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GEARED MOTORS

DIMENSIONS

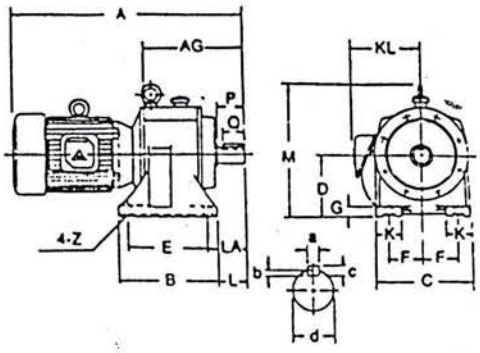

Fig 1. TFA Type (4P-3.7kw • 6P-2.2kw and below)

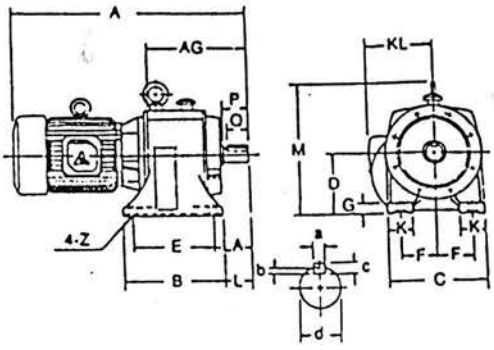

Fig 2. TFB Type (4P-5.5kw • 6P-3.7kw and above)

mm

Reduction Ratio	Output KW		Unit Size	Fig	A	Motor frame	AG	B	C	D	E	F	G	K	L	LA	M	KL	Z	Output Shaft					Weight (kg)
	4p	6p																		d	a	b	p	q	
1/10	0.4	-	TA6	Fig 1	450	71	203	194	180	112	160	65	18	45	67	50	240	105	12	28	7	4	50	45.5	24
	0.75	0.4	TA6		470	80	203	194	180	112	160	65	18	45	67	50	240	105	12	28	7	4	50	45.5	29
	1.5	0.75	TA6		505	90L	203	194	180	112	160	65	18	45	67	50	240	105	12	28	7	4	50	45.5	38
	2.2	1.5	TA7		563	100L	221	210	200	125	170	75	20	50	75	55	265	118	15	31.5	10	4.5	56	50	50
	3.7	2.2	TA8		614	112M	257	230	230	140	190	85	22	55	91	71	295	138	15	41.5	10	4.5	71	65	73
	5.5	3.7	TB11		744	132S	328	310	300	200	250	110	30	75	120	90	405	185	19	50	12	4.5	90	81	126
	7.5	5.5	TB11	Fig 2	782	132M	328	310	300	200	250	110	30	75	120	90	405	185	19	50	12	4.5	90	81	137
	11	7.5	TB14		891	160M	397	370	395	250	310	150	40	90	140	110	500	245	24	63	18	6	112	104	226
	15	11	TB14		935	160L	397	370	395	250	310	150	40	90	140	110	500	245	24	63	18	6	112	104	241
1/20	0.4	-	TA6	Fig 1	450	71	203	194	180	112	160	65	18	45	67	50	240	105	12	28	7	4	50	45.5	24
	0.75	0.4	TA6		470	80	203	194	180	112	160	65	18	45	67	50	240	105	12	28	7	4	50	45.5	29
	1.5	0.75	TA7		522	90L	221	210	200	125	170	75	20	50	75	55	265	118	15	31.5	10	4.5	56	50	42
	2.2	1.5	TA8		599	100L	257	230	230	140	190	85	22	55	91	71	295	138	15	40	10	4.5	71	65	59
	3.7	2.2	TA9		637	112M	282	255	250	160	205	90	25	65	105	80	330	155	19	45	12	4.5	80	73	82
	5.5	3.7	TB11		744	132S	328	310	300	200	250	110	30	75	120	90	405	185	19	50	12	4.5	90	81	126
	7.5	5.5	TB12	Fig 2	813	132M	359	340	350	212	280	130	35	85	130	100	440	210	24	56	15	5	100	92.5	166
	11	7.5	TB14		891	160M	397	370	395	250	310	150	40	90	140	110	500	245	24	63	18	6	112	104	226
	15	11	TB15		973	160L	435	415	420	280	345	160	40	95	150	115	555	270	24	71	20	7	112	105	288
1/30	0.4	-	TA6	Fig 1	450	71	203	194	180	112	160	65	18	45	67	50	240	105	12	28	7	4	50	45.5	25
	0.75	0.4	TA7		487	80	221	210	200	125	170	75	20	50	75	55	265	118	15	31.5	10	4.5	56	50	34
	1.5	0.75	TA8		558	90L	257	230	230	140	190	85	22	55	91	71	295	138	15	40	10	4.5	71	65	51
	2.2	1.5	TA9		622	100L	282	255	250	160	205	90	25	65	105	80	330	155	19	45	12	4.5	80	73	68
	3.7	2.2	TA10		663	112M	310	275	290	180	215	110	28	65	120	90	370	176	19	50	12	4.5	90	81	95
	5.5	3.7	TB12		775	132S	359	340	350	212	280	130	35	85	130	100	440	210	24	56	15	5	100	92.5	155
	7.5	5.5	TB14	Fig 2	845	132M	397	370	395	250	310	150	40	90	140	110	500	245	24	63	18	6	112	104	189
	11	7.5	TB15		929	160M	435	415	420	280	345	160	40	95	150	115	555	270	24	71	20	7	112	105	273
	15	11	TB17		1039	160L	501	490	455	300	410	175	45	105	170	130	590	295	28	80	20	7	125	118	339

Selection of Unit Size: Select a Unit Size from Table 1 according to the KW of your motor and required r.p.m. of the Low Speed Shaft
If the KW of your motor is unknown, consult Table 2.

TABLE 1: Unit Size Selection Table

Output (r.p.m.)		Motor Pole	Reduction Ratio	Output (KW)								
50HZ	60HZ			0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15
33	40	6	1/30	TA7	TA8	TA9	TA10	TB12	TB14	TB15	TB17	-

DYNAMIC ELECTRICAL CHARACTERISTICS at T_A = 25°C, Input t_r, t_f = 20 ns, C_L = 50 pF, R_L = 200 kΩ

CHARACTERISTIC	TEST CONDITIONS V_{DD} (V)	LIMITS Min.	Typ.	Max.	UNITS
CLOCKED OPERATION					
Propagation Delay Time t_{PHL}, t_{PLH}	5	-	160	320	ns
	10	-	80	150	
	15	-	60	120	
Transition Time, t_{THL}, t_{TLH}	5	-	100	200	ns
	10	-	50	100	
	15	-	40	80	
Minimum Clock Pulse Width, t_{WCL}	5	-	90	180	ns
	10	-	40	80	
	15	-	25	50	
Clock Rise & Fall Time: t_{rCL}, t_{fCL}*	5	-	-	15	µs
	10	-	-	15	
	15	-	-	15	
Minimum Data Setup Time, t_{SU}	5	-	35	70	ns
	10	-	20	40	
	15	-	15	30	
Maximum Clock Input Frequency, f_{CL}	5	3	6	-	MHz
	10	6	12	-	
	15	8.5	17	-	
Input Capacitance, C_{IN}	Any Input	-	5	7.5	pF
RESET OPERATION					
Propagation Delay Time, t_{PHL}	5	-	200	400	ns
	10	-	100	200	
	15	-	80	160	
Minimum Reset Pulse Width, t_{WR}	5	-	100	200	
	10	-	40	80	
	15	-	30	60	

* If more than one unit is cascaded t_{rCL} should be made less than or equal to the sum of the transition time and the fixed propagation delay of the output of the driving stage for the estimated capacitive load

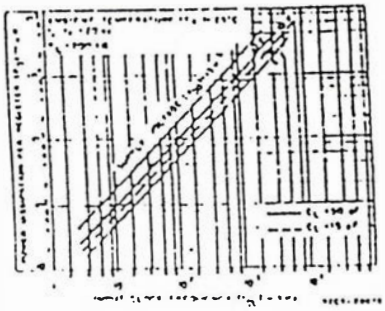

Fig. 8 – Typical power dissipation as a function of frequency.

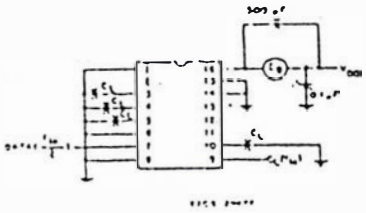

Fig. 9 – Power dissipation test circuit.

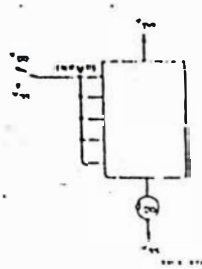

Fig. 10 – Quiescent device current test circuit.

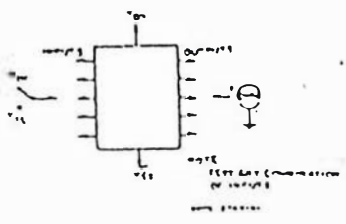

Fig. 11 – Input voltage test circuit.

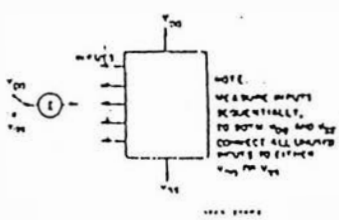

Fig. 12 – Input current test circuit.