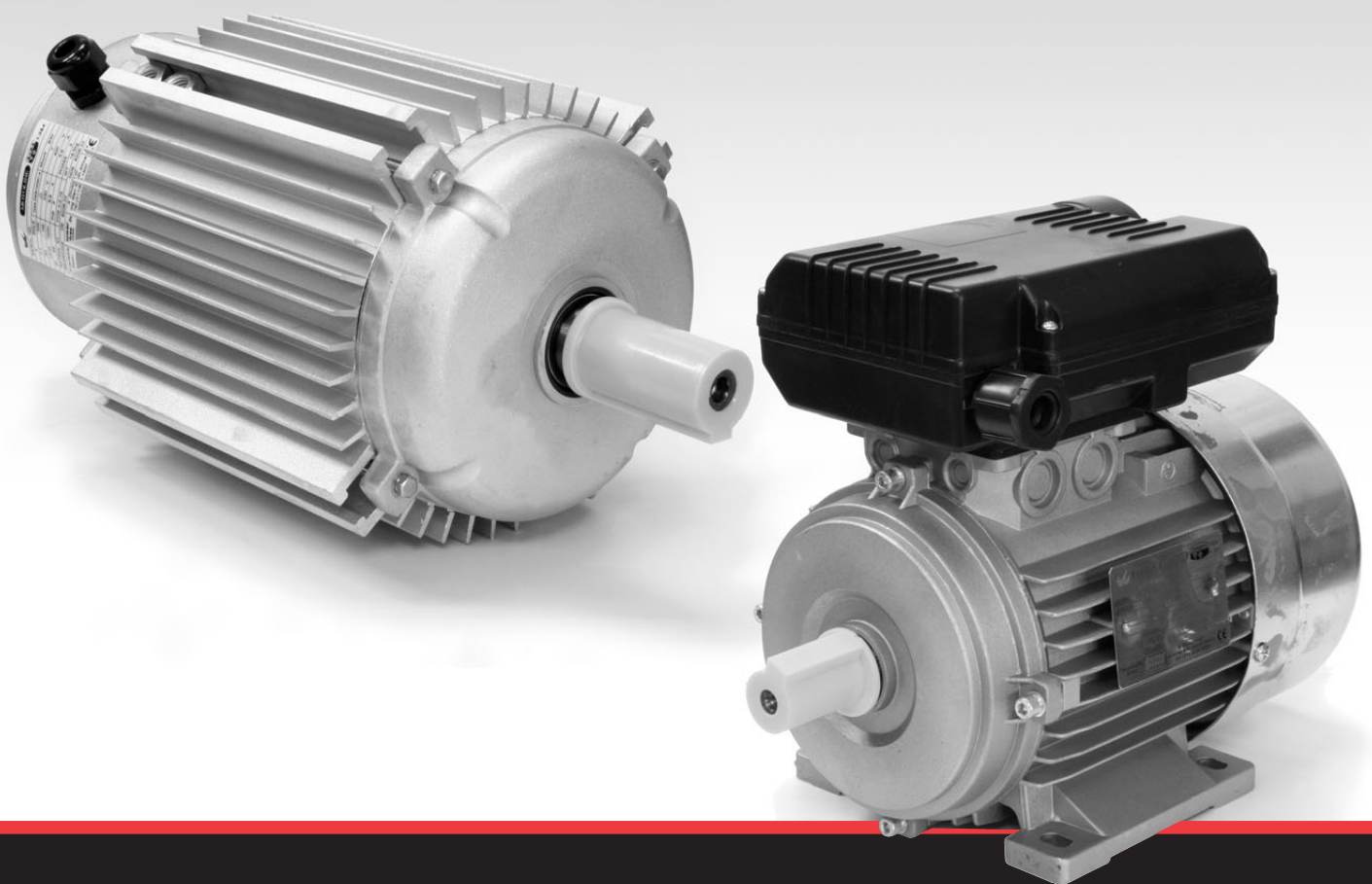




DRIVES



Fenner
MOTOLINE

ALUMINIUM SINGLE PHASE MOTORS

Technical Guide

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A DIVISION OF THE BEARING MAN GROUP

SANS ISO 9001:2008

ALUMINIUM SINGLE PHASE 220V

HIGHER STARTING TORQUE (CAPACITOR START & CAPACITOR RUN) - 2 POLE

MOTOR TYPE	RATED OUTPUT POWER kW	CURRENT 220V A	RATED SPEED min ⁻¹	FULL-LOAD POWER FACTOR cos ϕ	FULL-LOAD EFF. η %	LOCKED ROTOR CURRENT Is/In	LOCKED ROTOR TORQUE Ms/Mn	BREAK DOWN TORQUE Ms/Mn	STARTING CAPACITOR (250v) μ F	RUNNING CAPACITOR (450v) μ F	NET WEIGHT kg
ML63-2	0.18	1.89	2750	0.72	60	6.3	3.0	1.8	75		6.2
ML63-2	0.25	2.4	2770	0.74	64	6.25	3.0	1.8	75		6.3
ML71-2	0.37	3.36	2800	0.77	65	6.25	2.8	1.8	100		8.3
ML8012	0.75	4.94	2800	0.92	75	5.7	1.8	1.7	100	25	8.3
ML8022	1.10	6.75	2800	0.95	78	5.6	1.8	1.7	150	25	9.0
ML90S-2	1.50	9.2	2800	0.95	78	6.0	1.7	1.7	300	40	12
ML90L-2	2.20	12.8	2800	0.95	82	6.2	1.7	1.7	300	40	5
ML100L1-2	3.00	17.3	2820	0.95	83	6.4	1.7	1.7	400	55	14.0
ML112M-2	3.7	21.1	2820	0.96	83	6.5	1.7	1.7	400	50	20.5

HIGHER STARTING TORQUE (CAPACITOR START & CAPACITOR RUN) - 4 POLE

MOTOR TYPE	RATED OUTPUT POWER kW	CURRENT 220V A	RATED SPEED min ⁻¹	FULL-LOAD POWER FACTOR cos ϕ	FULL-LOAD EFF. η %	LOCKED ROTOR CURRENT Is/In	LOCKED ROTOR TORQUE Ms/Mn	BREAK DOWN TORQUE Ms/Mn	STARTING CAPACITOR (250v) μ F	RUNNING CAPACITOR (450v) μ F	NET WEIGHT kg
ML63-4	0.12	1.88	1350	0.58	50	4.8	3.0	1.8	75		6.1
ML63-4	0.18	2.49	1370	0.62	53	4.8	2.8	1.8	75		6.7
ML71-4	0.25	3.11	1400	0.63	58	4.8	2.8	1.8	100		8.9
ML71-4	0.37	4.24	1410	0.64	62	5.0	2.5	1.8	100		9.6
ML8014	0.55	3.88	1400	0.92	70	5.4	1.8	1.7	100	25	8.9
MI8024	0.75	5.22	1400	0.92	71	5.5	1.8	1.7	150	30	9.6
ML90S-4	1.10	6.93	1400	0.95	76	5.7	1.7	1.7	200	35	13
ML90L-4	1.50	9.2	1400	0.95	78	6.0	1.7	1.7	200	40	16
ML100LA-4	2.20	13.2	1410	0.95	80	6.1	1.7	1.7	400	50	23
ML100LB-4	3.00	17.3	1420	0.95	83	6.4	1.7	1.7	400	50	27
ML112M-4	3.7	21.1	1430	0.96	83	6.5	1.7	1.7	400	50	35

NORMAL STARTING TORQUE (CAPACITOR START AND RUN) - 2 POLE

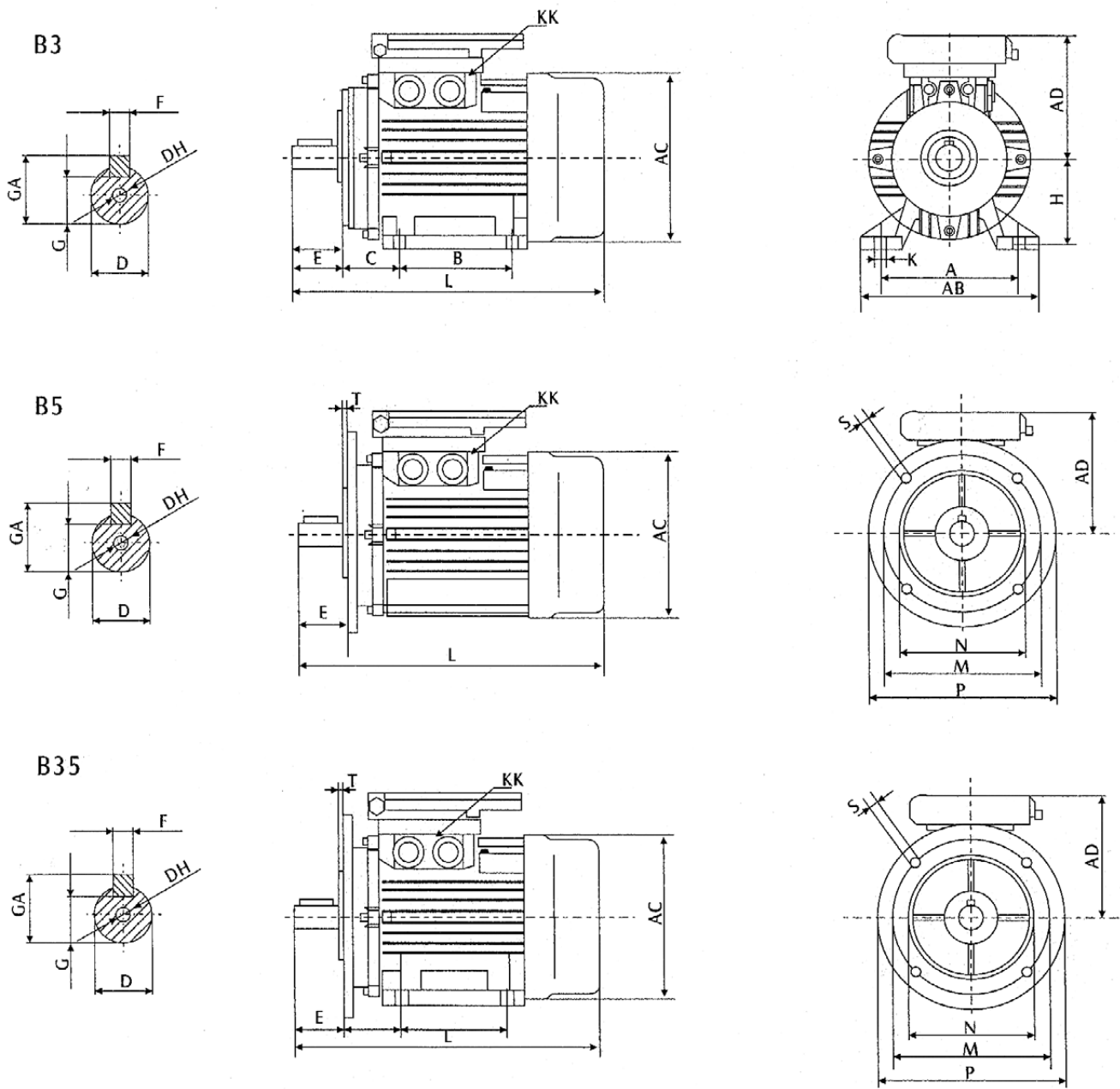
MOTOR TYPE	RATED OUTPUT POWER kW	CURRENT 220V A	RATED SPEED min ⁻¹	FULL-LOAD POWER FACTOR cos ϕ	FULL-LOAD EFF. η %	LOCKED ROTOR CURRENT Is/In	LOCKED ROTOR TORQUE Ms/Mn	BREAK DOWN TORQUE Ms/Mn	STARTING CAPACITOR (250v) μ F	NET WEIGHT kg
MY5614	0.09	0.79	2730	0.92	56	3.2	0.5	1.7	6	3.2
MY5624	0.12	0.99	2730	0.92	60	3.5	0.5	1.7	6	3.4
MY6312	0.18	1.37	2740	0.92	65	3.7	0.4	1.7	6	3.9
NY6322	0.25	1.87	2740	0.92	66	3.7	0.4	1.7	8	4.4
MY6312	0.37	2.73	2750	0.92	67	3.7	0.35	1.7	12	6.2
MY7122	0.55	3.88	2760	0.92	70	3.9	0.35	1.7	16	6.3
MY6012	0.75	5.15	2780	0.92	72	3.9	0.33	1.7	30	8.3
MY8022	1.10	7.02	2790	0.95	75	4.3	0.33	1.7	35	9.0
MY90S-2	1.50	9.44	2800	0.95	76	4.8	0.30	1.7	40	13
MY90L-2	2.20	13.7	2800	0.95	77	4.8	0.30	1.7	40	15

NORMAL STARTING TORQUE (CAPACITOR START AND RUN) - 4 POLE

MOTOR TYPE	RATED OUTPUT POWER kW	CURRENT 220V A	RATED SPEED min ⁻¹	FULL-LOAD POWER FACTOR cos ϕ	FULL-LOAD EFF. η %	LOCKED ROTOR CURRENT Is/In	LOCKED ROTOR TORQUE Ms/Mn	BREAK DOWN TORQUE Ms/Mn	STARTING CAPACITOR (250v) μ F	NET WEIGHT kg
MY5624	0.09	0.87	1340	0.90	52	2.9	0.45	1.7	6	3.4
MY6314	0.12	1.06	1350	0.90	57	3.2	0.40	1.7	6	4.0
MY6324	0.18	1.54	1360	0.90	59	3.3	0.40	1.7	8	4.5
MY7114	0.25	2.02	1370	0.92	61	3.4	0.35	1.7	12	6.1
MY7124	0.37	2.95	1370	0.92	62	3.4	0.35	1.7	16	7.0
MY8014	0.55	4.25	1380	0.92	64	3.5	0.35	1.7	25	9.5
MY8024	0.75	5.45	1380	0.92	68	3.7	0.32	1.7	30	10
MY90S-4	1.10	7.41	1390	0.95	71	4	0.32	1.7	40	13
MY90L-4	1.50	9.83	1400	0.95	73	4.6	0.30	1.7	40	16

ALUMINIUM SINGLE PHASE 220V

DIMENSIONS TO IEC SPECIFICATIONS

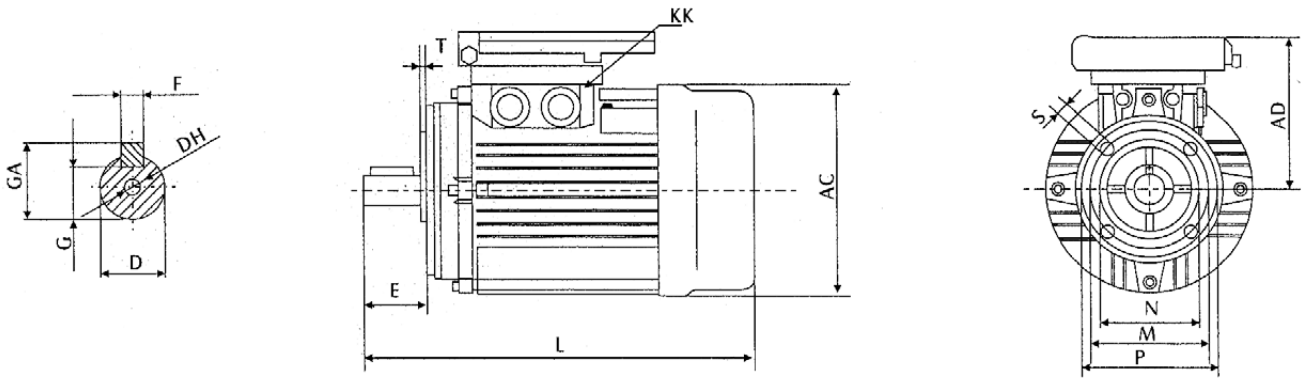


FRAME SIZE	A	AB	AC	AD	B	C	D	DH	E	F	G	H	K	KK	L	M	N	P	S	T	FLANGE NO.	GA
56	90	110	110	96	71	36	9	M4X12	20	3	7.2	56	7	2-M18X1.5	193	100	80	120	7	3	FF100	10.2
63	100	122	122	99	80	40	11	M4X12	23	4	8.5	63	7	2-M18X1.5	218	115	95	140	9	3	FF115	12.5
71	112	136	138	110	90	45	14	M5X12	30	5	11	71	7	2-M18X1.5	251	130	110	160	9	3.5	FF130	16
80	125	154	157	152	100	50	19	M6X16	40	6	15.5	80	10	2-M20X1.5	286	165	130	200	12	3.5	GG165	21.5
90S	140	174	175	158	100	56	24	M8X19	50	8	20	90	10	2-M20X1.5	335	165	130	200	12	3.5	FF165	27
90L	140	174	175	158	125	56	24	M8X19	50	8	20	90	10	2-M20X1.5	350	165	130	200	12	3.5	FF165	27
100L	160	194	196	177	140	63	28	M10X22	60	8	24	100	12	2-M20X1.5	377	215	180	250	15	4	GG215	31
112M	190	224	220	184	140	70	28	M10X22	60	8	24	112	12	2-M20X1.5	395	215	180	250	15	4	FF215	31

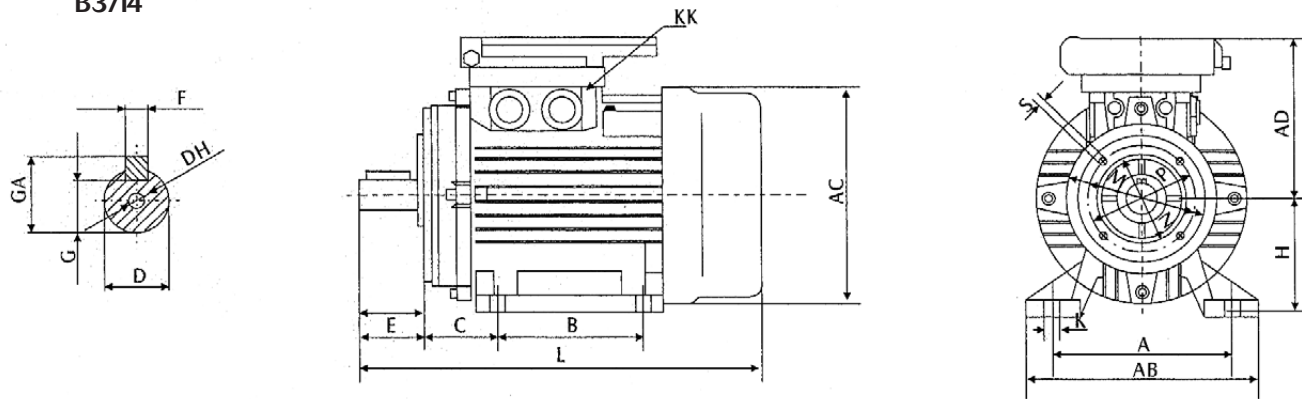
ALUMINIUM SINGLE PHASE 220V

DIMENSIONS TO IEC SPECIFICATIONS

B14



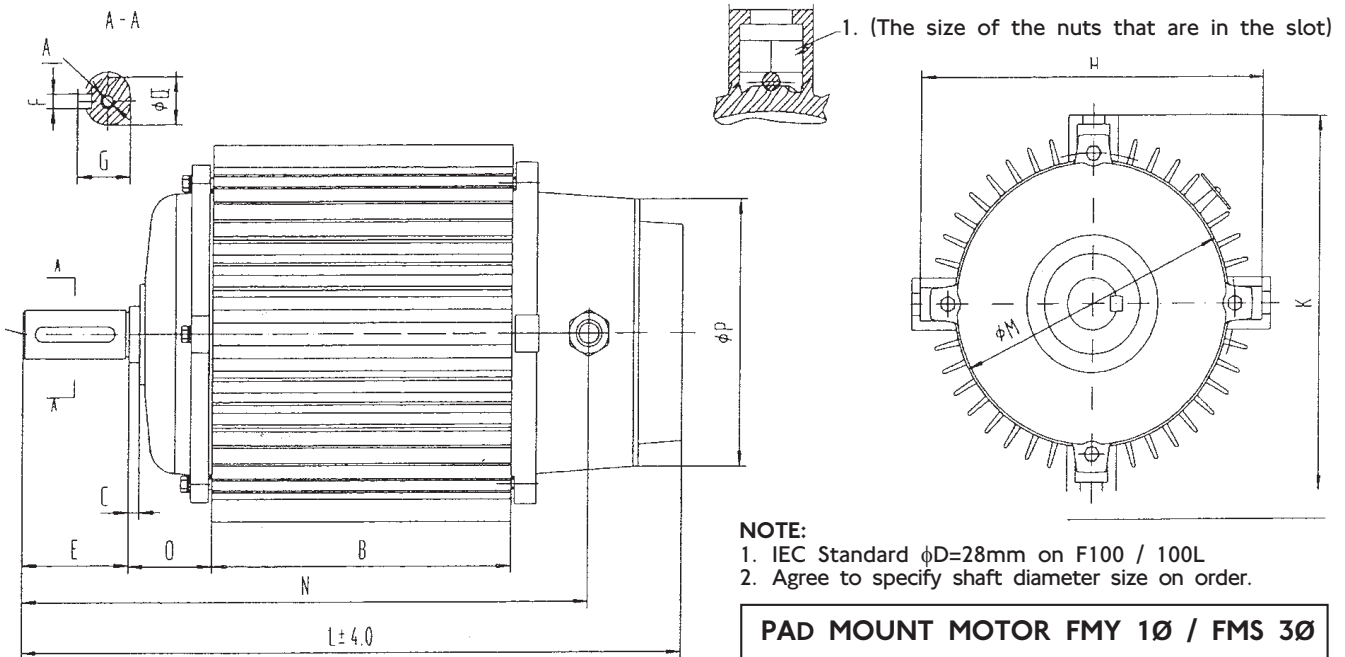
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FRAME SIZE	A	AB	AC	AD	B	C	D	DH	E	F	G	H	R	K	KK	L	M	N	P	S	T	FLANGE NO.	GA
56	90	110	110	96	71	36	9	M4X12	20	3	7.2	56	0±1.0	7	2-M18X1.5	193	65	50	80	M5	3	FT65	10.2
63	100	122	122	99	80	40	11	M4X12	23	4	8.5	63	0±1.0	7	2-M18X1.5	218	75	60	90	M5	3	FT75	12.5
71	112	136	138	110	90	45	14	M5X12	30	5	11	71	0±1.0	7	2-M18X1.5	251	85	70	105	M6	3.5	FT85	16
80	125	154	157	152	100	50	19	M6X16	40	6	15.5	80	0±1.5	10	2-M20X1.5	286	100	80	120	M6	3.5	FT100	21.5
90S	140	174	175	158	100	56	24	M8X19	50	8	20	90	0±1.5	10	2-M20X1.5	335	115	95	140	M8	3.5	FT115	27
90L	140	174	175	158	125	56	24	M8X19	50	8	20	90	0±1.5	10	2-M20X1.5	350	115	95	140	M8	3.5	FT115	27
100L	160	194	196	177	140	63	28	M10X22	60	8	24	100	0±1.5	12	2-M20X1.5	377	130	110	160	M8	4	FT130	31
112M	190	224	220	184	140	70	28	M10X22	60	8	24	112	0±1.5	12	2-M20X1.5	395	130	110	160	M8	4	FT130	31

DIMENSION ALUMINIUM PAD MOUNTS

FMY SINGLE PHASE / FMS 3 PHASE



NOTE:
 1. IEC Standard $\phi D=28\text{mm}$ on F100 / 100L
 2. Agree to specify shaft diameter size on order.

PAD MOUNT MOTOR FMY 1Ø / FMS 3Ø

71~112 OUTLINE DIMENSION

TYPE	A	B	C	D ϕ	E	F	G	H	I	K	L	M	N	O	P	J
71	M5X10	110	1	14	30	5	16	145	M10	153	254	117	226	33	110	11
80	M6X12	122	1	19	40	6	21.5	166	M12	175	286	129	242	37	120	13
90(100S)	M6X12	150	4	24	50	8	27	193	M12	203	341	155	288	45	144	13
100M	M8X16	167	6	26/28	60	8	29/31	193	M12	203	370	155	317	47	144	13
100L	M8X16	190	6	26/28	60	8	29/31	193	M12	203	393	155	340	47	144	13
112	M8X16	179	4	28	60	8	31	217	M12	227	393	185	343	56	144	13

ELECTRICAL FORMULAE

- 1) active kW = $kVA \times PF$ or $\frac{\text{line amps} \times \text{line volts} \times 1,732}{1000} \times PF$
- 2) rated kW = $kVA \times PF \times \text{eff}$ or $\frac{\text{line amps} \times \text{line volts} \times 1,732 \times PF \times \text{eff}}{1000}$ or HP x 0,746
- 3) rated Hp = $\frac{\text{active kW} \times \text{eff}}{0,746}$ or $\frac{\text{line amps} \times \text{line volts} \times 1,732 \times \text{pf} \times \text{eff}}{746}$
- 4) apparent kVA = $\frac{\text{rated kW}}{\text{eff} \times PF}$ or $\frac{HP \times 0,746}{\text{eff} \times PF}$ or $\frac{\text{line amps} \times \text{line volts} \times 1,732}{1000}$
- 5) line amps = $\frac{\text{rated kW} \times 1000}{\text{line volts} \times 1,732 \times PF \times \text{eff}}$ or $\frac{\text{rated HP} \times 746}{\text{line volts} \times 1,732 \times PF \times \text{eff}}$
- 6) rated torque = (Nm) = $\frac{9,55 \times \text{rated kW} \times 1000}{\text{rated speed of motor (r/min)}}$
- 7) rated kW = $\frac{\text{rated torque (Nm)} \times \text{rated speed of motor (r/min)}}{9,55 \times 1000}$
- 8) rated slip % = $\frac{\text{synchronous speed minus rated speed}}{\text{synchronous speed}} \times 100$
- 9) starting time (s) = $\frac{\text{total inertia kg m}^2 \text{ (WR}^2\text{)} \times \text{working speed (r/min)}}{9,55 \times \text{mean acceleration torque (Nm)}}$
- 10) synch. speed (r/min) = $\frac{\text{frequency (Hz)} \times 60}{\text{number of pairs of poles}}$

PF : Power Factor
 eff : Efficiency
 rated kW : mechanical power delivered by motor shaft
 active kW : input power

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