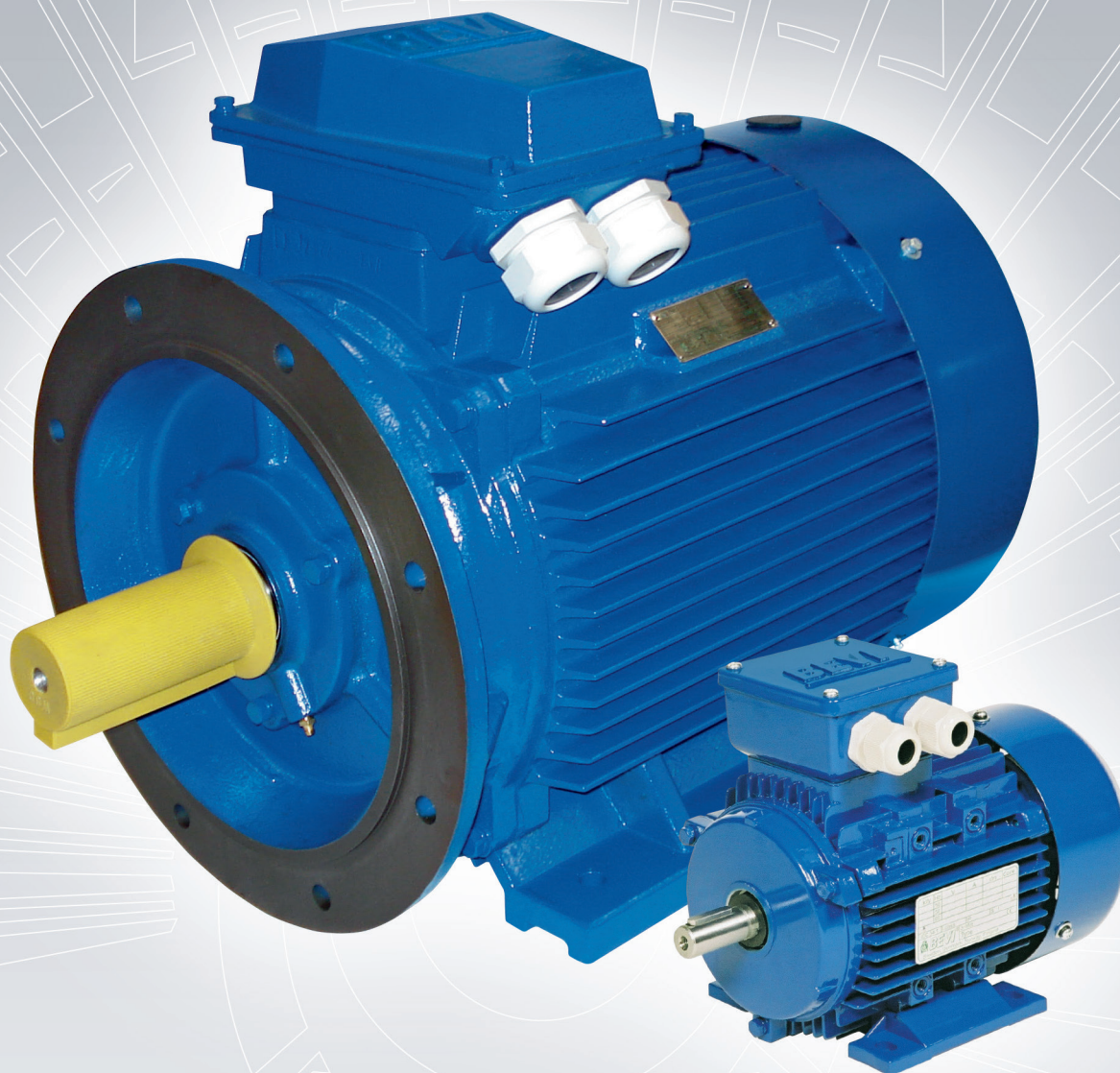




ELECTRIC MOTORS

4A2/3D2 **IE2**



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TECHNICAL INFORMATION TYPE 4A2/3D2 IE2

Construction

4A2 have stator house in aluminum and also end-shields in aluminum. 3D2 have a stator house and end-shields in cast iron. The motors are produced according to IEC60034-30: 2008, IEC60034-2-1:2007 and IEC 60034-30-1:2014. Standard are SS-EN 60 034-1 IEC 60072 and motors are marked with CE. In addition the motors can also comply with the rules and technical specification of Marine class authorities. BEVI 3D2 model have type approval from BV, DNV-GL, ABS PDA and we can also supply motors according to LRS, RINA, NK, CCS and RMRS.

Voltage and Frequency

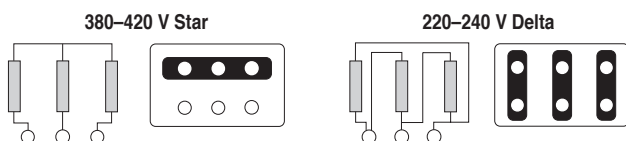
Motors are available for frequencies of 50Hz and 60Hz at standard voltage. Special voltage on request. The voltage can vary up to +/- 5%, without derating.

Maintenance

In normal use maintenance is limited to greasing of the bearings. All motors in sizes 160 and larger are fitted with grease nipples as standard. The bearings are lubricated with lithium based grease class 11. Smaller motors have closed bearing housings and sealed bearings, and can be considered maintenance free. For hard operations special bearings can be supplied – for example, for high ambient temperature and increased speed.

Voltage

Three phase single speed motors can normally be connected for two different voltage ranges (connection in star – higher voltage, or delta – lower voltage) with a ratio of $\sqrt{3}$. This gives a wide application range and simplified management of ordering and stockholding.



The above connection diagrams are applicable to range wound motors for supplies of 220-240 V (Delta connection) and 380-420 V (Star connection).

Examples:

a) 220-240 V Delta/380-420 V Star – may be labelled 230/400 V (Standard for motors 3 kW and smaller). Suitable for direct on line starting on 380-420 V supplies.

b) 380-420V Delta/660-720V Star – may be labelled 400 V Delta (Standard for motors 4 kW and larger). Suitable for Star/Delta starting on 380-420 volt supplies or direct on line starting on 660-720 V supplies.

Frequency

Motors wound for 50Hz supplies can also be used on 60Hz. Rated data can be calculated from the table below.

Voltage at 50Hz	Voltage at 60Hz	60Hz data as % of 50Hz data			
		Power P	Torque M	Starting torque Mst	Speed n
230	230	100	83	69	120
230	255	111	92	85	120
400	400	100	83	69	120
400	440	110	92	84	120
400	460	115	96	92	120
400	480	120	100	100	120
525	525	100	83	69	120
525	575	115	96	92	120

Enclosure (degree of protection)

Motors are produced in degree of protection IP55 as standard, but are also available to other standards.

Insulation Class

All motors are wound with Class F material, but calculated with temperature rise according to class B at 50Hz.

Balancing

Motors are balanced with a half key. Special degrees of balancing are available on request.

Standards

Motor construction, outputs, and fixing dimensions comply with IEC standards.

STANDARD	STANDARD EFFICIENCY
SS-EN 60 034-1 IEC 60072	IEC 60034-30: 2008 IEC 60034-2-1: 2007 IEC 60034-30-1: 2014

Thermistors

Protection is provided fitted in frame 160 and up. Thermistors are temperature sensitive resistors that at a certain temperature have a wide change of resistance. When connected with sensing relay it can be used to e.g. cut of the supply to main contactor coil.

Cooling

As standard, the fan and cowl is fitted at the non-drive end (cooling form IC 411). Other cooling methods can be supplied e.g. separately driven cooling fan (often used with inverter drives).

Heaters

Motors used in conditions of wide temperature variation or extreme climatic conditions can be damaged by condensation and dampness in the windings. In motors fitted with heaters, the windings are heated to a few degrees above ambient, which is enough to prevent condensation. Heaters must not be energised when the motor is running. Smaller motors can be heated by supplying a low voltage via the motor leads, using a supply of 5-10% of the rated voltage between two phases. BEVI can fit heaters to all motor sizes.

Ambient Temperature

The motors can operate at ambient 40 degrees and for Marine applications at 45 degrees if the motor not are placed over 1000 meter over the sea.

Duty

Motors are designed for S1 duty. The motors can also be used for S2-S9 duty.

Vibration Speed

The vibration speed complies with Class A of IEC60034-14 as standard. Class B can also be met if required by customer.

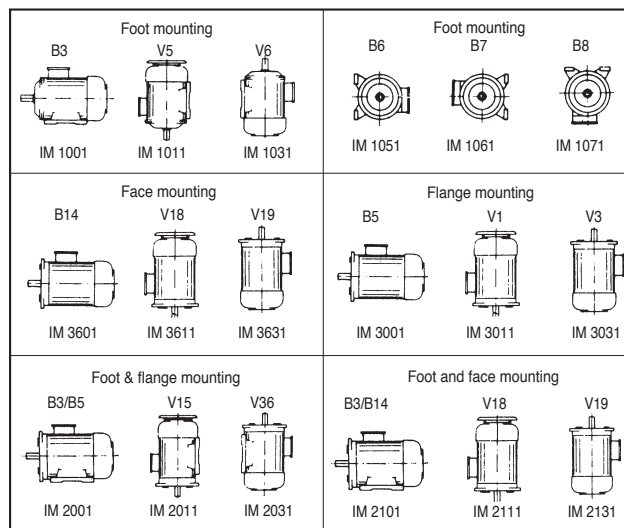
Noise Level

The noise level complies with IEC60034-9 as standard.

Recycling

Larger motors can advantageously be renovated. The motors will otherwise be treated as electronic waste in accordance with national laws and regulations. The motors can be recycled at very high extent.

Mounting arrangements



ELECTRIC MOTORS TYPE 4A2/3D2 IE2 – 2 poles – 3000rpm

Number of poles 2 3000 rpm	Power kW 50Hz	Full load speed rpm 50Hz	Full load current (A)			Power kW 60Hz	Full load speed rpm 60Hz	Full load current 60Hz 460V 440-480V	Efficiency			Power factor Cos ψ	Starting current ratio Ia/In	Starting torque ratio Ma/Mn	Pull out torque ratio Mmax/Mn	Moment of inertia (J) kgm ²	Mass (B3) kg
			220-240V 230V	380-420V 400V	525V				100%	75%	50%						
4A2 80 1-2	0.75	2860	2.9	1.66	1.3	0.9	3432	1.73	77.4	78.5	77.3	0.83	6.8	2.3	2.3	0.0008	11
4A2 80 2-2	1.1	2880	4.0	2.31	1.8	1.32	3456	2.41	79.6	80.0	78.5	0.83	7.3	2.3	2.3	0.0009	12.5
4A2 80 M2-2*	1.5	2880	5.5	3.2	2.4	1.8	3456	3.33	81.1	81.8	80.0	0.84	7.5	2.3	2.3	0.0016	14.5
4A2 90 S-2	1.5	2890	5.3	3.08	2.3	1.8	3468	3.21	81.3	81.8	80.0	0.85	7.5	2.3	2.3	0.0012	14.5
4A2 90 L-2	2.2	2890	7.6	4.39	3.3	2.64	3468	4.58	83.2	84.0	82.5	0.85	7.6	2.3	2.3	0.0014	18
4A2 90 L1-2*	3	2880	10.2	5.9	4.5	3.6	3456	6.14	85.5	85.8	84.1	0.87	8.1	2.3	2.3	0.0033	21
4A2 100 L-2	3	2890	10.0	5.80	4.4	3.6	3468	6.05	84.6	85.8	84.1	0.87	8.1	2.3	2.3	0.0029	21
4A2 100 L-2*	4	2900	13.3	7.6	5.8	4.8	3480	7.9	86.8	87.0	85.5	0.88	8.3	2.3	2.3	0.0045	77
4A2 112 M-2	4	2910	13.1	7.55	5.8	4.8	3492	7.88	85.8	87.0	85.5	0.88	8.3	2.3	2.3	0.0055	28
4A2 112 M1-2*	5.5	2910	18.1	10.4	7.9	6.6	3492	10.8	87.9	88.0	86.0	0.88	7.7	2.2	2.3	0.0083	40.5
4A2 132 S1-2	5.5	2910	17.8	10.3	7.8	6.6	3492	10.7	87.0	88.0	86.0	0.88	7.7	2.2	2.3	0.0109	40.5
4A2 132 S2-2	7.5	2910	23.9	13.8	10.5	9.0	3492	14.4	88.1	88.6	86.3	0.88	7.7	2.2	2.3	0.0126	46
4A2 132 M12-2*	9.2	2910	23.9	16.9	12.8	11.0	3492	17.6	88.4	88.6	86.3	0.89	7.9	2.3	2.3	0.0172	49
4A2 132 M2-2*	11	2940	34.7	20.0	15.2	13.2	3528	20.9	90.0	90.2	88.9	0.89	7.9	2.3	2.3	0.0357	55
4A2 160 M1-2	11	2940	34.6	20.0	15.2	13.2	3528	20.9	89.4	90.2	88.9	0.89	7.9	2.3	2.3	0.0377	80
3D2 160 M1-2	11	2945	34.6	20.0	15.2	13.2	3534	20.9	89.4	90.3	89.1	0.89	7.9	2.2	2.3	0.0489	119
4A2 160 M2-2	15	2940	46.4	26.8	20.4	18	3528	28.0	90.3	91.0	90.0	0.89	8.1	2.3	2.3	0.0499	94
3D2 160 M2-2	15	2945	46.6	26.9	20.5	18	3534	28.1	90.3	91.6	90.6	0.89	8.0	2.2	2.3	0.0559	128
4A2 160 L-2	18.5	2940	56.8	32.8	25.0	22.2	3528	34.2	90.9	91.6	90.3	0.90	8.1	2.3	2.3	0.0550	106
3D2 160 L-2	18.5	2940	57.2	33.0	25.1	22.2	3528	34.4	90.9	92.2	91.3	0.89	8.1	2.2	2.3	0.0648	134
3D2 180 M-2	22	2960	67.7	39.1	29.8	26.4	3552	40.8	91.3	91.9	90.5	0.89	8.2	2.2	2.3	0.0808	191
3D2 200 L1-2	30	2965	91.6	52.9	40.3	36	3558	55.2	92.0	92.7	91.5	0.89	7.5	2.2	2.3	0.1630	237
3D2 200 L2-2	37	2965	112.4	64.9	49.4	44.4	3558	67.7	92.5	93.3	92.3	0.89	7.5	2.2	2.3	0.1720	254
3D2 225 M-2	45	2965	136.1	78.6	59.9	54	3558	82.0	92.9	93.5	92.4	0.89	7.6	2.2	2.3	0.3020	307
3D2 250 M-2	55	2965	165.8	95.7	72.9	66	3558	99.9	93.2	93.6	92.5	0.89	7.6	2.2	2.3	0.4200	388
3D2 280 S-2	75	2980	224.6	129.7	98.8	90	3576	135.3	93.8	94.0	92.8	0.89	6.9	2.0	2.3	0.9860	501
3D2 280 M-2	90	2970	268.6	155.1	118.2	108	3564	161.8	94.1	94.5	93.4	0.89	7.0	2.0	2.3	1.0400	551
3D2 315 S-2	110	2980	324.1	187.1	142.6	132	3576	195.2	94.3	94.3	93.0	0.90	7.1	2.0	2.2	1.3300	916
3D2 315 M-2	132	2980	387.6	223.8	170.5	158	3576	233.5	94.6	94.9	93.8	0.90	7.1	2.0	2.2	1.5000	954
3D2 315 L1-2	160	2980	463.7	267.7	204.0	192	3576	279.3	94.8	95.3	94.5	0.91	7.1	2.0	2.2	1.6700	1083
3D2 315 L2-2	200	2980	578.3	333.9	254.4	240	3576	348.4	95.0	94.9	93.6	0.91	7.1	2.0	2.2	1.8800	1178
3D2 355 M-2	250	2985	722.9	417.4	318.0	300	3582	435.5	95.0	94.7	93.1	0.91	7.1	2.0	2.2	4.0200	1611
3D2 355 L-2	315	2985	910.9	525.9	400.7	378	3582	548.8	95.0	94.9	93.4	0.91	7.1	2.0	2.2	4.8600	1801

* Progressive motors.

We reserve the right to make design changes.

ELECTRIC MOTORS TYPE 4A2/3D2 IE2 – 4 poles – 1500rpm

Number of poles 4 1500 rpm	Power kW 50Hz	Full load speed rpm 50Hz	Full load current (A)			Power kW 60Hz	Full load speed rpm 60Hz	Full load current 60Hz 460V 440-480V	Efficiency			Power factor Cos ψ	Starting current ratio Ia/In	Starting torque ratio Ma/Mn	Pull out torque ratio Mmax/Mn	Moment of inertia (J) kgm ²	Mass (B3) kg
			220-240V 230V	380-420V 400V	525V				100%	75%	50%						
4A2 80 2-4	0.75	1430	2.98	1.72	1.31	0.9	1716	1.79	79.6	80.3	79.2	0.75	6.5	2.3	2.3	0.0021	13
4A2 80 M2-4*	1.1	1420	4.5	2.6	1.98	1.32	1704	2.7	82.5	82.7	81.4	0.77	6.8	2.3	2.3	0.0027	16.5
4A2 90 S-4	1.1	1430	4.4	2.53	1.9	1.32	1716	2.64	81.4	82.7	81.4	0.77	6.8	2.3	2.3	0.0023	16.5
4A2 90 L-4	1.5	1430	5.8	3.37	2.6	1.8	1716	3.52	82.8	83.5	82.0	0.77	7.0	2.3	2.3	0.0027	20.5
4A2 90 L-4*	2.2	1440	8.2	4.7	3.57	2.64	1728	4.9	85.1	82.7	84.0	0.80	7.4	2.3	2.3	0.0049	24
4A2 100 L1-4	2.2	1450	8.1	4.65	3.5	2.64	1740	4.85	84.3	85.3	84.0	0.81	7.4	2.3	2.3	0.0054	24
4A2 100 L2-4	3	1450	10.7	6.20	4.7	3.6	1740	6.47	85.5	86.6	85.3	0.81	7.4	2.3	2.3	0.0067	28.5
4A2 112 M-4	4	1450	14.3	8.23	6.3	4.8	1740	8.59	86.6	87.3	86.0	0.82	7.5	2.3	2.3	0.0095	36.5
4A2 112 M-4*	5.5	1450	19.3	11.1	8.44	6.6	1740	11.5	88.1	88.3	87.5	0.82	7.5	2.0	2.3	0.0153	47.5
4A2 132 S-4	5.5	1450	18.9	10.9	8.3	6.6	1740	11.4	87.7	88.3	87.5	0.83	7.5	2.0	2.3	0.0214	48
4A2 132 M-4	7.5	1450	25.3	14.6	11.1	9.0	1740	15.2	88.7	89.4	88.5	0.84	7.5	2.0	2.3	0.0296	57
4A2 132 M1-4*	9.2	1450	31.4	18.0	13.7	11.0	1740	18.7	89.2	89.4	88.5	0.83	7.5	2.2	2.3	0.0364	59
4A2 132 M3-4*	11	1470	37.1	21.3	16.2	13.2	1764	22.2	90.1	90.3	89.4	0.83	7.5	2.2	2.3	0.0478	67
3D2 160 M-4	11	1470	36.0	20.8	15.8	13.2	1764	21.7	89.8	91.1	90.3	0.85	7.5	2.2	2.3	0.0771	118
4A2 160 M-4	11	1450	37.2	21.5	16.4	13.2	1740	22.4	89.8	90.3	89.4	0.84	7.4	2.2	2.3	0.0747	86
3D2 160 L-4	15	1470	48.1	27.8	21.2	18	1764	29.0	90.6	91.6	91.0	0.86	7.5	2.2	2.3	0.1010	139
4A2 160 L-4	15	1470	49.9	28.8	21.9	18	1764	30.1	90.6	91.2	90.6	0.85	7.5	2.2	2.3	0.0918	102
4A2 160 L-4*	18.5	1470	59.9	34.4	26.1	26.1	1764	35.8	91.3	91.7	90.8	0.85	7.7	2.2	2.3	0.1247	153
3D2 180 M-4	18.5	1475	58.9	34.0	25.9	22.2	1770	35.5	91.2	92.2	91.5	0.86	7.7	2.2	2.3	0.1520	186
3D2 180 L-4	22	1475	69.8	40.3	30.7	26.4	1770	42.1	91.6	92.6	92.0	0.86	7.8	2.2	2.3	0.1870	197
3D2 200 L-4	30	1480	94.6	54.6	41.6	36	1776	57.0	92.3	93.1	92.3	0.86	7.2	2.2	2.3	0.2850	261
3D2 225 S-4	37	1485	116.0	67.0	51.0	44.4	1782	69.9	92.7	93.3	92.4	0.86	7.3	2.2	2.3	0.4730	308
3D2 225 M-4	45	1485	140.5	81.1	61.8	54	1782	84.6	93.1	93.8	92.9	0.86	7.4	2.2	2.3	0.5540	337
3D2 250 M-4	55	1480	170.9	98.7	75.2	66	1776	103.0	93.5	93.8	92.9	0.86	7.4	2.2	2.3	0.7510	410
3D2 280 S-4	75	1490	226.7	130.9	99.7	90	1788	136.6	94.0	94.2	93.2	0.88	6.7	2.2	2.3	1.9200	579
3D2 280 M-4	90	1490	271.4	156.7	119.4	108	1788	163.5	94.2	94.6	93.6	0.88	6.9	2.2	2.3	2.3200	641
3D2 315 S-4	110	1490	330.6	190.9	145.4	132	1788	199.2	94.5	94.6	93.5	0.88	6.9	2.2	2.2	2.3400	959
3D2 315 M-4	132	1490	395.9	228.6	174.2	158	1788	238.5	94.7	95.1	94.1	0.88	6.9	2.2	2.2	2.5800	999
3D2 315 L1-4	160	1490	473.5	273.4	208.3	192	1786	285.3	94.9	95.3	94.5	0.89	6.9	2.2	2.2	2.9600	1096
3D2 315 L2-4	200	1490	590.8	341.1	259.9	240	1788	355.9	95.1	95.3	94.4	0.89	6.9	2.2	2.2	3.4600	1330
3D2 355 M-4	250	1490	730.2	421.6	321.2	300	1788	439.9	95.1	94.8	93.7	0.90	6.9	2.2	2.2	6.6000	1638
3D2 355 L-4	315	1490	920.0	531.2	404.7	378	1788	554.3	95.1	95.3	94.3	0.90	6.9	2.2	2.2	7.5500	1832

* Progressive motors.

We reserve the right to make design changes.

ELECTRIC MOTORS TYPE 4A2/3D2 IE2 – 6 poles – 1000rpm

Number of poles 6 1000 rpm	Power kW 50Hz	Full load speed rpm 50Hz	Full load current (A)			Power kW 60Hz	Full load speed rpm 60Hz	Full load current 60Hz 460V 440-480V	Efficiency 50Hz			Power factor Cos ψ	Starting current ratio Ia/In	Starting torque ratio Ma/Mn	Pull out torque ratio Mmax/Mn	Moment of inertia (J) kgm ²	Mass (B3) kg
			220-240V 230V	380-420V 400V	525V				100%	75%	50%						
4A2 90 S-6	0.75	940	3.39	1.96	1.49	0.9	1128	2.05	75.9	77.4	75.6	0.72	5.8	2.1	2.1	0.0035	16.5
4A2 90 L-6	1.1	940	4.80	2.77	2.11	1.32	1128	2.89	78.1	80.1	77.9	0.73	5.9	2.1	2.1	0.0038	21
4A2 100 L-6	1.5	940	6.30	3.64	2.77	1.8	1128	3.80	79.8	80.6	78.6	0.75	6.0	2.1	2.1	0.0069	23.5
4A2 100 L-6*	2.2	945	9.4	5.4	4.1	2.64	1134	5.62	82.1	82.5	80.9	0.72	6.0	2.1	2.1	0.0125	31.5
4A2 112 M-6	2.2	940	8.95	5.17	3.94	2.64	1128	5.39	81.8	82.5	80.9	0.76	6.0	2.1	2.1	0.0140	31.5
4A2 132 S-6	3	960	11.95	6.90	5.26	3.6	1152	7.20	83.3	83.9	82.6	0.76	6.2	2.0	2.1	0.0286	40.5
4A2 132 M1-6	4	970	15.8	9.14	7.0	4.8	1164	9.54	84.6	85.1	83.5	0.76	6.8	2.0	2.1	0.0357	49
4A2 132 M2-6	5.5	970	21.1	12.2	9.3	6.6	1164	12.7	86.0	86.5	85.1	0.77	7.1	2.0	2.1	0.0449	64
4A2 160 M-6	7.5	970	27.9	16.1	12.3	9	1164	16.8	87.2	87.6	86.3	0.77	6.7	2.1	2.1	0.0081	92
3D2 160 M-6	7.5	980	27.5	15.9	12.1	9	1176	16.6	87.2	89.5	88.4	0.78	6.7	2.1	2.1	0.0964	111
4A2 160 L-6	11	970	39.8	23.0	17.5	13.2	1164	24.0	88.7	89.1	88.2	0.78	6.9	2.1	2.1	0.1160	105
3D2 160 L-6	11	980	39.3	22.7	17.3	13.2	1176	23.7	88.7	90.0	89.2	0.79	6.9	2.1	2.1	0.1270	132
3D2 180 L-6	15	980	51.6	29.8	22.7	18	1176	31.1	89.7	91.3	90.7	0.81	7.2	2.0	2.1	0.2010	176
3D2 200 L1-6	18.5	985	63.2	36.5	27.8	22.2	1182	38.1	90.4	91.8	91.0	0.81	7.2	2.1	2.1	0.3250	222
3D2 200 L2-6	22	980	73.8	42.6	32.5	26.4	1176	44.5	90.9	92.1	91.5	0.82	7.3	2.1	2.1	0.3710	242
3D2 225 M-6	30	980	101.0	58.3	44.4	36	1176	60.8	91.7	92.7	92.1	0.81	7.1	2.0	2.1	0.5330	292
3D2 250 M-6	37	990	119.5	69.0	52.6	44.4	1188	72.0	92.2	92.7	92.0	0.84	7.1	2.1	2.1	0.8770	369
3D2 280 S-6	45	990	141.2	81.5	62.1	54	1188	85.0	92.7	93.4	92.5	0.86	7.2	2.1	2.0	1.8500	511
3D2 280 M-6	55	990	171.8	99.2	75.6	66	1188	103.5	93.1	93.9	93.0	0.86	7.2	2.1	2.0	2.1200	656
3D2 315 S-6	75	995	235.4	135.9	103.5	90	1194	141.8	93.7	94.2	93.2	0.85	6.7	2.0	2.0	2.6100	851
3D2 315 M-6	90	995	284.9	164.5	125.3	108	1194	171.7	94.0	94.5	93.5	0.84	6.7	2.0	2.0	3.0400	973
3D2 315 L1-6	110	995	343.1	198.1	150.9	132	1194	206.7	94.3	94.8	93.9	0.85	6.7	2.0	2.0	3.7100	1022
3D2 315 L2-6	132	995	405.6	234.2	178.4	158	1194	244.4	94.6	95.2	94.3	0.86	6.7	2.0	2.0	4.2400	1112
3D2 355 M1-6	160	995	485.0	280.0	213.3	192	1194	292.2	94.8	94.5	93.2	0.87	6.7	2.0	2.0	7.4400	1628
3D2 355 M2-6	200	995	634.1	366.1	278.9	240	1194	382.0	95.0	94.9	93.8	0.87	6.7	2.0	2.0	9.1000	1760
3D2 355 L-6	250	995	756.2	436.6	332.6	300	1194	455.6	95.0	95.2	94.2	0.87	6.7	2.0	2.0	10.800	1924

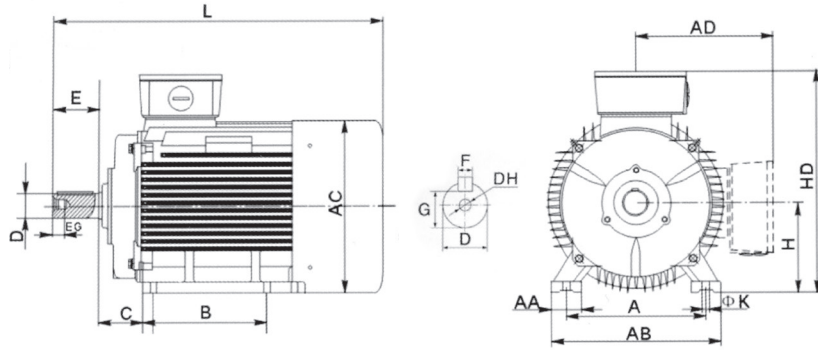
ELECTRIC MOTORS – 8 poles – 750rpm – Outside the IE2 and IE3 norms

Number of poles 8 750 rpm	Power kW 50Hz	Full load speed rpm 50Hz	Full load current (A)			Efficiency %	Power factor Cos ψ	Starting current ratio Ia/In 400V	Starting torque ratio Ma/Mn	Pull out torque ratio Mmax/Mn	Mass (B3) kg
			230V	400V	525V						
4A 80 1-8	0.18	690	1.4	0.8	0.6	52	0.61	3.3	1.8	1.9	10
4A 80 2-8	0.25	690	1.9	1.1	0.8	55	0.61	3.3	1.8	1.9	11
4A 90 S-8	0.37	690	2.4	1.4	1.1	63	0.61	4.0	1.8	1.9	13
4A 90 L-8	0.55	690	3.5	2.0	1.5	64	0.61	4.0	1.8	2.0	14
4A 100 L1-8	0.75	700	3.8	2.2	1.7	72	0.67	4.0	1.8	2.0	23
4A 100 L2-8	1.1	700	5.4	3.1	2.4	74	0.69	5.0	1.8	2.0	25
4A 112 M-8	1.5	700	7.1	4.1	3.1	76	0.69	5.0	1.8	2.0	28
4A 132 S-8	2.2	710	9.7	5.6	4.3	79	0.72	6.0	1.8	2.0	45
4A 132 M-8	3	710	12.7	7.3	5.6	78	0.74	6.0	1.8	2.0	55
4A 160 M1-8	4	720	16.5	9.5	7.2	82	0.74	6.0	1.9	2.0	69
3D 160 M1-8	4	720	17.0	9.8	7.5	86	0.74	6.0	1.9	2.0	105
4A 160 M2-8	5.5	720	21.9	12.6	9.6	84	0.75	6.0	2.0	2.0	78
3D 160 M2-8	5.5	720	22.4	12.9	9.8	87	0.77	6.0	2.0	2.0	115
4A 160 L-8	7.5	720	29.2	16.8	12.8	86	0.75	6.0	2.0	2.0	90
3D 160 L-8	7.5	720	29.4	16.9	12.9	87	0.79	6.0	2.0	2.0	145
3D 180 L-8	11	730	41.4	23.8	18.1	88	0.77	6.0	2.0	2.0	160
3D 200 L-8	15	730	56.3	32.4	24.7	88	0.77	6.6	2.0	2.0	228
3D 225 S-8	18.5	730	67.8	39.0	29.7	91	0.76	6.6	1.9	2.0	242
3D 225 M-8	22	730	78.3	45.0	34.3	90	0.78	6.6	1.9	2.0	265
3D 250 M-8	30	730	104.7	60.2	45.9	92	0.81	6.6	1.9	2.0	368
3D 280 S-8	37	730	128.7	74.0	56.4	93	0.78	6.6	1.9	2.0	472
3D 280 M-8	45	740	155.3	89.3	68.0	93	0.78	6.6	1.8	2.0	538
3D 280 M2-8*	55	740	184.3	106.0	80.8	93	0.81	6.6	1.8	2.0	640
3D 315 S-8	55	740	182.6	105.0	80.0	93	0.82	6.6	1.8	2.0	900
3D 315 M-8	75	740	248.7	143.0	109.0	94	0.82	6.6	1.8	2.0	1000
3D 315 L1-8	90	740	293.9	169.0	128.8	94	0.82	6.6	1.8	2.0	1055
3D 315 L2-8	110	740	358.3	206.0	157.0	94	0.83	6.4	1.8	2.0	1118
3D 355 M1-8	132	745	431.3	248.0	189.0	95	0.82	6.4	1.8	2.0	2000
3D 355 M2-8	160	745	520.0	299.0	227.8	95	0.85	6.4	1.8	2.0	2150
3D 355 L-8	200	745	641.7	369.0	281.1	95	0.84	6.4	1.8	2.0	2250

* Progressive motors. For drawings on 8 pole motors see page 48-49 in our catalogue or website. We reserve the right to make design changes.

DIMENSIONAL DRAWING ELECTRIC MOTORS TYPE 4A2/3D2 IE2

B3



Mounting arrangement B3

Type	Poles	A	B	C	D	E	F	G	DH	H	K	AB	AC	AD	HD	L
4A2 80M	2,4,6,8	125	100	50	19	40	6	15.5	M6	80	10	153	167	138	217	295
4A2 90S	2,4,6,8	143	100	56	24	50	8	20	M8	90	10	178	180	150	240	327
4A2 90L	2,4,6,8	143	125	56	24	50	8	20	M8	90	10	178	180	150	240	360
4A2 100L	2,4,6,8	160	140	63	28	60	8	24	M10	100	12	196	205	168	265	406
4A2 112M	2,4,6,8	192	140	70	28	60	8	24	M10	112	12	227	218	178	290	432
4A2 132S	2,4,6,8	216	140	89	38	80	10	33	M12	132	12	262	257	198	330	490
4A2 132M	2,4,6,8	216	178	89	38	80	10	33	M12	132	12	262	257	198	330	521
4A2 160M	2,4,6,8	254	210	108	42	110	12	37	M16	160	15	312	310	255	415	615
4A2 160L	2,4,6,8	254	254	108	42	110	12	37	M16	160	15	312	310	255	415	670
3D2 160M	2,4,6,8	254	210	108	42	110	12	37	M16	160	15	320	320	285	440	680
3D2 160L	2,4,6,8	254	254	108	42	110	12	37	M16	160	15	320	320	285	440	680
3D2 180M	2,4,6,8	279	241	121	48	110	14	42.5	M16	180	15	355	380	310	470	730
3D2 180L	2,4,6,8	279	279	121	48	110	14	42.5	M16	180	15	355	380	310	470	740
3D2 200L	2,4,6,8	318	305	133	55	110	16	49	M20	200	19	395	410	335	525	785
3D2 225S	4,6,8	356	286	149	60	140	18	53	M20	225	19	435	470	370	580	830
3D2 225M	2	356	311	149	55	110	16	49	M20	225	19	435	470	370	580	825
3D2 225M	4,6,8	356	311	149	60	140	18	53	M20	225	19	435	470	370	580	855
3D2 250M	2	406	349	168	60	140	18	53	M20	250	24	490	490	380	635	930
3D2 250M	4,6,8	406	349	168	65	140	18	58	M20	250	24	490	490	380	635	930
3D2 280S	2	457	368	190	65	140	18	58	M20	280	24	550	580	410	698	981
3D2 280S	4,6,8	457	368	190	75	140	20	67.5	M20	280	24	550	580	410	698	981
3D2 280M	2	457	419	190	65	140	18	58	M20	280	24	550	580	410	698	1032
3D2 280M	4,6,8	457	419	190	75	140	20	67.5	M20	280	24	550	580	410	698	1032
3D2 315S	2	508	406	216	65	140	18	58	M20	315	28	630	645	535	885	1195
3D2 315S	4,6,8	508	406	216	80	170	22	71	M20	315	28	630	645	535	885	1225
3D2 315M	2	508	457	216	65	140	18	58	M20	315	28	630	645	535	885	1305
3D2 315M	4,6,8	508	457	216	80	170	22	71	M20	315	28	630	645	535	885	1335
3D2 315L	2	508	508	216	65	140	18	58	M20	315	28	630	645	535	885	1305
3D2 315L	4,6,8	508	508	216	80	170	22	71	M20	315	28	630	645	535	885	1335
3D2 355M	2	610	560	254	75	140	20	67.5	M20	355	28	730	720	650	1065	1515
3D2 355M	4,6,8	610	560	254	95	170	25	86	M24	355	28	730	720	650	1065	1545
3D2 355L	2	610	630	254	75	140	20	67.5	M20	355	28	730	720	650	1065	1415
3D2 355L	4,6,8	610	630	254	95	170	25	86	M24	355	28	730	720	650	1065	1545

Bearings and cable glands

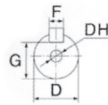
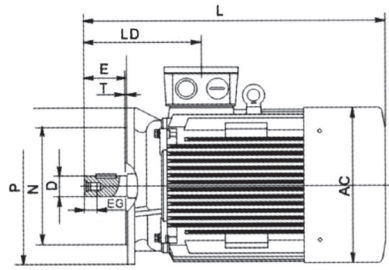
Motor Type	Poles	Bearing size		Cable gland	Cable gland for PTC
		DE	NDE		
4A2 80M	2,4,6,8	6204-2Z/C3	6204-2Z/C3	1 x 20 x 1.5	
4A2 90S	2,4,6,8	6205-2Z/C3	6205-2Z/C3	1 x 20 x 1.5	
4A2 90L	2,4,6,8	6205-2Z/C3	6205-2Z/C3	1 x 20 x 1.5	
4A2 100L	2,4,6,8	6206-2Z/C3	6206-2Z/C3	1 x 20 x 1.5	
4A2 112M	2,4,6,8	6306-2Z/C3	6306-2Z/C3	2 x 25 x 1.5	
4A2 132S	2,4,6,8	6308-2Z/C3	6308-2Z/C3	2 x 25 x 1.5	
4A2 132M	2,4,6,8	6308-2Z/C3	6308-2Z/C3	2 x 25 x 1.5	
4A2 160M	2,4,6,8	6309-2ZC3	6309-2ZC3	2 x 40 x 1.5	
4A2 160L	2,4,6,8	6309-2ZC3	6309-2ZC3	2 x 40 x 1.5	
3D2 160M	2,4,6,8	6309/C3	6309/C3	2 x 40 x 1.5	M16 x 1.5
3D2 160L	2,4,6,8	6309/C3	6309/C3	2 x 40 x 1.5	M16 x 1.5
3D2 180M	2,4,6,8	6311/C3	6311/C3	2 x 40 x 1.5	M16 x 1.5
3D2 180L	2,4,6,8	6311/C3	6311/C3	2 x 40 x 1.5	M16 x 1.5
3D2 200L	2,4,6,8	6312/C3	6312/C3	2 x 50 x 1.5	M16 x 1.5
3D2 225S	4,6,8	6313/C3	6313/C3	2 x 50 x 1.5	M16 x 1.5
3D2 225M	2	6312/C3	6312/C3	2 x 50 x 1.5	M16 x 1.5
3D2 225M	4,6,8	6313/C3	6313/C3	2 x 50 x 1.5	M16 x 1.5

Motor Type	Poles	Bearing size		Cable gland	Cable gland for PTC
		DE	NDE		
3D2 250M	2	6314/C3	6314/C3	2 x 63 x 1.5	M20 x 1.5
3D2 250M	4,6,8	6314/C3	6314/C3	2 x 63 x 1.5	M20 x 1.5
3D2 280S	2	6316/C3	6316/C3	2 x 63 x 1.5	M20 x 1.5
3D2 280S	4,6,8	6316/C3	6316/C3	2 x 63 x 1.5	M20 x 1.5
3D2 280M	2	6316/C3	6316/C3	2 x 63 x 1.5	M20 x 1.5
3D2 280M	4,6,8	6316/C3	6316/C3	2 x 63 x 1.5	M20 x 1.5
3D2 315S	2	6316/C3	6316/C3	2 x 63 x 1.5	M20 x 1.5
3D2 315S	4,6,8	6319/C3	6319/C3	2 x 63 x 1.5	M20 x 1.5
3D2 315M	2	6316/C3	6316/C3	2 x 63 x 1.5	M20 x 1.5
3D2 315M	4,6,8	6319/C3	6319/C3	2 x 63 x 1.5	M20 x 1.5
3D2 315L	2	6316/C3	6316/C3	2 x 63 x 1.5	M20 x 1.5
3D2 315L	4,6,8	6319/C3	6319/C3	2 x 63 x 1.5	M20 x 1.5
3D2 355M	2	6319/C3	6319/C3	2 x 63 x 1.5	M20 x 1.5
3D2 355M	4,6,8	6322/C3	6319/C3	2 x 63 x 1.5	M20 x 1.5
3D2 355L	2	6319/C3	6319/C3	2 x 63 x 1.5	M20 x 1.5
3D2 355L	4,6,8	6322/C3	6319/C3	2 x 63 x 1.5	M20 x 1.5

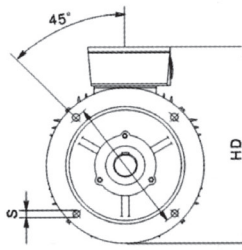
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DIMENSIONAL DRAWING ELECTRIC MOTORS TYPE 4A2/3D2 IE2

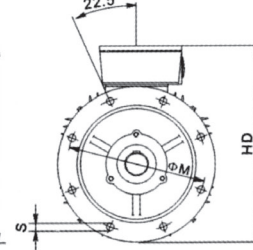
B5



Frame size 80-200



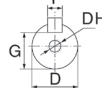
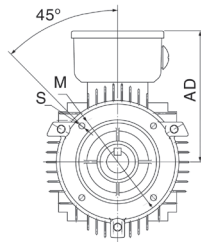
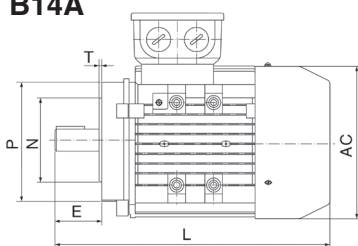
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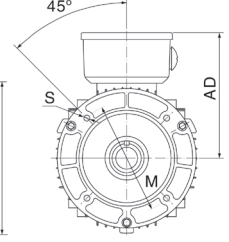
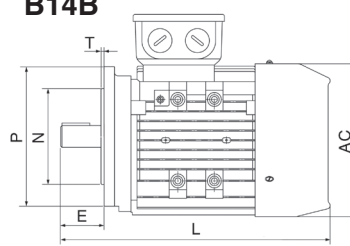
Mounting arrangement B5

Type	Poles	D	E	F	G	DH	M	N	P	S	T	AC	AD	LD	L
4A2 80M	2,4,6,8	19	40	6	15.5	M6	165	130	200	12	3	167	138	295	295
4A2 90S	2,4,6,8	24	50	8	20	M8	165	130	200	12	3.5	180	150	327	327
4A2 90L	2,4,6,8	24	50	8	20	M8	165	130	200	12	3.5	180	150	360	360
4A2 100L	2,4,6,8	28	60	8	24	M10	215	180	250	15	4	205	168	406	406
4A2 112M	2,4,6,8	28	60	8	24	M10	215	180	250	15	4	218	178	432	432
4A2 132S	2,4,6,8	38	80	10	33	M12	265	230	300	15	5	257	198	490	490
4A2 132M	2,4,6,8	38	80	10	33	M12	265	230	300	15	5	257	198	521	521
4A2 160M	2,4,6,8	42	110	12	37	M16	300	250	350	19	5	310	255	615	615
4A2 160L	2,4,6,8	42	110	12	37	M16	300	250	350	19	5	310	255	670	670
3D2 160M	2,4,6,8	42	110	12	37	M16	300	250	350	19	5	320	285	620	620
3D2 160L	2,4,6,8	42	110	12	37	M16	300	250	350	19	5	320	285	675	675
3D2 180M	2,4,6,8	48	110	14	42.5	M16	300	250	350	19	5	380	310	700	700
3D2 180L	2,4,6,8	48	110	14	42.5	M16	300	250	350	19	5	380	310	740	740
3D2 200L	2,4,6,8	55	110	16	49	M20	350	300	400	19	5	410	335	775	775
3D2 225S	4,6,8	60	140	18	53	M20	400	350	450	19	5	470	370	820	820
3D2 225M	2	55	110	16	49	M20	400	350	450	19	5	470	370	815	815
3D2 225M	4,6,8	60	140	18	53	M20	400	350	450	19	5	470	370	845	845
3D2 250M	2	60	140	18	53	M20	500	450	550	19	5	490	380	930	930
3D2 250M	4,6,8	65	140	18	58	M20	500	450	550	19	5	490	380	930	930
3D2 280S	2	65	140	18	58	M20	500	450	550	19	5	580	410	981	981
3D2 280S	4,6,8	75	140	20	67.5	M20	500	450	550	19	5	580	410	981	981
3D2 280M	2	65	140	18	58	M20	500	450	550	19	5	580	410	1032	1032
3D2 280M	4,6,8	75	140	20	67.5	M20	500	450	550	19	5	580	410	1032	1032

B14A



B14B



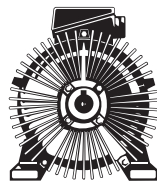
Mounting arrangement B14A

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Type	Poles	D	E	F	G	DH	M	N	P	S	T	AC	AD	L
4A2 80M	2,4,6,8	19	40	6	15.5	M6	100	80	120	M6	3	167	138	295
4A2 90S	2,4,6,8	24	50	8	20	M8	115	95	140	M8	3	180	150	327
4A2 90L	2,4,6,8	24	50	8	20	M8	115	95	140	M8	3	180	150	360
4A2 100L	2,4,6,8	28	60	8	24	M10	130	110	160	M8	3.5	205	168	406
4A2 112M	2,4,6,8	28	60	8	24	M10	130	110	160	M8	3.5	218	178	432
4A2 132S	2,4,6,8	38	80	10	33	M12	165	130	200	M10	3.5	257	198	490
4A2 132M	2,4,6,8	38	80	10	33	M12	165	130	200	M10	3.5	257	198	521

Mounting arrangement B14B

Type	Poles	D	E	F	G	DH	M	N	P	S	T	AC	AD	L
4A2 80M	2,4,6,8	19	40	6	15.5	M6	130	110	160	M8	3.5	167	138	295
4A2 90S	2,4,6,8	24	50	8	20	M8	130	110	160	M8	3.5	180	150	327
4A2 90L	2,4,6,8	24	50	8	20	M8	130	110	160	M8	3.5	180	150	360
4A2 100L	2,4,6,8	28	60	8	24	M10	165	130	200	M10	3.5	205	168	406
4A2 112M	2,4,6,8	28	60	8	24	M10	165	130	200	M10	3.5	218	178	432
4A2 132S	2,4,6,8	38	80	10	33	M12	215	180	250	M12	4	257	198	490
4A2 132M	2,4,6,8	38	80	10	33	M12	215	180	250	M12	4	257	198	521



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