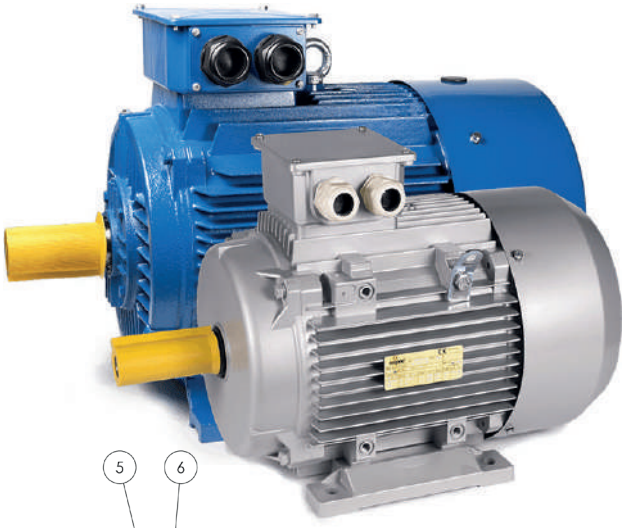
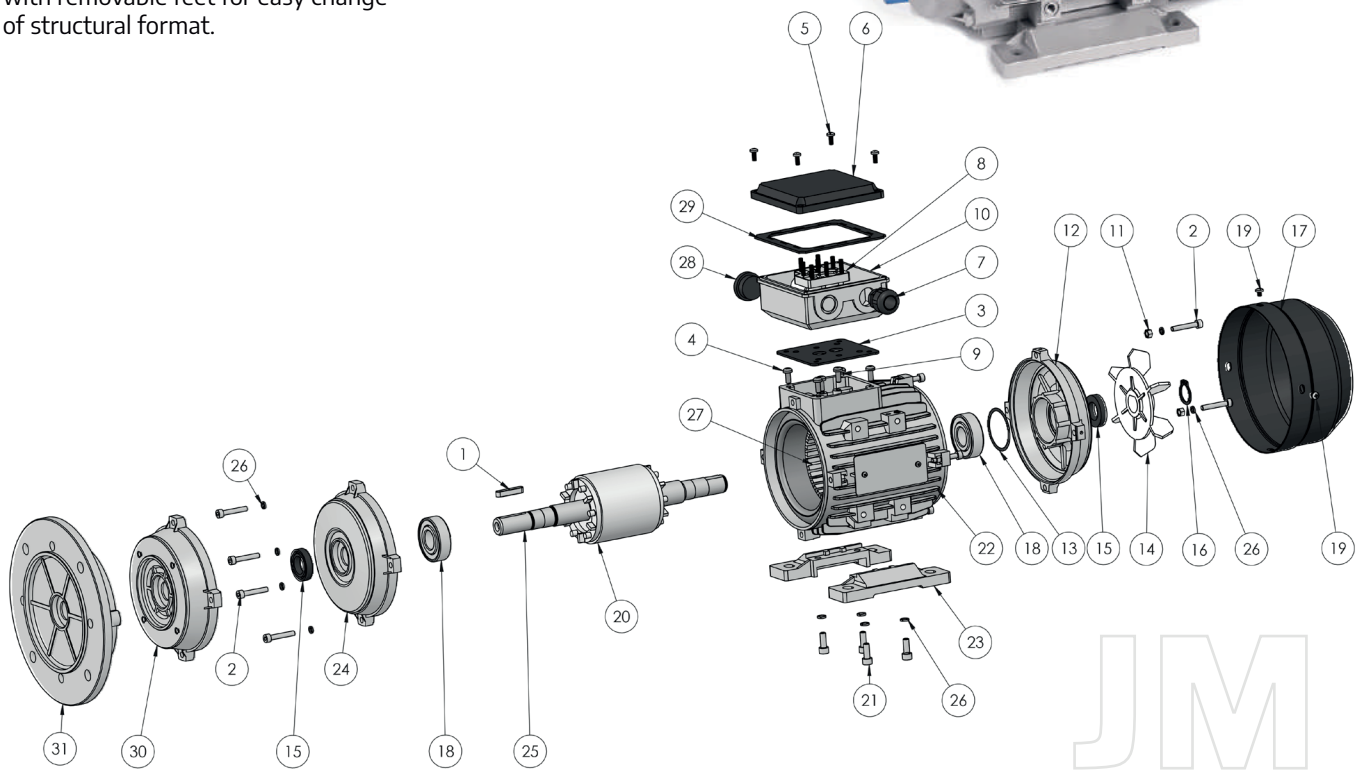
JM-GM
THREE-PHASE MOTORS
IE1

6 JM-GM THREE-PHASE MOTORS

6.1 COMPONENTS

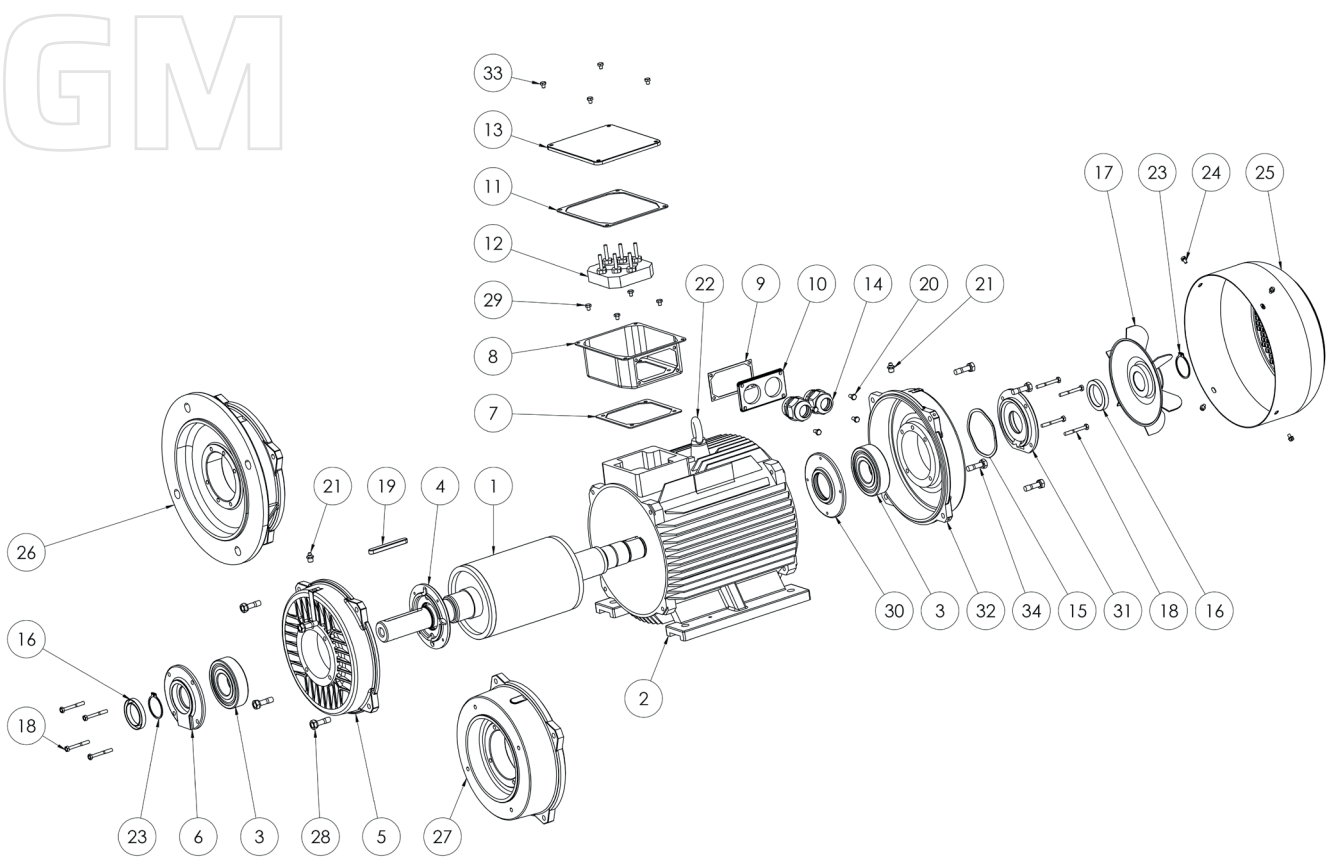


JM SERIES
JM Motors Series size 56 TO 160, in aluminium, with removable feet for easy change of structural format.



1) Key
2) Tie-rod
3) Terminal box gasket
4) Terminal box locking screw
5) Terminal board cover locking screw
6) Terminal board cover
7) Cable gland
8) Terminal board
9) Terminal board locking screw
10) Terminal box
11) Nut
12) Shield B3 side opposite control
13) Preload spring
14) Fan
15) Sealing ring
16) Safety flexible ring
17) Fan cover
18) Bearings
19) Fan cover locking screw
20) Rotor
21) Feet fastening screw for IMB3
22) Housing
23) Foot for IMB3
24) Shield on control side for IMB3
25) Shaft
26) Washer
27) Stator
28) Plug
29) Terminal box cover gasket
30) Flange IMB14
31) Flange IMB5

GM SERIES
GM series motors size 160 to 450, in cast iron,
with fused feet.



1) Shaft with rotor
2) Housing
3) Bearing
4) Control side bearing locking internal flange
5) Shield on control side
6) Control side bearing locking external flange
7) Terminal box gasket
8) Terminal box
9) Terminal box tab gasket
10) Terminal box tab
11) Terminal box cover gasket
12) Terminal board
13) Terminal box cover
14) Cable gland
15) Preload spring
16) Sealing ring
17) Fan
18) Bearing locking external flange fastening screw
19) Key
20) Terminal box tab screw
21) Greaser
22) Lifting eyebolts
23) Safety flexible ring
24) Locking screw
25) Fan cover
26) Flange IMB5
27) Flange IMB14 (size Gm 160 only)
28) Shield locking screw IMB3 on control side
29) Terminal box locking screw
30) Side opposite control bearing locking internal flange
31) Side opposite control bearing locking external flange
32) Shield on side opposite control IMB3
33) Terminal box cover locking screw
34) Shield locking screw IMB3 on side opposite control

• 6.2 ELECTRICAL CONNECTIONS

Single-speed three-phase motor windings can be connected star or delta.

The delta connection is obtained by connecting the end of a phase with the beginning of the next phase.
The phase current I_{ph} and the phase voltage U_{ph} are respectively:
$I_{ph} = I_n / \sqrt{3}$; $U_{ph} = U_n$

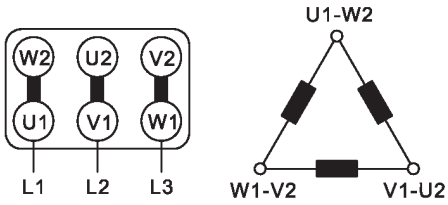
Where I_n is the line current and U_n the voltage relating to the delta connection.

The star connection is obtained by connecting W2, U2 and V2 and powering U1, V1, W1.
The phase current I_{ph} and the phase voltage U_{ph} are respectively:
$I_{ph} = I_n$; $U_{ph} = Un / \sqrt{3}$

Where I_n e U_n refers to the star connection.

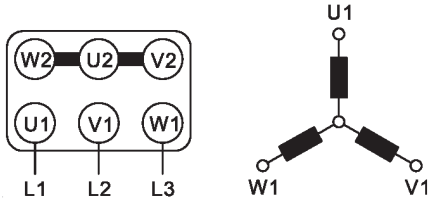
■ **MINIMUM VOLTAGE**
DELTA CONNECTION

Δ



■ **MAXIMUM VOLTAGE**
STAR CONNECTION

Y



Starting of the star-triangle motor allows reduced inrush current by reducing the starting torque, and can therefore only be implemented if the obtained starting torque is higher than the resistant torque.

The inrush current of an asynchronous motor is directly proportional to the square of the voltage, therefore the motors whose nominal delta voltage corresponds to the mains voltage can be started with the star-triangle method

THREE-PHASE ASYNCHRONOUS
IE1 JM-GM MOTORS

Size	JM
56 ~ 160	

Size	GM
160 ~ 450	

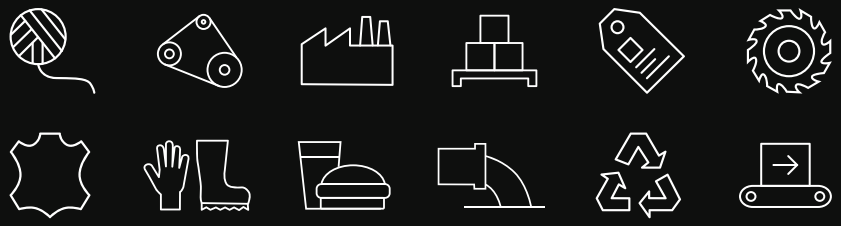
Power	JM
0.09 ~ 18.5 kW	

Power	GM
11 ~ 1000 kW	

Polarity	JM
2, 4, 6, 8 poles	

Polarity	GM
2, 4, 6, 8 poles	

Sectors of use



6.13 IE1 MOTORS

6.14 JM ELECTRICAL DATA

All motors in this section of the catalogue are exclusively intended for export outside the European Economic Area.
Therefore, the sale of the aforementioned motors by Seipee is made under the sole responsibility of the buyer who assumes all legal obligations that result from completely exempting Seipee from any direct or indirect liability according to current legislation.

JM 2 POLES SERIES **Tab. 6.14.1**

IE1	JM Motor	Poles	P_N kW	n_N min^{-1}	T_N Nm	$I_{N\,(400\,V)}$ A	COSφ 100%	η 100%	I_S/I_N	T_s/T_N	T_{max}/T_N	J Kg m^2	Weight Kg
Δ/Y 230/400V 50Hz	**56 a**	**2**	**0,09**	2670	0,32	0,34	0,66	58,0	3,4	2,3	2,7	0,00012	3
	56 b	**2**	**0,12**	2720	0,42	0,44	0,67	59,0	3,5	2,4	2,8	0,00015	3,6
	63 a	**2**	**0,18**	2720	0,63	0,5	0,80	65,0	4,2	2,9	3,1	0,00020	4,5
	63 b	**2**	**0,25**	2720	0,88	0,66	0,81	68,0	4,5	2,8	2,9	0,00028	4,9
	63 c*	**2**	**0,37**	2740	1,29	0,94	0,81	70,0	4,1	2,9	3,0	0,00033	5,3
	71 a	**2**	**0,37**	2740	1,29	0,94	0,81	70,0	5,4	2.9	3,1	0,00042	6
	71 b	**2**	**0,55**	2740	1,92	1,33	0,82	73,0	5,2	2,9	3,0	0,00051	6,3
	71 c*	**2**	**0,75**	2840	2,52	1,81	0,83	72,1	5,5	2,7	2,8	0,00063	6,6
	80 a	**2**	**0,75**	2840	2,52	1,81	0,83	72,1	5,6	2,8	2,9	0,00078	8,7
	80 b	**2**	**1,1**	2840	3,70	2,52	0,84	75,0	5,7	2,8	3,0	0,00103	9,2
	80 c*	**2**	**1,5**	2840	5,04	3,34	0,84	77,2	5,8	3,0	3,1	0,00127	10,5
	90 S	**2**	**1,5**	2840	5,04	3,34	0,84	77,2	5,9	3,0	3,2	0,00129	12
	90 La	**2**	**2,2**	2840	7,40	4,69	0,85	79,2	6,1	2,9	3,1	0,00160	15
	90 Lb*	**2**	**3**	2860	10,0	6,11	0,87	81,5	5,8	3,2	3,3	0,00210	15,5
	100 La	**2**	**3**	2860	10,0	6,11	0,87	81,5	6,4	2,6	3,0	0,00240	20
	100 Lb*	**2**	**4**	2880	13,3	7,9	0,88	83,1	6,1	2,5	2,8	0,00285	21,5
	112Ma	**2**	**4**	2880	13,3	7,9	0,88	83,1	6,6	2,3	2,9	0,00540	26
	112 Mb*	**2**	**5,5**	2900	18,1	10,7	0,88	84,7	6,5	2,5	2,9	0,00572	32
	112 Mc	**2**	**7,5**	2900	24,7	14,3	0,88	86	7,0	2,2	2,3	0,00985	34
Δ 400V 50Hz	**132 Sa**	**2**	**5,5**	2900	18,1	10,7	0,88	84,7	6,4	2,4	3,1	0,0120	38,5
	132 Sb	**2**	**7,5**	2900	24,7	14,3	0,88	86,0	6,1	2,3	2,8	0,0140	43
	132 Ma*	**2**	**9,25**	2900	30,5	17,3	0,89	86,9	7,5	2,7	3,0	0,0180	53
	132 Mb*	**2**	**11**	2930	35,9	20,4	0,89	87,6	6,0	1,9	2,4	0,0240	57
	132 Mc*	**2**	**15**	2930	48,9	27,4	0,89	88,7	5,9	2,1	2,3	0,0270	62
	160 Ma	**2**	**11**	2930	35,9	20,4	0,89	87,6	7,0	2,2	2,4	0,0340	73
	160 Mb	**2**	**15**	2930	48,9	27,4	0,89	88,7	6,9	1,9	2,3	0,0400	82
	160 La	**2**	**18,5**	2930	60,3	33,2	0,90	89,3	6,8	2,1	2,4	0,0450	90
	160 Lb*	**2**	**22**	2940	71,5	39,2	0,90	89,9	6,7	2,0	2,3	0,0490	96

JM 4 POLES SERIES

Tab. 6.14.2

IE1	JM Motor	Poles	P_N kW	n_N min^{-1}	T_N Nm	$I_{N\,(400\,V)}$ A	COSφ 100%	η 100%	I_S/I_N	T_s/T_N	T_{max}/T_N	J Kg m^2	Weight Kg
Δ/Y 230/400V - 50Hz	**56 b**	**4**	**0,09**	1325	0,65	0,45	0,59	49,0	2,8	2,2	2,3	0,00018	3,6
	56 c*	**4**	**0,12**	1310	0,87	0,42	0,72	57,0	2,8	2,2	2,3	0,00020	4,2
	63 a	**4**	**0,12**	1310	0,87	0,42	0,72	57,0	2,7	2,3	2,4	0,00022	4,5
	63 b	**4**	**0,18**	1310	1,31	0,59	0,73	60,0	2,9	2,3	2,3	0,00030	4,9
	63 c*	**4**	**0,25**	1350	1,77	0,75	0,74	65,0	2,7	2,4	2,4	0,00034	5,7
	71 a	**4**	**0,25**	1330	1,79	0,75	0,74	65,0	3,5	2,8	2,8	0,00044	6
	71 b	**4**	**0,37**	1330	2,66	1,06	0,75	67,0	3,4	2,5	2,6	0,00064	6,3
	71 c*	**4**	**0,55**	1340	3,92	1,49	0,75	71,1	3,6	2,4	2,4	0,00079	7,3
	80 a	**4**	**0,55**	1390	3,78	1,49	0,75	71,1	3,8	2,3	2,4	0,00103	8,1
	80 b	**4**	**0,75**	1390	5,15	1,98	0,76	72,1	4,0	2,2	2,3	0,00143	9,2
	80 c*	**4**	**1,1**	1390	7,56	2,75	0,77	75,0	4,0	2,3	2,3	0,00193	10,5
	90 S	**4**	**1,1**	1390	7,56	2,75	0,77	75,0	5,5	2,5	2,8	0,00230	13
	90 La	**4**	**1,5**	1390	10,3	3,55	0,79	77,2	5,4	2,3	2,6	0,00270	14,5
	90 Lb*	**4**	**1,85**	1390	12,7	4,40	0,80	78,2	6,8	2,3	3,1	0,00410	15,5
	90 Lc*	**4**	**2,2**	1390	15,1	4,90	0,82	79,2	5,0	2,7	2,9	0,00470	16
	100 La	**4**	**2,2**	1390	15,1	4,92	0,81	79,2	6,4	2,3	2,5	0,00540	18,8
	100 Lb	**4**	**3**	1410	20,3	6,48	0,82	81,5	5,8	2,2	2,6	0,00670	21,5
	100 Lc*	**4**	**4**	1410	27,1	8,47	0,82	83,1	5,7	2,3	2,6	0,00810	25
	112 Ma	**4**	**4**	1410	27,1	8,47	0,82	83,1	5,9	2,2	2,7	0,00950	28
	112 Mc*s	**4**	**5,5**	1435	36,6	11,3	0,83	84,7	6,0	2,6	2,8	0,0115	32
Δ 400V - 50Hz	**132 Sa**	**4**	**5,5**	1435	36,6	11,3	0,83	84,7	6,4	2,2	2,8	0,0214	42
	132 Ma	**4**	**7,5**	1440	49,7	15,0	0,84	86,0	6,7	2,3	2,7	0,0296	48
	132 Mb*	**4**	**9,25**	1445	61,1	17,9	0,86	86,9	7,3	2,7	3,3	0,0395	59
	132 Mc*	**4**	**11**	1440	72,9	21,6	0,84	87,6	7,2	2,8	3,2	0,0496	69
	160 Ma	**4**	**11**	1440	72,9	21,6	0,84	87,6	6,7	2,2	2,5	0,0747	83
	160 La	**4**	**15**	1460	98,1	28,7	0,85	88,7	6,4	2,0	2,6	0,0918	92
	160 Lb*	**4**	**18,5**	1460	121	34,8	0,86	89,3	6,3	2,0	2,5	0,1080	98

JM 6 POLES SERIES

Tab. 6.14.3

IE1	JM Motor	Poles	P_N kW	n_N min^{-1}	T_N Nm	$I_{N\,(400\,V)}$ A	COSφ 100%	η 100%	I_s/I_N	T_s/T_N	T_{max}/T_N	J Kg m²	Weight Kg
Δ / Y - 230/400 V - 50 Hz	**63 b**	**6**	**0,12**	840	1,36	0,63	0,60	46,0	3,0	2,0	2,1	0,00035	5,5
	71 a	**6**	**0,18**	850	2,02	0,70	0,66	56,0	2,5	2,6	2,6	0,00090	6,2
	71 b	**6**	**0,25**	850	2,81	0,90	0,68	59,0	2,7	2,5	2,5	0,00120	6,6
	71 c*	**6**	**0,30**	860	3,33	0,94	0,69	60,0	2,5	2,4	2,4	0,00130	6,9
	80 a	**6**	**0,37**	885	3,99	1,23	0,70	62,0	3,0	2,0	2,1	0,00140	8,2
	80 b	**6**	**0,55**	885	5,93	1,70	0,72	65,0	3,2	2,1	2,2	0,00150	9,2
	80 c*	**6**	**0,75**	910	7,87	2,15	0,72	70,0	3,1	2,1	2,2	0,00165	10
	90 S	**6**	**0,75**	910	7,87	2,15	0,72	70,0	3,5	1,9	2,2	0,00290	13
	90 La	**6**	**1,1**	910	11,5	2,98	0,73	72,9	3,7	2,0	2,3	0,00350	14
	90 Lb°	**6**	**1,5**	920	15,6	3,84	0,75	75,2	3,6	1,9	2,2	0,00440	15,6
	100 La	**6**	**1,5**	920	15,6	3,84	0,75	75,2	4,6	2,1	2,3	0,00690	21
	112 Ma	**6**	**2,2**	935	22,5	5,38	0,76	77,7	4,8	2,0	2,2	0,0140	27,5
Δ 400V - 50Hz	**132 Sa**	**6**	**3**	960	29,8	7,15	0,76	79,7	5,6	2,1	2,2	0,0286	36
	132 Ma	**6**	**4**	960	39,8	9,33	0,76	81,4	5,7	2,3	2,4	0,0357	43
	132 Mb	**6**	**5,5**	960	54,7	12,4	0,77	83,1	5,8	2,4	2,5	0,0449	54
	160 Ma	**6**	**7,5**	970	73,8	16,6	0,77	84,7	6,4	2,1	2,4	0,0810	83
	160 La	**6**	**11**	970	108,0	23,6	0,78	86,4	6,5	2,2	2,6	0,1160	94
	160 Lb*	**6**	**15**	970	148,0	30,5	0,81	87,7	6,6	2,3	2,5	0,1250	105

JM 8 POLES SERIES

Tab. 6.14.4

IE1	JM Motor	Poles	P_N kW	n_N min^{-1}	T_N Nm	$I_{N\,(400\,V)}$ A	COSφ 100%	η 100%	I_s/I_N	T_s/T_N	T_{max}/T_N	J Kg m²	Weight Kg
Δ / Y - 230/400 V - 50 Hz	**71 a**	**8**	**0,09**	645	1,33	0,42	0,60	51,0	1,8	1,9	1,9	0,00120	6,0
	71 b	**8**	**0,12**	645	1,78	0,55	0,60	51,0	1,9	1,9	1,9	0,00130	6,3
	80 a	**8**	**0,18**	645	2,66	0,84	0,61	51,0	2,0	1,9	1,9	0,00200	8,6
	80 b	**8**	**0,25**	645	3,70	1,1	0,61	54,0	1,9	1,9	1,9	0,00240	9,5
	90 s	**8**	**0,37**	670	5,27	1,41	0,61	62,0	2,8	1,9	2,1	0,00350	13
	90 la	**8**	**0,55**	670	7,84	2,07	0,61	63,0	2,9	2,0	2,2	0,00430	14
	100 La	**8**	**0,75**	680	10,5	2,28	0,67	71,0	3,3	2,0	2,1	0,00980	22
	100 Lb	**8**	**1,1**	680	15,4	3,15	0,69	73,0	3,5	1,8	2,0	0,0112	24
	112 Ma	**8**	**1,5**	690	20,8	4,18	0,69	75,0	4,1	2,0	2,1	0,0200	28
Δ 400V - 50Hz	**132 Sa**	**8**	**2,2**	705	29,8	5,73	0,71	78,0	4,9	2,1	2,2	0,0360	45
	132 Ma	**8**	**3**	705	40,6	7,51	0,73	79,0	4,8	2,2	2,3	0,0500	55
	160 Ma	**8**	**4**	720	53,1	9,76	0,73	81,0	5,4	1,9	2,0	0,0950	85
	160 Mb	**8**	**5,5**	720	72,9	12,9	0,74	83,0	5,2	2,0	2,2	0,1090	89
	160 La	**8**	**7,5**	720	99,5	16,9	0,75	85,5	5,6	2,0	2,1	0,1380	94

* Power or power/size not standardized

• 6.15 GM ELECTRICAL DATA

GM 2 POLES SERIES

Tab. 6.15.1

IE1	GM Motor	Poles	P_N kW	n_N min^{-1}	T_N Nm	$I_{N\,(400\,V)}$ A	COSφ 100%	η 100%	$\frac{I_s}{I_N}$	$\frac{T_s}{T_N}$	$\frac{T_{max}}{T_N}$	J Kg m²	Weight Kg
Δ - 400V - 50 Hz	**160 Ma**	**2**	**11**	2930	35,9	20,4	0,89	87,6	7,0	2,2	2,4	0,0340	110
	160 Mb	**2**	**15**	2930	48,9	27,4	0,89	88,7	7,3	2,1	2,5	0,0400	120
	160 La	**2**	**18,5**	2930	60,3	33,2	0,90	89,3	7,1	2,2	2,4	0,0450	135
	180 Ma	**2**	**22**	2940	71,5	39,2	0,90	89,9	7,0	2,1	2,3	0,0750	165
	180 Lb	**2**	**30**	2950	97,1	53	0,90	90,7	7,5	2,0	2,3	0,0820	182
	200 La	**2**	**30**	2950	97,1	53	0,90	90,7	6,9	2,0	2,5	0,1240	218
	200 Lb	**2**	**37**	2950	120	65,1	0,90	91,2	7,2	2,0	2,4	0,1390	230
	225 M	**2**	**45**	2960	145	78,7	0,90	91,7	7,3	2,2	2,4	0,2330	280
	225 Mb	**2**	**55**	2965	177	95,8	0,90	92,1	7,6	2,0	2,3	0,2460	321
	250 M	**2**	**55**	2965	177	95,8	0,90	92,1	7,1	2,0	2,3	0,3120	365
	250 Mb	**2**	**75**	2970	241	130	0,90	92,7	7,0	2,0	2,3	0,4350	425
	280 S	**2**	**75**	2970	241	130	0,90	92,7	7,3	2,2	2,4	0,5790	495
	280 M	**2**	**90**	2970	289	153	0,91	93,0	7,0	2,0	2,3	0,6750	565
	280 Mb	**2**	**110**	2975	353	187	0,91	93,3	7,1	1,8	2,2	0,7500	570
	280 Md*	**2**	**132**	2975	424	224	0,91	93,5	7,0	2,1	2,4	0,9150	573
	315 S	**2**	**110**	2975	353	187	0,91	93,3	7,1	1,9	2,3	1,1800	840
	315 Ma	**2**	**132**	2975	424	224	0,91	93,5	6,6	1,8	2,3	1,8200	980
	315 Mb	**2**	**160**	2975	514	268	0,92	93,8	6,7	1,9	2,3	2,0800	1055
	315 La	**2**	**200**	2975	642	334	0,92	94,0	7,0	1,8	2,2	2,3800	1110
	315 Lb	**2**	**250**	2980	801	417	0,92	94,0	7,1	1,6	2,2	2,6800	1200
	355 M	**2**	**250**	2980	801	417	0,92	94,0	6,6	1,8	2,3	3,0000	1900
	355 Mb	**2**	**280**	2980	897	468	0,92	94,0	6,8	1,9	2,3	3,3000	2200
	355 L	**2**	**315**	2980	1009	526	0,92	94,0	6,9	1,9	2,3	3,5000	2300
	355 Xa	**2**	**355**	2975	1139	585	0,93	94,0	6,6	1,7	2,8	12,520	2604
	355 Xb	**2**	**400**	2982	1281	654	0,92	96,0	6,8	1,8	2,7	13,260	3035
	355 Xc	**2**	**450**	2982	1441	735	0,92	96,1	6,4	1,7	2,7	14,210	3122
	400 Ma	**2**	**400**	2982	1281	654	0,92	96,0	6,9	1,6	2,8	14,950	3088
	400 Mb	**2**	**450**	2982	1441	735	0,92	96,1	7,3	1,7	2,7	15,670	3200
	400 La	**2**	**500**	2982	1601	815	0,92	96,3	6,1	1,7	2,8	20,070	3540
	400 Lb	**2**	**560**	2982	1793	912	0,92	96,3	5,5	1,8	2,7	22,300	3750
	400 Lc	**2**	**630**	2982	2017	1015	0,93	96,3	7,3	1,8	2,6	25,500	3990
	450 Ma	**2**	**560**	2986	1791	901	0,93	96,5	6,7	1,6	2,5	38,150	3800
	450 Mb	**2**	**630**	2984	2016	1012	0,93	96,6	6,6	1,6	2,5	43,300	4100
	450 La	**2**	**710**	2988	2269	1129	0,94	96,6	6,8	1,7	2,6	48,600	4540
	450 Lb	**2**	**800**	2986	2558	1270	0,94	96,7	6,7	1,8	2,7	52,900	4720
	450 Lc	**2**	**900**	2985	2879	1429	0,94	96,7	6,8	1,7	2,6	57,100	4935

GM 4 POLES SERIES

Tab. 6.15.2

IE1	GM Motor	Poles	P_N	n_N	T_N	$I_{N\,(400\,V)}$	COSφ	η	$\frac{I_S}{I_N}$	$\frac{T_s}{T_N}$	$\frac{T_{max}}{T_N}$	J	Weight
			kW	min^{-1}	Nm	A	100%	100%				Kg m^2	Kg
Δ - 400V - 50 Hz	**160 Ma**	**4**	**11**	1440	72,9	21,6	0,84	87,6	6,7	2,2	2,5	0,0747	110
	160 La	**4**	**15**	1460	98,1	28,7	0,85	88,7	6,4	2,0	2,6	0,0918	132
	160 Lb	**4**	**18,5**	1460	121,0	34,8	0,86	89,3	6,3	2,0	2,5	0,1080	135
	180 Ma	**4**	**18,5**	1460	121	34,8	0,86	89,3	6,7	2,1	2,8	0,1390	164
	180 L	**4**	**22**	1470	143	41,1	0,86	89,9	7,5	2,2	3,0	0,1580	182
	180 Lb	**4**	**30**	1470	195	55,5	0,86	90,7	7,1	2,3	2,4	0,2020	185
	200 La	**4**	**30**	1470	195	55,5	0,86	90,7	6,6	2,3	2,5	0,2620	244
	200 Lb	**4**	**37**	1470	240	67,3	0,87	91,2	7,2	2,3	2,6	0,2680	250
	225 S	**4**	**37**	1470	240	67,3	0,87	91,2	7,2	2,3	2,6	0,4060	258
	225 M	**4**	**45**	1475	291	81,4	0,87	91,7	7,0	2,2	2,4	0,4690	290
	250 M	**4**	**55**	1475	356	99,1	0,87	92,1	7,1	2,3	2,6	0,6600	388
	280 S	**4**	**75**	1480	484	134	0,87	92,7	6,6	2,3	2,5	1,1200	510
	280 M	**4**	**90**	1480	581	161	0,87	93,0	6,2	2,2	2,4	1,4600	606
	315 S	**4**	**110**	1480	710	193	0,88	93,3	7,0	2,2	2,4	3,1100	910
	315 Ma	**4**	**132**	1480	852	232	0,88	93,5	6,8	2,2	2,5	3,6200	985
	315 Mb	**4**	**160**	1480	1032	277	0,89	93,8	6,6	2,1	2,4	4,1300	1056
	315 L	**4**	**200**	1480	1290	345	0,89	94,0	6,9	2,2	2,4	4,7300	1128
	315 Lc	**4**	**250**	1490	1602	427	0,90	94,0	6,9	2,1	2,2	5,3500	1245
	355 M	**4**	**250**	1490	1602	427	0,90	94,0	6,5	2,2	2,4	6,5000	1700
	355 L	**4**	**315**	1490	2019	537	0,90	94,0	6,2	2,1	2,3	8,2000	1900
	355 Xa	**4**	**355**	1490	2275	604	0,90	94,0	6,5	2,1	2,7	9,5000	2150
	355 Xb	**4**	**400**	1492	2560	668	0,90	96,0	6,1	2,0	2,6	10,600	2300
	355 Xc	**4**	**450**	1492	2880	751	0,90	96,1	6,3	1,8	2,5	11,500	2460
	355 Xd	**4**	**500**	1490	3204	862	0,88	95,1	7,8	2,2	2,7	16,240	2500
	400 Ma	**4**	**355**	1492	2272	597	0,91	94,0	6,2	1,7	2,5	13,300	2600
	400 Mb	**4**	**400**	1492	2560	668	0,90	96,0	6,4	1,8	2,6	14,950	2790
	400 Mc	**4**	**450**	1492	2880	751	0,90	96,1	6,3	1,8	2,7	15,630	3050
	400 La	**4**	**500**	1492	3200	832	0,90	96,4	6,2	1,9	2,6	18,410	3132
	400 Lb	**4**	**560**	1492	3584	932	0,90	96,4	6,6	2,0	2,5	19,620	3340
	400 Lc	**4**	**630**	1492	4032	1037	0,91	96,4	6,4	1,9	2,4	21,330	3580
	450 Ma	**4**	**560**	1492	3584	922	0,91	96,3	6,4	1,3	2,7	35,100	3584
	450 Mb	**4**	**630**	1492	4032	1037	0,91	96,4	6,9	1,5	2,5	39,500	3870
	450 La	**4**	**710**	1492	4544	1168	0,91	96,4	6,2	1,3	2,6	41,000	4360
	450 Lb	**4**	**800**	1492	5120	1285	0,93	96,6	6,9	1,5	2,3	45,600	4650
	450 Lc	**4**	**900**	1492	5760	1462	0,92	96,6	6,1	1,6	2,3	49,500	4732
	450 Ld	**4**	**1000**	1492	6400	1669	0,92	94,0	7,0	1,1	2,0	50,600	5700

GM 6 POLES SERIES

Tab. 6.15.3

IE1	GM Motor	Poles	P_N kW	n_N min^{-1}	T_N Nm	$I_{N\,(400\,V)}$ A	COSφ 100%	η 100%	I_s/I_N	T_s/T_N	T_{max}/T_N	J Kg m²	Weight Kg
Δ - 400 V - 50 Hz	**160 Ma**	**6**	**7,5**	970	73,8	16,6	0,77	84,7	6,4	2,1	2,4	0,0747	115
	160 La	**6**	**11**	970	108,3	23,6	0,78	86,4	6,5	2,2	2,6	0,0918	130
	180 L	**6**	**15**	970	148	30,5	0,81	87,7	6,9	2,1	2,2	0,1580	178
	200 La	**6**	**18,5**	980	180	37,2	0,81	88,6	6,7	2,1	2,2	0,2620	210
	200 Lb	**6**	**22**	980	214	42,9	0,83	89,2	6,6	2,1	2,2	0,2800	227
	225 M	**6**	**30**	980	292	57,1	0,84	90,2	6,7	2,0	2,1	0,4690	265
	250 M	**6**	**37**	980	361	68,4	0,86	90,8	6,9	2,1	2,2	0,6600	370
	280 S	**6**	**45**	980	438	82,6	0,86	91,4	6,5	2,1	2,2	1,1200	490
	280 M	**6**	**55**	980	536	100,0	0,86	91,9	6,6	2,0	2,1	1,4600	540
	315 S	**6**	**75**	985	727	136	0,86	92,6	6,8	2,0	2,3	3,1100	800
	315 Ma	**6**	**90**	985	873	163	0,86	92,9	6,7	2,1	2,2	3,6200	920
	315 Mb	**6**	**110**	985	1066	198	0,86	93,3	6,6	2,0	2,1	4,1300	960
	315 L	**6**	**132**	985	1280	234	0,87	93,5	6,4	2,1	2,3	4,7300	1050
	315 Lc	**6**	**160**	985	1551	280	0,88	93,8	6,2	2,0	2,4	5,1500	1170
	355 Ma	**6**	**160**	985	1551	280	0,88	93,8	6,1	2,0	2,4	6,5000	1550
	355 Mb	**6**	**200**	985	1939	349	0,88	94,0	6,7	1,9	2,3	6,8000	1600
	355 L	**6**	**250**	985	2424	436	0,88	94,0	6,7	1,9	2,1	8,2000	1700
	355 Xa	**6**	**315**	994	3026	550	0,88	94,0	5,9	1,9	2,5	13,500	2310
	355 Xb	**6**	**355**	994	3410	620	0,88	94,0	5,8	2,0	2,4	14,300	2490
	355 Xc	**6**	**400**	990	3858	714	0,86	94,0	6,5	1,6	2,4	18,860	2980
	400 Ma	**6**	**315**	994	3026	552	0,88	94,0	5,7	1,8	2,3	18,210	3000
	400 Mb	**6**	**355**	994	3410	621	0,88	94,0	5,6	1,9	2,3	19,320	3410
	400 La	**6**	**400**	994	3843	700	0,86	95,9	6,1	1,9	2,4	21,860	3560
	400 Lb	**6**	**450**	994	4323	788	0,86	95,9	6,6	2,0	2,3	22,310	3840
	400 Lc	**6**	**500**	994	4803	873	0,86	96,1	6,2	1,8	2,2	23,520	3870
	400 Ld	**6**	**560**	994	5380	978	0,86	96,1	5,9	1,9	2,2	24,460	4140
	450 Ma	**6**	**500**	994	4803	874	0,86	96,0	6,2	1,6	2,3	49,300	3890
	450 Mb	**6**	**560**	994	5380	978	0,86	96,1	6,1	1,6	2,3	54,100	4200
	450 La	**6**	**630**	994	6052	1100	0,86	96,1	6,1	1,7	2,3	60,600	4620
	450 Lb	**6**	**710**	994	6821	1243	0,86	95,9	5,9	1,7	2,3	67,900	5080
	450 Lc	**6**	**800**	994	7686	1375	0,87	96,5	5,8	1,6	2,2	67,900	5080

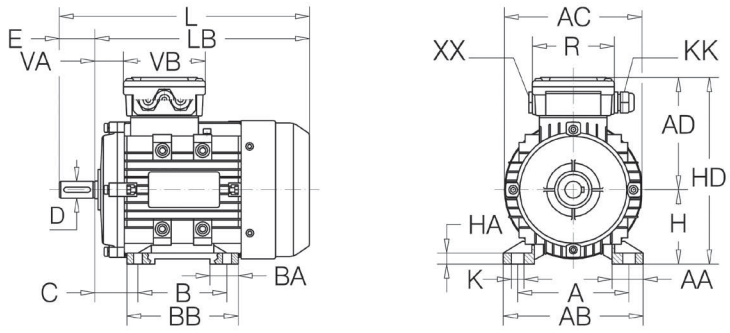
GM 8 POLES SERIES

Tab. 6.15.4

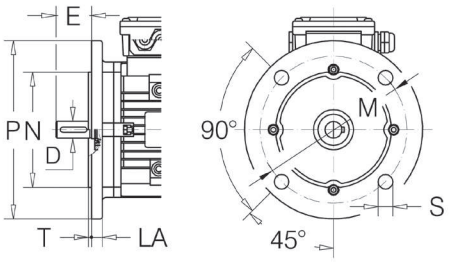
IE1	GM Motor	Poles	P_N kW	n_N min^{-1}	T_N Nm	$I_{N\,(400\,V)}$ A	COSφ 100%	η 100%	I_s/I_N	T_s/T_N	T_{max}/T_N	J Kg m²	Weight Kg
Δ - 400 V - 50 Hz	160 Ma	8	4	720	53,1	9,76	0,73	81,0	5,6	2,0	2,2	0,0753	105
	160 La	8	5,5	720	72,9	12,9	0,74	83,0	5,8	2,1	2,3	0,0931	115
	160 La	8	7,5	720	99,5	16,9	0,75	85,5	5,7	2,0	2,1	0,1260	145
	180 L	8	11	730	144	23,8	0,76	87,5	5,7	1,9	2,2	0,2030	160
	200 La	8	15	730	196	32,4	0,76	88,0	6,0	2,0	2,2	0,3390	228
	225 S	8	18,5	730	242	39	0,76	90,0	6,2	1,9	2,2	0,4910	242
	225 M	8	22	730	288	45	0,78	90,5	6,4	2,0	2,0	0,5470	265
	250 M	8	30	735	390	60,2	0,79	91,0	6,1	1,9	2,1	0,8340	368
	280 S	8	37	735	481	73,9	0,79	91,5	6,5	1,9	2,3	1,6500	472
	280 M	8	45	735	585	89,4	0,79	92,0	6,4	2,0	2,2	1,9300	538
	315 S	8	55	735	715	106	0,81	92,8	6,5	1,8	2,1	4,7900	900
	315 Ma	8	75	735	974	144	0,81	93,0	6,5	1,9	2,2	5,5800	1000
	315 Mb	8	90	735	1169	169	0,82	93,8	6,3	1,9	2,3	6,3700	1055
	315 L	8	110	735	1429	206	0,82	94,0	6,2	1,8	2,2	7,2300	1118
	315 Lc	8	132	740	1703	254	0,82	91,5	6,4	1,8	2,0	7,4300	1160
	355 Ma	8	132	740	1703	248	0,82	93,7	6,4	1,7	2,1	7,9000	2000
	355 Mb	8	160	740	2065	299	0,82	94,2	6,4	1,8	2,2	10,300	2150
	355 L	8	200	740	2581	368	0,83	94,5	6,2	1,7	2,1	12,300	2250
	355 Xa	8	250	745	3204	451	0,84	95,3	6,1	1,7	2,3	14,530	2460
	355 Xb	8	315	745	4038	560	0,85	95,5	6,0	1,7	2,4	15,390	2750
	400 Ma	8	250	745	3204	451	0,84	95,3	6,3	1,8	2,5	25,600	2914
	400 Mb	8	280	745	3589	505	0,84	95,3	5,9	1,7	2,3	26,500	3170
	400 La	8	315	745	4038	560	0,85	95,5	6,1	1,8	2,4	27,900	3392
	400 Lb	8	355	745	4550	631	0,85	95,6	5,8	1,7	2,3	29,800	3592
	400 Lc	8	400	745	5127	710	0,85	95,6	6,4	1,6	2,4	31,300	3949
	450 Ma	8	315	746	4032	581	0,82	95,4	6,0	1,8	2,5	59,500	3840
	450 Mb	8	355	745	4550	654	0,82	95,5	5,7	1,7	2,4	64,500	4090
	450 La	8	400	745	5127	727	0,83	95,7	5,5	1,6	2,3	69,400	4350
	450 Lb	8	450	745	5768	818	0,83	95,7	5,4	1,6	2,2	75,200	4660
	450 Lc	8	500	745	6409	909	0,83	95,7	5,7	1,7	2,2	79,300	4870
	450 Ld	8	560	745	7178	1053	0,83	92,5	6,0	1,6	2,4	80,200	5550
	450 Le	8	630	745	8075	1184	0,83	92,5	6,5	1,8	2,3	81,600	5650

• 6.16 JM DIMENSIONAL DATA

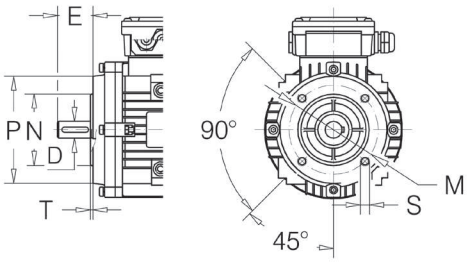
B3

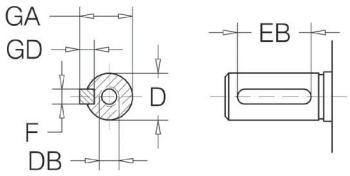


B5



B14





Shaft end

JM-A SERIES **Tab. 6.16.1**

JM - JMD Motor			Main Overall Dimension						Feet									Flange						
			AC	AD	H	HD	LB	L	A	B	C	AB	BB	AA	BA	HA	K	IM	M	NJ6	P	LA	T	S
56		**2-4-6**	112	97	56	153	170	190	90	71	36	110	90	30	21	8	6	**B5**	100	80	120	8	3	N°4 7
																		B14	65	50	80	--	2,5	N°4 M5
63		**2-4-6**	120	101	63	164	191	214	100	80	40	122	100	35	24	8	7	**B5**	115	95	140	10	3	N°4 10
																		B14	75	60	90	--	2,5	N°4 M5
71		**2-4-6-8**	137	108	71	179	212	242	112	90	45	133	110	35	24	8	7	**B5**	130	110	160	10	3,5	N°4 10
																		B14	85	70	105	--	2,5	N°4 M6
80		**2-4-6-8**	158	129	80	209	244	284	125	100	50	157	125	35	31	8	10	**B5**	165	130	200	12	3,5	N°4 12
																		B14	100	80	120	--	3	N°4 M6
90	**S**	**2-4-6-8**	175	142	90	232	270	320	140	100	56	173	125	37	31	10	10	**B5**	165	130	200	12	3,5	N°4 12
	L						295	345		125			150					**B14**	115	95	140	--	3	N°4 M8
100	**L**	**2-4-6-8**	198	156	100	256	338	398	160	140	63	196	172	40	39	11	12	**B5**	215	180	250	13	4	N°4 15
																		B14	130	110	160	--	3,5	N°4 M8
112	**M**	**2-4-6-8**	219	168	112	280	341	401	190	140	70	227	180	41	43	12	12	**B5**	215	180	250	14	4	N°4 15
																		B14	130	110	160	--	3,5	N°4 M8
132	**S**	**2-4-6-8**	258	190	132	322	395	475	216	140	89	262	186	51	46	15	12	**B5**	265	230	300	14	4	N°4 15
	M						433	513		178			224					**B14**	165	130	200	--	3,5	N°4 M10
160	**M**	**2-4-6-8**	316	242	160	402	500	610	254	210	108	304	260	55	50	18	15	**B5**	300	250	350	15	5	N°4 19
	L						545	655		254			304					**B14**	215	180	250	--	4	N°4 M12

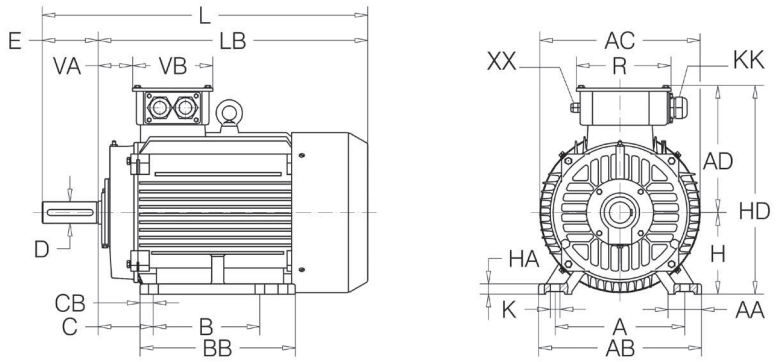
JM-B SERIES

Tab. 6.16.2

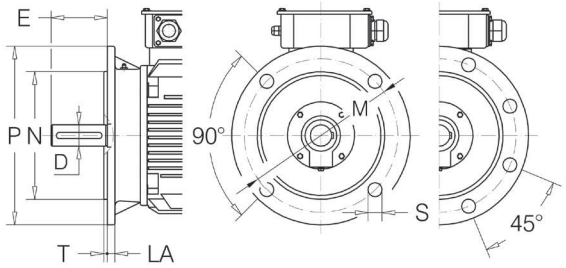
JM - JMD Motor		Shaft - End							Shaft - Seals						Terminal - Box					
						Key			Flange-End			Drive End DE Non drive end NDE.			Term.	Flange-End				
		D	DB	E	GA	F	GD	EB	Øi	Øe	H	Øi	Øe	H	N°-Ø	N°-KK	N°-XX	VA	VB	R
56	**2-4-6**	9	M4	20	10,2	3	3	14	12	25	7	12	25	7	6-M4	1-M20x1,5	1-plug	18	80	80
63	**2-4-6**	11	M4	23	12,5	4	4	16	12	25	7	12	25	7	6-M4	1-M20x1,5	1-plug	29	87	87
71	**2-4-6-8**	14	M5	30	16	5	5	25	15	30	7	15	30	7	6-M4	1-M20x1,5	1-plug	40	87	87
80	**2-4-6-8**	19	M6	40	21,5	6	6	30	20	35	7	20	35	7	6-M4	1-M20x1,5	1-plug	31	87	87
90	**2-4-6-8**	24	M8	50	27	8	7	40	25	40	7	25	40	7	6-M4	1-M25x1,5	1-plug	31	106	106
100	**2-4-6-8**	28	M10	60	31	8	7	50	30	47	7	30	47	7	6-M4	1-M25x1,5	1-plug	31	106	106
112	**2-4-6-8**	28	M10	60	31	8	7	50	30	47	7	30	47	7	6-M5	2-M25x1,5	--	35	114	122
132	**2-4-6-8**	38	M12	80	41	10	8	65	40	62	7	40	62	7	6-M5	2-M32x1,5	--	43	114	122
160	**2-4-6-8**	42	M16	110	45	12	8	90	45	62	12	45	62	12	6-M6	2-M40x1,5	1-M16x1,5	78	156	167

• 6.17 GM DIMENSIONAL DATA

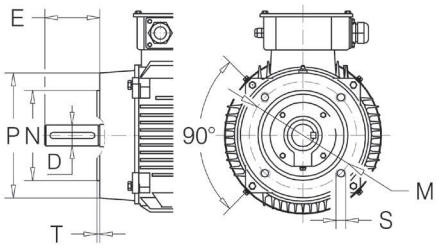
B3

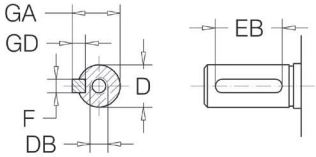


B5



B14





Shaft end

GM-A SERIES

Tab. 6.17.1

GM-GMD Motor			Main Overall Dimension						Feet									Flange						
			AC	AD	H	HD	LB	L	A	B	C	AB	BB	AA	CB	HA	K	IM	M	NJ6	P	LA	T	S
160	M	2-4-6-8	314	251	160	411	498	608	254	210	108	320	260	65	26	20	15	B5	300	250	350	15	5	N°4 19
	L						542	652		254			304					B14	215	180	250	--	4	N°4 M12
180	M	2-4-6-8	355	267	180	447	578	688	279	241	121	350	311	70	35	22	15	B5	300	250	350	15	5	N°4 19
	L						616	726		279			349											
200	L	2-4-6-8	397	299	200	499	669	779	318	305	133	390	370	70	32	25	18	B5	350	300	400	17	5	N°4 19
225	S	2-4-6-8	446	322	225	547	684	824	356	286	149	432	370	75	46	28	19	B5	400	350	450	20	5	N°8 19
225	M	2-4-6-8	446	322	225	547	709	819	356	311	149	433	395	75	46	28	19	B5	400	350	450	20	5	N°8 19
								849																
250	M	2-4-6-8	485	358	250	608	770	910	406	349	168	486	445	80	55	30	24	B5	500	450	550	22	5	N°8 19
280	S	2-4-6-8	547	387	280	667	842	982	457	368	190	545	485	85	69	35	24	B5	500	450	550	22	5	N°8 19
	M						893	1033		419			536											
315	S	2 4-6-8	620	527	315	842	1054	1194	508	406	216	630	570	120	84	45	28	B5	600	550	660	22	6	N°8 24
								1224																
315	M	2 4-6-8	620	527	315	842	1164	1304	508	457	216	630	680	120	84	45	28	B5	600	550	660	22	6	N°8 24
								1334																
315	L	2 4-6-8	620	527	315	842	1164	1304	508	508	216	630	680	120	84	45	28	B5	600	550	660	22	6	N°8 24
								1334																
355	M	2 4-6-8	698	642	355	997	1346	1486	610	560	254	730	750	120	68	52	28	B5	740	680	800	25	6	N°8 24
								1556																
355	L	2 4-6-8	698	642	355	997	1346	1486	610	630	254	730	750	120	68	52	28	B5	740	680	800	25	6	N°8 24
								1556																
355	X	2 4-6-8	770	765	355	1120	1710	1850	630	800	224	760	1140	135	88	52	35	B5	840	780	900	28	6	N°8 24
								1920																
400	M	2 4-6-8	860	680	400	1080	1770	1940	686	630	280	806	1090	120	57	45	35	B5	940	880	1000	25	6	N°8 28
								1980																
400	L	2 4-6-8	860	680	400	1080	1770	1940	686	710	280	806	1090	120	57	45	35	B5	940	880	1000	25	6	N°8 28
								1980																
450	L	2 4-6-8	960	820	450	1270	1880	2050	800	1000	250	990	1300	190	107	52	42	B5	940	880	1000	25	6	N°8 28
							1990	2200										B5	1080	1000	1150	33	6	N°8 28

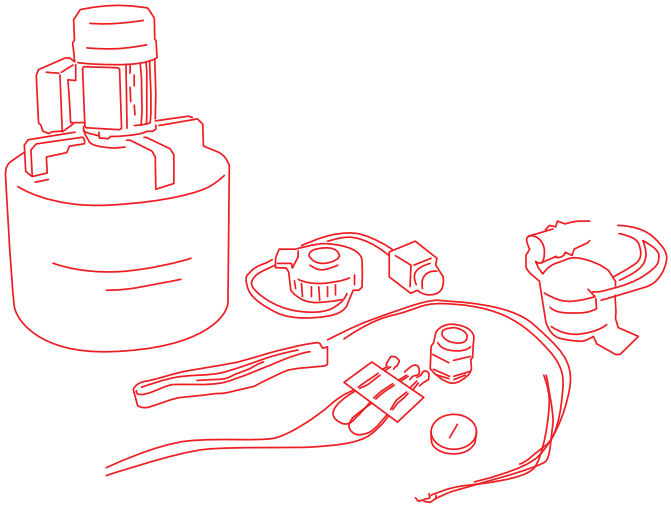
GM-B SERIES

Tab. 6.17.2

GM-GMD Motor			Shaft - End							Shaft - End						Terminal - Box					
							Key			Flange-End			Drive End DE Non drive end NDE			Term.	Cable gland				
			D	DB	E	GA	F	GD	EB	Øi	Øe	H	Øi	Øe	H	N°-Ø	N°-KK	N°-XX	VA	VB	R
160		**2-4-6-8**	42	M16	110	45	12	8	90	45	62	8/12	45	62	8/12	6-M6	2-M40x1,5	1-M16x1,5	67	158	185
180		**2-4-6-8**	48	M16	110	51,5	14	9	100	55	75	8/12	55	75	8/12	6-M6	2-M40x1,5	1-M16x1,5	82	158	185
200		**2-4-6-8**	55	M20	110	59	16	10	100	60	80	8/12	60	80	8/12	6-M8	2-M50x1,5	1-M16x1,5	92	187	224
225	**S**	**4-8**	60	M20	140	64	18	11	125	65	90	10/12	65	90	10/12	6-M8	2-M50x1,5	1-M16x1,5	95	187	224
225	**M**	**2**	55	M20	110	59	16	10	100	60	80	8/12	60	80	8/12	6-M8	2-M50x1,5	1-M16x1,5	95	187	224
		4-6-8	60		140	64	18	11	125	65	90	10/12	65	90	10/12						
250		**2**	60	M20	140	64	18	11	125	65	90	10/12	65	90	10/12	6-M10	2-M63x1,5	1-M16x1,5	88	238	283
		4-6-8	65			69				70	90	10/12	70	90	10/12						
280		**2-4-6-8**	65	M20	140	69	18	11	125	70	90	10/12	70	90	10/12	6-M10	2-M63x1,5	1-M16x1,5	96	238	283
			75			79,5	20	12		85	110	10/12	85	110	10/12						
315		**2**	65	M20	140	69	18	11	125	85	110	10/12	85	110	10/12	6-M12/16	2-M63x1,5	1-M16x1,5	117	280	320
		4-6-8	80		170	85	22	14	140	95	120	10/12	95	120	10/12						
355		**2**	75	M20	140	79,5	20	12	125	95	120	10/12	95	120	10/12	6-M20	2-M63x1,5	1-M16x1,5	117	328	380
		4-6-8	100	M24	210	106	28	16	180	110	140	10/12	110	140	10/12						
355	**X**	**2**	75	M20	170	79,5	20	12	140	95	120	10/12	95	120	10/12	6-M20	3-M63x1,5	1-M16x1,5	--	--	--
		4-6-8	100	M24	210	106	28	16	180	120	140	10/12	120	140	10/12						
400	**M**	**2**	80	M20	170	85	22	14	140	90	115	10/12	90	115	10/12	6-M24	3-M63x1,5	1-M16x1,5	--	--	--
		4-6-8	110	M24	210	116	28	16	180	130	150	10/12	130	150	10/12						
400	**L**	**2**	80	M20	170	85	22	14	140	90	115	10/12	90	115	10/12	6-M24	3-M63x1,5	1-M16x1,5	--	--	--
		4-6-8	110	M24	210	116	28	16	180	130	150	10/12	130	150	10/12						
450	**L**	**2**	95	M24	170	100	25	14	140	110	130	10/12	110	130	10/12	6-M24	3-M63x1,5	1-M16x1,5	--	--	--
		4-6-8	130	M24	210	137	32	18	180	140	160	10/12	140	160	10/12	6-M24	3-M63x1,5	1-M16x1,5	--	--	--

EXECUTIONS
NON-STANDARD

10 SPECIAL EXECUTIONS



1) WINDING

Non-standard voltages and/or frequencies
Seipee electric motors with three-phase power supply are designed for use on the European mains
230/400V ± 10% 50Hz.
This means that the same motor can also be connected to the following electrical mains:

- 220/380V ±5%
- 230/400V ±10%
- 240/415V ±5%

Special windings can be created on request with different voltages and/or frequencies.

Tropicalization
Tropicalization of winding consists in cold painting a product of remarkable hygroscopic qualities that ensures a certain refractory capacity against penetration of condensation in materials that must maintain optimal insulation.
It is indicated in situations where the motor is installed in environments where moisture content is particularly high.

Additional wrapping impregnation
It consists of a second impregnation cycle, recommended for:

- humid and corrosive environments (mildew);
- environments with strong mechanical and electromagnetic stress induced by inverters;
- in the presence of strong electrical agents (voltage peaks);
- in the presence of strong mechanical agents (induced mechanical or electromagnetic vibrations);

2) TERMINAL BOX

Side terminal box
As standard, the terminal box is in position T, i.e. on the top control side.
For motors with feet IM B3 and deriving structural formats, it is possible to place the terminal box R (right) or L (left), on request.
In self-braking motors, any release lever follows the position of the terminal box.

NDE terminal box
On request, the terminal box can be positioned on the NDE side (fan side) instead of the DE side (control side) as is standard.

Cables input
As standard, the cable glands are positioned on the right side of the terminal box. The position of the cables input can be rotated by 90° or 180° on request.

Cable gland type
The standard cable glands are made of polyamide, and the relative dimensions for each motor size are outlined in the tables of the dimensional data of the various series of motors.
On request, cable glands and metal plugs can be supplied, especially suitable for applications with temperatures outside the range -15/+40 C.

Cylindrical connector for quick motor cabling

Auxiliary capacitor (JMM series)
Auxiliary capacitor with built-in electronic circuit breaker for high starting point (MS/MN=approximately 1..1÷1.4).
It automatically enters at the start of the motor only for a time of 1.5 s (not suitable for applications with starting times > 1.5 s).

Warning: The time between starting and the next start must be > 6 s, to avoid causing damage to the circuit breaker.

3) MOTOR PROTECTION

Bimetal thermal probes (PTO)
Three probes connected in series with normally closed contact inserted in the motor winding. The contact is opened when the winding temperature reaches and exceeds the intervention value (150 C for motor in class F). VN,max. 250 [V], IN,max. 1.6 [A]
The terminals are placed inside the motor terminal box.

Standard on motors with axle height 160 to 450.

Thermistor thermal probes (PTC)
Three thermistors connected in series inserted in the winding conforming to DIN 44081/44082, to be connected to specific release equipment (the purchase of this equipment is charged to the buyer of the motor).

There is a sudden change in resistance (which causes the release) when the temperature of the winding reaches and exceeds the intervention value (150 C for motor in class F).
The terminals are placed inside the motor terminal box.

Standard on all motors with power over 0.75kw.

Temperature sensor PT 100 (resistance thermometer)
It is a temperature sensor that takes advantage of the variation in the resistivity of certain materials as temperature changes, in accordance with DIN-IEC 751.
Three PT 100 are inserted inside the winding, one for each phase. Terminals placed inside the motor terminal box must be connected to appropriate equipment (purchase of this equipment is charged to the buyer of the motor).

Temperature probe KTY84-130
Temperature sensor in silicon depending on the change in resistance with positive temperature coefficient.

Anti-condensation heater
It is recommended for motors operating in environments:
- with high humidity;
- with strong thermal excursions;
- with low temperature (possible ice formation);

It is a resistor fixed on coil heads that allows heating the winding of the stopped electric motor and then eliminates condensate inside the housing.

Structure: Glass fibre tape, in which a multi-wire resistor is inserted in nickel-chrome, covered with polyester adhesive tape reinforced with glass fibre filaments and an additional external glass fibre sleeve

Single-phase power supply 230V ac ±10% 50 / 60 Hz, absorbed power:
- 25 W for size 63 ... 90;
- 26 W for size 100 ... 112;
- 40 W for size 132 ... 160;
- 26 W for size 180 ... 200;
- 42 W for size 225 ... 250;
- 65 W for size 280;
- 99 W for size 315 ... 450;

The heater must not be powered during while the motor is running.
Terminals located inside the motor terminal box.

The anti-condensate heater is compulsory combined with the condensation drainage holes execution.
As standard on the GM 160...450 motors, on the side opposite the terminal box.
On placing the order, always specify the working position of the motor.
If, on installation, the plugs on the holes of the condensate exhaust located on the lower side of the electric motor have not been removed, they must be opened approximately every 5 months to allow leakage of the condensate created.

4) COLOURS AND PAINTING

Seipee motors are powder painted or painted with combined nitro paint to resist normal industrial environments and allow further finishing with monocomponent synthetic paint.

- JMM 56...100: RAL 9006 (White aluminium);
- JM 56...160: RAL 9006 (White aluminium);
- GM 160...450: RAL 5010 (blue);
- JMD 80...160: RAL 9006 (White aluminium);
- GMD 180...250: RAL 5010 (blue);
- JMK 63....160 RAL 9006 (White aluminium); Copriventola RAL 9005 (Black)
- GMK 180...280 RAL 5010 (blue);

The choice of painting treatment is a critical phase as it depends on the durability of the electric motor according to the environment in which it is to be placed.

According to standard UNI EN ISO 12944-1 the durability of the paint can be classified according to 3 classes:
Low (L) from 2 to 5 years.
Medium (M) from 5 to 10 years.
High (H) over 15 years.
Durability is indicated next to the corrosion category of the installation environment to allow the definition of the protec-

tion cycle able to operate in that environment and to ensure the required durability. The painting cycles that are carried out are fully compliant with the regulations.
ISO 12944 Classification:
C1 - C2 = Rural zones, low pollution. Heated buildings/neutral atmosphere.
C3 = Urban and industrial atmosphere. Moderate levels of sulphur dioxide. Production areas with high humidity.
C4 = Industrial and coastal. Chemical processing plants.
C5L = Industrial areas with high humidity and aggressive atmospheres.
C5M = Sea areas, offshore, estuaries, coastal areas with high salinity.

- Without paint: motor supplied with base primer only
- Painting in other hues: RAL to indicate on purchase order
- Special paint C3
- Special paint resistant to heavier environments C4 or C5.

5) EXECUTIONS ON BEARINGS

PT 100 on bearing
PT100 sensor inserted on the bearing support (control side, side opposite control). The terminals are placed inside a shunt box fastened to the motor housing. .

Electrically insulated bearing
The rolling bearings of electric motors are potentially subject to current passages that quickly damage the surfaces of runners and rolling bodies and degrade their grease.
The risk of damage increases in the increasingly popular electric motors equipped with frequency converters, especially in applications with sudden variations in frequency.
In bearings on such motors, there is an additional risk due to the presence of high frequency currents caused by the parasitic capacities existing within the motor. The electrically insulated bearing has the outer surface of the external ring coated with a layer of aluminium oxide 100 m thick, able to withstand voltages of 1,000 V d.c., practically eliminating issues caused by current passage.
It is usually installed on the NDE bearing.

For use in motors equipped with frequency converters: recommended starting from size 250.

• Bearing 2RS

• Locked bearing as standard on GM motors, on request on JM series

• Oblique contact bearing
For applications with important axial loads acting in one direction only (size 315 and higher)

• Cylindrical roller bearing
For applications with strong, constant radial loads (size 160 to 280).

• Automatic single point greaser for bearings
Automatic lubricators can be installed to ensure the correct amount of lubricant is delivered within a certain time using an inert gas cell.
This lubrication procedure allows more accurate control of the amount of lubricant supplied, compared to traditional manual re-lubrication techniques. It has a nominal delivery period that can vary between 1 month and 12 months and can also be temporarily deactivated if necessary.

Suitable for direct mounting in confined spaces and is particularly suitable for points requiring frequent lubrication, machine shutdown and safety implications. (only possible for motors with re-lubricating bearings, GM series size 160 and higher)

6) MECHANICAL EXECUTIONS AND DEGREES OF PROTECTION

- **Double output shaft** (on which radial loads are not permitted)
- **Shaft ends to drawing**
- **Standard shaft in stainless steel**
- **External screws in stainless steel**
- **Entire key balancing**
- **Balancing without key**
- **Flange tolerance in precise class**
- **Fan cover for textile environment**

Fan cover equipped with a special protective roof instead of the normal grate to avoid clogging with waste and dust from filaments in the textile environment.
The longitudinal dimensions of the motor increase by 30÷70mm according to size.

IP56 protection JM and GM series
Recommended for motors operating in very humid environments and/ or in the presence water sprays. The protection rating on the rating plate becomes IP56.
You should contact the technical office for vertical axis positioned motors.

IP65 protection JM and GM series
Recommended for motors working in dusty environments. The protection rating on the rating plate becomes IP65.
You should contact the technical office for vertical axis positioned motors.

Condensate drain holes
As standard on the GM 160...450 motors, on the side opposite the terminal box.
On placing the order, always specify the working position of the motor.
If, on installation, the plugs on the holes of the condensate exhaust located on the lower side of the electric motor have not been removed, they must be opened approximately every 5 months to allow leakage of the condensate created.

Rain cover
Execution required for outdoor applications or in the presence of water splashes, with vertical shaft pointing downwards, type of construction (IM V5, IM V1, IM V18, IM V15, IM V17).
The LB dimension increases by:
• 35 mm size 56 ... 112;
• 45 mm size 132 ... 160;
• 65 mm size 180 ... 225;
• 85 mm size 250 ... 355;
• 120 mm size 355X ... 450

Execution for low temperatures
Standard motors can operate at room temperature up to -15°C with peaks up to -20°C.
For room temperature up to -30°C and above, special bearings and an anti-condensate heater are required. On request, we recommend the light alloy fan and the metal cable glands/plugs and in case of condensate formation the relative condensate drainage holes (in this case indicate the mounting position).

Execution for high temperatures
Standard three-phase motors can operate at room temperature up to 55°C with peaks up to 60°C, as long as the required power is lower than the plate power (as per General characteristics/Power yield based on ambient temperature Tab.....).
For an ambient temperature 60 ÷ 90°C, special bearings and sealing rings are necessary in fluorine rubber (viton). Wrapping in insulation class H, light alloy fan and metal cable glands/plugs are also recommended.

7) VENTILATION

IC418
Motor without fan and fan cover. Used in applications where cooling is ensured by the external environment.
IC416
Axial servo-fan IP54 indicated for:
- frequent start-ups and/or heavy start-up cycles
- with use of frequency or voltage variator

since, in the event of prolonged operation at low speed, the ventilation loses its effectiveness, it is therefore advisable to install a forced ventilation system with constant flow.
Vice versa, in the event of prolonged operation at high speeds, the noise emitted by the ventilation system can be annoying, and it is therefore recommended to opt for a forced ventilation system.
The characteristics of the servo-fan and the variation ΔL of the measurement LB (see "motor dimensions) are outlined on page 30 tab. 3.14.

The auxiliary ventilation power terminals are located inside an auxiliary terminal box attached to the fan cover. Before making the electrical connection make sure the power supply corresponds to the electrical data shown on the plate.

Important:
check the rotation direction of the three-phase fan. Corresponds to that indicated by the arrow placed on the fan cover, otherwise reverse two of the three phases of power supply

On request, the servo-fan can be created in special versions: voltages, frequencies, working temperature according to client specifications as well as the single-phase, multi-voltage and IP 66 protection versions.

8) SPEED TRANSDUCERS

Standard incremental encoder with hollow shaft and elastic fastening connection cable equipped with military type male connector fastened to the motor.
The female connector is also supplied with relevant diagram for the connection

Characteristics:
- incremental optical type
- two-directional with zero channel (channels A, B, Z and respective denied channels)
- degree of protection IP 54
- max speed 6000 RPM (4000 RPM in continuous service S1)
- operating temperature -10 C +85 C
- resolution from 200 to 2048 pul. /rev; 1024 standard
- max load current 20 mA per channel
- supply voltage 5 ÷ 28 Vdc
- electronic configuration line driver / push-pull (in push-pull configuration do not connect A,B,Z denied channels)
- absorption with no load 100 mA.

Available executions:
- servo-ventilated motor with encoder
- self-ventilated motor with encoder

Measurement LB in two executions is subject to the same variation ΔL outlined in table (Characteristics of the auxiliary fan page 32 no. table 3.14).

On request, the following can be supplied:
- Incremental encoder with high degree of protection
- Absolute encoder
- Resolver

Only for the JMK and GMK Series:

- **Brake protection in rubber**

It is used to prevent dust and/or water or other foreign bodies from entering the braking surfaces. Furthermore, consistently limit the dust from brake wear dispersing in the environment
It is applied around the brake in the appropriate slots provided.
This execution is necessary for IP55

- **IP55 protection (not possible in execution with release lever).**

TA and GA series brake: sealing ring on control side for IM B5 (V-ring for IM B3), dust-proof, water-proof rubber protection and V-ring on opposite side.

- **TC or L7 brake with IP66 protection (not possible in execution with release lever).**

- **Brake pad with anti-sticking friction material (TA, GA, TC, GC series)**

Eliminates danger of brake pad sticking. It is recommended for motors operating in environments:
- that are aggressive
- with high vapour concentrations
- near the sea (near saltwater)

Also recommended when the motor remains unused for long periods of time. (Attention: the nominal braking moment reduces by 10%)

- **Manual release lever**

It frees the motor from the unpowered brake and returns to its initial position after the manoeuvre (automatic return). Useful for manual rotations in case of power failure and/or during installation. The handle of the lever can be removed and is located in correspondence with the terminal box (standard

position). It is always advisable to remove the handle once the operations have been completed.

- **Manual rotation**

It allows you to turn the motor shaft from the opposite the control side. A hex male key is used by inserting it in the central hole of the fan cover.

- measurement 3 for size 63;
- measurement 4 for 71;
- measurement 5 for 80;
- measurement 6 for 90 ... 132;
- measurement 8 for 160;

NOT possible with executions with Rain protection roof, Encoder and axial servo-fan**.**

- **Braking moment calibrated different to standard value.**

- **Mechanical micrometer to signal wear or the brake Locked/Unlocked position**

- **Micro-switch to signal brake opening/closure.**

9) EXECUTIONS ACCORDING TO STANDARDS GUARDS

Execution according to standards

c UL us for the US and Canadian market, available on JM and GM series. Certificate No. E34813
The main variants are the insulation system of the winding class F certified UL, adaptation of air distances towards the ground and live parts.

Execution according to standards

EAC for the per Eurasian customs union (Russia, Belarus, Kazakhstan, Armenia and Kyrgyzstan) certified RU D-IT.AD53. B07480

for the People's Republic of China

UKCA for the UK

for applications in a naval or marine environment

ATEX

The JM and GM (≤600V) series motors are supplied for use in environments with potentially explosive atmospheres according to ATEX 94/9/EC directive group II category 3D for zone 22 / 3G zone 2.
As standard, PTC 130°C and certified cable glands are installed ATEX.
Marking plate:

ATEX II 3D Ex tc IIIC T125°C Dc IP65 zone 22
ATEX II 3G Ex ec IIC T3 Gc zone 2

On request, the execution is possible ATEX II 3G Ex ec IIC T4 Gc.

Legend:
II = Group of origin (use on surface);
3 = Protection category;
includes equipment designed to operate in accordance with the operating parameters established by the manufacturer and to ensure a normal level of protection; it may only be used in classified areas 2 or 22 non-conductive powders.
D = Powders per installation zone Dc (zona 22);
G = Gas per installation zone Gc (zona 2);
tc / ec = protection mode;
IIIC / IIC = equipment group of origin according to the nature of the explosive atmosphere;
T135°C = maximum surface temperature for atmospheres with presence of dust;
T3 / T4 = temperature class for atmospheres with presence of gas.

For inverter applications. it is always necessary to connect the supplied temperature probes to meet the thermal classes indicated in the marking.

The purchaser of the product will be responsible for taking appropriate technical and organisational measures and for assessing any possible risk of explosion to the health and safety of workers in potentially explosive areas (Directive 99/92/EC).
On receipt of the electric motor, make sure there is no damage or faults.
Before starting the motor, check the data on the plate, read the instruction manual carefully (supplied to the motor) and verify its suitability for the application requested

10) TECHNICAL DATA AND ADDITIONAL PLATES

- Double plate
- Sheet metal plate
- Additional instructions on the plate and the packaging label
- Test certificate
- Document with electrical data
- Document with dimensional drawing