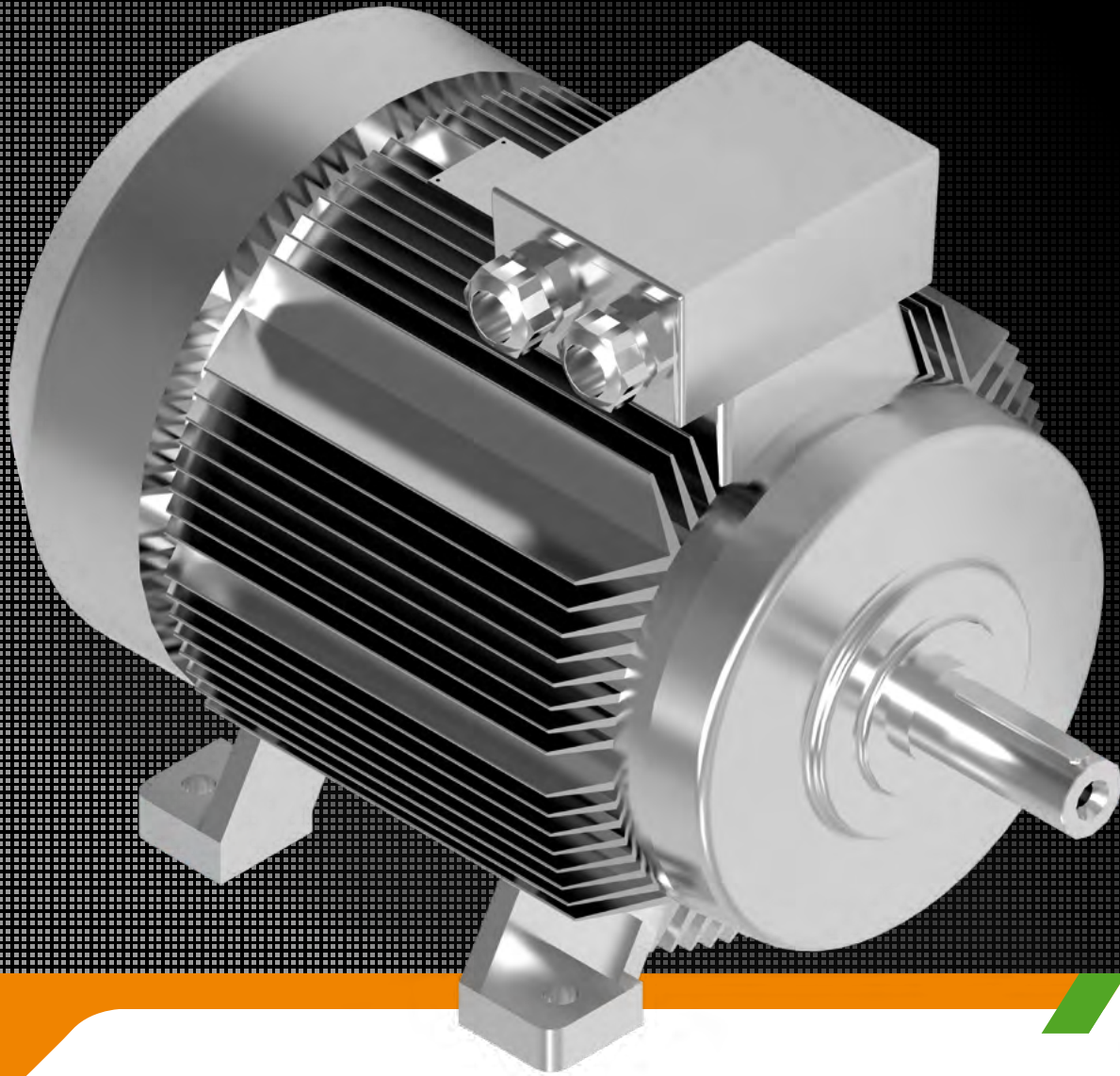




ORANGE1  
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# IE3 Motors High Power

Technical Datasheets

EN



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### **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 with an annual turnover of approx 235 million euro and more than 1600 workers in 15 production facilities. 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.



# 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 250	460V-60Hz HE 160÷ HE 250 (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)
- Motors with VFD mounted (EiM range)
- Customised execution (shaft, flange, IP, aggressive environments)
- Thermal class H (high ambient temperature)
- Without fan (IC410/TENV) or forced ventilated (IC416/TEFV).

## Application sectors

Considering 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	160 -180 Aluminium; removable feet   200÷250 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	Efficiency full load	efficiency 3/4 load	efficiency 1/2 load	Power Factor	Starting Current Rated current	Starting Torque Rated torque	Breakdown Torque Rated torque	Moment of inertia	Weight
	P <sub>n</sub>	I <sub>n</sub>	n	M <sub>n</sub>	η			COS φ	I <sub>s</sub> /I <sub>n</sub>	M <sub>s</sub> /M <sub>n</sub>	M <sub>b</sub> /M <sub>n</sub>	J	kg
	kW	A	rpm	Nm	%							10 <sup>-3</sup> kgm <sup>2</sup>	
HE 160M A2	11,0	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	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	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	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	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	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	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	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	76,3	2955	145,4	94,0	92,1	91,1	0,92	6,8	2,2	3,0	260	360
HE 250M A2	55,0	92,0	2980	179,0	94,3	93,5	93,3	0,98	8,7	2,9	3,0	260	460

# 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	efficiency 3/4 load	efficiency 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	η			COS φ	Is/In	Ms /Mn	Mb/Mn	J	kg
	kW	A	rpm	Nm	%							10 <sup>-3</sup> kgm <sup>2</sup>	
HE 160M D4	11,0	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	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	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	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	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	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	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	98,9	1478	355,0	94,6	94,0	93,0	0,86	8,3	2,6	2,6	780	460

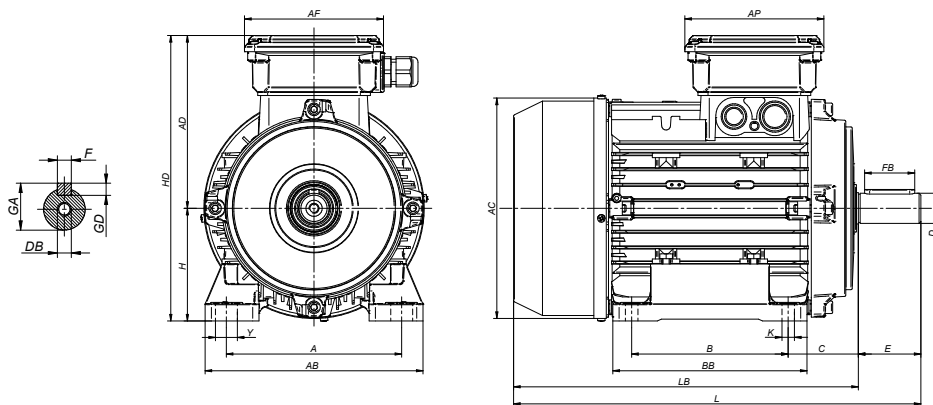
## Single Speed - 6 poles - 1000rpm - 400V; 50Hz; S1

Thermal class F; temperature rise B

Type	Rated Power	Rated current at 400V	Rated speed	Rated Torque	Efficency full load	efficiency 3/4 load	efficiency 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	η			COS φ	Is/In	Ms /Mn	Mb/Mn	J	kg
	kW	A	rpm	Nm	%							10 <sup>-3</sup> kgm <sup>2</sup>	
HE 160L D6	7,5	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	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	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	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	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	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	69,5	985	360,0	93,3	93,2	92,9	0,82	7,0	2,8	2,6	990	455

# IE3 Motors - Dimension

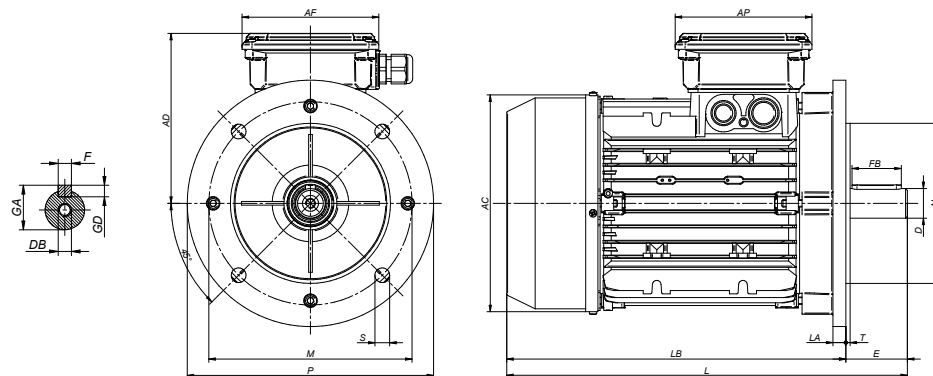
Aluminium execution: 160-180 | Cast Iron execution: 200-250



## B3 (IM B3)

Type	A	AB	B	BB	C	D	E	H	HD	L	K	Y	AC	AD	AF	AP	F	FB	GA	GD	DB	LB
160M-L (Short)	254	305.5	210-254	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	210-254	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	18	100	64	-	M20	685
225S (4-6 poles)	356	438	286	369	149	60	140	225	538	825	19	24	432.5	313	186	186	16	125	59	-	M20	685
225 M (2 poles)	356	438	311	369	149	55	110	225	538	795	19	24	432.5	313	186	186	18	100	64	-	M20	685
225 M (4-6 poles)	356	438	311	369	149	60	140	225	538	825	19	24	432.5	313	186	186	16	125	59	-	M20	685
250 M (2 poles)	406	486	349	412.5	168	60	140	250	587	855	25	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	25	30	480	337	198	198	18	125	69	-	M20	715

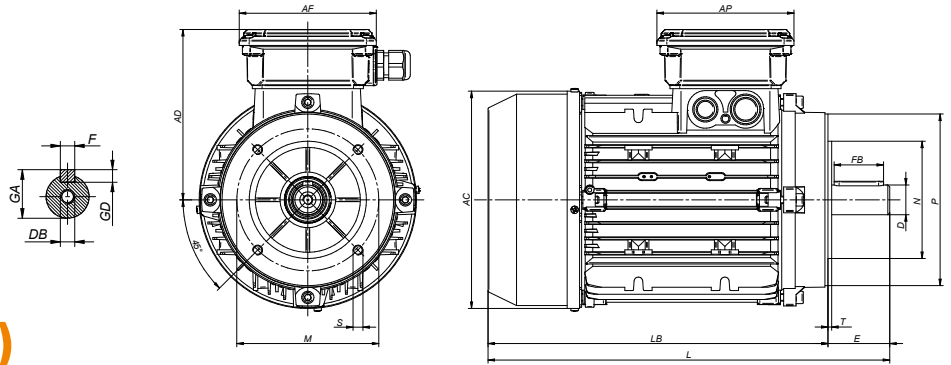
## B5 (IM B5)



Type	A	AB	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
160M-L (Short)	254	305.5	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	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	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	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	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	369	149	55	110	225	538	795	19	24	432.5	313	186	186	18	100	64	-	M20	685	450	350	400	5	19x8	16
225S (4-6 poles)	356	438	369	149	60	140	225	538	825	19	24	432.5	313	186	186	16	125	59	-	M20	685	450	350	400	5	19x8	16
225 M (2 poles)	356	438	369	149	55	110	225	538	795	19	24	432.5	313	186	186	18	100	64	-	M20	685	450	350	400	5	19x8	16
225 M (4-6 poles)	356	438	369	149	60	140	225	538	825	19	24	432.5	313	186	186	16	125	59	-	M20	685	450	350	400	5	19x8	16
250 M (2 poles)	406	486	412.5	168	60	140	250	587	855	25	30	480	337	198	198	18	125	64	-	M20	715	550	450	500	5	19x8	18
250 M (4-6 poles)	406	486	412.5	168	65	140	250	587	855	25	30	480	337	198	198	18	125	69	-	M20	715	550	450	500	5	19x8	18

# IE3 Motors - Dimension

Aluminium execution: 160-180 | Cast Iron execution: 200-250



## B14 (IM B14)

Type	A	AB	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
<b>160M-L (Short)</b>	254	305.5	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
<b>160M-L (Long)</b>	254	305.5	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
<b>180M</b>	279	338.5	334	121	48	110	180	440	744	15	17	357	260	165	165	14	90	51,5	-	M16	634	250	180	215	4	M12
<b>180L</b>	279	338.5	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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