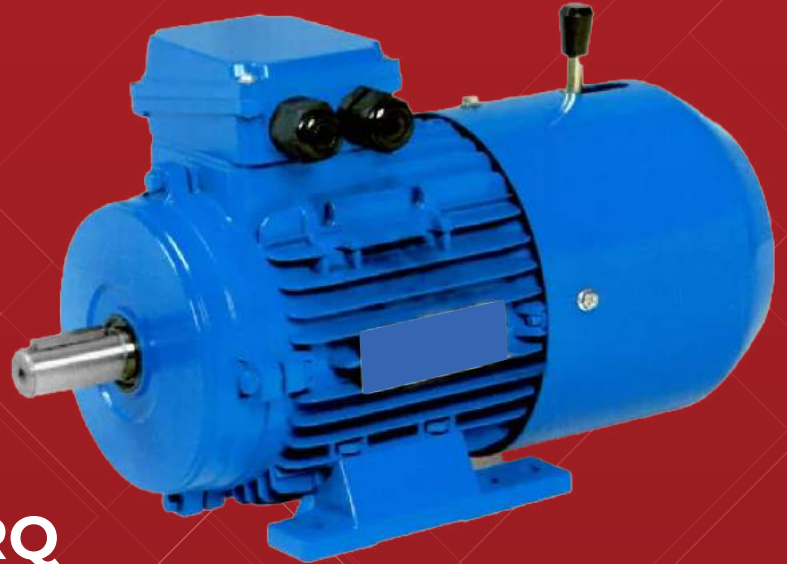


UNITORQ[®]

Clutches & Brakes



Motor with UNITORQ Electromagnetic DC Fail Safe Brakes

USB/UMB Series



Electromatic Engineers Pvt. Ltd.
Udaipur (Rajasthan)



BRAKE MOTORS are used for various applications where instantaneous stopping of the driven load is required. The operation of the brake is “FAIL SAFE TYPE” (USB & UMB Series) and are Normally On in nature. The brake is applied when power to the motor is switched off or on power failure occurs.

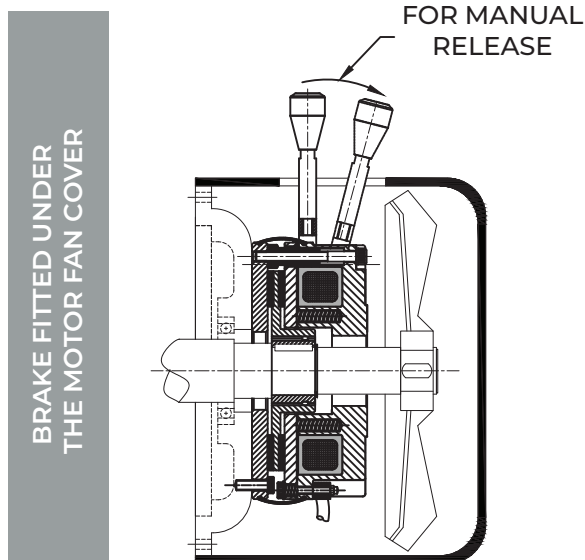
CONSTRUCTION

Brake Motor is combination of an AC Induction motor and an electromagnetic DC Fail Safe Brake.

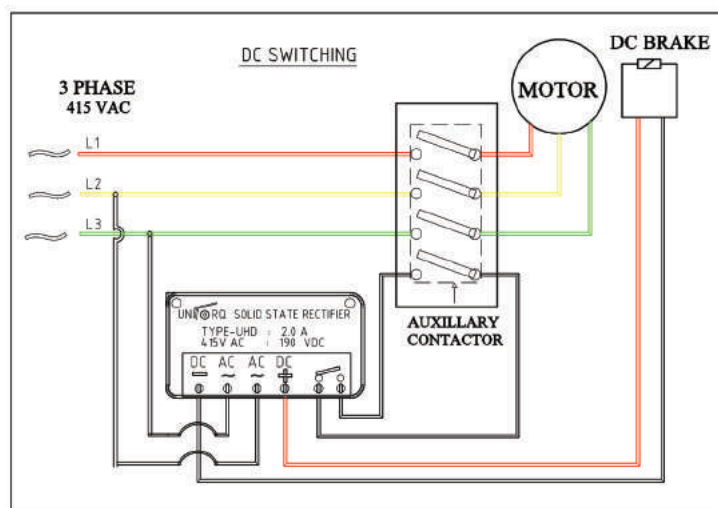
BRAKE MOTOR CONSISTS OF THE FOLLOWING :

- AC induction motor (Foot / Flange)
- Electromagnetic DC Fail Safe Brake – Type USB Or UMB (With or Without Manual Release)
- Cooling Fan after the brake for better heat dissipation and cooling of motor & brake as well.
- Rectifier units either can be provided near to motor terminal (For AC Switching) or given separately to mount them in the control panel (For DC Switching)
- Manual release is an option feature and will be provided only with our UMB Series.

MOUNTING



ADVISABLE SWITCHING



These types of brakes require DC Voltage to release. It can be done on either side. However for higher cycle time/ faster engagement and disengagement, switching must be carried out on DC side only.

WORKING

When there is no power given to either motor or brake, the brake torque is provided by compression springs developing an axial course on the brake armature plate which ultimately presses it against mounting flange. In this condition a nominal air gap will be available and the rotor with the friction surfaces remains sandwiched in between armature plate and mounting plate. Release of the brake takes place when the power to the brake and motor is supplied at the same time. Power to the brake coil produces strong magnetic field and pulls the armature plate against the compression spring force towards the stator (Brake Coil) over the air gap and rotor becomes free to rotate. The attraction of the armature plate and returning to its original position takes place instantaneously thus failsafe nature is ensured in case of power failure.

To protect contactor points, coil & switches, resistor and capacitor networks must be provided across the contactor to restrict the high inductive voltage/ back EMF which is produced when power is switched off.

RECTIFIER SELECTION			
BRAKE COIL (VDC)	AC INPUT (VAC)	CURRENT RATING	RECTIFIER TYPE
190	415	2 Amp	UHD-A, UHD1-A
	230	2 Amp	UFD-B
105	230	2 Amp	UHD-C
	230	2 Amp	UHD1-C
96	230	2 Amp	UHD-D
	110	2 Amp	UFD-C
24	415	2 Amp	UTR-A
	415	5 Amp	UTR-B
	230	2 Amp	UTR-C
	230	5 Amp	UTR-D

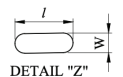
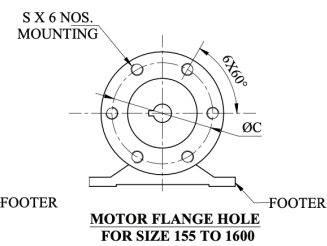
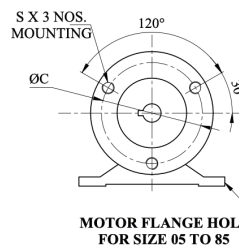
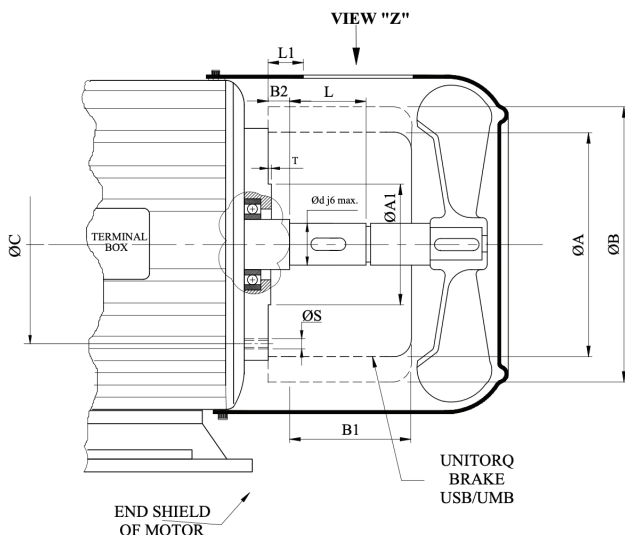
NOTE- ALL RECTIFIERS ARE WITH IN BUILT DC SWITCHING PROVISION

SELECTION CHART FOR UNITORQ BRAKE MOTORS

Motor HP/KW	Motor RPM	Motor Frame	Brake size/ torque	Safety Factor
0.25/0.18	1500	63	05	4.2
	1000	71	05	2.79
	750	80	05	2.10
0.5/0.37	1500	71	05	2.10
	1000	80	10	2.79
	750	90S	10	2.10
0.75/0.55	1500	80	10	2.79
	1000	80	10	1.86
	750	90L	20	2.79
1.0/0.75	1500	80	10	2.10
	1000	90S	20	2.79
	750	100L	20	2.10
1.5/1.1	1500	90S	20	2.79
	1000	90 L	20	1.86
	750	100L	35	2.44
2.0/1.5	1500	90L	20	2.10
	1000	100L	35	2.44
	750	112M	35	1.83
3.0/2.2	1500	100L	35	2.44
	1000	112M	65	3.02
	750	132S	65	2.26
5.0/3.7	1500	112M	65	2.72
	1000	132S	65	1.82
	750	160M	85	1.78
7.5/5.5	1500	132S	85	2.37
	1000	132M	155	2.88
	750	160M	155	2.16
10.0/7.5	1500	132M	85	1.78
	1000	160M	155	2.16
	750	160L	250	2.65
12.5/9.3	1500	160M	155	2.60
	1000	160L	155	1.73
	750	180M	250	2.10
15.0/11.0	1500	160M	155	2.16
	1000	160L	250	2.33
	750	180L	400	2.79
20.0/15.0	1500	160L	250	2.62
	1000	180L	400	2.79
	750	200L	400	2.03

UNITORQ-DC Fail Safe Brake Type :- USB/UMB with Mounting Flange

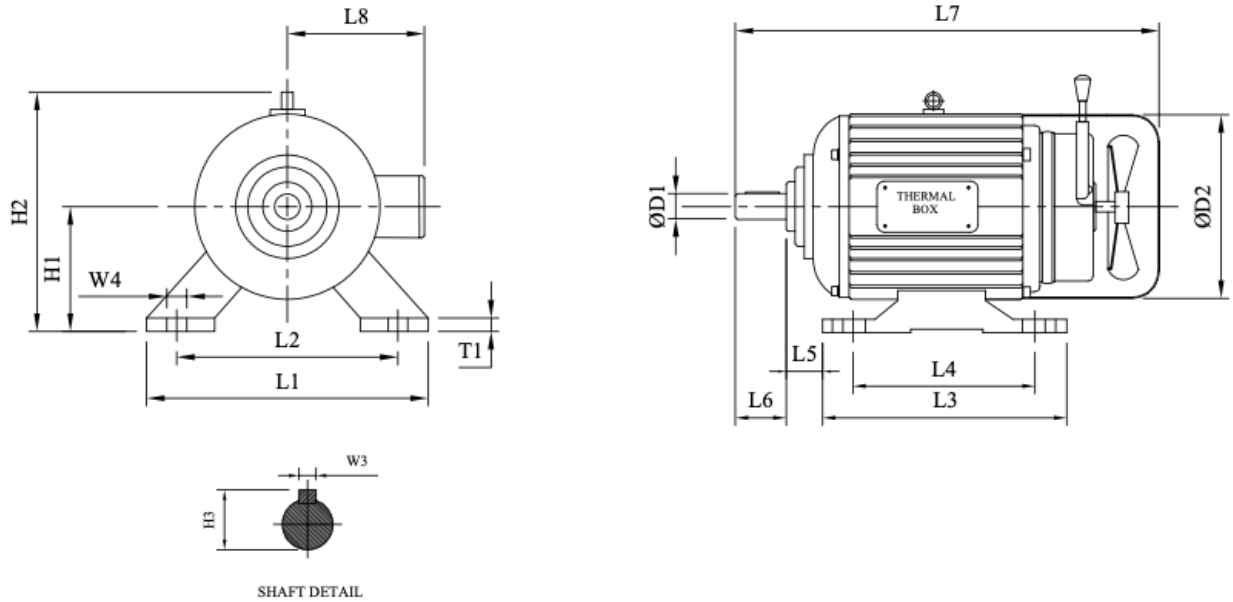
BRAKE SIZE	Ød j6 max.	ØA	ØB	ØD	S	ØA1	B1	B2	L	L1	T	l x w
05	11/15#	86	110	72	3 x M4	20/31#	40	6	18	17	2	60 x 14
10	15/24#	104	126	90	3 x M5	30/41#	42	7	20	18	2	60 x 14
20	22	128	155	112	3 x M6	40	54	9	20	30	2	60 x 15
35	28	148	178	132	3 x M6	45	58	9	25	32	3	60 x 15
65	34	164	198	145	3 x M8	55	70	11	30	36	3	70 x 15
85	38	188	225	170	3 x M8	65	79	11	30	41	3	70 x 16
155	45	212	255	196	6 x M8	75	93	11	35	43	3	80 x 16
250	50	250	304	230	6 x M10	90	104	11	40	50	3	85 x 19
400	70	300	356	278	6 x M10	120	120	15	50	61	3	100 x 19



SLOT APPLICABLE FOR HAND RELEASE

DIMENSIONS -TEFC

Foot Mounted Motor With DC Brake Type UMB

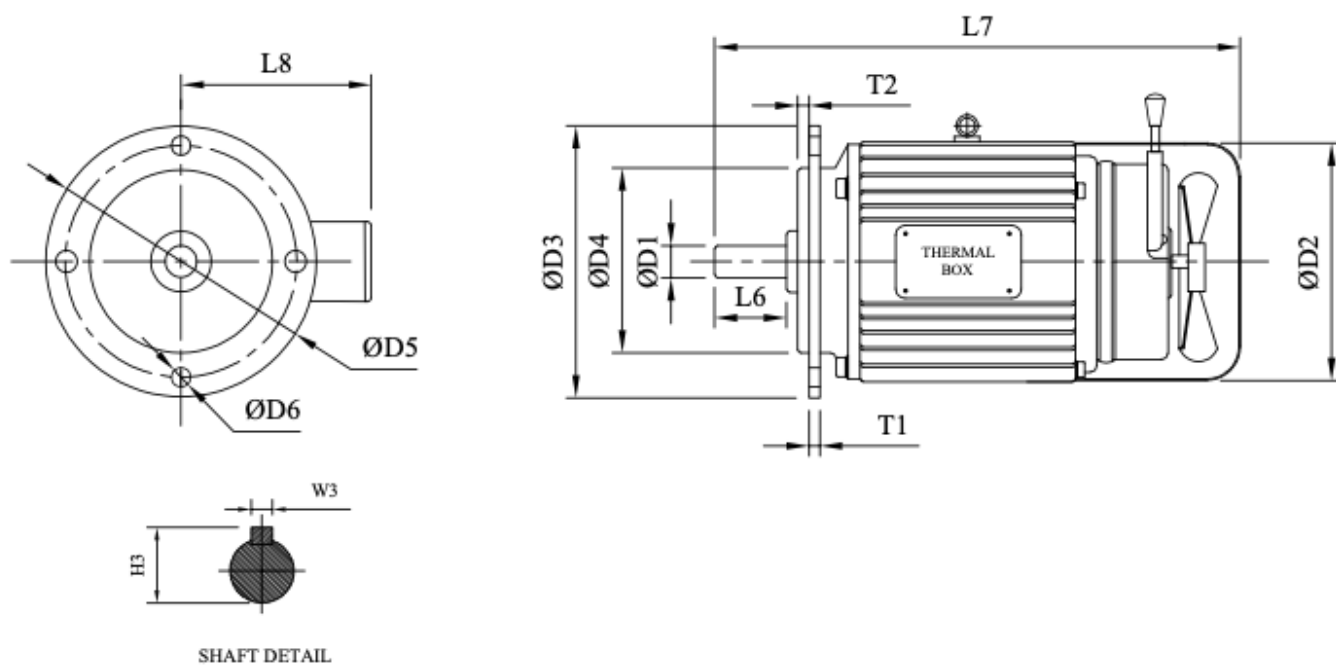


Dimensions - UMB series

TEFC FOOT MOUNTED MOTOR WITH UNITORQ DC BRAKE TYPE UMB SERIES

MOTOR FRAME	BRAKE SIZE/ TORQUE NM	D1 J6	D2	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L8	T1	W1	W3	W4
63	5	11	115	63	158	12.5	125	100	106	80	40	23	283	95	10	35	4	7
71	5	14	140	71	176	16	140	112	112	90	45	30	313	105	10	35	5	7
80	10	19	162	80	161	21.5	160	125	130	100	50	40	357	128	13	38	6	10
90S	10	24	173	90	177	27	175	140	132	100	56	50	404	135	14	37	8	10
90L	20	24	173	90	177	27	175	140	157	125	56	50	429	135	14	37	8	10
100L	35	28	195	100	245	31	200	160	170	140	63	60	470	165	14	42	8	12
112M	65	28	226	112	285	31	225	190	175	140	70	60	510	178	14	50	8	12
132S	85	38	260	132	320	41	258	216	176	140	89	80	568	198	18	55	10	12
132M	155	38	260	132	320	41	258	216	214	178	89	80	606	198	18	55	10	15
160M	155	42	310	160	390	45	320	254	260	210	108	110	713	240	25	72	12	15
160L	155	42	310	160	390	45	320	254	304	254	108	110	773	240	25	72	12	15
180M	250	48	360	180	445	51.5	360	279	300	141	121	110	784	260	25	80	14	15
180L	400	48	360	180	445	51.5	360	279	338	189	121	110	822	260	25	80	14	15
200L	400	55	390	200	505	59	400	318	370	315	133	110	903	295	30	85	16	19

Dimensions -TEFC Flange Mounted Motor With DC Brake Type UMB



Dimensions - UMB series

TEFC FLANGE MOUNTED MOTOR WITH UNITORQ DC BRAKE TYPE UMB SEREIS

MOTOR FRAME	BRAKE SIZE/ TORQUE NM	D1 J6	D2	D3	D4	D5	D6	H3	L6	L7	L8	T1	T2	W3
63	5	11	115	140	95	115	10	12.5	23	283	95	9	3	4
71	5	14	140	160	110	130	10	16	30	313	105	9	3.5	5
80	10	19	162	200	130	165	12	21.5	40	357	128	10	3.5	6
90S	10	24	173	200	130	165	12	27	50	404	135	10	3.5	8
90L	20	24	173	200	130	165	12	27	50	429	135	10	3.5	8
100L	35	28	195	250	180	215	15	31	60	470	165	11	4	8
112M	65	28	226	250	180	215	15	31	60	510	178	11	4	8
132S	85	38	260	300	230	265	15	41	80	568	198	12	4	10
132M	155	38	260	300	230	265	15	41	80	606	198	12	4	10
160M	155	42	310	350	250	300	19	45	110	713	240	13	5	12
160L	155	42	310	350	250	300	19	45	110	773	240	13	5	12
180M	250	48	360	350	250	300	19	51.5	110	784	260	13	5	14
180L	40	48	360	350	250	300	19	51.5	110	822	260	13	5	14
200L	400	55	390	400	300	350	19	59	110	903	295	13	5	16



Clutches & Brakes

"PACE SETTER IN POWER TRANSMISSION"

REGISTERED HEAD OFFICE :

8-B, Saheli Marg, Udaipur - 313001

Rajasthan, India

Phone : +91 294 2526933

Mobile : +91 9001992823 / 9001995895

E-mail : sales@unitorq.in / sales@clutchesbrakes.com

Website : www.unitorq.in / www.clutchesbrakes.com

PRODUCTION UNIT I :

E-104 B-105, ROAD NO. 3, RIICO

Industrial Area, Gudli, Udaipur - 313024

PRODUCTION UNIT II :

E-104 A, ROAD NO. 3, RIICO

Industrial Area, Gudli, Udaipur - 313024

PRODUCTION UNIT III :

G I - 173, RIICO Industrial Area,

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SALES OFFICES :

Delhi :

105-A, PAL MOHAN PLAZA, 11/56, D.B.GUPTA ROAD,

OPP. P.P. JEWELLERS, KAROL BAGH, NEW DELHI - 110005

Tel : 011-42131213, Mobile No : +91 9810255901 / +91 91166 29966

Email Id : amardeep@clutchesbrakes.com / marketing@unitorq.in

Kolkata :

20/9/F, G. C. Bose Sarani, Kamala Bagan,

Post Konnagar - 712235, Dist. Hooghly (W.B.),

Phone : 033-26746308, Mobile No : +91 9433046308 / +91 91166 29970

Email Id : chakrabortysk@clutchesbrakes.com / kolkata@clutchesbrakes.com

Ahmedabad :

89, Gajanand Industrial Hub - 2, B/h Metrix Plaza,

Jashodanagar, Hathizan Road, Vatva, GIDC, Ahmedabad - 382450

Mob : +91 9116629980, +91 9829016003

Email Id : gujarat@unitorq.in / sales@unitorq.in

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