

Motors for Hazardous Areas

D5, D6 SERIES

I M2, II 2G, II 2D

Ex d/de I, Ex d/de IIB, Ex tD A21 IP65



IIB



This catalogue refers to ATEX Motors belonging to Group I Category M2 and Group II Category 2G, 2D, 2GD as described.

STANDARDS

The ATEX Motors described in this catalogue are manufactured in accordance with IEC 60034-1-5-6-7-8-9-12-14, IEC 60072-1, EN 50347, EN 60079-0-1-7, EN 61241-0-1. Approved by SABS (South Africa Bureau Standards) and Gost R (Russia).

EUROPEAN DIRECTIVES

Title	Directive
Equipment and protective system intended for use in potentially explosive atmospheres (ATEX)	94/9/EC
Electromagnetic Compatibility (EMC)	2004/108/IEC
Low Voltage Directive (LVD)	2006/95/EC
Machinery Directive (MD)	98/37/EC

CERTIFICATES

Frame size	Number	Temperature Limits
71-132	BVI 08 ATEX 0001	-20°C +40°C*
160-315	CESI 02 ATEX 071	-20°C +40°C*
355-400	CESI 03 ATEX 048	-20°C +40°C*

(*) Limit +60°C For Temperature Class T3 and/or Maximum Surface Temperature T150°C. -40°C, -55°C limits on request (only for cat. 2G).

GROUPS

The electrical motors are subdivided into two groups, depending on the intended operating environment.

GROUP	Description
I	equipment used in mines and on the surface of mines
II	equipment used in explosive atmosphere other than mines (surface industries)

EQUIPMENT AND AREA CLASSIFICATIONS

The table on the right defines the EQUIPMENT CATEGORY suitable for each CLASSIFIED AREA. Dangerous environments are classified by ZONE, according to the risk generated by explosive GAS (zone 0, 1 and 2) or DUST (zone 20, 21 and 22). The equipment is classified by CATEGORY according to the level of protection the apparatus must have (specified by a number) and the atmosphere in which it will operate (specified by the letter G, D or GD). In the areas and equipment classification lower numbers stand for higher danger and requirement for higher protection. In zone 0/20 the use of electric motors is not allowed.

D	G	SAFE	Zone 2	Zone 1	Zone 0
SAFE		Standard Industrial	3G	2G	
Zone 22		3D	3GD	2GD	
Zone 21		2D	2GD	2GD	
Zone 20		MOTORS NOT PERMITTED			

TYPES OF PROTECTION

The types of protection are defined as follows:

GAS environments	
PROTECTION	<i>The equipment must be designed in such a way that:</i>
Ex d	• no internal explosion can be spread to the surrounding explosive atmosphere
Ex e	• no sparks, arcs, or hot spots can occur in service, including starting and locked rotor situation, in all internal and external parts of the machine
Ex de	• an "Ex d" flameproof enclosure is combined with the terminal box featuring an "Ex e" increased safety protection
DUST environments	
Ex tD A21 IP65	• The surface temperature of the enclosure must be less than the reference ignition temperature (Tamm) of the dust atmosphere considered.

GROUP (IIA, IIB, IIC)

Gas atmospheres are furtherly divided into 3 sub-groups (IIA, IIB and IIC), according to the severity of the environment. **This catalogue refers to motors belonging to group IIB**, which are suitable for medium-danger environment (some examples of IIB atmosphere are: coke-oven gas, ethylene, ethylene oxide, ethyl ether, formic aldehyde).

NOMENCLATURE

The data sheets included in this catalogue refer to the series shown in this table.

Series	Frame size where applicable	Ex	Group	Category	Protection	Group	Temperature Class Maximum surfaces temperature
D6C	71 - 132	⊕Ex	II	2G	Ex d	II B	T4
D6X		⊕Ex	II	2G	Ex de	II B	T4
D6A		⊕Ex	II	2D	Ex tD A21 - IP 65	II	T125°C
D6W		⊕Ex	II	2GD	Ex d	II B	T4
	⊕Ex	II	2GD	Ex de	II B	T4	
	⊕Ex	II	2GD	Ex tD A21 - IP 65	II	T125°C	
D5C	160 - 400	⊕Ex	II	2G	Ex d	II B	T4
D5X		⊕Ex	II	2G	Ex de	II B	T4
D5A		⊕Ex	II	2D	Ex tD A21 - IP 65	II	T135°C
D5T	160 - 315	⊕Ex	I	M2	Ex d	I	-
					Ex de		-

MATERIALS

Size (mm)	71-80		90-132		160-280	315-355		355-400	
	Ex d IIB	Ex tD A21 IP65 Ex de IIB	Ex d IIB	Ex tD A21 IP65 Ex de IIB		2-6 poles	≥ 8 poles	2 poles	4 poles
Frame endshields	Cast Iron					Steel			
Fan cowl	Steel								
Fan	Thermolastic*							Metallic	
Terminal Box	Cast Iron					Steel			
Terminal Box Cover	Cast Iron					Steel			

(*) Metal is used for motors of M2 category.

BEARINGS

Frame Size (mm)	D - end	N - end
71*	6202-2Z	6202-2Z
80*	6204-2Z	6204-2Z
90*	6205-2Z	6205-2Z
100*	6206-2Z	6206-2Z
112*	6206-2Z	6206-2Z
132*	6308-2Z	6308-2Z
160 - 180M	6310-Z-C3	6209-Z-C3
180L	6310-Z-C3	6210-Z-C3
200	6312-Z-C3	6210-Z-C3
225	6313-Z-C3	6213-Z-C3
250	6314-Z-C3	6213-Z-C3
280 2 poles	6314-Z-C3	6314-Z-C3
280 ≥ 4 poles	NU2217-EC-C3	6314-Z-C3
315 2 poles	6316-C3	6316-C3
315 ≥ 4 poles	NU2219-EC-C3	6316-C3

Frame Size	Poles	B 3		V 1	
		D - end	N - end	D - end	N - end
355-400	2	6317-C3	6317-C3	6317-C3	7317-B
355	≥ 4	6322-C3	6322-C3	6322-C3	6322-C3
400	≥ 4	NU222-C3	6222-C3	NU222-C3	6222-C3 + 7222 B

These tables describe the bearing types used in standard configurations. Different types are available on request (for high loads applications).

*D6A motors can be equipped with different bearing types

TERMINAL BOX AND CABLE ENTRY

The terminal box is located on top of the motor (referred to a B3 mounting) for all sizes from 71 to 400 and it is usually equipped with 6 terminals. The terminal box can be rotated by steps of 90°.

Frame Size (mm)	Type of terminal	Terminal thread	Cable entrance holes
71 - 80	Threaded terminals	M6	M25 x 1,5**
90 - 132	Threaded terminals	M6	M32 x 1,5 + M20 x 1,5*
160 - 200	Threaded terminals	M6	M40 x 1,5 + M40 x 1,5* + M20 x 1,5*
225 - 250	Threaded terminals	M8	M50 x 1,5 + M50 x 1,5* + M20 x 1,5*
280 - 315	Threaded terminals	M12	M75 x 1,5 + M75 x 1,5* + M20 x 1,5*
355 - 400	Threaded terminals	M20	M75 x 1,5 + M75 x 1,5

(*): Closed with a certified plug, in accordance with Directive 94/4/EC, when not used.

(**): Valid for Ex d protection. For Ex de protection cable entry is M32 x 1,5 + M20 x 1,5.

SURFACE PROTECTION

External surface. The standard painting process consists of a epoxy-vinyl / polyamidic paint with a thickness not less than 50 µm. A special painting process, consisting in the addition of a polyacrillic paint to the standard one, is available on request; in this case the total thickness of the painting is not less than 200 µm. The finishing paint is RAL 5010; other RAL or MUNSSELL colours are available on request.

DRAINAGE HOLE

A drainage hole is available on request from frame size 132 (only for horizontal mounting).

THERMAL PROTECTION

Motors with a frame size ≥ 90 mm are provided with 3 PTC in their standard configuration. PTC, PT100 and Space Heaters are available on request according to the following table:

Frame size	Type of protection	PTC	PT 100	Anticondensation Heaters	PTC + Heaters	PT100 + Heaters
71 - 80	d de	optional	-	-	-	-
90 - 132	d de	standard	optional	optional *	optional	-
160 - 250	d de	standard	optional optional*	optional	optional	optional*
280 - 315	d de	standard	optional optional*	optional	optional	optional optional*
355 - 400	d de	standard	optional	optional	optional	optional

(*): PT100 terminal in auxiliary terminal box, except for motors of category M2.

(**): PT100 optional for Ex d from frame size 132. For Ex de please contact Marelli Motori sales department.

OPTIONS Other options are available on request. Please contact Marelli Motori for more information and/or quotation.

FREQUENCY CONVERTER SUPPLY Please contact Marelli Motori for specific data sheet and quotation relevant to Ex d/de IIB motors fed by frequency converter.

Contact Marelli Motori S.p.A. for PT100 in bearings and other combinations of protections.

Ex d I, Ex de I, Ex d IIB, Ex de IIB, Ex tD A21 IP65

400V 50Hz / 440V 60Hz

All rated values refer to: Ambient Temperature ≤ 40°C, Installation ≤ 1000 m a.s.l., Insulation cl. F, duty S1.

RATED OUTPUT [kW]	MOTOR TYPE		PERFORMANCE AT RATED OUTPUT					PERFORMANCE AT RATED VOLTAGE					MOMENT OF INERTIA J [kgm ²]	WEIGHT IM 1001 Approx. [kg]
			SPEED		EFFICIENCY η [%]	POWER FACTOR cos φ	400V 50Hz							
			50 Hz	60 Hz			RATED CURRENT I [A]	RATED TORQUE T _n [Nm]	STARTING CURRENT I _s /I _n p.u.	STARTING TORQUE T _s /T _n p.u.	BREAKDOWN TORQUE T _{max} /T _n p.u.			

2 poles = 3000/3600 rpm - 50/60 Hz

T4, T 125°C

0,37	0,44	D6•	71 MA2	2840	3408	75,4	0,81	0,9	1,24	5,6	2,6	-	0,00048	18
0,55	0,66	D6•	71 MB2	2840	3408	76,8	0,81	1,3	1,85	5,8	2,8	-	0,00048	18
0,75	0,90	D6•	80 MA2	2860	3432	79,6	0,80	1,7	2,50	6,2	2,8	2,9	0,00092	23
1,1	1,30	D6•	80 MB2	2870	3444	80,9	0,81	2,4	3,66	6,4	3,1	3,2	0,00092	23
1,5	1,7	D6•	90 S2	2870	3444	82,6	0,84	3,1	4,99	7,3	2,9	3,3	0,00175	35
2,2	2,5	D6•	90 L2	2870	3444	83,8	0,86	4,4	7,32	7,5	3,7	3,9	0,00175	35
3	3,5	D6•	100 LA2	2880	3456	84,6	0,89	5,8	9,95	7,7	3,1	3,3	0,0037	53
4	4,6	D6•	112 M2	2890	3468	86,5	0,90	7,4	13,2	7,5	2,7	2,9	0,0060	62
5,5	6,3	D6•	132 SA2	2920	3504	87,9	0,89	10,2	18,0	7,2	2,7	2,9	0,0171	99
7,5	9,0	D6•	132 SB2	2920	3504	88,8	0,90	13,6	24,5	7,2	2,7	2,9	0,0171	99
9	10,8	D6•	132 MB2	2928	3514	89,1	0,90	16,2	29,4	7,3	2,9	3,0	0,0171	99

T4, T 135°C

11	12	D5•	160 MA2	2920	3520	88,4	0,82	21,9	36	6,2	2,1	2,8	0,030	115
15	16,5	D5•	160 MB2	2925	3525	89,8	0,83	29,0	49	6,6	2,4	3,0	0,035	129
18,5	20	D5•	160 L2	2925	3525	90,0	0,81	36,7	60	7,1	2,6	3,0	0,040	143
22	24	D5•	180 M2	2930	3530	90,5	0,84	41,8	72	7,0	2,5	3,0	0,048	154
30	33	D5•	200 LA2	2945	3545	92,0	0,87	54	97	6,8	2,3	2,9	0,165	189
37	40	D5•	200 LB2	2945	3545	92,2	0,87	67	120	6,9	2,4	3,0	0,180	209
45	50	D5•	225 M2	2960	3560	92,5	0,88	80	145	6,6	2,4	3,0	0,225	304
55	60	D5•	250 M2	2960	3560	93,0	0,87	98	177	6,7	2,4	3,0	0,250	336
75	83	D5•	280 S2	2960	3560	93,6	0,87	133	242	6,8	2,3	2,7	0,350	484
90	100	D5•	280 M2	2960	3560	94,2	0,88	157	290	7,2	2,3	2,7	0,416	517
110	121	D5•	315 SM2	2975	3575	94,3	0,87	194	353	6,4	2,4	2,4	0,95	760
132	158	D5•	315 MA2	2970	3570	94,3	0,86	235	424	6,5	2,5	2,5	0,95	760
160	192	D5•	315 MC2	2975	3575	94,4	0,87	281	513	6,5	2,5	2,5	1,12	827
200	240	D5•	315 MD2	2980	3580	94,7	0,87	351	640	6,5	2,5	2,5	1,30	887
250	300	D5•	355 LA2	2980	3576	96,2	0,90	417	800	6,3	2,5	2,4	3,7	1620
315	375	D5•	355 LB2	2980	3576	96,4	0,90	524	1008	6,4	2,4	2,3	4,5	1810
330	330	D5•	400 LX2	2980	3580	94,5	0,91	555	1056	7,0	2,2	2,8	7,9	2780
400	400	D5•	400 LW2	2980	3580	95,0	0,91	669	1281	7,0	2,2	3,0	8,9	2940
500	500	D5•	400 LY2	2980	3580	95,0	0,91	936	1601	7,2	2,2	3,0	10,0	3150

I_s = Starting current, T_s = Starting torque, T_{max} = Breakdown torque.

Ex d I and Ex de I type of protection available from frame size 160 to 315 included.

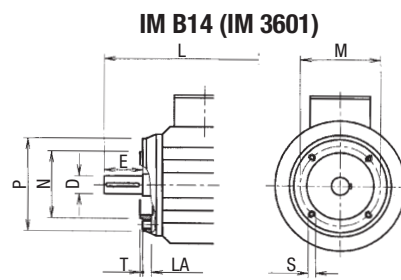
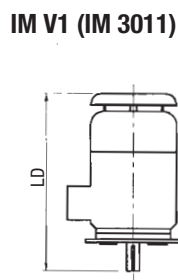
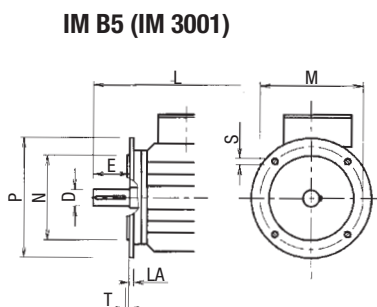
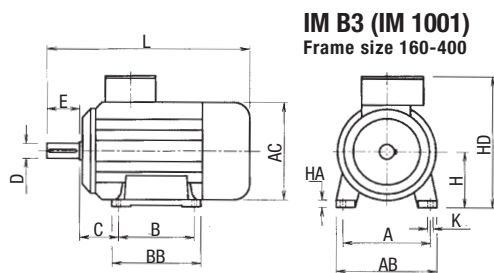
Detailed data for 440V/60Hz on request.

Higher output available for Temperature Class T3 and/or Maximum Surface Temperature T150°C.

Motor not multivoltage. Output values at 440V/60Hz refer to motors with dedicated winding.

SERIES SELECTION

- D6• ● = C for 2G Ex d IIB
- D6• ● = X for 2G Ex de IIB
- D5• ● = A for 2D Ex tD A21 IP65
- D6 W for 2GD Ex d/de, Ex tD A21 IP65
- D5 T for M2 Ex d/de



FRAME SIZE			A	A
IEC	POLES			
71	M	2 - 8	112	2
80	M	2 - 8	125	3
90	S	2 - 8	140	3
	L	2 - 8		
100	L	2 - 8	160	3
112	M	2 - 8	190	4
	S	2 - 8		
132	M	2 - 8	216	4
				A
D5_160	M	2 - 8	254	
	L	2 - 8		
D5_180	M	2 - 4	279	
	L	4 - 8		
D5_200	L	2 - 8	318	
	S	4 - 8		
D5_225	M	2	356	
		4 - 8		
D5_250	M	2	406	
		4 - 8		

Ex d I, Ex de I, Ex d IIB, Ex de IIB, Ex tD A21 IP65

400V 50Hz / 440V 60Hz

All rated values refer to: Ambient Temperature ≤ 40°C, Installation ≤ 1000 m a.s.l., Insulation cl. F, duty S1.

RATED OUTPUT [kW]	MOTOR TYPE		PERFORMANCE AT RATED OUTPUT					PERFORMANCE AT RATED VOLTAGE					MOMENT OF INERTIA J [kgm ²]	WEIGHT IM 1001 Approx. [kg]
			SPEED		EFFICIENCY η [%]	POWER FACTOR cos φ	400V 50Hz							
			50 Hz	60 Hz			RATED CURRENT I [A]	RATED TORQUE T _n [Nm]	STARTING CURRENT I _s /I _n p.u.	STARTING TORQUE T _s /T _n p.u.	BREAKDOWN TORQUE T _{MAX} /T _n p.u.			

4 poles = 1500/1800 rpm - 50/60 Hz

T4, T 125°C

0,25 0,37	0,30 0,44	D6• 71 MA4 D6• 71 MB4	1410 1410	1692 1692	68,6 71,0	0,65 0,68	0,8 1,1	1,69 2,51	4,2 4,4	2,5 2,6	2,0 2,0	0,00097 0,00097	19 19
0,55 0,75	0,66 0,90	D6• 80 MA4 D6• 80 MB4	1410 1420	1692 1704	72,0 73,7	0,80 0,81	1,4 1,8	3,72 5,04	5,9 5,9	2,7 2,7	2,5 2,5	0,00245 0,00245	24 24
1,1 1,5	1,30 1,70	D6• 90 S4 D6• 90 L4	1420 1420	1704 1704	78,2 79,3	0,79 0,81	2,6 3,4	7,40 10,1	6,1 6,2	3,0 3,2	3,0 3,2	0,0034 0,0034	36 36
2,2 3	2,5 3,5	D6• 100 LA4 D6• 100 LB4	1440 1440	1728 1728	84,2 84,4	0,82 0,81	4,6 6,3	14,6 19,9	5,9 5,9	2,8 2,7	2,9 2,9	0,0075 0,0075	56 56
4	4,6	D6• 112 M4	1445	1734	85,7	0,82	8,2	26,4	6,8	2,8	3,0	0,0125	68
5,5 7,5	6,3 9,0	D6• 132 SA4 D6• 132 MA4	1450 1450	1740 1740	87,9 88,2	0,82 0,82	11,0 15,0	36,2 49,4	6,2 6,3	2,5 2,6	2,6 2,8	0,032 0,032	101 101

T4, T 135°C

11 15	12 16	D5• 160 M4 D5• 160 L4	1455 1460	1760 1760	88,6 89,4	0,81 0,81	22,1 29,9	72 98	5,2 5,8	2,0 2,2	2,1 2,4	0,034 0,075	123 135
18,5 22	20 24	D5• 180 M4 D5• 180 L4	1460 1465	1765 1765	90,0 90,5	0,82 0,84	36,2 41,8	121 143	6,2 6,3	2,3 2,4	2,5 2,5	0,090 0,110	148 177
30	33	D5• 200 L4	1470	1765	91,6	0,84	56	195	6,4	2,4	2,8	0,180	205
37 45	40 50	D5• 225 S4 D5• 225 M4	1475 1475	1770 1775	92,5 92,5	0,86 0,86	67 82	239 291	6,5 6,5	2,3 2,4	2,8 2,8	0,320 0,410	302 332
55 75	60 83	D5• 250 M4 D5• 280 S4	1475 1480	1775 1780	93,0 93,7	0,87 0,86	98 134	356 483	6,4 7,0	2,3 2,5	2,6 2,3	0,520 0,885	370 525
90 100	100 121	D5• 280 M4 D5• 315 SM4	1480 1488	1780 1780	93,9 93,6	0,88 0,85	157 200	580 705	7,1 6,5	2,7 2,6	2,4 2,6	1,060 2,10	584 780
110 132	121 158	D5• 315 MA4 D5• 315 MC4	1485 1485	1785 1785	94,5 94,8	0,85 0,85	237 287	848 1028	6,2 6,2	2,5 2,5	2,5 2,5	2,10 2,50	780 859
160 200	192 240	D5• 315 MD4 D5• 355 LA4	1485 1490	1785 1788	95,3 95,7	0,86 0,86	353 438	1285 1600	6,5 5,6	2,5 2,1	2,6 2,5	3,10 6,1	965 1690
315 350	375 500	D5• 355 LB4 D5• 400 LX4	1490 1490	1788 1790	95,8 95,1	0,86 0,88	552 569	2016 2113	5,6 6,8	2,1 2,3	2,5 2,2	7,4 15,8	1880 2880
400 500	400 500	D5• 400 LW4 D5• 400 LY4	1490 1490	1790 1790	95,5 95,5	0,88 0,88	687 859	2561 3201	6,8 7,2	2,3 1,2	2,3 2,5	18,8 20,7	3030 3240

I_s = Starting current, T_s = Starting torque, T_{MAX} = Breakdown torque.

Ex d I and Ex de I type of protection available from frame size 160 to 315 included.

Detailed data for 440V/60Hz on request.

Higher output available for Temperature Class T3 and/or Maximum Surface Temperature T150°C.

Motor not multivoltage. Output values at 440V/60Hz refer to motors with dedicated winding.

SERIES SELECTION

- D6• ● = C for 2G Ex d IIB
- D6• ● = X for 2G Ex de IIB
- D5• ● = A for 2D Ex tD A21 IP65
- D6 W for 2GD Ex d/de, Ex tD A21 IP65
- D5 T for M2 Ex d/de

DIMENSIONS													SHAFT EXTENSION						FLANGE B5					FLANGE B14													
AA	AB	AC	AD Ex d	AD Ex e	B	BB	BC	C	CA	H	HA	HD Ex d	HD Ex e	K	L	LC	LD	W	D	DA	E	EA	F	FA	GA	GC	M	N	P	S	T	LA	M	N	P	S	T
99	138	146	119	179	90	112	11	45	120	71	8	200	274	7	280	315	295	131	14	14	30	30	5	5	16	16	130	110	160	10		7	85	70	105	M6	2,5
11	156	166	133	193	100	126	13	50	150	80		214	288	10	335	380	350	141	19	19	40	40	6	6	21,5	21,5	165	130	200	12	3,5	10	100	80	120		3
14	172	184	208	268	125	152	13,5	56	184	90	10	298	284	10	385	440	400	160	24	24	50	50	8	8	27	27	165	130	200	12		115	95	140	M8	3	
16	196	204	215	275	140	172	16	63	187	100	12	315	301	12	445	510	460	175	28	28	60	60	8	8	31	31	215	180	250	14,5	4	14	130	110	160		3,5
10	225	228	226	286	140	172	16	70	195	112	13	338	324	12	460	525	475		28	28	60	60	8	8	31	31	215	180	250	14,5	4	14	130	110	160		3,5
15	255	386	241	301	178	214	18	89	246	132	15	373	359	12	550	635	565	205	38	38	80	80	10	10	41	41	265	230	300	14,5	4	14	165	130	200	M10	3,5

DIMENSIONS													FLANGE B5 - V1						FLANGE B14					
AB	AC	AD	B	BB	C	H	HA	HD	K	L	LD	D	E	M	N	P	LA	S	T	M	N	P	S	T
300			210	296	108	160	22	446																
	314		254						14	648	710	42												
324			241	283	121	180	24	466				110		300	250	350	15							
	354		279	321				488				48												
368			305	350	133	200		508				55		350	300	400	18			18	5			
			286									60	140											
406			311	360	149	225	28	593	18			55	110	400	350	450	16							
	411											60												
465			349	406	168	250		618	22	830		65	140	500	450	550	18							

Ex d I, Ex de I, Ex d IIB, Ex de IIB, Ex tD A21 IP65

400V 50Hz / 440V 60Hz

All rated values refer to: Ambient Temperature ≤ 40°C, Installation ≤ 1000 m a.s.l, Insulation cl. F, duty S1.

RATED OUTPUT [kW]	MOTOR TYPE		PERFORMANCE AT RATED OUTPUT						PERFORMANCE AT RATED VOLTAGE					MOMENT OF INERTIA J [kgm ²]	WEIGHT IM 1001 Approx. [kg]
			SPEED		EFFICIENCY η [%]	POWER FACTOR cos φ	400V 50Hz								
			50 Hz	60 Hz			RATED CURRENT I [A]	RATED TORQUE T _n [Nm]	STARTING CURRENT I _s /I _n p.u.	STARTING TORQUE T _s /T _n p.u.	BREAKDOWN TORQUE T _{MAX} /T _n p.u.				

6 poles = 1000/1200 rpm - 50/60 Hz

T4, T 125°C

0,37	0,44	D6• 80 MA6	930	1116	64,5	0,60	1,4	3,8	3,7	2,0	1,8	0,0029	25
0,55	0,66	D6• 80 MB6	930	1116	66,9	0,69	1,7	5,6	3,9	2,0	1,9	0,0029	25
0,75	0,90	D6• 90 S6	920	1104	66,7	0,72	2,3	7,8	4,0	2,1	2,3	0,0037	42
1,1	1,30	D6• 90 L6	920	1104	69,9	0,74	3,1	11,4	4,2	2,3	2,4	0,0037	42
1,5	1,7	D6• 100 LA6	930	1116	76,6	0,77	3,7	15,4	3,8	2,0	1,9	0,0075	56
2,2	2,5	D6• 112 M6	940	1128	80,3	0,77	5,1	22,3	4,0	1,5	1,6	0,0125	71
3	3,5	D6• 132 SA6	950	1140	84,7	0,75	6,8	30,2	4,5	2,0	2,3	0,0390	106
4	4,6	D6• 132 MA6	950	1140	85,0	0,75	9,1	40,2	4,6	2,0	2,4	0,0390	106
5,5	6,3	D6• 132 MB6	960	1152	85,4	0,76	12,2	54,7	4,6	1,9	2,5	0,0390	106

T4, T 135°C

7,5	9	D5• 160 M6	965	1165	86,0	0,82	15,4	74	5,0	2,0	2,3	0,087	131
11	13,2	D5• 160 L6	967	1165	88,0	0,82	22,0	108	5,5	2,3	2,5	0,110	147
15	18	D5• 180 L6	970	1170	88,2	0,82	30,0	147	5,2	2,3	2,2	0,130	165
18,5	22	D5• 200 LA6	970	1170	88,2	0,83	36	182	5,2	2,1	2,3	0,170	185
22	26	D5• 200 LB6	972	1170	89,0	0,83	43	216	5,5	2,4	2,4	0,220	203
30	36	D5• 225 M6	975	1175	90,5	0,84	57	294	6,2	2,4	2,4	0,470	309
37	44	D5• 250 M6	975	1175	91,0	0,84	70	362	6,5	2,6	2,6	0,570	342
45	54	D5• 280 S6	980	1180	92,5	0,83	85	438	6,0	2,5	2,5	0,850	479
55	66	D5• 280 M6	980	1180	93,0	0,84	102	535	6,0	2,5	2,5	1,075	518
75	90	D5• 315 SM6	985	1185	94,0	0,83	139	726	6,3	2,6	2,6	2,60	748
90	108	D5• 315 MA6	985	1185	94,0	0,84	165	872	6,0	2,5	2,5	2,60	748
110	132	D5• 315 MB6	985	1185	94,0	0,84	201	1065	6,0	2,5	2,5	3,00	799
132	158	D5• 315 MC6	985	1185	93,3	0,85	240	1278	6,3	2,5	2,5	3,60	889
160	192	D5• 315 MD6	985	1185	94,8	0,86	283	1550	6,3	2,7	2,5	4,40	994
200	240	D5• 355 LA6	990	1188	95,5	0,85	355	1927	5,4	2,2	2,2	10,5	1660
250	300	D5• 355 LB6	990	1188	95,7	0,85	443	2409	5,4	2,2	2,2	13,1	1890
280	280	D5• 400 LX6	995	1194	95,0	0,87	490	2685	6,8	2,2	2,4	22,7	2860
315	315	D5• 400 LW6	995	1194	95,0	0,87	551	3020	6,8	2,2	2,4	25,5	3040
350	350	D5• 400 LY6	995	1194	95,0	0,87	612	3356	7,0	2,2	2,4	29,0	3300

I_s = Starting current, T_s = Starting torque, T_{MAX} = Breakdown torque.

Ex d I and Ex de I type of protection available from frame size 160 to 315 included.

Detailed data for 440V/60Hz on request.

Higher output available for Temperature Class T3 and/or Maximum Surface Temperature T150°C.

Motor not multivoltage. Output values at 440V/60Hz refer to motors with dedicated winding.

SERIES SELECTION

- D6• ● = C for 2G Ex d IIB
- D6• ● = X for 2G Ex de IIB
- D5• ● = A for 2D Ex tD A21 IP65
- D6 W for 2GD Ex d/de, Ex tD A21 IP65
- D5 T for M2 Ex d/de

FRAME SIZE		FLANGE B5 V1																					
IEC	POLES	A	AB	AC	B	BB	C	H	HA	HD	K	L	LD	D	E	M	N	P	LA	S	T		
D5_280	S	457	540	490	368	480	190	280	40	710	22	960	1045	65	140	500	450	550	18	18	5		
	4 - 8				75																		
	M				419									65									
	4 - 8				75																		
D5_315	SM	508	590	604	457	520	216	315	45	820	28	1102	1177	65	600	550	660	22	22	6			
	4 - 8													80									
	MA													1102							1177	65	140
	4 - 8													1132							1207	80	170
	MD													1102							1177	70	140
	4 - 8													1132							1207	90	170
D5_355	LA-LB	610	740	770	630	818	254	355	40	1025	33	1475	1595	75	740	680	800	25	24				
	4 - 8													100						210			
D5_400	LX-LW-LY	686	836	850	710	880	280	400	35	1130	33	1780	1880	75	940	880	1000	26	28				
	4 - 8					880								210									

Ex d I, Ex de I, Ex d IIB, Ex de IIB, Ex tD A21 IP65

400V 50Hz / 440V 60Hz

All rated values refer to: Ambient Temperature $\leq 40^{\circ}\text{C}$, Installation ≤ 1000 m a.s.l, Insulation cl. F, duty S1.

RATED OUTPUT [kW]	MOTOR TYPE		PERFORMANCE AT RATED OUTPUT					PERFORMANCE AT RATED VOLTAGE					MOMENT OF INERTIA J [kgm ²]	WEIGHT IM 1001 Approx. [kg]
			SPEED		EFFICIENCY η [%]	POWER FACTOR $\cos \varphi$	400V 50Hz							
			[rpm]	50 Hz			60 Hz	RATED CURRENT I [A]	RATED TORQUE T _n [Nm]	STARTING CURRENT I _s /I _n p.u.	STARTING TORQUE T _s /T _n p.u.	BREAKDOWN TORQUE T _{MAX} /T _n p.u.		

8 poles = 750/900 rpm - 50/60 Hz

T4, T 125°C

0,18 0,25	0,22 0,30	D6• D6•	80 MA8 80 MB8	680 690	816 828	49,3 53,8	0,65 0,68	0,8 1,0	2,5 3,5	2,6 2,7	1,9 1,9	- -	0,0029 0,0029	25 25
0,37 0,55	0,44 0,66	D6• D6•	90 S8 90 L8	675 680	810 816	55,9 60,9	0,66 0,69	1,4 1,9	5,2 7,7	2,8 2,9	2,0 2,0	2,0 2,1	0,0037 0,0037	42 42
0,75 1,1	0,90 1,30	D6• D6•	100 LA8 100 LB8	680 695	816 834	67,6 70,2	0,66 0,66	2,4 3,4	10,5 15,1	2,7 2,7	1,5 1,4	1,9 1,8	0,0075 0,0075	56 56
1,5	1,70	D6•	112 M8	700	840	75,8	0,71	4,0	20,5	2,8	1,2	1,7	0,0132	71
2,2 3	2,5 3,5	D6• D6•	132 SA8 132 MA8	710 710	852 852	80,7 81,0	0,70 0,70	5,6 7,6	29,6 40,3	3,2 3,1	1,5 1,4	1,7 1,6	0,039 0,039	106 106

T4, T 135°C

4 5,5 7,5	4,8 6,6 9	D5• D5• D5•	160 MA8 160 MB8 160 L8	710 720 720	860 870 870	81,5 82,4 84,7	0,73 0,74 0,74	9,7 13,0 17,3	54 73 99	4,2 4,2 4,2	1,9 1,9 2,0	2,1 2,1 2,1	0,080 0,092 0,110	115 123 133
11	13,2	D5•	180 L8	725	875	86,7	0,75	24,4	145	4,5	2,0	2,2	0,160	188
15	18	D5•	200 L8	725	875	88,0	0,75	33	197	5,0	2,1	2,3	0,220	216
18,5 22	22 26	D5• D5•	225 S8 225 M8	730 730	880 880	89,0 90,0	0,76 0,76	40 47	242 288	5,2 5,3	2,2 2,2	2,4 2,4	0,420 0,520	294 326
30	36	D5•	250 M8	730	880	91,0	0,76	63	392	5,5	2,3	2,5	0,620	356
37 45	44 54	D5• D5•	280 S8 280 M8	735 735	885 885	92,5 93,0	0,80 0,80	72 87	480 584	6,0 6,0	2,5 2,5	2,5 2,5	1,050 1,250	520 553
55 75 90 110 132	66 90 108 132 158	D5• D5• D5• D5• D5•	315 SM8 315 MA8 315 MC8 315 MD8 315 ME8	740 740 740 740 740	890 890 890 890 890	93,5 93,8 94,4 94,5 94,6	0,81 0,82 0,83 0,83 0,83	105 141 166 202 243	709 967 1160 1418 1702	6,5 6,0 6,2 6,2 6,2	2,3 2,1 2,2 2,2 2,2	2,4 2,2 2,3 2,3 2,3	2,80 2,80 3,50 4,00 4,30	776 776 886 924 993
160 200	190 240	D5• D5•	355 LA8 355 LB8	740 740	888 888	95,3 95,4	0,83 0,83	292 364	2063 2578	5,2 5,0	2,2 2,1	2,2 2,2	12,7 15,4	1710 1910
230 250 280	230 250 280	D5• D5• D5•	400 LX8 400 LW8 400 LY8	745 745 745	895 895 895	95,6 95,5 95,6	0,81 0,82 0,83	429 461 510	2945 3201 3586	6,6 6,8 6,8	2,1 2,2 2,2	2,2 2,3 2,2	25,0 29,7 33,2	2760 2940 3200

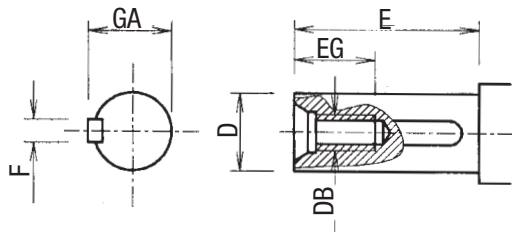
I_s = Starting current, T_s = Starting torque, T_{MAX} = Breakdown torque.
Ex d I and Ex de I type of protection available from frame size 160 to 315 included.
Detailed data for 440V/60Hz on request.
Higher output available for Temperature Class T3 and/or Maximum Surface Temperature T150°C.
Motor not multivoltage. Output values at 440V/60Hz refer to motors with dedicated winding.

SERIES SELECTION

- D6• = C for 2G Ex d IIB
- D6• = X for 2G Ex de IIB
- D5• = A for 2D Ex tD A21 IP65
- D6W for 2GD Ex d/de, Ex tD A21 IP65
- D5T for M2 Ex d/de

SHAFT EXTENSION

Tapped holes as per DIN 332



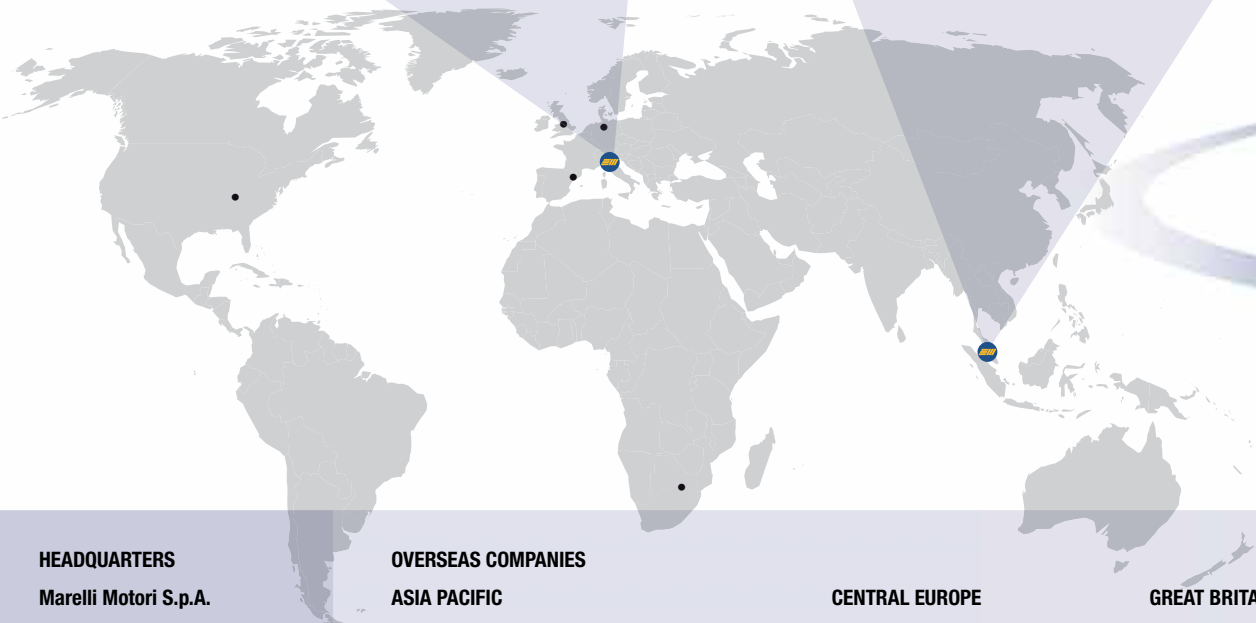
D	14	19	24	28	38	42	48	55	60	65	70	75	80	90	100
toll.	j6			k6				m6							
E	30	40	50	60	80	110	110	110	140	140	140	140	170	170	210
F h9	5	6	8	8	10	12	14	16	18	18	20	20	22	25	28
GA	16	21,5	27	31	41	45	51,5	59	64	69	74,5	79,5	85	95	106
DB	M5	M6	M8	M10	M12	M16		M20						M24	
EG	12,5	19	19	22	28	36		42						48	



Manufacturing Plant
Arzignano - Italy



Manufacturing Plant
Shah Alam - Malaysia



HEADQUARTERS

Marelli Motori S.p.A.

Via Sabbionara, 1
36071 Arzignano (VI) - Italy
(T) +39 0444 479.711
(F) +39 0444 479.888
www.marellimotori.com
sales@marellimotori.com

Branches

Milan

Via Cesare Cantù, 29
20092 Cinisello Balsamo (MI)
(T) +39 02 660.131.66
(F) +39 02 660.134.83
milan@marellimotori.com

Florence

Via Panciatici, 37/2
50127 Firenze - Italy
(T) +39 055 431.838
(F) +39 055 433.351
florence@marellimotori.com

OVERSEAS COMPANIES

ASIA PACIFIC

Marelli Asia Pacific Sdn Bhd **Marelli Manufacturing Asia Sdn Bhd**

Lot PT 5038-5041 Jalan Teluk Datuk 28/40
Off Persiaran Sepang, Seksyen 28,
40400 Shah Alam, Selangor D.E.
Malaysia
(T) +60 3 5192 7213
(F) +60 3 5517 1883
asiapacific@marellimotori.com

SOUTH AFRICA

Marelli Electrical Machines South Africa (Pty) Ltd

Unit 4, 55 Activia Rd - Activia Park
Elandsfontein,
1406 Gauteng
Republic of South Africa
(T) +27 11 822 5566
(F) +27 11 828 8089
southafrica@marellimotori.com

CENTRAL EUROPE

Marelli Central Europe GmbH

Heilswannenweg 50
31008 Elze
Germany
(T) +49 5068 462 400
(F) +49 5068 462 409
germany@marellimotori.com

SPAIN

Representative Office

Calle Constanza 5
08029 Barcelona
Spain
(T) +34 66 446 4121
(F) +34 93 419 6094
spain@marellimotori.com

GREAT BRITAIN

Marelli UK, Ltd

Meadow Lane
Loughborough
Leicester LE111NB
UK
(T) +44 1509 615 518
(F) +44 1509 615 514
uk@marellimotori.com

USA

Marelli USA, Inc

1620 Danville Road
PO Box 410
Harrodsburg, KY 40330
USA
(T) +1 859 734 2588
(F) +1 859 7340629
usa@marellimotori.com