

Однофазный асинхронный двигатель серии JEMC

Технические характеристики

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JEMEC

Driving machines for better



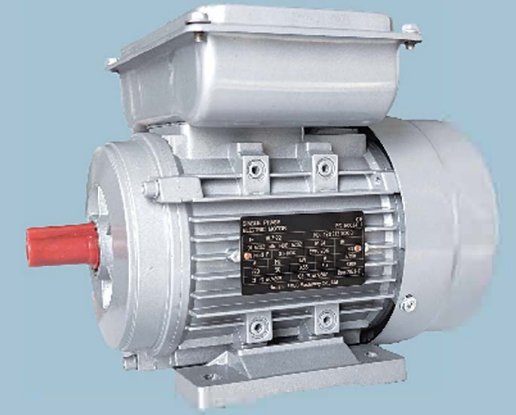
JEML series single phase asynchronous motor (frame 63 ~ 112)

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Contents



Introduction	2
Types	2
Operating conditions	2
Reference standards	3
Degree of protection	4
Electrical design	4
Tolerance for electrical data	5
Overload times	6
Insulation system	6
Technical data table	6
Installation size and overall dimension	8

Introduction

JEML series single phase motors, one of our latest developed products, applied European standard. The motor frame, front and back end shields are made of aluminum-alloy die-casting while the terminal box is made of engineering plastics. It has a beautiful modeling, compact structure, light weight and removable feet with various mounting mode available, which is convenient for using.

JEML series single phase electric motors have a lot of advantages including high efficiency, large starting torque, especially JEMLY series with starting torque one time higher than standard Chinese motors, excellent performance, low noise and vibration, and so on. The mounting dimension and power rate is in conformity to the IEC standard. They are widely used on small machineries such as reducers, air conditioners, pumps, medical equipments etc. They are particularly suitable for the sites with single phase power.

Types

JEML series single phase motors are available in the following three types:

- JEMLY : is with running capacitor
- JEMLC: is with starting capacitor
- JEMLL: is with double capacitors

Operating conditions

- Ambient temperature: -20°C~40°C.
- Duty: Continuous (S1).
- Altitude: Below 1000 meters above sea level.
- Insulation class: B or F or others on request.
- Relative humidity: Not over 90%.
- Protection degree: IP55 ,or others on request.
- Rated voltage: 110V, 220V, 230V, 240V.
- Cooling method: IC411.
- Rated frequency: 50Hz, 60Hz.

Reference standards

Title	IEC standard
Rotating electrical machines – Part 1: Rating and performance	IEC 60034-1
Rotating electrical machines – Part 2-1: Standard methods for determining	IEC 60034-2-1
Rotating electrical machines – Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) - Classification	IEC 60034-5
Rotating electrical machines – Part 6: Methods of cooling (IC Code)	IEC 60034-6
Rotating electrical machines – Part 7: Classification of types of construction, mounting arrangements and terminal box position (IM Code)	IEC 60034-7
Rotating electrical machines – Part 8: Terminal markings and direction of	IEC 60034-8
Rotating electrical machines – Part 9: Noise limits	IEC 60034-9
Rotating electrical machines – Part 14: Mechanical vibration of certain machines with shaft heights 56 mm and higher – Measurement, evaluation and limits of vibration severity	IEC 60034-14
Rotating electrical machines – Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080	IEC 60072-1
Electrical insulation – Thermal evaluation and designation	IEC 60085
Classification of environmental conditions Part 2-1: Environmental conditions appearing in nature – Temperature and humidity	IEC 60721-2-1
Standard voltages	IEC 60038
Rotating electrical machines – Part 12: Starting performance of single-speed three-phase cage induction motors	IEC 60034-12
Rotating electrical machines -Part 30-1: Efficiency classes of line operated AC motors (IE code)	IEC 60034-30-1

Degree of protection

The IP code consists of IP code letters and two obligatory digits, meaning:

The first digit (protection from introduction of solid foreign matter)		The second digit (protection against penetration of water and its harmful effects)	
IP	Definition	IP	Definition
0	No protection	0	No protection
1	Diameter $\geq 50\text{mm}$	1	Dropping vertically
2	Diameter $\geq 12.5\text{mm}$	2	Dropping (up to 15°)
3	Diameter $\geq 2.5\text{mm}$	3	Sprayed
4	Diameter $\geq 1.0\text{mm}$	4	Splashed
5	Limited protection against dust	5	In stream
6	Dust tight	6	In strong steam
		7	Under short-time immersion
		8	Under permanent immersion

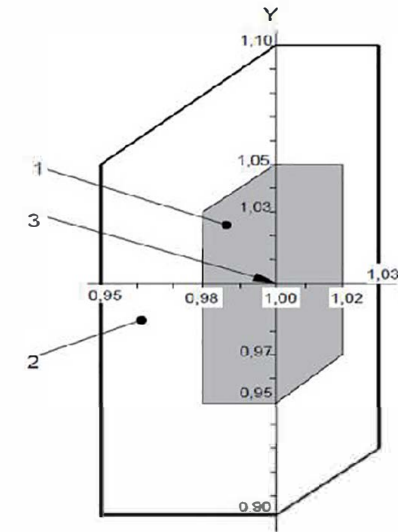
Electrical design

Rated output

The rated output power of JEML series motors means that the motor runs under continuous duty S1 operation when operated at ambient temperature from -20°C to 40°C and at altitudes of up to 1000 m over sea.

Voltage and frequency

According to IEC 60034-1, the voltage and frequency fluctuations are differentiated between Category A (combination of voltage deviation $\pm 5\%$ and frequency deviation $\pm 2\%$) and Category B (combination of voltage deviation $\pm 10\%$ and frequency deviation $+3\%$ / -5%). JEML series motors can supply their rated torque in both Category A and B. In Category A, the temperature rise is approximately 10 K higher than during normal operation.



X axis: Frequency p.u
Y axis: Voltage p.u
1: Zone A
2: Zone B (outside Zone A)
3: Rating point

Tolerance for electrical data

No.	Quantity	Tolerance
1	Efficiency η $P_{\text{rated}} \leq 150\text{kW}$	-15% of $(1 - \eta)$
2	Power factor	$-1/6 (1 - \cos\phi)$ Minimum absolute value: 0.02 Maximum absolute value: 0.07
3	Slip (at full load and working temperature) $P_{\text{rated}} < 1\text{kW}$ $P_{\text{rated}} \geq 1\text{kW}$	Slip $\pm 30\%$ Slip $\pm 20\%$
4	Locked rotor current	+20%
5	Locked rotor torque	-15% ~ +25%
6	Breakdown torque	-10%
7	Moment of inertia	$\pm 10\%$
8	Current of no load	+30%
9	Rated current	+10%

Overload times

According to IEC60034-1, JEML series motors are designed to withstand overload capacity of 1.5 times rated current for 2 minutes at rated voltage and frequency.

Insulation system

JEML series motors are designed for insulation class F (155 °C) with temperature rise class B (80 K). If the motor works at high ambient temperature, or there's factors affect the motor cooling, insulation class H is optional to increase the motor's reliability.

Technical data table

JMELC series

Type	Rated power		Rated voltage	Rated current	Rated speed	Efficiency	Power factor	Starting current	Locked torque/Rated torque	Breakdown torque/Rated torque	Weight
	(kW)	(Hp)									
JMELC-71M1-2	0.18	0.25	220	1.89	2800	60.0	0.72	12	3.0	1.8	6.5
JMELC-71M2-2	0.25	0.37	220	2.4	2800	64.0	0.74	15	3.0	1.8	6.8
JMELC-80M1-2	0.37	0.5	220	3.36	2800	65.0	0.77	21	2.8	1.8	8.3
JMELC-80M2-2	0.55	0.75	220	4.65	2800	68.0	0.79	29	2.8	1.8	9
JMELC-90S-2	0.75	1	220	6.09	2800	70.0	0.80	37	2.5	1.8	12.5
JMELC-90L-2	1.1	1.5	220	8.68	2800	72.0	0.80	60	2.5	1.8	14
JMELC-100L-2	1.5	2	220	11.3	2900	74.0	0.81	80	2.5	1.8	22.5
JMELC-71M1-4	0.12	0.16	220	1.89	1400	52.0	0.58	90	3.0	1.8	6.5
JMELC-71M2-4	0.18	0.25	220	2.49	1400	53.0	0.62	12	2.8	1.8	6.7
JMELC-80M1-4	0.25	0.37	220	3.11	1400	58.0	0.63	15	2.8	1.8	8.9
JMELC-80M2-4	0.37	0.5	220	4.24	1400	62.0	0.64	21	2.8	1.8	9.6
JMELC-90S-4	0.55	0.75	220	5.49	1400	66.0	0.69	29	2.5	1.8	12.5
JMELC-90L-4	0.75	1	220	6.87	1400	68.0	0.73	37	2.5	1.8	15
JMELC-100L1-4	1.1	1.5	220	9.52	1450	71.0	0.74	60	2.5	1.8	23
JMELC-100L2-4	1.5	2	220	12.4	1450	73.0	0.75	80	2.5	1.8	27
JMELC-112M-4	2.2	3	220	17.7	1450	74.0	0.76	120	2.2	1.8	35

JMELY series

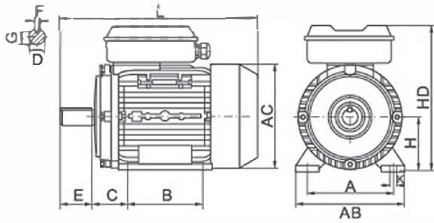
Type	Rated power		Rated voltage	Rated current	Rated speed	Efficiency	Power factor	Starting current	Locked torque/Rated torque	Breakdown torque/Rated torque	Weight
	(kW)	(Hp)									
JMELY-63M1-2	0.18	0.25	220	1.48	2800	60.0	0.92	5	0.4	1.7	3.9
JMELY-63M2-2	0.25	0.37	220	1.96	2800	63.0	0.92	7	0.4	1.7	4.4
JMELY-71M1-2	0.37	0.5	220	2.73	2800	67.0	0.92	10	0.4	1.7	6.2
JMELY-71M2-2	0.55	0.75	220	3.88	2800	70.0	0.92	15	0.4	1.7	6.5
JMELY-80M1-2	0.75	1	220	5.15	2800	72.0	0.92	20	0.3	1.7	8.3
JMELY-80M2-2	1.1	1.5	220	7.02	2800	75.0	0.95	30	0.3	1.7	9.0
JMELY-90S-2	1.5	2	220	9.44	2800	76.0	0.95	45	0.3	1.7	13
JMELY-90L-2	2.2	3	220	13.6	2800	77.0	0.95	65	0.3	1.7	15
JMELY-63M1-4	0.12	0.16	220	1.1	1400	55.0	0.92	3.5	0.4	1.7	4
JMELY-63M2-4	0.18	0.25	220	1.62	1400	56.0	0.92	5	0.4	1.7	4.5
JMELY-71M1-4	0.25	0.37	220	2.02	1400	61.0	0.92	7	0.4	1.7	6.1
JMELY-71M2-4	0.37	0.5	220	2.95	1400	62.0	0.92	10	0.4	1.7	7
JMELY-80M1-4	0.55	0.75	220	4.25	1400	64.0	0.92	15	0.4	1.7	9.5
JMELY-80M2-4	0.75	1	220	5.45	1400	68.0	0.92	20	0.3	1.7	10
JMELY-90S-4	1.1	1.5	220	7.45	1400	71.0	0.95	30	0.3	1.7	13
JMELY-90L-4	1.5	2	220	9.83	1400	73.0	0.95	45	0.3	1.7	16

JMELL series

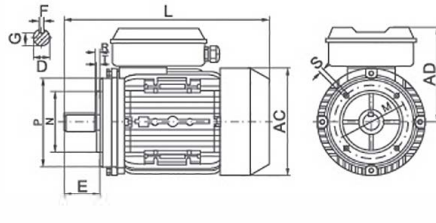
Type	Rated power		Rated voltage	Rated current	Rated speed	Efficiency	Power factor	Starting current	Locked torque/Rated torque	Breakdown torque/Rated torque	Weight
	(kW)	(Hp)									
JMELL-63M1-2	0.18	0.25	220	1.55	2800	63.0	0.92	5	2.0	1.8	5
JMELL-63M2-2	0.25	0.37	220	1.8	2800	65.0	0.92	6	2.0	1.8	5.5
JMELL-71M1-2	0.37	0.5	220	2.73	2800	67.0	0.92	16	2.3	1.8	7
JMELL-71M2-2	0.55	0.75	220	3.88	2800	70.0	0.92	21	2.5	1.8	8
JMELL-80M1-2	0.75	1	220	5.15	2800	72.0	0.92	30	2.5	1.8	8.5
JMELL-80M2-2	1.1	1.5	220	7.02	2800	75.0	0.95	40	2.5	1.8	9.5
JMELL-90S-2	1.5	2	220	9.44	2800	76.0	0.95	55	2.5	1.8	12.5
JMELL-90L-2	2.2	3	220	13.6	2800	77.0	0.95	80	2.5	1.8	14
JMELL-100L-2	3	4	220	18.2	2800	79.0	0.95	110	2.5	1.8	20.5
JMELL-63M1-4	0.12	0.16	220	1.25	1400	53.0	0.92	3	2.0	1.7	5
JMELL-63M2-4	0.18	0.25	220	1.65	1400	54.0	0.92	5	2.0	1.7	5.5
JMELL-71M1-4	0.25	0.37	220	1.99	1400	62.0	0.92	12	2.5	1.8	6.9
JMELL-71M2-4	0.37	0.5	220	2.81	1400	65.0	0.92	16	2.5	1.8	8.1
JMELL-80M1-4	0.55	0.75	220	4	1400	68.0	0.92	21	2.5	1.8	8.9
JMELL-80M2-4	0.75	1	220	5.22	1400	71.0	0.92	30	2.5	1.8	9.6
JMELL-90S-4	1.1	1.5	220	7.2	1400	73.0	0.95	40	2.5	1.8	13
JMELL-90L-4	1.5	2	220	9.57	1400	75.0	0.95	55	2.5	1.8	16
JMELL-100L1-4	2.2	3	220	13.9	1400	76.0	0.95	80	2.5	1.8	23
JMELL-100L2-4	3	4	220	18.6	1400	77.0	0.95	110	2.5	1.8	27

Installation size and overall dimension

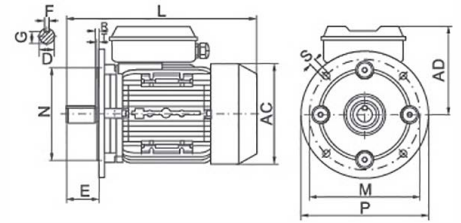
IMB3



IMB5



IMB14



Frame size	Mounting dimensions(mm)																				Overall 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
63M	100	80	40	11	23	4	8.5	63	7	75	60	90	0	M5	3	115	95	140	0	10	3	130	130	125	188	235
71M	112	90	45	14	30	5	11	71	7	85	70	105	0	M6	3.5	130	110	160	0	10	3.5	145	145	125	210	255
80M	125	100	50	19	40	6	15.5	80	10	100	80	120	0	M6	3.5	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	3.5	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	3.5	165	130	200	0	12	3.5	180	185	145	270	360
100L	160	140	63	28	60	8	24	100	12	130	110	160	0	M8	4	215	180	250	0	15	4	205	215	170	280	380
112M	190	140	70	28	60	8	24	112	12	130	110	160	0	M8	4	215	180	250	0	15	4	245	240	180	310	400

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