rated output and at a maximum ambient temperature of a 60 °C. The specified grease life applies at an ambient temperature of 40 °C. For a 10 K increase in ambient temperature, the grease life of lubrication interval is halved. Please contact your local Brammer office.

Temperature class F, used in accordance with B, ambient temperature 45 °C, approx. 4% derating

For motors of series 1TZ9, 14/16BG and 7BA a version can be ordered that is designed to temperature class F, for use in accordance with temperature class B at a maximum ambient temperature of 45 °C at 4% derating.

Insulation class



Ambient temperature and humidity

Temperature class F, used in accordance with B, ambient temperature 50 °C, approx. 8% derating

For motors of series 1TZ9, 14/16BG and 7BA a version can be ordered that is designed to temperature class F, for use in accordance with temperature class B at a maximum ambient temperature of 50 °C at 8% derating.

Temperature class F, used in accordance with B, ambient temperature 55 °C, approx. 13% derating

For motors of series 1TZ9, 14/16BG and 7BA a version can be ordered that is designed to temperature class F, for use in accordance with temperature class B at a maximum ambient temperature of 55 °C at 13% derating.

Temperature class F, used in accordance with B, ambient temperature 60 °C, approx. 18% derating

For motors of series 1TZ9, 14/16BG and 7BA a version can be ordered that is designed to temperature class F, for use in accordance with temperature class B at a maximum ambient temperature of 60 °C at 18% derating. Please contact your local Brammer office.

Increased air temperature/ humidity with more than 60 g up to 100 g water per m³ of air

For motors of series 1TZ9, 14/16BG and 7BA a version can be ordered for increased air humidity of between 60 and 100 g water per m³ of air depending on the temperatures as listed in table below. In this case, the external bolts can be supplied in rust-proof material. This option not include any condensation protection, so an anti- condensation heater must be ordered separately if required. Please contact your local Brammer office.

Increased air temperature/ humidity with 30 to 60 g water per m³ of air

For motors of series 1TZ9, 14/16BG and 7BA a version can be ordered for increased air humidity of between 30 and 60 g water per m³ of air depending on the temperatures as listed in table below. In this case, the external bolts can be supplied in rust-proof material. This option not include any condensation protection, so an anti- condensation heater must be ordered separately if required. Please contact your local Brammer office.

Relative humidity	Temp 20 °C	30 °C	40 °C	50 °C	60 °C	70 °C	80 °C	90 °C
10%	2	3	5	8	13	20	29	42
15%	3	5	8	12	19	30	44	63
20%	3	6	10	17	26	39	58	84
25%	4	8	13	21	32	49	73	105
30%	5	9	15	25	39	59	87	126
35%	6	11	18	29	45	69	102	146
40%	7	12	20	33	52	79	116	167
45%	8	14	23	37	58	89	131	188
50%	9	15	26	41	65	98	145	209
55%	10	17	28	43	71	108	160	230
60%	10	19	31	50	78	118	174	251
65%	11	20	33	54	84	128	189	272
70%	12	21	36	58	91	138	203	293
75%	13	23	38	62	97	148	218	314
80%	14	24	41	66	104	157	233	335
85%	15	26	43	70	110	167	247	356
90%	16	27	46	74	117	177	262	377
95%	16	29	49	79	123	187	276	398
100%	17	30	51	83	130	197	291	419

The values in the table with a light blue background are covered by the standard version (up to 30 g water per m³ of air)

The values in the table with a light grey background are covered by order code C19 (30 to 60 g of water per m³ of air)

The values in the table with a medium blue background are covered by order code C26 (60 to 100 g of water per m³ of air)

Please contact your LÖNNE office regarding requirements exceeding 100 g water per m³ of air.

Safety and Commissioning for Low Voltage Asynchronous Motors

1. General information

Electrical motors have dangerous voltage carrying and rotating parts as well as hot surfaces. Fatal or severe injuries and substantial material damage can occur if the required covers are removed or if the machines are not handled, operated, or maintained properly. All work at the machine involving transport, connection, commissioning and regular maintenance must be carried out by qualified personnel only. The applicable national, local and works regulations and requirements must be complied with.

2. Intended use

These electric machines have been designed and built in accordance with the specifications contained in Directive 2006/95/EC ("Low-Voltage Directive") and is intended for use in industrial plants. Please observe the country-specific regulations when using the electric machine outside the European Community. These machines are intended for industrial installations. They comply with the harmonized standards of the series EN / IEC 60034 (VDE 0530). Their use in hazardous areas is forbidden unless the marking on the rating plate expressly permits this operation. If other/more wide-ranging demands (e.g. protection so that they cannot be touched by children) are made in special cases – i.e. use in nonindustrial installations – these conditions must have been complied with in the plant or system itself when the motors are installed. Low-voltage motors are components designed for installation in machines in accordance with the current Machinery Directive. The system may not be commissioned until confirmation has been given that the final product is in conformance with this directive (observe EN 60204-1 !).

3. Transport

The machine must only be transported and lifted using the lifting eyes, in a position that is appropriate for its type of construction. Otherwise, it could fall over or slip in the lifting tackle. If necessary, use suitable, sufficiently-sized transport equipment such as lifting straps (EN1492-1) and lashing straps (EN12195-2).

4. Storage

If the machines are used or stored outdoors, we recommend keeping them under a shelter or an additional cover. Turn the shafts 1x every year to avoid bearing brinelling. Prolonged storage periods reduce the useful life of the bearing grease (aging).

For open bearings e.g. 1Z, check the state of the bearing grease over 12 months. Replace the grease if it can be identified that the grease has lost oil content or has become dirty (ingress of condensation leads to consistency changes of the grease). For closed bearings, replace the DE and NDE bearings after a storage time of 48 months.

5. Mounting and Installation

It must be ensured that parts (cables etc.) do not come into contact with the machine enclosure. If the torque levels are very unequal (e.g. when a reciprocating compressor is being driven), a non-sinusoidal machine current will be induced whose harmonics can have an impermissible effect on the supply system and cause impermissible interference emissions as a result. The rotors are balanced dynamically. The balancing quality corresponds to vibration severity grade "A" for the complete machine as standard. The optional vibration severity grade "B" is indicated on the rating plate.

The declaration regarding the type of featherkey for balancing is generally marked on the rating plate and optionally on the face of the shaft end. As a standard measure, balancing is carried out dynamically with a half featherkey (code "H") in accordance with ISO 8821. "F" means balancing with a whole featherkey (optional version). "N" means balancing without a featherkey (optional version).

6. Electrical Connection

Only qualified and trained personnel should carry out work on the machine while it is stationary. Operating the machine on a line supply system with a non-grounded neutral point is only permitted over short time intervals that occur rarely, e.g. the time leading to a fault being eliminated (ground fault of a cable, EN 60034-1). When work is carried out on the machine with the terminal box open, it must not be electrically connected!

In case of 1TZ9 machines with frame sizes 80 and 90, arcing at the optional terminal board can destroy the machine. To change the operating mode, always press the jumper fully into the base of the slot and use the red locking lever to ensure that it is engaged.

During disassembly and particularly when installing the cover plate, make sure that the connection cables are not clamped between enclosure parts and the cover plate.

6.1 Tightening torques

Take care not to damage the cable jacket. Tightening torques must be adapted to suit the type of cable jacket material in use.

Table 6-1 Tightening torques for cable glands

	Metal ± 10% Nm	Plastic ± 10% Nm	Clamping range mm		O ring Cord Ø mm
			Standard -30 °C ... 100 °C	Ex -30 °C ... 90 °C	
			Ex -30 °C ... 90 °C		
M 12 x 1,5	8	1,5	3,0 ... 7,0	-	2
M 16 x 1,5	10	2	4,5 ... 10,0	6,0 ... 10,0	
M 20 x 1,5	12	4	7,0 ... 13,0	6,0 ... 12,0	
M 25 x 1,5	12	4	9,0 ... 17,0	10,0 ... 16,0	
M 32 x 1,5	18	6	11,0 ... 21,0	13,0 ... 20,0	
M 40 x 1,5	18	6	19,0 ... 28,0	20,0 ... 26,0	
M 50 x 1,5	20	6	26,0 ... 35,0	25,0 ... 31,0	
M 63 x 1,5	20	6	34,0 ... 45,0	-	

Table 6-2

Tightening torques for screws on the terminal box, end shields, screw-type grounding conductor connections.

Thread Ø		M 4	M 5	M 6	M 8	M 10	M 12	M 16	M 20
Nm	min	2	3,5	6	16	28	46	110	225
	max	3	5	9	24	42	70	165	340

Table 6-3

Tightening torques for self-tapping screws on the terminal box, end shields, screw-type grounding conductor connections, sheet metal fan covers.

Thread Ø		M 4	M 5	M 6
Nm	min	2	3,5	6
	max	3	5	9

7. Commissioning

Before starting commissioning, install all covers that are designed to prevent active or rotating parts from being touched, or which are necessary to ensure correct air guidance and thus effective cooling.

The insulation resistance needs to be checked prior to start-up and again after any extended periods of storage or periods during which the equipment is not in operation. Before you begin measuring the insulation resistance, please read the operating manual for the insulation resistance meter you are going to use. Disconnect any main-circuit cables that are connected to the terminals before measuring the insulation resistance. The minimum acceptable value of insulation resistance is 1000 ohm per voltage. If the critical insulation resistance is less than or equal to this value, the windings must be dried or, if the fan is removed, cleaned thoroughly and dried.

8. Operation

Before switching on, always make sure that the (optional) anti-condensation heating is switched off. Operating the machine on a line supply system with a non-grounded neutral point is only permitted over short time intervals that occur rarely, e.g. the time leading to a fault being eliminated (ground fault of a cable, EN / IEC 60034-1). Ensure that any covers, which are designed to prevent active or rotating parts from being touched, which are necessary to ensure correct air guidance and thus effective cooling, or which guarantee the degree of protection of the machine, remain closed during operation. Be sure to comply with the minimum radial load of 30% of the cylindrical roller bearings in accordance with catalog data.

Deviations from conditions during normal operation, such as an increase in power consumption, temperatures or vibrations, unusual noises or odors, tripping of monitoring devices, etc., indicate that the machine is not functioning properly. This can cause faults which can result in eventual or immediate death, severe injury or material damage. If you are in doubt, immediately switch off the machine, being sure to observe the system-specific safety conditions.

8.1 Stoppages

If the machine remains out of service for an extended period of time (> 1 month), it should be commissioned regularly (around once a month) or, at the very least, the rotor should be turned. If a rotor locking device has been fitted to the machine, you must remove it before the rotor starts to turn. If the machine is to be out of service for a period in excess of 12 months, you must take suitable anti-corrosion, mothballing, packaging, and drying measures.

The machine must be relubricated during commissioning if it has been out of service for more than 1 year, in order to ensure that the grease is distributed throughout the bearings. The shaft must rotate for the grease to be distributed. Please observe the information on the lubricant plate if carrying out relubrication using relubrication equipment.

9. Maintenance

As a standard feature, the machines have rolling-contact bearings which are permanently lubricated with grease (UNIREX N3, made by ESSO). A regreasing device is possible as an option. In this case, you can find information about relubrication intervals, quantities and types of grease, and, if required, additional data on the rating plate or lubricant plate. But it should be ensured that you do not mix different types of grease.

Prolonged storage periods reduce the useful life of the bearing grease. Check the condition of the grease if the equipment has been in storage for more than 12 months. If the grease is found to have lost oil content or to be contaminated, the machine must be immediately relubricated before commissioning.

The bearing temperature rises sharply at first, and then drops to the normal value again when the excess grease is displaced out of the bearing.

The used grease collects outside each bearing in the used grease chamber of the outer bearing cap. When replacing bearings, remove the used grease. Regularly clean the cooling air passages through which the ambient air flows, e.g. using dry compressed air. The frequency of the cleaning intervals depends on the local degree of contamination.

Prolonged storage periods reduce the useful life of the bearing grease. In the case of permanently lubricated bearings, this leads to a shorter bearing lifetime. Bearing or grease replacement is recommended after a storage time of 12 months, for longer than four years, replace the bearings or grease.

Table 9-1 Bearing replacement intervals

Before commencing disassembly, you should mark how each of the fastening elements has been assigned, as well as how internal connections are arranged, for re-assembly purposes.

Ambient temperature	Principle of operation	Bearing replacement intervals
40° C	Horizontal coupling operation	40 000 h
40° C	With axial and radial forces	20 000 h

Before commencing disassembly, you should mark how each of the fastening elements has been assigned, as well as how internal connections are arranged, for re-assembly purposes.

Cable Glands

Index

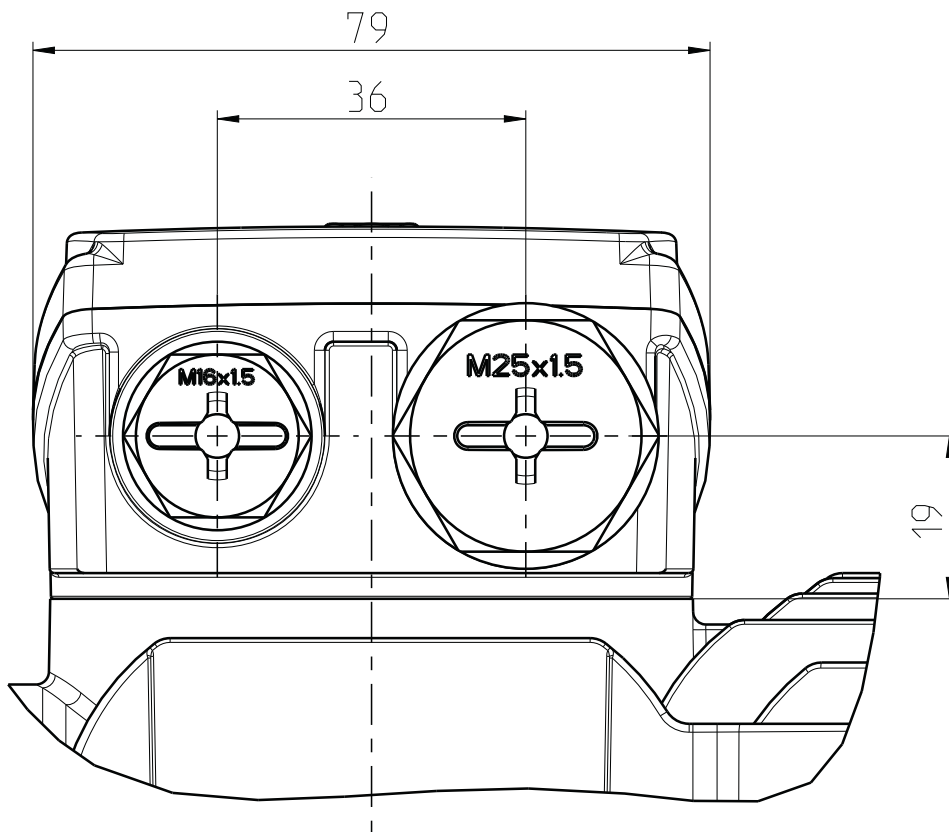
Cable Gland Dimension Table for LÖNNE Motors.	52
Jacob Perfect Polyaramid Glands	53
Jacob Perfect Nickle Plated Brass Glands	54
Miltronic Skintop EMC Nickle Plated Brass Glands.....	55
Miltronic Skintop EMC Brush Brass Glands	56
Miltronic Skintop EMC Brush Add-On	57



Cable Gland Dimension Table for LÖNNE Motors

Table for motor series 1TZ9

IEC Frame Size	Metric Thread
63	M25
71	M25
80	M25
90	M25
100	2 X M32
112	2 X M32
132	2 X M32
160	2 X M40
180	2 X M40
200-225	2 X M50
250-315	2 X M63



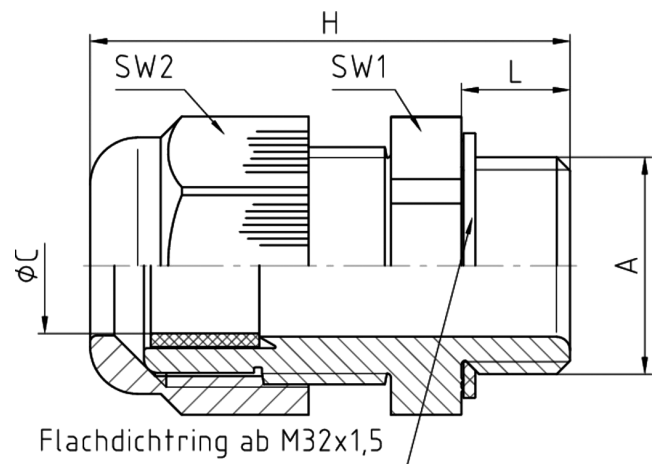
Terminal box, 1TZ9 A 63-90 motor with PTC thermistors.

Jacob Perfect Polyamid Glands

50.6xx PAzzz

Dome nut	Polyamide PA6 V-2
Sealing ring	Polychloroprene-Nitrile rubber CR/NBR
Gland body	Polyamide PA6 V-2
Connecting thread	Metric, as per EN 60423

Properties	
	<ul style="list-style-type: none"> integrated anchorage wide sealing and clamping range easy-to-install
Temperature range (°C)	-20°C / +100°C (dynamic) -40°C (static, short term)
Protection grade	68 5
Test standard	EN 50262 UL 514B
VDE licence	40020902
UL / CSA-File	E140310
GL T.A. Certificate	44 608 - 07 HH
Comment	Details about tests - see annex



RAL 7001

Connecting thread standard length

A	ØC	L	SW1	SW2	H		Part No.
M12x1,5	3 - 6	8	15	15	31	100	50.612 PA7001
M16x1,5	5 - 10	8	20	20	35,5	100	50.616 PA7001
M20x1,5	8 - 13	8	24	24	36	100	50.620 PA7001
M25x1,5	11 - 17	8	29	29	43	50	50.625 PA7001
M32x1,5	15 - 21	10	36	36	50	25	50.632 PA7001
M40x1,5	19 - 28	10	46	46	51	10	50.640 PA7001
M50x1,5	27 - 35	12	55	55	61,5	5	50.650 PA7001
M63x1,5	32 - 42	12	68	68	65,5	5	50.663 PA7001

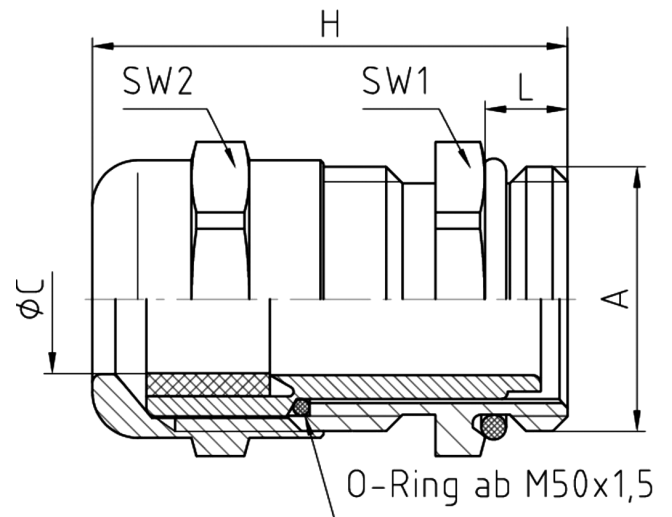
Jacob Perfect Nickle Plated Brass Glands

Jacob

50.6xx M

Dome nut	Polyamide PA6 V-2
Sealing ring	Polychloroprene-Nitrile rubber CR/NBR
Gland body	Polyamide PA6 V-2
Connecting thread	Metric, as per EN 60423

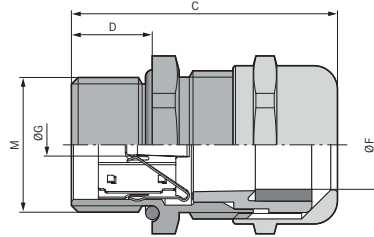
Properties	
<ul style="list-style-type: none"> integrated anchorage protection against twisting, wide sealing and clamping range easy-to-install 	
Temperature range (°C)	-20°C / +100°C (dynamic) -40°C (static, short term)
Protection grade	68 5 IP69*
Test standard	EN 50262 UL 514B
VDE licence	40020901
UL / CSA-File	E140310
GL T.A. Certificate	44 608 - 07 HH
Comment	Details about tests - see annex



Features

A	ØC	L	SW1	SW2	H		Part No.
M12x1,5	3 - 6	5	14	14	25	100	50.612 M
M16x1,5	5 - 9	5	17	17	30	100	50.616 M
M20x1,5	9 - 13	6	22	22	33,5	100	50.620 M
M25x1,5	11 - 16	7	27	27	36,5	50	50.625 M
M32x1,5	14 - 21	8	34	34	38	25	50.632 M
M40x1,5	19 - 27	8	43	43	41	10	50.640 M
M50x1,5	24 - 35	9	55	55	49,5	5	50.650 M
M63x1,5	32 - 42	10	65	65	52,5	5	50.663 M
M63x1,5	38 - 48	10	65	65	52,5	5	50.663 M1

Miltronic SKINTOP® EMC Nickle Plated Brass Glands SKINTOP® MS-SC-M



Benefits

- Suitable for cables with and without inner sheath
- Also suitable for continuing the cable screen to another connection
- Low-resistance screen contact, optimum EMC protection
- Highly conductive, flexible EMC contact for clamping various screen diameters
- Few operation steps, easy to assemble

Application range

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath
- Telecommunication
- Industrial machinery and plant engineering
- Measurement and control technology
- Automation technology

Norm references / Approvals

- UL File Nr. E79903

Product Make-up

- Metric connection thread acc. to DIN EN 60423
- Basis for technical information EN 50262

Note

- SKINDICHT® SM-PE-M counter nut should be used to ensure optimum contact with painted, anodised or powder-coated housings
- Refer to SKINTOP metric accessories for suitable accessories
- As an alternative for thick-walled housings, we recommend SKINTOP® MS-SC-M-XL with long connection thread in the sizes M16 to M50

Technical data



Classification
ETIM 5.0 Class-ID: EC000441
ETIM 5.0 Class-Description:
Cable screw gland



Caution
Refer to Appendix T21 for the installation dimensions and torques



Material
Body: nickel-plated brass
Insert: polyamide
Sealing ring: CR
O-ring: NBR



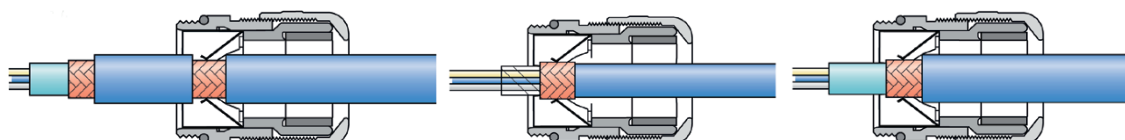
Protection rating
IP 68 - 10 bar



Temperature range
dynamic -25°C up to +100°C
static -40°C up to +100°C

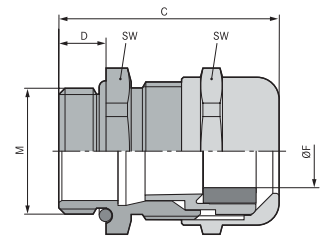
Article number	Article designation / size	Outer Ø (mm), from - to	Minimum Ø above braiding (mm)	SW wrench size mm	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-SC-M						
53112610	12 x 1,5	3.5 - 7.0	2	16	6.5	50
53112620	16 x 1,5	4.5 - 9.0	4	20	7	50
53112630	20 x 1,5	7.0 - 12.5	5	24	8	25
53112640	25 x 1,5	9.0 - 16.5	7.5	29	8	25
53112650	32 x 1,5	11.0 - 21.0	9	36	9	25
53112660	40 x 1,5	19.0 - 28.0	15	45	9	10
53112670	50 x 1,5	27.0 - 35.0	21	54	10	5

Photographs are not to scale and do not represent detailed images of the respective products.



Miltronic SKINTOP® EMC Brush Brass Glands

SKINTOP® MS-M BRUSH



Technical data

Technical data



Classification
ETIM 5.0 Class-ID: EC000441
ETIM 5.0 Class-Description:
Cable screw gland



Caution
Refer to Appendix T21 for the installation dimensions and torques



Certifications
VDE, UL, CSA, DNV approval for size M90 x 2 and 110 x 2 pending
SKINTOP® MSR-M BRUSH 25 x 1,5 approvals pending



Material
Body: nickel-plated brass
EMC brush: brass
Sealing ring: special elastomer
O-ring: special elastomer



Protection rating
IP 68 - 10 bar (M12 - M50)
IP 68 - 5 bar (M63)
IP 68 - 1 bar (M63 plus - M75)
IP 69 (M12 - M63)



Temperature range
dynamic -25°C up to + 100°C
Fixed: -40°C to +100°C

Benefits

- Faster, easier screen contact
- Optimum, low-resistance 360° screen contact
- Faster than any other comparable system
- Uncomplicated and reliable
- Maximum assembly freedom during adjustment

Application range

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath
- Automation systems
- High-power drives
- Frequency converters
- Conveyor and transport systems

Norm references / Approvals

- UL File Nr. E79903

Product Make-up

- Metric connection thread acc. to DIN EN 60423
- Basis for technical information EN 50262

Note

- SKINDICHT® SM-PE-M counter nut should be used to ensure optimum contact with painted, anodised or powder-coated housings

Info

- SKINTOP® MS-M BRUSH sizes 75 x 1.5 to 110 x 2 with innovative double lamella gasket for easier assembling of cables with large diameters.

Article number	Article designation / size	Outer Ø (mm), from - to	Minimum Ø above braiding (mm)	SW wrench size mm	Thread length, D (mm)	Pieces / PU
SKINTOP® MS-M BRUSH						
53112676	25 x 1,5	9.0 - 17.0	6	29	8	10
53112677	32 x 1,5	11.0 - 21.0	8	36	9	5
53112678	40 x 1,5	19.0 - 28.0	10	45	9	5
53112679	50 x 1,5	27.0 - 35.0	14	54	10	5
53112680	63 x 1,5	34.0 - 45.0	20	67	15	1
53112681	63 x 1,5 plus	44.0 - 55.0	25	75	15	1
53112501	75 x 1,5	53.0 - 63.0	35	95	15	1
53112500	75 x 1,5 plus	58.0 - 68.0	35	95	15	1
53112503	90 x 2	66.0 - 78.0	45	115	20	1
53112505	110 x 2	76.0 - 88.0	55	135	25	1
53112504	110 x 2 plus	86.0 - 98.0	55	135	25	1



Info

- Innovative EMC add-on for SKINTOP® ST(R)-M polyamide cable glands.
- Worlds first patented active EMC lock-nut!



Technical data



Classification

ETIM 5.0 Class-ID: EC000441
ETIM 5.0 Class-Description:
Cable screw gland



Caution

Refer to Appendix T21 for the installation dimensions and torques
Apply SKINTOP® ST-M torques



Certifications

UL pending



Material

Body: nickel-plated brass
EMC brush: brass



Temperature range

Dynamic: -20°C to +100°C
Depending on the combination of the used cable gland

Product Make-up

- Metric connection thread acc. to DIN EN 60423
- Basis for technical information EN 50262

Application range

- For EMC-compliant earthing of the copper braiding, or for cables with copper shaft sheath
- For EMC-contact at through bore-holes
- Control cabinet manufacturing
- Automation systems
- Conveyor and transport systems

Benefits

- Optimum, low-resistance 360° screen contact
- Cutting edges cut through the insulating layer of the housing or switch cabinets, thus guaranteeing an optimum EMC contact
- Easy disassembling
- Visible, large-scale screen contact
- Uncomplicated and reliable



Article number	Article designation / size	Minimum Ø above braiding (mm)	SW wrench size mm	Thread length, D (mm)	Pieces / PU
SKINTOP® BRUSH ADD-ON					
54110839	M 12 x 1,5	4	24	10	25
54110840	M 16 x 1,5	5	24	10	25
54110841	M 20 x 1,5	5	24	10	10
54110842	M 25 x 1,5	5	30	10	10
54110843	M 32 x 1,5	8	39	12	10
54110844	M 40 x 1,5	10	47	12	5
54110845	M 50 x 1,5	14	56	12	5
54110846	M 63 x 1,5	14	63	12	5

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