VARIABLE FREQUENCY DRIVE

GREEN TECH, GREEN LIFE

RM5G Series

AC MOTOR CONTROLLER

RHYMEBUS

RM5G Variable Frequency Drive

About Rhymebus.

RHYMEBUS CORPORATION has been established since1987. Our mission is to be professional manufacturer of AC inverter, auxiliary control equipment, and customized products.

www.rhymebus.com.tw

RM5G Series

RHYMEBUS RM5G Series using the newest IGBT technology and digital control system with the user-friendly operation interface and multi-function features can be applied to the varies of product applications and increase the energy saving efficiency. RM5G is your best choice for the cost and energy saving!

Features

- Suitable for the constant torque load—mixer, conveyor, etc.
- Suitable for the variable torque load—fan, pump, PIMM, etc.
- Suitable for variety of heavy duty applications.
- Analog input signals with addition and subtraction functions.
- Restart function after an instant power interruption.
- The adjustable responding time for digital input signals (5~16ms)
- Switching frequency adjustable range between 800 Hz ~ 15kHz.
- Programmable input-output terminals.
- Command saving and copying functions using KP-201C digital keypad.
- Energy saving 30% ~ 50% (varied by applications).
- The adjustable digital filtering function for andog input signals.
- The drive can control and start synchronous motors.

Applications

- Plastic Injection Molding Machine
- Air Conditioning System
- Air Compressor
- Pump
- Elevator System
- Metal Processing Machine
- Conveyor Machine
- Textile Machine
- Construction Building
- Consumer Product

RM5G 100V/200V Series (1Ø)

- RM5G 100V Series: 1Ø, 100 ~ 120V, 50/60Hz
- RM5G 200V Series: 1Ø, 200 ~ 240V, 50/60Hz

Features

- 1 phase power in—3 phase power output
- High torque, low noise
- Automatic voltage regulator
- Suitable for variety of applications

RM5G 200V/400V Series (3Ø)

- RM5G 200V Series: 3Ø, 200 ~ 240V, 50/60Hz
- RM5G 400V Series: 3Ø, 380 ~ 480V, 50/60Hz
- Applicable motors
  -200V Series : 0.5HP/0.4KW ~ 250HP/200KW
  -400V Series : 1HP/0.75KW ~ 600HP/450KW

Features

- Low noise, high torque
- Output frequency adjustable range: 0.1 ~ 400Hz
- Overload protection: 150% rated current/ 1min
- The adjustable range of switching frequency : 800Hz~15kHz
- Suitable for variety of applications
- Protective Structure: IP20, IP00, IP20
  (UL open type RM5G-2001/2 ~ 2005, 4001 ~ 4005)

Model Number Scheme

RM5G-2 020 B

A B C D

- A ▸ RM5G Product Series
- B ▸ 1: 100V Series-100 ~ 120V
  2: 200V Series-200 ~ 240V
  4: 400V Series-380 ~ 480V
- C ▸ 020: Rated Horsepower (20HP)
- D ▸ B: Brake type
  (the internal braking transistor included)

Specifications

RM5G 100V Series (1Ø)

RM5G(100V 1Ø)	1001/2-1PH	1001-1PH	1002-1PH
Maximum Applicable Motor (HP/KW)	0.5/0.4	1/0.75	1.5/1.1
Rated Output Capacity (KVA)	1	1.6	2.3
Rated Output Current (A)	2.5	4.2	6
Input Current (A)	8.8	18	24.2
Rated Output Voltage (V)	3ø 200~240V		
Range of Output Frequency (Hz)	0.1~400.00Hz		
Overload Protection	150% over rated output current/1 min		
Power Source (Φ, V, Hz)	1ø 100~120V 50/60Hz		
Permissible AC Power Source Fluctuation	90~132V 50/60Hz		
Permissible Frequency Fluctuation	±5%		
Protective Structure	IP20		

RM5G 200V Series (1Ø)

RM5G(200V 1Ø)	2001/2-1PH	2001-1PH	2002-1PH
Maximum Applicable Motor (HP/KW)	0.5/0.4	1/0.75	2/1.5
Rated Output Capacity (KVA)	1.1	1.9	3
Rated Output Current (A)	3	5	8
Input Current (A)	7	13.5	19
Rated Output Voltage (V)	3ø 200~240V		
Range of Output Frequency (Hz)	0.1~400.00Hz		
Overload Protection	150% over rated output current/1 min		
Power Source (Φ, V, Hz)	1ø 200~240V 50/60Hz		
Permissible AC Power Source Fluctuation	176~264V 50/60Hz		
Permissible Frequency Fluctuation	±5%		
Protective Structure	IP20, UL open type		

RM5G 200V Series (3Ø)

RM5G(200V 3Ø)	2001/2	2001	2002	2003	2005	2007	2010	2015	2020	2025	2030	2040	2050	2060	2075	2100	2125	2150	2200	2250	--	--
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	20/15	25/18.5	30/22	40/30	50/37	60/45	75/55	100/75	125/90	150/110	200/160	250/200	--	--
Rated Output Capacity (KVA)	1.1	1.9	3	4.2	6.5	9.5	13	18	23	28	34	44	55	67	84	112	132	154	223	267	--	--
Rated Output Current (A)	3	5	8	11	17	25	33	46	60	74	90	115	145	175	220	295	346	405	585	700	--	--
Input Current (A)	5	6	10	14	18	30	44	60	71	98	110	133	176	200	240	280	330	380	550	660	--	--
Rated Output Voltage (V)	3ø 200~240V																					
Range of Output Frequency (Hz)	0.1~400.00Hz																					
Overload Protection	150% over rated output current/1 min																					
Power Source (Ø, V, Hz)	3ø 200~240V 50/60Hz																					
Permissible AC Power Source Fluctuation	176V~264V 50/60Hz																					
Permissible Frequency Fluctuation	±5%																					
Protective Structure	IP20, UL open type					IP20								IP00(IP20 Option)								

RM5G 400V Series (3Ø)

RM5G(400V 3Ø)	4001	4002	4003	4005	4007	4010	4015	4020	4025	4030	4040	4050	4060	4075	4100	4125	4150	4175	4200	4250	4300	4350	4420	4500	4600
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	150/110	175/132	200/160	250/200	300/220	350/250	420/315	500/375	600/450
Rated Output Capacity (KVA)	1.9	3	4.6	6.9	11	14	18	23	30	34	46	56	66	84	114	134	160	193	232	287	316	366	446	533	655
Rated Output Current (A)	2.5	4	6	9	14	18	24	30	39	45	61	73	87	110	150	176	210	253	304	377	415	480	585	700	860
Input Current (A)	3.5	5	8	12	14	20	26	30	50	61	74	90	105	130	155	177	196	217	282	355	385	440	540	650	800
Rated Output Voltage (V)	3ø 380~480V																								
Range of Output Frequency (Hz)	0.1~400.00Hz																								
Overload Protection	150% over rated output current/1 min																								
Power Source (Ø, V, Hz)	3ø 380V~480V 50/60Hz																								
Permissible AC Power Source Fluctuation	332~528V 50/60Hz																								
Permissible Frequency Fluctuation	±5%																								
Protective Structure	IP20, UL open type					IP20								IP00(IP20 Option)											

RM5G General Specifications

User interface			Digital and analog operating keypads with remote control
Control characteristics	Control method		Voltage vector sinusoidal PWM control
	Resolution of frequency setting		0.1~400.00 Hz
	Resolution of frequency setting		Digital keypad: 0.01 Hz
			Analog input: 0.06Hz (at maximum frequency 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
	Five steps acceleration/ deceleration time		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), KP-202 disconnection during running (PAdF), 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 then 5.9m/sec² (0.6G)
	Altitude		Less then 1000m (3280 ft.)

Outline Drawing

Fig.1 OPERATIONAL KEYPAD—KP201C, KP202

Unit: mm

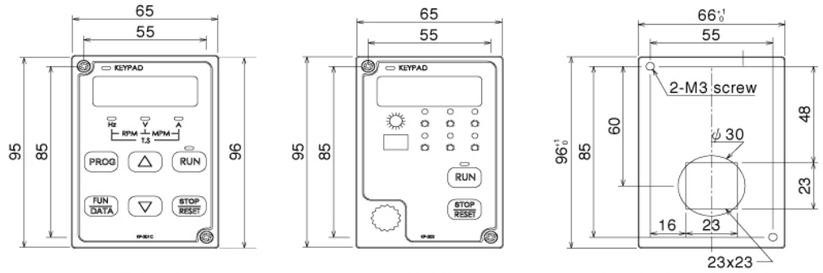


Fig.2 RM5G (1Ø) - 1001/2 ~ 1002, 2001/2 ~ 2002
RM5G (3Ø) - 2001/2 ~ 2005, 4001 ~ 4005

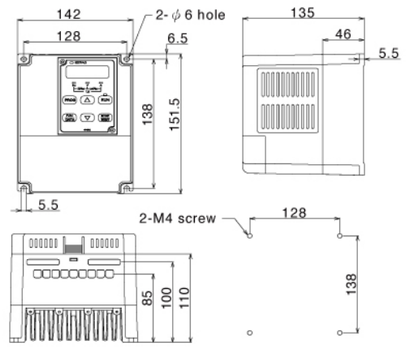
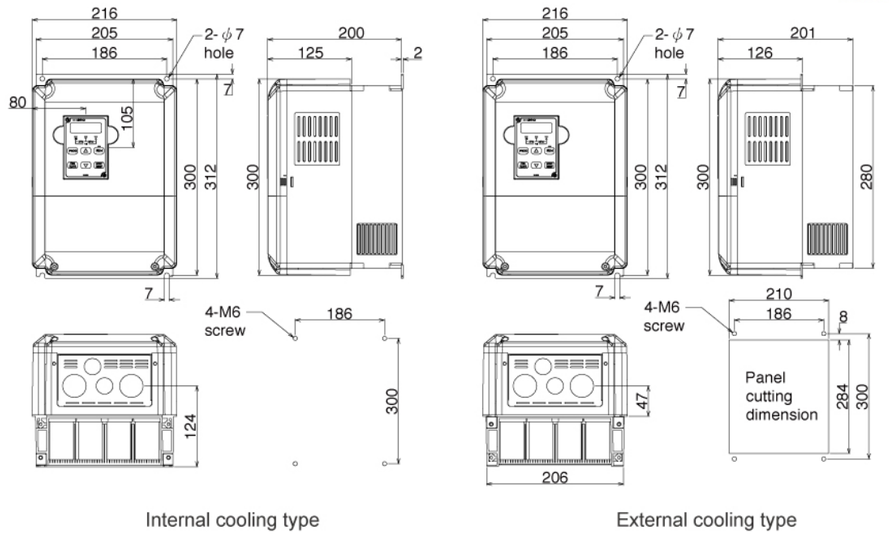


Fig.3 RM5G - 2007, 2010, 2015, 4007, 4010, 4015, 4020

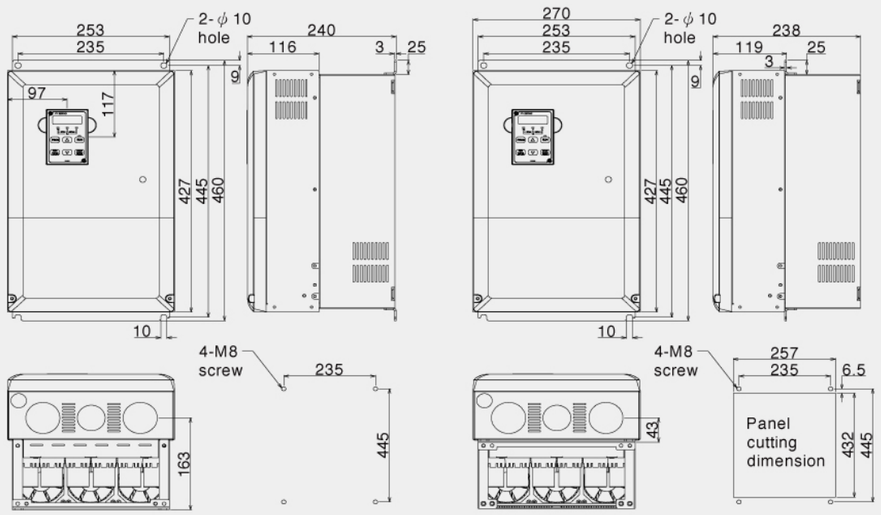
Unit: mm



Outline Drawing

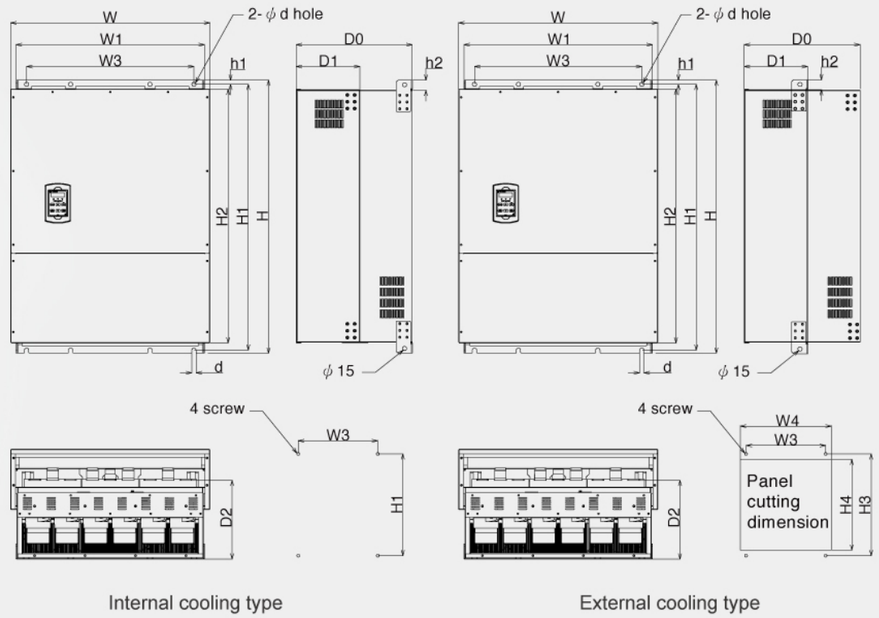
Fig.4 RM5G - 2020, 2025, 2030, 2040, 4025, 4030, 4040, 4050, 4060

Unit: mm



Internal cooling type　　External cooling type

Fig.5 RM5G - 2050, 2060, 2075, 2100, 2125, 2150, 2200, 2250
RM5G - 4075, 4100, 4125, 4150, 4175, 4200, 4250, 4300, 4350, 4420, 4500, 4600



Internal cooling type　　External cooling type

RM5G 200V and 400V Outline Dimension Reference Table

Applicable RM5G Series Number

RM5G - 2050, 2060, 2075, 2100, 2125, 2150, 2200, 2250
RM5G - 4075, 4100, 4125, 4150, 4175, 4200, 4250, 4300, 4350, 4420, 4500, 4600

RM5G 200V Series

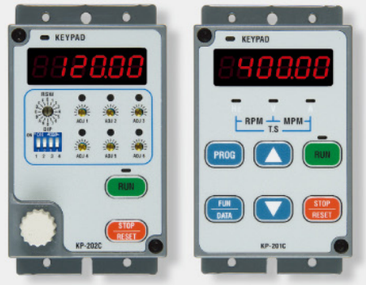
RM5G 200V Series	Dimension (mm)																	Screw
	W	W1	W3	W4	H	H1	H2	H3	H4	h1	h2	h3	D0	D1	D2	d	d1	Ref.	(mm)
2050	386	361	275	365	584	562	539	564	545	11	25	10	325	170	242	10	3	Fig.5	M8
2060																			
2075																			
2100	446	418	275	427	685	660	630	662	634	14	30	12	334	172	246	12	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																			

RM5G 400V Series

RM5G 400V Series	Dimension (mm)																	Screw
	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		M12
4200																			
4250																			
4300	696	654	580	657	1000	974	929	978	936	15	39	18	405	224	294	15	3		
4350																			
4420																			
4500	992	954	710	958	1030	1003	963	1007	968	15	39	19	419	235	308	15	3		
4600																			

Remote Controller

Operation Keypad



KP-202 KP-201C

External Display

RAC-01 RAC-02

Remote Indicator DM-501

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

Fault Message Display

RM5G Error Trip Display

EER
EEPROM error

AD_Err
AD converter error

OC
Over current

OE
Over voltage

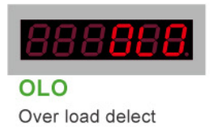
LE1
Under voltage during operation

GF
Grounding fault

OH
Sink overheat

OL
Motor over load

OL1
Drive over load



OLO
Over load delect

thr
External thermal relay protection

PAdF
KP-202 error

SC
Drive internal fuse open

RM5G Warning Display

Err 00
Keypad interrupt

Err 01
Keypad interrupt during operation

LE
Main power source under voltage

OLO
Over load detect

bb
Output interrup

Fr
Coast to stop

dtf
Direction terminal error

db
Over voltage at stop

Wr_F
Write to drive fault

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Dandelion Design

Seeds of Dandelion travel far away when the wind blows for life carrying and planting – As Rhymebus drive varying the constant voltage and frequency to increase the energy use efficiency and save the energy to green the environment for our life and future.

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