

Variable Frequency Drives



RM6 Series AC Motor Controller

Variable Frequency Drive RM6 Series

Features

- RM6 series are suitable for constant and variable torque loads (mixer, conveyor, fan, pump, etc.)
- Overload capacity with 150% drive's rated output current for 1 min can sustain heavy load conditions at drive's operation
- Programmable digital input and output terminals can be defined for various control applications
- Portable external display units (DM-501) can be connected to display drive statuses (maximum 3 units of DM-501)
- Programmable 8 preset speeds are suitable for multi-speed control demands
- Stall prevention functions can prevent the drive from the surge current occurred when the motor accelerates or runs at the constant speed
- Built-in DC braking function enhances the motor stop completely to prevent unexpected rotations of the motor
- Programmable jump frequency can prevent the system running at unstable frequency regions
- Communication control allows portable remote control devices (HMI/PLC/Laptop PC) to operate the drive via RS485 interface
- Automatic drive restart can start the drive after the power failure

Drive Model Number Scheme

RM6 - 2 075 B

A B C D

A RM6 Product Series

B
 1: 100V Series - 100~120V
 2: 200V Series - 200~240V
 4: 400V Series - 380~480V

C 075: Rated HP (75HP)

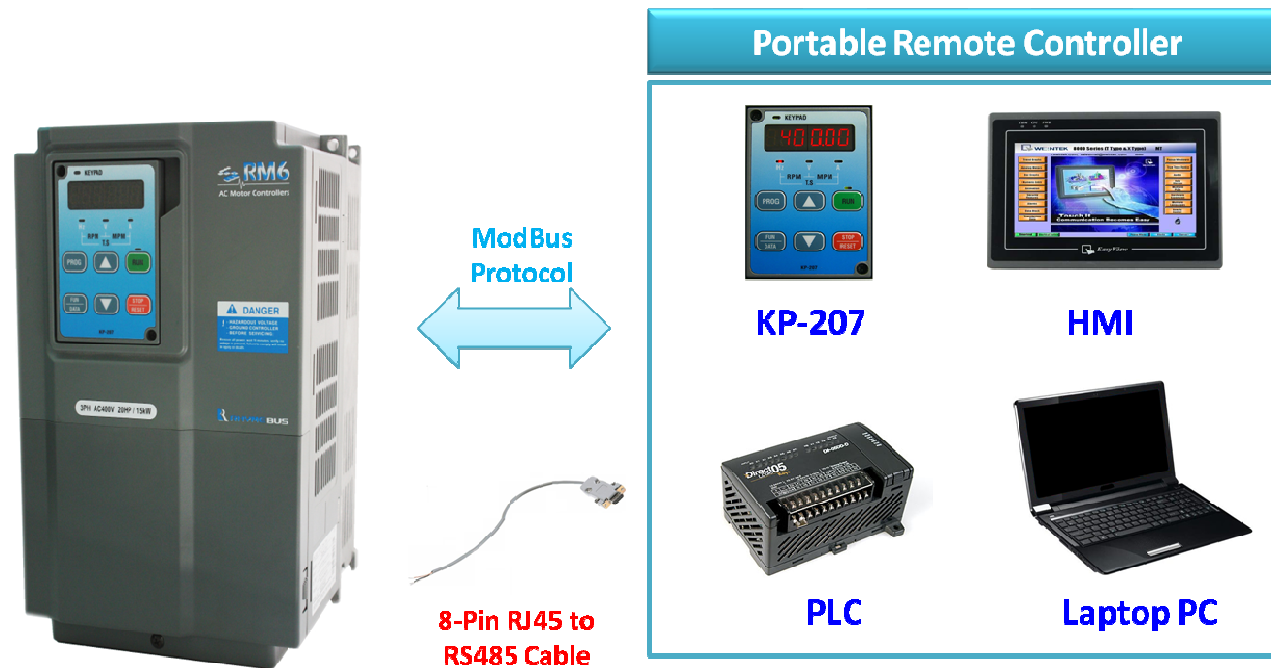
D B: Braking Resistor
 (Built-in Braking Transistor)



Variable Frequency Drive RM6 Series

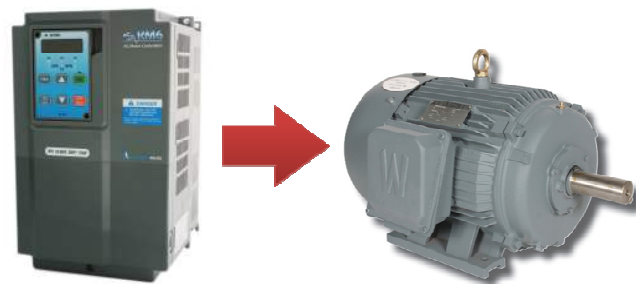
Special Features

RM6—Communication Control



RM6 series drives with the communication feature enhances the drive controllability by varieties of remote control schemes. RM6 series drives with RS-485 interface along with ModBus communication protocol are capable of connecting portable remote control device such PLC/HMI/Laptop PC to meet user remote control demands.

RM6—DC Braking



DC braking function is to prevent the motor from coasting after the motor stops to ensure the motor completely stops and idle. This function is also to hold the motor from running before drive starts the motor. This function can be applied to crane motor, conveyor, escalator, etc..

Variable Frequency Drive RM6 Series

RM6-Stall Prevention



Stall prevention function can prevent the motor from sudden load applied causing the stall of the motor speed when the motor runs at constant speed or during the acceleration/deceleration. This function can apply to grinder/mixer/sawing machinery to prevent the machine from stalling if the load condition suddenly changes.

RM6-Energy Saving Mode Selection



Pump



Air Conditioning System

RM6 energy-saving mode is designed with various V/F curve modes to allow users to select their desire energy-saving mode based on the applications. This function provides intelligent options not only in the motor control but in more energy-saving options based upon the application demands to save the energy. This function can be applied to pump, air conditioning system, fan, or light load applications.

Variable Frequency Drive RM6 Series

Specifications

RM6 100V/200V Series— 1 Phase

RM6 Series	100V 1Φ			200V 1Φ		
	1001/2-1PH	1001-1PH	1002-1PH	2001/2-1PH	2001-1PH	2002-1PH
Maximum applicable motor (HP / kW)	0.5/0.4	1/0.75	1.5/1.1	0.5/0.4	1/0.75	2/1.5
Rated output capability (kVA)	1	1.6	2.3	1.1	1.9	3
Rated output current (A)	2.5	4.2	6	3	5	8
Rated output voltage (V)	Three-phase 200~240V			Three-phase 200~240V		
Range of output frequency (Hz)	0.1~400.00Hz			0.1~400.00Hz		
Power source (ψ, V, Hz)	Single-phase 100~120V 50/60Hz			Single-phase 200~240V 50/60Hz		
Input current (A)	8.8	18	24	7	13.5	19
Permissible AC power source fluctuation	90~132V 50/60Hz / ±5%			176~264V 50/60Hz / ±5%		
Overload protection	150% of drive rated output current for 1 min.			150% of drive rated output current for 1 min.		
Cooling method	Nature cooling		Fan cooling	Nature cooling		Fan cooling
Applicable safety standards	—			UL508C, CSA C22.2 No. 14-05		
Protective structure	IP20			IP20, UL open type		
Weight / Mass(kg)	1.7	1.8	1.8	1.8	1.9	2

RM6 200V Series—3 Phases

RM6 Series 200V, 3Φ)	2001/2	2001	2002	2003	2005	2007	2010	2015
Maximum applicable motor (HP / kW)	0.5/0.4	1/0.75	2/1.5	3/2.2	5/3.7	7.5/5.5	10/7.5	15/11
Rated output capability (kVA)	1.1	1.9	3	4.2	6.5	9.5	13	18
Rated output current (A)	3	5	8	11	17	25	33	46
Rated output voltage (V)	Three-phase 200~240V							
Range of output frequency (Hz)	0.1~400.00Hz							
Power source (ψ, V, Hz)	Three-phase 200~240V 50/60Hz							
Input current (A)	5	6	10	14	18	30	40	60
Permissible AC power source fluctuation	176~264V 50/60Hz / ±5%							
Overload protection	150% of drive rated output current for 1 min.							
Cooling method	Nature cooling		Fan cooling					
Applicable safety standards	UL508C, CSA C22.2 No.14-05							
Protective structure	IP20, UL open type							
Weight / Mass(kg)	1.8	1.8	1.9	2	2.1	5.3	5.4	5.7

Variable Frequency Drive RM6 Series

RM6 200V Series—3 Phases

RM6 Series (200V, 3Φ)	2020	2025	2030	2040	2050	2060	2075	2100
Maximum applicable motor (HP / kW)	20/15	25/18.5	30/22	40/30	50/37	60/45	75/55	100/75
Rated output capability (kVA)	23	28	34	44	55	67	84	112
Rated output current (A)	60	74	90	115	145	175	220	295
Rated output voltage (V)	Three-phase 200~240V							
Range of output frequency (Hz)	0.1~400.00Hz							
Power source (ψ, V, Hz)	Three-phase 200~240V 50/60Hz							
Input current (A)	71	98	110	133	176	200	240	280
Permissible AC power source fluctuation	176~264V 50/60Hz / ±5%							
Overload protection	150% of drive rated output current for 1 min.							
Cooling method	Fan cooling							
Applicable safety standards	UL508C, CSA C22.2 No. 14-05							-
Protective structure	IP20				IP00 (IP20 OPTION)			
Weight / Mass(kg)	16	16	16	17	40	41	44	61

RM6 200V Series—3 Phases

RM6 Series (200V, 3Φ)	2125	2150	2200	2250
Maximum applicable motor (HP / kW)	125/90	150/110	200/160	250/200
Rated output capability (kVA)	132	154	223	267
Rated output current (A)	346	405	585	700
Rated output voltage (V)	Three-phase 200~240V			
Range of output frequency (Hz)	0.1~400.00Hz			
Power source (ψ, V, Hz)	Three-phase 200~240V 50/60Hz			
Input current (A)	330	380	550	660
Permissible AC power source fluctuation	176~264V 50/60Hz / ±5%			
Overload protection	150% of drive rated output current for 1 min.			
Cooling method	Fan cooling			
Applicable safety standards	-			
Protective structure	IP00 (IP20 OPTION)			
Weight / Mass(kg)	89	90	164	167

Variable Frequency Drive RM6 Series

Specifications

RM6 400V Series—3 Phases

RM6 Series (400V, 3Φ)	4001	4002	4003	4005	4007	4010	4015	4020	4025	4030	4040	4050	4060	4075	4100	4125
Maximum applicable motor (HP / kW)	1/0.75	2/1.5	3/2.2	5/3.7	7.5/5.5	10/7.5	15/11	20/15	25/18.5	30/22	40/30	50/37	60/45	75/55	100/75	125/90
Rated output capability (kVA)	1.9	3	4.6	6.9	11	14	18	23	30	34	46	56	66	84	114	134
Rated output current (A)	2.5	4	6	9	14	18	24	30	39	45	61	73	87	110	150	176
Rated output voltage (V)	Three-phase 380~480V															
Range of output frequency (Hz)	0.1~400.00Hz															
Power source (ψ, V, Hz)	Three-phase 380~480V 50/60Hz															
Input current (A)	3.5	5	8	12	16	22	28	38	50	61	74	90	105	130	155	177
Permissible AC power source fluctuation	332~528V 50/60Hz / ±5%															
Overload protection	150% of drive rated output current for 1 min															
Cooling method	Nature cooling		Fan cooling													
Applicable safety standards	UL508C				UL508C, CSA C22.2 No.14-05											
Protective structure	IP20, UL open type				IP20, UL open type				IP20						IP00 (IP20 OPTION)	
Weight / Mass(kg)	1.8	1.9	2	2	5.3	5.4	5.6	5.7	15	16	16	17	18	44	45	47

RM6 400V Series—3 Phases

RM6 Series (400V, 3Φ)	4150	4175	4200	4250	4300	4350	4420	4500	4600
Maximum applicable motor (HP / kW)	150/110	175/132	200/160	250/200	300/220	350/250	420/315	500/375	600/450
Rated output capability (kVA)	160	193	232	287	316	366	446	533	655
Rated output current (A)	210	253	304	377	415	480	585	700	860
Rated output voltage (V)	Three-phase 380~480V								
Range of output frequency (Hz)	0.1~400.00Hz								
Power source (ψ, V, Hz)	Three-phase 380~480V 50/60Hz								
Input current (A)	196	217	282	355	385	440	540	650	800
Permissible AC power source fluctuation	332~528V 50/60Hz / ±5%								
Overload protection	150% of drive rated output current for 1 min.								
Cooling method	Fan cooling								
Applicable safety standards	-								
Protective structure	IP00 (IP20 OPTION)								
Weight / Mass(kg)	65	91	95	97	159	163	164	217	225

Variable Frequency Drive RM6 Series

RM6 General Specifications

Item			Description
User interface			Digital operating keypads with remote control and communication link (RS-485 Modbus)
Control characteristics	Control method		Voltage vector sinusoidal PWM control
	Range of frequency setting		0.1~400.00 Hz
	Resolution of frequency setting		Digital keypad: 0.01 Hz Analog input: 0.06/60 Hz
	Resolution of output frequency		0.01 Hz
	Analog voltage of frequency setting		DC 0~10 V (20 kΩ), 4~20 mA (250 Ω)
	Overload protection		150% drive rated current for 1 minute (inverse time characteristics)
	Five steps acc. / dec. times		0 second (coast to stop), 0.1~3200.0 seconds (each setting of acc. and dec.) 0.015 ~ 19200000 sec (Acceleration from 0 to 60Hz)
	Braking torque		About 20% (with build-in braking transistor can reach about 100%)
	V/F curve		The V/F curve can be set arbitrarily
	Stall prevention		The current of stall prevention can be set arbitrarily
Operational characteristics	Input	Start method	Forward (FWD) / reverse (REV) rotation, 3-wire self-holding FWD/REV control, or 9-speed control can be selected
		Multi-function inputs	Stop command by 3-wire start/stop, jogging operation, secondary acc/dec time, multi-speed command 1~3, reset alarm, external fault command, command of inhibiting output, coast to a stop, max. frequency search command, frequency setting search command, acc/dec inhibition command, UP/DOWN command, UP/DOWN frequency command clear/enter, analog input select, DC braking enable, current limit enable
		Analog inputs	Vin-GND (0~10 V), Iin-GND (4~20 mA / 2~10 V or 0~20 mA / 0~10 V)
	Output	Multi-function outputs	Running, constant speed, zero speed, frequency, overload, stall prevention, under-voltage, braking detections, restart after fault, fault condition, and instantaneous power interruption to restart detections, programmable a and b ports
		Analog outputs	Analog signal (DC 0~10 V) output, adjustable gain, output frequency selection, frequency setting or output current
Display	Keypad display (controller)		Frequency output, frequency setting, voltage output, DC bus voltage, current output, motor RPM, linear speed, terminal status
	External display (external connection)		Independent external display can be added for up to three sets (96 mm x 48 mm, 5 digits) to show voltage, current, frequency, linear speed, etc.
Protections	Fault Protection		Over-current (OC), over-voltage (OE), low-voltage (LE), motor overload (OL), drive overload (OL1), overheat (OH), fuse open (SC), ground fault (GF), voltage low during running (LE1)
	Diagnostics		Digital keypad linking disconnected (Err_00, Err_01), EEPROM error (EEr)
	Cooling method		Force air cooling (200V series 1/2, 1HP and 400V series 1HP, 2HP are natural air cooling)
	Environment Atmosphere		Non-corrosive or non-conductive, or non-explosive gas or liquid, and non-dusty
	Surrounding temperature		-10°C (14°F) ~ +50°C (122°F) non-freezing and non-condensing
	Storage temperature		-20°C (-4°F) ~ +60°C (149°F)
	Relative humidity		90% RH or less (no-condensing atmosphere)
	Vibration		Less than 5.9m/sec² (0.6G)
	Altitude		Less than 1000m (3280 ft.)

Variable Frequency Drive
RM6 Series

RM6 200V&400V Outline Dimensions Reference Table

Applicable RM6 Series Number
RM6(3Φ) - 2050, 2060, 2075, 2100, 2125, 2150, 2200, 2250
RM6(3Φ) - 4075, 4100, 4125, 4150, 4175, 4200, 4250, 4300, 4350, 4420, 4500, 4600

RM6-200V Series

RM6-200V Series	Dimension (mm)																		Mounting Hole
	W	W1	W3	W4	H	H1	H2	H3	H4	h1	h2	h3	D0	D1	D2	d	d1	Ref	(mm)
2050	386	361	275	365	584	562	539	564	545	11	25	10	325	170	242	10	3	Fig. 5	M8
2060																			
2075																			
2100	446	418	275	427	685	660	630	662	634	14	30	12	334	172	246	12	3		M10
2125	508	479	275	487	818	785	751	788	758	19	35	12	366	183	257	15	3		M12
2150																			
2200	696	654	580	657	1000	974	929	978	936	15	39	18	405	224	294	15	3		
2250																			

RM6-400V Series

RM6-400V Series	Dimension (mm)																		Mount-	
	W	W1	W3	W4	H	H1	H2	H3	H4	h1	h2	h3	D0	D1	D2	d	d1	Ref	(mm)	
4075	386	361	275	365	584	562	539	564	545	11	25	10	325	170	242	10	3	Fig. 5	M8	
4100																				
4125																				
4150	446	418	275	427	685	660	630	662	634	14	30	12	334	172	246	12	3		M10	
4175	508	479	275	487	818	785	751	788	758	19	35	12	366	183	257	15	3			
4200																				
4250																				
4300	696	654	580	657	1000	974	929	978	936	15	39	18	405	224	294	15	3			M12
4350																				
4420																				
4500	992	954	710	958	1030	1003	963	1007	968	15	39	19	419	235	308	15	3			
4600																				

Variable Frequency Drive
RM6 Series

Fault Message Display

Fault-Trip Display

EER EEr HzV A EEPROM error	AdEr AdEr HzV A AD converter error	OC 00 HzV A Over current
OE OE HzV A Over voltage	LE1 LE1 HzV A Under voltage during operation	GF GF HzV A Grounding fault
OH OH HzV A Sink overheat	OL OL HzV A Motor over load	OL1 OL1 HzV A Drive over load
OLO OLO HzV A Over load detect	thr thr HzV A External thermal relay protection	PAdF PAdF HzV A Copy error
SC SC HzV A Drive internal fuse open		

Warning Display

Err 00 Err00 HzV A Keypad interrupt	Err 01 Err01 HzV A Keypad interrupt during operation	LE LE HzV A Main power source under voltage
OLO OLO HzV A Over load detect	bb bb HzV A Output interrupt	Fr Fr HzV A Coast to stop
dIF dIF HzV A Direction terminal error	db db HzV A Over voltage at stop	Wr_F Wr_F HzV A Write to drive fault

Variable Frequency Drive RM6 Series

RM6-Accessories

Remote Controller—KP-207



Remote Controller—RAC Series



RAC-01



RAC-02

Portable External Display—DM-501



Hz	Output Frequency
V	PN Voltage
V	Output Voltage
A	Output Current
rpm	Rotation Speed
mpm	Machine Speed
TS	Terminal Status

Variable Frequency Drive RM6 Series

Zero-Phase Radio Frequency Filter (RFI-01, 02, 03, 04)

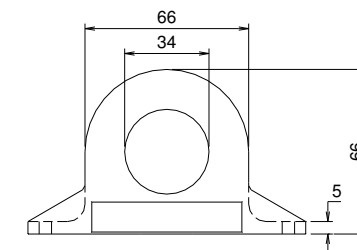
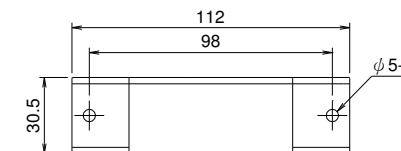


RFI-01

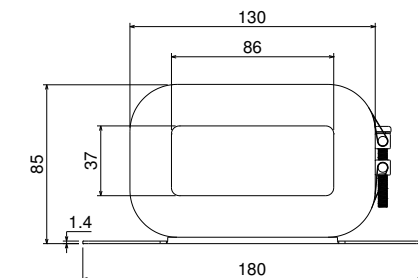
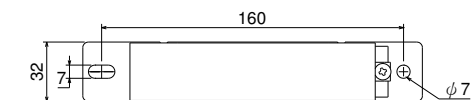


RFI-02

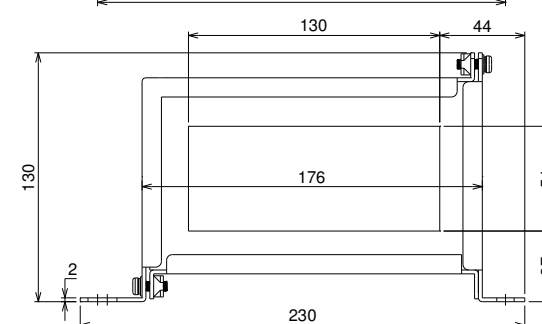
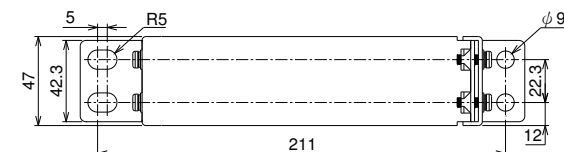
RFI-01 Dimensions



RFI-02 Dimensions



RFI-03 Dimensions



RFI-04 Dimensions

