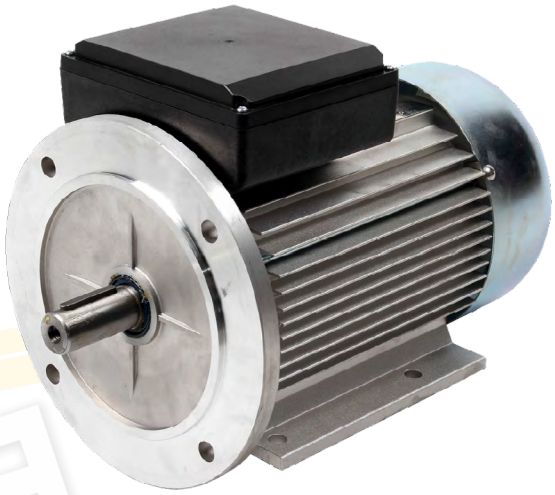
DL SINGLE PHASE
Flanged motor

Applications
These motors are suitable for the occasion requiring low starting torque and long-term continuous working, such as home electric appliances, pumps, fans, and recording meters, etc.

Features
Running dual capacitors

Frame Size:	71-90
Rated Power Range:	2 pole 0.37kW -2.2kW
House Material:	Aluminium (plastic terminal box)
Rated Voltage:	220V ± 5%, 50Hz
Protection Class:	IP54/IP55
Insulation Class:	Class B/F



Performance data

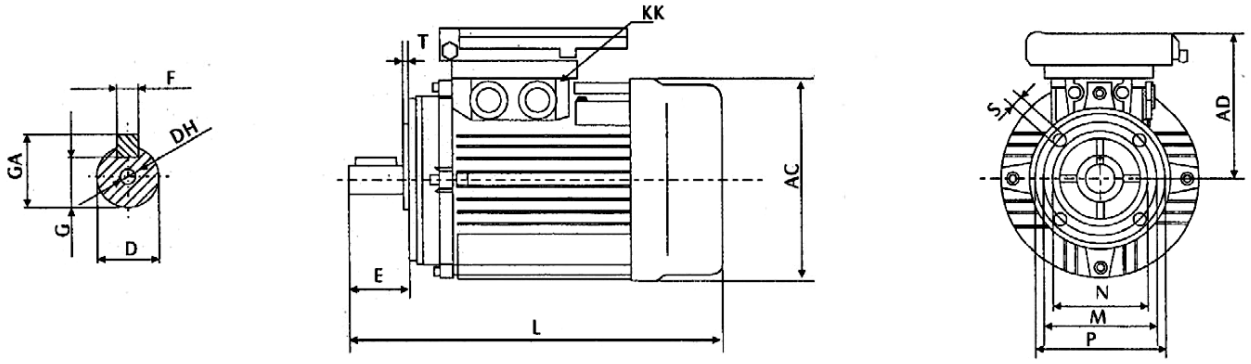
FRAME SIZE	POWER (kW)	RATED SPEED (rpm)	CURRENT FULL LOAD 400V I_{FL} - 400V	CURRENT STARTING ÷ CURRENT FULL LOAD	EFFICIENCY %	POWER FACTOR	RATED TORQUE (Nm)	LOCKED ROTOR TORQUE ÷ TORQUE FULL LOAD	TORQUE BREAKDOWN ÷ TORQUE FULL LOAD	STARTING CAPACITOR 250V
71	0.37	2750	2.73	3.7	67	0.92	3.99	0.35	1.7	12
71	0.55	2760	3.88	3.9	70	0.92	5.94	0.35	1.7	16
80	0.75	2780	5.15	3.9	72	0.92	7.83	0.33	1.7	30
80	1.1	2790	7.02	4.3	75	0.95	11.48	0.33	1.7	35
90S	1.5	2800	9.44	4.8	76	0.95	15.57	0.30	1.7	40
90L	2.2	2800	13.7	4.8	77	0.95	22.47	0.30	1.7	40

Pumps up to 4kW require B14 flange and pumps from 5.5kW require B3/B5 flange.

OUTLINE AND INSTALLATION

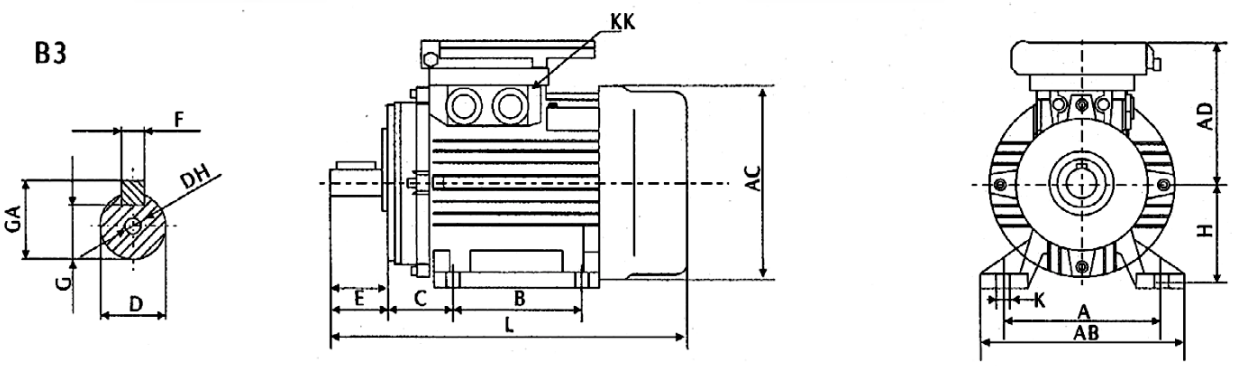
Dimensions

Flange Specification: B14



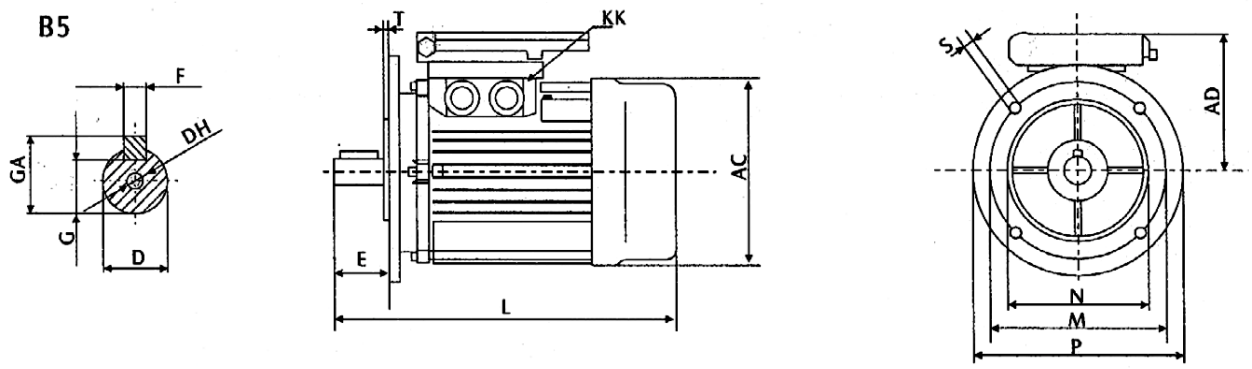
FRAME SIZE	A	AB	AC	AD	B	C	D	DH	E	F	G	H	R	K	KK	L	M	N	P	S	T	GA
71	112	136	138	110	90	45	14	M5X12	30	5	11	71	0+-1.0	7	2-M18X1.5	251	85	70	105	M6	3.5	16
80	125	154	157	152	100	50	19	M6X16	40	6	15.5	80	0+-1.5	10	2-M20X1.5	286	100	80	120	M6	3.5	21.5
90S	140	174	175	158	100	56	24	M8X19	50	8	20	90	0+-1.5	10	2-M20X1.5	335	115	95	140	M8	3.5	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	27

Flange Specification: B3



FRAME SIZE	A	AB	AC	AD	B	C	D	DH	E	F	G	H	K	KK	L	M	N	P	S	T	GA
71	112	136	138	110	90	45	14	M5X12	30	5	11	71	7	2-M18X1.5	251	130	110	160	9	3.5	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	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	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	27

Flange Specification: B5



FRAME SIZE	A	AB	AC	AD	B	C	D	DH	E	F	G	H	K	KK	L	M	N	P	S	T	GA
71	112	136	138	110	90	45	14	M5X12	30	5	11	71	7	2-M18X1.5	251	130	110	160	9	3.5	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	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	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	27

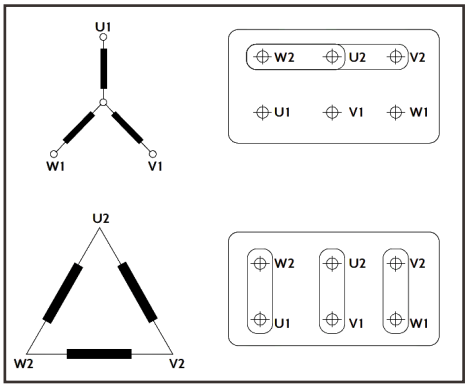
DL THREE PHASE FLANGED
Motor Cast Iron

Features
- Frame Size Range: H80~H355
- Housing Material: Frame, flange and bracket, grey cast iron, conduit box-steel
- Standard Mounting Construction: IEC60034-7 Protect
- Enclosed Class:IP55 (IEC60034-5)
- Cooling Method: IC411 (IEC60034-6)



The special winding design can work for multi-voltages (50Hz or 60Hz)
Can withstand 1.5 times of the rated current for 2 minutes (IEC60034-1)
Anti-condensation heater is available.
PTC or Pt100 thermistor are available to protect the winding and bearing.

Standard 3-phase motors can be connected using the star of delta method.
Star connection is achieved by wiring W2,U2, V2 to each other; and U1, V1, W1 leads to voltage supply.
Delta connection is achieved by wiring the end of a phase to the head of another.



Insulation classification
The motors have insulation class F while the temperature rise is for class B ensuring a longer service life. Class H insulation motors can be manufactured at the customer's request. Under specified measuring conditions in accordance with IEC 60034-1 standard, insulation class F for an electric motor means that at the ambient temperature of 400C the temperature rise of its windings may be maximum 165K with the additional temperature margin of 10K.

	B	F	H
Temperature Margin		155°C 10	15
Max. Temp. Rise	130°C 10		
	80	105	125
Ambient Temperature	40	40	40

Degree of protection

According to IEC 60034-5 standard, electric motors are provided with IP code which determines the degree of protection ensured by the housing against access to dangerous parts, introducing foreign matter and/or water.

Our motors comply with IP55 protection class as standard.

THE FIRST CHARACTERISTIC NUMERAL: PROTECTION FORM INTRODUCTION OF SOLID FOREIGN MATTER		THE SECOND CHARACTERISTIC NUMERAL: PROTECTION AGAINST PENETRATION OF WATER AND ITS HARMFUL EFFECTS	
0	Non-protected machine	0	Non-protected machine
1	Machine protected against solid objects greater than 50mm	1	Machine protected against dripping water
2	Machine protected against solid objects greater than 12mm	2	Machine protected against dripping water when tilted up to 15º
3	Machine protected against solid objects greater than 2.5mm	3	Machine protected against spraying water
4	Machine protected against solid objects greater than 1mm	4	Machine protected against splashing water
5	Dust protected machine	5	Machine protected against water jets
6	Dust-tight machine	6	Machine protected against heavy seas

Number of starts per hour

The number of starts per hour is dependant on the inertia of the driven load and the load torque demand. A guide to generally acceptable starts per hour would be as per table.

STARTS PER HOUR	
FRAME SIZE	2 POLE
80	20
90	16
100	16
112	16
132	10
160	10
180	8
200	6
225	5

Bearings

FRAME SIZE	DRIVING END	NON DRIVING END
	2 POLE	2 POLE
80	6205 2Z/C3	6205 2Z/C3
90	6206 2Z/C3	6206 2Z/C3
100	6206 2Z/C3	6206 2Z/C3
112	6207 2Z/C3	6207 2Z/C3
132	6208 2Z/C3	6208 2Z/C3
160	6209 2Z/C3	6209 2Z/C3
180	6211/C3	6211/C3
200	6212/C3	6212/C3
225	6212/C3	6212/C3

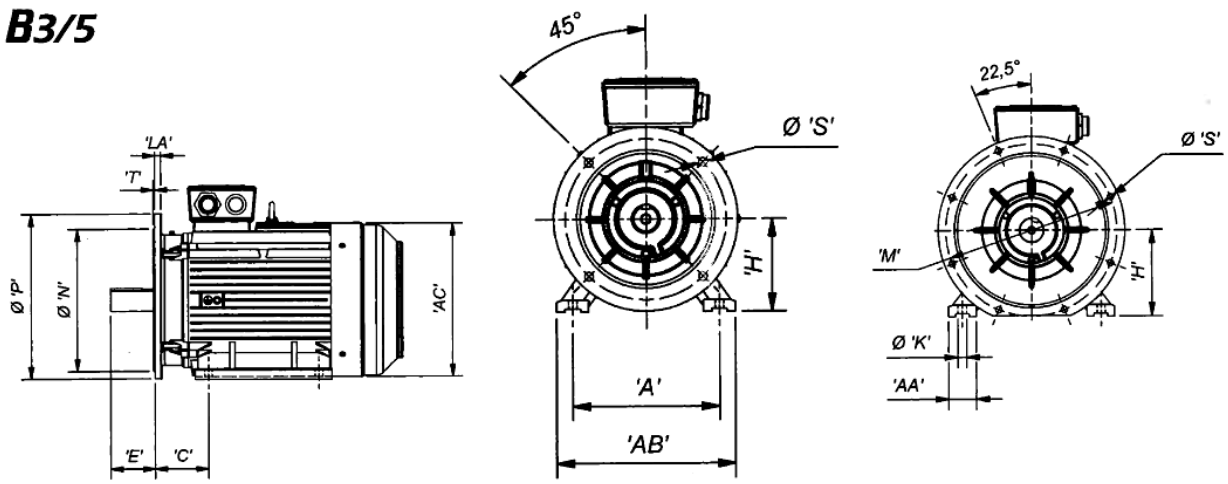
PERFORMANCE DATA

NET WEIGHT kg	14	15	20	24	30	38	43	57	61	101	111	126	176	226	245	280
NOISE LEVEL LW db(A)	67	67	72	72	76	77	78	80	80	86	86	86	89	92	92	92
TORQUE MAXIMUM ÷ TORQUE FULL LOAD	2.6	2.6	2.9	2.9	2.9	2.9	3.2	2.6	2.8	2.9	2.9	2.8	2.8	2.7	2.6	2.6
TORQUE STARTING ÷ TORQUE FULL LOAD	2.3	2.3	2.5	2.7	2.7	2.6	2.7	2.3	2.5	2.6	2.6	2.5	2.6	2.5	2.4	2.4
RATED TORQUE (Nm)	2.5	3.7	5	7.4	10	13.3	13.3	18.1	24.5	35.8	48.8	60.4	71.4	97.2	119.8	144.8
POWER FACTOR	0.83	0.84	0.85	0.85	0.87	0.88	0.88	0.88	0.88	0.89	0.89	0.90	0.90	0.90	0.90	0.90
EFFICIENCY %	75.5	76.2	79.5	81.7	83.1	84.2	85.7	85.9	87.2	88.7	89.5	90.2	90.6	91.5	92.0	82.5
CURRENT FULL LOAD 415V	1.67	2.4	3.1	4.4	5.8	7.6	10.2	10.2	13.5	19.4	26.2	31.8	37.6	50.7	62.2	75.3
CURRENT FULL LOAD 400V	1.7	2.5	3.2	4.6	6	7.8	10.5	10.5	14.2	20.1	27.2	32.9	38.9	52.6	64.5	78
CURRENT FULL LOAD 380V	1.8	2.6	3.4	4.8	6.3	8.2	11.1	11.1	16.9	21.1	28.6	34.6	41	55.4	67.9	82.1
RATED SPEED (rpm)	2840	2840	2850	2850	2880	2880	2880	2900	2900	2930	2930	2930	2940	2950	2950	2970
POWER (kW)	0.75	1.1	1.5	2.2	3	4	5.5	5.5	7.5	11	15	18.5	22	30	37	45
FRAME SIZE	80	80	90S	90L	100L	112M	112M	132S	132S	160M	160M	160L	180M	200L	200L	225M

OUTLINE AND INSTALLATION

Dimensions

Flange Specification: B3B5

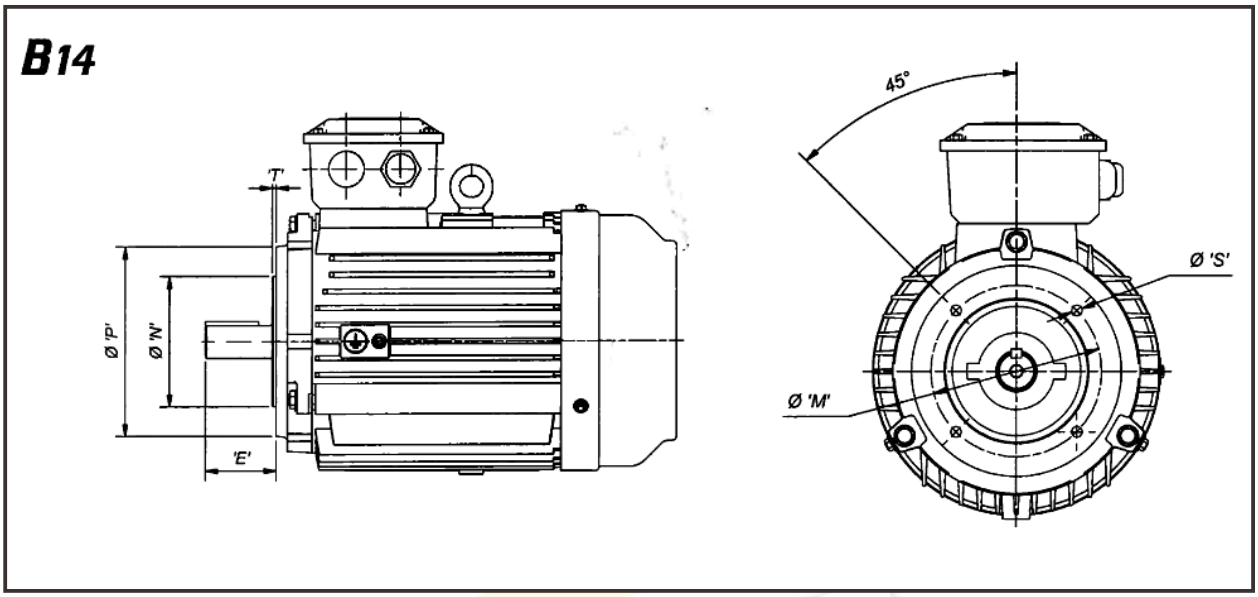


FRAME SIZE	A	AA	AB	AC	C	E	H	ΦK	LA	ΦM	ΦN	ΦP	T	ΦS	NO OF HOLES
80	125	34	156	175	50	40	80	10	12	165	130	200	3.5	12	4
90S	140	36	176	190	56	50	90	10	12	165	130	200	3.5	12	4
90L	140	36	176	190	56	50	90	10	12	165	130	200	3.5	12	4
100L	160	40	198	215	63	60	100	12	14	215	180	250	4	15	4
112M	190	45	226	236	70	60	112	12	14	215	180	250	4	15	4
132S	216	52	260	275	89	80	132	12	14	265	230	300	4	15	4
160M	254	65	314	330	108	110	160	14.5	16	300	250	350	5	19	4
160L	254	65	314	330	108	110	160	14.5	16	300	250	350	5	19	4
180M	279	70	345	380	121	110	180	14.5	16	300	250	350	5	19	4
200L	318	70	388	420	133	110	200	18.5	18	350	300	400	5	19	4
225M	356	75	431	465	149	110	225	18.5	20	400	350	450	5	19	8

OUTLINE AND INSTALLATION

Dimensions

Flange Specification: B14



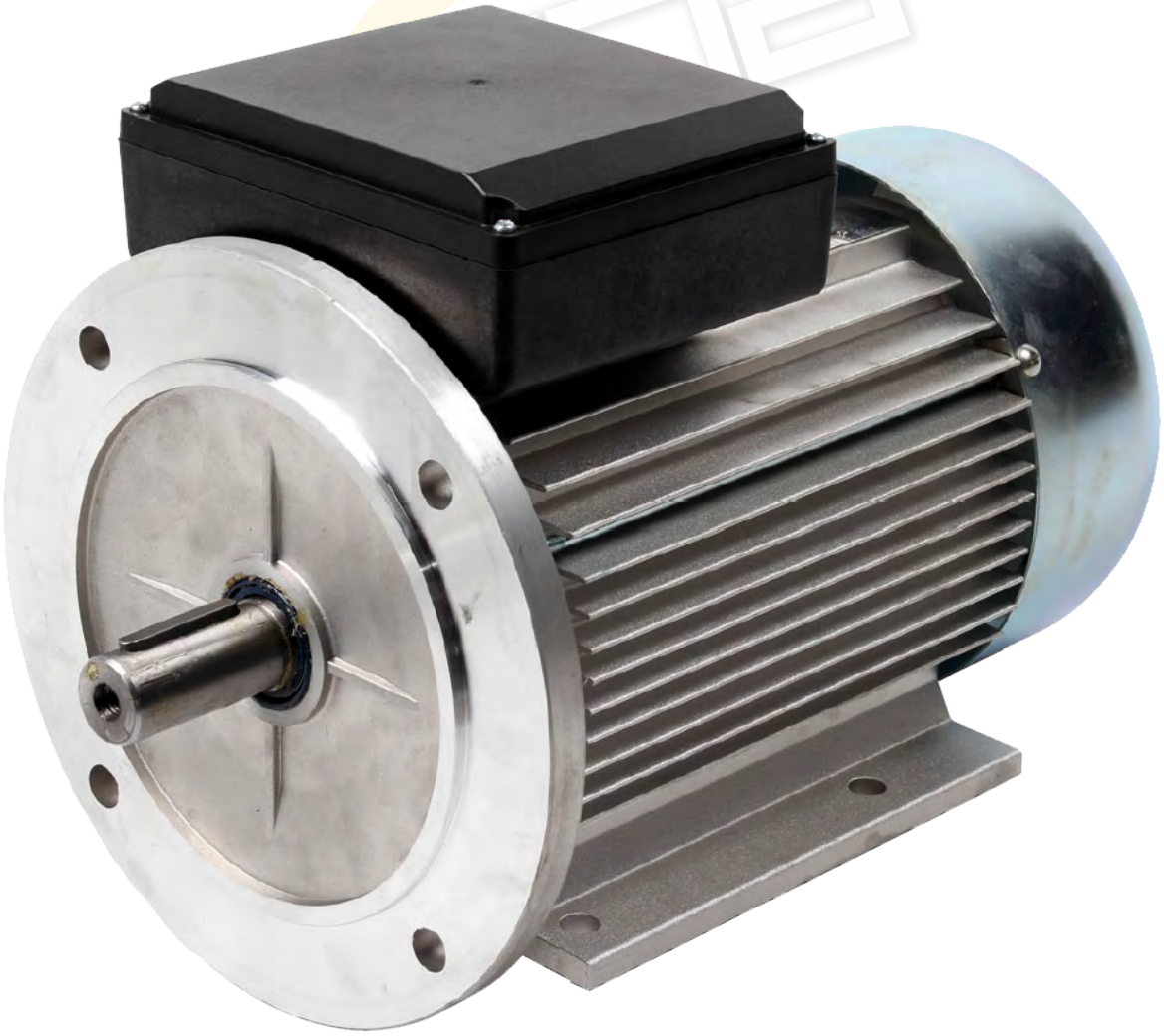
FRAME SIZE	E	ΦM	ΦN	ΦP	T	S	NO OF HOLES
80	40	100	80	120	3	M6	4
90S	50	115	95	140	3	M8	4
90L	50	115	95	140	3	M8	4
100L	60	130	110	160	3.5	M8	4
112M	60	130	110	160	3.5	M8	4
132S	80	165	130	200	3.5	M10	4
160M	110	215	180	248	4	M12	4
160L	110	215	180	248	4	M12	4

DL THREE PHASE FLANGED
Motor Aluminium

Features
Three-phase removable feet standard efficiency aluminium induction motors. Position of the terminal box can be changed according to the user's requirements. Efficiency indicator reaches IE1 standard.

Characteristics for al standard 3-phase aluminium induction motors are as follows:
1. IP55 protection, class F insulation,B temperature rise and S1 duty.
2. Rated voltage 400V or 525V, rated frequency 50Hz.
3. Y-connection for motors up to 3kW and △- connection for 4kW and above.
4. Cooling method is Ic411.

Operating conditions
Ambient temperature: -200C to 400C.
Altitude: <1000m



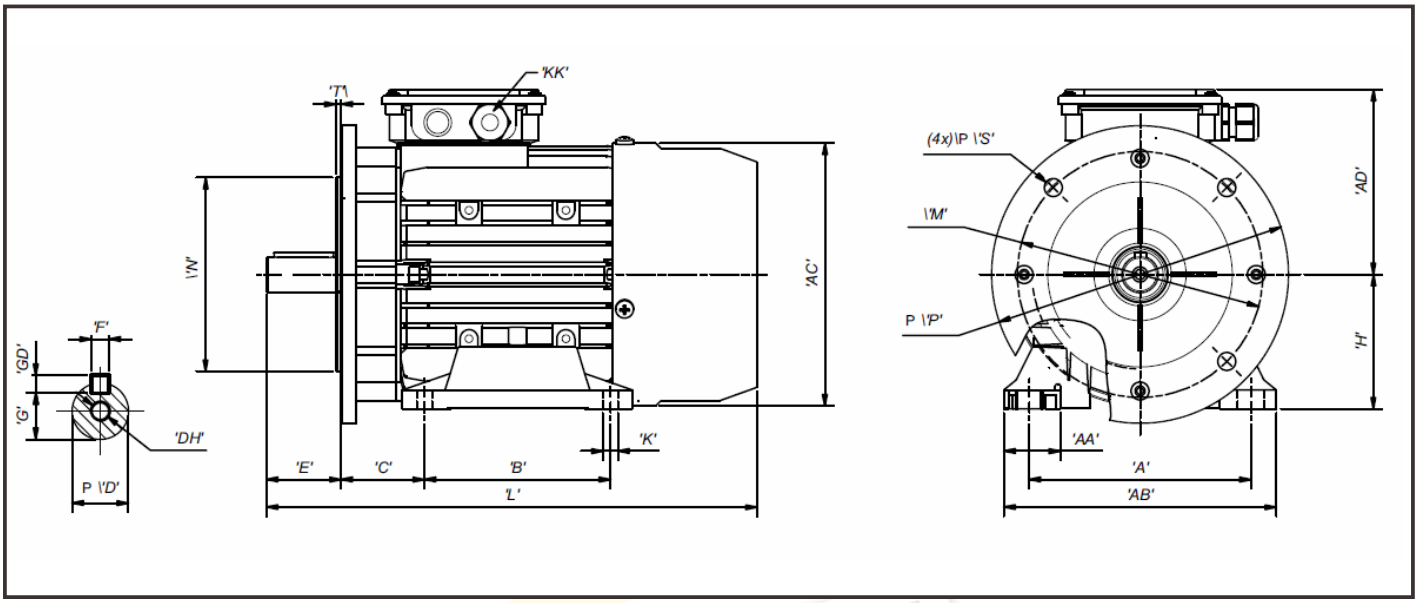
PERFORMANCE DATA

NETT WEIGHT kg	kg	6.2	6.3	8.3	9.0	12.5	14.0	20.5	26.0	40.0	44.0
MOMENT OF INERTIA	J(K-gm^2)	0.0005	0.00063	0.0008	0.0010	0.0012	0.0014	0.0029	0.0050	0.0104	0.0121
RATED TORQUE	Nm	1.28	1.86	2.52	3.7	5.04	7.4	9.98	13.26	18.11	24.66
BREAKDOWN ÷ TORQUE	Mk/Mn	2.2	2.3	2.5	2.5	2.8	2.8	2.5	2.3	2.5	2.4
LOCKED ROTOR ÷ TORQUE	Ms/Mn	2.2	2.2	2.4	2.5	2.7	2.5	2.2	2.3	2.2	2.2
LOCKED ROTOR ÷ CURRENT	Is/In	6.1	6.1	6.1	7.0	7.0	7.0	7.5	7.5	7.5	7.5
EFFICIENCY η% OF % FULL LOAD	50	68.9	71.9	71.4	75.3	76.7	79.5	80.3	84.1	83.5	85.6
	75	70.9	73.9	74.2	76.8	78.7	80.8	82.1	84.8	85.0	86.6
	100	70.0	73.0	74.0	76.0	78.0	80.0	82.0	84.0	85.0	86.3
FULL LOAD POWER FACTOR	COSφ	0.81	0.82	0.83	0.84	0.84	0.85	0.87	0.88	0.88	0.88
CURRENT FULL LOAD I_n(A)	400V	0.94	1.33	1.76	2.49	3.30	4.67	6.07	7.81	10.6	14.3
RATED SPEED	(rpm)	2760	2820	2845	2840	2840	2840	2870	2880	2910	2905
POWER	(kW)	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5
FRAME SIZE		71	71	80	80	90S	90L	100L	112M	132S	132S

OUTLINE AND INSTALLATION

Dimensions

Flange Specification: B5

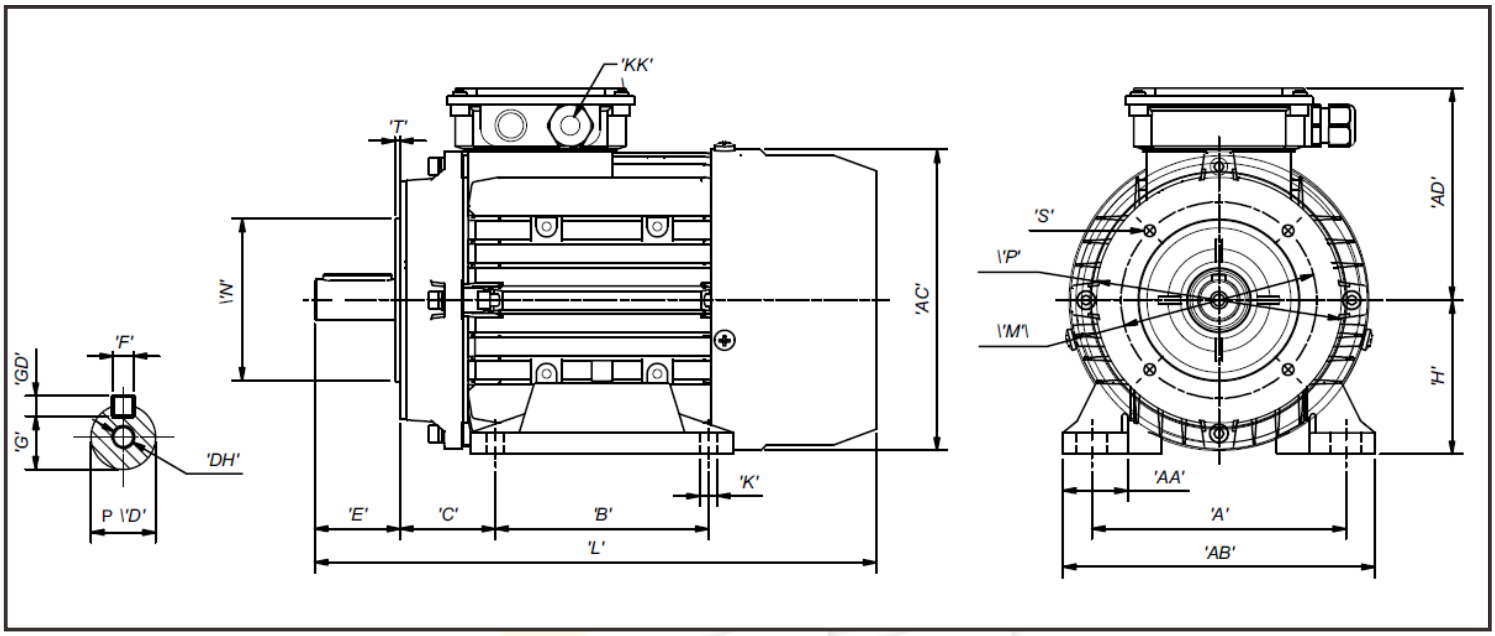


FRAME SIZE	kW	MOUNTING DIMENSIONS (mm)															
		AC	AD	D	DH	E	F	G	GD	KK	L	M	N	P(max)	S(min)	T	kg
71	0.37	138	109	14	M5x12	30	5	16	5	M20x1.5	245	130	110	160	10	3.5	6.2
71	0.55	138	109	14	M5x12	30	5	16	5	M20x1.5	245	130	110	160	10	3.5	6.3
80	0.75	157	112	19	M6x16	40	6	21.5	6	M20x1.5	275	160	130	200	12	3.5	8.3
80	1.1	157	112	19	M6x16	40	6	21.5	6	M20x1.5	275	160	130	200	12	3.5	9.0
90S	1.5	175	123	24	M8x19	50	8	27	7	M20x1.5	315	165	130	200	12	3.5	12.5
90L	2.2	175	123	24	M8x19	50	8	27	7	M20x1.5	330	165	130	200	12	3.5	14.0
100L	3.0	196	139	28	M10x22	60	8	31	7	M20x1.5	370	215	180	250	15	4	20.5
112M	4.0	220	156	28	M10x22	60	8	31	7	M25x1.5	395	215	180	250	15	4	26.0
132S	5.5	260	185	38	M12x28	80	10	41	8	M25x1.5	472	265	230	300	15	4	40.0
132S	7.5	260	185	38	M12x28	80	10	41	8	M25x1.5	472	265	230	300	15	4	44.0

OUTLINE AND INSTALLATION

Dimensions

Flange Specification: B14



FRAME SIZE	kW	MOUNTING DIMENSIONS (mm)															
		AC	AD	D	DH	E	F	G	GD	KK	L	M	N	P(max)	S(min)	T	kg
71	0.37	138	109	14	M5x12	30	5	16	5	M20x1.5	245	85	70	105	M6	2.5	6.2
71	0.55	138	109	14	M5x12	30	5	16	5	M20x1.5	245	85	70	105	M6	2.5	6.3
80	0.75	157	112	19	M6x16	40	6	21.5	6	M20x1.5	275	100	80	120	M6	3	8.3
80	1.1	157	112	19	M6x16	40	6	21.5	6	M20x1.5	275	100	80	120	M6	3	9.0
90S	1.5	175	123	24	M8x19	50	8	27	7	M20x1.5	315	115	95	140	M8	3	12.5
90L	2.2	175	123	24	M8x19	50	8	27	7	M20x1.5	330	115	95	140	M8	3	14.0
100L	3.0	196	139	28	M10x22	60	8	31	7	M20x1.5	370	130	110	160	M8	3.5	20.5
112M	4.0	220	156	28	M10x22	60	8	31	7	M25x1.5	395	130	110	160	M8	3.5	26.0
132S	5.5	260	185	38	M12x28	80	10	41	8	M25x1.5	472	165	130	200	M10	3.5	40.0
132S	7.5	260	185	38	M12x28	80	10	41	8	M25x1.5	472	165	130	200	M10	3.5	44.0