AllianceMotori

HEAVY INDUSTRY
ELECTRIC MOTOR

DC MOTOR
A-Z4 SERIES

www.alliancemotori.com

DC Motor - A-Z4 Series

AllianceMotori

Type Designation

A-Z4 - 200 - 2 1

- Code for end shield *
- Code for armature core length **
- Center height (mm)
- Code for series ***

NOTE

*The digit 1,2 for short, and long end shield.

**As regards frame size A-Z4-112, the first digit means No. of poles, the second digit for core length.

***The letter 'Z' for d–c machine, the digit '4' for ordinal number of the fourth series design.

Electrical Performance

1. Data listed in the technical data sheet should be employed under the following conditions;

   a. Altitude above sea level maximal 1000m;
   b. Cooling air temperature maximal 40°C;
   c. Ambient conditions for motors should be free from acidic, alkali fumes or other aggressive gases which corrode insulation.
   d. Duty : Continuous (S1)
   e. Armature and field circuit for motors may be either operated on static thyristor controlled supplies, or from d-c generator.
   f. Performances of motors all comply with state standard GB755 (Rotating electrical machines - Rating and performance)

2. Standard rated voltage : 160V or 440V. Values for 220V or 400V and 660V or other voltage may be derived on request.

3. Rated speed : 3000, 1500, 1000, 750, 600, 500, 400, 300, 200 r/min, total nine grades.

   Decrease armature voltage to make speed regulating under constant torque, lowering down field voltage to make speed regulating at constant out-put. Speed regulating range; see technical data. The given multiple of load to ranted load of different speed range (see Appendix 1).

   The torque can be remained consta by reducing speed via armature voltage weakening below rates value. It is stipulated that armature speed range down to maximal 20 r/min at constant torque and stable running.

4. Separate excitation is basic excitation type of the motors. Nominal field voltage : 180V. Other excitation voltage are also acceptable on request.

   To assure the reliability of insulation of excitation system, the motor must be protected againse self-induced voltages by a release resistor connected in parallel with the field winding when the excitation circuit of the motor is interrupted. At rated field winding resistance (cold). While the field voltage is higher than nominal voltage, the value of shunt resistant may be lower than seven-times field resistance, otherwise higher than seven-times.

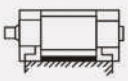
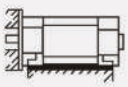
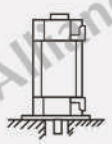
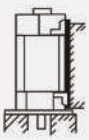
5. Both frame size A-Z4-315, A-Z4-355, A-Z4-400 and A-Z4-450 compensating windings are provender. For frame size A-Z4-250 and A-Z4-280 the motors are feasible with a compensating winding too.

6. A marked earthing terminal is provided for the motors.

7. The efficiencies listed in the data sheet are for rated output, voltage and speed, and include excitation losses, excluding separte ventilating fans.

Construction

1. Protection, mounting and type of construction :
   a. Types of protection of the whole series IP21S.
   b. Mounting modes comply with the State Standard GB/T997 stipulated as follows :

Mounting Type	For Use In
 IMB-3	A-Z4-100 ~ A-Z4-450
 IMB-35	A-Z4-100 ~ A-Z4-315
 IMV-1	A-Z4-100 ~ A-Z4-225 (The machines are always delivered with feet, even when they are flange–mounted)
 IMV-15	A-Z4-100 ~ A-Z4-315

2. Method of Cooling :
   Modes of cooling for all the motors are separate cooling, force ventilated. Cooling by frame radially mounted, separately powered ventilating fan, and attached an air filter. Modes of cooling for motors may be made into three types, namely IC06, IC17 and IC37.

   a. For A-Z4-100 ~ A-Z4-160, the blower is mounted on the non-drive side.
   b. For A-Z4-180 ~ A-Z4-450, the blower is mounted on the drive side.
   c. The required cooling air volume, air pressure and fan motor capacity areshown below : (Table 1)

DC Motor - A-Z4 Series

(Table 1)

Frame Size	(m³/hr) Air Volume	(Pa) Static Pressurfe	(kw) Motor Output
A-Z4-100	160	200	0.04
A-Z4-112	220	300	0.06
A-Z4-132	360	450	0.18
A-Z4-160	790	600	0.37
A-Z4-180	1200	940	1.1
A-Z4-200	1600	940	1.1
A-Z4-225	2880	1400	3.0
A-Z4-250	3000	1400	3.0
A-Z4-280	4000	1600	4.0
A-Z4-315	4680	1600	5.5
A-Z4-355	5200	1600	5.5
A-Z4-400	7200	1800	5.5
A-Z4-450	9000	1800	7.5

*All the ventilating fan motors are of there phase, two pole, 380V.

Motors with the following five methods of cooling can be also ordered, but prior consultations are needed.

a. Frame size 100 up to 250 may be made into the totally enclosed, frame cooled motor (IC410).
b. Frame size 160 up to 250 may be made into the separately ventilated motor with blower mounted on its non-drive side (IC05)
c. Frame size 100 up to 200 may be made into the self cooled open motor with its own fan mounted on the shaft (IC01).
d. Frame size 160 up to 355 may be made into totally enclosed motor with internal cooling air circulation by independent air-air heat exchanger mounted on it (IC666).
e. Frame size 160 up to 450 may be made into totally enclosed motor with independent air-water heat exchanger mounted on it (IC86W).

3. Standard terminal box mounting is on the right hand side seen frin the drive end of the motor. As an alternative, mounting at the top or on the left-hand side is possible on request.
4. Motors, if needed, can be fitted a tacho-generator or other accessories at the non-drive end.
5. Motors, when directly coupled, must use elastic or flexible couplings. The drive and driven units must be aligned with the utmost care.
Radial torces acting on the shaft extensions (belt or pinion driver) must not exceed the values given in the diagrams on the following pages (see Appendix 2).

Remarks:The ratings, output and speed range through field weakening etc. Listed below are merely for referenc. For purposes of incessantly adopting upto-date technology, the data listed in the following table are subject to relev.

Features and Uses

This series motors are found wide use for prime mover in various in various machinery, such as mill auxiliary in metallurgical industry, metal cutting machine tool, paper-making, print textile, painting dan dyeing, cement-making, plastic extruding machine woodwork machine, etc.

Outline mounting dimensions of the motors comply with IEC 72 standard, except for the axial distance between the mounting holes (dimension B)

Performances and technical requirements of the motors can be checked in accordance with IEC34-1 standard of the international electro technical commision, or DIN57530 Norm of the Deutsche Industrie-Norm.

The angular shape of the machine makes good use of space. The motors have laminated yokes, which means that when used on rectifier power supplies they can endure both current ripple and rapid current changes (load change) under dynamic condition. The stator design leads to high accuracy of pole spacing and consequent good communication.

Motors and class F insulated, with reliable insulating construction and impregnating process, ensuring stable dielectric performance and excellent heat dissipation.

The motors possess the features of small size. Smaller moment of inertia better dynamic characteristic, light weight, larger kW output, high efficiency and reliability, being able to match the current international advanced level.

The motors can be lastingly operated from fully controlled three phase bridge without a smoothing reactor. Motors for 160V may be operated on single phase bridge thyristor. In that case, a smoothing reactor, whose inductance is specified in the relevant technical data, should be inserted in the armature circuit to suppress ripple current.

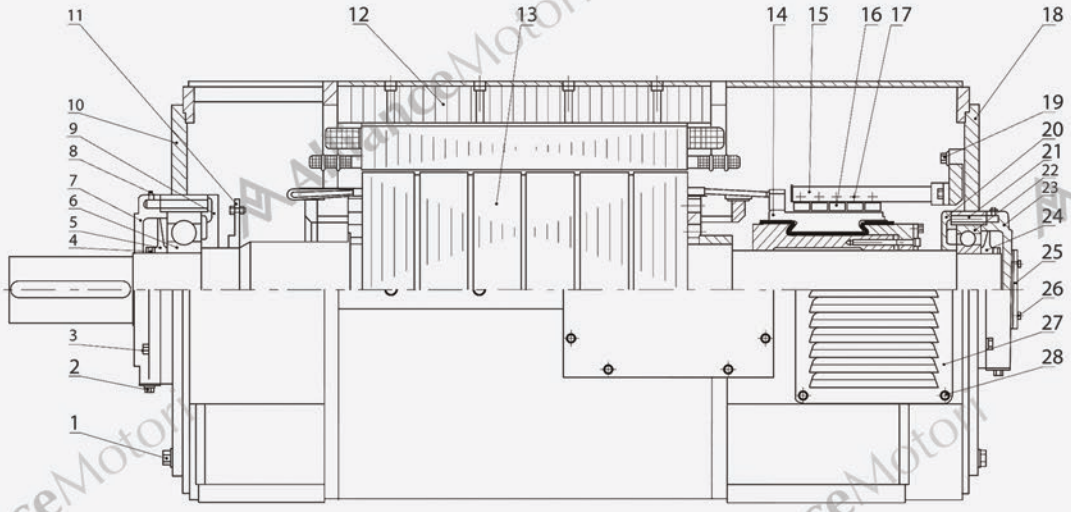
Notice on Order

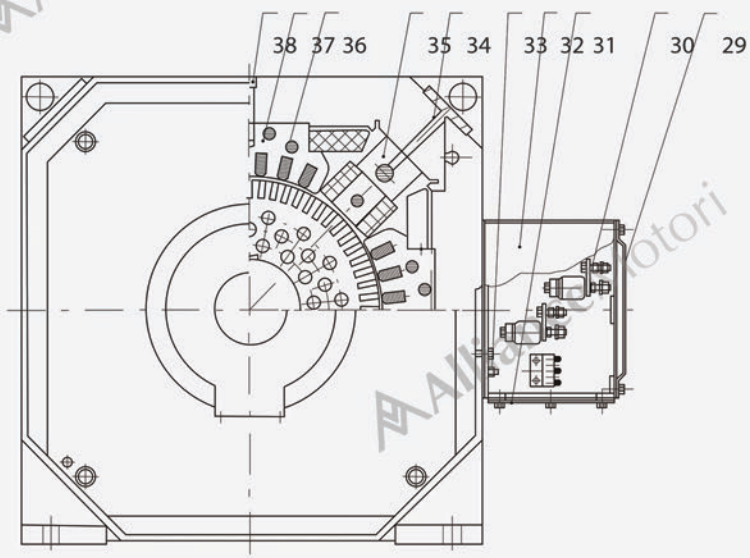
1. Please refer to our catalogue before ordering, if the types, ratings you need are not covered by our boodlet please contact us. Should you have particular needs, please offer us specific proposal in advance. Acontract or pilot production agreement may be made when the requirements are fixed by common consent.

2. Please write clearly the type, output, volts, speed, duty, type of construction, excitation, field voltage, No. Of shaft-end, location of terminal box, necessary accessories and spare parts, etc.

3. If the humid-tropical type required, please mark "TH" behind the original type number.

DC Motor - A-Z4 Series





1、	Fastening screw of endshield AS & NS**
2、	Oil–cap of ball bearing AS & NS
3、	Screw of bearing cover AS*
4、	Headless screw centrifugal disc AS & NS
5、	Centrifugal disc AS
6、	Ball bearing AS
7、	Bearing cover AS outer
8、	Oil nipple AS & NS
9、	Bearing cover AS inner
10、	Endshield AS
11、	Balancing disc AS
12、	Frame
13、	Armature
14、	Commutator
15、	Brush rocker
16、	Brush holder
17、	Carbon brush
18、	Endshield NS
19、	Fastening screw with washer NS
20、	Bearing cover NS inner
21、	Screw of bearing cover NS
22、	Ball bearing NS
23、	Bearing cover NS outer
24、	Cdntrifugal disc NS
25、	Endplate NS
26、	Screw of endplate NS
27、	Louvre NS
28、	Screw of louvre NS
29、	Terminal box lid
30、	Terminal
31、	Outlet plate with gasket–sealing
32、	Terminal box
33、	Grounding bolt
34、	Screw of compoie
35、	Compole
36、	Compensating winding
37、	Main pole
38、	Screw of main poie

Note:
*AS:Drive side
**NS:Non–driver side

Technical Data

(Table 2)

Type	Rated Output	Rated Speed	Speed with Field Weaking	Arm. Curr.	Field Power	Arm. Circuirt Resistance	Arm. Circuirt Inductance	Field. Inductance	Smoothing. Induct.	Eff.	Moment of Inertia	Wt.
	P_N	160V 400V 440V	nF	I_N	P_F	R	L_A	L_F	L_R		GD^2	
	kW	r/min	r/min	A	W	Ω(20°C)	mH	H	mH	%	kg. m²	kg
A-Z4-100-1	2. 2	1490	3000	17. 9	315	1. 19	11. 2	22	15	67. 8	0. 044	72
	1. 5	955	2000	13. 3		2. 17	21. 4	13	15	58. 5		
	4	2630	4000	12		2. 82	26	18		78. 9		
	4	2960	4000	10. 7						80. 1		
	2	1310	3000	6. 6		9. 12	86	18		68. 4		
	2. 2	1480	3000	6. 5						70. 6		
	1. 4	860	2000	5. 1		16. 76	163	18		60. 3		
	1. 5	990	2000	4. 77						63. 2		
A-Z4-112/2-1	3	1540	3000	24	320	0. 785	7. 1	14	20	69. 1	0. 072	100
	2. 2	975	2000	19. 6		1. 498	14. 1	13	20	62. 1		
	5. 5	2630	4000	16. 4		1. 933	17. 9	17		79. 9		
	5. 5	2940	4000	14. 7						81. 1		
	2. 8	1340	3000	9. 1		6	59	17		71. 2		
	3	1500	3000	8. 6						72. 8		
	1. 9	855	2000	6. 9		11. 67	110	13		61. 1		
	2. 2	965	2000	7. 1						63. 5		
A-Z4-112/2-2	4	1450	3000	31. 3	350	0. 567	6. 2	14	12	72. 6	0. 088	107
	3	1070	2000	24. 8		0. 934	10. 3	14	10	66. 8		
	7	2660	4000	20. 4		1. 305	14	19		82. 4		
	7. 5	2980	4000	19. 7						83. 5		
	3. 7	1320	3000	11. 7		4. 24	48. 5	19		74. 1		
	4	1500	3000	11. 2						76		
	2. 6	895	2000	9		7. 62	83	14		65. 1		
	3	1010	2000	9. 1						67. 3		
A-Z4-112/4-1	5. 5	1520	3000	42. 5	500	0. 38	3. 85	6. 8	6. 5	73	0. 128	106
	4	990	2000	33. 7		0. 741	7. 7	6. 7	4. 5	64. 9		
	10	2680	3500	29		0. 89	9	6. 8		82. 7		
	11	2950	3500	28. 8						83. 3		
	5	1340	1800	15. 7		3. 01	30. 5	6. 8		74. 3		
	5. 5	1480	1800	15. 4						75. 7		
	3. 7	855	1100	13		5. 78	60	6. 7		65. 2		
	4	980	1100	12. 2						68. 7		
A-Z4-112/4-2	5. 5	1090	2000	43. 5	570	0. 441	5. 1	7. 8	6	69. 5	0. 156	114
	13	2740	3600	37		0. 574	6. 4	5. 8		84. 4		
	15	3035	3600	38. 6						85. 4		
	6. 7	1330	1800	20. 6		2. 12	24. 1	7. 8		76. 8		
	7. 5	1480	1800	20. 6						78. 4		
	5	955	1200	16. 1		3. 46	40. 5	5. 8		71. 1		
	5. 5	1025	1200	15. 7						71. 9		

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Technical Data

Type	Rated Output	Rated Speed		Speed with Field Weaking	Arm. Curr.	Field Power	Arm. Circuirt Resistance	Arm. Circuirt Inductance	Field. Inductance	Eff.	Moment of Inertia	Wt.
	P_N	400V	440V	nF	I_N	P_F	R	L_A	L_F		GD^2	
	kW	r/min		r/min	A	W	Ω(20°C)	mH	H	%	kg. m²	kg
A-Z4-132-1	18. 5	2610		4000	52. 2	650	0. 368	5. 3	6. 5	85	0. 32	140
	18. 5		2850	4000	47. 1					85. 9		
	10	1330		2100	30. 1		1. 309	18. 9	8. 9	79. 4		
	11		1480	2200	29. 6					80. 9		
	7	865		1600	22. 7		2. 56	37. 5	6. 3	71. 9		
	7. 5		975	1600	21. 4					74. 5		
A-Z4-132-2	20	2800		3600	55. 4	730	0. 226	3. 65	10	87. 8	0. 4	160
	22		3090	3600	55. 3					88. 3		
	15	1360		2500	44. 5		0. 811	13. 5	7. 7	81. 2		
	15		1510	2500	39. 5					83. 4		
	10	905		1400	31. 1		1. 565	26	6	75. 6		
	11		995	1400	30. 5					77. 7		
A-Z4-132-3	27	2720		3600	74. 5	800	0. 1905	3. 4	21	88. 2	0. 48	180
	30		3000	3600	75					88. 6		
	18. 5	1390		2100	53. 2		0. 531	9. 8	6. 6	83. 6		
	18. 5		1540	2200	47. 6					84. 7		
	13. 5	945		1600	40. 5		0. 976	19. 4	6. 5	79. 4		
	15		1050	1600	40. 5					80. 5		
A-Z4-160-11	33	2710		3500	93. 4	820	0. 1835	3. 15	10	87. 4	0. 64	220
	37		3000							88. 5		
	19. 5	1350		3000	58. 8		0. 593	10. 4	7. 7	80. 4		
	22		1500							82. 6		
A-Z4-160 -22	40. 5	2710		3500	113	920	0. 1426	2. 7	10	88. 2	0. 76	242
	45		3000							89. 1		
-21	16. 5	900		2000	50. 5		0. 862	17. 7	6	77. 9		
	18. 5		1000							79. 4		
A-Z4-160-31 -32	49. 5	2710		3500	137	1050	0. 097	2. 07	11	89. 1	0. 88	268
	55		3010							90. 2		
	27	1350		3000	77. 8		0. 376	8. 3	10	84. 7		
	30		1500							85. 7		
-31	19. 5	900		2000	59. 1		0. 675	15. 2	6. 3	79. 1		
	22		1000							81. 7		
A-Z4-180-11	33	1350		3000	95. 4	1200	0. 29	5. 8	7. 1	84. 7	1. 52	326
	37		1500							86. 5		
	16. 5	670		1900	51. 4		0. 947	17. 6	5. 6	75. 5		
	18. 5		750							78. 1		
	13	540		1400	42. 4		1. 264	25	5. 6	73		
	15		600							74. 1		

Technical Data

Type	Rated Output	Rated Speed		Speed with Field Weaking	Arm. Curr.	Field Power	Arm. Circuirt Resistance	Arm. Circuirt Inductance	Field. Inductance	Eff.	Moment of Inertia	Wt.
	P_N	400V	440V	nF	I_N	P_F	R	L_A	L_F		GD^2	
	kW	r/min		r/min	A	W	Ω(20°C)	mH	H	%	kg. m²	kg
A-Z4-180-21 -22	67	2710		3400	185	1400	0. 0555	1. 16	6. 9	89. 5	1. 72	350
	75		3000							90. 7		
-21	40. 5	1350		2800	115		0. 2125	4. 65	6. 6	85. 8		
	45		1500							87		
-21	27	900		2000	78. 7		0. 419	9. 3	7. 3	82. 2		
	30		1000							83. 7		
-21	19. 5	670		1400	60. 3		0. 756	15. 7	7. 1	77. 3		
	22		750							79. 7		
-21	16. 5	540		1600	52		1. 003	21. 9	5	73. 8		
	18. 5		600							76. 8		
A-Z4-180-31	33	900		2000	96. 6	1500	0. 332	7. 7	6. 6	82. 8	1. 92	380
	37		1000							83. 6		
	19. 5	540		1250	61. 8		0. 801	19	6. 6	74. 8		
	22		600							76. 6		
A-Z4-180-41 -42	81	2710		3200	221	1700	0. 051	1. 16	12	91	2. 2	410
	90		3000							91. 3		
-41	50	1350		3000	139		0. 1417	3. 2	5. 7	87. 5		
	55		1500							87. 7		
	27	670		2000	79. 5		0. 459	10. 4	6. 3	80. 4		
	30		750							81. 1		
A-Z4-200 -12	99	2710		3000	271	1400	0. 0373	0. 83	7. 62	90. 2	3. 68	485
	110		3000							91. 6		
-11	40. 5	900		2000	118		0. 2653	8. 4	7. 01	83. 4		
	45		1000							85. 5		
-11	33	670		1600	99		0. 369	10. 6	7. 77	80. 2		
	37		750							82. 9		
-11	19. 5	450		1000	63. 5		0. 93	21. 9	7. 3	72. 2		
	22		500							77. 4		
A-Z4-200 -21	67	1350		3000	188	1500	0. 0885	2. 8	6. 78	88. 7	4. 2	530
	75		1500							89. 6		
-21	27	540		1000	82		0. 535	14	9. 64	78. 8		
	30		600							80. 4		
A-Z4-200 -32	119	2710		3200	322	1750	0. 0266	0. 79	10. 9	91. 7	4. 8	580
	132		3000							92. 4		
-31	81	1350		2800	224		0. 0771	2. 6	5. 61	88. 7		
	90		1500							90		
-31	49. 5	900		2000	141		0. 1751	4. 8	8. 54	85. 6		
	55		1000							87. 1		
-31	40. 5	670		1400	119		0. 283	8. 5	8. 35	82. 5		
	45		750							84. 1		
-31	33	540		1200	101		0. 42	12. 2	8. 42	79. 6		
	37		600							82		
-31	27	450		750	83. 5		0. 598	17. 1	8. 4	77. 5		
	30		500							79. 5		

DC Motor - A-Z4 Series

Technical Data

Type	Rated Output	Rated Speed		Speed with Field Weaking	Arm. Curr.	Field Power	Arm. Circuirt Resistance	Arm. Circuirt Inductance	Field. Inductance	Eff.	Moment of Inertia	Wt.
	P_N	400V	440V	nF	I_N	P_F	R	L_A	L_F		GD^2	
	kW	r/min		r/min	A	W	Ω(20°C)	mH	H	%	kg. m²	kg
A-Z4-225-11	99	1360		3000	276	2300	0. 0664	2. 1	4. 45	87. 9	5	680
	110		1500							89. 4		
	67	900		2000	193		0. 1406	4. 9	4. 28	84. 4		
	75		1000							86. 5		
	49	680		1300	146		0. 2433	8. 7	5. 77	81. 2		
	55		750							84		
	40	540		1200	123		0. 356	9. 5	6. 38	78. 2		
	45		600							80. 8		
	33	450		1000	103		0. 476	15. 2	6. 10	76. 5		
	37		500							78. 8		
A-Z4-225-21	49	540		1000	148	2470	0. 2648	9. 5	4. 14	79. 3	5. 6	740
	55		600							82. 4		
	40	450		1000	125		0. 397	13. 7	5. 41	76. 6		
	45		500							78. 9		
A-Z4-225-31	119	1360		2400	327	2580	0. 0454	1. 5	5. 33	89. 3	6. 2	800
	132		1500							90. 5		
	81	900		2000	227		0. 093	3. 4	5. 3	86. 9		
	90		1000							88		
	67	680		2250	197		0. 167	5. 1	5. 44	82. 5		
	75		750							85. 1		
A-Z4-250 -12	144	1360		2100	399	2500	0. 0444	1. 3	4. 29	88. 8	8. 8	890
	160		1500							89. 9		
A-Z4-250 -11	99	900		2000	281		0. 0911	2. 4	4. 55	86. 2		
	110		1000							88. 1		
A-Z4-250-21	167	1360		2200	459	2750	0. 0325	0. 91	4. 28	89. 8	10	970
	185		1500							90. 5		
	81	680		2250	234		0. 1306	3. 9	5. 41	83. 2		
	90		750							85. 2		
A-Z4-250-31	180	1360		2400	493	2850	0. 0281	0. 87	5. 32	90. 4	11. 2	1070
	200		1500							91. 5		
	119	900		2000	334		0. 0668	1. 7	5. 46	87. 4		
	132		1000							89. 1		
	67	540		2000	204		0. 202	4. 0	4. 0	80. 8		
	75		600							84. 6		
	49	450		1500	152		0. 305	7. 3	5. 1	78. 5		
	55		500							82. 4		
A-Z4-250-41 -41	198	1360		2400	539	3000	0. 0237	0. 93	6. 19	91	12. 8	1180
	220		1500							91. 7		
-42	144	900		2000	401		0. 0485	1. 9	4. 53	88. 0		
	160		1000							89. 2		
	99	680		1900	283		0. 0102	2. 6	5. 3	85. 8		
	110		750							87. 4		
-41	81	540		1600	236		0. 141	4. 7	6. 36	83. 4		
	90		600							85		
-41	67	450		1500	201		0. 195	5. 1	4. 97	80		
	75		500							83. 4		

Technical Data

Type	Rated Output	Rated Speed		Speed with Field Weaking	Arm. Curr.	Field Power	Arm. Circuirt Resistance	Arm. Circuirt Inductance	Field. Inductance	Eff.	Moment of Inertia	Wt.
	P_N	400V	440V	nF	I_N	P_F	R	L_A	L_F		GD²	
	kW	r/min		r/min	A	W	Ω(20°C)	mH	H	%	kg. m²	kg
A-Z4-280-11	226	1355		2000	614	3100	0. 02134	0. 69	4. 58	90. 9	16. 4	1280
	250		1500							91. 6		
-22	253	1355		1800	684	3500	0. 01796	0. 77	5. 3	91. 5	18. 4	1400
	280		1500							92. 1		
-21	180	900		2000	498		0. 0373	1. 2	4. 46	89. 1		
A-Z4-280	200		1000							90. 1		
	119	675		1600	333		0. 0662	2. 3	4. 37	87. 1		
-21	132		750							88. 6		
-21	99	540		1500	281		0. 093	3. 1	4. 57	84. 7		
	110		600							86		
	284	1360		1800	768		0. 01493	0. 59	6. 94	91. 7		
-32	315		1500							92. 6		
	198	900		2000	545		0. 0314	1. 1	5. 54	89. 7		
-31	220		1000							90. 6		
	144	675		1700	402		0. 0532	2	5. 47	87. 8		
A-Z4-280-32	160		750							89. 1	21. 2	1550
	118	540		1000	339		0. 0839	2. 6	5. 77	85. 4		
-31	132		600							86. 8		
	80	450		1400	234		0. 1377	5. 3	9. 03	84. 1		
-31	90		500							85. 4		
	225	900		1800	616		0. 02545	0. 96	5. 29	90. 2		
-42	250		1000							91. 1		
	166	675		1900	464		0. 0457	1. 7	5. 19	88. 1		
A-Z4-280-41	185		750							89. 4	24	1700
	98	450		1000	282		0. 0993	3. 7	6. 86	85. 1		
-41	110		500							86. 9		
	321	1360		1800	865		0. 015	0. 39	8. 64	92. 2		
	355		1500							92. 8		
	253	900		1600	690		0. 02355	0. 46	5. 06	90. 4		
A-Z4-315-12	280		1000							91. 6		
	180	680		1900	500		0. 04371	0. 83	4. 97	88. 4		
	200		750			3850				89. 4	21. 2	1890
	144	540		1900	409		0. 06919	1. 3	7. 6	86. 4		
	160		600							87. 4		
	118	450		1600	344		0. 1	2. 3	9. 43	84. 4		
A-Z4-315-11	132		500							86. 3		
	98	360		1200	294		0. 1415	2. 9	9. 96	81. 7		
	110		400							84. 3		

Type	Rated Output	Rated Speed		Speed with Field Weaking	Arm. Curr.	Field Power	Arm. Circuirt Resistance	Arm. Circuirt Inductance	Field. Inductance	Eff.	Moment of Inertia	Wt.
	P_N	400V	440V	nF	I_N	P_F	R	L_A	L_F		GD^2	
	kW	r/min		r/min	A	W	Ω(20°C)	mH	H	%	kg. m^2	kg
A-Z4-315-22	284	900		1600	772	4350	0. 02034	0. 49	5. 91	91	24	2080
	315		1000							91. 5		
	225	680		1600	624		0. 03392	0. 74	18. 8	88. 7		
	250		750							89. 6		
A-Z4-315-21	166	540		1600	468		0. 05382	1. 2	25	87. 2		
	185		600							88. 5		
	143	450		1500	413		0. 076	1. 5	19	84. 7		
	160		500							86		
A-Z4-315-32	320	900		1600	867	4650	0. 01658	0. 39	23. 1	91. 0	27. 2	2290
	355		1000							92. 0		
	252	680		1600	698		0. 03043	0. 82	21. 5	89. 1		
	280		750							89. 8		
	180	540		1500	501		0. 04536	0. 95	31. 6	88. 2		
	200		600							89. 4		
A-Z4-315-31	118	360		1200	344		0. 1002	2. 1	23. 3	83. 2		
	132		400							85. 3		
A-Z4-315-42	361	900		1400	971	5200	0. 01302	0. 33	29	92. 1	30. 8	2520
	400		1000							92. 7		
	284	680		1600	778		0. 02364	0. 67	20. 8	90		
	315		750							90. 7		
	225	540		1600	626		0. 03554	0. 87	21. 9	88. 3		
	250		600							89		
A-Z4-315-41	166	450		1500	468		0. 055	1. 4	37. 4	87. 3		
	185		500							88. 3		
	143	360		1200	416		0. 0803	1. 8	22. 2	84		
	160		400							85. 3		
A-Z4-355-12	406	900		1500	1094	4700	0. 01259	0. 36	37. 6	91. 8	42	2890
	450		1000							92. 8		
	321	680		1500	877		0. 02087	0. 59	28. 1	90. 4		
	355		750							91. 2		
A-Z4-355-11	253	540		1500	697		0. 02952	0. 91	22	89. 2		
	280		600							90. 2		
	180	450		1500	506		0. 0502	1. 5	8. 91	87. 6		
	200		500							88. 9		
	166	360		1200	478		0. 066	1. 8	22. 4	84. 9		
	185		400							85. 9		

Technical Data

Type	Rated Output	Rated Speed		Speed with Field Weaking	Arm. Curr.	Field Power	Arm. Circuirt Resistance	Arm. Circuirt Inductance	Field. Inductance	Eff.	Moment of Inertia	Wt.
	P_N	400V	440V	nF	I_N	P_F	R	L_A	L_F		GD^2	
	kW	r/min		r/min	A	W	Ω(20°C)	mH	H	%	kg. m²	kg
A-Z4-355-22	361	680		1600	978	5600	0. 01583	0. 44	15. 6	90. 8	46	3170
	400		750							91. 7		
	284	540		1500	783		0. 02676	0. 81	34. 7	89. 5		
	315		600							90. 5		
	225	450		1600	624		0. 03462	1. 0	20. 5	88. 4		
	250		500							89. 5		
A-Z4-355-21	180	360		1200	511		0. 05642	1. 6	35. 5	86. 3		
	200		400							87. 5		
A-Z4-355-32	406	680		1100	1098	6000	0. 01362	0. 39	19	91. 3	52	3490
	450		750							92. 1		
	320	540		1600	877		0. 02153	0. 7	24. 3	89. 9		
	355		600							91		
	284	450		1500	789		0. 0293	0. 91	18. 5	88. 3		
	315		500							89. 5		
A-Z4-355-31	197	360		1200	559		0. 04957	1. 3	34. 6	86. 6		
	220		400							88. 4		
A-Z4-355-42	361	540		1300	985	6500	0. 01836	0. 64	29. 6	90. 5	60	3840
	400		600							91. 2		
	320	450		1200	882		0. 02361	0. 76	17. 7	88. 9		
	355		500							89. 2		
	225	360		1200	627		0. 0358	1. 2	17. 7	87. 5		
	250		400							88. 8		
A-Z4-400-21 -22	435	680		1400	1175	5700	0. 0139	0. 33	7. 85	90. 8	74	4500
	480		750							92		
	235	360		1200	675		0. 0497	1	7. 3	84. 8		
	260		400							86. 3		
-21	180	270		900	537		0. 0804	1. 6	7. 44	81. 8		
	200		300							83. 1		

DC Motor - A-Z4 Series

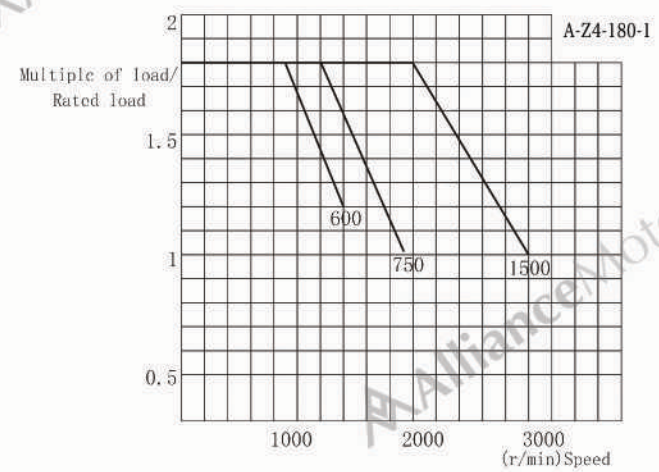
Technical Data

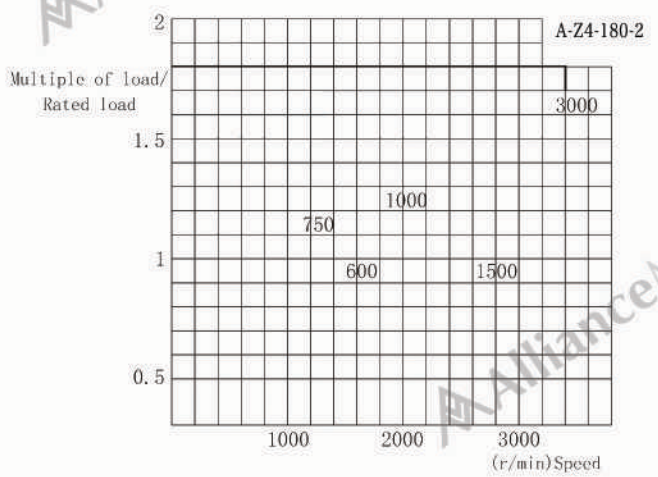
Type	Rated Output	Rated Speed		Speed with Field Weaking	Arm. Curr.	Field Power	Arm. Circuirt Resistance	Arm. Circuirt Inductance	Field. Inductance	Eff.	Moment of Inertia	Wt.
	P_N	400V	440V	nF	I_N	P_F	R	L_A	L_F		GD²	
	kW	r/min		r/min	A	W	Ω(20°C)	mH	H	%	kg. m²	kg
-32	500	680		1400	1340		0. 0112	0. 3	9. 57	91. 2		
	550		750							92. 5		
-32	400	540		1300	1083		0. 0162	0. 35	4. 51	89. 9		
	440		600							91. 1		
A-Z4-400-32	344	450		1300	952	6400	0. 0248	0. 58	6	88. 1	84	4900
	380		500							89. 5		
-31	270	360		1200	768		0. 03821	0. 82	6. 11	86		
	300		400							87. 5		
-31	208	270		900	611		0. 0659	1. 5	5. 89	82. 8		
	230		300							84		
-42	435	540		1300	1175		0. 0134	0. 32	5. 54	90. 8		
	480		600							92		
-42	390	450		1400	1070		0. 0201	0. 47	6. 86	88. 6		
	430		500							90		
A-Z4-400-41	316	360		1200	880	7100	0. 0274	0. 73	5. 41	87. 7	94	5300
	350		400							89		
-41	235	270		900	676		0. 0508	1. 2	5. 38	84		
	260		300							85. 4		
-22	472	540		1200	1286		0. 0133	0. 29	10. 2	90. 8		
	520		600							92. 1		
-22	408	450		1400	1114		0. 0159	0. 41	7. 99	90		
	450		500			6500				91. 3	138	5600
A-Z4-450-22	362	360		1200	1010		0. 0232	0. 61	5. 79	88. 1		
	400		400							89. 4		
-21	253	270		900	720		0. 0415	1	5. 82	85. 8		
	280		300							87. 1		
-32	500	540		1200	1358		0. 0134	0. 39	19. 6	90. 8		
	550		600							92		
-32	453	450		1300	1228		0. 0145	0. 32	7. 36	90		
	500		500							91. 4		
A-Z4-450-32	408	360		1200	1130	7100	0. 0205	0. 53	7. 17	88. 5	156	6000
	450		400							89. 7		
-32	309	270		900	875		0. 0342	0. 83	4. 8	85. 9		
	340		300							87. 1		
-31	200	180		600	595		0. 0751	1. 9	9. 09	81. 3		
	220		200							82. 6		
-42	545	540		1100	1492		0. 0134	0. 51	28. 2	90. 3		
	600		600							91. 5		
-42	500	450		1100	1367		0. 0145	0. 43	18. 6	90		
	550		500							91. 4		
A-Z4-450-42	453	360		1200	1254	7800	0. 0178	0. 42	5. 85	88. 9	174	6700
	500		400							90		
-42	345	270		900	972		0. 0275	0. 81	5. 62	86. 8		
	380		300							88. 1		
-41	235	180		600	698		0. 0612	1. 7	5. 73	81. 7		
	260		200							83		

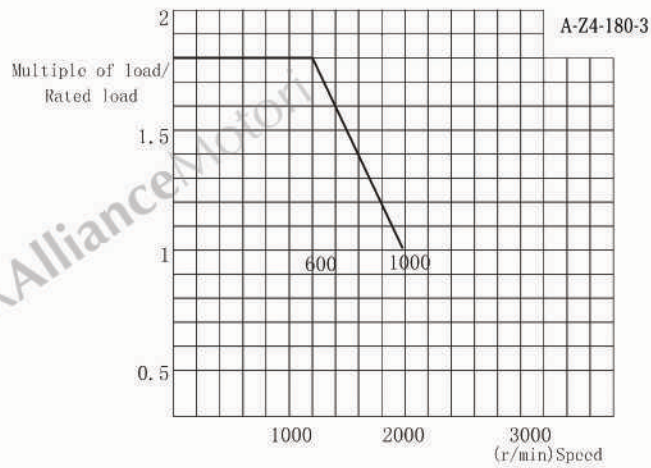
Illustration (Appendix 1)

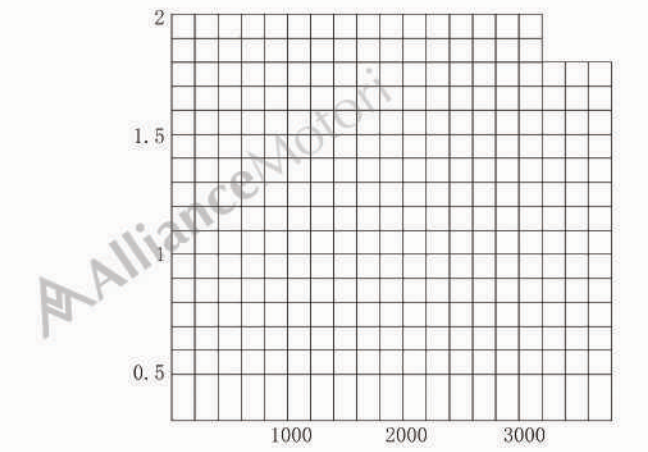
1. Multiple of load implies the multiple of armature current (armature circuit Characteristic factor)
2. The figures beside the curves in the drawing are the rated speed of Motors.
3. The multiple of load under speed Regulation via field weakening for frame size Z4-160 and below may consult with the manufacturer.

Appendix 1 Armature Circuit Characteristic Factor



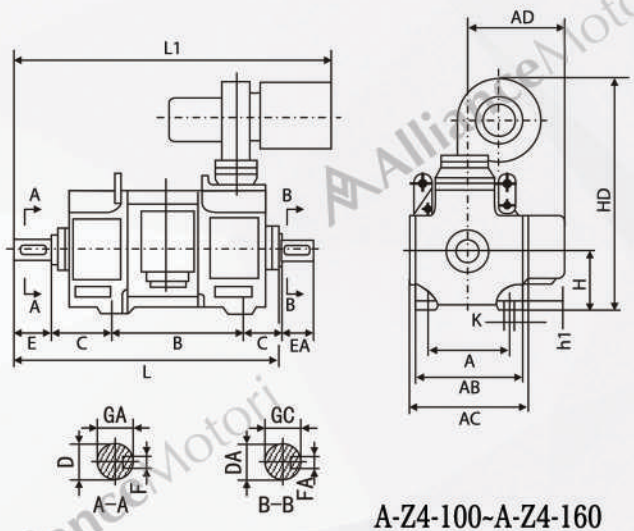




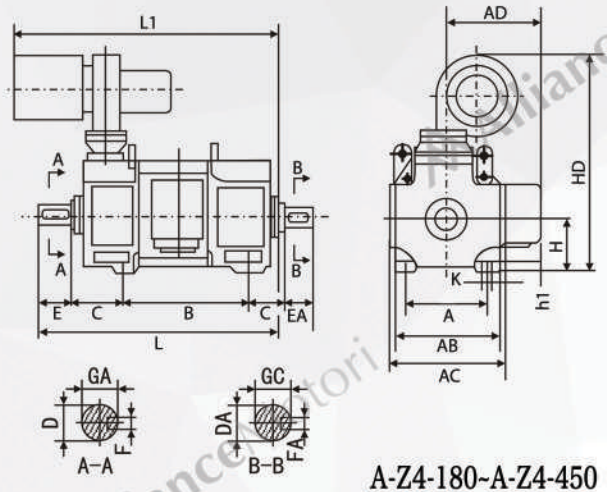


DC Motor - A-Z4 Series

Figure. 01



A-Z4-100~A-Z4-160

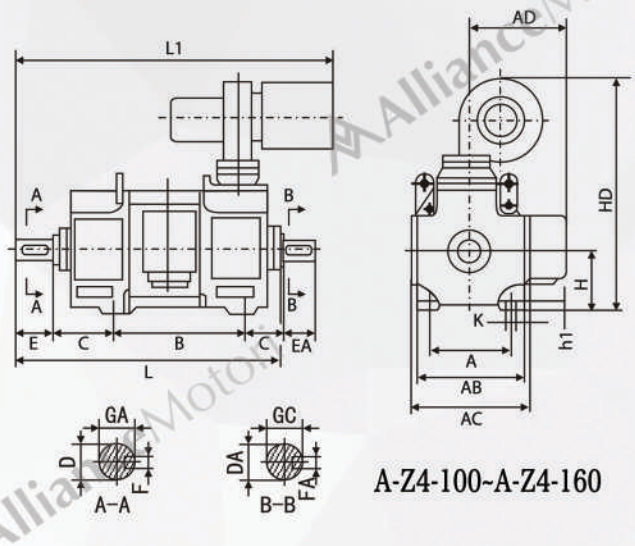


A-Z4-180~A-Z4-450

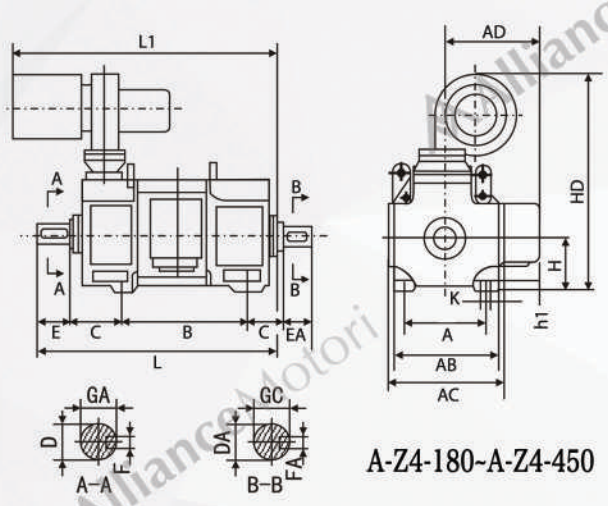
(Table 3) mm

Type	Mounting Dimensions in Millimeter													Outline Dimensions in Millimeter						
	A	B	C	D	E	F	GA	DA	EA	FA	GC	H	K	AB	AC	AD	HD	L	L1	h1
A-Z4-200-11	318	566	133	65	140	18	69	65	140	18	69	200	19	396	430	355	779	977	1158	18
A-Z4-200-12		614																1025	1206	
A-Z4-200-21		606																1017	1198	
A-Z4-200-22		654																1065	1246	
A-Z4-200-31		686																1097	1278	
A-Z4-200-32		734																1145	1326	
A-Z4-200-41		756																1167	1348	
A-Z4-200-42		804																1215	1396	
A-Z4-225-11	356	701	149	75	140	20	79.5	75	140	20	79.5	225	19	440	474	398	981	1140	1605	20
A-Z4-225-12		761																1200	1665	
A-Z4-225-21		751																1190	1655	
A-Z4-225-22		811																1250	1715	
A-Z4-225-31		811																1250	1715	
A-Z4-225-32		871																1310	1775	
A-Z4-250-11	406	715	168	85	170	22	90	75	140	20	79.5	250	24	490	524	432	1031	1225	1657	25
A-Z4-250-12		775																1285	1717	
A-Z4-250-21		765																1275	1707	
A-Z4-250-22		825																1335	1767	
A-Z4-250-31		825																1335	1767	
A-Z4-250-32		885																1395	1827	
A-Z4-250-41		895																1405	1837	
A-Z4-250-42		955																1465	1897	

Figure. 01



A-Z4-100~A-Z4-160



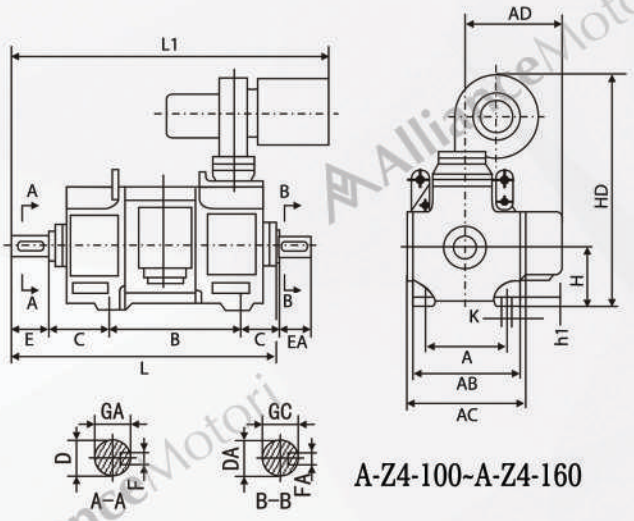
A-Z4-180~A-Z4-450

(Table 3) mm

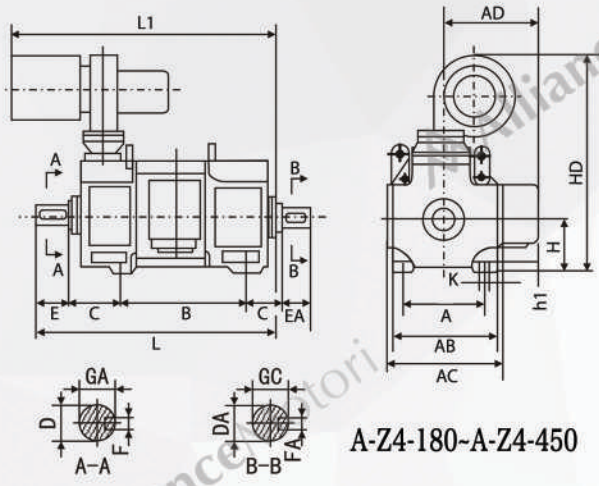
Type	Mounting Dimensions in Millimeter													Outline Dimensions in Millimeter						
	A	B	C	D	E	F	GA	DA	EA	FA	GC	H	K	AB	AC	AD	HD	L	L1	h1
A-Z4-280-11	457	762	190	95	170	25	100	85	170	22	90	280	24	550	584	462	1130	1315	1748	25
A-Z4-280-12		852																1405	1838	
A-Z4-280-21		822																1375	1808	
A-Z4-280-22		912																1465	1898	
A-Z4-280-31		892																1445	1878	
A-Z4-280-32		982																1535	1968	
A-Z4-280-41		972																1525	1958	
A-Z4-280-42		1062																1615	2048	
A-Z4-280-51		1062																1615	2048	
A-Z4-280-52		1152																1705	2138	
A-Z4-315-11	508	887	216	100	210	28	106	95	170	25	100	315	28	620	654	497	1221	1532	1897	30
A-Z4-315-12		977																1622	1987	
A-Z4-315-21		967																1612	1977	
A-Z4-315-22		1057																1702	2067	
A-Z4-315-31		1057																1702	2067	
A-Z4-315-32		1147																1792	2157	
A-Z4-315-41		1157																1802	2167	
A-Z4-315-42		1247																1892	2257	
A-Z4-355-11	610	968	254	110	210	28	116	110	210	28	116	355	28	700	734	701	1301	1689	2010	30
A-Z4-355-12		1058																1779	2100	
A-Z4-355-21		1058																1779	2100	
A-Z4-355-22		1148																1869	2190	
A-Z4-355-31		1158																1879	2200	
A-Z4-355-32		1248																1969	2290	
A-Z4-355-41		1268																1989	2310	
A-Z4-355-42		1358																2079	2400	

DC Motor - A-Z4 Series

Figure. 01



A-Z4-100~A-Z4-160



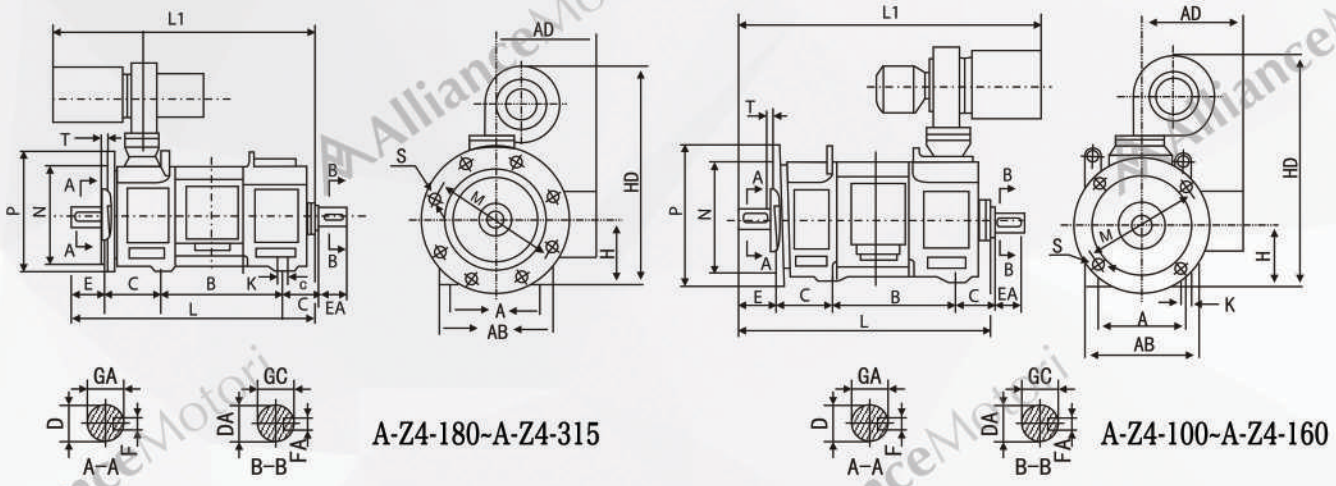
A-Z4-180~A-Z4-450

(Table 3) mm

Type	Mounting Dimensions in Millimeter													Outline Dimensions in Millimeter						
	A	B	C	D	E	F	GA	DA	EA	FA	GC	H	K	AB	AC	AD	HD	L	L1	h1
A-Z4-400-11	686	959	280	120	210	32	127	120	210	32	127	400	35	790	830	750	1620	1732	1817	35
A-Z4-400-12		1079																1852	1937	
A-Z4-400-21		1039																1812	1897	
A-Z4-400-22		1159																1932	2017	
A-Z4-400-31		1129																1902	1987	
A-Z4-400-32		1249																2022	2107	
A-Z4-400-41		1229																2002	2087	
A-Z4-400-42		1349																2122	2207	
A-Z4-450-11	800	1061	315	140	250	36	148	140	250	36	148	450	35	890	924	800	1720	1944	2050	40
A-Z4-450-12		1181																2064	2070	
A-Z4-450-21		1151																2034	2140	
A-Z4-450-22		1271																2154	2260	
A-Z4-450-31		1251																2134	2240	
A-Z4-450-32		1371																2254	2360	
A-Z4-450-41		1361		160	300	40	169											2294	2350	
A-Z4-450-42		1481																2414	2470	
A-Z4-450-51		1481																2414	2470	
A-Z4-450-52		1601																2534	2590	

All type can be provided with type ZYS-A d-c tachogenerator made by our factory. In that case, The dimension L of the motor length with inerease by 300mm.

Figure. 02



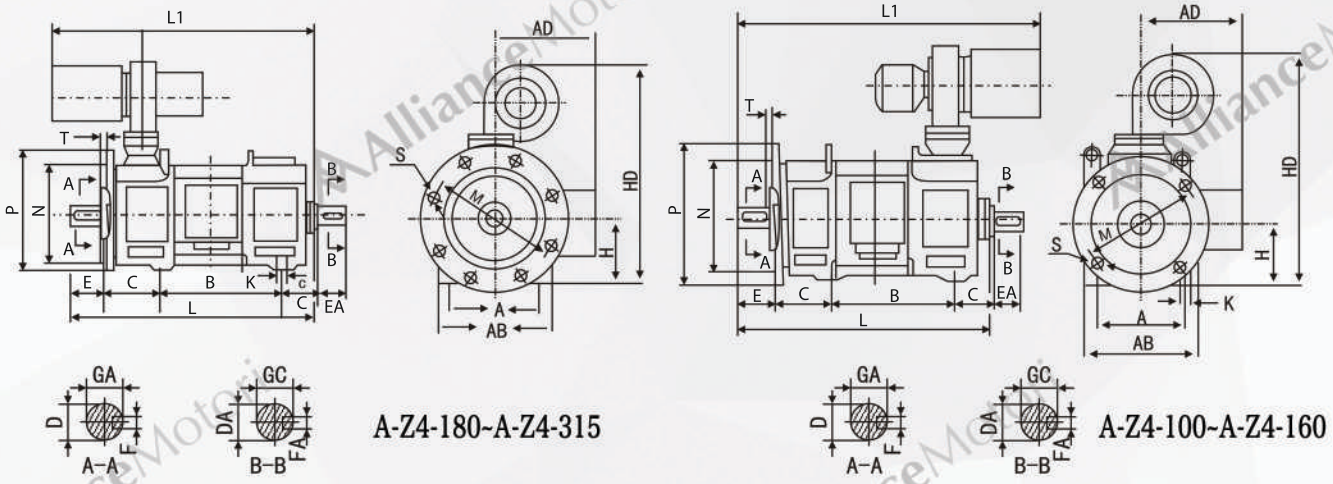
A-Z4-180~A-Z4-315

A-Z4-100~A-Z4-160

Horizontal Flanged Foot-mounted

(Table 4)

Type	Mounting Dimensions in Millimeter																		Outline Dimensions in Millimeter							
	A	B	C	D	E	F	GA	DA	EA	FA	GC	H	K	M	N	S	Holes	T	P	AB	AC	AD	HD	L	L1	h1
A-Z4-100-1	160	318	63	24	50	8	27	24	50	8	27	100	12	215	180	15	4	4	250	197	234	179	398	500	580	10
A-Z4-100-2		358																						540	620	
A-Z4-112/2-1	190	337	70	28	60	8	31	28	60	8	31	112	12	215	180	15	4	4	250	221	255	202	452	544	612	10
A-Z4-112/2-2		367																						574	642	
A-Z4-112/2-3		407																						614	682	
A-Z4-112/2-4		477																						684	752	
A-Z4-112/4-1	190	347	70	32	80	10	35	32	80	10	35	112	12	215	180	15	4	4	250	221	255	202	452	573	642	10
A-Z4-112/4-2		387																						613	682	
A-Z4-112/4-3		437																						663	732	
A-Z4-112/4-4		497																						723	792	
A-Z4-132-1	216	355	89	38	80	10	41	38	80	10	41	132	12	265	230	15	4	4	300	260	295	240	527	619	814	12
A-Z4-132-2		405																						669	864	
A-Z4-132-3		465																						729	924	
A-Z4-132-4		545																						809	1004	
A-Z4-160-11	254	411	108	48	110	14	51.5	48	110	14	51.5	160	15	300	250	19	4	5	350	316	346	283	625	744	953	14
A-Z4-160-12		476																						809	986	
A-Z4-160-21		451																						784	993	
A-Z4-160-22		516																						849	1026	
A-Z4-160-31		501																						834	1043	
A-Z4-160-32		566																						899	1076	
A-Z4-160-41		561																						894	1103	
A-Z4-160-42		626																						959	1136	
A-Z4-160-51		631																						964	1173	
A-Z4-160-52		696																						1029	1206	



A-Z4-180~A-Z4-315

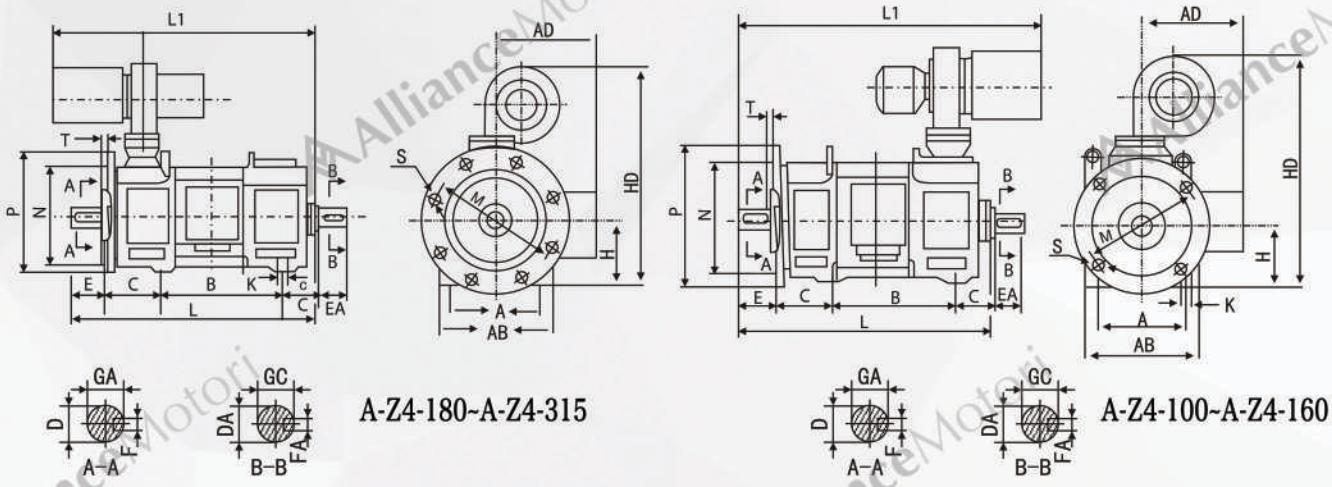
A-Z4-100~A-Z4-160

Horizontal Flanged Foot-mounted

Type	Mounting Dimensions in Millimeter																		Outline Dimensions in Millimeter							
	A	B	C	D	E	F	GA	DA	EA	FA	GC	H	K	M	N	S	Holes	T	P	AB	AC	AD	HD	L	L1	h1
A-Z4-180-11	279	436	121	55	110	16	59	55	110	16	59	180	15	350	300	19	4	5	400	356	390	305	731	794	1022	16
A-Z4-180-12		501																						859	1087	
A-Z4-180-21		476																						834	1062	
A-Z4-180-22		541																						899	1127	
A-Z4-180-31		526																						884	1112	
A-Z4-180-32		591																						949	1177	
A-Z4-180-41		586																						944	1172	
A-Z4-180-42		651																						1009	1237	
A-Z4-180-51		656																						1014	1242	
A-Z4-180-52		721																						1079	1307	

Type	Mounting Dimensions in Millimeter																		Outline Dimensions in Millimeter						
	A	B	C	D	E	F	GA	DA	EA	FA	GC	H	K	M	N	S	Holes	T	P	AB	AC	AD	HD	L	h1
A-Z4-200-11	318	566	133	65	140	18	69	65	140	18	69	200	19	400	350	19	8	5	450	396	430	355	779	977	1158
A-Z4-200-12		614																						1025	1206
A-Z4-200-21		606																						1017	1198
A-Z4-200-22		654																						1065	1246
A-Z4-200-31		686																						1097	1278
A-Z4-200-32		734																						1145	1326
A-Z4-200-41		756																						1167	1348
A-Z4-200-42		804																						1215	1396
A-Z4-225-11	356	701	149	75	140	20	79.5	75	140	20	79.5	225	19	500	450	19	8	5	550	440	474	398	981	1140	1605
A-Z4-225-12		761																						1200	1665
A-Z4-225-21		751																						1190	1655
A-Z4-225-22		811																						1250	1715
A-Z4-225-31		811																						1250	1715
A-Z4-225-32		871																						1310	1775

Figure. 02



A-Z4-180~A-Z4-315

A-Z4-100~A-Z4-160

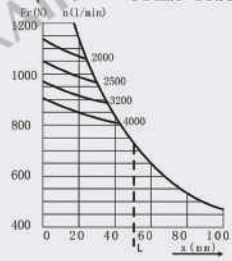
Horizontal Flanged Foot-mounted

Type	Mounting Dimensions in Millimeter																	Outline Dimensions in Millimeter						
	A	B	C	D	E	F	GA	DA	EA	FA	GC	H	K	M	N	S	Holes	T	P	AB	AC	AD	HD	L	h1
A-Z4-250-11	406	715	168	85	170	22	90	75	140	20	79.5	250	24	600	550	24	8	6	660	490	524	432	1031	1225	1657
A-Z4-250-12		775																						1285	1717
A-Z4-250-21		765																						1275	1707
A-Z4-250-22		825																						1335	1767
A-Z4-250-31		825																						1335	1767
A-Z4-250-32		885																						1395	1827
A-Z4-250-41		895																						1405	1837
A-Z4-250-42		955																						1465	1897
A-Z4-280-11	457	762	190	95	170	25	100	85	170	22	90	280	24	600	550	24	8	6	660	550	584	462	1130	1315	1748
A-Z4-280-12		852																						1405	1838
A-Z4-280-21		822																						1375	1808
A-Z4-280-22		912																						1465	1898
A-Z4-280-31		892																						1445	1878
A-Z4-280-32		982																						1535	1968
A-Z4-280-41		972																						1525	1958
A-Z4-280-42		1062																						1615	2048
A-Z4-280-51		1062																						1615	2048
A-Z4-280-52		1152																						1705	2138
A-Z4-315-11	508	887	216	100	210	28	106	95	170	25	100	315	28	740	680	24	8	6	800	620	654	497	1221	1532	1897
A-Z4-315-12		977																						1622	1987
A-Z4-315-21		967																						1612	1977
A-Z4-315-22		1057																						1702	2067
A-Z4-315-31		1057																						1702	2067
A-Z4-315-32		1147																						1792	2157
A-Z4-315-41		1157																						1802	2167
A-Z4-315-42		1247																						1892	2257

All type can be provided with type ZYS-A d-c tachogenerator made by our factory. In that case, The dimension L of the motor length with inerease by 300mm.

Additional radial forces drive end horizontal construction

Frame size:100



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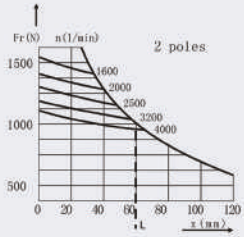

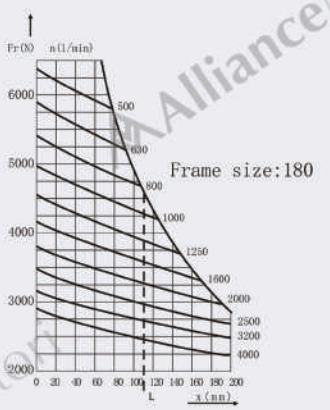

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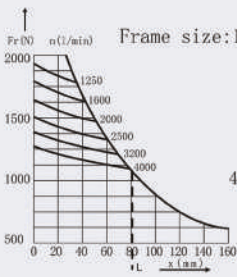

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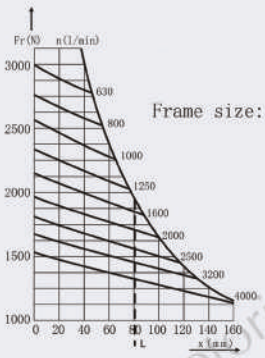
4poles



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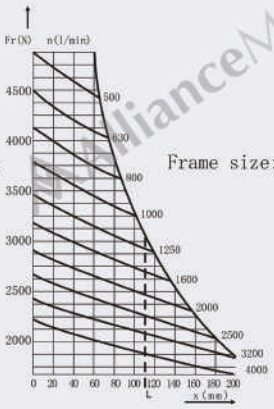

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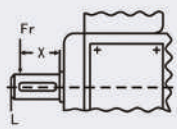
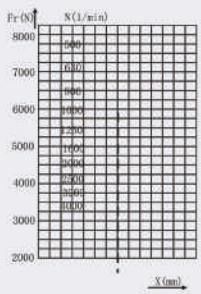
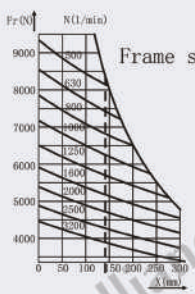
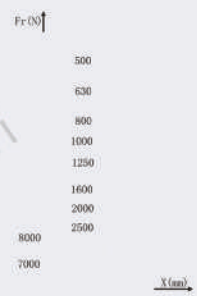


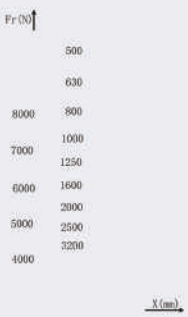
normal shaft end

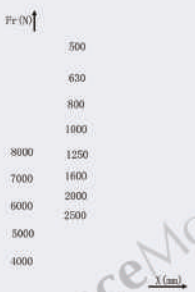
Additional radial forces drive end horizontal construction

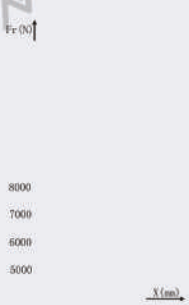




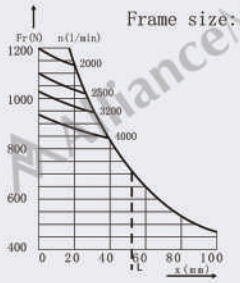


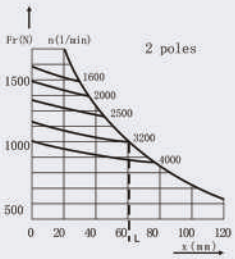


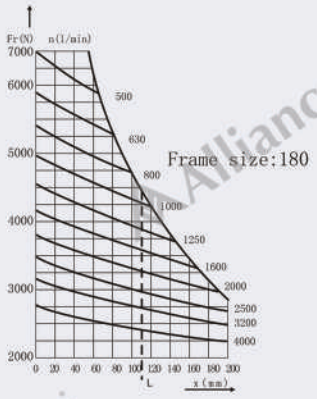


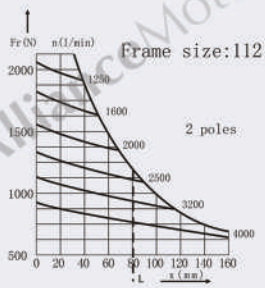


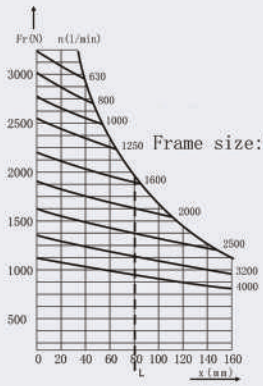
Additional radial forces drive end verticac construction

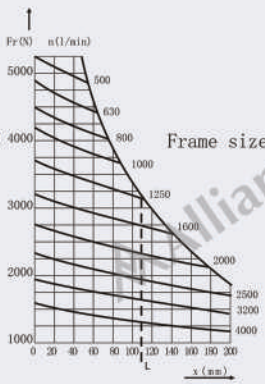


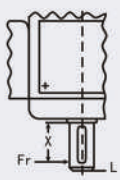






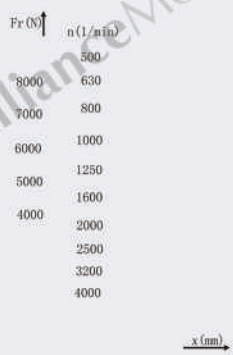


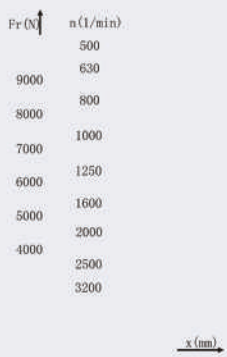


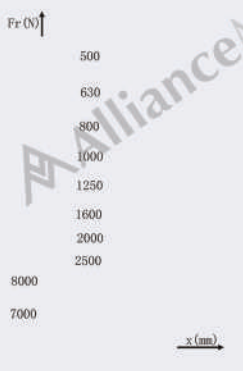


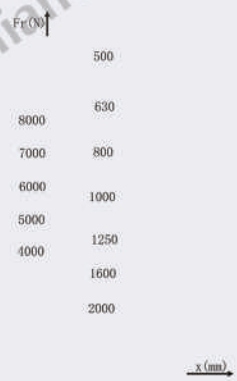
normal shaft end

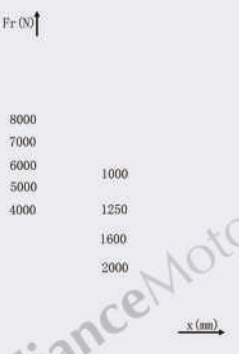
Additional radial forces drive end verticac construction

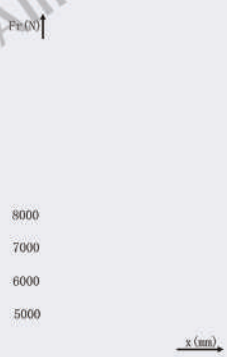












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