



High Efficiency IE4 Motors - ECOPM



ECOPM Synchronous Motors the High efficiency makes them compatible with current and future Energy saving regulations.

Their efficiency classification exceeds the standard defined by 60034-30-2 regulation as IE4 premium.

ECOPM motors can only be fed by inverter

- Rare earth magnets for high temperature
- **8 poles** construction, Sinusoidal Bemf
- Integrated Thermal Protection with PTC
- Sensorless, standard version self-ventilated
- Standard IEC housing, B3 B5 and B14 shape
- Compact design, reduced weight
- High efficiency, low losses
- Silent, high protection degree

ECO5 1500rpm – DCBus 560Vdc

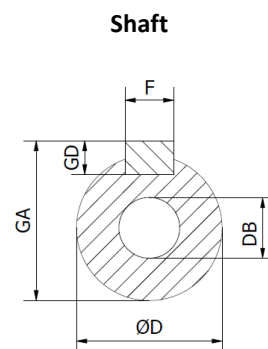
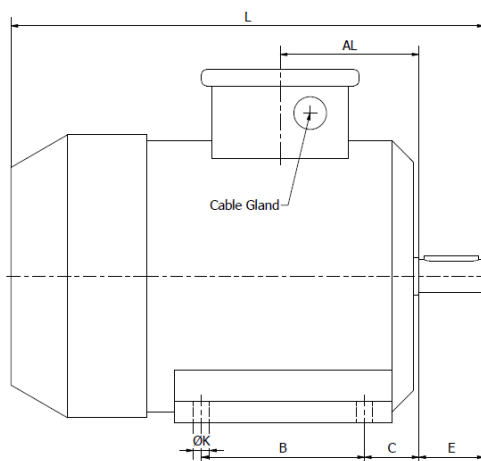
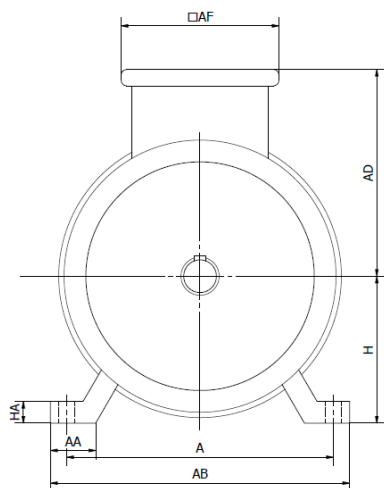
Frame & Stack			56		71		90		112	
Description			A	B	A	B	A	B	A	B
Rated Power	P _n	kW	0,25	0,5	0,65	1,3	1,5	3	5	10
Rated Speed	N _n	rpm	1500							
Rated Torque	M _n	Nm	1,6	3,2	4,1	8,3	9,7	19,2	31,7	64,0
Rated Current	I _n	A	0,7	1,4	1,5	2,9	3,6	6,5	9,2	18,1
Rated Efficiency	η _n	%	76,2	82,3	83,9	86,5	87,1	89,7	91	92,6
Efficiency Class	-	-	IE4	IE4	IE4	IE4	IE4	IE4	IE4	IE4
Stall Torque	M _o	Nm	2	4	5	10	13	25	34	64
Stall Current	I _o	A	0,7	1,4	1,5	2,9	3,6	7,2	9,2	18,1
Peak Torque	M _{pk}	Nm	5,2	10	14	26	35	64	72	130
Peak Current	I _{pk}	A	2,1	4,1	5,1	9,1	12	22	23	41
Mass	m	Kg	2,6	3,5	5,1	7,3	10,2	14,8	21	32
Rotor Inertia	J _r	Kg cm ²	0,9	1,7	4,5	8,5	20	40	90	170

ECO5 3000rpm – DCBus 560Vdc

Frame & Stack			56		71		90		112	
Description			A	B	A	B	A	B	A	B
Rated Power	P _n	kW	0,55	1,1	1,5	3	3,5	7	8	16
Rated Speed	N _n	rpm	3000							
Rated Torque	M _n	Nm	1,8	3,5	4,8	9,5	11,1	22,3	25,5	51,0
Rated Current	I _n	A	1,1	2,2	2,9	5,7	7,3	14,3	18,4	33,0
Rated Efficiency	η _n	%	81	84,5	85,8	88,5	88,9	91	91,3	92,9
Efficiency Class	-	-	IE4	IE4	IE4	IE4	IE4	IE4	IE4	IE4
Stall Torque	M _o	Nm	2	4	5	10	13	25	34	68
Stall Current	I _o	A	1,1	2,2	2,9	5,7	7,3	14,3	18,4	38,1
Peak Torque	M _{pk}	Nm	5,2	10	14	26	35	64	72	130
Peak Current	I _{pk}	A	3,4	6,5	9,3	17	24	43	46	87
Mass	m	Kg	2,6	3,5	5,1	7,3	10,2	14,8	21	32
Rotor Inertia	J _r	Kg cm ²	0,9	1,7	4,5	8,5	20	40	90	170

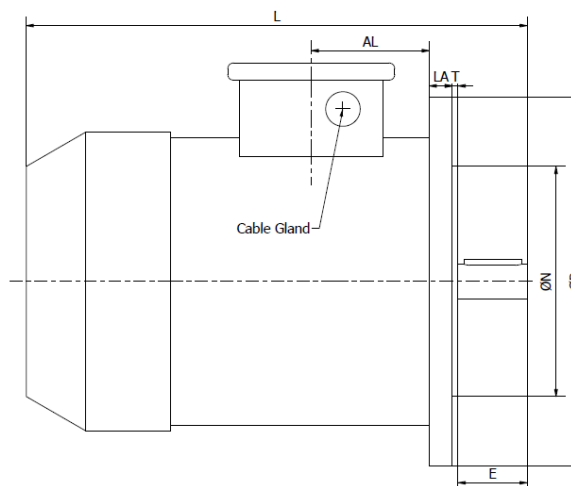
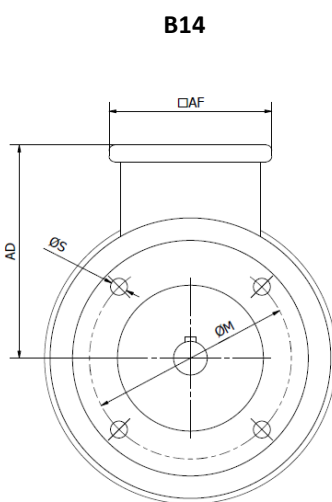
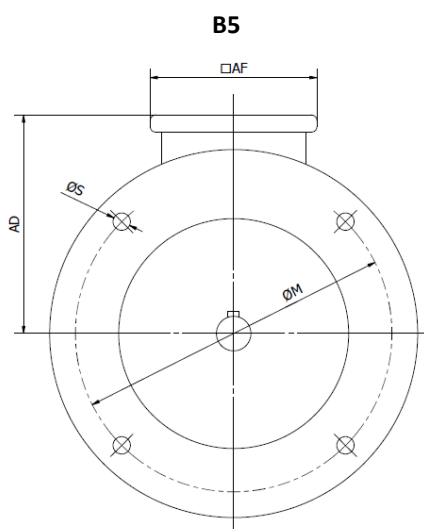
*PWM switching frequency 8kHz

Feet Mounting Dimensions (B3)



Frame	A	AA	AB	AD	AF	AL	B	C	H	HA	K	L	D	DB	E	F	GA	GD
56	90	20	110	102	100	50	71	36	56	9	9	188	14 j6	M5x15	30	5	16	5
71	112	24	136	115,5	100	58	90	45	71	11	7	249,7	19 j6	M6x16	40	6	21,5	6
90	140	34	174	137,8	115	68	100	56	90	14	10	297	24 j6	M8x15	50	8	27	7
112	190	34	224	160,8	115	72,5	140	70	112	14	12,5	387,5	28 j6	M10x22	60	8	31	7

Flange Mounting Dimensions (B5 & B14)



B5	Frame	AD	AF	AL	LA	L	M	N	P	S	T	D	DB	E	F	GA	GD
	56	102	100	50	8,3	195	100	80 j6	120	7	3	14 j6	M5x15	30	5	16	5
	71	115,5	100	58	9,3	249,7	130	110 j6	160	10	3,5	19 j6	M6x16	40	6	21,5	6
	90	137,8	115	68	10	297	165	130 j6	200	12	3,5	24 j6	M8x15	50	8	27	7
	112	160,8	115	72,5	15	387,5	215	180 j6	250	15	4	28 j6	M10x22	60	8	31	7

B14	Frame	AD	AF	AL	L	M	N	P	S	T	D	DB	E	F	GA	GD
	56	102	100	54,5	188	65	50 j6	80	M5	2,5	14 j6	M5x15	30	5	16	5
	71	115,5	100	67,5	249,7	85	70j6	105	M6	2,5	19 j6	M6x16	40	6	21,5	6
	90	137,8	115	78	298	115	95 j6	140	M8	3	24 j6	M8x15	50	8	27	7
	112	160,8	115	87,5	387,5	130	110 j6	160	M8	3,5	28 j6	M10x22	60	8	31	7

Data shown on this catalogue are referred to the following conditions:

- Room Temperature max 40° C
- Room Temperature min. 0° C
- Altitude max 1000 m asl
- F insulation class, F and H insulating
- Rms value
- B3-B5-B14 construction shape
- IP55 protection (shaft IP54)
- Values tolerance ±10%
- Overtemperature max 100K
- 8 poles motors. Only with inverter

Data of this catalogue may be changed without notice.

Nomenclature Breakdown

1	2	3	4	5	6	7	8	9	10	11	12	13	14
E	C	O	5	1	1	2	B	2	1	A	1	x	x

POS. DESCRIPTION

1-3 **Product**
ECOPM: Permanent Magnet Synchronous Motor SPMSM

4 **Motor Type**
5=SPM

5-6-7 **Motor Frame Size**
Available frames 56, 71, 90, 112

8 **Motor Stack Length**

9 **Voltage**
1= DC bus 320 V
2= DC bus 560 V

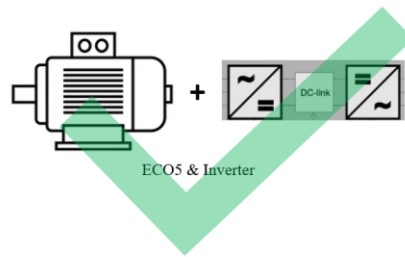
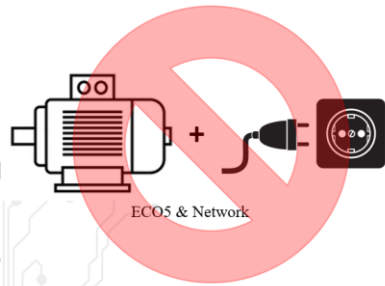
10 **Speed**
1= 1.000 rpm*
2= 1.500 rpm
4= 2.000 rpm*
6= 3.000 rpm
8= 4.000 rpm*
**special version*

11 **Ventilation**
A= self ventilated
0= without ventilation

12 **Motor Type**
1= B3/B14 terminal board cover at the top
2= B5 shape
3= B3, terminal board cover at the top
4= B14 shape
5= B3/B5 terminal board cover at the top

13-14 **Special version**
xx = custom configuration

On request, TTL encoder Kit Available



IMPORTANT: Our **ECOPM** ECO5 Synchronous Motors are not suitable to be directly connected to the supply mains. Their operation is expected only in combination with an inverter. The inverter chosen must be able to drive a PMSM motor without feedback (function sensorless PMSM). On the market there are some types of inverters able to perform this function very well. Not all inverters are suitable for this function. It's very important to carefully match the combination motor-inverter-load. Our technical department is at your disposal for more detailed information.

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ISD : E220486

