

AC Input

Conformity to RoHS Directive

Single Output, Long Life, UL/C-UL/TÜV Approved

R Series RKW(30W to 1.5kW)

TDK answers a wide range of customers' needs with preparations of 68 models under 7 types of 30/50/100/150/300/600W and 1.5kW of the definitive compact power supplies which have achieved the most space-saving and lightweight designs in the industry by commanding the latest circuit and thermal analysis simulation technologies.

FEATURES

- Harmonics current requirement EN61000-3-2 meet(Applicable for 50W min. products).
- Universal input (AC.100 to 200V; Switching not required).
- Immunity EN50082-2 meet.
- Radiated noise and conductive noise FCC-B and VCCI-B meet.
- Continuously variable within the range of 0V to 120% of the rated output voltage when using RV terminal (300/600/1.5kW).
- · Corresponds to products with CE marking.
- Life of electrolytic capacitor: 60000H min.
- · Lightweight design.
- Warranty period: 5 years (10 years for F-type product)
- Cover (30 to 150W) type is semi-standard specification product (The temperature condition is different from standard type.).
- Specific bromine inflammable materials (PBDPEs, PBBs) are not included in use.
- 24V model can supply the peak current(30 to 150W).
- It is a product conforming to RoHS directive.



PART NUMBERS AND RATINGS

Output voltage(V)	30W		50W	50W		100W		150W	
	Current(A)	Part No.							
3.3	7	RKW03-7R0	12	RKW03-12R	25	RKW03-25R	35	RKW03-35R	
5	6	RKW05-6R0	10	RKW05-10R	20	RKW05-20R	30	RKW05-30R	
12	2.5	RKW12-2R5	4.3	RKW12-4R3	8.5	RKW12-8R5	13	RKW12-13R	
15	2	RKW15-2R0	3.5	RKW15-3R5	7	RKW15-7R0	10	RKW15-10R	
24	1.3	RKW24-1R3	2.2	RKW24-2R2	4.5	RKW24-4R5	6.5	RKW24-6R5	
28					3.8	RKW28-3R8	5.5	RKW28-5R5	
48	0.65	RKW48-R65	1.1	RKW48-1R1	2.1	RKW48-2R1	3.3	RKW48-3R3	

PART NUMBERS AND RATINGS

Output voltage(\/)	300W		600W		1.5kW		
Output voltage(V)	Current(A)	Part No.	Current(A)	Part No.	Current(A)	Part No.	
3.3	70	RKW03-70R	150	RKW03-150	375	RKW03-375	
5	60	RKW05-60R	120	RKW05-120	300	RKW05-300	
12	27	RKW12-27R	53	RKW12-53R	125	RKW12-125	
15	22	RKW15-22R	43	RKW15-43R	100	RKW15-100	
24	14	RKW24-14R	27	RKW24-27R	65	RKW24-65R	
28	12	RKW28-12R	23	RKW28-23R	55	RKW28-55R	
48	7	RKW48-7R0	13	RKW48-13R	32	RKW48-32R	

PART NUMBERS AND RATINGS(F TYPE)

Output voltage(\/)	300W		600W		1.5kW	1.5kW		
Output voltage(V)	Current(A)	Part No.	Current(A)	Part No.	Current(A)	Part No.		
3.3	70	RKW03-70RF	150	RKW03-150F	375	RKW03-375F		
5	60	RKW05-60RF	120	RKW05-120F	300	RKW05-300F		
12	27	RKW12-27RF	53	RKW12-53RF	125	RKW12-125F		
15	22	RKW15-22RF	43	RKW15-43RF	100	RKW15-100F		
24	14	RKW24-14RF	27	RKW24-27RF	65	RKW24-65RF		
28	12	RKW28-12RF	23	RKW28-23RF	55	RKW28-55RF		
48	7	RKW48-7R0F	13	RKW48-13RF	32	RKW48-32RF		

 Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

[•] All specifications are subject to change without notice.



AC Input

Conformity to RoHS Directive

Single Output, Long Life, UL/C-UL/TÜV Approved

R Series RKW(30 to 150W)

TDK answers a wide range of customers' needs with preparations of 26 models under 4 types of 30/50/100W and 150W of the definitive compact power supplies which have achieved the most spacesaving and lightweight designs in the industry by commanding the latest circuit and thermal analysis simulation technologies.

FEATURES

- Harmonics current requirement EN61000-3-2 meet(Applicable for 50W min. products).
- Universal input (AC.100 to 200V; Switching not required).
- Immunity EN50082-2 meet.
- Radiated noise and conductive noise FCC-B and VCCI-B meet.
- · Corresponds to products with CE marking.
- Life of electrolytic capacitor: 60000H min.
- · Low profile and lightweight design.
- · Warranty period: 5 years
- Cover type is semi-standard specification product(The temperature condition is different from standard type.).
- Specific bromine inflammable materials (PBDPEs, PBBs) are not included in use.
- 24V model can supply the peak current(30 to 150W).
- It is a product conforming to RoHS directive.





PART NUMBERS AND RATINGS

Output voltage(V)	30W		50W		100W		150W	
Output voltage(v)	Current(A)	Part No.						
3.3	7	RKW03-7R0	12	RKW03-12R	25	RKW03-25R	35	RKW03-35R
5	6	RKW05-6R0	10	RKW05-10R	20	RKW05-20R	30	RKW05-30R
12	2.5	RKW12-2R5	4.3	RKW12-4R3	8.5	RKW12-8R5	13	RKW12-13R
15	2	RKW15-2R0	3.5	RKW15-3R5	7	RKW15-7R0	10	RKW15-10R
24	1.3	RKW24-1R3	2.2	RKW24-2R2	4.5	RKW24-4R5	6.5	RKW24-6R5
28					3.8	RKW28-3R8	5.5	RKW28-5R5
48	0.65	RKW48-R65	1.1	RKW48-1R1	2.1	RKW48-2R1	3.3	RKW48-3R3

[•] Standard type and cover type: Stock products.

OPTIONAL SPECIFICATION TYPE

To answer customer's various needs, the RKW series prepares the semi-standard power supply. Please order by adding the undermentioned symbol to the product number's end of standard type.

	Optional functi	Optional functions								
Symbol	With cover	Remote control	Damp proof treatment							
No	Standard type									
С	✓									
A		✓								
В			✓							
E	✓	✓								
G	✓		✓							
J		✓	✓							
N	✓	✓	✓							

: Indicates the products upon receipt of order.

Example) RKW05-6R0G Output voltage: 5V

Output voltage: 5V Output current: 6A

Optional functions: With cover and damp proof treatment

- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.
- All specifications are subject to change without notice.

RKW30W Type

SPECIFICATIONS AND STANDARDS

Part No.	,	Without c	cover	RKW03-7R0	RKW05-6R0	RKW12-2R5	RKW15-2R0	RKW24-1R3	RKW48-R65						
ait ivo.	,	With cove	er	RKW03-7R0C	RKW05-6R0C	RKW12-2R5C	RKW15-2R0C	RKW24-1R3C	RKW48-R650						
Rated out	tput voltage and	current*	1	3.3V • 7A	5V • 6A	12V • 2.5A	15V • 2A	24V • 1.3A*3	48V • 0.65A						
/laximum	n output power		W	23.1	30	30	30	31.2	31.2						
nput con	ditions	•													
nput volta	age Eac		V	85 to 265[Rated:	100 to 240]										
nput freq	quency		Hz	47 to 66[Rated: 5	47 to 66[Rated: 50 to 60](Single phase)										
nput curr	rent		Α	0.85max./0.45max.[AC.100/200V](3.3V : 0.7max./0.4max.)											
use ratir	ng		Α	2.0[Built-in]											
urge cur	rrent		Α	12.5typ./25typ.[A	C.100/200V, 1st su	irge current, cold s	tart.]								
eakage	current		mA	0.55max./0.75ma	x.[AC.100(Electric	al Appliance And N	Material Safety Law)/240V(UL, IEC)]							
ower fac	ctor			0.56typ./0.42typ.[AC.100/240V]										
· · · · · · · · · · · · · · · · · · ·		%	100V	75typ.	77typ.	81typ.	81typ.	84typ.	84typ.						
fficiency	/	%	200V	76typ.	78typ.	82typ.	83typ.	85typ.	85typ.						
utput ch	naracteristics	II													
	oltage Edc		V	3.3	5	12	15	24	48						
	ariable range Ed	dc	V	2.85 to 4.0	4.0 to 5.8	9.6 to 13.2	12 to 16.5	19.2 to 26.4	38.4 to 52.8						
	n output current		A	7	6	2.5	2	1.3(Peak 2.0)	0.65						
	output current		A	0	0	0	0	0	0						
	age threshold*2		V	4.2 to 5.2	6.0 to 6.9	13.7 to 15.7	17 to 19	27.0 to 30.5	55.0 to 60.0						
	ent threshold		A	7.9min.	6.3min.	2.6min.	2.1min.	2.1min.	0.68min.						
vorourie	Source effect		%	-			2.1111111	2	0.00111111						
ļ	Load effect		%		0.2max.(0.1typ.)[Within the input voltage range] 0.6max.(0.3typ.)[0 to 100% load] Total effect±1.8max.(±0.9typ.)										
oltage	Temperature e	ffoot	%		mbient temperature	o: 10 to +71°C1	_ Total ellecti	1.0max.(±0.5typ.)							
ability				· ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			nout valtage ON fo	r 20min to 0h1							
	Drift(Time effect	CI)	%			tput ratings, after in									
	Recovery		%			nange, tr, tf ≥ 50µs			100						
ipple Ep			mV	80max.	80max.	100max.	100max.	100max.	130max.						
• •	ise Ep-p		mV	120max.	120max.	150max.	150max.	150max.	200max.						
Start up time ms				/400max.(200typ.)											
Hold up time ms					20min.(35typ.)/130min.(230typ.)[AC.100/240V]										
	n load capacitor		μF	60000	60000	12000	12000	3000	600						
	functions			T											
dicator	<u> </u>				ates when voltage	output is ON.									
	age protection*2			Voltage shut-dow	n type										
	w voltage detect	ion		No											
	ent protection				, automatic recove	ery(Winker operatio	n).								
larm out	•			No											
	protection			No											
emote C	ON-OFF			Supported with o	ption(Floating).										
emote s	sensing			No											
arallel o	peration			Impossible											
utput vc	oltage external v	ariable fu	unction	No											
laster sla	ave operation			No											
tandard	s														
								Electrical Applianc ce in Attachment 8							
afety sta	andards														
					CI-Class B, EN55	011-B, EN55022-B	meet.	FCC-Class B, VCCI-Class B, EN55011-B, EN55022-B meet. EN50082-2, EN61000-4-2, 3, 4, 5, 6, 8, 11 meet.							
oise teri	minal voltage			FCC-Class B, VC			meet.								
oise teri nmunity	minal voltage	eguireme	ent	FCC-Class B, VC EN50082-2, EN6	1000-4-2, 3, 4, 5,		meet.								
oise teri nmunity put harr	minal voltage monics current r	equireme	ent	FCC-Class B, VC EN50082-2, EN6 Outside correspo	1000-4-2, 3, 4, 5, ondence.	6, 8, 11 meet.									
oise teri nmunity nput harr adiation	minal voltage monics current r	equireme	ent	FCC-Class B, VC EN50082-2, EN6 Outside correspo	1000-4-2, 3, 4, 5, ondence.										
loise teri mmunity nput harr tadiation	minal voltage monics current r i field intensity tions	equireme		FCC-Class B, VC EN50082-2, EN6 Outside correspo FCC-Class B, VC	1000-4-2, 3, 4, 5, ondence. CCI-Class B, EN55	6, 8, 11 meet.									
loise tern mmunity nput harr ladiation construct xternal (minal voltage monics current r	equireme	mm	FCC-Class B, VC EN50082-2, EN6 Outside correspo FCC-Class B, VC	1000-4-2, 3, 4, 5, ondence. CCI-Class B, EN55	6, 8, 11 meet.									
loise terminumity Input harricadiation Construct External of	minal voltage monics current r field intensity tions dimensions	equireme		FCC-Class B, VC EN50082-2, EN6 Outside correspo FCC-Class B, VC 85×31×124[H×V 0.3max.	1000-4-2, 3, 4, 5, ndence. CCI-Class B, EN55	6, 8, 11 meet.									
mmunity nput harr Radiation Construct External of	minal voltage monics current r field intensity tions dimensions	equireme	mm	FCC-Class B, VC EN50082-2, EN6 Outside correspo FCC-Class B, VC 85×31×124[H×V 0.3max. Can be attached	1000-4-2, 3, 4, 5, ndence. CCI-Class B, EN55	6, 8, 11 meet. 011-B, EN55022-B									

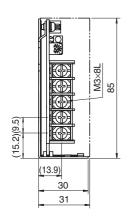
^{*1} Current rating(maximum output current) is determined for -10 to +50°C. Derating is required when used outside this temperature range.

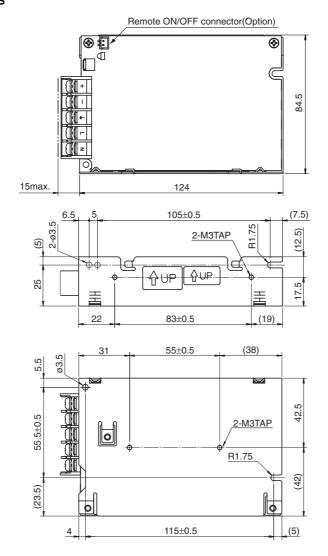
^{*2} Recovers upon reset(interval approx. 60s).

^{*3 24}V model can supply the peak current. Please refer "Characteristics, Functions, and Applications" section about the conditions.

RKW30W Type

SHAPES AND DIMENSIONS





 $\label{eq:Dimensions} \mbox{Dimensions in mm} \\ \pm 1 \mbox{mm}: \mbox{without specified dimensions}$

• Do not insert M3 tap installation screws more than 6mm into the power supply.





RKW50W Type

SPECIFICATIONS AND STANDARDS

	W	ithout cover	RKW03-12R	RKW05-10R	RKW12-4R3	RKW15-3R5	RKW24-2R2	RKW48-1R1			
Part No.		ith cover	RKW03-12RC	RKW05-10RC	RKW12-4R3C	RKW15-3R5C	RKW24-2R2C	RKW48-1R10			
Rated out	put voltage and c		3.3V • 12.5A	5V • 10A	12V • 4.3A	15V • 3.5A	24V • 2.2A*3	48V • 1.1A			
	output power	W	41.2	50	51.6	52.5	52.8	52.8			
Input conc			11.2	00	01.0	02.0	02.0	02.0			
Input volta		٧	85 to 265[Rated	N: 100 to 2401							
Input frequ		Hz	•		350)						
Input curre		A		47 to 66[Rated: 50 to 60](Single phase) 0.8max./0.4max.[AC.100/240V](3.3V: 0.7max./0.35max.)							
Fuse ratin		A	2.0[Built-in]	K.[AC.100/240V](3.3	. U./IIIax./U.33III	ax.)					
Surge curi	•	A		2 100/200V 1st sure	an ourrent and sta	r+ 1					
Leakage o		mA		C.100/200V, 1st surg nax.[AC.100(Electric			\/040\//III_IEC\1				
Power fact		IIIA	0.99typ.	iax.[AC. 100(Electric	ai Appliance And i	viateriai Salety Law	///240V(UL, IEC)]				
rower laci		% 100V	• • • • • • • • • • • • • • • • • • • •	75typ.	70tup	70+ m	70tup	90tus			
Efficiency	9		71typ.	78typ.	78typ.	78typ.	79typ.	80typ.			
O. d		% 200V	73typ.	7 οιγρ.	80typ.	80typ.	82typ.	83typ.			
	aracteristics		0.0	1 -	140	145	0.4	40			
Output vol		V	3.3	5	12	15	24	48			
	ariable range Edc		2.85 to 4.0	4.0 to 5.8	9.6 to 13.2	12 to 16.5	19.2 to 26.4	38.4 to 52.8			
	output current	Α	12.5	10	4.3	3.5	2.2(Peak 3.2)	1.1			
	output current	Α	0	0	0	0	0	0			
	ge threshold*2	V	4.2 to 5.2	6.0 to 6.9	13.7 to 15.7	17 to 19	27.0 to 30.5	55.0 to 60.0			
Overcurre	ent threshold	Α	13.1min.	10.5min.	4.5min.	3.6min.	2.3min.	1.15min.			
	Source effect	%)[Within the input vo	oltage range]	_					
Voltage	Load effect	%	0.4max.(0.1typ.)[0 to 100% load]		Total effect±1	1.8max.(±0.9typ.)				
stability	Temperature effe	ect %	1max.(0.5typ.)[/	1max.(0.5typ.)[Ambient temperature: -10 to +71°C]							
Stability	Drift(Time effect)) %	0.5max.(0.2typ.)[25°C, input and ou	utput ratings, after i	nput voltage ON fo	r 30min to 8h]				
	Recovery	%	±4max.[50 to 1	00% sudden load ch	nange, tr, tf ≧ 50µs]					
Ripple Ep-	-p	mV	80max.	80max.	100max.	100max.	100max.	130max.			
Ripple noi	•	mV	120max.	120max.	150max.	150max.	150max.	200max.			
Start up tir		ms	500max.(300tvi	o.)/200max.(100typ.))[AC.100/240V]						
Hold up tir		ms		25min.(40typ.)[AC.10	· · · · · · · · · · · · · · · · · · ·						
	load capacitor	μF	10000	- (-) - /1 -							
Auxiliary fo		, pro									
Indicator of			LED(Green) inc	licates when voltage	e output is ON.						
	ge protection*2		LED(Green) indicates when voltage output is ON. Voltage shut-down type								
	w voltage detection	n e	No								
	ent protection	// 1	Rectangular type, automatic recovery.								
Alarm out	•		No No	e, automatic recove	51 y.						
	•										
	protection			No							
Remote O				option(Floating).							
Remote se				Yes							
Parallel op		- المامان	Impossible								
	ltage external var	iable function	No								
	ave operation		No								
Standards	3		111 000 0	000 011							
Safety standards UL60950, CSA C22.2 No.60950(C-UL), EN60950-1(TÜV) approved, Electrical Appliance and Materia Law ("DENAN") (Compliant with creepage surface and air clearance in Attachment 8) meet.								d Material Safe			
Salety Sta			FCC-Class B, VCCI-Class B, EN55011-B, EN55022-B meet.								
	minal voltage		FCC-Class B, V	EN50082-2, EN61000-4-2, 3, 4, 5, 6, 8, 11 meet.							
Noise tern			-		6, 8, 11 meet.						
Noise tern Immunity		quirement	-	161000-4-2, 3, 4, 5,	6, 8, 11 meet.						
Noise tern Immunity Input harn	minal voltage	quirement	EN50082-2, EN EN61000-3-2 m	161000-4-2, 3, 4, 5, oneet.		3 meet.					
Noise tern Immunity Input harn Radiation	minal voltage monics current rec field intensity	quirement	EN50082-2, EN EN61000-3-2 m	161000-4-2, 3, 4, 5,		3 meet.					
Noise tern Immunity Input harm Radiation Constructi	minal voltage monics current rec field intensity ions		EN50082-2, EN EN61000-3-2 m FCC-Class B, \	l61000-4-2, 3, 4, 5, oneet. //CCI-Class B, EN55		3 meet.					
Noise tern Immunity Input harm Radiation Constructi External d	minal voltage monics current rec field intensity	mm	EN50082-2, EN EN61000-3-2 m FCC-Class B, \ 85×31×150[H×	l61000-4-2, 3, 4, 5, oneet. //CCI-Class B, EN55		3 meet.					
Noise tern Immunity Input harm Radiation Constructi	minal voltage monics current rec field intensity ions dimensions		EN50082-2, EN EN61000-3-2 m FCC-Class B, \	l61000-4-2, 3, 4, 5, meet. //CCI-Class B, EN55		3 meet.					

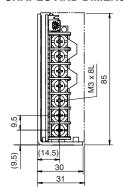
^{*1} Current rating(maximum output current) is determined for -10 to +50°C. Derating is required when used outside this temperature range.

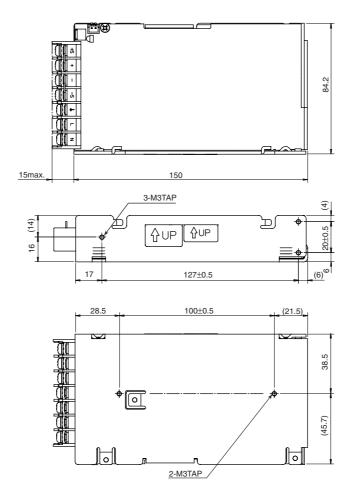
^{*2} Recovers upon reset(interval approx. 30s).

^{*3 24}V model can supply the peak current. Please refer "Characteristics, Functions, and Applications" section about the conditions.

RKW50W Type

SHAPES AND DIMENSIONS





 $\label{eq:Dimensions} \mbox{Dimensions in mm} \\ \pm 1 \mbox{mm}: \mbox{without specified dimensions}$

• Do not insert M3 tap installation screws more than 6mm into the power supply.



RKW100W Type

SPECIFICATIONS AND STANDARDS

Part No.		Without	cover	RKW03-25R	RKW05-20R	RKW12-8R5	RKW15-7R0	RKW24-4R5	RKW28-3R8	RKW48-2R1			
Part No.		With cov	er er	RKW03-25RC	RKW05-20RC	RKW12-8R5C	RKW15-7R0C	RKW24-4R5C	RKW28-3R8C	RKW48-2R1C			
Rated ou	tput voltage and	d current	*1	3.3V • 25A	5V • 20A	12V • 8.5A	15V • 7A	24V • 4.5A*3	28V • 3.8A	48V • 2.1A			
Maximun	n output power		W	82.5	100	102	105	108	106.4	100.8			
Input cor	nditions									,			
Input volt	tage Eac		V	85 to 265[Rate	d: 100 to 240]								
Input free	quency		Hz	47 to 66[Rated	: 50 to 60](Singl	e phase)							
Input cur	rent		Α	1.4max./0.7max.[AC.100/240V](3.3V: 1.2max./0.6max.)									
Fuse rati	ng		Α	3.15[Built-in]									
Surge cu	rrent		Α	14typ./28typ.[AC.100/200V, 1st surge current, cold start.]									
Leakage	current		mA					fety Law)/240V(I	UL, IEC)]				
Power fac	ctor			0.99typ.									
		%	100V	74typ.	77typ.	80typ.	80typ.	81typ.	81typ.	83typ.			
Efficiency	У	%	200V	77typ.	82typ.	84typ.	84typ.	85typ.	85typ.	86typ.			
Output cl	haracteristics				1				II	1			
Output vo	oltage Edc		V	3.3	5	12	15	24	28	48			
Voltage v	ariable range E	dc	V	2.85 to 4.0	4.0 to 5.8	9.6 to 13.2	12 to 16.5	19.2 to 26.4	22.4 to 30.8	38.4 to 52.8			
	n output current		Α	25	20	8.5	7	4.5(Peak 6.5)	3.8	2.1			
	output current		Α	0	0	0	0	0	0	0			
	age threshold*2		V	4.2 to 5.2	6.0 to 6.9	13.7 to 15.7	17 to 19	27.0 to 30.5	32.0 to 35.0	55.0 to 60.0			
	ent threshold		Α	26.25min.	21min.	8.92min.	7.35min.	4.72min.	3.99min.	2.2min.			
	Source effect		%			ut voltage range				1			
	Load effect		%		.)[0 to 100% loa			Total effect±	±1.8max.(±0.9ty)	o.)			
Voltage	Temperature e	effect	%	` ,.	<i>,</i> .	rature: -10 to +7	1°Cl	-	()	,			
stability	Drift(Time effe		%	` , , , ,	max.(0.2typ.)[25°C, input and output ratings, after input voltage ON for 30min to 8h]								
	Recovery	,,,	%		±4max.[50 to 100% sudden load change, tr, tf ≥ 50µs]								
Ripple E			mV	80max.	80max.	100max.	100max.	100max.	100max.	130max.			
Ripple no	•		mV	120max.	120max.	150max.	150max.	150max.	150max.	200max.			
	Start up time ms				Otyp.)[AC.100/24		100	Tooman	200				
Hold up t			ms	20min.(37typ.)/25min.(45typ.)[AC.100/240V]									
	n load capacitor		μF	10000									
	functions		۳.	.0000									
Indicator				LED(Green) in	dicates when vo	Itage output is C	N.						
	age protection*2	<u> </u>		LED(Green) indicates when voltage output is ON. Voltage shut-down type									
	w voltage detec			No									
	ent protection	7.11011		-	pe, automatic re	covery							
Alarm ou				No	po, automatio ro	oovory.							
	t protection			No									
Remote				Supported with option(Floating).									
Remote				Yes									
Parallel c				Impossible									
	oltage external v	variable f	unction	No No									
	lave operation		u	No									
Standard	· · · · · · · · · · · · · · · · · · ·			110									
Safety st					UL60950-1, CSA C22.2 No.60950-1(C-UL), EN60950-1(TÜV) approved, Electrical Appliance and Material Safety Law ("DENAN") (Compliant with creepage surface and air clearance in Attachment 8) meet.								
Noise ter	minal voltage												
Immunity				FCC-Class B, VCCI-Class B, EN55011-B, EN55022-B meet. EN50082-2, EN61000-4-2, 3, 4, 5, 6, 8, 11 meet.									
	monics current	requirem	ent	EN50082-2, EN61000-4-2, 3, 4, 5, 6, 8, 11 meet. EN61000-3-2 meet.									
	n field intensity	roquironi	10111	FCC-Class B, VCCI-Class B, EN55011-B, EN55022-B meet.									
Construc				1 00 oldoo b,	1001 Oldoo B, E	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	COLL D IIICOL						
	dimensions		mm	92×40×180[H	√W√I1								
Weight	un 1011310113		kg	0.6max.	× • • • • • • • • • • • • • • • • • • •								
Mounting	ı method		Νÿ	Can be attache	nd to 2 sides								
Case ma						circuit board: CE	=M-3						
				1				audaida dete de					
* Curren	ıt ratıng(maxımı	ım outpu	t current) is determined for	or –10 to +50°C.	Derating is regu	iired when used	outside this temi	perature range.				

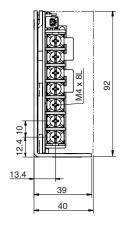
^{*1} Current rating(maximum output current) is determined for -10 to +50°C. Derating is required when used outside this temperature range.

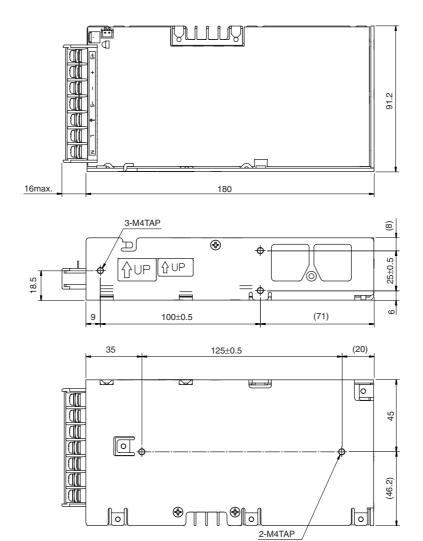
^{*2} Recovers upon reset(interval approx. 30s).

^{*3 24}V model can supply the peak current. Please refer "Characteristics, Functions, and Applications" section about the conditions.

RKW100W Type

SHAPES AND DIMENSIONS





 $\label{eq:Dimensions} \mbox{Dimensions in mm} \\ \pm 1 \mbox{mm}: \mbox{without specified dimensions}$

• Do not insert M4 tap installation screws more than 6mm into the power supply.





RKW150W Type

SPECIFICATIONS AND STANDARDS

Part No.		Without	cover	RKW03-35R	RKW05-30R	RKW12-13R	RKW15-10R	RKW24-6R5	RKW28-5R5	RKW48-3R3			
rantino.		With cov	/er	RKW03-35RC	RKW05-30RC	RKW12-13RC	RKW15-10RC	RKW24-6R5C	RKW28-5R5C	RKW48-3R3C			
Rated ou	tput voltage and	d current	*1	3.3V • 35A	5V • 30A	12V • 13A	15V • 10A	24V • 6.5A*3	28V • 5.5A	48V • 3.3A			
Maximum	n output power		W	115.5	150	156	150	156	154	158.4			
Input con	ditions		•							,			
Input volt	age Eac		V	85 to 265[Rate	d: 100 to 240]								
Input free	quency		Hz	47 to 66[Rated	: 50 to 60](Singl	e phase)							
Input curi	rent		Α	2.0max./1.0max.[AC.100/240V](3.3V:1.75max./0.85max.)									
Fuse ratir	ng		Α	5[Built-in]									
Surge cu	rrent		Α	25typ./50typ.[A	25typ./50typ.[AC.100/200V, 1st surge current, cold start.]								
Leakage	current		mA					fety Law)/240V(UL, IEC)]				
Power fac				0.99typ.	,			, ,	7.				
		%	100V	73typ.	77typ.	80typ.	80typ.	82typ.	82typ.	84typ.			
Efficiency	/	%	200V	76typ.	82typ.	84typ.	84typ.	86typ.	86typ.	88typ.			
Output ch	naracteristics				7.		7.	7.					
	oltage Edc		V	3.3	5	12	15	24	28	48			
	ariable range E	dc	V	2.85 to 4.0	4.0 to 5.8	9.6 to 13.2	12 to 16.5	19.2 to 26.4	22.4 to 30.8	38.4 to 52.8			
	n output current		Α	35	30	13	10	6.5(Peak 10)	5.5	3.3			
	output current		Α	0	0	0	0	0	0	0			
	age threshold*2		V	4.2 to 5.2	6.0 to 6.9	13.7 to 15.7	17 to 19	27.0 to 30.5	32.0 to 35.0	55.0 to 60.0			
	ent threshold		A	36.75min.	31.5min.	13.65min.	10.5min.	6.82min.	5.78min.	3.46min.			
Overdune	Source effect		%			ut voltage range		0.02111111.	0.7 OHIIII.	0.4011111.			
	Load effect		%		.)[0 to 100% loa		J	Total offect	±1.8max.(±0.9ty)	0.)			
Voltage	Temperature 6	offoot	%	\ 71	/L	•	1001	. Iotal ellects	11.011lax.(±0.5ty)	<i>J.)</i>			
stability				` , , , ,	1max.(0.5typ.)[Ambient temperature: -10 to +71°C] 0.5max.(0.2typ.)[25°C, input and output ratings, after input voltage ON for 30min to 8h]								
	Drift(Time effe	ect)	%		±4max.[50 to 100% sudden load change, tr, tf ≥ 50µs]								
D:	Recovery		%					100	100	100			
Ripple Ep	•		mV	80max.	80max.	100max.	100max.	100max.	100max.	130max.			
Ripple no	<u> </u>		mV	120max.	120max.	150max.	150max.	150max.	150max.	200max.			
	Start up time ms			350max.(150typ.)/200max.(100typ.)[AC.100/240V]									
Hold up t			ms	20min.(35typ.)/25min.(40typ.)[AC.100/240V]									
	n load capacitor		μF	10000									
	functions			1									
Indicator	<u> </u>					Itage output is C	N.						
	age protection*2			Voltage shut-down type									
	w voltage detec	tion		No									
	ent protection				pe, automatic re	covery.							
Alarm ou	•			No									
	protection			No									
Remote 0				Supported with	option(Floating).							
Remote s	sensing			Yes									
Parallel o	peration			Impossible									
Output vo	oltage external v	/ariable f	unction	No No									
Master sl	ave operation			No									
Standard	s												
Safety sta	andards					, ,,	` ,	oved, Electrical A ance in Attachm	• •	aterial Safety			
Noise ter	minal voltage			FCC-Class B.	VCCI-Class B. E	N55011-B, EN5	5022-B meet.		,				
Immunity						l, 5, 6, 8, 11 me							
	monics current	requirem	ent			., 5, 5, 5, 11 11166	···						
	field intensity	roquiron	ioni	EN61000-3-2 meet. FCC-Class B, VCCI-Class B, EN55011-B, EN55022-B meet.									
Construc				i OU-Class D,	v OOI-Olass B, E	.1400011-D, ENO	JUZZ-D IIIEEI.						
			mm	00×50×1050	νM×11								
	dimensions		mm	92×50×195[H	× vV× Lj								
Weight	, ma a tha a cl		kg	0.72max.	ad &a O al-l								
Mounting				Can be attache		-ttale 1 07	-14.0						
Case ma				1		circuit board: CE							
		m outpu	t current) is determined for				outside this tem	perature range.				

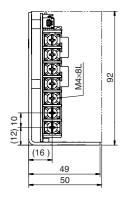
^{*1} Current rating(maximum output current) is determined for -10 to +50°C. Derating is required when used outside this temperature range.

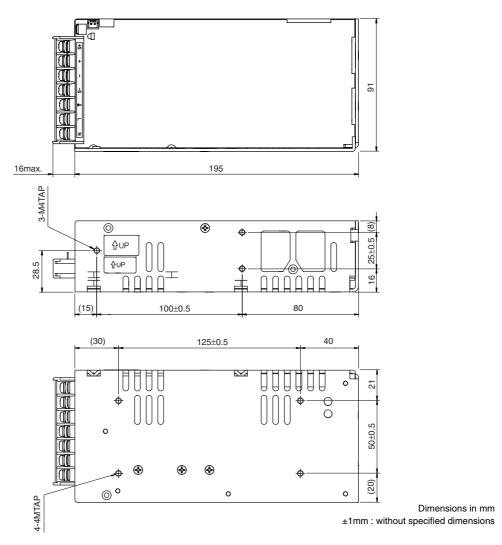
^{*2} Recovers upon reset(interval approx. 30s).

^{*3 24}V model can supply the peak current. Please refer "Characteristics, Functions, and Applications" section about the conditions.

RKW150W Type

SHAPES AND DIMENSIONS





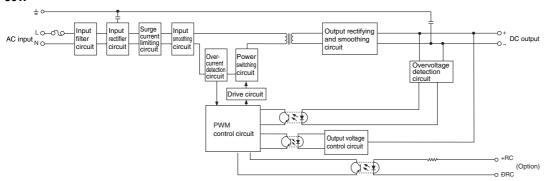
• Do not insert M4 tap installation screws more than 6mm into the power supply.



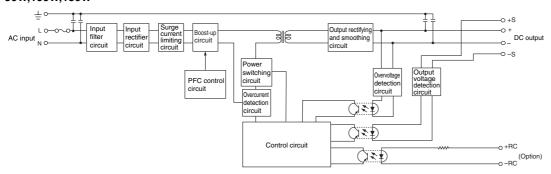


BLOCK DIAGRAMS

30W



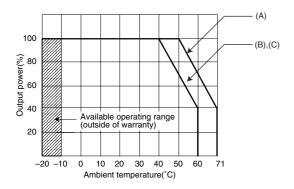
50W,100W,150W

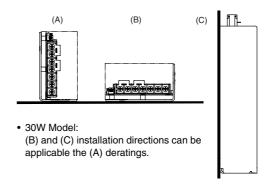


COMMON SPECIFICATIONS

Temperature and humic	lity						
	Operating(°C)	-10 to +71[please refer to Derating curve.]					
Temperature range	Operating available(°C)	−20 to −10					
	Storage(°C)	-30 to +75					
Humidity range	Operating(%)RH	10 to 05[Maximum wat hulb tamparature: 25°C without dawing]					
numuny range	Storage(%)RH	- 10 to 95[Maximum wet-bulb temperature: 35°C, without dewing]					
Vibration and shock							
Vibration	5 to 10Hz	All amplitude 10mm[3 directions, each 1h]					
/ibration	10 to 200Hz	Acceleration 19.6m/s ² (2G)[3 directions, each 1h]					
Shock	Acceleration	588m/s ² (60G)[3 directions, each 3 times]					
SHOCK	Pulse duration	11±5ms					
Withstand voltage and i	nsulation resistance						
	Input terminal to case(G)	Eac: 2.0kV, 1min[Normal temperature, normal humidity, cutout current 20mA]					
Withstand voltage	Input terminal to output terminal	Eac: 3.0kV, 1min[Normal temperature, normal humidity, cutout current 20mA]					
	Output terminal to case(G)	Eac: 500V, 1min[Normal temperature, normal humidity cutout current 20mA]					
	Input terminal to case(G)						
Insulation resistance	Input terminal to output terminal	Edc: 500V, 100MΩ min. [Normal temperature, normal humidity]					
	Output terminal to case(G)						

OUTPUT POWER-AMBIENT TEMPERATURE(DERATINGS) WITHOUT COVER TYPE

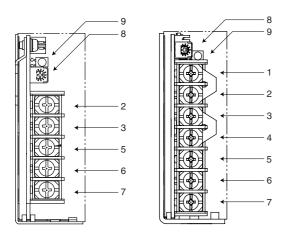




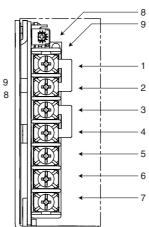
[•] All specifications are subject to change without notice.



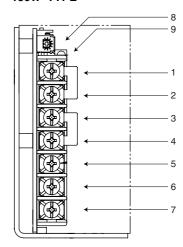
TERMINAL DESIGNATIONS AND FUNCTIONS 30W TYPE 50W TYPE



100W TYPE

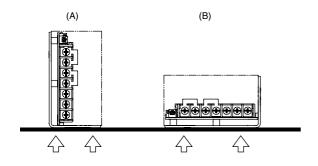


150W TYPE



Terminal No.	Designations and functions	
1	Remote sensing terminals(+S)	These terminals are used to compensate voltage loss from the output terminal to a load.
'	Herriote serising terminals(+3)	They are shorted to the DC output(+) terminal with a metal bar.
2	DC output terminals(+)	Connect to load.
3	DC output terminals(-)	Connect to load.
4	Dometa consing terminals (C)	These terminals are used to compensate voltage loss from the output terminal to a load.
4	Remote sensing terminals(–S)	They are shorted to the DC output(-) terminal with a metal bar.
5	Frame ground terminal(G)	Connect to earth ground. This is connected to the case.
6	AC input terminals(L)	Connect to AC.100 to 120V or AC. 200 to 240V input line.
7	AC input terminals(N)	Connect to AC.100 to 120V or AC. 200 to 240V input line.
8	Output voltage adjustment trim(V.ADJ)	Adjusts output voltage.
9	Operation indicator LED(Green)	This Green LED becomes indicated when voltage is output.

INSTALLATIONS



- Derating depends upon the installation direction.
- The standard installation direction is as shown in (A).





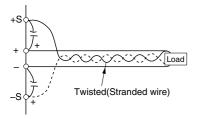
[•] All specifications are subject to change without notice.



REMOTE SENSING

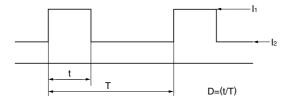
Remote Sensing compensates to provide stability at the load terminal when voltage drop in the line between the power supply and the load causes instability. Remote sensing is possible if the voltage drop per wire between the output and load terminals is 0.15V max. for 3.3V models, 0.25V max. for 5.0V models and 0.4V max. for 12 to 48V models.

In case of parasitic oscillation or overvoltage protection malfunction too easily, install an external electrolytic capacitor, rated 470 μ F min. between the +OUT, +S and -OUT, -S terminals in the diagram shown below.



PRECAUTIONS OF PEAK CURRENT SETTING CONDITIONS

24V models are capable supply the peak current. The values exceeding the continuous rated values, however, must fulfill the following conditions.



(1) Conditions of time

t≦10s

(2) Conditions of peak currentI1 ≤ Peak current(A)

(3) Conditions of effective current $\sqrt{DI1^2+(I-D)I2^2} \le \text{Rated current}(A)$

(4) Conditions of effective powerP≦ Maximum power(W)(output RMS currentxoutput voltage)

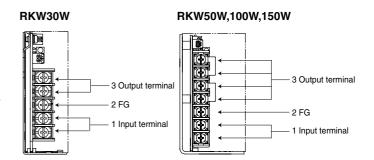
INSULATION AND WITHSTAND VOLTAGE TESTS

The insulation and withstand voltage tests may cause deterioration. Care must be taken for execution of the tests. The potential must be equal among input, output, and FG (frame ground) terminals. It is preferable to use testers which gently start up at the test-ON and automatically discharge charging energy at the test-OFF. Manual discharging after the tests should be through a resistor around $100 k\Omega$ to $1M\Omega$ (Do not perform discharging at low impedance. It may cause deterioration.).

In any case, take full countermeasures for electric-shock prevention.

POWER SUPPLY TERMINAL CONNECTION AT INSULATION AND WITHSTAND VOLTAGE TESTS

Short output or input terminals.



CONNECTIONS BETWEEN TESTERS AND POWER SUPPLY AT INSULATION AND WITHSTAND VOLTAGE TESTS

For connections between the testers and the power supply body, couple the tester terminals at the corresponding locations listed below before executing the tests.

Test conditions	Withstand v	oltage tester	Insulation tester		
rest conditions	+ terminal	-terminal	+ terminal	-terminal	
Input-to-output withstand voltage	1	3	_	_	
Input-to-FG withstand voltage	1	2	_	_	
Output-to-FG withstand voltage	3	2	_	_	
Input-to-FG insulation	_	_	1	2	
Input-to-output insulation	_	_	1	3	
Output-to-FG insulation	_	_	3	2	



OPTIONAL SPECIFICATIONS

To answer customer's various needs, the RKW series prepares the semi-standard power supply. Please order by adding the undermentioned symbol to the product number's end of standard type.

PRODUCT IDENTIFICATIONS

$RKW\bigcirc\bigcirc-\bigcirc\bigcirc\bigcirc$	
(1)	(2)

(1) Part No. of standard product

(2) Optional function's symbol

	Optional functions									
Symbol	With cover	Remote control	Damp proof treatment							
С	✓									
A		✓								
В			✓							
E	✓	✓								
G	✓		✓							
J		✓	✓							
N	✓	✓	✓							

: Indicates the products upon receipt of order.

Example) RKW05-6R0G

Output voltage: 5V Output current: 6A

Optional functions: With cover and damp proof treatment

OPTIONAL FUNCTIONS

WITH COVER TYPE

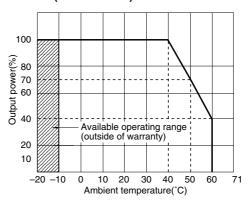
Change temperature condition of input voltage and input frequency range.

Temperature range: -10 to +60°C

- Change temperature condition of temperature effect.
 Temperature range: -10 to +60°C
- Change temperature condition of ripple and ripple noise.
 Temperature range: 0 to +60°C
- Change operating temperature range: -10 to +60°C
- Change safety standards approved temperature: 40°C(except 150W type)
- Change temperature condition of electrolytic capacitor's life expectancy: 30°C
- Change weight 30W: 330g max.

50W: 470g max. 100W: 700g max. 150W: 770g max.

DERATINGS RKW30W(WITH COVER) TYPE







(E)





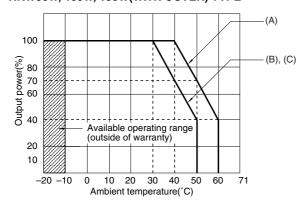


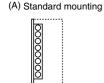
There are (B), (C), (D), (E), and (F) besides standard installation method (A) when the power supply is mounted on the device. Because heat shuts oneself up internally in the power supply, the installation of (D) and (E) cannot be used.

Please use the installation of (A), (B), (C), and (F) within the range of DERATING CURVE.

In generally, do not mount by top side screw only, as shown in (F). When mounting as shown in (F), vibration is 9.8m/s^2 and shock is 98m/s^2 mentioned in Clauses 5-3 and 5-4.

RKW50W, 100W, 150W(WITH COVER) TYPE







(B)



(E)





There are (B), (C), (D), and (E) besides standard installation method (A) when the power supply is mounted on the device. Because heat shuts oneself up internally in the power supply, the installation of (D) and (E) cannot be used.

Please use the installation of (A), (B), and (C) within the range of DERATING CURVE.

REMOTE CONTROL

Output voltage ON/OFF can be controlled from outside of power supply.

Between +RC and -RC terminals

SW ON(H-level): External voltage applied

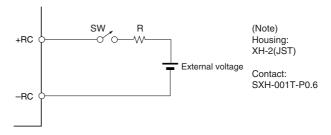
4.5 to 12.5V: Output voltage ON

12.5 to 24.5V: R1.5kΩ

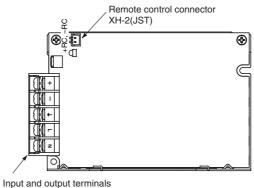
SW OFF (L-level): Shorted or between terminal voltage

0 to 0.8V: Output voltage OFF

 \pm RC terminals are isolated to AC input terminals and DC output terminals. Insulation resistance between \pm RC terminals and output is the same insulation resistance between output and ground. Insulation resistance between \pm RC terminals and AC input terminals is the same insulation resistance between output and ground.



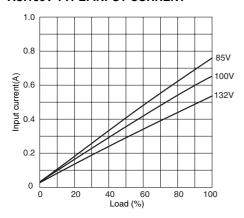
Example: RKW30W Type



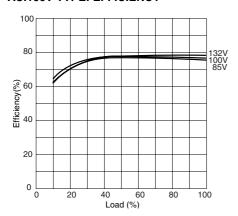
DAMP PROOF TREATMENT

The damp proof treatment is given.

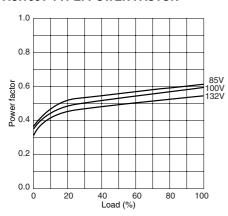
RKW30W(Typical Characteristics RKW05-6R0) AC.100V TYPE: INPUT CURRENT



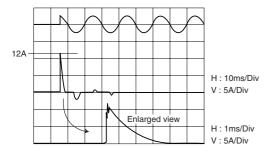
AC.100V TYPE: EFFICIENCY



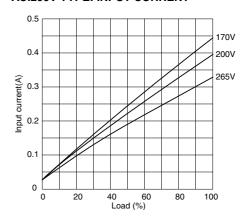
AC.100V TYPE: POWER FACTOR



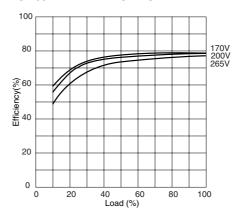
AC.100V TYPE: SURGE CURRENT



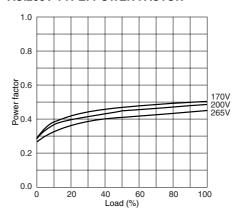
AC.200V TYPE: INPUT CURRENT



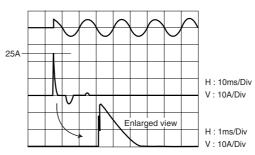
AC.200V TYPE: EFFICIENCY



AC.200V TYPE: POWER FACTOR

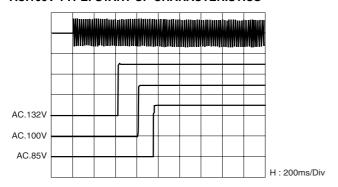


AC.200V TYPE: SURGE CURRENT

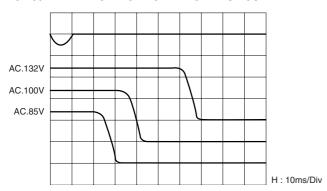


[•] All specifications are subject to change without notice.

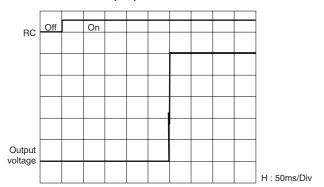
RKW30W(Typical Characteristics RKW05-6R0) AC.100V TYPE: START UP CHARACTERISTICS



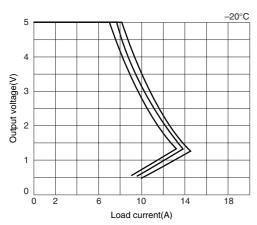
AC.100V TYPE: TURN-OFF CHARACTERISTICS



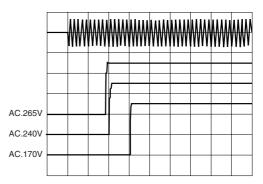
REMOTE CONTROL (ON)



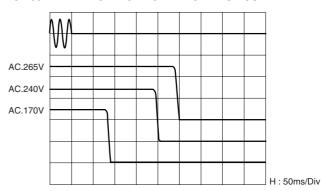
AC.100V/200V TYPE: OVERCURRENT CURVE



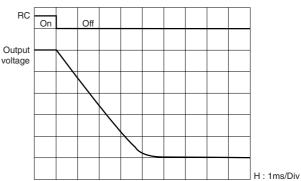
AC.200V TYPE: START UP CHARACTERISTICS



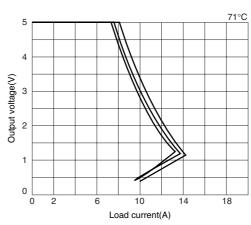
AC.200V TYPE: TURN-OFF CHARACTERISTICS



REMOTE CONTROL (OFF)



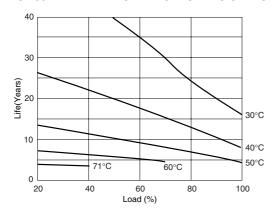
AC.100V/200V TYPE: OVERCURRENT CURVE



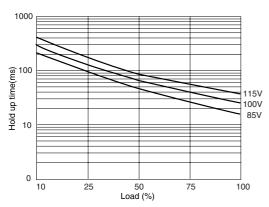
[•] All specifications are subject to change without notice.



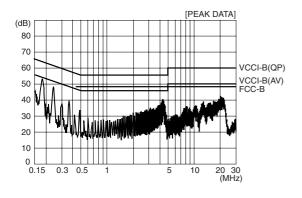
RKW30W(Typical Characteristics RKW05-6R0) AC.100V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



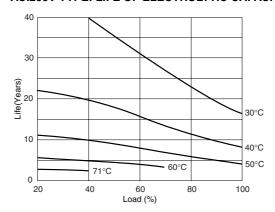
AC.100V TYPE: HOLD UP TIME



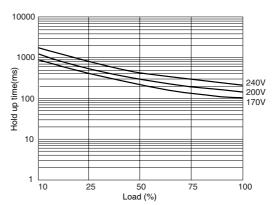
NOISE TERMINAL VOLTAGE



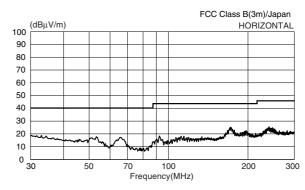
AC.200V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



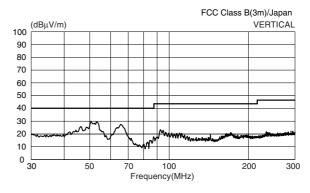
AC.200V TYPE: HOLD UP TIME



RADIATED NOISE

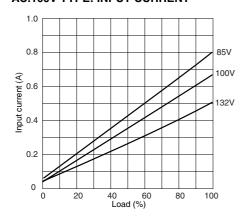


RADIATED NOISE

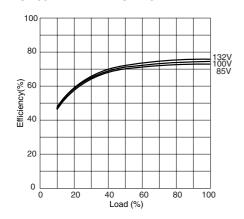


[•] All specifications are subject to change without notice.

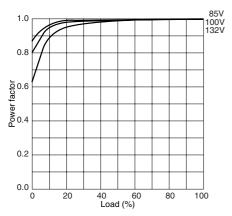
RKW50W(Typical Characteristics RKW05-10R) AC.100V TYPE: INPUT CURRENT



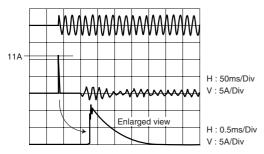
AC.100V TYPE: EFFICIENCY



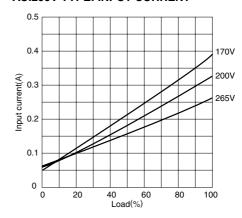
AC.100V TYPE: POWER FACTOR



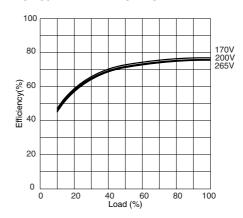
AC.100V TYPE: SURGE CURRENT



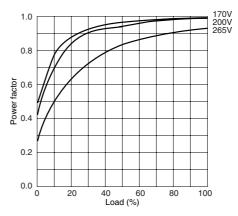
AC.200V TYPE: INPUT CURRENT



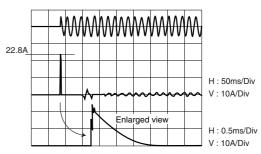
AC.200V TYPE: EFFICIENCY



AC.200V TYPE: POWER FACTOR

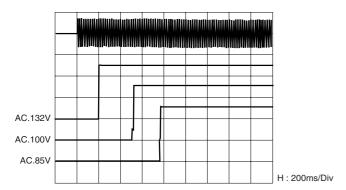


AC.200V TYPE: SURGE CURRENT

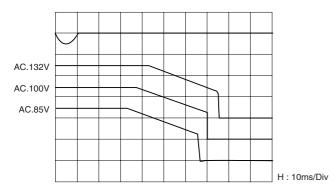


[•] All specifications are subject to change without notice.

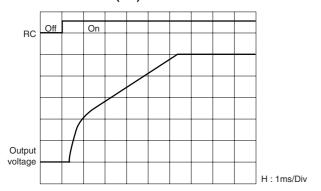
RKW50W(Typical Characteristics RKW05-10R) AC.100V TYPE: START UP CHARACTERISTICS



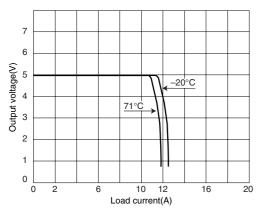
AC.100V TYPE: TURN-OFF CHARACTERISTICS



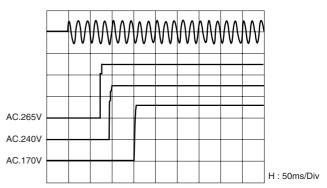
REMOTE CONTROL (ON)



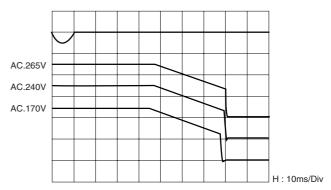
AC.100V/200V TYPE: OVERCURRENT CURVE



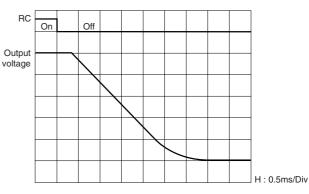
AC.200V TYPE: START UP CHARACTERISTICS



AC.200V TYPE: TURN-OFF CHARACTERISTICS



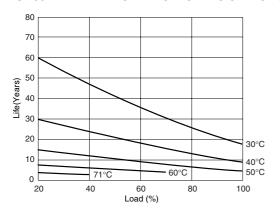
REMOTE CONTROL (OFF)



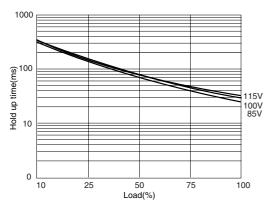
[•] All specifications are subject to change without notice.



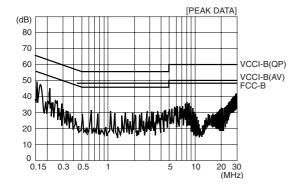
RKW50W(Typical Characteristics RKW05-10R) AC.100V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



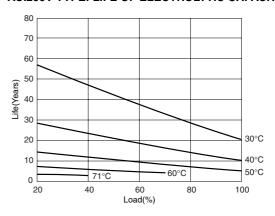
AC.100V TYPE: HOLD UP TIME



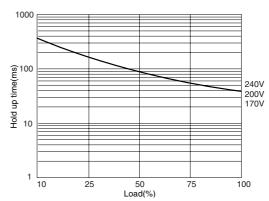
NOISE TERMINAL VOLTAGE



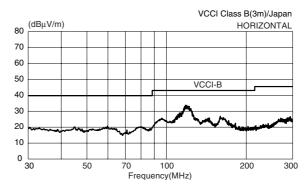
AC.200V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



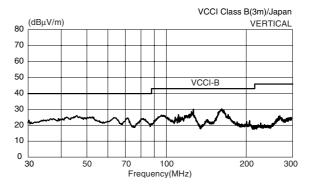
AC.200V TYPE: HOLD UP TIME



RADIATED NOISE

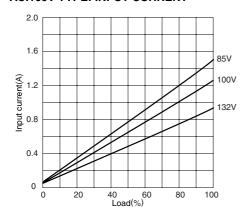


RADIATED NOISE

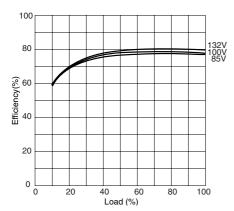


[•] All specifications are subject to change without notice.

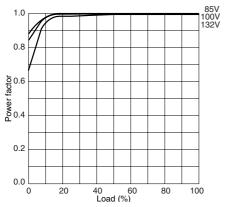
RKW100W(Typical Characteristics RKW05-20R) AC.100V TYPE: INPUT CURRENT



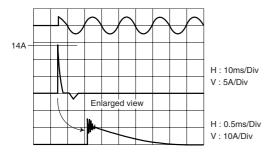
AC.100V TYPE: EFFICIENCY



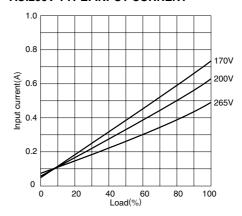
AC.100V TYPE: POWER FACTOR



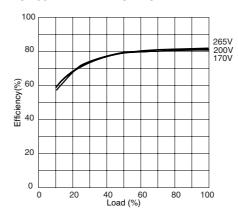
AC.100V TYPE: SURGE CURRENT



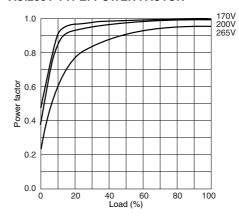
AC.200V TYPE: INPUT CURRENT



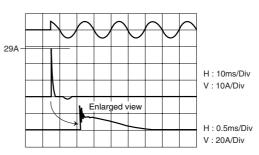
AC.200V TYPE: EFFICIENCY



AC.200V TYPE: POWER FACTOR

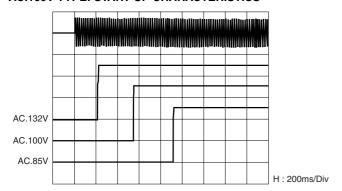


AC.200V TYPE: SURGE CURRENT

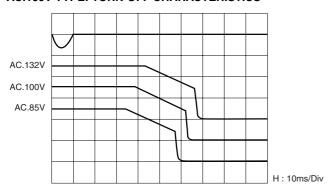


[•] All specifications are subject to change without notice.

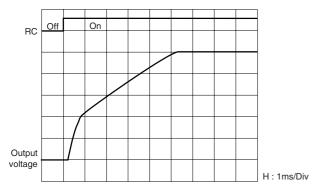
RKW100W(Typical Characteristics RKW05-20R) AC.100V TYPE: START UP CHARACTERISTICS



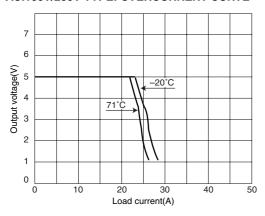
AC.100V TYPE: TURN-OFF CHARACTERISTICS



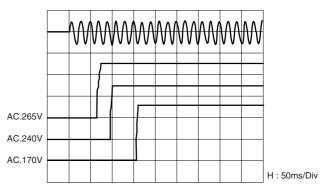
REMOTE CONTROL (ON)



AC.100V/200V TYPE: OVERCURRENT CURVE



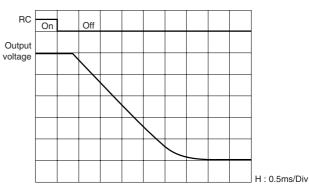
AC.200V TYPE: START UP CHARACTERISTICS



AC.200V TYPE: TURN-OFF CHARACTERISTICS

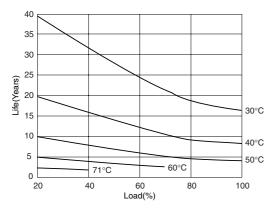


REMOTE CONTROL (OFF)

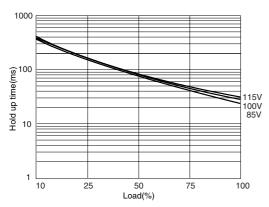


[•] All specifications are subject to change without notice.

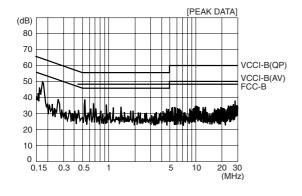
RKW100W(Typical Characteristics RKW05-20R) AC.100V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



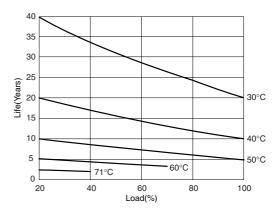
AC.100V TYPE: HOLD UP TIME



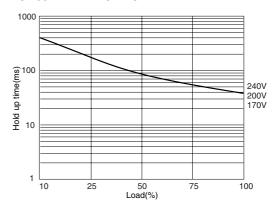
NOISE TERMINAL VOLTAGE



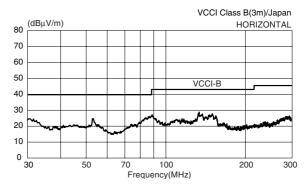
AC.200V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



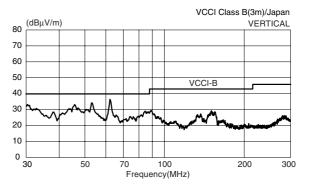
AC.200V TYPE: HOLD UP TIME



RADIATED NOISE

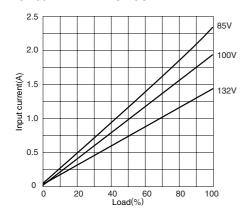


RADIATED NOISE

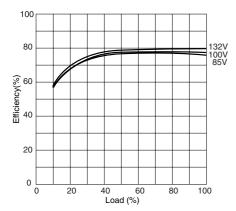


[•] All specifications are subject to change without notice.

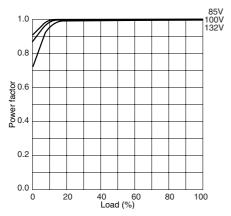
RKW150W(Typical Characteristics RKW05-30R) AC.100V TYPE: INPUT CURRENT



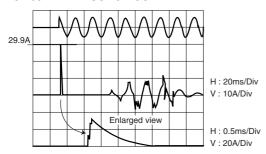
AC.100V TYPE: EFFICIENCY



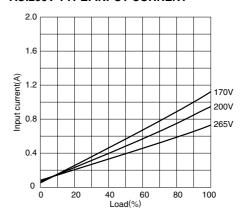
AC.100V TYPE: POWER FACTOR



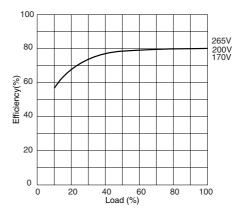
AC.100V TYPE: SURGE CURRENT



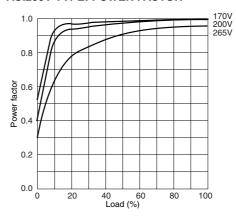
AC.200V TYPE: INPUT CURRENT



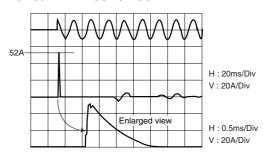
AC.200V TYPE: EFFICIENCY



AC.200V TYPE: POWER FACTOR



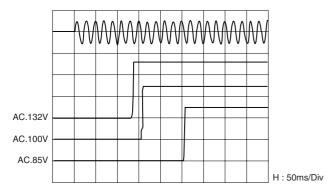
AC.200V TYPE: SURGE CURRENT



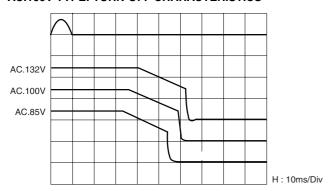
[•] All specifications are subject to change without notice.



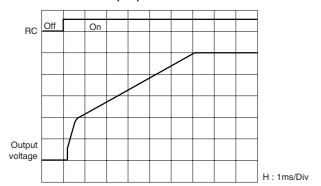
RKW150W(Typical Characteristics RKW05-30R) AC.100V TYPE: START UP CHARACTERISTICS



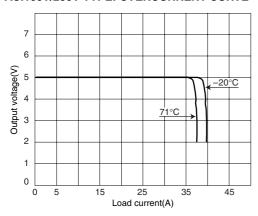
AC.100V TYPE: TURN-OFF CHARACTERISTICS



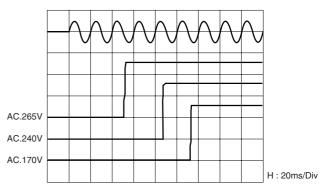
REMOTE CONTROL (ON)



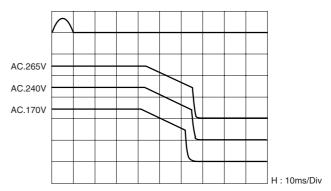
AC.100V/200V TYPE: OVERCURRENT CURVE



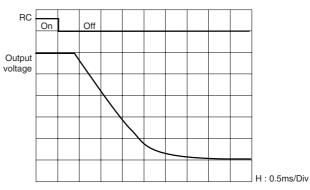
AC.200V TYPE: START UP CHARACTERISTICS



AC.200V TYPE: TURN-OFF CHARACTERISTICS

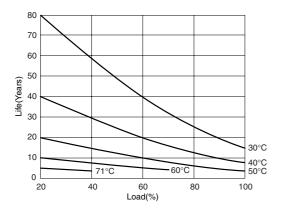


REMOTE CONTROL (OFF)

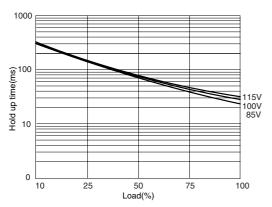


[•] All specifications are subject to change without notice.

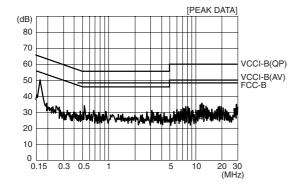
RKW150W(Typical Characteristics RKW05-30R) AC.100V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



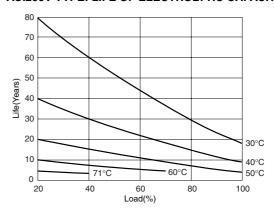
AC.100V TYPE: HOLD UP TIME



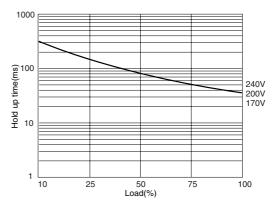
NOISE TERMINAL VOLTAGE



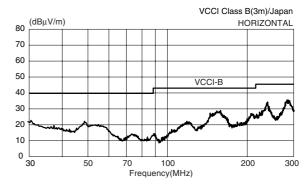
AC.200V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



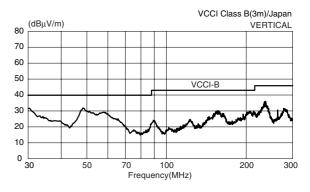
AC.200V TYPE: HOLD UP TIME



RADIATED NOISE



RADIATED NOISE



[•] All specifications are subject to change without notice.



AC Input Single Output, Long Life, UL/C-UL/TÜV Approved

Conformity to RoHS Directive

R Series RKW(300W to 1.5kW)

TDK answers a wide range of customers' needs with preparations of 42 models under 3 types of 300W, 600W and 1.5kW of the definitive compact power supplies which have achieved the most space-saving and lightweight designs in the industry by commanding the latest circuit and thermal analysis simulation technologies.

FEATURES

- Harmonics current requirement EN61000-3-2 meet.
- Universal input (AC.100 to 200V; Switching not required).
- Immunity EN50082-2, EN61000-4-2,3,4,5,6,8,11 meet.
- Radiated noise and conductive noise FCC-B and VCCI-B meet.
- · Continuously variable within the range of 0V to 120% of the rated output voltage when using RV terminal.
- · Lightweight design.
- · Corresponds to products with CE marking.
- Long-life fan mounted F-type product available (RKW ___- C _ F).
- Warranty period: 5 years (10 years for F-type product)
- Specific bromine inflammable materials (PBDPEs, PBBs) are not included in use.
- It is a product conforming to RoHS directive.

PART NUMBERS AND RATINGS

Output voltage(V)	300W		600W		1.5kW	
Output voltage(v)	Current(A)	Part No.	Current(A)	Part No.	Current(A)	Part No.
3.3	70	RKW03-70R	150	RKW03-150	375	RKW03-375
5	60	RKW05-60R	120	RKW05-120	300	RKW05-300
12	27	RKW12-27R	53	RKW12-53R	125	RKW12-125
15	22	RKW15-22R	43	RKW15-43R	100	RKW15-100
24	14	RKW24-14R	27	RKW24-27R	65	RKW24-65R
28	12	RKW28-12R	23	RKW28-23R	55	RKW28-55R
48	7	RKW48-7R0	13	RKW48-13R	32	RKW48-32R

PART NUMBERS AND RATINGS(F TYPE)

Outrout valtage (V)	300W		600W		1.5kW	1.5kW	
Output voltage(V)	Current(A)	Part No.	Current(A)	Part No.	Current(A)	Part No.	
3.3	70	RKW03-70RF	150	RKW03-150F	375	RKW03-375F	
5	60	RKW05-60RF	120	RKW05-120F	300	RKW05-300F	
12	27	RKW12-27RF	53	RKW12-53RF	125	RKW12-125F	
15	22	RKW15-22RF	43	RKW15-43RF	100	RKW15-100F	
24	14	RKW24-14RF	27	RKW24-27RF	65	RKW24-65RF	
28	12	RKW28-12RF	23	RKW28-23RF	55	RKW28-55RF	
48	7	RKW48-7R0F	13	RKW48-13RF	32	RKW48-32RF	

[•] Standard type and F type: Stock products.

OPTIONAL SPECIFICATION TYPE

To answer customer's various needs, the RKW series prepares the semi-standard power supply. Please order by adding the undermentioned symbol to the product number's end of standard type.

	Optional functions							
Symbol	Long life span Fan	Overvoltage detection point fix	Fan alarm					
F	✓							
A		✓						
В			✓					
E	✓	✓						
G	✓		✓					
J		✓	✓					
N	✓	✓	✓					

: Indicates the products upon receipt of order.

Example) RKW05-60RG
Output voltage: 5V
Output current: 60A

Optional functions: With long life span Fan and Fan alarm

- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.
- All specifications are subject to change without notice.



RKW300W Type

SPECIFICATIONS AND STANDARDS

Part No.		RKW03-70R	RKW05-60R	RKW12-27R	RKW15-22R	RKW24-14R	RKW28-12R	RKW48-7R0				
Rated output voltage and current*1		3.3V • 70A	5V • 60A	12V • 27A	15V • 22A	24V • 14A	28V • 12A	48V • 7A				
			W	231	300	324	330	336	336	336		
Input con			1	1								
F			V	85 to 265[Rated:								
Input free	. ,		Hz	47 to 66[Rated: 5		<u> </u>						
Input curr			Α	4.4max./2.2max.	[AC.100/240V](3.3V : 3.6max./1	.8max.)					
Fuse ratir	•		Α	10[Built-in]								
Surge cu			Α	20max./40max.[/								
Leakage	current		mA	0.30max./0.38ma	ax.[AC.100(Elec	trical Appliance	And Material S	afety Law)/240V	'(UL, IEC)]			
Power fac	ctor			0.99typ.								
Efficiency	,	%	100V	68typ.	74typ.	76typ.	77typ.	80typ.	80typ.	81typ.		
		%	200V	72typ.	78typ.	80typ.	81typ.	84typ.	84typ.	85typ.		
	naracteristics											
Output vo	oltage Edc		V	3.3	5	12	15	24	28	48		
Voltage v	ariable range E	Edc	V	1.8 to 3.6	3.5 to 6	7.2 to 14.4	10.5 to 18	16.8 to 28.8	19.6 to 23.6	33.6 to 52.8		
Maximum	n output current	t	Α	70	60	27	22	14	12	7		
Minimum	output current		Α	0	0	0	0	0	0	0		
Overvolta	age threshold*2		V	Vo+0.66 to 1.32	Vo+1 to 2	Vo+2.4 to 4.8	Vo+3 to 6	Vo+4.8 to 9.6	Vo+5.6 to 10.4	Vo+2.5 to 12		
Overcurre	ent threshold		Α	73.5 to 91	63 to 78	28.4 to 35.1	23.1 to 28.6	14.7 to 18.2	12.6 to 15.6	7.4 to 9.1		
	Source effect		%	0.2max.(0.1typ.)[Within the inpu	voltage range]						
	Load effect		%	0.4max.(0.2typ.)[0 to 100% load]		Total effect	±1.8max.(±0.9typ	o.)		
Voltage	Temperature	effect	%	1max.(0.5typ.)[A	mbient tempera	ture: -10 to +65	°C1	-				
stability	Drift(Time eff	ect)	%					ge ON for 30mir	n to 8h]			
	Recovery		%		0.5max.(0.2typ.)[25°C, input and output ratings, after input voltage ON for 30min to 8h] ±4max.[50 to 100% sudden load change, tr, tf ≥ 50µs]							
Ripple Ep			mV	80max.	80max.	120max.	120max.	150max.	150max.	200max.		
Ripple no			mV	120max.	120max.	150max.	150max.	200max.	200max.	300max.		
Start up t			ms	350max.(280typ.)/210max.(150typ.)[AC.100/240V]								
Hold up t			ms	20min.(30typ.)/20min.(40typ.)[AC.100/240V]								
	n load capacito	r	μF	10000								
Auxiliary	•		I.									
Indicator				LED(Green) indicates when voltage output is ON.								
	age protection*2	2*3*4		Voltage shut-down type								
	w voltage dete			Yes (A power failure signal is outputted when an output voltage drops to 80% or lower of a set voltage.)								
	ent protection*3			Rectangular type (Output voltage is shut down after an elapse of time of 30s or longer.)								
Fan alarn				Voltage shut-down type								
	protection*3			Voltage shut-down type Voltage shut-down type								
Remote 0	•			Yes(Floating)								
Remote s				Yes (Floating)								
Current b				Yes								
	oltage external	variable f	iunction	Yes								
	ave operation	variable i	unction	Yes								
Standard				163								
Safety sta				UL60950-1, CSA C22.2 No.60950-1(C-UL), EN60950(TÜV) approved, Electrical Appliance and Material Safety								
Noise ter	minal voltage			Law ("DENAN") (Compliant with creepage surface and air clearance in Attachment 8) meet. FCC-Class B, VCCI-Class B, EN55011-B, EN55022-B meet.								
Immunity				EN50082-2, EN50082-2, EN61000-4-2, 3, 4, 5, 6, 8, 11 meet.								
Input harmonics current requirement			EN30002-2, EN30002-2, EN61000-4-2, 3, 4, 5, 6, 6, 11 meet. EN61000-3-2 meet.									
Radiation field intensity			FCC-Class B, VC		ISSO11_R ENSS	022-B moot						
				FOC-Class B, VC	OI-Class B, EN	1000 TT-D, EN00	022-b meet.					
	Constructions External dimensions mm			92×80×175[H×V	M~I1							
	uii 11811310115		mm	-	v ^ Lj							
Weight	mathad		kg	1.8max.	to 2 sides							
Mounting				Can be attached		ord, CEM 0						
Case mat				Frame and cover								
*1 Curron	t rating/maxim	ım outnu	t currant'	is datarminad for	_10 to ±50°€ [laratina ie raguii	rad whan usad .	auteida thie tami	naratura ranga			

^{*1} Current rating(maximum output current) is determined for -10 to +50°C. Derating is required when used outside this temperature range.

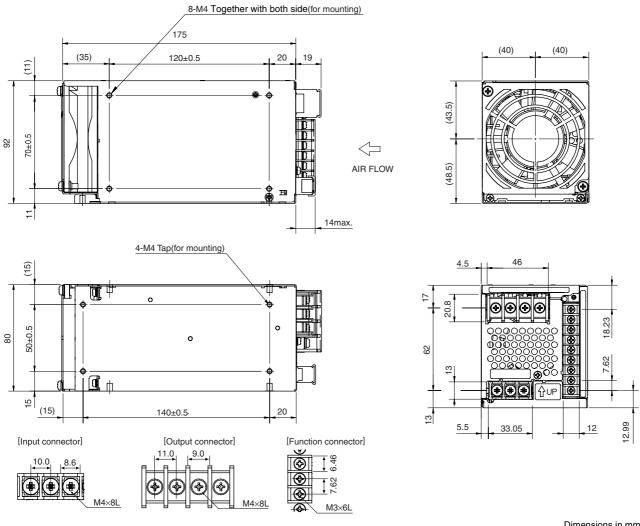
^{*2} Tracking type (Type in which a detected value is linked with an output voltage value). An overvoltage threshold is for an output set voltage (Vo).

^{*3} Recovers upon reset(interval approx. 40s).

^{*4} Remote control. It can be restarted by resetting.

RKW300W Type

SHAPES AND DIMENSIONS



 $\label{eq:Dimensions} \mbox{Dimensions in mm} \\ \pm 1 \mbox{mm} : \mbox{without specified dimensions}$

• Do not insert M4 tap installation screws more than 6mm into the power supply.





RKW600W Type

SPECIFICATIONS AND STANDARDS

Part No.			RKW03-150	RKW05-120	RKW12-53R	RKW15-43R	RKW24-27R	RKW28-23R	RKW48-13R		
	tput voltage and current		3.3V • 150A	5V • 120A	12V • 53A	15V • 43A	24V • 27A	28V • 23A	48V • 13A		
	n output power	W	495	600	636	645	648	644	624		
Input con		1	1								
Input volt	•	V	85 to 265[Rate								
Input frec	•	Hz		d: 50 to 60](Sing	1 /						
Input curi		Α	8.4max./4.2ma	ax.[AC.100/240V](3.3V : 7.2max.	/3.6max.)					
Fuse ratii	ng	Α	15[Built-in]								
Surge cu	rrent	Α	30max./60max	c.[AC.100/240V,	1st surge curren	t, reset after 30s	minimum.]				
Leakage		mA	0.75max./0.75	max.[AC.100(Ele	ectrical Applianc	e And Material S	Safety Law)/240V	(UL, IEC)]			
Power fac	ctor		0.99typ.								
Efficiency	,	100V	74typ.	76typ.	80typ.	81typ.	82typ.	82typ.	84typ.		
Liliciency	%	200V	78typ.	81typ.	84typ.	85typ.	86typ.	86typ.	87typ.		
Output ch	naracteristics										
Output vo	oltage Edc	V	3.3	5	12	15	24	28	48		
Voltage v	ariable range Edc	V	1.8 to 3.6	3.5 to 6	7.2 to 14.4	10.5 to 18	16.8 to 28.8	19.6 to 33.6	33.6 to 52.8		
Maximum	n output current	Α	150	120	53	43	27	23	13		
Minimum	output current	Α	0	0	0	0	0	0	0		
Overvolta	age threshold*2	V	Vo+0.66 to 1.32	Vo+1 to 2	Vo+2.4 to 4.8	Vo+3 to 6	Vo+4.8 to 9.6	Vo+5.6 to 10.4	Vo+4.8 to 12		
_	ent threshold	Α	156 to 186	126 to 156	55.6 to 68.9	45.1 to 55.9	28.3 to 35.1	24.1 to 29.8	13.7 to 16.9		
-	Source effect	%	0.2max.(0.1typ	o.)[Within the inp	ut voltage range	1		II.			
	Load effect	%		o.)[0 to 100% loa			Total effect:	±1.8max.(±0.9ty	p.)		
Voltage	Temperature effect	%			rature: -10 to +6	55°C1	=	` ,	,		
stability	Drift(Time effect)	%					age ON for 30mi	n to 8hl			
	Recovery	%		0.5max.(0.2typ.)[25°C, input and output ratings, after input voltage ON for 30min to 8h] ±4max.[50 to 100% sudden load change, tr, tf ≥ 50µs]							
Ripple Ep	•	mV	80max.	80max.	150max.	150max.	200max.	200max.	300max.		
Ripple no	•	mV	120max.	120max.	200max.	200max.	300max.	300max.	400max.		
Start up t	<u>' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' </u>	ms			Otyp.)[AC.100/24		ocomax.	ocoman.	Toomax.		
Hold up t		ms	` '	. ,	71 /-	01,					
	n load capacitor	μF	20min.(30typ.)/20min.(40typ.)[AC.100/240V] 10000								
Auxiliary		μι	10000								
Indicator			LED/Green) in	dicates when vo	Itana outnut is C	N					
	age protection*2*3*4		LED(Green) indicates when voltage output is ON.								
	w voltage detection		Voltage shut-down type Vo. (A newer failure signal is outputted when an output voltage draps to 90% or lower of a set voltage)								
	ent protection*3*4		Yes (A power failure signal is outputted when an output voltage drops to 80% or lower of a set voltage.)								
Fan alarn			Rectangular type (Output voltage is shut down after an elapse of time of 30s or longer.)								
	protection*3		Voltage shut-down type								
Remote (•		Voltage shut-down type								
			, 0,	Yes(Floating)							
Remote s Current b			Yes								
		f ati a	Yes								
	oltage external variable	lunction	Yes								
	ave operation		Yes								
Standard Safety sta			UL60950-1, C	SA C22.2 No.60	950-1(C-UL), EN	N60950-1(TÜV) a	approved, Electri	cal Appliance ar	nd Material		
	minal voltage		Safety Law ("D	UL60950-1, CSA C22.2 No.60950-1(C-UL), EN60950-1(TÜV) approved, Electrical Appliance and Material Safety Law ("DENAN") (Compliant with creepage surface and air clearance in Attachment 8) meet. FCC-Class B, VCCI-Class B, EN55011-B, EN55022-B meet.							
			EN50082-2, EN61000-4-2, 3, 4, 5, 6, 8, 11 meet.								
Immunity			EN61000-3-2		+, J, U, U, I I IIIE	J					
Input harmonics current requirement Radiation field intensity					NEED11-R ENE	5022-B most					
Radiation field intensity FCC-Class B, VCCI-Class B, EN55011-B, EN55022-B meet. Constructions											
		mm	00/100/000	⊔.√M.√.I.1							
	dimensions	mm	92×120×200[l								
Weight	ا معالم معا	kg	3max.	ad to 0 a!-!							
Mounting			Can be attache								
Case ma	terial		riame and col	Frame and cover: Iron, circuit board: CEM-3							
*1 (10 to . FOOC							

^{*1} Current rating(maximum output current) is determined for -10 to +50°C. Derating is required when used outside this temperature range.

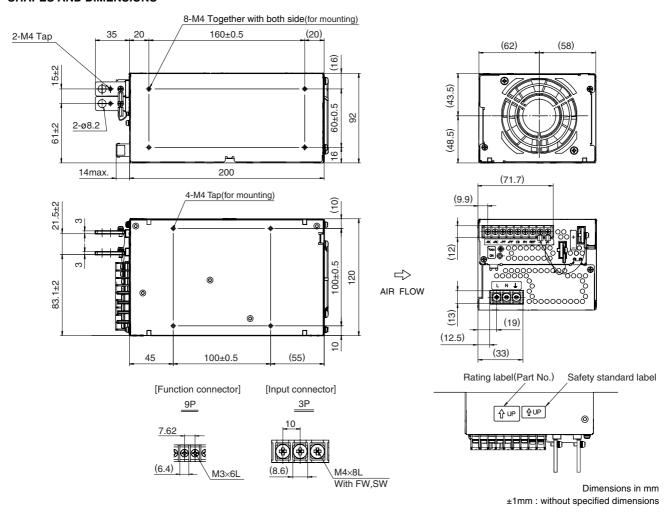
^{*2} Tracking type (Type in which a detected value is linked with an output voltage value). An overvoltage threshold is for an output set voltage (Vo).

^{*3} Recovers upon reset(interval approx. 40s).

^{*4} Remote control. It can be restarted by resetting.

RKW600W Type

SHAPES AND DIMENSIONS



• Do not insert M4 tap installation screws more than 6mm into the power supply.





RKW1.5kW Type

SPECIFICATIONS AND STANDARDS

Part No.		RKW03-375	RKW05-300	RKW12-125	RKW15-100	RKW24-65R	RKW28-55R	RKW48-32F				
Rated output voltage and current*1		3.3V • 375A	5V • 300A	12V • 125A	15V • 100A	24V • 65A	28V • 55A	48V • 32A				
Maximum	output power		W	1237.5	1500	1500	1500	1560	1540	1536		
Input cond	ditions											
Input volta	age Eac		V	85 to 265[Rate	ed: 100 to 240]							
Input freq	uency		Hz	47 to 66[Rated	d: 50 to 60](Sing	le phase)						
Input curr	ent		Α		x.[AC.100/240V]	<u> </u>	max.)					
Fuse ratin			Α	30[Built-in]								
Surge cur	•		Α		x.[AC.100/240V,	1st surge currer	nt, reset after 30:	s minimum.]				
Leakage			mA					fety Law)/240V(L	JL. IEC)]			
Power fac				0.99typ.		PI		, , , , , ,	, -,1			
		%	100V	73typ.	77typ.	80typ.	82typ.	82typ.	82typ.	84typ.		
Efficiency	1	%	200V	77typ.	82typ.	84typ.	86typ.	86typ.	86typ.	88typ.		
Output ch	naracteristics			31	- 71-	- 71		71				
	oltage Edc		V	3.3	5	12	15	24	28	48		
	ariable range E	-dc	V	1.8 to 3.6	3.5 to 6	7.2 to 14.4	10.5 to 18	16.8 to 28.8	19.6 to 33.6	33.6 to 52.8		
	output curren		A	375	300	125	100	65	55	32		
	output current		Α	0	0	0	0	0	0	0		
	ige threshold*2		V	Vo+0.66 to 1.32	-	Vo+2.4 to 4.8	Vo+3 to 6	Vo+4.8 to 9.6	Vo+5.6 to 10.4			
	ent threshold	-	A	390 to 430	315 to 350	130 to 140	105 to 115	68 to 72	57.7 to 63.2	33.6 to 36.8		
Overcurre	Source effect		%		p.)[Within the inp			00 10 72	37.7 10 03.2	33.0 10 30.0		
	Load effect		%		o.)[0 to 100% loa		<u>*]</u>	Total offect	. 1 0mov / . 0 0tu	n)		
Voltage	Temperature	offoot					2E°C1	_ iotal ellect	±1.8max.(±0.9ty	ρ.)		
stability	'		%		[Ambient tempe			f 00 t 01-1				
-	Drift(Time eff	ect)	%	0.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h] ±4max.[50 to 100% sudden load change, tr, tf ≥ 50µs]								
Dissels Es	Recovery		%	_		·		000	000	000		
Ripple Ep			mV	100max.	100max.	150max.	150max.	200max.	200max.	300max.		
Ripple noise Ep-p mV		200max.	200max.	200max.	200max.	300max.	300max.	400max.				
Start up ti			ms		yp.)/400max.(18		10V]					
Hold up ti			ms	20min.(35typ.)/20min.(40typ.)[AC.100/240V]								
	load capacito	r	μF	10000	10000							
Auxiliary f				1								
Indicator				LED(Green) indicates when voltage output is ON.								
	ge protection*			Voltage shut-down type								
	w voltage dete			Yes (A power failure signal is outputted when an output voltage drops to 80% or lower of a set voltage.)								
	ent protection*3	3*4		Rectangular type (Output voltage is shut down after an elapse of time of 30s or longer.)								
Fan alarm	n* ^{3*4}			Voltage shut-down type								
	protection*3			Voltage shut-down type								
Remote C	DN-OFF			Yes(Floating)								
Remote s	ensing			Yes								
Current b	alance			Yes								
Output vo	oltage external	variable f	unction	Yes								
Master sla	ave operation			Yes								
Standards	S											
Safety sta	andards			UL1950, CSA C22.2 No.950-95(C-UL), EN60950-1(TÜV) approved, Electrical Appliance and Material Safety Law ("DENAN") (Compliant with creepage surface and air clearance in Attachment 8) meet.								
Noise terr	minal voltage			FCC-Class B, VCCI-Class B, EN55011-B, EN55022-B meet (only if an input filter is mounted).								
Immunity				EN50082-2, EN61000-4-2, 3, 4, 5, 6, 8, 11 meet.								
		requirem	ent	EN61000-3-2 meet.								
Input harmonics current requirement Radiation field intensity			ioni	FCC-Class B, VCCI-Class B, EN55011-B, EN55022-B meet.								
Construct				. 00 Jiaoo D,	. 55. 5.055 D, I	D, LIV	COLL D IIIOUL					
	dimensions		mm	92×190×300[HyWyl1							
	u111011310113				I I^ VV^ L]							
Weight	mothod		kg	6max.	ad to 3 sides							
Mounting				Can be attach		boord: ED 4						
Case mat	ıcılaı			riame and co	ver: Iron, circuit	oodiu. FK-4						

^{*1} Current rating(maximum output current) is determined for -10 to +50°C. Derating is required when used outside this temperature range.

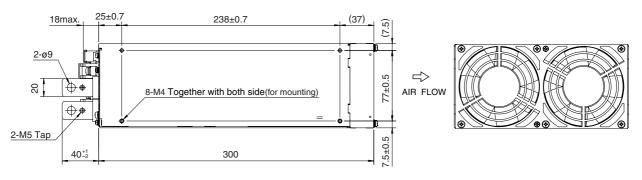
^{*2} Tracking type (Type in which a detected value is linked with an output voltage value). An overvoltage threshold is for an output set voltage (Vo).

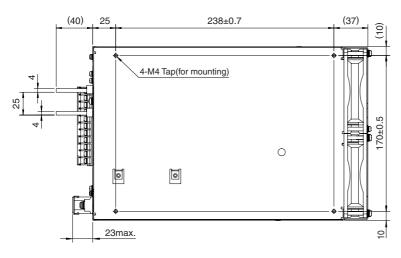
^{*3} Recovers upon reset(interval approx. 40s).

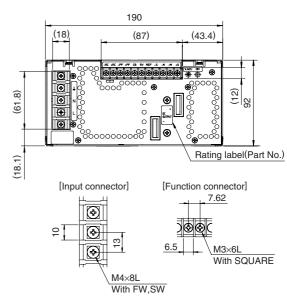
^{*4} Remote control. It can be restarted by resetting.

RKW1.5kW Type

SHAPES AND DIMENSIONS







Dimensions in mm ±1mm: without specified dimensions

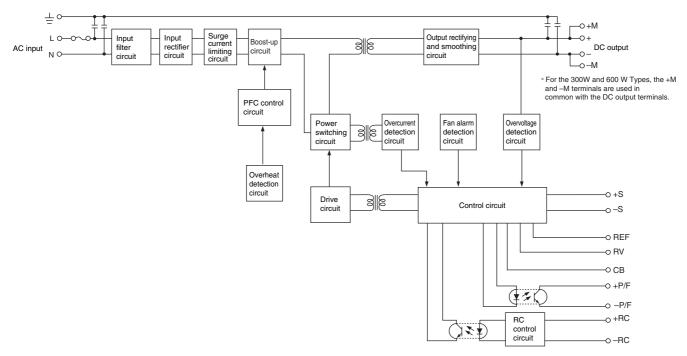
• Do not insert M4 tap installation screws more than 6mm into the power supply.



[•] All specifications are subject to change without notice.



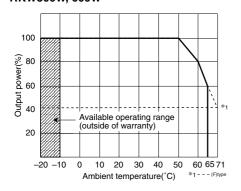
BLOCK DIAGRAM



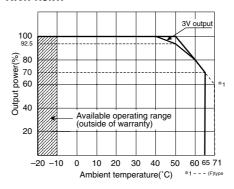
COMMON SPECIFICATIONS

Temperature and humid	ity					
	Operating(°C)	-10 to +65(71) ():F type[please refer to Derating curve.]				
Temperature range	Operating available(°C)	−20 to −10				
	Storage(°C)	−30 to +75				
Humidity range	Operating(%)RH	10 to OFINA view we wat halfs town eventures OFOC without deviced				
	Storage(%)RH	— 10 to 95[Maximum wet-bulb temperature: 35°C, without dewing]				
Vibration and shock						
Vibration	5 to 10Hz	All amplitude 10mm[3 directions, each 1h]				
	10 to 200Hz	Acceleration 19.6m/s ² (2G)[3 directions, each 1h]				
Shock	Acceleration	294m/s ² (30G)[3 directions, each 3 times]				
SHOCK	Pulse duration	11±5ms				
Withstand voltage and i	nsulation resistance					
	Input terminal to case(G)	Eac: 2.0kV, 1min[Normal temperature, normal humidity, cutout current 20mA]				
Withstand voltage	Input terminal to output terminal	Eac: 3.0kV, 1min[Normal temperature, normal humidity,				
vviiiisianu voitage		cutout current 300 and 600W: 20mA/1.5kW: 25mA]				
	Output terminal to case(G)	Eac: 500V, 1min[Normal temperature, normal humidity, cutout current 100mA]				
	Input terminal to case(G)					
Insulation resistance	Input terminal to output terminal	Edc: 500V, 100M Ω min. [Normal temperature, normal humidity]				
	Output terminal to case(G)					

OUTPUT POWER-AMBIENT TEMPERATURE(DERATINGS) RKW300W, 600W



RKW1.5kW

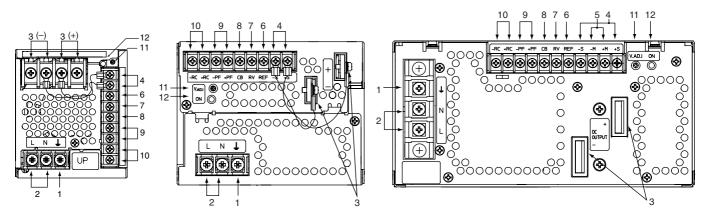


[•] All specifications are subject to change without notice.



TERMINAL DESIGNATIONS AND FUNCTIONS 300W TYPE 600W TYPE

1.5kW TYPE



Terminal No.	Designations and functions	
1	Frame ground terminal(G)	Connect to earth ground. This is connected to the case.
2	AC input terminals(L, N)	Connect to AC.100 to 120V or AC. 200 to 240V input line.
3	DC output terminals(+, -)	Connect to load.
		These terminals are used to compensate voltage loss from the output terminal to a load.
4	Remote sensing terminals(+S, -S)	For the 1.5kW Type, they are shorted with a metal bar. For the 600W Type,
		they are coupled to DC output terminals.
		This terminal is used to monitor DC output voltage. Load lines should not be connected to
5	DC output monitor terminals(+M, -M)	these monitor terminals. These monitor terminals should be jumpered when the remote
		monitoring feature is not in use.
		This terminal is for a reference voltage for controlling an output voltage and used for a
6	Output voltage reference terminal (REF)	master-slave operation or when using an output voltage adjustment function. Normally it is
		shorted with a metal bar to an RV terminal.
7	Output voltage adjustment terminal(RV)	This terminal is used for controlling output voltage from outside.
8	Current balance terminal(CB)	This terminal is used when several power supplies are connected in parallel to connect
	Current balance terrimal(CD)	the respective CB and -S terminals in parallel.
		These terminals output an open mode signal if an output voltage drops to 80 % or lower
9	Power failure terminal (PF)	of a set voltage. They also output the signal if an output voltage is shut down due to an
· ·	r ower failare terminal (11)	operation of an error detecting circuit for over output voltage protection, fan alarm overheat pro-
		tection, or overcurrent protection.
		Output is turned ON-OFF by disconnecting-connecting the RC terminals (output ON
10	Remote ON-OFF terminals(+RC, –RC)	when open).
		RC terminals are floating. Normally, ±RC terminals are shorted with a metal bar.
11	Output voltage adjustment trim(V.ADJ)	Adjusts output voltage.
12	Operation indicator LED(Green)	This Green LED becomes indicated when voltage is output.

INSTALLATIONS

2)

RKW300W

1)

3)

RKW600W

П

2)

RKW1.5kW

Fixing screw direction \Diamond 2) 3)

• Maintain a 50mm min. distance between the fan, front panel and surrounding equipment, etc. and install so as to provide heat-outside air exchange.

[•] Maintain a 30mm min. distance between the ventilation holes, fan surface and surrounding equipment, etc. and install so as to provide heat-outside air exchange.

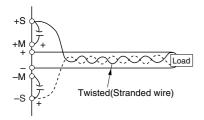
[•] All specifications are subject to change without notice.



REMOTE SENSING

Remote Sensing compensates to provide stability at the load terminal when voltage drop in the line between the power supply and the load causes instability. Remote sensing is possible if the voltage drop per wire between the output and load terminals is 0.15V max. for 3.3V models, 0.25V max. for 5.0V models and 0.4V max. for 12 to 48V models.

In case of parasitic oscillation or overvoltage protection malfunction too easily, install an external electrolytic capacitor, rated 470 μ F min. between the +M, +S and -M, -S terminals in the diagram shown below.



For 300W and 600W Types +OUT and +M output terminals are common.

-OUT and -M output terminals are common.

OUTPUT VOLTAGE EXTERNAL VARIABLE FUNCTION (RV)

The output voltage setting can be adjusted by attaching an external trimmer or an external voltage to the RV terminal.

When using this function, use a twisted wire or a shielded wire (shielded wire for –S) for the wiring from the REF, RV, and –S terminals (A recommended length is 2m max.). Care must be taken to make sure that the wires are not disconnected or miswired.

Voltage model (V)	RV voltage (V)	Output voltage variable range (%)
3.3	0 to 6.0	0 to 110 (3.6V max.)
5 to 24	0 to 6.0	0 to 120
48	0 to 5.5	0 to 110

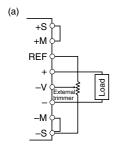
HOW TO USE THE FUNCTION

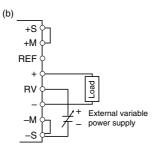
- Remove a short plate between the REF and RV terminals.
- For adjusting output voltage with external trimmer
 Rotate V.ADJ full clockwise and connect the external trimmer
 (5kΩ) to the REF, RV, and –S terminals as shown in the diagram
 (a) below.

The output voltage cannot be adjusted to 0V due to a residual resistance of the trimmer in some cases.

- For adjusting output voltage with external voltage
 As shown in the diagram (b) in the right side, connect the external variable power supply at the + end to the RV terminal and at end to the -S terminal.
- For low load

If an output voltage is rapidly dropped, the overvoltage protection function may operate.





CURRENT BALANCE (CB TERMINAL)

This terminal has a monitoring function to control and equalize the output current of power supplies connected in parallel by mutually connecting the respective CB terminals and the –S terminals of each power supply. Voltage almost proportional to the output current can be obtained between the CB and –S terminals.

(1) Conditions for current balance

The variation in output voltage between the respective power supplies cannot exceed 2%

(Highest voltage-lowest voltage) ÷ rated voltage=2% max.

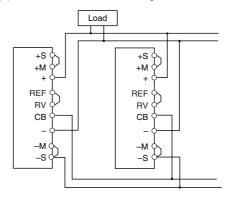
The output current is 20 to 90% of the total output rated current.

(2) Uniform performance (for two power supplies)

The variation in output current between the respective power supplies does not exceed 10%

(Highest current–lowest current) ÷ (rated voltage× the number of power supplies in parallel)=10% max.

(3) CB terminal connection diagram



Equalize the impedance of the load wires coming from each power supply. Use a twisted wire or a shielded wire for the wiring from CB and –S (shielded wire for –S). The maximum four power supplies are connected in parallel.



REMOTE ON-OFF

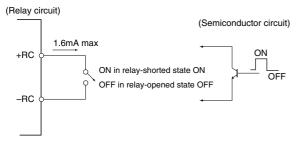
Power supply output voltage can be turned on/off externally at the Remote On-Off terminals (+RC, -RC) by activating one of the following signals:

Output voltage is turned off when the level is high between the +RC and -RC terminals (open or external voltage application of 2.4 to 24V: incoming current 1.0mA max.).

Output voltage is turned on when the level is low between the +RC and –RC terminals (short or terminal voltage of 0 to 0.4V: outgoing current 1.6mA max.).

 $\pm RC$ terminals are insulated from AC input terminals and the DC output terminals.

Insulation between the \pm RC terminals and the output conforms to the common specifications (Output to case). Withstand voltage between AC input terminals and \pm RC terminals conforms to the common specifications (Input to case).



POWER FAILURE SIGNAL

This function delivers a signal when an output voltage drops to 80% or lower of a set voltage.

If the power supply protection function operates, however, an output is shut down and a power failure signal is delivered.

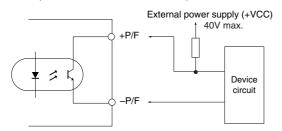
OUTPUT FORMAT

Sink current: 50mA max.

Collector emitter voltage: 40V max.

 $\pm \text{P/F}$ terminals are insulated from AC input terminals and the DC output terminals.

Insulation between the \pm P/F terminals and the output conforms to an insulation resistance for an output to the ground of the common specifications. Insulation between AC input terminals and \pm P/F terminals conforms to an insulation resistance for an input terminal to an output terminal of the common specifications.



P/F signal

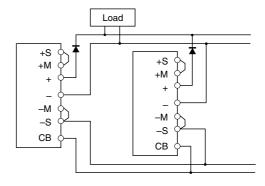
- · High-impedance at error detection
- Maximum collector current: 50mA (Collector emitter saturation voltage: 0.4V max.)
- Maximum collector emitter voltage: 40V

POWER SUPPLY PROTECTION

Protective function	Operation
OV Output overvoltage protection	Output is shut down and the fan stops upon detection of an abnormal output voltage rise. The output recovers after removing the cause upon setting the remote ON-OFF terminal to a high level and then to a low level or upon an input shutdown and a reset after 40s interval.
OC Output overcurrent protection	Output is shut down and the fan stops upon detection of an overcurrent state continued for 30s or longer. For an overcurrent within 30s, the output automatically recovers. The output recovers in the same manner as for the OV in the above.
FAN Fan alarm	Output is shut down when the fan rotation stops. The output recovers in the same manner as for the OV in the above. In case of an abnormal fan rotation, the output cannot recover.
TH Overheat protection	Output is shut down and the fan stops when the internal temperature of the power supply rises abnormally. The output recovers upon an input shutdown and a reset after 40s interval. Unless the internal temperature drops, the output cannot recover.

REDUNDANT (N+1) OPERATION

Connect diodes to output terminals of the power supplies before their redundant operation. Equalize the impedance of the load wires coming from each power supply. Use a twisted wire or a shielded wire for the wiring from CB and -S (shielded wire for -S). The maximum four power supplies are connected in parallel.



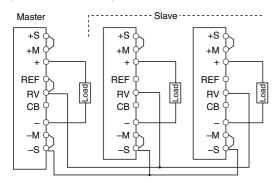


MASTER SLAVE FUNCTION

A use of the REF terminal and RV terminal enables the master slave operation. Connect the REF terminal of a power supply selected as a master, the RV terminals of slave power supplies, and respective –S terminals as shown in the diagram below. Then, output voltages of all the power supplies can be simultaneously adjusted with following V.ADJ of the master power supply. The maximum four power supplies are connected in parallel.

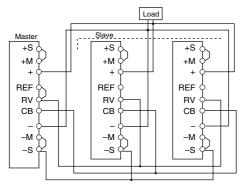
· For two or more output loads

Use a twisted wire or a shielded wire for the wiring from RV and –S (shielded wire for –S).



· For a single output load

Equalize the impedance of the load wires coming from each power supply. Use a twisted wire or a shielded wire for the wiring from RV and –S (shielded wire for –S).



 For 300W and 600W Types, the +M and -M terminals are used in common with the DC output terminals.

INSULATION AND WITHSTAND VOLTAGE TESTS

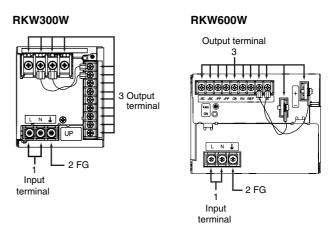
The insulation and withstand voltage tests may cause deterioration. Care must be taken for execution of the tests. The potential must be equal among input, output, and FG (frame ground) terminals.

It is preferable to use testers which gently start up at the test-ON and automatically discharge charging energy at the test-OFF. Manual discharging after the tests should be through a resistor around $100 k\Omega$ to $1 M\Omega$ (Do not perform discharging at low impedance. It may cause deterioration.)

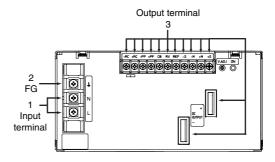
In any case, take full countermeasures for electric-shock prevention.

POWER SUPPLY TERMINAL CONNECTION AT INSULATION AND WITHSTAND VOLTAGE TESTS

Short output or input terminals.



RKW1.5kW



CONNECTIONS BETWEEN TESTERS AND POWER SUPPLY AT INSULATION AND WITHSTAND VOLTAGE TESTS

For connections between the testers and the power supply body, couple the tester terminals at the corresponding locations listed below before executing the tests.

Test conditions	Withstand voltage tester		Insulation tester	
	+ terminal	-terminal	+ terminal	-terminal
Input-to-output	1	3	_	_
withstand voltage				
Input-to-FG	1	2	_	_
withstand voltage				
Output-to-FG	3	2	_	_
withstand voltage				
Input-to-FG	_	_	1	2
insulation				
Input-to-output	_	_	1	3
insulation				
Output-to-FG	_	_	3	2
insulation				



OPTIONAL SPECIFICATIONS

To answer customer's various needs, the RKW series prepares the semi-standard power supply. Please order by adding the undermentioned symbol to the product number's end of standard type.

PRODUCT IDENTIFICATIONS

RKW O - O O	
(1)	(2)

(1) Part No. of standard product

(2) Optional function's symbol

	Optional function	IS	
Symbol	Long life span Fan	Overvoltage detection point fix	Fan alarm
F	✓		
A		✓	
В			✓
E	✓	✓	
G	✓		✓
J		✓	✓
N	✓	✓	✓

: Indicates the products upon receipt of order.

Example) RKW05-60RG

Output voltage: 5V

Output current: 60A

Optional functions: With long life span Fan and Fan alarm

• The power supply part number when the safety standard is applied must use the standard power supply type name.

OPTIONAL FUNCTIONS LONG LIFE SPAN FAN TYPE

· Change temperature condition of input voltage and input frequency range.

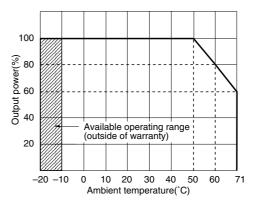
Temperature range: -10 to +71°C

- Change temperature condition of temperature effect. Temperature range: -10 to +71°C
- Change temperature condition of ripple and ripple noise. Temperature range: 0 to +71°C
- Change operating temperature range: -10 to +71°C
- · Warranty period: 10 years
- · Power Fail signal

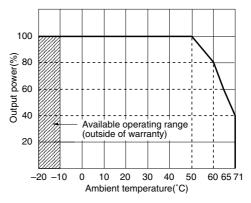
Sink current: 20mA max.(except 300W type)

• The damp proof treatment is given.

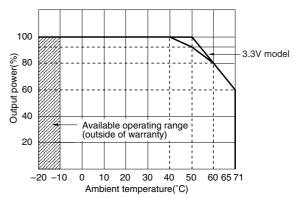
DERATINGS RKW300W



RKW600W



RKW1.5kW



[•] All specifications are subject to change without notice.



OVER VOLTAGE POINT FIX TYPE

Over voltage setting is fixed(Over voltage setting is not tracking by REF voltage).

300W Type	Over voltage setting(V)	600W Type	Over voltage setting(V)	1.5kW Type	Over voltage setting(V)
RKW03-70R*	4.0 to 4.6	RKW03-150 *	4.0 to 4.6	RKW03-375*	4.0 to 4.6
RKW05-60R	6.2 to 7.0	RKW05-120	6.2 to 7.0	RKW05-300	6.2 to 7.0
RKW12-27R	14.8 to 16.8	RKW12-53R	14.8 to 16.8	RKW12-125	14.8 to 16.8
RKW15-22R	18.6 to 21.0	RKW15-43R	18.6 to 21.0	RKW15-100	18.6 to 21.0
RKW24-14R	29.8 to 33.6	RKW24-27R	29.8 to 33.6	RKW24-65R	29.8 to 33.6
RKW28-12R	34.7 to 39.2	RKW28-23R	34.7 to 39.2	RKW28-55R	34.7 to 39.2
RKW48-7R0	55.5 to 59.9	RKW48-13R	55.5 to 59.9	RKW48-32R	55.5 to 59.9

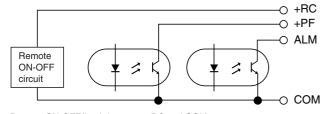
^{*} Please refer "Product Identifications" section about the part number.

FAN ALARM TYPE

When the rotation of the fan decreases, the FAN alarm signal is sent . The output of the power supply does not stop. Please use a remote ON-OFF function or intercept the input, and stop the power supply promptly, and then confirm whether to find abnormality in FAN part.

- Power fail signal
 When the output voltage is less than 80% selected voltage, output signal is open state.
- FAN alarm signal
 When the FAN slow down, output signal is open state.
- Sink current: 50mA max.
- Collector to emitter voltage: 40V max.
 Insulation resistance between AC input terminal and +PF terminal, +RC terminal, ALM terminal and COM terminal are same as the insulation resistance between input and output.
 Insulation resistance between +PF terminal, +RC terminal, ALM terminal, COM terminal and output are same the insulation resistance between output and ground.

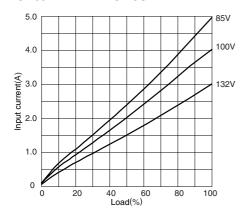
OUTPUT CIRCUIT



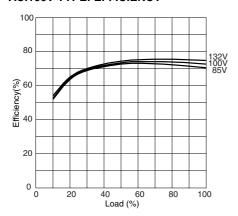
Remote ON-OFF(Iput): between +RC and COM Power fail signal(output): between +PF and COM FAN alarm(output): between ALM and COM (COM is common return terminal)

[•] All specifications are subject to change without notice.

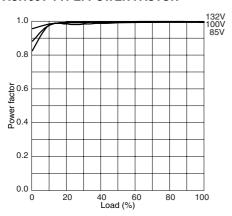
RKW300W(Typical Characteristics RKW05-60R) AC.100V TYPE: INPUT CURRENT



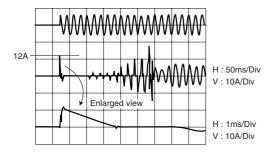
AC.100V TYPE: EFFICIENCY



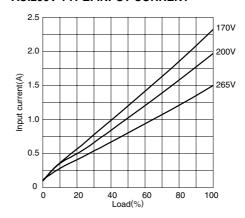
AC.100V TYPE: POWER FACTOR



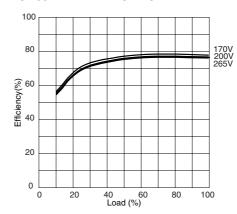
AC.100V TYPE: SURGE CURRENT



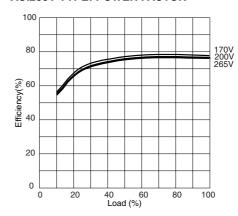
AC.200V TYPE: INPUT CURRENT



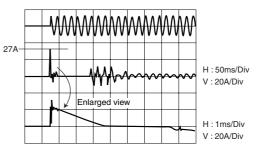
AC.200V TYPE: EFFICIENCY



AC.200V TYPE: POWER FACTOR



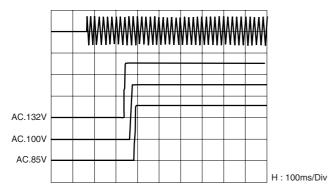
AC.200V TYPE: SURGE CURRENT



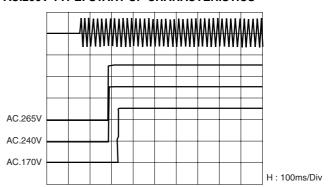
[•] All specifications are subject to change without notice.



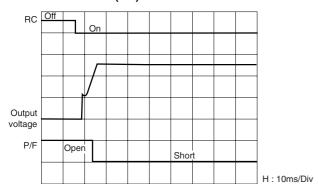
RKW300W(Typical Characteristics RKW05-60R) AC.100V TYPE: START UP CHARACTERISTICS



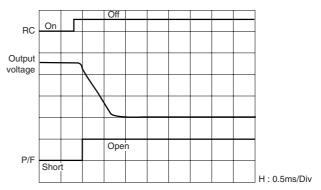
AC.200V TYPE: START UP CHARACTERISTICS



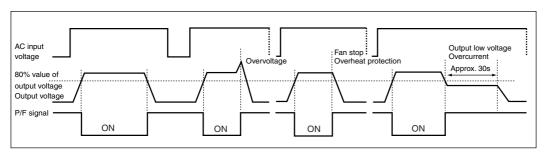
REMOTE CONTROL (ON)



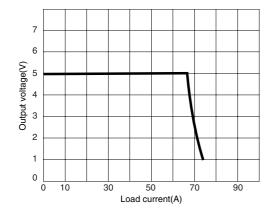
REMOTE CONTROL (OFF)



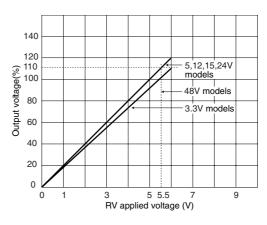
POWER FAILURE SIGNAL SEQUENCE



AC.100V/200V TYPE: OVERCURRENT CURVE



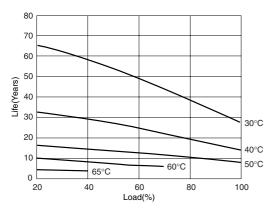
RV TERMINAL VOLTAGE VARIABLE RANGE



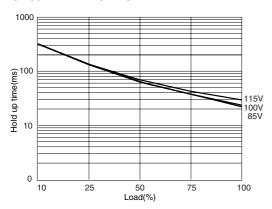
[•] All specifications are subject to change without notice.



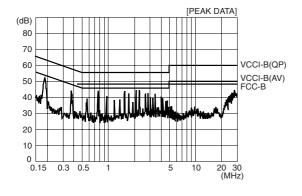
RKW300W(Typical Characteristics RKW05-60R) AC.100V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



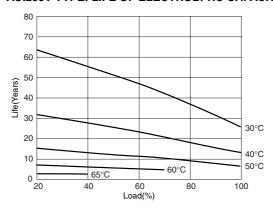
AC.100V TYPE: HOLD UP TIME



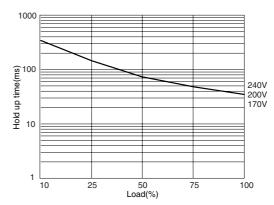
NOISE TERMINAL VOLTAGE



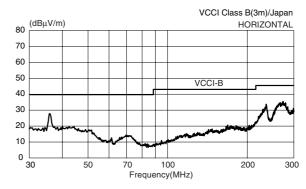
AC.200V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



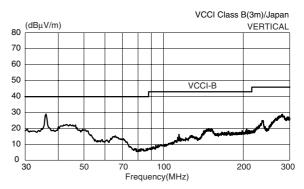
AC.200V TYPE: HOLD UP TIME



RADIATED NOISE

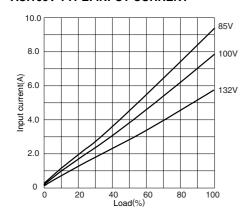


RADIATED NOISE

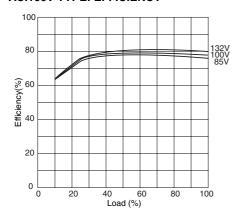


[•] All specifications are subject to change without notice.

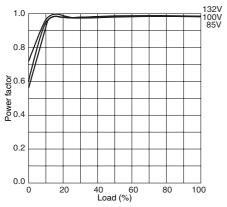
RKW600W(Typical Characteristics RKW05-120) AC.100V TYPE: INPUT CURRENT



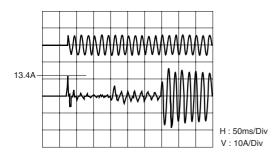
AC.100V TYPE: EFFICIENCY



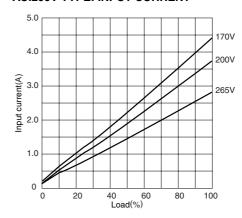
AC.100V TYPE: POWER FACTOR



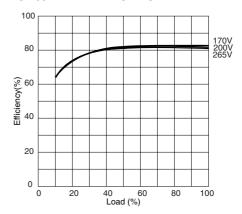
AC.100V TYPE: SURGE CURRENT



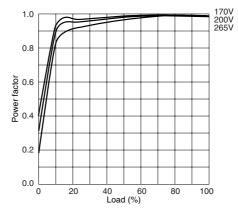
AC.200V TYPE: INPUT CURRENT



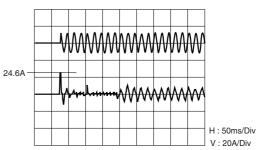
AC.200V TYPE: EFFICIENCY



AC.200V TYPE: POWER FACTOR



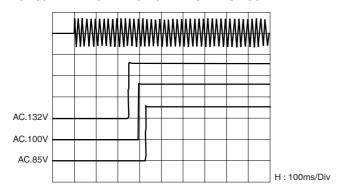
AC.200V TYPE: SURGE CURRENT



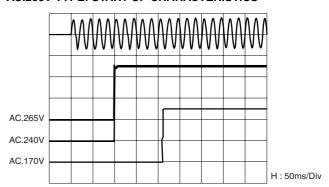
[•] All specifications are subject to change without notice.



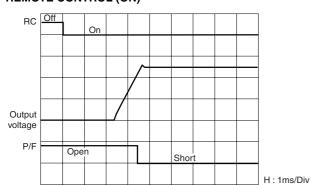
RKW600W(Typical Characteristics RKW05-120) AC.100V TYPE: START UP CHARACTERISTICS



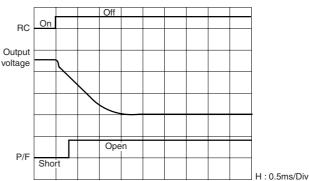
AC.200V TYPE: START UP CHARACTERISTICS



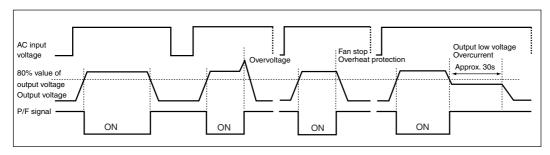
REMOTE CONTROL (ON)



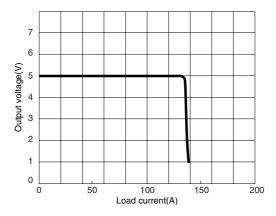
REMOTE CONTROL (OFF)



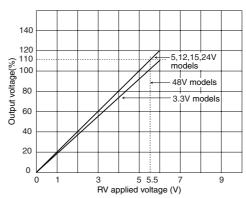
POWER FAILURE SIGNAL SEQUENCE



AC.100V/200V TYPE: OVERCURRENT CURVE



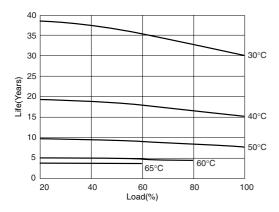
RV TERMINAL VOLTAGE VARIABLE RANGE



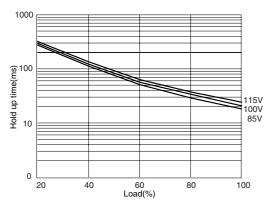
[•] All specifications are subject to change without notice.



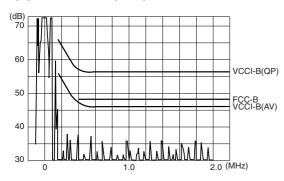
RKW600W(Typical Characteristics RKW05-120) AC.100V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



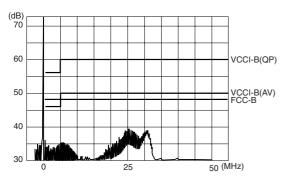
AC.100V TYPE: HOLD UP TIME



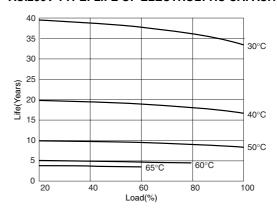
NOISE TERMINAL VOLTAGE



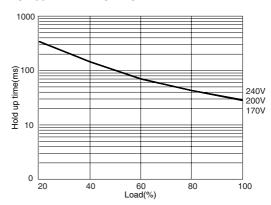
NOISE TERMINAL VOLTAGE



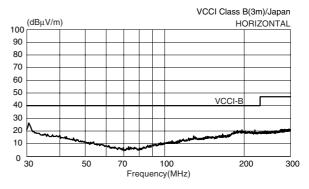
AC.200V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



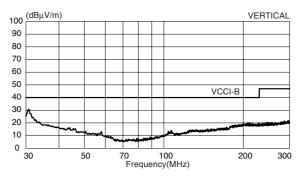
AC.200V TYPE: HOLD UP TIME



RADIATED NOISE

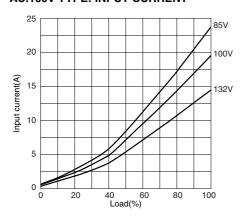


RADIATED NOISE

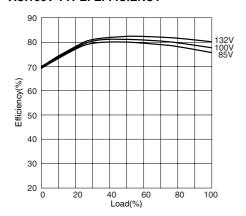


[•] All specifications are subject to change without notice.

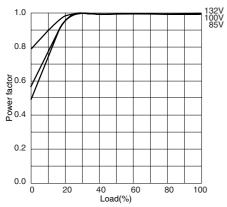
RKW1.5kW(Typical Characteristics RKW05-300) AC.100V TYPE: INPUT CURRENT



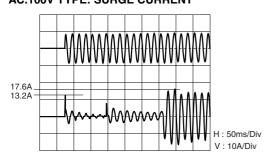
AC.100V TYPE: EFFICIENCY



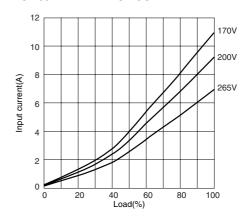
AC.100V TYPE: POWER FACTOR



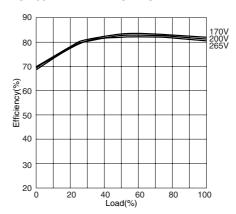
AC.100V TYPE: SURGE CURRENT



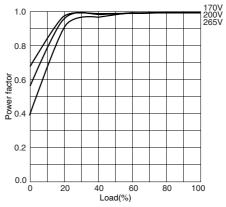
AC.200V TYPE: INPUT CURRENT



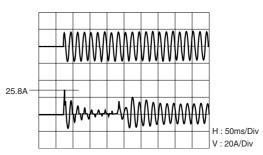
AC.200V TYPE: EFFICIENCY



AC.200V TYPE: POWER FACTOR



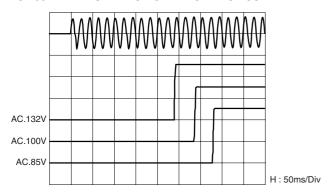
AC.200V TYPE: SURGE CURRENT



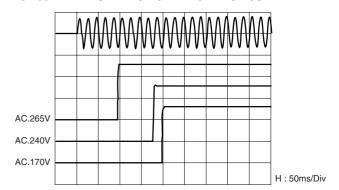
[•] All specifications are subject to change without notice.



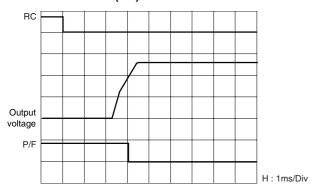
RKW1.5kW(Typical Characteristics RKW05-300) AC.100V TYPE: START UP CHARACTERISTICS



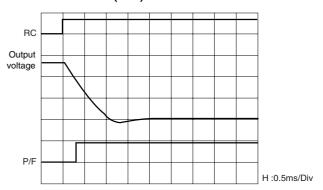
AC.200V TYPE: START UP CHARACTERISTICS



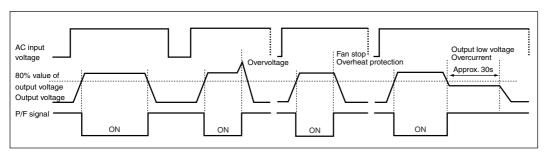
REMOTE CONTROL (ON)



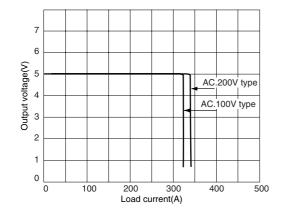
REMOTE CONTROL (OFF)



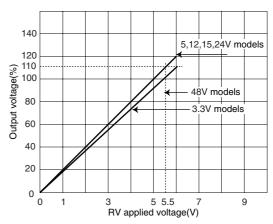
POWER FAILURE SIGNAL SEQUENCE



AC.100V/200V TYPE: OVERCURRENT CURVE

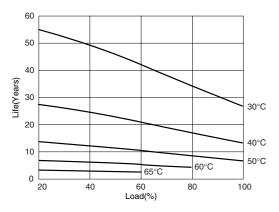


RV TERMINAL VOLTAGE VARIABLE RANGE

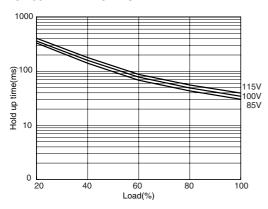


[•] All specifications are subject to change without notice.

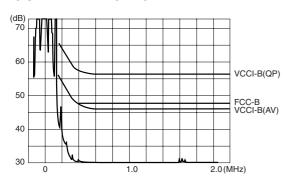
RKW1.5kW(Typical Characteristics RKW05-300, RKW12-125) AC.100V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



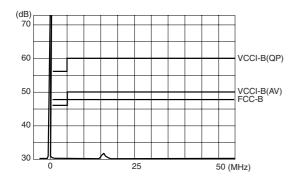
AC.100V TYPE: HOLD UP TIME



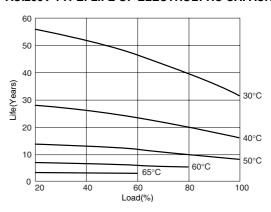
NOISE TERMINAL VOLTAGE



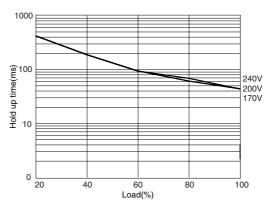
NOISE TERMINAL VOLTAGE



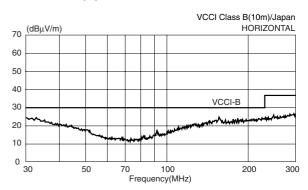
AC.200V TYPE: LIFE OF ELECTROLYTIC CAPACITOR



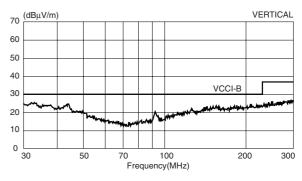
AC.200V TYPE: HOLD UP TIME



RADIATED NOISE



RADIATED NOISE



[•] All specifications are subject to change without notice.