

Equipment category		
Gas symbol G	Dust symbol D	Zone Criteria Presence of Gas or Dust
Category 1 Zone 0	Category 1 Zone 20	Continuously or very long period
Category 2 Zone 1	Category 2 Zone 21	Present in normal operation
Category 3 Zone 2	Category 3 Zone 22	Unlikely but if present, then only for a short time

*Note: Category 1, Zone 0 and Zone 20 are not applicable to electric motors*

Dust are marked differently, eg:  
**CE 1180 Ex II 2 D T125°C**  
T125°C = certified external surface temperature

- IEC/Metric Aluminum
- IEC/Metric Cast Iron
- ATEX EEXD IIB Explosion Proof
- ATEX EEXDE IIC Explosion Proof
- ATEX EEXNA Non-Sparking
- IEC/Metric Brake Motor

IEC/Metric  
Aluminium

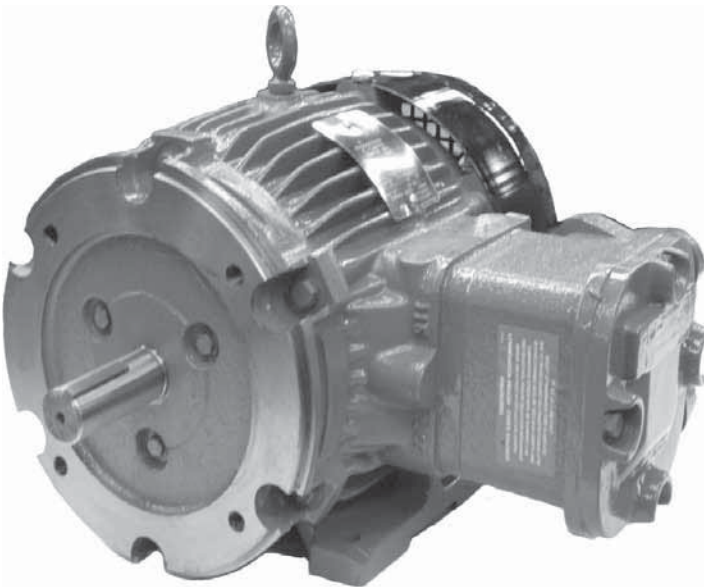
IEC/Metric  
Cast Iron

ATEX EEXD IIB  
Explosion Proof

ATEX EEXDE IIC  
Explosion Proof

ATEX EEXNA  
Non-Sparking

IEC/Metric  
Brake Motor



ATEX/IECex EExde IIC Explosion Proof Motors. Features Include:

- Ex II 2G Ex db IIC T4 Gb & IECex
- Motors comply with IEC 60034, IEC 60072/EN50347, IEC 60079
- Certified by BASEEFA / ATEX / IECex
- Zone 1, Groups IIA, IIB & IIC
- TEFC enclosure
- All motors suitable for T4 applications
- Cast iron construction
- Class F insulation
- Service factor 1.0 50Hz
- 380-415V/660-720V/3PH/50HZ
- 440-480V/3PH/60HZ
- Right mount to left mount terminal box convertible up to 180 frame by factory modification
- 200 frame and above have removable/ repositionable feet for easy conversion to terminal box on top, left, right, or round body configuration
- 3 year warranty

**Notes:**

**BS** - British Standard Dimensions  
**X** - Motors Are For Export Only  
**EX** - IECEx Rated

**ATEX/IECex EEXDE IIC Explosion Proof IEC 90S-315M - TEFC  
B3 (Foot Mount) - Cast Iron**



HP	Kw	RPM	Frame	Voltage	P/N	List	FL Eff.	L Dim. (mm)	S.F. 50 Hz	FL Amps	LBS	Notes
1	0.75	1500	EF90S	380-415 V	AC4M001-E	\$1,877	75	308	1.0	1.90	66	BS, X, EX
		1000	EF90S	380-415 V	AC6M001-E	\$1,817	65	308	1.0	2.40	66	BS, X, EX
1.5	1.1	3000	EF90S	380-415 V	AC2M1.5-E	\$1,877	78	308	1.0	2.30	66	BS, X, EX
		1500	EF90S	380-415 V	AC4M1.5-E	\$1,639	77	308	1.0	2.70	66	BS, X, EX
		1000	EF90L	380-415 V	AC6M1.5-E	\$2,015	70	333	1.0	3.20	75	BS, X, EX
2	1.5	3000	EF90S	380-415 V	AC2M002-E	\$1,874	79	308	1.0	3.10	66	BS, X, EX
		1500	EF90L	380-415 V	AC4M002-E	\$1,817	79	333	1.0	3.50	75	BS, X, EX
		1000	EF100L	380-415 V	AC6M002-E	\$2,213	76	394	1.0	4.20	101	BS, X, EX
3	2.2	3000	EF90L	380-415 V	AC2M003-E	\$2,203	81	333	1.0	4.30	75	BS, X, EX
		1500	EF100L	380-415 V	AC4M003-E	\$1,976	81	394	1.0	4.80	101	BS, X, EX
		1000	EF112M	380-415 V	AC6M003-E	\$3,028	77	391	1.0	5.80	128	BS, X, EX
4	3	3000	EF100L	380-415 V	AC2M004-E	\$2,365	84	394	1.0	5.50	101	BS, X, EX
		1500	EF100L	380-415 V	AC4M004-E	\$2,275	83	394	1.0	6.70	101	BS, X, EX
		1000	EF132S	380-415 V	AC6M004-E	\$3,668	82	467	1.0	6.60	176	BS, X, EX
5.5	4	3000	EF112M	380-415 V	AC2M5.5-E	\$2,896	85	391	1.0	7.20	128	BS, X, EX
		1500	EF112M	380-415 V	AC4M5.5-E	\$2,728	84.5	391	1.0	8.10	128	BS, X, EX
		1000	EF132M	380-415 V	AC6M5.5-E	\$4,404	83	505	1.0	9.10	212	BS, X, EX
7.5	5.5	3000	EF132S	380-415 V	AC2M7.5-E	\$3,470	87	467	1.0	9.90	176	BS, X, EX
		1500	EF132S	380-415 V	AC4M7.5-E	\$3,305	86	467	1.0	10.70	176	BS, X, EX
		1000	EF132M	380-415 V	AC6M7.5-E	\$5,109	85	505	1.0	12.30	212	BS, X, EX
10	7.5	3000	EF132S	380-415 V	AC2M010-E	\$4,275	88	467	1.0	13.50	176	BS, X, EX
		1500	EF132M	380-415 V	AC4M010-E	\$4,074	87	505	1.0	14.30	212	BS, X, EX
		1000	EF160M	380-415 V	AC6M010-E	\$6,000	87	605	1.0	16.00	317	BS, X, EX
15	11	3000	EF160M	380-415 V	AC2M015-E	\$5,103	89	605	1.0	19.80	317	BS, X, EX
		1500	EF160M	380-415 V	AC4M015-E	\$5,129	90	605	1.0	19.80	317	BS, X, EX
		1000	EF160L	380-415 V	AC6M015-E	\$7,633	87	650	1.0	23.10	357	BS, X, EX
20	15	3000	EF160M	380-415 V	AC2M020-E	\$5,934	90	605	1.0	26.10	317	BS, X, EX
		1500	EF160L	380-415 V	AC4M020-E	\$6,524	90	650	1.0	25.80	357	BS, X, EX
		1000	EF180L	380-415 V	AC6M020-E	\$10,324	87.5	710	1.0	29.10	492	BS, X, EX
25	18.5	3000	EF160L	380-415 V	AC2M025-E	\$7,171	91.5	650	1.0	32.00	357	BS, X, EX
		1500	EF180M	380-415 V	AC4M025-E	\$8,124	91	672	1.0	32.00	458	BS, X, EX
		1000	EF200L	380-415 V	AC6M025-E	\$13,194	91	810	1.0	35.00	750	BS, X
30	22	3000	EF180M	380-415 V	AC2M030-E	\$9,101	91.5	672	1.0	36.00	458	BS, X, EX
		1500	EF180L	380-415 V	AC4M030-E	\$9,559	91	710	1.0	40.00	492	BS, X, EX
		1000	EF200L	380-415 V	AC6M030-E	\$16,829	91.5	810	1.0	42.00	750	BS, X
40	30	3000	EF200L	380-415 V	AC2M040-E	\$12,479	92.9	810	1.0	50.00	750	BS, X
		1500	EF200L	380-415 V	AC4M040-E	\$11,885	93.2	810	1.0	51.00	750	BS, X
		1000	EF225M	380-415 V	AC6M040-E	\$20,834	92.7	915	1.0	56.00	981	BS, X
50	37	3000	EF200L	380-415 V	AC2M050-E	\$15,823	93.3	810	1.0	62.00	750	BS, X
		1500	EF225S	380-415 V	AC4M050-E	\$14,903	93.6	873	1.0	64.00	816	BS, X
		1000	EF250S	380-415 V	AC6M050-E	\$25,564	93.2	985	1.0	67.00	1089	BS, X
60	45	3000	EF225M	380-415 V	AC2M060-E	\$19,913	93.9	885	1.0	74.00	981	BS, X
		1500	EF225M	380-415 V	AC4M060-E	\$18,439	94.2	915	1.0	77.00	981	BS, X
		1000	EF250M	380-415 V	AC6M060-E	\$30,746	93.4	1030	1.0	81.00	1530	BS, X
75	55	3000	EF250S	380-415 V	AC2M075-E	\$24,182	94.4	985	1.0	90.00	1089	BS, X
		1500	EF250S	380-415 V	AC4M075-E	\$23,031	94.6	985	1.0	94.00	1089	BS, X
		1000	EF280S	380-415 V	AC6M075-E	\$35,924	93.8	1100	1.0	98.00	1664	BS, X
100	75	3000	EF250M	380-415 V	AC2M100-E	\$29,083	95.2	1030	1.0	122.00	1530	BS, X
		1500	EF250M	380-415 V	AC4M100-E	\$27,712	94.9	1030	1.0	126.00	1530	BS, X
		1000	EF280M	380-415 V	AC6M100-E	\$42,188	94.3	1145	1.0	132.00	1962	BS, X

**Discount Category 21**

IEC/Metric  
Aluminum

IEC/Metric  
Cast Iron

ATEX EEXD IIB  
Explosion Proof

ATEX EEXDE IIC  
Explosion Proof

ATEX EEXNA  
Non-Sparking

IEC/Metric  
Brake Motor

IEC/Metric  
Aluminum

IEC/Metric  
Cast Iron

ATEX EEXD IIB  
Explosion Proof

ATEX EEXDE IIC  
Explosion Proof

ATEX EEXNA  
Non-Sparking

IEC/Metric  
Brake Motor

HP	Kw	RPM	Frame	Voltage	P/N	List	FL Eff.	L Dim. (mm)	S.F. 50 Hz	FL Amps	LBS	Notes
125	90	3000	EF280S	380-415 V	AC2M125-E	\$33,982	95.3	1100	1.0	146.00	1664	BS, X, RF
		1500	EF280S	380-415 V	AC4M125-E	\$32,365	95.2	1100	1.0	151.00	1664	BS, X, RF
		1000	EF315S	380-415 V	AC6M125-E	\$59,772	94.5	1215	1.0	158.00	2535	BS, X, RF
150	110	3000	EF280M	380-415 V	AC2M150-E	\$39,909	95.8	1145	1.0	177.00	1962	BS, X, RF
		1500	EF280M	380-415 V	AC4M150-E	\$38,009	95.6	1145	1.0	184.00	1962	BS, X, RF
		1000	EF315M	380-415 V	AC6M150-E	\$67,000	94.8	1245	1.0	190.00	2976	BS, X, RF
200	150	3000	EF315M	380-415 V	AC2M200-E	\$63,384	96.2	1215	1.0	238.00	2976	BS, X, RF
		1500	EF315M	380-415 V	AC4M200-E	\$60,365	95.9	1245	1.0	247.00	2976	BS, X, RF

Discount Category **21**

**ATEX/IECex EEXDE IIC Explosion Proof IEC 90S-315M - TEFC  
B14 (C-Face With B3 Feet) - Cast Iron**



HP	Kw	RPM	Frame	Voltage	P/N	List	FL Eff.	L Dim. (mm)	S.F. 50 Hz	FL Amps	LBS	Notes
1	0.75	1500	EF90S	380-415 V	AC4M001-EC	\$2,325	75	308	1.0	1.90	76	BS, X, EX
		1000	EF90S	380-415 V	AC6M001-EC	\$2,265	65	308	1.0	2.40	76	BS, X, EX
1.5	1.1	3000	EF90S	380-415 V	AC2M1.5-EC	\$2,325	78	308	1.0	2.30	76	BS, X, EX
		1500	EF90S	380-415 V	AC4M1.5-EC	\$2,087	77	308	1.0	2.70	76	BS, X, EX
		1000	EF90L	380-415 V	AC6M1.5-EC	\$2,463	70	333	1.0	3.20	85	BS, X, EX
2	1.5	3000	EF90S	380-415 V	AC2M002-EC	\$2,322	79	308	1.0	3.10	80	BS, X, EX
		1500	EF90L	380-415 V	AC4M002-EC	\$2,265	79	333	1.0	3.50	85	BS, X, EX
		1000	EF100L	380-415 V	AC6M002-EC	\$2,697	76	394	1.0	4.20	120	BS, X, EX
3	2.2	3000	EF90L	380-415 V	AC2M003-EC	\$2,651	81	333	1.0	4.30	85	BS, X, EX
		1500	EF100L	380-415 V	AC4M003-EC	\$2,460	81	394	1.0	4.80	120	BS, X, EX
		1000	EF112M	380-415 V	AC6M003-EC	\$3,512	77	391	1.0	5.80	140	BS, X, EX
4	3	3000	EF100L	380-415 V	AC2M004-EC	\$2,849	84	394	1.0	5.50	120	BS, X, EX
		1500	EF100L	380-415 V	AC4M004-EC	\$2,759	83	394	1.0	6.70	120	BS, X, EX
		1000	EF132S	380-415 V	AC6M004-EC	\$4,218	82	467	1.0	6.60	195	BS, X, EX
5.5	4	3000	EF112M	380-415 V	AC2M5.5-EC	\$3,380	85	391	1.0	7.20	140	BS, X, EX
		1500	EF112M	380-415 V	AC4M5.5-EC	\$3,212	84.5	391	1.0	8.10	140	BS, X, EX
		1000	EF132M	380-415 V	AC6M5.5-EC	\$4,954	83	505	1.0	9.10	235	BS, X, EX
7.5	5.5	3000	EF132S	380-415 V	AC2M7.5-EC	\$4,020	87	467	1.0	9.90	192	BS, X, EX
		1500	EF132S	380-415 V	AC4M7.5-EC	\$3,855	86	467	1.0	10.70	192	BS, X, EX
		1000	EF132M	380-415 V	AC6M7.5-EC	\$5,659	85	505	1.0	12.30	235	BS, X, EX
10	7.5	3000	EF132S	380-415 V	AC2M010-EC	\$4,825	88	467	1.0	13.50	192	BS, X, EX
		1500	EF132M	380-415 V	AC4M010-EC	\$4,624	87	505	1.0	14.30	235	BS, X, EX
		1000	EF160M	380-415 V	AC6M010-EC	\$7,024	87	605	1.0	16.00	336	BS, X, EX
15	11	3000	EF160M	380-415 V	AC2M015-EC	\$6,127	89	605	1.0	19.80	336	BS, X, EX
		1500	EF160M	380-415 V	AC4M015-EC	\$6,153	90	605	1.0	19.80	336	BS, X, EX
		1000	EF160L	380-415 V	AC6M015-EC	\$8,657	87	650	1.0	23.10	369	BS, X, EX
20	15	3000	EF160M	380-415 V	AC2M020-EC	\$6,958	90	605	1.0	26.10	336	BS, X, EX
		1500	EF160L	380-415 V	AC4M020-EC	\$7,548	90	650	1.0	25.80	336	BS, X, EX
25	18.5	3000	EF160L	380-415 V	AC2M025-EC	\$8,195	91.5	650	1.0	32.00	336	BS, X, EX

**Discount Category 21**

IEC/Metric  
Aluminum

IEC/Metric  
Cast Iron

ATEX EEXD IIB  
Explosion Proof

ATEX EEXDE IIC  
Explosion Proof

ATEX EEXNA  
Non-Sparking

IEC/Metric  
Brake Motor

IEC/Metric  
Aluminum

IEC/Metric  
Cast Iron

ATEX EEXD IIB  
Explosion Proof

ATEX EEXDE IIC  
Explosion Proof

ATEX EEXNA  
Non-Sparking

IEC/Metric  
Brake Motor

HP	Kw	RPM	Frame	Voltage	P/N	List	FL Eff.	L Dim. (mm)	S.F. 50 Hz	FL Amps	LBS	Notes
1	0.75	1500	EF90S	380-415 V	AC4M001-ED	\$2,325	75	308	1.0	1.90	76	BS, X, EX
		1000	EF90S	380-415 V	AC6M001-ED	\$2,265	65	308	1.0	2.40	76	BS, X, EX
1.5	1.1	3000	EF90S	380-415 V	AC2M1.5-ED	\$2,325	78	308	1.0	2.30	76	BS, X, EX
		1500	EF90S	380-415 V	AC4M1.5-ED	\$2,087	77	308	1.0	2.70	76	BS, X, EX
		1000	EF90L	380-415 V	AC6M1.5-ED	\$2,463	70	333	1.0	3.20	85	BS, X, EX
2	1.5	3000	EF90S	380-415 V	AC2M002-ED	\$2,322	79	308	1.0	3.10	80	BS, X, EX
		1500	EF90L	380-415 V	AC4M002-ED	\$2,265	79	333	1.0	3.50	85	BS, X, EX
		1000	EF100L	380-415 V	AC6M002-ED	\$2,697	76	394	1.0	4.20	120	BS, X, EX
3	2.2	3000	EF90L	380-415 V	AC2M003-ED	\$2,651	81	333	1.0	4.30	85	BS, X, EX
		1500	EF100L	380-415 V	AC4M003-ED	\$2,460	81	394	1.0	4.80	120	BS, X, EX
		1000	EF112M	380-415 V	AC6M003-ED	\$3,512	77	391	1.0	5.80	140	BS, X, EX
4	3	3000	EF100L	380-415 V	AC2M004-ED	\$2,849	84	394	1.0	5.50	120	BS, X, EX
		1500	EF100L	380-415 V	AC4M004-ED	\$2,759	83	394	1.0	6.70	120	BS, X, EX
		1000	EF132S	380-415 V	AC6M004-ED	\$4,218	82	467	1.0	6.60	195	BS, X, EX
5.5	4	3000	EF112M	380-415 V	AC2M5.5-ED	\$3,380	85	391	1.0	7.20	140	BS, X, EX
		1500	EF112M	380-415 V	AC4M5.5-ED	\$3,212	84.5	391	1.0	8.10	140	BS, X, EX
		1000	EF132M	380-415 V	AC6M5.5-ED	\$4,954	83	505	1.0	9.10	235	BS, X, EX
7.5	5.5	3000	EF132S	380-415 V	AC2M7.5-ED	\$4,020	87	467	1.0	9.90	192	BS, X, EX
		1500	EF132S	380-415 V	AC4M7.5-ED	\$3,855	86	467	1.0	10.70	192	BS, X, EX
		1000	EF132M	380-415 V	AC6M7.5-ED	\$5,659	85	505	1.0	12.30	235	BS, X, EX
10	7.5	3000	EF132S	380-415 V	AC2M010-ED	\$4,825	88	467	1.0	13.50	192	BS, X, EX
		1500	EF132M	380-415 V	AC4M010-ED	\$4,624	87	505	1.0	14.30	235	BS, X, EX
		1000	EF160M	380-415 V	AC6M010-ED	\$7,024	87	605	1.0	16.00	336	BS, X, EX
15	11	3000	EF160M	380-415 V	AC2M015-ED	\$6,127	89	605	1.0	19.80	336	BS, X, EX
		1500	EF160M	380-415 V	AC4M015-ED	\$6,153	90	605	1.0	19.80	336	BS, X, EX
		1000	EF160L	380-415 V	AC6M015-ED	\$8,657	87	650	1.0	23.10	369	BS, X, EX
20	15	3000	EF160M	380-415 V	AC2M020-ED	\$6,958	90	605	1.0	26.10	336	BS, X, EX
		1500	EF160L	380-415 V	AC4M020-ED	\$7,548	90	650	1.0	25.80	372	BS, X, EX
		1000	EF180L	380-415 V	AC6M020-ED	\$11,534	87.5	710	1.0	29.10	512	BS, X, EX
25	18.5	3000	EF160L	380-415 V	AC2M025-ED	\$8,195	91.5	650	1.0	32.00	372	BS, X, EX
		1500	EF180M	380-415 V	AC4M025-ED	\$9,334	91	672	1.0	32.00	473	BS, X, EX
		1000	EF200L	380-415 V	AC6M025-ED	\$15,304	91	810	1.0	35.00	770	BS, X
30	22	3000	EF180M	380-415 V	AC2M030-ED	\$10,311	91.5	672	1.0	36.00	473	BS, X, EX
		1500	EF180L	380-415 V	AC4M030-ED	\$10,769	91	710	1.0	40.00	512	BS, X, EX
		1000	EF200L	380-415 V	AC6M030-ED	\$18,939	91.5	810	1.0	42.00	770	BS, X
40	30	3000	EF200L	380-415 V	AC2M040-ED	\$14,589	92.9	810	1.0	50.00	770	BS, X
		1500	EF200L	380-415 V	AC4M040-ED	\$13,995	93.2	810	1.0	51.00	770	BS, X
		1000	EF225M	380-415 V	AC6M040-ED	\$23,566	92.7	915	1.0	56.00	1002	BS, X
50	37	3000	EF200L	380-415 V	AC2M050-ED	\$17,933	93.3	810	1.0	62.00	770	BS, X
		1500	EF225S	380-415 V	AC4M050-ED	\$17,635	93.6	873	1.0	64.00	832	BS, X
		1000	EF250S	380-415 V	AC6M050-ED	\$28,358	93.2	985	1.0	67.00	1106	BS, X
60	45	3000	EF225M	380-415 V	AC2M060-ED	\$22,645	93.9	885	1.0	74.00	1002	BS, X
		1500	EF225M	380-415 V	AC4M060-ED	\$21,171	94.2	915	1.0	77.00	1002	BS, X
		1000	EF250M	380-415 V	AC6M060-ED	\$33,540	93.4	1030	1.0	81.00	1552	BS, X
75	55	3000	EF250S	380-415 V	AC2M075-ED	\$26,976	94.4	985	1.0	90.00	1106	BS, X
		1500	EF250S	380-415 V	AC4M075-ED	\$25,825	94.6	985	1.0	94.00	1106	BS, X
		1000	EF280S	380-415 V	AC6M075-ED	\$39,100	93.8	1100	1.0	98.00	1690	BS, X
100	75	3000	EF250M	380-415 V	AC2M100-ED	\$31,877	95.2	1030	1.0	122.00	1552	BS, X
		1500	EF250M	380-415 V	AC4M100-ED	\$30,506	94.9	1030	1.0	126.00	1552	BS, X
		1000	EF280M	380-415 V	AC6M100-ED	\$45,364	94.3	1145	1.0	132.00	1990	BS, X

Discount Category **21**

**ATEX/IECex EEXDE IIC Explosion Proof IEC 90S-315M - TEFC  
B5 (D-Flange With B3 Feet) - Cast Iron**

HP	Kw	RPM	Frame	Voltage	P/N	List	FL Eff.	L Dim. (mm)	S.F. 50 Hz	FL Amps	LBS	Notes
125	90	3000	EF280S	380-415 V	AC2M125-ED	\$37,158	95.3	1100	1.0	146.00	1690	BS, X, RF
		1500	EF280S	380-415 V	AC4M125-ED	\$35,541	95.2	1100	1.0	151.00	1690	BS, X, RF
		1000	EF315S	380-415 V	AC6M125-ED	\$63,352	94.5	1215	1.0	158.00	2552	BS, X, RF
150	110	3000	EF280M	380-415 V	AC2M150-ED	\$43,085	95.8	1145	1.0	177.00	1990	BS, X, RF
		1500	EF280M	380-415 V	AC4M150-ED	\$41,185	95.6	1145	1.0	184.00	1990	BS, X, RF
		1000	EF315M	380-415 V	AC6M150-ED	\$70,580	94.8	1245	1.0	190.00	2992	BS, X, RF
200	150	3000	EF315M	380-415 V	AC2M200-ED	\$66,964	96.2	1215	1.0	238.00	2992	BS, X, RF
		1500	EF315M	380-415 V	AC4M200-ED	\$63,945	95.9	1245	1.0	247.00	2992	BS, X, RF

**Discount Category 21**

IEC/Metric  
Aluminum

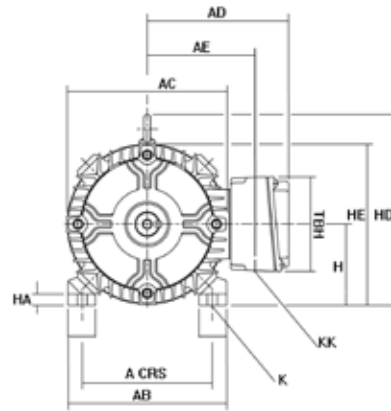
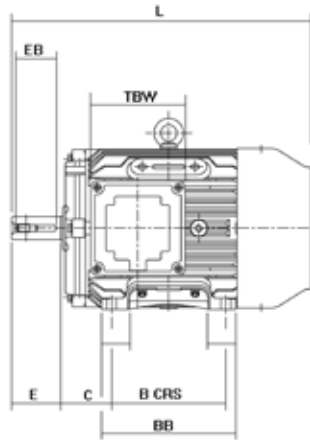
IEC/Metric  
Cast Iron

ATEX EEXD IIB  
Explosion Proof

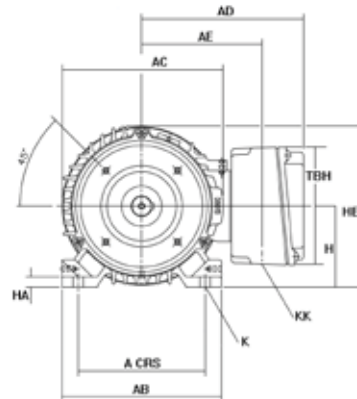
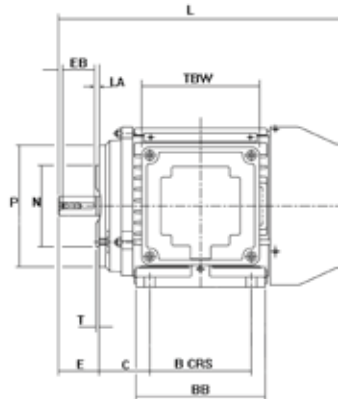
ATEX EEXDE IIC  
Explosion Proof

ATEX EEXNA  
Non-Sparking

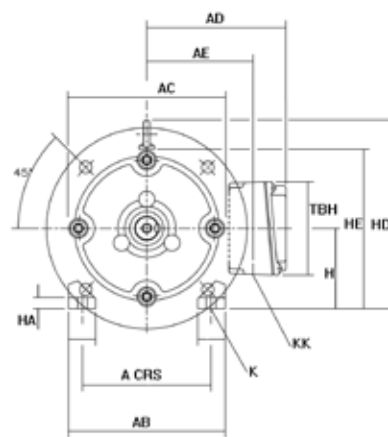
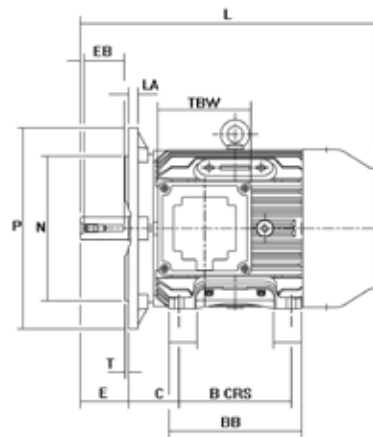
IEC/Metric  
Brake Motor



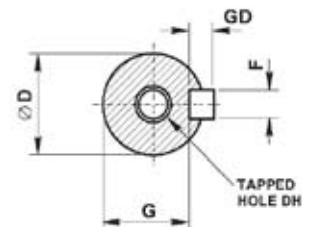
**FOOT MOUNTED**



**C FACE MOUNTED**



**D FLANGE MOUNTED**





# IEC British Standard TEFC Dimensions

## Frame Sizes 80 - 315

GENERAL														
FRAME	A	B	C	H	K	AA	AB	BB	HA	AC	HD	TBW	TBH	KK
80M	125	100	50	80	10	35	157	127	10	156	236	120	120	20
80S	125	100	50	80	10	35	157	127	10	156	236	120	120	20
90S	140	100	56	90	10	35	164	150	12	178	225	120	120	20
90L	140	125	56	90	10	35	164	150	12	178	225	120	120	20
100L	160	140	63	100	12	34	184	170	14	199	254	120	120	20
112M	190	140	70	112	12	40	218	170	16	215	279	135	135	25
132S	216	140	89	132	12	47	242	208	16	255	320	135	135	25
132M	216	178	89	132	12	47	242	208	16	255	320	135	135	25
160M	254	210	108	160	15	55	304	304	22	314	400	174	174	32
160L	254	254	108	160	15	55	304	304	22	314	400	174	174	32
180M	279	241	121	180	15	64	329	329	22	358	440	174	174	32
180L	279	279	121	180	15	64	329	329	22	358	440	174	174	32
200L	318	305	133	200	19	74	382	369	30	358	460	176	176	
225S	356	286	149	225	M16	70	426	349	25	410	550	220	285	
225M	356	311	149	225	M16	70	426	374	25	448	570	220	285	
250S	406	311	168	250	M20	79	482	381	28	448	595	220	285	
250M	406	349	168	250	M20	79	482	419	35	508	625	220	285	
280S	457	368	190	280	M20	83	540	438	35	508	655	220	285	
280M	457	419	190	280	M20	83	540	487	38	563	810	220	285	
315S	508	406	216	315	M24	89	597	483	38	563	845	330	326	
315M	508	457	216	315	M24	89	597	533	38	640	875	330	326	
315L	508	508	216	315	M24	89	597	583	38	640	875	330	326	

D FLANGE (B5)							C FACE (B14)						SHAFT DRIVE END										
FRAME	M	N	P	S	T	LA	FRAME	M	N	P	S	T	LA	FRAME	D	E	F	G	GD	EB	ED	DH	
63	115	95	140	10	3	7	63	75	60	90	M5	2.5	7	63	11	23	4	8.5	4	10	0	M4X10	
71	130	110	160	10	3.5	7	71	85	70	105	M6	2.5	9	71	14	30	5	11	5	20	5	M5X12.5	
80	165	130	200	12	3.5	12	80	100	80	120	M6	3.0	9	80	19	40	6	15.5	6	32	4	M6X16	
90S/L	165	130	200	12	3.5	10	90S/L	115	95	140	M8	3.0	9	90S/L	24	50	8	20	7	40	5	M8X19	
100L	215	180	250	14.5	4	12	100L	130	110	160	M8	3.5	12.5	100L	28	60	8	23.9	7	50	5	M10X22	
112M	215	180	250	14.5	4	12	112M	130	110	164	M8	3.5	13	112M	28	60	8	23.9	7	50	5	M10X22	
132S/M	265	230	300	14.5	4	12	132S/M	165	130	200	M10	3.5	14	132S/M	38	80	10	33	8	70	5	M12X28	
160M/L	300	250	350	18.5	5	13	160M/L	215	180	250	M14	4.0	13	160M/L	42	110	12	37	8	100	5	M16X36	
180M/L	300	250	350	18.5	5	15	180M/L	-	-	-	-	-	-	180M/L	48	110	14	42.5	9	100	5	M16X36	
200L	350	300	400	19	5	19	200L	-	-	-	-	-	-	200L	55	110	16	49	10	100	5	M20X42	
225S/M	400	350	450	19	5	19	225S/M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
250S/M	500	450	550	19	5	25	250S/M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
280S/M	500	450	550	19	5	25	280S/M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
315S/M/L	600	550	660	24	6	29	315S/M/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SHAFT DRIVE END																	
1800 RPM >									3600 RPM								
FRAME	D	E	F	G	GD	EB	ED	DH	FRAME	D	E	F	G	GD	EB	ED	DH
225S	60	140	18	53	11	125	5	M20X42	225S	55	110	16	49	10	100	5	M20X42
225M	60	140	18	53	11	125	5	M20X42	225M	55	110	16	49	10	100	5	M20X43
250S	70	140	20	62.5	12	125	5	M20X42	250S	60	140	18	53	11	125	5	M20X44
250M	70	140	20	62.5	12	125	5	M20X42	250M	60	140	18	53	11	125	5	M20X45
280S	80	170	22	71	14	160	5	M20X42	280S	65	140	18	58	11	125	5	M20X46
280M	80	170	22	71	14	160	5	M20X42	280M	65	140	18	58	11	125	5	M20X47
315S	85	170	22	76	14	160	5	M20X42	315S	65	140	18	58	11	125	5	M20X48
315M	85	170	22	76	14	160	5	M20X42	315M	65	140	18	58	11	125	5	M20X49
315L	85	170	22	76	14	160	5	M20X42	315L	65	140	18	58	11	125	5	M20X50

**Definition  
IP (Ingress Protection)  
IEC Metric Motors**



Protection Against Solid Objects			Protection Against Liquids		
#	Brief Description*	Definitions	#	Brief Description*	Definitions
<b>0</b>	Non-protected machines	No special protection	<b>0</b>	Non-protected machines	No special protection
<b>1</b>	Machine protected against solid objects greater than 50 mm**	Accidental or inadvertent contact with or approach to live and moving parts inside the enclosure by a large surface of the human body, such as a hand (but no protection against deliberate access). Ingress of solid objects exceeding 50 mm in diameter	<b>1</b>	Machine protected against dripping water	Dripping water (vertically falling drops) shall have no harmful effect.
<b>2</b>	Machine protected against solid objects greater than 12 mm**	Contact by fingers or similar objects not exceeding 80 mm in length with or approach to live or moving parts inside the enclosure. Ingress of solid objects exceeding 12 mm in diameter.	<b>2</b>	Machine protected against dripping water when tilted up to 15°	Vertically dripping water shall have no harmful effect when the machine is tilted in any angle up to 15° from its normal position
<b>3</b>	Machine protected against solid objects greater than 2.5 mm**	Contact with or approach to live or moving parts inside the enclosure by tools or wires exceeding 2.5 mm in diameter. Ingress of solid objects exceeding 1 mm in diameter.	<b>3</b>	Machine protected against spraying water	Vertically dripping water shall have no harmful effect when the machine is tilted in any angle up to 15° from its normal position
<b>4</b>	Machine protected against solid objects greater than 1mm**	Contact with or approach to live or moving parts inside the enclosure by wires or strips of thickness greater than 1 mm in diameter.	<b>4</b>	Machine protected against splashing water	Water falling as a spray at any angle up to 60° from the vertical shall have no harmful effect
<b>5</b>	Dust-protected machine†	Contact with or approach to live or moving parts inside the enclosure. Ingress of dust is not totally prevented but dust does not enter insufficient quantity to interfere with satisfactory operation of the machine.	<b>5</b>	Machine protected against water jets	Water projected by a nozzle against the machine from any direction shall have no harmful effect.
<b>6</b>	Dust-tight machine†	Contact with or approach to live or moving parts inside the enclosure. No ingress of dust	<b>6</b>	Machine protected against heavy seas	Water from heavy seas or water projected in powerful jets shall not enter the machine in harmful quantities.

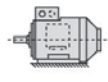
\* The brief description given in column 2 on this table should not be used to specify the form of protection.

\*\* Machines assigned a first characteristic number 1,2,3 or 4 will exclude both regularly or irregularly shaped solid objects proved that three normally per pendicular dimensions of the object exceed the appropriate figure in column "Definition".

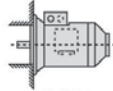
† The degree of protection against dust defined by this standard is a general one. When the nature (dimensions of particles, their nature, for instance fibrous particles) is specified, test conditions should be determined by an agreement between manufacturer and user.

## IEC Mounting Codes

Horizontal shaft:



IM B3  
IM 1001  
foot mounted



IM B5  
IM 3001  
flange at DE  
no feet



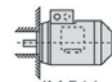
IM B6  
IM 1051  
foot wall mounted with  
feet on left-hand side  
when viewed from DE



IM B7  
IM 1061  
foot wall mounted with  
feet on right-hand side  
when viewed from DE

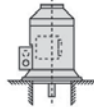


IM B8  
IM 1071  
ceiling mounted  
with feet  
above motor

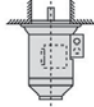


IM B14  
IM 3601  
face at DE  
no feet

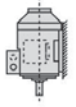
Vertical shaft:



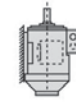
IM V1  
IM 3011  
flange at DE  
shaft down  
no feet



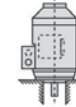
IM V3  
IM 3031  
flange at DE  
shaft up  
no feet



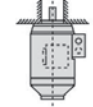
IM V5  
IM 1011  
vertical foot  
wall mounted  
shaft down



IM V6  
IM 1031  
vertical foot  
wall mounted  
shaft up



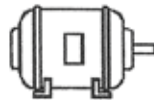
IM V18  
IM 3611  
face at DE  
shaft down  
no feet



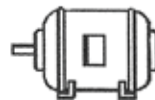
IM V19  
IM 3631  
face at DE  
shaft up  
no feet

## NEMA Mounting Codes

### FLOOR MOUNTINGS



ASSEMBLY F-1



ASSEMBLY F-2

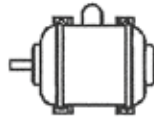


ASSEMBLY F-3

### WALL MOUNTINGS



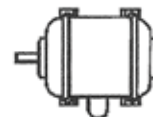
ASSEMBLY W-1



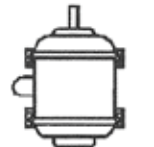
ASSEMBLY W-2



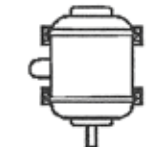
ASSEMBLY W-3



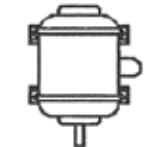
ASSEMBLY W-4



ASSEMBLY W-5



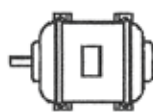
ASSEMBLY W-6



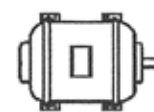
ASSEMBLY W-7



ASSEMBLY W-8



ASSEMBLY W-9



ASSEMBLY W-10



ASSEMBLY W-11

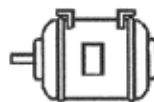


ASSEMBLY W-12

### CEILING MOUNTINGS



ASSEMBLY C-1



ASSEMBLY C-2



ASSEMBLY C-3