

marathon[®]
Motors

LEESON[®]



TERRAMAX[®] IEC

LOW VOLTAGE MOTORS

REGAL[®]

TERRAMAX[®] GENERAL PURPOSE

INDUSTRIAL MOTORS

In today's ever changing global economy, one motor is designed to meet international and NEMA[®] performance and efficiency standards. Marathon[®] TerraMAX[®] motors are the perfect solution meeting the IEC Design N and NEMA Design B torque characteristics, as well as, IE3 and NEMA Premium[®] efficiencies making these motors suitable for requirements worldwide.

The TerraMAX motor comes with a top mounted conduit box which is rotatable in 90 degree increments, with a metric threaded conduit box allowing for easy retrofitting into existing applications. Wiring connections are marked with both IEC and NEMA Standards. The frames 160 and larger are arranged for Wye Start-Delta run or across-the-line start.

FEATURES:

- 100-315 IEC frame
- 1.1 – 75 kW
- 2, 4, 6 pole
- 230/460V, 50/60 HZ
- 1.15 service factor
- IE3 efficiency
- B3, B5 & B14 mount
- Class F, Class B rise insulation
- TEFC enclosure
- Cast iron construction
- Inverter duty 10:1
- IP55 protection
- UL recognized & CSA certified



TERRAMAX® DEFINITE PURPOSE

INDUSTRIAL MOTORS SERIES

The TerraMAX industrial motor design will extend into a line of definite purpose motors making this the most encompassing series of motors for today's global markets. Each motor is a combination of features and materials carefully engineered to provide a reliable, efficient and long lasting motor for the toughest industrial applications.

FUTURE IEC MOTORS



	SEVERE DUTY	MARINE DUTY	SMOKE SPILL	BRAKEMOTORS	FIRE PUMP
IEC Frame	100-315	100-450	100-280	100-112	100-355
Range	1.1 - 75 kW	.75 - 1000 kW	.75 - 75 kW	1.0 - 5.5 kW	.75 - 375 kW
Speed	2, 4, 6 pole	2, 4 pole	2, 4, 6, 8 pole	4 pole	2, 4 pole
Voltage	230/460V	Up to 690V	Up to 690V	230/460V	Up to 690V
Frequency	50/60 Hz	50/60 Hz	50 & 50 Hz	50/60 Hz	50 & 50 Hz
Service factor	1.15	1.0	1.0	1.15	1.0
Efficiency	IE3	IE2 & IE3	IE1, IE2 & IE3	IE3	IE1, IE2 & IE3
Mounting flanges	B3, B5 & B14	B3, B5 & B14	B3, B5 & B14	B3, B5 & B14	B3
Insulation	Class F, Class B rise	Class F, Class B rise	Class H	Class F, Class B rise	Class F
Enclosure	TEFC	TEFC	TEFC	TEFC	TEFC
Construction	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron
Inverter duty	10:1	10:1	N/A	10:1	N/A*
IP protection	IP56	IP56	IP56	IP55	IP55
Paint	C51 paint process	C5M paint process	RAL3001 red	Blue enamel	RAL3000 Fire Pump red
Agencies	UL recognized & CSA Certified	ABS, DNV & LR certified	N/A	UL recognized & CSA Certified	UL Fire Pump certified, UL recognized & CSA Certified
Additional features	N/A	N/A	2 meter long cable High temperature braking & grease Class F200, F250, F300 & F400	Brake ratings 6-74 FT/LB	N/A

N/A* - Fire Pump motors are not recommended for use with variable frequency drives.

COMPARING NEMA MOTORS TO IEC METRIC MOTORS

Specific considerations must be taken when selecting an IEC motor or a NEMA motor.

Dimensionally these two standards are very different. See the chart below to assist in comparing frame sizes between NEMA and IEC motors.

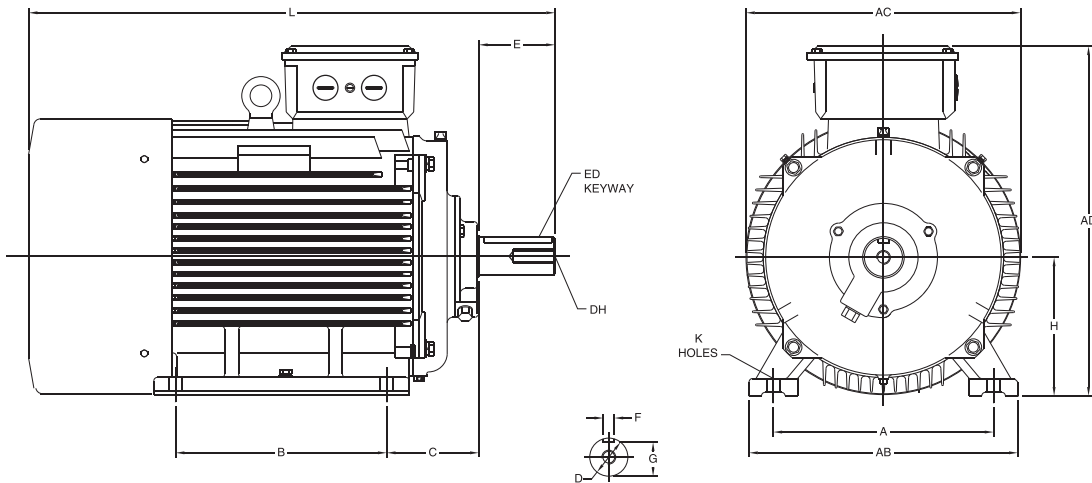
NEMA	42	48	56	145	-	182	184	213	215	254	256	284
IEC	63	71	80	90	100L	112S	112M	132S	132M	160M	160L	180M
NEMA	286	324	326	364	365	404	405	444	445	447	449	N/A
IEC	180L	200M	200L	225S	225M	250S	250M	280S	280M	280H	280H	N/A

HIGH QUALITY FACTORY MODIFICATIONS

Modification	TerraMAX® General Purpose Motors	TerraMAX® Severe Duty Motors	TerraMAX® Marine Duty Motors	TerraMAX® Smoke Spill Motors	TerraMAX® Fire Pump Motors	TerraMAX® Brakemotors
Bearings						
Ball to roller	●	●	●	●		
Insulated bearing	●	●	●	●		
Brackets/Flanges/Feet						
B5 FF D-Flange	●	●	●	●	●	●
B14 FT C-Face	●	●	●	●	●	●
Reposition feet and nameplate	●					
Brakes						
Crane brakes	●	●	●			
Industrial brakes	●	●				
Marine brakes	●	●	●			
Conduit / Terminal Box						
Auxiliary box	●	●	●			
Auxiliary box (condulet)	●	●	●			
Cable gland	●	●	●	●	●	●
Rotate conduit box lead opening	●	●	●			
Drains						
304 Stainless steel drain & breather	●	●	●			
Drip Cover						
Canopy cover	●	●	●			
Encoders						
HS35 encoder	●	●	●			
Fan						
Cast iron fan cover	●					
Grease / Lubrication / Fittings						
Low temperature grease	●	●	●			●
High temperature grease	●	●	●			●
Grounding						
On-frame grounding	●	●	●	●	●	
Shaft grounding ring	●	●	●			
Hardware						
304 Stainless steel hardware	●	●	●			
Mounting / Assembly						
Convert to floor, ceiling or wall mount	●	●	●	●		●
Nameplates / Markings						
304 Stainless steel nameplate	●	●	●	●	●	●
Additional data on nameplate	●	●	●	●	●	●
Inverter duty nameplate	●	●	●	●	●	●
Renameplate as EX nA 22 T3	●	●	●			
Replacement nameplate	●	●	●	●	●	●
Rotation arrow	●	●	●	●	●	●
Separate nameplate for customer data	●	●	●	●	●	●
Packaging						
Export packaging	●	●	●	●	●	●
Paint / Coatings						
ISO 12944: C1-C5I/M coating process	●	●	●			
Repaint to a stock color	●	●	●			
Shaft						
Double shaft	●	●	●			
Space Heaters						
100-120 Volt single phase	●	●	●	●		
200-230 Volt single phase	●	●	●	●		
Testing						
Routine test report	●	●	●	●	●	●
Protection- Thermal						
Stator temperature detector (RTDs)	●	●	●			
Thermistors	●	●	●			
Thermostats	●	●	●			
Weatherproofing/Special Service Motors						
Artic duty motors	●	●	●			
Fire Pump motor certification	●					
IP55-IP56 protection	●				●	●
Marine duty motors - ABS without certification	●	●				
Marine duty motors - DNV without certification	●	●				
Marine duty motors - Lloyds register without certification	●	●				
Mining duty motors	●	●				
Tropical anti-fungus treatment	●	●				

IEC QUICK REFERENCE DIMENSIONAL CHART

B3 Foot-Mounted (Ridge Base)

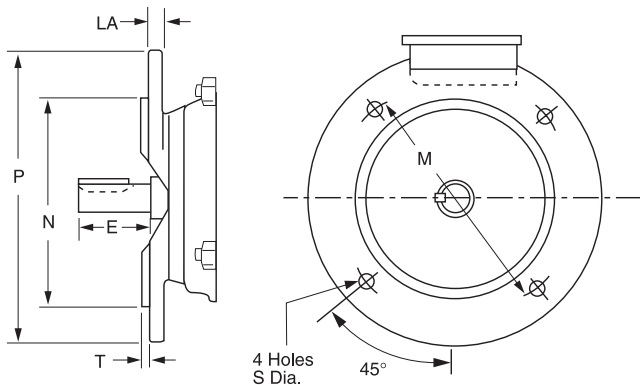


IEC Frame Dimensions (Millimeters)

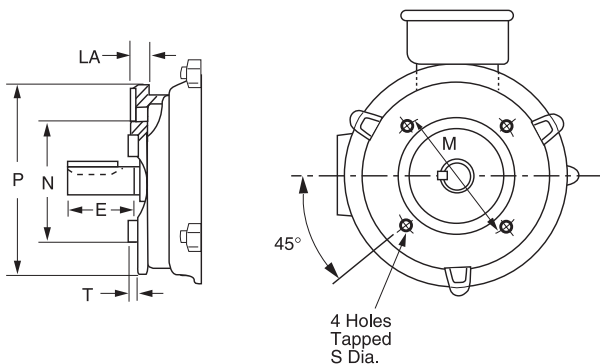
FRAME	MOUNTING						SHAFT						GENERAL			B5 (FF) FLANGE						B14 (FT) FACE					
	A	B	C	H	AB	K	D	E	F	G	ED	DH	AC	AD	HD	M	N	P	S	T	LA	M	N	P	S	T	LA
63	100	80	40	63	119	7	11	23	4	8.5	10	M4 x 10	126	—	169	115	95	140	10	3.0	7	75	60	90	M5	2.5	7
71	112	90	45	71	131	7	14	30	5	11.0	20	M5 x 12.5	140	—	186	130	110	160	10	3.5	7	85	70	105	M6	2.5	9
80	125	100	50	80	157	10	19	40	6	15.5	25	M6 x 16	158	132	212	165	130	200	12	3.5	12	100	80	120	M6	3.0	9
90S	140	100	56	90	174	10	24	50	8	20.0	32	M8 x 19	178	140	230	165	130	200	12	3.5	12	115	95	140	M8	3.0	9
90L	140	125	56	90	174	10	24	50	8	20.0	32	M8 x 19	178	140	230	165	130	200	12	3.5	12	115	95	140	M8	3.0	9
100L	160	140	63	100	205	12	28	60	8	24.0	40	M10 x 22	215	178	278	215	180	250	15	4.0	11	130	110	160	M8	3.5	14
112M	190	140	70	112	245	12	28	60	8	24.0	40	M10 x 22	220	190	302	215	180	250	15	4.0	12	130	110	160	M8	3.5	11
132S	216	140	89	132	280	12	38	80	10	33.0	56	M12 x 28	275	210	342	265	230	300	15	4.0	12	165	130	200	M10	3.5	14
132M	216	178	89	132	280	12	38	80	10	33.0	56	M12 x 28	275	210	342	265	230	300	15	4.0	12	165	130	200	M10	3.5	14
160M	254	210	108	160	325	15	42	110	12	37.0	80	M16 x 36	325	254	414	300	250	350	19	5.0	13	215	180	250	M12	4.0	13
160L	254	254	108	160	325	15	42	110	12	37.0	80	M16 x 36	325	254	414	300	250	350	19	5.0	13	215	180	250	M12	4.0	13
180M	279	241	121	180	335	15	48	110	14	42.5	80	M16 x 36	360	310	490	300	250	350	19	5.0	15	NOT DEFINED BY IEC 72					
180L	279	279	121	180	335	15	48	110	14	42.5	80	M16 x 36	360	310	490	300	250	350	19	5.0	15						
200L	318	305	133	200	395	19	55	110	16	49.0	100	M20 x 42	400	340	540	350	300	400	19	5.0	19.5						
225S	356	286	149	225	435	19	55*/ 60	110*/ 140	16*/ 18	49*/ 53	100*/ 125	M20 x 42	445	414	639	400	350	450	19	5.0	21.0						
225M	356	311	149	225	435	19	55*/ 60	110*/ 140	16*/ 18	49*/ 53	100*/ 125	M20 x 42	445	414	639	400	350	450	19	5.0	21.0						
250M	406	349	168	250	490	24	60*/ 65	140	18	53*/ 58	125	M20 x 42	500	440	690	400	350	450	19	5.0	21.0						

*2 Pole Dimensions

1mm = .03937", 1" = 25.4mm



FF Flange B5 Mount



FT Face B14 Mount

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APPLICATION CONSIDERATIONS

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