

Power Supplies

AC Input

Single Output, Long Life

R Series RM-GB(30 to 300W)

UL/CSA Approved(applicable for 300W Type only)

These products are high-reliability long-life products having a high reputation for high MTBF field achievements. They have Remote ON-OFF, Remote Sensing, and Parallel Connection and other functions.

A wide variety of 22 models of 30 to 300W are prepared, thereby enabling customers to use these general-purpose power supplies with confidence.

FEATURES

- High-reliability AC.100V input and single output power supply.
- Remote ON-OFF function.
- Remote sensing function.
- Parallel connection is possible.
- Low noise(CISPR standard compliant).



PART NUMBERS AND RATINGS

Output voltage(V)	30W Type		50W Type		75W Type	
	Current(A)	Part No.	Current(A)	Part No.	Current(A)	Part No.
5	6	RM05-6R0GB	10	RM05-10R0GB	15	RM05-15R0GB
12	2.5	RM12-2R5GB	5	RM12-5R0GB	6.3	RM12-6R3GB
15	2	RM15-2R0GB	4	RM15-4R0GB	5	RM15-5R0GB
24	1.3	RM24-1R3GB	2.5	RM24-2R5GB	3.2	RM24-3R2GB
48			1.3	RM48-1R3GB	1.6	RM48-1R6GB

Output voltage(V)	100W Type		300W Type	
	Current(A)	Part No.	Current(A)	Part No.
5	20	RM05-20R0GB	60	RM05-60R0GB
12	8.5	RM12-8R5GB	27	RM12-27R0GB
15	7	RM15-7R0GB		
24	4.5	RM24-4R5GB	16	RM24-16R0GB
48			6	RM48-6R0GB

Power Supplies

R Series RM-GB(30 to 300W)

AC Input

Single Output, Long Life

RM-GB30W TYPE

SPECIFICATIONS AND STANDARDS

Part No.		RM05-6R0GB	RM12-2R5GB	RM15-2R0GB	RM24-1R3GB
Rated output voltage and current*		5V • 6A	12V • 2.5A	15V • 2A	24V • 1.3A
Maximum output power	W	33	33.7	33	34.4
Input conditions					
Input voltage Eac	V	85 to 132[Rating: 100 to 115]			
Input frequency	Hz	47 to 440[Rating: 50 to 60](Single phase)			
Input capacitance	VA	80max.[At maximum output power]			
Fuse rating	A	3.15[Built-in]			
Surge current	A	15/17max.[25°C, input and output ratings, 1st surge current, reset after 5s minimum.]			
Leakage current	mA	0.5max.(0.3typ.)[25°C, input and output ratings]			
Efficiency	%	75typ.[25°C, input and output ratings]			
Output characteristics					
Output voltage Edc	V	5	12	15	24
Voltage variable range Edc	V	4.25 to 5.5	9.5 to 13.5	12 to 16.5	19 to 26.5
Maximum output current*	A	6	2.5	2	1.3
Overvoltage threshold Edc	V	5.8 to 6.9	13.7 to 15.7	17 to 19	27 to 30.5
Overcurrent threshold	A	6.6 to 7.8	2.8 to 3.3	2.2 to 2.6	1.5 to 1.8
Voltage stability	Source effect	%	0.8max.(0.5typ.)[Within the input voltage range]		
	Load effect	%	1max.(0.5typ.)[10 to 100% load]		
	Temperature effect	%	1.2max.(0.4typ.)[Ambient temperature: 0 to +50°C]		
	Drift(Time effect)	%	0.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]		
	Recovery	%/ms	±4max./1max.[50 to 100% sudden load change]		
Ripple Ep-p	mV	50max.	80max.	80max.	100max.
Ripple noise Ep-p	mV	Output voltage×0.5%+50max.[50MHz max.]			
Start up time	ms	100max.(50typ.)[25°C, input and output ratings]			
Hold up time	ms	20min.(35typ.)[25°C, input and output ratings]			
Auxiliary functions					
Overvoltage protection		Output voltage shut-down type, recovers upon reset(interval approx. 5s).			
Overcurrent protection		Rectangular type, automatic recovery.			
Remote ON-OFF		Yes(Floating)			
Remote sensing		Yes			
Standards					
Safety standards		—			
Noise terminal voltage		CISPR standard meet.			
Constructions					
External dimensions	mm	130×35×146[H×W×L]			
Weight	g	650max.			
Mounting method		Can be attached to 4 sides.			
Case material		Aluminum(Phosphoric acid anodized surface)			

* Current rating(maximum output current) is determined for 0 to +50°C. Derating is required when used outside this temperature range.

Power Supplies

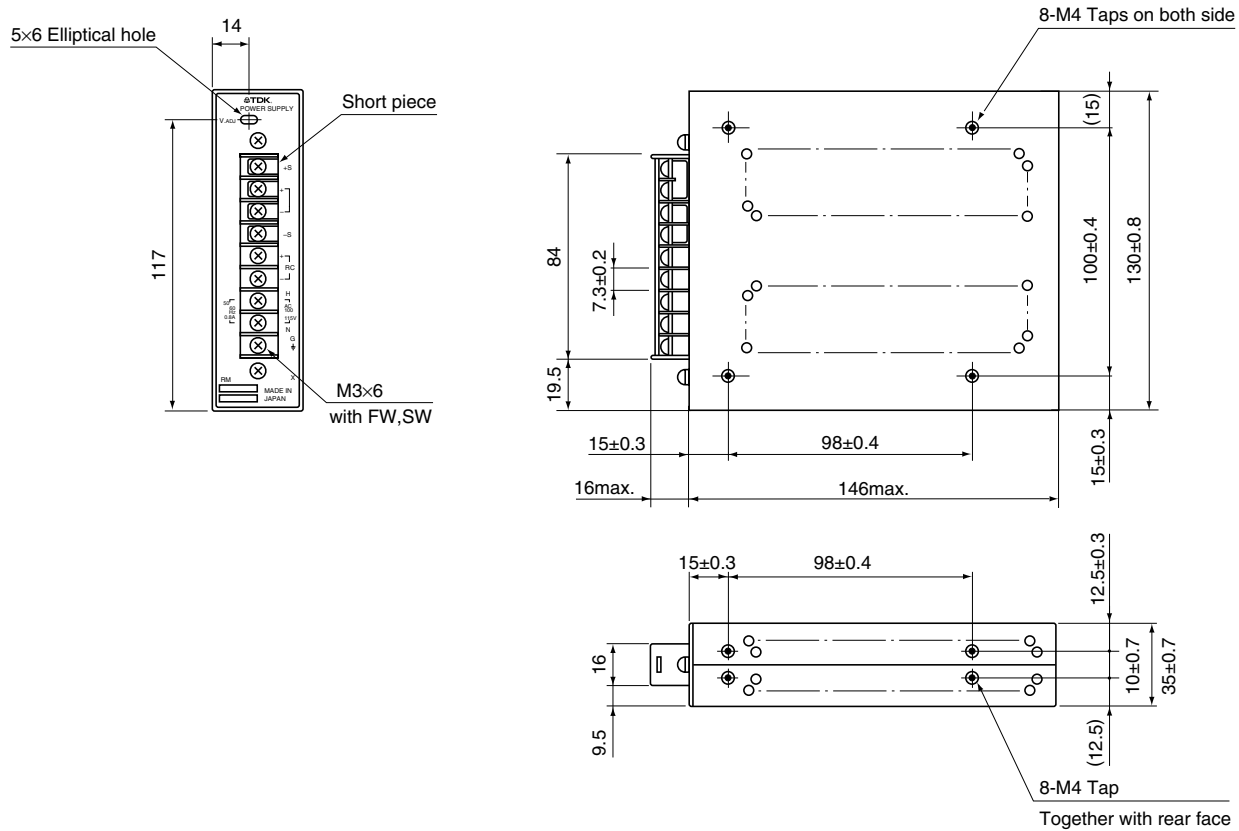
AC Input

Single Output, Long Life

R Series RM-GB(30 to 300W)

RM-GB30W TYPE

SHAPES AND DIMENSIONS



Dimensions in mm
±1mm : without specified dimensions

- Do not insert M4 tap installation screws more than 7mm from surface of housing.



Power Supplies

R Series RM-GB(30 to 300W)

AC Input

Single Output, Long Life

RM-GB50W TYPE

SPECIFICATIONS AND STANDARDS

Part No.		RM05-10RGB	RM12-5R0GB	RM15-4R0GB	RM24-2R5GB	RM48-1R3GB	
Rated output voltage and current*		5V • 10A	12V • 5A	15V • 4A	24V • 2.5A	48V • 1.3A	
Maximum output power	W	55	68	66	66	69	
Input conditions							
Input voltage Eac	V	85 to 132[Rating: 100 to 115]					
Input frequency	Hz	47 to 440[Rating: 50 to 60Hz](Single phase)					
Input capacitance	VA	180max. [At maximum output power]					
Fuse rating	A	3.15[Built-in]					
Surge current	A	15/17max.[25°C, input and output ratings, 1st surge current, reset after 5s minimum.]					
Leakage current	mA	0.5max.(0.3typ.)[25°C, input and output ratings]					
Efficiency	%	78typ.[25°C, input and output ratings]					
Output characteristics							
Output voltage Edc	V	5	12	15	24	48	
Voltage variable range Edc	V	4 to 5.5	9.5 to 13.5	12 to 16.5	19 to 26.5	38.4 to 53	
Maximum output current	A	10	5	4	2.5	1.3	
Overvoltage threshold Edc	V	6 to 6.5	14 to 14.5	17 to 17.5	27 to 27.5	55 to 57	
Overcurrent threshold	A	11.5 to 12.5	5.7 to 6.3	4.6 to 5	2.8 to 3.2	1.5 to 1.7	
Voltage stability	Source effect	% 0.8max.(0.5typ.)[Within the input voltage range]				Total effect 2max.(1.3typ.)	
	Load effect	% 1max.(0.5typ.)[10 to 100% load]					
	Temperature effect	% 1.2max.(0.4typ.)[Ambient temperature: 0 to +50°C]					
	Drift(Time effect)	% 0.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]					
	Recovery	%ms ±4max./1max.[50 to 100% sudden load change]					
Ripple Ep-p	mV	50max.	80max.	80max.	100max.	100max.	
Ripple noise Ep-p	mV	Output voltage×0.5%+50max.[50MHz max.]					
Start up time	ms	150max.(90typ.)[25°C, input and output ratings]					500max.(250typ.)
Hold up time	ms	20min.(35typ.)[25°C, input and output ratings]					
Auxiliary functions							
Overvoltage protection		Output voltage shut-down type, recovers upon reset(interval approx. 5s).					
Overcurrent protection		Rectangular type, automatic recovery.					
Remote ON-OFF		Yes(Floating)					
Remote sensing		Yes					
Standards							
Safety standards		—					
Noise terminal voltage		CISPR standard meet.					
Constructions							
External dimensions	mm	130×55×191[H×W×L]					
Weight	kg	1.1max.					
Mounting method		Can be attached to 4 sides.					
Case material		Aluminum(Phosphoric acid anodized surface)					

* Current rating(maximum output current) is determined for 0 to +50°C. Derating is required when used outside this temperature range.

Power Supplies

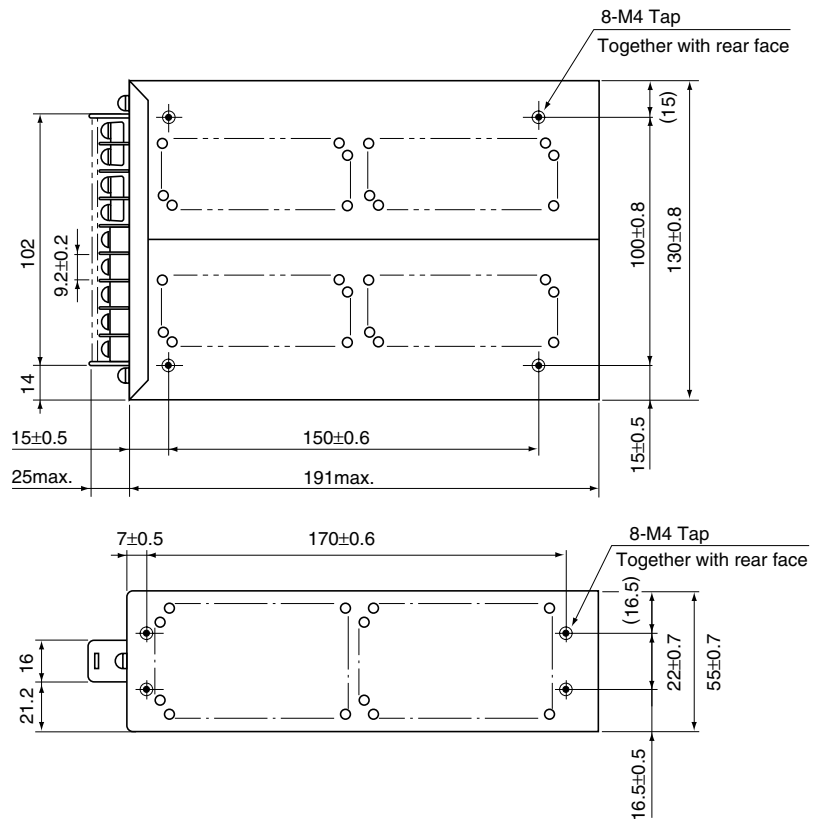
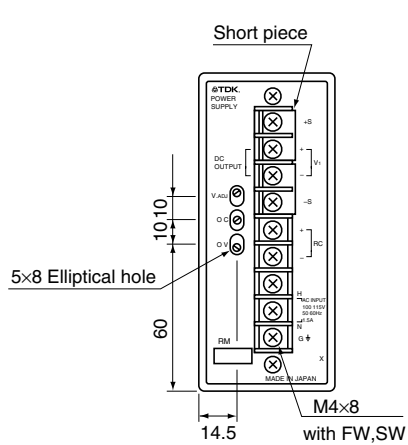
AC Input

Single Output, Long Life

R Series RM-GB(30 to 300W)

RM-GB50W TYPE

SHAPES AND DIMENSIONS



Dimensions in mm
±1mm : without specified dimensions

- Do not insert M4 tap installation screws more than 7mm from surface of housing.



Power Supplies

R Series RM-GB(30 to 300W)

AC Input

Single Output, Long Life

RM-GB75W TYPE

SPECIFICATIONS AND STANDARDS

Part No.		RM05-15RGB	RM12-6R3GB	RM15-5R0GB	RM24-3R2GB	RM48-1R6GB	
Rated output voltage and current*		5V • 15A	12V • 6.3A	15V • 5A	24V • 3.2A	48V • 1.6A	
Maximum output power	W	82.5	85	82.5	85	85	
Input conditions							
Input voltage Eac	V	85 to 132[Rating: 100 to 115]					
Input frequency	Hz	47 to 440[Rating: 50 to 60Hz](Single phase)					
Input capacitance	VA	220max.[At maximum output power]					
Fuse rating	A	4[Built-in]					
Surge current	A	15/17max.[25°C, input and output ratings, 1st surge current, reset after 5s minimum.]					
Leakage current	mA	0.5max.(0.3typ.)[25°C, input and output ratings]					
Efficiency	%	78typ.[25°C, input and output ratings]					
Output characteristics							
Output voltage Edc	V	5	12	15	24	48	
Voltage variable range Edc	V	4 to 5.5	9.5 to 13.5	12 to 16.5	19 to 26.5	38.4 to 53	
Maximum output current	A	15	6.3	5	3.2	1.6	
Overvoltage threshold Edc	V	6 to 6.5	14 to 14.5	17 to 17.5	27 to 27.5	55 to 57	
Overcurrent threshold	A	17.2 to 18.8	7.2 to 7.9	5.7 to 6.3	3.6 to 4	1.8 to 2	
Voltage stability	Source effect	% 0.8max.(0.5typ.)[Within the input voltage range]				Total effect 2max.(1.3typ.)	
	Load effect	% 1max.(0.5typ.)[10 to 100% load]					
	Temperature effect	% 1.2max.(0.4typ.)[Ambient temperature: 0 to +50°C]					
	Drift(Time effect)	% 0.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]					
	Recovery	%ms ±4max./1max.[50 to 100% sudden load change]					
Ripple Ep-p	mV	50max.	80max.	80max.	100max.	100max.	
Ripple noise Ep-p	mV	Output voltage×0.5%+50max.[50MHz max.]					
Start up time	ms	150max.(90typ.)[25°C, input and output ratings]					500max.(250typ.)
Hold up time	ms	20min.(35typ.)[25°C, input and output ratings]					
Auxiliary functions							
Overvoltage protection		Output voltage shut-down type, recovers upon reset(interval approx. 8s).					
Overcurrent protection		Rectangular type, automatic recovery.					
Remote ON-OFF		Yes(Floating)					
Remote sensing		Yes					
Standards							
Safety standards		—					
Noise terminal voltage		CISPR standard meet.					
Constructions							
External dimensions	mm	130×55×224[H×W×L]					
Weight	kg	1.5max.					
Mounting method		Can be attached to 4 sides.					
Case material		Aluminum(Phosphoric acid anodized surface)					

* Current rating(maximum output current) is determined for 0 to +50°C. Derating is required when used outside this temperature range.

Power Supplies

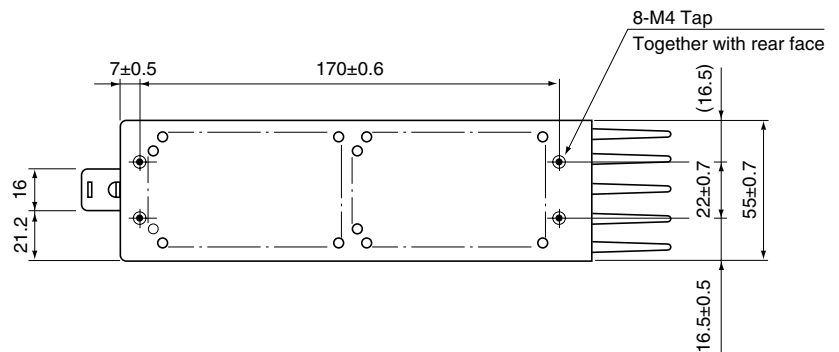
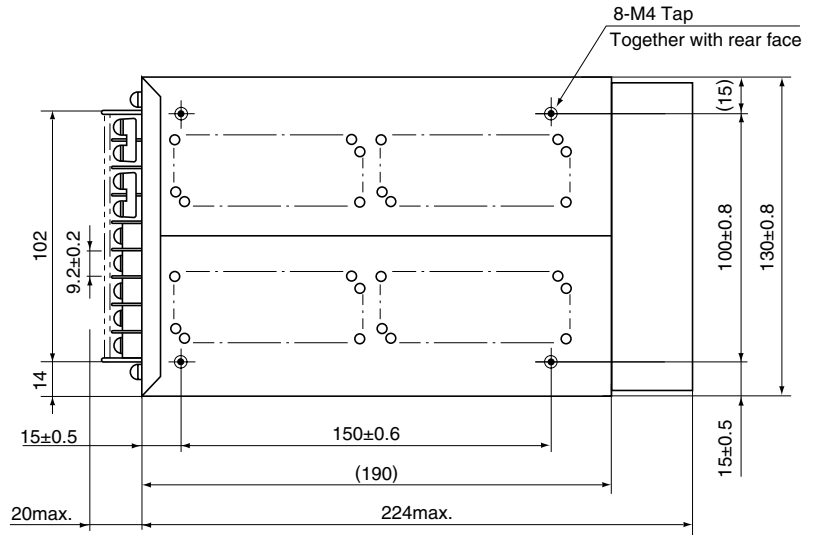
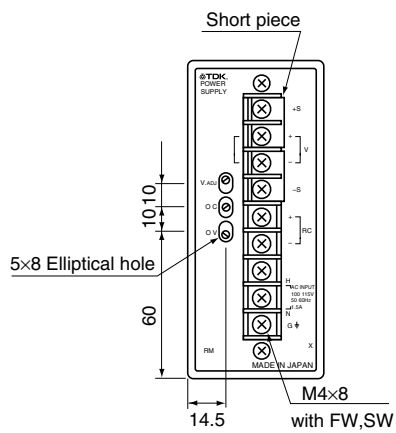
AC Input

Single Output, Long Life

R Series RM-GB(30 to 300W)

RM-GB75W TYPE

SHAPES AND DIMENSIONS



Dimensions in mm
±1mm : without specified dimensions

- Do not insert M4 tap installation screws more than 7mm from surface of housing.



Power Supplies

R Series RM-GB(30 to 300W)

AC Input

Single Output, Long Life

RM-GB100W TYPE

SPECIFICATIONS AND STANDARDS

Part No.		RM05-20RGB	RM12-8R5GB	RM15-7R0GB	RM24-4R5GB
Rated output voltage and current*		5V • 20A	12V • 8.5A	15V • 7A	24V • 4.5A
Maximum output power	W	110	115	116	119
Input conditions					
Input voltage Eac	V	85 to 132[Rating: 100 to 115]			
Input frequency	Hz	47 to 440[Rating: 50 to 60Hz](Single phase)			
Input capacitance	VA	290max.[At maximum output power]			
Fuse rating	A	5[Built-in]			
Surge current	A	15/17max.[25°C, input and output ratings, 1st surge current, reset after 5s minimum.]			
Leakage current	mA	0.5max.(0.3typ.)[25°C, input and output ratings]			
Efficiency	%	78typ.[25°C, input and output ratings]			
Output characteristics					
Output voltage Edc	V	5	12	15	24
Voltage variable range Edc	V	4 to 5.5	9.5 to 13.5	12 to 16.5	19 to 26.5
Maximum output current	A	20	8.5	7	4.5
Overvoltage threshold Edc	V	6 to 6.5	14 to 14.5	17 to 17.5	27 to 27.5
Overcurrent threshold	A	23 to 25	9.7 to 10.7	8 to 8.8	5.1 to 5.7
Voltage stability	Source effect	%	0.8max.(0.5typ.)[Within the input voltage range]		
	Load effect	%	1max.(0.5typ.)[10 to 100% load]		
	Temperature effect	%	1.2max.(0.4typ.)[Ambient temperature: 0 to +50°C]		
	Drift(Time effect)	%	0.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]		
	Recovery	%/ms	±4max./1max.[50 to 100% sudden load change]		
Ripple Ep-p	mV	50max.	80max.	80max.	100max.
Ripple noise Ep-p	mV	Output voltage×0.5%+50max.[50MHz max.]			
Start up time	ms	150max.(90typ.)[25°C, input and output ratings]			
Hold up time	ms	20min.(35typ.)[25°C, input and output ratings]			
Auxiliary functions					
Overvoltage protection		Output voltage shut-down type, recovers upon reset(interval approx. 15s).			
Overcurrent protection		Rectangular type, automatic recovery.			
Remote ON-OFF		Yes(Floating)			
Remote sensing		Yes			
Standards					
Safety standards		—			
Noise terminal voltage		CISPR standard meet.			
Constructions					
External dimensions	mm	130×83×224[H×W×L]			
Weight	kg	1.8max.			
Mounting method		Can be attached to 4 sides.			
Case material		Aluminum(Phosphoric acid anodized surface)			

* Current rating(maximum output current) is determined for 0 to +50°C. Derating is required when used outside this temperature range.

Power Supplies

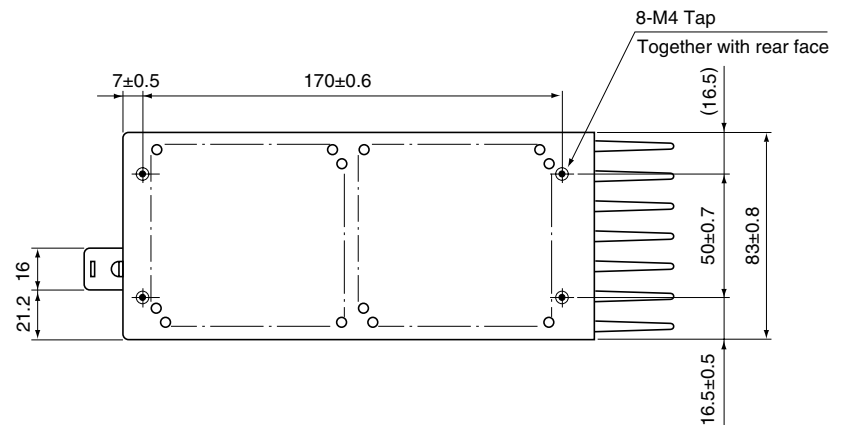
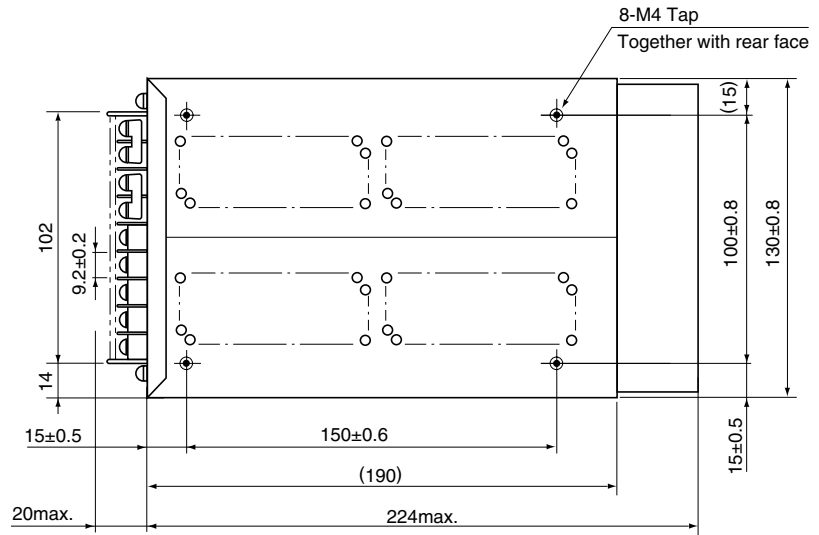
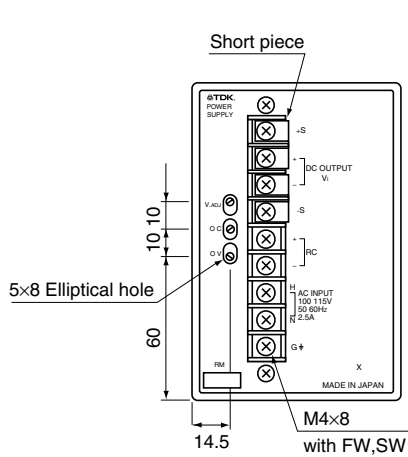
AC Input

Single Output, Long Life

R Series RM-GB(30 to 300W)

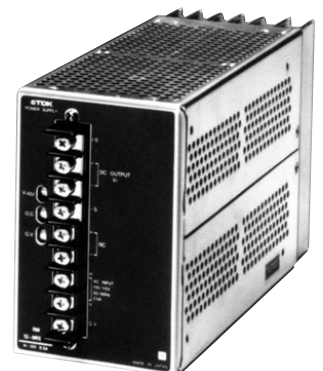
RM-GB100W TYPE

SHAPES AND DIMENSIONS



Dimensions in mm
±1mm : without specified dimensions

- Do not insert M4 tap installation screws more than 7mm from surface of housing.



Power Supplies

AC Input

Single Output, Long Life

R Series RM-GB(30 to 300W)

UL/CSA Approved

RM-GB300W TYPE

SPECIFICATIONS AND STANDARDS

Part No.		RM05-60RGB	RM12-27RGB	RM24-16RGB	RM48-6R0GB
Rated output voltage and current*		5V • 60A	12V • 27A	24V • 16A	48V • 6A
Maximum output power	W	330	365	384	318
Input conditions					
Input voltage Eac	V	85 to 132[Rating: 100 to 115]			
Input frequency	Hz	47 to 440[Rating: 50 to 60Hz](Single phase)			
Input capacitance	VA	750max.[At maximum output power]			
Fuse rating	A	15[Built-in]			
Surge current	A	20/25max.[25°C, input and output ratings, 1st surge current, reset after 40s minimum.]			
Leakage current	mA	0.5max.(0.3typ.)[25°C, input and output ratings]			
Efficiency	%	80typ.[25°C, input and output ratings]			
Output characteristics					
Output voltage Edc	V	5	12	24	48
Voltage variable range Edc	V	4 to 5.5	9.5 to 13.5	19 to 26.5	38.4 to 53
Maximum output current	A	60	27	16	6
Overvoltage threshold Edc	V	6 to 6.5	14 to 14.5	27 to 27.5	55 to 57
Overcurrent threshold	A	66 to 72	30 to 34	17 to 18.5	6.6 to 7.4
Voltage stability	Source effect	%	0.8max.(0.5typ.)[Within the input voltage range]		
	Load effect	%	1max.(0.5typ.)[10 to 100% load]		
	Temperature effect	%	1.2max.(0.4typ.)[Ambient temperature: 0 to +50°C]		
	Drift(Time effect)	%	0.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]		
	Recovery	%/ms	±4max./1max.[50 to 100% sudden load change]		
Ripple Ep-p	mV	50max.	80max.	100max.	100max.
Ripple noise Ep-p	mV	Output voltage×0.5%+50max.[50MHz max.]			
Start up time	ms	150max.(90typ.)[25°C, input and output ratings]			
Hold up time	ms	20min.(30typ.)[25°C, input and output ratings]			
Auxiliary functions					
Overvoltage protection		Output voltage shut-down type, recovers upon reset(interval approx. 40s).			
Overcurrent protection		Rectangular type, automatic recovery.			
Remote ON-OFF		Yes(Floating)			
Remote sensing		Yes			
Standards					
Safety standards		UL1950-3, CSA 950-95(C-UL) approved.			
Noise terminal voltage		CISPR standard meet.			
Constructions					
External dimensions	mm	130×153×224[H×W×L]			
Weight	kg	3.8max.			
Mounting method		Can be attached to 4 sides.			
Case material		Aluminum(Phosphoric acid anodized surface)			

* Current rating(maximum output current) is determined for 0 to +50°C. Derating is required when used outside this temperature range.

Power Supplies

AC Input

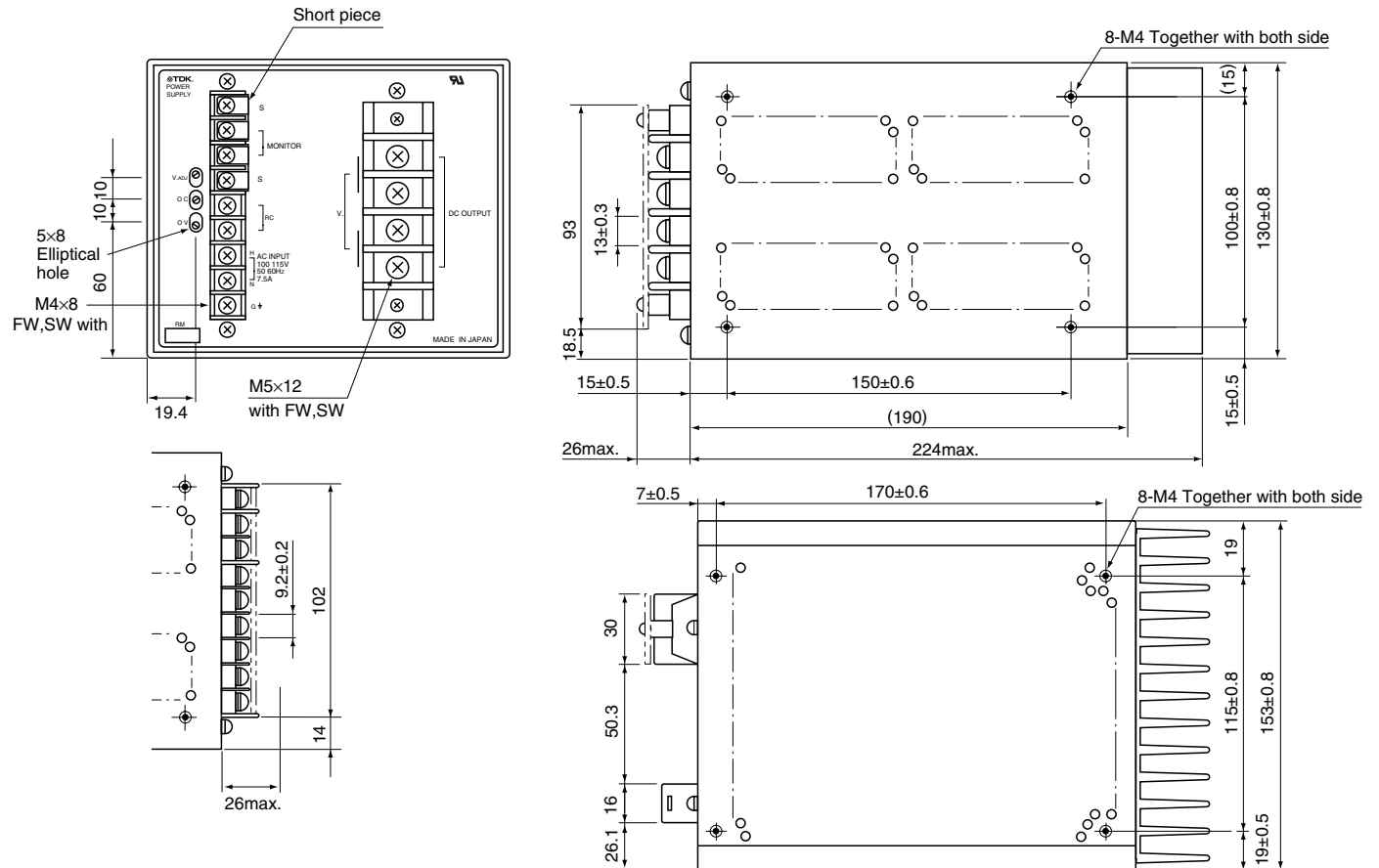
Single Output, Long Life

R Series RM-GB(30 to 300W)

UL/CSA Approved

RM-GB300W TYPE

SHAPES AND DIMENSIONS



Dimensions in mm
±1mm : without specified dimensions

- Do not insert M4 tap installation screws more than 7mm from surface of housing.
- Output terminals on 2 places.
Connect both terminals when output current was over 40A.



Power Supplies

AC Input

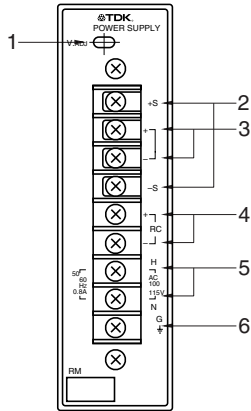
Single Output, Long Life

R Series RM-GB(30 to 300W)

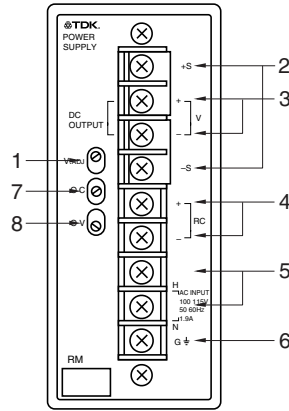
UL/CSA Approved(applicable for 300W Type only)

TERMINAL DESIGNATIONS AND FUNCTIONS

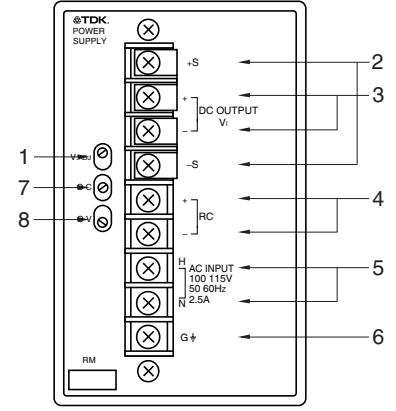
30W TYPE



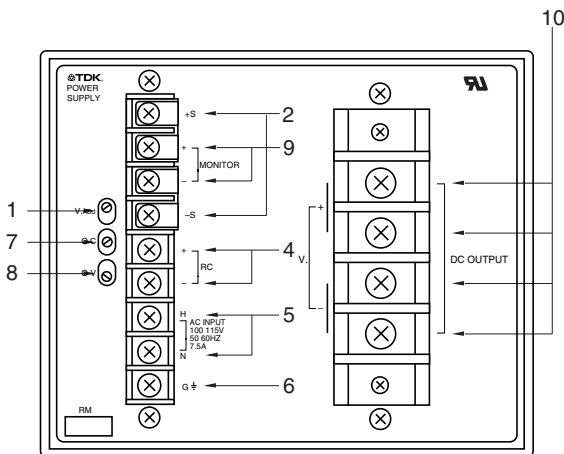
50W, 75W TYPE



100W TYPE



300W TYPE



Terminal No.	Designations and functions	
1	Output voltage adjustment trim(V.ADJ)	Adjusts output voltage.
2	Remote sensing terminals(+S, -S)	These terminals are used to compensate voltage loss from the output terminal to a load. Normally they are shorted with a metal bar.
3	DC output terminals(+, -)	Connect to load.
4	Remote ON-OFF terminals(+RC, -RC)	Output is turned ON-OFF by disconnecting-connecting the RC terminals(output ON when open). RC terminals are floating.
5	AC input terminals(H, N, AC.100/115V)	Connect to AC.100/115V single phase input line.
6	Frame ground terminal(G)	Connect to earth ground. This is connected to the case.
7	Overcurrent value adjustment trimmer(OC)	Setting trimmer at delivery.
8	Overvoltage value adjustment trimmer(OV)	Setting trimmer at delivery.
9	Monitor terminals(MONITOR, +, -)	Monitor terminal for direct current. Do not connect a load line to this terminal. Unless the Remote Sensing is used, short with the Remote Sensing terminal.
10	Direct output terminals(DC OUTPUT, +, -)	Connect a load line to this terminal. Allowable current per pin is 40A max. A use of two pins each is recommended.

Power Supplies

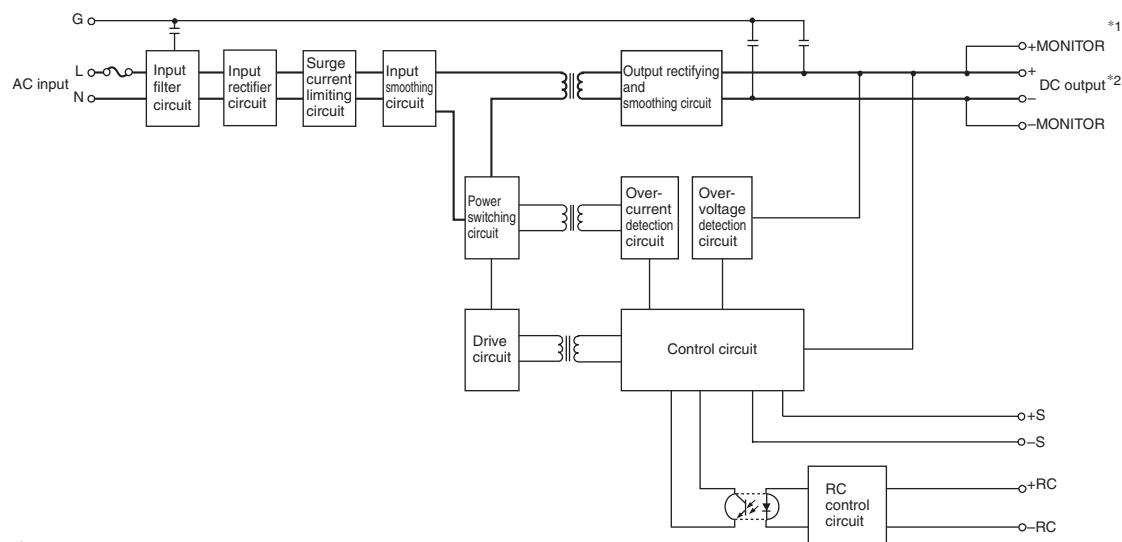
AC Input

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R Series RM-GB(30 to 300W)

UL/CSA Approved(applicable for 300W Type only)

BLOCK DIAGRAM



*1 MONITOR terminal is only for 300W type.

*2 For the 300W type, two DC output terminals + and - are prepared for each.

COMMON SPECIFICATIONS

Temperature and humidity

Temperature range	Operating(°C)	0 to +60 [Derating is necessary when operating environment temperature exceed 50°C.]
	Storage(°C)	-25 to +75
Humidity range	Operating(%)RH	20 to 95[Maximum wet-bulb temperature: 35°C, without dewing]
	Storage(%)RH	

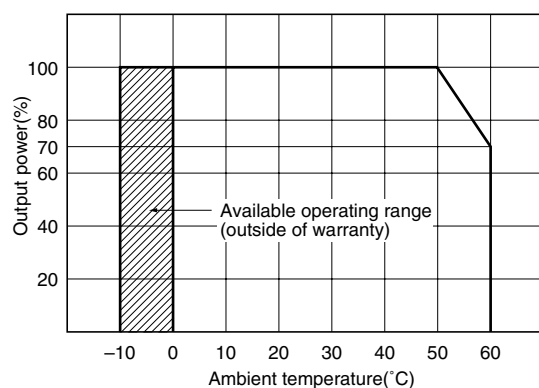
Vibration and shock

Vibration	5 to 10Hz	All amplitude 10mm[3 directions, each 1h]
	10 to 55Hz	Acceleration 19.6m/s ² (2G)[3 directions, each 1h]
Shock	Acceleration	196m/s ² (20G)[3 directions, each 3 times]
	Pulse duration	11±5ms

Withstand voltage and insulation resistance

Withstand voltage	Input terminal to case(G)	Eac: 2kV, 1min[Normal temperature, normal humidity, cutout current 10mA]
	Input terminal to output terminal	
Insulation resistance	Input terminal to case(G)	Edc: 500V, 100MΩ min. [Normal temperature, normal humidity]
	Output terminal to case(G)	

OUTPUT POWER-AMBIENT TEMPERATURE(DERATINGS)



Power Supplies

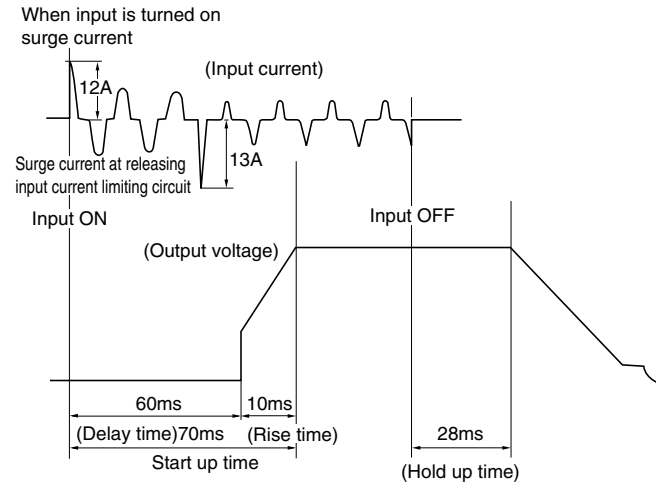
AC Input

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R Series RM-GB(30 to 300W)

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INPUT SURGE CURRENT, START UP / RISE / HOLD UP TIMES



REMOTE ON-OFF

Power supply output voltage can be turned on/off by this terminal for a power supply sequence or the like.

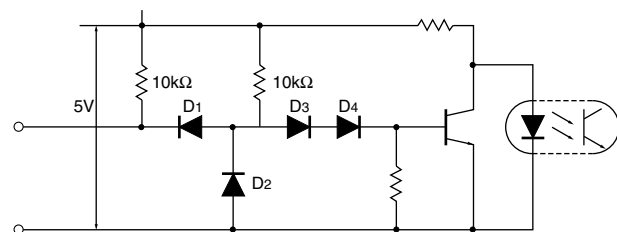
Between +RC and -RC: Turned on upon setting to high level (2.4 to 24V) or being open.

Between +RC and -RC: Turned off upon setting to low level (0 to 0.4V) or shorted.

The RC terminals are at a floating level to the AC input terminals and the DC output terminals.

Keep the +RC terminal open when not in use since it is internally pulled up.

REMOTE ON-OFF CIRCUIT



· D4 not connected for 30W Type.

OTHER CONDITIONS

- Unless conditions are otherwise specified in the specifications or standards, 25°C and rated input-output should be applied.
- Ripple and noise (50MHz or lower) should be specified at a temperature within a range of 0 to +50°C.