



XI. About Motors

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11. About Motors

11.1 Vibration and Noise

* Please refer to the “2-2-3 Dedicated Motor Specifications” for the specifications and the external dimensions of the dedicated motors.

Dedicated applicable motor [kW]	No. of poles	Motor type	Vibration level [μm]		Noise level [dB] *3)			
		MVK__	At base speed 1500[r/min]	At max. speed *2) 3600[r/min]	At base speed 1500[r/min]	At max. speed 3600[r/min]		
0.75	4	8095A	less than 5	less than 7	56	60		
1.5		8097A						
2.2		8107A						
3.7		8115A			58	62		
5.5		8133A						
7.5		8135A			60	64		
11		8165A						
15		8167A			68	72		
18.5		8184A						
22		8185A			71	73		
30		8187A						
37		8207A			less than 7	73		
45		8208A			less than 5	less than 7 *2)	71	73
55		9224A			*1)	less than 15	*1)	88
75		9254A						
90		9256A						
110	9284A							
132	9286A							
160	931LA							
200	931MA							
220	931NA							

*1) Please contact Fuji for the individual figures.

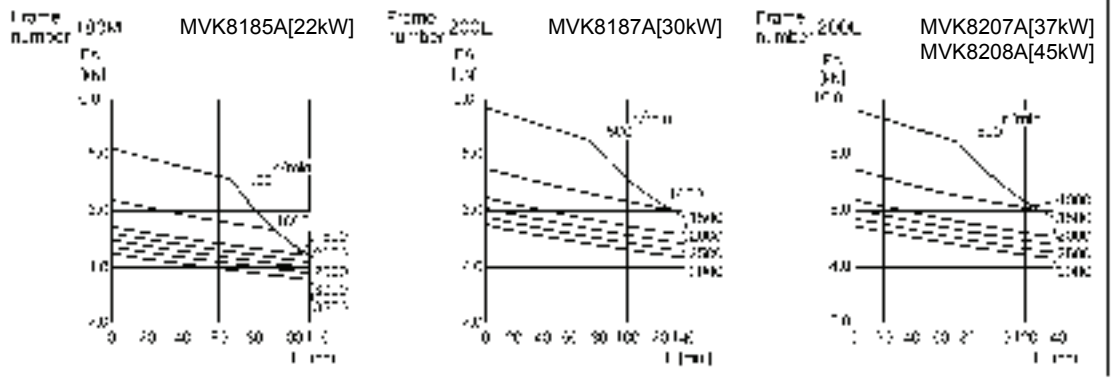
*2) The maximum speed (max. speed) for 30 to 37[kW] is 3000[r/min], for 45 to 75[kW], 2400[r/min], and for 90 to 220[kW] max. speed is 2000[r/min].

*3) This noise level was measured at the point which is 1[m] away to the direction of the terminal box from the motor.

11.2 Acceleration Vibration Value

Dedicated applicable motor [kw]	No. of poles	Motor type	Acceleration vibration value, acceptable [m/s ²]
		MVK__A-C	
0.75	4	8095A	less than 6.4
1.5		8097A	
2.2		8107A	
3.7		8115A	
5.5		8133A	
7.5		8135A	
11		8165A	
15		8167A	
18.5		8184A	
22		8185A	
30		8187A	
37		8207A	
45		8208A	
55		9224A	less than 1.0
75		9254A	
90		9256A	
110		9284A	less than 6.4
132		9286A	
160		931LA	
200		931MA	
220	931NA		

Note: If the actual vibration is over the figure on this table, other countermeasure is required.



Note: Please contact Fuji individually for the motors whose frame number is over 200L (more than 55kW).

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11.4 Allowable Thrust Load

(Unit:k·N)

Frame number	Type MVK	Horizontal use IM B3(F11), IM B5(L51)						Vertical use IM V5(F12), IM V1(L52)						Vertical use IM V6(F13), IM V3(L53)					
		Direction of thrust: FS			Direction of thrust: FU			Direction of thrust: FS			Direction of thrust: FU			Direction of thrust: FS			Direction of thrust: FU		
		2 Poles	4 Poles	6 Poles	2 Poles	4 Poles	6 Poles	2 Poles	4 Poles	6 Poles	2 Poles	4 Poles	6 Poles	2 Poles	4 Poles	6 Poles	2 Poles	4 Poles	6 Poles
90L	8095A 8097A	0.3	0.45	0.55	0.4	0.6	0.7	0.25	0.4	0.5	0.45	0.65	0.75	0.4	0.55	0.65	0.3	0.5	0.6
100L	8107A	-	0.65	0.8	-	0.55	0.65	-	0.6	0.7	-	0.6	0.6	-	0.5	0.6	-	0.75	0.85
112M	8115A	0.65	0.9	1.1	0.6	0.75	0.95	0.6	0.8	1	0.65	0.85	1	0.55	0.7	0.85	0.75	1	1.2
132S	8133A	1	1.4	1.7	0.75	1	1.2	1	1.3	1.7	0.9	1.1	1.4	0.65	0.9	1.1	1.2	1.5	1.9
132M	8135A	-			-			-		1.6	-			-		1	-		
160M	8165A	1.3	1.8	2.2	1.2	1.5	1.9	1.1	1.6	2	1.5	1.8	2.2	1	1.4	1.7	1.6	2.1	2.5
160L	8167A		1.7	2.1			1.8		1.5	1.8					1.3	1.5			
180M	8184A 8185A	2	2.7	3.3	1.9	2.3	2.8	1.8	2.3	2.9	2.2	2.7	3.4	1.6	2	2.6	2.4	3.2	3.9
200L	8187A 8207A	1.9	3.8	4.5	2	3.2	3.7	1.5	3.2	3.8	2.6	4	4.8		2.7	3	2.5	4.6	5.6
225S	8208A	1.2	5.4	6.5	1.2	5.4	6.5	0.4	4.4	5.3	2.3	6.9	8.2	0.4	4.4	5.3	2.3	6.9	8.2
250S	9224A	1.1	5.2	6.2	1.1	5.2	6.2	0.3	4.1	4.8				0.3	4.1	4.8			
250M	9254A	1	6.4	7.6	1	6.4	7.6	-	4.9	5.6	-	8.4	10.3	-	4.9	5.6	-	8.4	10.3
280S	9256A	0.9	6.2	7.3	0.9	6.2	7.3	-	4.5	5.1	-	8.5	10.4	-	4.5	5.1	-	8.5	10.4
280M	9284A	0.8	5.9	6.9	0.8	5.9	6.9	-	3.7	4.2	-	9.2	10.8	-	3.7	4.2	-	9.2	10.8
315S	9286A	0.7	5.7	6.7	0.7	5.7	6.7	-	3.1	3.8	-	9.3	10.9	-	3.1	3.8	-	9.3	10.9
315M	931LM 931MA - 931NA	* Contact Fuji individually						* Contact Fuji individually						* Contact Fuji individually					
Mounting method and the direction of thrust																			

Note 1: The above-mentioned figures whose frame number are more than 250S are the allowable thrust (axial) load of the motor for direct connection

Note 2: The above-mentioned allowable thrust (axial) load is calculated on the assumption that the motor would bear the radial load through the normal sized half-coupling.

Note 3: For the motor with shielded type ball bearing, if the thrust load to the anti-driving direction is bigger than the pre-load spring pressure on the anti-driving side, the runout of shaft end shown in the following table will occur on the anti-driving side.

Frame number	90L, 100L	112M	132S, 132M	160M, 160L	180M to 225S	250S to 315M	
Preload [N]	166	235	294	343	568	*Contact Fuji individually.	
Runout of shaft end [mm]	*Std	0.6				1.2	
	Max.	1.4				2.0	

*Std.: Standard

11.5 List of Special Combinations

11.5.1 List of Combinations of 380V Series

Type		4-pole non-standard special motor			4-pole standard motor		
Base speed [r/min]		1500			Base speed: 1,500[r/min], Max. speed: 1,500[r/min]		
Max. load torque [%]		150			150		
Model and item		Model		Max. speed Nmax[r/min]	Model		Potential max. speed Nmax[r/min]*2
		Motor	Inverter		Motor	Inverter	
Output [kW]	3.7	MVK8115A	FRN3.7VG7S-4	3600	MVK8115A	FRN3.7VG7S-4	3300
	5.5	MVK8133A	FRN5.5VG7S-4		MVK8133A	FRN5.5VG7S-4	3400
	7.5	MVK8135A	FRN7.5VG7S-4		MVK8135A	FRN7.5VG7S-4	2150
	11	MVK8165A	FRN11VG7S-4		MVK8165A	FRN11VG7S-4	1600
	15	MVK8167A	FRN15VG7S-4		MVK8167A	FRN15VG7S-4	3200
	18.5	MVK8184A	FRN22VG7S-4		MVK8184A	FRN18.5VG7S-4	2750
	22	MVK8185A	FRN30VG7S-4		MVK8185A	FRN22VG7S-4	2000
	30	MVK8187A	FRN37VG7S-4		MVK8187A	FRN30VG7S-4	2200
	37	MVK8207A	FRN45VG7S-4	MVK8207A	FRN37VG7S-4	1600	
	45	MVK8208A	FRN55VG7S-4	MVK8208A	FRN45VG7S-4	2100	
	55	MVK9224A	FRN75VG7S-4	2400	MVK9224A	FRN55VG7S-4	1600
	75	MVK9254A	FRN90VG7S-4		MVK9254A	FRN75VG7S-4	2000
	90	MVK9256A	FRN110VG7S-4	2000	MVK9256A	FRN90VG7S-4	2000
	110	MVK9284A	FRN132VG7S-4		MVK9284A	FRN110VG7S-4	2000
	132	MVK9286A	FRN160VG7S-4		MVK9286A	FRN132VG7S-4	1500
	160	MVK931LA	FRN200VG7S-4		MVK931LA	FRN160VG7S-4	2000
200	MVK931MA	FRN220VG7S-4	MVK931MA		FRN200VG7S-4	1800	
220	MVK931NA	FRN220VG7S-4	MVK931NA		FRN220VG7S-4	1600	

- *1) The electric characteristics of the motor are the same as those of the standard motor. The frame size of the inverter is one frame larger.
- *2) The maximum speed at which the 150% overload rating torque is obtained with 380V input is specified. If a 150% overload constant is necessary at a larger speed, select the inverter of a larger capacity.

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11.5.2 Low Base Speed Series Combination List

[200V class]

No. of poles, standard/non-standard		6-pole non-standard special motor					4-pole standard motor	
Base speed	500[r/min]	650[r/min]	750[r/min]	850[r/min]	1,000[r/min]		1,000[r/min]	
Max. speed	2,000[r/min]	2,000[r/min]	1,800[r/min]	1,700[r/min]	2,000[r/min]	2,400[r/min]	3,000[r/min]	3,600[r/min]
Output [kW]	0.75	MVK8115A FRN1.5VG7S-2		MVK8107A FRN1.5VG7S-2			MVK8097A FRN0.75VG7S-2	MVK8097A FRN1.5VG7S-2
	1.5	MVK8133A FRN3.7VG7S-2		MVK8115A FRN2.2VG7S-2			MVK8107A FRN2.2VG7S-2	MVK8107A FRN2.2VG7S-2
	2.2	MVK8135A FRN3.7VG7S-2		MVK8133A FRN3.7VG7S-2			MVK8115A FRN3.7VG7S-2	MVK8115A FRN3.7VG7S-2
	3.7	MVK8165A FRN5.5VG7S-2		MVK8135A FRN5.5VG7S-2			MVK8133A FRN5.5VG7S-2	MVK8133A FRN5.5VG7S-2
	5.5	MVK8167A FRN7.5VG7S-2		MVK8165A FRN7.5VG7S-2			MVK8135A FRN7.5VG7S-2	MVK8135A FRN7.5VG7S-2
	7.5	MVK8185A FRN11VG7S-2		MVK8167A FRN11VG7S-2			MVK8165A FRN7.5VG7S-2	MVK8165A FRN11VG7S-2
	11	MVK8187A FRN15VG7S-2		MVK8184A FRN15VG7S-2			MVK8167A FRN15VG7S-2	MVK8184A FRN15VG7S-2
	15	MVK8207A FRN22VG7S-2		MVK8185A FRN18.5VG7S-2			MVK8184A FRN18.5VG7S-2	MVK8185A FRN22VG7S-2
	18.5	MVK9256A FRN30VG7S-2	MVK9221A FRN30VG7S-2	MVK8187A FRN22VG7S-2			MVK8185A FRN22VG7S-2	MVK8187A FRN30VG7S-2
	22	MVK9284A FRN30VG7S-2	MVK9250A FRN30VG7S-2	MVK8207A FRN30VG7S-2		MVK8187A FRN30VG7S-2		MVK8207A FRN37VG7S-2
	30	MVK9284A FRN45VG7S-2	MVK9256A FRN45VG7S-2		MVK9221A FRN37VG7S-2	MVK8207A FRN37VG7S-2		MVK8208A FRN45VG7S-2
	37	MVK9286A FRN55VG7S-2	MVK9284A FRN45VG7S-2		MVK9224A FRN45VG7S-2	MVK9221A FRN45VG7S-2		
	45	MVK931LA FRN55VG7S-2	MVK9284A FRN55VG7S-2		MVK9250A FRN55VG7S-2	MVK9224A FRN55VG7S-2		
	55	MVK931NA FRN75VG7S-2	MVK9286A FRN75VG7S-2		MVK9256A FRN75VG7S-2	MVK9250A FRN75VG7S-2		
	75	MVK9354A FRN90VG7S-2	MVK931MA FRN90VG7S-2		MVK9284A FRN90VG7S-2	MVK9256A FRN90VG7S-2		

[400V class]

No. of poles, standard/ non-standard		6-pole non-standard special motor					4-pole standard motor	
Base speed	500[r/min]	650[r/min]	750[r/min]	850[r/min]	1,000[r/min]		1,000[r/min]	
Max. speed	2,000[r/min]	2,000[r/min]	1,800[r/min]	1,700[r/min]	2,000[r/min]	2,400[r/min]	3,000[r/min]	3,600[r/min]
Output [kW]	0.75	MVK8115A FRN3.7VG7S-4		MVK8107A FRN3.7VG7S-4			MVK8097A FRN3.7VG7S-4	MVK8097A FRN1.5VG7S-4
	1.5	MVK8133A FRN3.7VG7S-4		MVK8115A FRN3.7VG7S-4			MVK8107A FRN3.7VG7S-4	MVK8107A FRN2.2VG7S-4
	2.2	MVK8135A FRN3.7VG7S-4		MVK8133A FRN3.7VG7S-4			MVK8115A FRN3.7VG7S-4	MVK8115A FRN3.7VG7S-4
	3.7	MVK8165A FRN5.5VG7S-4		MVK8135A FRN5.5VG7S-4			MVK8133A FRN5.5VG7S-4	MVK8133A FRN5.5VG7S-4
	5.5	MVK8167A FRN7.5VG7S-4		MVK8165A FRN7.5VG7S-4			MVK8135A FRN7.5VG7S-4	MVK8135A FRN7.5VG7S-4
	7.5	MVK8185A FRN11VG7S-4		MVK8167 FRN11VG7S-4			MVK8165A FRN7.5VG7S-4	MVK8165A FRN11VG7S-4
	11	MVK8187A FRN15VG7S-4		MVK8184 FRN15VG7S-4			MVK8167A FRN11VG7S-4	MVK8184A FRN18.5VG7S-4
	15	MVK8207A FRN22VG7S-4		MVK8185A FRN18.5VG7S-4			MVK8184A FRN18.5VG7S-4	MVK8185A FRN22VG7S-4
	18.5	MVK9256A FRN30VG7S-4	MVK9221A FRN30VG7S-4	MVK8187A FRN22VG7S-4			MVK8185A FRN22VG7S-4	MVK8187A FRN30VG7S-4
	22	MVK9284A FRN30VG7S-4	MVK9250A FRN30VG7S-4	MVK8207A FRN30VG7S		MVK8187A FRN30VG7S-4		MVK8207A FRN37VG7S-4
	30	MVK9284A FRN45VG7S-4	MVK9256A FRN45VG7S-4		MVK9221A FRN37VG7S-4	MVK8207A FRN37VG7S-4		MVK8208A FRN45VG7S-4
	37	MVK9286A FRN55VG7S-4	MVK9284A FRN45VG7S-4		MVK9224A FRN45VG7S-4	MVK9221A FRN45VG7S-4		
	45	MVK931LA FRN55VG7S-4	MVK9284A FRN55VG7S-4		MVK9250A FRN55VG7S-4	MVK9224A FRN55VG7S-4		
	55	MVK931NA FRN75VG7S-4	MVK9286A FRN75VG7S-4		MVK9256 FRN55VG7S-4	MVK9250A FRN75VG7S-4		
	75	MVK9354A FRN90VG7S-4	MVK931MA FRN90VG7S-4		MVK9284A FRN90VG7S-4	MVK9256A FRN90VG7S-4		
	90	MVK9356A FR110VG7S-4	MVK931PA FRN110VG7S-4		MVK9286A FRN110VG7S-4	MVK9284A FRN110VG7S-4		
	110		MVK9352A FRN132VG7S-4		MVK9310A FRN132VG7S-4	MVK9286A FRN132VG7S-4		
	132		MVK9356A FRN160VG7S-4		MVK931MA FRN160VG7S-4	MVK9310A FRN160VG7S-4		
	160					MVK931MA FRN200VG7S-4		
	200					*1)		

*1) Contact us.



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