

# MONARCH

**Single Phase Induction Motors**  
**0.18 kW to 3 kW**



# MONARCH - Single Phase Induction Motors

**MONARCH** - Single Phase Induction Motors are a range of high quality, Totally Enclosed Fan Cooled (TEFC), Squirrel Cage Induction motors, designed, manufactured and tested to the latest International and Australian Standards.

## Standards

- Designed and Manufactured to IEC34, IEC72, AS1359 with Quality Assurance to ISO9001. Motors are CE marked.

## Electric Supply

- Motors are designed for 230-250 Volt single phase 50 Hz. Motors 1.5kW and larger are dual voltage 240/480 Volts.

## Mounting

Motors are available in the following mountings

- Foot mounted IM1001 (B3), Foot and Flange mounted IM2001 (B35), Flange mounted IM3001 (B5), Foot and C Face mounted IM2101 (B34), C Face mounted IM3601 (B14)

Above IM nominations are those for horizontal mounting with other mounting orientations (i.e. vertical etc.) available on request.

- **Multi-mount frame construction**, to enable terminal box to be located in any position by repositioning cast alloy motor feet, which are bolted to the frame.

## Duty Rating

- All motors are maximum continuously rated type S1.

## Ambient

- Motors are designed to operate in ambient conditions of -15°C to +40°C as standard. Operation in adverse ambient conditions should be referred to TECO.

## Altitude

- Designed for operation at an altitude not exceeding 1000 metres above sea level (refer to TECO sales offices for higher altitudes).

## Performance

- Motors are designed to meet the performance requirements of AS1359.
- Winding configurations –
  - ML Series is Capacitor Start & Capacitor Run providing excellent starting torque and efficiency.
  - MY Series is Capacitor Start Run designed for Centrifugal Pumps & Fans with the benefit of no internal switchgear.

## Motor Construction

- Aluminium frame and end shields. Castings are machined to close tolerances for accurate alignment and minimum vibration.

## Enclosure / Cooling System

- Standard protection is IP55. Cooling is TEFC IC411 to AS1359.106. Fan cover is pressed steel with cooling fan of polypropylene.

## Stator and Windings

- High grade insulated cold rolled electro magnetic steel laminations. Vacuum impregnated Class F insulation with design temperature rise of class B for long motor life and thermal reserve for abnormal conditions.

## Winding Protection

- Manual Reset Thermal Overload device are fitted to motors up to an including 1.1 kW to protect against overload conditions.

## Bearing and Lubrication System

- Motors have a Ball / Ball bearing combination and are fitted with greased for life sealed bearings.
- Shaft Oil seals are provided at each end on all motors to exclude the ingress of dust and water.

## Balance

- All rotors are dynamically balanced with a half key to Class N, according to AS1359.50.

## Terminal Box

- Terminal box is top mounted on motor frame and is made of high strength polypropylene.

## Rating Plate

- An alloy rating plate containing all details as specified in AS1359 is fitted to all motors.

## Finish

- All castings are mechanically cleaned and de-greased with aluminium components being primed externally.
- Two finish coats of gloss acrylic resin in finish colour TEAL T63 to AS2700 are applied providing a high corrosion protected surface.

## Testing

- In addition to a full program of tests during manufacture each motor is subjected to routine tests to AS1359 prior to despatch.

## Options

Some available options as follows:

- IP56, IP65 enclosure, special paint systems / colours, others on request.

**Not to be used for installation purposes without referring to TECO Australia Pty. Ltd.**

# MONARCH - Single Phase Induction Motors

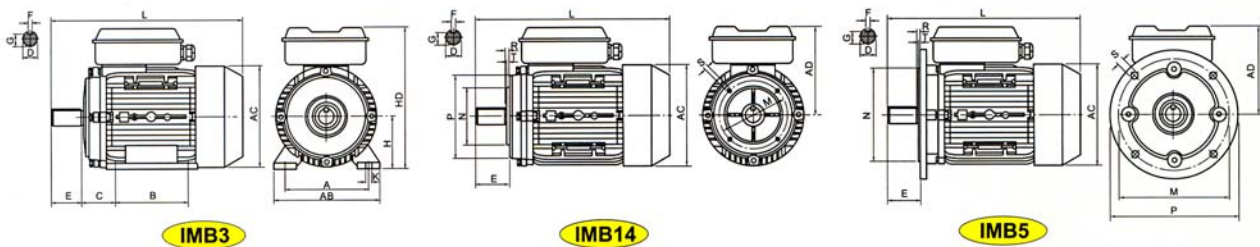
## Performance Data 240 Volt, 50 Hz, Capacitor Start, Capacitor Run (ML series) 2 Pole – 3000 RPM

Rated Power (kW)	Frame Size	Current (Amps) $I_N$	Speed (RPM)	Efficiency (%)	Power Factor (p.u.)	Starting Torque	Break-down Torque	Starting Current	Approx net Weight IM1001 Kg
						$\frac{T_{st}}{T_N}$	$\frac{T_b}{T_N}$	$\frac{I_{st}}{I_N}$	
0.37	71	2.5	2800	67	0.92	2.3	1.8	5.9	7
0.55	71	3.6	2800	70	0.92	2.5	1.8	5.4	8
0.75	80	4.7	2800	72	0.92	2.5	1.8	5.8	8.5
1.1	80	6.5	2800	75	0.95	2.5	1.8	5.7	9.5
1.5	90S	8.7	2800	76	0.95	2.5	1.8	5.8	12.5
2.2	90L	12.5	2800	77	0.95	2.5	1.8	5.8	14
3	100L	16.7	2800	79	0.95	2.5	1.7	6.0	20.5

## 4 Pole – 1500 RPM

Rated Power (kW)	Frame Size	Current (Amps) $I_N$	Speed (RPM)	Efficiency (%)	Power Factor (p.u.)	Starting Torque	Break-down Torque	Starting Current	Approx net Weight IM1001 Kg
						$\frac{T_{st}}{T_N}$	$\frac{T_b}{I_N}$	$\frac{I_{st}}{I_N}$	
0.18	63	1.4	1400	60	0.92	2.3	1.7	5.9	5
0.37	71	2.6	1400	65	0.92	2.3	1.7	6.6	8.1
0.55	80	3.7	1400	68	0.92	2.5	1.7	5.3	8.9
0.75	80	4.8	1400	71	0.92	2.5	1.7	5.8	9.6
1.1	90S	6.6	1400	73	0.95	2.5	1.7	5.6	13
1.5	90L	8.8	1400	75	0.95	2.5	1.7	5.8	16
2.2	100L	12.8	1400	76	0.95	2.5	1.7	5.8	23
3	100L	17.1	1400	77	0.95	2.5	1.7	5.9	27

## Dimensions: Capacitor Start, Capacitor Run (ML series)



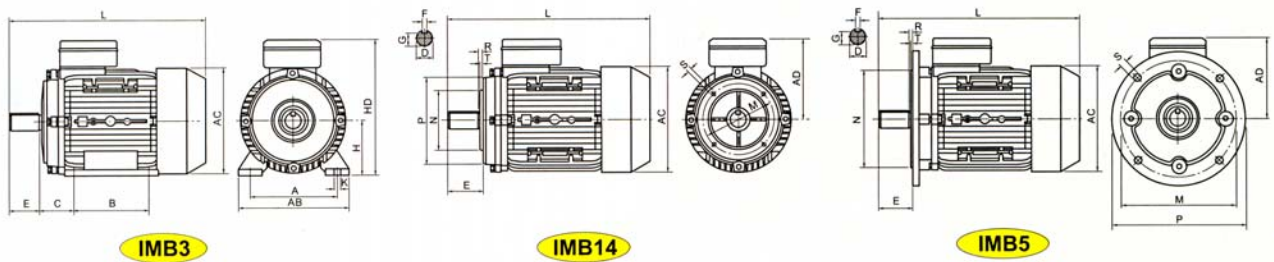
Frame Size	Mounting Dimensions (mm)																				Frame Dimensions (mm)					
											IMB14					IMB5										
	A	B	C	D	E	F	G	H	K	M	N	P	R	S	T	M	N	P	R	S	T	AB	AC	AD	HD	L
71	112	90	45	14	30	5	11	71	7	85	70	105	0	M6	2.5	130	110	160	0	10	3.5	145	145	125	210	255
80	125	100	50	19	40	6	15.5	80	10	100	80	120	0	M6	3.0	165	130	200	0	12	3.5	160	165	135	240	295
90S	140	100	56	24	50	8	20	90	10	115	95	140	0	M8	3.0	165	130	200	0	12	3.5	180	185	145	270	335
90L	140	125	56	24	50	8	20	90	10	115	95	140	0	M8	3.0	165	130	200	0	12	3.5	180	185	145	270	360
100L	160	140	63	28	60	8	24	100	12	-	-	-	-	-	-	215	180	250	0	15	4.0	205	215	170	280	380

# MONARCH - Single Phase Induction Motors

## Performance Data 240 Volt, 50 Hz, Capacitor Start Run (MY series) 4 Pole – 1500 RPM

Rated Power (kW)	Frame Size	Current (Amps) $I_N$	Speed (RPM)	Efficiency (%)	Power Factor (p.u.)	Starting Torque $\frac{T_{st}}{T_N}$	Break-down Torque $\frac{T_b}{T_N}$	Starting Current $I_{st}$	Approx net Weight IM1001 Kg
0.37	71	2.7	1400	62	0.92	0.35	1.7	3.4	7
0.55	80	3.9	1400	64	0.92	0.35	1.7	3.5	9.5
0.75	80	5.0	1400	68	0.92	0.32	1.7	3.7	10
1.1	90S	6.8	1400	71	0.95	0.32	1.7	4.0	13
1.5	90L	9.0	1400	73	0.95	0.3	1.7	4.6	16

## Dimensions: Capacitor Start Run (MY series)



Frame Size	Mounting Dimensions (mm)																				Frame Dimensions (mm)					
	IMB14										IMB5										AB	AC	AD	HD	L	
	A	B	C	D	E	F	G	H	K	M	N	P	R	S	T	M	N	P	R	S						T
63	100	80	40	11	23	4	8.5	63	7	75	60	90	0	M5	2.5	115	95	140	0	10	3.0	130	130	115	185	230
71	112	90	45	14	30	5	11	71	7	85	70	105	0	M6	2.5	130	110	160	0	10	3.5	145	145	125	205	255
80	125	100	50	19	40	6	15.5	80	10	100	80	120	0	M6	3.0	165	130	200	0	12	3.5	160	165	135	235	295
90S	140	100	56	24	50	8	20	90	10	115	95	140	0	M8	3.0	165	130	200	0	12	3.5	180	185	145	265	335
90L	140	125	56	24	50	8	20	90	10	115	95	140	0	M8	3.0	165	130	200	0	12	3.5	180	185	145	265	360

## Bolt on feet – Multi-mount construction

