**JAK Series** 

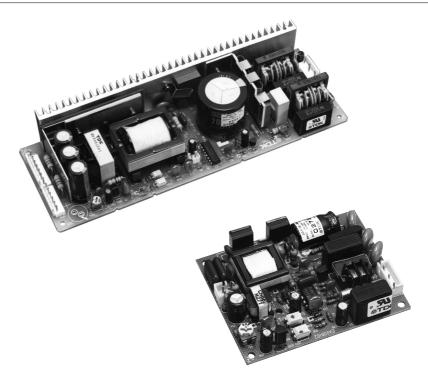
AC Input Single Output, General-Purpose

#### **FEATURES**

- Low profile, single output AC.100V input power supply.
- Compact open frame type.
- These low noise power supplies are FCC Class B standard compliant.
- · Low price.

#### PART NUMBERS AND RATINGS

Output valtage () ()	10W type		15W type		25W type	25W type	
Output voltage(V)	Current(A) Part No.		Current(A)	Current(A) Part No.		Current(A) Part No.	
5	2	JAK05-2R0	3	JAK05-3R0	5	JAK05-5R0	
12	0.84	JAK12-R84	1.3	JAK12-1R3	2.1	JAK12-2R1	
15	0.67	JAK15-R67	1	JAK15-1R0	1.7	JAK15-1R7	
24	0.42	JAK24-R42	0.63	JAK24-R63	1.1	JAK24-1R1	
Output voltage(\/)	50W type		100W type		150W type		
Output voltage(V)	Current(A)	Part No.	Current(A)	Part No.	Current(A)	Part No.	
5	10	JAK05-10R	20	JAK05-20R	30	JAK05-30R	
12	4.2	JAK12-4R2	8.4	JAK12-8R4	12.5	JAK12-13R	
15	3.4	JAK15-3R4	6.7	JAK15-6R7	10	JAK15-10R	
24	2.1	JAK24-2R1	4.2	JAK24-4R2	6.3	JAK24-6R3	



Mounting method

#### **JAK Series**

### AC Input Single Output, General-Purpose

#### **SPECIFICATIONS** 10W TYPE Part No. JAK05-2R0 JAK12-R84 JAK15-R67 JAK24-R42 Output voltage, current\*1 5V • 2A 12V • 0.84A 15V • 0.67A 24V • 0.42A W Maximum output power 10 10.1 10.1 10.1 Input requirements Input voltage Eac\*2 V 85 to 132[Rating:100-120] Input frequency Нz 47 to 66[Single phase] Input current 0.3max.[100V] Α 1.6[Internal] Fuse rating Α 40max.[100/120V] Surge current Α Leakage current 0.5max.[100/120V] mA Efficiency 74typ. % 70typ. 72typ. 73typ. Output characteristics Output voltage 5 12 15 24 Voltage variable range 10.8 to 13.2 13.5 to 16.5 4.5 to 5.5 21.6 to 26.4 Maximum output current\*1 Α 0.84 0.67 0.42 Overvoltage threshold V 5.6 to 6.9 13.4 to 15.7 16.7 to 19 26.7 to 30.5 Overcurrent threshold 2.1min. 0.9min. 0.7min. 0.44min. Α Input variation 2max.(1typ.)[Within the input voltage range] Load variation % 2max.(1typ.)[10 to 100% load] Total variation ±3max.(±1typ.) Temperature Voltage % 2max.(1typ.)[0 to +40°C] stability variation Drift % 0.5max.(0.1typ.)[After input voltage ON for 30min to 8h] Dynamic load %/ms ±4max./1max.[50 to 100% sudden load change] Ripple noise Ep-p 220max. 310max. m٧ 120max 190max. Start up time 500max.[100V] ms Hold up time 15min.(17typ.)[100V] Accessory equipment Operation indicator Overvoltage protection Voltage shielding type, recovers upon reset(interval approx. 40s). Overcurrent protection Fixed current and voltage threshold type, automatic recovery, but overcurrent of 1s min. is shielded. Remote ON-OFF None None Remote sensing Output voltage external variable None function Standards Safety standards UL1950D3 recognized. VCCI class 2, FCC class B compliant. Noise terminal voltage Construction External dimensions H×W×L 19×60×77 Weight 65max g



<sup>\*1</sup> Current rating(maximum output current) is determined for -10 to +40°C. Derating is required when used outside this temperature range.

<sup>\*2</sup> When under load, output is cut off if the input voltage is below the minimum input voltage continuously for more than 1s.

#### **JAK Series**

### AC Input Single Output, General-Purpose

SPECIFICA	ATIONS							
15W TYPE								
Part No.			JAK05-3R0	JAK12-1R3	JAK15-1R0	JAK24-R63		
Output volta	ge, current*1		5V • 3A	12V • 1.3A	15V • 1A	24V • 0.63A		
Maximum ou	itput power	W	15	15.6	15	15.1		
Input require	ements							
Input voltage	Eac*2	V	85 to 132[Rating:1	00-120]				
Input freque	ncy	Hz	47 to 66[Single pha	ase]				
Input current	t	Α	0.4max.[100V]					
Fuse rating		Α	1.6[Internal]					
Surge currer	nt	Α	40max.[100/120V]					
Leakage cur	rent	mA	0.5max.[100/120V]					
Efficiency		%	71typ.	72typ.	73typ.	74typ.		
Output chara	acteristics							
Output voltage	ge	V	5	12	15	24		
Voltage varia	able range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5	21.6 to 26.4		
Maximum ou	utput current*1	Α	3	1.3	1	0.63		
Overvoltage	threshold	V	5.6 to 6.9	13.4 to 15.7	16.7 to 19	26.7 to 30.5		
Overcurrent	threshold	A	3.2min.	1.4min.	1.05min.	0.66min.		
	Input variation	%	2max.(1typ.)[Withir	2max.(1typ.)[Within the input voltage range]				
	Load variation	%	2max.(1typ.)[10 to	2max.(1typ.)[10 to 100% load] Total variation ±3max.(±1typ.)				
Voltage stability	Temperature variation	%	2max.(1typ.)[0 to +	2max.(1typ.)[0 to +40°C]				
,	Drift	%	0.5max.(0.1typ.)[A	fter input voltage ON for 30mi	n to 8h]			
	Dynamic load	%/ms	±4max./1max.[50 to 100% sudden load change]					
Ripple noise	Ер-р	mV	120max.	190max.	220max.	310max.		
Start up time		ms	500max.[100V]					
Hold up time	<b>)</b>	ms	15min.(17typ.)[100	V1				
Accessory e	guipment		( )1 /1	-				
Operation in	• •		None					
Overvoltage	protection		Voltage shielding to	ype, recovers upon reset(inter	rval approx. 40s).			
Overcurrent	protection		Fixed current and voltage threshold type, automatic recovery, but overcurrent of 1s min. is shielded.					
Remote ON-	•		None					
Remote sens	sina		None					
Output volta	ge external variable	)						
function	9		None					
Standards								
Safety standards		UL1950D3 recognized.						
Noise termin			•	class B compliant.				
Construction			,	<b>'</b>				
	ensions H×W×L	mm	19×60×95					
Weight		g	85max.					
VVCIQIII								

<sup>\*1</sup> Current rating(maximum output current) is determined for -10 to +40°C. Derating is required when used outside this temperature range.



<sup>\*2</sup> When under load, output is cut off if the input voltage is below the minimum input voltage continuously for more than 1s.

Mounting method

#### **JAK Series**

### AC Input Single Output, General-Purpose

SPECIFICA	ATIONS							
25W TYPE								
Part No.			JAK05-5R0	JAK12-2R1	JAK15-1R7	JAK24-1R1		
Output volta	ge, current*1		5V • 5A	12V • 2.1A	15V • 1.7A	24V • 1.1A		
Maximum ou	utput power	W	25	25.2	25.5	26.4		
Input require	ements							
Input voltage	e Eac*2	V	85 to 132[Rating:1	00-120]				
Input freque	ncy	Hz	47 to 66[Single pha	ase]				
Input curren	t	Α	0.65max.[100V]					
Fuse rating		Α	1.6[Internal]					
Surge currer	nt	Α	40max.[100/120V,	25°C cold start]				
Leakage cur	rent	mA	0.5max.[100/120V]					
Efficiency		%	78typ.	79typ.	81typ.	82typ.		
Output chara	acteristics							
Output volta	ge	V	5	12	15	24		
Voltage varia	able range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5	21.6 to 26.4		
Maximum ou	utput current*1	Α	5	2.1	1.7	1.1		
Overvoltage	threshold	V	5.6 to 6.9	13.4 to 15.7	16.7 to 19	26.7 to 30.5		
Overcurrent	threshold	Α	5.3min.	2.2min.	1.8min.	1.2min.		
	Input variation	%	2max.(1typ.)[Withir	2max.(1typ.)[Within the input voltage range]				
	Load variation	%	2max.(1typ.)[10 to	2max.(1typ.)[10 to 100% load] Total variation ±3max.(±1typ.)				
Voltage stability	Temperature variation	%	2max.(1typ.)[0 to +	2max.(1typ.)[0 to +40°C]				
	Drift	%	0.5max.(0.1typ.)[A	ter input voltage ON for 30r	min to 8h]			
	Dynamic load	%/ms	±4max./1max.[50 t	o 100% sudden load chang	e]			
Ripple noise	Ер-р	mV	120max.	190max.	220max.	310max.		
Start up time	9	ms	500max.[100V]					
Hold up time	)	ms	15min.(17typ.)[100	V]				
Accessory e	quipment							
Operation in	dicator		None					
Overvoltage	protection		Voltage shielding type, recovers upon reset(interval approx. 40s).					
Overcurrent			Fixed current and voltage threshold type, automatic recovery, but overcurrent of 1s min. is shielded.					
Remote ON-	-OFF		None					
Remote sen	sing		None					
Output voltage external variable		None						
function			NOTIC					
Standards								
Safety stand	lards		UL1950D3 recogni					
Noise termin	nal voltage		VCCI class 2, FCC	class B compliant.				
Construction	1				<u> </u>			
External dim	ensions H×W×L	mm	25×60×110					
Weight		g	150max.					

<sup>\*1</sup> Current rating(maximum output current) is determined for -10 to +40°C. Derating is required when used outside this temperature range.



<sup>\*2</sup> When under load, output is cut off if the input voltage is below the minimum input voltage continuously for more than 1s.

#### **JAK Series**

### AC Input Single Output, General-Purpose

SPECIFICA	ATIONS							
50W TYPE								
Part No.			JAK05-10R	JAK12-4R2	JAK15-3R4	JAK24-2R1		
Output voltag	ge, current*1		5V • 10A	12V • 4.2A	15V • 3.4A	24V • 2.1A		
Maximum ou		W	50	50.4	51	50.4		
Input require								
Input voltage	Eac*2	V	85 to 132[Rating:100-	120]				
Input frequer	ncy	Hz	47 to 66[Single phase]					
Input current	•	A	1.3max.[100V]					
Fuse rating		Α	3.15[Internal]					
Surge curren	nt	Α	40max.[100/120V, 25°	°C cold start]				
Leakage curi	rent	mA	0.5max.[100/120V]					
Efficiency		%	77typ.	79typ.	79typ.	81typ.		
Output chara	cteristics							
Output voltag	де	V	5	12	15	24		
Voltage varia	ble range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5	21.6 to 26.4		
Maximum ou	tput current*1	Α	10	4.2	3.4	2.1		
Overvoltage	threshold	V	5.6 to 6.9	13.4 to 15.7	16.7 to 19	26.7 to 30.5		
Overcurrent t	threshold	Α	10.5min.	4.4min.	3.5min.	2.2min.		
	Input variation	%	2max.(1typ.)[Within the input voltage range]					
	Load variation	%	2max.(1typ.)[10 to 100% load]					
/oltage	Temperature variation	%	2max.(1typ.)[0 to +40°C]  Total variation ±3max.(±1typ.)			пах.(± пур.)		
stability	Drift	%	0.5max.(0.1typ.)[After input voltage ON for 30min to 8h]					
	Dynamic load	%/ms	±4max./1max.[50 to 100% sudden load change]					
Ripple noise	Ер-р	mV	120max.	190max.	220max.	310max.		
Start up time	1	ms	500max.[100V]					
Hold up time		ms	15min.(17typ.)[100V]					
Accessory ed	quipment							
Operation inc	dicator		None					
Overvoltage	protection		Voltage shielding type	e, recovers upon reset(int	erval approx. 40s).			
Overcurrent	protection		Fixed current and voltage threshold type, automatic recovery, but overcurrent of 1s min. is shielded.					
Remote ON-	OFF		None					
Remote sens	sing		None					
Output voltag	ge external variable	)	Nama					
unction			None					
Standards								
Safety standards		UL1950 recognized, Japan Electric/Electronic Products Control Law conformed.						
Noise termin	al voltage		VCCI class 2, FCC cla	ass B compliant.				
Construction								
External dim	ensions H×W×L	mm	30×60×156					
Weight		g	220max.					
	thod		1 side(Open frame)					

<sup>\*1</sup> Current rating(maximum output current) is determined for -10 to +40°C. Derating is required when used outside this temperature range.



<sup>\*2</sup> When under load, output is cut off if the input voltage is below the minimum input voltage continuously for more than 1s.

Mounting method

#### **JAK Series**

# AC Input Single Output, General-Purpose

SPECIFIC							
100W TYP	PE						
Part No.			JAK05-20R	JAK12-8R4	JAK15-6R7	JAK24-4R2	
	ige, current*1		5V • 20A	12V • 8.4A	15V • 6.7A	24V • 4.2A	
	utput power	W	100	100.8	100.5	100.8	
Input require	ements						
Input voltag	e Eac	V	85 to 132[Rating:10	00-120]			
Input freque	ency	Hz	47 to 66[Single pha	ase]			
Input curren	nt	Α	2.5max.[100V]				
Fuse rating		Α	5[Internal]				
Surge curre	nt	Α	25max.[100/120V,	1st surge current, reset afte	r roughly 10s min.]		
Leakage cu	rrent	mA	0.5max.[100/120V]				
Efficiency		%	81typ.	83typ.	84typ.	85typ.	
Output char	acteristics						
Output volta	ige	V	5	12	15	24	
Voltage vari	able range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5	21.6 to 26.4	
Maximum o	utput current*1	Α	20	8.4	6.7	4.2	
Overvoltage	threshold	V	5.6 to 6.9	13.4 to 15.7	16.7 to 19	26.7 to 30.5	
Overcurrent		Α	21min.	8.9min.	7.1min.	4.5min.	
	Input variation	%	2max.(1typ.)[Withir	the input voltage range]			
	Load variation	%		2may (1tyn)[10 to 100% load]			
Voltage stability	Temperature variation	%	2max.(1typ.)[0 to +	max.(±1typ.)			
otability	Drift	%	0.5max.(0.1typ.)[After input voltage ON for 30min to 8h]				
	Dynamic load	%/ms	±4max./1max.[50 to 100% sudden load change]				
Ripple noise	,	mV	120max.	190max.	220max.	310max.	
Start up tim		ms	500max.[100V]	rooman	2201110711	0.0	
Hold up time		ms	15min.(23typ.)[100	V1			
Accessory 6				- 1			
Operation in	<u> </u>		None				
Overvoltage			Voltage shielding type, recovers upon reset(interval approx. 40s).				
	protection*2		Fixed current and voltage threshold type, automatic recovery, but overcurrent of 1s min. is shielded.				
Remote ON	•		None				
Remote sensing		None					
Output voltage external variable		None					
function	ige external variable	•	None				
Standards							
Safety stand	dards		UI 1950 recognized	d, Japan Electric/Electronic	Products Control Law conf	ormed.	
Noise termi			VCCI class 2, FCC	<u> </u>		JJu.	
Construction			V 001 class 2, 1°00	oldos D compliant.			
	nensions H×W×L	mm	35×60×222				
Weight	IIGHSIUHS I IAVVAL		550max.				
vveigill		g	ooumax.				

<sup>\*1</sup> Current rating(maximum output current) is determined for -10 to +40°C. Derating is required when used outside this temperature range.



<sup>\*2</sup> Output can stop if input voltage drops below the minimum value continuously for over 1min during supply of power to load.

Mounting method

#### **JAK Series**

## AC Input Single Output, General-Purpose

SPECIFIC								
150W TYF	'E							
Part No.			JAK05-30R	JAK12-13R	JAK15-10R	JAK24-6R3		
	age, current*1		5V • 30A	12V • 12.5A	15V • 10A	24V • 6.3A		
	utput power	W	150	150	150	151.2		
Input requir								
Input voltag	e Eac	V	85 to 132[Rating:1					
Input freque	ency	Hz	47 to 66[Single phase]					
Input currer		A	3.5max.[100V]					
Fuse rating		Α	6.3[Internal]					
Surge curre	ent	Α		1st surge current, reset after r	roughly 10s min.]			
Leakage cu	rrent	mA	0.5max.[100/120V]					
Efficiency		%	80typ.	83typ.	84typ.	85typ.		
Output char								
Output volta	age	V	5	12	15	24		
Voltage vari	iable range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5	21.6 to 26.4		
Maximum o	utput current*1	Α	30	12.5	10	6.3		
Overvoltage	e threshold	V	5.6 to 6.9	13.4 to 15.7	16.7 to 19	26.7 to 30.5		
Overcurrent	t threshold	Α	31.5min.	13.2min.	10.5min.	6.7min.		
	Input variation	%	2max.(1typ.)[Withir	the input voltage range]				
	Load variation	%	2max.(1typ.)[10 to	2max.(1typ.)[10 to 100% load]		Total variation ±3max.(±1typ.)		
Voltage stability	Temperature variation	%	2max.(1typ.)[0 to +	40°C]	—— 10tal valiati011±3	шал.(± пур. <i>)</i>		
	Drift	%	0.5max.(0.1typ.)[At	fter input voltage ON for 30mi	to 8h]			
	Dynamic load	%/ms	±4max./1max.[50 t	±4max./1max.[50 to 100% sudden load change]				
Ripple noise	е Ер-р	mV	120max.	190max.	220max.	310max.		
Start up tim		ms	500max.[100V]					
Hold up tim	e	ms	15min.(23typ.)[100	V]				
Accessory	equipment							
Operation in	ndicator		None					
Overvoltage	protection		Voltage shielding ty	Voltage shielding type, recovers upon reset(interval approx. 60s).				
Overcurrent	t protection*2		Fixed current and voltage threshold type, automatic recovery, but overcurrent of 1s min. is shielded.					
Remote ON	I-OFF		None					
Remote ser	nsing		None					
Output volta	age external variable	Э	None					
function	-		None					
Standards								
Safety stand	dards		UL1950 recognized	d, Japan Electric/Electronic Pr	roducts Control Law conf	ormed.		
Noise termi	nal voltage		VCCI class 2, FCC	class B compliant.				
Constructio			,	•				
External din	mensions H×W×L	mm	47×75×222					
Weight		g	700max.					
	- a 4 b - a -d		1 sids/Open frame	\				

<sup>\*1</sup> Current rating(maximum output current) is determined for -10 to +40°C. Derating is required when used outside this temperature range.

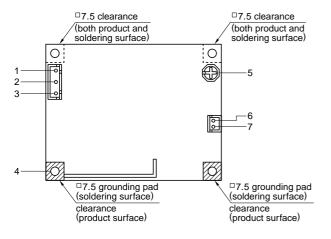


<sup>\*2</sup> Output can stop if input voltage drops below the minimum value continuously for over 1min during supply of power to load.

### **JAK Series**

AC Input Single Output, General-Purpose

# TERMINAL DESIGNATIONS AND FUNCTIONS JAK10W



Terminal No. 1: Input terminal(No. 1 pin of CP1)

Live line. Fuse is built in.

Terminal No. 2: Input terminal (No. 3 pin of CP1)

Neutral line

Terminal No. 3: Input terminal (No. 5 pin of CP1)

Ground

Terminal No. 4: Ground

Connect with input terminal(No. 5 pin of CP1). If the power supply is connected electrically to equipment via the spacer, etc., the spacer material should be electrically conductive(spacer contact surface=6mm max. dia.).

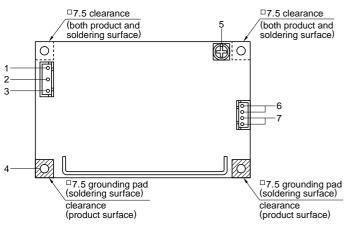
Terminal No. 5: Output voltage adjustment

Clockwise rotation increases output voltage.

Terminal No. 6: + output terminal(No. 2 pin of CP51)

Terminal No. 7: - output terminal(No. 1 pin of CP51)

#### JAK15W



Terminal No. 1: Input terminal(No. 1 pin of CP1)

Live line. Fuse is built in.

Terminal No. 2: Input terminal(No. 3 pin of CP1)

Neutral line

Terminal No. 3: Input terminal (No. 5 pin of CP1)

Ground

Terminal No. 4: Ground

Connect with input terminal(No. 5 pin of CP1). If the power supply is connected electrically to equipment via the spacer, etc., the spacer material should be electrically conductive(spacer contact surface=6mm max dia)

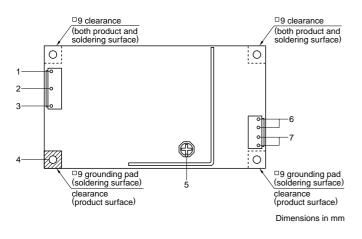
Terminal No. 5: Output voltage adjustment

Clockwise rotation increases output voltage.

Terminal No. 6: + output terminals(No. 3 and 4 pins of CP51)

Terminal No. 7: – output terminals(No. 1 and 2 pins of CP51)

#### JAK25W



Terminal No. 1: Input terminal(No. 5 pin of CP1)

Live line. Fuse is built in.

Terminal No. 2: Input terminal (No. 3 pin of CP1)

Neutral line

Terminal No. 3: Input terminal(No. 1 pin of CP1)

Ground

Terminal No. 4: Ground

Connect with input terminal(No. 1 pin of CP1). If the power supply is connected electrically to equipment via the spacer, etc., the spacer material should be electrically conductive(spacer contact surface=6mm max. dia.).

Terminal No. 5: Output voltage adjustment

Clockwise rotation increases output voltage.

Terminal No. 6: + output terminals(No. 1 and 2 pins of CP51)

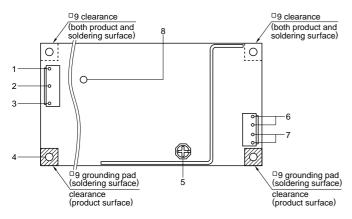
Terminal No. 7: - output terminals(No. 3 and 4 pins of CP51)



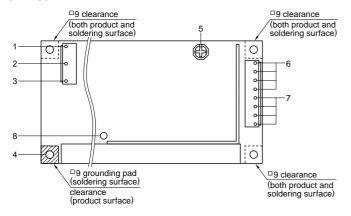
#### **JAK Series**

AC Input Single Output, General-Purpose

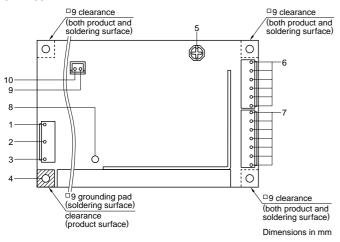
# TERMINAL DESIGNATIONS AND FUNCTIONS JAK50W



#### JAK100W



#### **JAK150W**



Terminal No. 1: Input terminal(No. 5 pin of CP1)

Live line. Fuse is built in.

Terminal No. 2: Input terminal(No. 3 pin of CP1)

Neutral line

Terminal No. 3: Input terminal(No. 1 pin of CP1)

Ground

Terminal No. 4: Ground

Connect with input terminal(No. 1 pin of CP1). If the power supply is connected electrically to equipment via the spacer, etc., the spacer material should be electrically conductive(spacer contact surface=6mm max. dia.).

Terminal No. 5: Output voltage adjustment

Clockwise rotation increases output voltage.

Terminal No. 6: + output terminals(No. 1 and 2 pins of CP51)

Terminal No. 7: -output terminals(No. 3 and 4 pins of CP51)

Terminal No. 8: Spacer mounting hole

A spacer should be used that is constructed from an insulating material(spacer contact surface=6mm max. dia.).

Terminal No. 1: Input terminal (No. 5 pin of CP1)

Live line. Fuse is built in.

Terminal No. 2: Input terminal (No. 3 pin of CP1)

Neutral line

Terminal No. 3: Input terminal (No. 1 pin of CP1)

Ground

Terminal No. 4: Ground

Connect with input terminal(No. 1 pin of CP1). If the power supply is connected electrically to equipment via the spacer, etc., the spacer material should be electrically conductive(spacer contact surface=6mm max. dia.).

Terminal No. 5: Output voltage adjustment

Clockwise rotation increases output voltage.

Terminal No. 6: + output terminals(No. 1 to 4 pins of CP51)

Terminal No. 7: -output terminals(No. 5 to 8 pins of CP51)

Terminal No. 8: Spacer mounting hole

A spacer should be used that is constructed from an insulating material(spacer contact surface=6mm max. dia.).

Terminal No. 1: Input terminal(No. 5 pin of CP1)

Live line. Fuse is built in.

Terminal No. 2: Input terminal(No. 3 pin of CP1)

Neutral line

Terminal No. 3: Input terminal(No. 1 pin of CP1)

Ground

Terminal No. 4: Ground

Connect with input terminal(No. 1 pin of CP1). If the power supply is connected electrically to equipment via the spacer, etc., the spacer material should be electrically conductive(spacer contact surface=6mm max. dia.).

Terminal No. 5: Output voltage adjustment

Clockwise rotation increases output voltage.

Terminal No. 6: + output terminal(No. 1 to 6 pins of CP51)

Terminal No. 7: -output terminal(No. 1 to 7 pins of CP52)

Terminal No. 8: Spacer mounting hole

A spacer should be used that is constructed from an insulating material(spacer contact surface=6mm max. dia.).

Terminal No. 9: VCC terminal(No. 1 pin of CP2)

VCC+

Terminal No. 10: VCC terminal(No. 2 pin of CP2)

VCC-

15±2V should be applied to the VCC terminals if JAK power supplies are used in parallel. An isolated external DC power supply should be used to apply this voltage to the VCC terminals.

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