

# The most widely used motors from the world leaders

M2BA & HX+



TEFC, S1 Duty  
 415 ± 10% V, 50Hz ± 5%.  
 Combined Variation (absolute sum 10%)

Insulation Class F  
 Ambient temp 50°C  
 Temperature rise Class B ( 70°C)

## 2 Pole Ambient 50°C

Output kw	Motor Type	Product Code	Speed r/min	Efficiency, IEC 60034-2 1996		Power Factor cos 100%	Current		Torque			Moment of inertia J=1/4 Gd <sup>2</sup> kgm <sup>2</sup>	Weight foot mounted kg	Sound pressure level dB(A)
				FL	3/4FL		I <sub>n</sub> (A)	I <sub>s</sub> / I <sub>n</sub>	T <sub>n</sub> (Nm)	T <sub>s</sub> / T <sub>n</sub>	T <sub>max</sub> / T <sub>n</sub>			
0.37	M2BA71A2	3GBA 071 001-••B	2790	72.7	72.0	0.84	0.90	4.0	1.29	2.2	3.2	0.00039	11	58
0.55	M2BA71B2	3GBA 071 002-••B	2760	77.2	78.4	0.82	1.20	4.7	1.90	2.7	2.8	0.00051	11	58
0.75	M2BA80A2	3GBA 081 001-••B	2840	77.0	77.8	0.82	1.60	3.7	2.52	2.6	3.4	0.00080	14	60
1.1	M2BA80B2	3GBA 081 002-••B	2825	82.8	82.9	0.81	2.40	5.7	3.70	2.9	3.0	0.00101	16	60
1.5	M2BA90S2	3GBA 091 001-••B	2890	82.3	82.4	0.82	3.20	6.0	4.95	2.7	3.3	0.00199	22	63
2.2	M2BA90LB2	3GBA 091 003-••B	2875	85.6	86.5	0.89	4.10	6.5	7.30	2.7	3.0	0.00280	25	68
3.7	M2BA100LB2	3GBA 101 002-••B	2855	84.7	86.3	0.91	6.70	6.2	12.4	2.2	2.6	0.00528	36	68
5.5	M2BA132SA2	3GBA 131 001-••B	2890	86.8	87.4	0.80	11.0	6.5	18.2	2.6	3.6	0.01029	61	75
7.5	M2BA132SBB2	3GBA 131 004-••B	2880	90.0	90.4	0.87	13.5	6.5	24.8	2.2	3.3	0.01359	70	75
9.3	M2BA132SC2	3GBA 131 003-••B	2840	87.7	88.2	0.92	16.2	6.5	31.3	2.8	3.4	0.01951	80	75

## 4 Pole Ambient 50°C

Output kw	Motor Type	Product Code	Speed r/min	Efficiency, IEC 60034-2 1996		Power Factor cos 100%	Current		Torque			Moment of inertia J=1/4 Gd <sup>2</sup> kgm <sup>2</sup>	Weight foot mounted kg	Sound pressure level dB(A)
				FL	3/4FL		I <sub>n</sub> (A)	I <sub>s</sub> / I <sub>n</sub>	T <sub>n</sub> (Nm)	T <sub>s</sub> / T <sub>n</sub>	T <sub>max</sub> / T <sub>n</sub>			
0.25	M2BA71A4	3GBA 072 001-••B	1390	66.5	65.5	0.76	0.75	3.8	1.70	2.2	2.4	0.00074	10	45
0.37	M2BA71B4	3GBA 072 002-••B	1400	69.6	71.2	0.79	0.90	4.5	2.53	2.0	2.5	0.00088	11	45
0.55	M2BA80A4	3GBA 082 001-••B	1390	71.8	72.2	0.80	1.36	4.3	3.80	2.2	2.8	0.00144	15	50
0.75	M2BA80B4	3GBA 082 002-••B	1405	75.5	76.0	0.74	1.90	5.1	5.10	2.2	3.1	0.00198	16	50
1.1	M2BA90S4	3GBA 092 001-••B	1410	76.8	77.1	0.78	2.60	5.3	7.40	2.6	3.0	0.0033	22	50
1.5	M2BA90L4	3GBA 092 002-••B	1420	79.6	80.1	0.80	3.40	5.5	10.1	2.7	3.4	0.00444	25	50
2.2	M2BA100LA4	3GBA 102 001-••B	1430	82.8	83.3	0.83	4.60	5.6	14.7	2.2	2.7	0.00873	34	64
3.7	M2BA112M4	3GBA 112 001-••B	1425	85.0	86.2	0.83	7.50	5.9	24.8	2.6	3.0	0.0106	39	60
5.5	M2BA132S4	3GBA 132 001-••B	1455	88.3	88.4	0.78	11.1	5.5	36.1	2.1	2.5	0.02635	60	66
7.5	M2BA132M4	3GBA 132 002-••B	1450	88.4	88.9	0.80	14.8	6.0	49.4	2.1	2.7	0.03282	70	66

## 6 Pole Ambient 50°C

Output kw	Motor Type	Product Code	Speed r/min	Efficiency, IEC 60034-2 1996		Power Factor cos 100%	Current		Torque			Moment of inertia J=1/4 Gd <sup>2</sup> kgm <sup>2</sup>	Weight foot mounted kg	Sound pressure level dB(A)
				FL	3/4FL		I <sub>n</sub> (A)	I <sub>s</sub> / I <sub>n</sub>	T <sub>n</sub> (Nm)	T <sub>s</sub> / T <sub>n</sub>	T <sub>max</sub> / T <sub>n</sub>			
0.18	M2BA71A6	3GBA 073 001-••B	905	59.8	56.4	0.70	0.6	3.3	1.9	2.2	2.3	0.00089	10	42
0.25	M2BA71B6	3GBA 073 002-••B	885	63.5	61.5	0.71	0.8	3.4	2.7	2.2	2.6	0.0011	12	42
0.37	M2BA80A6	3GBA 083 001-••B	920	69.8	69.7	0.71	1.1	3.0	3.8	2.3	2.8	0.00187	15	47
0.55	M2BA80B6	3GBA 083 002-••B	925	72.4	74.0	0.70	1.5	3.8	5.7	2.1	2.7	0.00239	17	47
0.75	M2BA90L6	3GBA 093 002-••B	940	75.1	74.7	0.64	2.2	4.4	7.6	2.3	3.4	0.00444	25	44
1.1	M2BA90LB6	3GBA 093 003-••B	925	77.3	77.8	0.69	2.9	4.1	11.3	2.3	2.6	0.00491	25	44
1.5	M2BA100L6	3GBA 103 002-••B	955	81.5	81.3	0.68	3.8	4.4	15.0	2.2	2.7	0.00873	37	49
2.2	M2BA112M6	3GBA 113 001-••B	945	82.4	83.3	0.72	5.2	4.4	22.2	2.2	2.4	0.0114	40	54
3.7	M2BA132MA6	3GBA 133 002-••B	970	85.7	84.8	0.68	8.8	5.2	36.4	2.1	2.5	0.03336	69	57
5.5	M2BA132MC6	3GBA 133 004-••B	970	87.8	87.4	0.70	12.5	5.0	54.0	1.8	2.7	0.0487	86	57

## 8 Pole Ambient 50°C

Output kw	Motor Type	Product Code	Speed r/min	Efficiency, IEC 60034-2 1996		Power Factor cos 100%	Current		Torque			Moment of inertia J=1/4 Gd <sup>2</sup> kgm <sup>2</sup>	Weight foot mounted kg	Sound pressure level dB(A)
				FL	3/4FL		I <sub>n</sub> (A)	I <sub>s</sub> / I <sub>n</sub>	T <sub>n</sub> (Nm)	T <sub>s</sub> / T <sub>n</sub>	T <sub>max</sub> / T <sub>n</sub>			
0.09	M2BA71A8	3GBA 074 001-••B	700	43.8	35.5	0.53	0.55	2.3	1.25	2.1	2.5	0.00089	11	40
0.12	M2BA71B8	3GBA 074 002-••B	700	44.4	36.1	0.53	0.70	2.3	1.67	2.2	2.4	0.0011	12	40
0.18	M2BA80A8	3GBA 084 001-••B	705	57.8	52.4	0.57	0.77	3.0	2.45	2.4	2.6	0.00187	15	45
0.25	M2BA80B8	3GBA 084 002-••B	695	64.0	62.1	0.64	0.88	3.1	3.5	2.1	2.4	0.00239	17	45
0.37	M2BA90L8	3GBA 094 002-••B	705	64.8	62.4	0.56	1.40	2.9	5.0	1.6	2.3	0.00444	24	43
0.55	M2BA90LB8	3GBA 094 003-••B	690	67.0	64.4	0.59	2.0	2.6	7.6	1.5	2.0	0.00491	25	43
0.75	M2BA100LA8	3GBA 104 001-••B	710	71.3	68.5	0.60	2.5	3.9	10.0	2.4	2.7	0.0072	30	46
1.1	M2BA100LB8	3GBA 114 002-••B	705	73.5	73.1	0.63	3.25	3.6	15.1	2.1	2.7	0.00871	34	46
1.5	M2BA112MA8	3GBA 114 001-••B	685	74.6	76.0	0.71	3.9	3.5	20.9	1.9	2.2	0.0118	28	42
2.2	M2BA132S8	3GBA 134 001-••B	720	81.2	81.0	0.60	6.0	4.0	29.3	1.9	2.6	0.03336	70	56

I<sub>n</sub> = Nominal or rated current

T<sub>max</sub> = Maximum torque

I<sub>s</sub> = Starting current

T<sub>s</sub> = Starting torque

T<sub>n</sub> = Nominal or rated torque in Nm

T<sub>cold</sub> = Cold withstand time

T<sub>hot</sub> = Hot withstand time

Note : All performance figures are subject to IS tolerances.



TEFC, S1 Duty  
 415 ± 10% V, 50Hz ± 5%.  
 Combined Variation (absolute sum 10%)

Insulation Class F  
 Ambient temp 50°C  
 Temperature rise Class B ( 70°C)

## 2 Pole Ambient 50°C

Output kw	hp	Frame Size	Rated Speed (rpm)	I <sub>n</sub> (A)	Efficiency %			Power Factor			I <sub>s</sub> /I <sub>n</sub>	Torque		T <sub>n</sub> N <sub>m</sub>	T <sub>hot</sub> (Sec)	T <sub>cold</sub> (Sec)	Weight Kg	GD <sup>2</sup> Kgm <sup>2</sup>
					FL	3/4FL	1/2FL	FL	3/4FL	1/2FL		T <sub>s</sub> /T <sub>n</sub>	T <sub>max</sub> /T <sub>n</sub>					
11	15	HX+160MLB2	2900	20.0	88.0	88.0	87.0	0.87	0.85	0.82	6.0	2.2	2.8	36.2	12	28	120	0.128
15	20	HX+160MLD2	2900	26.0	89.0	89.0	88.0	0.87	0.85	0.82	6.0	2.2	3.0	49.4	12	28	130	0.152
18.5	25	HX+160MLE2	2900	32.0	91.0	91.0	90.0	0.90	0.87	0.84	6.0	2.5	2.9	60.9	12	28	145	1.82
22	30	HX+180MLB2	2925	37.5	92.1	92.1	91.1	0.89	0.87	0.81	6.0	2.3	3.0	72	20	46	170	0.25
30	40	HX+200MLB2	2940	51.0	92.6	92.6	91.0	0.88	0.86	0.81	6.0	2.3	3.0	97	20	46	240	0.72
37	50	HX+200MLC2	2940	62.0	93.1	93.1	92.1	0.89	0.87	0.81	6.0	2.4	2.7	120	20	46	260	0.78
45	60	HX+225SMC2	2955	75.0	93.5	93.5	92.5	0.89	0.87	0.81	6.0	2.6	3.0	145	20	46	330	1.28
55	75	HX+250MB2	2960	91.5	94.0	94.0	93.0	0.89	0.87	0.81	6.0	2.4	3.0	177	20	46	440	1.92
75	100	HX+280SMB2	2965	123.0	94.2	94.2	93.2	0.90	0.88	0.82	6.0	2.0	3.0	242	20	46	610	3.28
90	125	HX+280SMC2	2965	147.0	94.5	94.5	93.5	0.90	0.89	0.83	6.0	2.2	3.0	290	20	46	640	3.42

## 4 Pole Ambient 50°C

Output kw	hp	Frame Size	Rated Speed (rpm)	I <sub>n</sub> (A)	Efficiency %			Power Factor			I <sub>s</sub> /I <sub>n</sub>	Torque		T <sub>n</sub> N <sub>m</sub>	T <sub>hot</sub> (Sec)	T <sub>cold</sub> (Sec)	Weight Kg	GD <sup>2</sup> Kgm <sup>2</sup>
					FL	3/4FL	1/2FL	FL	3/4FL	1/2FL		T <sub>s</sub> /T <sub>n</sub>	T <sub>max</sub> /T <sub>n</sub>					
9.3	12.5	HX+160MLB4	1455	18.8	88.0	88.0	86.0	0.81	0.74	0.63	6.0	2.2	2.8	61	8	18	125	0.028
11	15	HX+160MLD4	1455	21.0	89.0	89.0	87.0	0.82	0.76	0.66	6.0	2.1	2.8	72.2	12	28	145	0.252
15	20	HX+160MLE4	1450	28.0	89.0	89.0	87.0	0.82	0.76	0.66	6.0	2.1	2.8	98.8	14	30	150	0.272
18.5	25	HX+180MLB4	1455	34.5	90.6	90.6	89.6	0.82	0.76	0.66	6.0	2.4	2.7	121	15	34	175	0.48
22	30	HX+180MLC4	1460	40.5	91.5	91.5	90.5	0.83	0.78	0.70	6.0	2.6	2.7	144	15	34	185	0.54
30	40	HX+200MLC4	1470	54.5	92.6	92.6	91.6	0.83	0.78	0.70	6.0	2.6	2.7	195	15	34	245	1.20
37	50	HX+225SMB4	1470	67.0	92.8	92.8	91.8	0.83	0.78	0.70	6.0	2.2	2.7	240	20	46	310	1.40
45	60	HX+225SMC4	1470	81.0	93.3	93.3	92.3	0.83	0.78	0.70	6.0	2.2	2.7	292	20	46	340	1.52
55	75	HX+250MB4	1475	98.5	93.8	93.8	92.8	0.83	0.78	0.70	6.0	2.4	2.7	356	20	46	435	2.80
75	100	HX+280SMB4	1475	131.0	93.8	93.8	92.8	0.85	0.81	0.72	6.0	2.3	2.7	486	20	46	610	4.44
90	125	HX+280SMC4	1475	157.0	94.0	94.0	93.0	0.85	0.82	0.73	6.0	2.4	2.7	583	20	46	680	5.32

## 6 Pole Ambient 50°C

Output kw	hp	Frame Size	Rated Speed (rpm)	I <sub>n</sub> (A)	Efficiency %			Power Factor			I <sub>s</sub> /I <sub>n</sub>	Torque		T <sub>n</sub> N <sub>m</sub>	T <sub>hot</sub> (Sec)	T <sub>cold</sub> (Sec)	Weight Kg	GD <sup>2</sup> Kgm <sup>2</sup>
					FL	3/4FL	1/2FL	FL	3/4FL	1/2FL		T <sub>s</sub> /T <sub>n</sub>	T <sub>max</sub> /T <sub>n</sub>					
7.5	10	HX+160MLC6	960	15.5	87.5	87.5	86.5	0.77	0.72	0.60	5.5	1.9	2.5	74.6	8	18	145	0.326
9.3	12.5	HX+160MLD6	965	19.0	88.0	88.0	86.0	0.77	0.72	0.60	6.0	2.0	2.5	92	8	18	155	0.372
11	15	HX+160MLE6	965	23.0	88.0	88.0	86.0	0.77	0.72	0.60	6.0	2.0	2.5	109	9	20	170	0.446
15	20	HX+180MLC6	965	30.0	89.0	89.0	87.0	0.79	0.72	0.59	6.0	2.4	3.0	148	15	34	185	0.68
18.5	25	HX+200MLB6	985	36.0	90.5	90.5	88.5	0.79	0.72	0.59	6.0	2.3	3.0	179	15	34	230	1.60
22	30	HX+200MLC6	985	42.0	91.7	91.7	89.7	0.79	0.72	0.59	6.0	2.4	3.0	213	15	34	300	1.80
30	40	HX+225SMC6	985	55.5	92.1	92.1	90.1	0.82	0.76	0.66	6.0	2.4	2.8	291	20	46	320	2.98
37	50	HX+250MB6	985	66.0	92.8	92.8	90.8	0.84	0.80	0.71	6.0	2.4	2.8	359	20	46	420	4.80
45	60	HX+280SMB6	985	79.5	93.6	93.6	91.6	0.84	0.80	0.71	6.0	2.3	2.6	436	20	46	590	7.20
55	75	HX+280SMC6	985	97.0	93.8	93.8	91.8	0.84	0.80	0.71	6.0	2.1	2.7	533	20	46	600	8.10

## 8 Pole Ambient 50°C

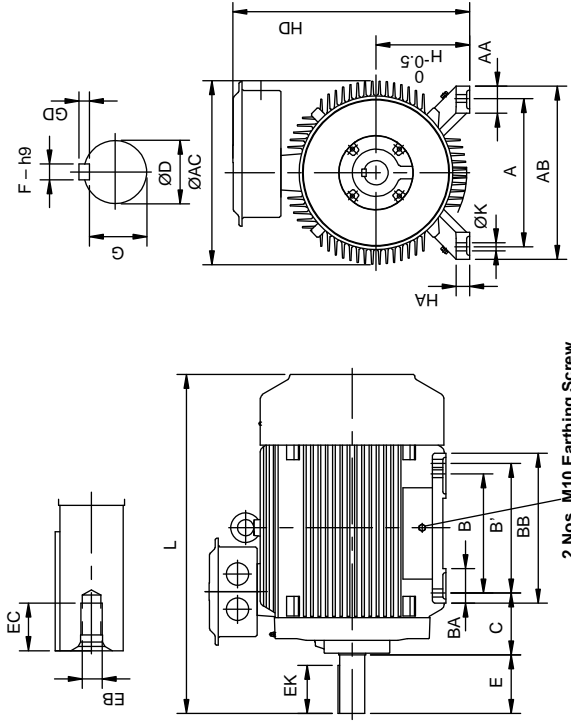
Output kw	hp	Frame Size	Rated Speed (rpm)	I <sub>n</sub> (A)	Efficiency %			Power Factor			I <sub>s</sub> /I <sub>n</sub>	Torque		T <sub>n</sub> N <sub>m</sub>	T <sub>hot</sub> (Sec)	T <sub>cold</sub> (Sec)	Weight Kg	GD <sup>2</sup> Kgm <sup>2</sup>
					FL	3/4FL	1/2FL	FL	3/4FL	1/2FL		T <sub>s</sub> /T <sub>n</sub>	T <sub>max</sub> /T <sub>n</sub>					
3.7	5.0	HX+160MLB8	715	8.0	82.5	82.5	79.5	0.77	0.70	0.61	5.1	1.8	2.4	49.4	9	20	125	0.288
5.5	7.5	HX+160MLD8	715	12.0	84.5	83.5	81.5	0.79	0.72	0.59	5.1	1.8	2.5	73.5	13	29	155	0.372
7.5	10.0	HX+160MLE8	715	16.0	85.0	84.0	82.0	0.79	0.72	0.59	5.1	1.8	2.5	98.8	15	30	170	0.446
9.3	12.5	HX+180MLA8	725	20.0	87.0	87.0	85.0	0.75	0.67	0.53	6.0	1.8	2.6	123	13	29	160	0.64
11	15.0	HX+180MLB8	725	23.5	87.0	87.0	85.0	0.75	0.67	0.53	6.0	2.0	2.5	145	13	29	170	0.72
15	20.0	HX+200MLC8	735	31.5	88.0	88.0	86.0	0.75	0.67	0.53	6.0	2.2	2.5	195	15	34	240	1.98
18.5	25.0	HX+225SMB8	735	38.5	90.0	90.0	89.0	0.74	0.66	0.52	6.0	2.2	2.3	240	18	40	320	3.32
22	30.0	HX+225SMC8	735	45.5	91.0	91.0	89.0	0.74	0.66	0.52	6.0	2.1	2.3	286	18	40	340	3.50
30	40.0	HX+250MB8	740	60.0	91.5	91.5	89.5	0.76	0.68	0.54	6.0	2.1	2.3	387	18	40	520	4.54
37	50.0	HX+280SMB8	740	73.5	92.0	92.0	90.0	0.76	0.73	0.61	6.0	2.1	2.3	478	18	40	590	7.64
45	60.0	HX+280SMC8	740	89.0	92.5	92.5	90.5	0.76	0.73	0.61	6.0	2.1	2.3	581	18	40	600	7.75

I<sub>n</sub> = Nominal or rated current      I<sub>s</sub> = Starting current  
 T<sub>n</sub> = Nominal or rated torque in Nm      T<sub>s</sub> = Starting torque  
 T<sub>max</sub> = Maximum torque      T<sub>hot</sub> = Hot withstand time  
 T<sub>cold</sub> = Cold withstand time

Note : All performance figures are subject to IS tolerances.

## HX+ 160...280 (Foot Mounted)

Mounting Designation B3, B6, B7, B8, V5, V6



Type	A	AA	AB	AC	B	B'	BA	BB	C	D -Tol.	E	EB	EC
HX+160ML	254	60	310	305	210	254	65	310	108	42-k6	110	M16	36
HX+180ML	279	58	324	348	241	279	58	324	121	48-k6			
HX+200ML	318	70	378	381	267	305	81	354	133	55-m6			
HX+225SM 2P 4-8P	356	65	416	442	286	311	83	360	149	60-m6	140	M20	42
HX+250M 2P 4-8P	406	80	473	495	349	-	93	406	168	65-m6			
HX+280SM 2P 4-8P	457	85	530	556	368	419	105	486	190	75-m6			

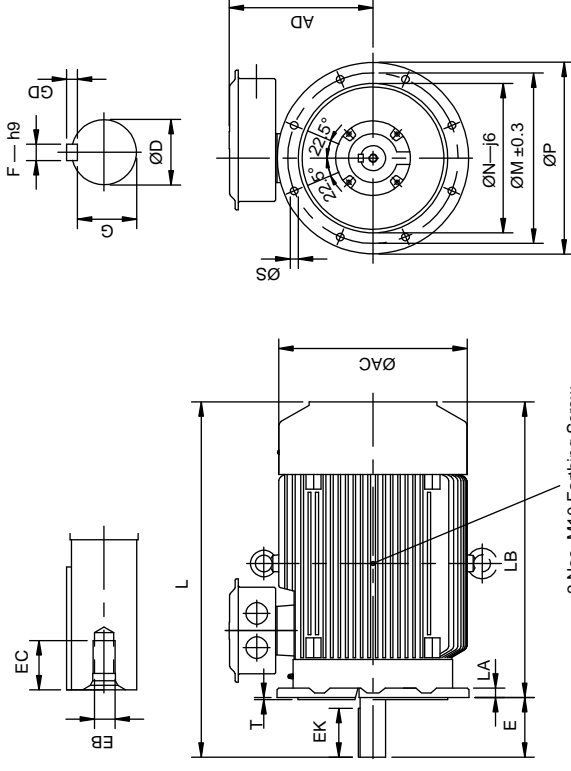
Type	EK	F	G	GD	H	HA	HD	K	L	Bearing		
										DS	NDS	
HX+160ML	90	12	37	8	160	22	407	15	671	6309ZZ C3	6308ZZ C3	
HX+180ML		14	42.5	9	180	26	446	15	706	6310ZZ C3	6309ZZ C3	
HX+200ML		16	49	10	200	30	484	19	731	6312ZZ C3	6311ZZ C3	
HX+225SM 2P 4-8P	115	16	49	10	225	32	562	19	833	6313 C3	6312 C3	
HX+250M 2P 4-8P		18	53	11	250	40	612	24	910	6315 C3	6313 C3	
HX+280SM 2P 4-8P		20	67.5	12	280	728	728	1040	1040	6316 C3	6315 C3	

\* For HX+ 200MLC2, L= 770mm

\* For 160-250 frame: sheet metal terminal box, 280 frame: cast iron terminal box

## HXF+ 160...280 (Flange Mounted)

Mounting Designation B5, V1



Type	AC	AD	D -Tol.	E	EB	EC	EK	F	G	GD	L
HXF+160ML	305	247	42-k6	110	M16	36	90	12	37	8	671
HXF+180ML	348	266	48-k6					14	42.5	9	706
HXF+200ML	381	284	55-m6					16	49	10	731
HXF+225SM 2P 4-8P	442	337	60-m6	140	M20	42	115	18	53	11	910
HXF+250M 2P 4-8P	495	362	65-m6					20	58	12	1040
HXF+280SM 2P 4-8P	556	448	75-m6								

Type	LA	LB	M	N-Tol.	P	S	T	Bearing		
								DS	NDS	
HXF+160ML	16	561	300	250-j6	350			6309ZZ C3	6308ZZ C3	
HXF+180ML	20	596	300	250-j6	350			6310ZZ C3	6309ZZ C3	
HXF+200ML		621	350	300-j6	400			6312ZZ C3	6311ZZ C3	
HXF+225SM 2P 4-8P		723	400	350-j6	450	19	5	6313 C3	6312 C3	
HXF+250M 2P 4-8P	22	770	500	450-j6	550			6315 C3	6313 C3	
HXF+280SM 2P 4-8P		900						6316 C3	6315 C3	

\* For 160-200 frame flange mounted motors, 4 nos mounting holes are provided

\* For 225-280 frame flange mounted motors, 8 nos mounting holes are provided



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