Atom

induction motor

Atom

induction motor

- IP 55
- CAST IRON
- SKF BEARING
- CLASS F (155ºC)
- POWER 0.25 TO 425 HP
- 3 PHASE / IEC STANDARD
- THERMISTOR FOR PROTECTION

12 MONTHS WARANTY

ISO9001

TUV GS EFF2 CE

CDF Series three-phase induction motor

CDF series three-phase asynchronous motor is designed for Europe market, the terminal box is located on the top of motor, the motor structure is compact and the appearance is attractive, the signs and nominal value are all in conformity with IEC standards the motor have some good feature, such as high effecient, energy-saving, high starting torque and easy maintenance etc.

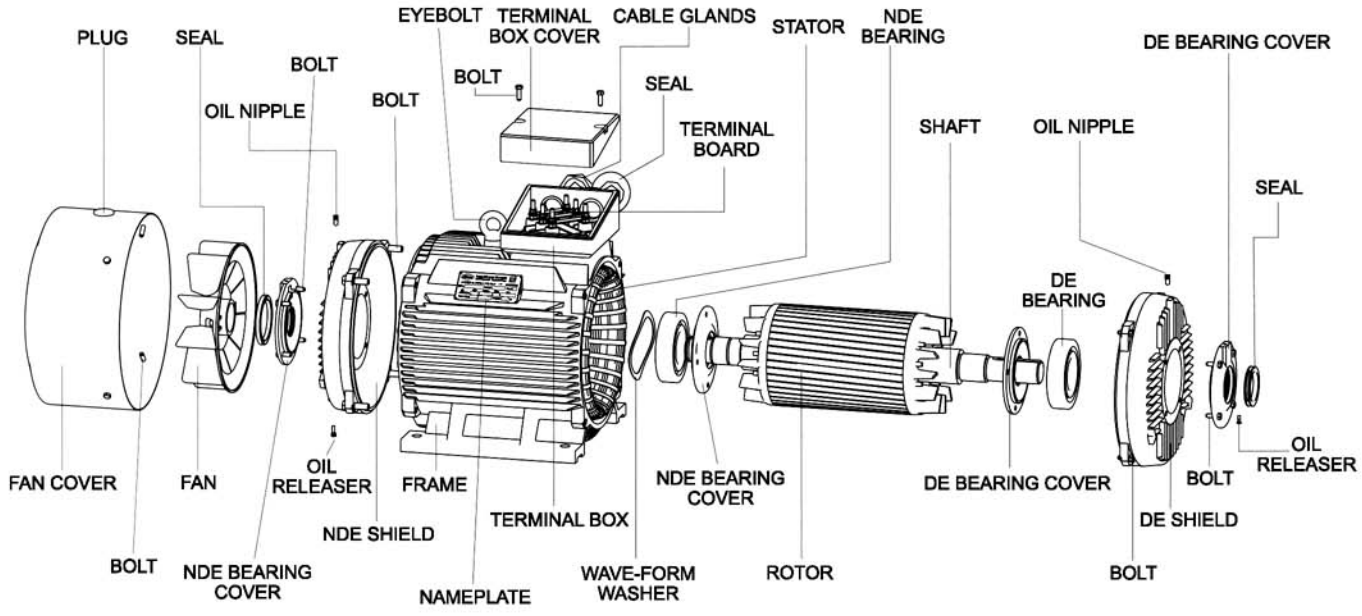
Technical data

Power range : 0.12 - 315kW
Centre height of frame : 63 - 355mm
Rated voltage : 380V, 440V
Rated frequency : 50Hz, 60Hz
Protection class : IP55
Insulation class : F
Duty type : S1

Operating conditions

Ambient temperature: -15ºC<0<40ºC
Altitude: not exceed 1000 m
Connection: Star-connection for up to 3kW, delta-connection for 4kW and above
Remark: Motors can be equipped with PTC, for frame size 160 and above, also can be equipped with re-greasing system. Terminal box on top, right side or left side are available. Key-way can be closed type or opened type.

Part list



Mechanical and construction characteristics

A motor described in this catalogues are dimensioned according to IEC standard.

Casing : Our motor casings from size 63 to 355 are in die cast iron. The aluminum frame upon request. Painting is sea blue.

Rotor : Cage rotor are made of aluminum (pressure die-cast method) The rotors are dynamically balanced (with the key inserted on shaft), in accordance with vibration rating N (IEC 34-14 Standard).

Stator Windings : The stators, assembled from magnetic sheet metal, are wound with copper wire insulated with a double coating to class F standard. Windings are subjected to a special impregnation treatment with insulating paint, increase compactness and heat dispersion coefficients.

Ventilation : External and surface ventilation in provided by redial bi-directional fan blades installed on the opposite end of drive shaft, inside a fan cover made.

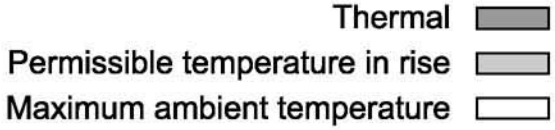
Type of service

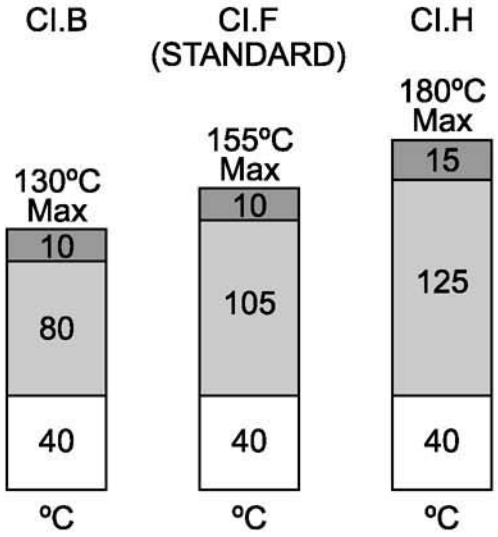
S1	=	continuous service
S2	=	limited duration service
S3	=	Periodic intermittent service
S4	=	Periodic intermittent service with starting phase
S5	=	Periodic intermittent service with electric braking
S6	=	Periodic intermittent service with intermittent load
S7	=	Periodic interrupted service with electric braking
S8	=	Periodic interrupted service with correlated variations of load and speed
S9	=	Service with non-periodic variations of load and speed

Motors built for general use, as described in this catalogue, are able to operate in S1 services.

Overtemperature and insulation rating

Considering the full load operation of a motor at a maximum ambient temperature of 40ºC, the insulation rating is calculated according to the temperature increase of the motor it self. Normalized power of our motors are based on a temperature rise corresponding to class 'B' insulation, which our motors are constructed with class 'F' insulation.





Standard bearing type

Frame Size	Poles	Bearing #	
		Drive End	Non-Drive End
56	2,4	6200	6200
63	2,4	6201	6201
71	2,4,6	6202	6202
80	2,4,6,8	6204	6204
90	2,4,6,8	6205	6205
100	2,4,6,8	6206	6206
112	2,4,6,8	6206	6206
132	2,4,6,8	6208	6208
160	2,4,6,8	6309	6309
180	2,4,6,8	6311	6311
200	2,4,6,8	6312	6312
225	2,4,6,8	6313	6313
250	2,4,6,8	6314	6314
280	2	6314	6314
	4,6,8	6317	6317
315	2	6317	6317
	4,6,8,10	6319	6319
355	2	6319	6319
	4,6,8,10	Nu322	6322

Remark : This standard bearing is designed for horizontal installation. Please contact supplier when vertical installation is needed.

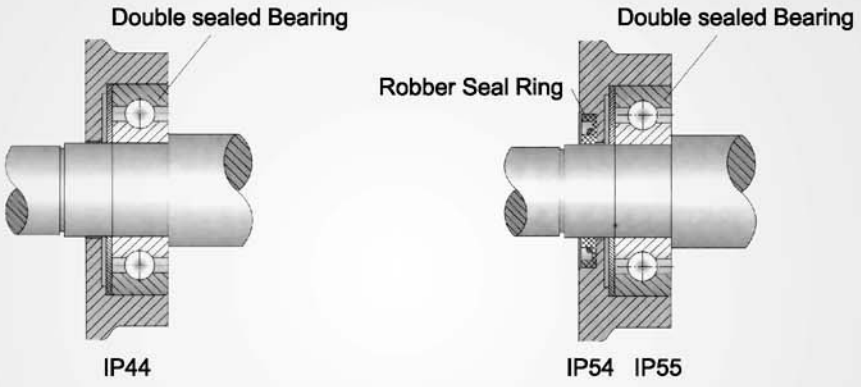
Altitude and temperature

The power rating shown refer to motors which normally operating conditions, motors characteristics will vary according to the coefficients shown in the chart below.

Ambient Temperature (°C)	%Nominal Power Rating
40	100%
45	96.50%
50	93.00%
55	90.00%
60	86.50%
70	79.00%

Altitude Above Sea Level in Metres	%Nominal Power Rating
1000 m.	100%
1500 m.	97.00%
2000 m.	94.50%
2500 m.	92.00%
3000 m.	89.00%
4000 m.	83.50%

Protection class



Keyway on drive shaft

Protection level (IEC 34-5)

Protection levels against accidental contact and/or against the entrance of foreign bodies and the entrance of water are expressed internationally by a code rating made up of a group of two letters and two numbers

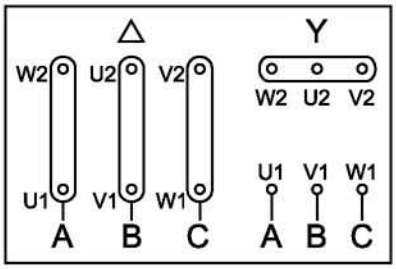
IP = Reference letters for type of protection;
1 st number = Protection level against solid objects;
2 nd number = Protection level against water

Protection level	1st number Protected against	2nd number Protected against
IP 21	Protected against solid objects of over 12 mm (e.g. finger)	Water drop falling vertically must not cause damage
IP 22		Water drop falling on the motor from a 15 degree angle direction must not cause damage
IP 23		Water falling down a 60 degree angle direction must not cause damage
IP 44	Any contact tools, wire or similar objects of width or diameter exceeding 1 mm. with the live or rotating parts inside the casing	Water sprinkled on the machine from any direction must not cause damage
IP 45		Water ejected by a nozzle on the machine from any direction must not cause damage
IP 54	Protected against dust (no deposits of narmful material)	Water sprinkled on the machine from any direction must not cause damage
IP 55*		Water ejected by a nozzle on the machine from any direction must not cause damage
IP 56		With troubled waters (sea), water inside the water must not cause damage
IP 57		Damaging quantities of water can not penetrate into the motor, when the water is under water, (The motor is under a specific pressure of depth, and the immersion lasts only for a limited lap on time)

* The standard protecting of our motor is IP55, but models with different protection levels are often supplied.

Connection diagram

Three phase motor



Standards and Award certificates

TÜV PRODUCT SERVICE GS

ISO9001

EFF2 CE

Thecnical data

380V 50Hz Synchronous Speed
3000 r/min (2 Poles)

Model	Output		Full load				75% Load		50% Load		Tstart/Tn	Ist/In	Tmax/Tn
	kW	HP	Current (A)	Speed (r/min)	Eff (%)	Power Factor	Eff (%)	Power Factor	Eff (%)	Power Factor			
CDF-631-2	0.18	0.25	0.53	2720	65.0	0.80	63.1	0.75	60.0	0.69	2.2	5.5	2.2
CDF-632-2	0.25	0.34	0.69	2720	68.0	0.81	65.1	0.76	62.0	0.70	2.2	5.5	2.2
CDF-711-2	0.37	0.50	0.99	2740	70.0	0.81	69.0	0.76	66.0	0.71	2.2	6.1	2.2
CDF-712-2	0.55	0.75	1.4	2740	73.0	0.82	71.2	0.70	70.0	0.72	2.2	6.1	2.3
CDF-801-2	0.75	1	1.83	2830	75.0	0.83	73.0	0.77	71.0	0.74	2.2	6.1	2.3
CDF-802-2	1.1	1.5	2.58	2830	77.0	0.84	75.1	0.78	73.0	0.73	2.2	7.0	2.3
CDF-90S-2	1.5	2	3.43	2840	79.0	0.84	77.0	0.78	74.9	0.76	2.2	7.0	2.3
CDF-90L-2	2.2	3	4.85	2840	81.0	0.85	80.0	0.79	79.9	0.76	2.2	7.0	2.3
CDF-100L-2	3.0	4	6.31	2870	83.0	0.87	82.0	0.80	81.1	0.77	2.2	7.5	2.3
CDF-112M-2	4.0	5.5	8.10	2890	85.0	0.88	83.9	0.83	82.0	0.80	2.2	7.5	2.3
CDF-132S1-2	5.5	7.5	11.0	2900	86.0	0.88	84.2	0.83	83.8	0.80	2.2	7.5	2.3
CDF-132S2-2	7.5	10	14.9	2900	87.0	0.88	85.8	0.84	84.9	0.78	2.2	7.5	2.3
CDF-160M1-2	11	15	21.3	2930	88.0	0.89	86.6	0.84	85.1	0.79	2.2	7.5	2.3
CDF-160M2-2	15	20	28.8	2930	89.0	0.89	87.9	0.84	86.4	0.80	2.2	7.5	2.3
CDF-160L-2	18.5	25	34.7	2930	90.0	0.90	89.8	0.86	86.8	0.80	2.2	7.5	2.3
CDF-180M-2	22	30	41.0	2940	90.0	0.90	88.9	0.86	86.8	0.82	2.0	7.5	2.3
CDF-200L1-2	30	40	55.5	2950	91.2	0.90	89.4	0.85	88.5	0.81	2.0	7.5	2.3
CDF-200L2-2	37	50	67.9	2950	92.0	0.90	91.0	0.86	90.4	0.82	2.0	7.5	2.3
CDF-225M-2	45	60	82.3	2970	92.3	0.90	90.5	0.85	89.7	0.82	2.0	7.5	2.3
CDF-250M-2	55	75	101	2970	92.5	0.90	91.3	0.85	91.0	0.82	2.0	7.5	2.3
CDF-280S-2	75	100	134	2970	93.0	0.90	91.9	0.86	91.5	0.81	2.0	7.5	2.3
CDF-280M-2	90	125	160	2970	93.8	0.91	92.6	0.87	92.2	0.83	2.0	7.5	2.3
CDF-315S-2	110	150	195	2980	94.0	0.91	93.1	0.87	93.0	0.83	1.8	7.1	2.2
CDF-315M-2	132	180	233	2980	94.5	0.91	93.2	0.87	93.1	0.84	1.8	7.1	2.2
CDF-315L1-2	160	220	279	2980	94.6	0.92	93.1	0.88	93.3	0.85	1.8	7.1	2.2
CDF-315L2-2	200	270	348	2980	94.8	0.92	94.0	0.88	93.8	0.85	1.8	7.1	2.2
CDF-355M-2	250	340	433	2980	95.3	0.92	94.8	0.88	94.0	0.85	1.6	7.1	2.2
CDF-355L-2	315	430	544	2980	95.6	0.92	95.0	0.88	94.0	0.85	1.6	7.1	2.2

Thecnical data

380V 50Hz Synchronous Speed
1500 r/min (4 Poles)

Model	Output		Full load				75% Load		50% Load		Tstart/Tn	Ist/In	Tmax/Tn
	kW	HP	Current (A)	Speed (r/min)	Eff (%)	Power Factor	Eff (%)	Power Factor	Eff (%)	Power Factor			
CDF-631-4	0.12	0.16	0.42	1310	57.0	0.72	56.1	0.69	51.9	0.55	2.1	5.2	2.2
CDF-632-4	0.18	0.25	0.62	1310	60.0	0.73	58.5	0.70	56.7	0.59	2.1	5.2	2.2
CDF-711-4	0.25	0.34	0.79	1330	65.0	0.74	62.4	0.73	59.3	0.59	2.1	5.2	2.2
CDF-712-4	0.37	0.50	1.12	1330	67.0	0.75	65.3	0.74	62.1	0.63	2.1	5.2	2.2
CDF-801-4	0.55	0.75	1.57	1390	71.0	0.75	69.2	0.74	68.6	0.64	2.4	5.2	2.3
CDF-802-4	0.75	1	2.03	1390	73.0	0.76	71.7	0.75	70.0	0.67	2.3	6.0	2.3
CDF-90S-4	1.1	1.5	2.89	1400	75.0	0.77	73.1	0.75	72.0	0.67	2.3	6.0	2.3
CDF-90L-4	1.5	2	3.70	1400	78.0	0.79	76.1	0.76	74.1	0.69	2.3	6.0	2.3
CDF-100L1-4	2.2	3	5.16	1430	80.0	0.81	78.0	0.79	75.5	0.69	2.3	7.0	2.3
CDF-100L2-4	3.0	4	6.78	1430	82.0	0.82	79.9	0.78	78.5	0.70	2.3	7.0	2.3
CDF-112M-4	4.0	5.5	8.80	1440	84.0	0.82	82.9	0.79	81.1	0.70	2.3	7.0	2.3
CDF-132S-4	5.5	7.5	11.7	1440	85.0	0.83	83.8	0.81	82.2	0.73	2.3	7.0	2.3
CDF-132M-4	7.5	10	15.6	1440	87.0	0.84	85.6	0.82	83.6	0.74	2.3	7.0	2.3
CDF-160M-4	11	15	22.3	1460	88.0	0.84	86.8	0.83	85.9	0.75	2.2	7.0	2.3
CDF-160L-4	15	20	30.1	1460	89.0	0.85	88.9	0.83	88.5	0.75	2.2	7.5	2.3
CDF-180M-4	18.5	25	36.5	1470	90.5	0.86	90.0	0.82	89.5	0.77	2.2	7.5	2.3
CDF-180L-4	22	30	43.2	1470	91.0	0.86	90.2	0.84	89.9	0.76	2.2	7.5	2.3
CDF-200L-4	30	40	57.6	1470	92.0	0.86	91.5	0.84	90.8	0.77	2.2	7.2	2.3
CDF-225S-4	37	50	69.9	1480	92.5	0.87	91.9	0.87	90.3	0.80	2.2	7.2	2.3
CDF-225M-4	45	60	84.7	1480	92.8	0.87	92.4	0.87	90.9	0.80	2.2	7.2	2.3
CDF-250M-4	55	75	103	1480	93.0	0.87	92.7	0.89	91.2	0.81	2.2	7.2	2.3
CDF-280S-4	75	100	140	1480	93.8	0.87	92.4	0.86	91.6	0.80	2.2	7.2	2.3
CDF-280M-4	90	125	167	1490	94.2	0.87	93.0	0.86	92.8	0.78	2.2	7.2	2.3
CDF-315S-4	110	150	201	1490	94.5	0.88	93.3	0.87	92.8	0.81	2.1	6.9	2.2
CDF-315M-4	132	180	240	1490	94.8	0.88	93.8	0.87	93.0	0.81	2.1	6.9	2.2
CDF-315L1-4	160	220	287	1490	94.9	0.89	93.9	0.88	93.1	0.81	2.1	6.9	2.2
CDF-315L2-4	200	270	359	1490	95.0	0.89	94.1	0.88	93.8	0.82	2.1	6.9	2.2
CDF-355M-4	250	340	443	1485	95.3	0.90	94.3	0.88	94.0	0.83	2.1	6.9	2.2
CDF-355L-4	315	420	556	1485	95.6	0.90	94.5	0.89	94.0	0.84	2.1	6.9	2.2

Thecnical data

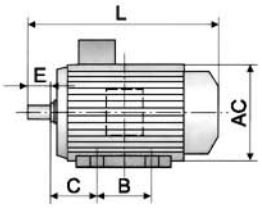
380V 50Hz Synchronous Speed
1000 r/min (6 Poles)

Model	Output		Full load				75% Load		50% Load		Tstart/Tn	Ist/In	Tmax/Tn
	kW	HP	Current (A)	Speed (r/min)	Eff (%)	Power Factor	Eff (%)	Power Factor	Eff (%)	Power Factor			
CDF-711-6	0.18	0.25	0.74	850	56.0	0.66	53.1	0.66	51.0	0.65	1.9	4.0	2.0
CDF-712-6	0.25	0.34	0.95	850	59.0	0.68	56.0	0.68	53.8	0.62	1.9	4.0	2.0
CDF-801-6	0.37	0.50	1.30	890	62.0	0.70	60.5	0.69	57.0	0.50	1.9	4.7	2.0
CDF-802-6	0.55	0.75	1.79	890	65.0	0.72	63.3	0.71	60.1	0.53	1.9	4.7	2.1
CDF-90S-6	0.75	1	2.29	910	69.0	0.72	67.3	0.72	66.3	0.54	2.0	5.5	2.1
CDF-90L-6	1.1	1.5	3.18	910	72.0	0.73	70.2	0.72	68.0	0.55	2.0	5.5	2.1
CDF-100L-6	1.5	2	3.94	940	76.0	0.75	74.0	0.75	71.0	0.54	2.0	5.5	2.1
CDF-112M-6	2.2	3	5.60	940	79.0	0.76	77.1	0.77	75.1	0.60	2.0	6.5	2.1
CDF-132S-6	3.0	4	7.40	960	81.0	0.76	78.9	0.77	76.1	0.60	2.1	6.5	2.1
CDF-132M1-6	4.0	5.5	9.80	960	82.0	0.76	80.0	0.76	77.5	0.60	2.1	6.5	2.1
CDF-132M2-6	5.5	7.5	12.9	960	84.0	0.77	82.1	0.77	80.1	0.60	2.1	6.5	2.1
CDF-160M-6	7.5	10	17.0	970	86.0	0.77	83.4	0.77	82.4	0.60	2.0	6.5	2.1
CDF-160L-6	11	15	24.2	970	87.5	0.78	86.6	0.78	84.8	0.61	2.0	6.5	2.1
CDF-180L-6	15	20	31.6	970	89.0	0.81	88.1	0.82	86.3	0.63	2.0	7.0	2.1
CDF-200L1-6	18.5	25	38.6	970	90.0	0.81	89.1	0.82	87.4	0.65	2.1	7.0	2.1
CDF-200L2-6	22	30	44.7	970	90.0	0.83	89.8	0.83	88.5	0.68	2.1	7.0	2.1
CDF-225M-6	30	40	59.3	980	91.5	0.84	89.2	0.84	88.8	0.69	2.0	7.0	2.1
CDF-250M-6	37	50	71.0	980	92.0	0.86	90.5	0.86	89.1	0.75	2.1	7.0	2.1
CDF-280S-6	45	60	86.0	980	92.5	0.86	90.8	0.86	90.1	0.79	2.1	7.0	2.0
CDF-280M-6	55	75	105	980	92.8	0.86	90.5	0.86	90.1	0.80	2.1	7.0	2.0
CDF-315S-6	75	100	141	990	93.5	0.86	92.5	0.86	91.8	0.76	2.0	7.0	2.0
CDF-315M-6	90	125	169	990	93.8	0.86	92.6	0.86	91.9	0.76	2.0	7.0	2.0
CDF-315L1-6	110	150	206	990	94.0	0.86	93.0	0.86	92.1	0.77	2.0	6.7	2.0
CDF-315L2-6	132	180	244	990	94.2	0.87	93.3	0.87	92.8	0.78	2.0	6.7	2.0
CDF-355M1-6	160	220	292	990	94.5	0.88	93.6	0.88	93.0	0.79	1.9	6.7	2.0
CDF-355M2-6	200	270	365	990	94.7	0.88	93.8	0.88	93.1	0.80	1.9	6.7	2.0
CDF-355L-6	250	340	455	990	94.9	0.88	94.0	0.88	93.5	0.81	1.9	6.7	2.0

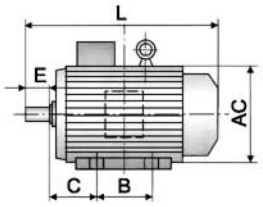
Thecnical data

380V 50Hz Synchronous Speed
750 r/min (8 Poles)

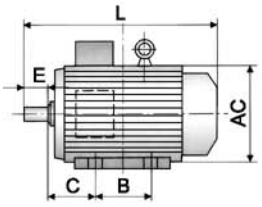
Model	Output		Full load				75% Load		50% Load		Tstart/Tn	Ist/In	Tmax/Tn
	kW	HP	Current (A)	Speed (r/min)	Eff (%)	Power Factor	Eff (%)	Power Factor	Eff (%)	Power Factor			
CDF-801-8	0.18	0.25	0.88	630	51.0	0.61	46.4	0.52	42.1	0.45	1.8	4.0	1.9
CDF-802-8	0.25	0.34	1.15	640	54.0	0.61	48.5	0.54	43.2	0.45	1.8	4.0	1.9
CDF-90S-8	0.37	0.50	1.49	660	62.0	0.61	57.1	0.57	53.3	0.43	1.8	4.0	1.9
CDF-90L-8	0.55	0.75	2.18	660	63.0	0.61	58.5	0.58	54.4	0.44	1.8	4.0	2.0
CDF-100L1-8	0.75	1	2.53	690	71.0	0.67	67.2	0.63	63.4	0.45	1.8	4.0	2.0
CDF-100L2-8	1.1	1.5	3.32	690	73.0	0.69	71.5	0.61	69.7	0.48	1.8	5.0	2.0
CDF-112M-8	1.5	2	4.50	680	75.0	0.69	73.8	0.64	72.7	0.48	1.8	5.0	2.0
CDF-132S-8	2.2	3	6.00	710	78.0	0.71	77.1	0.61	76.2	0.49	1.8	6.0	2.0
CDF-132M-8	3.0	4	7.90	710	79.0	0.73	78.5	0.62	77.3	0.50	1.8	6.0	2.0
CDF-160M1-8	4.0	5.5	10.3	720	81.0	0.73	79.8	0.63	79.1	0.51	1.9	6.0	2.0
CDF-160M2-8	5.5	7.5	13.6	720	83.0	0.74	82.2	0.61	81.8	0.53	2.0	6.0	2.0
CDF-160L-8	7.5	10	17.8	720	85.5	0.75	85.0	0.63	84.4	0.54	2.0	6.0	2.0
CDF-180L-8	11	15	25.1	730	87.5	0.76	86.1	0.66	85.2	0.56	2.0	6.6	2.0
CDF-200L-8	15	20	34.1	730	88.0	0.76	87.2	0.66	86.4	0.56	2.0	6.6	2.0
CDF-225S-8	18.5	25	40.6	730	90.0	0.76	89.4	0.68	88.2	0.57	1.9	6.6	2.0
CDF-225M-8	22	30	47.4	740	90.5	0.78	89.6	0.69	88.6	0.58	1.9	6.6	2.0
CDF-250M-8	30	40	64.0	740	91.0	0.79	90.0	0.69	89.1	0.58	1.9	6.6	2.0
CDF-280S-8	37	50	78.0	740	91.5	0.79	91.2	0.71	90.1	0.60	1.9	6.6	2.0
CDF-280M-8	45	60	94.0	740	92.0	0.79	91.8	0.75	90.8	0.61	1.9	6.6	2.0
CDF-315S-8	55	75	111	740	92.8	0.81	91.9	0.78	91.0	0.64	1.8	6.6	2.0
CDF-315M-8	75	100	151	740	93.0	0.81	92.9	0.76	91.5	0.65	1.8	6.6	2.0
CDF-315L1-8	90	125	178	740	93.8	0.82	92.9	0.76	91.7	0.70	1.8	6.6	2.0
CDF-315L2-8	110	150	217	740	94.0	0.82	93.1	0.78	92.9	0.71	1.8	6.4	2.0
CDF-355M1-8	132	180	261	740	93.7	0.82	93.1	0.78	92.9	0.71	1.8	6.4	2.0
CDF-355M2-8	160	220	313	740	94.2	0.82	93.2	0.79	93.0	0.71	1.8	6.4	2.0
CDF-355L-8	200	270	388	740	94.5	0.83	93.8	0.79	93.3	0.72	1.8	6.4	2.0



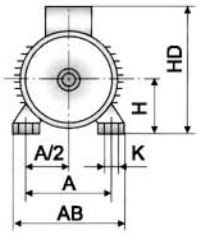
H63~90



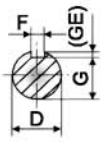
H100~132

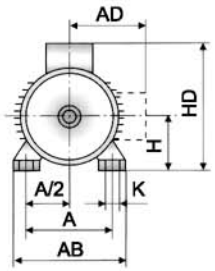


H160~355



H63~71

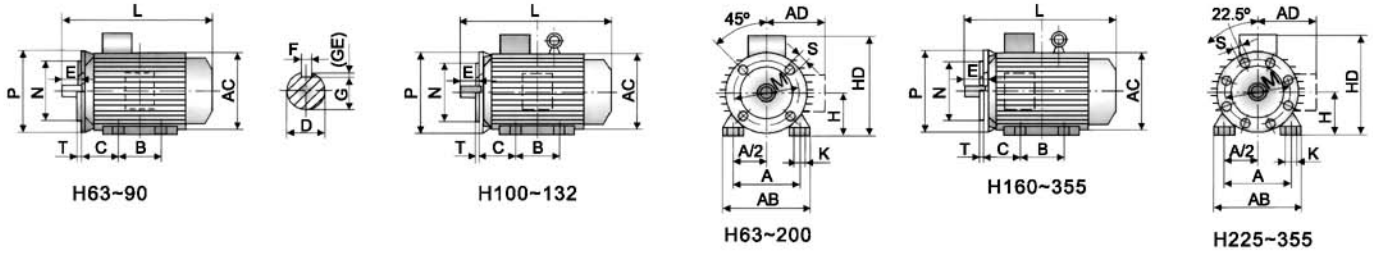




H80~355

Frame with feet and endshield without flange B3

Frame size	Poles	Mounting dimensions										Overall dimensions				
		A	A/2	B	C	D	E	F	G	H	K	AB	AC	AD	HD	L
63	2,4	100	50	80	40	11	23	4	8.5	63	7	135	130	70	180	225
71	2,4,6	112	56	90	45	14	30	5	11	71		150	145	80	195	250
80	2,4,6,8	125	62.5	100	50	19	40	6	15.5	80	10	165	175	145	214	295
90S		140	70	100	56	24	50	8	20	90		180	195	155	250	315
90L				125												340
100L		160	80	140	63	28	60		24	100	12	205	215	180	270	385
112M		190	95	140	70					112		230	240	190	300	400
132S		216	108	140	89	38	80	10	33	132		270	275	210	345	470
132M				178												510
160M		254	127	210	108	42	110	12	37	160	15	320	330	255	420	615
160L				254												670
180M		279	139.5	241	121	48		14	42.5	180		355	380	280	455	700
180L				279												740
200L		318	159	305	133	55		16	49	200	19	395	420	305	545	770
225S	4,8	356	178	286	149	60	140	18	53	225		435	470	335	555	815
225M	2			311		55	110	16	49							820
	4,6,8					60	140	18	53							845
250M	2	406	203	349	168					250	24	490	510	370	615	910
	4,6,8					65			58							
280S	2	457	228.5	368	190					280		550	580	410	680	985
	4,6,8					75		20	67.5							
280M	2			419		65		18	58							1035
	4,6,8					75		20	67.5							
315S	2	508	254	406	216	65		18	58	315	28	635	645	530	845	1160
	4,6,8,10					80	170	22	71							1270
315M	2			457		65	140	18	58							1190
	4,6,8,10					80	170	22	71							1300
315L	2			508		65	140	18	58							1190
	4,8					80	170	22	71							1300
355M	2	610	305	560	254	75	140	20	67.5	355		730	710	655	1010	1500
	4,6,8,10					95	170	25	86							1530
355L	2			630		75	140	20	67.5							1500
	4,6,8,10					95	170	25	86							1530

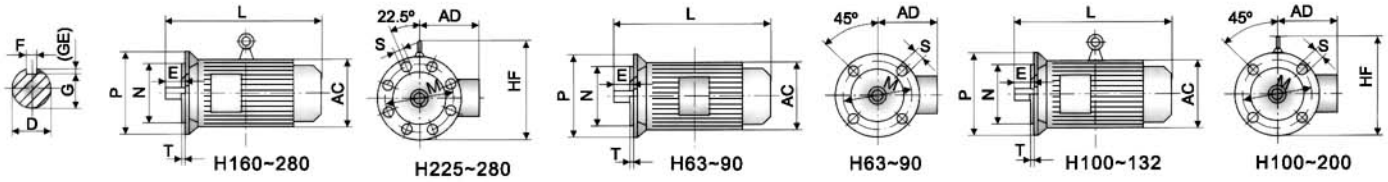


H63~90 H100~132 H63~200 H160~355 H225~355

Frame with feet and endshield with flange (with plain holes) B35

Frame size	Flange No.	Poles	Mounting dimensions																Overall dimensions				
			A	A/2	B	C	D	E	F	G	H	K	M	N	P	R*	S	T	Flange holes	AB	AC	AD	HD	L
63	FF115	2,4	100	50	80	40	11	23	4	8.5	63	7	115	95	140		10	3		135	130	70	180	225
71	FF130	2,4,6	112	56	90	45	14	30	5	11	71		130	110	160					150	145	80	195	250
80			125	62.5	100	50	19	40	6	15.5	80									165	175	145	214	295
90S	FF165		140	70	100	56	24	50	8	20	90	10	165	130	200		12	3.5		180	195	155	250	315
90L					125																			340
100L	FF215		160	80	140	63	28	60		24	100		215	180	250					205	215	180	270	385
112M			190	95	140	70					112	12						4		230	240	190	300	400
132S	FF265	2,4,6,8	216	108	140	89	38	80	10	33	132		265	230	300		15			270	275	210	345	470
132M					178																			510
160M	FF300		254	127	210	108	42	110	12	37	160	15	300	250	350			5	4	320	330	255	420	615
160L					254																			670
180M			279	139.5	241	121	48		14	42.5	180						19			335	380	380	455	700
180L					279																			740
200L	FF350		318	159	305	133	55		16	49	200		350	300	400					395	420	305	545	770
225S	FF400	4,8	356	178	286	149	60	140	18	53	225	19	400	350	450	0				435	470	335	555	815
225M		2			311		55	110	16	49														820
		4,6,8					60	140		53														845
250M	FF500	2	406	203	349	168			18		250	24	500	450	550		19			490	510	370	615	900
		4,6,8					65			58														
280S		2	457	228.5	368	190					280									550	580	410	680	985
		4,6,8					75		20	67.5														
280M		2			419		65		18	58														1035
		4,6,8					75		20	67.5														
315S	FF600	2	508	254	406	216	65		18	58	315	28	600	550	660		24	6	8	635	645	530	845	1160
		4,6,8,10					80	170	22	71														1270
315M		2			457		6	140	18	58														1190
		4,6,8,10					80	170	22	71														1300
315L		2			508		65	140	18	58														1190
		4,8					80	170	22	71														1300
355M	FF740	2	610	305	560	254	75	140	20	67.5	355		740	680	800					730	710	655	1010	1500
		4,6,8,10					95	170	25	86														1530
355L		2			630		75	140	20	67.5														1500
		4,6,8,10					95	170	25	86														1530

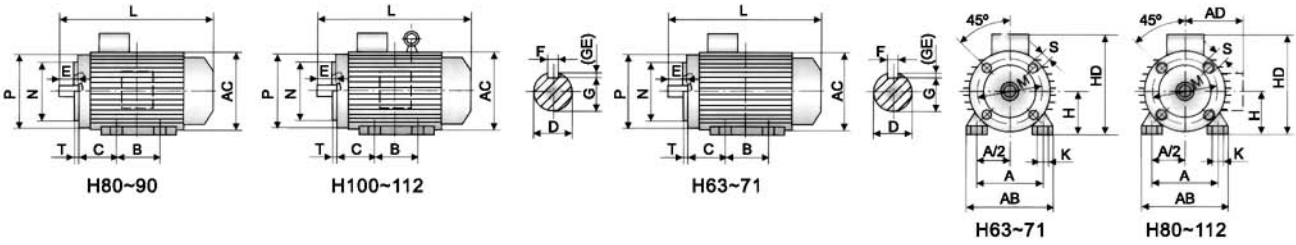
Note : R is the distance from the flange mounting-plane to the shaft- extension shoulder



Frame without feet and endshield with flange (with plain holes) B5

Frame size	Flange No.	Poles	Mounting dimensions											Overall dimensions			
			D	E	F	G	M	N	P	R*	S	T	Flange holes	AC	AD	HF	L
63	FF115	2,4	11	23	4	8.5	115	95	140		10	3		130	70	130	225
71	FF130	2,4,6	14	30	5	11	130	110	160					145	80	145	250
80			19	40	6	15.5								175	145	185	295
90S	FF165		24	50	8	20	165	130	200		12	3.5		195	155	195	315
90L																	340
100L	FF215		28	60		24	215	180	250		15	4		215	180	245	385
112M														240	190	265	400
132S	FF265	2,4,6,8	38	80	10	33	265	230	300				4	275	210	315	470
132M																	510
160M	FF300		42	110	12	37	300	250	350	0	19	5		330	255	385	615
160L																	670
180M			48		14	42.5								380	280	430	700
180L																	740
200L	FF350		55		16	49	350	300	400					420	305	480	770
225S	FF400	4,8	60	140	18	53	400	350	450				8	470	335	535	815
225M		2	55	110	16	49											820
		4,6,8	60	140	18	53											845
250M	FF500	2					500	450	550					510	370	595	910
		4,6,8	65			58											
280S		2												580	410	650	985
		4,6,8	75		20	67.5											
280M		2	65		18	58											1035
		4,6,8	75		20	67.5											

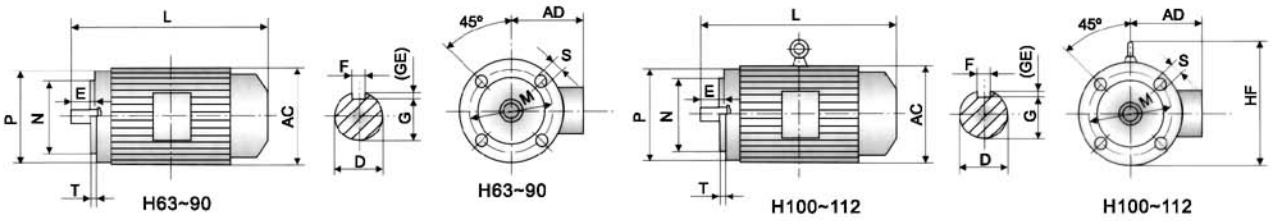
Note : R is the distance from the flange mounting-plane to the shaft- extension shoulder



Frame with feet and endshield with face flange (with thread holes) B34

Frame size	Flange No.	Poles	Mounting dimensions											Overall dimensions				
			D	E	F	G	M	N	P	R*	S	T	Flange holes	AB	AC	AD	HD	L
63	FT75	2,4	11	23	4	8.5	75	60	90		M5			135	130	70	180	225
71	FT85	2,4,6	14	30	5	11	85	70	105		M6	2.5		150	145	80	195	250
80	FT100		19	40	6	15.5	100	80	120					165	175	145	214	295
90S	FF115		24	50	8	20	115	95	140	0	M8	3.0	4	180	195	155	250	315
90L																		340
100L	FT130	2,4,6,8	28	60		24	130	110	160			3.5		205	215	180	270	385
112M														230	240	190	300	400
132S	FT165		38	80	10	33	165	130	200		M10			270	275	210	345	470
132M																		510

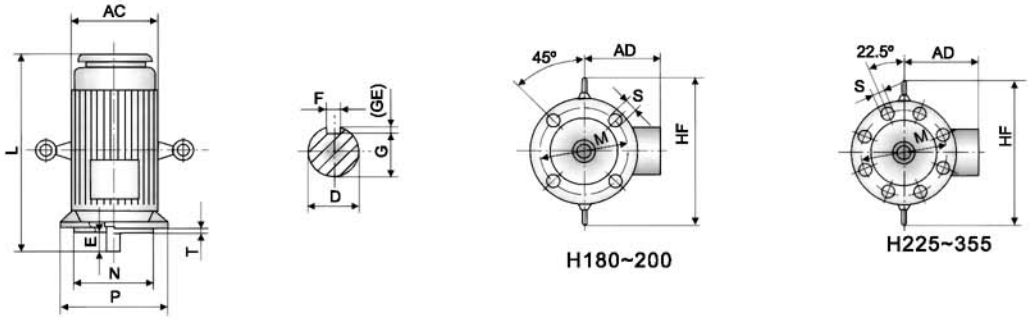
Note : R is the distance from the flange mounting-plane to the shaft- extension shoulder



Frame without feet and endshield with flange (with thread holes) B14

Frame size	Flange No.	Poles	Mounting dimensions										Overall dimensions			
			D	E	F	G	M	N	P	R*	S	T	Flange holes	AC	AD	HF	L
63	FT75	2,4	11	23	4	8.5	75	60	90	0	M5	2.5	4	130	70	130	225
71	FT85	2,4,6	14	30	5	11	85	70	105		M6			145	80	145	250
80	FT100	2,4,6,8	19	40	6	15.5	100	80	120		M8	3.0		175	145	185	295
90S	FF115		24	50	8	20	115	95	140					195	155	195	315
90L																	340
100L	FT130		28	60		24	130	110	160			3.5		215	180	245	385
112M														240	190	265	400
132S	FT165		38	80	10	33	165	130	200		M10			275	210	315	470
132M																	510

Note : R is the distance from the flange mounting-plane to the shaft- extension shoulder

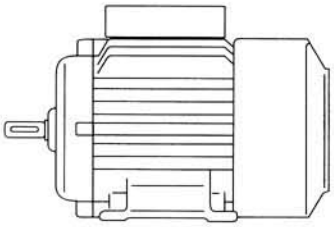


Vertical type, frame without feet and endshield with flange (with plain holes) V1

Frame size	Flange No.	Poles	Mounting dimensions										Overall dimensions			
			D	E	F	G	M	N	P	R*	S	T	Flange holes	AC	AD	HF	L
180M	FF300	2,4,6,8	48	110	14	42.5	300	250	350	0	19	5	4	380	280	500	760
180L																	800
200L	FF350		55		16	49	350	300	400					420	305	550	840
225S	FF400	4,8	60	140	18	53	400	350	450				8	470	335	610	905
225M		2	55	110	16	49											910
		4,6,8	60	140	18	53											935
250M	FF500	2					500	450	550					510	370	650	1015
		4,6,8	65			58											
280S		2												580	410	720	1110
		4,6,8	75		20	67.5											
280M		2	65		18	58											1150
		4,6,8	75		20	67.5											
315S	FF600	2	65		18	58	600	550	660		24	6		645	530	900	1280
		4,6,8,10	80	170	22	71											1510
315M		2	65	140	18	58											1310
		4,6,8,10	80	170	22	71											1430
315L		2	65	140	18	58											1310
		4,6,8,10	80	170	22	71											1430
355M	FF740	2	75	140	20	67.5	740	680	800					710	655	1010	1640
		4,6,8,10	95	170	25	86											1670
355L		2	75	140	20	67.5											1640
		4,6,8,10	95	170	25	86											1670

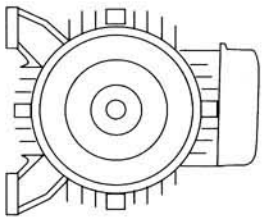
Note : R is the distance from the flange mounting-plane to the shaft- extension shoulder

IM B3/IM 1001



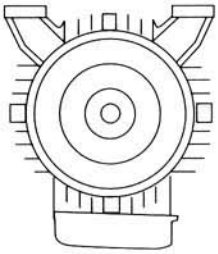
1) Food mounted

IM B6/IM 1051



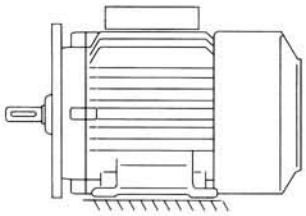
2) Foot wall mounted with feet on left side viewed from DE.

IM B8/IM 1071



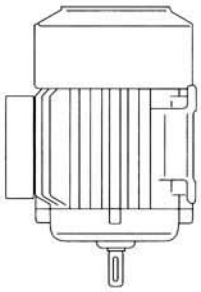
3) Celling mounted with feet above motor

IM B35/IM 2001



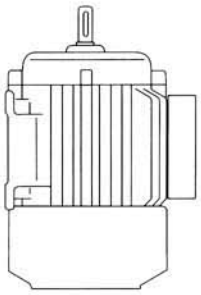
4) B5 type flange at DE, with feet

IM V5/IM 1011



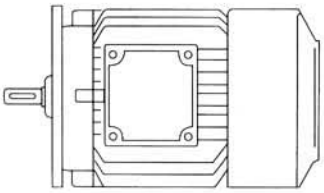
5) Vertical feet wall mounted shaft down

IM V6/IM 1031



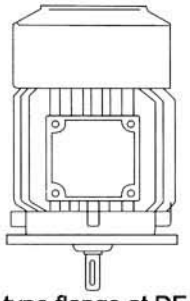
6) Vertical feet wall mounted shaft up

IM B5/IM 3001



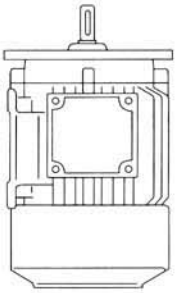
7) B5 type flange at DE, no feet

IM V1/IM 3011



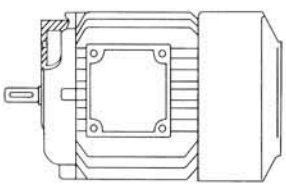
8) B5 type flange at DE, no feet shaft down

IM V3/IM 3031



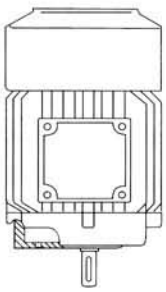
9) B5 type flange at DE, shaft up no feet

IM B14/IM 3601



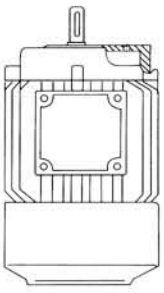
10) Face flange B14 at DE, no feet

IM V18/IM 3611



11) Face flange B14 at DE, shaft down, no feet

IM V19/IM 3611



12) Face flange B14 at DE, shaft up, no feet

Trouble shooting

Symptom	Possible Causes	Cure
Symptoms you can see		
1. Motor won't start	Usually power trouble-single-phasing at starter perhaps a fuse blown	Check source of power supply don't merely try to make it go, while motor sits there and "fries"
	Load too heavy. Disconnect motor to see if it starts without load	Reduce load-or replace with motor of greater power
Symptoms you can hear		
2. Excessive hum	Uneven air-gap. Measure with feelers	Replace bearings-before introduction of scraping noise indicates rotor is rubbing against stator
	Winding fault, short circuit	Check, and repair if necessary by electrical rewinder
	Unbalanced rotor	Take out rotor, remove matter
3. Regular clicking	Foreign matter in air gap	Take out rotor, remove matter
4. Rapid Knocking (Oil Bearings)	Misalignment-probably causing shoulder of shaft to pound periodically against bearing end. Worn bearing	Re-align and re-level set until knocking disappears. Fit new bearing
5. Knocking, Rumbling (Ball bearings)	Bearing worn due to lack of lubrication or excessive mechanical overload	Replace bearing and put in new grease of recommended grade.
	Severe thrust	(as above)
	Double location if two ball bearings are fitted	Check cap spigots and reduce at one end if necessary, so that only one bearing is located to take end thrust.
	Bearing slack in housing	Fit new end-shield
	Bearing moving on shaft	Change bearing for one with tighter bore.
	Foreign matter in grease or bearing housing	Wash in diesel oil or equal and put in new grease
(Roller bearings)	Bearing worn due to lack of lubrication. Outer race of bearing scored.	Replace bearing. If old bearing, replace, if bearing is new or recently fitted, check fitting of the race into the end-shield and of the end-shield into the stator.
Symptoms you can feel		
6. Vibration	Misalignment	Re-align set
	Vibration in driven machine. Run motor disconnected for check	Eliminate sorce in Machine, if possible A change to a flexible belt drive may help
7. Vibration-following motor repair	Rotor out of balance, due to holes drilled or weight shifted due to new rotor coils or coils	Re-balance rotor-dynamically if possible
8. Motor over-heating (Check with thermometer do not depend on hand)	Overload. Measure load; compare with nameplate rating	Check for excessive friction in motor, drive or machine. Reduce load, or replace with motor of greater capacity
	Dirt in motor. Check flow of ventilating air	Blow out motor. Use harmless cleaning solvent on wound section if necessary
	Rotor rubbing on stator	Replace bearing
	Shorted star or windings	Test with ammeter and correct
	Earth (ground)	Locate with test lamp or insulation tester and repair
9. Bearing overheating (Ball and roller bearings)	Misalignment of bearing	Check all machined faces for correct seating of bearings
	Bearing on verge of collapse	Inspect and replace if necessary
	Over-greasing of bearings	Sufficient grease should be placed in the bearing to allow easy running, but not packed so tightly that bearing has to plough through. Avoid packing grease too tightly into motor bearings where speed is 3,000 rpm or higher
(Oil bearings)	Misalignment	Re-align. In all cases of bearings overheating-keep shaft turning until bearing is cooled. To prevent freezing
	Too much tension in chain or belt drive	Reduce tension
	Excessive end thrust	Reduce thrust from drive or machine. Or if motor is off level, shim-up end to take thrust off its bearing