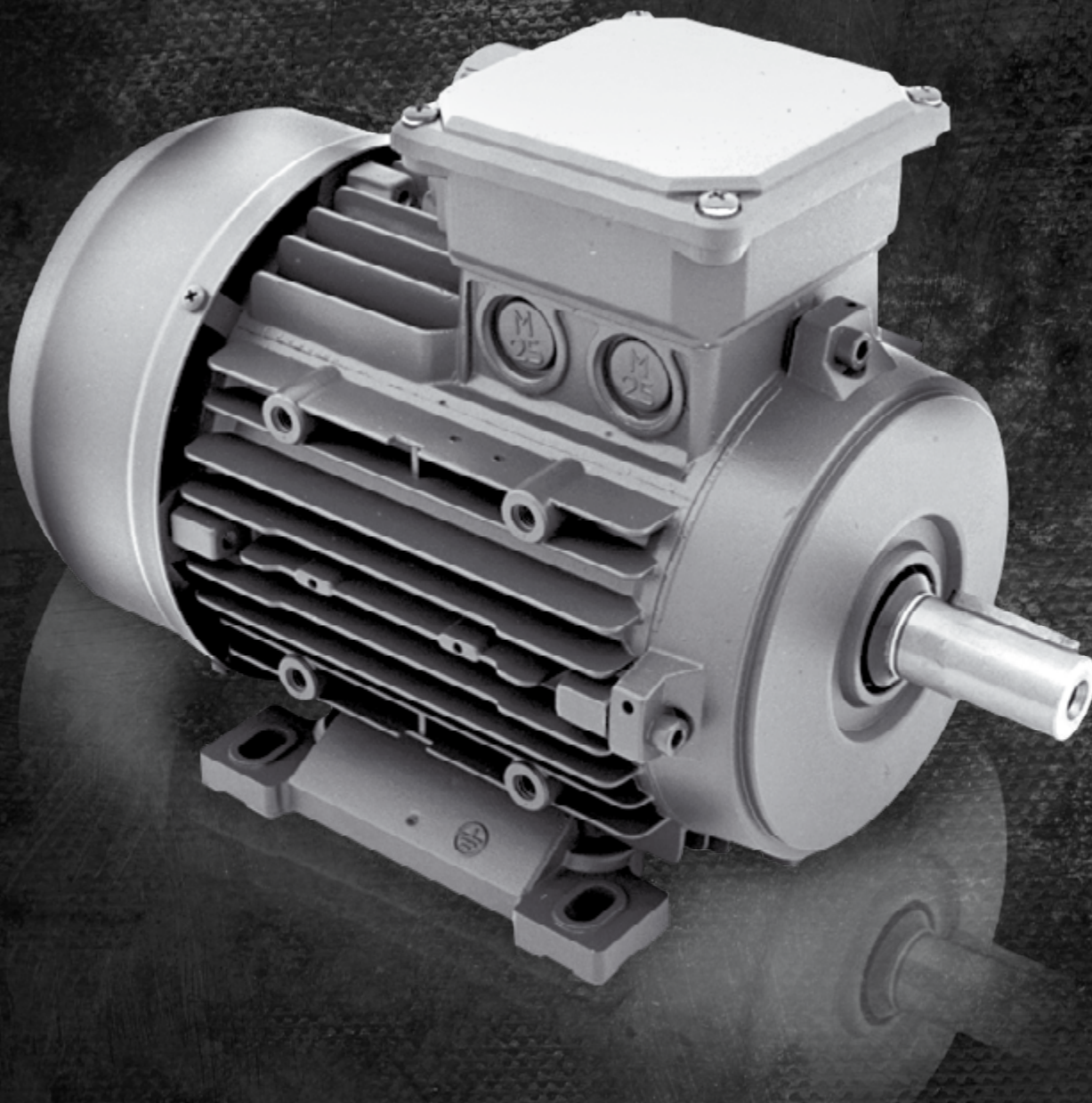




THREEPHASE IE2 & IE3 MOTORS

Electric Motors Production



A dynamic, strong and ambitious Group

Orange1 Holding is an international renown Group, one of the most important European manufacturers of single-phase and three-phase asynchronous electric motors. It has an annual capacity of more than 1 million motors and 5 million electric stators. The group, established in 1971 by Leone Donazzan, chaired today by his son Armando Donazzan, is strongly focused on technological innovation, performance and customization to meet individual clients requirements.





Elettromeccanica Leone Donazzan was established on 1971 in Bassano del Grappa. In 1983 the company turned into Eld Spa. In 1998 Armando Donazzan took over the running of the company; thanks to his determination and intuition he applied new financial and commercial policies which increased the level of reliability and visibility. In March 2006 the company changed its name to EME Spa and finally become Orange1 Electric Motors in 2018. The aim of O1EM is to manufacture custom made motors to meet clients and market expectations. The actual production covers a large range of AC and DC motors, as well as brushless motors and Variable Frequency Drives , to provide total solution.

PRODUCTION PLANTS

LOCATION	MOTORS PRODUCTION
ARSIÈ - ITALY 32030 (BL) Via A. Messedaglia 4	SINGLE AND THREE PHASE MOTORS HOLLOW SHAFT MOTORS IE2 AND IE3 MOTORS INVERTER AND MOTORINVERTER
S. MAURO PASCOLI - ITALY 47030 (FC) Via A. Grandi 23	GRADUAL BRAKE MOTORS HIGH TORQUE BRAKE MOTORS LOW CENTER MOTORS MOTORS FOR BURNERS
PARMA - ITALY 43122 (PR) Via Mantova 93	ATEX MOTORS HYDRAULIC MOTORS ENCAPSULATED WATERPROOF MOTORS OIL SUBMERGED MOTORS

IE2 & IE3 Motors

Motors efficiency - IE2 & IE3



The Orange1 Group is always attentive to energy saving with choices driven by the desire to preserve the environment that surrounds us and this is why the electric motors are also protagonists to reduce the emission of greenhouse gases. Thanks to a careful energy saving philosophy to protect the environment around us, Orange1 Holding produces electric motors in order to reduce the emission of greenhouse gases. The European Commission has drawn up the new edition of the Regulations EC 1781/2019, laying down rules for the application of directive 2009/125 /EC on the specific ecodesign requirements for electric motors. The new European regulations defines Minimum Efficiency Performance Standards, called MEPS. The obligatory dates for using motors with IE2 and IE3 efficiency level are in accordance with the below table:

Efficiency Level	IE2		IE3	
Type and range	400V-50Hz HE56 ÷ 80 (<0,75kW)	460V-60Hz HE56 ÷ 80 (on demand)	400V-50Hz HE80 ÷ 180 (≥0,75kW)	460V-60Hz HE80 ÷ 180 (at demand)
Reference standard:	EN60034-30-1-2014		EN60034-30-1-2014	
Reference standard: testing method	EN60034-2-1; 2007		EN60034-2-1; 2007	

The efficiency levels are established by law EN60034-30-1; 2014 and the test method is established by law EN 60034-2-1; 2014.

Possible custom executions

This series of motors has been designed to be predisposed to follow the OEM requirements in their different configurations dictated by the needs of the application. Below some of these possible configurations:

- Motors with thermal protector
- Motors suitable for VFD
- Motors with transducer (encoder)
- Motors with VFD mounted
- Customised execution (shaft, flange, IP, aggressive environments)
- Thermal class H (high ambient temperature)
- Without fan (IC410/TENV) or forced ventilated (IC416/TEFV).

Application sectors

Considered the efficiency level and the high flexibility of these motors, below we report some of the possible applications:

- Pumps, vacuum pumps
- Fans
- Textile machine
- Automatic machine
- Wood machine
- Food machine (i.e: kneading)
- HVAC/R
- Compressors

CONFIGURATION	Protection	IP55
	Thermal class/Temperature rise	F/B
	Duty Time	S1
	Housing	Aluminium; removable feet
	Terminal box	Aluminium (two components); possibility to rotate
	Fan cover	Steel zinc-plated
	Coating	No painting

Motors IE2 & IE3 - Performance

According to EN 60034-30-1;2014



Single speed, 3000rpm, 2poles, 400V, 50Hz, S1 Thermal class F; temperature rise class B

Type	Rated Power		Rated current at 400V	Rated Speed	Rated Torque	Efficiency			Power factor	Starting current/ rated current	Starting torque/ rated torque	Breakdown torque/ rated torque	Moment of inertia	Weight
	P _n		I _n	n	M _n	η-100%P _n	η-75%P _n	η-50%P _n	COS φ	Is/In	Ms /Mn	Mb/Mn	J	kg
	kW	HP	A	Min ⁻¹	Nm	%	%	%					10 ⁻³ kgm ²	
HE 56M B2	0,12	0,16	0,50	2790	0,41	55,1	50,9	42,8	0,688	3,9	3,3	2,9	0,183	3,6
HE 63M A2	0,18	0,25	0,58	2800	0,61	64,0	61,2	54,4	0,710	3,9	3,1	3,0	0,183	4,4
HE 63M B2	0,25	0,35	0,75	2830	0,81	65,4	62,6	55,8	0,680	3,9	3,2	3,3	0,214	4,8
HE 71M A2	0,37	0,50	1,13	2890	1,22	69,5	63,5	55,4	0,680	6,7	3,6	3,8	0,451	6,5
HE 71M B2	0,55	0,75	1,49	2890	1,82	74,1	71,6	64,8	0,720	6,8	3,7	3,9	0,542	7,6
HE 80M A2	0,75	1,00	1,59	2885	2,49	84,2	84,8	83,3	0,810	7,2	3,2	3,5	1,037	9,8
HE 80M B2	1,10	1,50	2,50	2870	3,70	83,1	83,9	82,7	0,770	7,4	3,8	3,6	1,201	11,9
HE 80M C2	1,50	2,00	3,42	2890	4,96	85,4	85,7	84,0	0,740	7,9	4,4	4,0	1,305	13,5
HE 90S A2	1,50	2,00	3,16	2885	5,00	84,8	85,4	84,1	0,790	7,9	3,6	3,7	1,591	13,5
HE 90L D2	2,20	3,00	4,84	2895	7,28	86,2	86,3	84,4	0,760	7,9	4,4	4,6	2,022	16,8
HE 100L A2	3,00	4,00	5,72	2885	9,95	87,9	88,9	88,5	0,860	8,8	4,0	3,8	3,702	18,3
HE 112M A2	4,00	5,50	7,64	2935	13,03	89,1	88,9	87,2	0,848	10,7	4,2	5,3	6,303	31,5
HE 112M C2	5,50	7,50	10,14	2925	17,95	89,2	89,0	87,6	0,878	10,4	3,4	4,8	7,536	36,5
HE 132S A2	5,50	7,50	10,58	2935	17,90	89,2	88,8	87,2	0,840	7,7	3,2	4,6	12,08	43,7
HE 132S B2	7,50	10,00	14,20	2935	24,41	90,1	89,7	88,5	0,850	7,9	2,8	3,7	14,74	46,2
HE 132M D2	9,20	12,30	16,71	2945	29,84	91,3	90,6	89,3	0,870	8,0	3,2	3,9	19,81	48
HE 160M A2	11,0	15,00	20,35	2950	35,61	91,4	91,5	90,5	0,850	8,0	2,8	3,5	33,70	97
HE 160M B2	15,0	20,00	27,56	2950	48,56	92,0	91,4	90,1	0,850	10,3	4,4	4,3	44,47	100
HE 160L D2	18,5	24,80	33,59	2950	59,90	92,4	91,9	90,5	0,860	9,0	3,2	3,4	52,00	107,2
HE 160L E2	22,0	30,00	39,70	2955	71,11	92,7	92,1	91,2	0,860	8,0	3,3	3,5	59,54	112
HE 180M A2	22,0	30,00	39,70	2955	71,11	92,7	92,1	91,2	0,860	8,0	3,3	3,5	88,59	140
HE 180L D2	30,0	40,00	51,70	2960	96,80	93,4	93,7	93,5	0,900	11,1	3,7	4,1	101,24	170

Single speed, 1500rpm, 4poles, 400V, 50Hz, S1 Thermal class F; temperature rise class B

Type	Rated Power		Rated current at 400V	Rated Speed	Rated Torque	Efficiency			Power factor	Starting current/ rated current	Starting torque/ rated torque	Breakdown torque/ rated torque	Moment of inertia	Weight
	P _n		I _n	n	M _n	η-100%P _n	η-75%P _n	η-50%P _n	COS φ	Is/In	Ms /Mn	Mb/Mn	J	kg
	kW	HP	A	Min ⁻¹	Nm	%	%	%					10 ⁻³ kgm ²	
HE 63M A4	0,12	0,16	0,49	1390	0,82	60,9	58,6	52,4	0,580	3,3	2,8	2,9	0,268	4,6
HE 63M B4	0,18	0,25	0,57	1340	1,28	64,7	62,4	56,4	0,590	3,3	2,1	2,2	0,268	4,6
HE 71M A4	0,25	0,35	0,79	1430	1,66	69,8	67,1	60,1	0,650	5,3	3,6	4,2	0,836	6,5
HE 71M B4	0,37	0,50	1,08	1420	2,49	72,8	71,6	66,2	0,670	5,4	3,9	3,9	1,025	7,8
HE 80M Z4	0,55	0,75	1,32	1440	3,65	77,8	76,7	72,7	0,780	5,9	2,7	3,4	2,249	9,6
HE 80M A4	0,75	1,00	1,85	1445	4,96	82,5	81,6	78,2	0,708	6,8	3,4	4,1	2,644	9,8
HE 90S A4	1,10	1,50	2,61	1440	7,30	84,1	84,1	81,6	0,724	6,6	2,8	2,8	2,979	13,3
HE 90L D4	1,50	2,00	3,40	1440	10,00	85,3	84,9	82,9	0,746	6,2	3,0	3,5	4,034	17,5
HE 100L A4	2,20	3,00	4,90	1440	14,6	86,7	87,6	87,0	0,75	7,0	3,4	3,9	6,351	23,6
HE 112M A4	3,00	4,00	6,05	1455	19,70	87,7	88,2	87,4	0,820	7,7	2,7	3,4	10,99	32,5
HE 112M B4	4,00	5,50	8,25	1455	26,27	88,6	88,7	87,6	0,790	7,3	3,1	3,8	11,66	33,8
HE 132S A4	5,50	7,50	11,77	1455	36,77	89,6	89,9	88,8	0,750	7,4	3,5	3,5	25,53	50
HE 132M D4	7,50	10,00	15,03	1465	48,86	90,7	91,1	90,4	0,790	8,1	2,7	4,0	36,98	54
HE 160M B4	9,20	12,30	18,08	1475	59,56	91,2	91,5	90,5	0,805	5,7	2,1	2,8	62,62	70
HE 160M D4	11,0	15,00	21,50	1475	71,23	91,4	91,5	90,5	0,808	5,8	2,0	2,7	73,04	85
HE 160L E4	15,0	20,00	29,54	1474	97,31	92,1	92,2	91,1	0,797	8,0	3,5	3,3	86,71	130
HE 180M A4	18,5	24,80	33,91	1470	120,20	92,9	92,3	91,7	0,850	6,2	2,9	4,9	162,17	170
HE 180L D4	22,0	30,00	42,10	1472	142,72	93,1	93,5	93,1	0,810	8,7	3,9	3,5	185,08	177

Motors IE2 & IE3 - Datasheet

According to EN 60034-30-1;2014



Single speed, 1000rpm, 6poles, 400V, 50Hz, S1 Thermal class F; temperature rise class B

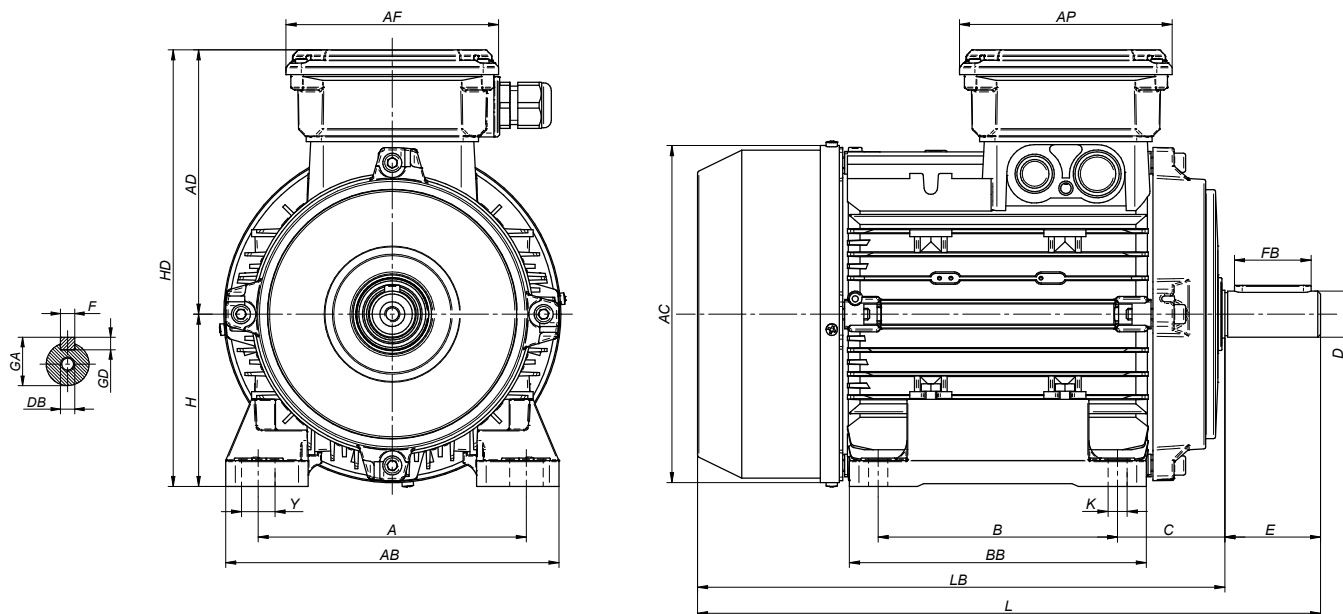
Type	Rated Power		Rated current at 400V	Rated Speed	Rated Torque	Efficiency			Power factor	Starting current/ rated current	Starting torque/ rated torque	Breakdown torque/ rated torque	Moment of inertia	Weight
	P_n		I_n	n	M_n	$\eta_{100\%P_n}$	$\eta_{75\%P_n}$	$\eta_{50\%P_n}$	COS φ	Is/In	Ms /Mn	Mb/Mn	J	kg
	kW	HP	A	Min ⁻¹	Nm	%	%	%					10 ⁻³ kgm ²	
HE 63M B6	0,12	0,16	0,58	880	1,30	50,6	47,8	40,0	0,590	2,1	2,4	2,4	0,387	5,5
HE 71M Z6	0,12	0,16	0,59	935	1,23	50,6	45,8	37,3	0,580	4,8	2,7	2,9	0,360	7,3
HE 71M A6	0,18	0,25	0,82	925	1,86	56,7	51,9	43,6	0,560	4,8	2,4	2,6	1,088	8
HE 71M B6	0,25	0,35	0,92	905	2,64	61,6	62,0	56,0	0,635	4,0	2,6	2,7	1,340	8
HE 80M Z6	0,25	0,35	0,80	920	2,59	61,8	58,3	50,9	0,730	3,2	2,5	2,6	1,590	8,5
HE 80M A6	0,37	0,50	1,05	945	3,74	72,6	72,3	67,8	0,700	4,2	2,1	2,5	2,249	9,3
HE 80M B6	0,55	0,75	1,50	910	5,77	73,1	71,8	67,2	0,725	5,3	2,6	2,7	2,644	10,5
HE 90L A6	0,75	1,00	1,96	945	7,58	79,1	78,8	76,0	0,700	5,7	3,1	3,7	5,661	16,7
HE 100L A6	1,10	1,50	2,70	950	11,06	81,0	80,8	78,4	0,730	5,9	2,7	3,6	10,01	21
HE 100L B6	1,50	2,00	3,75	945	15,16	82,5	81,2	78,5	0,700	5,9	2,6	3,4	13,04	25,3
HE 112M A6	2,20	3,00	5,2	955	21,89	84,3	84,4	83,5	0,72	5,2	1,9	2,7	18,63	32,3
HE 132S A6	3,00	4,00	6,32	965	29,69	85,7	86,2	85,4	0,800	6,6	1,8	3,2	33,85	44
HE 132M D6	4,00	5,50	8,18	965	39,59	86,8	86,9	85,8	0,810	6,9	1,8	3,3	45,15	53,2
HE 160M A6	5,50	7,50	11,4	970	54,14	88,6	88,8	87,5	0,790	7,6	2,9	3,7	93,66	90
HE 160L D6	7,50	10,00	15,11	970	73,85	89,1	89,4	88,8	0,810	7,9	2,8	4,0	132,81	97
HE 180M A6	11,0	15,00	22,36	975	107,76	90,3	90,4	89,9	0,790	4,6	2,7	3,9	192,54	150
HE 180L D6	15,0	20,00	29,15	975	146,94	91,2	91,3	90,8	0,820	4,9	2,8	4,0	255,08	170

Single speed, 750rpm, 8poles, 400V, 50Hz, S1 Thermal class F; temperature rise class B

Type	Rated Power		Rated current at 400V	Rated Speed	Rated Torque	Efficiency			Power factor	Starting current/ rated current	Starting torque/ rated torque	Breakdown torque/ rated torque	Moment of inertia	Weight
	P_n		I_n	n	M_n	$\eta_{100\%P_n}$	$\eta_{75\%P_n}$	$\eta_{50\%P_n}$	COS φ	Is/In	Ms /Mn	Mb/Mn	J	kg
	kW	HP	A	Min ⁻¹	Nm	%	%	%					10 ⁻³ kgm ²	
HE 71M B8	0,12	0,16	0,72	660	1,74	45,7	42,7	40,7	0,527	2,0	1,6	2,0	1,088	8,5
HE 80M A8	0,18	0,25	0,86	710	2,42	45,9	42,5	38,5	0,662	2,8	2,2	2,6	1,854	10
HE 80M B8	0,25	0,35	1,18	700	3,41	51,0	46,7	40,5	0,600	2,3	2,1	2,5	2,381	11
HE 90S A8	0,37	0,50	1,42	665	5,31	56,2	54,9	47,8	0,670	2,2	1,4	1,8	2,588	14,5
HE 90L D8	0,55	0,75	2,07	660	7,96	61,7	58,2	53,4	0,620	2,9	1,7	1,8	2,993	16
HE 100L A8	0,75	1,00	2,45	714	10,06	75,0	73,3	67,7	0,585	3,6	2,3	2,5	9,251	23
HE 100L B8	1,10	1,50	3,13	710	14,84	77,7	75,5	70,7	0,654	3,7	2,0	2,2	13,04	28,4
HE 112M B8	1,50	2,00	3,96	708	20,23	79,7	78,0	73,6	0,685	3,8	2,3	2,6	18,63	30
HE 132S A8	2,20	3,00	5,84	715	29,38	81,9	79,5	74,4	0,664	4,0	2,5	2,9	39,40	53
HE 132M D8	3,00	4,00	7,38	715	40,04	83,5	83,1	80,3	0,703	3,8	2,1	2,3	50,70	65
HE 160M A8	4,00	5,50	9,86	726	52,61	84,8	84,3	81,6	0,691	4,8	1,6	2,4	132,75	97
HE 160L D8	5,50	7,50	13,52	727	72,20	86,3	85,3	82,3	0,681	4,2	1,4	2,5	161,24	110
HE 160L E8	7,50	10,00	18,32	727	98,45	87,4	87,0	84,3	0,677	6,0	2,5	3,0	184,02	125
HE 180M A8	7,50	10,00	17,59	725	98,74	87,3	87,1	85,1	0,705	4,4	2,2	2,2	171,19	145
HE 180L D8	11,00	15,00	25,65	728	144,29	88,6	88,1	86,4	0,705	4,4	2,2	2,2	235,44	175

Motors IE2 & IE3 - Dimension

According to EN 60034-30-1; 2014 - aluminium execution

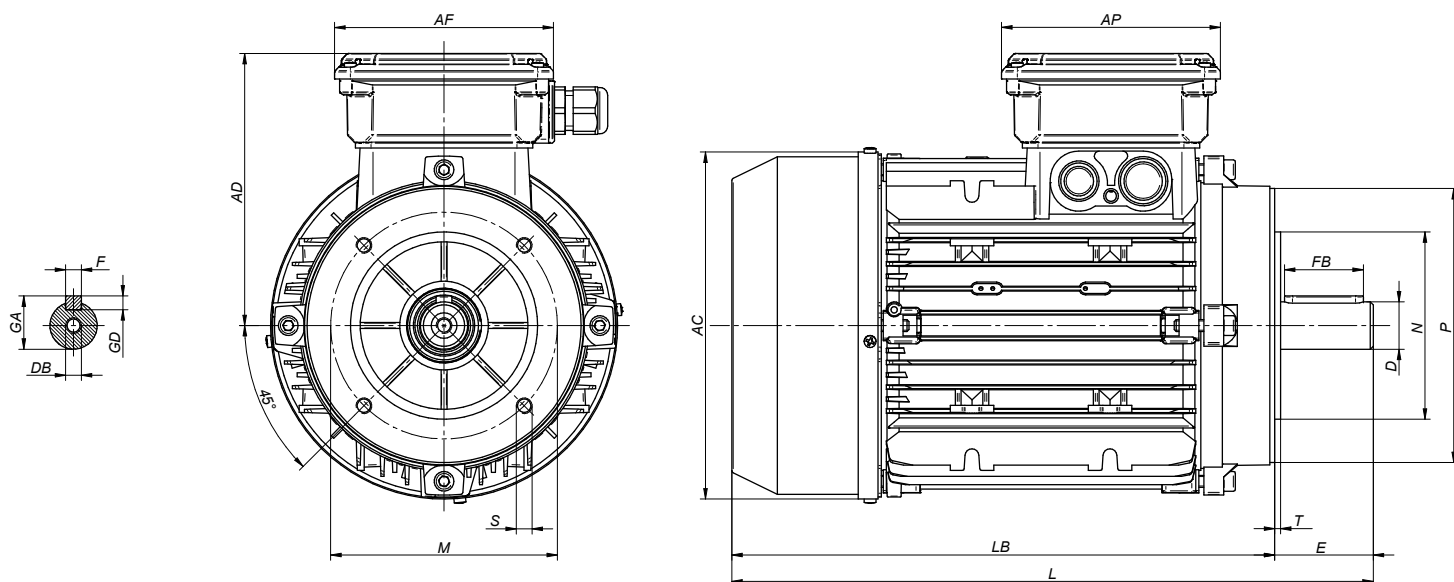


B3 (IMB3) Dimension in "mm"

IEC Frame	A	AB	B	BB	C	D	E	H	HD	L	K	Y	AC	AD	AF	AP	F	FB	GA	GD	DB	LB
56M	90	108	71	91	36	9	20	56	168	188	6	11	115	112	93	93	3	15	10,2	3	M3	168
63M	100	120	80	106	40	11	23	63	176	210	7	12	123	113	93	93	4	15	12,5	4	M4	187
71M	112	136	90	108	45	14	30	71	196	245	8	12	141	125	93	93	5	20	16	5	M5	212
80M	125	155	100	126	50	19	40	80	219	279	10	17,5	158	139	114	114	6	30	21,5	6	M6	239
90S	140	170	100	129	56	24	50	90	234	315	10	17,5	176	144	114	114	8	40	27	7	M8	279
90L	140	170	125	155	56	24	50	90	234	330	10	17,5	176	144	114	114	8	40	27	7	M8	290
100L	160	192	140	175	63	28	60	100	255	370	12	20	191	155	114	114	8	50	31	7	M10	310
112M	190	223	140	176,5	70	28	60	112	277	388	12	22	220	165	114	114	8	50	31	7	M10	328
132S	216	260	140	180	89	38	80	132	328	460	12	28	258	190	134	134	10	70	41	8	M12	380
132M	216	260	178	218	89	38	80	132	328	500	12	28	258	190	134	134	10	70	41	8	M12	420
160M	254	318	210	267	108	42	110	160	403	610	15	30	310	243	185	185	12	90	45	8	M16	500
160L	254	318	254	308	108	42	110	160	403	650	15	30	310	243	185	185	12	90	45	8	M16	540
180M	279	350	241	291	121	48	110	180	440	720	13	38	352	260	185	185	14	90	51,5	9	M16	610
180L	279	350	279	330	121	48	110	180	440	720	13	38	352	260	185	185	14	90	51,5	9	M16	610

Motors IE2 & IE3 - Dimension

According to EN 60034-30-1; 2014 - aluminium execution

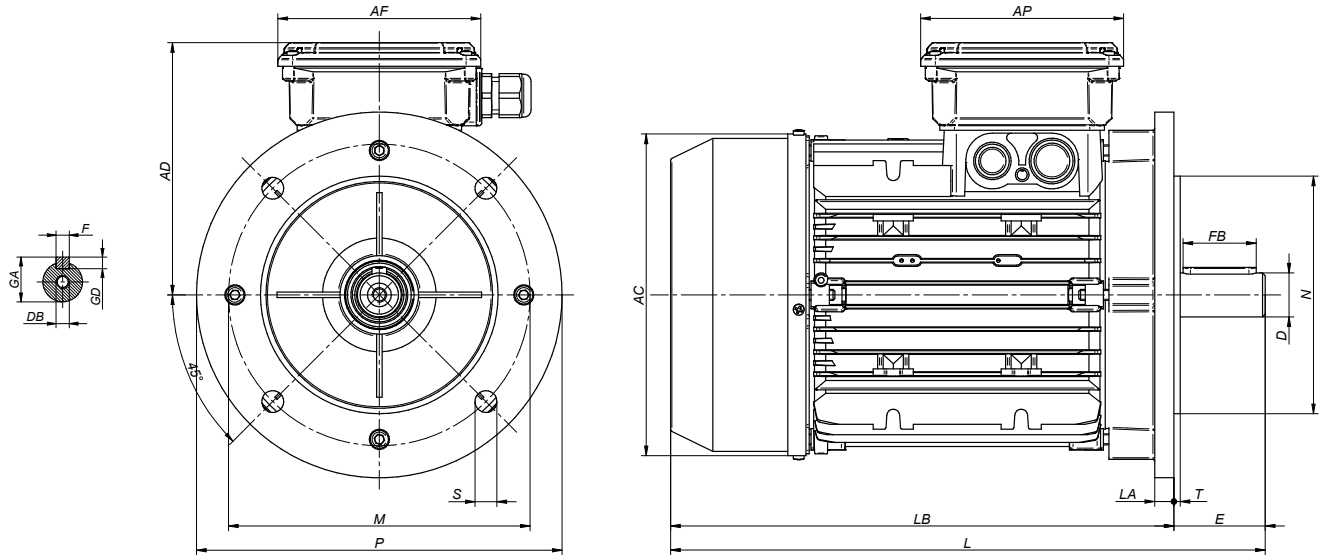


B14 (IMB14) Dimension in "mm"

Size	A	AB	B	BB	C	D	E	H	HD	L	K	Y	AC	AD	AF	AP	F	FB	GA	GD	DB	LB	P-B14	N-B14	M-B14	T-B14	S-B14
56M	90	108	71	91	36	9	20	56	168	188	6	11	115	112	93	93	3	15	10,2	3	M3	168	80	50	65	2,5	M5
63M	100	120	80	106	40	11	23	63	176	210	7	12	123	113	93	93	4	15	12,5	4	M4	187	90	60	75	2,5	M5
71M	112	136	90	108	45	14	30	71	196	245	8	12	141	125	93	93	5	20	16	5	M5	212	105	70	85	2,5	M6
80M	125	155	100	126	50	19	40	80	219	279	10	17,5	158	139	114	114	6	30	21,5	6	M6	239	120	80	100	3	M6
90S	140	170	100	129	56	24	50	90	234	315	10	17,5	176	144	114	114	8	40	27	7	M8	279	140	95	115	3	M8
90L	140	170	125	155	56	24	50	90	234	330	10	17,5	176	144	114	114	8	40	27	7	M8	290	140	95	115	3	M8
100L	160	192	140	175	63	28	60	100	255	370	12	20	191	155	114	114	8	50	31	7	M10	310	160	110	130	3,5	M8
112M	190	223	140	176,5	70	28	60	112	277	388	12	22	220	165	114	114	8	50	31	7	M10	328	160	110	130	3,5	M8
132S	216	260	140	180	89	38	80	132	328	460	12	28	258	190	134	134	10	70	41	8	M12	380	200	130	165	3,5	M10
132M	216	260	178	218	89	38	80	132	328	500	12	28	258	190	134	134	10	70	41	8	M12	420	200	130	165	3,5	M10
160M	254	318	210	267	108	42	110	160	403	610	15	30	310	243	185	185	12	90	45	8	M16	500	250	180	215	4	M12
160L	254	318	254	308	108	42	110	160	403	650	15	30	310	243	185	185	12	90	45	8	M16	540	250	180	215	4	M12
180M	279	350	241	291	121	48	110	180	440	720	13	38	352	260	185	185	14	90	51,5	9	M16	610	NA	NA	NA	NA	NA
180L	279	350	279	330	121	48	110	180	440	720	13	38	352	260	185	185	14	90	51,5	9	M16	610	NA	NA	NA	NA	NA

Motors IE2 & IE3 - Dimension

According to EN 60034-30-1; 2014 - aluminium execution



B5 (IMB5) Dimension in "mm"

Size	A	AB	B	BB	C	D	E	H	HD	L	K	Y	AC	AD	AF	AP	F	FB	GA	GD	DB	LB	P-B5	N-B5	M-B5	T-B5	S-B5	LA-B5
56M	90	108	71	91	36	9	20	56	168	188	6	11	115	112	93	93	3	15	10,2	3	M3	168	120	80	100	3	7	8
63M	100	120	80	106	40	11	23	63	176	210	7	12	123	113	93	93	4	15	12,5	4	M4	187	140	95	115	3	8,5	10
71M	112	136	90	108	45	14	30	71	196	245	8	12	141	125	93	93	5	20	16	5	M5	212	160	110	130	3	10	9,5
80M	125	155	100	126	50	19	40	80	219	279	10	17,5	158	139	114	114	6	30	21,5	6	M6	239	200	130	165	3,5	12	10,5
90S	140	170	100	129	56	24	50	90	234	315	10	17,5	176	144	114	114	8	40	27	7	M8	279	200	130	165	3	12	11,5
90L	140	170	125	155	56	24	50	90	234	330	10	17,5	176	144	114	114	8	40	27	7	M8	290	200	130	165	3	12	11,5
100L	160	192	140	175	63	28	60	100	255	370	12	20	191	155	114	114	8	50	31	7	M10	310	250	180	215	4	14,5	15
112M	190	223	140	176,5	70	28	60	112	277	388	12	22	220	165	114	114	8	50	31	7	M10	328	250	180	215	4	14,5	11,5
132S	216	260	140	180	89	38	80	132	328	460	12	28	258	190	134	134	10	70	41	8	M12	380	300	230	265	4	14	14
132M	216	260	178	218	89	38	80	132	328	500	12	28	258	190	134	134	10	70	41	8	M12	420	300	230	265	4	14	14
160M	254	318	210	267	108	42	110	160	403	610	15	30	310	243	185	185	12	90	45	8	M16	500	350	250	300	5	18,5	15
160L	254	318	254	308	108	42	110	160	403	650	15	30	310	243	185	185	12	90	45	8	M16	540	350	250	300	5	18,5	15
180M	279	350	241	291	121	48	110	180	440	720	13	38	352	260	185	185	14	90	51,5	9	M16	610	350	250	300	5	18,5	20
180L	279	350	279	330	121	48	110	180	440	720	13	38	352	260	185	185	14	90	51,5	9	M16	610	350	250	300	5	18,5	20

ELECTRIC MOTORS

Note

[illegible]

Note

[illegible]



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