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



MarelliMotori

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.

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:

PROTECTION	*The equipment must be designed in such a way that:*
	GAS environments
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 de	II B	T4
					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		355-400	
Protection Mode	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.

MarelliMotori

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	6217-C3	6217-C3	6217-C3	7217 B
355	≥ 4	NU222-C3	6217-C3	NU222-C3	6217-C3 + 7217 B
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 MUNSELL 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 COVERTER 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.

MarelliMotori

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.

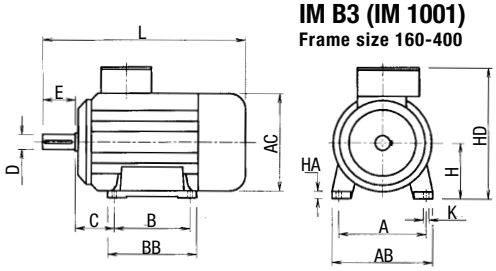
RATED OUTPUT [kW] 50 Hz	60 Hz	MOTOR TYPE SERIES	FRAME SIZE	PERFORMANCE AT RATED OUTPUT: SPEED [rpm] 50 Hz	60 Hz	EFFICIENCY η [%]	POWER FACTOR cos φ	PERFORMANCE AT RATED VOLTAGE 400V 50Hz: RATED CURRENT I [A]	RATED TORQUE Tn [Nm]	STARTING CURRENT Is/In p.u.	STARTING TORQUE Ts/Tn p.u.	BREAKDOWN TORQUE TMAX/Tn p.u.	MOMENT OF INERTIA J [kgm²]	WEIGHT IM 1001 Approx. [kg]
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
200	200	D5•	355 LX2	2980	3580	94,5	0,90	339	640	6,5	2,0	2,8	4,4	1770
250	250	D5•	355 LW2	2980	3580	95,4	0,90	420	800	6,5	2,0	3,0	5,1	1950
280	280	D5•	355 LY2	2980	3580	95,8	0,91	464	896	6,8	2,1	3,0	6,0	2145
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

Is = Starting current, **Ts** = Starting torque, **TMAX** = 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.

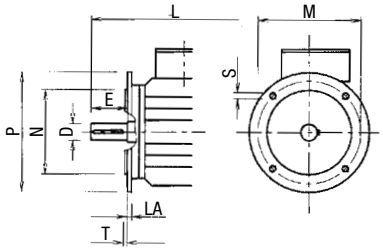
SERIES SELECTION

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

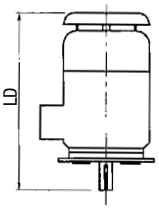
IM B3 (IM 1001)
Frame size 160-400



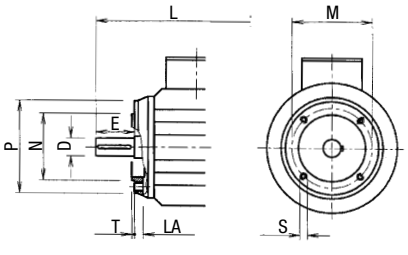
IM B5 (IM 3001)



IM V1 (IM 3011)



IM B14 (IM 3601)



FRAME SIZE IEC		POLES	A	A
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
132	S	2 - 8	216	4
	M	2 - 8		

			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
D5_225	S	4 - 8	356
	M	2	
		4 - 8	
D5_250	M	2	406
		4 - 8	

MarelliMotori

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] 50 Hz	RATED OUTPUT [kW] 60 Hz	MOTOR TYPE SERIES	MOTOR TYPE FRAME SIZE	PERFORMANCE AT RATED OUTPUT SPEED [rpm] 50 Hz	SPEED [rpm] 60 Hz	EFFICIENCY η [%]	POWER FACTOR cos φ	PERFORMANCE AT RATED VOLTAGE 400V 50Hz RATED CURRENT I [A]	RATED TORQUE Tn [Nm]	STARTING CURRENT Is/In p.u.	STARTING TORQUE Ts/Tn p.u.	BREAKDOWN TORQUE TMAX/Tn p.u.	MOMENT OF INERTIA J [kgm²]	WEIGHT IM 1001 Approx. [kg]
4 poles = 1500/1800 rpm - 50/60 Hz														**T4, T 125°C**
0,25	0,30	D6•	71 MA4	1410	1692	68,6	0,65	0,8	1,69	4,2	2,5	2,0	0,00097	19
0,37	0,44	D6•	71 MB4	1410	1692	71,0	0,68	1,1	2,51	4,4	2,6	2,0	0,00097	19
0,55	0,66	D6•	80 MA4	1410	1692	72,0	0,80	1,4	3,72	5,9	2,7	2,5	0,00245	24
0,75	0,90	D6•	80 MB4	1420	1704	73,7	0,81	1,8	5,04	5,9	2,7	2,5	0,00245	24
1,1	1,30	D6•	90 S4	1420	1704	78,2	0,79	2,6	7,40	6,1	3,0	3,0	0,0034	36
1,5	1,70	D6•	90 L4	1420	1704	79,3	0,81	3,4	10,1	6,2	3,2	3,2	0,0034	36
2,2	2,5	D6•	100 LA4	1440	1728	84,2	0,82	4,6	14,6	5,9	2,8	2,9	0,0075	56
3	3,5	D6•	100 LB4	1440	1728	84,4	0,81	6,3	19,9	5,9	2,7	2,9	0,0075	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	6,3	D6•	132 SA4	1450	1740	87,9	0,82	11,0	36,2	6,2	2,5	2,6	0,032	101
7,5	9,0	D6•	132 MA4	1450	1740	88,2	0,82	15,0	49,4	6,3	2,6	2,8	0,032	101
														T4, T 135°C
11	12	D5•	160 M4	1455	1760	88,6	0,81	22,1	72	5,2	2,0	2,1	0,034	123
15	16	D5•	160 L4	1460	1760	89,4	0,81	29,9	98	5,8	2,2	2,4	0,075	135
18,5	20	D5•	180 M4	1460	1765	90,0	0,82	36,2	121	6,2	2,3	2,5	0,090	148
22	24	D5•	180 L4	1465	1765	90,5	0,84	41,8	143	6,3	2,4	2,5	0,110	177
30	33	D5•	200 L4	1470	1765	91,6	0,84	56	195	6,4	2,4	2,8	0,180	205
37	40	D5•	225 S4	1475	1770	92,5	0,86	67	239	6,5	2,3	2,8	0,320	302
45	50	D5•	225 M4	1475	1775	92,5	0,86	82	291	6,5	2,4	2,8	0,410	332
55	60	D5•	250 M4	1475	1775	93,0	0,87	98	356	6,4	2,3	2,6	0,520	370
75	83	D5•	280 S4	1480	1780	93,7	0,86	134	483	7,0	2,5	2,3	0,885	525
90	100	D5•	280 M4	1480	1780	93,9	0,88	157	580	7,1	2,7	2,4	1,060	584
110	121	D5•	315 SM4	1488	1780	93,6	0,85	200	705	6,5	2,6	2,6	2,10	780
132	158	D5•	315 MA4	1485	1785	94,5	0,85	237	848	6,2	2,5	2,5	2,10	780
160	192	D5•	315 MC4	1485	1785	94,8	0,85	287	1028	6,2	2,5	2,5	2,50	859
200	240	D5•	315 MD4	1485	1785	95,3	0,86	353	1285	6,5	2,5	2,6	3,10	965
210	210	D5•	355 LX4	1490	1790	95,3	0,86	370	1345	6,8	2,2	2,4	7,5	1730
270	270	D5•	355 LW4	1490	1790	95,5	0,87	469	1729	6,8	2,2	2,4	9,3	1960
300	300	D5•	355 LY4	1490	1790	95,5	0,87	521	1921	6,8	2,2	2,5	11,2	2180
330	330	D5•	400 LX4	1490	1790	95,1	0,88	569	2113	6,8	2,3	2,2	15,8	2880
400	400	D5•	400 LW4	1490	1790	95,5	0,88	687	2561	6,8	2,3	2,3	18,8	3030
500	500	D5•	400 LY4	1490	1790	95,5	0,88	859	3201	7,2	1,2	2,5	20,7	3240

Is = Starting current, **Ts** = Starting torque, **TMAX** = 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; • = **X** for 2G Ex de IIB; • = **A** for 2D Ex tD A21 IP65
D5• { • = **C** for 2G Ex d IIB; • = **X** for 2G Ex de IIB; • = **A** for 2D Ex tD A21 IP65
D 6 W for 2GD Ex d/de, Ex tD A21 IP65
D 5 T for M2 Ex d/de

DIMENSIONS 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	SHAFT EXTENSION D	DA	E	EA	F	FA	GA	GC	FLANGE B5 M	N	P	S	T	LA	FLANGE B14 M	N	P	S	T
29	138	146	119	179	90	112	11	45	120	71	8	190	176	7	280	315	295	131	14	14	30	30	5	5	16	16	130	110	160	10		7	85	70	105	M6	2,5
31	156	166	133	193	100	126	13	50	150	80		213	199	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
34	172	184	208	268	125	152	13,5	56	184 159	90	10	298	284		385	440	400	160	24	24	50	50	8	8	27	27							115	95	140	M8	
36	196	204	215	275	140	172	16	63	187	100	12	315	301	12	445	510	460	175	28	28	60	60			31	31	215	180	250	14,5	4	14	130	110	160		3,5
40	225	228	226	286				70	195	112	13	338	324		460	525	475																				
45	255	386	241	301	140 178	214	18	89	246 208	132	15	373	359		550	635	565	205	38	38	80	80	10	10	41	41	265	230	300				165	130	200	M10	

AB	AC	AD	B	BB	C	H	HA	HD	K	L	LD	D	E	FLANGE B5 - V1 M	N	P	LA	S	T	FLANGE B14 M	N	P	S	T
300	314		210	296	108	160	22	446	14	648	710	42	110	300	250	350	15	18	5					
			254																					
324			241	283	121	180	24	466				48												
	354		279	321				488		723	790													
368			305	350	133	200		508	18			55		350	300	400	18							
406			286	360	149	225	28	593		830	895	60	140	400	350	450	16							
	411		311							800		55	110											
465			349	406	168	250		618	22	830		60 65	140	500	450	550	18							

MarelliMotori

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] 50 Hz	RATED OUTPUT [kW] 60 Hz	MOTOR TYPE SERIES	MOTOR TYPE FRAME SIZE	PERFORMANCE AT RATED OUTPUT SPEED [rpm] 50 Hz	SPEED [rpm] 60 Hz	EFFICIENCY η [%]	POWER FACTOR cos φ	PERFORMANCE AT RATED VOLTAGE 400V 50Hz RATED CURRENT I [A]	RATED TORQUE Tn [Nm]	STARTING CURRENT Is/In p.u.	STARTING TORQUE Ts/Tn p.u.	BREAKDOWN TORQUE TMAX/Tn p.u.	MOMENT OF INERTIA J [kgm²]	WEIGHT IM 1001 Approx. [kg]
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
160	160	D5•	355 LX6	990	1190	95,0	0,86	283	1542	6,8	2,3	2,5	11,2	1820
230	230	D5•	355 LW6	990	1190	95,0	0,86	407	2216	7,0	2,3	2,6	14,0	2060
250	250	D5•	355 LY6	990	1190	95,0	0,86	440	2409	7,0	2,3	2,4	15,5	2190
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

Is = Starting current, **Ts** = Starting torque, **TMAX** = 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; • = **X** for 2G Ex de IIB; • = **A** for 2D Ex tD A21 IP65
D5• { • = **A** for 2D Ex tD A21 IP65

D 6 W for 2GD Ex d/de, Ex tD A21 IP65
D 5 T for M2 Ex d/de

DIMENSIONS

FRAME SIZE IEC		POLES	A	AB	AC	B	BB	C	H	HA	HD	K	L	LD	D	E	FLANGE B5 V1 M	N	P	LA	S	T
D5_280	S	2	457	540	490	368	480	190	280	40	710	22	960	1045	65	140	500	450	550	18	18	5
		4 - 8													75							
	M	2				419									65							
		4 - 8													75							
D5_315	SM	2	508	590	604	457	520	216	315	45	820	27	1102	1177	65		600	550	660	22	22	6
	SM	4 - 8											1132	1207	80	170						
	MA	2											1102	1177	65	140						
	MA-MC	4 - 8											1132	1207	80	170						
	MD	2											1102	1177	70	140						
	MD-ME	4 - 8											1132	1207	90	170						
D5_355	L	2	610	740	750	630	706	254	355	26	1050		1550	1655	75	140	740	680	800	25	24	
		4 - 8											1620	1725	100	210						
D5_400	LX-LW-LY	2	686	836	850	710	880	280	400	35	1130	33	1780	1880	75	140	940	880	1000	26	28	
	LZ	2					1025						1880	1980								
	LX-LW-LY	4 - 8					880						1850	1950	100	210						
	LZ	4 - 8					1025						1950	2000								

MarelliMotori

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] 50 Hz	RATED OUTPUT [kW] 60 Hz	MOTOR TYPE SERIES	MOTOR TYPE FRAME SIZE	PERFORMANCE AT RATED OUTPUT: SPEED [rpm] 50 Hz	SPEED [rpm] 60 Hz	EFFICIENCY η [%]	POWER FACTOR cos φ	PERFORMANCE AT RATED VOLTAGE 400V 50Hz: RATED CURRENT I [A]	RATED TORQUE Tn [Nm]	STARTING CURRENT Is/In p.u.	STARTING TORQUE Ts/Tn p.u.	BREAKDOWN TORQUE TMAX/Tn p.u.	MOMENT OF INERTIA J [kgm²]	WEIGHT IM 1001 Approx. [kg]
8 poles = 750/900 rpm - 50/60 Hz														**T4, T 125°C**
0,18	0,22	D6•	80 MA8	680	816	49,3	0,65	0,8	2,5	2,6	1,9	-	0,0029	25
0,25	0,30	D6•	80 MB8	690	828	53,8	0,68	1,0	3,5	2,7	1,9	-	0,0029	25
0,37	0,44	D6•	90 S8	675	810	55,9	0,66	1,4	5,2	2,8	2,0	2,0	0,0037	42
0,55	0,66	D6•	90 L8	680	816	60,9	0,69	1,9	7,7	2,9	2,0	2,1	0,0037	42
0,75	0,90	D6•	100 LA8	680	816	67,6	0,66	2,4	10,5	2,7	1,5	1,9	0,0075	56
1,1	1,30	D6•	100 LB8	695	834	70,2	0,66	3,4	15,1	2,7	1,4	1,8	0,0075	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	2,5	D6•	132 SA8	710	852	80,7	0,70	5,6	29,6	3,2	1,5	1,7	0,039	106
3	3,5	D6•	132 MA8	710	852	81,0	0,70	7,6	40,3	3,1	1,4	1,6	0,039	106
														T4, T 135°C
4	4,8	D5•	160 MA8	710	860	81,5	0,73	9,7	54	4,2	1,9	2,1	0,080	115
5,5	6,6	D5•	160 MB8	720	870	82,4	0,74	13,0	73	4,2	1,9	2,1	0,092	123
7,5	9	D5•	160 L8	720	870	84,7	0,74	17,3	99	4,2	2,0	2,1	0,110	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	D5•	225 S8	730	880	89,0	0,76	40	242	5,2	2,2	2,4	0,420	294
22	26	D5•	225 M8	730	880	90,0	0,76	47	288	5,3	2,2	2,4	0,520	326
30	36	D5•	250 M8	730	880	91,0	0,76	63	392	5,5	2,3	2,5	0,620	356
37	44	D5•	280 S8	735	885	92,5	0,80	72	480	6,0	2,5	2,5	1,050	520
45	54	D5•	280 M8	735	885	93,0	0,80	87	584	6,0	2,5	2,5	1,250	553
55	66	D5•	315 SM8	740	890	93,5	0,81	105	709	6,5	2,3	2,4	2,80	776
75	90	D5•	315 MA8	740	890	93,8	0,82	141	967	6,0	2,1	2,2	2,80	776
90	108	D5•	315 MC8	740	890	94,4	0,83	166	1160	6,2	2,2	2,3	3,50	886
110	132	D5•	315 MD8	740	890	94,5	0,83	202	1418	6,2	2,2	2,3	4,00	924
132	158	D5•	315 ME8	740	890	94,6	0,83	243	1702	6,2	2,2	2,3	4,30	993
150	150	D5•	355 LX8	740	890	94,8	0,84	272	1934	6,6	1,5	2,4	13,2	1840
180	180	D5•	355 LW8	743	893	95,3	0,84	325	2311	6,8	1,5	2,5	16,2	2040
200	200	D5•	355 LY8	744	894	95,6	0,85	356	2565	7,2	2,0	2,6	18,0	2170
230	230	D5•	400 LX8	745	895	95,6	0,81	429	2945	6,6	2,1	2,2	25,0	2760
250	250	D5•	400 LW8	745	895	95,5	0,82	461	3201	6,8	2,2	2,3	29,7	2940
280	280	D5•	400 LY8	745	895	95,6	0,83	510	3586	6,8	2,2	2,2	33,2	3200

Is = Starting current, **Ts** = Starting torque, **TMAX** = 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.

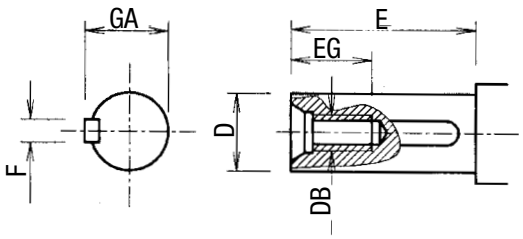
SERIES SELECTION

D6• / **D5•**
- • = **C** for 2G Ex d IIB
- • = **X** for 2G Ex de IIB
- • = **A** for 2D Ex tD A21 IP65

D 6 W for 2GD Ex d/de, Ex tD A21 IP65
D 5 T 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

MarelliMotori

MarelliMotori®



HEADQUARTERS
Marelli Motori S.p.A.
Via Sabbionara, 1
36071 **Arzignano** (VI) Italy
(T) +39.0444.479711
(F) +39.0444.479888
web: www.marellimotori.com
✉ **sales@marellimotori.com**

ITALIAN OFFICES
Milan
Via Cesare Cantù, 29
20092 **Cinisello Balsamo** (MI) Italy
(T) +39.02.660.131.66
(F) +39.02.660.134.83
✉ **milan@marellimotori.com**

Florence
Via Panciatichi, 37/2
50127 **Firenze** - Italy
(T) +39.055.431.838
(F) +39.055.433.351
✉ **florence@marellimotori.com**



MARELLIMOTORI OVERSEAS OFFICES:

GREAT BRITAIN
Marelli UK Ltd
Meadow Lane
Loughborough
Leicester
LE 11 1NB - UK
(P) +44.1509.615518
(F) +44.1509.615514
✉ uk@marellimotori.com

CENTRAL EUROPE
Marelli Central Europe GmbH
Heilswannenweg 50
31008 Elze - Germany
(P) +49.5068.462-400
(F) +49.5068.462-409
✉ germany@marellimotori.com

USA
Marelli USA, Inc
1620 Danville Road
PO Box 410
Harrodsburg, KY 40330 - USA
(P) +1.859.734-2588
(F) +1.859.734-0629
✉ usa@marellimotori.com

ASIA PACIFIC
Marelli Asia Pacific Sdn Bhd
Lot 7, Jalan Majistret U1/26
Hicom - Glenmarie Industrial Park
40150 Shah Alam
Selangor D.E., Malaysia
(P) +60.3.7805.3736
(F) +60.3.7803.9625
✉ 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
(P) +27.11.822.5566
(F) +27.11.828.8089
✉ southafrica@marellimotori.com

Grafiche Marcolin Schio 2059

MARELLI MOTORI reserves the right to change the design, technical specification and dimensions in order to update or improve its products, without prior notice.