

A-Y3K Series

without fan

- Kiln Duty Motor

A-Y3K Series
3 PHASE MOTOR

AllianceMotori

Reference NO : **1D201002**

Product Name :

A-Y3K - 100 - 4 - 3 (380V 50Hz)

Product Type:

Kiln Duty Motor

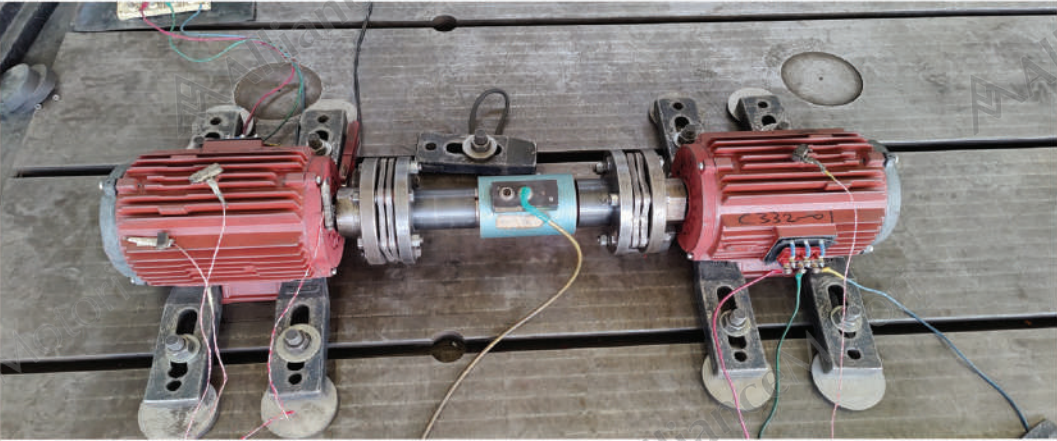
Manufacture :

Alliance Motori

Kind of test :

Type Test

Note. Data May Change Without Notice

Name of products	Three Phase Induction Motor		Brand		AllianceMotori	
Type of product	A-Y3K-100-4-3(380V 50)					
Tech. Data	Rated Voltage (V):	380	Rated Frequency (Hz):	50	Rated Power (KW):	3
	Rated Current (A):	6.7	Rated Speed (r/min):	1420	Power Factor:	0.82
	Eff.(%):	82.6	Poles:	4	Stator Connection:	Y
	Working system:	S1	Degrees of insulation:	H	Degrees of protection:	IP55
Test Category	Type Test					
Production Unit			Address			
Product Number	1D201001		Date of Product		2022.3	
Test Inspection						
Test Date						
Conclusion						
Note						

Approval:

Audit:

Test: Wangmin

Type Test Performance Overview

Main electrical performance	Unit	Standard Value	Test Result			Judgement
No-load current	A		2.7			
95°C phase dc resistance	Ω		U1-U2	V1-V2	W1-W2	
			1.5784	1.5784	1.5784	
95°C3-phase imbalance degree of resistance	%	≤±1.5	0.00			qualified
No-load current	A		U	V	W	
			2.66	2.70	2.66	
No-load three phase current imbalance degree	%	<5	1.22			qualified
No-load loss	kW		0.16			
Iron Loss	W		109.8			
Mechanical loss	W		18.0			
Rated load test voltage	V		380,100			
rated load test current	A		6.15			
rated load test input power	kW		3.431			
slip	%		3.187			
speed	rpm		1452.2			
Rated load stator loss	W		147.79			
Rated load rotor loss	W		102.46			
Stray loss	W		52.91			
Power factor		≥0.82 _{-0.03}	0.839			qualified
Full load efficiency	%	≥82.6 _{-2.61}	87.44			qualified
Rated torque	N.m		19.5			
Locked-rotor current,when the rated voltage	A		53.442			
Locked-rotor power ,when the rated voltage	kW		20.153			
Locked-rotor torque, when the rated voltage	N*m		50.004			
Locked-rotor current/Rated current	Times	≤7.2 ^{+1.44}	7.976			qualified
Locked-rotor torque/rated torque	Times	2.2 ^{+0.55} _{-0.33}	2.478			qualified
The max torque/rated torque	Times	≥2.3 _{-0.23}	2.48			qualified
Winding heat resistance	Ω		3.16400			
The stator winding temperature rise	K	≤125	91.1			qualified
Bearing temperature	°C	≤95	56.5			qualified
Entering Air Temperature	°C		14.0			
Outlet air temperature	°C		59.8			
Power frequency withstand voltage	V	1760				qualified
Short time high pressure test	V	494				qualified
Insulation resistance measurement	MΩ	>0.38				qualified
Cold dc resistance measurement	Ω		2.36000			
Hot state dc resistance measurement	Ω		3.16400			
Noise(no-load)	dB	≤83	63.0			qualified
Vibration velocity	mm/s	<2.8	1.3			qualified

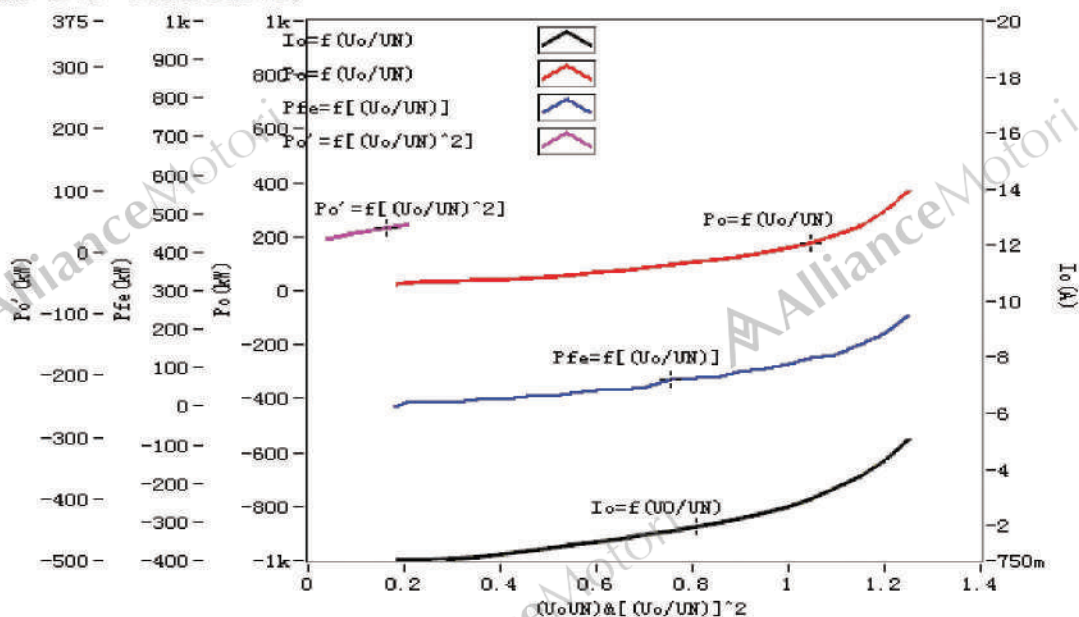
Note. Data May Change Without Notice

No-load performance data

f/Hz	U/V	I/A	Ia/A	Ib/A	Ic/A	COSφ	Po/kW	Pocu 1/W	P'o/W
50.00	475.1	5.05	5.02	5.14	5.00	0.089	0.37	114.4	255.6
50.00	455.9	4.33	4.30	4.41	4.28	0.086	0.29	84.1	205.9
50.00	436.6	3.75	3.73	3.81	3.71	0.086	0.24	63.1	176.9
50.00	417.2	3.29	3.27	3.33	3.27	0.086	0.20	48.5	151.5
50.00	397.7	2.93	2.91	2.96	2.92	0.088	0.18	38.5	141.5
50.00	380.2	2.67	2.66	2.70	2.66	0.090	0.16	32.0	128.0
50.00	360.5	2.44	2.43	2.46	2.43	0.093	0.14	26.7	113.3
50.00	340.8	2.23	2.22	2.26	2.23	0.096	0.13	22.3	107.7
50.00	321.2	2.05	2.04	2.07	2.05	0.100	0.11	18.8	91.2
50.00	306.5	1.94	1.93	1.95	1.93	0.103	0.11	16.9	93.1
50.00	286.7	1.79	1.78	1.80	1.79	0.106	0.10	14.4	85.6
50.00	267.0	1.65	1.63	1.65	1.66	0.110	0.08	12.2	67.8
50.00	247.2	1.52	1.52	1.52	1.53	0.114	0.07	10.4	59.6
50.00	227.6	1.40	1.38	1.39	1.42	0.119	0.07	8.8	61.2
50.00	207.8	1.28	1.26	1.28	1.30	0.127	0.06	7.3	52.7
50.00	190.9	1.17	1.15	1.16	1.19	0.134	0.05	6.1	43.9
50.00	173.2	1.08	1.06	1.08	1.10	0.142	0.05	5.2	44.8
50.00	153.3	0.98	0.96	0.97	1.00	0.154	0.04	4.3	35.7
50.00	133.6	0.89	0.87	0.88	0.91	0.169	0.04	3.6	36.4
50.00	113.7	0.81	0.79	0.79	0.84	0.211	0.03	2.9	27.1
50.00	93.7	0.76	0.74	0.74	0.80	0.233	0.03	2.6	27.4
50.00	76.8	0.76	0.73	0.74	0.82	0.244	0.03	2.6	27.4
50.00	67.8	0.78	0.73	0.75	0.85	0.248	0.02	2.7	17.3

No-load fitting data					
Un/V	I0/A	Po/W	PFe/W	Pm/W	R1/Ω
380.2	2.7	0.16	109.8	18.0	2.990

Pic.1 (No-load curve)

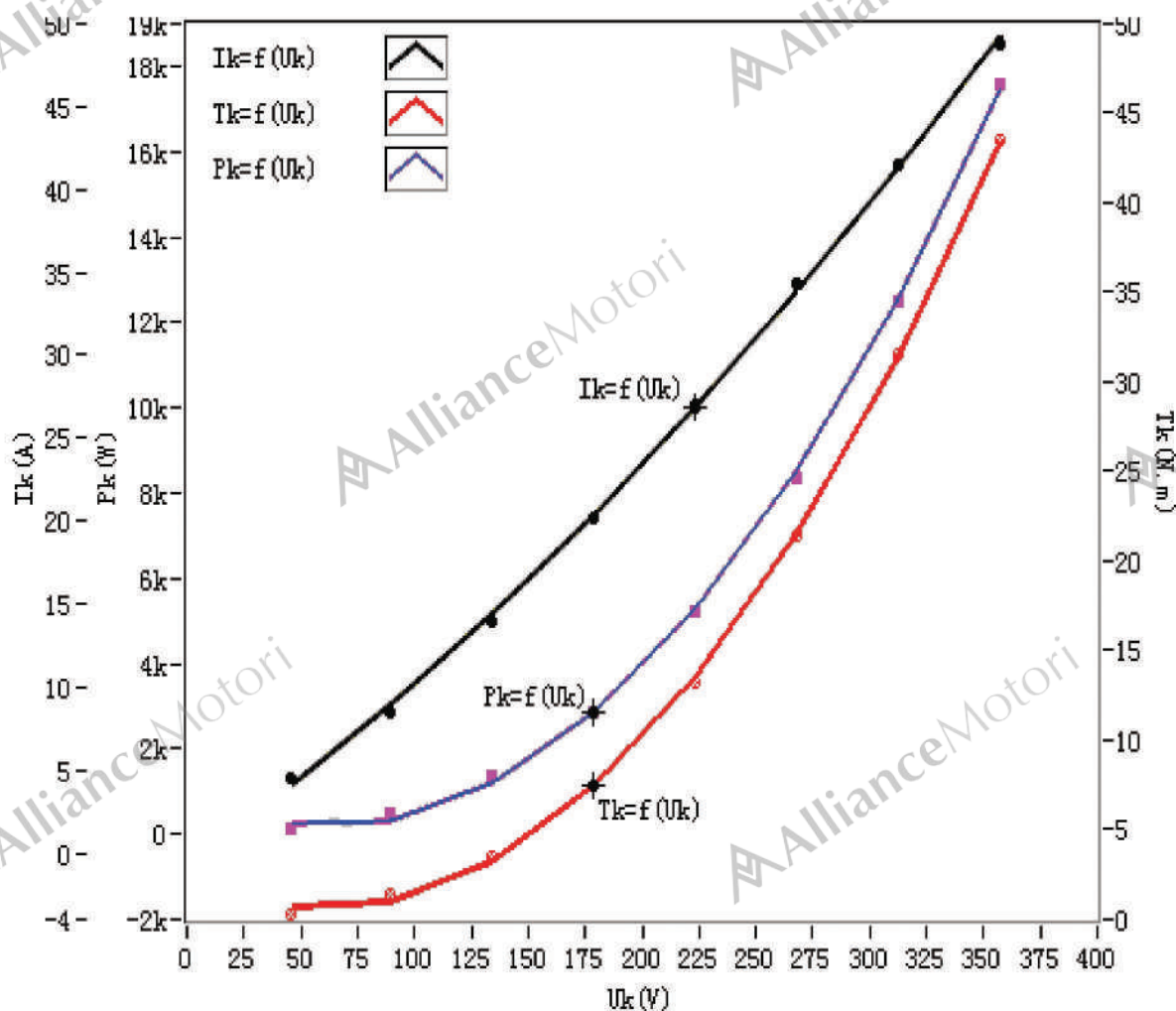


Locked-rotor performance data

U/V	I/A	I _a /A	I _b /A	I _c /A	COSφ	P _k /W	T _l /N*m
357.7	48.82	48.75	48.97	48.75	0.579	17.57	43.5
312.7	41.55	41.53	41.75	41.37	0.553	12.49	31.5
268.1	34.30	34.27	34.50	34.12	0.524	8.38	21.4
223.3	27.06	27.07	27.22	26.88	0.493	5.19	13.3
178.8	20.17	20.13	20.33	20.04	0.458	2.88	7.5
134.3	13.89	13.72	13.99	13.95	0.416	1.35	3.5
89.3	8.54	8.43	8.47	8.73	0.369	0.49	1.4
45.4	4.49	4.31	4.47	4.70	0.302	0.10	0.3

Locked-rotor fitting data					
U _n /V	I _k /A	I _k /I _n	T _k /N*m	T _k /T _n	P _k (W)
380	53.442	7.976	50.004	2.478	20.153

Pic.2 (locked-rotor data curve)



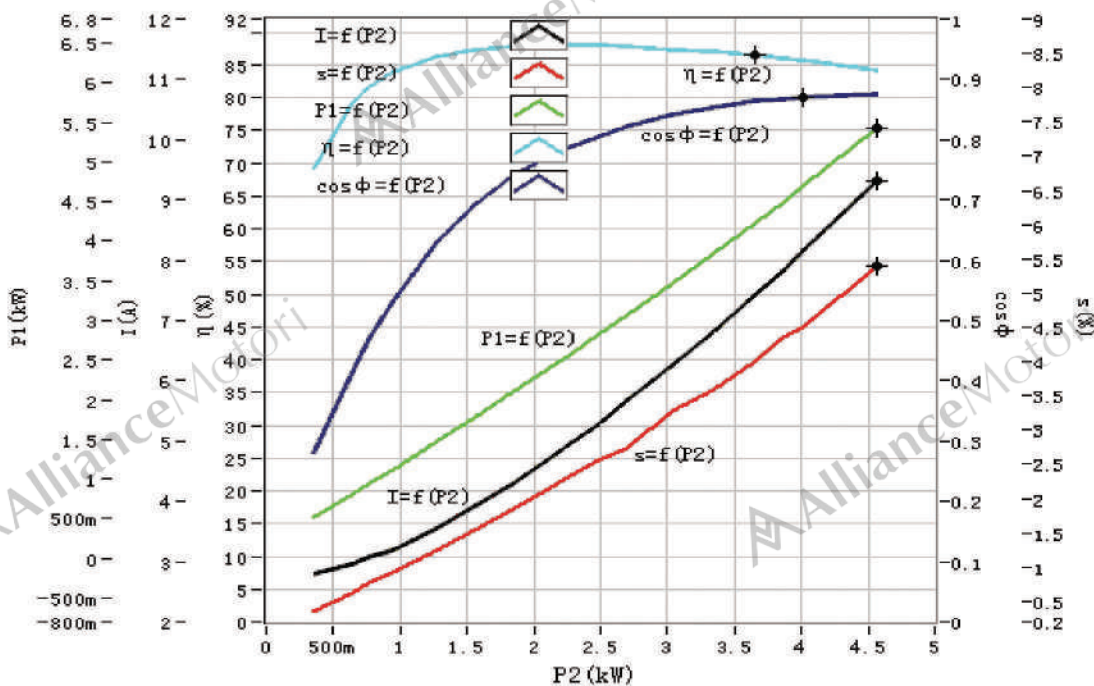
Note. Data May Change Without Notice

Load performance data

P2/kW	U/V	I/A	COSφ	P1/kW	T/N*m	n/r/min	ns/r/min	η %	Winding temp/C
4.53	380.7	9.33	0.877	5.42	30.40	1424.7	1500.00	83.63	79.8
3.99	381.0	8.15	0.870	4.69	26.50	1437.5	1500.00	85.10	79.6
3.84	380.8	7.83	0.867	4.49	25.50	1439.5	1500.00	85.47	79.6
3.63	380.5	7.41	0.863	4.22	24.00	1444.3	1500.00	85.94	79.4
3.32	380.3	6.80	0.853	3.83	21.80	1450.2	1500.00	86.57	79.5
3.02	380.1	6.26	0.841	3.48	19.80	1454.5	1500.00	86.92	79.3
2.68	380.6	5.66	0.822	3.07	17.50	1461.9	1500.00	87.32	79.4
2.46	381.0	5.29	0.806	2.82	16.10	1464.2	1500.00	87.43	79.4
2.25	380.3	4.96	0.789	2.58	14.60	1467.5	1500.00	87.02	79.7
2.15	380.4	4.80	0.780	2.47	14.00	1469.1	1500.00	87.04	79.8
1.82	380.0	4.29	0.739	2.09	11.80	1474.2	1500.00	87.15	80.0
1.53	380.3	3.91	0.692	1.78	9.90	1478.4	1500.00	86.06	80.1
1.25	380.7	3.56	0.630	1.48	8.00	1482.5	1500.00	84.23	80.1
0.90	379.9	3.19	0.532	1.12	5.80	1487.2	1500.00	80.85	80.1
0.75	380.2	3.06	0.468	0.94	4.80	1489.4	1500.00	79.61	80.0
0.62	380.4	2.95	0.416	0.81	4.00	1491.2	1500.00	76.88	80.1
0.33	380.8	2.79	0.277	0.51	2.10	1495.0	1500.00	64.49	80.0

Load fitting data								
I/A	T/N*m	Power factor	Eff. %	Input power/W	Stray loss/W	Stator loss/W	Rotor loss/W	Total loss/W
6.15	19.5	0.839	87.44	3.431	52.91	147.79	102.46	430.96

Pic.3 (load curve)

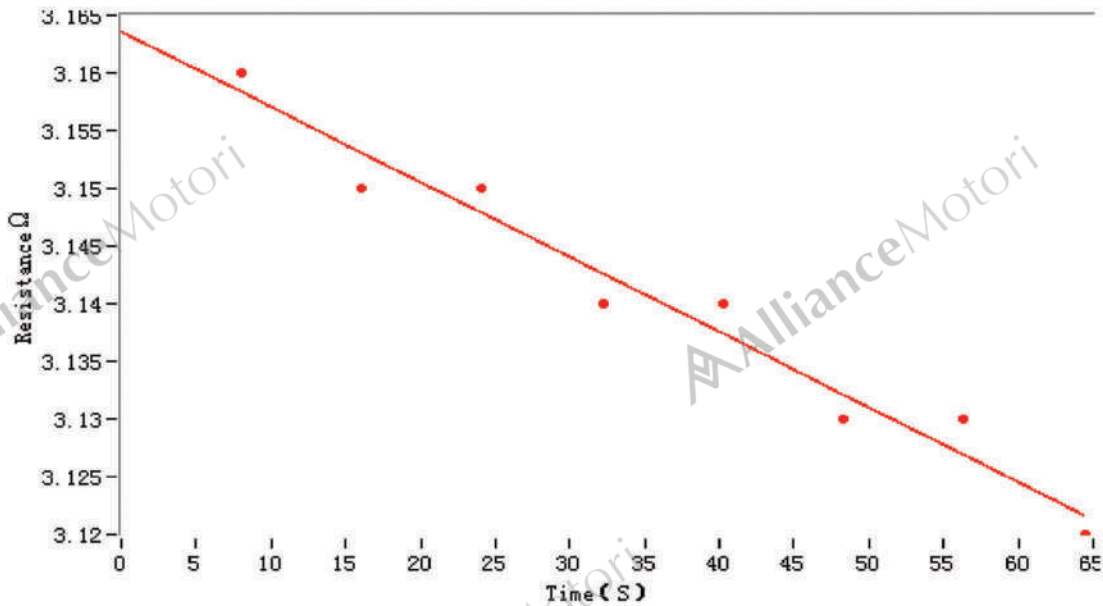


Temperature rise test data

Test Method: Resistance method

Cold ring Temp. (°C)	Hot ring Temp. (°C)	Cold resistance (Ω)	Hot resistance (Ω)	Stator winding temp. (K)	Result
10.0	14.4	2.36000	3.16400	91.1	qualified

Pic4 (Stop hot resistance trend chart)



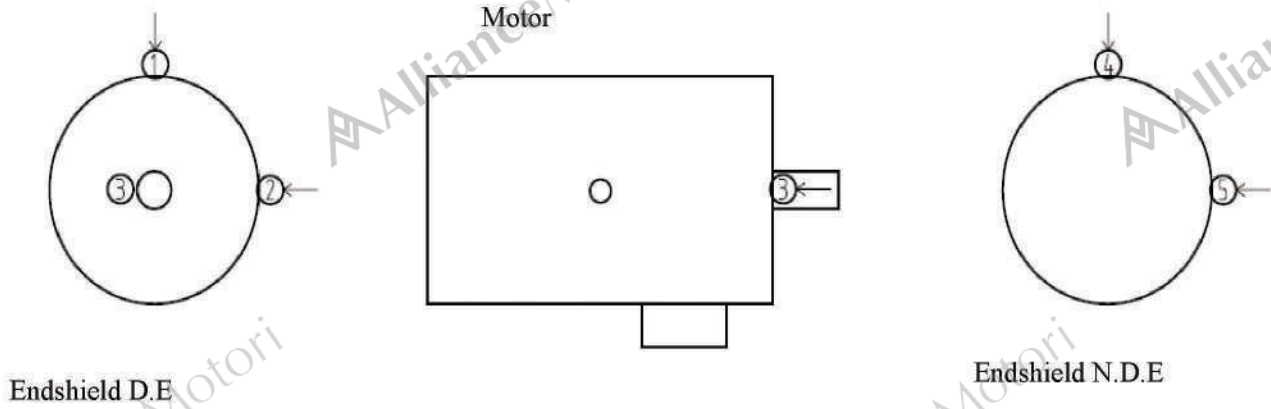
Note. Data May Change Without Notice

Time(S)	8.0	16.1	24.1	32.2	40.2	48.3	56.3	64.4
Resistance(Ω)	3.1600	3.1500	3.1500	3.1400	3.1400	3.1300	3.1300	3.1200

Temp. rise test data ,when rated frequency

HH:MM:SS	f/Hz	U/V	I/A	P1/kW	Ambient temperature (C)	Air inlet temperature (C)	Air outlet temperature (C)	Winding temperature under test, degree (C)	D-terminal shaft under test, bearing temperature (C)	Chassis temperature under test, degree (C)
14:40:56	50.00	380.2	6.33	3.53	14.4	14.0	59.8	83.9	56.5	74.9
14:25:56	50.00	380.2	6.35	3.53	14.1	13.7	59.3	83.6	56.2	74.8
14:10:56	50.00	380.0	6.35	3.54	14.0	13.7	60.9	83.6	55.4	74.3
13:55:56	50.00	379.9	6.36	3.54	13.7	13.4	61.1	82.8	55.8	74.0
13:40:56	50.00	380.0	6.37	3.55	13.4	13.1	61.7	82.4	55.7	73.0
13:25:56	50.00	379.9	6.39	3.56	13.4	12.9	60.2	81.7	54.8	72.2
13:10:56	50.00	380.9	6.45	3.60	13.2	12.5	58.5	81.0	53.7	71.0
12:55:56	50.00	381.0	6.48	3.62	13.1	12.3	58.6	80.2	52.6	69.1
12:40:56	50.00	381.0	6.53	3.65	12.8	12.0	56.3	78.2	50.2	66.7
12:25:56	50.00	380.8	6.58	3.69	12.4	11.7	54.2	74.6	48.2	63.2
12:10:56	50.00	380.1	7.19	4.07	11.9	11.3	49.0	69.2	44.8	57.9
11:55:56	50.00	380.6	6.78	3.81	11.7	11.3	44.3	60.8	39.1	49.6
11:40:56	50.00	380.3	7.00	3.94	11.3	10.6	38.6	51.3	33.0	40.1
11:25:56	50.00	380.0	7.09	3.99	11.0	10.3	29.5	38.0	24.8	27.8
11:10:59	50.00	380.8	6.41	3.54	10.8	10.2	18.0	21.5	15.7	13.9

Vibration Test data

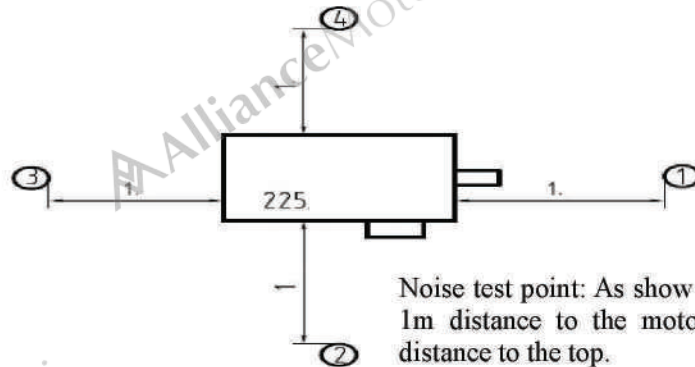


Vibration test point graphic

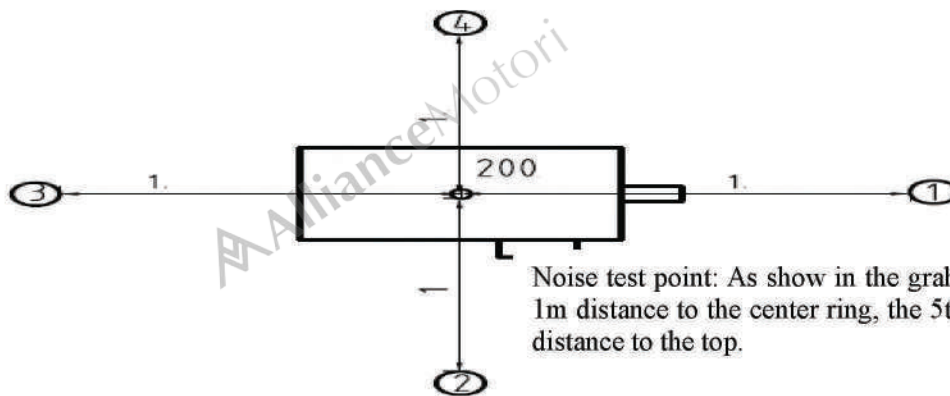
D side vibration			N side vibration	
1 Vertical (mm/s)	2 Horizontal (mm/s)	3 bearing direction (mm/s)	4 Vertical (mm/s)	5 Horizontal (mm/s)
1.0	1.3	0.8	1.0	1.3

Note. Data May Change Without Notice

Noise test data



Test surfance	1 spot noise (dB)	2 spot noise (dB)	3 spot noise (dB)	4 spot noise (dB)	5 spot noise (dB)
From motor surface to test point					



Test surfance	1 spot noise (dB)	2 spot noise (dB)	3 spot noise (dB)	4 spot noise (dB)	5 spot noise (dB)
From rings to test point	63.2	63.8	63.4	62.7	62.1

STATEMENT

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2. The test report shall not be reproduced except in full, without written approval of the laboratory.
3. The test report without the signature of the preparing person, review person and approval person shall be considered as invalid.
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