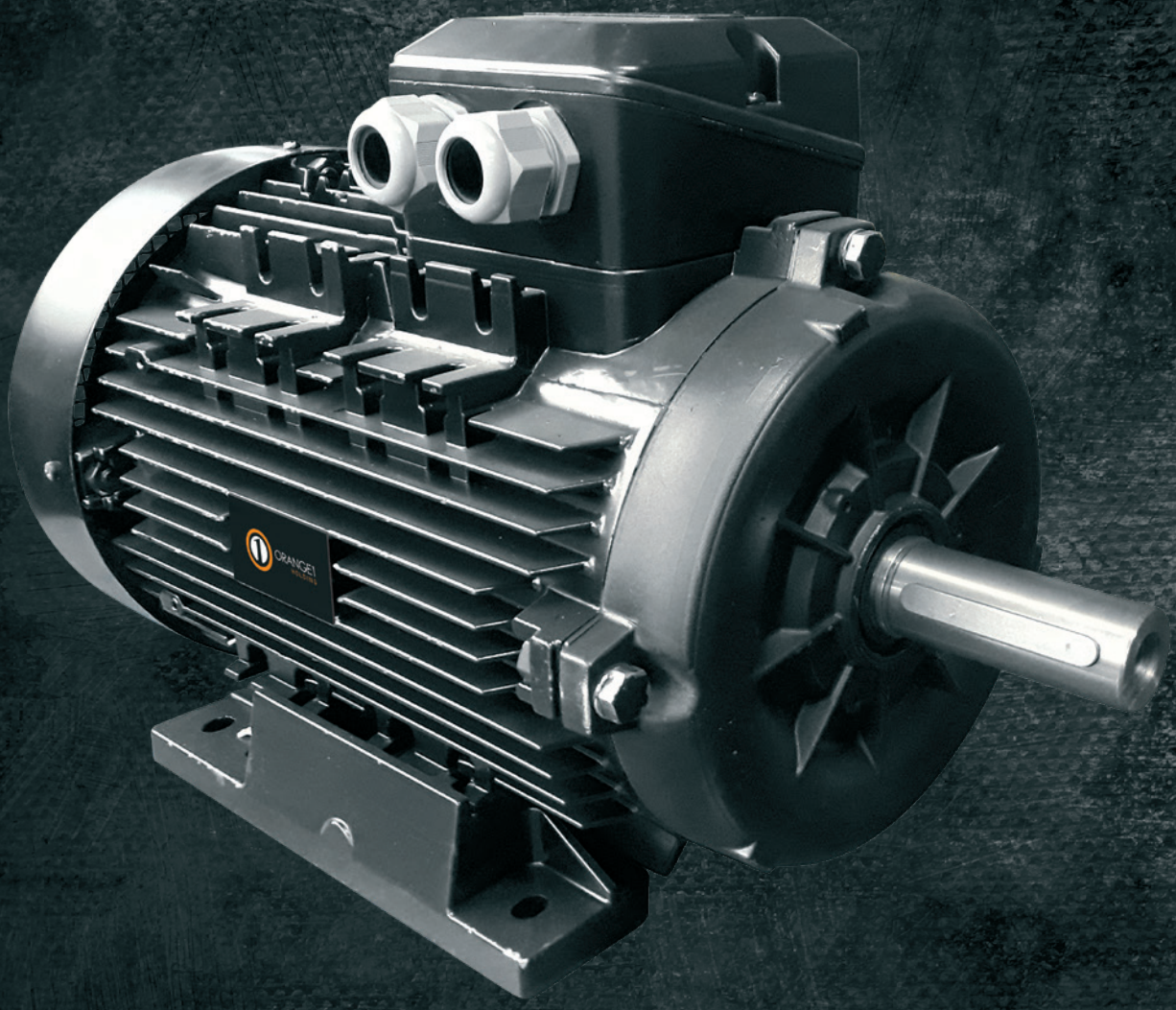
ORANGE1
ELECTRIC MOTORS



THREEPHASE IE3 MOTORS - HIGH POWER

Technical Datasheets

Member of
ORANGE1
HOLDING

Welcome to ORANGE1 World

Orange1 Holding is european leader in designing and manufacturing of Electric Motors, Windings, Aluminium Foundry and Turning Parts

A strong, dynamic and ambitious group.

Orange1 Holding is an international renown Group, one of the most important European manufacturer of single-phase and three-phase asynchronous electric motors, foundry and turning parts.

Present in over 70 countries the group annually produces over 1 million single-phase and three-phase asynchronous motors, 5 million windings for asynchronous motors, 60,000 drives for electric motors, 12.500 tons of die-cast aluminum and over 12 million high precision turning parts for the automotive sector.

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.

OUR PHILOSOPHY

CREATIVITY

We strongly believe that imagination is the engine that opens up new avenues for innovation. We take care of the details, we want to stand out for our originality, because we believe in the art of making the difference.

PASSION

We carry out our work with passion, because passion is the engine that moves the world. We work with dedication and joy, we believe in what we do, we believe that what we do is unique.

AUDACITY

Our goals are important and our projects ambitious; we are convinced that daring dreams are the indispensable fuel for the engine of doing.

SPEED

We are committed to riding the time and we must keep our beliefs. There is no room for hesitations, we move decisively between the gears of an increasingly complex market.

IE3 Motors

Motors efficiency - 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 EC Regulations 640/2009 and EC 4/2014, laying down rules for the application of directive 2005/32 / EC on the specific ecodesign requirements for electric motors. The European regulations define the obligatory dates for using motors with IE3 efficiency level. From 1 January 2017 all motors with power from 0.75kW to 375kW must guarantee IE3 level. From 1 January 2017 all motors with power from 0.75kW to 375kW, combined with a variable speed drive (VSD), must guarantee the IE2 level. The IE3 levels are established by law EN 60034-30-1; 2014 and the test method is established by law EN 60034-2-1; 2014.

Efficiency Level	IE3	IE3
Type and range	400V-50Hz HE 160÷ HE 315	460V-60Hz HE 160÷ HE 315 (on demand)
Reference standard	EN60034-30-1-2014	EN60034-30-1-2014
Reference standard: testing method	EN60034-2-1; 2007	EN60034-2-1; 2007

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)
- 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
- Texitle 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	160 -180 Aluminium; removable feet | 200÷315 Cast Iron
	Terminal box	Two components; possibility to rotate
	Fan cover	Steel zinc-platted
	Coating	Black (RAL9005)
	Thermal protection	PTO

IE3 Motors - Datasheet

According to EN 60034-30-1;2014

Single Speed - 2 poles - 3000rpm - 400V; 50Hz; S1

Thermal class F; temperature rise B

Type	Rated Power		Rated current at 400V	Rated speed	Rated Torque	efficency full load	efficency 3/4 load	efficency 1/2 load	Power factor	Starting current / Rated current	Starting torque /Rated torque	Breakdown torque Rated torque	Moment of inertia	Weight
	Pn		In	n	Mn	h	h	h	COS φ	Is/In	Ms /Mn	Mb/Mn	J	kg
	kW	HP	A	rpm	Nm	%	%	%					10^{-3} kgm²	
HE 160M A2	11,0	15	19,7	2960	35,5	91,2	92,0	90,7	0,88	6,5	2,3	2,9	46	66
HE 160M B2	15,0	20	26,9	2945	48,6	91,9	90,9	88,9	0,88	7,1	2,3	2,8	50	90
HE 160L D2	18,5	25	32,6	2950	59,7	92,4	91,8	90,3	0,91	8,8	2,8	3,5	56	97
HE 160L E2	22,0	30	40,2	2960	70,8	92,7	91,7	90,0	0,86	10,5	3,9	5,1	70	115
HE 180M A2	22,0	30	38,4	2960	71,1	92,7	92,6	92,2	0,90	7,0	2,4	3,1	75	130
HE 180L D2	30,0	40	53,0	2950	97,0	93,3	89,1	86,6	0,90	8,2	2,3	3,2	130	135
HE 200L A2	30,0	40	52,1	2960	97,0	93,3	88,6	86,0	0,93	10,8	3,4	4,2	150	225
HE 200L B2	37,0	50	63,7	2960	120,0	93,7	89,4	87,9	0,93	10,0	2,9	4,0	170	245
HE 225M A2	45,0	60	76,3	2955	145,4	94	92,1	91,1	0,92	6,8	2,2	3,0	260	360
HE 250M A2	55,0	74	92,0	2980	179,0	94,3	93,5	93,3	0,98	8,7	2,9	3,0	260	460
HE 280S A2	75,0	100	127,0	2980	240,0	94,7	94,0	93,5	0,90	8,0	2,9	3,2	620	550
HE 280M B2	90,0	120	148,0	2980	290,0	95,0	94,6	94,1	0,92	8,2	2,9	3,0	740	575
HE 315S A2	110,0	148	186,0	2980	355,0	95,2	94,8	94,0	0,90	8,0	2,5	3,0	1200	850
HE 315M B2	132,0	177	223,0	2980	425,0	95,4	94,7	93,9	0,90	8,0	2,4	3,5	1400	870
HE 315M C2	160,0	215	265,0	2980	511,0	95,6	95,0	94,5	0,91	8,0	2,5	3,0	1500	920
HE 315L D2	185,0	248	305,0	2985	595,0	95,8	95,1	94,3	0,92	7,5	2,5	2,8	1850	1060
HE 315L E2	200,0	268	325,0	2980	645,0	95,8	95,1	94,6	0,93	7,5	2,5	2,8	1800	1100

IE3 Motors - Datasheet

According to EN 60034-30-1;2014

Single Speed - 4 poles - 1500rpm - 400V; 50Hz; S1

Thermal class F; temperature rise B

Type	Rated Power		Rated current at 400V	Rated speed	Rated Torque	efficency full load	efficency 3/4 load	efficency 1/2 load	Power factor	Starting current / Rated current	Starting torque /Rated torque	Breakdown torque Rated torque	Moment of inertia	Weight
	Pn		In	n	Mn	h	h	h	COS φ	Is/In	Ms /Mn	Mb/Mn	J	kg
	kW	HP	A	rpm	Nm	%	%	%					10^{-3} kgm²	
HE 160M D4	11,0	15	21,5	1470	71,6	91,4	91,2	90,5	0,80	7,0	2,7	3,2	72	80
HE 160L E4	15,0	20	30,0	1470	97,5	92,1	92,1	91,1	0,79	7,9	3,1	3,6	92	115
HE 180M A4	18,5	25	35,0	1475	120,0	92,6	91,1	90,9	0,82	7,2	2,7	3,2	140	140
HE 180L D4	22,0	30	42,5	1470	143,0	93,0	92,8	92,0	0,80	8,3	3,1	3,5	170	160
HE 200LA4	30,0	40	52,8	1470	195,0	93,6	92,7	91,9	0,89	7,7	2,7	3,1	250	245
HE 225S A4	37,0	50	64,8	1470	240,2	93,9	93,6	93,2	0,88	7,5	2,5	3,5	360	355
HE 225M B4	45,0	60	79,0	1485	291,0	94,2	93,6	92,8	0,88	7,0	3,0	3,0	510	365
HE 250M B4	55,0	74	98,9	1478	355,0	94,6	94,0	93,0	0,86	8,3	2,6	2,6	780	460
HE 280S A4	75,0	100	133,0	1485	483,0	95,0	94,5	93,9	0,86	7,6	2,9	3,0	1110	565
HE 280M B4	90,0	120	158	1485	577,0	95,2	94,6	93,7	0,86	7,4	2,9	3,0	1320	650
HE 315S A4	110,0	148	192,0	1485	705,0	95,4	94,8	93,8	0,87	7,7	2,4	3,3	2500	865
HE 315M B4	132,0	177	230,0	1485	850,0	95,6	95,1	94,2	0,87	7,4	2,3	3,0	2800	955
HE 315M C4	160,0	215	275,0	1485	1025,0	95,8	95,0	94,6	0,88	6,9	2,2	2,9	3000	965
HE 315L D4	185,0	248	321,0	1485	1193,0	96,0	95,5	95,0	0,87	6,9	2,2	2,9	3100	1010
HE 315L E4	200,0	268	355,0	1485	1290,0	96,0	95,8	95,1	0,90	5,2	2,0	3,1	3300	1070

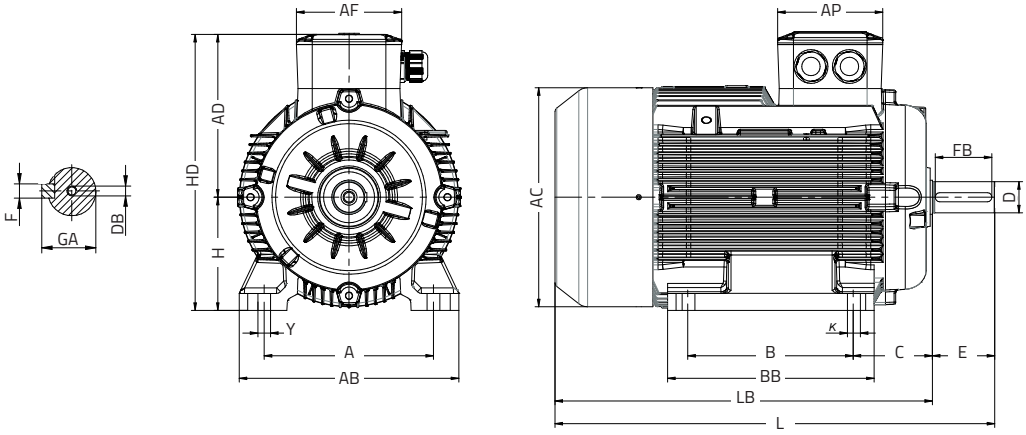
Single Speed - 6 poles - 1000rpm - 400V; 50Hz; S1

Thermal class F; temperature rise B

Type	Rated Power		Rated current at 400V	Rated speed	Rated Torque	efficency full load	efficency 3/4 load	efficency 1/2 load	Power factor	Starting current / Rated current	Starting torque /Rated torque	Breakdown torque Rated torque	Moment of inertia	Weight
	Pn		In	n	Mn	h	h	h	COS φ	Is/In	Ms /Mn	Mb/Mn	J	kg
	kW	HP	A	rpm	Nm	%	%	%					10^{-3} kgm²	
HE 160L D6	7,5	10	16,2	975	73,5	89,1	89,8	88,5	0,74	6,2	2,0	3,3	110	95
HE 160L E6	11,0	15	25,0	975	107,7	90,3	89,9	88,3	0,71	5,6	2,2	3,3	140	105
HE 180L D6	15,0	20	28,5	970	147,7	91,2	91,1	91,4	0,84	6,2	2,8	3,1	220	145
HE 200L A6	18,5	25	35,0	980	180,8	91,7	92,3	91,5	0,83	7,4	1,8	3,3	260	230
HE 200L B6	22,0	30	43,0	975	215,0	92,2	92,0	91,7	0,80	7,0	2,6	3,2	320	248
HE 225M A6	30,0	40	58,0	985	282,0	92,9	92,9	92,1	0,80	7,0	3,3	2,7	690	355
HE 250M A6	37,0	50	69,5	985	360,0	93,3	93,2	92,9	0,82	7,0	2,8	2,6	990	455
HE 280S A6	45,0	60	88,0	990	435,0	93,7	92,8	91,7	0,79	6,9	3,0	2,8	1500	535
HE 280M B6	55,0	74	107,0	990	530,0	94,1	93,5	92,6	0,79	7,3	3,3	3,2	1700	585
HE 315S A6	75,0	100	140,0	990	720,0	94,6	93,7	93,0	0,82	7,2	2,7	3,0	2900	840
HE 315M B6	90,0	120	166,0	990	865,0	94,9	94,0	93,3	0,83	7,2	2,7	3,0	3500	882
HE 315M C6	110,0	148	200,0	991	1060,0	95,1	94,6	93,5	0,84	7,2	2,7	3,0	4200	930
HE 315L D6	132,0	177	235,0	985	1285,0	95,4	94,9	94,0	0,86	7,2	2,5	2,8	5500	955
HE 315L E6	160,0	215	285,0	990	1545,0	95,6	95,1	94,8	0,83	7,0	2,4	3,2	6800	1100

IE3 Motors - Dimension

Aluminium execution: 160-180 | Cast Iron execution: 200÷315



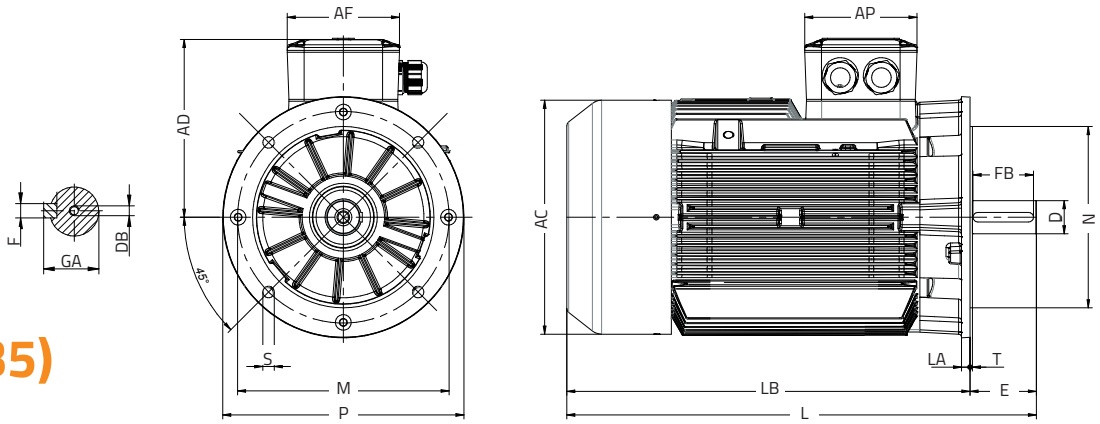
B3 (IM B3)

Dimensions in mm

Type	A	AB	B	BB	C	D	E	H	HD	L	K	Y	AC	AD	AF	AP	F	FB	GA	DB	LB
160M-L (Short)	254	305.5	210	308	108	42	110	160	398	596	15	19	313.5	238	165	165	12	90	45	M16	486
160M-L (Long)	254	305.5	254	308	108	42	110	160	398	660	15	19	313.5	238	165	165	12	90	45	M16	550
180M	279	338.5	241	334	121	48	110	180	440	744	15	17	357	260	165	165	14	90	51,5	M16	634
180L	279	338.5	279	334	121	48	110	180	440	744	15	17	357	260	165	165	14	90	51,5	M16	634
200L	318	388	305	365	133	55	110	200	484	777	19	19	386.5	284	185.5	185.5	16	90	59	M20	667
225S (2 poles)	356	438	286	369	149	55	110	225	538	795	19	24	432.5	313	186	186	16	100	59	M20	685
225S (4-6 poles)	356	438	286	369	149	60	140	225	538	825	19	24	432.5	313	186	186	18	125	64	M20	685
225M (2 poles)	356	438	311	369	149	55	110	225	538	795	19	24	432.5	313	186	186	16	100	59	M20	685
225M (4-6 poles)	356	438	311	369	149	60	140	225	538	825	19	24	432.5	313	186	186	18	125	64	M20	685
250 M (2 poles)	406	486	349	412.5	168	60	140	250	587	855	24	30	480	337	198	198	18	125	64	M20	715
250 M (4-6 poles)	406	486	349	412.5	168	65	140	250	587	855	24	30	480	337	198	198	18	125	69	M20	715
280 S (2 poles)	457	550	368	505	190	65	140	280	678	972	24	25	547,5	398	259	259	18	125	69	M20	832
280 S (4-6 poles)	457	550	368	505	190	75	140	280	678	972	24	25	547,5	398	259	259	20	125	79,5	M20	832
280 M (2 poles)	457	550	419	505	190	65	140	280	678	972	24	25	547,5	398	259	259	18	125	69	M20	832
280 M (4-6 poles)	457	550	419	505	190	75	140	280	678	972	24	25	547,5	398	259	259	20	125	79,5	M20	832
315 S (2 poles)	508	610	406	574	216	65	140	315	800	1080	28	43	627	485	330	330	18	125	69	M20	940
315 S (4-6 poles)	508	610	406	574	216	85	170	315	800	1110	28	43	627	485	330	330	22	140	90	M20	940
315M A2 (2 poles)	508	610	457	574	216	65	140	315	800	1080	28	43	627	485	330	330	18	125	69	M20	940
315M A4-A6(4-6 poles)	508	610	457	574	216	85	170	315	800	1110	28	43	627	485	330	330	22	140	90	M20	940
315M B2(2 poles)	508	610	457	625	216	65	140	315	800	1200	28	43	627	485	330	330	18	125	69	M20	1060
315M B4-B6(4-6 poles)	508	610	457	625	216	85	170	315	800	1230	28	43	627	485	330	330	22	140	90	M20	1060
315 L (2 poles)	508	610	508	625	216	65	140	315	800	1200	28	43	627	485	330	330	18	125	69	M20	1060
315 L (4-6 poles)	508	610	508	625	216	85	170	315	800	1230	28	43	627	485	330	330	22	140	90	M20	1060

IE3 Motors - Dimension

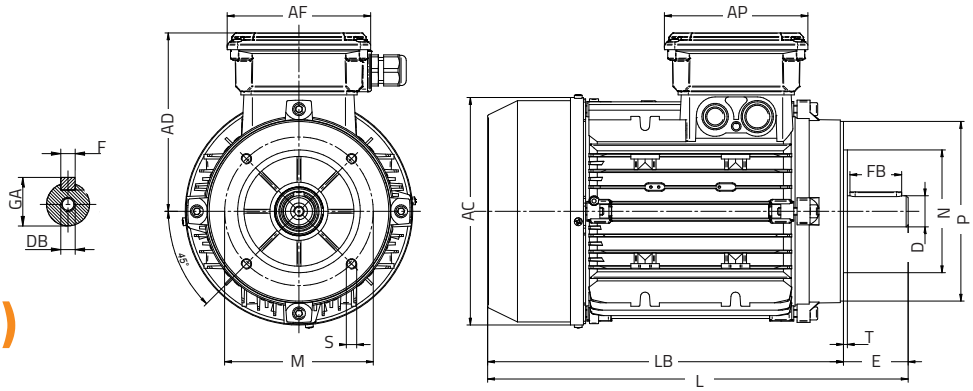
Aluminium execution: 160-180 | Cast Iron execution: 200÷315



B5 (IM B5)

Dimensions in mm

Type	A	AB	B	BB	C	D	E	H	HD	L	K	Y	AC	AD	AF	AP	F	FB	GA	DB	LB	P-B5	N-B5	M-B5	T-B5	S-B5	LA-B5
160M-L (Short)	254	305.5	210	308	108	42	110	160	398	596	15	19	313.5	238	165	165	12	90	45	M16	486	350	250	300	5	19x4	13
160M-L (Long)	254	305.5	254	308	108	42	110	160	398	660	15	19	313.5	238	165	165	12	90	45	M16	550	350	250	300	5	19x4	13
180M	279	338.5	241	334	121	48	110	180	440	744	15	17	357	260	165	165	14	90	51,5	M16	634	350	250	300	5	19x4	13
180L	279	338.5	279	334	121	48	110	180	440	744	15	17	357	260	165	165	14	90	51,5	M16	634	350	250	300	5	19x4	13
200L	318	388	305	365	133	55	110	200	484	777	19	19	386.5	284	185.5	185.5	16	90	59	M20	667	400	300	350	5	19x4	15
225S (2 poles)	356	438	286	369	149	55	110	225	538	795	19	24	432.5	313	186	186	16	100	59	M20	685	450	350	400	5	19x8	16
225S (4-6 poles)	356	438	286	369	149	60	140	225	538	825	19	24	432.5	313	186	186	18	125	64	M20	685	450	350	400	5	19x8	16
225M (2 poles)	356	438	311	369	149	55	110	225	538	795	19	24	432.5	313	186	186	16	100	59	M20	685	450	350	400	5	19x8	16
225M (4-6 poles)	356	438	311	369	149	60	140	225	538	825	19	24	432.5	313	186	186	18	125	64	M20	685	450	350	400	5	19x8	16
250 M (2 poles)	406	486	349	412.5	168	60	140	250	587	855	24	30	480	337	198	198	18	125	64	M20	715	550	450	500	5	19x8	18
250 M (4-6 poles)	406	486	349	412.5	168	65	140	250	587	855	24	30	480	337	198	198	18	125	69	M20	715	550	450	500	5	19x8	18
280 S (2 poles)	457	550	368	505	190	65	140	280	678	972	24	25	547,5	398	259	259	18	125	69	M20	832	550	450	500	5	19x8	18
280 S (4-6 poles)	457	550	368	505	190	75	140	280	678	972	24	25	547,5	398	259	259	20	125	79,5	M20	832	550	450	500	5	19x8	18
280 M (2 poles)	457	550	419	505	190	65	140	280	678	972	24	25	547,5	398	259	259	18	125	69	M20	832	550	450	500	5	19x8	18
280 M (4-6 poles)	457	550	419	505	190	75	140	280	678	972	24	25	547,5	398	259	259	20	125	79,5	M20	832	550	450	500	5	19x8	18
315 S (2 poles)	508	610	406	574	216	65	140	315	800	1080	28	43	627	485	330	330	18	125	69	M20	940	660	550	600	6	24x8	22
315 S (4-6 poles)	508	610	406	574	216	85	170	315	800	1110	28	43	627	485	330	330	22	140	90	M20	940	660	550	600	6	24x8	22
315M A2 (2 poles)	508	610	457	574	216	65	140	315	800	1080	28	43	627	485	330	330	18	125	69	M20	940	660	550	600	6	24x8	22
315M A4-A6 (4-6 poles)	508	610	457	574	216	85	170	315	800	1110	28	43	627	485	330	330	22	140	90	M20	940	660	550	600	6	24x8	22
315M B2 (2 poles)	508	610	457	625	216	65	140	315	800	1200	28	43	627	485	330	330	18	125	69	M20	1060	660	550	600	6	24x8	22
315M B4-B6 (4-6 poles)	508	610	457	625	216	85	170	315	800	1230	28	43	627	485	330	330	22	140	90	M20	1060	660	550	600	6	24x8	22
315 L (2 poles)	508	610	508	625	216	65	140	315	800	1200	28	43	627	485	330	330	18	125	69	M20	1060	660	550	600	6	24x8	22
315 L (4-6 poles)	508	610	508	625	216	85	170	315	800	1230	28	43	627	485	330	330	22	140	90	M20	1060	660	550	600	6	24x8	22



B14 (IM B14)

Dimensions in mm

Type	A	AB	B	BB	C	D	E	H	HD	L	K	Y	AC	AD	AF	AP	F	FB	GA	DB	LB	P-B14	N-B14	M-B14	T-B14	S-B14
160M-L (Short)	254	305.5	210	308	108	42	110	160	398	596	15	19	313.5	238	165	165	12	90	45	M16	486	200	130	165	3,5	M10
160M-L (Long)	254	305.5	254	308	108	42	110	160	398	660	15	19	313.5	238	165	165	12	90	45	M16	550	200	130	165	3,5	M10
180M	279	338.5	241	334	121	48	110	180	440	744	15	17	357	260	165	165	14	90	51,5	M16	634	250	180	215	4	M12
180L	279	338.5	279	334	121	48	110	180	440	744	15	17	357	260	165	165	14	90	51,5	M16	634	250	180	215	4	M12

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ELECTRIC MOTORS

info@orange1.eu
www.orange1.eu

ORANGE1 ELECTRIC MOTORS
Production plants
Via Angelo Messedaglia 4
32030 - Arsiè (BL) - Italy
T. +39 0439 750067

Via A. Grandi 23
47030 - San Mauro Pascoli (FC) - Italy
T. +39 0541 815611

Via Mantova nr. 93
43122 Parma (PR) - Italy
T. +39 0521 272383

Member of ORANGE1 HOLDING

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